REMEDIAL INVESTIGATION REPORT
20TH STREET AND FACTOR AVENUE WQARF SITE
YUMA, ARIZONA

Prepared by:

TETRA TECH

Tetra Tech
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
(602) 682-3320

June 27, 2014

REMEDIAL INVESTIGATION REPORT
20TH STREET AND FACTOR AVENUE WQARF SITE
YUMA, ARIZONA

Prepared for:

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
1110 West Washington Street
Phoenix, Arizona 85007

Prepared by:

TETRA TECH

4801 East Washington Street, Suite 260
Phoenix, Arizona 85034

Prepared by:

REGISTERED GEOLOGIST
CERTIFICATE NO.
53599
CHRISTOPHER K
GUTMANN
Date Signed 6-25-14
ARIZONA U.S.A.

Expires: 6/30/15

Christopher Gutmann, R.G
Senior Hydrogeologist

Registered Professional Engineer (Civil)
CERTIFICATE NO.
16984
CHRISTOPHER L.
JACQUEMIN
Date Signed 6-25-14
ARIZONA U.S.A.

EXPIRES 6/30/15

Christopher. L. Jacquemin, P.E.
Senior Engineer

June 27, 2014

EXECUTIVE SUMMARY

This Remedial Investigation (RI) Report for the 20th Street and Factor Avenue Water Quality Assurance Revolving Fund (WQARF) Site (the Site) was prepared by Tetra Tech, Inc. (on behalf of the Arizona Department of Environmental Quality (ADEQ) under the Arizona Superfund Response Action Contract. The boundary for the entire WQARF Site includes the Houston International, Ltd. (Houston International) Facility (the Facility) and encompasses industrial, commercial, and residential areas located downgradient to the west, north, and northwest of the Facility in Yuma, Arizona.

The purpose of the RI conducted at the Yuma 20th Street and Factor Avenue WQARF Site was to determine the nature and extent of contamination at the Site. The RI also identified present and reasonably foreseeable uses of land and waters of the state that have been or are threatened to be impacted by the contamination. Based upon the data collected, the following represents the interpretations and conclusions reached as a result of the RI. This RI report presents the site investigation activities performed at the Site from 1990 through November 2012 by ADEQ and Houston International.

Wastewater containing spent photo-processing chemicals including cyanide compounds was discharged onto or into soils at the Facility either directly or indirectly through wastewater disposal systems and land application. Investigations have indicated the presence of the following compounds in samples of soil, soil vapor, and groundwater at the Site; tetrachloroethene (PCE), trichloroethene (TCE), 1,1-dichloroethene (1,1-DCE), cis,1-2-dichloroethene (cis-1,2-DCE), 1,1,1-trichloroethane (1,1,1-TCA), Di(2-ethylhexyl)phthalate (DEHP), benzene, total cyanide[1], and free (amenable to chlorination) cyanide[2]. Based on the results of the RI, the Site Contaminants of Concern (COC) include PCE, TCE, 1,1-DCE, cis-1,2-DCE, DEHP, total cyanide, and free cyanide. These chemicals are all thought to have originated from, or been derived from chemicals that originated from the Facility and have all been detected during the previous activities in soil at concentrations exceeding Soil Remediation Levels (SRLs) and/or groundwater at concentrations exceeding Arizona Aquifer Water Quality Standards (AWQS). The Houston International, Ltd. (Houston) Facility has been identified as a source by ADEQ. To date, ADEQ has not identified any other sources.

Based on historical data, COCs were introduced to the subsurface via wastewater disposal systems (WDSs). Spent wastewater was also disposed directly onto surface soils in one of three ways. It was either discharged to water plants in front of the building or it was discharged to the soil in the southwest portion of the Facility via a sprinkler system, or discharged to a 1,000-gallon concrete underground sump (WDS-1) on the east side of the Facility. When this sump was full, it was discharged to a disposal pond on the east side of the Facility. Wastewater from this disposal pond overflowed onto the adjacent property to

[1] There is no AWQS currently established for total cyanide. Total cyanide concentrations are compared to the AWQS for free (amenable to chlorination) cyanide of 0.2 mg/L.

[2] Free cyanide is defined as the sum of the cyanide present as hydrogen cyanide (HCN) and as the cyanide ion (CN-) and is dependent of pH and temperature (EPA, 1985)

the east of the Facility. Wastewater from this disposal pond overflowed onto the adjacent property to the east of the Facility.

Based on recommendations from Arizona Department of Health Services (ADHS), residential and non-residential SRLs were established for sodium cyanide compounds for use in remedial action at the Site. ADHS also concluded that the existing SRLs established for hydrogen cyanide were the most appropriate standards for application at the Site. Based on risk to public health from the cyanides in shallow soils and dispersion by wind, an early response action (ERA) was undertaken by ADEQ in 2002-2003. The ERA included removal of the impacted surface soils to a depth of 1 foot. ADEQ implemented engineering controls including installation of a geotextile over the remaining cyanide-impacted soil followed by a 1-foot thick layer of aggregate base coarse (ABC) material. In addition to removal of the cyanide-impacted surface soils, the five WDSs (WDS-1 through WDS-5) that received wastewater from the Facility activities were cleaned. Following the cleaning, two of the WDSs (WDS-1 and WDS-4) and their associated piping were removed from the Facility. During ERA activities, WDS-2 was identified as being located in an area containing cyanide-impacted soils. Since completion of the ERA for cyanides, WDS-2, was relocated in 2008 to an area away from the previously identified cyanide-impacted soils.

In 2011, Tetra Tech constructed an engineered cap over the cyanide-impacted areas along the eastern and southern portions of the Facility. The cap was designed and installed to mitigate potential leaching of contaminants to groundwater and eliminate potential exposure pathways to contaminated soil via dermal contact, ingestion, and particulate and vapor inhalation. The cap was constructed in 2013.

The extent of contamination in soil at the Facility is as follows:

- The lateral extent of soil contamination of chlorinated-hydrocarbons, specifically PCE, in the vadose zone is confined to the source areas on the Facility, especially in the area beneath former WDS-1.
- The lateral extent of cyanide soil contamination is limited to the southwestern, southern, and eastern portions of the Facility and its immediate vicinity.

The extent of COC contamination in soil vapor is as follows:

- The vertical extent of VOCs and hydrogen cyanide in soil vapor at the Facility is defined to depths of approximately 70 feet below ground surface (bgs), just above groundwater. The lateral extent of these COCs in soil vapor on the Facility is not completely defined, and data shows that contamination extends beyond the southern and western boundaries of the Facility.
- The lateral extent of COC contamination in shallow soil vapors (ground surface to 10 feet bgs) off the Facility has been completely defined. However, COC contaminants below 10 feet bgs has not been completely defined, and the lateral downgradient extent of COCs in soil vapors (particularly PCE) due to off-gassing from the dissolved phase groundwater plume is unknown.

As of January 2014, the Site groundwater monitoring/sampling network includes 48 groundwater monitoring wells, two triple-nested piezometer wells, one extraction well, and two production wells that are screened within various zones of the aquifer. Groundwater levels have remained relatively stable at the Site at depths of approximately 80 feet bgs.

Historical data collected at the Site has documented the migration of COCs from the Facility downgradient towards sensitive receptors. As of the date of this report, the receptors have not been impacted by the COCs[3]. The extent of COC contamination in groundwater is as follows:

- In the upper 105 feet of the aquifer (A-Zone), the lateral extent of VOC contamination extends approximately 2,700 feet northwest or downgradient from the source area at the Facility. The lateral extent of the cyanide contamination in the A-Zone at Site extends approximately 1,300 feet west-northwest from beneath the Facility.
- In the B-Zone (105 to 170 feet bgs) of the aquifer, the lateral extent of VOCs extends approximately 4,100 feet northwest from the source areas at the Facility, and approximately 250 feet to the north. The lateral extent of the cyanide in the B-Zone of the aquifer extends approximately 2,400 feet northwest of the Facility.

Preliminary data collected in April and May 2013 using three recently installed B-Zone monitoring wells indicated that the B-Zone downgradient of MW-21 well series was not impacted by the COCs.

PCE and its daughter product compounds, including TCE, are present in soil underlying the Facility in soil-gas and dissolved in pore-water. Based on hydraulic gradients and aquifer characteristics, groundwater is believed to move at average pore-velocities of approximately 37 feet per year in the A-Zone, 91 feet per year in the B-Zone, and 73 feet per year in the C-Zone, with the general flow direction in each of the three zones being to the northwest. Sorption-based retardation limits average transport velocities of PCE to between 18 and 45 feet per year, TCE to between 22 and 55 feet per year, and 1,1-DCE to between 27 and 68 feet per year, depending on the aquifer zone. The chlorinated COCs have been detected as far downgradient as 4,100 feet (MW-21B). PCE, TCE and 1,1-DCE vertical mobility is believed to be limited mostly to the A- and B-Zones. The Clay-A layer between the B- and C-Zones of the aquifer has been consistently encountered in borings advanced to its depth intervals, and all detections of chlorinated COCs beneath it have been in concentrations less than the applicable AWQS.

The potential receptors most likely to be influenced by further downgradient progress of Facility releases are believe to be the production wells used for irrigation purposes at the Alice Byrne Elementary School and St. Francis of Assisi School. Left unchecked, the chlorinated hydrocarbon plume might be expected to reach these wells (located 2,200 and 1,700 feet downgradient from MW-21B respectively) in approximately 25 years for the St. Francis School well and 32 years for the Alice Byrne School well, based on sorption-related retardation calculations for 1,1-DCE.

[3] Total and free cyanide were detected one time from the production school well St. Francis of Assisi in June 2007.

Factors which control the transport of cyanide-based compounds are less understood than those for VOCs. Cyanide probably exists in the soil at the Facility as combinations of different compounds including Prussian Blue, sodium cyanide, potassium cyanide, hydrogen cyanide, and/or as a number of moderately soluble and degradable complexed cyanides based on cobalt, nickel, copper and iron. ADEQ's assumption regarding migration of cyanides is that they are mobile and will be transported to groundwater. It is uncertain how stable or long-lasting cyanide compounds are in groundwater under Site conditions. In the A-Zone of the aquifer, cyanide species appear only to have been transported as far downgradient as MW-14A, a distance of approximately 800 feet from the nearest part of the source area adjacent to MW-5A. Cyanide has been detected recently in B-Zone groundwater monitoring well MW-24B, a distance of approximately 2,400 feet from the southwest corner of the Facility.

Land use in the general region around the Facility consists of mixed-use, low-density residential use, with the usage of properties in the immediate vicinity of the Facility consisting of local commercial and light industrial use. There is no appreciable surface water within the Site boundaries. All water use is from groundwater and is primarily irrigation-based in the vicinity of the Site. The potential receptors most likely to be influenced by further downgradient progress of releases from the Facility are believed to be the irrigation-production well at the Alice Byrne Elementary School and the irrigation-production well at the St. Francis of Assisi School.

The following data gaps have been identified as part of this remedial investigation:

- Additional data defining the parameters used in transport calculations for VOCs in groundwater beneath the Site would increase the confidence predicting impact to potential receptors.
- Nitrate and nitrite as nitrogen were detected above regulatory limits in November 2004 and January 2005, when ADEQ conducted a one-time sampling event for water quality parameters in groundwater beneath the Site. Additional sampling and testing for the compounds is required to determine if this should be considered a COC.
- The lateral extent of soil-vapor contamination at the Facility, particularly on the south and east sides has not been completely characterized. The extent of soil-vapor contamination in the industrial area northwest of the Facility is also undefined.
- Only selected wells in the well network for the Site have been sampled since August 2008, resulting in collection of monitoring data arrayed mostly along the axis of the plume Sampling of deeper zoned wells and/or sampling events that include all the wells in the well network may be needed in the future to provide clarification of localized flow variations that may exist between aquifer units.

TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 PURPOSE OF RI REPORT 1
1.2 SITE CONTAMINANTS OF CONCERN 1
1.3 SITE BACKGROUND 3
1.3.1 Site Description 3
1.3.2 Operational History 4
1.3.3 History of Chemicals Use 5
1.3.4 Wastewater Discharge History 7
1.4 SOURCE IDENTIFICATION 9
2.0 REGULATORY HISTORY AND PREVIOUS INVESTIGATIONS 11
2.1 PRE-ADEQ SITE INVESTIGATIONS FROM 1990 TO 1996 12
2.1.1 Environmental Property Evaluation – Houston International, 1990 12
2.1.2 Phase II Environmental Site Assessment (ESA) and its Addendum – Houston International, 1990 12
2.1.3 ADEQ Regulatory Guidance 1990-1992 13
2.1.4 Site Assessment, RAP, and Installation of Groundwater Monitoring Well MW-1A – Houston International, 1992 14
2.1.5 Installation of MW-2A and Soil Sampling – Houston International, 1992/1993 14
2.1.6 Installation of Groundwater Monitoring Well MW-3A, ADEQ Inspection, and Groundwater Monitoring – Houston International and ADEQ, 1993 15
2.1.7 Soil Gas Survey (Houston International) and Soil Sampling (ADEQ) – 1994 15
2.1.8 Site Assessment Plan and Its Addenda, and Wastewater Characterization – Houston International, 1994 16
2.1.9 Soil Sampling and Hydropunch Groundwater Investigation – Houston International, 1994/1995 16
2.1.10 Installation of MW-101A – Houston International, 1996 17
2.1.11 Groundwater Monitoring and Sampling – Houston International, 1996 17
2.1.12 Installation of Groundwater Monitoring Wells MW-102A,B1,B2 – Houston International, 1996 17
2.2 SITE INVESTIGATIONS PERFORMED BY ADEQ, 1996 TO 2002 18
2.2.1 Sampling of Off-Site Production Wells – ADEQ, 1998 18
2.2.2 Passive Soil Vapor Survey and Soil Sampling at the Facility – ADEQ, 2001 18
2.2.3 Characterization of Soil and WDS Contents for VOCs, SVOCs, Cyanides, and Metals – ADEQ, 2001 19
2.2.4 Groundwater Monitoring and Sampling of Selected Wells – ADEQ, 2001 20
2.2.5 Headspace Vapor Sampling of WDS-1 and Groundwater Monitoring Wells MW-1A, MW-2A, MW-3A, MW-102B1– ADEQ, 2001 20
2.2.6 Installation of Groundwater Monitor Wells MW-5A, MW-6A, and MW-7A, and Groundwater Sampling - ADEQ, 2002 20
2.3 EARLY RESPONSE ACTION (ERA) CHARACTERIZATION OF CYANIDES AND VOCS 21
2.3.1 ERA for Cyanides in Surface Soils and WDSs – ADEQ, 2002 21
2.3.2 Characterization of VOCs in Soils and Soil Vapors at the Facility, Soil Boring SB-01 through SB-06, and Installation of SVMW-1 – ADEQ, 2004 21
2.3.3 Installation of Groundwater Monitor Wells MW-103B, C and MW-4A, Wells Repair/Modifications, and Groundwater Monitoring and Sampling – ADEQ, 2004 22
2.3.4 Indoor Air Sampling – ADEQ, 2004 22
2.3.5 Soil Cyanide Leachability Evaluation – ADEQ, 2004 23

2.3.6 Geophysical Investigations – ADEQ, 2004 24
2.4 FURTHER SITE CHARACTERIZATRION ACTIVITIES 2004 TO PRESENT 24
2.4.1 Groundwater Monitoring and Installation of Wells MW-104B, C, MW-8, MW-9, and MW-10A – ADEQ, 2004 through 2005 24
2.4.2 Vapor Intrusion Modeling – ADEQ, 2005 25
2.4.3 Installation of Groundwater Monitoring Well MW-11A and Groundwater Monitoring and Sampling – ADEQ, 2005 26
2.4.4 Installation of Groundwater Monitoring Wells MW-12A and MW-15A, and Groundwater Monitoring and Sampling - ADEQ, 2006 26
2.4.5 Final Indoor Air Risk Assessment - ADEQ, 2006 27
2.4.6 Installation of Groundwater Monitoring Wells MW-8B, MW-17A, MW-18A, B, MW-19A, and MW-20A, and Groundwater Monitoring and Sampling – ADEQ, 2006 27
2.4.7 Groundwater Monitoring and Sampling and Installation of Groundwater Monitoring Wells MW-8C, MW-17C, MW-21A,B,C, MW-22B, and MW-23B – ADEQ, 2007 28
2.4.8 Installation of Groundwater Monitoring Well MW-24B, Extraction Well EW-1, and Piezometer Wells PZ-1A, B, C and PZ-2A, B, C – ADEQ, 2008 30
2.4.9 Groundwater Sampling and Monitoring, Installation of Groundwater Monitoring Well MW-16A, and Investigation of VOCs and Cyanides in Monitoring Well Headspace Vapors – ADEQ, 2008 31
2.4.10 Installation of Dual-Nested Soil Vapor Monitoring Wells SVMW-2 through SVMW-4, Soil Vapor Investigations, and Groundwater Monitoring and Sampling - ADEQ, 2008 33
2.4.11 Installation of Dual-Nested Soil Vapor Monitoring Wells SVMW-5 through SVMW-7, and Groundwater Monitoring and Sampling – ADEQ, 2009 34
2.4.12 Installation of Dual-Nested Soil Vapor Sampling Wells SVMW-9, SVMW-10 and SVMW-12, and SVMW-13, Multi-nested Soil Vapor Monitoring Wells SVMW-8 and SVMW-11 and SVMW-14 through SVMW-17; Installation of Groundwater Monitoring Wells MW-25A,B through MW-27A,B – ADEQ, 2010 34
2.4.13 Groundwater and Soil Vapor Sampling and Monitoring, Installation of Groundwater Monitoring Well MW-22A and Soil Vapor Monitoring Well SVMW-18 - ADEQ, 2011 35
2.4.14 Cap Inspection and Soil Sampling – ADEQ, 2012 36
2.4.15 Groundwater Monitoring and Sampling – ADEQ, 2012 37
2.4.16 Cap Installation– ADEQ, 2013 37
3.0 EARLY RESPONSE ACTIONS 39
3.1 ERA FOR CYANIDES 39
3.1.1 Characterization of Soil and WDS Contents for Cyanides – ADEQ, 2001 39
3.1.2 Cyanide-Impacted Soil Removal 40
3.1.3 WDSs 41
3.1.4 Development of Site-Specific GPLs For Cyanides – ADEQ, 2005 41
3.1.5 Abandonment of WDS-2 and Its Leach Field and Installation of Replacement Septic Tank System – ADEQ, 2008 41
3.1.6 Capping of Cyanide-Contaminated Soil, 2013 42
3.2 ERA FOR VOCS 43
3.2.1 Passive Soil Gas Survey 43
3.2.2 Subsurface Soil Investigation 44
4.0 PHYSICAL SITE CHARACTERISTICS 47
4.1 LOCATION AND PHYSIOGRAPHY 47
4.2 CLIMATE 47
4.3 SURFACE DRAINAGE 47
4.4 REGIONAL AND SITE GEOLOGY 48
4.4.1 Undifferentiated Lower Unit 49

4.4.2 Coarse Gravel Unit 50
4.4.3 Lower Fill Unit 50
4.4.4 Clay A 50
4.4.5 Middle Fill Unit 50
4.4.6 Clay B 51
4.4.7 Upper Fill Unit 51
4.4.8 Regional Hydrology 52
4.5 SITE-SPECIFIC HYDROGEOLOGY 52
4.5.1 Groundwater Movement 52
4.5.2 Vertical Hydraulic Gradients 53
4.5.3 Aquifer Testing – ADEQ, March 2008 54
4.5.4 Groundwater Modeling – ADEQ, March 2008 54
4.5.5 Groundwater Field and Natural Attenuation Parameters 55
4.5.6 Geotechnical Parameters of Selected Soil Samples 57
5.0 NATURE AND EXTENT OF CONTAMINATION AND FATE AND TRANSPORT 59
5.1 NATURE AND EXTENT OF SOIL CONTAMINATION 59
5.1.1 Conclusions 60
5.2 NATURE AND EXTENT OF SOIL VAPOR CONTAMINATION 61
5.2.1 Soil Vapor VOC Contamination (on the Facility) 62
5.2.2 Hydrogen Cyanide in Soil Vapor (On Facility) 63
5.2.3 Summary of Soil Vapor Contamination (on the Facility) 63
5.2.4 Soil Vapor VOC Contamination (off the Facility) 64
5.2.5 Summary of Soil Vapor Contamination off the Facility 66
5.3 CONTAMINATED ZONES OF THE AQUIFER 66
5.3.1 Groundwater Movement 66
5.3.2 Groundwater Contamination 68
5.4 FATE AND TRANSPORT OF CONTAMINANTS 76
5.4.1 VOC Fate and Transport 76
5.4.2 SVOC Fate and Transport 83
5.4.3 Cyanide Compound Fate and Transport 83
6.0 LAND AND WATER USE EVALUATION 87
6.1 CURRENT LAND USES 88
6.1.1 Regional Land Use 88
6.1.2 Site-Specific Land Use 88
6.2 FUTURE LAND USES 89
6.2.1 Regional Land Use 89
6.2.2 Site-Specific Land Use 89
6.3 GROUNDWATER USES 89
6.3.1 Yuma County 90
6.3.2 City of Yuma 90
6.3.3 Houston International Ltd. 91
6.3.4 Arizona Department of Environmental Quality 91
6.3.5 Larry & Martha Covarrubias 91
6.3.6 Ronald A Martin Trust 91
6.3.7 Alice Byrne Elementary School 91
6.3.8 St. Francis of Assisi School Well 92
6.3.9 KL-1 (Markel Investments) 92
6.3.10 Woodward Junior High School 92

6.4 SURFACE WATER USES 92
6.5 SUMMARY OF USES 92
6.5.1 Land Uses 92
6.5.2 Groundwater Uses 93
7.0 SUMMARY AND CONCLUSIONS 95
7.1 SOURCES AND PATHWAYS OF CONTAMINATION 95
7.2 EARLY RESPONSE ACTIONS 95
7.3 NATURE AND EXTENT OF CONTAMINATION 96
7.3.1 Soils 96
7.3.2 Soil Vapor 96
7.3.3 Groundwater 97
7.4 FATE AND TRANSPORT 98
7.5 LAND AND WATER USE 98
7.6 AREA OF UNCERTAINTY/ DATA GAPS 99
8.0 REFERENCES 101

TABLES

Table 1-1 Definitions of Various Cyanides Terms (in text)
Table 2-1 Summary of Detected Concentrations in Soil: VOCs and Cyanides
Table 2-2 Summary of Previous Soil Sampling Results for Total Metals
Table 2-3 Historical Soil Sampling Results for SVOCs
Table 2-4 Concentrations of Analytes Detected in Soil Vapor Samples
Table 2-5 Monitoring Well Construction Details
Table 2-6 Depth to Groundwater Measurements and Groundwater Elevations
Table 2-7 Summary of VOCs and Cyanides Historically Detected in Groundwater Since 1982
Table 2-8 Total and Dissolved Metals Historically Detected in Groundwater
Table 2-9 Summary of SVOCs Detected in Groundwater
Table 2-10 Characterization of WDS Wastewaters and Sludges
Table 2-11 Concentrations of Analytes Detected in Indoor Air Samples in 2004
Table 2-12 Comparison of Cyanide in Soil Samples and Leachate
Table 2-13 Soil and Gas Johnson and Ettinger Model Output
Table 4-1 Summary of Groundwater Field Parameters
Table 4-2 Summary of Natural Attenuation Compounds Detected in Groundwater Samples
Table 4-3 Geotechnical Parameters of Soil Samples Collected From Borings SB-01 and SB 04
Table 5-1 Calculated Retardation Factors for Site Chlorinated Hydrocarbons (in text)
Table 5-2 Calculated Transport Velocities for Site Chlorinated Hydrocarbons (in text)
Table 6-1 Notable Industrial Facilities Located Near the Facility (in text)
Table 6-2 Summary of Well Users in Site Vicinity

FIGURES

Figure 1-1 Facility Location Map
Figure 1-2 Facility Layout Map
Figure 1-3 Site Boundary Location Map
Figure 2-1 Site Diagram and Soil Boring Locations
Figure 2-2 Surface and Subsurface Soil Sample Locations with Cyanide Concentrations
Figure 2-3 Soil Vapor Monitoring Well Locations
Figure 2-4 Groundwater Monitoring Well Locations
Figure 2-5 Indoor Air Sampling Locations
Figure 2-6 Selected VOC and HCN Results from September 2008 Soil Vapor Survey
Figure 2-7 Residual Cyanide Concentrations – Bottom of Excavations GPL Evaluation for Cyanides
Figure 4-1 Yuma Area and Algodones Faults
Figure 4-2 Regional Hydrogeologic Cross Section
Figure 4-3 Cross Section Location Map
Figure 4-4 Geologic Cross Section from A-A'
Figure 4-5 Geologic Cross Section from B-B'
Figure 4-6 Geologic Cross Section from C-C'
Figure 5-1 Location of Cross Section SV-SV', Vadose Zone, January 2011
Figure 5-2 PCE Plume in Vadose Zone at 5' bgs, January 2011
Figure 5-3 PCE Plume in Vadose Zone at 20' bgs, January 2011
Figure 5-4 PCE Plume in Vadose Zone at 40' bgs, January 2011
Figure 5-5 PCE Plume in Vadose Zone at 60' bgs, January 2011
Figure 5-6 PCE Plume in Vadose Zone at 80' bgs, January 2011
Figure 5-7 PCE Plume in Vadose Zone Cross Section SV-SV', January 2011
Figure 5-8 VOC Soil Vapor Monitoring Results, January & February, 2011
Figure 5-9 Groundwater Elevation Map in A-Zone Wells – October 22, 2013
Figure 5-10 Groundwater Elevation Map in B-Zone Wells – October 22, 2013
Figure 5-11 Groundwater Elevation Map in C-Zone Wells – October 22, 2013
Figure 5-12 Estimated Extent of COC Contamination in A-Zone and B-Zone Wells, January 2002
Figure 5-13 Estimated Extent of COC Contamination in A-Zone, November 2007
Figure 5-14 Estimated Extent of COC Contamination in B-Zone, November 2007
Figure 5-15 Estimated Extent of COC Contamination in C-Zone, November 2007
Figure 5-16 A-Zone Chlorinated VOC Plume Map and Selected Analytical Results, November 2013
Figure 5-17 A-Zone Cyanide Plume Map, Cyanide Analytical Results, November 2013
Figure 5-18 B-Zone Plume Map and Selected Analytical Results, November 2013
Figure 5-19 B-Zone Plume Map, and Cyanide Analytical Results, November 2013
Figure 5-20 C-Zone Map, Selected Analytical Results, November 2013
Figure 5-21 Total VOC Contamination Along A-A', Fourth Quarter 2013
Figure 5-22 PCE Contamination Along A-A', Fourth Quarter 2013
Figure 5-23 TCE Contamination Along A-A', Fourth Quarter 2013
Figure 5-24 1,1-DCE Contamination Along A-A', Fourth Quarter 2013

Figure 5-25 CN Contamination Along A-A', Fourth Quarter 2013
Figure 5-26 Total VOC Contamination Along B-B', Fourth Quarter 2013
Figure 5-27 PCE Contamination Along B-B', Fourth Quarter 2013
Figure 5-28 TCE Contamination Along B-B', Fourth Quarter 2013
Figure 5-29 1,1-DCE Contamination Along B-B', Fourth Quarter 2013
Figure 5-30 CN Contamination Along B-B', Fourth Quarter 2013
Figure 5-31 Total VOC Contamination Along C-C', Fourth Quarter 2013
Figure 5-32 PCE Contamination Along C-C', Fourth Quarter 2013
Figure 5-33 TCE Contamination Along C-C', Fourth Quarter 2013
Figure 5-34 1,1-DCE Contamination Along C-C', Fourth Quarter 2013
Figure 5-35 CN Contamination Along C-C', Fourth Quarter 2013
Figure 6-1 Sensitive Receptors & Community Involvement Area (CIA)
Figure 6-2 County of Yuma Land Use Map
Figure 6-3 Water Well Users in the Site Vicinity

APPENDICES

Appendix A HGL Report
Appendix B Soil Gas Survey, April 1994
Appendix C Passive Soil Vapor Survey, June 2001
Appendix D SPLP Results
Appendix E Soil Boring Logs
Appendix F Hydrographs of Contaminated Zones
Appendix G 1,4-Dioxane Memo Reference
Appendix H L & W Use Questionnaires and Groundwater Well Records
Appendix I Remedial Objectives
Appendix J Responsiveness Summary

1.0 INTRODUCTION

This Remedial Investigation (RI) Report for the 20th Street and Factor Avenue Water Quality Assurance Revolving Fund (WQARF) Site (the Site) was prepared by Tetra Tech, Inc. (formerly GeoTrans, Inc. and Tetra Tech GEO) for the Arizona Department of Environmental Quality (ADEQ) under the Arizona Superfund Response Action Contract Nos. 99-0017 (Work Assignment No. 01-0017), EV03-0073 (Task Assignment TA 04-0049), and EV09-0100AC (Task Assignment EV10-0081). The 20th Street and Factor Avenue WQARF Site is located in Yuma, Arizona.

The Site was added to the WQARF Registry in March 2000. The boundary for the WQARF Site includes the Houston International, Ltd. (Houston International) Facility (the Facility) at 653-655 East 20th Street and industrial, commercial, and residential areas located to the west, north, and northwest of the Facility as shown in Figure 1-1. A detailed map showing the location of the Facility is shown in Figure 1-2. The Site is defined by the extent of contamination exceeding Aquifer Water Quality Standards (AWQSs), and covers an area approximately 1 mile long and ½-mile wide, originating from the Facility as shown in Figure 1-3. The Facility has been identified as a source by ADEQ. To date, ADEQ has not identified any other sources. This RI presents the results of RI activities performed at the Site from 1990 through November 2013 by ADEQ and Houston International.

1.1 PURPOSE OF RI REPORT

The purpose of this RI report is to identify: 1) the nature, extent, and source of contamination; 2) current and potential impacts to public health, welfare, and the environment; and, 3) current and reasonably foreseeable uses of land and waters of the state.

1.2 SITE CONTAMINANTS OF CONCERN

Investigations have indicated the presence of the following compounds in samples of soil, soil vapor, and groundwater at the Site; tetrachloroethene (PCE), trichloroethene (TCE), 1,1-dichloroethene (1,1-DCE), cis,1-2-dichloroethene (cis-1,2-DCE), 1,1,1-trichloroethane (1,1,1-TCA), Di(2-ethylhexyl)phthalate (DEHP), benzene, total cyanide[4], and free (amenable to chlorination) cyanide[5]. Based on the results of the RI, the Site Contaminants of Concern (COC) include PCE, (TCE), 1,1-DCE, cis-1,2-DCE, DEHP, total cyanide, and free cyanide. The regulatory limits for the COCs are summarized in the table below:

[4] There is no AWQS currently established for total cyanide. Total cyanide concentrations are compared to the AWQS for free (amenable to chlorination) cyanide of 0.2 mg/L.

[5] Free cyanide is defined as the sum of the cyanide present as hydrogen cyanide (HCN) and as the cyanide ion (CN-) and is dependent of pH and temperature (EPA, 1985)

Contaminant of Concern	Aquifer Water Quality Standards (µg/L)	EPA Maximum Contaminant Level (µg/L)	Residential Soil Remediation Level (mg/kg)	Industrial Soil Remediation Level (mg/kg)	EPA Regional Screening Level Residential Air (µg/m³)	EPA Regional Screening Level Industrial Air (µg/m³)
PCE	5	5	0.51	13	9.4	47
TCE	5	5	3.0	65	0.43	3.0
1,1-DCE	7	7	120	410	210	880
Cis,1-2-DCE	70	70	43	150	Not Established	Not Established
DEHP	6	6	39	1200	1.0	5.1
Total cyanide	Not Established	200 (or 0.2 mg/L)*	Not Established	Not Established	0.83*	3.5*
Free cyanide	200 (or 0.2 mg/L)	200 (or 0.2 mg/L)*	1,200	12,000	0.83*	3.5*

Notes : * Value established by EPA for "Cyanide"; not specified total or free

The COCs listed above have been detected in waste materials, soil samples, soil vapor samples, and groundwater samples from the Facility, and therefore are believed to have originated from the Facility. Several of the COCs have been detected in soil at concentrations exceeding applicable Soil Remediation Levels (SRLs) and in groundwater under the Facility/Site at concentrations exceeding applicable Arizona Aquifer Water Quality Standards (AWQSs). There have been some contaminants detected in groundwater at concentrations above the AWQSs which are not being considered COCs at the Site, including selenium and nitrate.

Total and dissolved selenium has been detected in groundwater at the Site since 2002; the majority of the selenium detected has been above the AWQS of 0.05 mg/L. Selenium is believed to be related to historical photographic development operations, and has been identified as a constituent of photographic toner (Los Alamos National Laboratory, 2013). Although the sources of selenium in groundwater beneath the Site are uncertain, the chemistry of selenium is such that it tends to be increasingly mobile under oxidizing conditions. Selenium has not been found to be present in elevated concentrations in soils at the Facility. According to Arizona Department of Water Resources (ADWR), selenium exceeding the AWQS is fairly common in the Yuma Basin, especially in the Gila River, which feeds the Yuma Basin (ADWR, 2011). Based on a statistical distribution analysis conducted by Tetra Tech of selenium in upgradient and cross-gradient wells relative to the Facility during Second Quarter 2013, it appears the selenium concentrations are naturally occurring in groundwater and are unlikely to be a result of previous activities at the Facility (Tetra Tech, 2013b). Based on background concentrations of selenium and an evaluation of selenium concentrations in groundwater monitoring data at the Site, it appears that selenium is not a COC at the Site and will not be discussed further in this RI report.

Nitrate (NO_3^-) and nitrite (NO_2^-) as nitrogen (N) were detected at concentrations above the AWQSs in the November 2004 and January 2005 events, when Tetra Tech conducted a one-time sampling event for natural parameters in groundwater beneath the Site. The AWQS for nitrate and nitrite as nitrogen and for nitrate are 10 mg/L; the AWQS is 1 mg/L. Nitrite was not detected above AWQS at the Site during this one-time sampling event. Although nitric acid has been recorded as being used during previous operations at the Facility; no spills and/or releases have been reported. The nitric acid wash tank was previously used at the Facility, and its contents were reportedly spread into soil at the Facility. The tank was located in Building 2 (Figure 1-2), and its contents were likely spread on soils south and/or east of Building 2. Nitrate concentrations were not detected above the AWQS in groundwater wells (MW-3A and MW-4A) near Building 2. According to the ADWR

records, there are multiple cross-gradient and upgradient wells within a five-mile radius of the Site where concentrations of nitrate exceed regulatory limits. Also of note are the historical operations of large-scale agricultural activities in the Yuma Basin. Nitrates are mainly produced for use in fertilizers because of their high solubility and biodegradability. The main nitrates are ammonium, sodium, potassium, and calcium salts. Several million kilograms of fertilizers containing nitrates are produced annually for this purpose in the Yuma Basin (ADWR, 2011). At this time it is unknown if the elevated concentrations of nitrate is connected to former operations at the Facility. Therefore, the lack of analytical data concerning nitrate concentrations in groundwater is identified as a data gap, and additional sampling should be conducted to determine if nitrate concentrations in groundwater are related to former operations at the Facility.

1.3 SITE BACKGROUND

1.3.1 Site Description

The Site is located in Yuma, Arizona, in an urban setting that includes a mixture of commercial businesses, light industrial businesses, warehouses, and residential neighborhoods. It occupies approximately 65 acres, and is generally bounded to the north by 17th Street, to the south by 21st Street, to the west by 3rd Avenue, and to the east by Kennedy Lane (Figure 1-3). The Site is generally located in Sections 33 and 34 in Township 8 South, Range 23 West of the Gila and Salt River Baseline and Meridian in Yuma County, Arizona.

ADEQ has identified past operations at the Houston Facility as a source of the COCs.. The Houston Facility is located in the north half of the north half of the southwest quarter of Section 34 in Township 8 South, Range 23 West of the Gila and Salt River Baseline and Meridian in Yuma County, Arizona. The Facility is identified by the Yuma County Assessor's Office as Parcel 33 in Book 665 of Map 53 (formerly APN 109-64-033) as shown on Figures 1-1 and 1-2.

The Facility contains four structures: main office building (Building 1), carpenter shop (Building 2), paint shop (Building 3), and west office building (Building 4) (Western Technologies, 1990). In addition, there were five wastewater disposal systems (WDSs) at the Facility that received sanitary wastewater and industrial wastewater. WDS-1 was a former 1,000-gallon, concrete tank previously located in the east parking lot, east of Building 1. WDS-2 was a 500-gallon concrete septic tank with a leach field, located in the east parking lot, north of WDS-1 (Houston International, 1994). WDS-2 was replaced by ADEQ with a new system in 2008 and is located along the southeastern portion of Building 1. WDS-3 is a former concrete septic tank with a leach field, located south of Building 2. WDS-4 was a former concrete underground wastewater collection and possible disposal tank, located west of Building 3. WDS-5 was a former 500-gallon septic tank located north of Building 4. The location of the Buildings and WDS systems are shown in Figure 1-2. A detailed discussion of the history and usage of the Buildings and WDSs at the Facility are presented in the following sections.

1.3.2 Operational History

The operational history for the Houston International Facility is described in detail in the March 6, 2012 "Draft Final Letter Report – Remedial Investigation, 20th Street and Factor Avenue WQARF Registry Site," completed by Hydrogeologic, Inc. (HGL, 2012). The operational history and chemical use history section of the March 6, 2012 HGL Draft Final Letter Report is presented verbatim below. A copy of this Draft Final Letter Report is provided in electronic form as Appendix A.

Houston began operations as Houston Photo Products Inc., in 1966, running a motion picture laboratory and manufacturing photographic film and paper processing equipment for the photo industry (ADEQ website update, 2011). Houston Photo Products, Inc., acquired Parcel 109-64-003 from Industrial Properties, Inc., in 1969 (Industrial Properties, 1969). In 1988, Houston Photo Products, Inc. changed its name to Houston International, Ltd. (ADEQ website update, 2011). The chemicals used at the facility included standard photographic chemicals, PCE, and small amounts of other chemicals. PCE was used in a heated vapor degreaser to clean parts until 1991. By 1995, the motion picture laboratory was moved off site (ADEQ, 2002).

Wastewater was treated to recover silver and disposed of in one of three ways. It was either discharged to water plants in front of the building, discharged to the soil in the southwest portion of the Facility via a sprinkler system and later to a sump, or discharged to a 1,000-gallon concrete underground sump on the east side of the Facility. When this sump was full, it was discharged to a disposal pond on the east side of the Facility. Wastewater from this disposal pond overflowed onto the adjacent property to the east of the site (ADEQ, 1996 and 2011).

The Houston facility contained four structures: main office building, west office building, carpenter shop, and paint shop. The main office building was located in the northeast side of the Facility and houses the administrative offices and photographic machine manufacturing area; this is also where the photographic developing process took place. The west office building was on the northwest side of the Facility. The east half of the building was used by the owner as a storage warehouse and a repair area for circuit boards associated with the photographic machine manufacturing operation. The west half of the building was leased to Dreamland Bedding as a mattress manufacturing facility. No chemicals were used in this building. The carpenter shop was located south of the main office building and was used for manufacturing wood and plastic panels for photographic machines. A small room contained a PCE wash tank, a nitric acid wash tank, and a water rinse tank. These tanks were drained annually, and the waste was spread into the soil. The paint shop is located west of the carpenter shop and was used for painting photographic machines and components (Western Technologies, 1990).

According to a review of aerial photographs from Landis Aerial Survey, the main office building and paint room were the only two structures on the Facility in 1966. In 1970, the west office building was under construction and the carpenter shop was present. A dark stain east of the Facility was also noted in the aerial photograph from this year. In 1973, all four structures were complete on the Facility, and the dark stained area was still present

east of the Facility. A 1980 aerial photograph shows that the dark stain east of the Facility remained, but no other significant changes are visible. In 1984, the dark stain was significantly smaller than in previous years. In the 1988 photographs, the stained area seen in the previous photographs is no longer visible (Western Technologies, 1990).

As of 2002, the Facility was occupied by Houston Fearless International (a film processing equipment manufacturer), a dance studio, and a furniture warehouse. The Facility was also being used for personal storage by Mr. Houston (ADEQ, 2002).

1.3.3 History of Chemicals Use

As previously discussed, historical operations at the Facility have included photographic processing and the manufacture of film processing machines. According to the available Material Safety Data Sheets (MSDSs) provided by Houston International, various developers, fixers, toners, stops, stabilizers, bleaches, and rinses were used in its photographic processes (Foree & Vann, 1994b). These processing liquids (developers, fixers, toners, stops, stabilizers, bleaches, and rinses) contained various chemicals, including sodium thiocyanate, potassium cyanide, sodium hydroxide, acetic acid, sodium sulfite, benzyl alcohol, ethylene glycol, monobutyl ether, hydroquinone, formaldehyde, pyrazolidinone, phenylenediamine, polyethylene glycol, and tert-butylamine borane.

In addition to processing liquids mentioned above, Houston International also used solvents, cleaners, paint thinners, and nitric acid in the manufacturing of film-processing machines (Western Technologies, 1990). From 1975 through 1990, Houston International used approximately 100 gallons per year of PCE to clean the stainless-steel machine parts (Houston International, 1991a; Houston International, 1994; ADEQ, 1999a). The parts-cleaning operations were conducted in the carpenter shop, and included a 50-gallon PCE vapor degreaser tank, a nitric acid wash tank, and a water-rinse tank (Western Technologies, 1990).

In 1991, Houston International began using Industroclean® in place of PCE. The last purchase of PCE (one 55-gallon drum) was reportedly in March 1990 (Houston, 1991a). Industroclean® contains ethylene glycol monobutyl ether (ADEQ, 1999a). Other documented solvents used at the facility included methyl ethyl ketone (MEK), chloroethene (vinyl chloride), and chloroform (Western Technologies, 1990). MEK was used as a thinner to solvent-weld plastics and to remove the ink stamps from stainless steel and titanium sheets and plastic pipes (Houston International, 1994; Foree & Vann, 1994b).

While 1,1-DCE is formed by anaerobic biodegradation of TCE, it is also an abiotic-degradation product of 1,1,1-TCA, which has also detected at the Site in soil vapor and groundwater.[1] 1,1-DCE is also formed by cometabolism of 1,1,1-TCA (WRHSRC, 2003) during the anaerobic biodegradation of TCE (EPA, 2009). 1,1,1-TCA has occasionally been detected in groundwater beneath the Site and has consistently been detected in soil vapor samples collected at the Site. These data suggest that 1,1,1-TCA has been released to the environment at the Site.

[1] Abiotic degradation of 1,1,1-TCA to 1,1-DCE in groundwater occurs rapidly, with a half-life of up to several years (EPA, 600/M-89/009; Gerkens, R.R. and J.A. Franklin, 1989; Wing, M.R., 1997).

A review of industrial uses of DEHP revealed that there are two primary categories: use in plastic (PVC) products and non-plastic origins. Of particular interest is the identification that DEHP is sometimes used as a solvent or inert carrier in inks (CEPA, 1997), and is also common laboratory contaminant in groundwater samples (WDNR, 2002). While it is possible that DEHP may have been released at the Facility, DEHP has high retardation factor which significantly limits its transport in groundwater, and makes it unlikely to travel more than 5-10 feet beyond the Facility release area. DEHP has however been sporadically detected significantly downgradient of the Facility (well series MW-21), suggesting that DEHP may be present due to other factors unrelated to groundwater transport from the Facility. Further research to isolate the cause of these detections is needed to determine if DEHP should be considered a COC at the Site.

Facility background information (HGL, 2012) suggests that process wastewater containing mixtures of cyanide compounds was discharged to WDSs and to the land surface. These mixtures may have included variable concentrations of several compounds, including sodium thiocyanate and potassium ferricyanide, which were used in film processing activities (GeoTrans, 2005c). Table 1-1 presents the various forms in which cyanide may be present and the definitions of the categories by which cyanide-based compounds are typically measured and discussed.

TABLE 1-1 DEFINITIONS OF VARIOUS CYANIDES TERMS

Total Cyanides	Total cyanide is a measure of all cyanides including iron cyanide complexes after conversion to hydrogen cyanide (HCN) by acidification, distillation and absorption in a NaOH scrubber (EPA, June 1984). Cyanides can be found in both soluble and non-soluble forms; thiocyanates are the soluble form, while the iron cyanides are the insoluble form.
Free Cyanides	Free cyanide is defined as the sum of the cyanide present as hydrogen cyanide (HCN) and as the cyanide ion (CN-) and is dependent of pH and temperature (EPA, 1985)
Cyanides Amenable to Chlorination	A measurement of free/available cyanide after the addition of chlorine to a sample; therefore, cyanide amenable to chlorination is cyanide complexes dissociated by the addition of chlorine[1]
Prussian Blue	Prussian Blue, also known as Iron cyanide ($Fe\text{-}(CN)_6^{3-}$), is the most stable form of cyanide found in soil conditions, and its stability is dependent upon light conditions (Meeussen 1992)[2] Prussian blue is generated by the reaction of potassium ferricyanide with ferric ions.
Thiocyanates	A salt of thiocyanic acid; formed when alkaline cyanides are fused with sulfur[3]

Cyanides may occur in the environment in three general forms: (1) hydrogen cyanide (HCN; volatile and very soluble); (2) very soluble and degradable simple cyanides, such as sodium

[1] Eaton, A. D., M. A. H. Franson, A. W. W. Association, and W. E. Federation. Standard methods for the examination of water & wastewater. 21st. Amer Public Health Assn, 2006. Print.
[2] Dissolution behavior of iron cyanide (Prussian blue) in contaminated soils
Johannes C. L. Meeussen, Meindert G. Keizer, Willem H. Van Riemsdijk, and Frans A. M. De Haan
Environmental Science & Technology 1992 26 (9), 1832-1838
[3] http://wordnetweb.princeton.edu/perl/webwn?s=thiocyanate

cyanide (NaCN) and potassium cyanide (KCN); and (3) moderately soluble and degradable to sparingly soluble and decomposable complex cyanides, such as cobalt, nickel, copper, and iron cyanides (National Park Service, 1997; Sharma, V.K., et al, 1998). Simple cyanides can easily dissociate into cations and cyanide anions (CN^-), while complex cyanides, such as iron and cobalt complexes, are considered strong complexes and do not dissociate easily. Total cyanide is defined as the sum of all cyanides (CN^-), and the sum of HCN and CN^- is defined as "free cyanide" (National Park Service, 1997). At pH<9.2, more than 90 percent of the free cyanide is expected to be in the form of molecular HCN (National Park Service, 1997). Another measure of cyanides is amenable cyanide, which is a measure of cyanides that includes some of the weak complexes, including zinc, copper and nickel cyanide (GeoTrans, 2005c).

A review of the chemicals and use of chemicals in previous Facility operations suggests that process wastewater containing mixtures of cyanide compounds was discharged to both WDSs and to the land surface through direct discharge. These mixtures may have included variable concentrations of several compounds, including sodium thiocyanate and potassium ferricyanide, which were used in film processing activities. Ultimately, cyanide-containing compounds also formed the relatively stable compound, Prussian Blue [$Fe_4(Fe(CN)_6)_3$], as an associated byproduct prior to discharge. Prussian Blue may also have formed subsequent to discharge depending upon the nature of the discharged materials and the chemical environment. Because of this, the exact nature of the discharged cyanides cannot be determined, as it may include a number of possible constituents and varying concentrations. It is also likely that free cyanide, cyanide or hydrogen cyanide were contained in discharged mixtures as chemical reactions released them due to pH, reduction/oxidation potential (redox), UV light and other chemical changes during use and discharge (GeoTrans, 2005c).

Because there are no established SRLs for iron cyanides and sodium thiocyanate, ADEQ requested a recommendation from ADHS for the appropriate SRLs for the site. The recommendation from ADHS indicated that the established SRL for sodium cyanide of 2,600 mg/kg (residential) and 27,000 mg/kg (non-residential) would be protective of human health if the cyanide group remains bound within the thiocyanate and iron cyanide molecules. ADHS also acknowledged that metal cyanides (including iron cyanides) and thiocyanates can generate hydrogen cyanide when in solution, even in a near-neutral pH environment, and when exposed to sunlight or ultraviolet radiation. The sodium cyanide standard, however, does not account for the generation of hydrogen cyanide. Their recommendation thus concludes that the SRL for hydrogen cyanide of 11 mg/kg (residential) and 35 mg/kg (non-residential) is the most appropriate standard for application at the site if there are no institutional or engineering controls to ensure the residual cyanide remains to be bound in the thiocyanate or iron cyanide molecules (GeoTrans, 2002b).

1.3.4 Wastewater Discharge History

Historical records indicate that wastewater generated from historical operations at the Facility was discharged to a treatment plant prior to disposal. In 1991, Houston International was using approximately 275 to 300 gallons of photographic chemicals per week and by 1994 the usage decreased to approximately 500 gallons per month. After the

wastewater from the photographic processes was treated to recover silver flake, the treated wastewater was either: 1) discharged to irrigate plants in front of Building 1; 2) discharged to soil in the southwestern portion of the Facility; or, 3) discharged to WDS-1 (see below). It was noted that when this sump was full that the contents were discharged to a disposal pond located on the east side of the Facility (HGL, 2012).

In addition, a review of historical records indicates that wastewater was also conveyed to the following five on-site wastewater disposal systems (WDSs; Figure 1-2).

1.3.4.1 WDS-1

WDS-1 was a 1,000-gallon, concrete, underground, wastewater collection sump located in the east parking lot that was reportedly constructed in 1966. Photo-development wash water containing spent photographic chemicals was conveyed via underground pipe from Building 1 into WDS-1 for temporary storage (Figure 1-2; Foree & Vann, 1990a and 1992a). The wastewater was eventually conveyed from WDS-1 into unlined soil retention areas located along the eastern and southern Facility boundaries, onto the soil on the adjoining property to the east, and sprayed onto soil[6] in the southwest corner of the Facility (Western Technologies, 1990; Foree & Vann, 1990a, 1992a and 1994b). WDS-1 was connected with piping to WDS-4 to re-route wastewater from WDS-1 (GeoTrans, 2004b).

Wastewater disposal to WDS-1 was discontinued in 1994, and discharge piping to WDS-1 was re-routed and connected to WDS-2 piping. According to Mr. Houston, floor drains in the photo-processing lab in Building 1 were grouted at the same time to prevent further discharge of process wastewater into WDS-2, but this has not been confirmed (GeoTrans, 2001a). However, there were additional drains remaining in the building that were connected to WDS-1. WDS-1 was removed by ADEQ in 2002 (GeoTrans, 2003b).

1.3.4.2 WDS-2

WDS-2 was a 500-gallon concrete septic tank with a leach field (Houston International, 1994), located in the east parking lot, north of WDS-1 (Figure 1-2). This system received chemical overflow from the film-developing machines, and film-processing wash water (the latter after WDS-1 was disconnected) (Foree & Vann, 1990b). WDS-2 received sanitary wastewater from Building 1. It is possible that WDS-2 received wastewater generated from the floor drains of Building 1, but this has not been confirmed. WDS-2 received wastewater via trench drains located in Building 1. The leach lines for the WDS-2 system may have been extended following the purchase of additional land (approximately 25 feet) east of the original Facility line (GeoTrans, 2001a). The contents of this septic tank were removed by ADEQ in 2002, and the tank was rinsed and returned to use until 2008, when the tank and

[6] Stained soil was observed west of Building 3; along south sides of Buildings 2 and 3; on the eastern side of the Facility where standing water and a hose connected to WDS-1 were observed in 1990; and on the adjoining property to the east of the Facility (Western Technologies, 1990; Foree and Vann, 1990a;ADEQ, 1991).

its leach field were abandoned and replaced by ADEQ with a new system located along the southeastern portion of Building 1 in an area where soil was not contaminated.

1.3.4.3 WDS-3

WDS-3 is a concrete septic tank with a leach field, located south of Building 2, and connected by underground piping to bathroom facilities in Building 2 (Figure 1-2). Thus sanitary wastewater from Building 2 would be conveyed to WDS-3, where the wastewater would leach into the soils beneath the Facility. The contents of WDS-3 were removed by ADEQ in 2002, and the tank was rinsed and returned to use (GeoTrans, 2003b). WDS-3 is assumed to be currently in use.

1.3.4.4 WDS-4

WDS-4 was an underground concrete wastewater collection and possible disposal tank, connected by piping with WDS-1 to re-route the wastewater from WDS-1. WDS-4 was located west of Building 3 (Figure 1-2). The contents of WDS-4 and WDS-4 itself were removed by ADEQ in 2002 (GeoTrans, 2003b).

1.3.4.5 WDS-5

WDS-5 was a 500-gallon septic tank with a leach field (Houston, 1994), located north of Building 4 and connected by piping to this building (Figure 1-2). Thus sanitary wastewater from Building 4 would be conveyed to WDS-5, where the wastewater would leach into the soils beneath the Facility. The contents of this tank were removed by ADEQ in 2002, and the tank was rinsed and returned to use. This septic system is assumed to be currently in use (GeoTrans, 2003b).

1.4 SOURCE IDENTIFICATION

In 2007, HGL was contracted by ADEQ to conduct an industrial survey in the boundaries of the WQARF Site to identify businesses or activities that may have used PCE, TCE, and/or cyanide. All of these chemicals are COCs. The HGL industrial survey boundaries were 18th Street to the north, Arizona Avenue to the west, 22nd Street to the south, and the Union Pacific Rail Road parcels to the east. A total of 368 businesses were identified within the industrial survey boundaries. Of these facilities, 145 businesses were grouped into 11 business categories for potential users/generators of PCE, TCE, and/or cyanide.

HGL reviewed records that provided facility information including historical site operations, chemical use, and regulatory involvement. Of the 145 businesses, only three facilities were identified as potentially significant users/generators of PCE, TCE, and/or cyanide: Houston International, Yuma Daily Sun/Freedom Newspapers, and Yuma Recycling Center. The following conclusions were presented in the 2007 industrial survey report (HGL, 2012):

- PCE was regularly used at the Houston International Facility from 1975 to early 1990s and wastewater containing high concentrations of PCE was discharged at the Facility;

- A small amount of used batteries were the only hazardous substance stored at the Yuma Recycling Center, and it “is unlikely that they contributed to contamination at the Site;” and,
- Manifest records were also identified for the Yuma Daily Sun and Freedom Newspapers stating that the facilities shipped petroleum distillates and PCE to Safety-Kleen. However, there was no conclusion of local discharge based on these observations (HGL, 2007). ADEQ installed monitoring wells MW-10A, MW-20A, and MW-23A downgradient (west and northwest) of the Yuma Daily Sun building in 2005 and 2006. Subsequent water sampling of these monitoring wells did not detect PCE or other COC in the groundwater directly downgradient of the Yuma Daily Sun.

Based on the HGL report and data from the Site, ADEQ has identified the Facility as the only source of COCs for the Site.

2.0 REGULATORY HISTORY AND PREVIOUS INVESTIGATIONS

This section provides a summary of regulatory history actions and site investigations conducted at the Houston International Facility and the Site. Investigations have included drilling exploratory borings, installation of groundwater and soil vapor monitoring wells, groundwater monitoring, and sampling of soil, soil gas, groundwater, wastewater/sludge, and indoor and ambient air.

Site investigations were performed by: 1) consultants retained by Houston International, including Western Technologies, Foree & Vann, and Geotechnical and Environmental Consultants (GEC); and, 2) ADEQ from 1990 through 1996. Site investigations were directed by ADEQ and were conducted by its contractor's including Tetra Tech (formerly HSI GeoTrans, GeoTrans, Inc. and Tetra Tech GEO) from 1998 through 2012.

A total of 89 soil-sampling boreholes have been advanced and numerous soil samples have been collected at the Site since 1990. Historical soil sampling data are summarized in Table 2-1 (volatile organic compounds [VOCs] and cyanides), Table 2-2 (metals), and Table 2-3 (semi-volatile organic compounds [SVOCs]). Soil sampling locations are shown in Figures 2-1 and 2-2.

A total of 68 soil vapor monitoring wells have been installed at the Site since 2003. Soil vapor well locations are shown on Figure 2-3. Soil vapor sampling data are summarized in Table 2-4.

A total of 48 groundwater monitoring wells, two triple-nested piezometer wells (PZ-1A,B,C and PZ-2 A,B,C), and one extraction well (EW-1) have been installed and sampled at the Site since 1992. Construction details for well making up the monitoring well network for the Site are summarized in Table 2-5. Historical depth-to-water measurements are summarized in Table 2-6. Groundwater sampling data for VOCs and cyanides, total and dissolved metals, and selected SVOCs are summarized in Tables 2-7 through 2.-9. Groundwater monitoring well locations is shown in Figure 2-4.

It should be noted that groundwater monitoring well nomenclature (designations "A", "B", or "C") was revised in 2007, to denote the aquifer zone within which each well was completed (Table 2-9). These designations reflect the following subsurface stratigraphic zones at the Site: "A" denotes wells screened above Clay B[7] from about 50 feet below ground surface (bgs) to 105 feet bgs; "B" denotes wells screened between Clay B and Clay A, from about 105 feet bgs to 170 feet bgs; and "C" denotes wells screened below Clay A, from about 170 feet bgs to 318 feet bgs. This RI Report utilizes the current nomenclature ("A", "B", "C"). The reports that are referenced herein utilize the nomenclature that was utilized at the time the reports were written.

[7] Clay B and Clay A are identified stratigraphic layers present in the subsurface beneath the Site. These stratigraphic are discussed in detail in Section 4.0.

2.1 PRE-ADEQ SITE INVESTIGATIONS FROM1990 TO 1996

2.1.1 Environmental Property Evaluation – Houston International, 1990

Western Technologies conducted an environmental evaluation which documented the storage of various chemicals throughout the Facility in drums, bags, boxes, and other containers, especially along the north and south walls of Buildings 2 and 3, and in the areas to the east and west of these buildings (Western Technologies, 1990). These chemicals included MEK, vinyl chloride, paints, and lacquer thinners. Chemical wastes from photo-developing machines were piped into WDS-1 (incorrectly classified by Western technologies as an underground storage tank; see Section 2.1.2), and subsequently pumped out and sprayed on the soil on the south side of the Facility. The report further documented that operations conducted in Building 2 included hydraulic testing (using ethylene glycol) and parts cleaning (using a PCE degreaser, a nitric acid tank, and a water-rinse tank) at the east end of the building. The parts cleaning tanks were drained annually and the resulting wastes were spread onto soil in the southern part of the Facility, along with wastewater from WDS-1. Parts painting were performed in Building 3. Building 4 was used by Houston International as a storage warehouse and touch-up and repair area for small printed circuit boards associated with photographic machine manufacturing. The west half of the building was leased and used for mattress manufacturing. Western Technologies observed oil staining areas (blue-green in color) in several areas of the Facility, and reported that the largest soil stains were observed in the southwest corner of the Facility where discharge from WDS-1 was sprayed.

2.1.2 Phase II Environmental Site Assessment (ESA) and its Addendum – Houston International, 1990

Prior to conducting subsurface investigations, Foree & Vann conducted a site inspection (Foree & Vann, 1990a). Foree and Vann observed areas of stained soil (blue-green stains) in the southwest and east portions of the Facility. Although the staining in the southwest portion of the Facility was previously noted by Western Technologies, (Western Technologies, 1990), the stained soil in the east portion of the Facility was not noted by Western Technologies.

Foree & Vann observed standing water and a hose connected to WDS-1 in the stained area along the eastern boundary. A total of six soil borings (B-1 through B-6) were drilled to depths from 2 feet bgs to 20 feet bgs: Soil borings B-1 and B-2 were drilled next to WDS-1 (incorrectly classified by Foree & Vann as an underground storage tank), soil boring (B-3) was drilled in the blue-green stained soil along the eastern boundary of the Facility, and soil borings (B-4 through B-6) were drilled in the stained soil area in the southwest portion of the Facility (Figure 2-1).

Soil samples were collected at various depths from each borehole, and analyzed for VOCs and metals by Extraction Procedure Toxicity test. A composite sample collected from boring B-1 indicated a PCE concentration of 0.09 mg/kg; no other COCs were detected in boring B-1 (Table 2-1). Although cyanide was not analyzed, the remaining Site COCs were not detected in the soil samples collected from borings B-2 through B-6 (Tables 2-1 and 2-2)

(Foree & Vann, 1990a). Soil samples collected from soil borings indicated that the blue-green staining around WDS-1 extended to approximately 3.5 feet bgs. Light green staining was observed at approximately 4 feet bgs. A slight septic odor was detected at 19 feet bgs.

Soil samples collected from soil borings in the southwest portion of the Facility indicated that blue-green staining in the southwest portion of the Facility extended to approximately 1 to 3 inches from the surface. A sulfurous odor was observed in the soil samples collected from these soil borings.

Addendum I to the Phase II ESA (Foree & Vann, 1990b) contained corrections and additions to the Phase II ESA (Foree & Vann, 1990a). The corrections included a statement that WDS-1 was incorrectly classified by Western Technologies and Foree & Vann as an Underground Storage Tank (UST), WDS-1 was classified by ADEQ as a wastewater holding tank.

2.1.3 ADEQ Regulatory Guidance 1990-1992

On October 9, 1990, the ADEQ UST Unit was notified of a release of PCE that occurred from WDS-1. According to Incident Report # 1471, an unknown quantity of PCE was released as reported by Herb Houston. He also stated that the cause of the incident was a "1,000 gallon tank" and noted that a "soil sample shows 90 ppb of tetrachloroethene". The ADEQ UST unit determined that WDS-1 did not meet ADEQ's definition of a UST, and referred the case to ADEQ's Hazardous Waste Compliance Unit (HWCU) on October 19, 1990 (ADEQ, 1990). In a response letter dated August 27, 1991, Houston International clarified its report by stating "the amount of the spill into the sump tank was approximately 15-20 gallons" (Houston International, 1991a).

The ADEQ HWCU sent Houston International a letter requesting written status reports describing Houston International's hazardous waste generation activities. On August 30, 1991 and January 2, 1992, ADEQ HWCU received submittals from Houston International in response to these letters and had a technical assistance meeting with Houston International on March 4, 1992. As a follow up, on March 11, 1992, ADEQ HWCU issued a letter to Houston International, requiring a hazardous waste determination for all wastes generated at the Facility. The ADEQ HWCU also requested that Houston International submit documentation of the disposal procedure(s) utilized at the Facility for sludge generated from the degreaser that utilized PCE; a MSDS for Industroclean®; as well as any reports previously prepared regarding contamination at the Facility.

On April 8, 1992, the ADEQ HWCU referred the Facility to ADEQ's Water Pollution Compliance Unit (WPCU) because of the wastewater issues. The ADEQ HWCU continued to be involved by providing assistance on issues related to the Resource Conservation and Recovery Act (RCRA).

On June 30, 1992, the ADEQ WPCU requested that Houston International immediately discontinue discharging wastewater from WDS-1. ADEQ WPCU also requested that Houston International immediately do the following: (1) discontinue discharging industrial wastewater or chemical overflow into the septic tanks; (2) begin collecting process overflow

in a separate container; and (3) dispose of collected wastewater in accordance with applicable federal, state, and local rule and laws. ADEQ WPCU also requested that Houston International submit a Remedial Action Plan (RAP) that would, at a minimum, address the stained soils located adjacent (east) to WDS-1, the stained soil where the septic leach tank lines were located, and the southwest corner of the Facility where wastewater was sprayed and the soil was highly stained "with an unknown blue-green colored substance."

2.1.4 Site Assessment, RAP, and Installation of Groundwater Monitoring Well MW-1A – Houston International, 1992

In response to ADEQ's WPCU request that Houston International submit a RAP, Foree & Vann prepared a Site Assessment and RAP on July 28, 1992 (Foree & Vann, 1992a). Foree & Vann began implementing the plan on October 22, 1992, when they advanced one soil boring west of WDS-1 to a depth of 71 feet bgs (Foree & Vann, 1992b). The soil samples were submitted for laboratory analyses for VOCs (Table 2-1); samples were not analyzed for cyanides or metals. PCE was only detected in the soil sample collected from 11 feet bgs at a concentration of 0.14 milligrams per kilogram (mg/kg). No other chlorinated VOCs were detected. To assess groundwater conditions at the Facility, the soil boring was completed as monitor well MW-1, now referred to as MW-1A (Figure 2-4; Table 2-9 for the well construction details) (Foree & Vann, 1992b). The groundwater sample collected from MW-1A was analyzed for VOCs only; metals and cyanides were not analyzed (Table 2-5; Foree & Vann, 1992b). PCE was detected in well MW-1A at a concentration of 20,000 µg/L. Other chlorinated VOCs were not detected above the laboratory reporting limits in well MW-1A.

2.1.5 Installation of MW-2A and Soil Sampling – Houston International, 1992/1993

To further understand groundwater contamination downgradient of MW-1 at the Facility, Foree & Vann installed monitoring well MW-2, now referred to as MW-2A, on December 29, 1992 (Figure 2-4). Soil samples were collected from the borehole and submitted to a state-certified laboratory for analysis for VOCs. VOCs were not detected in any of these soil samples (Table 2-1). Monitoring well MW-2A was developed and sampled on January 7, 1993. Depth-to-water measurements are presented in Table 2-5 and sampling results are provided in Table 2-6. Well construction details are presented in Table 2-9 (Foree & Vann 1993a). With the exception of cyanide and metals, which were not analyzed, COCs were detected in the initial sampling of MW-2A, with PCE and TCE exceeding their respective AWQSs with concentrations of 8,700 µg/L and 8.7 µg/L, respectively.

Foree & Vann drilled four soil borings (B11 through B14) in the southwest portion of the Facility and collected soil samples from each soil boring to depths of up to 8 feet bgs (Figure 2-1). Soil samples were submitted to a state-certified laboratory for analysis for VOCs (Table 2-1) and one sample (B-11 from 14 feet bgs) was submitted for metal analysis (Table 2-2). VOCs and metals were not detected in any of these soil samples (Foree & Vann, 1993a).

2.1.6 Installation of Groundwater Monitoring Well MW-3A, ADEQ Inspection, and Groundwater Monitoring – Houston International and ADEQ, 1993

In March 1993, Foree & Vann installed groundwater monitoring well MW-3, now referred to as MW-3A, to assess groundwater contamination beneath the Facility (Table 2-9 and Figure 2-4) (Foree & Vann, 1993b). On April 21, 1993, Foree & Vann collected depth-to-water measurements (Table 2-5) and groundwater samples from groundwater monitoring wells MW-1A, MW-2A, and MW-3A. The groundwater monitoring results were submitted to a state-certified laboratory for analysis for VOCs only; cyanides and metals were not analyzed. PCE was detected above the AWQS in all 3 wells ranging from 6,860 µg/L in well MW-2A to 270,000 µg/L in well MW-3A. TCE was detected above the AWQS in MW-1A and MW-2A at concentrations of 5.2 µg/L and 5.4 µg/L, respectively. Laboratory analytical results are presented in Table 2-6.

The ADEQ HWCU conducted a site inspection on June 24, 1993, in response to a complaint which stated that the Facility used an above-ground sprinkler system to discharge an unknown product to a field behind the Facility. The complaint specified that the product turned green in color and would not support any vegetation (ADEQ, 1993a). The subsequent ADEQ HWCU site investigation report (ADEQ, 1994) stated that, according to Mr. Houston, the primary waste generated at the Facility was wastewater from the film "washing" process, which was discharged to a small field directly behind the building. According to the ADEQ HWCU report, the Facility has been discharging wastewater via an above-ground sprinkler system for several years, and prior to that via an underground piping system. At the time of the inspection, the Facility was discharging several hundred gallons of wastewater per day; the wastewater was reportedly green due to a dye additive (ADEQ, 1993a). The HWCU report further stated that according to Mr. Houston, site investigations revealed "soil and groundwater contamination with PERC (PCE), resulting from historical dumping that occurred at the facility" (ADEQ, 1993a).

Pursuant to the June 1993 ADEQ site inspection, on August 17, 1993, Foree & Vann (Foree & Vann, 1993c) and ADEQ's HWCU (ADEQ, 1993b) collected split groundwater samples from wells MW-1A, MW-2A, and MW-3A and analyzed them for VOCs and metals only; cyanide was not analyzed. PCE was detected above the AWQS in all 3 wells ranging from 8,700/5,000 µg/L in well MW-3A to 20,000/27,000 µg/L in well MW-1A. TCE and other chlorinated VOCs were not detected above the laboratory reporting limits (Tables 2-6 and 2-7). Depth-to-water measurements are provided in Table 2-5.

2.1.7 Soil Gas Survey (Houston International) and Soil Sampling (ADEQ) – 1994

On April 12 1994, Foree & Vann conducted a soil gas survey at the Facility. A total of 34 soil gas samples were collected from approximate depths of 4.5 and 6.5 feet bgs along the north, west, and east Facility boundaries, the northern edge of the southwest wastewater disposal area and north of Building 2, and between Buildings 1 and 4 (Foree & Vann, 1994a) (see Appendix B). No soil vapor samples were collected next to the WDSs. The soil gas samples were submitted to a state-certified laboratory for analysis for VOCs. The greatest concentrations of PCE (up to 52,000 micrograms per liter [µg/L] or 52 micrograms per cubic meter [µg/m^3]) were detected northeast of Building 1. The greatest concentrations

of TCE (0.8 µg/L to 2 µg/L) were detected along the north and northeast corner of Building 2 and northeast of Building 1 (0.3 µg/L to 0.6 µg/L).

On April 11 and 12, 1994 ADEQ's HWCU conducted another site inspection, at which time blue-green stained soil was observed along the east fence line, in the area where wastewater was discharged from Building 1. On April 12, 1994, ADEQ HWCU collected three soil samples (HI-1B through HI-3B) and analyzed the soil samples for metals. The analytical results indicated the elevated presence of naturally occurring, common constituents (iron and manganese) and lower levels of barium, chromium, silver, and zinc (Table 2-2) (ADEQ, 1994).

The Houston International Facility was entered into the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) on April 19, 1994, and assigned a United States Environmental Protection Agency (EPA) ID number of AZD983480963. The EPA identified the site for CERCLIS through its investigation of Yuma County under the Border Initiative Program (ADEQ, 1999a).

On June 20, 1994, ADEQ issued a Compliance Order (Order) to Houston International (No. D-77-94) as a result of the June 24, 1993 ADEQ HWCU site inspection; the Order became effective on June 22, 1994. In this Order, ADEQ requested that Houston International submit a Site Assessment Plan to adequately evaluate the lateral and vertical extent of the PCE contamination in soils and groundwater. The Site Assessment Plan was to include installation of new monitor wells upgradient and downgradient of the wastewater discharge areas.

2.1.8 Site Assessment Plan and Its Addenda, and Wastewater Characterization – Houston International, 1994

In response to the 1994 ADEQ Compliance Order, a Site Assessment Plan (Foree & Vann, 1994b) was submitted in July 1994 and Addenda to the plan in August and September 1994. ADEQ approved the documents in October 1994, and the subsequent site investigations were conducted pursuant to these approved documents.

The Site Assessment Plan (Foree & Vann, 1994b) included the analytical results for wastewater samples collected by Foree & Vann on July 18, 1994 (Foree & Vann 1994b). The following chemicals were detected in the black-and-white film processing wastewater: PCE (7.9 µg/L), bromodichloromethane (BDCM; 16 µg/L), dibromochloromethane (DBCM; 15 µg/L), chloroform (13 µg/L), PCE (7.9 µg/L), methylene chloride (2.7 µg/L), bromoform (1.9 µg/L), and barium (140 µg/L). The following chemicals were detected in the color film processing wastewater: BDCM (47 µg/L), chloroethane (41 µg/L), DBCM (33 µg/L), bromoform (4.8 µg/L), and barium (140 µg/L).

2.1.9 Soil Sampling and Hydropunch Groundwater Investigation – Houston International, 1994/1995

In December 1994 and January 1995, Foree & Vann drilled seven soil borings (4255-1 through 4255-7) to depths ranging from 5 to 70 feet bgs, in accordance with the approved

Site Assessment Plan and its addendum. Soil samples from the seven soil borings were analyzed for VOCs; PCE was detected at concentrations ranging from 0.028 mg/kg (Boring 4255-1 at 20 feet bgs) to 0.33 mg/kg (Boring 4255-3 at 5 feet bgs). In addition, a total of three soil samples were analyzed for metals and barium, chromium, manganese and mercury were detected (Table 2-2). The sample locations are shown on Figure 2-1, and the results are included in Tables 2-1 through 2-3 (Foree & Vann, 1996)

In May 1995, Foree & Vann collected HydroPunch™ groundwater samples from one location within the leach field area along the eastern Facility fence, at approximate depths of 75, 82, 85, 96, and 102 feet bgs (Foree & Vann, 1996); the exact location of this HydroPunch™ investigation could not be identified based on the documents available in the ADEQ WQARF files. These samples were screened for PCE and TCE, and PCE was detected at concentrations ranging from 580 µg/L to 2,400 µg/L.

2.1.10 Installation of MW-101A – Houston International, 1996

On March 13, 1996, GEC installed an upgradient monitor well (MW-101A) on the adjacent property east of the Facility to delineate the horizontal extent of the contamination (Figure 2-4); the well was monitored and sampled on March 21, 1996 (Tables 2-6, and 2-7). Samples were analyzed for VOCs only. PCE was detected at a concentration of 20 µg/L and was the only chlorinated VOC detected in the sample (GEC, 1996c).

2.1.11 Groundwater Monitoring and Sampling – Houston International, 1996

In October 1996, GEC purged monitor wells MW-1A, MW-2A, MW-3A, and MW-101A, and collected the groundwater samples on the following day. The groundwater samples were analyzed for VOCs only. PCE was detected at concentrations ranging from 5.2 µg/L in well MW-101A to 3,000 µg/L in well MW-2A. Depth-to-water measurements are presented in Table 2-6 and concentrations of detected compounds are included in Table 2-7.[8] GEC concluded that these concentrations were significantly lower than PCE concentrations previously reported at the site by Foree & Vann (GEC, 1997).

2.1.12 Installation of Groundwater Monitoring Wells MW-102A,B1,B2 – Houston International, 1996

In November 1996, GEC installed monitor well MW-102 and completed it as a nested well to assess vertical extent of contamination beneath the Facility. The screen intervals were completed between 80 to 90 feet bgs in MW-102A; between 110 to 120 feet bgs in MW-102B1, and between 140 to 150 feet bgs in MW-102B2 (Figure 2-4 and Table 2-5). GEC developed the wells on November 6, 1996, and sampled them on November 14, 1996. The groundwater samples were analyzed for VOCs only (Table 2-7). GEC concluded that the vertical extent of PCE in groundwater was not delineated (GEC, 1997). ADEQ collected duplicate groundwater samples from monitor wells MW-102A and MW-102B2 (Table 2-7)

[8] The reported PCE concentrations have been significantly lower during the October 4, 1996 sampling round than the previous round on August 17, 1993). For example, for August 1993, Foree & Vann and ADEQ reported 8,700 µg/L and 5,000 µg/L PCE in the sample collected from MW-3. On October 4, 1996, the same well was sampled by GEC; the results indicated significantly lower concentration of 150 µg/L PCE.

(AEN, 1996). Concentrations of PCE were detected at 78 µg/L/76 µg/L in well MW-102A, at 38 µg/L in MW-102B1, and at 520 µg/L/470 µg/L in MW-102B2. Although TCE, 1,1-DCE, and cis,1-2, DCE were not detected at the laboratory reporting limits, 1,1,1-TCA was detected in the samples collected from MW-102A and MW-102B2.

2.2 SITE INVESTIGATIONS PERFORMED BY ADEQ, 1996 TO 2002

Prior to 1998, site investigations did not address or attempt to identify cyanide-containing compounds because the blue-green soils noted at the Facility were explained by the owner to be colored "dye" present on the back of the films, that was added to the undeveloped films by the manufacturer (GeoTrans, 2001a). A review of photographic process chemicals used at the Facility and sanitary sewer discharge violations for Houston Film Labs, located at 639 E. 39th Street in Yuma, identified cyanide as a potential chemical of concern (COC).

2.2.1 Sampling of Off-Site Production Wells – ADEQ, 1998

ADEQ's Site Assessment Unit collected groundwater samples from three production wells (Alice Byrne Elementary School (Alice Byrne), ABC Metals, and Desert Lawn) within a one-mile radius of the Facility during a site inspection on February 23 and 24, 1998 to determine if production wells in the area were impacted by contaminants detected at the Facility. Four additional off-site production wells (St. Francis of Assisi, Yuma County Club [YCC] #1, YYC#3, and Woodward Junior High School [JHS]) were sampled on May 4, 1998. The groundwater samples were submitted to a state-certified laboratory for analysis for VOCs only. In all cases, VOCs including PCE were not detected above the laboratory reporting limits (ADEQ, 1999a). Well locations are shown on Figures 1-3.

2.2.2 Passive Soil Vapor Survey and Soil Sampling at the Facility – ADEQ, 2001

From June 6 through June 21, GeoTrans performed a passive soil vapor survey using Gore SORBER® technology to screen the Facility for VOCs and SVOCs (Appendix C). The greatest masses of PCE were detected around WDS-1 and underneath Building 1. The highest concentrations of TCE were primarily detected underneath Building 1. A significant indication of 1,1,1-TCA was detected around WDS-2 (Gore, 2001).

On June 26, GeoTrans collected two soil samples (RMP-101 and RMP-102) from the vacant lot east of the Facility as shown on Figure 2-2. These two samples were collected at depths of approximately 6 inches in discolored areas presumed to be associated with historical wastewater discharges by Houston International (GeoTrans, 2001a), and were submitted to a state-certified laboratory for analysis for VOC, SVOCs, cyanides, and metals. Total cyanide was detected in both soil samples at 650 mg/kg. Free cyanide was detected at 5.3 and 5.7 mg/kg in RMP-101 and RMP-102, respectively. Several metals were detected, but at concentrations below the respective SRLs. VOCs and SVOCs were not detected above the laboratory reporting limits. The analytical results are included in Tables 2-1 through 2-3.

2.2.3 Characterization of Soil and WDS Contents for VOCs, SVOCs, Cyanides, and Metals – ADEQ, 2001

In June 2001, GeoTrans collected wastewater, soil, and sludge samples to characterize contents of all the WDSs for VOCs, SVOCs, cyanides, and metals (GeoTrans, 2001b) (Table 2-10). Sludge and wastewater results could be used to identify COCs and provide relative concentrations that could be expected. SRLs/Groundwater Protection Levels (GPLs) were used as a reference to potential COC concentration in soil underlying the WDSs. Likewise, AWQSs could be used as a comparative reference if the contamination was released into groundwater; however these assumptions are for comparative purposes and used for discussion purposes only.

Wastewater and sludge samples contained concentrations of PCE, 1,1-DCE, chromium, cyanide, DEHP and 1,1-DCA that exceeded their respective SRLs, GPLs, or MCLs.

Wastewater sampled from WDS-2 and WDS-4 indicated a PCE and 1,1-DCE at concentration above the MCLs 5 µg/L and 7 µg/L, respectively. Wastewater from WDS-4 also exceeded the AWQS for free cyanide of 200 µg/L (or 0.2 mg/L). Sludge samples collected from WDS-1 and WDS-5 contained cyanide concentrations above the residential SRL for free cyanide of 1,300 mg/kg. PCE and chromium were also detected above both their respective GPLs and the residential SRLs in the sludge sample collected from WDS-1. Concentrations of 1,1-DCE and 1,1-DCA were detected above the either their respective GPLs and/or residential SRLs in the sludge sample collected from WDS-4. DEHP was also detected in sludge samples collected from WDS-1 and WDS-4 at concentrations below the residential SRL of 320 mg/kg (Table 2-10).

In September 2001, GeoTrans collected numerous surface and shallow subsurface soil samples at (and adjacent to) the Facility. Soil samples were collected from a total of 87 different locations using a GeoProbe drill rig which was advanced to a maximum depth of 22 feet bgs. The collected soil samples were analyzed selectively for cyanide, VOCs, SVOCs, and/or priority pollutant metals (Tables 2-1 through 2-3). Cyanide was detected in soils at the facility at levels which exceeded Arizona Residential SRL for hydrogen cyanide (HCN) of 35 mg/kg (ADHS recommended SRL; see Section 1.3.3) and/or EPA Regional Screening Levels (RSLs) for “hydrogen cyanide” of 150 mg/kg. The highest cyanide concentrations in soil were detected in stained surface and very shallow subsurface soils, up to 2,000 mg/kg total cyanide in the surface sample collected from GP-141 (Table 2-1) (GeoTrans, 2001c; 2002). The greatest cyanide concentrations were found to be associated with blue-green colored soils (Table 2-1). A visual representation of cyanide in soil is presented on Figure 2-2.

In addition, selected soil samples from the GeoProbe borings were analyzed for VOCs, SVOCs, and metals. None of the selected soil samples had concentrations of PCE, TCE, 1,1-DCE, 1,1,1-TCA detectable at or above the laboratory reporting limits. Concentrations of DEHP were detected in some of the selected samples, as a tentatively identified compound (TIC), at concentrations of up to 0.26 mg/kg (10 foot sample of GP-063). This is below the Arizona residential SRL and the EPA RSLs for DEHP.

2.2.4 Groundwater Monitoring and Sampling of Selected Wells – ADEQ, 2001

In June of 2001, GeoTrans performed groundwater monitoring and sampling of selected wells in the monitoring well network and one up gradient production well KL-1. Groundwater samples were submitted and analyzed for VOCs, SVOCS, free and total cyanides, and total and dissolved priority pollutant metals. The only COCs detected above the regulatory levels in 2001 were PCE, cyanides, and DEHP (Tables 2-6 through 2-9). PCE was detected at concentrations up to 410 µg/L in MW-102B. Total cyanides were detected in several wells, at concentrations up to 12 mg/L in MW-102B. DEHP was detected in MW-102B and MW-102C with concentrations of 48 µg/L and 62 µg/L, respectively, above the current AWQS for DEHP of 6 µg/L. Total chromium was also detected in one well, KL-1, at 0.11 mg/L only slightly above the AWQS of 0.1 mg/L.

2.2.5 Headspace Vapor Sampling of WDS-1 and Groundwater Monitoring Wells MW-1A, MW-2A, MW-3A, MW-102B1– ADEQ, 2001

In August 2001, GeoTrans collected soil vapor samples from groundwater monitoring wells MW-1A, MW-2A, MW-3A, MW-102B1, and the underground concrete sump WDS-1 (Figure 1-2) at the Facility. Soil vapor samples collected from these locations were submitted to the laboratory to: 1) to evaluate the viability of employing air sparging/soil vapor extraction (SVE) as a source control technology at the Facility; and 2) determine proper personal protective equipment required while collecting samples from the Facility. Soil vapor samples collected were submitted for cyanide analyses. In addition, samples from MW-1A, MW-2A, and MW-3A were also analyzed for VOCs (Table 2-4). PCE was detected at concentrations ranging from 92,000 µg/m^3 in MW-3A to 570,000 µg/m^3 in MW-1A. It should be noted that 1,1,1-TCA was detected at 1,800 µg/m^3 in the headspace sample collected from well MW-3A. Other COCs were not detected above the laboratory reporting units in the soil vapor samples.

2.2.6 Installation of Groundwater Monitor Wells MW-5A, MW-6A, and MW-7A, and Groundwater Sampling - ADEQ, 2002

In January 2002, to further assess the horizontal extent of contamination, GeoTrans installed groundwater monitoring wells MW-5A, MW-6A, and MW-7A; well MW-7A was not developed because liquid phase hydrocarbon (LPH) was noted in the boring and well. The LPH identified in the well was presumably diesel fuel from the releases at the railroad facility immediately north of the Facility (Union Pacific Railroad; also known as the ADEQ Dieselville VRP Site). GeoTrans performed groundwater sampling of the monitoring network wells (except MW-7A) and off-site school wells located west of the Site, Woodard JHS and Alice Byrne (GeoTrans, 2003a).

Groundwater samples were analyzed for VOCs and cyanides. In addition, samples from wells MW-5A and MW-6A were analyzed for SVOCs and metals. The only COCs detected above the regulatory levels were PCE and cyanides. PCE was detected at concentrations of up to 420 µg/L in MW-2A. Total and free cyanides were the highest in well MW-1A and were detected at concentrations of 6.68 mg/L and 2.07 mg/L, respectively. The sampling results are provided in Tables 2-7 through 2-9 and depth-to-water data in Table 2-6.

2.3 EARLY RESPONSE ACTION (ERA) CHARACTERIZATION OF CYANIDES AND VOCS

2.3.1 ERA for Cyanides in Surface Soils and WDSs – ADEQ, 2002

In 2002, an Early Response Action (ERA) was conducted to address potential risks caused by cyanides in surface soil and WDSs (GeoTrans, 2003b). This ERA consisted of the removal of blue-green stained surface soils with concentrations of cyanides exceeding 35 mg/kg to a depth of 1 foot bgs, removal of the contents from all WDSs, and removal of WDS-1 and WDS-4 structures (see Section 3 for more details). During these activities, surface soil samples were collected to guide soil excavations. In addition, soil samples were collected from the floor of excavations after removal of the upper one foot of cyanide-impacted soil and WDS-1 concrete structure to document cyanide concentrations in soil left in place (Figure 2-2) (GeoTrans, 2003c). Cyanide was detected at concentrations of up to 430 mg/kg from beneath former WDS-1 and at concentrations of up to 54 mg/kg beneath former WDS-4 (Table 2-1).

2.3.2 Characterization of VOCs in Soils and Soil Vapors at the Facility, Soil Boring SB-01 through SB-06, and Installation of SVMW-1 – ADEQ, 2004

In December 2003, GeoTrans drilled six soil borings (SB-01 through SB-06) and installed a nested soil vapor monitor well SVMW-1C,D,E,F in boring SB-02; the remaining five borings were abandoned following sampling (GeoTrans, 2004a). Locations of soil borings are shown in Figure 2-1, and the soil vapor monitoring well location is shown in Figure 2-3. Soil and soil vapor samples were collected from each boring to evaluate VOCs and cyanides and the extent of contamination; soil sample results are included in Table 2-1, and soil vapor results in Table 2-4 (GeoTrans, 2004a). In addition, physical properties were determined for selected soil samples from SB-01 and SB-04 to assist in evaluating contaminant transport conditions at the Site. Section 4.5.5 summarizes these results, including in-place dry soil density, total organic compounds, total and effective porosity, moisture content and hydraulic conductivity.

PCE was detected in the samples collected during the initial sampling round in concentrations ranging from 7,300 µg/m^3 to 280,000 µg/m^3, with the highest concentration detected at a depth of 70 feet bgs in SB-04, which was located inside Building 1. PCE concentrations in the soil vapor samples collected in all six borings (Table 2-4) and the soil vapor monitor well cluster SVMW-1 were found to be below the 1,300 µg/L (1,300,000 µg/m^3) action level specified in the approved work plan for ERA for VOCs (GeoTrans, 2003c), which would require borings to be completed as either SVE or monitor wells to allow for on-site treatment of the VOC soil contamination. This value is based on a calculated equivalent soil vapor concentration for the minimum GPL concentration for PCE of 1.3 mg/kg, which was the GPL in use at the time of this evaluation. The actual soil vapor and soil analytical results indicated that, following the 2002 removal of WDS contents, VOCs were present throughout the Facility soils in low concentrations, not indicative of the existence of any continued, concentrated source area(s). Based on these findings, GeoTrans and ADEQ concluded that the remaining mass of VOCs present in the vadose zone at the Facility was not sufficient to warrant remediation.

2.3.3 Installation of Groundwater Monitor Wells MW-103B, C and MW-4A, Wells Repair/Modifications, and Groundwater Monitoring and Sampling – ADEQ, 2004

From February through June, 2004, GeoTrans installed additional wells (MW-103B,C and MW-4A) at the Facility to further assess the horizontal and vertical extent of contamination (GeoTrans, 2004b). Nested groundwater monitoring wells MW-103B,C were installed in boring SB-07 at the former location of WDS-1. During drilling of SB-07, one groundwater sample was collected at 180 feet bgs using a SimulProbe® sampler and was analyzed for VOCs (EPA Method 8260B) and cyanides (SM 4500 CN). VOCs and cyanides were not detected above the laboratory limits in well MW-103B,C during February 2004 (Table 2-7). No soil samples were obtained from SB-07.

Groundwater monitoring well MW-4A was installed in soil boring SB-08, at the former location of WDS-4. During drilling soil boring SB-08, soil samples were collected as follows: for VOCs at depths of 15, 40, 50, 60, and 70 feet bgs, and for cyanides at 5-foot depth intervals, starting at 10 feet bgs (Table 2-1). Soil vapor samples were also collected during drilling of SB-08 at depths of 10, 30, and 50 feet bgs for VOC analyses (EPA Method TO-15); Cyanide and metals were not analyzed in soil vapor samples. PCE, TCE, and 1-1,DCE, (and 1,1,1-TCA) were detected in soil vapor samples collected from SB-08 at concentrations of up to 5,800 $\mu g/m^3$, 41 $\mu g/m^3$, and 24 $\mu g/m^3$, respectively (Table 2-4; GeoTrans, 2004b).

Three existing monitoring wells, MW-2A, MW-7A, and MW-101A, were repaired or modified, as applicable, to permit groundwater sampling activities (GeoTrans, 2004b).

GeoTrans performed groundwater monitoring and sampling of the existing monitoring well network in June 2004 (Tables 2-5 through 2-7). All groundwater samples were submitted for analysis of total cyanide (SM 4500 CN), free (amenable) cyanide (SM 4500 CN) and VOCs (EPA Method 8260B). Groundwater samples were also analyzed for total and dissolved (field filtered) priority pollutant metals (EPA Methods 3010A/3020A with 6010B/7060A/7470/7841, as applicable).

2.3.4 Indoor Air Sampling – ADEQ, 2004

In March/April 2004, GeoTrans performed indoor air sampling in Buildings 1, 2, and 4 at the Facility and in one off-site building located on the adjacent property, east of the Facility (Building 5). Air sampling was performed to determine If volatile subsurface contaminants were migrating into indoor air, thus posing a health risk to building occupants (GeoTrans, 2004c). Indoor air sampling locations were chosen in such a way as to evaluate open areas within buildings, small rooms with ventilation, rooms with plumbing fixtures and vents connected to environmental media, and rooms with limited access and poor ventilation. The sampling event collected data on the known contaminants of concern: VOCs, hydrogen cyanide, and hydrogen sulfide. Results of the indoor air sampling event are presented in Table 2-11.

Sample results were analyzed to determine whether vapor concentrations from the subsurface were indicative of elevated risks for building and site occupants. GeoTrans

compared results with EPA-recommended target concentrations for residential indoor air (EPA, 2002; EPA, 2003) and Arizona Ambient Air Quality Guidelines (AAAQGs; ADEQ, 1999b). The EPA indoor air target concentrations were based on the values in the EPA's Office of Solid Waste and Emergency Response (OSWER) Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils, November 2002. EPA target concentrations are risk-based exposures for residential scenarios.

Results indicated benzene, PCE, hydrogen cyanide, and trimethylbenzene exceeded 1-hour AAAQGs and/or EPA target concentrations in various locations (GeoTrans, 2004c). The highest concentration of PCE (14.92 µg/m^3) was detected in Building 1, in a hallway containing a floor drain connected to WDS-2. All PCE concentrations exceeded the 10^{-6} carcinogenic risk target concentrations and 4 samples exceeded the 10^{-5} carcinogenic risk target concentration. The only sample containing detectable concentrations of HCN (4 µg/m^3) was also collected in Building 1, in a restroom with fixtures connected indirectly to WDS-2.

In Building 2, the PCE detection limit was over the AAAQG limit and the EPA target concentration for the 10^{-6} carcinogenic risk level. Therefore, a conclusion could not be made concerning 10^{-6} exposure levels. No samples exceeded the 10^{-5} to 10^{-4} risk range. In Buildings 4 and 5, the detected indoor air concentrations were similar to those of Building 2; therefore, the conclusions reached for Building 2 applied to these two buildings (GeoTrans, 2004c).

Elevated levels of benzene and trimethylbenzene exceeding EPA target concentrations were detected in every sample. However, these chemicals were detected in groundwater in off-site monitoring wells (MW-16, MW-17, and MW-18) and in background ambient air samples collected in March 2004, and not detected in groundwater or soil gas samples taken in the vicinity of the these buildings. Thus, the presence of these chemicals in indoor air was not attributed to the Facility operations.

In February 2012, EPA issued a final assessment on the toxicology of PCE (EPA, 2012). Based on this final assessment, the EPA revised the target indoor air concentration and the industrial indoor target air concentration is currently 47 µg/m^3 (EPA, 2013). All measured indoor air concentrations of PCE measured in 2004 were below this new target concentration.

2.3.5 Soil Cyanide Leachability Evaluation – ADEQ, 2004

In April 2004, GeoTrans collected 20 soil samples for evaluation of cyanide compounds in soils and leachability of cyanides to evaluate transport conditions for residual contamination (GeoTrans, 2005c). Each sample was analyzed for total cyanides, free cyanides (soil concentrations) and respective leachable cyanide analyses (water concentration in leachate) using the Synthetic Precipitation Leachate Procedure (SPLP) method. This method was designed to simulate acid rain leaching of soils, rather than the more commonly used Toxicity Characteristic Leaching Procedure (TCLP) which was designed to simulate landfilled hazardous waste leaching conditions. TCLP is commonly used as a waste

characterization method for disposal requirements, while SPLP is more commonly utilized for evaluating on-site leaching scenarios (Kingham, 2000).

Samples for SPLP analysis were collected from a depth of 1 foot at random locations from the eastern wastewater disposal area (along the eastern Facility boundary) and the southeast wastewater disposal area (west of Building 3). Since composition of discharged wastewater varied over time and area, potential for leaching should also vary. The random sampling method was selected to limit sample bias, and to give a generalized evaluation of leaching potential across the Site.

Results of the SPLP leaching samples indicate widely variable results, but in general, higher total cyanide yields higher leachable cyanide concentrations. Table 2-12 illustrates results from this sampling event, and copies of the analytical results are included in Appendix D (GeoTrans, 2005c).

2.3.6 Geophysical Investigations – ADEQ, 2004

In November 2004, GeoTrans performed a geophysical investigation at the Facility to identify the presence of any WDSs in the northeast portion of Building 1 and locations of the leach fields associated with WDS-2 (located east of Building 1) and WDS-5 (located north of Building 4) (GeoTrans, 2005a). The ground penetrating radar (GPR) survey did not identify evidence of a buried tank under Building 1, but located the septic tank pipe known to exist at the building. The results of electromagnetic (EM) survey did not show clear responses indicative of the presence of a leach field probably due to returned signals from near the eastern boundary fence. Similarly, due to interference from the metal siding of the building, the EM survey did not show clear signals south of Building 2, in the vicinity of WDS-3, but a GPR transect picked up the signature of WDS-3 and a pipe coming out of Building 2. The EM survey performed north of Building 4 identified the apparent trace of WDS-5 and its leach filed to the east (GeoTrans, 2005a).

2.4 FURTHER SITE CHARACTERIZATRION ACTIVITIES 2004 TO PRESENT

2.4.1 Groundwater Monitoring and Installation of Wells MW-104B, C, MW-8, MW-9, and MW-10A – ADEQ, 2004 through 2005

During the week of November 29, 2004, GeoTrans installed nested deep groundwater monitoring wells MW-104B,C to further assess the vertical extent of contamination on the Facility. During January 2005, GeoTrans installed groundwater monitoring wells MW-8A, MW-9A, and MW-10A to further assess the horizontal extent of contamination downgradient of the Facility (Figure 2-4; Table 2-9; GeoTrans, 2005d). Soil vapor samples were collected during the drilling from depths of 10 feet bgs during the installation of MW-8A through MW-10A. PCE was detected in the soil vapor samples collected at concentrations of up to 115.29 µg/m^3 in well MW-9A. No other COCs were detected in the soil vapor samples (Table 2-4).

During the period November 22, 2004 through January 2005, GeoTrans monitored and sampled all existing network wells and an upgradient production well (Ron Martin); the

results are included in Tables 2-6 through 2-9, as applicable. The collected groundwater samples were submitted under proper chain-of-custody protocols for analysis of total and/or amenable cyanide (SM 4500 CN), VOCs (EPA Method 8260B), and priority pollutant metals (EPA Methods 245/200.7).

Groundwater samples were collected using both low-flow and the standard 3-volume purge techniques. No distinct difference was detected in the sample results, except for total and free cyanides from MW-5A; concentrations detected in the low-purge sample were lower than in the 3-volume purge sample. The difference in the sample results suggested that the presence of total cyanides in groundwater may be dependent on colloidal transport, and the 3-volume purge sample with higher pump rates most likely stirred up and drew in colloidal material. It was thus decided by ADEQ and GeoTrans to continue sampling using the 3-volume purge technique, as the sample results from this method are more representative of Site conditions (GeoTrans, 2005d). PCE and TCE were detected at concentrations of up 290 µg/L and 28 µg/L in well MW-7A, respectively. The highest concentration of cyanide (6.6 mg/L) was detected in well MW-5A. (Table 2-7).

Groundwater samples were also monitored for natural attenuation parameters, including methane, ethane and ethene (RSK-175), manganese, sodium, potassium, calcium, and magnesium (EPA Method 200.7), nitrate-nitrite (EPA Methods 353.2/354.1), sulfate (SM 4500 SO), total sulfide (EPA Method 376.2), chloride (EPA Method 300.0), and alkalinity (SM 3220). Ferrous iron (Fe II) was measured in the field using a field test kit. Select on-Site well samples were submitted for analysis of total organic carbon (TOC) (Method SW 9060). Discussion of these natural attenuation parameters is presented in Section 4.5 (GeoTrans, 2005d).

2.4.2 Vapor Intrusion Modeling – ADEQ, 2005

Based on the sampling results for indoor air, soil vapors, soil, and groundwater in May 2004, GeoTrans conducted vapor intrusion modeling for PCE and the complete suite of VOC analytes in EPA Method TO15 and hydrogen cyanide using Johnson and Ettinger Version 3 Model (JEM) (GeoTrans, 2005b). Non-carcinogenic hazard quotients from soil gas migration into indoor air were found to be lower than the target quotient of 1.0 across the entire Facility. Carcinogenic risks due to soil vapor migration into indoor are within the ADEQ's acceptable risk range of 10^{-4} to 10^{-6} for all 4 buildings at the Facility and a building on the adjoining property to the east (Table 2-13). Non-carcinogenic hazard quotients from groundwater vapor migration into indoor air were lower than the target hazard quotient of 1 for all 5 buildings, and carcinogenic risks due to groundwater vapor migration into indoor air were within the ADEQ's acceptable risk range of 10^{-5} to 10^{-6} for all 5 buildings.

In September 2011, EPA issued a final assessment on the toxicology of TCE (EPA, 2011). Based on this final assessment, the EPA revised the target indoor air concentration and the industrial indoor target air concentration is currently 3.0 µg/m^3 (EPA, 2013). All measured indoor air concentrations of TCE were below this new target concentration.

In February 2012, EPA issued a final assessment on the toxicology of PCE (EPA, 2012). Based on this final assessment, the EPA revised the target indoor air concentration and the

industrial indoor target air concentration is currently 47 µg/m^3 (EPA, 2013). All measured indoor air concentrations of PCE were below this new target concentration.

The air concentrations for HCN were estimated by the JEM based on soil vapor data for all 5 buildings, and the measured indoor concentrations for Buildings 1, 2, and 4 were lower than the EPA target indoor air concentration of 3.5 µg/m^3 (GeoTrans, 2005b).

2.4.3 Installation of Groundwater Monitoring Well MW-11A and Groundwater Monitoring and Sampling – ADEQ, 2005

On May 25 and 26, 2005, to further assess the horizontal extent downgradient of the Facility, GeoTrans installed a shallow groundwater monitoring well MW-11A and expanded the Site's monitoring network (Figure 2-4). During the drilling, soil vapor samples were collected at a depth of 10 feet bgs using the SimulProbe® sampler. The sample was collected for analysis of VOCs (EPA Method TO-15) using a SUMMA® canister, and for analysis of hydrogen cyanide (National Institute for Occupational Safety and Health [NIOSH]) Method 6010) using a soda-lime sorbent tube. Hydrogen cyanide ion and HCN ion-particulate was then calculated and reported by the laboratory based on cyanide ion and particulate concentrations[9]. COCs were not detected in the soil vapor sample (Table 2-4). Subsequently, during May and June 2005, the entire groundwater monitoring well network (including select Union Pacific's "Dieselville" wells and St. Francis of Assisi School production well) was monitored and sampled beginning at the end of May (Tables 2-6 and 2-7; GeoTrans, 2006a). The collected groundwater samples were submitted for analysis of total cyanide (SM 4500 CN), free (amenable) cyanide (SM 4500 CN), and VOCs (EPA Method 8260B). PCE was detected at concentrations of up 180 µg/L in well MW-5A. TCE and 1,1-DCE were detected at concentrations of up to 66 µg/L and 23 µg/L, respectively in MW-8A. The highest concentration of cyanide (11 mg/L) was detected in well MW-5A (Table 2-7).

2.4.4 Installation of Groundwater Monitoring Wells MW-12A and MW-15A, and Groundwater Monitoring and Sampling - ADEQ, 2006

In March and April 2006, GeoTrans installed shallow groundwater monitoring wells MW-12A through MW-15A to further assess the horizontal extent of downgradient of the Facility (Figure 2-4). Soil vapor samples were collected at depths of 10 feet bgs during drilling of these wells using the SimulProbe® sampler (Table 2-4). The samples were collected for analysis of VOCs (EPA Method TO-15) using 1-L MiniCan Silonite TM canisters, and for analysis of hydrogen cyanide (NIOSH Method 6010) using soda-lime sorbent tubes. Hydrogen cyanide was not detected in samples collected from MW-12, but was detected in samples collected at MW-13 (68.2 µg/m^3), MW-14 (52.5 µg/m^3), and MW-15 (40.2 µg/m^3). PCE and TCE were detected in samples collected at MW-12 (298.4 µg/m^3 and 44.6 µg/m^3,

[9]According to NIOSH Method 6010, hydrogen cyanide-particulates and hydrogen cyanide are adsorbed onto the filters and soda lime matrix, respectively. The filters and soda lime are separated, and placed into a basic (pH > 7.0) solution, thereby converting the hydrogen cyanide and hydrogen cyanide-particulates to the aqueous cyanide ion$^-$. The spectrophotometric analysis directly detects the concentration of aqueous cyanide ion$^-$. The measured mass of aqueous cyanide ion is directly related to the concentration of hydrogen cyanide and hydrogen cyanide-particulates after dividing the total mass of the cyanide ion by the original vapor sample volume and multiplying by 1.039 to correct for the differences in molar mass.

respectively), but were not detected above the laboratory reporting limits in samples collected at MW-13, MW-14, and MW-15.

Groundwater monitoring and sampling of network wells was conducted in February and May 2006 (Tables 2-6 through 2-8). The collected groundwater samples were submitted for analysis of total cyanide (SM 4500 CN), amenable cyanide (SM 4500 CN), VOCs (EPA Method 8260B), total and dissolved priority pollutant metals (EPA Methods 200.7 and 245.1). PCE was detected at concentrations of up 140 µg/L in well MW-5A. TCE and 1,1-DCE were detected at concentrations of up to 66 µg/L and 23 µg/L, respectively in MW-8A. The highest concentration of cyanide (10 mg/L) was detected in well MW-5A Table 2-7).

2.4.5 Final Indoor Air Risk Assessment - ADEQ, 2006

In May 2006, GeoTrans submitted a final indoor air risk assessment to evaluate potential health risks associated with exposure of industrial workers in all buildings and child visitors to the dance studio in Building 1. The Final Risk Assessment was based on vapor intrusion modeling results mentioned in the previous section 2.4.2. The potential risks from inhalation at the site were based on three sources of data:

1. Measured indoor air concentrations collected in April 2004;
2. Modeled indoor air concentrations from groundwater data collected in June 2004; and,
3. Modeled indoor air concentrations from soil gas data collected in December 2003 and January 2004.

The chemicals detected in indoor air, groundwater, and soil vapors were evaluated in the risk assessment. The aggregate cancer risk estimates were found to be within ADEQ's acceptable risk range of 10^{-6} to 10^{-4} for all receptors and all buildings using both the measured indoor air exposure point concentrations (EPCs) and the "combined" indoor air EPCs (GeoTrans, 2006b).

2.4.6 Installation of Groundwater Monitoring Wells MW-8B, MW-17A, MW-18A, B, MW-19A, and MW-20A, and Groundwater Monitoring and Sampling – ADEQ, 2006

In order to further assess the vertical extent of groundwater contamination downgradient of the Facility, beneath a previously identified Clay B layer, GeoTrans installed groundwater monitoring wells MW-8B, MW-17A, MW-18A,B, MW-19A, and MW-20A in November 2006 (Figure 2-4; Table 2-5). During drilling of MW-17A, depth specific groundwater grab samples were collected at 10-foot intervals, starting at 107 feet bgs and analyzed by a mobile laboratory; select samples were also analyzed by a stationary laboratory. Mobile laboratory detected PCE in samples collected at depths of 107 to 157 feet bgs in concentrations ranging from 21 to 610 µg/L; the highest concentrations were detected from 127 to 137 feet bgs (GeoTrans, 2007a).

In October and December 2006, GeoTrans performed two rounds of groundwater monitoring and sampling of all existing site monitoring network wells. Wells from the Union

Pacific (Dieselville) site (DMW and DEW wells) located north of 20th Street were added to the monitoring network (GeoTrans, 2006c) (GeoTrans, 2007b). The results of this sampling and monitoring round are included in Tables 2-6 through 2-8. The collected groundwater samples were submitted for analysis of total cyanide (SM 4500 CN), amenable cyanide (SM 4500 CN), VOCs (EPA Method 8260B), total and dissolved priority pollutant metals (EPA Methods 200.7 and 245.1), and soluble priority pollutant metals (EPA Methods 200.7 and 245.1, field-filtered). The highest concentrations of PCE, TCE, and 1,1-DCE were detected in December 2006 in well MW-8B at 910 µg/L, 290 µg/L, and 140 µg/L, respectively. However, the highest concentration of cyanide in December 2006 was detected at 12 mg/L in well MW-5A (Table 2-7).

2.4.7 Groundwater Monitoring and Sampling and Installation of Groundwater Monitoring Wells MW-8C, MW-17C, MW-21A,B,C, MW-22B, and MW-23B – ADEQ, 2007

In February and March 2007, GeoTrans performed one round of groundwater sampling and monitoring of network monitoring wells and Alice Byrne and St. Francis of Assisi School (St. Francis) production wells (Tables 2-6 through 2-8). The collected groundwater samples were submitted for analysis of total and/or amenable cyanide (SM 4500 CN), VOCs (EPA Method 8260B), total and dissolved priority pollutant metals (EPA Methods 200.7 and 245.1). In addition, the collected groundwater samples from monitoring wells MW-7, MW-8, and MW-11 were analyzed for total sulfides (SM 4500-S C,D) (GeoTrans, 2007c).

During the period of March through May 2007, GeoTrans installed monitoring wells MW-8C and sentinel wells MW-21A,B,C (Figure 2-4) to further delineate the horizontal and/or vertical contamination at the Site. Soil vapor samples were collected at a depth of 10 feet bgs during drilling of MW-21C (Table 2-4). The soil vapor samples were submitted for VOC analysis (EPA Method TO-15). A soil vapor sample was not collected for hydrogen cyanide analysis. COCs were not detected in the soil vapor samples collected from MW-21C.

Depth-specific groundwater samples were collected while drilling MW-8C and MW-21C at 10-foot intervals, between 90 feet bgs and 245 feet bgs, to define the depth and screen intervals for these wells. Groundwater samples were submitted to an on-Site mobile laboratory for a solvent screen analysis (EPA Method 8021B) for TCE, PCE, cis-1,2-DCE, and trans-1,2-DCE. In addition, four depth-specific groundwater samples, three from soil boring MW-21C and one from soil boring MW-8C, were collected and were submitted to a fixed-based laboratory for analysis of VOCs (EPA Method No. 8260B) total cyanide (SM 4500 CN), and amenable cyanide (SM 4500 CN) analysis. COCs were not detected above laboratory reporting limits in any groundwater samples collected from the soil boring MW-21C. PCE was detected in 10 of the 14 depth-specific groundwater samples collected from the soil boring MW-8C at concentrations up to 220 µg/L (at 115 feet bgs). TCE was detected in 4 of 14 depth-specific groundwater samples collected from soil boring MW-8C at concentrations of up to 87 µg/L (at 115 feet bgs)(GeoTrans, 2007d).

GeoTrans performed one round of groundwater sampling and monitoring of network monitoring wells and the Alice Byrne production well in May 2007 (Tables 2-6 through 2-8). The collected groundwater samples were submitted for analysis of total and/or amenable

cyanide (SM 4500 CN), VOCs (EPA Method 8260B), total and dissolved priority pollutant metals (EPA Methods 200.7 and 245.1) (GeoTrans, 2007e).

In July and August 2007, GeoTrans performed another round of groundwater sampling and monitoring of all network monitoring wells and the Alice Byrne and St. Francis production wells (Tables 2-6 through 2-9). The collected groundwater samples were submitted for analysis of total and/or amenable cyanide (SM 4500 CN), VOCs (EPA Method 8260B), and total and/or dissolved priority pollutant metals (EPA Methods 200.7 and 245.1). In addition, selected wells were also sampled for SVOCs (EPA Method 8270). The highest concentrations of COCs were detected in B-Zone wells; PCE, TCE, and 1,1-DCE were detected at 1,200 µg/L, 320 µg/L, and 28 µg/L in well MW-8B, respectively (Table 2-6). Alice Byrne and St. Francis production wells were added to the monitoring well network beginning in August 2007. The highest concentrations of DEHP were detected in C-Zone wells MW-8C (80 µg/L) and MW-103C (81 µg/L) (Table 2-9). DEHP was not detected in any of the other selected monitoring wells during this groundwater sampling event (GeoTrans, 2007f).

In August and September 2007, GeoTrans installed groundwater monitoring well MW-17C (Figure 2-4). Depth-specific groundwater samples were collected from depths of 107 to 207 feet bgs and were submitted to an on-Site mobile laboratory for a solvent screen analysis (EPA Method 8021B) for TCE, PCE, cis-1,2-DCE, and trans-1,2-DCE. In addition, three groundwater samples from soil boring MW-17C were collected and were submitted to a stationary laboratory for VOCs analysis (EPA Method 8260B). It should be noted that these samples were not analyzed for cyanides in the field. However, two of the groundwater samples submitted to the stationary laboratory and were analyzed for total cyanide and/or amenable cyanide (SM 4500 CN). A groundwater sample was collected from MW-17C immediately following its development and analyzed for total and/or amenable cyanide (SM 4500 CN), VOCs (EPA Method 8260), DEHP and other SVOCs (EPA Method 8270C), and total and/or dissolved priority pollutant metals (EPA Methods 200.7 and 245.1). Total cyanide, amenable cyanide, DEHP and other SVOCs were not detected in the groundwater samples collected from groundwater monitoring well MW-17C. (Tables 2-7 through 2-9; GeoTrans, 2007g).

In November 2007, GeoTrans performed sampling and monitoring of the network groundwater monitoring wells and Alice Byrne and St. Francis production wells (Tables 2-6 through 2-9) (GeoTrans, 2008a). The collected groundwater samples were submitted for analysis of total and/or amenable cyanide (SM 4500 CN), VOCs (EPA Method 8260B), and total and/or dissolved priority pollutant metals (EPA Methods 200.7 and 245.1). In addition, groundwater samples from selected wells were also analyzed for SVOCs (EPA Method 8270). The highest concentrations of VOCs were detected in B-Zone wells; PCE, TCE, and 1,1-DCE were detected at 870 µg/L, 260 µg/L, and 110 µg/L in well MW-8B, respectively (Table 2-7). The highest detection of DEHP was in well MW-103C at 79 µg/L (Table 2-9).

In November 2007, to further assess the horizontal and vertical extent of contamination downgradient of the Facility, GeoTrans installed groundwater monitoring wells MW-22B and MW-23B. During drilling of MW-22B, soil vapor samples were collected at 10 feet bgs using SimulProbe® sampling techniques for analysis of VOCs and cyanides using a pre-cleaned, non-preservative, MiniCan Silonite canister and a soda lime tube, respectively. The soil

vapor samples were submitted for analysis of VOCs (EPA Method TO-15) and hydrogen cyanide (NIOSH Method 6010). PCE and TCE were detected at 1,831.06 µg/m^3 and 112.83 µg/m^3, respectively. Hydrogen cyanide was not detected above the laboratory reporting limits in the soil vapor sample (Table 2-4).

In addition, depth-specific groundwater samples were collected from both borings at 10-foot intervals, starting at 90 feet bgs in MW-22B and 95 feet bgs in MW-23B and submitted to an on-site mobile laboratory for PCE, TCE, cis-1,2-DCE, and trans-1,2-Dichloroethylene (EPA Method 8021B). PCE was detected in 8 of the 10 groundwater samples collected from soil boring MW-22B at concentrations of up to 1,800 µg/L (at 120 feet bgs). TCE was detected in one (1) of the 10 groundwater samples collected from soil boring MW-22B at a concentration of 23 µg/L (at 90 feet bgs;(GeoTrans, 2008b).

Two groundwater samples from boring MW-22B and three groundwater samples from boring MW-23B were submitted to a stationary laboratory for VOCs and cyanide analyses. The highest concentrations of PCE, TCE, and 1,1-DCE were detected from the 90 feet bgs sample from MW-22B at 670 µg/L, 19 µg/L, and 9.4 µg/L, respectively. COCs were not detected above the laboratory reporting limits in boring MW-23B (GeoTrans, 2008b).

2.4.8 Installation of Groundwater Monitoring Well MW-24B, Extraction Well EW-1, and Piezometer Wells PZ-1A, B, C and PZ-2A, B, C – ADEQ, 2008

Groundwater monitoring well MW-24B was installed in January 2008 to further assess the vertical extent of contamination downgradient of the Facility. Groundwater samples were collected during drilling and analyzed by mobile and stationary laboratories. A total of 6 depth-specific groundwater grab samples were collected at depths ranging from approximately 100 feet bgs to 150 feet bgs and were submitted to an on-Site mobile laboratory for a solvent screen analysis (EPA Method 8021B) for TCE, PCE, 1,1-DCE, cis-1,2-DCE, and trans-1,2-DCE. (GeoTrans, 2008c).

Immediately following the development of groundwater monitoring well MW-24B, one sample of groundwater was collected and analyzed for VOCs (EPA Method 8260B), SVOCs (EPA Method 8270C), and total and/or amenable cyanide (SM 4500 CN). DEHP was detected in the groundwater sample at a concentration of 94 µg/L, above the AWQS of 6 µg/L. No other COCs were detected at or above the laboratory reporting limits (GeoTrans, 2008c).

During January and February 2008, GeoTrans also installed extraction well EW-1 and two nested piezometer wells, PZ-1A,B,C ad PZ-2A,B,C (Table 2-5 for well construction information) and collected a groundwater sample immediately following well development of EW-1 (Table 2-7). The sample was analyzed for VOCs (EPA Method 8260B), SVOCs (EPA Method 8270), and total and/or amenable cyanide (SM 4500 CN).PCE, and TCE were detected in well EW-1 at 1,000 µg/L and 98 µg/L respectively, exceeding the established AWQSs for PCE and TCE of 5 µg/L. 1,1-DCE was detected at 32 µg/L, exceeding the established AWQS of 7 µg/L. SVOCs, including DEHP, and total cyanide were not detected above the laboratory reporting limits in the groundwater sample collected from EW-1 (GeoTrans, 2008d).

2.4.9 Groundwater Sampling and Monitoring, Installation of Groundwater Monitoring Well MW-16A, and Investigation of VOCs and Cyanides in Monitoring Well Headspace Vapors – ADEQ, 2008

In February 2008, GeoTrans performed monitoring and sampling of all groundwater monitoring network wells and the Alice Byrne and St. Francis production wells (Tables 2-6 through 2-9). The collected groundwater samples were submitted for analysis of VOCs (EPA Method 8260B), total and dissolved priority pollutant metals (EPA Methods 6010B, 7470A, and 200.8); and total and/or amenable cyanide (SM 4500 CN). In addition, selected wells were also sampled for SVOCs (EPA Method 8270).The highest concentrations of COCs were detected in B-Zone wells; PCE, TCE, and 1,1-DCE were detected at 2,100 µg/L, 110 µg/L, and 53 µg/L in well EW-1, respectively.

DEHP was detected in groundwater samples collected from the B-Zone and C-Zone monitoring wells, with the highest concentration of DEHP detected in well MW-21B at 120 µg/L. All of the detected DEHP concentrations were above the AWQS of 6 µg/L for DEHP. The highest concentrations of total and amenable cyanides was detected in the groundwater sample collected from monitoring well MW-5A at 18 mg/L and 4.4 mg/L, respectively (GeoTrans, 2008e).

In April 2008, GeoTrans installed groundwater monitoring well MW-16A (GeoTrans, 2008h). During drilling, GeoTrans collected soil vapor and groundwater grab samples. Soil vapor samples were collected at a depth of 10 feet bgs and submitted for analysis of VOCs (EPA Method TO-15) and hydrogen cyanide (NIOSH Method 6010). COCs were not detected (SVOCs and metals were not analyzed; Table 2-4). Groundwater samples were collected during drilling at depths of 100 feet bgs, 110 feet bgs, 130 feet bgs, and 140 feet bgs. Due to an equipment malfunction, only 2 of the 4 depth-specific groundwater samples (collected from 100 and 110 feet bgs) were analyzed by an on-Site, mobile laboratory for PCE, TCE, 1,1-DCE, cis-1,2-DCE, and trans-1,2-DCE (EPA Method 8021B). However, all four of the depth-specific groundwater samples from soil boring MW-16A were submitted to a stationary laboratory for VOCs analysis (EPA Method 8260B). In addition, the depth-specific groundwater sample collected at 140 feet bgs was analyzed for total cyanide (SM 4500 CN). PCE, TCE, 1,1-DCE, cis-1,2-DCE, and trans-1,2-DCE were not detected by the mobile or stationary laboratories. Immediately following the development of groundwater monitoring well MW-16A, one sample of groundwater was collected and analyzed for VOCs (EPA Method 8260B), DEHP and other SVOCs (EPA Method 8270C), and total and/or amenable cyanide (SM Method 4500 CN). DEHP was detected in the groundwater sample at a concentration of 7.0 µg/L (above the AWQS of 6 µg/L). No other COCs were detected (GeoTrans, 2008h).

In April 2008, GeoTrans collected vapor samples from well casing headspaces of wells MW-8A, B, C, EW-1, and MW-22B (Table 2-4). Samples were submitted for analysis of VOCs (EPA Method TO-15) and hydrogen cyanide (NIOSH Method 6010). MW-8C had the highest concentrations of PCE and TCE at 28,000 µg/m^3 and 5,100 µg/m^3, respectively. No other COCs were detected (DEHP was not analyzed). Upon completion of the headspace sampling, a grab sample of the near-surface groundwater was collected and submitted for analysis of VOCs (EPA Method 8260B) and total and/or amenable cyanides

(SM 4500 CN). The highest concentrations of PCE, TCE and 1,1-DCE were detected in well MW-8B at concentrations of 770 µg/L, 180 µg/L, and 42 µg/L, respectively; all the concentrations were above the respective AWQSs. The highest concentration of total and amenable cyanide was detected in well MW-8A at 0.95 mg/L, above the AWQS for free cyanide of 0.20 mg/L (GeoTrans, 2008i).

In April 2008, GeoTrans performed sampling and monitoring of sentinel wells MW-21A,B,C and the Alice Byrne and St. Francis production wells (Tables 2-6 through 2-9). Groundwater samples were collected and analyzed for VOCs (EPA Method 8260B), SVOCs[10] (EPA Method 8270C), total and dissolved metals (EPA Methods 200.8 and 245.1), and total cyanide (SM 4500 CN). No COCs were detected above AWQS (GeoTrans, 2008j).

In May 2008, GeoTrans performed sampling and monitoring of all network wells (Tables 2-6 through 2-8). Groundwater samples were collected and analyzed for VOCs (EPA Method 8260B) and total and amenable cyanides (SM 4500 CN). The highest concentration of PCE was detected in well MW-8A at 770 µg/L, above the AWQS of 5 µg/L for PCE. The highest concentration of TCE was detected in well MW-18B at a concentration of 200 µg/L, above the AWQS of 5 µg/L for TCE. The highest concentration of 1,1-DCE was detected in well MW-8A at 54 µg/L, above the AWQS of 7 µg/L. The highest concentration of total and amenable cyanide was detected in the sample collected from well MW-5A, at concentrations of 18 mg/L, above the AWQS for free cyanide of 0.20 mg/L (GeoTrans, 2008j).

In June 2008, GeoTrans performed sampling and monitoring of sentinel wells MW-21A,B,C and the Alice Byrne and St. Francis production wells (Tables 2-6 and 2-7). Groundwater samples were collected and analyzed for VOCs (EPA Method 8260B) and total cyanide (SM 4500 CN). PCE was only detected in the sample collected from well MW-21C at a concentration of 1.6 µg/L. TCE was detected in the samples collected from well MW-21C at 1.6 µg/L and from well MW-21B at 0.59 µg/L. All of the detections were below their respective AWQS (GeoTrans, 2008j).

In August 2008, GeoTrans performed monitoring of all network wells and piezometers and sampling of all network wells and the Alice Byrne and St. Francis production wells (Tables 2-6 and 2-7). The collected groundwater samples were submitted for analysis of VOCs (EPA Method 8260B), and total and/or amenable cyanide (SM 4500 CN). The highest concentration of PCE was detected at 650 µg/L in well MW-22B, above the AWQS of 5 µg/L for PCE. The highest concentration of TCE was detected at 140 µg/L in well PZ-2B, above the AWQS of 5 µg/L for TCE. The highest concentrations of total and amenable cyanide was detected in sample collected from well MW-5A, with concentrations of 13 mg/L, above the AWQS for free cyanide of 0.20 mg/L (GeoTrans, 2008m).

In September 2008, GeoTrans performed monitoring of MW-21A,B,C and sampling of MW-21A,B,C and the Alice Byrne and St. Francis production wells(Tables 2-6 and 2-7). The collected groundwater samples were submitted for analysis of VOCs (EPA Method 8260B) and total cyanide (SM 4500 CN). PCE and TCE were detected in the sample collected from

[10] The analysis of DEHP and other SVOCs was discontinued after April 2008 due to budgetary restraints.

MW-21C at a concentration of 1.8 µg/L and 0.70 µg/L, respectively; concentrations were below the respective AWQSs (GeoTrans, 2008m).

2.4.10 Installation of Dual-Nested Soil Vapor Monitoring Wells SVMW-2 through SVMW-4, Soil Vapor Investigations, and Groundwater Monitoring and Sampling - ADEQ, 2008

In August 2008, GeoTrans installed three dual-nested soil vapor monitoring wells SVMW-2A,B through SVMW-4A,B to assess shallow vadose conditions at the Site (Figure 2-3). The wells were sampled on September 2008 for hydrogen cyanide (NIOSH Method 6010) and VOCs (EPA Method TO-15) (Table 2-4). Hydrogen cyanide was detected at 121 µg/m^3 in SVMW-2B and at 117 µg/m^3 in SVMW-3A. PCE was detected in wells SVMW-3A,B and SVMW-4A,B at concentrations up 28 µg/m^3 (SVMW-3B). 1,1-DCE and cis-1,2-DCE were not detected in the samples analyzed from SVMW-2A,B through SVMW-4A,B (Table 2-4) (GeoTrans, 2008l; GeoTrans, 2010).

In September 2008, GeoTrans conducted an active soil vapor survey that consisted of a collection of 30 soil vapor samples (SVS-1 through SVS-30) from depths of approximately 5 feet bgs at various locations across the Site, as shown in Figure 2-6. Soil vapor samples were analyzed for VOCs (GeoTrans, 2010). Soil vapor sample results are presented on Table 2-4. PCE was detected during this survey at concentrations up to 4,800 µg/m^3 in sample SVS-27. TCE was also detected during the 2008 active soil gas survey at concentrations up to 86 µg/m^3 in sample SVS-26. 1,1-DCE and 1,1,1-TCA were not detected above the laboratory reporting limits in the soil vapor samples.

In October and November 2008, GeoTrans collected soil vapor samples from SVMW-2A,B, SVMW-3A,B, and SVMW-4A,B and analyzed them for VOCs (EPA Method TO-15) and hydrogen cyanide (NIOSH 6010); only VOCs were detected (GeoTrans, 2010). PCE and TCE were detected in wells SVMW-2A,B through SVMW-4A,B at concentrations up to 130 µg/m^3 (SVMW-3B) and 70 µg/m^3 (SVMW-3A), respectively. Hydrogen cyanide, 1,1-DCE, and cis-1,2-DCE were not detected in the samples analyzed from SVMW-2A,B through SVMW-4A,B above the laboratory reporting limits (Table 2-4).

In October 2008, GeoTrans collected depth-to-water measurements from sentinel well MW-21C, and groundwater samples from MW-21C and Alice Byrne and St. Francis school production wells (Tables 2-6 and 2-7). The collected groundwater samples were submitted for analysis of VOCs (EPA Method 8260B) and total and/or amenable cyanide (SM 4500 CN). At MW-21C, a PCE concentration of 1.4 µg/L was detected; however the detection was below AWQS. No other COCs were detected.

In November 2008, GeoTrans performed monitoring and sampling of 20 monitoring wells and the Alice Byrne and St. Francis production wells (Tables 2-6 and 2-7). The collected groundwater samples were submitted for analysis of VOCs (EPA Method 8260B) and total and/or amenable cyanide (SM 4500 CN). The highest detections of PCE, TCE, and 1,1-DCE were in the sample from well MW-8A at 700 µg/L, 160 µg/L, and 90 µg/L, respectively; all the concentrations were above their respective AWQSs. The highest detection of total

and amenable cyanide was detected in well MW-24B at 1.1 mg/L, above the AWQS of 0.2mg/L for free cyanide.

In addition, in December 2008 groundwater samples were collected from MW-21C and the St. Francis production well. Only TCE and PCE were detected in samples from MW-21C at concentrations of 1.9 µg/L and 1.6 µg/L, respectively, both below the AWQSs of 5 µg/L for PCE and TCE (GeoTrans, 2009a).

2.4.11 Installation of Dual-Nested Soil Vapor Monitoring Wells SVMW-5 through SVMW-7, and Groundwater Monitoring and Sampling – ADEQ, 2009

GeoTrans performed groundwater monitoring and sampling of MW-21C and the Alice Byrne and St. Francis production wells in January 2009. The collected groundwater samples were submitted for analysis of VOCs (EPA Method 8260B) and total cyanide (SM 4500 CN). PCE, TCE, 1,1-DCE, and cyanide were not detected at or above the laboratory reporting limits (Tables 2-5 and 2-6; GeoTrans, 2010).

In February 2009, GeoTrans installed soil vapor monitoring wells SVMW-5A,B through SVMW-7A,B (Figure 2-3) to assess shallow vadose conditions at the Site, and collected samples from these wells in March 2009 (Table 2-4). The collected vapor samples were submitted for analysis of VOCs (EPA Method TO-15) and hydrogen cyanide (NIOSH Method 6010). PCE and TCE were detected in the soil vapor samples collected from SVMW-5B, SVMW-6B, and SVMW-7B. The highest concentrations were 10 µg/m^3 of PCE in SVMW-6B and 29 µg/m^3 of TCE in SVMW-7B. Hydrogen cyanide was not detected above laboratory reporting limits in the four wells (GeoTrans, 2010).

2.4.12 Installation of Dual-Nested Soil Vapor Sampling Wells SVMW-9, SVMW-10 and SVMW-12, and SVMW-13, Multi-nested Soil Vapor Monitoring Wells SVMW-8 and SVMW-11 and SVMW-14 through SVMW-17; Installation of Groundwater Monitoring Wells MW-25A,B through MW-27A,B – ADEQ, 2010

In February and March 2010, GeoTrans installed SVMW-8A through H, and SVMW-9A,B through SVMW-12A,B (Figure 2-3) to assess the shallow and deeper vadose conditions at the Site, and collected samples from all existing SVMW in March 2010. The collected vapor samples were submitted for analysis of VOCs (EPA Method TO-15) and hydrogen cyanide (NIOSH Method 6010). With exception to the samples collected from wells SVMW-2A, SVMW-5A,B, SVMW-7A,B, and SVMW-8H, all of the soil vapor wells had detection of PCE in the soil vapor samples. Concentrations of PCE ranging from 12 µg/m^3 in SVMW-8F to 5,970 µg/m^3 in SVMW-11C. Selected samples from the March 2010 soil vapor sampling event were submitted for hydrogen cyanide analysis; hydrogen cyanide was not detected above the laboratory reporting limit (Table 2-4; GeoTrans, 2010).

In March 2010, GeoTrans performed the installation of new wells MW-25A,B to further assess the downgradient vertical and horizontal extent of contamination at the Site (Table 2-5 for well construction information and Figure 2-4 for their locations). Monitoring and sampling of select network wells were performed in April 2010 (Tables 2-6 and 2-7). The collected groundwater samples were submitted for analysis of VOCs (EPA Method 8260B)

and total and/or amenable cyanide (SM 4500 CN). The highest concentrations were as follows: PCE was detected in MW-8A at 97 µg/L; TCE was detected in MW-8A at 36 µg/L; 1,1-DCE was detected in MW-8A at 17 µg/L; and cyanides (total and free) were detected at 0.64 mg/L in MW-24B. All of the above concentrations were detected at levels above their respective AWQSs (GeoTrans, 2010).

In August 2010, GeoTrans collected depth-to-water measurements and groundwater samples from select wells in the monitoring well network (Tables 2-6 and 2-7). The collected groundwater samples were submitted for analysis of VOCs (EPA Method 8260B) and total and/or amenable cyanide (SM 4500 CN; Tetra Tech GEO, 2011). The highest concentrations were as follows: PCE was detected in MW-7A at 380 µg/L; TCE was detected in MW-7A at 68 µg/L; 1,1-DCE was detected in MW-8A at 7.8 µg/L; and cyanides (total and free) were detected 3.2 mg/L in MW-1A. All of the above concentrations were detected at levels above their respective AWQSs (Tetra Tech GEO, 2011).

In October 2010, GeoTrans installed groundwater monitoring wells MW-26A,B and MW-27A,B to further assess the extent of contamination near the Facility (see Figure 2-4 for their locations and Table 2-5 for construction details). During drilling of MW-27A, GeoTrans collected a soil vapor sample at a depth of 10 feet bgs and analyzed it for VOCs (EPA Method TO-15) only; hydrogen cyanide was not analyzed. The only COC detected in the soil vapor sample was PCE at 74.6 µg/m^3 (Table 2-4; Tetra Tech GEO, 2011).

In November 2010 to further characterize soil vapor conditions at the Site, GeoTrans installed soil vapor monitoring wells SVMW-11C through F, SVMW-13A,B, SVMW-14A through F, SVMW-15A through F, SVMW-16A through F, and SVMW-17A through F (Figure 2-3; Tetra Tech GEO, 2011). These soil vapor monitoring wells were not sampled after installation, but were sampled in early 2011; these results are discussed in further detail in Section 2.4.13.

In December 2010, GeoTrans collected depth-to-water measurements and groundwater samples from select network monitoring wells (Tables 2-6 and 2-7). The collected groundwater samples were submitted for analysis of VOCs (EPA Method 8260B) and total and/or amenable cyanide (SM 4500 CN). The highest concentrations were as follows: PCE was detected in MW-7A at 210 µg/L; TCE was detected in MW-7A at 34 µg/L; and cyanides (total and free) were detected 0.33 mg/L in MW-2A. Other COCs were not detected or were not analyzed. All of the above concentrations were detected at levels above their respective AWQSs (Tetra Tech GEO, 2011).

2.4.13 Groundwater and Soil Vapor Sampling and Monitoring, Installation of Groundwater Monitoring Well MW-22A and Soil Vapor Monitoring Well SVMW-18 - ADEQ, 2011

During January and February 2011, GeoTrans installed monitoring well MW-22A and collected depth-to-water measurements and groundwater samples from select groundwater monitoring wells and the Alice Byrne and St. Francis school production wells. The collected groundwater samples were submitted for analysis of VOCs (EPA Method 8260B) and total and/or amenable cyanide (SM 4500 CN). The highest concentrations were detected were

as follows: PCE was detected in MW-22A at 1,100 µg/L, TCE was detected in MW-18B at 140 µg/L; and cyanides (total and free) were detected at 16 mg/L in MW-22A. 1,1-DCE was not detected (Tables 2-5, 2-6 and 2-7) (Tetra Tech GEO, 2011).

In February 2011, GeoTrans performed oversight of drilling and installation of multi-nested soil vapor monitoring wells SVMW-18A through F to further assess horizontal and vertical contamination in the vadose zone (Figure 2-4). In January and February 2011, GeoTrans also collected soil vapor samples from all SVMWs at the Site and analyzed them for VOCs (EPA Method TO-15). Selected wells were also analyzed for hydrogen cyanide (NIOSH Method 6010). The highest concentrations were detected in the SVMW-18 well series at a depth of 60 feet bgs. In SVMW-18F, PCE was detected at 15,600 µg/m^3 and TCE was detected at 258 µg/m^3. However, the highest concentrations of 1,1-DCE and 1,1,1-TCA were detected in the sample for SVMW-1C at 27.8 µg/m^3 and 109 µg/m^3, respectively (Table 2-4).

To assess groundwater contamination in the A-Zone near the Facility, Groundwater monitoring well MW-22A was installed in February 2011 (Figure 2-4 and Table 2-5). Following installation, GeoTrans collected depth-to-water measurements and groundwater samples from monitoring wells MW-22A, as well as MW-22 B. The collected groundwater samples were submitted for analysis of VOCs (EPA Method 8260B) and total and/or amenable cyanide (SM 4500 CN) (Tetra Tech GEO, 2011). The highest COC concentrations were all detected at MW-22A and are as follows: PCE was detected at 1,100 µg/L; TCE was detected at 11 µg/L; and cyanides (total and free) were detected at 16 mg/L(Table 2-7). Other COCs were not detected or were not analyzed (Tetra Tech GEO, 2011).

2.4.14 Cap Inspection and Soil Sampling – ADEQ, 2012

On May 1, 2012, Tetra Tech observed pieces of exposed non-woven geotextile at six locations on the east and southeast unpaved areas of the Facility during a meeting with construction contractors. The textile was previously installed in 2002 as part of the ERA soil remediation, where approximately one foot of impacted soil had been removed from the eastern and southern portions of the Facility. Four textile pieces were observed extending through the clean soil cover surface, and two pieces were observed above the surface. While initial observations and conversations with the ADEQ and Herb Houston, owner of the Facility, indicated that some type of earth-moving had occurred, the exact causes of the disturbed areas are unknown. Soil sampling of the disturbed area was necessary to evaluate worker exposure risk to possible cyanide-contaminated soils during future cap construction (Tetra Tech, 2013a).

A total of 124 soil samples were collected from the Facility on September 24 and 25, 2012, and half of them were analyzed for cyanide. Results of the 68 samples analyzed indicated that the minimal cyanide concentrations were acceptable for workers with a limited time exposure to soils on the Facility. ADEQ and Tetra Tech agreed that disturbed soils had been adequately characterized for planned cap activities, and no other soil samples were analyzed. Based on the results of the soil sampling activities, ADEQ and Tetra Tech

continued the planned capping activities based on these concentrations (Tetra Tech, 2013a).

2.4.15 Groundwater Monitoring and Sampling – ADEQ, 2012

In October and November 2012, Tetra Tech performed one round of groundwater sampling and monitoring of selected network monitoring wells and the Alice Byrne and St. Francis of Assisi School production wells (Tables 2-6 and 2-7). The collected groundwater samples were submitted for analysis of VOCs (EPA Method 8260B) and total and/or amenable cyanide (SM 4500 CN). The highest concentration of COCs included cyanide detected at 2.5 mg/L in well MW-5A; cis-1,2-DCE at 150 µg/L in well MW-7A; and PCE at 560 µg/L, TCE at 150 µg/L, and 1,1-DCE at 38 µg/L in well MW-18B. Other COCs were not detected or were not analyzed (Tetra Tech, 2013b).

2.4.16 Cap Installation – ADEQ, 2013

In 2011, a conceptual design was developed as a final ERA for addressing impacts from near-surface soil at the Facility. The design included construction of an engineered cap over the cyanide-impacted areas along the eastern and southern portions of the Facility. This design was designed to mitigate potential leaching of contaminants to groundwater and eliminate potential exposure pathways to contaminated soil via dermal contact, ingestion, and particulate and vapor inhalation. Between May and September 2013, an asphalt cap was placed at the Facility, and included a nonwoven geotextile as well as curb and gutter features (Tetra Tech, 2014).

3.0 EARLY RESPONSE ACTIONS

An ERA under the WQARF Program includes investigations and remedial actions initiated under A.A.C. R-18-16-405 prior to selection of a remedy at a site under AAC R-18-16-410. ERA activities at the Site were conducted to identify sources of contaminants and address risk to public health and the environment. Based on site investigations and toxicity/environmental fate information for cyanides, ADEQ and GeoTrans concluded that the impacted near-surface soil at the Facility and wastewater and/or sludge in WDSs presented risks to public health and the environment. ADEQ determined ERAs were necessary to:

1. Address current risk to public health, welfare and the environment;
2. Protect or provide a supply of water;
3. Address sources of contamination; or
4. Control or contain contamination where such actions are expected to reduce the scope or cost of the remedy needed at the site.

ADEQ implemented ERAs for cyanides and for VOCs. The ERAs discussed in this section were selected based on the most cost-effective approach to addressing risk and achieving the goals of moving forward a final remedy.

3.1 ERA FOR CYANIDES

Early Response Action activities were performed at the facility from 2001 to 2005. These activities included characterization and removal of cyanide-impacted soils and removal of certain WDSs.

3.1.1 Characterization of Soil and WDS Contents for Cyanides – ADEQ, 2001

In June 2001, GeoTrans sampled surface and shallow subsurface soil at the Facility to maximum depths of 22 feet bgs using a GeoProbe drill rig, to evaluate the extent of soil contamination by cyanides, VOCs, ethylene glycol, formaldehyde, and/or priority pollutant metals. Cyanide was detected in soils at the site at levels which exceeded Arizona SRLs for hydrogen cyanide. The highest cyanide concentrations in soil were detected in stained surface and very shallow subsurface soils. The results of this investigation were summarized in a technical memorandum regarding ERA site investigation for cyanides (GeoTrans, 2001b) and a work plan and protocols for implementing an ERA for cyanides (GeoTrans, 2002b).

Sludge and/or wastewaters contained in WDS-1, WDS-2, WDS-4, and WDS-5 were also sampled and found to contain elevated levels of cyanides, VOCs, and/or metals. Similarly, samples from on-site groundwater monitor wells were found to contain cyanides, VOCs, SVOCs and/or metals.

Although there were established SRLs for hydrogen cyanide of 11 mg/kg (residential) and 35 mg/kg (non-residential), there were no established Arizona SRLs for iron cyanides and sodium thiocyanate. Therefore, ADEQ requested a recommendation from the Arizona

Department of Health Services (ADHS) for the appropriate SRLs for the Site. The recommendation from ADHS indicated that the established SRLs for sodium cyanide of 2,600 mg/kg (residential) and 27,000 mg/kg (non-residential) would be protective of human health if the cyanide group remains bound within the thiocyanate and iron cyanide molecules. ADHS also acknowledged that metal cyanides (including iron cyanides) and thiocyanates can generate hydrogen cyanide gas when in solution, even in a near-neutral pH environment, and when exposed to sunlight or ultraviolet radiation. ADHS thus concluded that the SRLs for hydrogen cyanide of 11 mg/kg (residential) and 35 mg/kg (non-residential) are the most appropriate standards for application at the Site, if there are no institutional or engineering controls, to ensure the residual cyanide remains bound in the thiocyanate or iron cyanide molecules (ADHS, 2002).

3.1.2 Cyanide-Impacted Soil Removal

In 2001 surface soils with cyanide concentrations greater than 35 mg/kg were excavated to a depth of 1 foot bgs, and transported offsite for lawful disposal. The limits of the excavation are shown on Figure 2-2.

Excavated soil was segregated (where possible) into three categories based on visual observations: (1) soil without apparent discoloration, (2) soil with slight or possible discoloring (blue, green, gray, or any combination of these colors), and (3) discolored soil. The segregated soil was loaded into labeled plastic-lined (20-mil poly sheeting) 20-cubic yard roll-off bins, and covered with plastic. All roll-off bins were decontaminated before leaving the Exclusion Zone. Loaded bins were then transported to an on-site location where they were staged and sampled for subsequent disposal. Approximately 1,700 tons of contaminated soils were removed from the Facility. Concentrations of cyanide-impacted soils remaining within the excavated area at the Facility are presented in Figure 2-7.

A composite sample collected from each bin was analyzed using EPA Method 9010B/9014, with sample preparation procedures specified in SM 4500 CN (GeoTrans, 2002a). Based on the laboratory results of composite samples, bins were manifested and transported off-site for disposal, in accordance with the RCRA and Land Ban requirements as follows:

- Soil containing total cyanides in concentrations less than 250 mg/kg was disposed at Republic Services' Copper Mountain Landfill (a RCRA Subtitle D facility) near Yuma, Arizona;
- Soil containing total cyanides in concentrations ranging from 250 mg/kg to less than 590 mg/kg was transported to the US Ecology Landfill (a RCRA Subtitle C facility) in Beatty, Nevada for landfilling; and
- Soil containing over 590 mg/kg total cyanides was transported to Kettleman Hills Landfill (a RCRA Subtitle C facility) in California for treatment and subsequent landfilling.

Following sampling activities, a geotextile fabric was placed over the limits of the excavation, and the area was backfilled by moisture conditioning, placing, and compacting aggregate base course (ABC) in lifts to match the approximate existing grades around the excavation.

3.1.3 WDSs

The following is a summary of the ERA activities related to the WDSs performed between 2002 and 2008 (Figure 1-2). Historically, wastewater containing COCs was discharged indirectly or directly to soil, some of which was discharged from WDS-1. WDS-4 was connected by piping with WDS-1 to re-route the wastewater from WDS-1, and also received wastewater containing COCs. As part of the ERA activities, the contents of WDS-1 and WDS-4 were removed. Following removal of wastewater and sludge, WDS-1 and WDS-4 and related piping were excavated and removed from the Facility. The resulting excavations were sampled and then backfilled with aggregate base coarse (ABC) material. Sample results are presented in Tables 2-1 through 2-3. Total cyanide was detected at concentrations ranging from 78 mg/kg and 430 mg/kg from the east and west ends of WDS-1, respectively. Total cyanide was also detected from beneath WDS-4 at a depth of 10 feet bgs at a concentration of 54 mg/kg. PCE was also detected from beneath WDS-1 at concentrations of up 0.50 mg/kg. Several metals, including barium, chromium, and silver were detected from beneath WDS-4. DEHP was detected in WDS-4 contents at 200 mg/kg, however, were not detected in soil samples collected from beneath WDS-4. Metals and SVOCs were not analyzed in the samples collected from beneath WDS-1.

In 2002, GeoTrans also oversaw the removal of the contents from WDS-2, WDS-3, and WDS-5. The removed contents were then treated with lime for Fecal Coliforms and the WDSs were rinsed and the systems were placed back into operation. Samples were not collected during the excavation and cleaning of WDS-2, WDS-3, and WDS-5.

3.1.4 Development of Site-Specific GPLs For Cyanides – ADEQ, 2005

In June 2005, GeoTrans evaluated the previous results and findings for residual cyanide concentrations in soils at the Facility, site-specific SPLP leaching test results for cyanides, and environmental fate of relevant cyanide. Based on this information, GeoTrans estimated a Minimum GPL for cyanides of 290 mg/kg in soils as protective of groundwater quality. GeoTrans also concluded that previously recommended residential cleanup level of 11 mg/kg total cyanides and the non-residential 35 mg/kg soil cleanup level will be protective of groundwater quality. GeoTrans recommended relocation of WDS-2 septic leach field away from cyanide-impacted soil and placement of an engineered cap over unpaved contaminated areas; these actions would increase the site-specific GLP to approximately 290,000 mg/kg or higher (GeoTrans, 2005c).

3.1.5 Abandonment of WDS-2 and Its Leach Field and Installation of Replacement Septic Tank System – ADEQ, 2008

Historically, cyanide-containing wastewater was discharged indirectly or directly to soil, including an unpaved soil area approximately 132 feet long and 26 feet wide along the eastern Facility boundary. Following implementation of ERA for cyanides in 2001, WDS-2 continued to be used (after its cleaning) for treatment of domestic sewage from the Facility. However, its leach field was located within the formal disposal pond area on the east side of the Facility. Reducing leaching of cyanides from the vadose zone to groundwater under this septic tank leach field by eliminating further percolation of domestic sewage effluent was the

first step towards attaining the site-specific GPLs (GeoTrans, 2005b). This source control was accomplished by abandoning WDS-2 and its leach field and installing a new septic system away from cyanide-impacted soils in March 2008 (GeoTrans, 2008f).

The inlet piping from the building clean-out to the existing WDS-2 tank inlet (including a secondary sewage pipe routed from the building clean-out to the south, which connected via a "Tee" fitting to the main inlet line) was exposed and inspected. The piping was cut, removed from the excavation, placed in drums, and disposed. The septic tank inlet was securely capped.

The replacement septic tank system (tank, underground piping, leach field) was installed near the southeastern corner of Building 1 (Figure 2-1). The native soils around the inlet, outlet, and distribution box plumbing required compaction to 90 percent of maximum dry density, soil around the septic tank required 90% compaction, and the ABC material below the replacement asphalt required 100 percent compaction.

3.1.6 Capping of Cyanide-Contaminated Soil, 2013

On May 2012, Tetra Tech observed exposed pieces of the geotextile fabric at various locations on the east and southeast unpaved areas at the Facility. The geotextile fabric was installed in 2002 as part of the ERA soil remediation as discussed above in Section 3.1.2. Four pieces of geotextile fabric were observed extending through the clean soil cover, and two pieces were observed above the surface. Based on discussions with the Facility owner and Facility tenants, the unpaved area had been cleared of vegetation and some of the geotextile fabric had been pulled up during these activities. Reportedly, geotextile fabric had also been pulled up when vehicles had gotten stuck in the soil south of Building 2. Based on the presence of exposed geotextile fabric ADEQ determined that a new cap should be installed at the Facility.

ADEQ and Tetra Tech discussed alternatives to reduce potential exposure to contaminated soil at the Facility. Based on these discussions, an ERA involving placement of an asphalt concrete cap over the backfilled area was selected. The asphalt concrete cap would serve as a final ERA along with other use restrictions to be placed on the Facility to mitigate exposure to contaminated soil on the Facility. Use restrictions would be enforced through a Declaration of Environmental Use Restriction (DEUR) that will be recorded on the official property records for the Facility.

Tetra Tech obtained samples of near surface soil to evaluate the impact of the disturbance of the ABC backfill in September 2012 (Tetra Tech, 2012a). Soil samples were analyzed for cyanide. Based on the results of these tests and predictive modeling to evaluate worst-case exposure concentrations, use of Level D personal protective equipment was deemed appropriate for construction workers involved in the grading and placement activities anticipated for the asphalt concrete cap.

Tetra Tech developed a conceptual design for the final ERA which included construction of an engineered cap over the cyanide-impacted areas along the eastern and southern borders of the Facility and the southwest portion of the Facility (Tetra Tech, 2011). Tetra

Tech and ADEQ met with representatives of the City of Yuma (COY) Department of Community Development to discuss drainage and the conceptual project design. COY indicated that manhole filter drains could be located on the Facility and connected to the COY storm drain running along the 20th Street right-of-way to resolve stormwater issues at the Facility (Tetra Tech, 2011).

The ERA was implemented in 2013 and included grading and paving the unpaved areas to drain to two filter drains, one located on the west side of Facility and one located near the north-east corner of the Facility. The filter drains were connected to the COY stormwater system through underground piping. Off-site construction activities included excavating trenches; installing two manhole filter drains, an access manhole, and piping; making connections to the COY stormwater drain system; and backfilling and paving the trenches to match existing conditions. Off-site construction activities were conducted under a COY permit.

On-site construction activities included grading the existing ABC, including cutting and filling as required; constructing Portland cement concrete valley gutters to direct surface flow to the drains; and paving the graded ABC with asphalt concrete for a permanent cap over the impacted areas on the Facility. Other incidental work, such as repairing the chain-link fence along the south side of the Facility; was completed as required in support of the ERA in September 2013.

Following completion of the construction activities, drainage tests were conducted to verify stormwater would drain as intended. Localized ponding or other areas not draining as designed were corrected. The ERA for cyanide was described in greater detail in Tetra Tech's ERA Completion Report (Tetra Tech, 2014).

3.2 ERA FOR VOCS

The ERA for VOCs at the Site was implemented in 2001. The primary objectives of the ERA response actions in 2001 were to: 1) determine whether the PCE and other VOCs in the unsaturated zone at the Site pose a risk to the public health and the environment; 2) address the remaining sources of PCE contamination; and 3) develop the data necessary to support the selection of an approach for source reduction and/or removal, and implement a well-supported and focused early response action. ERA activities at the Site have continued through 2012.

3.2.1 Passive Soil Gas Survey

In 2001, GeoTrans conducted a passive soil gas survey using GORE-SORBER® technology (modules) at the Facility to identify areas of contamination by VOCs and SVOCs (Appendix C; GeoTrans 2001a). This survey detected a variety of VOCs in soil vapors over much of the Facility. In particular, significant detections of PCE and other VOCs (benzene, toluene, 1,1,1-trichloroethane [TCA], and TCE were recorded. PCE was detected over most of the Houston International portion of the Facility. The highest concentrations of PCE were detected under Building 1 and in the vicinity of WDS-1 and WDS-2. Toluene was detected in the planters on the northern edge of Building 1. The adjacent property east of the Facility

boundary was not evaluated, but concentrations dropped significantly near the eastern Facility boundary.

3.2.2 Subsurface Soil Investigation

To further determine the extent of VOC and cyanide impacts to Facility soils and soil vapor, GeoTrans coordinated the drilling of six soil borings around Building 1. The locations of these borings were selected based on the passive soil-gas survey results and are shown on Figure 2-1.

In December 2003, GeoTrans provided oversight for the drilling of six soil borings (SB-01 through SB-06) to a depth of 70 feet bgs using the hollow-stem auger drilling method and collecting regular soil and soil-vapor samples throughout the drilling process (Figure 2-1). In addition, GeoTrans installed a nested soil vapor monitor well in one of these borings, consisting of four individual well casings and collected soil vapor samples from all four depths. GeoTrans collected four soil-vapor samples at 20-foot depth intervals between 10 feet and 70 feet bgs in each of the six borings. The samples were submitted to a mobile laboratory for analysis of PCE and TCE using EPA Method 8021B. In addition, GeoTrans performed two rounds of sampling of the nested soil vapor well SVMW-1; one modified round (8021B) during December 2003, the second was a full round (TO-15) in January 2004 (GeoTrans, 2004b).

PCE was detected in borings consistently throughout the Facility in concentrations ranging from 5,400 µg/m^3 (SB-01) to 280,000 µg/m^3 (SB-04). The highest concentrations were typically found in the lower 20 feet of the soil boring, suggesting that the source of the PCE in soil vapor may be dissolved-phase in groundwater at depths of 75 to 80 feet bgs. The highest PCE concentration was detected at 70 feet bgs in SB-04 (inside Building 1). TCE was not detected in any of the soil vapor samples from SB-01 through SB-06.

PCE was detected in the vapor samples collected during the initial sampling round in SVMW-1 at concentrations ranging from 160,000 µg/m^3 to 240,000 µg/m^3, with the highest concentration detected at a depth of 65 feet bgs. The results of the second round of sampling resulted in PCE concentrations ranging from 20,000 µg/m^3 to 36,000 µg/m^3, with the highest concentration detected at a depth of 35 feet. TCE was not detected in the soil vapor samples collected. However, these samples were also found to contain 1,1,1-TCA in concentrations ranging from 270 µg/m^3 to 280 µg/m^3.

PCE concentrations in the soil vapor samples collected in all six borings and SVMW-1 were found to be below 1,300 µg/L (or 1,300,000 µg/m^3), the ADEQ-approved action level specified in ERA VOC Work Plan (GeoTrans, 2003c). If the action level was exceeded, borings would have been required to be completed as either soil vapor extraction (SVE) or monitor wells, to allow for on-site treatment of the VOC contamination. The 1,300 µg/L value represents the equivalent soil vapor concentration to the minimum GPL concentration in soil for PCE of 1.3 mg/kg. The soil vapor concentration was calculated from equilibrium equations using the default values for soil parameters used in the GPL guidance document. The actual soil-vapor and soil analytical results indicated that VOCs were present throughout the Facility in low concentrations, not indicative of the presence of any

concentrated source area(s). Based on these findings, GeoTrans and ADEQ concluded that the mass of VOCs present in the vadose zone at the Facility was not significant to warrant remediation by soil-vapor extraction (GeoTrans, 2004b).

4.0 PHYSICAL SITE CHARACTERISTICS

4.1 LOCATION AND PHYSIOGRAPHY

The Site is located within the northwest ¼ of the northwest ¼ of the southwest quarter of section 34, Township 8 South, Range 3 West of the Gila and Salt River Meridian, in Yuma, Yuma County, Arizona. The Houston Facility is located near the southeast corner of the intersection of 20th Street and Factor Avenue (Figure 1-1). The Site is within the extreme northeast portion of the Yuma Mesa area, which abuts the northwest portion of the Yuma Valley to the west.

According to Olmsted et al. (1973), the slope of the land surface of the Yuma Mesa at the Site location is approximately three feet per mile towards the south-southwest and then to the west further south on Yuma Mesa. The land surface slopes gently to the south-southwest from an elevation of approximately 200 feet above mean sea level (amsl) at the Site to approximately 110 feet amsl along the current floodplain of the Colorado River to the west. A smaller portion of the Site is located east of Arizona Avenue and is within an area of industrial and commercial use. A larger portion of the Site is located west of Arizona Avenue is dominated by single-family and residential apartment buildings.

According to Olmsted et al. (1973), the Yuma Mesa is a terrace of the ancestral Colorado River. The Yuma Valley lies to the west of Yuma Mesa and represents the eastern extent of the former Colorado River floodplain. The Yuma Valley slopes to the south-southwest at approximately 2 feet per mile. The westward sloping Upper Mesa represents older river alluvium, which has been dissected and overlain by re-worked deposits of ephemeral streams. The Yuma Mesa and Yuma Valley are examples of erosional features of the pre-existing Upper Mesa sediments (Olmsted et al., 1973).

4.2 CLIMATE

The average annual maximum temperature in Yuma, Arizona is 90 degrees Fahrenheit (°F) and the average annual minimum temperature is 59°F. Monthly average high temperatures peak at approximately 110°F in July and August. Monthly average low temperatures reach approximately 45°F in December and January. Rainfall averages 2.5 inches per year, most of which falls during the months from December through February (Office of the Arizona State Climatologist, 2011).

4.3 SURFACE DRAINAGE

There are no incised washes within the project area. However, a Yuma County Flood Control District (YCFCD) retention basin is located approximately 500-feet northeast of the Facility. According to Greg Sellers, a representative of YCFCD, the basin is designed for 100-year flood capacity. Mr. Sellers also stated that the basin receives the majority of runoff from the Yuma Mesa. In years when there is normal runoff, the runoff percolates in the basin. However, in years of abundant runoff, runoff in the basin is channeled through a storm drain to the Colorado River. Infiltration of surface water run-off at this location may be a source of periodic groundwater recharge near the Site (GeoTrans, 2008k). The East Main

Canal, an irrigation structure, conveys water from north to south and is located approximately 2 miles west of the Site.

4.4 REGIONAL AND SITE GEOLOGY

The Site is located within the basin and range physiographic province of the southwestern United States, which is characterized by generally north-northwest trending mountain ranges with down-faulted basins between, filled with sediments from erosion of the nearby mountain ranges (Dickinson, 2006).

The Yuma area is defined by mountains and hills Tertiary to pre-Tertiary in age, that are composed of volcanic and non-marine deposits of the lower hills, to the crystalline bedrock of the higher elevation areas (Olmsted et al., 1973). The mountains in the Yuma area are: the Chocolate Mountains to the north, the Laguna Mountains to the northeast, and the Gila, Butler and Tinajas Atlas Mountains respectively, to the east and southeast. Although the Butler Mountains appear to be a separate chain of mountains, they are actually the southeastern extension of the Gila Mountains, a portion of which has been covered with deposits derived from nearby mountains, infilling of the structural feature known as the Salton Trough and sediments from the ancestral Colorado and the Gila Rivers. The western boundary of the Yuma area is bounded by the Colorado River and its floodplain. According to Olmsted, the thickness of some deposits in basins within the Yuma area exceeds 16,000 feet. However, only the upper 2,000 to 2,500 feet are freshwater alluvial deposits, associated with the old Colorado and Gila Rivers. Olmsted lumps these deposits into a category called the wedge zone. Beneath the wedge deposits, a Pliocene-aged marine to non-marine transition zone, and the Pliocene marine Bouse Formation are present. These in turn overlie a set of older marine sedimentary rocks, volcanic rocks and the deeper Tertiary non-marine sedimentary rocks including the Kinter Formation.

One hill of a series of eight northwest-trending (N20°W), exposed bedrock knobs, known as the “Yuma Hills” (Olmsted et al., 1973) is located east-northeast of the Site. The Colorado River bisects the northern two “hills” composed of granitic fanglomerate and breccia. The southern six “hills” are granitic in composition. The closest one of these Hills is approximately one-half mile north-northeast of the Site, with three City of Yuma water storage tanks situated at the top. This location also coincides with the designated location of the “Yuma Mineral Spring” on the United States Geologic Survey (USGS) 7.5-minute, Yuma East, AZ-CA topographic map, dated 1994. These northwest-trending features delineate the location of a bedrock ridge buried by alluvial sediments from the Colorado and Gila Rivers (Olmsted et al., 1973). The surrounding mountains and sediments from the Colorado and Gila Rivers are the source for the sediments in the Yuma area.

Faults are present in the Yuma area; the largest and most prominent is the Algodones fault, which is part of the San Andreas Fault system (Olmsted et al., 1973). The trace of the fault extends from approximately one mile south of Moreles Dam on the Colorado River, southwest southeast across the Yuma Valley, the Yuma Mesa, and Upper Mesa (Figure 4-1) and eventually across to a point near the Town of San Luis on the international border with Mexico. Movement along this fault is revealed by an escarpment of sediments along the south side of the fault, approximately 30 to 60 feet higher than those on the north side,

with these sediments sloping towards the south-southwest at 30 to 40 feet per mile (Olmsted et al., 1973). No faults or structures have been mapped or reported near the Site area. However, Olmsted et al. (1973) suggest the locations of the ridge beneath the Yuma Hills are probably bounded by faults to the north and south of this buried ridge line. However, no direct evidence of this faulting has been documented to date.

According to Olmsted et al. (1973), the sands deposited from the Colorado and Gila Rivers and locally derived sands can be differentiated based on their physical characteristics and color. Sands deposited by the Colorado River are better rounded and are gray to pinkish gray and feldspathic, while locally-derived sands are yellowish to reddish brown. After sand, gravel is probably the most abundant material in the deposits of the old Colorado and Gila Rivers, especially in the upper several hundred feet of these deposits. Some of the gravel is coarse containing many rounded cobbles and small boulders and is exposed at many places throughout the Yuma area. The uppermost coarse-gravel strata beneath the river valleys and Yuma Mesa constitute the principle aquifer in the Yuma area and are referred to collectively as the coarse-gravel zone and described as a widespread blanket-like deposit underlying parts of the “upper terrace” and Yuma Mesa and river valleys. Areas were the coarse-gravel zone does not appear include multiple areas of the Yuma Mesa and the northeast corner of the Yuma Valley where the older alluvium is predominately sandy with minor streaks of fine gravel (Olmsted et al., 1973). Olmsted et al. described two major water-bearing units of the groundwater reservoir as consisting of two major subdivisions: the poorly water-bearing rocks of Tertiary Age and water-bearing deposits of Quaternary (Pliocene to Holocene in age; Figure 4-2). Significant quantities of water are not produced from the water bearing older Tertiary-age rocks. Therefore, the major transmissive younger sediments form the basis for the aquifer system in the Yuma area and the Site. Olmsted et al. separated the younger water-bearing units as the into the older alluvium (a complex of alluvial fill cycles of Pliocene to late Pleistocene age), the younger alluvium (including all of the alluvial deposits of the most recent cycle of deposition associated with the Colorado and Gila Rivers, alluvial fan deposits and wash and sheet flow deposits), and windblown sand. The windblown sand occurs as dunes and thin sheets on Yuma Mesa and Upper Mesa, and are probably derived from nearby sandy alluvium or from old lacustrine or marine beaches.

Dickinson (2006) further modified the upper (above bedrock) alluvial water-bearing hydrogeologic units (HGUs) as follows (from depth to ground surface): the undifferentiated lower unit, which is part of the wedge zone described by Olmsted et al.; the coarse gravel unit; lower fill; Clay A; middle fill; Clay B; and upper fill.

4.4.1 Undifferentiated Lower Unit

The undifferentiated lower unit lies above the Pliocene Bouse Formation (Figure 4-2) with a reported thickness of several hundred feet (Dickinson et al., 2006). However, because of its depth, few wells in the area have penetrated it, so there is little information developed for this unit.

4.4.2 Coarse Gravel Unit

The coarse gravel unit was deposited by the ancestral Colorado and Gila Rivers. This unit lies stratigraphically above the undifferentiated lower unit and is equivalent to the coarse-gravel zone described by Olmsted and others (1973). This unit is the result of deposition and down-cutting events by the Colorado River, probably during Pleistocene times when glacial meltwaters filled the Colorado River and filled existing trenches or scars. According to Olmsted et al., the uppermost coarse gravel unit beneath the Yuma Valley and Yuma Mesa constitute the principal aquifer system for Yuma, and the coarse-gravel unit may not be encountered in the northwest corner of Yuma Mesa (Site location) or the northeast corner of Yuma Valley.

4.4.3 Lower Fill Unit

The lower fill unit was deposited by the ancestral Colorado and Gila Rivers. It is defined by Olmsted as equivalent to the older alluvium, and stratigraphically defined by the top of the coarse gravel zone below and the base of overlying Clay A (where present) above. The older alluvium is collectively described as, “alluvial sand and silt with extensive beds of silt and clay in places” (Olmsted et al., 1973). This description includes the clays described as Clay A below.

4.4.4 Clay A

Clay A was deposited by the ancestral Colorado and Gila Rivers. Olmsted et al. described the clays associated with older alluvium as mixtures of clay and silt, typically gray to brown, with varying amounts of fine sand. Because of the amount of silt and sand typically found in these clay units, these clays are not thought of as vertically confining, but restrictive to vertical flow. However, perching of groundwater may occur due to differences in recharge rates and vertical transmissivity of the clays.

Clay A represents the lower clay bed, above the coarse-grained gravel zone. Olmsted et al. (1973) noted it beneath the Yuma Mesa and Yuma Valley with a thickness ranging from a few inches to 35 feet. Parts of this unit may grade laterally (towards river) to coarser materials, and it has a similar slope to the southwest as Yuma Valley. This clay layer was reported at depths of approximately 12 to 27 feet above mean sea-level near the site location. With a reported surface elevation of approximately 200 feet amsl, the depth to this clay layer would be in the range of 170 to 180 feet below surface. The depth correlates with the clay layer reported in several borings west at the Site, including wells MW-8C, MW-17C, MW-21B/C, MW-22B, MW-23B, MW-24B, and MW-103B.

4.4.5 Middle Fill Unit

The middle fill unit is defined similar in character to that of the previously described lower fill unit.

4.4.6 Clay B

Clay B is the uppermost clay unit defined and the uppermost alluvial unit deposited by the ancestral Colorado and Gila Rivers. According to Olmsted et al. (1973), Clay B is typically found at an average altitude of 100 feet above sea level, which would correspond to approximately 100 feet bgs at the Site. Clay B is reportedly 10-15 feet thick in most places, with more than half the thickness clay and silty clay. Like Clay A, Clay B reportedly grades laterally into pebbly clay and other heterogeneous gravel deposits (Olmsted et al., 1973). The work of Dickinson et al. (2006) states the recently defined areal extent of Clay B is laterally more extensive than Clay A, and extends primarily to the southwest, and only slightly toward the northeast. Olmsted did not show Clay B occurring near the subject site. Dickinson's revised northeastern extent of Clay B is approximately two miles southwest of the Site. The depth correlates with the clay layer reported in several borings west of the Facility, including wells MW-8A through MW-11A, MW-15A, MW-17A, MW-21A, and MW-24A.

4.4.7 Upper Fill Unit

The Upper Fill unit is described by Olmsted et al. (1973) as derived from windblown sand. This unit was deposited by the recent Colorado and Gila Rivers. During drilling investigations at the Site, several clay layers have been encountered at depths ranging from 40 to 60 feet bgs. While the majority of the upper fill unit is coarser-grained sediments, the presence of smaller clay intervals is common in the Colorado River depositional environment.

Geologic cross-sections A-A', B-B', and C-C' (Figures 4-3 through 4-6) present the subsurface lithology based on available boring logs (Appendix E). Coarse-grained sediments, illustrated in light yellow on the cross-sections, predominate in the upper part of the vadose zone and are generally porous, coarse-grained deposits with relatively low percentages of fines. Fine-grained sediments, illustrated in tan and brown, predominate in the lower part of the upper vadose zone and make up the upper aquitard. Fine-grained intervals vary in sediment characteristics between borings.

In general, subsurface lithology was classified into three categories: 1) coarse-grained materials, including well- to poorly-graded sands, silty sands, and clayey sands; 2) fine-grained sediments, including silts, sandy silts, and clayey sands; and 3) clays. Due to the gradational variations historically observed in the aquitard, clayey sands encountered at depths ranging from 90 to 110 feet bgs are interpreted to be a gradational feature of the aquitard. Furthermore, lithologic correlations observed within the cross-sections were made between boreholes located within 400 feet of one another. If a specific borehole was located more than 400 feet away from another borehole, lithology between the boreholes was inferred based on interpretation and projection of boreholes within the vicinity.

4.4.8 Regional Hydrology

The upper fine-grained zone described in Section 4.4.7 is not an important source of groundwater. However, it is an important zone because recharge and discharge occurs through this zone (Olmsted et al., 1973).

The major source of groundwater in the upper alluvial portion of the groundwater reservoir is infiltration from the Colorado River. Another source of infiltration is the irrigation of citrus orchards on Yuma Mesa, which has occurred since the 1940's (Dickinson et al., 2006). This irrigation has created an elevated groundwater surface or "mound". This mound was created because water is infiltrated at a rate exceeding the subsurface sediments ability to transmit this water vertically and laterally.

Another possible cause or contributing factor associated with groundwater mounding beneath Yuma Mesa may be shallow bedrock, or bedrock "high" discovered using subsurface geophysical survey methods. As groundwater migrates through subsurface sediments and comes in contact with a surface such as this, groundwater levels increase on the upgradient side of the high. This results in some mounding effect on the upside of the subsurface high. With continued infiltration as in the case of the Yuma Mesa groundwater mound this effect can be amplified over time (Olmsted et al., 1973).

The groundwater mound has been estimated to contain 600,000 acre-feet of additional groundwater storage. The northwest limits of the mound approach the subject site location where groundwater models have estimated mounding of zero to four feet above the static water level. Flow away from the groundwater mound will be radial from the perimeter of the mound for some distance until the regional groundwater gradient (south-southwest) is re-established. The proximity of this mound correlates with the predominately northwest groundwater flow direction documented at the subject Site (Olmsted et al., 1973). There may be additional localized effects on groundwater flow at the Site location. Olmsted et al. (1973) estimated the transmissivity of the upper alluvium at 100 to 200 gallons per day per foot.

4.5 SITE-SPECIFIC HYDROGEOLOGY

4.5.1 Groundwater Movement

In general, the historic groundwater flow directions and gradients observed at the Facility and the Site have been relatively consistent since the early installation of groundwater monitoring wells at the Facility. The groundwater gradient across the Facility was calculated to be approximately 0.001 feet/foot (ft/ft) to the west-northwest. In addition, historically calculated groundwater gradients for the northwestern and southern portions of the Site range from approximately 0.001 ft/ft to 0.011 ft/ft.

During the period from October 1993 to November 1996, depth to groundwater at the Facility was approximately 70 to 72 feet, and groundwater flow direction was to the west-northwest (Foree & Vann, 1993c and GEC, 1996). From 2001 through 2011, depths to groundwater in wells located on the Facility have been measured between 75 and 78 feet bgs, with gradual 1 to 2 foot fluctuations in most of the wells. Depths to groundwater in Site

wells located off the Facility have historically ranged from 71 to 82 feet bgs (depending on the zone of the aquifer), with gradual fluctuations of 1-foot since their installations.

It should be noted that, based on previous groundwater events, there is evidence that the portion of the Site located south and west of MW-5A has a different shallow groundwater flow direction compared with the dominant west-northwest regime at the Site. One flow direction is observed on the Facility, and generally flows east to west, as evidenced by the majority of on-Facility A-Zone monitoring wells (MW-1 through MW-7), and to a lesser extent C-Zone monitoring wells MW-103C and MW-104C. The second flow regime is noted in several A-Zone monitoring wells, MW-5, MW-10A, MW-19A, MW-20A, which indicate that the groundwater flow direction in this area is to the southwest. Possible influences on flow regime in this area southwest of the Facility include: variations in local production pumping, the hydraulic differences due to the presence of a thick clay unit (the lower part of the screened interval of MW-10A is in this clay), recharge from the nearby YCFCD drainage basin, and local variations in water levels associated with the groundwater mound beneath Yuma Mesa from the nearby Yuma Hills (see Section 4.4.8).

4.5.2 Vertical Hydraulic Gradients

Comparison of potentiometric head measurements in the nested wells at the Site, including well series MW-8, MW-17, MW-18, MW-21, MW-102, MW-103, and MW-104 show evidence of varying vertical gradients in the aquifer at the Site. Historical groundwater elevation data for these and other Site wells is presented in Table 2-5, and the most recent 2012 for these wells is summarized below.

Groundwater levels in wells located at the Facility including well series MW-102, MW-103, and MW-104 and in well series MW-8, approximately 1,350 feet northwest of the Facility, indicated a downgradient vertical gradient in the aquifer at the Site.

- MW-8 – Groundwater elevations in MW-8A, B, and C were 120.27, 119.84, and 119.63 feet amsl, respectively;
- MW-102 – Groundwater elevations in MW-102A, B1, and B2 were 121.69, 121.62, and 121.58 feet amsl, respectively;
- MW-103 – Groundwater elevations in MW-103B and C were 121.58 and 121.55 feet amsl, respectively; and
- MW-104 – Groundwater elevations in MW-104B and C were 120.85 and 120.87 feet amsl, respectively. Historical data for the MW-104 well series indicate a greater gradient of 0.3 or 0.4 feet difference between groundwater elevations, indicating a relatively consistent downward gradient.

However, upward vertical gradients were observed in the furthest downgradient well series including MW-17, MW-18, and MW-21.

- MW-17 – Groundwater elevations in MW-17A and C were 119.20 and 119.79 feet amsl, respectively, indicating a upward vertical gradient;

- MW-18 – Groundwater elevations in MW-18A and B were 118.51 and 118.53 feet amsl, respectively; and
- MW-21 – Groundwater elevations in MW-21A, B, and C were 117.77, 117.76, and 119.79, respectively.

The presence of a downward vertical gradient in the vicinity of the Facility implies the likelihood of downward flow of groundwater which would increase downward transport of dissolved phase COCs. The cause of the downward gradients remains undetermined, but as it is not observed in the areas where Clay B is present to the west, the cause is likely to be east of the Clay B pinch-out, and likely east of the Facility. The cause of the downward gradients is unlikely to be related to infiltration of precipitation across the Site, since the presence of the Clay B would likely cause increased, rather than decreased downward gradients, since a clay layer would restrict downward flow and cause further mounding in the A Zone.

4.5.3 Aquifer Testing – ADEQ, March 2008

To assist in calibrating a groundwater flow model (see Section 3.5.3), two aquifer tests were performed on one A-Zone well (MW-8A) and on one B-Zone well (EW-1) in March 2008. All work was performed in accordance with an ADEQ-approved aquifer test plan (GeoTrans, 2008g).

Fifteen observation wells were located within approximately 1,000 feet of the two test wells. Water levels were recorded automatically every 2 minutes in the pumped and observation wells. The first test was conducted at B-Zone extraction well EW-1, which was pumped at an average rate of 38.9 gallons per minute (gpm) during a 25-hour period. The second aquifer test was conducted at MW-8A as an A-Zone extraction well. In the MW-8A pump test, pumping at 8 gpm caused drawdown to reach the submersible pump intake in less than one minute; so the test was restarted with a reduced pumping rate of approximately 1.5 gpm for a 17-hour period.

During the B-Zone test, drawdown was observed at nearby wells that included MW-8A, MW-8B, PZ-1B, and PZ-2B. Drawdown was observed in both the shallow (A-Zone) and middle (B-Zone) zones of the aquifer, indicating that there is a hydraulic connection between the two zones of the aquifer. The time-drawn data were analyzed using the Aqtesolv® program to estimate aquifer hydraulic properties. The B-zone aquifer transmissivity was estimated to be 2,700 square feet per day (ft^2/day), and storage coefficient 0.0023. The A-zone aquifer transmissivity was estimated to be 9 ft^2/day and a storage coefficient 0.0004, assuming a specific yield of 0.2 (GeoTrans, 2008g).

4.5.4 Groundwater Modeling – ADEQ, March 2008

In 2008, a groundwater flow model was calibrated using the data collected in the March aquifer testing (Section 4.5.3). The primary objective of the modeling was to predict the extent of hydraulic capture for various remedies involving groundwater pumping scenarios. In addition, the calibrating flow model could also be used to estimate how long it may take for the contaminants to reach the vicinity of potential receptors. The values obtained during

the aquifer testing were slightly adjusted (i.e., B-Zone transmissivity was reduced from 2,700 ft^2/day to 2,400 ft^2/day) within reasonable ranges to obtain an acceptable match between observed and simulated heads and/or calibration targets. Given an aquifer thickness of approximately 50 to 60 feet for the middle zone of the aquifer, the hydraulic conductivity of the middle zone is expected to be on the order of 40 to 50 feet per day (ft/day) (GeoTrans, 2008k).

In addition, the calibrated flow model suggested that the groundwater velocity in the middle zone of the aquifer is on the order of 100 feet/year (ft/yr); calculation as follows:

$$v = ki/n = 50 \text{ ft/day} * 0.001 / 0.2 = 0.25 \text{ ft/day} = 91 \text{ ft/yr}$$

Where: v = velocity;
k = hydraulic conductivity (50 ft/day)
i = hydraulic gradient (approximately 0.001 ft/ft)
n = porosity (assume 0.2)

This is consistent with site parameters including the size of the plume, which is on the order of 3,200 feet long, and releases at the Facility (i.e., potential introduction of contaminants to the aquifer) occurring up to 45 years ago. Plume transport is affected by dispersion and retardation due to sorption, but it is reasonable to assume that plume migration towards potential receptors might occur on the order of 100 ft/yr (GeoTrans, 2008k).

4.5.5 Groundwater Field and Natural Attenuation Parameters

Field Parameters

The field parameters of temperature, conductivity, pH, dissolved oxygen (DO), and oxidation-reduction potential (ORP) were recorded during each groundwater sampling event for the Site. Most of the wells have similar field parameters. Table 4-1 presents the most recent (August 2010 through February 2011) field parameters recorded from the monitoring wells at the Site.

During the more recent sampling events, temperatures generally ranged from 26.3 degrees Centigrade (ºC) to 34.8 ºC; conductivity ranged from 0.91 millisiemens per centimeter (ms/cm) to 6.75 ms/cm and, pH in the monitoring wells ranged from 6.52 to 8.19. Recorded values for DO in the monitoring wells ranged from 0.23 to 11.55 and ORP ranged from -291 to 304 (Tetra Tech GEO, 2011).

Natural Attenuation Parameters

Between November 2004 and January 2005, a total of 19 groundwater samples were analyzed for various natural attenuation compounds. A detailed table presenting the detected natural attenuation compounds is presented in Table 4-2 and a summary is presented below:

- Total organic carbon (TOC) was detected in one well (MW-5) at 1.2 milligrams per liter (mg/L);
- Methane was detected in 6 wells ranging from 0.99 to 5.9 mg/L;
- Ethane was detected in one well (MW-10) at 0.71 mg/L;
- Sulfate was detected in all 19 wells and ranged from 200 to 2,100 mg/L;
- Chloride was detected in all 19 wells and ranged from 210 to 1,600 mg/L;
- Nitrate-Nitrite was detected in 16 wells ranging from 0.020 to 25 mg/L;
- Nitrite was detected in 5 wells ranging from 0.027 to 0.13 mg/L;
- Alkalinity, Bicarbonate was detected in all wells ranging from 110 to 260 mg/L;
- pH was recorded in 15 wells and ranged from 6.94 to 7.98;
- DO was recorded in 15 wells and ranged from 0.05 to 5.08;
- ORP was recorded in 13 wells and ranged from 71 to 480;
- Total manganese was detected 15 wells ranging from 0.13 to 3.2 mg/L;
- Dissolved manganese was detected 10 wells ranging from 0.07 to 1.1 mg/L;
- Total sodium was detected in all 19 wells ranging from 52 to 1,300 mg/L;
- Dissolved sodium was detected in 17 wells ranging from 52 to 1,300 mg/L;
- Total potassium was detected in all 19 wells ranging from 9.1 to 40 mg/L;
- Dissolved potassium was detected in 17 wells ranging from 7.5 to 30 mg/L;
- Total calcium was detected in all 19 wells ranging from 87 to 420 mg/L;
- Dissolved calcium was detected in 17 wells ranging from 28 to 390 mg/L;
- Total magnesium was detected in all 19 wells ranging from 9.2 to 120 mg/L; and
- Dissolved magnesium was detected in 17 wells ranging from 7 to 160 mg/L.

No discernible trends were noted between the A-Zone and B-Zone wells, and/or between the on-Facility and off-Facility wells in comparing detected field and/or natural attenuation parameters.

The AWQS for nitrate and nitrite as nitrogen and for nitrate are 10 mg/L; the AWQS is 1 mg/L. Nitrite was not detected above AWQS at the Site during this one-time sampling event. Although nitric acid has been recorded as being used during previous operations at the Facility; however, no spills and/or releases have been reported. The nitric acid wash tank was previously used at the Facility, and its contents were reportedly spread into soil at the Facility. The tank was located in Building 2 (Figure 1-2), and its' contents were likely spread on soils south and/or east of Building 2. Nitrate concentrations were not detected above the AWQS in groundwater wells (MW-3A and MW-4A) near Building 2.

According to the ADWR records, there are multiple cross-gradient and upgradient wells within a five-mile radius of the Site where concentrations of nitrate exceed regulatory limits. Also of note are the historical operations of large-scale agricultural activities in the Yuma Basin. Nitrates are mainly produced for use in fertilizers because of their high solubility and biodegradability. The main nitrates are ammonium, sodium, potassium, and calcium salts. Several million kilograms of fertilizers containing nitrates are produced annually for this purpose in the Yuma Basin (ADWR, 2011). At this time it is unknown if the elevated concentrations of nitrate is connected to former operations at the Facility. Therefore, the lack of analytical data concerning nitrate concentrations in groundwater is identified as a data gap, and additional sampling should be conducted to determine if nitrate concentrations in groundwater are related to former operations at the Facility.

4.5.6 Geotechnical Parameters of Selected Soil Samples

Selected soil samples from the borings SB-01 and SB-04 were submitted for laboratory testing for total organic compound (TOC) analysis, hydraulic conductivity, moisture content, dry density, porosity, and percent composition. Samples from depths of 10, 40, and 70 feet bgs were submitted for soil boring SB-01 and samples from depths of 20, 40, 60, and 70 were submitted for soil boring SB-04. A detailed summary of the data is presented in Table 4-3.

The samples from each soil boring were averaged. Sediments from SB-01 had an average dry density of 1.61 grams per cubic centimeter (g/cc); 10.27 percent moisture; 0.0023 centimeter per second (cm/sec) for hydraulic conductivity; TOC of 0.25 percent; and total porosity of 39.3 percent. The sediment composition of soil boring SB-01 was dominated by 77 percent sand, followed by 8 percent gravel, 8.2 percent silt, and 6.6 percent clay.

Sediments from SB-04 had an average dry density of 1.50 g/cc; 9.45 percent moisture; 0.00136 cm/sec for hydraulic conductivity; TOC of 0.12 percent; and total porosity of 43.4 percent. The sediment composition of soil boring SB-01 was dominated by 72.9 percent sand, followed by 14.4 percent silt, 12.7 percent clay, and 0.05 percent gravel.

5.0 NATURE AND EXTENT OF CONTAMINATION AND FATE AND TRANSPORT

This section describes the nature and extent of the COCs in soil and groundwater beneath the Site, as well as the fate and transport characteristics of these COCs. Based on review of the historical data from the initial Site investigations in 1992 through the fourth quarter of 2012, the COCs in soil, soil vapor, and groundwater at the Site are total and free (amenable to chlorination) cyanides, as well as PCE and its breakdown products: TCE, and cis-1,2-DCE. Another COC identified at the Site is 1,1-DCE. While 1,1-DCE is formed by anaerobic biodegradation of TCE, it is also an abiotic degradation product of 1,1,1-TCA, which has been detected in soil vapor and groundwater at the Site.[1] 1,1-DCE is also formed by cometabolism of 1,1,1-TCA (WRHSRC, 2003) during the anaerobic biodegradation of TCE (EPA, 2009). 1,1,1-TCA has been occasionally detected in groundwater beneath the Site and is consistently detected in soil vapor samples collected at the Site. The compound 1,4-dioxane, commonly used as a stabilizer of 1,1,1-TCA has also been detected in groundwater samples from Site wells as well as Facility wells. These data suggest that 1,1,1-TCA has been released to the environment at the Site. DEHP was also detected in sludge, soil, and groundwater samples collected at the Site in 2007 and 2008.

5.1 NATURE AND EXTENT OF SOIL CONTAMINATION

Numerous soil samples were collected at the Facility during investigations conducted between 1990 and 2004. Based on the soil investigations, PCE and cyanides were the dominant chemicals detected in soil.

PCE was detected at depths ranging from 5 feet bgs to 70 feet bgs in the source areas. The highest concentrations of PCE in soil were detected in soil samples collected from soil borings 4255-1 through 4255-3, advanced beneath former WDS-1. PCE concentrations ranged from 0.033 mg/kg (5 feet bgs in 4255-1) to 0.75 mg/kg (20 feet bgs in 4255-3). Other COCs, including TCE, cis-1,2-DCE, and 1,1-DCE (and 1,1,1-TCA) were either not detected above laboratory reporting limits or were not analyzed.

The lateral extent of soil contamination of PCE in the vadose zone is confined to the source areas on the Facility, specifically in the area beneath former WDS-1 and the former wastewater disposal areas. PCE-contaminated soil has been documented from immediately below the WDS-1 and extends through the vadose zone to just above the aquifer to a depth of 70 feet bgs. Based on the data collected, contamination in soil originated from below former WDS and wastewater disposal areas.

Due to the difficulty of detecting VOCs in soil samples due to volatilization, the lateral extent of chlorinated hydrocarbons in soil may be more appropriately delineated by collection of soil vapor VOC samples, with the caveat that soil vapor concentrations may slightly change as concentrations diffuse in soil. Soil vapor is further discussed in the Section 5.2.

[1] Abiotic degradation of 1,1,1-TCA to 1,1-DCE in groundwater occurs rapidly, with a half-life of up to several years (EPA, 600/M-89/009; Gerkens, R.R. and J.A. Franklin, 1989; Wing, M.R., 1997).

Cyanide was detected in soil at depths ranging from 1-foot bgs to 70 feet bgs. The greatest cyanide concentrations were detected in three distinct areas:

- WDS-1 – The highest cyanide concentration in this area was detected just beneath the former WDS-1 sump location at 12 feet bgs, at a concentration of 430 mg/kg. Cyanide was detected in soil samples collected beneath WDS-1 to a depth of 50 feet bgs.
- Eastern Wastewater Disposal Area – The highest cyanide concentration was detected at a depth of 1 foot bgs at a concentration of 5,800 mg/kg. Cyanide was detected in soil samples collected beneath the eastern wastewater disposal area (former discharge location; Section 1.3.4.1) to a depth of 50 feet bgs.
- Southwest Wastewater Disposal Area – The highest detection of cyanide was 560 mg/kg at a depth of 1 foot bgs. However, cyanide was detected in the southwest disposal area (former discharge location; Section 1.3.4.1) from the ground surface to a depth of approximately 70 feet bgs.

Based on the historical analytical data shown in Table 2-1, the lateral extent of cyanide soil contamination at the Site is limited to the Facility and its immediate vicinity, as defined by soil samples collected at SS-138 to the north, GP-038 to the east, GP-205 and GP-207 to the south, and GP-462 to the west. (Figure 2-2).

The extent of DEHP contamination in soil is not well defined. The majority of soil samples collected from the Site were at the Facility and were not analyzed for DEHP. However, of the limited number of samples that were analyzed for DEHP, two samples had detections:1) the 10 foot soil sample from GP-063 at 0.26 mg/kg (on the western boundary of the Facility); and, 2) the 10 foot sample GP-387 at 0.17 mg/kg (60 feet east of the Facility's eastern boundary).

5.1.1 Conclusions

Numerous soil samples were collected at the Facility during investigations conducted between 1990 and 2004. The extent of COC contamination is as follows:

- The lateral extent of cyanide soil contamination at the Site is limited to the Facility and its immediate vicinity, and is defined by soil samples collected at SB-1 to the north, GP-038 to the east, GP-205 and GP-207 to the south, and GP-462 to the west.
- Due to the difficulty in detecting VOCs in soil samples due to volatilization, the lateral extent of chlorinated hydrocarbons in soil may be more appropriately estimated by VOC vapor data which is discussed in the Section 5.2.
- The extent of DEHP contamination in soil is not well defined. The majority of soil samples collected were not analyzed for DEHP. However, of the limited number of samples analyzed for DEHP, two samples had detections: the first on the western boundary of the Facility and a second 60 feet east of the Facility's eastern boundary.

5.2 NATURE AND EXTENT OF SOIL VAPOR CONTAMINATION

Soil vapor impacts are present at the Site due to two processes, off-gassing from soil contamination, and off-gassing from dissolved VOCs in the associated groundwater plume. Soil-vapor contamination is present at the Site in the areas beneath the locations of historical releases. These soil vapor impacts are caused by the soil to soil-vapor phase partitioning equilibrium between the soil contamination and the surrounding interstitial soil vapor. At shallow depths, this form of contamination may be a better indicator of soil contamination than the direct measurements of VOCs in soil samples due to the complications from volatilization of those compounds during the soil sample collection process itself. Soil vapor contamination can also occur due to off-gassing of the dissolved phase of the compound as it is transported downgradient in groundwater. In this second form, impacts are likely to be present in highest concentrations in the soil immediately above the water table. Soil vapor samples have been collected by three methods: a previously mentioned Gore-Sorber survey conducted in 2001, in-situ samples collected during soil boring advancement, and from soil vapor monitoring wells. A total of 68 soil vapor-monitoring wells (SVMWs) have been installed at the Site since 2003. The Gore-Sorber survey is included in Appendix C. Soil vapor well locations are shown on Figure 2-3. Historical soil vapor analytical results and SVMW screen intervals are presented in Table 2-4. Cross-sections presenting COC contamination in the subsurface are presented as Figures 5-1 through 5-7.

ADEQ uses the Regional Screening Levels (RSLs) developed by EPA for evaluating risk associated with intrusion of chemical contaminants in soil and groundwater under occupied buildings. RSLs have been developed for both residential and commercial occupancies. EPA periodically updates the RSLs and lists most current values on its website at http://www.epa.gov/region09/superfund/prg/.

The RSLs represent the lower threshold for vapor concentrations in indoor air. ADEQ adjusts the RSLs to estimate vapor concentrations in soil vapor by applying an attenuation factor of 0.03, to calculate the soil vapor screening level (SVSLs). The attenuation factor is from a study conducted by EPA on attenuation of chlorinated hydrocarbons in residential buildings (2012, EPA). Use of attenuation factors allows for direct comparison between measured concentrations in soil vapor and the soil vapor screening level. If measured concentrations exceed the SVSLs, additional investigation is warranted. The SVSLs for PCE, TCE, and HCN are summarized in µg/m^3 in the table below.

Compound	Residential		Commercial	
	Cancer Risk (Target Risk = 10^{-6})	Hazard Index	Cancer Risk (Target Risk = 10^{-5})	Hazard Index
PCE	**367**	1,400	15,670	**6,000**
TCE	**16**	70	1,000	**293**
HCN	NA	**28**	NA	**117**

The SVSLs shown in the table above are based on the RSL values listed in EPA's website that were updated in May 2014. The bolded values shown in the table above represent the driving concentrations that will be used in vapor intrusion evaluations.

Based on the soil vapor sampling conducted in 2011, only PCE has been detected at concentrations exceeding the SVSLs. TCE and HCN were not detected at concentrations exceeding the applicable SVSLs during this event. PCE concentrations detected in SVMW-18 with screen intervals deeper than approximately 20 feet exceeded the commercial hazard index SVSLs as shown in Figure 5-8. Soil vapor testing is discussed further in the following paragraphs.

5.2.1 Soil Vapor VOC Contamination (on the Facility)

Historically, the highest PCE concentrations in soil vapor on the Facility were detected in in-situ soil vapor samples collected from soil boring SB-04 (in 2003) where PCE was detected at concentrations ranging from 82,000 µg/m^3 at 10 feet bgs to 280,000 µg/m^3 at 70 feet bgs. The maximum TCE soil vapor concentrations on the Facility were detected in soil vapor samples collected from soil boring SB-08 in 2004 (up to 41 µg/m^3 at an approximate depth of 70 feet bgs). The maximum 1,1-DCE soil vapor concentrations at the Facility were detected in soil vapor samples collected from SVMW-1D (up to 250 µg/m^3 at approximate depth of 35 feet bgs). 1,1,1-TCA was identified to be present in soil vapor at elevated levels in the vicinity of WDS-2 during the passive soil-vapor Gore-Sorber survey. 1,1,1-TCA has also been detected in the soil vapor samples collected from SVMW-1 series and soil boring SB-08. The highest concentrations of 1,1,1-TCA were detected from SVMW-1E in 2004 at concentrations up to 280 µg/m^3 at approximate depth of 50 feet bgs; in addition, 270 µg/m^3 was detected at approximate depths of 35 feet and 65 feet bgs from SVMW-1 (Table 2-4). Cis,1-2 DCE has not been detected above the laboratory limits in the soil vapor samples collected from the Facility.

During the most recent soil vapor sampling event (January 2011), the overall consistent and highest concentrations of PCE in soil vapor on the Facility were detected near the former location of WDS-1 in SVMW-1C, D, E, and F (Figure 2-1) and are presented below:

- PCE was detected at 4,750 µg/m^3 at approximately 20 feet bgs;
- PCE was detected at 3,870 µg/m^3 at approximately 35 feet bgs;
- PCE was detected at 3,800 µg/m^3 at approximately 50 feet bgs; and
- PCE was detected at 2,370 µg/m^3 at approximately 65 feet bgs.

TCE was only detected in one well on the Facility in 2011; SVMW-1C at a concentration of 26.9 µg/m^3 from approximately 20 feet bgs. 1,1-DCE was detected in this sample at a concentration of 27.8 µg/m^3. 1,1,1-TCA was detected in soil vapor samples collected from SVMW-1C,D,E, and F at concentrations ranging from 27.3 µg/m^3 (at 35 feet bgs) to 43.7 µg/m^3 (at 65 feet bgs; Table 2-4). The soil vapor samples collected from the facility were not analyzed for selenium.

In 2011, concentrations of PCE in the SVMW-16 well series generally increased with depth and ranged from 461 µg/m^3 in SVMW-16A (at approximately 5 feet bgs) to 5,490 µg/m^3 in SVMW-16E (at approximately 50 feet bgs). TCE was also detected in the SVMW-16 well series at depths starting at 10 feet bgs and followed the same increasing trend to approximately 50 feet bgs. Concentrations of TCE ranged from 9.67 µg/m^3 in SVMW-16B (at approximately 5 feet bgs) to 69.8 µg/m^3 in SVMW-16E (at approximately 50 feet bgs). 1,1-DCE, 1,1,1-TCA, and hydrogen cyanide were not detected in the soil vapor samples collected from the SVMW-16 well series in 2011.

5.2.2 Hydrogen Cyanide in Soil Vapor (On Facility)

The majority of soil vapor samples collected in 2003 and 2004 were also analyzed for hydrogen cyanide. Concentrations of hydrogen cyanide were detected in soil vapor samples collected from borings SB-01 through SB-07, and in soil vapor monitoring wells SVMW-1C and SVMW-1E (Figure 2-1). The highest concentrations were detected in SVMW-1C (140 µg/m^3) and SVMW-1E (110 µg/m^3) at depths of approximately 20 feet bgs and 50 feet bgs, respectively (Table 2-4).

Hydrogen cyanide was not detected above the laboratory reporting limit in the soil vapor samples analyzed from the Facility in 2010 or 2011 (Table 2-4).

5.2.3 Summary of Soil Vapor Contamination (on the Facility)

Based on the data collected, the vertical extent of PCE in soil vapor at the Facility is to depths of approximately 70 feet bgs; however the lateral extent of PCE in soil vapor on the Facility is not completely defined. Based on the data presented in Table 2-4 and in Figures 5-2 through 5-7, the soil vapor contamination appears to extend beyond the Facility boundary.

The vertical extent of TCE at the Facility encompasses its entire footprint to a depth of approximately 70 feet bgs, and is especially found in the WDS-1 and southwest wastewater disposal source areas. It should be noted that TCE was analyzed in most of the soil vapor samples from the Facility; however; the laboratory detection limits were exceedingly high (ranging from 1,000 µg/m^3 to 20,000 µg/m^3) due to elevated concentrations of PCE. Concentrations of TCE (in SVMW-1 well series and in SB-08) were only detected at concentrations ranging from 2.1 µg/m^3 to 41 µg/m^3. Therefore, while TCE was not detected in the soil vapor samples collected, it is likely that TCE contamination in the vadose zone is present laterally throughout the Facility footprint, and the lateral extent of TCE is unknown.

PCE and TCE soil vapor contamination is believed to be representative of soil contamination partitioning at the Facility, particularly near WDS-1, and due to off-gassing of the underlying groundwater plume toward the western edge of the Facility.

1,1-DCE, and to a lesser extent 1,1,1-TCA, have been detected in soil vapor samples collected from the WDS-1 (SVMW-1 well series) and southwest wastewater disposal (SB-08) source areas and is vertically defined to approximately 70 feet bgs. 1,1-DCE (and 1,1,1-TCA) has not been analyzed in any other soil vapor samples collected at the Facility, and therefore, the lateral extent of 1,1-DCE at the Facility is unknown.

While hydrogen cyanide was not detected above the laboratory reporting limits in soil vapor samples analyzed from the Facility in 2010 or 2011 (Table 2-4), the vertical extent of cyanide at the Facility has been previously documented to a depth of approximately 70 feet bgs based on testing of soil samples. Historical data suggests the lateral extent of hydrogen cyanide in soil vapor on the Facility is not completely defined (Table 2-4), and that it may extend beyond the Facility boundary.

Cis,1-2 DCE has not been detected above the laboratory limits in the soil vapor samples collected from the Facility.

5.2.4 Soil Vapor VOC Contamination (off the Facility)

In-situ soil vapor samples were collected off the Facility between 2005 and 2011 in one of three ways: 1) during the installation of monitoring wells; 2) during a 2008 active soil gas survey, and; 3) from dedicated soil vapor monitoring wells (SVMWs) as shown on Figure 2-3.

Installation of Groundwater Monitoring Wells

During the installation of groundwater monitoring wells off the Facility, soil vapor samples were collected at approximately 10 feet bgs. PCE was detected at concentrations ranging from 10.85 µg/m^3 in well MW-10A (in 2005) to 1,831.06 µg/m^3 in well MW-22B (in 2007). Concentrations of TCE were detected in only two of soil vapor samples collected during groundwater monitoring well installations; at 44.60 µg/m^3 in well MW-12A (in 2006) and at 112.83 µg/m^3 in well MW-22B (in 2007). Concentrations of hydrogen cyanide were detected in soil vapor samples from wells MW-13A, MW-14A, and MW-15A at concentrations of 68.2 µg/m^3, 52.5 µg/m^3, and 52.5 µg/m^3, respectively (Table 2-4).

1,1-DCE, cis-1,2- DCE, and 1,1,1-TCA were not detected above the laboratory reporting limits in samples obtained during monitoring well installations.

Active Soil Vapor Survey

In September 2008, a total of 30 soil vapor samples were collected from the industrial area northwest of the Facility at depths of approximately 5 feet bgs (Figure 5-8A). PCE was detected during this survey at concentrations ranging from 10 µg/m^3 (SVS-7 and SVS-20) to 4,800 µg/m^3 (SVS-27). TCE was detected at concentrations ranging from 11 µg/m^3 (SVS-28) to 86 µg/m^3 (SVS-26; Table 2-4). The locations with measurements of elevated soil vapor VOC concentrations are generally aligned with the axis of the underlying Site groundwater plume. At the shallow depth of 5 feet, the observed concentrations of PCE and TCE present in SVS-15, SVS-16, SVS-17, SVS-26, SVS-27, SVS-28 seem significantly higher than those observed elsewhere as part of this study. As surveys of historical chemical usage by industry in the area have not revealed indication of an alternate source of VOCs associated with these impacts, it has been assumed that they are due to off-gassing from the underlying groundwater plume.

1,1-DCE, cis-1,2- DCE, and 1,1,1-TCA were not detected above the laboratory reporting limits in the soil vapor survey. Hydrogen cyanide was not analyzed as part of the active soil vapor survey.

Dedicated SVMW Soil Vapor Sampling

During the most recent sampling event, the highest concentrations of chlorinated-hydrocarbon COCs in soil vapors across the Site were located in the industrial area located northwest of the Facility (Figures 2-3 and 5-8). Well series SVMW-11, SVMW-16 and SVMW-18 had the highest detections of COCs at the Site (Table 2-4). The data for these wells are presented below:

- SVMW-11 – In 2011, concentrations of PCE in the SVMW-11 well series ranged from 1,760 µg/m^3 in SVMW-11E (at approximately 40 feet bgs) to 5,970 µg/m^3 in SVMW-11C (at approximately 20 feet bgs). In general, soil vapor concentrations in this well increased with depth between the ground surface and 20 feet bgs, and decrease with depth from below 20 feet bgs. TCE was also detected in the SVMW-11 well series at depths of up to approximately 35 feet bgs and followed the same increasing trend to 20 feet bgs. Concentrations of TCE ranged from 26.3 µg/m^3 in SVMW-11A (at approximately 10 feet bgs) to 43 µg/m^3 in SVMW-11C (at approximately 20 feet bgs). 1,1-DCE, 1,1,1-TCA, and hydrogen cyanide were not detected in the soil vapor samples collected from the SVMW-11 well series in 2011.
- SVMW-18 – In 2011, concentrations of PCE in the SVMW-18 well series ranged from 3,320 µg/m^3 in SVMW-18A (at approximately 5 feet bgs) to 15,600 µg/m^3 in SVMW-18F (at approximately 60 feet bgs). In general, soil vapor concentrations in this well increased with depth from the ground surface to the bottom of the well at 60 feet bgs. TCE was also detected in the SVMW-18 well series in the last three depth intervals at depths of up to approximately 35, 50 and 60 feet bgs. Similar to PCE, the TCE concentrations increased with depth with the highest concentrations of TCE at 258 µg/m^3 in SVMW-18F. 1,1-DCE, and 1,1,1-TCA were not detected in the soil vapor samples collected from the SVMW-18 well series in 2011. Hydrogen cyanide was not analyzed in the soil vapor samples collected from the SVMW-18 well series.

The highest concentrations of chlorinated-hydrocarbon COCs in soil vapors across the Site were located in soil vapor wells SVMW-11,-16, and -18 in the industrial area located northwest of the Facility. The elevated soil vapor concentrations correspond directly with the location of elevated chlorinated-hydrocarbon COCs in the A-Zone of the groundwater aquifer at the Site (Figures 5-2 through 5-7, 5-8, and 5-15). Groundwater monitoring wells containing the highest concentrations of PCE in November 2012 include wells MW-22A (320 µg/L), MW-6A (87 µg/L), and MW-7A (46 µg/L) which are located near or adjacent to the above mentioned SVMW wells, had detected PCE concentrations during the November 2012 groundwater sampling event of 320 µg/L, 87 µg/L, and 46 µg/L, respectively. In addition, the elevated soil vapor concentrations in the industrial area northwest of the Facility warrant further investigations.

As mentioned above, hydrogen cyanide has been detected off the Facility in soil vapor samples collected from downgradient groundwater monitoring wells in 2006. Hydrogen

cyanide was detected more recently in 2008 from two of the soil vapor samples collected from dedicated SVMWs. Hydrogen cyanide was detected at 121 µg/m^3 in SVMW-2B at 10 feet bgs, and at 117 µg/m^3 in SVMW-3A at 5 feet bgs (Table 2-4).

5.2.5 Summary of Soil Vapor Contamination off the Facility

Soil vapor contamination in the vadose zone extends laterally approximately 2,400 feet downgradient (northwest) from the source area at the Facility. With the exception of cyanide, concentrations of COCs in soil vapor have been detected vertically to depths of 70 feet bgs and concentrations have been increasing in the SVMWs since their installation. Hydrogen cyanide has only been detected at depths of up to 10 feet bgs.

Based on the soil vapor data collected from the Site, it appears that the COC contamination in shallow soil vapors (ground surface to 10 feet bgs) have been adequately defined. However, COC contaminants in subsurface soils below 10 feet bgs have not been completely defined, and the lateral downgradient extent of COC in soil vapors (particularly PCE) due to off-gassing from the dissolved phase groundwater plume is unknown.

In general, the cause for the soil vapor in wells off the Facility appears to be related to off-gassing from the underlying groundwater plume. Based on an industrial survey and results of soil vapor sampling, no evidence of other sources of COCs have been identified.

5.3 CONTAMINATED ZONES OF THE AQUIFER

For the purposes of evaluating the groundwater flow and resulting transport of COCs, the aquifer has been subdivided into three zones based on the depths of the identified clay units. Zone A represents the aquifer from the land surface down to an approximate depth of 105 feet bgs, which is consistent with the saturated zone overlying Clay B. Zone B represents the aquifer below Zone A to a depth of approximately 170 feet bgs, consistent with the saturated interval overlying Clay A. Zone C represents the aquifer present below 170 feet bgs and underlying Clay A (Figures 4-3 through 4-6). Each of the groundwater wells at the Site are assigned a letter designation of A, B, or C, identifying which zone they are screened.

The Site groundwater monitoring/sampling network consists of 48 groundwater monitoring wells, two triple-nested piezometer wells, one extraction well, and two production wells that are screened within various zones of the aquifer. Observed water levels in the monitor wells have shown seasonal variations, typically rising during the winter and spring, and falling during the summer and fall (see hydrographs in Appendix F). Groundwater well construction details, including measured elevation and screened intervals, are presented in Table 2-5. In addition to the aquifer characteristics presented below, other pertinent information is presented in Section 4.5.

5.3.1 Groundwater Movement

Groundwater levels have remained relatively stable at the Site at depths of approximately 80 feet bgs. Fluctuations of approximately 1 to 2 feet bgs have been observed in the

groundwater wells throughout the Site from 2001 through 2013. However, previous site investigation data shows a 4 to 5 foot decline in water levels between 1993 and 2001.

Comparison of potentiometric head measurements in the nested wells at the Site, including well series MW-8, MW-17, MW-18, MW-21, MW-102, MW-103, and MW-104, show evidence of varying vertical gradients in the aquifer at the Site. Historical groundwater elevation data for these and other Site wells are presented in Table 2-5. The most recent data (Fourth Quarter, 2013) for these wells are summarized below.

Groundwater levels in well series MW-104 at the Facility, and in well series MW-8 and MW-25, located downgradient approximately 1,400 to 2,700 feet northwest of the Facility indicated a downward vertical hydraulic gradient in the aquifer at the Site.

- MW-8 – Groundwater elevations in MW-8A, B, and C were 119.72, 119.27, and 119.08 feet amsl, respectively;
- MW-25 – Groundwater elevations in MW-25A and B were 118.04 and 117.96 feet amsl, respectively;
- MW-104 – Groundwater elevations in MW-104B and C were 120.69 and 120.43 feet amsl, respectively.

However, upward vertical gradients were observed in the further down-gradient and northern well series including MW-17, MW-21, MW-26 and MW-27.

- MW-17 – Groundwater elevations in MW-17A and C were 118.65 and 119.25 feet amsl, respectively, indicating a upward vertical gradient;
- MW-21 – Groundwater elevations in MW-21A, B, and C were 117.13, 117.08, and 117.20 feet amsl, respectively; and
- MW-26 – Groundwater elevations in MW-26A and B were 119.67 and 120.19 feet amsl, respectively.
- MW-27 – Groundwater elevations in MW-27A and B were 120.09 and 120.19 feet amsl, respectively.

Generally no vertical gradients were observed in the well series MW-102 and MW-103 at the Facility, and in well series MW-18 and MW-22, located downgradient approximately 2,400 and 600 feet northwest of the Facility.

- MW-18 – Groundwater elevations in MW-18A and B were 117.94 and 117.97 feet amsl, respectively.
- MW-22 – Groundwater elevations in MW-22A and B were 120.19 and 120.20 feet amsl, respectively;

- MW-102 – Groundwater elevations in MW-102A, B1, and B2 were 121.00, 121.01, and 121.08 feet amsl, respectively;

- MW-103 – Groundwater elevations in MW-103B and C were 121.11 and 121.12 feet amsl, respectively.

November 2013 groundwater elevations and groundwater contours in the A-Zone, B-Zone, and C-Zone of the aquifer are presented as Figures 5-9, 5-10, and 5-11. A summary of historical depth-to-water measurements and groundwater elevations is presented in Table 2-6.

5.3.1.1 A-Zone Groundwater Movement

As of November 2013, the A-Zone of the aquifer gradient across the Site was calculated to be approximately 0.001 ft/ft to the west across the Site (Figure 5-9).

5.3.1.2 B-Zone Groundwater Movement

As of November 2013, the B-Zone of the aquifer gradient across the Site was calculated to be approximately 0.001 ft/ft to the northwest across the Site (Figure 5-10).

5.3.1.3 C-Zone Groundwater Movement

As of November 2013, the C-Zone of the aquifer gradient across the Site was calculated to be approximately 0.001 ft/ft to the west-northwest across the Site (Figure 5-11).

5.3.2 Groundwater Contamination

In general, concentrations of COCs have decreased in groundwater wells since they were initially sampled. Beginning in 2008, ADEQ placed the groundwater monitoring well network on a reduced sampling schedule with selective wells being sampled on a semi-annual basis. In order to demonstrate the nature and behavior of the COC contamination at the Site over time, the following discussion presents data from the Site over three separate time periods: 2002, 2007, and 2012. These particular years were chosen to reflect the initial groundwater characterization stage at the Site (2002), mid-characterization phase and entire sampling of the well network (2007), and the most recent data collected at the Site (2013).

5.3.2.1 2002 Site Groundwater Contamination

As of 2002, a total of 8 A-Zone wells (MW-1A through MW-6A[11], MW-101A, and MW-102A) and 2 B-Zone monitoring wells (MW-102B1 and MW-102B2) had been installed at the Site. Nine of the wells were located on the Facility, and one well, MW-101A, was located approximately 150 feet east of the Facility boundary.

During the January 2002 groundwater monitoring and sampling event, samples were analyzed for VOCs and cyanides. In addition, samples from wells MW-5A and MW-6A were

[11] MW-4A was not installed in 2002 due to budgetary restrictions

analyzed for SVOCs and metals. PCE, TCE, 1,1-DCE, 1,1,1-TCA, and cyanides were detected in groundwater samples collected from the wells. Of the identified COCs, only PCE and cyanides were detected above their respective AWQSs (Table 2-7).

PCE was detected above the AWQS of 5 µg/L, at concentrations ranging from 2.3 µg/L in MW-101A to 420 µg/L in MW-2A (Table 2-7). Based on the 2002 analytical results, PCE contamination at the Site increased with depth in the aquifer. PCE was detected in wells MW-102A, MW-102B1, and MW-102B2 at concentrations of 75 µg/L, 320 µg/L, and 220 µg/L, respectively.

The highest concentrations of total and free cyanides were detected in the well MW-1A, at concentrations of 6.68 mg/L and 2.07 mg/L, respectively. The concentrations were above the AWQS for free cyanide of 0.2 mg/L. There is no AWQS currently established for total cyanide. Unlike PCE, cyanides did not increase with depth during the 2002 sampling event and were not detected above the AWQS in the B-Zone groundwater monitoring wells.

DEHP was not detected above the laboratory reporting limits in wells MW-5A and MW-6A, the two wells for which SVOC analyses were conducted in 2002 (Table 2-9). Since only limited DEHP analytical results are available during the early rounds of sample collection for the Site, three other sample results are identified prior to 2007 when a more complete set of analyses was performed. Although not part of the 2002 groundwater sampling event, SVOC analysis was conducted in June 2001 for three wells, MW-102B1, MW-102B2, and KL-1. DEHP was detected in MW-102B1 during 2001 at a concentration of 48 µg/L, and in MW-102B2 at a concentration of 62 µg/L. It was not detected in the sample from KL-1.

Based on the information gathered in 2002, the lateral and vertical extent of COC contamination was not completely defined. Figure 5-12 depicts extent of the COC plume boundary in 2002.

5.3.2.2 2007 Site Groundwater Contamination

By 2007, the well network included a total of 22 A-Zone wells (MW-1A through MW-21A, MW-101A, MW-102A), 9 B-Zone monitoring wells (MW-8B, MW-18B, MW-22B, MW23B, MW-102B1, MW-102B2, MW-103B, and MW-104B), and 5 C-Zone monitoring wells (MW-8C, MW-17C, MW-21C, MW-103C, and MW-104C). In addition, five monitoring wells (DMW-6, DMW-10, DMW-11, DMW-25, and DEW-19) from the Dieselville site that are screened in the A-Zone were also sampled in Fourth Quarter 2007.

During the Fourth Quarter 2007 groundwater monitoring and sampling event[12], PCE, TCE, 1,1-DCE, cyanides, and DEHP were detected in groundwater samples above their respective AWQSs (Tables 2-7 through 2-9). In addition, the SVOC 1,4-dioxane, which has historically been used as a stabilizer compound for 1,1,1-TCA, was detected in groundwater samples collected in November 2007 (Table 2-9). Although 1,4-dioxane is not considered a COC, since there is no AWQS established, it has been judged to be indicative of past releases of the compound 1,1,1-TCA, and has therefore been included in this discussion. A

[12] Analysis of total and dissolved metals was discontinued in 2007 due to budgetary restrictions.

technical memorandum on the relationship between 1,4-dioxane, 1,1,1-TCA, and the COC 1,1-DCE was prepare in 2007, and is included in Appendix G.

A-Zone Groundwater Monitoring Wells

PCE was detected in 14 of the 27 A-Zone wells during November 2007. Concentrations of PCE ranged from 1.6 µg/L in MW-101A to 310 µg/L in MW-8A. The AWQS for PCE of 5 µg/L was exceeded in 12 of the 14 wells.

TCE was detected in 8 of the 27 A-Zone wells at concentrations ranging from 0.65 µg/L in well MW-18A to 150 µg/L in well MW-8A; TCE concentrations detected in the samples obtained from wells MW-6A through MW-8A in November 2007 exceeded the AWQS of 5 µg/L.

1,1-DCE was detected in only 2 of the 27 A-Zone wells sampled and analyzed during November 2007, and was detected at concentrations of 0.97 µg/L in well MW-6A and 54 µg/L in well MW-8A. The concentration of 1,1-DCE in well MW-8A exceeded the AWQS of 7 µg/L.

Total cyanide was detected in 9 of the 27 A-Zone groundwater monitoring wells at concentrations ranging from 0.053 mg/L in MW-14A to 22 mg/L in MW-5A. Free cyanide was detected in 7 of the above mentioned wells at concentrations 0.024 mg/L to 3.2 mg/L in well MW-5A. A total of 5 wells had cyanide (total and/or free) concentrations above the AWQS for free cyanide of 0.2 mg/L. There is no AWQS currently established for total cyanide.

DEHP was detected in 2 of the 16 A-Zone wells that were analyzed for SVOCs, at concentrations of 3.3 µg/L in well MW-14A and 5.0 µg/L in well MW-15A[13]. Both of the concentrations were below the AWQS for DEHP of 6 µg/L.

In addition, 1,4-Dioxane was detected in 3 of the 16 A-Zone wells that were analyzed for SVOCs at concentrations ranging from 1.0 µg/L in MW-5A to 3.6 µg/L in well MW-1A[14]. 1,4-Dioxane was detected in 2007 in wells MW-1A, MW-5A, and MW-8A.

B-Zone Groundwater Monitoring Wells

PCE was detected in 5 of the 9 B-Zone wells during November 2007. Concentrations of PCE ranged from 1.1 µg/L in MW-18B to 870 µg/L in MW-8B (Table 2-7). The AWQS for PCE of 5 µg/L was exceeded in 4 of the 5 wells.

TCE was detected in 5 of the 9 wells at concentrations ranging from 0.55 µg/L in well MW-102B1 to 260 µg/L in well MW-8B; three TCE concentrations detected in November 2007 exceeded the AWQS of 5 µg/L.

[13] The highest concentration of DEHP in A-Zone wells during 2007 was in August at well MW-19A at a detection of 30 µg/L.

[14] The highest concentration of 1,4-Dioxane in A-Zone wells during 2007 was in June at well MW-8A at a detection of 11 µg/L.

1,1-DCE was detected in only 2 of the 5 B-Zone wells sampled and analyzed during November 2007, and was detected at concentrations of 1.6 µg/L in well MW-18B and 110 µg/L in well MW-8B. The concentration of 1,1-DCE in well MW-8B exceeded the AWQS of 7 µg/L.

Total cyanide was detected in 2 of the 9 B-Zone groundwater monitoring wells: 1.2 mg/L in MW-8B and 0.13 mg/L in MW-22B. Free cyanide was detected in these wells at 0.096 mg/L in well MW-8B to 0.042 mg/L in well MW-22B. In November 2007, only total cyanide in well MW-8B exceeded the AWQS for free cyanide of 0.2 mg/L. There is no AWQS currently established for total cyanide.

DEHP was detected in 5 of the 6 B-Zone wells at concentrations ranging from 10 µg/L in well MW-23B to 120 µg/L in well MW-21B. All of the detected concentrations were above the AWQS for DEHP of 6 µg/L.

In addition,1,4-Dioxane was detected in 2 of the 6 B-Zone wells at concentrations of 15 µg/L in well MW-8B and 4.1 µg/L in well MW-22B[15].

C-Zone Groundwater Monitoring Wells

PCE was detected in 2 samples analyzed from the 5 C-Zone and 2 downgradient school wells during November 2007. PCE was detected in well MW-8C at 2.3 µg/L and in well MW-103C at 0.56 µg/L, well below the AWQS for PCE of 5 µg/L. TCE was also detected in well MW-8B at a concentration of 1.2 µg/L, below the AWQS of 5 µg/L for TCE. TCE was not detected in other C-Zone wells in November 2007.

1,1-DCE, total cyanide, and free cyanide were not detected in C-Zone wells monitored and sampled in November 2007.

DEHP was detected in 4 of the 6 B-Zone wells at concentrations ranging from 8.9 µg/L in well MW-21C to 79 µg/L in well MW-103C. All of the detected concentrations were above the AWQS for DEHP of 6 µg/L[16]. 1,4-Dioxane was not detected above the laboratory reporting limit in C-Zone wells monitored and sampled during the Fourth Quarter 2007.

VOCs, SVOCs, and cyanides were not detected at or above their laboratory reporting limits in the groundwater samples collected from the Alice Byrne or St. Francis production wells during this groundwater sampling event. Historically, with the exception of cyanide detected at a concentration of 0.011 mg/L in the St. Francis well during the Second Quarter (July 2007) groundwater sampling event, cyanides have not been detected above the laboratory reporting limit in the Alice Byrne or St. Francis production wells.

[15] The highest concentration of 1,4-Dioxane in B-Zone wells during 2007 was in June at well MW-8B at a detection of 56 µg/L.

[16] The highest concentration of DEHP in C-Zone wells during 2007 was in August at well MW-8C at a detection of 80 µg/L.

Summary of Fourth Quarter 2007 Groundwater Sampling Event

Based on the 2007 analytical results, the highest concentrations of COCs at the Site were detected approximately 1,800 feet northwest (downgradient) of the source area in the MW-8 well series. In general, PCE and TCE contamination at the Site increased with depth in the aquifer, with the highest concentrations detected in MW-8B.

Furthermore, based on the 2007 data, the PCE and cyanide contamination in groundwater was estimated to extend laterally approximately 2,100 feet downgradient from the source area at the Facility[17]. However, the estimated lateral extent of the TCE and DEHP contamination at the Site was detected much further downgradient, approximately 3,100 feet from the source area at the Facility.

Based on the information gathered in 2007, the vertical extent of groundwater contamination exceeding the AWQS at the Site has been defined. While COCs have impacted the groundwater in the A- and B-Zones above the respective AWQSs, the C-Zone of the aquifer has been impacted by COCs (below AWQSs) indicating that contamination at the Site has extended beyond the deepest groundwater monitoring wells at the Site. The total depth of the contamination at the Facility and downgradient across the Site is unknown. Figures 5-13 through 5-15 depicts extent of the COC plume boundaries in 2007.

5.3.2.3 2013 Site Groundwater Contamination

By Fourth Quarter 2013, the well network included 48 groundwater monitoring wells, two triple-nested piezometer wells (PZ-1A,B,C and PZ-2 A,B,C), and one extraction well (EW-1). In addition, two downgradient school production wells (Alice Byrne and St. Francis) were included in the well network for groundwater sampling.

During this round of groundwater monitoring, Tetra Tech measured the depth-to-water in 46 selected wells; excluding the production wells at Alice Byrne Elementary and St. Francis of Assisi School. Groundwater samples were obtained from 38 selected monitoring wells, including 23 A-Zone wells (MW-1A through MW-6A, MW-8A, MW-9A, MW-13A through MW-22A, MW-26A, MW-27A, MW-101A, DMW-11, and DMW-25); 12 B-Zone wells (MW-8B, MW-18B, MW-21B through MW-24B, MW-26B, MW-28B through MW-30B, MW-102B2, and MW-104B); and three C-Zone wells (MW-8C, MW-21C, and MW-103C). Groundwater samples were also obtained from two school production wells (St. Francis and Alice Byrne). Groundwater samples were analyzed for VOCs using EPA Method 8260B, SVOCs using EPA Method 8270C, metals using EPA Method 200.8 and 245.1, and cyanides using Standard Method (SM) 4500 CN.

Figures 5-16 through 5-20 depict the estimated lateral extent of COC contamination in the A-Zone, B-Zone, and C-Zone in Fourth Quarter 2013. Subsurface cross-sections of the

[17] It should be noted that cyanide, both total and free, were detected in the St. Francis school production well at low concentrations (0.011 mg/L; below the AWQS of 0.2 mg/L) during the Third Quarter 2007 groundwater sampling event. With exception to the Third Quarter 2007, cyanides have not been detected in either of the downgradient school production wells.

COC contamination in the A-Zone, B-Zone, and C-Zone in Fourth Quarter 2013 are presented in Figures 5-21 through 5-35.

A-Zone Groundwater Monitoring Wells

PCE was determined to be present in concentrations above the laboratory-reported detection limit in groundwater samples collected from 13 A-Zone monitoring wells at concentrations ranging from 0.70 micrograms per liter (µg/L) in well DMW-25 to 250 µg/L in well MW-22A. PCE concentrations at or above the AWQS for PCE of 5.0 µg/L were detected in nine of the 13 wells with PCE detections. PCE was not detected in concentrations above the laboratory-reported detection limit in 10 of the 23 samples collected from A-Zone monitoring wells during the Fourth Quarter 2013 groundwater sampling event.

TCE was determined to be present in concentrations above the laboratory-reported detection limit in groundwater samples collected from seven A-Zone monitoring wells at concentrations ranging from 0.68 µg/L in well MW-2A to 27 µg/L in well MW-8A. TCE concentrations at or above the AWQS of 5.0 µg/L were detected in three of the eight wells; MW-6A, MW-8A, and MW-22A. TCE was not detected in concentrations above the laboratory-reported detection limit in 13 of the 23 samples collected from A-Zone monitoring wells during the Fourth Quarter 2013 groundwater sampling event.

1,1-DCE was determined to be present in a concentration above the laboratory-reported detection limit in the groundwater sample collected from A-Zone well MW-8A at 23 µg/L, which exceeds the AWQS for 1,1-DCE of 7.0 µg/L. 1,1-DCE was not detected in concentrations above the laboratory-reported detection limit in 22 of the 23 samples collected from A-Zone monitoring wells during the Fourth Quarter 2013 groundwater sampling event.

DEHP was determined to be present in concentrations above the laboratory-reported detection limit in the groundwater samples collected from three A-Zone wells; MW-3A at 7.0 µg/L, MW-15A at 8.8 µg/L, and DMW-11 at 6.5 µg/L which all exceed the AWQS for DEHP of 6.0 µg/L. DEHP was not detected in concentrations above the laboratory-reported detection limit in 20 of the 23 samples collected from A-Zone monitoring wells during the Fourth Quarter 2013 groundwater sampling event.

Groundwater samples collected from 12 wells in the A-Zone were analyzed for total cyanide. If total cyanide was detected in the groundwater sample, the sample was then analyzed for amenable (free) cyanide. Total cyanide was determined to be present above the laboratory-reported detection limit in groundwater samples from five A-Zone wells at concentrations ranging from 0.14 milligrams per liter (mg/L) at MW-3A to 20 mg/L at MW-5A. Samples which were analyzed for amenable (free) cyanide contained concentrations ranging from 0.14 mg/L to 20 mg/L. Of the five wells whose samples contained concentrations of total cyanide exceeding the laboratory-reported detection limit, three of the samples contained amenable (free) cyanide at concentrations exceeding the AWQS of 0.2 mg/L. There is no AWQS currently established for total cyanide. Total cyanide was not detected in

concentrations above the laboratory-reported detection limit in 7 of the 12 samples collected from A-Zone monitoring wells during the Fourth Quarter 2013 groundwater sampling event.

The estimated extent of the chlorinated VOC contamination and cyanide contamination in the A-Zone of the aquifer are presented in Figures 5-16 and 5-17, respectively. Subsurface cross-sections of the COC contamination in the A-Zone are presented in Figures 5-21 through 5-25.

B-Zone Groundwater Monitoring Wells

PCE was determined to be present in concentrations above the laboratory-reported detection limit in groundwater samples collected from five B-Zone monitoring wells at concentrations ranging from 0.53 µg/L in well MW-23B to 620 µg/L in well MW-18B. PCE concentrations at or above the AWQS for PCE of 5.0 µg/L were detected in four of the five wells with PCE detections. PCE was not present in concentrations above the laboratory-reported detection limit in seven of the 12 samples collected from B-Zone monitoring wells during the Fourth Quarter 2013 groundwater sampling event.

TCE was determined to be present in concentrations above the laboratory-reported detection limit in groundwater samples collected from four B-Zone monitoring wells at concentrations ranging from 1.9 µg/L in well MW-22B to 130 µg/L in well MW-18B. Of the four wells with detectable concentrations, two of the well samples contained TCE concentrations above the AWQS for TCE of 5.0 µg/L. TCE was not present in concentrations above the laboratory-reported detection limit in eight of the 12 samples collected from B-Zone monitoring wells during the Fourth Quarter 2013 groundwater sampling event.

1,1-DCE was determined to be present in concentrations above the laboratory-reported detection limit in one of the groundwater samples collected from B-Zone wells, MW-18B at 30 µg/L. The groundwater sample collected from monitoring well MW-18B exceeded the AWQS for 1,1-DCE of 7.0 µg/L. 1,1-DCE was not present in concentrations above the laboratory-reported detection limit in 11 of the 12 samples collected from B-Zone monitoring wells sampled during the Fourth Quarter 2013 sampling event.

DEHP was determined to be present in concentrations above the laboratory-reported detection limit in the groundwater samples collected from two B-Zone wells; MW-29B at 3.8 µg/L and MW-30B at 12 µg/L. Only the sample collected from MW-30B exceeded the AWQS for DEHP of 6.0 µg/L. DEHP was not present in concentrations above the laboratory-reported detection limit in 10 of the 12 samples collected from B-Zone monitoring wells during the Fourth Quarter 2013 groundwater sampling event. The presence of DEHP in samples from these two wells is puzzling considering no other COCs were detected and DEHP generally travels in groundwater at a slower rates than some of the other COCs (such as PCE). It is worth noting that low concentrations of DEHP (typically less than 10 ug/L), can be generated by some batches of PVC. Most of the monitoring wells used at the Site are constructed of PVC plastic. Therefore some detections of DEHP may not represent an indication of Site-based contamination.

Groundwater samples from wells screened in the B-Zone were analyzed for total cyanide. If total cyanide was detected in the groundwater sample, the sample was then analyzed for amenable (free) cyanide. Total and free cyanide was detected above the laboratory reporting limit in groundwater samples from two B-Zone wells; 0.15 mg/L at MW-18B and 0.087 mg/L at MW-22B with either sample detected exceeding the AWQS for amenable (free) cyanide of 0.20 mg/L. Total cyanide was not detected in concentrations above the laboratory-reported detection limit in 10 of the 12 samples collected from B-Zone monitoring wells during the Fourth Quarter 2013 groundwater sampling event.

The estimated extent of the chlorinated VOC contamination and cyanide contamination in the B-Zone of the aquifer are presented in Figures 5-18 and 5-19, respectively. Subsurface cross-sections of the COC contamination in the B-Zone are presented as Figures 5-26 through 5-30.

C-Zone Groundwater Monitoring Wells

PCE was determined to be present in concentrations above the laboratory–reported detection limit in groundwater samples collected from two C-Zone monitoring wells, MW-8C at 4.9 µg/L and MW-103C at 1.1 µg/L both contained PCE concentrations blow the AWQS for PCE of 5.0 µg/L. PCE was not detected in concentrations above the laboratory-reported detection limit in three of the five samples collected from C-Zone wells during the Fourth Quarter 2013 groundwater sampling event.

TCE was determined to be present at a concentration above the laboratory-reported detection limit in the groundwater sample collected from one C-Zone monitoring well. TCE was detected in the sample from MW-8C at a concentration of 2.0 µg/L, below the AWQS of 5.0 µg/L. TCE was not detected in concentrations above the laboratory-reported detection limit in four of the five samples collected from C-Zone wells during the Fourth Quarter 2013 groundwater sampling event.

DEHP was determined to be present at a concentration above the laboratory-reported detection limit in the groundwater sample collected from one C-Zone monitoring well. DEHP was detected in the sample from MW-103C at a concentration of 3.8 µg/L, below the AWQS of 5.0 µg/L. DEHP was not detected in concentrations above the laboratory-reported detection limit in four of the five samples collected from C-Zone wells during the Fourth Quarter 2013 groundwater sampling event.

1,1-DCE, cis-1,2-DCE, 1,4-dioxane, and cyanide concentrations were not detected at or above the laboratory-reported detection limit in any of the C-Zone well samples collected during the Fourth Quarter 2013 sampling event.

VOCs and cyanides were not detected at or above the listed laboratory reporting limits in the groundwater samples collected from the Alice Byrne or St. Francis[18] production wells during the Fourth Quarter 2013 groundwater sampling event.

[18] Historically, with the exception of 0.011 mg/L of cyanide detected at St. Francis during the July 2007 groundwater sampling event, cyanides have not been detected above the laboratory reporting limit in the Alice Byrne or St. Francis production wells

The estimated extent of the chlorinated VOCs and cyanide contamination in the C-Zone of the aquifer are presented in Figure 5-20. Subsurface cross-sections of the COC contamination in the C-Zone are presented as Figures 5-31 through 5-35.

Summary of Fourth Quarter 2013 Groundwater Sampling Event

In the A-Zone of the aquifer, the lateral extent of PCE, TCE, 1,1-DCE, and cis-1,2-DCE contamination extends approximately 2,700 feet northwest or downgradient from source area at the Facility. Furthermore, the A-Zone plume extends approximately 300 feet to the south-southwest and approximately 1,000 feet to the north from the source area at the Facility.

The lateral extent of the cyanide contamination in the A-Zone at Site extends approximately 1,150 feet west-northwest from beneath the Facility and approximately 250 feet to the south.

In the B-Zone of the aquifer, the lateral extent of PCE, TCE, and 1,1-DCE, extends approximately 3,900 feet northwest from beneath the Facility, and approximately 1,600 feet to the north. Based on the analytical data, COC contamination in the B-Zone is not detected south of the Facility.

Cyanide was not detected in samples from two on-site wells; however it was detected in a sample from a single off-site well (MW-22B) at a concentration below the AWQS. This is the first monitoring event in which cyanide has not exceeded the AWQS in any of the Zone B wells. Based on the information gathered in the 2013 monitoring event, additional sampling will be conducted to confirm cyanide concentrations in Zone B of the aquifer below the AWQS.

The vertical extent of groundwater contamination exceeding the AWQS for the COCs has been defined in the C Zone at the Site.

5.4 FATE AND TRANSPORT OF CONTAMINANTS

Contaminants at the 20th Street and Factor Avenue WQARF Site include both volatile and non-volatile constituents. Transport pathways for the volatile compounds have been determined to include both saturated and unsaturated (soil-vapor) routes. Transport mechanisms for the non-volatile compounds principally including the cyanide-based species are primarily based on gravity-driven downward movement in combination with water infiltration within the source area, or groundwater saturated flow.

5.4.1 VOC Fate and Transport

The VOCs at the Site principally include PCE and its degradation product TCE. 1,1-DCE, is also considered a COC and is formed by anaerobic biodegradation of TCE, but can also be formed by an abiotic degradation of 1,1,1-TCA; which has been detected at the Site in soil vapor and groundwater. Although the use of the compound 1,1,1-TCA has not been documented at the Site, it has been detected occasionally in groundwater and consistently in soil vapor samples collected at the Site. These data suggest that 1,1,1-TCA was included

in the waste streams released to the environment at the Site. In particular the Gore-Sorber survey conducted in 2001 indicates that 1,1,1-TCA was likely released to WDS-2. VOCs historically were released onto the ground surface via sprinklers, and below ground surface from WDS-1, WDS-2, WDS-4, or the associated leach fields. Once in the subsurface soils, vadose-zone transport was controlled by the chemical nature of the compound, physical properties of subsurface soils, diffusion within the vadose-zone, and vertical movement of infiltrating water due to precipitation or irrigation fluids. Saturated-zone transport was a product of the chemical sorption characteristics of the compound, the subsurface medium through which the compound moved, and direction and gradient of groundwater flow.

Although cis-1,2-DCE is also a COC associated with operations at the Site, it has not been historically detected consistently or widespread distributions. Cis-1,2-DCE is a degradation product of TCE, which in turn degrades to vinyl chloride. Evaluation of the nature of transport of cis-1,2-DCE was not conducted due to its generally low concentrations and inconsistent distribution at the Site.

5.4.1.1 Fate and Transport of VOCs in Soils

Lithologies observed during excavation and drilling activities at the Facility were composed primarily of silty sand, with occasional, but localized laminations of clay from land surface until the top of the Clay A unit at a depth of approximately 162 feet bgs (in well MW-103B). The water table has historically been observed at elevations ranging from 72.4 to 78.4 ft bgs (approximately 120 to 126 ft amsl; in well MW-1A). These soils are expected to represent a minimal barrier to downward movement of introduced contaminants. Although soil moisture and organic carbon content of soils typically act to retard movement of VOCs through the vadose zone, either due to the moisture occupying available pore spaces or due to the affinity of the VOCs for soil carbon via sorption processes, geotechnical analyses performed on samples from borings SB-01 and SB-04 suggest that soil moisture is relatively low (2.5-15 percent) as are organic carbon fractions (0.06-0.3 percent).

Volatilization of VOCs, particularly those with low vapor pressures such as PCE and TCE, leads to phase transfer from liquid to soil gas. A soil-vapor survey conducted at the Facility in 2010 indicated that in the source area near WDS-1, VOCs remain present throughout the vadose zone soil column. PCE concentrations were observed between land surface and 50 ft bgs in a range from 3,500 to 5,200 $\mu g/m^3$ (3.5 to 5.2 µg/L). A 2011 soil-gas survey found elevated concentrations of PCE and TCE in SVMW-18, a monitoring point located northwest of the Facility. The highest concentrations of these compounds were found just above the water table, suggesting that the VOCs may be volatilizing into soil-gas from dissolved phase in groundwater.

5.4.1.2 Fate and Transport of VOCs in Groundwater

Horizontal flow

PCE and TCE, the primary COCs at the Site, as well as 1,1-DCE are presumed to enter the groundwater immediately beneath the source area. As dissolved phase hydrocarbons,

transport within groundwater is controlled by a combination of groundwater properties and aquifer characteristics properties, in addition to chemical properties of the contaminants.

Advection and dispersion are typically considered the principal mechanisms of contaminant transport. In coarse-grained sediments, transport parallel with groundwater flow, or advection, is considered to dominate. In very fine-grained sediments with high clay content, the tendency of individual water molecules to follow irregular and non-linear paths that are not necessarily parallel with groundwater flow leads to the spreading of dissolved phase contaminants.

Spreading, in combination with diffusion that occurs as the result of chemical gradients is known as dispersion, and may dominate transport in fine-grained materials in which advective flow is minimal.

COC plumes at sites dominated by advective processes tend to be narrow and elongated in the direction of groundwater flow, whereas those at sites dominated by dispersion will commonly be nearly as wide as they are long. An additional process which may appear to cause dispersion, but actually be driven by advection can occur when groundwater flow directions vary over time, causing a groundwater plume to initially flow in one direction, then be transported in a direction transverse to the original flow by a shift in flow direction, causing the apparent width of the plume to increase as it is spread out.

Soils beneath the Site generally consist of silty sands, a matrix in which transport would be dominated by advective processes, with enough fine-grained particles for transport to have some dispersion-based component. Maps of the B-Zone COC plume based on 2013 data, show a COC plume body which is approximately as wide as the Facility at the eastern end, but has doubled or tripled in width at well series MW-8. This supports an interpretation of primarily advective transport with a dispersion component.

Plume migration may be further affected by two processes which constrain spreading, adsorption and degradation. As chlorinated hydrocarbons such as PCE or TCE move through subsurface soils, their non-polar charged structure comes in contact with clay minerals and organic matter in the aquifer. Charge-based affinity between the hydrocarbons and clay minerals, as well as the porous and partially hydrophobic nature of organic matter causes the hydrocarbons to adsorb or “stick” temporarily to the organic matter, which in turn causes the downgradient transport to be delayed or retarded. At fractions of organic matter <0.002, sorption to mineral surfaces, including clays, may be worth considering in evaluation of the retardation of a non-polar organic compound. Above this, sorption to organic matter probably dominates to the extent that consideration of mineral sorption is unnecessary[19]. It is possible to estimate the retardation factor for each of the chlorinated compounds based on the partitioning coefficient of the molecule; the bulk density and effective porosity of the aquifer; and the fraction of organic carbon in the aquifer. Degradation may also lead to an apparent slowing of the COC transport as the hydrocarbons break down chemically or biologically into other components. PCE degrades

[19] Schwarzenbach, R. and Gschwend, P. “Environmental Organic Chemistry” c 1993. Pub Wiley and Sons, New York, NY. (Chapter 11, section 11.5: Sorption of neutral organic chemicals to polar mineral surfaces)

via biotic reductive dechlorination into daughter compounds TCE and, following further dechlorination, cis-1,2-DCE. To a lesser extent, trans-1,2-DCE may also be formed during this second dechlorination step. These compounds in turn degrade into vinyl chloride. Assuming that bacteria necessary to promote these degradation processes are present in subsurface soils, concentrations of source-based PCE may be expected to decline over time as degradation processes convert it to daughter products.

Approach to Calculation of Transport Velocity

Assuming that retardation of the Site chlorinated-hydrocarbon COCs is dominantly dependent on sorption to aquifer organic matter; the relative transport velocity of these COCs in groundwater can be estimated using the following approach.

The ratio of the groundwater advective velocity to the advective velocity of the transported hydrocarbons is termed the retardation factor, as expressed in the following:

$$\mathbf{R_f = V / V_c} \qquad \textbf{Eqn.1}$$

Where:

- R_f Retardation Factor
- V Groundwater Velocity (ft/day)
- V_c Transported Contaminant Velocity (ft/day)

The retardation factor is influenced by sorption to organic matter, which is defined using the linear solid-water sorption equilibrium constant (Kd), as expressed in the following relationship:

$$\mathbf{R_f = 1 + ([\rho_b * K_d]/n_e)} \qquad \textbf{Eqn.2}$$

Where:

- ρ_b: Bulk Density (grams per cubic centimeter, g/cm^3)
- K_d: Solid-Water Sorption Constant (compound-specific)
- n_e: Effective Porosity

In turn, the soil-water sorption constant can be approximated based on aqueous solubility. K_{oc}, the partitioning coefficient of various organic compounds between water and the organic carbon solid, has been approximated based on aqueous solubility in various literature articles[20],[21]. EPA also publishes a list of compound-specific K_{oc} values, last updated in November 2013 as of the time of this report (EPA, 2013). The reference K_{oc} for PCE is 94.94 L/kg, for TCE is 60.7 L/kg, and the K_{oc} for 1,1-DCE is 31.82 L/kg.

[20] Fetter, C.W., "Contaminant Hydrogeology" c. 1993 Prentice-Hall, Upper Saddle River, NJ. (Table 3.6, Table 7.6)

[21] Chiou, C.T. et al. "A Physical Concept of soil-water equilibria for non-ionic organic compounds", Science 2006:831-832, Science, 1979.

Based on the organic carbon solid-water sorption constant, and the fraction of organic carbon present in the soil, the solid-water sorption equilibrium constant is calculated as follows:

$$K_d = K_{oc} * f_{oc} \qquad \textbf{Eqn.3}$$

Where:

f_{oc}: fraction of organic carbon
K_{oc}: Organic carbon solid-water Sorption Constant (compound-specific)

Finally, a calculation of groundwater flow velocity can be conducted using the Darcy Equation which relates velocity to hydraulic conductivity, hydraulic gradient and effective porosity:

$$v = K_h\, i / n_e \qquad \textbf{Eqn.4}$$

Where:

v = velocity (ft/day);
K_h = hydraulic conductivity (ft/day)
i = hydraulic gradient (ft/foot)
n_e = porosity (dimensionless)

Site-Specific Transport Calculations

Generally the groundwater flow directions observed between 2000 and 2012 have not varied significantly. Hydraulic gradients have averaged 0.001 feet per foot flowing east to west beneath the Facility, then in a northwestern direction west of Factor Avenue.

Laboratory measurements of porosity obtained from core samples suggest porosities between 39 and 44 percent. These are believed to be artificially elevated based on sample disturbance; a porosity of 20 percent is believed to be more likely, based on the grain size distribution of 73-77 percent sand, 8-15 percent silt, and 6-13 percent clay. Measurement of the dry density of the aquifer silty-sand material in borings SB-01 and SB-04 produced a range of 1.5 to 1.61 g/cm^3. Bulk density based on this dry-density range and a porosity of 20% would be 1.8 to 1.93 g/cm^3. Measurement of the fraction of organic carbon present in the aquifer materials was conducted for the SB-01 and SB-04 borings at the Facility, resulting in measured organic carbon fractions of 0.12% and 0.25%. Samples from these two borings were collected at various depths between 10 and 70 feet bgs. Although these data were not collected from the saturated zone they are believed to be similar to the deeper sediments beneath the water table on the basis of lithologic cutting observations.

Calculations of compound-specific retardation factors were conducted based on the parameters above.

TABLE 5-1 CALCULATED RETARDATION FACTORS FOR SITE CHLORINATED HYDROCARBONS

	Koc	Kd	Rf
PCE	94.94	0.114	2.03
TCE	60.7	0.073	1.66
1,1-DCE	31.82	0.038	1.34

Notes:
K_d = Solid-Water Sorption Constant (calculate using Eqn.2)
K_{oc} = Organic carbon solid-water Sorption Constant (based on EPA Nov. 2013 values)
R_f = Retardation Factor (calculate using Eqn .3)

Assumptions:
Hydraulic gradient (i) = 0.001 ft/ft
Effective porosity (n_e) = 20%
Bulk Density (ρ_b) = 1.80 g/cm3
Fraction of organic carbon (f_{oc}) = 0.12%

An evaluation of pumping tests conducted at the Site was performed during development of an initial groundwater flow model in 2008 (GeoTrans, 2008k). This evaluation in combination with the groundwater model calibration process concluded that the A-Zone could be considered to have a horizontal hydraulic conductivity (Kh) of 20 feet per day, The B-Zone a Kh of 50 feet per day, and the C-Zone a Kh of 40 feet per day.

Using the equations from the previous discussion of retardation and flow relationships, the following table describes the expected contaminant transport rates based on the available Site data.

TABLE 5-2 CALCULATED TRANSPORT VELOCITIES FOR SITE CHLORINATED HYDROCARBONS

			Transport Velocity (ft/y)			Travel Distance in 45 years (feet)		
	h (ft/d)	Groundwater Velocity (ft/y)	PCE	1,1-DCE	TCE	PCE	1,1-DCE	TCE
Zone A	20	36.5	18.0	27.2	22.1	800	1,200	1,000
Zone B	50	91.3	45.1	68.0	55.2	2,000	3,100	2,500
Zone C	40	73.1	36.1	54.4	44.1	1,600	2,400	2,000

Notes:
ft/d = feet per day
ft/y = feet per year

Assumptions:
Hydraulic gradient = 0.001 ft/ft
Effective porosity = 20%
Bulk Density = 1.80 g/cm3
Fraction of organic carbon = 0.12%

The history of the Facility operations suggests that operations at the Facility began approximately 45 years ago (HGL, 2012); hence; releases would have occurred within approximately the past 45 years. The calculated COC velocities range from 18.0 feet per year for PCE in the A-Zone, to 68.0 feet per year for 1,1-DCE in the B-Zone. Travel distances would be expected to be greatest in the B-Zone because groundwater moves faster in this zone than the A-Zone and C-Zone. In the B-Zone, PCE could be expected to travel approximately 2,000 feet, 1,1-DCE to travel 3,100 feet, and TCE to travel 2,500 feet over a 45 year period.

These travel distances are considered to be the approximate distances for transport to have occurred. Additional factors such as clay sorption, dispersion, chemical degradation, and the initial infiltration time have not been taken into account in these calculations. In addition, the distances assume that all travel occurs in the B-Zone, rather than initially in the lower-permeability A-Zone.

It is noted that the farthest downgradient extent of chlorinated hydrocarbons observed in groundwater monitoring data for the Site is in samples from MW-21B (approximately 4,100 feet to the northwest of the approximate location of the source area at the Facility). This represents the approximate distance that groundwater has traveled over the past 45 years. This may imply that retardation factors impacting the rate of transport for the COCs have significantly less impact than assumed. Also, the transport rate refers to the travel time for the center of the mass breakthrough to occur. Lower concentrations are likely to be detected prior to this time due to dispersion. Addressing data gaps may clarify the inconsistencies between observed and calculated transport rates (including B-Zone specific porosity, bulk density and f_{oc} data).

Potential receptors most likely to be impacted by further downgradient progress of releases from the Facility are believed to be the irrigation-production well at the Alice Byrne Elementary School and the irrigation-production well at the St. Francis of Assisi School. Left unchecked, the chlorinated hydrocarbon plume (based on calculated transport velocities for 1,1-DCE with the lowest retardation factor) might be expected to reach these wells (located 2,200 and 1,700 feet downgradient from MW-21B respectively) in approximately 25 years for the St. Francis School well and 32 years for the Alice Byrne School well. Based on estimated groundwater flow velocity, a non-retarded solute presently at MW-21B might be expected to take approximately 18 years to reach the St. Francis School well and approximately 24 years to reach the Alice Byrne School well.

These velocities and travel calculations represent approximations and should not be viewed as absolute. They are qualitative in large part due to uncertainty and natural variation present in each of the parameters used in the calculations.

<u>Vertical mobility of chlorinated-hydrocarbon COCs</u>

Most chlorinated-hydrocarbons including PCE, TCE and 1,1-DCE are slightly denser than water. Therefore, even though the majority of the transport component is advection-based and horizontal, these contaminants may have a tendency to move vertically downward within the saturated zone over time. Although the concentrations of chlorinated

hydrocarbons are highest in the A-Zone at the Facility, elevated concentrations begin descending while being transported horizontally downgradient by groundwater flow. In the middle of the plume near MW-8, concentrations of PCE and TCE are still slightly higher in the A-Zone than in the B-Zone; but further downgradient higher concentrations were observed in the B-Zone at MW-18 and MW-21 than in the A-Zone. As of Fourth Quarter 2012, there appears to be little indication that PCE or TCE is moving downward through Clay A into the C-Zone, suggesting that the Clay A mostly forms a barrier to downward migration of contamination. Detections of COCs are historically routine in the C-Zone, but at concentrations below the AWQS.

5.4.2 SVOC Fate and Transport

While consideration and calculation of potential transport of VOCs is important to determining the likely impacts to public health, the same level of consideration is not judged necessary for the contaminant SVOC DEHP. DEHP has a very strong affinity for organic carbon (EPA referenced Koc is 119,600 L/kg; EPA, 2013) which means that its retardation factor is likely greater than 1000. This means that if advective flow of groundwater travels 4,500 feet in 45 years, during the same time period a compound with a retardation factor of 1000 is only expected to travel 4.5 feet. It is worth noting that low concentrations of DEHP (typically less than 10 µg/L), can be generated by some batches of PVC. Most of the monitoring wells used at the Site are constructed of PVC plastic. Therefore some detections of DEHP may not represent indication of Site-based contamination.

DEHP was detected in two outer boundary wells (MW-29B and MW-30B during the 2013 monitoring event. The presence of DEHP in samples from these two wells is puzzling considering no other COCs were detected and, as discussed above, DEHP generally travels in groundwater at a slower rates than some of the other COCs (such as PCE).

5.4.3 Cyanide Compound Fate and Transport

5.4.3.1 Factors Controlling Cyanide Mobility

A review of the chemicals and use of chemicals in previous site operations suggests that process wastewater containing mixtures of cyanide compounds was discharged to the land surface. These mixtures may have included variable concentrations of several compounds, including sodium thiocyanate and potassium ferricyanide, which were used in film processing activities. The exact nature of the discharged cyanides cannot be determined, as it may include a number of possible constituents and varying concentrations. It is also likely that free cyanide was contained in discharged mixtures as chemical reactions released them due to pH, reduction/oxidation potential (redox), UV light, and other chemical changes during use and discharge (GeoTrans, 2005).

Ultimately, cyanide-containing compounds also formed the relatively stable compound, Prussian Blue [$Fe_4(Fe(CN)_6)_3$], as an associated byproduct prior to discharge. Prussian Blue represents the most stable and least soluble form of cyanide at the Facility. It is subject to decomposition when exposed to sunlight/UV light, releasing hydrogen cyanide in the process. Prussian Blue may also have formed subsequent to discharge depending

upon the nature of the discharged materials and the chemical environment. Paradoxically, Prussian Blue has greater solubility at higher pH (Ghosh, et al, 2004). In general, cyanides convert to hydrogen cyanide as pH decreases, so changes in pH could lead to increased solubility of soil contaminants or increased hydrogen cyanide production, depending upon the changes in pH.

Cyanides may occur in the environment in three general forms: (1) hydrogen cyanide (volatile and very soluble); (2) very soluble and degradable simple cyanides, such as sodium cyanide (NaCN) and potassium cyanide (KCN); and (3) moderately soluble and degradable to sparingly soluble and decomposable complex cyanides, such as cobalt, nickel, copper, and iron cyanides (National Park Service, 1997; Sharma, V.K., et al, 1998). Simple cyanides can easily dissociate into cations and cyanide anions (CN^-), while complex cyanides, such as iron and cobalt complexes, are considered strong complexes and do not dissociate easily. Generally, soluble forms of simple cyanides (NaCN and KCN, for example) will dissolve and be transported in soil moisture with conversion to the gas hydrogen cyanide depending on soil moisture conditions, pH, and redox potential. Changes in redox potential an impact the stability/rate of degradation of iron cyanide complexes. In general, low redox potential (reducing conditions) limits dissociation of iron cyanide complexes.

In general, normal soil pH conditions lead to dissolution, dissociation and degradation of cyanide complexes to free cyanide (Meeussen, 1992). Cyanides (including ferrocyanides, ferricyanides, and ferrous ferricyanides) can form hydrogen cyanide and cyanide ions by photolysis when exposed to sunlight or UV light (Research Triangle Institute, 1997; National Park Service, 1997). In broad daylight, the decomposition rate of iron cyanide compounds to free cyanide can up to 8 percent per hour (Meeussen, 1992). Thus, cyanide in surface and near-surface soils will readily decompose, releasing the gas hydrogen cyanide to the atmosphere and soil.

5.4.3.2 Biodegradation of Cyanides

Many microorganisms are known to biodegrade cyanides, such as the genera Actinomycetes, Alcaligenes, Arthobacter, Bacillus, Micrococcus, Neisseria, Paracoccus, Pseudomonas, and Thiobacillus (Nordwick et al. 1999). In subsurface soils, cyanides present at low concentrations that are not toxic to microorganisms would probably biodegrade; simple cyanide compounds (such as hydrogen, sodium, and potassium cyanide) are more readily biodegradable than more complex ones (such as iron, nickel, copper, and zinc cyanide). In cases where cyanide levels are toxic to microorganisms (e.g., spills, disposal areas), hydrogen cyanide and water-soluble cyanides may migrate into groundwater (Syracuse Research Corp, 1989; National Park Service, 1997).

Under aerobic conditions, cyanide salts in the soil are microbially oxidized to ammonia and carbon dioxide (EPA, 1994; Verschaueren, 1983). Cyanide biodegradation under anaerobic conditions is thought to proceed by hydrolysis, yielding formic acid and ammonia (Kunz, et al, 1998; Fallon, 1992). It should be noted that, according to EPA, cyanide hydrolysis can also occur abiotically (without microbiological participation) (EPA, 1994.). EPA has also reported that the anaerobic biodegradation of cyanide can also proceed by reaction with

aqueous sulfide, generating ammonia, gaseous hydrogen sulfide, and carbon dioxide (EPA, 1994).

5.4.3.3 Fate and Transport of Cyanides in Soils

Oxidizing conditions, such as those at the Site, would promote dissociation and generation of free cyanide. Hydrogen cyanide can then partition into gas phase/dissolved phase and thus be transported in a similar fashion as VOCs (GeoTrans, 2005c). At soil surfaces, hydrogen cyanide is released into the atmosphere. The rate of hydrogen cyanide volatilization into the atmosphere is affected by a number of parameters, including temperature and wind speed (Syracuse Research Corp, 1989; National Park Service, 1997). At pH less than 9.2, more than 90 percent of the free cyanide is expected to be in the form of molecular hydrogen cyanide (National Park Service, 1997). In subsurface soils with pH less than 9.2, hydrogen cyanide is expected to be highly mobile, and may impact groundwater due to its high solubility in water. Cyanide ions have low affinity for adsorption to soil and are expected to move to the groundwater (Syracuse Research Corp, 1989; National Park Service, 1997). Soluble cyanides also have low tendency to adsorb to soils with high pH, high carbonate, and low clay content, and are not expected to bioconcentrate. Insoluble cyanides, however, may adsorb to soils and generally have a potential to bioconcentrate (EPA, 2001a).

For the purposes of our fate and transport evaluation, we have assumed that cyanides are mobile and will be transported to groundwater. The form of cyanide may be hydrogen cyanide, CN^{-1} or weak or strong complexes which dissolve into pore water and be transported through the vadose zone through recharge and infiltration. Prussian Blue is assumed to be soluble over the long term, eventually dissociating and dissolving into pore water, then transported via recharge to groundwater.

5.4.3.4 Fate and Transport of Cyanides in Groundwater

Once cyanide reaches an aquifer, it becomes mobile in the groundwater. This may occur in the form of one of the many cyanide complexes in dissolved or potentially colloidal form, or as dissolved hydrogen cyanide or CN^-. It is uncertain how stable or long-lasting cyanide compounds are in groundwater under Site conditions. In the A-Zone of the aquifer, cyanide species appear only to have been transported as far downgradient as MW-14A, a distance of approximately 800 feet from the nearest part of the source area adjacent to MW-5A. Cyanide has been detected recently in B-Zone groundwater monitoring well MW-24B, a distance of approximately 2,400 feet from the southwest corner of the Facility.

If transport retardation is occurring, it would probably be due to temporary complexation of cyanide species in less soluble form followed by remobilization. There is some evidence that cyanide may be transported colloidally, either sorbed to colloidal clays which are slowly mobile themselves, or possibly as a colloidal form of cyanide. Wells which have been pumped at higher rates and thereby subjected to increased agitation of the surrounding aquifer sediments have been observed to contain higher concentrations of total cyanide.

In part because cyanide transport in groundwater has not been subject to the scrutiny accorded to the transport mechanisms of the more-common chlorinated solvent compounds PCE and TCE, the timing and fate of the cyanide in Site groundwater is not completely understood. It is assumed that cyanide detections will continue to move further downgradient with time as a function of groundwater transport. If unretarded, this may occur at rates of as high as 91 feet per year in the B-Zone as groundwater flows toward the west-northwest and the nearest downgradient receptors (The St. Francis of Assisi School well, located approximately 4,800 feet downgradient and the Alice Byrne well located approximately 5,500 feet downgradient from where cyanide has most recently been detected in monitoring well MW-24B).

6.0 LAND AND WATER USE EVALUATION

This Land and Water Use section for the Site has been prepared as part of this RI report to meet the requirements established under Arizona Administrative Code (A.A.C.) R18-16-406 (D). The purpose of this section is to present information regarding current and foreseeable uses of land or waters that have been or are threatened to be impacted by releases of COCs, and to project time frames for future changes in those uses. Information gathered from property owners, water providers, municipalities, and well owners are included in the section.

The current and potential future land and water users were identified by sending questionnaires to the land and water users in the site vicinity. This land and water use section evaluates the future uses and the "reasonably foreseeable" uses of the land and water based on the information from the completed questionnaires. Reasonable foreseeable uses of land are those uses of land likely to occur at the site. Reasonable foreseeable uses of water are those likely to occur within 100 years unless a longer time period is shown to be reasonable based on site-specific circumstances. The surveys did not indicate any substantial changes in the future use of the land and water uses in the area of the Site and therefore, reasonable foreseeable uses are the current land and water uses in the area of the Site. The completed questionnaires are included in Appendix H.

In 2013, the ADEQ defined a Community Involvement Area (CIA) which encompasses the Site as well as residential, commercial, and industrial communities that surround the Site. Within the CIA, 10 sensitive receptors have been identified. A summary of these receptors and their locations relative to the Site and the Facility are presented below and shown on Figure 6-1:

- The Harvest Preparatory School is located along the northern edge of the Site, approximately 1,840 feet northwest (downgradient) from the Facility;
- Alice Byrne Junior High School is located at the northern edge of the CIA, approximately 5,500 feet northwest (downgradient) from the Facility;
- St. Francis of Assisi Junior High School is located western region of the CIA, approximately 4,800 feet northwest (downgradient) from the Facility;
- AmeriSchools Academy is located in the central region of the CIA, approximately 3,160 feet west-southwest (cross-gradient) from the Facility
- Happy Trails Day Care & Preschool is located in the central region of the CIA, approximately 5,020 feet west-northwest (down- to cross-gradient) from the Facility;
- Woodward Junior High School is located just outside the southwestern edge of the CIA, approximately 5,100 feet southwest (downgradient or cross gradient) from the Facility;
- Yuma East Headstart Center is located in the southern region of the CIA, approximately 850 feet south-southwest (up- to cross-gradient) from the Facility;

- Gila Vista Junior High School is located in the southern region of the CIA, approximately 1,200 feet southwest (cross-gradient) from the Facility;
- CW McGraw Elementary School is located at the southern edge of the CIA, approximately 1,600 feet southwest (cross-gradient) from the Facility;
- Wonder Kidz Preschool is located at the southern edge of the CIA, approximately 2,060 feet southwest (cross-gradient) from the Facility; and
- Desert View Academy is located at the southern edge of the Community Involvement Area, approximately 2,300 feet south-southeast (up- to cross-gradient) from the Facility.

6.1 CURRENT LAND USES

Based on a preliminary evaluation of properties located in proximity of the Facility, properties judged likely to be potentially impacted by future soil and/or groundwater remediation efforts were identified. The properties identified included: Houston International, the City of Yuma, and the County of Yuma. The identified properties were asked to provide information regarding current and future land uses. The sections below summarize the information provided to ADEQ by the property owners; the complete responses are contained in Appendix H.

6.1.1 Regional Land Use

Development in the area must comply with the City of Yuma and the County of Yuma zoning laws. Current regional zoning in the Site area is indicated in Figure 6-2. At the time of this report, approximately 80 percent of the properties within in the CIA are zoned for low-density residential use; 8 percent for local commercial use, 12 percent for light industrial use (Figure 6-2).

<u>City of Yuma</u>

The City of Yuma owns approximately 208 parcels within the footprint of the COC contaminant plumes extending from the Facility (Figure 5-16 through 5-20). According to the survey responses, the City of Yuma has currently designated these parcels for uses associated with the mixed use, low-density residential.

<u>Yuma County</u>

Yuma County owns nine parcels within the CIA. None of the parcels owned by the County of Yuma are located within the footprint of the COC contaminated plumes. According to the survey completed by the County, two of the nine parcels owned by the County of Yuma are currently occupied by the Union Pacific Railroad.

6.1.2 Site-Specific Land Use

Houston International, Ltd. owns the Facility, which has been identified as the source of the COCs in soil and groundwater at the Site. Houston International leases the Buildings at the

Facility to tenants that use it as office space, welding and machine repair shop, a mechanic shop, and a dance studio. Since 2012, the outdoor parking area has been used for storage of commercial trucks.

Numerous industrial properties are located immediately surrounding the Facility. Residentially developed properties occupy most of the parcels within the Site boundaries to the west and northwest. The residential properties are located primarily west of Arizona Avenue, and consist of single-family dwellings and mobile home parks. Several public schools and private day care facilities are also located in the residential neighborhood west of Arizona Avenue.

6.2 FUTURE LAND USES

6.2.1 Regional Land Use

City of Yuma

The City of Yuma owns approximately 208 parcels that are currently designated as mixed use, low-density residential land. The City of Yuma did not indicate they had plans to change the land use of this area in the future.

Yuma County

Yuma County's current land use includes nine parcels two of which are used for detention basins and discharge to the Colorado River, and several are associated with the Union Pacific Railroad's needs. Yuma County indicated that the future uses for land are the same as the current land uses.

6.2.2 Site-Specific Land Use

Houston International, Ltd.

Houston International's future use for its properties will be related to commercial business use, including office space, shop, or other commercial uses.

6.3 GROUNDWATER USES

The Site lies within the Arizona Department of Water Resources (ADWR) Lower Colorado River Water Planning Area (WPA), which is composed of eleven groundwater basins in southwestern Arizona. Within the WPA, and outside of the Active Management Areas (AMAs), there are effectively no restrictions on groundwater withdrawal, provided the water is put to reasonable and beneficial use (ADWR, 2009). The only exception to groundwater withdrawal occurs within areas designated as Irrigation Non-Expansion Areas (INAs), where irrigation of new agricultural land is restricted to prevent decline in groundwater levels. The Site is not located within an INA.

The groundwater in the Yuma Basin is primarily used for agriculture use. According to an ADWR Lower Colorado River Cultural Water Demand Report, approximately 935,700 acre-

feet (acre-ft) of groundwater is used for agriculture purposes; approximately 17,400 acre-feet are used for municipal purposes, and approximately 12,140 acre-feet are used for Industrial purposes.

Based on well records, the City of Yuma has no wells within the vicinity of Site. However, there is a well field located in the City limits, approximately 1.5-miles east of the Facility. The Yuma Mesa Well Field and Conduit System consists of 12 wells and is operated by the Bureau of Reclamation. The wells in the system make up the overall groundwater recovery and river regulation program for the Yuma area (USBR, 2013).

Surface water used for agriculture in the Yuma Basin, according to the same report, is 1,899,400 acre-feet, or 65.03 percent. The Municipal usage is 33,000 acre-feet, or 1.09 percent, and Industrial usage is 1,420 acre-feet, or 0.05 percent.

The following sections summarize the information received by ADEQ from well owners regarding current and future uses of groundwater wells in or near the Site that "have been or are threatened to be impacted by a contaminant release." This information was solicited by ADEQ based on the groundwater-flow directions in the aquifer, as well as the current and potential future extent of COC plumes in the aquifer. A total of nine water users were identified to receive Land and Water Use Study questionnaires. Table 6-2 provides information on the well owners, well address, well names, ADWR well numbers, water use, and well type for these field-verified wells.

The complete responses from the well owners are contained in Appendix H. In addition, copies of available ADWR well records are included in Appendix H.

6.3.1 Yuma County

As of January 2013, Yuma County has no wells within the vicinity of Site.

6.3.2 City of Yuma

The City of Yuma's Annual Water Quality Report for 2013 indicates the main source of Yuma's drinking water is surface water from the Colorado River, delivered to the treatment facilities via the canal systems. None of the treatment facilities are located in the vicinity of the site.

The Main Street Treatment facility is a conventional surface water treatment plant. The Agua Viva Water Treatment facility presently treats surface water and groundwater. The city has three wells producing groundwater located near the Agua Viva Water Treatment Plant. Each well is capable of producing approximately 3 million gallons of water per day. The wells are typically used only April through October. The wells are located at Avenue 9E and 28th Street, on the east side of Yuma and well outside the site (Goodwin, 2014).

The City provides approximately 30,000 acre feet of water per year and groundwater use makes up approximately three to 25 percent of that use. The city indicated it has no plans to develop groundwater resources within the area of the site.

6.3.3 Houston International Ltd.

Houston International owns seven groundwater monitoring wells which are used for groundwater sampling and monitoring at the Facility, including MW-1A through MW-3A, MW-101A (east of the Facility), MW102-A, MW-102B1 and MW-102B2. Houston International's plan for its groundwater wells is to assist in groundwater remediation efforts at the Facility. Houston International did not identify any other future uses for groundwater.

6.3.4 Arizona Department of Environmental Quality

The ADEQ owns 45 environmental monitoring wells (groundwater, extraction, and piezometer) that are used for groundwater sampling and monitoring. There are no plans for future uses other than for groundwater sampling and monitoring and groundwater remediation.

6.3.5 Larry & Martha Covarrubias

Mr. and Mrs. Covarrubias own one groundwater well (ADWR #55-550765) near the Site. According to Mr. Covarrubias the well depth is approximately 80 feet bgs and water from the well is used for restroom purposes. No future uses were provided. This well has not been sampled by ADEQ or ADWR.

6.3.6 Ronald A Martin Trust

The Ronald Martin Trust owns one 180-foot deep well (ADWR identification number is unknown) in the vicinity of the Site. According to Mr. Martin, the well was previously used for irrigation purposes only and the well has been disconnected for 1.5 years. Future uses for the well may include re-activation for irrigation purposes. This well was sampled in November 2004. While some metals were detected above the laboratory reporting limits, no COCs were detected (Tables 2-6 and 2-7).

6.3.7 Alice Byrne Elementary School

One known production well is located approximately 5,500 feet downgradient of the Site. Based on ADWR well records this well (ADWR# 55-613927) was installed in 1982 to a total depth of 203 feet bgs with the capacity to pump 1,000 gpm. Alice Byrne was provided a questionnaire, however it was not returned to ADEQ. Although no survey was provided, based on existing knowledge of the Alice Byrne property, the well supplies water for irrigation of the school fields. This well has been sampled on a frequent basis as part of the well network at the Site. Analytical data for the Alice Byrne well include results for VOCs, metals, and SVOCs analyses. Results are presented in Tables 2-6 through 2-8, respectively. With exception of chloroform in 2008, VOCs and cyanides were not detected at or above their laboratory reporting limits in the groundwater samples collected from the Alice Byrne.

6.3.8 St. Francis of Assisi School Well

One production well is located approximately 4,800 feet downgradient of the Site. Based on ADWR well records, this well (ADWR# 55-626423) was installed in 1982 with the capacity to pump 150 gpm. The St. Francis of Assisi Roman Catholic Church stated that the well is used for irrigation purposes. No future wells are anticipated by the Church. This well has been sampled on a frequent basis as part of the well network at the Site. Analytical data for the St. Francis well include results for VOCs, metals, and SVOCs analyses. Results are presented in Tables 2-6 through 2-8, respectively. VOCs and cyanides were not detected at or above their laboratory reporting limits in the groundwater samples collected St. Francis well, with the exception of 0.011 mg/L of cyanide detected at St. Francis during July 2007.

6.3.9 KL-1 (Markel Investments)

A questionnaire was sent to Markel Investments, owner of well identified as KL-1 (ADWR #55-580030). The survey was not returned. Based on ADWR information, the well was installed to a depth of 240 feet bgs in 2000, and is screened from 200 to 240. Groundwater from well KL-1 was sampled in June 2001 and was analyzed for VOCs, metals, and SVOCs (Tables 2-6 through 2-8). No COCs were detected.

6.3.10 Woodward Junior High School

A questionnaire was sent to Woodward Junior High School (JHS), which has one well identified as ADWR #55-613924. The survey was not returned. Based on ADWR information, the well was installed to a depth of 300 feet bgs in 2000, and was equipped with a pump for 1250 gpm. The screened interval is unknown. Groundwater from Woodward JHS was sampled in May 1998 and May 2002 for VOCs and/or cyanides (Table 2-6). No COCs were detected during the two events.

6.4 SURFACE WATER USES

No surface water rights were identified in the Site vicinity.

The City-of-Yuma storm-sewer system, which runs parallel to 20th Avenue, receives stormwater from the neighborhoods in the area, and discharges into a stormwater retention and infiltration basin located northeast of the Facility on the north side of 20th Avenue. This basin is typically dry, although immediately following significant rainstorms it likely contains ponded surface water. Infiltration of this water may be of sufficient quantity to temporarily alter local groundwater flow directions in its vicinity.

6.5 SUMMARY OF USES

6.5.1 Land Uses

Current and future land uses within the Site area include the following:

The Facility – Houston International currently owns the Facility and leases it for commercial purposes. Houston International's future use for the parcel will be for similar commercial

business uses. Current tenants use the Facility for office space, welding and machine repair shop, a mechanic shop, and a dance studio.

The Site – With the exception of the Facility, the remained portions of the Site are owned by private individuals, private enterprises, the City of Yuma, and Yuma County. Current uses are associated with the mixed use: commercial, industrial, and low-density residential. No future plans were provided by the City of Yuma. The City of Yuma did not indicate they had plans to change the land use of this area in the future. Future plans for County of Yuma parcels included two parcels occupied Union Pacific Railroad. Other future plans for County of Yuma parcels included development of detention basins with intended discharge routes to the Colorado River.

6.5.2 Groundwater Uses

Current and future groundwater uses within the Site area include the following:

The Facility – Houston International currently seven groundwater monitor wells which are used for groundwater sampling and monitoring: MW-1A through MW-3A, MW-101A, MW102-A, MW-102B1 and MW-102B2. Houston International's only plan for its groundwater wells is to assist in potential groundwater remediation efforts. Houston International did not identify any other future uses for groundwater.

The Site – With the exception of wells located on the Facility, ADEQ currently owns 37 environmental monitoring wells (groundwater, extraction, and piezometer) associated with the Site that are used for groundwater sampling and monitoring[22]. There are nine water owners including commercial businesses and public organizations. Water users are summarized in Table 6-2 and well records are included in Appendix H. These wells are either inactive, used for irrigation purposes, or for other non-potable purposes.

[22] A total of eight other monitoring wells from the Dieselville VRP Site were at one time sampled as part of the well network, but were not included as part of this survey.

7.0 SUMMARY AND CONCLUSIONS

The purpose of the RI conducted at the 20th Street and Factor Avenue WQARF Site was to determine the nature and extent of contamination at the Site. The RI also identified present and reasonably foreseeable uses of land and waters of the state that have been or are threatened to be impacted by the contamination. Based upon the data collected, the following represents the interpretations and conclusions.

7.1 SOURCES AND PATHWAYS OF CONTAMINATION

Wastewater containing spent photo-processing chemicals including cyanide compounds was discharged onto or into soils at the Facility either directly or indirectly through wastewater disposal systems and through hoses and irrigation sprinklers.

Based on historical data, VOCs, DEHP, cyanides, and/or metals were introduced to the subsurface via wastewater disposal systems WDS-1, WDS-2, and WDS-4. WDS-1 was used to temporarily contain spent photographic chemicals prior to its discharge to surface soils at the Facility. WDS-1 was connected with piping to WDS-4 to re-route wastewater from WDS-1. WDS-1 and WDS-4 were removed in 2002. WDS-2 received chemical overflow from the film-developing machines, and film-processing wash water. The contents of WDS-2 were removed by ADEQ in 2002, and the tank was rinsed and returned to use until 2008, when the tank and its leach field were abandoned and replaced by a new system.

In addition to the WDSs, spent wastewater was disposed directly onto surface soils in one of three ways. It was either discharged to irrigate plants in front of the building or it was discharged to the soil in the southwest portion of the Facility via a sprinkler system, or discharged to a 1,000-gallon concrete underground sump (WDS-1) on the east side of the Facility. When this sump was full, it was discharged to a disposal pond on the east side of the Facility. Wastewater from this disposal pond overflowed onto the adjacent property to the east of the Facility.

7.2 EARLY RESPONSE ACTIONS

Based on recommendations from ADHS, residential and non-residential SRLs were established for sodium cyanide, potassium cyanide, and hydrogen cyanide for use in remedial action at the Site. ADHS also concluded that the existing SRLs established for hydrogen cyanide were the most appropriate standards for application at the Site. Based on risk to public health from the cyanides in shallow soils and dispersion by wind, an early response action (ERA) was undertaken by ADEQ. The ERA included removal of the impacted surface soils to a depth of 1 foot, which resulted in the excavating of approximately 1,700 tons of contaminated soils. ADEQ implemented engineering controls including installation of a geotextile over the remaining cyanide-impacted soil followed by a 1-foot thick layer of aggregate base coarse (ABC) material.

In addition to removal of the cyanide-impacted surface soils, the five WDSs that received wastewater from the Facility activities were cleaned in the following manner:

- The contents of WDS-1 and WDS-4 tanks were removed. Following the removal of the sludge/wastewater, WDS-1 and WDS-4 and their associated piping were removed.
- The contents of WDS-2, WDS-3, and WDS-5 were removed. The removed contents were then treated with lime for fecal coliforms and the WDSs were rinsed and the systems were placed back into operation.

Since completion of the ERA for cyanides, WDS-2 continued to operate (after its cleaning) for treatment of domestic sewage from the Facility. However, its leach field was located within source area. Source control was accomplished in March 2008 by removing WDS-2 and its leach field and installation of a new septic system away from previously identified cyanide-impacted soils.

In 2013, Tetra Tech installed an engineered cap over the cyanide-impacted areas along the eastern and southern portions of the Facility. The cap was designed and installed to mitigate potential leaching of contaminants to groundwater and eliminate potential exposure pathways to contaminated soil via dermal contact, ingestion, and particulate and vapor inhalation. The cap and ancillary drainage features were constructed in 2013.

7.3 NATURE AND EXTENT OF CONTAMINATION

7.3.1 Soils

Numerous soil samples have been collected at the Facility during investigations conducted between 1990 and 2004. The extent of COC contamination in soil is as follows:

- The lateral extent of soil contamination of chlorinated-hydrocarbons, specifically PCE, in the vadose zone is confined to the source areas on the Facility, especially in the area beneath former WDS-1. Contamination is defined by soil samples collected at SB-2 to the north, GP-036 to the east, GP-194 to the south, and MW-1 to the west.

  The lateral extent of cyanide soil contamination is limited to the southwestern, southern, and eastern portions of the Facility and its immediate vicinity, is generally defined by soil samples collected at SB-1 to the north, GP-038 to the east, GP-205 and GP-207 to the south, and GP-462 to the west.

Due to the difficulty of detecting VOCs in soil samples due to volatilization, the lateral extent of chlorinated hydrocarbons in soil may be more appropriately delineated by collection of soil vapor VOC samples, with the caveat that soil vapor concentrations may slightly change as concentrations diffuse in soil. Soil vapor data is discussed in the Section 7.3.2.

7.3.2 Soil Vapor

Numerous soil vapor samples have been collected at the Site by two methods: sampling during drilling of borings and from sampling soil vapor monitoring wells. The extent of COC contamination in soil vapor is as follows:

- The vertical extent of PCE, TCE, 1,1-DCE, and hydrogen cyanide in soil vapor at the Facility is defined to depths of approximately 70 feet bgs, just above groundwater. The lateral extent of these COCs in soil vapor on the Facility is not completely defined, and data shows that contamination extends beyond the southern and western boundaries of the Facility.
- The lateral extent of COC contamination in shallow soil vapors (ground surface to 10 feet bgs) off the Facility has been completely defined. However, COC contaminants below 10 feet bgs has not been completely defined, and the lateral downgradient extent of COC in soil vapors (particularly PCE) due to off-gassing from the dissolved phase groundwater plume is unknown.
- Cis,1-2 DCE has not been detected above the laboratory reporting limits in the soil vapor samples collected from the Site, including in soil vapor samples collected from the Facility.

7.3.3 Groundwater

Groundwater sampling has been conducted at the Site since the first monitoring well was installed at the Site in 1992. The Site groundwater monitoring/sampling network includes of 48 groundwater monitoring wells, two triple-nested piezometer wells, one extraction well, and two production wells that are screened within various zones of the aquifer. Groundwater levels have remained relatively stable at the Site at depths of approximately 80 feet bgs.

Historical data collected at the Site has documented the migration of COCs from the Facility downgradient towards sensitive receptors. As of the date of this report, the receptors have not been impacted by the COCs[23]. In Fourth Quarter 2013, selected wells in the network were monitored and sampled. The following conclusions are based on the most recent data.

- In the A-Zone of the aquifer, the lateral extent of PCE, TCE, 1,1-DCE, and cis-1,2-DCE contamination extends approximately 2,700 feet northwest or downgradient from the source area at the Facility. The lateral extent of the cyanide contamination in the A-Zone at Site extends approximately 1,300 feet west-northwest from beneath the Facility.
- In the B-Zone of the aquifer, the lateral extent of PCE, TCE, and 1,1-DCE, extends approximately 4,100 feet northwest from the source areas at the Facility, and approximately 250 feet to the north. The lateral extent of the cyanide in the B-Zone of the aquifer extends approximately 2,400 feet northwest of the Facility.
- The lateral extent of PCE, TCE, and 1,1-DCE in the B-Zone has been defined since no COC were detected in samples from the three perimeter wells MW-28B through MW-30B during the November 2013 monitoring event.

[23] Total and free cyanide were detected one time from the production school well St. Francis of Assisi in June 2007.

7.4 FATE AND TRANSPORT

PCE and its daughter product compounds, including TCE, are present in the soil underlying the Facility in soil-gas form as well as dissolved in pore-water in the vadose zone. Based on hydraulic gradients and aquifer characteristics, groundwater is believed to move at average pore-velocities of approximately 37 feet per year in the A-Zone, 91 feet per year in the B-Zone, and 73 feet per year in the C-Zone, with the general flow direction in each of the three zones being to the northwest. Sorption-based retardation limits average transport velocities of PCE to between 18 and 45 feet per year, TCE to between 22 and 55 feet per year, and 1,1-DCE to between 27 and 68 feet per year, depending on the aquifer zone. Chlorinated COCs have been detected as far downgradient as 4,100 feet (MW-21B). PCE, TCE and 1,1-DCE vertical mobility is believed to be limited mostly to the A- and B-Zones. The Clay-A layer between the B- and C-Zones of the aquifer has been consistently encountered in borings advanced to its depth intervals, and all detections of chlorinated COCs beneath it have been in concentrations less than the applicable AWQS.

The potential receptors most likely to be influenced by further downgradient progress of Facility releases are believed to be the production wells used for irrigation purposes at the Alice Byrne Elementary School and St. Francis of Assisi School. Left unchecked, the chlorinated hydrocarbon plume might be expected to reach these wells (located 2,200 and 1,700 feet downgradient from MW-21B respectively) in approximately 25 years for the St. Francis School well and 32 years for the Alice Byrne School well, based on sorption-related retardation calculations for 1,1-DCE.

Factors which control the transport of cyanide-based compounds are less well understood than those for VOCs. Cyanide probably exists in the soil at the Facility as combinations of different compounds including Prussian Blue, sodium cyanide, potassium cyanide, hydrogen cyanide, and/or as a number of moderately soluble and degradable complexed cyanides based on cobalt, nickel, copper and iron. Results of the RI indicate cyanides are mobile and have been transported to groundwater. The form of cyanide may be hydrogen cyanide, CN^{-1} or weak or strong complexes which dissolve into pore water and are transported through the vadose zone through recharge. Once cyanide has reached the aquifer, it becomes mobile in the groundwater. This may occur in the form of one of the many cyanide complexes in dissolved or potentially colloidal form, or as dissolved hydrogen cyanide or CN^{-}. It is uncertain how stable or long-lasting cyanide compounds are in groundwater under Site conditions. In the A-Zone of the aquifer, cyanide species appear only to have been transported as far downgradient as MW-14A, a distance of approximately 800 feet from the nearest part of the source area adjacent to MW-5A. Cyanide has been detected recently in B-Zone groundwater monitoring well MW-24B, a distance of approximately 2,400 feet from the southwest corner of the Facility.

7.5 LAND AND WATER USE

Land use in the general region around the Facility consists of mixed-use, low-density residential use, with the usage of properties in the immediate vicinity of the Facility consisting of local commercial use, and light industrial use. There is no appreciable surface water within the Site boundaries. All water use is from groundwater and is primarily

irrigation-based in the vicinity of the Site. The potential receptors most likely to be influenced by further downgradient progress of release from the Facility are believed to be the irrigation-production well at the Alice Byrne Elementary School and the irrigation-production well at the St. Francis of Assisi School.

7.6 AREA OF UNCERTAINTY/ DATA GAPS

The following data gaps have been identified as part of this remedial investigation:

- Several of the parameters used in transport calculations for VOCs in groundwater beneath the Site represent data gaps: The fraction of organic carbon (f_{oc}), the porosity, and the bulk density of the B-Zone aquifer materials have not been measured. All Site-based calculations have been performed based on parameters derived from the unsaturated zone at the Facility or based on assumptions.
- Nitrate and nitrite as nitrogen was detected above regulatory limits in November 2004 and January 2005, when ADEQ conducted a one-time sampling event for water quality parameters in groundwater beneath the Site. According to ADWR records, groundwater within a five-mile radius of the Site is impacted by nitrate, however the lack of Site-specific data on nitrate and nitrite is a data gap. Additional data should be collected to determine if concentrations of the compounds in groundwater at the Site are related to former operations at the Facility.
- A review of industrial uses of DEHP revealed that there are two primary categories: use in plastic (PVC) products and non-plastic origins. Of particular interest is the identification that DEHP is sometimes used as a solvent or inert carrier in inks (CEPA, 1997), and is also common laboratory contaminant in groundwater samples (WDNR, 2002). While it is possible that DEHP may have been released at the Facility, DEHP has high retardation factor which significantly limits its transport in groundwater, and makes it unlikely to travel more than 5-10 feet beyond the Facility release area. DEHP has however been sporadically detected significantly downgradient of the Facility (well series MW-21), suggesting that DEHP may be present due to other factors unrelated to groundwater transport from the Facility. Further research to isolate the cause of these detections is needed to determine if DEHP should be considered a COC at the Site.
- The lateral extent of soil-vapor contamination at the Facility, particularly on the south and east sides has not been completely characterized. VOCs in soil gas have the potential to impact adjacent properties if impacts extend significantly beyond the Facility boundaries.
- The extent of soil-vapor contamination in the industrial area northwest of the Facility is undefined. The high concentrations of COCs in this area warrant further investigation.
- The well network at the Site has been on selective sampling since August 2008. Data on B-Zone and C-Zone groundwater flow direction is lacking in the middle of the Site. Most of the B-Zone wells were installed with the intent of monitoring what was believed to be the downgradient edge of the COC plume. As a result, the wells

currently being monitored are arrayed mostly along the axis of the plume in this area. Additional deeper zoned well and/or sampling events in which all of the available monitoring wells in the B-Zone and C-Zones may be needed in the future to provide clarification of localized flow variations that may exist between aquifer units.

8.0 REFERENCES

ADHS, 2002. Letter from Will Humble, ADHS, to Jeanne Hanley, ADEQ. March 19, 2002.

ADEQ, 1990. Incident Report #1471, ADEQ Compliant Department, October 9, 1990.

ADEQ, 1993a. Hazardous Waste Inspection Report; Houston Photo Lab, EPA ID Number AZD983480963. June 24, 1993.

ADEQ, 1993b. Hazardous Waste Inspection Supplemental Report, Houston International, 655 E. 20th Street, Yuma, Arizona, EPA ID AZD983480963. August 17, 1993.

ADEQ, 1994. Hazardous Waste Inspection Supplemental Report; Houston International, 655 East 20th Street, Yuma, Arizona 85365, EPA ID Number AZD983480963. April 11 and 12, 1994.

ADEQ, 1996. Draft Revised Eligibility and Evaluation Form. October 2, 1996.

ADEQ, 1998a. Letter from Lupe M. Buys, ADEQ HWCU, to Herb W. Houston, Houston International. September 8, 1998.

ADEQ, 1999a. Abbreviated Preliminary Assessment Report, Houston International, 655 E. 20th Street, Yuma, Arizona 85365, Yuma County; EPA ID# AZD983480963. June 8, 1999.

ADEQ, 1999b. Arizona Ambient Air Quality Guidelines., http://www.azdeq.gov/environ/air/permits/download/ambient.pdf.

ADEQ, 2002. Rationale for an Early Response Action at the 20th Street and Factor WQARF Site, memo from Scott Goodwin to Phil McNeely

ADEQ, 2011. 20th Street and Factor Avenue – WQARF Regulatory Site (site). January 1, 2011.

Arizona Department of Water Resources (ADWR), 2009. Arizona Water Atlas, Volume 7, Lower Colorado River Planning Area, November 2009.

ADWR, Online well records available at: https://gisweb.azwater.gov/waterresourcedata/wellregistry.aspx, 2013.

AEN, 1996. Laboratory Analyses by American Environmental Network (Arizona), Inc. of Samples Collected by ADEQ from MW-102A and C. December 3, 1996.

California Environmental Protection Agency (CEPA), 1997. Public Health Goal for Di(2-Ethylhexyl)Phthalate (DEHP) in Drinking Water. December 1997.

DeJonge, L.W., C. Kjaargaard, and P. Moldrup, 2004. Colloids and Colloid-Facilitated Transport of Contaminants in Soils: In Introduction. Vadose Zone Journal, 3:321-325.

Dickinson, J.E., Land, Michael, Faunt, C.C., Leake, S.A., Reichard, E.G., Fleming, J.B., and Pool, D.R., 2006, Hydrogeologic framework refinement, ground-water flow and storage, water-chemistry analyses, and water-budget components of the Yuma area, southwestern Arizona and southeastern California: U.S Geological Survey Scientific Investigations Report 2006-5135, 90 p.

EPA, 1985. *Ambient Water Quality Criteria for Cyanide*. EPA 440/5-84-028. January 1985.

EPA, 1994. *Treatment of Cyanide Heap Leaches and Tailings*. U.S. Environmental Protection Agency, Office of Solid Waste, Washington, D.C. EPA 530-R-94-037.

EPA, 2001. National Primary Drinking Water Regulations; Technical Factsheet on: CYANIDE. April 12, 2001.

EPA, 2002. Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soil.

EPA, 2003. User's Guide for Evaluating Subsurface Vapor Intrusion Into Buildings. June 19, 2003.

EPA, 2011. Toxicological Review of Trichloroethylene. EPA/635/R-09/011F. September, 2011.

EPA, 2012. Toxicological Review of Tetrachloroethylene (Perchloroethylene). EPA/635/R-08/011F. February, 2012.

EPA, 2012. EPA's Vapor Intrusion Database: Evaluation and Characterization of Attenuation Factors for Chlorinated Volatile Organic Compounds and Residential Buildings, EPA 530-R-10-002, March 16, 2012.

EPA, 2013. EPA Regional Screening Level (RSL) Summary Table. November 2013.

Foree & Vann, 1990a. Phase II - Environmental Site Assessment, Houston International, Ltd., Photo Products Division, 655 E. 20th Street, Yuma, AZ. September 21, 1990.

Foree & Vann, 1990a. Addendum I, Phase II - Environmental Site Assessment, Houston International, Ltd., Photo Products Division, 655 E. 20th Street, Yuma, AZ. December 20, 1990.

Foree & Vann, 1992a. Site Assessment and Remedial Action Plan, Houston International Facility, Photo Products Division, 655 East 20th Street, Yuma, Arizona. July 28, 1992.

Foree & Vann, 1992b. Technical Report, Installation of MW-1 and response to ADEQ, Houston International, Ltd., Yuma, Arizona. November 23, 1992.

Foree & Vann, 1993a. Phase II Environmental Site Assessment, Soil & groundwater sampling, Houston International, Ltd., Yuma, Arizona. January 25, 1993.

Foree & Vann, 1993b. Technical report, Installation.

Foree & Vann, 1993c. Quarterly groundwater Monitoring report #2, Houston International, Ltd., 655 East 20th Street, Yuma, Arizona. October 25, 1993.

Foree & Vann, 1994a. Soil Gas Survey, Houston International Photo Products and Dreamland Facilities, 655 and 635 East 20th Street, Yuma, Arizona. May 9, 1994.

Foree & Vann, 1994b. Site Assessment Plan, Houston International, Ltd., 655 East 20th Street, Yuma, Arizona. July 27, 1994.

Foree & Vann, 1996. Copies of Mobile & Fixed Lab Results and test Boring Logs, and Original NOIS Forms, Houston International, Ltd. Site, 655 East 20th Street, Yuma, Arizona. February 12, 1996.

GEC, 1996. Upgradient Groundwater Monitoring Well Installation, Sampling, and Testing, Houston International, Ltd. Site, 655 East 20th Street, Yuma, Arizona. July 23, 1996.

GeoTrans, 2001a. 20th and Factor WQARF Site; February 15, 2001 Site Visit Summary. Memorandum, GeoTrans, to Nicki Fatherly, ADEQ. February 28, 2001.

GeoTrans, 2001b. ERA Site Investigation - Cyanides, Houston International Facility, 655 East 20th Street, 20th and Factor WQARF Site, Yuma, Arizona. Technical Memorandum, November 16, 2001.

GeoTrans, 2001c. Health and Safety Plan, 20th Street and Factor Avenue WQARF Site, Yuma, Arizona; Revision 2. April 2001.

GeoTrans, 2002a. Air Monitoring Plan, Cyanide Sources Excavation, 20th Street and Factor Avenue WQARF Site, Yuma, Arizona. May 1, 2002.

GeoTrans, 2002b. Work plan and Protocols for Implementing an Early Response Action for Cyanides at the 20th Street and Factor Avenue WQARF Site, Yuma, Arizona. May 1, 2002.

GeoTrans, 2003a. Groundwater Monitoring Well Installation and Sampling Summary Report for 2002, 20th and Factor WQARF Site, Yuma, Arizona. June 27, 2003.

GeoTrans, 2003b. Early Response Action for Cyanides in Surface Soil and Wastewater Disposal Systems, Houston International Facility, 655 East 20th Street, 20th and Factor WQARF Site, Yuma, Arizona. June 3, 2003.

GeoTrans, 2003c. Work Plan and Field Sampling Plan, Early Response Action Evaluation for Volatile Organic Compounds Protocols, 20th and Factor WQARF Site, Yuma, Arizona. December 24, 2003.

GeoTrans, 2004a. Groundwater Monitoring Well Installation and Sampling, Summary Report for 2004, 20th and Factor WQARF Site, Yuma, Arizona. June 30, 2004.

GeoTrans, 2004b. Early Response Action Evaluation for Volatile Organic Compounds, 20th and Factor WQARF Site, Yuma, Arizona. June 30, 2004.

GeoTrans, 2004c. Indoor Air Screening Evaluation for 20th Street and Factor Avenue, 20th and Factor WQARF Site, Yuma, Arizona. 2004.

GeoTrans, 2005a. Results of Geophysical Investigation, Houston International Facility. Technical memorandum, April 22, 2005.

GeoTrans, 2005b. Technical Memorandum, Vapor Intrusion Modeling, Houston International Facility, 653-655 East 20th Street, 20th and Factor WQARF Site, Yuma, Arizona. May 10, 2005.

GeoTrans, 2005c. Cyanide Compounds Solubility, Leachability and Implications for Groundwater Protection Levels (GPLs), Houston International Facility, 653-655 East 20th Street, 20th and Factor WQARF Site, Yuma, Arizona. June 28, 2005.

GeoTrans, 2005d. Groundwater Monitoring and Well Installation Summary Report for Period November 2004 through January 2005, 20th and Factor WQARF Site, Yuma, Arizona. June 30, 2005.

GeoTrans, 2006a. Groundwater Monitoring and Well Installation for May, June, and October 2005, 20th and Factor WQARF Site, Yuma, Arizona. January 2006.

GeoTrans, 2006b. Final Indoor Air Risk Assessment, 20th and Factor WQARF Site, Yuma, Arizona. March 10, 2006.

GeoTrans, 2006c. Groundwater Monitoring Report for October 2006, 20th and Factor WQARF Site, Yuma, Arizona. December 27, 2006.

GeoTrans, 2007a. Well Installation Report for Groundwater Monitoring Wells MW-16, MW-17, MW-18A,B, MW-19, and MW-10, 20th and Factor WQARF Site, Yuma, Arizona. January 17, 2007.

GeoTrans, 2007b. Groundwater Monitoring Report for November – December 2006, 20th and Factor WQARF Site, Yuma, Arizona. February 7, 2007.

GeoTrans, 2007c. Groundwater Monitoring Report for February-March 2007, 20th and Factor WQARF Site, Yuma, Arizona. April 20, 2007.

GeoTrans, 2007d. Well Installation Report for Groundwater Monitoring Wells MW-8C, MW-21A, MW-21B, and MW-21C, 20th and Factor WQARF Site, Yuma, Arizona. June 27, 2007.

GeoTrans, 2007e. Groundwater Monitoring Report for May 2007, 20th and Factor WQARF Site, Yuma, Arizona. June 28, 2007.

GeoTrans, 2007f. Groundwater Monitoring Report for July and August 2007, 20th and Factor WQARF Site, Yuma, Arizona. September 7, 2007.

GeoTrans, 2007g. Well Installation Report for Groundwater Monitoring Well MW-17C, 20th and Factor WQARF Site, Yuma, Arizona. November 29, 2007.

GeoTrans, 2008a. Groundwater Monitoring Report for November 2007, 20th and Factor WQARF Site, Yuma, Arizona. February 6, 2008.

GeoTrans 2008b. Well Installation Report for Groundwater Monitoring Wells MW-22B and MW-23B, 20th and Factor WQARF Site, Yuma, Arizona. February 8, 2008.

GeoTrans, 2008c. Well Installation Report for Groundwater Monitoring Well MW-24B, 20th and Factor WQARF Site, Yuma, Arizona. March 5, 2008.

GeoTrans, 2008d. Well Installation Report for Extraction Well EW-1, 20th and Factor WQARF Site, Yuma, Arizona. March 12, 2008.

GeoTrans, 2008e. Groundwater Monitoring Report for February 2008, 20th and Factor WQARF Site, Yuma, Arizona. April 30, 2008.

GeoTrans, 2008f. Installation of Replacement Septic Tank System for WDS-2, Houston International Facility, ERA at the 20th and Factor WQARF Site, Yuma, Arizona. May 15, 2008.

GeoTrans, 2008g. Results of March 2008 Aquifer Testing at the 20th and Factor Water Quality Assurance Fund site, Yuma, Arizona. Memorandum, May 23, 2008.

GeoTrans, 2008h. Well Installation Report for Groundwater Monitoring Well MW-16A, 20th and Factor WQARF Site, Yuma, Arizona. June 23, 2008.

GeoTrans, 2008i. Volatile Organic Compound (VOC) Analysis of Headspace Vapors and Near-Surface Waters in MW-8A, MW-8B, MW-8C, EW-1, and MW-22B, 20th and Factor WQARF site. Technical Memorandum, June 30, 2008.

GeoTrans, 2008j. Groundwater Monitoring Report for April, May, and June 2008, 20th and Factor WQARF Site, Yuma, Arizona. June 30, 2008.

GeoTrans, 2008k. Groundwater Modeling Report, 20th and Factor WQARF Site, Yuma, Arizona. June 30, 2008.

GeoTrans, 2008l. Cyanide Sampling in Fixed-Point soil Vapor Monitoring Wells at 20th and Factor WQARF Site. Technical Memorandum, October 7, 2008.

GeoTrans, 2008m. Groundwater Monitoring Report for August and September 2008, 20th and Factor WQARF Site, Yuma, Arizona. December 5, 2008.

GeoTrans, 2009a. Groundwater Monitoring Report for October through December 2008, 20th and Factor WQARF Site, Yuma, Arizona. January 26, 2009.

GeoTrans, 2010. Soil Vapor Investigation and Well Installation and Sampling, September 2008 through April 2010, 20th and Factor WQARF Site, Yuma, Arizona. July 20, 2010.

Ghosh, R.S., D.A. Dzombak, R.G. Luthy, and D.V. Nakles. 1999. Subsurface Fate and Transport of Cyanide Species at a Manufactured-Gas Plant Site. Water Environ. Res. 71, 1205-1216.

Ghosh, et al., 2004. Rajat S. Ghosh, David V. Nakles, Ishwar P. Murarka, and Edward F. Neuhauser. *Cyanide Speciation in Soil and Groundwater at Manufactured Gas Plant (MGP) Sites*. Environmental Engineering Science, Volume 26, Number 6, 2004.

Goodwin Scott D./ADEQ, 2002. ADEQ Interoffice Memorandum-Rationale for and Early Response Action at the 20th Street and Factor WQARF Site. April 8, 2002.

Goodwin Scott D./ADEQ, 2014. Personal communication with Jay Simonton, City of Yuma Utilities Director, April 3, 2014.

Gore, 2001. GORE-SORBER® Screening Survey Final Report, Houston International, Inc., Yuma, Arizona. September 5, 2001.

Hill, B., 1993. Hydrogeology, Numerical Model and Scenario Simulations of the Yuma Area Groundwater Flow Model, Arizona, California and Mexico. ADWR Modeling Report No. October 7, 1993.

Houston International, 1991a. Letter from H.W. Houston, Jr. to Holly Wheeler-Benson, ADEQ. August 27, 1991.

Houston International, 1991b. Letter from H.W. Houston, Jr. to Holly Wheeler-Benson, ADEQ. December 30, 1991.

Houston International, 1994. Letter from H. W. Houston Jr. to Lowell M. Carty, ADEQ, May 17, with attached Preliminary Assessment Questionnaire filled out by Houston International, dated May 17, 1994.

HydroGeoLogic, Inc. (HGL), 2007. Draft Industrial Survey, 20th Street and Factor Avenue WQARF Registry Site, dated June 29, 2007.

HGL, 2012. Draft Final Letter Report – Remedial Investigation, 20th Street and Factor Avenue WQARF Registry Site, dated March 6, 2012.

Industrial Properties, Inc., 1969. Warranty Deed. February 6, 1969.

Kingham and Semenak, 2000. Kingham, Neville and Semenak, Robert. *SPLP Gaining Ground as Acceptable, Even Preferred, Leachability*. July/August 2000 issue of Georgia and Southeast Environmental News.

Los Alamos National Laboratory, 2013, http://periodic.lanl.gov/34.shtml

Mansfeldt, T., S.B. Gehrt, and J. Friedl. 1998. Cyanides in a Soil of a Former Coking Plant Site. Z. Pflanzenernähr. Bodenkd. 161, 229-234.

Meeussen, 1992a. Johannes C. L. Meeussen, Meindorf G. Keizer, and F. A. M. de Hann. *Chemical Stability and Decomposition Rate of Iron Cyanide Complexes in Soil Solutions*. Environmental Science Technology, Volume 26, Number 3, 1992.

Meeussen, J.C.L., M.G. Keizer, W.H. van Riemsdijk, and F.A.M. de Haan. 1992b. Dissolution Behavior of Iron Cyanide (Prussian Blue) in Contaminated Soils. Environ. Sci. Technol. 26, 1832-1838.

Meeussen, J.C.L., D.W Nakles, R.J. Ghosh, and D.A Dzombak, 2006. Fate and Transport of Anthropogenic Cyanide in Soil and groundwater. In Cyanide in Water and Soil; Chemistry, Risks, and Management. Edited by R.S. Ghosh, D.A. Dzombak, and G.M. Wong-Chang. CRC Press.

National Park Service, 1997. Environmental Contaminants Encyclopedia, Entry on Cyanide(s) in General. July 1, 1997.

Nordwick, S., Canty, M., Hiebert R., and Thompson, L., 1999. Microbiological Treatment of Cyanide, Metals, and Nitrates in Mining Products. In Bioremediation of Metals and Inorganic Compounds. Leeson, A. and Alleman, B.C., ed. Battelle Press, Columbus, Ohio.

Office of the Arizona State Climatologist, 2011.

Olmstead, F.H., Loeltz and Irelan, B., 1973. *Geohydrology of the Yuma Area, Arizona and California*. USGS Professional Paper 486-H, 1973.

Overby, A., 1997. *Maps Showing Groundwater Conditions in the Yuma Basin, Yuma County, Arizona, 1992*. ADWR Hydrologic Map Series Report No. May 30, 1997.

Rennert, T. and T. Mansfeldt, 2005. Iron-Cyanide Complexes in Soil under Varying Redox Conditions: Speciation, Solubility and Modeling. European Journal of Soil Sciences, Volume 56, Issue 4, p. 527-536. August 2005.

Research Triangle Institute, 1997. Toxicological Profile for Cyanide. Prepared for U.S. Department of Health and Human Services. September 1997.

Sharma, V.K., Rivera, W., Smith, J.O., O'Brien, B., 1998. Ferrate(VI) Oxidation of Aqueous Cyanide. Environmental Science and Technology, Volume 32, pp. 2608-2613.

Syracuse Research Corp, 1989. Toxicological Profile for Cyanide. Prepared for Agency for Toxic Substances and Disease Registry, U.S. Public Health. Oak Ridge National Laboratory Technical Editor. ATSDR/TP-88/12. December 1989.

Tetra Tech, 2012a. Discussion of Existing Cap Inspection and Soil Sampling Results at the 20th and Factor WQARF Site, Yuma, Arizona. January 14, 2012.

Tetra Tech, 2012b. Draft Groundwater Monitoring Report for October and November 2012, 20th and Factor WQARF Site, Yuma, Arizona. January 21, 2012.

Tetra Tech, 2013a. Discussion of Existing Cap Inspection and Soil Sampling Results at the 20th and Factor WQARF Site, Yuma, Arizona. January 14, 2013.

Tetra Tech, 2013b. Groundwater Monitoring Report for Second Quarter 2013, 20th and Factor WQARF Site, Yuma, Arizona. October 14, 2013.

Tetra Tech, 2013c. Draft Early Response Activities, 2013 Capping Activities, 20th and Factor WQARF Site, Yuma, Arizona. January 3, 2014.

Tetra Tech GEO, 2011. FY2011 Soil Vapor Investigation Report, 20th and factor WQARF Site, Yuma, Arizona. May 24, 2011.

Tetra Tech, 2014. Early Response Action, Completion Report, 2012 – 2013 activities, 20th Street and Factor Avenue WQARF Site. February 24, 2014.

United States Bureau of Reclamation, http://www.usbr.gov/lc/yuma/facilities/yao_wellfields_map.html, 2013.

Verschueren, K., 1983. Handbook of Environmental Data on Organic Chemicals. Van Nostrand Reinhold, New York, NY.

Weatherunderground, http://www.wunderground.com/

Western Technologies, 1990. Environmental Property Evaluation, Houston International, Ltd., Yuma, Arizona. April 12, 1990.

Wisconsin Department of Natural Resources (WDNR), 2002. Problems Associated with bis(2-ethylhexyl)phthalate Detections in Groundwater Monitoring Wells. Publication WA 1011

TABLES

Sample Information			VOCs (mg/kg)											Cyanides (mg/kg)	
Boring ID	Depth (ft bgs)	Date	PCE	TCE	1,1-DCE	1,2-DCA	1,1,1-TCA	Chloroform	Methylene Chloride*	Benzene	Toluene	Ethylbenzene	Xylenes	Cyanide, Free	Cyanide, Total
Boring 1[1]	5, 10, 15, 20	8/13/1990	0.09	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	2.88	<0.04	0.04	NA	NA
Boring 2[1]	5, 10, 15, 20	8/13/1990	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	2.52	<0.04	<0.04	NA	NA
Boring 3	2	8/13/1990	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	2.97	<0.04	<0.04	NA	NA
Boring 4[2]	2, 5	8/13/1990	0.06	<0.04	<0.04	<0.04	<0.04	0.06	<0.04	<0.04	0.1	<0.04	0.07	NA	NA
Boring 5[2]	2, 5								<0.04						
Boring 6[2]	0.5, 5								<0.04						
MW-1[3]	10-11.5	10/22/1992	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.20	<0.05	<0.10	<0.10	<0.10	NA	NA
	20-21.5	10/22/1992	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.20	<0.05	<0.10	<0.10	<0.10	NA	NA
	30-31.5	10/22/1992	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.20	<0.05	<0.10	<0.10	<0.10	NA	NA
	40-41.5	10/22/1992	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.20	<0.05	<0.10	<0.10	<0.10	NA	NA
	50-51.5	10/22/1992	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.20	<0.05	<0.10	<0.10	<0.10	NA	NA
	60-61	10/22/1992	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.20	<0.05	<0.10	<0.10	<0.10	NA	NA
	70-71.5	10/22/1992	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.20	<0.05	<0.10	<0.10	<0.10	NA	NA
B11	3, 8	12/9/1992	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.50	<0.05	<0.10	<0.10	<0.10	NA	NA
B12	3, 8	12/9/1992	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.50	<0.05	<0.10	<0.10	<0.10	NA	NA
B13	3, 8	12/9/1992	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.50	<0.05	<0.10	<0.10	<0.10	NA	NA
B14	3, 8	12/9/1992	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.50	<0.05	<0.10	<0.10	<0.10	NA	NA
Composite-1[1]	0.5	12/9/1992	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.50	<0.05	<0.10	<0.10	<0.10	NA	NA
B11-14	8	12/9/1992	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HI-1B	0.5	4/12/1994	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HI-2B	0.5	4/12/1994	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HI-3B	0.5	4/12/1994	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4255-1	5	12/7/1994	0.033/<0.05#	<0.025/<0.05#	NA/<0.05#	NA/<0.05#	NA/<0.05#	NA/<0.05	<0.2	<0.025/<0.05#	<0.025/0.05#	<0.025/<0.05#	<0.025/<0.15#	NA	NA
	10	12/7/1994	<0.025/<0.05#	<0.025/NA#	NA/NA#	NA/NA#	NA/NA#	NA/NA#	NA	<0.025/NA#	<0.025/NA#	<0.025/NA#	<0.025/NA#	NA	NA
	20	12/7/1994	0.028/NA#	<0.025/NA#	NA/NA#	NA/NA#	NA/NA#	NA/NA#	NA	<0.025/NA#	<0.025/NA#	<0.025/NA#	<0.025/NA#	NA	NA
	30	12/7/1994	0.067/NA#	<0.025/NA#	NA/NA#	NA/NA#	NA/NA#	NA/NA#	NA	<0.025/NA#	<0.025NA#	<0.025/NA#	<0.025/NA#	NA	NA
	40	12/7/1994	0.11/NA#	<0.025/NA#	NA/NA#	NA/NA#	NA/NA#	NA/NA#	NA	<0.025/NA#	<0.025/NA#	<0.025/NA#	<0.025/NA#	NA	NA
	50	12/7/1994	0.059/NA#	<0.025/NA#	NA/NA#	NA/NA#	NA/NA#	NA/NA#	NA	<0.025/NA#	<0.025/NA#	<0.025/NA#	<0.025/NA#	NA	NA
	60	12/7/1994	0.16/NA#	<0.025/NA#	NA/NA#	NA/NA#	NA/NA#	NA/NA#	NA	<0.025/NA#	<0.025/NA#	<0.025/NA#	<0.025/NA#	NA	NA
	70	12/7/1994	0.045/<0.05#	<0.025/<0.05#	NA/<0.05#	NA/<0.05#	NA/<0.05#	NA/<0.05	<0.2	<0.025/<0.05	<0.025/<0.05#	<0.025/<0.05#	<0.025/<0.15#	NA	NA
4255-2	5	12/7/1994	0.027NA#	<0.025/NA#	NA/NA#	NA/NA#	NA/NA#	NA/NA#	NA	<0.025/NA#	<0.025/NA#	<0.025/NA#	<0.025/NA#	NA	NA
	10	12/7/1994	0.025/<0.050	<0.025/NA#	NA/<0.05#	NA/<0.05#	NA/<0.05#	NA/0.073	<0.2	<0.025/<0.05#	<0.025/<0.05#	<0.025/<0.05#	<0.025/<0.15#	NA	NA
	20	12/7/1994	0.032/NA#	<0.025/NA#	NA/NA#	NA/NA#	NA/NA#	NA/NA#	NA	<0.025/NA#	<0.025/NA#	<0.025/NA#	<0.025/NA#	NA	NA
	30	12/7/1994	0.045NA#	<0.025/NA#	NA/NA#	NA/NA#	NA/NA#	NA/NA#	NA	<0.025/NA#	<0.025NA#	<0.025/NA#	<0.025/NA#	NA	NA
	40	12/7/1994	0.082/NA#	<0.025/NA#	NA/NA#	NA/NA#	NA/NA#	NA/NA#	NA	<0.025/NA#	<0.025/NA#	<0.025/NA#	<0.025/NA#	NA	NA
	45	12/7/1994	NA/<0.050#	NA/<0.05#	NA/<0.05#	NA/<0.05#	NA/<0.05#	NA/<0.05	<0.2	NA/<0.05#	NA/<0.05#	NA/<0.05#	NA/<0.15#	NA	NA
	50	12/7/1994	0.14/<0.050#	<0.025/NA#	NA/<0.05#	NA/<0.05#	NA/<0.05#	NA/0.095	<0.2	<0.025/<0.05#	<0.025/<0.05#	<0.025/<0.05#	<0.025/<0.15#	NA	NA
	55	12/7/1994	NA/0.14#	NA/<0.05#	NA/<0.05#	NA/<0.05#	NA/<0.05#	NA/<0.05	<0.2	NA/<0.05#	NA/<0.05#	NA/<0.05#	NA/0.15#	NA	NA
	60	12/7/1994	0.21/NA#	<0.025/NA#	NA/NA#	NA/NA#	NA/NA#	NA/NA#	NA	<0.025/NA#	<0.025/NA#	<0.025/NA#	<0.025/NA#	NA	NA
4255-3	5	1/18/1995	0.33/NA#	<0.025/NA#	NA/NA#	NA/NA#	NA/NA#	NA/NA#	NA	<0.025/NA#	<0.025/NA#	<0.025/NA#	<0.025/NA#	NA	NA
	10	1/18/1995	0.21/NA#	<0.025/NA#	NA/NA#	NA/NA#	NA/NA#	NA/NA#	NA	<0.025/NA#	<0.025/NA#	<0.025/NA#	<0.025/NA#	NA	NA
	15	1/18/1995	0.10/NA#	<0.025/NA#	NA/NA#	NA/NA#	NA/NA#	NA/NA#	NA	<0.025/NA#	<0.025/NA#	<0.025/NA#	<0.025/NA#	NA	NA
	20	1/18/1995	0.75/NA#	<0.025/NA#	NA/NA#	NA/NA#	NA/NA#	NA/NA#	NA	<0.025/NA#	<0.025/NA#	<0.025/NA#	<0.025/NA#	NA	NA
	30	1/18/1995	0.050/NA#	<0.025/NA#	NA/NA#	NA/NA#	NA/NA#	NA/NA#	NA	<0.025/NA#	<0.025/NA#	<0.025/NA#	<0.025/NA#	NA	NA
	40	1/18/1995	0.13/NA#	<0.025/NA#	NA/NA#	NA/NA#	NA/NA#	NA/NA#	NA	<0.025/NA#	<0.025/NA#	<0.025/NA#	<0.025/NA#	NA	NA
	50	1/18/1995	0.093/NA#	<0.025/NA#	NA/NA#	NA/NA#	NA/NA#	NA/NA#	NA	<0.025/NA#	<0.025/NA#	<0.025/NA#	<0.025/NA#	NA	NA
	60	1/18/1995	0.20/<0.05#	<0.025/<0.05#	NA/<0.05#	NA/<0.05#	NA/<0.05#	NA/<0.05#	<0.2	<0.025/<0.05#	<0.025/<0.05#	<0.025/<0.05#	<0.025/0.15#	NA	NA
	70	1/18/1995	NA/<0.05#	NA/<0.05#	NA/<0.05#	NA/<0.05#	NA/<0.05#	NA/<0.05#	<0.2	<0.025/<0.05#	<0.025/<0.05#	<0.025/<0.05#	<0.025/0.15#	NA	NA
4255-4	3	1/18/1995	0.077/NA#	<0.025/NA#	NA/NA#	NA/NA#	NA/NA#	NA/NA#	NA	<0.025/NA#	<0.025/NA#	<0.025/NA#	<0.025/NA#	NA	NA
	8	1/18/1995	<0.025/NA#	<0.025/NA#	NA/NA#	NA/NA#	NA/NA#	NA/NA#	NA	<0.025/NA#	<0.025/NA#	<0.025/NA#	<0.025/NA#	NA	NA
4255-5	3	1/18/1995	0.20/NA#	<0.025/NA#	NA/NA#	NA/NA#	NA/NA#	NA/NA#	NA	<0.025/NA#	<0.025/NA#	<0.025/NA#	<0.025/NA#	NA	NA
	8	1/18/1995	<0.025/NA#	<0.025/NA#	NA/NA#	NA/NA#	NA/NA#	NA/NA#	NA	<0.025/NA#	<0.025/NA#	<0.025/NA#	<0.025/NA#	NA	NA
4255-6	3	1/18/1995	<0.025/NA#	<0.025/NA#	NA/NA#	NA/NA#	NA/NA#	NA/NA#	NA	<0.025/NA#	<0.025/NA#	<0.025/NA#	<0.025/NA#	NA	NA
	8	1/18/1995	<0.025/NA#	<0.025/NA#	NA/NA#	NA/NA#	NA/NA#	NA/NA#	NA	<0.025/NA#	<0.025/NA#	<0.025/NA#	<0.025/NA#	NA	NA
4255-7	3	1/18/1995	<0.025/NA#	<0.025/NA#	NA/NA#	NA/NA#	NA/NA#	NA/NA#	NA	<0.025/NA#	<0.025/NA#	<0.025/NA#	<0.025/NA#	NA	NA
	8	1/18/1995	<0.025/NA#	<0.025/NA#	NA/NA#	NA/NA#	NA/NA#	NA/NA#	NA	<0.025/NA#	<0.025/NA#	<0.025/NA#	<0.025/NA#	NA	NA

TABLE 2-1
SUMMARY OF DETECTED CONCENTRATIONS IN SOIL: VOCS AND CYANIDES
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Sample Information			VOCs (mg/kg)											Cyanides (mg/kg)	
Boring ID	Depth (ft bgs)	Date	PCE	TCE	1,1-DCE	1,2-DCA	1,1,1-TCA	Chloroform	Methylene Chloride*	Benzene	Toluene	Ethylbenzene	Xylenes	Cyanide, Free	Cyanide, Total
GS-530-SS	1	6/25/2001	<0.040	NA	<0.040	<0.040	<0.040	<0.040	<0.081	<0.040	<0.040	<0.040	<0.162	76	830
GS-619-SS	1.5	6/25/2001	<0.050	NA	<0.050	<0.050	<0.050	<0.050	<0.10	<0.050	<0.050	<0.050	<0.20	<2.5	790
SS-101	0.5	6/26/2011	<0.045	NA	<0.045	<0.045	<0.045	<0.045	<0.090	<0.045	<0.045	<0.045	<0.180	13	690
RMP-101	0.5	6/26/2001	<0.046	NA	<0.046	<0.046	<0.046	<0.046	<0.091	<0.046	<0.046	<0.046	<0.182	5.3	650
RMP-102	0.5	6/26/2001	<0.046	NA	<0.046	<0.046	<0.046	<0.046	<0.093	<0.046	<0.046	<0.046	<0.186	5.7	650
GP-141	Surface	9/19 & 9/20/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	1.1
	3		<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.080	<0.040	<0.040	<0.040	<0.160	1.37	2,000
	7		<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.098	<0.049	<0.049	<0.049	<0.196	<1.0	23
	10		<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.066	<0.033	<0.033	<0.033	<0.136	NA	<1.0
	12		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.10	<0.050	<0.050	<0.050	<0.20	NA	<1.0
	20		<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.098	<0.049	<0.049	<0.049	<0.196	NA	<1.0
GP-190	Surface	9/20 & 9/27/2001	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.091	<0.046	<0.046	<0.046	<0.182	<1.00	4.1
	5		<0.048	<0.048	<0.048	<0.048	<0.048	<0.048	<0.096	<0.048	<0.048	<0.048	<0.192	NA	<1.0
	10		<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.11	<0.052	<0.052	<0.052	<0.22	NA	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	20		<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.098	<0.049	<0.049	<0.049	<0.196	<1.0	4.2
GP-194	Surface	9/20 & 9/27/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	5		<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.080	<0.040	<0.040	<0.040	<0.160	NA	<1.0
	10		<0.044	<0.044	<0.044	<0.044	<0.044	<0.044	<0.088	<0.044	<0.044	<0.044	<0.176	NA	<1.0
	15		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.10	<0.050	<0.050	<0.050	<0.20	<1.0	3.2
GP-214	Surface	9/20 & 9/21/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	5		<0.048	<0.048	<0.048	<0.048	<0.048	<0.048	<0.096	<0.048	<0.048	<0.048	<0.192	NA	<1.0
	10		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.099	<0.050	<0.050	<0.050	<0.198	NA	<2.0
	15		<0.048	<0.048	<0.048	<0.048	<0.048	<0.048	<0.095	<0.048	<0.048	<0.048	<0.190	NA	<1.0
GP-138	Surface	9/21 & 9/22/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	3.0
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-429	Surface	9/22/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	32
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	15[1]		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-063	Surface	9/22 and 9/23/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.31	480
	4		<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.092	<0.046	<0.046	<0.046	<0.194	<1.0	24
	5		<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.098	<0.049	<0.049	<0.049	<0.196	NA	<1.0
	10		<0.048	<0.048	<0.048	<0.048	<0.048	<0.048	<0.095	<0.048	<0.048	<0.048	<0.190	NA	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	6.5
GP-282	Surface	9/23/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	4.8
	5		<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.097	<0.049	<0.049	<0.049	<0.194	NA	<1.0
	10		<0.047	<0.047	<0.047	<0.047	<0.047	<0.047	<0.094	<0.047	<0.047	<0.047	<0.194	NA	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	1.2
	20		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.099	<0.050	<0.050	<0.050	<0.198	<1.0	1.8
GP-198	Surface	9/23/2001	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.099	<0.050	<0.050	<0.050	<0.198	<1.0	350
	5		<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.11	<0.052	<0.052	<0.052	<0.22	<1.0	24
	10		<0.051	<0.051	<0.051	<0.051	<0.051	<0.051	<0.11	<0.051	<0.051	<0.051	<0.22	<1.0	1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	20		<0.051	<0.051	<0.051	<0.051	<0.051	<0.051	<0.11	<0.051	<0.051	<0.051	<0.22	NA	<1.0
GP-400	Surface	9/23/2001	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.11	<0.052	<0.052	<0.052	<0.22	NA	<1.0
	5		<0.047	<0.047	<0.047	<0.047	<0.047	<0.047	<0.093	<0.047	<0.047	<0.047	<0.186	NA	<1.0
	10		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.10	<0.050	<0.050	<0.050	<0.20	<1.00	4.1
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	20		<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.098	<0.049	<0.049	<0.049	<0.196	NA	<1.0
GP-430	Surface	9/23 & 9/27/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	5		<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.098	<0.049	<0.049	<0.049	<0.196	NA	<1.0
	10		<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.098	<0.049	<0.049	<0.049	<0.196	NA	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	20		<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.099	<0.05	<0.05	<0.05	<0.198	NA	<1.0

Sample Information			VOCs (mg/kg)											Cyanides (mg/kg)	
Boring ID	Depth (ft bgs)	Date	PCE	TCE	1,1-DCE	1,2-DCA	1,1,1-TCA	Chloroform	Methylene Chloride*	Benzene	Toluene	Ethylbenzene	Xylenes	Cyanide, Free	Cyanide, Total
GP-428	Surface	9/23, 9/24 & 9/26/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-387	Surface	9/24/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	5		<0.051	<0.051	<0.051	<0.051	<0.051	<0.051	<0.11	<0.051	<0.051	<0.051	<0.22	NA	<1.0
	10		<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.097	<0.049	<0.049	<0.049	<0.194	NA	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	20		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.099	<0.050	<0.050	<0.050	<0.198	NA	<1.0
GP-423	Surface	9/24/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	5		<0.047	<0.047	<0.047	<0.047	<0.047	<0.047	NA	<0.047	<0.047	<0.047	<0.186	NA	<1.0
	10		<0.051	<0.051	<0.051	<0.051	<0.051	<0.051	NA	<0.051	<0.051	<0.051	<.22	NA	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	20		<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.098	<0.049	<0.049	<0.049	<0.196	NA	<1.0
GP-146	Surface	9/24/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	240
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	2.4
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	2.2
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-151	Surface	9/24 & 9/25/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-431	Surface	9/24 & 9/25/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	1.2
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-196	Surface	9/25/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.26	310
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	1.3
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	2.4
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-433	Surface	9/25/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	<1.0
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	1.3
GP-188	Surface	9/25/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-087	Surface	9/25 & 9/26/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-089	Surface	9/25 & 9/26/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.37	230
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	1.4
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	2.5
GP-032	Surface	9/26/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	1.6
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0

Sample Information			VOCs (mg/kg)											Cyanides (mg/kg)	
Boring ID	Depth (ft bgs)	Date	PCE	TCE	1,1-DCE	1,2-DCA	1,1,1-TCA	Chloroform	Methylene Chloride*	Benzene	Toluene	Ethylbenzene	Xylenes	Cyanide, Free	Cyanide, Total
GP-057	Surface	9/26/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	1.7
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	2.3
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	6.4
GP-051	Surface	9/26/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-081	Surface	9/26/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	<1.0
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	<1.0
GP-070	Surface	9/26/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	1.5
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	<1.0
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-030	Surface	10/1/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-033	Surface	10/1/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	1.6
GP-035	Surface	10/1/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	2.4
GP-040	Surface	10/1/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
GP-041	Surface	10/1/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
GP-042	Surface	10/1/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
GP-069	Surface	10/1/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	1.9
GP-119	Surface	10/1/2011	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	7.0
GP-450	Surface	10/1/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	7.6
GP-278	Surface	10/1 & 10/2/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	46[4]
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		<1.0
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
GP-438	Surface	10/1 & 10/2/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14/<2.5	<190/<2.5
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17	1.2
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
GP-068	Surface	10/1 & 10/5/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	1.1/2.7 (mobile)/<2.5
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-204	Surface	10/2/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
GP-207	Surface	10/2/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
GP-451	Surface	10/2/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	760[4]
GP-452	Surface	10/2/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	20
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	18
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	17
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	19
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	8.5
GP-203	Surface	10/2 & 10/4/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	1.9
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0

Sample Information			VOCs (mg/kg)											Cyanides (mg/kg)	
Boring ID	Depth (ft bgs)	Date	PCE	TCE	1,1-DCE	1,2-DCA	1,1,1-TCA	Chloroform	Methylene Chloride*	Benzene	Toluene	Ethylbenzene	Xylenes	Cyanide, Free	Cyanide, Total
GP-437	Surface	10/2 & 10/3/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	5.2
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	1.2
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	1.9
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	5.0
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	3.9
GP-284	Surface	10/3/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	4.8
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	1.5
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	1.8
GP-363	Surface	10/3/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	7.5
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	3.1
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5/<2.5	1.1
GP-435	Surface	10/3/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	1.4
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	1.1
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	9.2
GP-439	Surface	10/3/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	10
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5/<2.5	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
GP-443	Surface	10/3/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	60
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
GP-201	Surface	10/4/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	29
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5/<2.5	4.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
GP-261	Surface	10/4/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	210
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	1.4
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	2.4
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	2.3
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	3.1
GP-205	Surface	10/4/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-287	Surface	10/4/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	17
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
GP-398	Surface	10/4/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-453	Surface	10/4/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	50
GP-053	Surface	10/5/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	4.1(mobile)<2.5
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-154	Surface	10/5/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-157	Surface	10/5/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0 (mobile)<2.5
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0

Sample Information			VOCs (mg/kg)											Cyanides (mg/kg)	
Boring ID	Depth (ft bgs)	Date	PCE	TCE	1,1-DCE	1,2-DCA	1,1,1-TCA	Chloroform	Methylene Chloride*	Benzene	Toluene	Ethylbenzene	Xylenes	Cyanide, Free	Cyanide, Total
GP-401	Surface	10/5/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-454	Surface	10/5/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-092	Surface	10/5 & 10/6/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0 (mobile)/<2.5
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-025	Surface	10/6/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5[5]	<1.0(mobile)/<2.5
	4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5[5]	1.8(mobile)/<2.5
GP-026	Surface	10/62001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-027	Surface	10/6/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-036	Surface	10/6/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	<1.0
	4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-038	Surface	10/6/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-444	Surface	10/6/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	1.1
	5		<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.082	<0.041	<0.041	<0.041	<0.164	<2.5	<1.0
	10		<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.070	<0.035	<0.035	<0.035	<0.140	<2.5	<1.0
GP-455	Surface	10/6/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	59(mobile)/13
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	2.1
RMP-103	Surface	10/6/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	9.6
RMP-104	Surface	10/6/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5[5]	<2.5
RMP-105	Surface	10/6/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	7.5
GP-456	Surface	10/7/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5[5]	<1.0(mobile)/<2.5
	4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	8		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	9		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	12		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-457	Surface	10/7/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	380(mobile)/45
	4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0
GP-458	Surface	10/7/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	170
	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	34
	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5/<1.00	15
	4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	6.2
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	4.4
	6		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	12
RMP-106	Surface	10/7/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	3.4
RMP-107	Surface	10/7/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	17
RMP-108	Surface	10/7/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	13
GP-451R	Surface	10/10/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<100[6]/5.55	108[4]
GP-459	Surface	10/10/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-460	Surface	10/10/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
GP-461	Surface	10/10/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.78
GP-462	Surface	10/10/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.1
GP-463	Surface	10/10/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	19.1[5]
GP-464	Surface	10/10/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.19	35.5[4]
MW-7	5	1/14/2002	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.084	<0.042	<0.042	<0.042	<0.168	NA	NA
	10		<0.048	<0.048	<0.048	<0.048	<0.048	<0.048	<0.096	<0.048	<0.048	<0.048	<0.192	NA	NA
SS-138	1	1/15/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3,400[7]/20.3[8]
SS-138A	1	1/15/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	59.5[4,9]/140[4,10]
SS-141	1	1/15/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,600[7]/74.1[8]/135[4,9]/182[4,10]
Z5-S10	1	1/15/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2,300[7]/53.0[8]/115[4,9]/172[4,10]
Z1-S-001	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21

Sample Information			VOCs (mg/kg)											Cyanides (mg/kg)	
Boring ID	Depth (ft bgs)	Date	PCE	TCE	1,1-DCE	1,2-DCA	1,1,1-TCA	Chloroform	Methylene Chloride*	Benzene	Toluene	Ethylbenzene	Xylenes	Cyanide, Free	Cyanide, Total
Z1 S-002	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23
Z1-S-003	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	55
Z1-S-004	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	39
Z1-S-005	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	19
Z1-S-006	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.5
Z1-S-007	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.7
Z1-S-008	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.2
Z1-S-009	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.0
Z1-S-010	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.9
Z1-S-011	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	30
Z1-S-012	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.1
Z1-S-013	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.0
Z1 - S-014	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	41
Z1-S-015	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	44
Z1-S-016	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	44
Z1-S-017	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	18
Z1-S-018	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	24
Z1-S-019	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35
Z1-S-020	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29
Z2-S-021	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	360
Z2-S-022	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17
Z2-S-023	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13
Z2-S-024	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16
Z3-S-025	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20
Z3-S-026	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	18
Z3-S-027	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11
Z3-S-028	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.0
Z3-S-029	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.3
Z3-S-030	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.2
Z5-S-031	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	39
Z5-S-032	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	150
Z5-S-033	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	180
Z5-S-034	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20
Z5-S-035	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	57
Z5-S-036	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14
Z5-S-037	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35
Z5-S-038	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	53
Z5-S-039	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	52
Z5-S-040	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27
Z5-S-041	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.2
Z5-S-042	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13
Z5-S-043	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.5
Z5-S-044	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11
Z5-S-045	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	30
EX-Z002-SUR-001	1	5/1/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	160
EX-Z002-SUR-002	1	5/1/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<10	100
EX-Z002-SUR-003	1	5/1/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27	90
EX-Z002-SUR-004	1	5/1/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<20	240
EX-Z002-SUR-005	1	5/1/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<6.7	110
EX-WDS1-012-E	12	5/3/2002	0.50[11]	<0.048	<0.048	<0.048	<0.048	<0.048	<0.096	<0.048	<0.048	<0.048	0.192	<200	430
EX-WDS-013-W	13	5/3/2002	0.47[11]	<0.044	<0.044	<0.044	<0.044	<0.044	<0.088	<0.044	<0.044	<0.044	0.196	NA	78
EX-Z002-SUR-006	1	5/5/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<500	5,200
EX-Z002-SUR-007	1	5/5/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2,400	5,800
EX-Z002-SUR-008	1	5/5/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2,800
EX-Z002-SUR-009	1	5/5/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4,100
EX-Z002-SUR-010	1	5/5/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	820
Z1-S-001C	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.1
Z1-S-001D	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.0
Z1-S-002C	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	36[12]
Z1-S-002D	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20
Z1-S-003C	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	40
Z1-S-004C	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10
Z1-S-004D	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.1

Sample Information			VOCs (mg/kg)											Cyanides (mg/kg)	
Boring ID	Depth (ft bgs)	Date	PCE	TCE	1,1-DCE	1,2-DCA	1,1,1-TCA	Chloroform	Methylene Chloride*	Benzene	Toluene	Ethylbenzene	Xylenes	Cyanide, Free	Cyanide, Total
Z1-S-006A-6	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.4
Z1-S-007A-R	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14
Z1-S-008A-R	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12
Z1-S-010A-6	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.2
Z1-S-014C	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29
Z1-S-014D	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	39
Z1-S-015C	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.6
Z1-S-015D	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9
Z1-S-016C	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.1
Z1-S-046	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	18
Z1-S-046A	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	25[13]
Z1-S-046B	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12
Z1-S-047	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16
Z1-S-047A	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17
Z1-S-047B	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14
Z1-S-048	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14
Z1-S-048A	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11
Z1-S-048B	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.3
Z1-S-049	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16
Z1-S-049A	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29
Z1-S-049B	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15
EX-Z002-SUR-011	1	5/8/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4,400
EX-Z002-SUR-012	1	5/8/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3,200	5,600
EX-Z002-SUR-013	1	5/8/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2,300
EX-Z1-SUR-014	1	5/14/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1[14]
EX-Z1-SUR-015	1	5/14/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	520	2,100
Z1-S-014E	Surface	5/14/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21
Z1-S-014F	Surface	5/14/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27
Z1-S-015E	Surface	5/14/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	18
Z1-S-015F	Surface	5/14/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17
Z1-S-046C	Surface	5/14/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14
Z1-S-046D	Surface	5/14/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.3
Z1-S-047C	Surface	5/14/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13
Z1-S-047D	Surface	5/14/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21
Z1-S-049C	Surface	5/14/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.4
Z1-S-049D	Surface	5/14/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21
EX-Z1-SUR-016	1	5/15/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	68[12]
EX-Z1-SUR-017	1	5/15/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	110
EX-Z1-SUR-018	1	5/15/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	180	1,300
EX-Z1-SUR-019	1	5/16/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
EX-Z1-SUR-020	1	5/16/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11
EX-Z1-SUR-021	1	5/16/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	58
EX-Z1-SUR-022	1	5/16/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	410
EX-Z1-SUR-023D	1	5/17/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.4
EX-Z1-SUR-024	1	5/17/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,300
EX-Z1-SUR-025	1	5/17/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,100
EX-Z1-SUR-26	1	5/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	550
EX-Z1-SUR-27	1	5/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	310
EX-Z1-SUR-28	1	5/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	350
EX-Z1-SUR-029	1	5/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.4
EX-Z1-SUR-030	1	5/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17
Z3-S-025A-6	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	150
Z3-S-026A	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15
Z3-S-026A-6	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	76
Z3-S-027A	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29
Z3-S-027A-6	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	31
Z3-S-028A	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13
Z3-S-028A-6	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11
Z3-S-029A	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.2
Z3-S-029A-6	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.4

Sample Information			VOCs (mg/kg)											Cyanides (mg/kg)	
Boring ID	Depth (ft bgs)	Date	PCE	TCE	1,1-DCE	1,2-DCA	1,1,1-TCA	Chloroform	Methylene Chloride*	Benzene	Toluene	Ethylbenzene	Xylenes	Cyanide, Free	Cyanide, Total
Z3-S-030A	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	18
Z3-S-030A-6	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	55
Z5-S-031A	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	45
Z5-S-031A	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14
Z5-S-032C	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.7
Z5-S-035A	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	120
Z5-S-035B	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.9
Z5-S-036A	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	86
Z5-S-036C	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	18
Z5-S-037A	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13
Z5-S-038A	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13
Z5-S-038C	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	62
Z5-S-039A	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	26
Z5-S-039B	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	74
Z5-S-040A	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.2
Z5-S-040A-6	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	220
Z5-S-041A-6	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
Z5-S-042A-6	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.4
Z5-S-043A-6	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	36
Z5-S-044A-6	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	39
Z5-S-045A-6	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	49
Z5-S-FEN	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	120
Z5-S-FEN-6	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16
Z3-S-026.5	Surface	5/21/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.5
Z3-S-026.5A	Surface	5/21/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29
Z3-S-029.5	Surface	5/21/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1
Z3-S-029.5A	Surface	5/21/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.2
Z3-S-029.5A-6	Surface	5/21/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.3
Z3-S-037B	Surface	5/21/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	54
Z3-S-039C	Surface	5/21/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	38
EX-Z1-SUR-031	1	5/21/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.3
EX-Z1-SUR-032	1	5/21/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.8
EX-Z5-SUR-033	1	5/23 & 5/29/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	180	230/260
EX-Z5-SUR-034	1	5/23 & 5/29/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	310/98
EX-Z5-SUR-035	1	5/29/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16/58
EX-Z5-SUR-036	1	5/29/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.0
EX-Z5-SUR-037	1	5/29/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	290
EX-Z3-SUR-038	1	5/30/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	340
EX-Z3-SUR-039	1	5/30/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	290	440
EX-Z3-SUR-040	1	5/30/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	61	400
EX-Z3-SUR-041	1	5/30/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	230
EX-Z3-SUR-042	1	5/30/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	48
EX-Z3-SUR-043	1	5/30/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10/16
EX-Z3-SUR-044	1	5/30/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16
EX-Z3-SUR-045	1	5/30/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	880	1,100
EX-Z5-SUR-046	1	6/1/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	45
EX-Z5-SUR-047	1	6/1/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17
EX-Z5-SUR-048	1	6/1/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	26
EX-Z5-SUR-049	1	6/1/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12
EX-Z5-SUR-050	1	6/1/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	330
EX-Z5-SUR-051	1	6/1/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	76
EX-Z5-SUR-052	1	6/2/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	190
EX-Z5-SUR-053	1	6/2/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	28
EX-Z5-SUR-054	1	6/2/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5
EX-Z5-SUR-055	1	6/2/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	54
EX-Z5-SUR-056	1	6/2/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	63
EX-Z5-SUR-057	1	6/2/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	30
EX-Z5-SUR-058	1	6/2/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	40[15]
EX-Z5-SUR-059	1	6/2/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7

Sample Information			VOCs (mg/kg)											Cyanides (mg/kg)	
Boring ID	Depth (ft bgs)	Date	PCE	TCE	1,1-DCE	1,2-DCA	1,1,1-TCA	Chloroform	Methylene Chloride*	Benzene	Toluene	Ethylbenzene	Xylenes	Cyanide, Free	Cyanide, Total
EX-Z5-SUR-060	1	6/2/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17
EX-Z5-SUR-061	1	6/2/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	230
EX-Z5-SUR-062	1	6/2/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	39
EX-Z5-SUR-063	1	6/2/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	25
EX-Z5-SUR-064	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	130
EX-Z5-SUR-065	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.4
EX-Z5-SUR-066	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.7
EX-Z5-SUR-067	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	140	300
EX-Z5-SUR-068	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.5
EX-Z5-SUR-069	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1
EX-Z5-SUR-070	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	22
EX-Z5-SUR-071	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	18/250[12]
EX-Z5-SUR-072	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15
EX-Z5-SUR-073	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.2
EX-Z5-SUR-074	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	37
EX-Z5-SUR-075	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	560
EX-Z5-SUR-076	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50
EX-Z5-SUR-077	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	280
EX-Z5-SUR-078	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11
EX-WDS4-010-E	10	6/16/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5.0
EX-WDS4-010-W	10	6/16/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5.0	54
EX-WDS4-014-E	14	6/16/2002	<0.061	<0.061	<0.061	<0.061	<0.061	<0.061	<0.13	<0.061	<0.061	<0.061	0.26	NA	NA
EX-WDS4-014-W	14	6/16/2002	<0.061	<0.061	<0.061	<0.061	<0.061	<0.061	<0.13	<0.061	<0.061	<0.061	0.26	NA	NA
EX-Z5-SUR-079	1	6/16/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	18	18
EX-Z5-SUR-080	1	6/16/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	13
EX-Z5-SUR-081	1	6/16/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5.0
EX-Z5-SUR-082	1	6/16/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.7
EX-Z5-SUR-083	1	6/16/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10	52
HI-SB-01 (SB-01)	10	12/15/2003	<0.10	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	15		<0.10	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		<0.050	<0.050	<0.10	<0.050	<0.050	<0.050	0.64	<0.050	<0.10	<0.10	<0.15	NA	NA
	30	12/16/2003	<0.10	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	1.7
	50		<0.10	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.3	1.3
	70		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
HI-SB-02 (SB-02)	10	12/16/2003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	25		<0.10	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	30		<0.10	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	40		<0.10	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	50		<0.050	<0.050	<0.10	<0.050	<0.050	<0.050	0.63	<0.050	<0.10	<0.10	<0.15	NA	<1.0
	60		<0.10	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HI-SB-03 (SB-03)	30	12/17/2003	<0.10	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	40		<0.10	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	45		<0.10	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	50		<0.10	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	60		<0.10	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	70		<0.050	<0.050	<0.10	<0.050	<0.050	<0.050	0.65	<0.050	<0.10	<0.10	<0.15	NA	NA
HI-SB-04 (SB-04)	10	12/18/2003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	30		<0.10	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	40		<0.10	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	55		<0.10	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	60		<0.10	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	70		<0.050	<0.050	<0.10	<0.050	<0.050	<0.050	<0.50	<0.050	<0.10	<0.10	<0.15	NA	NA
HI-SB-05 (SB-05)	10	12/19/2003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.6	240[4]
	30		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	<1.0
	50		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	70		<0.050	<0.050	<0.10	<0.050	<0.050	<0.050	<0.50	<0.050	<0.10	<0.10	<0.15	NA	<1.0

Sample Information			VOCs (mg/kg)											Cyanides (mg/kg)	
Boring ID	Depth (ft bgs)	Date	PCE	TCE	1,1-DCE	1,2-DCA	1,1,1-TCA	Chloroform	Methylene Chloride*	Benzene	Toluene	Ethylbenzene	Xylenes	Cyanide, Free	Cyanide, Total
HI-SB-06 (SB-06)	30	12/19/2003	<0.10	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
	35		<0.10	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	40		<0.10	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	45		<0.10	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	50		<0.050	<0.050	<0.10	<0.050	<0.050	<0.050	<0.50	<0.050	<0.10	<0.10	<0.15	NA	<1.0
	70		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
HI-SB-08	10	4/5/2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.5	4.5
	15		<0.050	<0.050	<0.10	<0.050	<0.050	<0.050	<0.50	<0.050	<0.10	<0.10	<0.15	NA	<2.0
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0
	25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0
	30		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0
	40		<0.050	<0.050	<0.10	<0.050	<0.050	<0.050	<0.50	<0.050	<0.10	<0.10	<0.15	NA	<2.0
	50		<0.050	<0.050	<0.10	<0.050	<0.050	<0.050	<0.50	<0.050	<0.10	<0.10	<0.15	NA	<2.0
	60		<0.050	<0.050	<0.10	<0.050	<0.050	<0.050	<0.50	<0.050	<0.10	<0.10	<0.15	2.6	2.6
	70		<0.050	<0.050	<0.10	<0.050	<0.050	<0.050	<0.50	<0.050	<0.10	<0.10	<0.15	2.8	2.8
HI-SB-12	5	11/30/2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0	<2.0[11]
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0	<2.0[11]
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0	<2.0[11]
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0	<2.0[11]
	25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0	<2.0[11]
	30		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0	<2.0[11]
	35		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0	<2.0
	40		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0	<2.0
	45		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0	<2.0
	50		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0	<2.0
	55		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0	<2.0
	60		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0	<2.0
	65		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0
	70		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0
	75		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0
HI-SB-11	5	12/1/2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0
	25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0
	30		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0
	35		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0
	40		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0
	45		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0
	50		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0
	55		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0
	60		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0
	65		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0
	70		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0
	75		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0
HB-SB-09	3.2	12/1/2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	180[16]	570[4]
	4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	160[16]	540[4]
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	24[16]	24[4]
	6		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	840[4]
	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	140[4]
	8		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	87[4]
	9		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.4[16]	2.4[4]
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[5]

Sample Information			VOCs (mg/kg)											Cyanides (mg/kg)	
Boring ID	Depth (ft bgs)	Date	PCE	TCE	1,1-DCE	1,2-DCA	1,1,1-TCA	Chloroform	Methylene Chloride*	Benzene	Toluene	Ethylbenzene	Xylenes	Cyanide, Free	Cyanide, Total
HB-SB-09	11.2	12/2/2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	45[4]
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]
	25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[16,6]
	30		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[16,6]
	35		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[16,6]
	40		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[16,6]
	45		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[16,6]
	50		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[16,6]
	55		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[16,6]
	60		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[16,6]
	65		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[16,6]
	73		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[16,6]
	74		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[16,6]
	75		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[16,6]
	76		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[16,6]
	77		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]
	78		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]
	79		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]
	80		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]
HI-SB-10	1	12/3/2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	88[4]
	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	810[4]
	2.5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	400[16]	420[4]
	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	2.2[4]
	4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.0[16]	6.2[4]
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.3[16]	4.1[4]
	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,900[16]	2,600[4]
	8		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	3,300[4]
	9		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,410[16]	2,400[4]
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	440[4]
	13		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	170[4]
	14		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.3[16]	190[4]
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]
	17		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14[16]	32[4]
	18		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]
	25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]
	30		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]

Sample Information			VOCs (mg/kg)											Cyanides (mg/kg)	
Boring ID	Depth (ft bgs)	Date	PCE	TCE	1,1-DCE	1,2-DCA	1,1,1-TCA	Chloroform	Methylene Chloride*	Benzene	Toluene	Ethylbenzene	Xylenes	Cyanide, Free	Cyanide, Total
HI-SB-10	35	12/3/2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]
	40		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]
	45		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]
	50		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]
	55		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]
	60		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]
	65		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]
	70		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]
	71		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]
	72		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]
	73		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]
	74		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]
	75		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]
	76		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]
	77		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]
	78		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]
	79		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0[6]

Note: ft bgs = feet below ground surface VOCs = Volatile Organic Compounds mg/kg = milligrams per kilogram PCE = Tetrachloroethene TCE = Trichloroethene DCE = Dichloroethene DCA = Dichloroethane TCA = Trichloroethane

* Methylene Chloride is possibly a laboratory contaminant.

NA = Not Analyzed # = First number corresponds to EPA 8020 Modified; second number corresponds to EPA 8010/8020

Mobile lab results

[1] = Composite sample 2 = Composite sample of 4-2, 4-5, 5-2, 5-5, 6-6 & 6-5 [3] = Samples submitted for analysis 13 days after collection. [4] = Sample required dilution due to high concentration of target analyte.

[5] = Based on Total Cyanides [6] = Sample required dilution due to matrix interference. [7] = Transwest Geochem results [8] = Test America results

[9] = Columbia Analytical Services/Phoenix results [10] = Columbia Analytical Services/Redding results [11] = Associated blank spike recovery was above laboratory acceptance limits.

[12] = Accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to spike level. Method control sample recovery was acceptable.

[13] = Matrix spike was high. Method control sample recovery was acceptable. [14] = RPD exceeded the method control limit. Recovery met acceptance criteria.

[15] = Matrix spike recovery was low. Method control slample recovery was acceptable.

[16] = The amenable result is based on two separate aliquots of the soil sample, one treated with chlorine and the other as a total. The calculated difference is reported as "Cyanide amenable to chlorination." It should be noted that the difference may be due more to the non-homogenous nature of the sample rather than any "amenable" cyanide in the soil.

Sample Information			Total Metals (mg/kg)																
Sample ID	**Depth (ft bgs)**	**Date**	**Antimony**	**Arsenic**	**Barium**	**Beryllium**	**Cadmium**	**Chromium**	**Cobalt**	**Copper**	**Iron**	**Lead**	**Manganese**	**Mercury**	**Nickel**	**Selenium**	**Silver**	**Thallium**	**Zinc**
Boring 1[1]	5, 10, 15, 20	8/13/1990	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boring 2[1]	5, 10, 15, 20	8/13/1990	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boring 3	2	8/13/1990	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boring 4[2]	2, 5	8/13/1990	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boring 5[2]	2, 5																		
Boring 6[2]	0.5, 5																		
MW-1	10-11.5	10/22/1992	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20-21.5	10/22/1992	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	30-31.5	10/22/1992	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	40-41.5	10/22/1992	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	50-51.5	10/22/1992	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	60-61	10/22/1992	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	70-71.5	10/22/1992	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B11	3, 8	12/9/1992	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B12	3, 8	12/9/1992	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B13	3, 8	12/9/1992	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14	3, 8	12/9/1992	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Composite-1[1]	0.5	12/9/1992	<0.2	**6**	**55**	<0.1	<1	**4.0**	NA	<0.1	NA	<10	NA	<0.1	<0.1	<0.1	**31**	<0.1	<0.5
B11-14	8	12/9/1992	<0.2	<0.1	NA	<0.1	<0.05	<0.1	NA	<0.1	NA	<0.5	NA	<0.01	<0.1	<0.1	<1	<0.1	<0.5
HI-1B	0.5	4/12/1994	NA	<50	**48**	NA	<10	<10	<10	<10	**2,600**	<50	**56**	<0.25	<10	<200	**37**	NA	**20**
HI-2B	0.5	4/12/1994	NA	<10	**120**	NA	<10	<10	<10	<10	**2,200**	<50	**97**	<0.25	<10	<200	<10	NA	<10
HI-3B	0.5	4/12/1994	NA	<50	**58**	NA	<10	**14**	<10	<10	**2,800**	<50	**27**	<0.25	<10	<200	**62**	NA	**16**
4255-1	5	12/7/1994	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10	12/7/1994	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20	12/7/1994	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	30	12/7/1994	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	40	12/7/1994	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	50	12/7/1994	NA	NA	**63**	NA	NA	**2.2**	NA	NA	NA	NA	**3.2**	**0.076**	NA	NA	NA	NA	NA
	60	12/7/1994	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	70	12/7/1994	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4255-2	5	12/7/1994	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10	12/7/1994	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20	12/7/1994	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	30	12/7/1994	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	40	12/7/1994	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	45	12/7/1994	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	50	12/7/1994	NA	<3.0	**63**	NA	<1.2	**2.2**	NA	NA	NA	**3.2**	NA	**0.076**	NA	<2.5	<1.2	NA	NA
	55	12/7/1994	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	60	12/7/1994	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4255-3	5	1/18/1995	NA	NA	NA	NA	NA	NA	NA	NA	N A	N A	N A	N A	NA	NA	N A	NA	N A
	10	1/18/1995	NA	NA	NA	NA	NA	NA	NA	NA	N A	N A	N A	N A	NA	NA	N A	NA	N A
	15	1/18/1995	NA	NA	NA	NA	NA	NA	NA	NA	N A	N A	N A	N A	NA	NA	N A	NA	N A
	20	1/18/1995	NA	NA	NA	NA	NA	NA	NA	NA	N A	N A	N A	N A	NA	NA	N A	NA	N A
	30	1/18/1995	NA	NA	NA	NA	NA	NA	NA	NA	N A	N A	N A	N A	NA	NA	N A	NA	N A
	40	1/18/1995	NA	NA	NA	NA	NA	NA	NA	NA	N A	N A	N A	N A	NA	NA	N A	NA	N A
	50	1/18/1995	NA	NA	NA	NA	NA	NA	NA	NA	N A	N A	N A	N A	NA	NA	N A	NA	N A
	60	1/18/1995	NA	NA	NA	NA	NA	NA	NA	NA	N A	N A	N A	N A	NA	NA	N A	NA	N A
4255-4	3	1/18/1995	NA	<2.5	**50**	NA	<1.2	**3.8**	NA	NA	NA	**3.0**	NA	<0.04	NA	<2.5	**120**	NA	NA
	8	1/18/1995	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4255-5	3	1/18/1995	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	8	1/18/1995	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4255-6	3	1/18/1995	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	8	1/18/1995	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4255-7	3	1/18/1995	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 2-2
SUMMARY OF PREVIOUS SOIL SAMPLING RESULTS FOR TOTAL METALS
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Sample Information			Total Metals (mg/kg)																
Sample ID	Depth (ft bgs)	Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
GS-530-SS	1	6/25/2001	<10	<5	NA	<0.5	<1	**23**	NA	**14**	NA	**11**	NA	<0.05	<5	<5	**58**	<5	**25**
GS-619-SS	1.5	6/25/2001	<10	<5	NA	<0.5	**1**	**37**	NA	**48**	NA	**140**	NA	**0.16**[3]	**17**	<5	**46**	<5	**170**
SS-101	0.5	6/26/2011	<10	<5	NA	<0.5	<1	**9**	NA	**15**	NA	**14**	NA	**0.1**	<5	<5	**60**	<5	**63**
RMP-101	0.5	6/26/2001	<10	<5	NA	<0.5	<1	**130**	NA	**4**	NA	<5	NA	<0.05	<5	<5	**100**	<5	**17**
RMP-102	0.5	6/26/2001	<10	<5	NA	<0.5	<1	**52**	NA	**4**	NA	<5	NA	<0.05	<5	<5	**94**	<5	**40**
GP-141	Surface	9/19 & 9/20/2001	<1.6	**2.9**	NA	**0.12**	**0.11**	**3.4**	NA	**2.0**	NA	**3.2**	NA	<0.01	**2.3**	<2.5	**1.5**	**2.6**	**8.7**
	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-190	Surface	9/20 & 9/27/2001	<1.6	**2.2**	NA	<0.10	<0.10	**2.2**	NA	**1.5**	NA	<2.9	NA	<0.01	**2.5**	<2.5	<0.20	<2.4	**8.4**
	5		<1.6	**2.3**	NA	<0.10	<0.10	**1.7**	NA	**1.1**	NA	<2.9	NA	<0.01	**1.7**	<2.5	<0.20	**2.7**	**6.1**
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		**2.5**	**2.6**	NA	**0.43**	**0.32**	**19.2**	NA	**10.3**	NA	**6.6**	NA	<0.01	**14.6**	<2.5	**23.9**	**10.0**	**32.0**
GP-194	Surface	9/20 & 9/27/2001	**2.0**	**2.5**	NA	**0.12**	<0.10	**2.5**	NA	**1.3**	NA	<2.9	NA	<0.01	<0.80	<2.5	<0.20	<2.4	**7.0**
	5		<1.6	**2.3**	NA	<0.10	<0.10	**1.2**	NA	**0.91**	NA	<2.9	NA	<0.01	**1.0**	<2.5	<0.20	<2.4	**4.9**
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		**1.8**	<2.1	NA	<0.10	<0.10	**2.8**	NA	**1.1**	NA	<2.9	NA	<0.01	**1.4**	<2.5	**3.7**	**2.4**	**6.6**
GP-214	Surface	9/20 and 9/21/2001	<1.6	**2.1**	NA	<1.0	<1.0	**1.3**	NA	**0.83**	NA	<2.9	NA	<0.01	**1.4**	<2.5	<0.20	<2.4	**4.7**
	5		<1.6	<2.1	NA	<0.10	<0.10	**1.3**	NA	**1.1**	NA	<2.9	NA	<0.01	**1.7**	<2.5	<0.20	<2.4	**5.2**
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		<1.6	**3.0**	NA	**0.25**	<0.10	**3.8**	NA	**3.9**	NA	**5.5**	NA	<0.01	**4.2**	<2.5	<0.20	**4.2**	**14.9**
GP-138	Surface	9/21 & 9/22/2001	**2.4**	**3.8**	NA	**0.23**	**0.62**	**8.4**	NA	**55.8**	NA	**11.8**	NA	<0.01	**9.2**	<2.5	<0.20	**3.4**	**126**
	50		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-429	Surface	9/22/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15[1]		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-063	Surface	9/22 & 9/23/01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4		<1.6	<2.1	NA	**0.12**	<0.10	**5.0**	NA	**1.4**	NA	**3.6**	NA	<0.01	**1.7**	<2.5	**77.5**	<2.4	**8.8**
	5		<1.6	**2.2**	NA	**0.17**	<0.10	**3.2**	NA	**1.8**	NA	**4.7**	NA	<0.01	**4.1**	<2.5	**27.9**	**2.8**	**13.2**
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		<1.6	<2.1	NA	**0.30**	<0.10	**4.9**	NA	**6.5**	NA	**4.6**	NA	<0.01	**5.8**	<2.5	<0.2	<2.4	**18.6**
GP-282	Surface	9/23/2001	<1.6	**2.2**	NA	**0.11**	**0.12**	**2.9**	NA	**3.0**	NA	**3.9**	NA	<0.01	**1.7**	<2.5	**4.3**	<2.4	**8.1**
	5		<1.6	<2.1	NA	<0.10	<0.10	**1.2**	NA	**0.84**	NA	**4**	NA	<0.01	**54.9**	<2.5	**0.25**	<2.4	**6.0**
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		<1.6	<2.1	NA	<0.10	<0.10	**3.6**	NA	**1.0**	NA	**3.8**	NA	<0.01	**1.8**	<2.5	<0.20	<2.4	**6.8**
GP-198	Surface	9/23/2001	<1.6	<2.1	NA	<0.10	<0.10	**1.6**	NA	**3.0**	NA	<2.9	NA	<0.01	**4.3**	<2.5	**142**	<2.4	**8.1**
	5		<1.6	<2.1	NA	**0.20**	<0.10	**3.6**	NA	**4.9**	NA	**6.6**	NA	**0.01**	**2.8**	<2.5	**150**	<2.4	**12.4**
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		<1.6	<2.1	NA	**0.10**	<0.10	**2.1**	NA	**1.4**	NA	**3.2**	NA	<0.01	**1.7**	<2.5	**25.3**	<2.4	**7.4**
GP-400	Surface	9/23/2001	<1.6	**2.2**	NA	<0.10	<0.10	**1.7**	NA	**3.2**	NA	<2.9	NA	<0.01	**1.2**	<2.5	<0.20	<2.4	**7.8**
	5		<1.6	<2.1	NA	<0.10	<0.10	**2.1**	NA	**3.2**	NA	<2.9	NA	<0.01	**1.8**	<2.5	<0.20	**2.5**	**9.0**
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample Information			Total Metals (mg/kg)																
Sample ID	Depth (ft bgs)	Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
GP-430	Surface	9/23 & 9/27/2001	<1.6	<2.1	NA	**0.11**	<0.10	**1.7**	NA	**1.7**	NA	<2.9	NA	<0.01	**1.7**	<2.5	<0.20	<2.4	**13.3**
	5		<1.6	<2.1	NA	**0.10**	<0.10	**1.6**	NA	**0.84**	NA	<2.9	NA	<0.01	**1.8**	<2.5	<0.20	<2.4	**8.5**
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		<1.6	<2.1	NA	<0.10	<0.10	**1.6**	NA	**0.63**	NA	**5.0**	NA	<0.01	**0.87**	<2.5	<0.20	**2.8**	**6.2**
GP-428	Surface	9/23, 9/24 & 9/26/01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-387	Surface	9/24/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		<1.6	<0.90	NA	<0.10	<0.10	**1.2**	NA	**0.79**	NA	<2.9	NA	<0.01	**1.5**	<2.5	<0.20	<2.4	**5.6**
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		<1.6	<2.1	NA	<0.10	<0.10	**1.4**	NA	**1.00**	NA	<2.9	NA	<0.01	**1.8**	<2.5	<0.20	<2.4	**6.8**
GP-423	Surface	9/24/2001	<1.6	<2.1	NA	**0.11**	<0.10	**1.8**	NA	**1.00**	NA	<2.9	NA	<0.01	**1.7**	<2.5	<0.20	<2.4	**6.5**
	5		<1.6	**2.3**	NA	<0.10	<0.10	**1.6**	NA	**1.4**	NA	<2.9	NA	<0.01	**1.4**	<2.5	<0.20	**2.7**	**6.0**
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		<1.6	<2.1	NA	**0.11**	<0.10	**2.7**	NA	**0.95**	NA	**4.1**	NA	<0.01	**1.6**	<2.5	<0.20	<2.4	**9.0**
GP-146	Surface	9/24/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-151	Surface	9/24 & 9/25/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-431	Surface	9/24 & 9/25/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-196	Surface	9/25/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-433	Surface	9/25/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-188	Surface	9/25/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-087	Surface	9/25 & 9/26/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample Information			Total Metals (mg/kg)																
Sample ID	Depth (ft bgs)	Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
GP-089	Surface	9/25 & 9/26/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-032	Surface	9/26/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-057	Surface	9/26/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	**1.7**	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	**2.3**	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	**6.4**	NA	NA	NA	NA	NA
GP-051	Surface	9/26/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	<1.0	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	NA	NA	NA	NA	NA
GP-081	Surface	9/26/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	<1.0	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	<1.0	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	<1.0	NA	NA	NA	NA	NA
GP-070	Surface	9/26/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	**1.5**	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	<1.0	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	<1.0	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	NA	NA	NA	NA	NA
GP-030	Surface	10/1/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.0	NA	NA	NA	NA	NA
GP-033	Surface	10/1/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	**1.6**	NA	NA	NA	NA	NA
GP-035	Surface	10/1/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	**2.4**	NA	NA	NA	NA	NA
GP-040	Surface	10/1/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0	NA	NA	NA	NA	NA
GP-041	Surface	10/1/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0	NA	NA	NA	NA	NA
GP-042	Surface	10/1/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	<1.0	NA	NA	NA	NA	NA
GP-069	Surface	10/1/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	**1.9**	NA	NA	NA	NA	NA
GP-119	Surface	10/1/2011	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	**7.0**	NA	NA	NA	NA	NA
GP-450	Surface	10/1/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	**7.6**	NA	NA	NA	NA	NA
GP-278	Surface	10/1 & 10/2/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-438	Surface	10/1 & 10/2/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-068	Surface	10/1 & 10/5/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-204	Surface	10/2/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-207	Surface	10/2/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample Information			Total Metals (mg/kg)																
Sample ID	Depth (ft bgs)	Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
GP-451	Surface	10/2/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-452	Surface	10/2/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-203	Surface	10/2 & 10/4/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-437	Surface	10/2 & 10/3/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-284	Surface	10/3/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-363	Surface	10/3/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-435	Surface	10/3/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-439	Surface	10/3/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-443	Surface	10/3/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-201	Surface	10/4/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-261	Surface	10/4/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-205	Surface	10/4/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-287	Surface	10/4/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-398	Surface	10/4/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample Information			Total Metals (mg/kg)																
Sample ID	Depth (ft bgs)	Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
GP-453	Surface	10/4/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-053	Surface	10/5/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-154	Surface	10/5/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-157	Surface	10/5/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-401	Surface	10/5/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-454	Surface	10/5/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-092	Surface	10/5 & 10/6/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-025	Surface	10/6/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-026	Surface	10/62001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-027	Surface	10/6/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**13**	<5	**1**	<5	**48**
GP-036	Surface	10/6/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	<5	<1	<5	**5**
	4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	<5	<1	<5	**6**
GP-038	Surface	10/6/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-444	Surface	10/6/2001	<10	<5	NA	<0.5	<1	**19**	NA	**39**	NA	**41**	NA	<0.05	NA	NA	NA	NA	NA
	5		<10	<5	NA	<0.5	<1	**2**	NA	<2	NA	<5	NA	<0.05	NA	NA	NA	NA	NA
	10		<10	<5	NA	<0.5	<1	**3**	NA	<2	NA	<5	NA	<0.05	NA	NA	NA	NA	NA
GP-455	Surface	10/6/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RMP-103	Surface	10/6/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RMP-104	Surface	10/6/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RMP-105	Surface	10/6/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-456	Surface	10/7/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	8		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-457	Surface	10/7/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-458	Surface	10/7/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	6		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RMP-106	Surface	10/7/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RMP-107	Surface	10/7/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RMP-108	Surface	10/7/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-451R	Surface	10/10/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-459	Surface	10/10/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-460	Surface	10/10/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-461	Surface	10/10/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-462	Surface	10/10/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-463	Surface	10/10/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GP-464	Surface	10/10/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-7	5	1/14/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample Information			Total Metals (mg/kg)																
Sample ID	Depth (ft bgs)	Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
SS-138	1	1/15/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-138A	1	1/15/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-141	1	1/15/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S10	1	1/15/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-001	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1 S-002	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-003	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-004	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-005	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-006	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-007	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-008	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-009	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-010	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-011	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-012	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-013	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1 - S-014	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-015	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-016	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-017	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-018	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-019	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-020	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z2-S-021	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z2-S-022	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z2-S-023	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z2-S-024	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z3-S-025	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z3-S-026	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z3-S-027	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z3-S-028	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z3-S-029	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z3-S-030	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-031	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-032	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-033	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-034	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-035	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-036	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-037	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-038	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-039	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-040	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-041	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-042	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-043	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-044	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-045	Surface	4/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z002-SUR-001	1	5/1/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z002-SUR-002	1	5/1/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z002-SUR-003	1	5/1/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z002-SUR-004	1	5/1/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z002-SUR-005	1	5/1/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-WDS1-012-E	12	5/3/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-WDS-013-W	13	5/3/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z002-SUR-006	1	5/5/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z002-SUR-007	1	5/5/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z002-SUR-08	1	5/5/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z002-SUR-09	1	5/5/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z002-SUR-10	1	5/5/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample Information			Total Metals (mg/kg)																
Sample ID	Depth (ft bgs)	Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
Z1-S-001C	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-001D	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-002C	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-002D	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-003C	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-004C	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-004D	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-006A-6	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-007A-R	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-008A-R	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-010A-6	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-014C	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-014D	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-015C	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-015D	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-016C	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-046	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-046A	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-046B	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-047	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-047A	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-047B	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-048	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-048A	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-048B	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-049	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-049A	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-049B	Surface	5/7/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z002-SUR-011	1	5/8/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z002-SUR-012	1	5/8/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z002-SUR-013	1	5/8/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z1-SUR-014	1	5/14/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z1-SUR-015	1	5/14/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-014E	Surface	5/14/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-014F	Surface	5/14/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-015E	Surface	5/14/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-015F	Surface	5/14/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-046C	Surface	5/14/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-046D	Surface	5/14/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-047C	Surface	5/14/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-047D	Surface	5/14/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-049C	Surface	5/14/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z1-S-049D	Surface	5/14/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z1-SUR-016	1	5/15/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z1-SUR-017	1	5/15/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z1-SUR-018	1	5/15/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z1-SUR-019	1	5/16/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z1-SUR-020	1	5/16/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z1-SUR-021	1	5/16/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z1-SUR-022	1	5/16/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z1-SUR-023D	1	5/17/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z1-SUR-024	1	5/17/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z1-SUR-025	1	5/17/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z1-SUR-26	1	5/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z1-SUR-27	1	5/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z1-SUR-28	1	5/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z1-SUR-029	1	5/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z1-SUR-030	1	5/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z3-S-025A-6	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 2-2
SUMMARY OF PREVIOUS SOIL SAMPLING RESULTS FOR TOTAL METALS
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Sample Information			Total Metals (mg/kg)																
Sample ID	Depth (ft bgs)	Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
Z3-S-026A	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z3-S-026A-6	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z3-S-027A	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z3-S-027A-6	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z3-S-028A	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z3-S-028A-6	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z3-S-029A	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z3-S-029A-6	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z3-S-030A	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z3-S-030A-6	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-031A	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-031A	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-032C	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-035A	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-035B	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-036A	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-036C	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-037A	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-038A	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-038C	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-039A	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-039B	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-040A	Surface	5/19/2002	<10	<5	NA	<0.5	<1	**18**	NA	<2	NA	<5	NA	<0.05	<5	<5	**24**	<5	**11.0**
Z5-S-040A-6	Surface	5/19/2002	<10	<5	NA	<0.5	<1	**13**	NA	<2	NA	<5	NA	<0.05	<5	<5	**21**	<5	**9**
Z5-S-041A-6	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-042A-6	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-043A-6	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-044A-6	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-045A-6	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-FEN	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z5-S-FEN-6	Surface	5/19/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z3-S-026.5	Surface	5/21/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z3-S-026.5A	Surface	5/21/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z3-S-029.5	Surface	5/21/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z3-S-029.5A	Surface	5/21/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z3-S-029.5A-6	Surface	5/21/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z3-S-037B	Surface	5/21/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z3-S-039C	Surface	5/21/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z1-SUR-031	1	5/21/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z1-SUR-032	1	5/21/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-033	1	5/23 & 5/29/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-034	1	5/23 & 5/29/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-035	1	5/29/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-036	1	5/29/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-037	1	5/29/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z3-SUR-038	1	5/30/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z3-SUR-039	1	5/30/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z3-SUR-040	1	5/30/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z3-SUR-041	1	5/30/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z3-SUR-042	1	5/30/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z3-SUR-043	1	5/30/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z3-SUR-044	1	5/30/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z3-SUR-045	1	5/30/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-046	1	6/1/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-047	1	6/1/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-048	1	6/1/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-049	1	6/1/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-050	1	6/1/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-051	1	6/1/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-052	1	6/2/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-053	1	6/2/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-054	1	6/2/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-055	1	6/2/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-056	1	6/2/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-057	1	6/2/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample Information			Total Metals (mg/kg)																
Sample ID	Depth (ft bgs)	Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
EX-Z5-SUR-058	1	6/2/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-059	1	6/2/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-060	1	6/2/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-061	1	6/2/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-062	1	6/2/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-063	1	6/2/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-064	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-065	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-066	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-067	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-068	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-069	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-070	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-071	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-072	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-073	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-074	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-075	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-076	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-077	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-078	1	6/4/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-WDS4-010-E	10	6/16/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-WDS4-010-W	10	6/16/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-WDS4-014-E	14	6/16/2002	NA	<5	**31**	NA	<1	**3**	NA	NA	NA	<5	NA	<0.05	NA	<5	**5**	NA	NA
EX-WDS4-014-W	14	6/16/2002	NA	<5	**37**	NA	<1	**2**	NA	NA	NA	<5	NA	<0.05	NA	<5	**6**	NA	NA
EX-Z5-SUR-079	1	6/16/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-080	1	6/16/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-081	1	6/16/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-082	1	6/16/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EX-Z5-SUR-083	1	6/16/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HI-SB-01	10	12/15/2003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	30	12/16/2003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	50		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	70		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HI-SB-02	10	12/16/2003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	30		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	40		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	50		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	60		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HI-SB-03	30	12/17/2003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	40		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	45		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	50		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	70		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HI-SB-04	10	12/18/2003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	30		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	40		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	55		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	60		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	70		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HI-SB-05	10	12/19/2003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	30		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	50		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	70		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HI-SB-06	30	12/19/2003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	35		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	40		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	45		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	50		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	70		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample Information			Total Metals (mg/kg)																
Sample ID	Depth (ft bgs)	Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
HI-SB-08	10	4/5/2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	30		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	40		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	50		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	60		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	70		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HI-SB-09	3.2	12/1 & 12/2/2004	<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**2,300**	<5.0	NA	<0.083	<5.0	<5.0	**260**[4]	<5.0	**6.5**
	4		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**2,100**	<5.0	NA	<0.083	<5.0	<5.0	**89**	<5.0	**8.5**
	5		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**2,200**	<5.0	NA	<0.083	<5.0	<5.0	**120**	<5.0	**5.7**
	6		<5.0	<5.0	NA	<1.0	<1.0	**11**	NA	<5.0	**4,400**	<5.0	NA	<0.083	<5.0	<5.0	**270**[4]	<5.0	**23**
	7		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**3,500**	<5.0	NA	<0.083	<5.0	<5.0	**59**	<5.0	**10**
	8		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**2,000**	<5.0	NA	<0.083	<5.0	<5.0	**73**	<5.0	<5.0
	9		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**2,700**	<5.0	NA	<0.083	<5.0	<5.0	**34**	<5.0	**5.8**
	10		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**2,000**	<5.0	NA	<0.083	<5.0	<5.0	**35**	<5.0	<5.0
	11.2		<5.0	<5.0	NA	<1.0	<1.0	**7.4**	NA	<5.0	**3,000**	<5.0	NA	<0.083	<5.0	<5.0	**75**	<5.0	**7.6**
	15		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**3,800**	<5.0	NA	<0.083	<5.0	<5.0	**33**	<5.0	**8.6**
	20		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**2,200**	<5.0	NA	<0.083	<5.0	<5.0	**6.8**	<5.0	**5.5**
	25		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**2,500**	<5.0	NA	<0.083	<5.0	<5.0	**9.5**	<5.0	**7.8**
	30		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**2,200**	<5.0	NA	<0.083	<5.0	<5.0	**7.8**	<5.0	**5.4**
	35		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**3,000**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**7.0**
	40		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**3,100**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**9.2**
HI-SB-09 (cont)	45	12/1 & 12/2/04	<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**2,600**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**7.1**
	50		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**2,700**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**6.4**
	55		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**7.5**	**3,400**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**10**
	60		<5.0	<5.0	NA	<1.0	<1.0	**6.7**	NA	**41**	**8,000**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**33**
	65		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**13**	**5,800**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**18**
	73		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**23**	**3,500**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**16**
	74		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**19**	**4,100**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**8.7**
	75		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**20**	**3,500**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**14**
	76		<5.0	<5.0	NA	<1.0	<1.0	**5.1**	NA	**23**	**3,800**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**18**
	77		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**3,700**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**9.1**
	78		<5.0	<5.0	NA	<1.0	<1.0	**5.4**	NA	**5.3**	**4,600**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**12**
	79		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**18**	**3,900**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**15**
	80		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**4,200**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**13**
HI-SB-10	1	12/3/2004	<5.0	<5.0	NA	<1.0	**1.1**	**51**	NA	**12**	**5,300**	**54**	NA	<0.083	**25**	<5.0	**16**	<5.0	**54**
	2		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**3,400**	<5.0	NA	<0.083	<5.0	<5.0	**200**[4]	<5.0	**6.3**
	2.5		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**2,600**	<5.0	NA	<0.083	<5.0	<5.0	**140**[4]	<5.0	**6.9**
	3		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**2,500**	<5.0	NA	<0.083	<5.0	<5.0	**48**	<5.0	**6.5**
	4		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**4,300**	<5.0	NA	<0.083	<5.0	<5.0	**26**	<5.0	**12**
	5		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**3,100**	<5.0	NA	<0.083	<5.0	<5.0	**22**	<5.0	**7.6**
	7		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**2,800**	<5.0	NA	<0.083	<5.0	<5.0	**630**[4]	<5.0	**8.0**
	8		<5.0	<5.0	NA	<1.0	<1.0	**11**	NA	<5.0	**3,500**	**8.9**	NA	<0.083	<5.0	<5.0	**430**[4]	<5.0	**11**
	9		<5.0	<5.0	NA	<1.0	<1.0	**12**	NA	**10**	**6,100**	**22**	NA	<0.083	**5.4**	<5.0	**160**[4]	<5.0	**31**
	10		<5.0	<5.0	NA	<1.0	<1.0	**17**	NA	**11**	**7,900**	**18**	NA	<0.083	**8.3**	<5.0	**86**	<5.0	**34**
	13		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**2,900**	<5.0	NA	<0.083	<5.0	<5.0	**39**	<5.0	**7.9**
	14		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**3,100**	<5.0	NA	<0.083	<5.0	<5.0	**53**	<5.0	**8.3**
	15		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**2,800**	<5.0	NA	<0.083	<5.0	<5.0	**11**	<5.0	**7.2**
	17		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**9.8**	**2,500**	<5.0	NA	<0.083	<5.0	<5.0	**27**	<5.0	**11**
	18		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**1,900**	<5.0	NA	<0.083	<5.0	<5.0	**5.2**	<5.0	**7.7**
	20		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**24**	**3,400**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**18**
	25		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**2,800**	<5.0	NA	<0.083	<5.0	<5.0	**6.1**	<5.0	**8.1**
	30		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**3,000**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**8.7**
	35		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**2,500**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**6.4**
	40		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**5.9**	**3,000**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**10**
	45		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**2,400**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**7.9**
	50		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**19**	**2,300**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**13**
	55		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**5.3**	**2,600**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**8.6**

Sample Information			Total Metals (mg/kg)																
Sample ID	Depth (ft bgs)	Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
HI-SB-10	60	12/3/2004	<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**26**	**4,300**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**21**
	65		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**2,900**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**9.8**
	70		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**4,700**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**11**
	71		<5.0	<5.0	NA	<1.0	<1.0	**5.0**	NA	<5.0	**4,700**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**12**
	72		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**6.7**	**5,400**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**15**
	73		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**3,800**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**11**
	74		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**6.5**	**5,200**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**13**
	75		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**3,800**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**9.9**
	76		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**4,600**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**12**
	77		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**11**	**3,700**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**12**
	78		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**3,800**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**9.3**
	79		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**3,500**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**12**
HI-SB-11	5	12/1/2004	<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**2,600**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**5.8**
	10		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**1,700**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**5.6**
	15		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**2,000**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**6.0**
	20		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**4,000**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**11**
	25		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**5.0**	**2,500**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**7.3**
	30		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**2,800**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**8.0**
	35		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**2,400**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**9.4**
	40		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**6.9**	**3,200**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**10**
	45		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**2,400**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**7.1**
	50		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**6.6**	**2,700**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**10**
	55		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**8.0**	**2,300**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**10**
	60		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**2,800**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**7.9**
	65		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**6.6**	**3,300**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**14**
	70		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**3,800**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**14**
	75		<5.0	<5.0	NA	<1.0	<1.0	**12**	NA	<5.0	**15,000**	**7.4**	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**21**
HI-SB-12	5	11/30/2004	<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**5.9**	**2,600**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**9.3**
	10		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**5.3**	**3,400**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**10**
	15		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**7.4**	**2,500**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**11**
	20		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**5.3**	**3,200**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**12**
	25		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**12**	**3,300**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**14**
	30		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**19**	**2,700**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**16**
	35		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**18**	**3,300**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**14**
	40		<5.0	**7.7**	NA	<1.0	<1.0	**6.8**	NA	**20**	**9,300**	**6.9**	NA	<0.083	10	<5.0	<5.0	<5.0	**31**
	45		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**8.2**	**3,500**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**13**
	50		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**4,200**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**11**
	55		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**8.4**	**4,700**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**19**
	60		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**6.7**	**5,500**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**18**
	65		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	<5.0	**4,100**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**11**
	70		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**7.1**	**3,800**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**19**
	75		<5.0	<5.0	NA	<1.0	<1.0	<5.0	NA	**7.8**	**3,200**	<5.0	NA	<0.083	<5.0	<5.0	<5.0	<5.0	**12**

Notes: ft bgs = feet below ground surface; mg/kg - milligrams per kilogram; **Bold** = Compound detected

[1] = Composite sample

[2] = Composite sample of 4-2, 4-5, 5-2, 5-5, 6-6, 6-5

[3] = Analyte concentration was determined by the method of standard addition.

[4] = Sample required dilution due to high concentration of target analyte.

TABLE 2-3
HISTORICAL SOIL SAMPLING RESULTS FOR SVOCS
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Sample Information			Semi-Volatile Organic Compounds (mg/kg)				
Sample ID	Depth (ft bgs)	Date	Di-n-butylphthlate	Formaldehyde	Diethylphthalate	Hexachlorobenzene	Di(2-ethylhexyl)phthalate
Boring 1[1]	5, 10, 15, 20	8/13/1990	NA	NA	NA	NA	NA
Boring 2[1]	5, 10, 15, 20	8/13/1990	NA	NA	NA	NA	NA
Boring 3	2	8/13/1990	NA	NA	NA	NA	NA
Boring 4[2]	2, 5	8/13/1990	NA	NA	NA	NA	NA
Boring 5[2]	2, 5		NA	NA	NA	NA	NA
Boring 6[2]	0.5, 5		NA	NA	NA	NA	NA
MW-1	10-11.5	10/22/1992	NA	NA	NA	NA	NA
	20-21.5		NA	NA	NA	NA	NA
	30-31.5		NA	NA	NA	NA	NA
	40-41.5		NA	NA	NA	NA	NA
	50-51.5		NA	NA	NA	NA	NA
	60-61		NA	NA	NA	NA	NA
	70-71.5		NA	NA	NA	NA	NA
B11	3, 8	12/9/1992	NA	NA	NA	NA	NA
B12	3, 8	12/9/1992	NA	NA	NA	NA	NA
B13	3, 8	12/9/1992	NA	NA	NA	NA	NA
B14	3, 8	12/9/1992	NA	NA	NA	NA	NA
Composite-1[1]	0.5	12/9/1992	NA	NA	NA	NA	NA
B11-14	8	12/9/1992	NA	NA	NA	NA	NA
HI-1B	0.5	4/12/1994	NA	NA	NA	NA	NA
HI-2B	0.5	4/12/1994	NA	NA	NA	NA	NA
HI-3B	0.5	4/12/1994	NA	NA	NA	NA	NA
4255-1	5	12/7/1994	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
	30		NA	NA	NA	NA	NA
	40		NA	NA	NA	NA	NA
	50		NA	NA	NA	NA	NA
	60		NA	NA	NA	NA	NA
	70		NA	NA	NA	NA	NA
4255-2	5	12/7/1994	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
	30		NA	NA	NA	NA	NA
	40		NA	NA	NA	NA	NA
	45		NA	NA	NA	NA	NA
	50		NA	NA	NA	NA	NA
	55		NA	NA	NA	NA	NA
	60		NA	NA	NA	NA	NA
4255-3	5	1/18/1995	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
	30		NA	NA	NA	NA	NA
	40		NA	NA	NA	NA	NA
	50		NA	NA	NA	NA	NA
	60		NA	NA	NA	NA	NA
4255-4	3	1/18/1995	NA	NA	NA	NA	NA
	8		NA	NA	NA	NA	NA
4255-5	3	1/18/1995	NA	NA	NA	NA	NA
	8		NA	NA	NA	NA	NA
4255-6	3	1/18/1995	NA	NA	NA	NA	NA
	8		NA	NA	NA	NA	NA
4255-7	3	1/18/1995	NA	NA	NA	NA	NA
	8		NA	NA	NA	NA	NA

TABLE 2-3
HISTORICAL SOIL SAMPLING RESULTS FOR SVOCS
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Sample Information			Semi-Volatile Organic Compounds (mg/kg)				
Sample ID	**Depth (ft bgs)**	**Date**	**Di-n-butylphthlate**	**Formaldehyde**	**Diethylphthalate**	**Hexachlorobenzene**	**Di(2-ethylhexyl)phthalate**
GS-530-SS	1	6/25/2001	<30	NA	<30	<20	<30
GS-619-SS	1.5	6/25/2001	<30	NA	<30	<20	<30
SS-101	0.5	6/26/2001	<30	NA	<30	<20	<30
RMP-101	0.5	6/26/2001	<30	NA	<30	<20	<0.3
RMP-102	0.5	6/26/2001	<0.6	NA	<0.6	<0.4	<0.6
GP-141	Surface	9/19 & 9/2001	NA	NA	NA	NA	NA
	3		NA	NA	NA	NA	NA
	7		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	12		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-190	Surface	9/20 and 9/27/2001	<0.30	NA	<0.30	<0.20	<0.30
	5		<0.30	NA	<0.30	<0.20	<0.30
	10		<0.30	NA	<0.30	<0.20	<0.30
	15		NA	NA	NA	NA	NA
	20		<0.30	NA	<0.30	**0.028**[3]	<0.30
GP-194	Surface	9/20 and 9/27/2001	NA	NA	NA	NA	NA
	5		<0.30	NA	<0.30	<0.20	<0.30
	10		<0.30	NA	<0.30	<0.20	<0.30
	15		<0.30	NA	<0.30	<0.20	<0.30
GP-214	Surface	9/20 and 9/21/2001	NA	NA	NA	NA	NA
	5		<0.30	NA	**0.037**[3]	<0.20	<0.30
	10		<0.30	NA	<0.30	<0.20	<0.30
	15		<0.30	NA	<0.30	<0.20	<0.30
	20		NA	NA	NA	NA	NA
GP-138	Surface	9/21 & 9/22/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-429	Surface	9/22/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15[1]		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-063	Surface	9/22 & 9/23/2001	NA	NA	NA	NA	NA
	4		<0.30	NA	<0.30	<0.20	<0.30
	5		<0.30	NA	<0.30	<0.20	<0.30
	10		<0.30	NA	<0.30	<0.20	**0.26**[3]
	15		<0.30	NA	<0.30	<0.20	<0.30
GP-282	Surface	9/23/2001	<0.30	NA	<0.30	<0.20	<0.30
	5		NA	NA	NA	NA	<0.30
	10		<0.30	NA	<0.30	<0.20	<0.30
	15		<0.30	NA	<0.30	<0.20	<0.30
	20		**0.24**[3]	NA	<0.30	<0.20	<0.30
GP-198	Surface	9/23/2001	<0.30	NA	<0.30	<0.20	<0.30
	5		<0.30	NA	<0.30	<0.20	<0.30
	10		NA	NA	NA	NA	<0.30
	15		NA	NA	NA	NA	NA
	20		**0.10**[3]	NA	<0.30	<0.20	<0.30

TABLE 2-3
HISTORICAL SOIL SAMPLING RESULTS FOR SVOCS
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Sample Information			Semi-Volatile Organic Compounds (mg/kg)				
Sample ID	**Depth (ft bgs)**	**Date**	**Di-n-butylphthlate**	**Formaldehyde**	**Diethylphthalate**	**Hexachlorobenzene**	**Di(2-ethylhexyl)phthalate**
GP-400	Surface	9/23/2001	<0.30	NA	<0.30	<0.20	<0.30
	5		<0.30	NA	<0.30	<0.20	<0.30
	10		<0.30	NA	<0.30	<0.20	<0.30
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-430	Surface	9/23 and 9/27/2001	<0.30	**0.4**	NA	<0.20	<0.30
	5		<0.30	**0.4**	<0.30	<0.20	<0.30
	10		<0.30	NA	<0.30	<0.20	<0.30
	15		NA	NA	NA	NA	NA
	20		**0.14**[3]	NA	<0.30	<0.20	<0.30
GP-428	Surface	9/23, 9/24 & 9/26/2001	NA	**0.85**	NA	NA	NA
	5		NA	**0.76**	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15	9/23, 9/24 & 9/26/2001	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-387	Surface	9/24/2001	NA	NA	NA	NA	NA
	5		<0.30	NA	<0.30	<0.20	<0.30
	10		<0.30	NA	<0.30	<0.20	**0.17**[3]
	15		NA	NA	NA	NA	NA
	20		<0.30	NA	<0.30	<0.20	<0.30
GP-423	Surface	9/24/2001	NA	**0.4**	NA	NA	NA
	5		<0.30	**0.64**	<0.30	<0.20	<0.30
	10		<0.30	NA	<0.30	<0.20	<0.30
	15		NA	NA	NA	NA	NA
	20		**0.068**	NA	<0.30	<0.20	<0.30
GP-146	Surface	9/24/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-151	Surface	9/24 & 9/25/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-431	Surface	9/24 & 9/25/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-196	Surface	9/25/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-433	Surface	9/25/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA

TABLE 2-3
HISTORICAL SOIL SAMPLING RESULTS FOR SVOCS
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Sample Information			Semi-Volatile Organic Compounds (mg/kg)				
Sample ID	Depth (ft bgs)	Date	Di-n-butylphthlate	Formaldehyde	Diethylphthalate	Hexachlorobenzene	Di(2-ethylhexyl)phthalate
GP-188	Surface	9/25/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-087	Surface	9/25 & 9/26/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-089	Surface	9/25 & 9/26/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-032	Surface	9/26/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-057	Surface	9/26/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10	9/26/2001	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-051	Surface	9/26/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
GP-081	Surface	9/26/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-070	Surface	9/26/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-030	Surface	10/1/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-033	Surface	10/1/2001	NA	NA	NA	NA	NA
GP-035	Surface	10/1/2001	NA	NA	NA	NA	NA
GP-040	Surface	10/1/2001	NA	NA	NA	NA	NA
GP-041	Surface	10/1/2001	NA	NA	NA	NA	NA
GP-042	Surface	10/1/2001	NA	NA	NA	NA	NA
GP-069	Surface	10/1/2001	NA	NA	NA	NA	NA
GP-119	Surface	10/1/2011	NA	NA	NA	NA	NA
GP-450	Surface	10/1/2001	NA	NA	NA	NA	NA

TABLE 2-3
HISTORICAL SOIL SAMPLING RESULTS FOR SVOCS
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Sample Information			Semi-Volatile Organic Compounds (mg/kg)				
Sample ID	Depth (ft bgs)	Date	Di-n-butylphthlate	Formaldehyde	Diethylphthalate	Hexachlorobenzene	Di(2-ethylhexyl)phthalate
GP-278	Surface	10/1 & 10/2/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-438	Surface	10/1 & 10/2/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-068	Surface	10/1 & 10/5/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
GP-204	Surface	10/2/2001	NA	NA	NA	NA	NA
GP-207	Surface	10/2/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-451	Surface	10/2/2001	NA	NA	NA	NA	NA
GP-452	Surface	10/2/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-203	Surface	10/2 & 10/4/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
GP-437	Surface	10/2 & 10/3/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-284	Surface	10/3/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-363	Surface	10/3/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-435	Surface	10/3/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA

TABLE 2-3
HISTORICAL SOIL SAMPLING RESULTS FOR SVOCS
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Sample Information			Semi-Volatile Organic Compounds (mg/kg)				
Sample ID	Depth (ft bgs)	Date	Di-n-butylphthlate	Formaldehyde	Diethylphthalate	Hexachlorobenzene	Di(2-ethylhexyl)phthalate
GP-439	Surface	10/3/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-201	Surface	10/4/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
GP-261	Surface	10/4/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-205	Surface	10/4/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
GP-287	Surface	10/4/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-398	Surface	10/4/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-453	Surface	10/4/2001	NA	NA	NA	NA	NA
GP-053	Surface	10/5/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
GP-154	Surface	10/5/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
GP-157	Surface	10/5/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
GP-401	Surface	10/5/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15	10/5/2001	NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
GP-454	Surface	10/5/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
GP-092	Surface	10/5 & 10/6/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
GP-025	Surface	10/6/2001	NA	NA	NA	NA	NA
	4		NA	NA	NA	NA	NA
GP-026	Surface	10/62001	NA	NA	NA	NA	NA
	4		NA	NA	NA	NA	NA
GP-027	Surface	10/6/2001	NA	NA	NA	NA	NA
	4		NA	NA	NA	NA	NA

TABLE 2-3
HISTORICAL SOIL SAMPLING RESULTS FOR SVOCS
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Sample Information			Semi-Volatile Organic Compounds (mg/kg)				
Sample ID	Depth (ft bgs)	Date	Di-n-butylphthlate	Formaldehyde	Diethylphthalate	Hexachlorobenzene	Di(2-ethylhexyl)phthalate
GP-036	Surface	10/6/2001	NA	NA	NA	NA	NA
	4		NA	NA	NA	NA	NA
GP-038	Surface	10/6/2001	NA	NA	NA	NA	NA
	4		NA	NA	NA	NA	NA
GP-444	Surface	10/6/2001	NA	NA	NA	NA	NA
	5		<0.3	NA	<0.3	<0.2	<0.3
	10		<0.3	NA	<0.3	<0.2	<0.3
GP-455	Surface	10/6/2001	NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
RMP-103	Surface	10/6/2001	NA	NA	NA	NA	NA
RMP-104	Surface	10/6/2001	NA	NA	NA	NA	NA
RMP-105	Surface	10/6/2001	NA	NA	NA	NA	NA
GP-456	Surface	10/7/2001	NA	NA	NA	NA	NA
	4		NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	8		NA	NA	NA	NA	NA
	9		NA	NA	NA	NA	NA
	12		NA	NA	NA	NA	NA
GP-457	Surface	10/7/2001	NA	NA	NA	NA	NA
	4		NA	NA	NA	NA	NA
GP-458	Surface	10/7/2001	NA	NA	NA	NA	NA
	1		NA	NA	NA	NA	NA
	2		NA	NA	NA	NA	NA
	4		NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	6		NA	NA	NA	NA	NA
RMP-106	Surface	10/7/2001	NA	NA	NA	NA	NA
RMP-107	Surface	10/7/2001	NA	NA	NA	NA	NA
RMP-108	Surface	10/7/2001	NA	NA	NA	NA	NA
GP-451R	Surface	10/10/2001	NA	NA	NA	NA	NA
GP-459	Surface	10/10/2001	NA	NA	NA	NA	NA
GP-460	Surface	10/10/2001	NA	NA	NA	NA	NA
GP-461	Surface	10/10/2001	NA	NA	NA	NA	NA
GP-462	Surface	10/10/2001	NA	NA	NA	NA	NA
GP-463	Surface	10/10/2001	NA	NA	NA	NA	NA
GP-464	Surface	10/10/2001	NA	NA	NA	NA	NA
MW-7	5	1/14/2002	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
SS-138	1	1/15/2002	NA	NA	NA	NA	NA
SS-138A	1	1/15/2002	NA	NA	NA	NA	NA
SS-141	1	1/15/2002	NA	NA	NA	NA	NA
Z5-S10	1	1/15/2002	NA	NA	NA	NA	NA
Z1-S-001	Surface	4/18/2002	NA	NA	NA	NA	NA
Z1 S-002	Surface	4/18/2002	NA	NA	NA	NA	NA
Z1-S-003	Surface	4/18/2002	NA	NA	NA	NA	NA
Z1-S-004	Surface	4/18/2002	NA	NA	NA	NA	NA
Z1-S-005	Surface	4/18/2002	NA	NA	NA	NA	NA
Z1-S-006	Surface	4/18/2002	NA	NA	NA	NA	NA
Z1-S-007	Surface	4/18/2002	NA	NA	NA	NA	NA
Z1-S-008	Surface	4/18/2002	NA	NA	NA	NA	NA
Z1-S-009	Surface	4/18/2002	NA	NA	NA	NA	NA

TABLE 2-3
HISTORICAL SOIL SAMPLING RESULTS FOR SVOCS
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Sample Information			Semi-Volatile Organic Compounds (mg/kg)				
Sample ID	Depth (ft bgs)	Date	Di-n-butylphthlate	Formaldehyde	Diethylphthalate	Hexachlorobenzene	Di(2-ethylhexyl)phthalate
Z1-S-010	Surface	4/18/2002	NA	NA	NA	NA	NA
Z1-S-011	Surface	4/18/2002	NA	NA	NA	NA	NA
Z1-S-012	Surface	4/18/2002	NA	NA	NA	NA	NA
Z1-S-013	Surface	4/18/2002	NA	NA	NA	NA	NA
Z1 - S-014	Surface	4/18/2002	NA	NA	NA	NA	NA
Z1-S-015	Surface	4/18/2002	NA	NA	NA	NA	NA
Z1-S-016	Surface	4/18/2002	NA	NA	NA	NA	NA
Z1-S-017	Surface	4/18/2002	NA	NA	NA	NA	NA
Z1-S-018	Surface	4/18/2002	NA	NA	NA	NA	NA
Z1-S-019	Surface	4/18/2002	NA	NA	NA	NA	NA
Z1-S-020	Surface	4/18/2002	NA	NA	NA	NA	NA
Z2-S-021	Surface	4/18/2002	NA	NA	NA	NA	NA
Z2-S-022	Surface	4/18/2002	NA	NA	NA	NA	NA
Z2-S-023	Surface	4/18/2002	NA	NA	NA	NA	NA
Z2-S-024	Surface	4/18/2002	NA	NA	NA	NA	NA
Z3-S-025	Surface	4/18/2002	NA	NA	NA	NA	NA
Z3-S-026	Surface	4/18/2002	NA	NA	NA	NA	NA
Z3-S-027	Surface	4/18/2002	NA	NA	NA	NA	NA
Z3-S-028	Surface	4/18/2002	NA	NA	NA	NA	NA
Z3-S-029	Surface	4/18/2002	NA	NA	NA	NA	NA
Z3-S-030	Surface	4/18/2002	NA	NA	NA	NA	NA
Z5-S-031	Surface	4/18/2002	NA	NA	NA	NA	NA
Z5-S-032	Surface	4/18/2002	NA	NA	NA	NA	NA
Z5-S-033	Surface	4/18/2002	NA	NA	NA	NA	NA
Z5-S-034	Surface	4/18/2002	NA	NA	NA	NA	NA
Z5-S-035	Surface	4/18/2002	NA	NA	NA	NA	NA
Z5-S-036	Surface	4/18/2002	NA	NA	NA	NA	NA
Z5-S-037	Surface	4/18/2002	NA	NA	NA	NA	NA
Z5-S-038	Surface	4/18/2002	NA	NA	NA	NA	NA
Z5-S-039	Surface	4/18/2002	NA	NA	NA	NA	NA
Z5-S-040	Surface	4/18/2002	NA	NA	NA	NA	NA
Z5-S-041	Surface	4/18/2002	NA	NA	NA	NA	NA
Z5-S-042	Surface	4/18/2002	NA	NA	NA	NA	NA
Z5-S-043	Surface	4/18/2002	NA	NA	NA	NA	NA
Z5-S-044	Surface	4/18/2002	NA	NA	NA	NA	NA
Z5-S-045	Surface	4/18/2002	NA	NA	NA	NA	NA
EX-Z002-SUR-001	1	5/1/2002	NA	NA	NA	NA	NA
EX-Z002-SUR-002	1	5/1/2002	NA	NA	NA	NA	NA
EX-Z002-SUR-003	1	5/1/2002	NA	NA	NA	NA	NA
EX-Z002-SUR-004	1	5/1/2002	NA	NA	NA	NA	NA
EX-Z002-SUR-005	1	5/1/2002	NA	NA	NA	NA	NA
EX-WDS1-012-E	1	5/3/2002	NA	NA	NA	NA	NA
EX-WDS-013-W	1	5/3/2002	NA	NA	NA	NA	NA
EX-Z002-SUR-006	1	5/5/2002	NA	NA	NA	NA	NA
EX-Z002-SUR-007	1	5/5/2002	NA	NA	NA	NA	NA
EX-Z002-SUR-008	1	5/5/2002	NA	NA	NA	NA	NA
EX-Z002-SUR-009	1	5/5/2002	NA	NA	NA	NA	NA
EX-Z002-SUR-010	1	5/5/2002	NA	NA	NA	NA	NA
Z1-S-001C	Surface	5/7/2002	NA	NA	NA	NA	NA
Z1-S-001D	Surface	5/7/2002	NA	NA	NA	NA	NA
Z1-S-002C	Surface	5/7/2002	NA	NA	NA	NA	NA
Z1-S-002D	Surface	5/7/2002	NA	NA	NA	NA	NA
Z1-S-003C	Surface	5/7/2002	NA	NA	NA	NA	NA
Z1-S-004C	Surface	5/7/2002	NA	NA	NA	NA	NA

TABLE 2-3
HISTORICAL SOIL SAMPLING RESULTS FOR SVOCS
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Sample Information			Semi-Volatile Organic Compounds (mg/kg)				
Sample ID	Depth (ft bgs)	Date	Di-n-butylphthlate	Formaldehyde	Diethylphthalate	Hexachlorobenzene	Di(2-ethylhexyl)phthalate
Z1-S-004D	Surface	5/7/2002	NA	NA	NA	NA	NA
Z1-S-006A-6	Surface	5/7/2002	NA	NA	NA	NA	NA
Z1-S-007A-R	Surface	5/7/2002	NA	NA	NA	NA	NA
Z1-S-008A-R	Surface	5/7/2002	NA	NA	NA	NA	NA
Z1-S-010A-6	Surface	5/7/2002	NA	NA	NA	NA	NA
Z1-S-014C	Surface	5/7/2002	NA	NA	NA	NA	NA
Z1-S-014D	Surface	5/7/2002	NA	NA	NA	NA	NA
Z1-S-015C	Surface	5/7/2002	NA	NA	NA	NA	NA
Z1-S-015D	Surface	5/7/2002	NA	NA	NA	NA	NA
Z1-S-016C	Surface	5/7/2002	NA	NA	NA	NA	NA
Z1-S-046	Surface	5/7/2002	NA	NA	NA	NA	NA
Z1-S-046A	Surface	5/7/2002	NA	NA	NA	NA	NA
Z1-S-046B	Surface	5/7/2002	NA	NA	NA	NA	NA
Z1-S-047	Surface	5/7/2002	NA	NA	NA	NA	NA
Z1-S-047A	Surface	5/7/2002	NA	NA	NA	NA	NA
Z1-S-047B	Surface	5/7/2002	NA	NA	NA	NA	NA
Z1-S-048	Surface	5/7/2002	NA	NA	NA	NA	NA
Z1-S-048A	Surface	5/7/2002	NA	NA	NA	NA	NA
Z1-S-048B	Surface	5/7/2002	NA	NA	NA	NA	NA
Z1-S-049	Surface	5/7/2002	NA	NA	NA	NA	NA
Z1-S-049A	Surface	5/7/2002	NA	NA	NA	NA	NA
Z1-S-049B	Surface	5/7/2002	NA	NA	NA	NA	NA
EX-Z002-SUR-011	1	5/8/2002	NA	NA	NA	NA	NA
EX-Z002-SUR-012	1	5/8/2002	NA	NA	NA	NA	NA
EX-Z002-SUR-013	1	5/8/2002	NA	NA	NA	NA	NA
EX-Z1-SUR-014	1	5/14/2002	NA	NA	NA	NA	NA
EX-Z1-SUR-015	1	5/14/2002	NA	NA	NA	NA	NA
Z1-S-014E	Surface	5/14/2002	NA	NA	NA	NA	NA
Z1-S-014F	Surface	5/14/2002	NA	NA	NA	NA	NA
Z1-S-015E	Surface	5/14/2002	NA	NA	NA	NA	NA
Z1-S-015F	Surface	5/14/2002	NA	NA	NA	NA	NA
Z1-S-046C	Surface	5/14/2002	NA	NA	NA	NA	NA
Z1-S-046D	Surface	5/14/2002	NA	NA	NA	NA	NA
Z1-S-047C	Surface	5/14/2002	NA	NA	NA	NA	NA
Z1-S-047D	Surface	5/14/2002	NA	NA	NA	NA	NA
Z1-S-049C	Surface	5/14/2002	NA	NA	NA	NA	NA
Z1-S-049D	Surface	5/14/2002	NA	NA	NA	NA	NA
EX-Z1-SUR-016	1	5/15/2002	NA	NA	NA	NA	NA
EX-Z1-SUR-017	1	5/15/2002	NA	NA	NA	NA	NA
EX-Z1-SUR-018	1	5/15/2002	NA	NA	NA	NA	NA
EX-Z1-SUR-019	1	5/16/2002	NA	NA	NA	NA	NA
EX-Z1-SUR-020	1	5/16/2002	NA	NA	NA	NA	NA
EX-Z1-SUR-021	1	5/16/2002	NA	NA	NA	NA	NA
EX-Z1-SUR-022	1	5/16/2002	NA	NA	NA	NA	NA
EX-Z1-SUR-023D	1	5/17/2002	NA	NA	NA	NA	NA
EX-Z1-SUR-024	1	5/17/2002	NA	NA	NA	NA	NA
EX-Z1-SUR-025	1	5/17/2002	NA	NA	NA	NA	NA
EX-Z1-SUR-26	1	5/18/2002	NA	NA	NA	NA	NA
EX-Z1-SUR-27	1	5/18/2002	NA	NA	NA	NA	NA
EX-Z1-SUR-28	1	5/18/2002	NA	NA	NA	NA	NA
EX-Z1-SUR-029	1	5/18/2002	NA	NA	NA	NA	NA
EX-Z1-SUR-030	1	5/18/2002	NA	NA	NA	NA	NA
Z3-S-025A-6	Surface	5/19/2002	NA	NA	NA	NA	NA

TABLE 2-3
HISTORICAL SOIL SAMPLING RESULTS FOR SVOCS
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Sample Information			Semi-Volatile Organic Compounds (mg/kg)				
Sample ID	Depth (ft bgs)	Date	Di-n-butylphthlate	Formaldehyde	Diethylphthalate	Hexachlorobenzene	Di(2-ethylhexyl)phthalate
Z3-S-026A	Surface	5/19/2002	NA	NA	NA	NA	NA
Z3-S-026A-6	Surface	5/19/2002	NA	NA	NA	NA	NA
Z3-S-027A	Surface	5/19/2002	NA	NA	NA	NA	NA
Z3-S-027A-6	Surface	5/19/2002	NA	NA	NA	NA	NA
Z3-S-028A	Surface	5/19/2002	NA	NA	NA	NA	NA
Z3-S-028A-6	Surface	5/19/2002	NA	NA	NA	NA	NA
Z3-S-029A	Surface	5/19/2002	<1.5	NA	<1.5	<1	<1.5
Z3-S-029A-6	Surface	5/19/2002	<1.5	NA	<1.5	<1	<1.5
Z3-S-030A	Surface	5/19/2002	NA	NA	NA	NA	NA
Z3-S-030A-6	Surface	5/19/2002	NA	NA	NA	NA	NA
Z5-S-031A	Surface	5/19/2002	NA	NA	NA	NA	NA
Z5-S-031A	Surface	5/19/2002	NA	NA	NA	NA	NA
Z5-S-032C	Surface	5/19/2002	NA	NA	NA	NA	NA
Z5-S-035A	Surface	5/19/2002	NA	NA	NA	NA	NA
Z5-S-035B	Surface	5/19/2002	NA	NA	NA	NA	NA
Z5-S-036A	Surface	5/19/2002	NA	NA	NA	NA	NA
Z5-S-036C	Surface	5/19/2002	NA	NA	NA	NA	NA
Z5-S-037A	Surface	5/19/2002	NA	NA	NA	NA	NA
Z5-S-038A	Surface	5/19/2002	NA	NA	NA	NA	NA
Z5-S-038C	Surface	5/19/2002	NA	NA	NA	NA	NA
Z5-S-039A	Surface	5/19/2002	NA	NA	NA	NA	NA
Z5-S-039B	Surface	5/19/2002	NA	NA	NA	NA	NA
Z5-S-040A	Surface	5/19/2002	NA	NA	NA	NA	NA
Z5-S-040A-6	Surface	5/19/2002	NA	NA	NA	NA	NA
Z5-S-041A-6	Surface	5/19/2002	NA	NA	NA	NA	NA
Z5-S-042A-6	Surface	5/19/2002	NA	NA	NA	NA	NA
Z5-S-043A-6	Surface	5/19/2002	NA	NA	NA	NA	NA
Z5-S-044A-6	Surface	5/19/2002	NA	NA	NA	NA	NA
Z5-S-045A-6	Surface	5/19/2002	NA	NA	NA	NA	NA
Z5-S-FEN	Surface	5/19/2002	NA	NA	NA	NA	NA
Z5-S-FEN-6	Surface	5/19/2002	NA	NA	NA	NA	NA
Z3-S-026.5	Surface	5/21/2002	NA	NA	NA	NA	NA
Z3-S-026.5A	Surface	5/21/2002	NA	NA	NA	NA	NA
Z3-S-029.5	Surface	5/21/2002	NA	NA	NA	NA	NA
Z3-S-029.5A	Surface	5/21/2002	NA	NA	NA	NA	NA
Z3-S-029.5A-6	Surface	5/21/2002	NA	NA	NA	NA	NA
Z3-S-037B	Surface	5/21/2002	NA	NA	NA	NA	NA
Z3-S-039C	Surface	5/21/2002	NA	NA	NA	NA	NA
EX-Z1-SUR-031	1	5/21/2002	NA	NA	NA	NA	NA
EX-Z1-SUR-032	1	5/21/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-033	1	5/23 & 5/29/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-034	1	5/23 & 5/29/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-035	1	5/29/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-036	1	5/29/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-037	1	5/29/2002	NA	NA	NA	NA	NA
EX-Z3-SUR-038	1	5/30/2002	NA	NA	NA	NA	NA
EX-Z3-SUR-039	1	5/30/2002	NA	NA	NA	NA	NA
EX-Z3-SUR-040	1	5/30/2002	NA	NA	NA	NA	NA
EX-Z3-SUR-041	1	5/30/2002	NA	NA	NA	NA	NA
EX-Z3-SUR-042	1	5/30/2002	NA	NA	NA	NA	NA
EX-Z3-SUR-043	1	5/30/2002	NA	NA	NA	NA	NA
EX-Z3-SUR-044	1	5/30/2002	NA	NA	NA	NA	NA
EX-Z3-SUR-045	1	5/30/2002	NA	NA	NA	NA	NA

TABLE 2-3
HISTORICAL SOIL SAMPLING RESULTS FOR SVOCS
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Sample Information			Semi-Volatile Organic Compounds (mg/kg)				
Sample ID	Depth (ft bgs)	Date	Di-n-butylphthlate	Formaldehyde	Diethylphthalate	Hexachlorobenzene	Di(2-ethylhexyl)phthalate
EX-Z5-SUR-046	1	6/1/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-047	1	6/1/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-048	1	6/1/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-049	1	6/1/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-050	1	6/1/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-051	1	6/1/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-052	1	6/2/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-053	1	6/2/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-054	1	6/2/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-055	1	6/2/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-056	1	6/2/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-057	1	6/2/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-058	1	6/2/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-059	1	6/2/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-060	1	6/2/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-061	1	6/2/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-062	1	6/2/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-063	1	6/2/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-064	1	6/4/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-065	1	6/4/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-066	1	6/4/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-067	1	6/4/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-068	1	6/4/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-069	1	6/4/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-070	1	6/4/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-071	1	6/4/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-072	1	6/4/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-073	1	6/4/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-074	1	6/4/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-075	1	6/4/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-076	1	6/4/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-077	1	6/4/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-078	1	6/4/2002	NA	NA	NA	NA	NA
EX-WDS4-010-E	10	6/16/2002	NA	NA	NA	NA	NA
EX-WDS4-010-W	10	6/16/2002	NA	NA	NA	NA	NA
EX-WDS4-014-E	14	6/16/2002	<0.3	NA	<0.3	<0,.2	<0.3
EX-WDS4-014-W	14	6/16/2002	<0.3	NA	<0.3	<0,.2	<0.3
EX-Z5-SUR-079	1	6/16/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-080	1	6/16/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-081	1	6/16/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-082	1	6/16/2002	NA	NA	NA	NA	NA
EX-Z5-SUR-083	1	6/16/2002	NA	NA	NA	NA	NA
HI-SB-01	10	12/15/2003	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
	30	12/16/2003	NA	NA	NA	NA	NA
	50		NA	NA	NA	NA	NA
	70		NA	NA	NA	NA	NA
HI-SB-02	10	12/16/2003	NA	NA	NA	NA	NA
	25		NA	NA	NA	NA	NA
	30		NA	NA	NA	NA	NA
	40		NA	NA	NA	NA	NA
	50		NA	NA	NA	NA	NA
	60		NA	NA	NA	NA	NA

TABLE 2-3
HISTORICAL SOIL SAMPLING RESULTS FOR SVOCS
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Sample Information			Semi-Volatile Organic Compounds (mg/kg)				
Sample ID	Depth (ft bgs)	Date	Di-n-butylphthlate	Formaldehyde	Diethylphthalate	Hexachlorobenzene	Di(2-ethylhexyl)phthalate
HI-SB-03	30	12/17/2003	NA	NA	NA	NA	NA
	40		NA	NA	NA	NA	NA
	45		NA	NA	NA	NA	NA
	50		NA	NA	NA	NA	NA
	60		NA	NA	NA	NA	NA
	70		NA	NA	NA	NA	NA
HI-SB-04	10	12/18/2003	NA	NA	NA	NA	NA
	30		NA	NA	NA	NA	NA
	40		NA	NA	NA	NA	NA
	55		NA	NA	NA	NA	NA
	60		NA	NA	NA	NA	NA
	70		NA	NA	NA	NA	NA
HI-SB-05	10	12/19/2003	NA	NA	NA	NA	NA
	30		NA	NA	NA	NA	NA
	50	12/19/2003	NA	NA	NA	NA	NA
	70		NA	NA	NA	NA	NA
HI-SB-06	30	12/19/2003	NA	NA	NA	NA	NA
	35		NA	NA	NA	NA	NA
	40		NA	NA	NA	NA	NA
	45		NA	NA	NA	NA	NA
	50		NA	NA	NA	NA	NA
	70		NA	NA	NA	NA	NA
HI-SB-08	10	4/5/2004	NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
	25		NA	NA	NA	NA	NA
	30		NA	NA	NA	NA	NA
	40		NA	NA	NA	NA	NA
	50		NA	NA	NA	NA	NA
	60		NA	NA	NA	NA	NA
	70		NA	NA	NA	NA	NA
HI-SB-12	5	11/30/2004	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
	25		NA	NA	NA	NA	NA
	30		NA	NA	NA	NA	NA
	35		NA	NA	NA	NA	NA
	40		NA	NA	NA	NA	NA
	45		NA	NA	NA	NA	NA
	50		NA	NA	NA	NA	NA
	55		NA	NA	NA	NA	NA
	60		NA	NA	NA	NA	NA
	65		NA	NA	NA	NA	NA
	70		NA	NA	NA	NA	NA
	75		NA	NA	NA	NA	NA
HI-SB-11	5	12/1/2004	NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
	25		NA	NA	NA	NA	NA
	30		NA	NA	NA	NA	NA
	35		NA	NA	NA	NA	NA
	40		NA	NA	NA	NA	NA
	45		NA	NA	NA	NA	NA
	50		NA	NA	NA	NA	NA
	55		NA	NA	NA	NA	NA
	60		NA	NA	NA	NA	NA
	65		NA	NA	NA	NA	NA
	70		NA	NA	NA	NA	NA
	75		NA	NA	NA	NA	NA

TABLE 2-3
HISTORICAL SOIL SAMPLING RESULTS FOR SVOCS
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Sample Information			Semi-Volatile Organic Compounds (mg/kg)				
Sample ID	**Depth (ft bgs)**	**Date**	**Di-n-butylphthlate**	**Formaldehyde**	**Diethylphthalate**	**Hexachlorobenzene**	**Di(2-ethylhexyl)phthalate**
HI-SB-09	3.2	12/1 & 12/2/2004	NA	NA	NA	NA	NA
	4		NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	6		NA	NA	NA	NA	NA
	7		NA	NA	NA	NA	NA
	8		NA	NA	NA	NA	NA
	9		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	11.2		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
	25		NA	NA	NA	NA	NA
	30	12/1 & 12/2/2004	NA	NA	NA	NA	NA
	35		NA	NA	NA	NA	NA
	40		NA	NA	NA	NA	NA
	45		NA	NA	NA	NA	NA
	50		NA	NA	NA	NA	NA
	55		NA	NA	NA	NA	NA
	60		NA	NA	NA	NA	NA
	65		NA	NA	NA	NA	NA
	73		NA	NA	NA	NA	NA
	74		NA	NA	NA	NA	NA
	75		NA	NA	NA	NA	NA
	76		NA	NA	NA	NA	NA
	77		NA	NA	NA	NA	NA
	78		NA	NA	NA	NA	NA
	79		NA	NA	NA	NA	NA
	80		NA	NA	NA	NA	NA
HI-SB-10	1	12/3/2004	NA	NA	NA	NA	NA
	2		NA	NA	NA	NA	NA
	2.5		NA	NA	NA	NA	NA
	3		NA	NA	NA	NA	NA
	4		NA	NA	NA	NA	NA
	5		NA	NA	NA	NA	NA
	7		NA	NA	NA	NA	NA
	8		NA	NA	NA	NA	NA
	9		NA	NA	NA	NA	NA
	10		NA	NA	NA	NA	NA
	13		NA	NA	NA	NA	NA
	14		NA	NA	NA	NA	NA
	15		NA	NA	NA	NA	NA
	17		NA	NA	NA	NA	NA
	18		NA	NA	NA	NA	NA
	20		NA	NA	NA	NA	NA
	25		NA	NA	NA	NA	NA
	30		NA	NA	NA	NA	NA
	35		NA	NA	NA	NA	NA
	40		NA	NA	NA	NA	NA
	45		NA	NA	NA	NA	NA
	50		NA	NA	NA	NA	NA
	55		NA	NA	NA	NA	NA
	60		NA	NA	NA	NA	NA
	65		NA	NA	NA	NA	NA
	70		NA	NA	NA	NA	NA
	71		NA	NA	NA	NA	NA
	72		NA	NA	NA	NA	NA
	73		NA	NA	NA	NA	NA
	74		NA	NA	NA	NA	NA
	75		NA	NA	NA	NA	NA
	76		NA	NA	NA	NA	NA
	77		NA	NA	NA	NA	NA
	78		NA	NA	NA	NA	NA
	79		NA	NA	NA	NA	NA

Notes:

SVOCS = Semi-volatile Organic Compounds
Bold = Compound detected
[1] = Composite sample
[2] = Composite sample of 4-2, 4-5, 5-2, 5-5, 6-6, 6-5
[3] = Indicates an estimated value; it is used when the data indicates the presence of a target compound below the reporting limit or the presence of a Tentatively Identified Compound.

mg/kg = milligrams per kilogram
ft bgs = feet below ground surface

TABLE 2-4
CONCENTRATIONS OF ANALYTES DETECTED IN SOIL VAPOR SAMPLES
2001 THROUGH 2011
20th Street and Factor Avenue WQARF Site, Yuma, Arizona
in microgram per cubic meter [ug/m3]

Sample Location	Date	Sample Type	Sample Depth or Screened Interval (in feet bgs)	Volatile Organic Compounds (VOCs)																																		Hydrogen Cyanide
				PCE	TCE	1,1-DCE	1,1,1-TCA	Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Ethanol	Chloro-methane	Chloro-ethane	1,3-Butadiene	Acetone	2-Propanol	CD	MC	Hexane	MEK	THF	Chloro-form	Cyclo-hexane	2,2,4-TMP	Heptane	BDCM	4-Methyl-2-Pentanone	2-Hexa-none	Styrene	Cumene	Freon 11	Propyl-benzene	4-Ethyl toluene	1,3,5-TMB	1,2,4-TMB	HCN
ACTIVE SOIL VAPOR SURVEY																																						
SVS-1	9/10/2008	Post Purge	5	<8.8	<6.9	<5.1	<7.0	<4.1	<4.9	<5.6	<5.6	<5.6	**22**	<11	<3.4	<2.8	**54**	<13	**4.6**	<4.5	<4.5	**25**	<3.8	<6.3	<4.4	<6.0	<5.3	<8.6	<5.3	<21	<5.5	<6.3	<7.2	<6.3	<6.3	<6.3	<6.3	NA
SVS-2	9/10/2008	Post Purge	5	<8.2	<6.5	<4.8	<6.6	**5.7**	**8.3**	<5.2	<5.2	<5.2	**12**	<10	<3.2	<2.7	**50**	<12	**28**	<4.2	**6.5**	**18**	<3.6	<5.9	<4.2	<5.6	**7.0**	<8.1	<5.0	<20	<5.2	<5.9	<6.8	<5.9	<5.9	<5.9	<5.9	NA
SVS-3	9/10/2008	Post Purge	5	<8.8	<6.9	<5.1	<7.0	**8.3**	**13**	<5.6	**5.9**	<5.6	**24**	<11	<3.4	4.9	**190**	**15**	**18**	<4.5	**12**	**39**	<3.8	<6.3	<4.4	<6.0	**9.7**	<8.6	<5.3	<21	<5.5	<6.3	<7.2	<6.3	<6.3	<6.3	<6.3	NA
SVS-4	9/10/2008	Post Purge	5	<8.8	<6.9	<5.1	<7.0	**4.3**	<4.9	<5.6	<5.6	<5.6	<9.7	<11	<3.4	<2.8	**180**	<13	**62**	<4.5	**5.0**	**34**	<3.8	<6.3	<4.4	<6.0	<5.3	<8.6	<5.3	<21	<5.5	<6.3	<7.2	<6.3	<6.3	<6.3	<6.3	NA
SVS-5	9/10/2008	Post Purge	5	<7.9	<6.3	<4.6	<6.4	**17**	**53**	**9.5**	**28**	**19**	**56**	<9.6	<3.1	**12**	**440**	**67**	**13**	**68**	**13**	**66**	<3.4	**25**	<4.0	<5.4	**11**	<7.8	<4.8	<19	<5.0	<5.7	<6.5	<5.7	<5.7	<5.7	**11**	NA
SVS-6	9/10/2008	Post Purge	5	<8.6	<6.8	<5.0	<6.9	**7.6**	**11**	**5.8**	**10**	<5.5	**47**	<10	<3.3	**4.7**	**190**	**16**	**14**	<4.4	**9.0**	**37**	<3.7	<6.2	<4.4	<5.9	**6.7**	<8.5	<5.2	<21	<5.4	<6.2	<7.1	<6.2	<6.2	<6.2	<6.2	NA
SVS-7	9/10/2008	Post Purge	5	**10**	<6.9	<5.1	<7.0	**10**	**12**	<5.6	**6.3**	<5.6	**38**	<11	<3.4	**6.2**	**310**	**21**	**6.2**	<4.5	**8.3**	**53**	<3.8	**7.5**	<4.4	<6.0	**8.4**	<8.6	<5.3	<21	<5.5	<6.3	<7.2	<6.3	<6.3	<6.3	<6.3	NA
SVS-8	9/10/2008	Post Purge	5	**43**	**11**	<4.9	<6.7	**9.7**	**54**	**11**	**43**	**22**	**110**	<10	<3.2	**3.7**	**530**	**25**	**25**	<4.3	**11.0**	**120**	<3.6	<6.0	**6.6**	<5.8	**19**	<8.3	<5.0	<20	<5.3	<6.1	<6.9	<6.1	**18**	**14**	**37**	NA
SVS-9	9/10/2008	Post Purge	5	<8.6	<6.8	<5.0	<6.9	**23**	**40**	**17**	**21**	**10**	**540**	<10	4.5	<2.8	**1,700 E**	**160**	**29**	**18**	**35**	**370**	<3.7	**8.2**	<4.4	<5.9	**32**	<8.5	**11**	**22**	<5.4	<6.2	<7.1	<6.2	**11**	<6.2	**12**	NA
SVS-11	9/10/2008	Post Purge	5	<8.2	<6.5	<4.8	<6.6	**37**	**54**	**20**	**17**	**12**	**150**	<10	<3.2	<2.7	**750**	**40**	**33**	<4.2	**11**	**180**	<3.6	<5.9	**4.2**	<5.6	**17**	<8.1	<5.0	<20	**6.8**	<5.9	<6.8	<5.9	**8.3**	<5.9	**6.6**	NA
SVS-12	9/11/2008	Post Purge	5	<8.4	<6.6	<4.9	<6.7	<3.9	**6.6**	**11**	**38**	**6.0**	**180**	<10	<3.2	<2.7	**130**	**36**	<3.8	<4.3	<4.4	**64**	<3.6	<6.0	<4.2	<5.8	<5.1	<8.3	**5.3**	<20	<5.3	<6.1	<6.9	<6.1	<6.1	<6.1	<6.1	NA
SVS-13	9/11/2008	Post Purge	5	<7.9	<6.3	<4.6	<6.4	**24**	**35**	**14**	**29**	**8.0**	**48**	<9.6	<3.1	**3.7**	**220**	**18**	**5.6**	<4.0	**16**	**87**	,3.4	<5.7	<4.0	<5.4	**17**	<7.8	<4.8	<19	<5.0	<5.7	<6.5	<5.7	<5.7	<5.7	<5.7	NA
SVS-14	9/11/2008	Post Purge	5	**33**	<6.6	<4.9	<6.7	**190**	**320**	**99**	**110**	**65**	**300**	<10	<3.2	**17**	**1,500 E**	**110**	**31**	<4.3	**180**	**470**	<3.6	<6.0	**18**	**9.2**	**140**	<8.3	**21**	**60**	**8.2**	**14**	<6.9	**32**	**35**	<6.1	**26**	NA
SVS-15	9/11/2008	Post Purge	5	**2,400**	**16**	<4.8	<6.6	**3.8**	<4.6	<5.2	**5.7**	<5.2	**16**	<10	<3.2	**5.9**	**150**	<12	**12**	**5.1**	<4.3	**34**	<3.6	**100**	<4.2	<5.6	<5.0	**16**	<5.0	<20	<5.2	<5.9	**30**	<5.9	<5.9	<5.9	<5.9	NA
SVS-16	9/11/2008	Post Purge	5	**4,400**	<17	<12	<17	<10	<12	<14	<14	<14	<24	<26	<8.2	<6.9	**83**	<31	**13**	<11	<11	**18**	<9.2	<15	<11	<14	<13	<21	<13	<51	<13	<15	<18	<15	<15	<15	<15	NA
SVS-17	9/11/2008	Post Purge	5	**1,900**	**17**	<5.1	<7.0	**4.1**	**6.7**	<5.6	<5.6	<5.6	**15**	<11	**4.7**	**3.9**	**72**	<13	**23**	<4.5	<4.5	**14**	<3.8	**280**	<4.4	<6.0	<5.3	**95**	<5.3	<21	<5.5	<6.3	<7.2	<6.3	<6.3	<6.3	<6.3	NA
SVS-18	9/11/2008	Post Purge	5	**97**	<6.4	<4.7	<6.5	**5.1**	**6.6**	<5.2	<5.2	<5.2	**16**	<9.8	<3.1	<2.6	**130**	<12	**12**	<4.1	**8.0**	**22**	<3.5	**6.3**	<4.1	<5.6	<4.9	<8.0	<4.9	<19	<5.1	<5.8	<6.7	<5.8	<5.8	<5.8	<5.8	NA
SVS-19	9/11/2008	Post Purge	5	<8.4	<6.6	<4.9	<6.7	**6.9**	**15**	<5.4	**5.8**	<5.4	**21**	<10	<3.2	**6.8**	**150**	<12	**18**	<4.3	**8.0**	**28**	<3.6	<6.0	**4.4**	<5.8	**7.1**	<8.3	<5.0	<20	<5.3	<6.1	<6.9	<6.1	<6.1	<6.1	<6.1	NA
SVS-20	9/11/2008	Post Purge	5	**10**	<6.5	<4.8	<6.6	**8.5**	**19**	**9.1**	**7.3**	<5.2	<9.1	<10	<3.2	<2.7	**220**	<12	**28**	<4.2	**16**	**33**	<3.6	**9.6**	**6.4**	<5.6	**11**	<8.1	<5.0	<20	<5.2	<5.9	<6.8	<5.9	<5.9	<5.9	<5.9	NA
SVS-21	9/11/2008	Post Purge	5	<8.2	<6.5	<4.8	<6.6	**4.9**	**9.3**	**21**	**73**	**8.1**	**13**	<10	**4.2**	**5.2**	**68**	<12	**9.5**	<4.2	<4.3	**17**	<3.6	**220**	<4.2	<5.6	<5.0	**70**	<5.0	<20	<5.2	<5.9	<6.8	<5.9	<5.9	<5.9	<5.9	NA
SVS-22	9/11/2008	Post Purge	5	<8.4	<6.6	<4.9	<6.7	**4.5**	**5.4**	**7.5**	**17**	<5.4	<9.3	<10	<3.2	**3.2**	**55**	<12	**6.7**	<4.3	<4.4	**12**	<3.6	**59**	<4.2	<5.8	<5.1	<8.3	<5.0	<20	<5.3	<6.1	<6.9	<6.1	<6.1	<6.1	<6.1	NA
SVS-23	9/11/2008	Post Purge	5	**17**	**40**	<5.0	<6.9	<40	**8.0**	<5.5	**10**	<5.5	**33**	<10	<3.3	<2.8	**390**	**14**	**19**	<4.4	**10**	**25**	<3.7	<6.2	<4.4	<5.9	<5.2	<8.5	<5.2	<21	<5.4	<6.2	<7.1	<6.2	<6.2	<6.2	<6.2	NA
SVS-24	9/11/2008	Post Purge	5	**30**	**7.4**	<4.9	<6.7	**6.5**	**14**	**7.8**	**11**	<5.4	**26**	<10	<3.2	**3.8**	**120**	**12**	**11**	<4.3	**16**	**18**	<3.6	**11**	<4.2	<5.8	**7.9**	<8.3	<5.0	<20	<5.3	<6.1	<6.9	<6.1	<6.1	<6.1	<6.1	NA
SVS-25	9/11/2008	Post Purge	5	**230**	**41**	<4.8	<6.6	**4.0**	**5.4**	**12**	**41**	**5.6**	**18**	<10	<3.2	<2.7	**140**	**16**	**13**	<4.2	<4.3	**17**	<3.6	**25**	<4.2	<5.6	<5.0	<8.1	<5.0	<20	<5.2	<5.9	<6.8	<5.9	<5.9	<5.9	<5.9	NA
SVS-26	9/11/2008	Post Purge	5	**1,700**	**86**	<4.7	<6.5	**5.6**	**7.8**	<5.2	**7.2**	<5.2	**22**	<9.8	<3.1	**6.0**	**150**	**14**	**12**	<4.1	**4.2**	**16**	<3.5	**29**	<4.1	<5.6	<4.9	<8.0	<4.9	<19	<5.1	<5.8	<6.7	<5.8	<5.8	<5.8	<5.8	NA
SVS-27	9/11/2008	Post Purge	5	**4,800**	**58**	<9.1	<12	<7.3	<8.6	<9.9	<9.9	<9.9	<17	<19	<6.0	<5.1	**49**	<22	<7.1	<8.0	<8.1	**14**	<6.8	<11	<7.9	<11	<9.4	<15	<9.4	<38	<9.8	<11	**17**	<11	<11	<11	<11	NA
SVS-28	9/12/2008	Post Purge	5	**1,400**	**11**	<4.6	<6.4	**6.3**	**12**	**5.9**	**10**	<5.0	<8.8	<9.6	<3.1	**7.9**	**59**	**16**	**5.4**	<4.0	**10**	**19**	<3.4	**150**	<4.0	<5.4	**7.7**	**12**	<4.8	<19	<5.0	<5.7	**30**	<5.7	<5.7	<5.7	<5.7	NA
SVS-29	9/12/2008	Post Purge	5	<8.1	<6.4	<4.7	<6.5	<3.8	<4.5	<5.2	<5.2	<5.2	<9.0	<9.8	<3.1	<2.6	**40**	<12	**7.3**	<4.1	<4.2	**9.5**	<3.5	<5.8	<4.1	<5.6	<4.9	<8.0	<4.9	<19	<5.1	<5.8	<6.7	<5.8	<5.8	<5.8	<5.8	NA
SVS-30	9/12/2008	Post Purge	5	<7.9	<6.3	<4.6	<6.4	**24**	**39**	**13**	**14**	<5.0	**45**	<9.6	<3.1	<2.6	**200**	**130**	**25**	**25**	**13**	**40**	<3.4	**19**	<4.0	<5.4	**9.3**	**10**	<4.8	<19	<5.0	<5.7	<6.5	<5.7	<5.7	<5.7	<5.7	NA
SOIL BORING AND MONITORING WELL INSTALLATION VAPOR SAMPLES																																						
SB-01	12/15/2003	Post Purge	10	**140,000 D2**	<1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.33**¥**
	12/15/2003	Post Purge	20	**170,000 D2**	<5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/15/2003	Post Purge	30	**120,000 D2**	<10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.41****
	12/16/2003	Post Purge	40	**120,000 D2**	<5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/16/2003	Post Purge	50	**140,000 D2**	<5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.25****
	12/16/2003	Post Purge	60	**5,400**	<1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 2-4
CONCENTRATIONS OF ANALYTES DETECTED IN SOIL VAPOR SAMPLES
2001 THROUGH 2011
20th Street and Factor Avenue WQARF Site, Yuma, Arizona
in microgram per cubic meter [ug/m3]

Sample Location	Date	Sample Type	Sample Depth or Screened Interval (in feet bgs)	Volatile Organic Compounds (VOCs)																																	Hydrogen Cyanide
				PCE	TCE	1,1-DCE	1,1,1-TCA	Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Ethanol	Chloro-methane	Chloro-ethane	1,3-Butadiene	Acetone	2-Propanol	CD	MC	Hexane	MEK	THF	Chloro-form	Cyclo-hexane	2,2,4-TMP	Heptane	BDCM	4-Methyl-2-Pentanone	2-Hexa-none	Styrene	Cumene	Freon 11	Propyl-benzene	4-Ethyl toluene	1,3,5-TMB	1,2,4-TMB	HCN
SB-01 (cont)	12/16/2003	Post Purge	70	**25,000**	<1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.27****
SVMW-1 (SB-02)	12/16/2003	Post Purge	10	**79,000 D2**	<5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.34****
	12/16/2003	Post Purge	20	**130,000 D2**	<5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/16/2003	Post Purge	30	**160,000 D2**	<5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.2**
	12/16/2003	Post Purge	40	**180,000 D2**	<10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/16/2003	Post Purge	50	**220,000 D2**	<10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.2**
	12/16/2003	Post Purge	60	**150,000 D2**	<10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/16/2003	Post Purge	70	**46,000 D1**	<10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.29****
SB-03	12/17/2003	Post Purge	10	**58,000 D2**	<2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**037****
	12/17/2003	Post Purge	20	**83,000 D2**	<5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/17/2003	Post Purge	30	**110,000 D2**	<5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.25****
	12/17/2003	Post Purge	40	**140,000 D2**	<5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/17/2003	Post Purge	50	**160,000 D2**	<10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.32****
	12/17/2003	Post Purge	60	**120,000 D2**	<10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/17/2003	Post Purge	70	**170,000 D2**	<10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.32****
SB-04	12/18/2003	Post Purge	10	**82,000 D2**	<5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.30****
	12/18/2003	Post Purge	20	**120,000 D2**	<5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/18/2003	Post Purge	30	**190,000 D2**	<10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.26****
	12/18/2003	Post Purge	40	**230,000 D2**	<10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/18/2003	Post Purge	50	**220,000 D2**	<10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.28****
	12/18/2003	Post Purge	60	**210,000 D2**	<10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/18/2003	Post Purge	70	**280,000 D2**	<20,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.2**
SB-05	12/19/2003	Post Purge	10	**69,000 D2**	<5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.34****
	12/19/2003	Post Purge	20	**110,000 D2**	<5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/19/2003	Post Purge	30	**130,000 D2**	<10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.2**
	12/19/2003	Post Purge	40	**170,000 D2**	<10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/19/2003	Post Purge	50	**200,000 D2**	<10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.24****
	12/19/2003	Post Purge	60	**200,000 D2**	<10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/19/2003	Post Purge	70	**220,000 D2**	<10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.30****
SB-06	12/19/2003	Post Purge	10	**30,000 D1**	<5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.28****
	12/19/2003	Post Purge	20	**55,000 D2**	<5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/19/2003	Post Purge	30	**82,000 D2**	<5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.2**
	12/19/2003	Post Purge	40	**93,000 D2**	<5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/19/2003	Post Purge	50	**96,000 D2**	<5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.2**
	12/19/2003	Post Purge	60	**7,300**	<1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/19/2003	Post Purge	70	**12,000**	<1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.37****

TABLE 2-4
CONCENTRATIONS OF ANALYTES DETECTED IN SOIL VAPOR SAMPLES
2001 THROUGH 2011
20th Street and Factor Avenue WQARF Site, Yuma, Arizona
in microgram per cubic meter [ug/m3]

Sample Location	Date	Sample Type	Sample Depth or Screened Interval (in feet bgs)	Volatile Organic Compounds (VOCs)																																	Hydrogen Cyanide
				PCE	TCE	1,1-DCE	1,1,1-TCA	Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Ethanol	Chloro-methane	Chloro-ethane	1,3-Butadiene	Acetone	2-Propanol	CD	MC	Hexane	MEK	THF	Chloro-form	Cyclo-hexane	2,2,4-TMP	Heptane	BDCM	4-Methyl-2-Pentanone	2-Hexa-none	Styrene	Cumene	Freon 11	Propyl-benzene	4-Ethyl toluene	1,3,5-TMB	1,2,4-TMB	HCN
MW-4A (SB-08)	4/5/2004	Post Purge	10	930 D2	2.1	1.8	8.6	9.6	8.1	0.59	1.7	0.81	NR	<0.50	<0.50	<0.50	130 D2	<1.0	0.79	<0.50	1.8	9.9	<2.0	1.1	1.0	<0.50	<0.50	<0.50	<1.0	<1.0	0.61	NR	0.95	NR	<0.50	<0.50	1.5	NA
	4/5/2004	Post Purge	30	1,700 D2	5.9	3.7	7.3	21	4.1	3.8	7.7	3.2	NR	<0.50	<0.50	<0.50	120 D2	<1.0	1.1	<0.50	15	23	<2.0	2.5	6.0	<0.50	<0.50	<0.50	<1.0	<1.0	1.4	NR	0.84	NR	4.2	2.8	<1.0	NA
	4/5/2004	Post Purge	50	2,700 D2	8.4	5.7	7.6	18	22	4.0	7.4	3.1	NR	<0.50	<0.50	<0.50	110 D2	<1.0	1.5	<0.50	7.4	26	<2.0	3.8	6.6	<0.50	<0.50	<0.50	1.1	1.1	2.1	NR	1.1	NR	3.3	2.1	<1.0	NA
	4/5/2004	Post Purge	70	5,800 D2	41	24	4.4	20	73 D2	4.0	9.8	3.9	NR	<0.50	<0.50	<0.50	220 D2	1.4	1.5	<0.50	13	61 D2	<2.0	9.5	<0.50	<0.50	<0.50	1.3	2.5	8.9	3.6	NR	1.8	NR	3.1	1.9	<1.0	NA
MW-8A*	1/26/2005	Post Purge	10	26.45 D1	<65.47	<3.96	<5.45	<3.19	45.22 D1	9.98 D1	29.96 D1	13.02 D1	NR	<2.06	<2.64	<2.21	125.88 D2	6.64 D1	7.78 D1	<3.47	20.44 D1	32.44 D1	<11.80	5.37 D1	<3.44	5.14 D1	<4.10	<6.70	<8.19	<8.19	<4.26	NR	<5.62	NR	<4.92	<4.92	12.29 D1	<0.505**
MW-8B*	11/1/2006	Post Purge	10	<33.91	<26.87	<33.91	<27.28	47.92	56.52	<21.71	<43.42	<21.71	NR	<10.32	<13.19	<11.06	235.14 D2	<49.15	<15.57	<17.37	74.01	<29.49	<58.98	<48.82	37.87	<23.36	77.86	<33.50	<40.96	<40.96	<21.30	NR	<28.09	NR	<24.58	<24.58	<24.58	<0.2**
MW-9A*	1/24/2005	Post Purge	10	115.29 D1	<65.47	<3.96	<5.45	<3.19	64.06 D1	9.12 D1	24.75 D1	12.16 D1	NR	<2.06	<2.64	<2.21	<23.75	7.62 D1	11.52 D1	<3.47	35.24 D1	41.28 D1	<11.80	68.35 D1	<3.44	51.38 D1	45.07 D1	<6.70	<8.19	<8.19	<4.26	NR	<5.62	NR	<4.92	<4.92	4.92 D1	<0.505**
MW-10A*	1/27/2005	Post Purge	10	10.85 D1	<65.47	<3.96	<5.45	<3.19	41.44 D1	9.12 D1	29.96 D1	13.02 D1	NR	<2.06	<2.64	<2.21	427.52 D2	6.88 D1	12.46 D1	<3.47	42.29 D1	35.39 D1	<11.80	48.82 D1	<3.44	46.71 D1	40.98 D1	<6.70	<8.19	<8.19	<4.26	NR	<5.62	NR	7.37 D1	<4.92	12.29 D1	<0.500**
MW-11A*	5/25/2005	Post Purge	10	<3.39	<2.69	<3.39	<2.73	4.79	29.39	11.29	40.38	17.80	NR	1.38	<1.32	<1.10	356.27 D2	8.85	3.43	<1.74	2.01	117.96	6.78	12.69	<1.72	10.74	<2.05	<0.50	18.43	14.34	2.26	NR	<2.81	NR	13.27	5.90	25.56	<16.8
MW-12A*	3/30/2006	Post Purge	10	298.40	44.60	<16.95	<16.64	<7.99	12.81	<10.85	<21.71	<10.85	NR	<5.16	<6.60	<5.53	135.38 D2	<24.58	<7.78	<8.68	15.51	19.46	<29.49	39.06	8.95	<11.68	20.5	<16.75	<20.48	<20.48	<10.65	NR	<14.04	NR	<12.29	<12.29	<12.29	<33.7
MW-13A*	3/30/2006	Post Purge	10	<16.95	<13.43	<16.95	<16.64	<7.99	11.68	<10.85	<21.71	<10.85	NR	<5.16	<6.60	<5.53	140.13 D2	<24.58	<7.78	<8.68	11.63	17.99	<29.49	131.81	<8.61	<11.68	31.14	20.10	<20.48	<20.48	<10.65	NR	<14.04	NR	<12.29	<12.29	<12.29	68.2
MW-14A*	4/5/2006	Post Purge	10	<16.95	<13.43	<16.95	<16.64	8.31	12.06	<10.85	<21.71	<10.85	NR	<5.16	<6.60	<5.53	78.38	<24.58	<7.78	<8.68	16.92	24.18	<29.49	<12.20	<8.61	<11.68	24.59	<16.75	<20.48	<20.48	<10.65	NR	<14.04	NR	<12.29	<12.29	<12.29	52.5
MW-15A*	4/4/2006	Post Purge	10	<16.95	<13.43	<16.95	<16.64	14.06	20.35	<10.85	<21.71	<10.85	NR	<5.16	<6.60	<5.53	137.76 D2	<24.58	<7.78	<8.68	225.56 D2	<14.74	<29.49	33.20	15.15	<11.68	40.16	<16.75	<20.48	<20.48	<10.65	NR	<14.04	NR	<12.29	<12.29	<12.29	40.2
MW-16A*	4/15/2008	Post Purge	10	<4,679.38	<2,955.20	<2,712.68	<3,000.54	<1,022.20	<1,431.83	4775.76	18,234.71	12,156.47	NR	<433.59	<263.83	<221.20	10,213.07	<983.11	<996.41	<1,215.64	<352.43	<1,769.35	<1,179.5	<2,440.97	<344.25	<2,195.37	<1,721.02	<669.98	<3,399.70	<3,399.70	<425.92	NR	<3,202.05	NR	2,408.42	1,966.06	5,898.18	<40
MW-17A*	11/13/2006	Post Purge	10	<678.17	<537.31	<678.17	<545.55	1,149.97 D2	2,486.87 D2	2,604.96 D2	8,683.19 D2	5,209.92 D2	NR	<206.47	<263.83	<221.20	<2,375.13	<983.11	<311.38	<347.33	<352.43	<589.78	<1,179.5	683.47 D2	<344.25	<467.10	<409.77	<669.98	<819.20	<819.20	<425.92	NR	<561.76	NR	3,735.51 D2	2,752.48 D2	8,355.75 D2	<0.2**
MW-18B*	11/10/2006	Post Purge	10	<67.82	<53.73	<67.82	<54.56	798.59 D2	866.64 D2	694.66 D2	2,778.62 D2	1,780.05 D2	NR	<20.65	<26.38	<22.12	403.77 D2	<98.31	52.93	<34.73	155.07	<58.98	<117.96	<48.82	<34.43	<46.71	<40.98	<67.00	<81.92	<81.92	<42.59	NR	<56.18	NR	3,538.91 D2	4,227.03 D2	10,321.81 D2	<0.2**
MW-19A*	11/19/2006	Post Purge	10	65.78	<26.87	<33.91	<27.28	479.15 D2	602.88 D2	42.55	<43.42	<21.71	NR	<10.32	<13.19	<11.06	475.03 D2	159.76 D2	<15.57	<17.37	144.50	38.34	<58.98	<24.41	79.18	<23.36	143.42	<33.50	<40.96	<40.96	<21.30	NR	<28.09	NR	<24.58	<24.58	49.15	<0.2**
MW-20A*	11/7/2006	Post Purge	10	42.05	<26.87	<33.91	<27.28	511.10 D2	489.84 D2	38.21	43.42	25.18	NR	<10.32	<13.19	<11.06	308.77 D2	<49.15	<15.57	<17.37	102.21	32.44	<58.98	<24.41	51.64	<23.36	122.93	<33.50	<40.96	<40.96	<21.30	NR	<28.09	NR	32.44	<24.58	78.64	<0.2**
MW-21C*	4/12/2007	Post Purge	10	<81.38	<64.48	<81.38	<65.47	<38.33	<45.22	<52.10	<108.54	95.52	NR	<24.78	<31.66	<26.54	<285.02	<122.89	<37.37	<41.68	<42.29	73.72	<147.45	175.75	41.31	<56.05	<49.17	<80.40	<102.40	<102.40	<51.11	NR	73.03	NR	403.04 D2	540.67 D2	2,015.21 D2	NA
MW-22B*	11/5/2007	Post Purge	10	1,831.06 D1	112.83	<33.91	<27.28	274.72 D2	203.47 D2	41.25	<43.42	<21.71	NR	206.47 D2	68.60	<11.06	20,188.63 D2	466.98 D2	404.79 D2	<17.37	1,127.78 D2	8,846.77 D2	<58.98	<24.41	<17.21	<23.36	<20.49	<33.50	274.43 D2	614.40 D2	<21.30	NR	<28.09	NR	<24.58	<24.58	<24.58	<67.3
MW-27A	10/27/2010	Post Purge	10	74.6	<2.69	<1.99	<2.73	15.0	36.2	11.7	24.3	<2.17	NR	<2.67	<1.32	5.75	500	<983.11	6.22	<1.74	63.4	88.5	74.6	19.5	31.3	<2.33	<2.05	3.35	10.7	12.3	10.2	NR	<2.81	NR	<2.46	6.40	9.35	NA
MONITORING WELL SOIL VAPOR SAMPLES																																					
MW-1A	8/8/2001	Post Purge	65 - 95	570,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	NR	<5,000	<5,000	NR	<5,000	NR	<5,000	<5,000	NR	<5,000	NR	<5,000	NR	NR	NR	<5,000	<5,000	<5,000	<5,000	NR	<10,000	NR	NR	NR	NR	<17 / <30t
MW-2A	8/8/2001	Post Purge	65 - 95	270,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	NR	<2,000	<2,000	NR	<2,000	NR	<2,000	<2,000	NR	<2,000	NR	<2,000	NR	NR	NR	<2,000	<2,000	<2,000	<2,000	NR	<4,000	NR	NR	NR	NR	<4.2 / <5.2t
MW-3A	8/8/2001	Post Purge	64 - 84	92,000	<1,000	<1,000	1,800	<1,000	<1,000	<1,000	<1,000	<1,000	NR	<1,000	<1,000	NR	<1,000	NR	<1,000	<1,000	NR	<1,000	NR	<1,000	NR	NR	NR	<1,000	<1,000	<1,000	<1,000	NR	<2,000	NR	NR	NR	NR	<4.2 / <6.1t
MW-8A	4/25/2008	Post Purge	65.4 - 105.4	340 D2	55	7.7	<2.8	<1.6	3.0	<2.2	8.4	4.4	NR	4.2	1.5	<1.1	51	<5.0	2.1	2.5	<1.8	<3.0	<6.0	<2.5	<1.7	<2.4	<2.1	<3.4	<4.2	<4.2	<2.2	NR	<2.8	NR	8.8	7.5	49	<10.4
MW-8B	4/25/2008	Post Purge	107 - 117	<1,200	10,000 D2	<410	<550	<320	<380	<440	<880	<440	NR	<210	<270	<220	<2,400	<1,000	<320	<350	<360	<600	<1,200	<500	<350	<470	<420	<680	<830	<830	<430	NR	<570	NR	<440	<500	<500	<9.52
MW-8C	4/25/2008	Post Purge	170 - 210	28,000 D3	5,100 D2	<410	<550	<320	<380	<440	<880	<440	NR	<210	<270	<220	<2,400	<1,000	<320	<350	<360	<600	<1,200	<500	<350	<470	<420	<680	<830	<830	<430	NR	<570	NR	<440	<500	<500	NA
MW-22B	4/25/2008	Post Purge	115 - 155	<600	<280	<210	<280	<160	<190	<220	<440	<220	NR	<100	<130	<110	<1,200	<500	<160	<180	<180	<300	<600	<250	<170	<240	<210	<340	<420	<420	<220	NR	<280	NR	<220	<250	<250	<10
MW-102B1	8/8/2001	Post Purge	80 -90	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<29 / <55t
EW-1	4/25/2008	Post Purge	100 - 160	6,600 D2	880 D2	220 D2	<55	<32	130	<44	<88	<44	NR	<21	<27	<22	<240	<100	1,100 D2	<35	64	<60	<120	<50	<35	<47	<42	<68	<83	<83	<43	NR	<57	NR	<44	<50	<50	<10.2
SOIL VAPOR MONITORING WELL VAPOR SAMPLES																																					
SVMW-1C	12/18/2003	Post Purge	19.5 to 20	160,000 D2	<5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS
	1/8/2004	Post Purge		20,000 D2	<250	<250	<250*	<250	<250	<250	<500	<250	NR	<250	<250	<250	<2,500	<500	<250	<250	<250	<500	<1,000	<250	<250	<250	<250	<250	<500	<500	<250	NR	<250	NR	<250	<250	<250	140
	4/24/2008	Post Purge		28,000 D2	<550	<410	<550	<320	<380	<440	<880	<440	NR	<210	<270	<220	<2,400	<1,000	<320	<350	<360	<600	<1,200	<500	<350	<470	<420	<680	<830	<830	<430	NR	<570	NR	<440	<500	<500	<10
	3/11/2010	No Purge		4,500	29	19	131	4.5	24	<4.3	14	9.1	NR	37	<2.6	<2.2	57	<10	1,100 D2	<3.5	4.2	10	<12	54	<3.4	<4.7	<4.1	9.4	<8.2	<8.2	<4.3	NR	7.9	NR	<8.2	<4.9	6.4	<7.78
	1/18/2011	No Purge		4,750	26.9 E4	27.8 E4	109	<31.9	86.7	208	564	187	NR	<41.4	<26.4	<22.1	<238	<98.0	933	59.0	<35.2	<59.0	<118	53.7	<34.4	<46.6	<41.0	<67.0	<82.0	<82.0	<42.6	NR	<56.2	NR	<49.2	<49.2	59.0	<7.85

TETRA TECH, INC.

TABLE 2-4
CONCENTRATIONS OF ANALYTES DETECTED IN SOIL VAPOR SAMPLES
2001 THROUGH 2011
20th Street and Factor Avenue WQARF Site, Yuma, Arizona
in microgram per cubic meter [ug/m3]

Sample Location	Date	Sample Type	Sample Depth or Screened Interval (in feet bgs)	Volatile Organic Compounds (VOCs)																																		Hydrogen Cyanide
				PCE	TCE	1,1-DCE	1,1,1-TCA	Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Ethanol	Chloro-methane	Chloro-ethane	1,3-Butadiene	Acetone	2-Propanol	CD	MC	Hexane	MEK	THF	Chloro-form	Cyclo-hexane	2,2,4-TMP	Heptane	BDCM	4-Methyl-2-Pentanone	2-Hexa-none	Styrene	Cumene	Freon 11	Propyl-benzene	4-Ethyl toluene	1,3,5-TMB	1,2,4-TMB	HCN
SVMW-1D	12/18/2003	Post Purge	34.5 to 35	170,000 D2	<10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS
	1/8/2004	Post Purge		36,000 D2	<250	250 D2	270 D2	<250	<250	<250	<500	<250	NR	<250	<250	<250	<2,500	<500	<250	<250	<250	<500	<1,000	<250	<250	<250	<250	<250	<500	<500	<250	NR	<250	NR	<250	<250	<250	110
	4/24/2008	Post Purge		8,300 D2	<280	<210	<210	<160	<190	<220	<440	<220	NR	<50	<50	<110	<1,200	<500	<160	<180	<180	<300	<600	<250	<170	<240	<210	<340	<420	<420	<220	NR	<280	NR	<220	<250	<250	<10
	3/11/2010	No Purge		5,200 D2	27	14	66	8.0	22	<4.3	<8.7	4.3	NR	352 D2	34	<2.2	90	<10	5,900 D2	<3.5	<3.5	17	<12	59	<3.4	<4.7	12	10	<8.2	<8.2	<4.3	NR	8.4	NR	<4.9	<4.9	6.4	<7.78
	1/18/2011	No Purge		3,870	<21.5	<15.9	27.3 E4	<31.9	82.9	208	564	<43.4	NR	248	39.6	<22.1	<238	<98.0	5,598	69.4	<35.2	<59.0	<118	48.8	<34.4	<46.6	<41.0	<67.0	<82.0	<82.0	<42.6	NR	<76.6	NR	<49.2	<49.2	<49.2	<7.85
SVMW-1E	12/18/2003	Post Purge	49.5 to 50	200,000 D2	<10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS
	1/8/2004	Post Purge		35,000 D2	<250	<250	280 D2	<250	<250	<250	<500	<250	NR	<250	<250	<250	<2,500	<500	<250	<250	<250	<500	<1,000	<250	<250	<250	<250	<250	<500	<500	<250	NR	<250	NR	<250	<250	<250	110
	4/25/2008	Post Purge		13,000 D2	<280	<200	<280	<160	<190	<220	<440	<220	NR	<100	<130	<110	<1,200	<500	<160	<180	<180	<300	<600	<250	<170	<240	<180	<340	<420	<420	<220	NR	<280	NR	<220	<250	<250	<10.4
	3/11/2010	No Purge		3,500 D2	22	11	87	6.1	26	4.8	19	11	NR	104 D2	11	<2.2	81	<10	2,200 D2	<3.5	<3.5	12	<12	46	<3.4	<4.7	<4.1	3,500	<8.2	<8.2	<4.3	NR	6.2	NR	<4.9	6.9	14	<7.78
	1/18/2011	No Purge		3,800	<21.5	<15.9	32.8	<31.9	86.7	213	564	187	NR	124	<26.4	<22.1	<238	<98.0	2,610	72.9	<35.2	<59.0	<118	<48.8	<34.4	<46.6	<41.0	<67.0	<82.0	<82.0	<42.6	NR	<76.6	NR	<49.2	<49.2	<49.2	<7.85
SVMW-1F	12/18/2003	Post Purge	64.5 to 65	240,000 D2	<10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS
	1/8/2004	Post Purge		32,000 D2	<250	<250	270 D2	<250	<250	<250	<500	<250	NR	<250	<250	<250	<2,500	<500	<250	<250	<250	<500	<1,000	<250	<250	<250	<250	<250	<500	<500	<250	NR	<250	NR	<250	<250	<250	<100
	4/25/2008	Post Purge		7,600 D2	<280	<200	<280	<160	<190	<220	<440	<220	NR	<100	<130	<110	<1,200	<500	<160	<180	<180	<300	<600	<250	<170	<240	<210	<340	<420	<420	<220	NR	<280	NR	<220	<250	<250	<9.46
	3/11/2010	No Purge		224	<5.4	<4.0	32	3.5	75	<4.3	<8.7	4.3	NR	7.0	<2.6	<2.2	45	<10	159 D2	<3.5	<3.5	11	<12	<4.6	<3.4	<4.7	<4.1	<6.7	<8.2	<8.2	<4.3	NR	<5.6	NR	<4.9	<4.9	8.4	<7.78
	1/18/2011	No Purge		2,370	<21.5	<15.9	43.7 E4	<31.9	82.9	204	521	169	NR	<41.4	<26.4	<22.1	<238	<98.0	498	69.4	<35.2	<59.0	<118	<48.8	<34.4	<46.6	<41.0	<67.0	<82.0	<82.0	<42.6	NR	<56.2	NR	<49.2	<49.2	<49.2	<7.85
SVMW-2A	9/12/2008	Post Purge	4.5 to 5	<7.5	<5.9	<4.4	<6.0	<3.5	<4.1	31	100	11	12	<9.1	<2.9		25	59	23	<3.8	<3.9	7.4	<3.2	7.8	<3.8	<5.1	<4.5	<7.4	<4.5	<18	<4.7	<5.4		<5.4	<5.4	<5.4	<5.4	<48.1
	10/7/2008	Pre Purge		5.1	18	<1.98	<2.73	3.1	60	19	56	19	NR	<1.03	<1.32	<1.10	<11.9	5.3	<1.56	2	5.6	<2.95	<5.90	13	5.2	13	3.4	<3.35	<4.10	5.3	18	NR	<2.81	NR	12	11	33	<65.6
	10/21/2008	Pre Purge		8.8	<6.0	<4.4	<6.1	32	67	30	120	32	16	12	<3.0	<2.5	130	36	26	8.4	<3.9	22	<3.3	8.8	<3.8	<5.2	<4.6	<7.5	<4.6	<18	<4.8	<5.5	<6.3	<5.5	22	6.5	25	<65.6
	10/21/2008	Post Purge		13	<6.4	<4.7	<6.5	29	81	42	170	48	16	<9.8	<3.1	<2.6	78	84	<3.7	11	<4.2	13	<3.5	14	<4.1	<5.6	<4.9	<8.0	<4.9	<19	<5.1	<5.8	<6.7	6.5	29	8.8	31	<65.6
	11/11/2008	Pre Purge		<3.39	<2.69	<1.98	<2.73	7.7	16	18	65	14	NR	5.0	<1.32	<1.10	26	10	17	4.9	2.6	5.6	<5.90	9.3	<1.72	<2.34	<2.05	<3.35	<4.10	<4.10	6.4	NR		NR	4.9	3.8	15	<7.78
	3/8/2010	No Purge		<17	<13	<9.9	<14	8.6	57	<11	23	<11	NR	<10	<6.6	<5.5	<60	<25	<7.8	<8.7	<8.8	<15	<30	17	<8.6	<12	<10	<17	<21	<21	<11	NR	<14	NR	<12	<12	<12	<7.78
	1/17/2011	No Purge		45.4	<5.37	<3.97	<5.46	<3.19	24.9	78.1	365	130	NR	<4.14	<2.64	<2.21	<23.8	<9.80	5.60	65.9	<3.52	<5.90	<11.8	15.6	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	16.2	8.36	22.1	<7.85
SVMW-2B	9/12/2008	Post Purge	9.5 to 10	<7.8	<6.2	<4.5	<6.2	8.6	<4.3	<5.0	<5.0	<5.0	<8.6	<9.4	<3.0		25	<11	17	<4.0	<4.0	4.9	<3.4	9.9	<3.9	<5.3	<4.7	<7.7	<4.7	<19	<4.9	<5.6		<5.6	<5.6	<5.6	<5.6	121
	10/7/2008	Pre Purge		<3.39	<2.69	<1.98	<2.73	<1.60	42	14	33	9.1	NR	<1.03	<1.32	<1.10	74	9.3	8.1	1.7	2.8	8.3	<5.90	14	<1.72	<2.34	<2.05	<3.35	4.1	<4.10	17	NR	<2.81	NR	9.8	6.9	20	<65.6
	10/21/2008	Pre Purge		12	<6.2	<4.5	<6.2	40	82	38	140	41	17	170	<3.0	<2.5	130	47	11	11	<4.0	17	<3.4	13	<3.9	<5.3	<4.7	<7.7	<4.7	<19	<4.9	<5.6	<6.4	5.8	24	7.0	26	<65.6
	10/21/2008	Post Purge		9.9	<6.2	<4.5	<6.2	32	72	34	130	38	10	23	<3.0	<2.5	48	<11	<3.6	6.9	<4.0	13	7.2	19	<3.9	<5.3	<4.7	<7.7	<4.7	<19	<4.9	<5.6	<6.4	5.7	25	7.9	29	<65.6
	11/11/2008	Pre Purge		6.8	<2.69	<1.98	<2.73	12	35	21	78	17	NR	91	<1.32	<1.10	59	6.4	14	3.8	4.9	9.7	<5.90	13	2.2	<2.34	3.7	<3.35	<4.10	<4.10	6.0	NR		NR	5.9	4.1	17	<7.78
	3/8/2010	No Purge		25	<13	<9.9	<14	<8.0	34	<11	<22	<11	NR	23	<6.6	<5.5	<60	<25	21	<8.7	<8.8	<15	<30	20	<8.6	<12	<10	<17	<21	<21	<11	NR	<14	NR	<12	<12	<12	<7.78
	1/17/2011	No Purge		52.9	<5.37	<3.97	<5.46	<3.19	20.0	91.1	421	156	NR	17.0	<2.64	<2.21	<23.8	<9.80	15.6	69.4	<3.52	<5.90	<11.8	17.6	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	17.2	9.84	28.0	<7.85
SVMW-3A	9/12/2008	Post Purge	4.5 to 5	21	<6.6	<4.9	<6.73	<3.9	<4.6	6.1	20	<5.4	<9.3	<10	<3.2		24	22	7.2	<4.3	<4.4	5.7	<3.6	8.8	<4.2	<5.8	<5.1	<8.3	<5.0	<20	<5.3	<6.1		<6.1	<6.1	<6.1	<6.1	117
	10/7/2008	Pre Purge		54	70	<1.98	<2.73	3.8	130	43	170	74	NR	<1.03	<1.32	<1.10	24	<4.92	3.1	<1.74	4.9	<2.95	<5.90	4.9	2.5	<2.34	4.5	<3.35	<4.10	<4.10	19	NR	<2.81	NR	37	27	76	<65.6
	10/21/2008	Pre Purge		34	<6.5	<4.8	<6.6	75	150	56	220	62	32	22	<3.2	<2.7	130	46	24	16	4.7	26	8.4	7.1	<4.2	<5.6	<5.0	<8.1	<5.0	<20	5.3	<5.9	<6.8	9.4	41	12	43	<65.6
	10/21/2008	Post Purge		33	<6.6	<4.9	<6.7	62	150	56	220	64	26	<10	<3.2	<2.7	110	36	<3.8	15	4.6	23	9.1	7.3	<4.2	<5.8	<5.1	<8.3	<5.0	<20	<5.3	<6.1	<6.9	9.2	39	12	40	<65.6
	11/12/2008	Pre Purge		24	4.5	<1.98	<2.73	8.6	18	22	83	18	NR	7.9	<1.32	<1.10	31	6.6	15	3.5	1.9	7.4	<5.90	5.4	<1.72	<2.34	<2.05	<3.35	<4.10	<4.10	7.7	NR		NR	5.9	4.3	18	<7.78
	3/9/2010	No Purge		20	<5.4	<4.0	<5.5	<3.2	12	<4.3	24	11	NR	<4.1	<2.6	<2.2	29	<10	4.0	<3.5	<3.5	<5.9	<12	<4.9	<3.4	<4.7	<4.1	<6.7	<8.2	<8.2	<4.3	NR	<5.6	NR	<4.9	5.4	13	<7.78
	1/17/2011	No Purge		59.7	<5.37	<3.97	<5.46	<3.19	16.6	82.5	399	139	NR	<4.14	<2.64	<2.21	<23.8	<9.80	6.84	65.9	<3.52	<5.90	<11.8	<4.88	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	15.7	8.86	25.6	<7.85

TETRA TECH, INC.

TABLE 2-4
CONCENTRATIONS OF ANALYTES DETECTED IN SOIL VAPOR SAMPLES
2001 THROUGH 2011
20th Street and Factor Avenue WQARF Site, Yuma, Arizona
in microgram per cubic meter [ug/m3]

Sample Location	Date	Sample Type	Sample Depth or Screened Interval (in feet bgs)	Volatile Organic Compounds (VOCs)																																	Hydrogen Cyanide
				PCE	TCE	1,1-DCE	1,1,1-TCA	Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Ethanol	Chloro-methane	Chloro-ethane	1,3-Butadiene	Acetone	2-Propanol	CD	MC	Hexane	MEK	THF	Chloro-form	Cyclo-hexane	2,2,4-TMP	Heptane	BDCM	4-Methyl-2-Pentanone	2-Hexa-none	Styrene	Cumene	Freon 11	Propyl-benzene	4-Ethyl toluene	1,3,5-TMB	1,2,4-TMB	HCN
SVMW-3B	9/12/2008	Post Purge	9.5 to 10	28	<6.2	<4.5	<6.2	<3.6	<4.3	9.7	31	<5.0	12	<9.4	<3.0		56	14	7.3	<4.0	<4.0	10	<3.4	9.4	<3.9	<5.3	<4.7	<7.7	<4.7	<19	<4.9	<5.6		<5.6	<5.6	<5.6	<5.6	<63.1
	10/7/2008	Pre Purge		130	37	<1.98	<2.73	2.2	57	17	61	18	NR	<1.03	<1.32	<1.10	5	<4.92	1.6	7.3	5.6	8.9	<5.90	8.8	2.3	<2.34	2.9	<3.35	4.5	<4.10	20	NR	<2.81	NR	16	12	32	<65.6
	10/21/2008	Pre Purge		34	<6.5	<4.8	<6.6	81	130	60	230	62	37	240	<3.2	<2.7	120	47	30	16	5.1	24	5.3	8.1	<4.2	<5.6	<5.0	<8.1	<5.0	<20	5.1	<5.9	<6.8	8.9	37	11	38	<65.6
	10/21/2008	Post Purge		38	8.7	<4.5	<6.2	74	140	51	210	55	32	<9.4	<3.0	<2.5	140	42	<3.6	17	4.9	36	9.4	9.1	<3.9	<5.3	6.3	<7.7	<4.7	<19	<4.9	<5.6	<6.4	8.0	34	10	38	<65.6
	11/12/2008	Pre Purge		81	12	<1.98	<2.73	9.9	22	22	83	18	NR	130	1.5	<1.10	40	8.9	21	4.9	<1.76	8.0	<5.90	6.8	<1.72	<2.34	<2.05	<3.35	<4.10	<4.10	7.2	NR		NR	11	7.9	30	<7.78
	3/9/2010	No Purge		24	<5.4	<4.0	<5.5	<3.2	13	<4.3	10	<4.3	NR	37	<2.6	<2.2	<24	<10	11	<3.5	<3.5	<5.9	<12	5.4	<3.4	<4.7	<4.1	<6.7	<8.2	<8.2	<4.3	NR	<5.6	NR	<4.9	<4.9	<4.9	<7.78
	1/17/2011	No Purge		66.4	<5.37	<3.97	<5.46	<3.19	19.6	82.5	391	143	NR	19.5	<2.64	<2.21	<23.8	<9.80	16.2	69.4	<3.52	<5.90	<11.8	<4.88	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	16.7	10.3	30.0	<7.85
SVMW-4A	9/12/2008	Post Purge	4.5 to 5	11	<6.5	<4.8	<6.6	<3.9	<4.6	5.4	16	<5.2	<9.1	<10	<3.2		51	16	12	<4.2	<4.3	8.6	<3.6	<5.9	<4.2	<5.6	<5.0	<8.1	<5.0	<20	<5.2	<5.9		<5.9	<5.9	<5.9	<5.9	<63.1
	10/7/2008	Pre Purge		12	<2.69	<1.98	<2.73	<1.60	49	16	38	11	NR	<1.03	<1.32	<1.10	71	<4.92	2.2	<1.74	3.5	11	<5.90	<2.44	1.9	<2.34	<2.05	<3.35	4.1	<4.10	20	NR	<2.81	NR	12	6.9	19	<65.6
	10/21/2008	Pre Purge		23	<6.4	<4.7	<6.5	210	110	56	220	59	44	24	<3.1	<2.6	160	81	25	17	4.7	28	4.4	<5.8	<4.1	<5.6	<4.9	<8.0	<4.9	<19	<5.1	<5.8	<6.7	7.8	34	9.6	32	<65.6
	10/21/2008	Post Purge		50	<6.8	<5.0	<6.9	81	130	55	230	59	26	<10	<3.3	<2.8	100	39	<3.9	16	4.6	14	4.1	<6.2	<4.4	<5.9	<5.2	<8.5	<5.2	<21	<5.4	<6.2	<7.1	8.8	37	11	37	<65.6
	3/10/2010	No Purge		14	<5.4	<4.0	<5.5	<3.2	15	<4.3	<8.7	<4.3	NR	<4.1	<2.6	<2.2	26	<10	4.7	<3.5	3.9	<5.9	<12	<4.9	<3.4	<4.7	<4.1	<6.7	<8.2	<8.2	<4.3	NR	<5.6	NR	<4.9	<4.9	<4.9	<7.78
	1/17/2011	No Purge		68	<5.37	<3.97	<5.46	<3.19	22.2	99.8	356	165	NR	<4.14	<2.64	<2.21	<23.8	<9.80	<3.11	86.8	<3.52	<5.90	<11.80	<4.88	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	17.2	9.84	31.0	NA
SVMW-4B	9/12/2008	Post Purge	9.5 to 10	12	<6.6	<4.9	<6.7	<3.9	<4.6	5.7	18	<5.4	<9.3	<10	<3.2		30	12	<3.8	<4.3	<4.4	6.9	<3.6	<6.0	<4.2	<5.8	<5.1	<8.3	<5.0	<20	<5.3	<6.1		<6.1	<6.1	<6.1	<6.1	<63.1
	10/7/2008	Pre Purge		24	5.9	<1.98	<2.73	3.1	57	17	43	13	NR	<1.03	<1.32	<1.10	33	<4.92	2.2	1.9	3.0	6.5	<5.90	<2.44	2.6	<2.34	2.6	<3.35	<4.10	<4.10	21	NR	<2.81	NR	17	8.4	26	<65.6
	10/21/2008	Pre Purge		25	<6.9	<5.1	<7.0	97	90	50	200	54	58	260	3.8	<2.8	260	100	23	14	<4.5	30	6.7	<6.3	<4.4	<6.0	<5.3	<8.6	<5.3	<21	<5.5	<6.3	<7.2	7.4	32	10	34	<65.6
	10/21/2008	Post Purge		23	<6.3	<4.6	<6.4	240	100	54	210	55	39	<9.6	<3.1	<2.6	120	35	<3.6	13	4.3	40	8.5	<5.7	<4.0	<5.4	5.4	<7.8	<4.8	<19	4.9	<5.7	<6.5	8.0	32	9.5	32	<65.6
	3/10/2010	No Purge		14	<5.4	<4.0	<5.5	13	64	10	91	33	NR	33	<2.6	<2.2	<24	<10	15	<3.5	12	<5.9	<12	<4.9	<3.4	11	7.4	<6.7	<8.2	<8.2	<4.3	NR	<5.6	NR	15	12	36	<7.78
	1/17/2011	No Purge		58.3	<4.54	<3.97	<5.46	<3.19	18.9	95.5	464	161	NR	20.7	<2.64	<2.21	<23.8	<8.20	16.5	65.9	<3.52	<5.90	<11.80	<4.88	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	11	9.84	28.5	NA
SVMW-5A	3/9/2009	No Purge	4.5 to 5	<17	<13.4	<10.1	<13.6	<7.99	31	24	160	87	NR	<5.16	<6.60	<5.52	<59.4	37	11	30	11	38	50	16	<8.61	<11.7	11	<16.8	<20.5	<20.5	<10.6	NR	<5.6	NR	98	180	320	<7.78
	3/9/2010	No Purge		<6.8	<5.4	<4.0	<5.5	<3.1	17	<4.3	16	8.2	NR	<4.1	<2.6	<2.2	<24	<10	3.7	<3.5	<3.5	<5.9	<12	33	<3.4	<4.7	<4.1	<6.7	<8.2	<8.2	<4.3	NR	NR	NR	<4.9	4.9	9.8	<7.78
	1/17/2011	No Purge		34.6	<5.37	<3.97	<5.46	6.06	41.5	56.4	273	91.1	NR	<4.14	23.4	<2.21	<23.8	<9.80	4.35	30.5	<3.52	<5.90	<11.8	23.4	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	15.7	8.4	23.6	<7.85
SVMW-5B	3/9/2009	No Purge	9.5 to 10	6.3	3.6	<1.98	<2.73	4.8	87	31	110	33	NR	7.4	<1.32	<1.10	57	<4.92	30	3.5	<1.76	68	110	36	4.5	3.8	<2.05	<3.35	12	5.3	10	NR	<5.6	NR	43	79	190	<7.78
	3/9/2010	No Purge		<6.8	<5.4	<4.0	<5.5	<3.1	15	<4.3	<8.7	<4.3	NR	4.1	<2.6	<2.2	29	<10	13	<3.5	<3.5	<5.9	<12	33	<3.4	<4.7	<4.1	<6.7	<8.2	<8.2	<4.3	NR	NR	NR	<4.9	<4.9	<4.9	<7.78
	1/17/2011	No Purge		36.6	<5.37	<3.97	<5.46	<3.19	17.7	65.1	208	113	NR	<4.14	<2.64	<2.21	<23.8	<9.80	8.40	52.1	<3.52	<5.90	<11.8	22.4	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	17.2	12.8	35.9	<7.85
SVMW-6A	3/10/2009	No Purge	4.5 to 5	<17.0	<13.4	<9.91	<13.6	<7.99	25	<10.9	65	38	NR	<5.16	<6.60	<5.52	<59.4	<24.6	16	13	12	41	35	<12.2	<8.61	<11.7	<10.2	<16.8	<20.5	<20.5	<10.6	NR	<14	NR	47	89	160	<7.78
	3/8/2010	No Purge		18	<13	<9.9	<14	<8.0	24	<11	<22	<11	NR	<10	<6.6	<5.5	<60	<25	<7.8	<8.7	<8.8	<15	<30	<12	<8.6	<12	<10	<17	<21	<21	<11	NR	NR	NR	<12	<12	<12	<7.78
	1/17/2011	No Purge		34.6	<5.37	<3.97	<5.46	<3.19	16.2	47.7	191	47.7	NR	<4.14	<2.64	<2.21	<23.8	<9.80	6.84	62.5	<3.52	<5.90	<11.8	5.37	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	16.2	8.36	20.7	<7.85
SVMW-6B	3/10/2009	No Purge	9.5 to 10	10	<2.69	<1.98	<2.73	6.7	110	30	100	29	NR	12	<1.32	<1.10	90	<4.92	16	5.9	<1.76	130	91	9.8	6.2	4.2	<2.05	<3.35	24	9.8	9.4	NR	<14	NR	42	54	140	<7.78
	3/8/2010	No Purge		55	<13	<9.9	<14	<8.0	25	<11	<22	<11	NR	<10	<6.6	<5.5	<60	<25	13	<8.7	<8.8	<15	<30	<12	<8.6	<12	<10	<17	<21	<21	<11	NR	NR	NR	<12	16	43	<7.78
	1/17/2011	No Purge		35.9	<5.37	<3.97	<5.46	3.51	23.8	43.4	191	43.4	NR	4.14	<2.64	<2.21	<23.8	<9.80	18	59.0	<3.52	<5.90	<11.8	8.30	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	14.8	7.38	13.8	<7.85
SVMW-7A	3/10/2009	No Purge	4.5 to 5	<17.0	<13.4	<9.91	<13.6	<7.99	34	<10.9	33	4.8	NR	<5.16	<6.60	<5.52	<59.4	27	17	13	<8.81	38	44	<12.2	<8.61	<11.7	<10.2	<16.8	<20.5	<20.5	<10.6	NR	<14	NR	<12.3	<12.3	<12.3	<7.78
	3/8/2010	No Purge		<17	<13	<9.9	<14	<8.0	15.0	<11	<22	<11	NR	<10	<6.6	<5.5	<60	<25	<7.8	<8.7	<8.8	<15	<30	49	<8.6	<12	<10	<17	<21	<21	<11	NR	NR	NR	<12	<12	<12	<7.78
	1/17/2011	No Purge		25.1	<5.37	<3.97	<5.46	<3.19	16.6	60.8	278	99.8	NR	<4.14	<2.64	<2.21	<23.8	<9.80	4.67	41.6	<3.52	<5.90	<11.8	23.4	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	16.2	9.35	26.6	<7.85
SVMW-7B	3/10/2009	No Purge	9.5 to 10	<17.0	29	<9.91	<13.6	<7.99	57	14	42	<10.9	NR	<5.16	<6.60	<5.52	74	<24.3	<7.78	10	<8.81	64	53	16	<8.61	<11.7	<10.2	<16.8	<20.5	<20.5	<10.6	NR	<14	NR	<12.3	<12.3	<12.3	<7.78
	3/8/2010	No Purge		<17	<13	<9.9	<14	<8.0	45	<11	100	59	NR	<10	<6.6	<5.5	<60	<25	<7.8	<8.7	<8.8	<5.0	<10	11	<8.6	<12	11	<17	<21	<21	<11	NR	NR	NR	13	31	33	<7.78
	1/17/2011	No Purge		27.8	<5.37	<3.97	<5.46	<3.19	17.7	60.8	278	95.5	NR	<4.14	<2.64	<2.21	<23.8	<9.80	3.11	45.1	<3.52	<5.90	<11.8	18.5	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	16.7	9.84	25.6	<7.85

TABLE 2-4
CONCENTRATIONS OF ANALYTES DETECTED IN SOIL VAPOR SAMPLES
2001 THROUGH 2011
20th Street and Factor Avenue WQARF Site, Yuma, Arizona
in microgram per cubic meter [ug/m3]

Sample Location	Date	Sample Type	Sample Depth or Screened Interval (in feet bgs)	Volatile Organic Compounds (VOCs)																																	Hydrogen Cyanide
				PCE	TCE	1,1-DCE	1,1,1-TCA	Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Ethanol	Chloro-methane	Chloro-ethane	1,3-Butadiene	Acetone	2-Propanol	CD	MC	Hexane	MEK	THF	Chloro-form	Cyclo-hexane	2,2,4-TMP	Heptane	BDCM	4-Methyl-2-Pentanone	2-Hexa-none	Styrene	Cumene	Freon 11	Propyl-benzene	4-Ethyl toluene	1,3,5-TMB	1,2,4-TMB	HCN
SVMW-8A	3/10/2010	No Purge	2.5 to 5	26	<13	<9.9	<14	<3.2	14	<4.3	9.5	<4.3	NR	<4.1	<2.6	<2.2	43	<10	12	<3.5	9.5	<5.9	<12	6.8	<3.4	<4.7	<4.1	<6.7	<8.2	<8.2	<4.3	NR	<5.6	NR	<4.9	<4.9	7.4	<7.78
	1/17/2011	No Purge		88.1	<5.37	<3.97	<5.46	<3.19	21.9	109	508	187	NR	<4.14	<2.64	<2.21	<23.8	<9.80	<3.11	104	<3.52	<5.90	<11.8	<4.88	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	17.7	11.3	30.5	NA
SVMW-8B	3/10/2010	No Purge	7.5 to 10	35	<5.4	<4.0	<5.5	<3.2	17	12	334	308 D2	NR	5.0	<2.6	<2.2	40	<10	21	<3.5	4.2	<5.9	<12	9.3	<3.4	<4.7	4.5	<6.7	<8.2	<8.2	<4.3	NR	<5.6	NR	89	241	590 D2	<7.78
	1/17/2011	No Purge		102	<5.37	<3.97	<5.46	<3.19	23.8	122	608	204	NR	<4.14	<2.64	<2.21	<23.8	<9.80	<3.11	93.7	<3.52	<5.90	<11.8	<4.88	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	16.7	9.84	27.6	NA
SVMW-8C	3/10/2010	No Purge	17.5 to 20	35	<5.4	<4.0	<5.5	6.7	139	6.1	15	5.6	NR	39	<2.6	<2.2	90	<10	72	<3.5	6.3	<5.9	<12	12	<3.4	<4.7	9.0	<6.7	<8.2	<8.2	<4.3	NR	<5.6	NR	<4.9	<4.9	9.8	<7.78
	1/17/2011	No Purge		94.9	<5.37	<3.97	<5.46	<3.19	21.5	109	521	182	NR	<4.14	<2.64	<2.21	<23.8	<9.80	4.35	86.8	<3.52	<5.90	<11.8	6.83	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	17.7	11.3	31.5	NA
SVMW-8D	3/10/2010	No Purge	27.5 to 30	16	<5.4	<4.0	<5.5	5.1	16	<4.3	<8.7	<4.3	NR	5.8	<2.6	<2.2	81	<10	9.0	<3.5	3.5	<5.9	<12	<4.9	<3.4	<4.7	4.9	<6.7	<8.2	<8.2	<4.3	NR	<5.6	NR	<4.9	<4.9	6.4	<7.78
	1/17/2011	No Purge		81.4	<5.37	<3.97	<5.46	3.19	22.2	99.8	477	165	NR	17.4	<2.64	<2.21	<23.8	<9.80	103	69.4	<3.52	<5.90	<11.8	4.88	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	16.2	9.35	32.5	NA
SVMW-8E	3/10/2010	No Purge	37.5 to 40	68	13	<4.0	<5.5	<3.2	14	<4.3	12	5.2	NR	<4.1	<2.6	<2.2	55	<10	16	<3.5	<3.5	13	<12	24	<3.4	<4.7	<4.1	<6.7	<8.2	<8.2	<4.3	NR	<6	NR	<4.9	6.4	15	<7.78
	1/17/2011	No Purge		67.8	<5.37	<3.97	<5.46	3.51	23.4	86.8	391	143	NR	<4.14	<2.64	<2.21	<23.8	<9.80	7.46	76.3	<3.52	<5.90	<11.8	<4.88	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	16.7	9.35	23.6	NA
SVMW-8F	3/10/2010	No Purge	47.5 to 50	12	<5.4	<4.0	<5.5	12	49	4.3	13	6.1	NR	56	4.2	<2.2	309 D2	<10	65	3.8	<3.5	47	<12	6.8	<3.4	<4.7	18	<6.7	<8.2	<8.2	<4.3	NR	<5.6	NR	<4.9	<4.9	7.4	<7.78
	1/17/2011	No Purge		54.9	<5.37	<3.97	<5.46	<3.19	18.9	78.1	347	122	NR	<4.14	<2.64	<2.21	<23.8	<9.80	71.5	59.0	<3.52	<5.90	<11.8	5.86	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	15.7	9.35	23.6	NA
SVMW-8G	3/11/2010	No Purge	57.5 to 60	16	<5.4	<4.0	<5.5	5.7	21	<4.3	13	5.2	NR	13	<2.6	<2.2	107	<10	17	<3.5	5.6	11	<12	<4.9	<3.4	<4.7	7.0	<6.7	<8.2	<8.2	<4.3	NR	<5.6	NR	<4.9	<4.9	6.4	<7.78
	1/17/2011	No Purge		61.0	<5.37	<3.97	<5.46	6.06	29.0	86.8	378	148	NR	78.7	4.49	<2.21	61.9	<9.80	467	55.5	<3.52	<5.90	<11.8	<4.88	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	19.7	10.8	36.4	NA
SVMW-8H	3/11/2010	No Purge	67.5 to 70	<6.8	<5.4	<4.0	<5.5	<3.2	14	<4.3	<8.7	<4.3	NR	<4.1	<2.6	<2.2	60	<10	<3.1	<3.5	3.5	8.3	<12	<4.9	<3.4	<4.7	4.5	<6.7	<8.2	<8.2	<4.3	NR	<5.6	NR	<4.9	<4.9	<4.9	<7.78
	1/17/2011	No Purge		122	11.8	<3.97	<5.46	<3.19	31.7	95.5	434	161	NR	11.2	<2.64	<2.21	33.3	<9.80	80.9	72.9	<3.52	<5.90	<11.8	29.8	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	18.2	11.8	31.0	NA
SVMW-9A	3/12/2010	No Purge	4.5 to 5	95	<5.4	<4.0	<5.5	12	53	5.2	30	12	NR	<4.1	<2.6	<2.2	131 D2	<10	14	<3.5	6.3	12	<12	21	<3.4	5.6	<4.1	<6.7	<8.2	<8.2	<4.3	NR	<5.6	NR	5.4	5.4	11	<7.78
	1/18/2011	No Purge		156	<5.37	<3.97	<5.46	3.51	23.4	65.1	326	109	NR	<4.14	<2.64	<2.21	<23.8	<9.80	6.84	41.6	<3.52	<5.90	<11.8	12.7	<3.44	<4.66	<4.10	<6.70	<6.20	<8.20	<4.26	NR	<5.62	NR	14.3	7.87	14.8	NA
SVMW-9B	3/12/2010	No Purge	9.5 to 10	163	<5.4	<4.0	<5.5	4.8	49	<4.3	17	8.7	NR	18	<2.6	<2.2	36	<10	8.1	<3.5	4.9	<5.9	<12	45.0	<3.4	5.1	<4.1	22	<8.2	<8.2	<4.3	NR	<5.6	NR	<4.9	11	12	<7.78
	1/18/2011	No Purge		271	<5.37	<3.97	<5.46	5.10	30.5	82.5	404	135	NR	<4.14	<2.64	<2.21	<23.8	<9.80	14.0	48.6	<3.52	<5.90	<11.8	16.1	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	15.3	8.36	4.92	NA
SVMW-10A	3/11/2010	No Purge	4.5 to 5	251	<5.4	<4.0	<5.5	30	83	65	256	139	NR	<4.1	<2.6	<2.2	238 D2	<10	131	<3.5	<3.5	32	<12	6.3	<3.4	14	25.0	<6.7	<8.2	<8.2	<4.3	NR	<5.6	NR	74	167	187	<7.78
	1/18/2011	No Purge		346	<5.37	<3.97	<5.46	7.66	37.7	91.1	434	139	NR	<4.14	<2.64	<2.21	<23.8	<9.80	43.5	59.0	<3.52	<5.90	<11.8	4.88	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	15.7	8.36	20	<7.85
SVMW-10B	3/11/2010	No Purge	9.5 to 10	515 D2	7.0	<4.0	<5.5	6.1	113	4.8	20	8.7	NR	23	<2.6	<2.2	164 D2	<10	22	<3.5	<3.5	30	<12	16	<3.4	<4.7	<4.1	<6.7	<8.2	<8.2	<4.3	NR	<5.6	NR	<4.9	<4.9	10	<7.78
	1/18/2011	No Purge		414	<5.37	<3.97	<5.46	9.89	41.5	91.1	430	148	NR	6.00	<2.64	<2.21	28.6	<9.80	99.5	62.5	<3.52	<5.90	<11.8	6.34	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	15.3	8.36	17.7	<7.85
SVMW-11A	3/9/2010	No Purge	4.5 to 5	3,100	<54	<41	<55	<32	<38	<43	<87	<43	NR	<41	<26	<22	<238	<98	<31	<35	<35	<59	<118	<49	<34	<47	<41	<67	<82	<82	<43	NR	<56	NR	<49	<49	<49	<7.78
	1/17/2011	No Purge		2,710	26.3	<3.97	<5.46	<3.19	15.5	69.4	378	130	NR	<4.14	<2.64	<2.21	<23.8	<9.80	4.35	59.0	<3.52	<4.66	<11.8	5.86	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	8.99	NR	15.3	8.36	18.2	<7.85
SVMW-11B	3/9/2010	No Purge	9.5 to 10	4,500	59	<41	<55	<32	41	<43	<87	<43	NR	<41	<26	<22	309 D2	<98	<31	<35	<35	<59	<118	73	<34	<47	<41	<67	<82	<82	<43	NR	<56	NR	<49	<49	<49	<7.78
	1/17/2011	No Purge		3,860	39.7	<3.97	<5.46	<3.19	15.1	78.1	391	135	NR	<4.14	<2.64	<2.21	<23.8	<9.80	34.2	59.0	<3.52	<4.66	<11.8	7.81	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	11.8	NR	16.2	8.86	23.6	<7.85
SVMW-11C	1/17/2011	No Purge	19.5 to 20	5,970	43 E4	<16	<54.6	<31.9	204	82.9	608	208	NR	269	<26.4	<22.1	<238	<98.0	467	76.3	<35.2	<59.0	<118	<48.8	<34.4	<46.6	<41.0	<67.0	<82.0	<82.0	<42.6	NR	<56.25	NR	<49.2	<49.2	<49.2	NA
SVMW-11D	1/17/2011	No Purge	34.5 to 35	3,930	32 E4	<16	<54.6	<31.9	82.9	208	75.8	204	NR	745	31.7	<22.1	<238	<98.0	1,280	72.9	<35.2	<59.0	<118	<48.8	<34.4	<46.6	<41.0	<67.0	<82.0	<82.0	<42.6	NR	<56.25	NR	<49.2	<49.2	<49.2	NA
SVMW-11E	1/17/2011	No Purge	49.5 to 50	1,760	<21	<16	<54.6	<31.9	79.2	200	521	182	NR	952	52.8	<22.1	405	184	653	79.8	<35.2	<59.0	<118	<48.8	<34.4	<46.6	<41.0	<67.0	<82.0	<82.0	<42.6	NR	<56.25	NR	<49.2	<49.2	<49.2	NA
SVMW-11F	1/17/2011	No Purge	59.5 to 60	1,630	<21	<16	<54.6	<31.9	86.7	208	608	200	NR	1,490	63.4	<22.1	428	<98.0	1,310	90.2	<35.2	<59.0	<118	<48.8	<34.4	<46.6	<41.0	<67.0	<82.0	<82.0	<42.6	NR	<56.25	NR	<49.2	<49.2	<49.2	NA
SVMW-12A	3/9/2010	No Purge	4.5 to 5	51	<13	<9.9	<14	11	26	<11	24	<11	NR	<10	<6.6	<5.5	160 D2	<25	34	<8.7	<8.8	<15	<30	22	<8.6	<12	<10	<17	<21	<21	<11	NR	<14	NR	<12	<12	<12	<7.78
	1/17/2011	No Purge		81.4	<5.37	<3.97	<5.46	<3.19	14.7	69.4	356	126	NR	<4.14	<2.64	<2.21	<23.8	<9.80	3.42	48.6	<3.52	<4.66	<11.8	8.30	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	16.7	9.35	27.1	<7.85
SVMW-12B	3/9/2010	No Purge	9.5 to 10	81	<13	<9.9	<14	11	64	<11	<18	<4.3	NR	23	<6.6	<5.5	330 D2	<25	34	<8.7	<8.8	<15	<30	36	<8.6	<12	11	<17	<21	<21	<11	NR	<14	NR	<12	<12	<12	<7.78
	1/17/2011	No Purge		88.1	<5.37	<3.97	<5.46	<3.19	15.5	73.8	334	122	NR	7.45	<2.64	<2.21	<23.8	<9.80	29.9	55.5	<3.52	<5.90	<11.8	11.2	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	15.7	9.84	25.6	<7.85
SVMW-13A	1/18/2011	No Purge	4.5 to 5	949	<13.4	<9.93	<13.7	<7.98	35.4	104	477	148	NR	18.4	<6.60	<5.53	171	<24.5	<7.78	72.9	<8.80	<14.8	<29.5	<12.2	<8.60	<11.7	<10.3	<16.8	<20.5	<20.5	<10.7	NR	54.5	NR	33.0	16.7	20.7	<7.85
SVMW-13B	1/18/2011	No Purge	9.5 to 10	2,780	26.9 E4	<15.9	<54.6	<31.9	86.7	239	521	174	NR	93.2	<26.4	<22.1	2,050	<98.0	<31.1	93.7	<35.2	<59.0	<118	<48.8	<34.4	<46.6	<41.0	<67.0	<82.0	<82.0	<42.6	NR	163	NR	<49.2	<49.2	<49.2	<7.85

TABLE 2-4
CONCENTRATIONS OF ANALYTES DETECTED IN SOIL VAPOR SAMPLES
2001 THROUGH 2011
20th Street and Factor Avenue WQARF Site, Yuma, Arizona
in microgram per cubic meter [ug/m3]

Sample Location	Date	Sample Type	Sample Depth or Screened Interval (in feet bgs)	Volatile Organic Compounds (VOCs)																																	Hydrogen Cyanide
				PCE	TCE	1,1-DCE	1,1,1-TCA	Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Ethanol	Chloro-methane	Chloro-ethane	1,3-Butadiene	Acetone	2-Propanol	CD	MC	Hexane	MEK	THF	Chloro-form	Cyclo-hexane	2,2,4-TMP	Heptane	BDCM	4-Methyl-2-Pentanone	2-Hexa-none	Styrene	Cumene	Freon 11	Propyl-benzene	4-Ethyl toluene	1,3,5-TMB	1,2,4-TMB	HCN
SVMW-14A	1/17/2011	No Purge	4.5 to 5	**3,320**	<21	<16	<54.6	<31.9	**82.9**	**195**	**521**	**178**	NR	<41.4	<26.4	<22.1	<238	<98.0	<31.1	**80**	<35.2	<59.0	<118	<48.8	<34.4	<46.6	<41.0	<67.0	<82.0	<82.0	<42.6	NR	<56.2	NR	<49.2	<49.2	**64.0**	NA
SVMW-14B	1/17/2011	No Purge	9.5 to 10	**4,000**	<21	<16	<54.6	<31.9	**79.2**	**204**	**521**	**182**	NR	**74.5**	<26.4	<22.1	<238	<98.0	<31.1	**76.3**	<35.2	<59.0	<118	<48.8	<34.4	<46.6	<41.0	<67.0	<82.0	<82.0	<42.6	NR	<56.2	NR	<49.2	<49.2	<49.2	NA
SVMW-14C	1/17/2011	No Purge	19.5 to 20	**3,530**	<21	<16	<54.6	<31.9	**79.2**	**191**	**521**	**178**	NR	**207**	<26.4	<22.1	<238	<98.0	**211**	**65.9**	<35.2	<59.0	<118	<48.8	<34.4	<46.6	<41.0	<67.0	<82.0	<82.0	<42.6	NR	<56.2	NR	<49.2	<49.2	**64.0**	NA
SVMW-14D	1/17/2011	No Purge	34.5 to 35	**3,730**	<21	<16	<54.6	<31.9	**82.9**	**200**	**477**	**178**	NR	**662**	<26.4	<22.1	**333**	<98.0	**1,120**	**69.4**	<35.2	<59.0	<118	<48.8	<34.4	<46.6	<41.0	<67.0	**168**	<82.0	<42.6	NR	<56.2	NR	<49.2	<49.2	<49.2	NA
SVMW-14E	1/17/2011	No Purge	49.5 to 50	**3,730**	<21	<16	<54.6	<31.9	**79.2**	**195**	**477**	**174**	NR	**497**	<26.4	<22.1	**238**	<98.0	**964**	**65.9**	<35.2	<59.0	<118	<48.8	<34.4	<46.6	<41.0	<67.0	**139**	<82.0	<42.6	NR	<56.2	NR	<49.2	<49.2	<49.2	NA
SVMW-14F	1/17/2011	No Purge	59.5 to 60	**5,020**	<21	<16	<54.6	<31.9	**82.9**	**200**	**543**	**187**	NR	**600**	<26.4	<22.1	<238	<98.0	<31.1	**76.3**	<35.2	<59.0	<118	<48.8	<34.4	<46.6	<41.0	<67.0	<82.0	<82.0	<42.6	NR	<56.2	NR	<49.2	<49.2	<49.2	NA
SVMW-15A	1/18/2011	No Purge	4.5 to 5	**400**	<5.37	<3.97	<5.46	**3.51**	**26.0**	**73.8**	**360**	**117**	NR	<4.14	<2.64	<2.21	<23.8	<9.80	<3.11	**38.2**	<3.52	<5.90	<11.8	**7.81**	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	**14.8**	**7.87**	**14.3**	<7.85
SVMW-15B	1/18/2011	No Purge	9.5 to 10	**637**	<5.37	<3.97	<5.46	**4.47**	**28.3**	**86.8**	**425**	**143**	NR	**47.6**	<2.64	<2.21	**57.1**	<9.80	**13.4**	**55.5**	<3.52	<5.90	<11.8	**12.2**	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	**15.7**	**8.36**	**18.7**	<7.85
SVMW-15C	1/18/2011	No Purge	19.5 to 20	**881**	**11.3**	<3.97	<5.46	**7.02**	**32.0**	**91.1**	**421**	**139**	NR	**248**	7.66	<2.21	**524**	**36.8**	**11.5**	**59.0**	<3.52	<5.90	<11.8	**19.5**	<3.44	<4.66	**18.9**	<6.70	<8.20	<8.20	<4.26	NR	**7.31**	NR	**15.7**	**8.86**	**18.2**	NA
SVMW-15D	1/18/2011	No Purge	34.5 to 35	**644**	**8.59**	<3.97	<5.46	**8.61**	**36.2**	**82.5**	**369**	**126**	NR	**497**	19.8	<2.21	**357**	**71.1**	**778**	**55.5**	<3.52	<5.90	<11.8	**17.6**	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	5.62	NR	**15.7**	**8.86**	**18.2**	NA
SVMW-15E	1/18/2011	No Purge	49.5 to 50	**292**	<10.7	<7.9	<27.3	<16.0	**49.0**	**117**	**434**	**130**	NR	**311**	<13.2	<11.1	**262**	<49.0	**404**	**55.5**	<17.6	<29.5	<59.0	<24.4	<17.2	<23.3	<20.5	<33.5	<41.0	<41.0	<21.3	NR	<28.1	NR	<24.6	<24.6	<24.6	NA
SVMW-15F	1/18/2011	No Purge	59.5 to 60	**393**	<10.7	<7.9	<27.3	<16.0	**56.6**	**113**	**391**	**122**	NR	**580**	19.3	<11.1	**286**	<49.0	**529**	**48.6**	<17.6	<29.5	<59.0	<24.4	<17.2	<23.3	<20.5	<33.5	<41.0	<41.0	<21.3	NR	<28.1	NR	<24.6	<24.6	**32.5**	<7.85
SVMW-16A	1/18/2011	No Purge	4.5 to 5	**461**	<5.37	<3.97	<5.46	**6.70**	**45.2**	**99.8**	**477**	**152**	NR	<4.14	<2.64	<2.21	**57.1**	**23.0**	**4.04**	**69.4**	<3.52	<5.90	<11.8	**5.37**	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	**15.7**	**8.86**	**18.2**	<7.85
SVMW-16B	1/18/2011	No Purge	9.5 to 10	**1,220**	**9.67**	<3.97	<5.46	**4.15**	**30.2**	**82.5**	**386**	**126**	NR	**39.3**	<2.64	<2.21	**76.2**	**29.4**	**19.3**	**48.6**	<3.52	<5.90	<11.8	**6.83**	<3.44	<4.66	<4.10	<6.70	<8.20	<8.20	<4.26	NR	<5.62	NR	**15.7**	**8.36**	**17.7**	<7.85
SVMW-16C	1/18/2011	No Purge	19.5 to 20	**2,310**	**21.5 E4**	<7.9	<27.3	<16.0	**56.6**	**126**	**421**	**130**	NR	**269**	13.2	<11.1	**198**	**127**	**118**	**69.4**	<17.6	<29.5	<59.0	<24.4	<17.2	<23.3	<20.5	<33.5	<41.0	<41.0	<21.3	NR	<28.1	NR	<24.6	<24.6	**36.4**	NA
SVMW-16D	1/18/2011	No Purge	34.5 to 35	**4,000**	**26.9 E4**	<15.9	<54.6	<31.9	**98.0**	**204**	**521**	**174**	NR	**911**	48	<22.1	**<238**	<98.0	**778**	**62.5**	<35.2	<59.0	<118	<48.8	<34.4	<4.6	<41.0	<67.0	<82.0	<82.0	<42.6	NR	<56.2	NR	<49.2	<49.2	<49.2	NA
SVMW-16E	1/18/2011	No Purge	49.5 to 50	**5,490**	**69.8**	<15.9	<54.6	<31.9	**90.5**	**213**	**564**	**195**	NR	**1,280**	55.4	<22.1	**809**	<98.0	**995**	**52.1**	<35.2	<59.0	<118	<48.8	<34.4	<46.6	<41.0	<67.0	295	<82.0	<42.6	NR	<56.2	NR	<49.2	<49.2	<49.2	NA
SVMW-16F	1/18/2011	No Purge	59.5 to 60	**2,850**	<21.5	<15.9	<54.6	<31.9	**128**	**208**	**521**	**191**	NR	**1,490**	63.4	<22.1	**738**	179	**1,060**	**55.5**	<35.2	<59.0	<118	<48.8	<34.4	<46.6	<41.0	<67.0	209	<82.0	<42.6	NR	<56.2	NR	<49.2	<49.2	<49.2	<7.85
SVMW-17A	1/17/2011	No Purge	4.5 to 5	**603**	<11	<7.9	<27.3	<16.0	**45.2**	**122**	**477**	**148**	NR	<20.7	<13.2	<11.1	<119	<49.0	<15.6	**72.9**	<17.6	<29.5	<59	<24.4	<17.2	<23.3	<20.5	<33.5	<41.0	<41.0	<21.3	NR	<28.1	NR	<24.6	<24.6	**37.4**	<7.85
SVMW-17B	1/17/2011	No Purge	9.5 to 10	**746**	<11	<7.9	<27.3	<16.0	**49.0**	**122**	**477**	**143**	NR	<20.7	<13.2	<11.1	**286**	<49.0	<15.6	**86.8**	<17.6	<29.5	<59	<24.4	<17.2	<23.3	<20.5	<33.5	<41.0	<41.0	<21.3	NR	<28.1	NR	<24.6	**32.5**	**34.4**	<7.85
SVMW-17C	1/17/2011	No Purge	19.5 to 20	**1,080**	<11	<7.9	<27.3	<16.0	**45.2**	**130**	**477**	**152**	NR	**37.3**	<13.2	<11.1	**188**	**83.3**	**121**	**97.2**	<17.6	<29.5	<59	<24.4	<17.2	<23.3	<20.5	<33.5	<41.0	<41.0	<21.3	NR	<28.1	NR	<24.6	<24.6	<24.6	NA
SVMW-17D	1/17/2011	No Purge	34.5 to 35	**814**	<11	<7.9	<27.3	<16.0	**41.5**	**117**	**421**	**135**	NR	<20.7	<13.2	<11.1	<119	<49.0	**52.9**	**69.4**	<17.6	<29.5	<59	<24.4	<17.2	<23.3	<20.5	<33.5	<41.0	<41.0	<21.3	NR	<28.1	NR	<24.6	<24.6	<24.6	NA
SVMW-17E	1/17/2011	No Purge	49.5 to 50	**427**	<11	<7.9	<27.3	<16.0	**45.2**	**117**	**373**	**122**	NR	**166**	**14.3**	<11.1	**286**	**145**	**131**	**62.5**	<17.6	<29.5	<59	<24.4	<17.2	<23.3	<20.5	<33.5	<41.0	<41.0	<21.3	NR	<28.1	NR	<24.6	<24.6	**33.5**	NA
SVMW-17F	1/17/2011	No Purge	59.5 to 60	**292**	<11	<7.9	<27.3	<16.0	**45.2**	**126**	**417**	**135**	NR	**180**	<13.2	<11.1	**286**	**189**	**193**	**65.9**	<17.6	<29.5	<59	<24.4	<17.2	<23.3	<20.5	<33.5	<41.0	<41.0	<21.3	NR	<28.1	NR	<24.6	<24.6	**37.9**	<7.85
SVMW-18A	2/25/2011	No Purge	4.5 to 5	**3,320**	<11	<7.9	<10.9	<16.0	**71.6**	<21.7	<43.4	<21.7	NR	<20.7	<13.2	<11.1	<119	<49.0	**308**	<17.4	<17.6	<29.5	<59	**43.9**	<17.2	**345**	<20.5	<33.5	<41.0	<41.0	<21.3	NR	**55.1**	NR	<24.6	<24.6	<24.6	NA
SVMW-18B	2/25/2011	No Purge	9.5 to 10	**4,880**	<11	<7.9	<10.9	<16.0	**64.1**	<21.7	<43.4	<21.7	NR	<20.7	<13.2	<11.1	<119	<49.0	**168**	<17.4	**49.3**	<29.5	<59	**48.8**	<17.2	**396**	<20.5	<33.5	<41.0	<41.0	<21.3	NR	**78.7**	NR	<24.6	<24.6	<24.6	NA
SVMW-18C	2/25/2011	No Purge	21.5 to 22	**9,490**	<11	<7.9	<10.9	<16.0	**82.9**	**109**	**226**	**165**	NR	<20.7	<13.2	<11.1	<119	<49.0	**71.5**	<17.4	<17.6	<29.5	<59	**37.1**	<17.2	**746**	<20.5	<33.5	<41.0	<41.0	<21.3	NR	**95.5**	NR	<24.6	**138**	<24.6	NA
SVMW-18D	2/25/2011	No Purge	34.5 to 35	**8,140**	**31.7**	<7.9	<10.9	<16.0	**52.8**	<21.7	**86.8**	<21.7	NR	<20.7	<13.2	<11.1	<119	<49.0	**65.3**	<17.4	<17.6	<29.5	<59	**31.7**	<17.2	<23.3	<20.5	<33.5	<41.0	<41.0	<21.3	NR	**95.5**	NR	<24.6	<24.6	<24.6	NA
SVMW-18E	2/25/2011	No Purge	49.5 to 50	**11,500**	**156**	<7.9	<10.9	<16.0	**52.8**	<21.7	<43.4	<21.7	NR	<20.7	<13.2	<11.1	<119	<49.0	**137**	<17.4	<17.6	<29.5	<59	**53.7**	<17.2	<23.3	<20.5	<33.5	<41.0	<41.0	<21.3	NR	**118**	NR	<24.6	<24.6	<24.6	NA
SVMW-18F	2/25/2011	No Purge	59.5 to 60	**15,600**	**258**	<7.9	<10.9	<16.0	**60.3**	<21.7	<43.4	<21.7	NR	<20.7	<13.2	<11.1	<119	<49.0	**59.1**	<17.4	<17.6	<29.5	<59	**53.7**	<17.2	<23.3	<20.5	<33.5	<41.0	<41.0	<21.3	NR	**135**	NR	<24.6	<24.6	<24.6	NA

TABLE 2-4
CONCENTRATIONS OF ANALYTES DETECTED IN SOIL VAPOR SAMPLES
2001 THROUGH 2011
20th Street and Factor Avenue WQARF Site, Yuma, Arizona
in microgram per cubic meter [ug/m3]

Sample Location	Date	Sample Type	Sample Depth or Screened Interval (in feet bgs)	Volatile Organic Compounds (VOCs)																																	Hydrogen Cyanide
				PCE	TCE	1,1-DCE	1,1,1-TCA	Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Ethanol	Chloro-methane	Chloro-ethane	1,3-Butadiene	Acetone	2-Propanol	CD	MC	Hexane	MEK	THF	Chloro-form	Cyclo-hexane	2,2,4-TMP	Heptane	BDCM	4-Methyl-2-Pentanone	2-Hexa-none	Styrene	Cumene	Freon 11	Propyl-benzene	4-Ethyl toluene	1,3,5-TMB	1,2,4-TMB	HCN
WASTE DISPOSAL SYSTEM VAPOR SAMPLES																																					
WDS-1 SUMP	8/8/2001	No Purge	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<17/ **30t**
ADHS AAAQG (1-hour)				1,300	810	130	57,000	1,700	4,400	4,500	5,400	5,400	57,000	770	NL	7.2	20,000	NL	90	NL	5,400	600	6,100	60	NL	NL	17,000	78	NL	NL	NL	NL	220,000	NL	NL	1,400	1,400	100
ADHS AAAQG (24-hour)				640	210	63	15,000	44	3,000	3,500	3,500	3,500	15,000	200	NL	1.9	14,000	NL	24	NL	1,400	160	4,700	16	NL	NL	16,000	21	NL	NL	NL	NL	59,000	NL	NL	990	990	40
ADHS AAAQG (Annual)				1.7	0.58	NL	NL	0.12	NL	NL	NL	NL	NL	0.56	NL	0.067	NL	NL	NL	NL	NL	NL	NL	0.043	NL	NL	NL	0.056	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL
EPA Residential RSL (November 2013)				9.4	0.43	210	5,200	0.31	5,200	0.97	100	100	NL	94	NL	0.081	32,000	NL	730	96	730	5,200	NL	0.11	6,300	NL	NL	0.066	3,100	31	1,000	420	730	1,000	NL	NL	7.3	0.83
EPA Industrial RSL (November 2013)				47	3	880	22,000	1.6	22,000	4.9	440	440	NL	390	NL	0.41	140,000	NL	3,100	1,200	3,100	22,000	NL	0.53	26,000	NL	NL	0.33	13,000	130	4,400	1,800	3,100	4,400	NL	NL	31	3.5

ADHS = Arizona Department of Health Services
AAAQG = Arizona Ambient Air Quality Guidelines
EPA = Environmental Protection Agency
bgs = below ground surface
RSL = Regional Screening Level (formerly Preliminary Remediation Goals)
VOCs were sampled and analyzed in accordance with EPA Method TO-15 or SW8021B
Hydrogen Cyanide was sampled and analyzed in accordance with NIOSH Method 6010
Soil Vapor Monitoring Well SVMW-1C,D,E,F was previously identified as SVMW-1A,B,C,D
NL = Not listed in the EPA's December 2009 PRG Table and/or the 1999 DRAFT ADHS AAAQG Guidelines
NR = Compound was not reported in laboratory analytical reports
NA = Not analyzed
31 Concentrations shown in bold were detected at or above laboratory detection limit

PCE = Tetrachloroethene
TCE = Trichloroethene
1,1-DCE = 1,1 Dichloroethene
1,1,1-TCA = 1,1,1-Trichloroethane
BDCM = Bromodichloromethane
CD = Carbon Disulfide
MC = Methylene Chloride
MEK = 2-Butanone (Methyl Ethyl Ketone)
HCN = Hydrogen Cyanide
THF = Tetrahydrofuran
1,2,4-TMB = 1,2,4-Trimethylbenzene
1,3,5-TMB = 1,3,5-Trimethylbenzene
2,2,4-TMP = 2,2,4-Trimethylpentane

On 1/8/04, 1,1,1-TCA was detected in the duplicate sample for SVMW-1C at a concentration of 260 ppbv
* Units for VOC results were reported by laboratory as parts per billion volume (ppbv) and were convert to µg/m³
** Units for the cyanide results were reported by laboratory as µg/sample
¥ The cyanide soil vapor sample in Boring-1 was actually collected at 15 feet bgs, not 10 feet, as suggested by the table
D1 = Sample required dilution to matrix
D2 = Sample required dilution to high concentrations of target analyte
E4 = Concentration estimated; analyte was detected below laboratory minimum reporting limit
t = Samples were analyzed for Cyanide and reported as filter/sampling solution
During the March 2010 sampling event, all soil vapor samples required dilution to matrix effects, except samples collected from SVMW-1A/B/C/D, SVMW-8B, SVMW-8F, SVMW-11A/B, SVMW-12A/B
2001 Data was reported by Performance Analytical and NATLSCO laboratory

TABLE 2-5

MONITORING WELL CONSTRUCTION DETAILS

20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Current Well ID	Previous Well ID	Cadastral Location	ADWR Number	Surveyed Measuring Point (ft amsl)	Diameter (inches)	Total Depth of Borehole (feet bgs)	Screened Interval (feet bgs)
A-Zone Groundwater Monitoring Wells							
MW-1A	MW-1	(C-08-23)34cba	55-537043	198.84	2	95	65 - 95
MW-2A	MW-2	(C-08-23)34cba	55-537614	199.11	2	95	65 - 95
MW-3A	MW-3	(C-08-23)34cba	55-537615	198.70	2	84	64 - 84
MW-4A	MW-4	(C-08-23)34cba	55-201459	197.90	4	105	65 - 105
MW-5A	MW-5	(C-08-23)34abc	55-588281	198.25	4	105	62.5 - 104.5
MW-6A	MW-6	(C-08-23)34abc	55-588282	197.63	4	103.5	61 - 103
MW-7A	MW-7	(C-08-23)34abc	55-588279	197.56	4	110	62.5 - 103.5
MW-8A	MW-8	(C-08-23)33add	55-203693	195.38	4	105.4	65.4 - 105.4
MW-9A	MW-9	(C-08-23)33add	55-203692	194.78	4	101.4	61.4 - 101.4
MW-10A	MW-10	(C-08-23)33daa	55-203691	194.86	4	104	64 - 104
MW-11A	MW-11	(C-08-23)33abd	55-902168	197.98	4	105	63 - 105
MW-12A	MW-12	(C-08-23)34bcc	55-904512	195.43	4	107.75	64.75 - 104.75
MW-13A	MW-13	(C-08-23)33ada	55-904513	198.35	4	105	62 - 102
MW-14A	MW-14	(C-08-23)34cbb	55-904514	196.68	4	108	65 - 105
MW-15A	MW-15	(C-08-23)33adc	55-904515	199.14	4	96[1]	66 - 96
MW-16A	MW-16A	(C-08-23)34cba	55-908808	199.22	4	162	64.5 - 104.5
MW-17A	MW-17	(C-08-23)33adc	55-905870	197.55	4	98	66 - 96
MW-18A	MW-18A	(C-08-23)33aca	55-905871	198.01	4	107	65.5 - 105.5
MW-19A	MW-19	(C-08-23)34cba	55-905873	198.90	4	105	65 - 105
MW-20A	MW-20	(C-08-23)33dda	55-905865	196.93	4	118	65 - 105
MW-21A	MW-21A	(C-08-23)33acb	55-906700	198.58	4	99	69 - 99
MW-22A	MW-22A	(C-08-23)33dab	55-912963	195.18	4	96	65 - 95
MW-25A	MW-25A	(C-08-23)33aad	55-911859	198.72	4	96	65 - 95
MW-26A	MW-26A	(C-08-23)34bcd	55-912630	195.91	4	100	65 - 95
MW-27A	MW-27A	(C-08-23)34bcd	55-912631	192.88	4	97	65 - 95
MW-101A	MW-101	(C-08-23)34cab	55-555248	197.20	4	90	50 - 90
MW-102A	MW-102A	(C-08-23)34cab	55-556705	198.48	2	90	80 - 90
PZ-1A	PZ-1A	(C-08-23)33add	55-908373	195.03	1.5	95[2]	80 - 95
PZ-2A	PZ-2A	(C-08-23)33add	55-908375	195.85	1.5	105[2]	85 - 100
DMW-6	DMW-6	(C-08-23)34bdd		185.87	4	70.5	50.5 - 70.5
DMW-10	DMW-10	(C-08-23)34bdd		191.26	4	90	60 - 90
DMW-11	DMW-11	(C-08-23)34bdd		192.77	4	90	60 - 90
DMW-16	DMW-16	(C-08-23)34bcc	55-594862	196.49	4	92.5	62 - 92
DMW-17	DMW-17	(C-08-23)34bcc	55-594863	196.88	4	92.5	62 - 92
DMW-18	DMW-18	(C-08-23)34bdd	55-900294	197.27	4	85	52 - 85
DMW-25	DMW-25	(C-08-23)34add	55-901535	192.84	4	93	62.5 - 92.5
DEW-19	DEW-19	(C-08-23)34bdd		186.04*	1; 4	87	57 - 87
B-Zone Groundwater Monitoring and Extraction Wells							
MW-8B	MW-16	(C-08-23)33add	55-905867	195.25	4	117	107 - 117
MW-18B	MW-18B	(C-08-23)33aca	55-905869	197.99	4	148	137 - 147
MW-21B	MW-21B	(C-08-23)33acb	55-906704	198.51	4	205	161 - 201
MW-22B	MW-22B	(C-08-23)33dab	55-908037	195.29	4	180	115 -155
MW-23B	MW-23B	(C-08-23)33dab	55-908038	196.40	4	185	120.5 - 160.5
MW-24B	MW-24B	(C-08-23)33adc	55-908311	199.52	4	170	110.5 - 160.5
MW-25B	MW-25B	(C-08-23)33aad	55-911860	199.34	4	178	140 - 170
MW-26B	MW-26B	(C-08-23)34bcd	55-912632	195.73	4	161	130 - 160
MW-27B	MW-27B	(C-08-23)34bcd	55-912633	192.95	4	161	130 - 160
MW-28B	MW-28B	(C-08-23)33abc	55-221971	198.15	4	141	110 - 140
MW-29B	MW-29B	(C-08-23)33acb	55-221972	198.66	4	146	115 - 145
MW-30B	MW-30B	(C-08-23)33baa	55-221970	201.04	4	148	112 -142
MW-102B1	MW-102B	(C-08-23)34cab	55-556705	198.44	2	120	110 - 120
MW-102B2	MW-102C	(C-08-23)34cab	55-556705	198.51	2	150	140 - 150
MW-103B	MW-103D	(C-08-23)34cab	55-201457	198.63	2	170	150 - 170
MW-104B	MW-104D	(C-08-23)34cab	55-205754	198.59	4	170	150 - 170
PZ-1B	PZ-1B	(C-08-23)33add	55-908373	194.99	1.5	170[3]	105 - 160
PZ-2B	PZ-2B	(C-08-23)33add	55-908375	195.79	1.5	160[3]	105 - 160
EW-1	EW-1	(C-08-23)33add	55-908295	194.60	12	178	100-160
C-Zone Groundwater Monitoring and Production Wells							
MW-8C	MW-22	(C-08-23)33add	55-906702	195.24	4	225	170 - 210
MW-17C	MW-17C	(C-08-23)33adc	55-907658	197.94	4	207	167-207
MW-21C	MW-21C	(C-08-23)33acb	55-906703	198.39	4	325	275 - 315
MW-103C	MW-103E	(C-08-23)34cab	55-201457	198.60	2	245	220 - 240
MW-104C	MW-104E	(C-08-23)34cab	55-205754	198.62	4	240	220 - 240
PZ-1C	PZ-1C	(C-08-23)33add	55-908373	194.91	1.5	200	170 - 200
PZ-2C	PZ-2C	(C-08-23)33add	55-908375	195.75	1.5	200	170 - 200
Alice Byrne	Alice Byrne	(C-08-23)33bba	55-613927	Unknown	12	241*	105 - 233
St. Francis	St. Francis	(C-08-23)33bdb	55-626423	Unknown	10	318*	Unknown

Notes:

ADWR = Arizona Department of Water Resources

ft amls = feet above mean sea level

bgs = below ground surface

A-Zone Groundwater Monitoring Wells are screened approximately 50 feet to 105 feet bgs

B-Zone Groundwater Monitoring Wells are screened approximately 105 feet to 170 feet bgs, or in between the two identified clay layers underlying the site

C-Zone Groundwater Monitoring Wells are screened approximately 170 feet to 318 feet bgs

DMW, DEW = Monitoring wells owned by Union Pacific Railroad

[1] Plugged at 96 feet bgs.

[2] Depth of bentonite plugs between nested wells. Total depth of piezometer boreholes was 200 feet bgs

[3] DEW-19 surveyed measuring point (ft amsl) corresponds to the top of the 1-inch casing

* = As reported in ADWR well database

TABLE 2-6
DEPTH TO GROUNDWATER MEASUREMENTS AND GROUNDWATER ELEVATIONS
October 1992 through November 2013
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well	Date	DTW (in feet)	Casing Elevation (in ft amsl)	Elevation (in ft amsl)
A-Zone Groundwater Monitoring Wells				
MW-1A	10/26/1992	74.20	198.84	124.64
	3/19/1993	72.44	198.84	126.40
	4/21/1993	72.58	198.84	126.26
	6/2/1993	72.66	198.84	126.18
	3/21/1996	72.39	198.84	126.45
	10/3/1996	72.60	198.84	126.24
	6/11/2001	76.89	198.84	121.95
	6/16/2001	76.89	198.84	121.95
	6/25/2001	76.89	198.84	121.95
	1/29/2002	77.09	198.84	121.75
	10/1/2002	76.82	198.84	122.02
	6/7/2004	78.08	198.84	120.76
	11/22/2004	78.17	198.84	120.67
	3/2/2005	78.10	198.84	120.74
	5/31/2005	78.13	198.84	120.71
	10/25/2005	78.34	198.84	120.50
	1/4/2006	78.09	198.84	120.75
	2/20/2006	78.19	198.84	120.65
	3/27/2006	78.18	198.84	120.66
	4/27/2006	78.31	198.84	120.53
	5/15/2006	78.42	198.84	120.42
	10/2/2006	77.40	198.84	121.44
	11/28/2006	78.37	198.84	120.47
	2/19/2007	78.43	198.84	120.41
	5/11/2007	78.39	198.84	120.45
	7/30/2007	78.28	198.84	120.56
	11/12/2007	77.75	198.84	121.09
	2/18/2008	77.42	198.84	121.42
	5/12/2008	77.36	198.84	121.48
	8/4/2008	77.22	198.84	121.62
	8/23/2010	77.32	198.84	121.52
	12/13/2010	77.29	198.84	121.55
	10/22/2012	77.17	198.84	121.67
	4/22/2013	77.55	198.84	121.29
	11/8/2013	77.85	198.84	120.99
MW-2A	1/7/1993	72.21	199.11	126.90
	3/19/1993	72.33	199.11	126.78
	4/21/1993	72.54	199.11	126.57
	6/2/1993	72.56	199.11	126.55
	3/21/1996	72.33	199.11	126.78
	10/3/1996	73.00	199.11	126.11
	6/11/2001	77.37	199.11	121.74
	6/16/2001	77.31	199.11	121.80
	6/25/2001	77.41	199.11	121.70
	1/29/2002	77.54	199.11	121.57
	10/1/2002	77.23	199.11	121.88
	6/7/2004	78.58	199.11	120.53
	11/22/2004	78.60	199.11	120.51
	3/2/2005	78.49	199.11	120.62
	5/31/2005	78.16	199.11	120.95
	10/25/2005	78.81	199.11	120.30
	1/4/2006	78.51	199.11	120.60
	2/20/2006	78.61	199.11	120.50
	3/27/2006	78.61	199.11	120.50
	4/27/2006	78.75	199.11	120.36
	5/15/2006	78.87	199.11	120.24
	10/2/2006	78.72	199.11	120.39
	11/28/2006	78.73	199.11	120.38
	2/19/2007	78.78	199.11	120.33
	5/11/2007	78.74	199.11	120.37
	7/30/2007	78.66	199.11	120.45
	11/12/2007	78.16	199.11	120.95
	2/18/2008	77.83	199.11	121.28
	5/12/2008	77.71	199.11	121.40
	8/4/2008	77.60	199.11	121.51
	8/23/2010	77.73	199.11	121.38
	12/13/2010	77.74	199.11	121.37
	10/22/2012	77.60	199.11	121.51
	4/23/2013	78.07	199.11	121.04
	11/8/2013	78.28	199.11	120.83
MW-3A	3/19/1993	72.16	198.70	126.54
	4/21/1993	72.32	198.70	126.38
	6/2/1993	72.40	198.70	126.30
	3/21/1996	72.13	198.70	126.57
	10/3/1996	72.35	198.70	126.35
	6/11/2001	76.68	198.70	122.02
	6/16/2001	76.71	198.70	121.99
	6/25/2001	76.70	198.70	122.00
	1/29/2002	76.86	198.70	121.84
	10/1/2002	76.56	198.70	122.14
	6/7/2004	77.88	198.70	120.82

TABLE 2-6
DEPTH TO GROUNDWATER MEASUREMENTS AND GROUNDWATER ELEVATIONS
October 1992 through November 2013
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well	Date	DTW (in feet)	Casing Elevation (in ft amsl)	Elevation (in ft amsl)
MW-3A (cont)	11/22/2004	77.97	198.70	120.73
	3/2/2005	77.88	198.70	120.82
	5/31/2005	77.96	198.70	120.74
	10/25/2005	78.13	198.70	120.57
	1/4/2006	77.84	198.70	120.86
	2/20/2006	77.95	198.70	120.75
	3/27/2006	77.97	198.70	120.73
	4/27/2006	78.09	198.70	120.61
	5/15/2006	78.22	198.70	120.48
	10/2/2006	78.10	198.70	120.60
	11/28/2006	78.10	198.70	120.60
	2/19/2007	78.17	198.70	120.53
	5/11/2007	78.13	198.70	120.57
	7/30/2007	78.05	198.70	120.65
	11/12/2007	77.50	198.70	121.20
	2/18/2008	77.21	198.70	121.49
	5/12/2008	77.11	198.70	121.59
	8/4/2008	76.95	198.70	121.75
	8/23/2010	77.08	198.70	121.62
	10/22/2012	NM	198.70	NM
	4/22/2013	77.37	198.70	121.33
	11/8/2013	77.39	198.41 (see note 1)	121.02
MW-4A	6/7/2004	77.43	197.90	120.47
	11/22/2004	77.43	197.90	120.47
	3/2/2005	77.47	197.90	120.43
	5/31/2005	77.50	197.90	120.40
	10/25/2005	77.71	197.90	120.19
	1/4/2006	77.32	197.90	120.58
	2/20/2006	77.47	197.90	120.43
	3/27/2006	77.48	197.90	120.42
	4/27/2006	77.64	197.90	120.26
	5/15/2006	77.74	197.90	120.16
	10/2/2006	77.54	197.90	120.36
	11/28/2006	77.51	197.90	120.39
	2/19/2007	77.58	197.90	120.32
	5/11/2007	77.56	197.90	120.34
	7/30/2007	77.47	197.90	120.43
	11/12/2007	76.96	197.90	120.94
	2/18/2008	76.63	197.90	121.27
	5/12/2008	76.46	197.90	121.44
	8/4/2008	76.34	197.90	121.56
	8/23/2010	76.52	197.90	121.38
	10/22/2012	76.53	197.90	121.37
	4/22/2013	76.82	197.90	121.08
	11/8/2013	77.10	197.70	120.60
MW-5A	1/29/2002	77.01	198.25	121.24
	10/1/2002	76.67	198.25	121.58
	6/7/2004	78.00	198.25	120.25
	11/22/2004	78.13	198.25	120.12
	3/2/2005	78.08	198.25	120.17
	5/31/2005	77.49	198.25	120.76
	10/25/2005	78.29	198.25	119.96
	1/4/2006	77.87	198.25	120.38
	2/20/2006	78.03	198.25	120.22
	3/27/2006	78.01	198.25	120.24
	4/27/2006	78.21	198.25	120.04
	5/15/2006	78.28	198.25	119.97
	10/2/2006	78.09	198.25	120.16
	11/28/2006	78.03	198.25	120.22
	2/19/2007	78.10	198.25	120.15
	5/11/2007	78.08	198.25	120.17
	7/30/2007	78.01	198.25	120.24
	11/12/2007	77.49	198.25	120.76
	2/18/2008	77.12	198.25	121.13
	5/12/2008	76.94	198.25	121.31
	8/4/2008	76.88	198.25	121.37
	8/23/2010	77.08	198.25	121.17
	12/13/2010	77.13	198.25	121.12
	10/22/2012	77.10	198.25	121.15
	4/23/2013	77.47	198.25	120.78
	11/8/2013	77.68	198.25	120.57
MW-6A	1/29/2002	76.38	197.63	121.25
	10/1/2002	76.12	197.63	121.51
	6/7/2004	77.41	197.63	120.22
	11/22/2004	77.46	197.63	120.17
	3/2/2005	77.32	197.63	120.31
	5/31/2005	77.37	197.63	120.26
	10/25/2005	77.64	197.63	119.99
	1/4/2006	77.29	197.63	120.34
	2/20/2006	77.40	197.63	120.23
	3/27/2006	77.39	197.63	120.24
	4/27/2006	77.54	197.63	120.09
	5/15/2006	77.65	197.63	119.98
	10/2/2006	77.54	197.63	120.09

TABLE 2-6
DEPTH TO GROUNDWATER MEASUREMENTS AND GROUNDWATER ELEVATIONS
October 1992 through November 2013
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well	Date	DTW (in feet)	Casing Elevation (in ft amsl)	Elevation (in ft amsl)
MW-6A (cont)	11/28/2006	77.49	197.63	120.14
	2/19/2007	77.51	197.63	120.12
	5/11/2007	77.55	197.63	120.08
	7/30/2007	77.44	197.63	120.19
	11/12/2007	76.92	197.63	120.71
	2/18/2008	76.57	197.63	121.06
	5/12/2008	76.42	197.63	121.21
	8/4/2008	76.35	197.63	121.28
	8/23/2010	76.55	197.63	121.08
	12/13/2010	76.52	197.63	121.11
	10/22/2012	76.46	197.63	121.17
	4/23/2013	76.75	197.63	120.88
	11/8/2013	77.00	197.63	120.63
MW-7A	1/29/2002	77.69	197.56	119.87
	10/1/2002	77.27	197.56	120.29
	6/7/2004	77.34	197.56	120.22
	11/22/2004	77.07	197.56	120.49
	3/2/2005	77.02	197.56	120.54
	5/31/2005	76.84	197.56	120.72
	10/25/2005	77.15	197.56	120.41
	1/4/2006	76.89	197.56	120.67
	2/20/2006	76.79	197.56	120.77
	3/27/2006	77.22	197.56	120.34
	4/27/2006	77.02	197.56	120.54
	5/15/2006	77.10	197.56	120.46
	10/2/2006	77.04	197.56	120.52
	11/28/2006	77.25	197.56	120.31
	2/19/2007	77.21	197.56	120.35
	5/11/2007	77.10	197.56	120.46
	7/30/2007	77.30	197.56	120.26
	11/12/2007	76.67	197.56	120.89
	2/18/2008	76.32	197.56	121.24
	5/12/2008	76.39	197.56	121.17
	8/4/2008	76.07	197.56	121.49
	8/23/2010	76.20	197.56	121.36
	12/13/2010	76.23	197.56	121.33
	8/23/2010	76.20	197.56	121.36
	4/23/2013	75.98	197.56	121.58
	11/8/2013	NM	197.56	NM
MW-8A	1/31/2005	76.74	195.38	118.64
	3/2/2005	76.37	195.38	119.01
	5/26/2005	76.28	195.38	119.10
	10/25/2005	76.66	195.38	118.72
	1/4/2006	76.24	195.38	119.14
	2/20/2006	76.25	195.38	119.13
	3/27/2006	76.26	195.38	119.12
	4/27/2006	76.36	195.38	119.02
	5/15/2006	76.44	195.38	118.94
	10/2/2006	76.35	195.38	119.03
	11/28/2006	76.25	195.38	119.13
	2/19/2007	76.23	195.38	119.15
	5/11/2007	76.20	195.38	119.18
	7/30/2007	76.17	195.38	119.21
	11/12/2007	75.76	195.38	119.62
	2/28/2008	75.72	195.38	119.66
	5/12/2008	75.09	195.38	120.29
	8/4/2008	75.07	195.38	120.31
	11/10/2008	75.14	195.38	120.24
	8/23/2010	75.26	195.38	120.12
	10/22/2012	75.11	195.38	120.27
	4/22/2013	75.35	195.38	120.03
	11/8/2013	75.66	195.38	119.72
MW-9A	1/31/2005	77.69	194.78	117.09
	3/2/2005	77.51	194.78	117.27
	5/26/2005	77.34	194.78	117.44
	10/25/2005	77.71	194.78	117.07
	1/4/2006	77.17	194.78	117.61
	2/20/2006	77.22	194.78	117.56
	3/27/2006	77.28	194.78	117.50
	4/27/2006	77.41	194.78	117.37
	5/15/2006	77.41	194.78	117.37
	10/2/2006	77.30	194.78	117.48
	11/28/2006	77.12	194.78	117.66
	2/19/2007	77.18	194.78	117.60
	5/11/2007	77.07	194.78	117.71
	7/30/2007	77.08	194.78	117.70
	11/12/2007	76.61	194.78	118.17
	2/18/2008	76.12	194.78	118.66
	5/12/2008	75.86	194.78	118.92
	8/4/2008	75.87	194.78	118.91
	11/10/2008	75.98	194.78	118.80
	4/26/2010	76.11	194.78	118.67
	8/23/2010	76.15	194.78	118.63
	10/22/2012	NM	194.78	NM
	4/22/2013	76.28	194.78	118.50
	11/8/2013	76.56	194.78	118.22

TABLE 2-6
DEPTH TO GROUNDWATER MEASUREMENTS AND GROUNDWATER ELEVATIONS
October 1992 through November 2013
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well	Date	DTW (in feet)	Casing Elevation (in ft amsl)	Elevation (in ft amsl)
MW-10A	1/31/2005	80.63	194.86	114.23
	3/2/2005	79.76	194.86	115.10
	5/26/2005	79.62	194.86	115.24
	10/25/2005	79.84	194.86	115.02
	1/4/2006	79.24	194.86	115.62
	2/20/2006	79.42	194.86	115.44
	3/27/2006	79.49	194.86	115.37
	4/27/2006	79.63	194.86	115.23
	5/15/2006	79.69	194.86	115.17
	10/2/2006	79.50	194.86	115.36
	11/28/2006	79.34	194.86	115.52
	2/19/2007	79.40	194.86	115.46
	5/11/2007	79.30	194.86	115.56
	7/30/2007	79.27	194.86	115.59
	11/12/2007	78.80	194.86	116.06
	2/28/2008	78.22	194.86	116.64
	5/12/2008	77.94	194.86	116.92
	8/4/2008	78.01	194.86	116.85
	8/23/2010	78.36	194.86	116.50
	10/22/2012	NM	194.86	NM
	4/22/2013	78.65	194.86	116.21
	11/8/2013	78.85	194.86	116.01
MW-11A	5/26/2005	98.00	197.98	99.98
	10/25/2005	81.29	197.98	116.69
	1/4/2006	80.94	197.98	117.04
	2/20/2006	80.91	197.98	117.07
	3/27/2006	80.97	197.98	117.01
	4/27/2006	81.06	197.98	116.92
	5/15/2006	81.07	197.98	116.91
	10/2/2006	80.64	197.98	117.34
	11/28/2006	80.99	197.98	116.99
	2/19/2007	80.99	197.98	116.99
	5/11/2007	80.90	197.98	117.08
	7/30/2007	80.95	197.98	117.03
	11/12/2007	80.62	197.98	117.36
	2/18/2008	80.13	197.98	117.85
	5/12/2008	79.87	197.98	118.11
	8/4/2008	79.92	197.98	118.06
	8/23/2010	80.05	197.98	117.93
	10/22/2012	NM	197.98	NM
	4/22/2013	79.83	197.98	118.15
	11/8/2013	80.14	197.98	117.84
MW-12A	4/27/2006	75.89	195.43	119.54
	5/15/2006	75.98	195.43	119.45
	10/2/2006	75.83	195.43	119.60
	11/28/2006	75.79	195.43	119.64
	2/19/2007	75.77	195.43	119.66
	5/11/2007	75.70	195.43	119.73
	7/30/2007	75.70	195.43	119.73
	11/12/2007	75.24	195.43	120.19
	2/18/2008	74.92	195.43	120.51
	5/12/2008	74.76	195.43	120.67
	8/4/2008	74.77	195.43	120.66
	11/10/2008	74.75	195.43	120.68
	4/26/2010	74.68	195.43	120.75
	8/23/2010	74.91	195.43	120.52
	12/13/2010	74.83	195.43	120.60
	10/22/2012	OBSTRUCTED	195.43	NM
	4/22/2013	OBSTRUCTED	195.43	NM
	11/8/2013	OBSTRUCTED	195.43	NM
MW-13A	4/27/2006	81.47	198.35	116.88
	5/15/2006	81.48	198.35	116.87
	10/2/2006	81.33	198.35	117.02
	11/28/2006	81.07	198.35	117.28
	2/19/2007	81.24	198.35	117.11
	5/11/2007	81.07	198.35	117.28
	7/30/2007	81.14	198.35	117.21
	11/12/2007	80.77	198.35	117.58
	2/18/2008	80.30	198.35	118.05
	5/12/2008	80.05	198.35	118.30
	8/4/2008	80.06	198.35	118.29
	11/10/2008	80.13	198.35	118.22
	4/26/2010	80.20	198.35	118.15
	8/23/2010	80.28	198.35	118.07
	10/22/2012	NM	198.35	NM
	4/22/2013	80.16	198.35	118.19
	11/8/2013	80.52	198.35	117.83
MW-14A	4/27/2006	77.48	196.68	119.20
	5/15/2006	77.53	196.68	119.15
	10/2/2006	77.41	196.68	119.27
	11/28/2006	77.28	196.68	119.40
	2/19/2007	77.34	196.68	119.34

TABLE 2-6
DEPTH TO GROUNDWATER MEASUREMENTS AND GROUNDWATER ELEVATIONS
October 1992 through November 2013
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well	Date	DTW (in feet)	Casing Elevation (in ft amsl)	Elevation (in ft amsl)
MW-14A (cont)	5/11/2007	77.31	196.68	119.37
	7/30/2007	77.28	196.68	119.40
	11/12/2007	76.81	196.68	119.87
	2/18/2008	76.36	196.68	120.32
	5/12/2008	76.11	196.68	120.57
	8/4/2008	76.09	196.68	120.59
	8/23/2010	76.34	196.68	120.34
	10/22/2012	76.25	196.68	120.43
	4/23/2013	76.56	196.68	120.12
	11/8/2013	76.80	196.68	119.88
MW-15A	4/27/2006	82.06	199.14	117.08
	5/15/2006	82.05	199.14	117.09
	10/2/2006	81.98	199.14	117.16
	11/28/2006	81.79	199.14	117.35
	2/19/2007	81.80	199.14	117.34
	5/11/2007	81.65	199.14	117.49
	7/30/2007	81.68	199.14	117.46
	11/12/2007	81.29	199.14	117.85
	2/18/2008	80.70	199.14	118.44
	5/12/2008	80.40	199.14	118.74
	8/4/2008	80.45	199.14	118.69
	11/10/2008	80.59	199.14	118.55
	4/26/2010	80.72	199.14	118.42
	8/23/2010	80.76	199.14	118.38
	10/22/2012	NM	199.14	NM
	4/22/2013	80.76	199.14	118.38
	11/8/2013	81.05	199.14	118.09
MW-16A	5/12/2008	78.33	199.22	120.89
	8/4/2008	78.38	199.22	120.84
	11/10/2008	78.43	199.22	120.79
	4/26/2010	78.61	199.22	120.61
	8/23/2010	78.70	199.22	120.52
	10/22/2012	NM	199.22	NM
	4/22/2013	79.09	199.22	120.13
	11/8/2013	79.31	199.22	119.91
MW-17A	11/28/2006	79.48	197.55	118.07
	2/19/2007	79.52	197.55	118.03
	5/11/2007	79.42	197.55	118.13
	7/30/2007	79.43	197.55	118.12
	11/12/2007	79.07	197.55	118.48
	2/19/2008	79.05	197.55	118.50
	5/12/2008	78.35	197.55	119.20
	8/4/2008	78.36	197.55	119.19
	11/10/2008	78.36	197.55	119.19
	4/26/2010	78.52	197.55	119.03
	8/23/2010	78.55	197.55	119.00
	10/22/2012	78.35	197.55	119.20
	4/22/2013	78.47	197.55	119.08
	11/8/2013	78.90	197.55	118.65
MW-18A	11/28/2006	80.80	198.01	117.21
	2/19/2007	80.81	198.01	117.20
	5/11/2007	80.72	198.01	117.29
	7/30/2007	80.72	198.01	117.29
	11/12/2007	80.31	198.01	117.70
	2/18/2008	79.80	198.01	118.21
	5/12/2008	79.51	198.01	118.50
	8/4/2008	79.52	198.01	118.49
	11/10/2008	79.64	198.01	118.37
	4/26/2010	79.77	198.01	118.24
	8/23/2010	79.75	198.01	118.26
	10/22/2012	79.50	198.01	118.51
	4/23/2013	79.74	198.01	118.27
	11/8/2013	80.07	198.01	117.94
MW-19A	11/28/2006	79.17	198.90	119.73
	2/19/2007	79.40	198.90	119.50
	5/11/2007	79.24	198.90	119.66
	7/30/2007	79.21	198.90	119.69
	11/12/2007	78.67	198.90	120.23
	2/18/2008	78.21	198.90	120.69
	5/12/2008	77.98	198.90	120.92
	8/4/2008	77.99	198.90	120.91
	8/23/2010	78.22	198.90	120.68
	10/22/2012	78.29	198.90	120.61
	4/23/2013	78.75	198.90	120.15
	11/8/2013	78.90	198.90	120.00
MW-20A	11/28/2006	78.02	196.93	118.91
	2/19/2007	78.05	196.93	118.88
	5/11/2007	77.99	196.93	118.94
	7/30/2007	77.98	196.93	118.95
	11/12/2007	77.48	196.93	119.45
	2/28/2008	76.91	196.93	120.02
	5/12/2008	76.66	196.93	120.27
	8/4/2008	76.74	196.93	120.19
	8/23/2010	77.04	196.93	119.89

TABLE 2-6
DEPTH TO GROUNDWATER MEASUREMENTS AND GROUNDWATER ELEVATIONS
October 1992 through November 2013
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well	Date	DTW (in feet)	Casing Elevation (in ft amsl)	Elevation (in ft amsl)
MW-20A (cont)	10/22/2012	NM	196.93	NM
	4/22/2013	77.20	196.93	119.73
	11/8/2013	77.51	196.93	119.42
MW-21A	5/11/2007	82.25	198.58	116.33
	7/30/2007	82.29	198.58	116.29
	11/12/2007	81.91	198.58	116.67
	2/18/2008	81.31	198.58	117.27
	4/16/2008	81.24	198.58	117.34
	5/12/2008	81.05	198.58	117.53
	6/12/2008	81.52	198.58	117.06
	8/4/2008	81.05	198.58	117.53
	11/10/2008	81.21	198.58	117.37
	4/26/2010	81.27	198.58	117.31
	8/23/2010	81.25	198.58	117.33
	10/22/2012	80.81	198.58	117.77
	4/22/2013	81.10	198.58	117.48
	11/8/2013	81.45	198.58	117.13
MW-22A	2/25/2011	75.79	195.18	119.39
	10/22/2012	76.15	195.18	119.03
	4/23/2013	76.38	195.18	118.80
	11/8/2013	76.64	196.83 (see note 2)	120.19
MW-25A	4/26/2010	80.63	198.72	118.09
	8/23/2010	80.77	198.72	117.95
	10/22/2012	NM	198.72	NM
	4/22/2013	80.33	198.72	118.39
	11/8/2013	80.68	198.72	118.04
MW-26A	12/13/2010	75.43	195.91	120.48
	10/22/2012	75.26	195.91	120.65
	4/22/2013	75.24	195.91	120.67
	11/8/2013	75.84	195.51	119.67
MW-27A	12/13/2010	72.45	192.88	120.43
	10/22/2012	72.20	192.88	120.68
	4/22/2013	72.47	192.88	120.41
	11/8/2013	72.79	192.88	120.09
MW-101A	3/21/1996	70.27	197.20	126.93
	10/3/1996	70.49	197.20	126.71
	6/11/2001	74.81	197.20	122.39
	6/25/2001	74.84	197.20	122.36
	1/29/2002	74.96	197.20	122.24
	10/1/2002	74.96	197.20	122.24
	6/7/2004	76.09	197.20	121.11
	11/22/2004	76.22	197.20	120.98
	3/2/2005	76.13	197.20	121.07
	5/31/2005	76.19	197.20	121.01
	10/25/2005	76.37	197.20	120.83
	1/4/2006	76.18	197.20	121.02
	2/20/2006	76.20	197.20	121.00
	3/27/2006	76.21	197.20	120.99
	4/27/2006	76.38	197.20	120.82
	5/15/2006	76.46	197.20	120.74
	10/2/2006	76.49	197.20	120.71
	11/28/2006	76.42	197.20	120.78
	2/19/2007	76.55	197.20	120.65
	5/11/2007	76.51	197.20	120.69
	7/30/2007	76.42	197.20	120.78
	11/12/2007	75.83	197.20	121.37
	2/18/2008	75.51	197.20	121.69
	5/12/2008	75.49	197.20	121.71
	8/4/2008	75.35	197.20	121.85
	11/10/2008	75.27	197.20	121.93
	4/26/2010	75.20	197.20	122.00
	8/23/2008	75.39	197.20	121.81
	10/22/2012	75.31	197.20	121.89
	4/22/2013	75.63	197.20	121.57
	11/8/2013	75.97	197.20	121.23
MW-102A	11/14/1996	72.17	198.48	126.31
	6/11/2001	76.53	198.48	121.95
	6/16/2001	76.57	198.48	121.91
	6/25/2001	76.54	198.48	121.94
	1/29/2002	76.71	198.48	121.77
	10/1/2002	76.44	198.48	122.04
	6/7/2004	77.70	198.48	120.78
	11/22/2004	77.70	198.48	120.78
	3/2/2005	77.65	198.48	120.83
	5/31/2005	77.72	198.48	120.76
	10/25/2005	77.96	198.48	120.52
	1/4/2006	77.70	198.48	120.78
	2/20/2006	77.82	198.48	120.66
	3/27/2006	77.81	198.48	120.67
	4/27/2006	77.92	198.48	120.56
	5/15/2006	78.04	198.48	120.44
	10/2/2006	78.01	198.48	120.47
	11/28/2006	78.03	198.48	120.45
	2/19/2007	78.05	198.48	120.43

TABLE 2-6
DEPTH TO GROUNDWATER MEASUREMENTS AND GROUNDWATER ELEVATIONS
October 1992 through November 2013
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well	Date	DTW (in feet)	Casing Elevation (in ft amsl)	Elevation (in ft amsl)
MW-102A (cont)	5/11/2007	77.99	198.48	120.49
	7/30/2007	77.92	198.48	120.56
	11/12/2007	77.38	198.48	121.10
	2/18/2008	77.05	198.48	121.43
	5/12/2008	77.01	198.48	121.47
	8/4/2008	76.98	198.48	121.50
	8/23/2010	76.97	198.48	121.51
	12/13/2010	76.43	198.48	122.05
	10/22/2012	76.79	198.48	121.69
	4/22/2013	77.17	198.48	121.31
	11/8/2013	77.48	198.48	121.00
PZ-1A	2/18/2008	75.47	195.03	119.56
	5/12/2008	75.26	195.03	119.77
	8/4/2008	75.15	195.03	119.88
	8/23/2010	NM	195.03	NM
	4/22/2013	75.35	195.03	119.68
	11/8/2013	NM	195.03	NM
PZ-2A	2/18/2008	76.22	195.85	119.63
	5/12/2008	75.89	195.85	119.96
	8/4/2008	75.87	195.85	119.98
	8/23/2010	NM	195.85	NM
	10/22/2012	NM	195.85	NM
	4/22/2013	76.10	195.85	119.75
	11/8/2013	NM	195.85	NM
DMW-6	1/4/2006	64.37	185.87	121.50
	2/24/2006	64.38	185.87	121.49
	3/27/2006	64.38	185.87	121.49
	4/27/2006	64.51	185.87	121.36
	5/15/2006	64.59	185.87	121.28
	10/3/2006	65.11	185.87	120.76
	11/28/2006	65.09	185.87	120.78
	2/19/2007	65.05	185.87	120.82
	5/11/2007	64.88	185.87	120.99
	7/30/2007	64.87	185.87	121.00
	11/12/2007	64.21	185.87	121.66
	2/19/2008	64.02	185.87	121.85
	5/12/2008	64.18	185.87	121.69
	8/4/2008	63.89	185.87	121.98
	8/23/2010	63.58	185.87	122.29
	10/22/2012	NM	185.87	NM
	12/12/2012	63.56	185.87	122.31
	4/26/2013	63.92	185.87	121.95
	11/20/2013	NM	185.87	NM
DMW-10	1/4/2006	70.77	191.26	120.49
	2/24/2006	70.84	191.26	120.42
	3/27/2006	70.82	191.26	120.44
	4/27/2006	70.95	191.26	120.31
	5/15/2006	71.00	191.26	120.26
	10/3/2006	71.08	191.26	120.18
	11/28/2006	71.05	191.26	120.21
	2/19/2007	71.01	191.26	120.25
	5/11/2007	70.92	191.26	120.34
	7/30/2007	70.89	191.26	120.37
	11/12/2007	70.26	191.26	121.00
	2/19/2008	70.11	191.26	121.15
	5/12/2008	70.14	191.26	121.12
	8/4/2008	69.89	191.26	121.37
	8/23/2010	69.91	191.26	121.35
	10/22/2012	NM	191.26	NM
	12/12/2012	69.63	191.26	121.63
	4/26/2013	69.95	191.26	121.31
	11/20/2013	NM	191.26	NM
DMW-11	1/4/2006	72.21	192.77	120.56
	2/24/2006	72.25	192.77	120.52
	3/27/2006	72.25	192.77	120.52
	4/27/2006	72.37	192.77	120.40
	5/15/2006	72.45	192.77	120.32
	10/3/2006	72.56	192.77	120.21
	11/28/2006	72.54	192.77	120.23
	2/19/2007	72.52	192.77	120.25
	5/11/2007	72.39	192.77	120.38
	7/30/2007	72.31	192.77	120.46
	11/12/2007	71.71	192.77	121.06
	2/19/2008	71.54	192.77	121.23
	5/12/2008	71.57	192.77	121.20
	8/4/2008	71.30	192.77	121.47
	11/10/2008	71.47	192.77	121.30
	8/23/2010	71.36	192.77	121.41
	10/22/2012	NM	192.77	NM
	12/12/2012	71.09	192.77	121.68
	4/26/2013	71.45	192.77	121.32
	11/20/2013	71.65	192.77	121.12

TABLE 2-6
DEPTH TO GROUNDWATER MEASUREMENTS AND GROUNDWATER ELEVATIONS
October 1992 through November 2013
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well	Date	DTW (in feet)	Casing Elevation (in ft amsl)	Elevation (in ft amsl)
DMW-16*	6/7/2004	78.75	196.49	117.74
	11/22/2004	78.69	196.49	117.80
	8/23/2010	75.67	196.49	120.82
	10/22/2012	NM	196.49	NM
	12/12/2012	75.33	196.49	121.16
	4/26/2013	NM	196.49	NM
	11/20/2013	NM	196.49	NM
DMW-17*	6/7/2004	79.53	196.88	117.35
	11/22/2004	79.34	196.88	117.54
	8/23/2010	75.43	196.88	121.45
	10/22/2012	NM	196.88	NM
	12/12/2012	75.33	196.88	121.55
	4/26/2013	NM	196.88	NM
	11/20/2013	NM	196.88	NM
DMW-18	6/7/2004	80.56	197.27	116.71
	11/22/2004	80.51	197.27	116.76
	8/23/2010	74.43	197.27	122.84
	10/22/2012	NM	197.27	NM
	4/26/2013	NM	197.27	NM
	11/20/2013	NM	197.27	NM
DMW-25	1/4/2006	72.54	192.84	120.30
	2/24/2006	72.55	192.84	120.29
	3/27/2006	72.62	192.84	120.22
	4/27/2006	72.75	192.84	120.09
	5/15/2006	72.83	192.84	120.01
	10/3/2006	72.75	192.84	120.09
	11/28/2006	72.76	192.84	120.08
	2/19/2007	72.73	192.84	120.11
	5/11/2007	72.67	192.84	120.17
	7/30/2007	72.59	192.84	120.25
	11/12/2007	72.05	192.84	120.79
	2/19/2008	71.88	192.84	120.96
	5/12/2008	71.80	192.84	121.04
	8/4/2008	71.59	192.84	121.25
	8/23/2010	71.70	192.84	121.14
	10/22/2012	NM	192.84	NM
	12/12/2012	71.52	192.84	121.32
	4/26/2013	71.87	192.84	120.97
	11/20/2013	72.08	192.84	120.76
DEW-19	1/4/2006	65.10	186.04	120.94
	2/24/2006	65.14	186.04	120.90
	3/27/2006	65.09	186.04	120.95
	4/27/2006	65.16	186.04	120.88
	5/15/2006	65.27	186.04	120.77
	10/2/2006	65.76	186.04	120.28
	11/28/2006	65.73	186.04	120.31
	2/19/2007	65.65	186.04	120.39
	5/11/2007	65.41	186.04	120.63
	7/30/2007	65.37	186.04	120.67
	11/12/2007	64.58	186.04	121.46
	2/19/2008	64.38	186.04	121.66
	5/12/2008	64.70	186.04	121.34
	8/4/2008	64.39	186.04	121.65
	8/23/2010	64.35	186.04	121.69
	10/22/2012	NM	186.04	NM
	12/11/2012	63.86	186.04	122.18
	4/26/2013	64.10	186.04	121.94
	11/20/2013	NM	186.04	NM
B-Zone Groundwater Monitoring and Extraction Wells				
MW-8B	11/28/2006	75.94	195.25	119.31
	2/19/2007	76.56	195.25	118.69
	5/11/2007	76.48	195.25	118.77
	7/30/2007	76.48	195.25	118.77
	11/12/2007	76.06	195.25	119.19
	2/18/2008	75.59	195.25	119.66
	5/12/2008	75.37	195.25	119.88
	8/4/2008	75.36	195.25	119.89
	11/10/2008	75.43	195.25	119.82
	4/26/2010	75.62	195.25	119.63
	8/23/2010	75.61	195.25	119.64
	10/22/2012	75.41	195.25	119.84
	4/22/2013	75.55	195.25	119.70
	11/8/2013	75.98	195.25	119.27
MW-18B	11/28/2006	80.68	197.99	117.31
	2/19/2007	80.78	197.99	117.21
	5/11/2007	80.69	197.99	117.30
	7/30/2007	80.70	197.99	117.29
	11/12/2007	80.30	197.99	117.69
	2/19/2008	79.72	197.99	118.27
	5/12/2008	79.47	197.99	118.52
	8/4/2008	79.45	197.99	118.54
	8/23/2010	NM	197.99	NM
	1/21/2011	79.70	197.99	118.29
	10/22/2012	79.46	197.99	118.53
	4/23/2013	79.77	197.99	118.22
	11/8/2013	80.02	197.99	117.97

TABLE 2-6
DEPTH TO GROUNDWATER MEASUREMENTS AND GROUNDWATER ELEVATIONS
October 1992 through November 2013
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well	Date	DTW (in feet)	Casing Elevation (in ft amsl)	Elevation (in ft amsl)
MW-21B	5/11/2007	82.11	198.51	116.40
	7/30/2007	82.23	198.51	116.28
	11/12/2007	81.87	198.51	116.64
	2/18/2008	81.29	198.51	117.22
	4/16/2008	81.23	198.51	117.28
	5/12/2008	81.07	198.51	117.44
	6/12/2008	81.53	198.51	116.98
	8/4/2008	81.09	198.51	117.42
	11/10/2008	81.27	198.51	117.24
	4/26/2010	81.27	198.51	117.24
	8/23/2010	81.32	198.51	117.19
	1/21/2011	81.23	198.51	117.28
	10/22/2012	80.75	198.51	117.76
	4/22/2013	81.19	198.51	117.32
	11/8/2013	81.43	198.51	117.08
MW-22B	11/12/2007	76.06	194.70	118.64
	2/18/2008	75.84	194.70	118.86
	5/12/2008	75.69	194.70	119.01
	8/4/2008	75.63	194.70	119.07
	8/23/2010	75.80	194.70	118.90
	12/13/2010	75.75	194.70	118.95
	2/25/2011	75.77	194.70	119.52
	10/22/2012	75.68	194.70	119.02
	4/23/2013	75.95	194.70	118.75
	11/8/2013	76.18	196.38 (see note 2)	120.20
MW-23B	11/12/2007	76.80	196.09	119.29
	2/18/2008	76.57	196.09	119.52
	5/12/2008	76.20	196.09	119.89
	8/4/2008	76.32	196.09	119.77
	11/10/2008	76.46	196.09	119.63
	4/26/2010	76.56	196.09	119.53
	8/23/2010	76.63	196.09	119.46
	10/22/2012	N.M	196.09	NM
	4/22/2013	76.71	196.09	119.38
	11/8/2013	77.05	196.09	119.04
MW-24B	2/18/2008	79.99	199.52	119.53
	5/12/2008	80.72	199.52	118.80
	8/4/2008	80.81	199.52	118.71
	11/10/2008	80.85	199.52	118.67
	8/23/2008	80.92	199.52	118.60
	4/26/2010	80.76	199.52	118.76
	10/22/2012	80.59	199.52	118.93
	4/22/2013	80.64	199.52	118.88
	11/8/2013	81.06	199.52	118.46
MW-25B	4/26/2010	80.94	199.06	118.12
	8/23/2010	81.11	199.06	117.95
	10/22/2012	NM	199.06	NM
	4/22/2013	80.67	199.06	118.39
	11/8/2013	81.10	199.06	117.96
MW-26B	12/13/2010	75.09	195.73	120.64
	10/22/2012	74.97	195.73	120.76
	4/22/2013	75.24	195.73	120.49
	11/8/2013	75.54	195.73	120.19
MW-27B	12/13/2010	72.34	192.95	120.61
	10/22/2012	NM	192.95	NM
	4/22/2013	72.45	192.95	120.50
	11/8/2013	72.76	192.95	120.19
MW-28B	3/18/2013	80.77	198.15	117.38
	4/22/2013	80.66	198.15	117.49
	11/8/2013	80.95	198.15	117.20
MW-29B	3/19/2013	81.51	198.66	117.15
	4/22/2013	81.43	198.66	117.23
	11/8/2013	81.65	198.66	117.01
MW-30B	3/19/2013	84.31	201.04	116.73
	6/6/2013	84.29	201.04	116.75
	11/8/2013	84.48	201.04	116.56
MW-102B1	11/14/1996	72.13	198.44	126.31
	6/11/2001	76.49	198.44	121.95
	6/16/2001	76.53	198.44	121.91
	6/25/2001	76.50	198.44	121.94
	1/29/2002	76.69	198.44	121.75
	10/1/2002	76.37	198.44	122.07
	6/7/2004	77.70	198.44	120.74
	11/22/2004	77.76	198.44	120.68
	3/2/2005	77.72	198.44	120.72
	5/31/2005	77.73	198.44	120.71
	10/25/2005	77.92	198.44	120.52
	1/4/2006	77.61	198.44	120.83
	2/20/2006	77.75	198.44	120.69
	3/27/2006	77.76	198.44	120.68
	4/27/2006	77.91	198.44	120.53
	5/15/2006	78.01	198.44	120.43
	10/2/2006	77.92	198.44	120.52
	11/28/2006	77.88	198.44	120.56
	2/19/2007	77.96	198.44	120.48

TABLE 2-6
DEPTH TO GROUNDWATER MEASUREMENTS AND GROUNDWATER ELEVATIONS
October 1992 through November 2013
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well	Date	DTW (in feet)	Casing Elevation (in ft amsl)	Elevation (in ft amsl)
MW-102B1 (cont)	5/11/2007	77.94	198.44	120.50
	7/30/2007	77.84	198.44	120.60
	11/12/2007	77.29	198.44	121.15
	2/18/2008	76.99	198.44	121.45
	5/12/2008	76.84	198.44	121.60
	8/4/2008	76.73	198.44	121.71
	11/10/2008	76.75	198.44	121.69
	4/26/2010	76.70	198.44	121.74
	8/23/2010	76.92	198.44	121.52
	12/13/2010	76.91	198.44	121.53
	10/22/2012	76.82	198.44	121.62
	4/22/2013	77.14	198.44	121.30
	11/8/2013	77.43	198.44	121.01
MW-102B2	11/14/1996	72.18	198.51	126.33
	6/11/2001	76.57	198.51	121.94
	6/16/2001	76.62	198.51	121.89
	6/25/2001	76.60	198.51	121.91
	1/29/2002	76.65	198.51	121.86
	10/1/2002	76.39	198.51	122.12
	6/7/2004	77.80	198.51	120.71
	11/22/2004	77.80	198.51	120.71
	3/2/2005	77.65	198.51	120.86
	5/31/2005	77.83	198.51	120.68
	10/25/2005	78.00	198.51	120.51
	1/4/2006	77.59	198.51	120.92
	2/20/2006	77.74	198.51	120.77
	3/27/2006	77.76	198.51	120.75
	4/27/2006	77.93	198.51	120.58
	5/15/2006	78.04	198.51	120.47
	10/2/2006	77.98	198.51	120.53
	11/28/2006	77.77	198.51	120.74
	2/19/2007	77.90	198.51	120.61
	5/11/2007	77.98	198.51	120.53
	7/30/2007	77.81	198.51	120.70
	11/12/2007	77.34	198.51	121.17
	2/18/2008	76.97	198.51	121.54
	5/12/2008	76.74	198.51	121.77
	8/4/2008	76.76	198.51	121.75
	8/23/2010	77.00	198.51	121.51
	12/13/2010	76.94	198.51	121.57
	10/22/2012	76.93	198.51	121.58
	4/22/2013	77.15	198.51	121.36
	11/8/2013	77.43	198.51	121.08
MW-103B	11/22/2004	77.88	198.63	120.75
	3/2/2005	77.94	198.63	120.69
	5/31/2005	77.98	198.63	120.65
	10/25/2005	78.11	198.63	120.52
	1/4/2006	77.67	198.63	120.96
	2/20/2006	77.84	198.63	120.79
	3/27/2006	77.87	198.63	120.76
	4/27/2006	78.04	198.63	120.59
	5/15/2006	78.14	198.63	120.49
	10/2/2006	78.00	198.63	120.63
	11/28/2006	77.90	198.63	120.73
	2/19/2007	78.05	198.63	120.58
	5/11/2007	78.33	198.63	120.30
	7/30/2007	77.98	198.63	120.65
	11/12/2007	77.47	198.63	121.16
	2/18/2008	77.19	198.63	121.44
	5/12/2008	76.88	198.63	121.75
	8/4/2008	76.84	198.63	121.79
	8/23/2010	77.15	198.63	121.48
	12/13/2010	77.02	198.63	121.61
	10/22/2012	77.05	198.63	121.58
	4/22/2013	77.28	198.63	121.35
	11/8/2013	77.52	198.63	121.11
MW-104B	11/22/2004	80.10	198.59	118.49
	3/2/2005	78.28	198.59	120.31
	5/31/2005	78.32	198.59	120.27
	10/25/2005	78.56	198.59	120.03
	1/4/2006	78.11	198.59	120.48
	2/20/2006	78.26	198.59	120.33
	3/27/2006	78.29	198.59	120.30
	4/27/2006	78.45	198.59	120.14
	5/15/2006	78.52	198.59	120.07
	10/2/2006	78.32	198.59	120.27
	11/28/2006	78.29	198.59	120.30
	2/19/2007	78.37	198.59	120.22
	5/11/2007	78.44	198.59	120.15
	7/30/2007	78.30	198.59	120.29
	11/12/2007	77.79	198.59	120.80
	2/18/2008	77.47	198.59	121.12
	5/12/2008	77.19	198.59	121.40
	8/4/2008	77.24	198.59	121.35

TABLE 2-6
DEPTH TO GROUNDWATER MEASUREMENTS AND GROUNDWATER ELEVATIONS
October 1992 through November 2013
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well	Date	DTW (in feet)	Casing Elevation (in ft amsl)	Elevation (in ft amsl)
MW-104B (cont)	8/23/2010	77.46	198.59	121.13
	12/13/2010	77.37	198.59	121.22
	10/22/2012	77.74	198.59	120.85
	4/22/2013	77.60	198.59	120.99
	11/8/2013	77.90	198.59	120.69
PZ-1B	2/18/2008	75.40	194.99	119.59
	5/12/2008	75.14	194.99	119.85
	8/4/2008	75.12	194.99	119.87
	8/23/2010	NM	194.99	NM
	4/22/2013	75.31	194.99	119.68
	11/8/2013	NM	194.99	NM
PZ-2B	2/18/2008	76.12	195.79	119.67
	5/12/2008	75.85	195.79	119.94
	8/4/2008	75.85	195.79	119.94
	8/23/2010	NM	195.79	NM
	4/22/2013	76.01	195.79	119.78
	11/8/2013	NM	195.79	NM
EW-1	2/18/2008	74.75	194.60	119.85
	5/12/2008	74.80	194.60	119.80
	8/4/2008	74.77	194.60	119.83
	8/23/2010	NM	194.60	NM
	4/22/2013	75.00	194.60	119.60
	11/8/2013	NM	194.60	NM
C-Zone Groundwater Monitoring and Production Wells				
MW-8C	5/11/2007	76.69	195.24	118.55
	7/30/2007	76.73	195.24	118.51
	11/12/2007	76.31	195.24	118.93
	2/18/2008	75.72	195.24	119.52
	5/12/2008	75.53	195.24	119.71
	8/4/2008	75.60	195.24	119.64
	11/10/2008	75.69	195.24	119.55
	4/26/2010	75.72	195.24	119.52
	8/23/2010	75.89	195.24	119.35
	10/22/2012	75.61	195.24	119.63
	4/22/2013	75.80	195.24	119.44
	11/8/2013	76.16	195.24	119.08
MW-17C	11/12/2007	79.01	197.94	118.93
	2/18/2008	78.43	197.94	119.51
	5/12/2008	78.19	197.94	119.75
	8/4/2008	78.27	197.94	119.67
	11/10/2008	78.27	197.94	119.67
	4/26/2010	78.31	197.94	119.63
	8/23/2010	78.46	197.94	119.48
	10/22/2012	78.15	197.94	119.79
	4/22/2013	78.39	197.94	119.55
	11/8/2013	78.69	197.94	119.25
MW-21C	5/11/2007	81.75	198.39	116.64
	7/30/2007	82.01	198.39	116.38
	11/12/2007	81.71	198.39	116.68
	2/18/2008	81.07	198.39	117.32
	4/16/2008	81.02	198.39	117.37
	5/12/2008	80.85	198.39	117.54
	6/12/2008	81.33	198.39	117.06
	8/4/2008	80.89	198.39	117.50
	9/19/2008	80.89	198.39	117.50
	10/24/2008	81.03	198.39	117.36
	11/10/2008	81.10	198.39	117.29
	12/19/2008	81.00	198.39	117.39
	4/26/2010	81.10	198.39	117.29
	8/23/2010	81.11	198.39	117.28
	1/21/2011	81.05	198.39	117.34
	10/22/2012	80.60	198.39	117.79
	4/22/2013	80.89	198.39	117.50
	11/8/2013	81.19	198.39	117.20
MW-103C	11/22/2004	77.98	198.60	120.62
	3/2/2005	78.12	198.60	120.48
	5/31/2005	77.08	198.60	121.52
	10/25/2005	78.25	198.60	120.35
	1/4/2006	77.65	198.60	120.95
	2/20/2006	77.86	198.60	120.74
	3/27/2006	77.91	198.60	120.69
	4/27/2006	78.09	198.60	120.51
	5/15/2006	78.20	198.60	120.40
	10/2/2006	78.02	198.60	120.58
	11/28/2006	77.90	198.60	120.70
	2/19/2007	78.04	198.60	120.56
	5/11/2007	78.69	198.60	119.91
	7/30/2007	77.94	198.60	120.66
	11/12/2007	77.59	198.60	121.01
	2/18/2008	77.15	198.60	121.45
	5/12/2008	76.92	198.60	121.68
	8/4/2008	76.88	198.60	121.72
	11/10/2008	76.85	198.60	121.75
	4/26/2010	76.90	198.60	121.70

TABLE 2-6
DEPTH TO GROUNDWATER MEASUREMENTS AND GROUNDWATER ELEVATIONS
October 1992 through November 2013
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well	Date	DTW (in feet)	Casing Elevation (in ft amsl)	Elevation (in ft amsl)
MW-103C (cont)	8/23/2010	77.36	198.60	121.24
	12/13/2010	77.03	198.60	121.57
	10/22/2012	77.05	198.60	121.55
	4/22/2013	77.27	198.60	121.33
	11/8/2013	77.48	198.60	121.12
MW-104C	11/22/2004	81.00	198.62	117.62
	3/2/2005	78.82	198.62	119.80
	5/31/2005	78.74	198.62	119.88
	10/25/2005	79.03	198.62	119.59
	1/4/2006	78.44	198.62	120.18
	2/20/2006	78.63	198.62	119.99
	3/27/2006	78.65	198.62	119.97
	4/27/2006	78.83	198.62	119.79
	5/15/2006	78.88	198.62	119.74
	10/2/2006	78.71	198.62	119.91
	11/28/2006	78.63	198.62	119.99
	2/19/2007	78.72	198.62	119.90
	5/11/2007	78.96	198.62	119.66
	7/30/2007	78.66	198.62	119.96
	11/12/2007	78.15	198.62	120.47
	2/18/2008	77.86	198.62	120.76
	5/12/2008	77.50	198.62	121.12
	8/4/2008	77.66	198.62	120.96
	8/23/2010	77.99	198.62	120.63
	12/13/2010	77.73	198.62	120.89
	10/22/2012	77.75	198.62	120.87
	4/22/2013	77.95	198.62	120.67
	11/8/2013	78.19	198.62	120.43
PZ-1C	2/18/2008	75.55	194.91	119.36
	5/12/2008	75.25	194.91	119.66
	8/4/2008	75.22	194.91	119.69
	8/23/2010	NM	194.91	NM
	10/22/2012	NM	194.91	NM
	4/22/2013	75.5	194.91	119.41
	11/8/2013	NM	194.91	NM
PZ-2C	2/18/2008	76.27	195.75	119.48
	5/12/2008	75.98	195.75	119.77
	8/4/2008	76.02	195.75	119.73
	8/23/2010	NM	195.75	NM
	8/23/2010	NM	195.75	NM
	4/22/2013	76.28	195.75	119.47
	11/8/2013	NM	195.75	NM

Notes:

DTW = Depth to Water

ft amsl = feet above mean sea level

NM = Not Measured

DTW measurements were not collected in monitoring Wells DMW-16, DMW-17, and DMW-18 due to presence of diesel product

In August 2010, free product was detected in Dieselville Wells DMW-16, DMW-17, DMW-18; however, water levels were corrected and reported; free product thickness was recorded as: DMW-16=0.61 feet; DMW-17=0.36 feet; and DMW-18=0.25 feet

In October 2012 and April 2013 free product was detected in MW-7A and was measured in April 2013; free product was recorded as 0.77 feet.

free product thickness was recorded as 0.77 feet

* Wells have not been measured since December 2012

1 The casing elevation was modified during Cap installation activities in September 2013.

2 The casing elevation was resurveyed on October 28, 2013.

TABLE 2-7

SUMMARY OF VOCs (µg/L) AND CYANIDES (mg/L) HISTORICALLY DETECTED IN GROUNDWATER SINCE 1992

20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well Number	Date Sampled	PCE	TCE	1,1,1-TCA	1,1-DCE	1,1-DCA	cis-1,2-DCE	VC	BCM	BDCM	DBCM	Bromoform	Chloroform	Benzene	MTBE	2- Butanone	n-Butyl-benzene	sec-Butyl-benzene	CD	Ethylbenzene	Isopropyl-benzene	4-Isopropyl-toluene	Naphthalene	n-Propyl-benzene	Toluene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Xylenes (Tot)	Acetone	MC	1,1,2-TCA	1,1,1,2-Tetra-chloroethane	1,2-Dichloro-benzene	Chloro-benzene	1,4-Dichloro-benzene	Cyanide, Free*	Cyanide, Total**
		AWQS: 5	AWQS: 5	AWQS: 200	AWQS: 7	AWQS: NE	AWQS: 70	AWQS: 2	AWQS: NE	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 5	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 700	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 1,000	AWQS: NE	AWQS: NE	AWQS: 10,000	AWQS: NE	AWQS: NE	AWQS: 5	AWQS: NE	AWQS: 600	AWQS: NE	AWQS: 75	AWQS: 0.2	AWQS: NE
A-Zone Groundwater Monitoring Wells																																					
MW-1A	10/23/1992	20,000 D1	<25	<25	<25	<25	<25	<50	<50	<50	<25	<50	<25	<25	NR	NR	<25	<25	NR	<25	<25	NR	<25	<25	38^	<25	<25	<50	NR	<100	<25	<25	<50	<25	<50	NA	NA
	4/21/1993	18,300	5.2	8.6	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	NR	<0.8	<0.8	7.6	NR	NR	<0.8	<0.8	NR	<0.8	<0.8	NR	<0.8	<0.8	<0.8	<0.8	<0.8	1.5	NR	NR	<0.8	<0.8	6.5	<0.8	<0.8	NA	NA
	8/17/1993	20,000/27,000	<1,000/<500	<1,000/<500	<1,000/<500	<1,000/<500	NR/NR	<1,000/<1,000	NR/NR	<1,000/<500	<1,000/<500	<1,000/<1,000	<1,000/<500	<1,000/<1,000	NR/NR	NR/NR	NR/NR	NR/NR	NR/NR	<1,000/<1,000	NR/NR	NR/NR	NR/NR	NR/NR	<1,000/<1,000	NR/NR	NR/NR	<2,500<1,500	NR/NR	<5,000/<5,000	<1,000/<500	NR/NR	<1,000/<500	<1,000/1,000	<1,000/500	NA/NA	NA/NA
	10/4/1996	1,300	<50	<50	<50	<50	<50	<100	NR	<50	<50	<50	<50	<50	NR	NR	NR	NR	NR	<50	NR	NR	NR	NR	<50	NR	NR	<150	NR	<500	<50	NR/NR	<100	<50	<100	NA	NA
	6/16 & 6/25/2003	220 D2	0.95	<0.5	<1.0	3.2	<1.0	<1.0	<0.50	<0.5	<0.5	<1.0	<1.0	<0.5	<1.0	<5.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<1.0 L2	<1.0	<0.50	<0.50	<0.50	<0.50	<0.05	<0.05
	1/29/2002	320 D2	0.99	1.6	1.2 L1	6.0 L1	<0.50	<1.0	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<1.0	<5.0	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	2.07	6.68 D2
	6/10/2004	150 D2	1.1	0.57	0.9	3	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.2	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.35/2.4	2.5/2.4 D2
	11/30/2004	130 D2	0.61	<0.50	0.56	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.9	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	1.2	2.3 D2
	6/3/2005	76 D2	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.73	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.99	3.1 D2
	2/21/2006	69 D2	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.4	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.34	2.5 D2
	5/25/2006	35	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.3	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.13	1.6 D2
	10/10/2006	33	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	1.6	4.8 D2
	12/1/2006	56	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.7	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	0.38	6.2 D2
	2/21/2007	49	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	0.24 D2	3.4 D2
	5/15/2007	54	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	0.35	3.0 D2
	8/1/2007	57	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.1	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	4.1 D2
	11/20/2007	39	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.54	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.55	4.3 D2
	2/28/2008	25	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.49 D2	4.1 D2
	5/22/2008	22	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.79	0.90 D2
	8/11/2008	19	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.77	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.38	0.38 D2
	8/27/2010	9.0	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	3.2	3.2 D2
	12/14/2010	4.3	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.58	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.097	0.097
	10/29/2012	6.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.35	0.35
	5/2/2013	11.0	0.54	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	0.86	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.32	0.32 D2
	11/18/2013	4.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.90	0.90 D2
MW-2A	1/7/1993	8,700 D1	7.8	0.6	5.7	1.4	<0.5	<1.0	<1.0	<1.0	<0.5	<1.0	1.4	1.2	NR	NR	<0.5	<0.5	NR	<0.5	<0.5	NR	0.5	<0.5	0.8	<0.5	<0.5	<1.0	NR	2.6	0.7	1.3	2.4	<0.5	<1.0	NA	NA
	4/21/1993	6,860	5.4	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	NR	<0.8	<0.8	28,100	NR	NR	<0.8	<0.8	NR	21,900	<0.8	NR	<0.8	<0.8	29,200	<0.8	<0.8	93,100	NR	NR	<0.8	<0.8	<0.8	<0.8	<0.8	NA	NA
	8/17/1993	6,500/10,000	<1,000/<500	<1,000/<500	<1,000/<500	<1,000/<500	NR/NR	<1,000/<1,000	NR/NR	<1,000/<500	<1,000/<500	<1,000/<1,000	<1,000/<500	<1,000/<1,000	NR/NR	NR/NR	NR/NR	NR/NR	NR/NR	<1,000/<1,000	NR/NR	NR/NR	NR/NR	NR/NR	<1,000/<1,000	NR/NR	NR/NR	<2,500/<1,500	NR/NR	<5,000/<5,000	<1,000/<500	NR/NR	<1,000/<500	<1,000/<1,000	<1,000/<500	NA/NA	NA/NA
	10/4/1996	3,000	<50	<50	<50	<50	<50	<100	NR	<50	<50	<50	<50	<50	NR	NR	NR	NR	NR	<50	NR	NR	NR	NR	<50	NR	NR	<150	NR	<500	<50	NR	<100	<50	<100	NA	NA
	6/16 & 6/25/2003	390 D2	2.1	<0.5	<1.0	1.5	<0.50	<1.0	<0.5	<0.5	<0.5	<1.0	2.2	<0.5	<1.0	<5.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<1.0 L2	<1.0	<0.50	<0.50	<0.50	<0.50	0.97	3.4
	1/30/2002	420 D2	3.5	0.54	<1.0	1.8	<0.50	<1.0	<0.50	<0.50	<0.50	<1.0	3.3	<0.50	<1.0	<5.0	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	0.162	1.78 D2
	6/10/2004	220 D2	3.5	<0.50	0.52	1	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.3	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.038/1.4	1.1/1.4
	11/30/2004	160 D2	2.1	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	5.8	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	1.2 D2
	6/3/2005	160 D2	2.2	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	4.6	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<0.50	<2.0	<3.0	<2.0	<1.5	<3.0	<20 L2	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.076	0.71 D2
	2/21/2006	99 D2	1.7	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	6.0	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.041	0.66 D2
	5/19/2006	110	1.2	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	6.4	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.068	0.75 D2
	10/10/2006	160 D2	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.6	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	0.021	0.78 D2
	12/12/2006	140 D2	1.3	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	NA	1.0 D2
	2/21/2007	140 D2	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.4	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	0.30 D1	1.2 D2
	5/15/2007	98	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.2	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	0.37	1.6 D2
	8/1/2007	110	1.1	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	4.2	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	2.1 D2
	11/21/2007	120	1.2	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	4.9	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.16	1.6 D2
	2/21/2008	88	0.91	<0.50	<1.0	0.75	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	4.7	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	<0.02	2.1
	5/21/2008	87	0.63	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	<0.02	0.43 D2
	8/12/2008	67	0.8	<0.50	<1.0	0.68	<1.0	<0.50	<0.50	1.4	1.4	<0.50	5	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	2.4	2.4 D2
	8/27/2010	31	1.1	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.64	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	1.6	1.6 D2
	12/14/2010	28	0.6	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.76	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.33	0.33
	10/31/2012	29	0.75	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	0.85	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	<0.02	<0.02
	5/8/2013	49	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	1.6	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.29	0.29 D2
	11/19/2013	22	0.68	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	0.71	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.18	0.18
MW-3A	4/21/1993	270,000	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	NR	0.8	<0.8	3.6	NR	NR	<0.8	<0.8	NR	<0.8	<0.8	NR	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	NR	NR	<0.8	<0.8	<0.8	<0.8	<0.8	NA	NA
	8/17/1993	8,700/5,000	<200/<250	<200/<250	<200/<250	<200/<250	NR/NR	<200/<500	NR/NR	<200/<250	<200/<250	<200/<500	<200/<250	<200/<500	NR/NR	NR/NR	NR/NR	NR/NR	NR/NR	<200/<500	NR/NR	NR/NR	NR/NR	NR/NR	<200/<500	NR/NR	NR/NR	<500/<750	NR/NR	<1,000<2,500	<200/<250	NR/NR	<200/<250	<200/<500	<200/<250	NA/NA	NA/NA
	10/4/1996	150	<2.5	<2.5	<2.5	<2.5	<2.5	<5.0	NR	<2.5	<2.5	<2.5	<2.5	<2.5	NR	NR	NR	NR	NR	<2.5	NR	NR	NR	NR	<2.5	NR	NR	<7.5	NR	<25	<2.5	NR	<5.0	<2.5	<5.0	NA	NA
	6/16 & 6/25/2001	9.8	<0.5	<0.5	<1.0	<0.5	<0.50	<1.0	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<1.0	<5.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<1.0 L2	<1.0	<0.50	<0.50	<0.50	<0.50	0.25	0.22
	1/29/2002	80	<0.50	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<1.0	<5.0	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	10	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.05	0.013
	6/11/2004	9.8	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.020
	11/29/2004	20	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	<0.010
	6/3/2005	3.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010

TETRA TECH, INC.

TABLE 2-7

SUMMARY OF VOCs (µg/L) AND CYANIDES (mg/L) HISTORICALLY DETECTED IN GROUNDWATER SINCE 1992

20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well Number	Date Sampled	PCE	TCE	1,1,1-TCA	1,1-DCE	1,1-DCA	cis-1,2-DCE	VC	BCM	BDCM	DBCM	Bromoform	Chloroform	Benzene	MTBE	2- Butanone	n-Butyl-benzene	sec-Butyl-benzene	CD	Ethylbenzene	Isopropyl-benzene	4-Isopropyl-toluene	Naphthalene	n-Propyl-benzene	Toluene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Xylenes (Tot)	Acetone	MC	1,1,2-TCA	1,1,1,2-Tetra-chloroethane	1,2-Dichloro-benzene	Chloro-benzene	1,4-Dichloro-benzene	Cyanide, Free*	Cyanide, Total**
		AWQS: 5	AWQS: 5	AWQS: 200	AWQS: 7	AWQS: NE	AWQS: 70	AWQS: 2	AWQS: NE	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 5	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 700	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 1,000	AWQS: NE	AWQS: NE	AWQS: 10,000	AWQS: NE	AWQS: NE	AWQS: 5	AWQS: NE	AWQS: 600	AWQS: NE	AWQS: 75	AWQS: 0.2	AWQS: NE
MW-3A (cont)	2/20/2006	9.3	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	0.023
	5/18/2006	3.1	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	0.031
	10/10/2006	3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	0.025
	12/1/2006	5.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	0.011	0.047
	2/21/2007	19	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	0.23 D2	1.0 D2
	5/15/2007	19	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	1.4	1.4 D2
	8/1/2007	17	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	1.2 D2
	11/21/2007	18	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.024	1.4 D2
	2/19/2008	13	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	1.2	1.2
	5/21/2008	9.4	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.2	0.2
	8/6/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.51	0.51 D2
	8/27/2010	3.4	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/23/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/1/2013	4.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	0.64	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.044	0.044
	11/14/2013	3.9	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.14	0.14
MW-4A	6/8/2004	120 D2	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.059	0.51
	11/29/2004	45 D1	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.03	0.28 D2
	6/1/2005	37	<0.50	<0.50	<0.50 L2	<1.0 L2	<0.50 L2,N1	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50 L2	<0.50	<2.0	<5.0	<2.5 L2	<1.5 L2	<0.50 L2	<2.0	<2.5	<1.5 L2	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20 L2	<3.0	<0.50 L2	<0.50	<1.5	<0.50	<1.5	0.20	0.84 D2
	2/22/2006	32	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.06	0.73 D2
	5/16/2006	24	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.079	1.2 D2
	10/11/2006	27	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	0.51	4.1 D2
	12/12/2006	36	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	NA	4.8 D2
	2/27/2007	16	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20 L1,V1	<2.0	<1.0	NR	<1.0	<1.0	<1.0	0.43	1.9 D2
	5/24/2007	26	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	0.41	5.9
	8/8/2007	30	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	1.6	11 D2
	11/21/2007	29	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	1.4	9.3 D2
	2/25/2008	18	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.68	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	1.6 D2	11 D2
	5/16/2008	23	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.66	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	4.5	4.5 D2
	8/11/2008	20	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.91	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	1.3	1.3 D2
	8/27/2010	11	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	5.5	5.5 D2
	10/30/2012	5.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	6.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.45 D2	0.45 D2
	5/2/2013	7.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	6.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.43	0.43 D2
	11/14/2013	11	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	2.3	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	3.1	3.1 D2
MW-5A	1/29/2002	310 D2	2.3	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<1.0	1.1	<0.50	<1.0	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.05	8.91
	6/7/2004	210 D2	0.79	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.98	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.71	8.4
	11/23/2004	160 D2/200 D2	0.69/0.75	<0.50/<0.50	<0.50/<0.50	<1.0/<1.0	<0.50/<0.50	<0.50/<0.50	<0.50/<0.50	0.95/<0.50	0.89/<0.50	<1.0/<1.0	1.9/1.2	<0.50/<0.50	<2.0/<2.0	<5.0/<5.0	<2.5/<2.5	<1.5/<1.5	<0.50/<0.50	<2.0/<2.0	<2.5/<2.5	<1.5/<1.5	<5.0/<5.0	<2.0/<2.0	<3.0/<3.0	<2.0/<2.0	<1.5/<1.5	<3.0/<3.0	<20/<20	<3.0/<3.0	<0.50/<0.50	<0.50/<0.50	<1.5/<1.5	<0.50/<0.50	<1.5/<1.5	0.041/0.46	0.55 D2/6.6 D2
	6/2/2005	180 D2	0.91	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.95	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.45	11
	2/22/2006	220 D2	1.1	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.1	<0.50	<2.0	<5.0	<2.5 L2	<1.5 L2	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<0.50	<0.50	<1.5	0.39	9.3 D2
	5/16/2006	140 D2	1	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.3	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	1.5 D2	10 D2
	10/11/2006	230 D2	1.4	<1.0	<1.0	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.2	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	1.37 D2	9.6 D2
	12/12/2006	230 D2	1.7	<1.0	<1.0	2.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.9	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	NA	12 D2
	2/27/2007	200 D2	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<30	<200	<20	<10	NR	<10	<10	<10	1.6 D2	15 D2
	5/24/2007	180 D2	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	9.3	17
	8/7/2007	130	0.8	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.73	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	4.5	18 D2
	11/19/2007	120	0.72	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.56	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	3.2 H1	22 D2
	2/25/2008	63	0.69	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	4.4 D2	18 D2
	5/19/2008	84	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	4.5 D2	18 D2
	8/12/2008	95	0.72	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.75	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	13	13 D2
	8/27/2010	73	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.56	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	1.6	1.6 D2
	12/15/2010	38	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.37	0.37
	10/31/2012	62 D2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<40	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<1.0	2.5 D2	2.5 D2
	5/8/2013	52 D2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	1.4 D2	<1.0	<2.0	<40	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0	<10	NR	<1.0	<1.0	<1.0	<1.0	<1.0	11	11 D2
	11/19/2013	46 D2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	1.3 D2	<1.0	<2.0	<40	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0	<10	NR	<1.0	<1.0	<1.0	<1.0	<1.0	20	20 D2
MW-6A	1/30/2002	120 D2	0.92	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<1.0	1.1	<0.50	<1.0	<5.0	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<1.0	<0.5	<0.50	<0.50	<0.50	<0.50	0.109	1.04 D2
	6/8/2004	46	1.4	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.5	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	NR	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	<0.010
	11/29/2004	69 D2	4.3	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.7	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	<0.010
	6/2/2005	64 D2	8.8	<0.50	0.61	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.9	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	6.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/24/2006	55 D2	7.8	<0.50	0.87	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	3.5	0.54	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	2.7	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	5/25/2006	45	8.1	<0.50	0.71	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	3.9	0.59	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	10/11/2006	29	1.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.6	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080

TETRA TECH, INC.

TABLE 2-7

SUMMARY OF VOCs (µg/L) AND CYANIDES (mg/L) HISTORICALLY DETECTED IN GROUNDWATER SINCE 1992

20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well Number	Date Sampled	PCE	TCE	1,1,1-TCA	1,1-DCE	1,1-DCA	cis-1,2-DCE	VC	BCM	BDCM	DBCM	Bromoform	Chloroform	Benzene	MTBE	2- Butanone	n-Butyl-benzene	sec-Butyl-benzene	CD	Ethylbenzene	Isopropyl-benzene	4-Isopropyl-toluene	Naphthalene	n-Propyl-benzene	Toluene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Xylenes (Tot)	Acetone	MC	1,1,2-TCA	1,1,1,2-Tetra-chloroethane	1,2-Dichloro-benzene	Chloro-benzene	1,4-Dichloro-benzene	Cyanide, Free*	Cyanide, Total**
		AWQS: 5	AWQS: 5	AWQS: 200	AWQS: 7	AWQS: NE	AWQS: 70	AWQS: 2	AWQS: NE	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 5	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 700	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 1,000	AWQS: NE	AWQS: NE	AWQS: 10,000	AWQS: NE	AWQS: NE	AWQS: 5	AWQS: NE	AWQS: 600	AWQS: NE	AWQS: 75	AWQS: 0.2	AWQS: NE
MW-6A (cont)	12/12/2006	30	2.9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.8	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	NA	<0.0080
	2/28/2007	36	6.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.2	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	5/24/2007	77	16	<1.0	1.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4	1.5	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	2.8	3	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.025	<0.025
	8/7/2007	87	16	<0.50	1.4	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	3.5	1.4	<2.0	<5.0	<2.5	<1.5	0.5	<2.0	<2.5	<1.5	7.7	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	0.011
	11/19/2007	93	18	<0.50	0.97	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	4.3	1.4	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	6	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/25/2008	77	14	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	4.5	0.86	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	5.6	<0.50	<0.50	<0.50	<0.50	2.6	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/19/2008	65	11	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	3.6	0.7	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.2	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/13/2008	75	16	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	5.84	0.87	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.2	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/27/2010	74	10	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	3.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.070	0.070
	12/15/2010	72	10	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	3.1	<0.50	<1.0	<20	<0.50	0.54	<0.50	<0.50	<0.50	0.55	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.041	0.041
	10/31/2012	87	16	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	3.7	<1.0	<2.0	<40	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0	<10	NR	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<0.02
	5/8/2013	110 D2	23 D2	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<5.0	<2.5	<2.5	5.4 D2	<2.5	<5.0	<100	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<10	<25	NR	<2.5	<2.5	<2.5	<2.5	<2.5	NA	<0.02
	11/19/2013	110 D2	26 D2	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<5.0	<2.5	<2.5	2.6 D2	<2.5	<5.0	<100	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<10	<25	NR	<2.5	<2.5	<2.5	<2.5	<2.5	NA	<0.02
MW-7A	6/11/2004	600 D2	33	<0.50	1	2.7	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	0.85	<2.0	<5.0	39	28	1.3	4.9	12	25	550 D2	21	33	380 D2	48	46	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	0.16
	11/23/2004	290 D2	28	<0.50	1.1	3.5	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	0.88	<2.0	<5.0	<2.5	1.8	2.1	<2.0	<2.5	2	120	2.4	<3.0	14	7.3	16	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	0.069
	6/2/2005	160 D2	23	<0.50	0.64	3.3	0.5	0.87	<0.50	<0.50	<0.50	<1.0	<0.50	1.1	<2.0	<5.0	<2.5	<1.5	2.7	<2.0	<2.5	1.9	50 H2,D2	<2.0	<3.0	9.8	6.9	9.6	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/22/2006	230 D2	20	<0.50	0.60	2.6	<0.50	0.64	<0.50	<0.50	<0.50	<1.0	<0.50	0.96	<2.0	<5.0	<2.5 L2	<1.5 L2	2	<2.0	<2.5	<2.5	14	<2.0	<3.0	<2.0	1.6	3.3	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	5/18 & 5/19/2006	130 D2	20	<0.50	0.53	2.6	0.70	0.65	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	2.7	<2.0	<2.5	<2.5	18	<2.0	<3.0	<2.0	<1.5	3.4	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	10/3/2006	91 D2	19	<1.0	<1.0	2.4	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	2.5	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	12/12/2006	150 D2	24	<1.0	<1.0	2.6	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	27	<1.0	<1.0	5.4	<1.0	4.5	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	NA	0.017
	3/2/2007	180 D2	36	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	78	<5.0	<5.0	18	6.6	9.6	<100	<10	<5.0	NR	<5.0	<5.0	<5.0	0.014	0.057
	5/14/2007	200 D2	33	<1.0	<1.0	1.9	3.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	<5.0	<1.0	1.2	1.1	<1.0	1	1.3	16	1.2	1	9.1	4.8	6.9	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	0.012
	8/8/2007	140 D2	36	<0.50	<0.50	1.9	5.4	<0.20	<0.50	<0.50	<0.50	<1.0	<0.50	1.5	<2.0	<5.0	<2.5	<1.5	2	<2.0	<2.5	<1.5	35	<2.0	<3.0	2.2	<1.5	5.7	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.10 N1	0.012
	11/20/2007	190 D2	34	<0.50	0.58	1.4	5.4	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	1.6	<2.0	<5.0	<2.5	<1.5	0.96	<2.0	<2.5	<1.5	29	<2.0	<3.0	<1.5	<1.5	5	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/19/2008	100 D2	23 D2	<2.5	<5.0	<2.5	<5.0	<2.5	<2.5	<5.0	<2.5	<2.5	<2.5	<2.5	<5.0	<50	<2.5	<2.5	<5.0	<2.5	<2.5	<2.5	26 D2	<2.5	<2.5	<2.5	<2.5	<10	<25	NR	<2.5	<2.5	<2.5	<2.5	<2.5	<0.02	<0.02
	5/15/2008	130 D1	19 D1	<0.50	<2.0	<1.0	<2.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.1 D1	<2.0	<40	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	36 D1	<1.0	<1.0	<1.0	<1.0	<4.0	<10	NR	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<0.02
	8/6/2008	120 D2	23 D2	<1.0	<2.0	<1.0	2.9 D2	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.8 D2	<2.0	<40	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	70 D2	<1.0	<1.0	<1.0	<1.0	<4.0	<10	NR	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<0.02
	8/30/2010	380 D2	68 D2	<2.5	<5.0	<2.5	6.2 D2	<2.5	<2.5	<5.0	<2.5	<2.5	2.9 D2	<2.5	<5.0	<100	4.4 D2	3.7 D2	<2.5	2.6 D2	2.9 D2	2.5 D2	97 D2	5.0 D2	<2.5	31 D2	8.6 D2	19 D2	<25	NR	<2.5	<2.5	<2.5	<2.5	<2.5	0.025	0.025
	12/15/2010	210 D2	34 D2	<2.5	<5.0	<2.5	<5.0	<2.5	<2.5	<5.0	<2.5	<2.5	<2.5	<2.5	<5.0	<100	3.5 D2	3.3 D2	<2.5	2.7 D2	<2.5	3.1 D2	96 D2	<2.5	<2.5	13 D2	4.7 D2	12 D2	<25	NR	<2.5	<2.5	<2.5	<2.5	<2.5	0.059	0.059
	11/1/2012	46 D1	15 D1	<5.0	<5.0	<5.0	150 D1	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<10	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	74 D1	<5.0	<5.0	<5.0	<5.0	<20	<50	NR	<5.0	<5.0	<5.0	<5.0	<5.0	NA	<0.02
	5/8/2013	Free Product Dectected, Well Not Sampled																																			
	11/8/2013	Free Product Dectected, Well Not Sampled																																			
MW-8A	1/31/2005	190 D2	88 D2	<0.50	25	<1.0	<1.0	<0.50	<0.50	9.4	6.8	<1.0	13	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	0.22
	5/31/2005	130 D2	66 D2	<0.50	23 L2	<1.0 L2	<0.50 L2	0.59	<0.50	2.7	1.9	<1.0	5.4 L2	<0.50 L2	<2.0	<5.0	<2.5 L2	<1.5 L2	<0.50 L2	<2.0	<2.5 L2	<1.5 L2	<5.0	<2.0 L2	<3.0	<2.0	<1.5	<3.0 L2	<20	<3.0	<0.50 L2	<0.50	<1.5	<0.50	<1.5	0.018	0.18
	2/24/2006	90 D2	40	<0.50	13	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.6	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	0.036
	5/22/2006	70 D2	76	<0.50	24	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	10/5/2006	210 D2	83	<1.0	29	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.1	<1.0	1.2	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	0.018	0.13
	12/11/2006	370 D2	170 D2	<1.0	56	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.4	<1.0	2.2	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	NA	0.27
	2/26/2007	350 D2	150 D2	<10	48	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<30	<200 L1,V1	<20	<10	NR	<10	<10	<10	0.069 D1	0.30 D1
	5/21/2007	480 D2	160 D2	<10	43	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<30	<200	<20	<10	NR	<10	<10	<10	0.072	0.26 D1
	8/6/2007	320 D2	120	<0.50	44	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.8	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	11/16/2007	310 D2	150	<0.50	54	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	3.1	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	0.065
	2/26/2008	100	35	<0.50	10	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.7	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	<0.02	<0.02
	4/25/2008	170	44	<0.50	10	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.5	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.95	0.95 D2
	5/19/2008	770 D2	190 D2	<5.0	54 D2	<5.0	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<10	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<50	NR	<5.0	<5.0	<5.0	<5.0	<5.0	0.027	0.027
	8/13/2008	210 D2	63 D2	<1.0	23 D2	<1.0	<2.0	<1.0	<1.0	<2.0	<1.0	<1.0	2.7 D2	<1.0	<2.0	<40	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0	<10	NR	<1.0	<1.0	<1.0	<1.0	<1.0	0.69	0.69 D2
	8/29/2008	440 D2	130 D2	<5.0	59 D2	<5.0	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<10	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<50	NR	<5.0	<5.0	<5.0	<5.0	<5.0	NA	NA
	11/13/2008	700 D2	160 D2	<5.0	90 D2	<5.0	<10	<5.0	<5.0	<10	<5.0	<5.0	5.4 D2	<5.0	<10	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<50	NR	<5.0	<5.0	<5.0	<5.0	<5.0	0.4	0.40 D2
	4/28/2010	97	36	<0.50	17	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.3	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.19	0.19
	8/30/2010	77	26	<0.50	7.8	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.9	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/31/2012	21	9.2	<0.50	2.9	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	1.7	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/7/2013	9.7	3.9	<0.50	1.2	<0.50	<0.50	<0.50	<0.50	1.0	0.78	<0.50	5.5	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/15/2013	66 D2	27 D2	<1.0	23 D2	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	3.3 D2	<1.0	<2.0	<40	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0	<10	NR	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<0.02
MW-9A	1/31/2005	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	0.61	<0.50	<1.0	3.2	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<3.0	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	<0.010
	5/31/2005	<0.50	<0.50	<0.50	<0.50 L2	<1.0 L2	<0.50 L2	<0.50	<0.50	<0.50	<0.50	<1.0	1.0 L2	<0.50 L2	<2.0	<5.0	<2.5 L2	<1.5 L2	<0.50 L2	<2.0	<2.5 L2	<1.5 L2	<5.0	<2.0 L2	<3.0	<2.0	<1.5	<3.0 L2	<20	<3.0	<0.50 L2	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/23/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.7	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	5/16/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	1	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	<0.010
	10/5/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	12/11/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	NA	<0.0080
	2/21/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080

TETRA TECH, INC.

TABLE 2-7

SUMMARY OF VOCs (µg/L) AND CYANIDES (mg/L) HISTORICALLY DETECTED IN GROUNDWATER SINCE 1992

20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well Number	Date Sampled	PCE	TCE	1,1,1-TCA	1,1-DCE	1,1-DCA	cis-1,2-DCE	VC	BCM	BDCM	DBCM	Bromoform	Chloroform	Benzene	MTBE	2- Butanone	n-Butyl-benzene	sec-Butyl-benzene	CD	Ethylbenzene	Isopropyl-benzene	4-Isopropyl-toluene	Naphthalene	n-Propyl-benzene	Toluene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Xylenes (Tot)	Acetone	MC	1,1,2-TCA	1,1,1,2-Tetra-chloroethane	1,2-Dichloro-benzene	Chloro-benzene	1,4-Dichloro-benzene	Cyanide, Free*	Cyanide, Total**
		AWQS: 5	AWQS: 5	AWQS: 200	AWQS: 7	AWQS: NE	AWQS: 70	AWQS: 2	AWQS: NE	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 5	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 700	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 1,000	AWQS: NE	AWQS: NE	AWQS: 10,000	AWQS: NE	AWQS: NE	AWQS: 5	AWQS: NE	AWQS: 600	AWQS: NE	AWQS: 75	AWQS: 0.2	AWQS: NE
MW-9A (cont)	5/23/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.6**	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.025	<0.025
	8/2/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	**1.5**	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	11/19/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	**1.3**	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/20/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	**1.2**	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/15/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	**1.1**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/7/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	**2**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/11/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	**1.8**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/27/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	**1.6**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/26/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	**1.5**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/23/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/24/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	**3.0**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/11/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	**2.4**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
MW-10A	1/31/2005	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	**5.0**	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	<0.010
	5/26/2005	<0.50	<0.50	<0.50	<0.50 L2	<1.0 L2	<0.50 L2	<0.50	<0.50	<0.50	<0.50	<1.0	**3.6 L2**	<0.50 L2	<2.0	<5.0	<2.5 L2	<1.5 L2	<0.50 L2	<2.0	<2.5 L2	<1.5 L2	<5.0	<2.0 L2	<3.0	<2.0	<1.5	<3.0 L2	<20	<3.0	<0.50 L2	<0.50	<1.5	<0.50	<1.5	NA	<0.0050
	2/24/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	**3.7**	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	5/24/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	**4.4**	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	10/4/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**4**	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	12/11/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**5.2**	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	NA	<0.0080
	2/20/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**4.5**	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	5/23/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**7**	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.025	<0.025
	8/2/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	**6.3**	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	11/19/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	**6.4**	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/21/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	**6.9**	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/14/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	**6.5**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/6/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	**9**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/25/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	**5.8**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/23/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/24/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	**5.5**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/11/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-11A	5/26/2005	<0.50	<0.50	<0.50	<0.50 L2	<1.0 L2	<0.50 L2	<0.50	<0.50	**1.1**	**0.86**	<1.0	**5.9 L2**	<0.50 L2	<2.0	<5.0	<2.5 L2	<1.5 L2	<0.50 L2	<2.0	<2.5 L2	<1.5 L2	<5.0	<2.0 L2	<3.0	<2.0	<1.5	<3.0 L2	<20	<3.0	<0.50 L2	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/24/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	**4.5**	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	5/17/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	**4.7**	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	10/4/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**4.1**	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	12/1/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**5**	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	2/20/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**4**	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	5/22/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**3.7**	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20 L1	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	7/31/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	**4.1**	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	11/14/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	**3.2**	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/21/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	**3.1**	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/14/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	**2.5**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/6/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	**2.9**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/25/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	**2.5**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/23/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/25/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	**1.7**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/11/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-12A	4/6/2006	**3.8**	**1.8**	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	**1.0**	**0.51**	<1.0	**2.5**	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	**0.034**
	5/23/2006	**4.8**	**2.1**	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	**1.2**	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	10/5/2006	**3.6**	**1.4**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	12/8/2006	**3.4**	**1.3**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	NA	<0.0080
	2/27/2007	**3.4**	**1.2**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20 L1,V1	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	**0.0099**
	5/24/2007	**4**	**1.4**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.1**	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.025	<0.025
	8/2/2007	**4.1**	**1.4**	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	**0.88**	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	11/19/2007	**4.5**	**1.2**	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	**0.83**	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/25/2008	**2.8**	**1.2**	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	**0.88**	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/16/2008	**2.8**	**1**	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	**0.7**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	**0.043**	**0.043**
	8/8/2008	**2.5**	**1**	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	**0.71**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	**0.065**	**0.065**
	11/13/2008	**2.1**	**0.74**	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	**1.2**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/28/2010	**2.1**	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	**3.4**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/26/2010	**2.6**	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	**4.6**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	12/14/2010	**2.0**	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	**2.8**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/23/2012	**Well Obstructed, Well Not Sampled**																																			
	4/25/2013	**Well Obstructed, Well Not Sampled**																																			
	11/11/2013	**Well Obstructed, Well Not Sampled**																																			

TETRA TECH, INC.

TABLE 2-7

SUMMARY OF VOCs (µg/L) AND CYANIDES (mg/L) HISTORICALLY DETECTED IN GROUNDWATER SINCE 1992

20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well Number	Date Sampled	PCE	TCE	1,1,1-TCA	1,1-DCE	1,1-DCA	cis-1,2-DCE	VC	BCM	BDCM	DBCM	Bromoform	Chloroform	Benzene	MTBE	2- Butanone	n-Butyl-benzene	sec-Butyl-benzene	CD	Ethylbenzene	Isopropyl-benzene	4-Isopropyl-toluene	Naphthalene	n-Propyl-benzene	Toluene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Xylenes (Tot)	Acetone	MC	1,1,2-TCA	1,1,1,2-Tetra-chloroethane	1,2-Dichloro-benzene	Chloro-benzene	1,4-Dichloro-benzene	Cyanide, Free*	Cyanide, Total**
		AWQS: 5	AWQS: 5	AWQS: 200	AWQS: 7	AWQS: NE	AWQS: 70	AWQS: 2	AWQS: NE	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 5	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 700	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 1,000	AWQS: NE	AWQS: NE	AWQS: 10,000	AWQS: NE	AWQS: NE	AWQS: 5	AWQS: NE	AWQS: 600	AWQS: NE	AWQS: 75	AWQS: 0.2	AWQS: NE
MW-13A	4/11/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.0	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	5/24/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.4	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	10/4/2006	110 D2	19	<1.0	<1.0	2.4	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	3.3	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	12/11/2006	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	NA	<0.0080
	2/20/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	5/23/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.7	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.025	<0.025
	7/31/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.9	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	11/15/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.1	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/20/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.4	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/13/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.3	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/6/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.9	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/11/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.8	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/27/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.6	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/25/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.8	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/23/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/25/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	0.89	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/11/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	2.7	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
MW-14A	4/10/2006	47	0.94	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	2.7	3.7	1.0	3.2	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	0.19 D1
	5/17/2006	160 D2	3	<0.50	0.69	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.3	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.49	2.0 D2
	10/11/2006	94	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	0.2	0.5
	12/11/2006	57	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.6	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	NA	0.19
	2/22/2007	66	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.5	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	0.042	0.11
	5/24/2007	53	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.8	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	0.035	0.056
	8/2/2007	13	0.54	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.9	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	0.014
	11/19/2007	19	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.6	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	0.053
	2/25/2008	9.5	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.4	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	<0.02	<0.02
	5/16/2008	150	1.1	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.9	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.034	0.034
	8/12/2008	60	0.9	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.7	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.22	0.22
	8/27/2010	19	0.55	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.7	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.06	0.06
	10/31/2012	63 D2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	2.2 D2	<1.0	<2.0	<40	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0	<10	NR	<1.0	<1.0	<1.0	<1.0	<1.0	0.21 D2	0.21 D2
	5/8/2013	240 D2	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	5.6 D2	<5.0	<10	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<50	NR	<5.0	<5.0	<5.0	<5.0	<5.0	0.10	0.10
	11/19/2013	200 D2	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<5.0	<2.5	<2.5	3.2 D2	<2.5	<5.0	<100	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<10	<25	NR	<2.5	<2.5	<2.5	<2.5	<2.5	NA	<0.02
MW-15A	4/6/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.8	<0.50	<2.0	13	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	66	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	5/16/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.7	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	<0.010
	10/5/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.3	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	11/30/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.5	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	2/20/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.2	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	5/25/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.8	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	7/31/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.7	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	11/20/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.6	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/20/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.4	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/13/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/5/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.7	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/11/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	3	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/29/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.8	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/24/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	3.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/24/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	3.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/25/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	3.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/11/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	3.7	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NS	NS
MW-16A	4/24/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.3	2.3	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	4.0	69	9.7	NA	<0.02
	5/13/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.83	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/5/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.92	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/12/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.93	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/27/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/24/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.2	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/24/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.2	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/25/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	1.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/12/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	1.5	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NS	NS

TETRA TECH, INC.

TABLE 2-7

SUMMARY OF VOCs (µg/L) AND CYANIDES (mg/L) HISTORICALLY DETECTED IN GROUNDWATER SINCE 1992

20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well Number	Date Sampled	PCE	TCE	1,1,1-TCA	1,1-DCE	1,1-DCA	cis-1,2-DCE	VC	BCM	BDCM	DBCM	Bromoform	Chloroform	Benzene	MTBE	2- Butanone	n-Butyl-benzene	sec-Butyl-benzene	CD	Ethylbenzene	Isopropyl-benzene	4-Isopropyl-toluene	Naphthalene	n-Propyl-benzene	Toluene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Xylenes (Tot)	Acetone	MC	1,1,2-TCA	1,1,1,2-Tetra-chloroethane	1,2-Dichloro-benzene	Chloro-benzene	1,4-Dichloro-benzene	Cyanide, Free*	Cyanide, Total**
		AWQS: 5	AWQS: 5	AWQS: 200	AWQS: 7	AWQS: NE	AWQS: 70	AWQS: 2	AWQS: NE	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 5	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 700	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 1,000	AWQS: NE	AWQS: NE	AWQS: 10,000	AWQS: NE	AWQS: NE	AWQS: 5	AWQS: NE	AWQS: 600	AWQS: NE	AWQS: 75	AWQS: 0.2	AWQS: NE
MW-17A	12/6/2006	5	11	<1.0	3.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	12	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	1	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	NA	<0.052
	2/28/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	13	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20 L1,V1	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	5/23/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	15	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.025	0.027
	7/31/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	14	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	11/15/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	8.7	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/22/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	5.8	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/14/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	3.9	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/6/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	4.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/12/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	3	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/27/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/25/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.9	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/24/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	1.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA
	4/25/2013	<0.50	<0..50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/12/2013	<0.50	<0..50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	4.9	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NS	NS
MW-18A	12/4/2006	1.5	2.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.6	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	NA	<0.0080
	2/26/2007	3.6	5.9	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20 L1,V1	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	0.0093
	5/23/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.1	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.025	<0.025
	8/2/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.9	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	11/16/2007	<0.50	0.65	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.7	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/25/2008	2.2	3.8	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.6	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/16/2008	5.4	7.1	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/12/2008	6.6	10	<0.50	1.8	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.8	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/13/2008	<0.50	0.53	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.5	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/28/2010	13	14	<0.50	4.4	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.9	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/27/2010	9.3	9.7	<0.50	2.4	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.8	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/30/2012	16	20	<0.50	5.9	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	1.9	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA
	5/7/2013	4.8	5.8	<0.50	1.7	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	2.3	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/14/2013	3.6	3.9	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	1.7	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
MW-19A	12/6/2006	12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.8	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	3.1	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	NA	0.049
	2/20/2007	18	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	0.008	0.076
	5/23/2007	24	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.1	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	0.062	0.089
	8/6/2007	27	1	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.9	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.0069	0.11
	11/21/2007	27	0.98	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.4	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.054	0.11
	2/22/2008	17	0.53	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.8	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	<0.002	0.11
	5/19/2008	14	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.6	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/11/2008	15	0.97	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.049	0.049
	8/27/2010	17	0.9	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.8	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.026	0.026
	10/30/2012	17	0.89	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	1.2	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/7/2013	21	1.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	2.0	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/18/2013	19	0.73	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	0.99	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NS	NS
MW-20A	12/6/2006	1.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.8	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	NA	<0.0080
	2/21/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.7	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	5/23/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7.8	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.025	<0.025
	8/6/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	8.4	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	11/19/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	6.4	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/22/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	6.2	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/14/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	5.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/7/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	7.5	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/25/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	10	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/23/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/26/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	12	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/12/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.3	0.95	0.66	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NS	NS
MW-21A***	5/20/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.8	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	7/30/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.93	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	11/13/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/21/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.1	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/16/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5.5	1.6	3.8	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/15/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.91	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	6/12/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.94	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/8/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.5	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02

TETRA TECH, INC.

TABLE 2-7

SUMMARY OF VOCs (µg/L) AND CYANIDES (mg/L) HISTORICALLY DETECTED IN GROUNDWATER SINCE 1992

20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well Number	Date Sampled	PCE	TCE	1,1,1-TCA	1,1-DCE	1,1-DCA	cis-1,2-DCE	VC	BCM	BDCM	DBCM	Bromoform	Chloroform	Benzene	MTBE	2- Butanone	n-Butyl-benzene	sec-Butyl-benzene	CD	Ethylbenzene	Isopropyl-benzene	4-Isopropyl-toluene	Naphthalene	n-Propyl-benzene	Toluene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Xylenes (Tot)	Acetone	MC	1,1,2-TCA	1,1,1,2-Tetra-chloroethane	1,2-Dichloro-benzene	Chloro-benzene	1,4-Dichloro-benzene	Cyanide, Free*	Cyanide, Total**
		AWQS: 5	AWQS: 5	AWQS: 200	AWQS: 7	AWQS: NE	AWQS: 70	AWQS: 2	AWQS: NE	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 5	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 700	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 1,000	AWQS: NE	AWQS: NE	AWQS: 10,000	AWQS: NE	AWQS: NE	AWQS: 5	AWQS: NE	AWQS: 600	AWQS: NE	AWQS: 75	AWQS: 0.2	AWQS: NE
MW-21A***	11/12/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	**1.3**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
(cont)	4/28/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	**2.1**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/26/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	**2.5**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/25/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	**2.2**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/25/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	**2.3**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/12/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	**2.1**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
MW-22A	2/25/2011	**1,100 D2**	**11 D2**	<10	<20	<10	<20	<10	<10	<20	<10	<10	<10	<10	<20	<400	<10	<10	<10	<10	<10	**1.3 D2,E4**	**1.1 D2,E4**	<10	<10	<10	<10	<40	<100	NR	<10	<10	<10	<10	<10	**16**	**16**
	11/1/2012	**320 D2**	**7.5 D2**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<10	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<50	NR	<5.0	<5.0	<5.0	<5.0	<5.0	**0.19 D2**	**0.19 D2**
	5/8/2013	**320 D2**	**8.3 D2**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<10	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<50	NR	<5.0	<5.0	<5.0	<5.0	<5.0	**0.18**	**0.18**
	11/20/2013	**250 D2**	**6.0 D2**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<10	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<50	NR	<5.0	<5.0	<5.0	<5.0	<5.0	NA	<0.02
MW-25A	4/26/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	**1.4**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/24/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	**1.0**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/23/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/29/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	**1.6**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/20/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-26A	12/14/2010	**1.6**	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	**0.5**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/26/2012	**9.2**	**1.2**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	**0.50**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA
	5/2/2013	**11**	**1.3**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	**0.7**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/15/2013	**6.3**	**0.77**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	**0.53**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
MW-27A	12/13/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/24/2012	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA
	4/29/2013	**0.78**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	**0.66**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/14/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**1.1**	**1.7**	**1.9**	**0.78**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NS	NS
MW-101A	3/21/1996	**20**	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	NR	**4.2**	<0.50	<0.50	**4.7**	<0.50	NR	NR	NR	NR	NR	<0.50	NR	NR	NR	NR	<0.50	NR	NR	<1.5	NR	<5.0	<0.50	NR	<1.0	<0.50	<1.0	NA	NA
	10/4/1996	**5.2**	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NR	NR	NR	NR	NR	<0.50	NR	NR	NR	NR	<0.50	NR	NR	<1.5	NR	<5.0	<0.50	NR	<1.0	<0.50	<1.0	NA	NA
	6/11 & 6/25/2003	**4.3**	<0.5	<0.5	<1.0	<0.5	<0.50	<1.0	<0.50	<0.5	<0.50	<1.0	<1.0	<0.5	<1.0	<5.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.05	<0.05
	1/30/2002	**2.3**	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.5	<1.0	<5.0	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.05	<0.01
	6/9/2004	**0.97**	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.01	<0.01
	11/29/2004	**1.4**	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	<0.010
	6/1/2005	**0.52**	<0.50	<0.50	<0.50 L2	<1.0 L2	<0.50 L2	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50 L2	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50 L2	<2.0	<2.5	<1.5	**10**	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50 L2	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/23/2006	**1.5**	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	5/16/2006	**0.87**	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	<0.010
	10/6/2006	**2.3**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	12/12/2006	**5.5**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	NA	<0.0080
	2/19/2007	**3.9**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	5/22/2007	**2.5**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20 L1	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	7/31/2007	**2.1**	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	11/19/2007	**1.6**	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/26/2008	**1.6**	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/15/2008	**0.58**	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/7/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/12/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/27/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.5	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/26/2010	**1.0**	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/26/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA
	5/1/2013	**0.70**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	**0.87**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/14/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	**1.1**	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
MW-102A	11/14/1996	**78 D1/76 D**	<2.5/<0.5	<2.5/**0.6**	<2.5/<0.5	<2.5/<0.5	<2.5/<0.5	<5.0/<0.5	NR/NR	<2.5/<0.5	<2.5/<0.5	<2.5/<0.5	<2.5/<0.5	<2.5/<0.5	NR/NR	NR/NR	NR/NR	NR/NR	NR/NR	<2.5/<0.5	NR/NR	NR/NR	NR/NR	NR/NR	<2.5/<0.5	NR/NR	NR/NR	<7.5/<0.5	NR/NR	<25/<2.0	<2.5/<0.5	NR/NR	<5.0/<0.5	<2.5/<0.5	<5.0/<0.5	NA/NA	NA/NA
	6/16 & 6/25/2003	**62**	<0.5	<0.5	<1.0	<0.5	<0.50	<1.0	<0.5	<0.5	<0.50	<1.0	<1.0	<0.5	<1.0	<5.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<1.0 L2	<1.0	<0.50	<0.50	<0.50	<0.50	<0.05	**7.1**
	1/30/2002	**75**	<0.50	**0.92**	<1.0	**0.89**	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<1.0	<5.0	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	**11**	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	**1.66**	**2.42 D2**
	6/10/2004	**64**	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	**2.2**	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	**0.2/0.30**	**0.87 D2/0.78**
	11/23/2004	**14/19**	<0.50/<0.50	<0.50/<0.50	<0.50/<0.50	<1.0/<1.0	<0.50/<0.50	<0.50/<0.50	<0.50/<0.50	<0.50/<0.50	<0.50/<0.50	<1.0/<1.0	<0.50/<0.50	<0.50/<0.50	<2.0/<2.0	<5.0/<5.0	<2.5/<2.5	<1.5/<1.5	<0.50/<0.50	<2.0/<2.0	<2.5/<2.5	<1.5/<1.5	<5.0/<5.0	<2.0/<2.0	<3.0/<3.0	<2.0/<2.0	<1.5/<1.5	<3.0/<3.0	<20/<20	<3.0/<3.0	<0.50/<0.50	<0.50/<0.50	<1.5/<1.5	<0.50/<0.50	<1.5/<1.5	**0.73/1.6**	**2.4 D2/2.6 D2**
	2/21/2006	**69 D2**	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	**2.9**	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	**0.33**	**10 D2**
	5/18/2006	**54**	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	**1.3**	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	**1.3 D2**	**9.2 D2**
	10/10/2006	**35**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	**1.2**	**5.7 D2**
	12/12/2006	**31**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	NA	**5.6 D2**
	2/21/2007	**33**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	**2.5 D2**	**7.0 D2**
	5/15/2007	**34**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	**3.2**	**5.8 D2**
	8/8/2007	**34**	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	**1.2**	**3.6 D2**
	11/21/2007	**29**	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	**0.79**	**2.4 D2**
	2/28/2008	**12**	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	**2.2**	**2.4**	<0.50	**1.6**	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	**1.2 D2**	**3.6 D2**

TABLE 2-7

SUMMARY OF VOCs (µg/L) AND CYANIDES (mg/L) HISTORICALLY DETECTED IN GROUNDWATER SINCE 1992
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well Number	Date Sampled	PCE	TCE	1,1,1-TCA	1,1-DCE	1,1-DCA	cis-1,2-DCE	VC	BCM	BDCM	DBCM	Bromoform	Chloroform	Benzene	MTBE	2- Butanone	n-Butyl-benzene	sec-Butyl-benzene	CD	Ethylbenzene	Isopropyl-benzene	4-Isopropyl-toluene	Naphthalene	n-Propyl-benzene	Toluene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Xylenes (Tot)	Acetone	MC	1,1,2-TCA	1,1,1,2-Tetra-chloroethane	1,2-Dichloro-benzene	Chloro-benzene	1,4-Dichloro-benzene	Cyanide, Free*	Cyanide, Total**
		AWQS: 5	AWQS: 5	AWQS: 200	AWQS: 7	AWQS: NE	AWQS: 70	AWQS: 2	AWQS: NE	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 5	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 700	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 1,000	AWQS: NE	AWQS: NE	AWQS: 10,000	AWQS: NE	AWQS: NE	AWQS: 5	AWQS: NE	AWQS: 600	AWQS: NE	AWQS: 75	AWQS: 0.2	AWQS: NE
MW-102A	5/22/2008	14	0.91	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	3.6	4.7	1.1	2.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.21	0.32 D2
(cont)	8/12/2008	17	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	1.3	1.2	<0.50	1.5	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	6	6.0 D2
	8/31/2010	11	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	2.2	2.7	0.95	1.9	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.81	0.81
	12/14/2010	6.8	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	1.3	1.4	<0.50	1.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/30/2012	11	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	3.6	8.4	0.85	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.76 D2	0.76 D2
	5/2/2013	4.9	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.9	4.4	1.9	3.8	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.24	0.24
	11/20/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
PZ-2A[4]	8/11/2008	30	11	<0.50	5.5	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.8	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.036	0.036
DMW-6[1]	2/24/2006	<0.50	<0.50	<0.50	<1.0	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	5/17/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	10/3/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	11/29/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	2/19/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	5/14/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	8/1/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.83	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	11/14/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	0.68	0.56	<1.0	1.2	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/19/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.95	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/13/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.7	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/4/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.79	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/23/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/26/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/20/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
DMW-10[1]	2/24/2006	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	5/17/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	10/3/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	11/29/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	2/19/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	5/14/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	8/1/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	11/14/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/19/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/13/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/4/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/23/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/26/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/20/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
DMW-11[1]	2/24/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	5/17/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	10/3/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	11/29/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	2/19/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	5/14/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	8/1/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.63	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	11/14/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/19/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/13/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/4/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.75	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/10/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/26/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/23/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/26/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/20/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NS	NS
DMW-16[1]	6/9/2004	210 D2	13	<0.50	0.84	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.95	0.91	<2.0	7.5	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	49	2.1	<3.0	19	5.3	10	25	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.44	5.3 D2
	11/22/2004	49 D1	21	<0.50	2.1	2.1	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.83	2.1	<2.0	18	<2.5	1.9	<0.50	7.3	2.5	1.9	89 D2	3.7	<3.0	31	8.9	20	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.18	2.4 D2
DMW-17[1]	6/9/2004	85 D2	7.5	<0.50	<0.50	1.3	<0.50	1.1	<0.50	<0.50	<0.50	<1.0	0.72	2.1	<2.0	<5.0	26	17	<0.50	15	8.8	15	NS	16	<3.0	78	21	24	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	2.6 D2
	11/22/2004	40	5.9	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	2.5	<2.0	17	<2.5	1.7	7.4	9.4	2.8	1.5	97 D2	3.9	<3.0	21	4.8	15	29	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.027	1.8 D2
DMW-18[1]	6/9/2004	28	10	<0.50	0.53	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.93	0.84	<2.0	<5.0	<2.5	<1.5	<0.50	3.3	<2.5	<1.5	21	<2.0	<3.0	9.2	1.7	5.0	21	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.25	1.8 D2
	6/3/2005	48 D1	9.7	<0.50	<0.50	<1.0	3.5	<0.50	<0.50	<0.50	<0.50	<1.0	0.85	0.61	<2.0	38	<2.5	<1.5	<0.50	4.3	<2.5	<1.5	29	2.0	<3.0	9.4	<1.5	5.3	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.074	0.62 D2
DMW-25[1]	6/3/2005	5.6	0.56	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/24/2006	9.1	0.90	<0.50	<1.0	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	5/17/2006	11	1.2	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	10/3/2006	18	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.4	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	11/29/2006	20	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080

TABLE 2-7

SUMMARY OF VOCs (µg/L) AND CYANIDES (mg/L) HISTORICALLY DETECTED IN GROUNDWATER SINCE 1992

20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well Number	Date Sampled	PCE	TCE	1,1,1-TCA	1,1-DCE	1,1-DCA	cis-1,2-DCE	VC	BCM	BDCM	DBCM	Bromoform	Chloroform	Benzene	MTBE	2- Butanone	n-Butyl-benzene	sec-Butyl-benzene	CD	Ethylbenzene	Isopropyl-benzene	4-Isopropyl-toluene	Naphthalene	n-Propyl-benzene	Toluene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Xylenes (Tot)	Acetone	MC	1,1,2-TCA	1,1,1,2-Tetra-chloroethane	1,2-Dichloro-benzene	Chloro-benzene	1,4-Dichloro-benzene	Cyanide, Free*	Cyanide, Total**
		AWQS: 5	AWQS: 5	AWQS: 200	AWQS: 7	AWQS: NE	AWQS: 70	AWQS: 2	AWQS: NE	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 5	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 700	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 1,000	AWQS: NE	AWQS: NE	AWQS: 10,000	AWQS: NE	AWQS: NE	AWQS: 5	AWQS: NE	AWQS: 600	AWQS: NE	AWQS: 75	AWQS: 0.2	AWQS: NE
DMW-25[1]	2/19/2007	28	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.7	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
(cont)	5/14/2007	26	1.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.1	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	8/1/2007	24	1.3	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.2	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	11/14/2007	15	0.78	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.9	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/19/2008	11	0.55	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	4.2	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/13/2008	14	0.56	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.8	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/4/2008	17	1.1	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.9	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/23/2010	12	1.6	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/26/2013	5.4	0.72	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/20/2013	0.70	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	0.85	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
DEW-19[1]	2/24/2006	<0.50	<0.50	<0.50	<0.50	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	5/17/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	10/3/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.9	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	11/29/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.4	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	2/19/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	5/14/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.4	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	8/1/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	3.7	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	11/14/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/19/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/13/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/4/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/23/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/26/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/20/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
B-Zone Groundwater Monitoring and Extraction Wells																																					
MW-8B	12/5/2006	910 D2	290 D2	<1.0	140 D2	3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7.3	<1.0	4.3	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	5.2	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	NA	5.8 D2
	2/26/2007	1,000 D2	320 D2	<10	140 D2	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<30	<200 L1,V1	<20	<10	NR	<10	<10	<10	0.21	3.3 D2
	5/21/2007	950 D2	350 D2	<10	19	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<30	<200 L1	<20	<10	NR	<10	<10	<10	1.7 D2	2.2 D2
	8/6/2007	1,200 D2	320 D2	<0.50	28	2.7	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	7.5	1.2	9.1	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.864	1.5 D2
	11/16/2007	870 D2	260 D2	<0.50	110	2.3	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	6.5	1.1	6.4	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.096	1.2 D2
	2/26/2008	750 D2	220 D2	<5.0	26 D2	<5.0	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<10	<100	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<50	NR	<5.0	<5.0	<5.0	<5.0	<5.0	0.88 D2	1.5 D2
	4/25/2008	770 D2	180 D2	<5.0	42 D2	<5.0	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<10	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<50	NR	<5.0	<5.0	<5.0	<5.0	<5.0	0.042	0.042
	5/20/2008	570 D2	140 D2	<5.0	23 D2	<5.0	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<10	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<50	NR	<5.0	<5.0	<5.0	<5.0	<5.0	1	1.0 D2
	8/13/2008	1,300 D2	340 D2	<5.0	76 D2	<5.0	<10	<5.0	<5.0	<10	<5.0	<5.0	11 D2	<5.0	<10	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<50	NR	<5.0	<5.0	<5.0	<5.0	<5.0	0.79	0.79 D2
	8/29/2008	500 D2	130 D2	<5.0	42 D2	<5.0	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<10	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<50	NR	<5.0	<5.0	<5.0	<5.0	<5.0	NA	NA
	11/13/2008	330 D2	86 D2	<5.0	35 D2	<5.0	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<10	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<50	NR	<5.0	<5.0	<5.0	<5.0	<5.0	0.23	0.23 D2
	4/28/2010	78	26	<0.50	11	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	4.4	<0.50	2.1	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.032	0.032
	8/30/2010	44	15	<0.50	2.9	<0.50	<1.0	<0.50	<0.50	3.4	3.4	1.3	5.9	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.85	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/31/2012	14	5.8	<0.50	2.1	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	5.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/7/2013	13	5.0	<0.50	1.6	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	6.7	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/15/2013	11	3.9	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.1	1.4	5.0	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
MW-18B	12/5/2006	<1.0	31	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.1	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	25	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	NA	<0.0080
	2/26/2007	<1.0	29	<1.0	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20 L1,V1	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	5/22/2007	1.5	45	<1.0	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	8/2/2007	0.67	34	<0.50	0.68	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.4	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	11/16/2007	1.1	100	<0.50	1.6	<1.0	<0.50	<0.50	<0.50	0.73	0.53	<1.0	1.8	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	0.01
	2/25/2008	8.9 D2	210 D2	<2.5	<5.0	<2.5	<5.0	<2.5	<2.5	<5.0	<2.5	<2.5	<2.5	<2.5	<5.0	<50	<2.5	<2.5	<5.0	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<10	<25	NR	<2.5	<2.5	<2.5	<2.5	<2.5	NA	<0.02
	5/20/2008	<0.50	200 D2	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/12/2008	2.6 D2	71 D2	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<40	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0	<10	NR	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<0.02
	1/21/2011[2]	<2.5	140 D2	<2.5	<5.0	<2.5	<5.0	<2.5	<2.5	<5.0	<2.5	<2.5	<2.5	<2.5	<5.0	<100	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<12.5	<10	<25	NR	<2.5	<2.5	<2.5	<2.5	<2.5	NA	<0.02
	11/1/2012	560 D2	150 D2	<10	38 D2	<10	<10	<10	<10	<20	<10	<10	<10	<10	<20	<400	<10	<10	<10	<10	<10	<10	<10	<10	<10	<2.5	<10	<40	<100	NR	<10	<10	<10	<10	<10	NA	NA
	5/8/2013	410 D2	71 D2	<10	24 D2	<10	<10	<10	<10	<20	<10	<10	<10	<10	<20	<400	<10	<10	<10	<10	<10	<10	<10	<10	<10	<2.5	<10	<40	<100	NR	<10	<10	<10	<10	<10	0.39	0.39 D2
	11/20/2013	620 D2	130 D2	<10	30 D2	<10	<10	<10	<10	<20	<10	<10	<10	<10	<20	<400	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<40	<100	NR	<10	<10	<10	<10	<10	0.15	0.15
MW-21B***	5/20/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.1	4.6	<1.0	5	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	7/30/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	3.1	3.2	<1.0	3.7	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	11/13/2007	<0.50	0.62	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	4	4.6	1.3	4.1	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/21/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	2.4	2.6	0.56	2.8	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/16/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	2.7	2.8	0.58	2.7	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/15/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	2.2	1.5	<0.50	2.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	6/12/2008	<0.50	0.59	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	1.8	0.66	<0.50	2.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/8/2008	<0.50	3.3	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	1.5	<0.50	<0.50	2.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02

TETRA TECH, INC.

TABLE 2-7

SUMMARY OF VOCs (µg/L) AND CYANIDES (mg/L) HISTORICALLY DETECTED IN GROUNDWATER SINCE 1992
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well Number	Date Sampled	PCE	TCE	1,1,1-TCA	1,1-DCE	1,1-DCA	cis-1,2-DCE	VC	BCM	BDCM	DBCM	Bromoform	Chloroform	Benzene	MTBE	2- Butanone	n-Butyl-benzene	sec-Butyl-benzene	CD	Ethylbenzene	Isopropyl-benzene	4-Isopropyl-toluene	Naphthalene	n-Propyl-benzene	Toluene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Xylenes (Tot)	Acetone	MC	1,1,2-TCA	1,1,1,2-Tetra-chloroethane	1,2-Dichloro-benzene	Chloro-benzene	1,4-Dichloro-benzene	Cyanide, Free*	Cyanide, Total**
		AWQS: 5	AWQS: 5	AWQS: 200	AWQS: 7	AWQS: NE	AWQS: 70	AWQS: 2	AWQS: NE	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 5	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 700	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 1,000	AWQS: NE	AWQS: NE	AWQS: 10,000	AWQS: NE	AWQS: NE	AWQS: 5	AWQS: NE	AWQS: 600	AWQS: NE	AWQS: 75	AWQS: 0.2	AWQS: NE
MW-21B*** (cont)	11/12/2008	<0.50	6	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/28/2010	<0.50	16	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.62	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/26/2010	<0.50	23	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.0	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.093	0.093
	1/21/2011[2]	<0.50	6	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.9	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/30/2012	<0.50	36	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/7/2013	0.75	29	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.70	<0.50	1.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/18/2013	<0.50	31	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.87	0.74	1.0	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
MW-22B	11/14/2007	280 D2	6.2	<0.50	3.2	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	9.9	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	41	<3.0	<0.50	<0.50	<1.5	1.0	<1.5	0.042	0.13
	2/26/2008	65	1.7	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	1.3	<0.50	0.53	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	<0.02	<0.02
	4/25/2008	400	7.3	<2.5	<5.0	<2.5	<5.0	<2.5	<2.5	<5.0	<2.5	<2.5	<2.5	<2.5	<5.0	<100	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<10	<25	NR	<2.5	<2.5	<2.5	<2.5	<2.5	0.58	0.58 D2
	5/19/2008	390 D2	7.2 D2	<5.0	<10	<5.0	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<10	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<50	NR	<5.0	<5.0	<5.0	<5.0	<5.0	0.15	0.15
	8/13/2008	1,200 D2	16 D2	<5.0	<10	<5.0	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<10	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<50	NR	<5.0	<5.0	<5.0	<5.0	<5.0	4.1	4.1 D2
	8/29/2008	650 D2	12 D2	<5.0	<10	<5.0	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<10	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<50	NR	<5.0	<5.0	<5.0	<5.0	<5.0	0.76	0.76 D2
	8/30/2010	63	3.5	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	2.1	<0.50	0.80	5.5	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.15	0.15
	12/15/2010	18	1.3	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.5	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	9.7	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.19	0.19
	2/25/2011	150 D1	3.8 D1,E4	<5.0	<10	<5.0	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<10	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	0.51 D1,E4	<5.0	<5.0	<5.0	<5.0	<20	<50	NR	<5.0	<5.0	<5.0	<5.0	<5.0	2.2	2.2
	11/1/2012	25	2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	0.68	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.24 D2	0.24 D2
	5/8/2013	22	1.8	<0.50	0.55	<0.50	<0.50	<0.50	<0.50	<1.0	0.56	<0.50	0.87	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.12	0.12
	11/19/2013	31	1.9	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.4	0.81	0.79	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.087	0.087
MW-23B	11/29/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.86	<0.50	<2.0	8.7 L1	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	0.99	<1.5	NA	<0.010
	2/20/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.69	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	<0.02	<0.02
	5/14/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.67	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/6/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.98	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/11/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.9	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/27/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.95	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/25/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	1.9	2.0	0.64	3.0	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/23/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/30/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.65	<0.50	<0.50	<2.0	21	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/12/2013	0.53	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.74	0.50	0.75	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NS	NS
MW-24B	1/31/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.1	<0.50	<1.0	NR	<0.50	<0.50	NR	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	NR	NR	<0.50	<0.50	<0.50	4.6	<0.50	NA	<0.02
	2/22/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.6	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	0.87	<0.50	NA	<0.02
	5/16/2008	0.64	2.3	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.96	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/7/2008	<0.50	2.4	<0.50	2.7	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.6	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	1.2	1.2 D2
	11/12/2008	0.52	1.7	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.5	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	1.1 D2
	4/28/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.64	0.64
	8/26/2012	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	1.7	2.1	0.88	3.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.24	0.24
	10/25/2012	<0.50	0.97	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	0.78	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.16	0.16
	5/1/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	1.5	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	13	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.075	0.075
	11/13/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	1.0	0.83	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	<0.02	<0.02
MW-25B	4/27/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	0.72	<0.50	1.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/24/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	0.70	<0.50	1.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/23/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/29/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.75	0.50	1.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/13/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-26B	12/13/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	0.82	<0.50	0.6	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/24/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.55	<1.0	<0.50	0.78	0.90	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA
	4/30/2013	1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.77	<1.0	0.75	0.91	1.2	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/12/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	2.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
MW-27B	12/13/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<1.0	<0.50	<1.0	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/23/2012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/29/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	1.3	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/12/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-28B	4/24/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.69	0.55	1.3	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.9	<0.50	<0.50	<2.0	17	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/13/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.80	0.51	1.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.79	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
MW-29B	4/24/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.73	0.58	1.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	<0.50	<2.0	16	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/13/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.82	0.65	0.74	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
MW-30B	6/6/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.69	<0.50	2.3	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	22	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/13/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	1.8	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
MW-102B1	11/14/1996	38 D1	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	NR	<1.0	<1.0	<1.0	<1.0	<1.0	NR	NR	NR	NR	NR	<1.0	NR	NR	NR	NR	<1.0	NR	NR	<3.0	NR	<10	<1.0	NR	<2.0	<1.0	<2.0	NA	NA
	6/16 & 6/25/2003	410 D2	0.78	3	2.0 L2	8.2	<0.50	<1.0	<0.50	<0.5	<0.50	<1.0	<1.0	<0.50	<1.0	<5.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<1.0 L2	<1.0	<0.50	<0.50	<0.50	<0.50	<0.05	12
	1/30/2002	320 D2	12	6.2	1.6 L1	7.0	<0.50	<0.50	<0.50	7.3	6.8	<1.0	6.7	0.79	<1.0	<5.0	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	0.055	0.022
	6/8/2004	200 D2	7.8	<0.50	0.81	4.8	0.61	<0.50	<0.50	<0.50	<0.50	<1.0	2.7	1.6	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	<0.010

TABLE 2-7

SUMMARY OF VOCs (µg/L) AND CYANIDES (mg/L) HISTORICALLY DETECTED IN GROUNDWATER SINCE 1992

20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well Number	Date Sampled	PCE	TCE	1,1,1-TCA	1,1-DCE	1,1-DCA	cis-1,2-DCE	VC	BCM	BDCM	DBCM	Bromoform	Chloroform	Benzene	MTBE	2- Butanone	n-Butyl-benzene	sec-Butyl-benzene	CD	Ethylbenzene	Isopropyl-benzene	4-Isopropyl-toluene	Naphthalene	n-Propyl-benzene	Toluene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Xylenes (Tot)	Acetone	MC	1,1,2-TCA	1,1,1,2-Tetra-chloroethane	1,2-Dichloro-benzene	Chloro-benzene	1,4-Dichloro-benzene	Cyanide, Free*	Cyanide, Total**
		AWQS: 5	AWQS: 5	AWQS: 200	AWQS: 7	AWQS: NE	AWQS: 70	AWQS: 2	AWQS: NE	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 5	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 700	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 1,000	AWQS: NE	AWQS: NE	AWQS: 10,000	AWQS: NE	AWQS: NE	AWQS: 5	AWQS: NE	AWQS: 600	AWQS: NE	AWQS: 75	AWQS: 0.2	AWQS: NE
MW-102B1	11/23/2004	1.3	0.79	<0.50	0.61	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	0.053
(cont)	6/1/2005	1.6	0.57	<0.50	<0.50 L2	<1.0 L2	<0.50 L2	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50 L2	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50 L2	<0.50	<1.5	<0.50	<1.5	<0.010	0.019
	2/21/2006	0.90	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	0.029
	5/26/2006	4.2	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	0.024
	10/10/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	0.008	0.02
	12/7/2006	8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.8	5.8	1.7	3.6	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	NA	0.01
	2/23/2007	16 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<25 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<25 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<15.0 D1	<100 D1	<10 D1	<5.0 D1	NR	<5.0 D1	<5.0 D1	<5.0 D1	<0.0080	0.015
	5/24/2007	24 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<25 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<25 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<15.0 D1	<100 D1	<10 D1	<5.0 D1	NR	<5.0 D1	<5.0 D1	<5.0 D1	<0.025	<0.025
	8/7/2007	10	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	4	3.2	<1.0	5.8	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	0.013
	11/21/2007	21	0.55	<0.50	<0.50	<1.0	<0.50	<0.50	1.6	0.6	0.65	<1.0	4.6	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/28/2008	16	1.3	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	3.9	4.6	0.85	3.8	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/22/2008	16	1.8	<0.50	<1.0	<0.50	<1.0	<0.50	0.74	1.5	2	<0.50	2.2	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/12/2008	5.8	0.55	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	4.7	4.1	1.1	5.3	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/14/2008	8.6	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	1.5	1.3	1.6	0.64	4.3	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/29/2010	9.2	0.57	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	7.2	7.7	2.1	6.5	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/30/2010	14	0.81	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	3.7	3.4	1.1	5.3	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	12/14/2010	7.2	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	2.1	2.3	0.8	2.3	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/30/2012	9.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.4	6.4	0.84	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA
	5/2/2013	7.2	0.54	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.5	1.3	0.65	1.7	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/12/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-102B2	11/14/1996	520 D1/470 D	<25/<0.5	<25/2.0	<25/<0.5	<25/0.9	<25/<0.5	<50/<0.5	NR/NR	<25/9.0	<25/14	<25/2.2	<25/11	<25<0.5	NR/NR	NR/NR	NR/NR	NR/NR	NR/NR	<25<0.5	NR/NR	NR/NR	NR/NR	NR/NR	<25<0.5	NR/NR	NR/NR	<75/<0.5	NR/NR	<250/<2.0	<25<0.5	NR/NR	<50/<0.5	<25/<0.5	<50/<0.5	NA/NA	NA/NA
	6/16 & 6/26/2003	56	<0.5	1.2	<1.0 L2	1.3	<0.50	<1.0	<0.50	0.81	0.62	<1.0	1.3	3.1	<1.0	<5.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	11	<1.0 L2	<1.0	<0.50	<0.50	<0.50	<0.50	<0.05	<0.05
	1/30/2002	220 D2	0.59	6.1	1.4 L1	5.3	<0.50	<0.50	<0.50	5.0	4.3	<1.0	5.9	2.3	<1.0	<5.0	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	18	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	0.104	<0.01
	6/8/2004	71	1.6	<0.50	0.65	3.8	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	3	3.4	2.2	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	<0.010
	11/23/2004	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	<0.010
	6/1/2005	<0.5	<0.5	<0.5	<0.50 L2	<1.0 L2	<0.50 L2,N1	<1.0	<0.50	<0.50	<0.50	<1.0	<0.50 L2	<0.50	<2.0	<5.0	<2.5 L2	<1.5 L2	<0.50 L2	<2.0	<2.5	<1.5 L2	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20 L2	<3.0	<0.50 L2	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/21/2006	41 D1	1	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2	<0.50	<2.0	<5.0	<2.5	<1.5	0.8	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	5/26/2006	36	0.89	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.2	<0.50	<2.0	<5.0	<2.5	<1.5	0.84	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	10/12/2006	4.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	6.3	5.0	1.4	5.9	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	12/7/2006	2.9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	1.2	<1.0	2.6	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	NA	<0.0080
	2/23/2007	11 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<25 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<25 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<15.0 D1	<100 D1	<10 D1	<5.0 D1	NR	<5.0 D1	<5.0 D1	<5.0 D1	<0.0080	0.0085
	5/24/2007	13 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<25 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<25 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<15.0 D1	<100 D1	<10 D1	<5.0 D1	NR	<5.0 D1	<5.0 D1	<5.0 D1	<0.025	<0.025
	8/7/2007	7.3	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	5.3	4	<1.0	7.7	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	11/21/2007	10	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	2	0.59	0.5	<1.0	6.4	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	3.4	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/28/2008	9.3	0.7	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	4.6	5.3	1	4.5	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/21/2008	10	1.4	<0.50	<1.0	<0.50	<1.0	<0.50	0.66	3.4	4.4	1	3.6	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/12/2008	2.9	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	2.3	1.8	<0.50	2.7	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/30/2010	11	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	2.5	2.5	0.80	2.7	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	12/14/2010	6.4	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	2.2	2.2	<0.50	2.6	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	6.1	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/30/2012	14	0.79	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.9	5.2	0.91	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	6.1	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA
	5/2/2013	11	0.51	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	6.1	5.6	2.0	6.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/18/2013	12	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.4	5.4	3.2	3.8	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
MW-103B	2/11/2004	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	NR	<2.0	NS	<1.5	NS	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	NR	<1.5	<0.50	<1.5	NA	<0.010
	11/24/2004	0.52	<0.50	<0.5	<1.0	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	<0.010
	6/1/2005	<0.50	<0.50	<0.50	<0.50 L2	<1.0 L2	<0.50 L2,N1	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50 L2	<0.50	<2.0	<5.0	<2.5 L2	<1.5 L2	<0.50 L2	<2.0	<2.5	<1.5 L2	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20 L2	<3.0	<0.50 L2	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/21/2006	1.1	<0.50	<0.50	<0.50	<1.0	<0.50	0.57	0.64	<0.50	<0.50	<1.0	2.2	<0.50	<2.0	<5.0	<2.5	<1.5	0.59	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	5/25/2006	1.3	<0.50	<0.50	<0.50	<1.0	<0.50	0.61	0.50	<0.50	<0.50	<1.0	1.5	<0.50	<2.0	<5.0	<2.5	<1.5	0.66	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	21	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	0.015
	10/12/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.6	4.3	1.3	2.8	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	12/7/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5	5.7	1.8	4.2	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	NA	<0.0080
	2/23/2007	<5.0 D1,N1	<5.0 D1,N1	<5.0 D1,N1	<5.0 D1,N1	<5.0 D1,N1	<5.0 D1,N1	<5.0 D1,N1	<5.0 D1,N1	<5.0 D1,N1	<5.0 D1,N1	<5.0 D1,N1	5.5 D1,N1	<5.0 D1,N1	<5.0 D1,N1	<25 D1,N1	<5.0 D1,N1	<5.0 D1,N1	<5.0 D1,N1	<5.0 D1,N1	<5.0 D1,N1	<5.0 D1,N1	<25 D1,N1	<5.0 D1,N1	<5.0 D1,N1	<5.0 D1,N1	<5.0 D1,N1	<15.0 D1,N1	<100 D1,N1	<10 D1,N1	<5.0 D1,N1	NR	<5.0 D1,N1	<5.0 D1,N1	<5.0 D1,N1	<0.0080	<0.0080
	3/9/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	NA	NA
	5/22/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	8/7/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	4.9	3.8	<1.0	5.5	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	11/20/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	0.73	1.9	1.9	<1.0	3.6	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/27/2008	20	5.2	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	1.1	1.1	<0.50	1.6	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/22/2008	10	1.7	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	4.3	5.7	1.3	3	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	1.9	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	8.6	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.18	0.18
	8/12/2008	3.4	0.79	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	11	11	2.9	11	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/31/2010	9.8	0.84	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	1.5	1.1	<0.50	2.3	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	12/14/2010	0.63	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	1.2	1.3	<0.50	1.3	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/26/2012	1.6	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	2.5	7.3	0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/1/2013	1.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.0	2.0	0.76	1.6	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	16	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/18/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

TETRA TECH, INC.

TABLE 2-7

SUMMARY OF VOCs (µg/L) AND CYANIDES (mg/L) HISTORICALLY DETECTED IN GROUNDWATER SINCE 1992
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well Number	Date Sampled	PCE	TCE	1,1,1-TCA	1,1-DCE	1,1-DCA	cis-1,2-DCE	VC	BCM	BDCM	DBCM	Bromoform	Chloroform	Benzene	MTBE	2- Butanone	n-Butyl-benzene	sec-Butyl-benzene	CD	Ethylbenzene	Isopropyl-benzene	4-Isopropyl-toluene	Naphthalene	n-Propyl-benzene	Toluene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Xylenes (Tot)	Acetone	MC	1,1,2-TCA	1,1,1,2-Tetra-chloroethane	1,2-Dichloro-benzene	Chloro-benzene	1,4-Dichloro-benzene	Cyanide, Free*	Cyanide, Total**
		AWQS: 5	AWQS: 5	AWQS: 200	AWQS: 7	AWQS: NE	AWQS: 70	AWQS: 2	AWQS: NE	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 5	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 700	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 1,000	AWQS: NE	AWQS: NE	AWQS: 10,000	AWQS: NE	AWQS: NE	AWQS: 5	AWQS: NE	AWQS: 600	AWQS: NE	AWQS: 75	AWQS: 0.2	AWQS: NE
MW-104B	12/6/2004	<0.50	<0.50	<0.50	<1.0	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	6/2/2005	1.9	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/22/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5 L2	<1.5 L2	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	5/23/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	10/11/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	Nr	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<1.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	12/8/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	NA	<0.0080
	2/27/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20 L1,V1	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	5/21/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20 L1	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	8/8/2007	1.6	0.73	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	1.3	1.2	<1.0	1.5	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	11/15/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	0.65	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/20/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	0.57	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/14/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/6/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/24/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	1.1	<0.50	1.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	12/14/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/23/2012	<0.50	0.68	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	1.4	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA
	4/30/2013	1.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.58	<0.50	0.52	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/14/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.91	1.1	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
PZ-2B[3]	8/11/2008	460 D2	140 D2	<2.5	52 D2	<2.5	<5.0	<2.5	<2.5	<5.0	<2.5	<2.5	18 D2	<2.5	<5.0	<100	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<10	<25	NR	<2.5	<2.5	<2.5	<2.5	<2.5	0.49	0.49 D2
EW-1[1]	2/1/2008	1,000 D2	98 D2	<5.0	32 D2	<5.0	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<10	NR	<5.0	<5.0	NR	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	NR	NR	<5.0	<5.0	<5.0	<5.0	<5.0	NA	<0.02
	2/26/2008	2,100 D2	110 D2	<10	53 D2	<10	<20	<10	<10	<20	<10	<10	<10	<10	<20	<200	<10	<10	<20	<10	<10	<10	<10	<10	<10	<10	<10	<40	<100	NR	<10	<10	<10	<10	<10	NA	<0.02
	4/25/2008	450 D2	150 D2	<2.5	28 D2	<2.5	<5.0	<2.5	<2.5	<5.0	<2.5	<2.5	<2.5	<2.5	<5.0	<100	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<10	<25	NR	<2.5	<2.5	<2.5	<2.5	<2.5	0.096	0.096
	5/20/2008	410 D2	130 D2	<2.5	31 D2	<2.5	<5.0	<2.5	<2.5	<5.0	<2.5	<2.5	<2.5	<2.5	<5.0	<100	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<10	<25	NR	<2.5	<2.5	<2.5	<2.5	<2.5	0.077	0.077
	8/13/2008	800 D2	240 D2	<2.5	61 D2	<2.5	<5.0	<2.5	<2.5	<5.0	<2.5	<2.5	<2.5	<2.5	6.1 D2	<100	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<10	<25	NR	<2.5	<2.5	<2.5	<2.5	<2.5	0.076	0.076
	8/29/2008	390 D2	120 D2	<5.0	42 D2	<5.0	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	3.2 D2,E4	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<50	NR	<5.0	<5.0	<5.0	<5.0	<5.0	NA	NA
C-Zone Groundwater Monitoring and Production Wells																																					
MW-8C	5/18/2007	2.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.4	2.7	<1.0	4.2	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	8/6/2007	2.9	1	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	2.3	2.5	<1.0	4.4	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.033	0.12
	11/16/2007	2.3	1.2	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/25/2008	1.2	0.69	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	<0.02	0.12
	5/15/2008	0.8	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/8/2008	2.4	1.1	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/12/2008	7.2	2.6	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/28/2010	11	3.7	<0.50	1.2	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/26/2010	9.2	3.0	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	1.5	<0.50	2.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	1/21/20112	2.5	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/29/2012	2.3	1.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/1/2013	8.9	3.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	0.58	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/15/2013	4.9	2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.71	0.93	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
MW-17C	9/24/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	0.65	<1.5	NA	<0.010
	11/15/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/22/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/15/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	0.039	0.039
	8/7/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/12/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/27/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/25/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	1.7	1.8	0.59	2.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/24/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA
	4/30/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/18/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-21C***	5/19/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	1.2	<1.0	2.6	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	8/1/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	0.93	0.78	<1.0	2.1	<0.50	<2.0	<5.0	<2.5	<1.5	0.74	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	11/29/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	0.86	0.51	<1.0	2	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/27/2008	2.4	0.74	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	1.2	1.4	<0.50	1.2	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	3/19/2008	1.4	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.74	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.4	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA
	4/16/2008	0.98	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.84	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/20/2008	2.5	2	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	0.83	<0.50	0.89	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	6/12/2008	1.6	1.6	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.2	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/11/2008	1.5	0.54	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	3.2	3	0.99	4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	9/19/2008	1.8	0.7	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	2.3	<0.50	3.5	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NS	<0.02

TETRA TECH, INC.

TABLE 2-7

SUMMARY OF VOCs (µg/L) AND CYANIDES (mg/L) HISTORICALLY DETECTED IN GROUNDWATER SINCE 1992

20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well Number	Date Sampled	PCE	TCE	1,1,1-TCA	1,1-DCE	1,1-DCA	cis-1,2-DCE	VC	BCM	BDCM	DBCM	Bromoform	Chloroform	Benzene	MTBE	2- Butanone	n-Butyl-benzene	sec-Butyl-benzene	CD	Ethylbenzene	Isopropyl-benzene	4-Isopropyl-toluene	Naphthalene	n-Propyl-benzene	Toluene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Xylenes (Tot)	Acetone	MC	1,1,2-TCA	1,1,1,2-Tetra-chloroethane	1,2-Dichloro-benzene	Chloro-benzene	1,4-Dichloro-benzene	Cyanide, Free*	Cyanide, Total**
		AWQS: 5	AWQS: 5	AWQS: 200	AWQS: 7	AWQS: NE	AWQS: 70	AWQS: 2	AWQS: NE	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 5	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 700	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 1,000	AWQS: NE	AWQS: NE	AWQS: 10,000	AWQS: NE	AWQS: NE	AWQS: 5	AWQS: NE	AWQS: 600	AWQS: NE	AWQS: 75	AWQS: 0.2	AWQS: NE
MW-21C***	10/24/2008	1.4	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	4.3	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
(cont)	11/14/2008	3.6	1.4	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	2.4	2.9	1.1	4.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	12/19/2008	1.9	1.6	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.3	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	01/26/2009	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/28/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.68	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/26/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	1.4	1.5	0.51	2.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	6.1	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	1/21/2011[2]	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/25/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	1.2	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/30/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	0.63	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/13/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.63	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.60	0.55	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
MW-103C	2/11/2004	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	NS	<2.0	NS	<1.5	NR	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	NR	<1.5	<0.50	<1.5	NA	<0.010
	11/24/2004	2.9	<0.50	<0.50	<1.0	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	<0.010
	6/1/2005	<0.50	<0.50	<0.50	<0.50 L2	<1.0 L2	<0.50 L2	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50 L2	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50 L2	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50 L2	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/21/2006	1.8	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.3	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	0.071
	5/25/2006	5	1.7	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	4.3	4	1.3	4.7	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	0.023
	10/12/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.5	3	<1.0	3.6	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	0.0091	0.068
	12/7/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.6	1.4	<1.0	3.5	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	NA	0.026
	2/22/2007	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<25 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<25 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<15.0 D1	<100 D1	<10 D1	<5.0 D1	NR	<5.0 D1	<5.0 D1	<5.0 D1	0.002	0.008
	5/23/2007	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	5.2 D1	<5.0 D1	<5.0 D1	<25 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<25 D1	<5.0 D1	<5.0 D1	<5.0 D1	<5.0 D1	<15.0 D1	<100 D1	<10 D1	<5.0 D1	NR	<5.0 D1	<5.0 D1	<5.0 D1	<0.025	<0.025
	8/7/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	3.6	2.9	<1.0	4.1	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	0.011	0.011
	11/20/2007	0.56	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	1.5	1.1	0.98	<1.0	5.8	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/28/2008	5.8	0.98	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	4.3	5.1	0.95	3.5	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	<0.02	<0.02
	5/21/2008	6.3	2.5	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	2.4	2.3	0.61	2.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/12/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/14/2008	<2.5	<2.5	<2.5	<5.0	<2.5	<5.0	<2.5	<2.5	5.3 D1	5.5 D1	<2.5	7.1 D1	<2.5	<5.0	<100	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<10	<25	NR	<2.5	<2.5	<2.5	<2.5	<2.5	NA	<0.02
	4/29/2010	3.1	1	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	7.1	7.4	2	6.7	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/30/2010	25	2.2	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	3.3	3.0	0.76	6.3	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	12/14/2010	3.9	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	2.6	2.6	0.72	4.8	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/29/2012	1.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.6	5.0	1.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/1/2013	1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.6	1.7	0.70	1.6	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	24	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/14/2013	1.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.5	3.2	4.9	1.2	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
MW-104C	12/6/2004	<0.50	<0.50	<0.50	<1.0	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	6/2/2005	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/22/2006	<0.50	<0.50	<0.50	<1.0	<0.5	<0.50	<0.50	<0.50	<0.50	0.69	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5 L2	<1.5 L2	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	5/23/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	0.78	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	10/10/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NR	<1.0	NR	<1.0	NR	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	12/8/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	NA	<0.0080
	2/27/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20 L1,V1	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	5/21/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20 L1	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	8/3/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.54	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	11/15/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/20/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/14/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/5/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	1	<0.50	0.72	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/25/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	1.8	1.6	0.55	2.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	12/14/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	0.56	<0.50	0.6	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/23/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/23/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/18/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Alice Byrne***	2/24/1998	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NR	NR	<0.5	<0.5	NR	<0.5	<0.5	NR	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NR	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	5/22/2002	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	NS	<2.0	NS	<1.5	NR	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	3/2/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	5/25/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	8/3/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	11/20/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/29/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/25/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/16/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	6/13/2008	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/8/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.53	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	9/19/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NS	<0.02

TABLE 2-7

SUMMARY OF VOCs (µg/L) AND CYANIDES (mg/L) HISTORICALLY DETECTED IN GROUNDWATER SINCE 1992

20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well Number	Date Sampled	PCE	TCE	1,1,1-TCA	1,1-DCE	1,1-DCA	cis-1,2-DCE	VC	BCM	BDCM	DBCM	Bromoform	Chloroform	Benzene	MTBE	2- Butanone	n-Butyl-benzene	sec-Butyl-benzene	CD	Ethylbenzene	Isopropyl-benzene	4-Isopropyl-toluene	Naphthalene	n-Propyl-benzene	Toluene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Xylenes (Tot)	Acetone	MC	1,1,2-TCA	1,1,1,2-Tetra-chloroethane	1,2-Dichloro-benzene	Chloro-benzene	1,4-Dichloro-benzene	Cyanide, Free*	Cyanide, Total**
		AWQS: 5	AWQS: 5	AWQS: 200	AWQS: 7	AWQS: NE	AWQS: 70	AWQS: 2	AWQS: NE	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 5	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 700	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 1,000	AWQS: NE	AWQS: NE	AWQS: 10,000	AWQS: NE	AWQS: NE	AWQS: 5	AWQS: NE	AWQS: 600	AWQS: NE	AWQS: 75	AWQS: 0.2	AWQS: NE
Alice Byrne*** (cont)	10/24/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/20/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	01/23/2009	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/30/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/31/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	1/21/2011[2]	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/26/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/26/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<050	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/15/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<050	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
St. Francis***	5/4/1998	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NR	NR	<0.5	<0.5	NR	<0.5	<0.5	NR	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NR	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	6/3/2005	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20 L2	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/22/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<2.0	<1.0	<1.0	<1.0	<3.0	<20	<2.0	<1.0	NR	<1.0	<1.0	<1.0	<0.0080	<0.0080
	8/7/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	**0.011**	**0.011**
	11/16/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010
	2/27/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/25/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	5/16/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	6/13/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/8/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	9/19/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/24/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/14 & 11/20/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	12/19/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	01/23/2009	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/30/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	8/27/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	1/21/2011[2]	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	10/26/2012	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	4/26/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<050	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
	11/15/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<050	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
Ron Martin	11/30/2004	<0.50	<0.50	<0.50	<1.0	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	<0.010	<0.010
	5/9/2013	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.02
ABC Metals	2/23/1998	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NR	NR	<0.5	<0.5	NR	<0.5	<0.5	NR	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NR	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
Desert Lawn	2/23/1998	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	NR	NR	<0.5	<0.5	NR	<0.5	<0.5	NR	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NR	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
YCC-1	5/4/1998	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NR	NR	<0.5	<0.5	NR	<0.5	<0.5	NR	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NR	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
YCC-3	5/4/1998	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NR	NR	<0.5	<0.5	NR	<0.5	<0.5	NR	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NR	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
KL-1	6/11/2001	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<1.0	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<1.0	<5.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	NA	NA
Woodward JHS	5/4/1998	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**1.2**	<0.5	NR	NR	<0.5	<0.5	NR	<0.5	<0.5	NR	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NR	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	5/22/2002	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	**0.92**	<0.50	<2.0	<5.0	<2.5	<1.5	NR	<2.0	NR	<1.5	NS	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<3.0	<0.50	<0.50	<1.5	<0.50	<1.5	NA	<0.010

µg/L = Micrograms per Liter

mg/L = Milligrams per Liter

AWQS = Aquifer Water Quality Standard (Arizona)

VOCs were analyzed using EPA Methods 502.2, 601/602, 8021 and/or 8260B

Free (Amenable) Cyanide analyzed by Standard Method 4500 CN

Total Cyanide analyzed by Standard Method 4500 CN

<25 = Concentration not detected at or above laboratory detection limits.

15 Concentrations at or above the AWQS

0.2 Detected concentration below the AWQS

NE = Not established

NR = Not reported

NA = Not analyzed

1,1-DCA = 1,1-Dichloroethane

cis-1,2-DCE = cis-1,2-Dichloroethene

1,1-DCE = 1,1-Dichloroethene

MTBE = Methyl tert-butyl ether

1,1,2-TCA = 1,1,2-Trichloroethane

BCM = Bromochloromethane

BDCM = Bromodichloromethane

1,1,1-TCA = 1,1,1-Trichloroethane

TCE = Trichloroethene

VC = Vinyl chloride

MC = Methylene chloride

CD = Carbon disulfide

DBCM = Dibromochloromethane

PCE = Tetrachloroethene

♦ Total trihalomethanes

^ Possible carry-over contamination; insufficient sample remained to confirm result at method reporting limit; sample required dilution

\ = The second numbers correspond to duplicate sample analysis by consultant and ADEQ, respectively

* = Cyanide amenable to chlorination

** Concentrations compared to AWQS for free cyanide for potential risk

***Between April 2008 and January 2009, wells MW-21A, B, and C, Alice Byrne, and St. Francis were sampled on monthly basis

D = Compound was analyzed at a greater dilution

D1 = Sample required dilution due to matrix

D2 = Sample required dilution due to high concentration of target analyte

E4 = Concentration estimated; analyte was detected below minimum reporting level

H1 = Sample analysis performed past holding time

H2 = Initial analysis within holding time; reanalysis for the required dilution was past holding time

[1] = Groundwater samples collected from Dieselville wells are grab samples and were collected without purging. Groundwater samples have not been collected since 2010.

[2] = Groundwater samples collected in January 2011 were grab samples and were collected without purging

[3] = Groundwater samples have not been collected from piezometer and extraction wells since 2008

L1 = The associated blank spike recovery was above laboratory acceptance limits.

L2 = The associated blank spike recovery was below laboratory acceptance limits

N1 = For samples MW-4, MW-102B2 and MW-103 B collected on 6/1/05, dichloroethene had recoveries below the laboratory acceptance limits; due to the lack of precision and accuracy, chloroform, 1,1-DCE, and cis-1,2-DCE are reported for informational purposes only

N1 - For sample MW-103B collected on 2/23/07, the internal standard response was less than 50% of the response for the middle point of the curve; did not rerun samples due to MS/MSD and foaming; samples 1x ran on 2/28/07; sample reported with N1 flag per client requested

N1 = For sample MW-7A collected on 8/8/07, cyanide amenable to chlorination is calculated for total cyanide minus a chlorinated treated sample; the total is above the practical quantification limit, but above the method detection limit

V1 = CCV recovery was above method acceptance limits; this target analyte was not detected in the sample

TETRA TECH, INC.

TABLE 2-8
TOTAL AND DISSOLVED METALS HISTORICALLY DETECTED IN GROUNDWATER
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Total Metals (mg/L)

Well Number	Date Sampled	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Zinc
		AWQS: 0.006	AWQS: 0.05	AWQS: 2	AWQS: 0.004	AWQS: 0.005	AWQS: NE	AWQS: 0.1	AWQS: NE	AWQS: NE	AWQS: 0.05	AWQS: NE	AWQS: NE	AWQS: 0.002	AWQS: 0.1	AWQS: NE	AWQS: 0.05	AWQS: NE	AWQS: NE	AWQS: 0.002	AWQS: NE
A-Zone Monitoring Wells																					
MW-1A	8/17/1993	NS	<0.010	0.41	NS	<0.0010	236	0.011	<0.010	19.0	<0.005	51.2	0.27	<0.0005	NS	NS	0.012	<0.001	646	NS	<0.05
	6/16/2001	<0.05	<0.005	NS	<0.004	<0.005	NS	<0.01	<0.01	NS	<0.05	NS	NS	<0.0005	<0.04	NS	0.16 M5	<0.01	NS	<0.005	<0.02
	6/10/2004	<0.10	<0.10	NS	<0.05	<0.02	NS	<0.05	<0.05	NS	<0.10	NS	NS	<0.0002	<0.05	NS	<0.10	<0.05	NS	<0.20	0.10
	11/30/2004	<0.10	<0.10	NS	<0.05	<0.02	170	<0.05	<0.05	NS	<0.10	31	1.1	<0.0002	<0.05	26	0.11	<0.05	700 D2	<0.20	0.21
	2/21/2006	<0.025	<0.010	NS	0.0013	<0.0030	NS	0.012	<0.010	NS	<0.010	NS	NS	<0.0002	0.011	NS	0.072	0.017	NS	<0.050	0.25
	5/25/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	0.013	0.014	NS	<0.010	NS	NS	<0.0002	0.013	NS	0.11	0.0095	NS	<0.050	0.11
	10/10/2006	<0.0030	0.028	NS	<0.0010	<0.0010	NS	0.0040	0.021	NS	0.0032	NS	NS	<0.00020	0.015	NS	0.16	0.0058	NS	<0.0010	0.017
	12/1/2006	<0.0030	0.033	NS	<0.0010	<0.0010	NS	0.0028	0.016	NS	0.0019	NS	NS	<0.00020	0.020	NS	0.11	0.0024	NS	<0.0010	0.014
	2/21/2007	<0.0030	0.015	NS	<0.0010	<0.0010	NS	0.0064	0.017	NS	0.0058	NS	NS	<0.00020	0.016	NS	0.13	0.0052	NS	<0.0010	0.026
	5/15/2007	<0.0030	0.017	NS	<0.0010	<0.0010	NS	0.0017	0.011	NS	<0.0010	NS	NS	<0.00020	0.013	NS	0.13	0.0019	NS	<0.0010	<0.010
	8/1/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.074	<0.0050	NS	<0.050	<0.050
	11/20/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.079	<0.0050	NS	<0.050	<0.050
	5/2/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.043	NS	NS	NS	NS
	11/18/2013	<0.005	0.0056 D1	NA	<0.0025	<0.0025	NA	0.067 D1	0.023 D1	NA	0.0031 D1	NA	NA	<0.001	0.015 D1	NA	0.047 D1	<0.010	NA	<0.0025	<0.050
MW-2A	8/17/1993	NS	<0.010	0.70	NS	0.0019	322	<0.010	<0.010	18.9	0.079	82.0	0.18	0.0005	NS	NS	0.102	<0.001	1280	NS	0.09
	6/16/2001	<0.05	<0.005	NS	<0.004	<0.005	NS	<0.01	<0.01	NS	<0.05	NS	NS	<0.0005	<0.04	NS	0.009 M5	<0.01	NS	<0.005	<0.02
	6/10/2004	<0.10	<0.10	NS	<0.05	<0.02	NS	<0.05	0.10	NS	<0.10	NS	NS	<0.0002	<0.05	NS	<0.10	<0.05	NS	<0.20	0.44
	11/30/2004	<0.10	<0.10	NS	<0.05	<0.02	130	<0.05	0.07	NS	<0.10	32	0.77	<0.0002	<0.05	14	<0.10	<0.05	360 D2	<0.20	0.30
	2/21/2006	<0.025	0.014	NS	0.0036	<0.0030	NS	0.049	0.087	NS	<0.010	NS	NS	<0.0002	0.041	NS	<0.025	<0.0050	NS	<0.050	0.47
	5/19/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	0.020	0.016	NS	<0.010	NS	NS	<0.0002	0.020	NS	<0.025	<0.0050	NS	<0.050	0.18
	10/10/2006	<0.0030	0.0070	NS	<0.0010	<0.0010	NS	0.0027	0.023	NS	0.0052	NS	NS	<0.00020	0.010	NS	0.018	<0.0010	NS	<0.0010	0.052
	12/12/2006	<0.0030	0.0075	NS	<0.0010	<0.0010	NS	0.0056	0.018	NS	0.0058	NS	NS	<0.00020	0.012	NS	0.026	<0.0010	NS	<0.0010	0.035
	2/21/2007	<0.0030	0.0095	NS	<0.0010	<0.0010	NS	0.0037	0.014	NS	0.0046	NS	NS	<0.00020	0.012	NS	0.032	<0.0010	NS	<0.0010	0.035
	5/15/2007	<0.0030	0.012	NS	<0.0010	<0.0010	NS	0.0019	0.0090	NS	0.0017	NS	NS	<0.00020	0.011	NS	0.036	<0.0010	NS	<0.0010	0.013
	8/1/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.029	<0.0050	NS	<0.050	<0.050
	11/21/2007	<0.025 L1	<0.010	NS	<0.0010	<0.0030	NS	<0.010	0.024	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.035	<0.0050	NS	<0.050	<0.050
	5/8/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.036	NS	NS	NS	NS
	11/19/2013	<0.005	0.0027 D1	NA	<0.0025	<0.0025	NA	<0.005	0.012 D1	NA	<0.0025	NA	NA	<0.001	0.011 D1	NA	0.036 D1	<0.010	NA	<0.0025	<0.050
MW-3A	8/17/1993	NS	<0.010	0.18	NS	<0.0010	59.2	<0.010	<0.010	9.03	<0.005	18.4	<0.05	<0.0005	NS	NS	<0.025	<0.001	790	NS	<0.05
	6/16/2001	<0.05	<0.005	NS	<0.004	<0.005	NS	0.01	<0.01	NS	<0.05	NS	NS	<0.0005	<0.04	NS	0.20 M5	<0.01	NS	<0.005	0.03
	6/11/2004	0.098	<0.10	NS	<0.0010	0.0018	NS	0.14	0.12	NS	0.084	NS	NS	<0.00020	0.14	NS	0.11	0.13	NS	<0.10	0.48
	11/29/2004	<0.10	<0.10	NS	<0.05	<0.02	330	<0.05	<0.05	NS	<0.10	60	1.2	<0.0002	<0.05	31	0.17	<0.05	1100 D2	<0.20	0.29
	2/20/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.20	<0.0050	NS	<0.050	0.16
	5/18/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.21	<0.0050	NS	<0.050	0.090
	10/10/2006	<0.0030	0.015	NS	<0.0010	<0.0010	NS	0.0036	0.019	NS	<0.0010	NS	NS	<0.00020	0.0090	NS	0.23	<0.0010	NS	<0.0010	0.022
	12/1/2006	<0.0030	0.020	NS	<0.0010	<0.0010	NS	0.0042	0.025	NS	<0.0010	NS	NS	<0.00020	0.015	NS	0.25	<0.0010	NS	<0.0010	0.025
	2/21/2007	<0.0030	0.012	NS	<0.0010	<0.0010	NS	0.0078	0.041	NS	0.0054	NS	NS	<0.00020	0.011	NS	0.20	<0.0010	NS	<0.0010	0.069
	5/15/2007	<0.0030	0.019	NS	<0.0010	<0.0010	NS	0.0097	0.018	NS	0.0020	NS	NS	<0.00020	0.015	NS	0.20	<0.0010	NS	<0.0010	0.065
	8/1/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.18	<0.0050	NS	<0.050	<0.050
	11/21/2007	<0.025 L1	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.16	<0.0050	NS	<0.050	<0.050
	5/1/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.18	NS	NS	NS	NS
	11/14/2013	<0.005	0.0025 D1	NA	<0.0025	<0.0025	NA	0.0070 D1	0.028 D1	NA	0.0029 D1	NA	NA	<0.001	0.017 D1	NA	0.150 D1	<0.010	NA	<0.0025	0.054 D1
MW-4A	8/17/1993	NS	<0.010	0.72	NS	0.0015	334	0.012	<0.010	19.1	0.070	84.5	0.31	<0.0005	NS	NS	0.050	<0.001	1270	NS	0.15
	6/8/2004	<0.10	<0.10	NS	<0.05	<0.02	NS	<0.05	<0.05	NS	<0.10	NS	NS	<0.0002	<0.05	NS	<0.10	<0.05	NS	<0.20	<0.05
	11/29/2004	<0.10	<0.10	NS	<0.05	<0.02	170	<0.05	<0.05	NS	<0.10	50	<0.05	<0.0002	<0.05	16	0.10	<0.05	860 D2	<0.20	<0.05
	2/22/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	0.021	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.12	<0.0050	NS	<0.050	0.052
	5/16/2006	<0.025	<0.10	NS	<0.0010	<0.0030	NS	0.032	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.13	<0.0050	NS	<0.050	0.12
	10/11/2006	<0.0030	0.013	NS	<0.0010	<0.0010	NS	0.0084	0.015	NS	<0.0010	NS	NS	<0.00020	0.0067	NS	0.12	0.0016	NS	<0.0010	0.087
	12/12/2006	<0.0030	0.0088	NS	<0.0010 V1	<0.0010	NS	0.0094	0.022	NS	<0.0010	NS	NS	<0.00020	0.011	NS	0.062	<0.0010	NS	<0.0010	0.011
	2/27/2007	<0.0030	0.073	NS	<0.0010 V1	<0.0010	NS	0.0051	0.023	NS	<0.0010	NS	NS	<0.00020	0.0067	NS	0.12	0.0010	NS	<0.0010	<0.010
	5/24/2007	<0.0030	0.013	NS	<0.0010	<0.0010	NS	0.0096	0.015	NS	<0.0010	NS	NS	<0.00020	0.0099	NS	0.095	0.0012	NS	<0.0010 V1	<0.010
	8/8/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	0.023	<0.010	NS	<0.010	NS	NS	0.0003	<0.010	NS	0.065	<0.0050	NS	<0.050	<0.050
	11/21/2007	<0.025 L1	<0.010	NS	<0.0010	<0.0030	NS	0.017	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.043	0.0056	NS	<0.050	<0.050
	5/2/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.021	NS	NS	NS	NS
	11/14/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	0.0073 D1	0.0095 D1	NA	<0.0025	NA	NA	<0.001	0.0081 D1	NA	0.021 D1	<0.010	NA	<0.0025	<0.050
MW-5A	1/29/2002	<0.05	<0.005	NS	<0.005	<0.005	NS	<0.01	<0.01	NS	<0.05	NS	NS	<0.0005	<0.04	NS	0.021	<0.01	NS	<0.005	0.40
	6/7/2004	<0.10	<0.10	NS	<0.05	<0.02	NS	<0.05	<0.05	NS	<0.10	NS	NS	<0.0002	<0.05	NS	<0.10	<0.05	NS	<0.20	<0.05
	11/23/2004	<0.10/<0.10	<0.10/<0.10	NS/NS	<0.05/<0.05	<0.02/<0.05	370/89	0.09/<0.05	0.14/<0.05	NS/NS	<0.10/<0.10	81/26	3.2/<0.05	<0.0002/ <0.0002	0.10/<0.05	40/12	<0.10/<0.10	<0.05/<0.05	940/ 600 D2	<0.20/<0.20	0.41/<0.05
	2/22/2006	<0.025	<0.010	NS	0.0026	<0.0030	NS	0.038	<0.010	NS	<0.010	NS	NS	<0.0010 D1	0.028	NS	0.041	<0.0050	NS	<0.050	0.22
	5/16/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	0.020	<0.010	NS	<0.010	NS	NS	<0.0002	0.014	NS	0.058	<0.0050	NS	<0.050	0.11
	10/11/2006	<0.0030	0.015	NS	<0.0010	<0.0010	NS	0.011	0.011	NS	<0.0010	NS	NS	<0.00020	0.0071	NS	0.039	<0.0010	NS	<0.0010	0.019
	12/12/2006	<0.0030	0.0093	NS	<0.0010 V1	<0.0010	NS	0.0097	0.019	NS	<0.0010	NS	NS	<0.00020	0.0079	NS	0.036	<0.0010	NS	<0.0010	0.013
	2/27/2007	<0.0030	0.011	NS	<0.0010 V1	<0.0010	NS	0.0092	0.016	NS	<0.0010	NS	NS	<0.00020	0.0075	NS	0.043	<0.0010	NS	<0.0010	0.011
	5/24/2007	<0.0030 D1	0.030 D1	NS	<0.010 D1	<0.010 D1	NS	0.022 D1	0.024 D1	NS	<0.010 D1	NS	NS	<0.00020	0.023 D1	NS	0.058 D1	<0.010 D1	NS	<0.010 D1	<0.10 D1
	8/7/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	0.013	<0.010	NS	<0.010	NS	NS	<0.0002	0.012	NS	0.036	<0.0050	NS	<0.050	<0.050
	11/19/2007	<0.025 L1	<0.010	NS	<0.0010	<0.0030	NS	0.019	<0.010	NS	<0.010	NS	NS	<0.0002	0.020	NS	0.051	<0.0050	NS	<0.050	0.12
	5/8/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.093	NS	NS	NS	NS
	11/19/2013	<0.005	0.0078 D1	NA	<0.0025	<0.0025	NA	0.012 D1	0.012 D1	NA	<0.0025	NA	NA	<0.001	0.014 D1	NA	0.060 D1	<0.010	NA	<0.050	<0.050
MW-6A	1/30/2002	<0.05	<0.005	NS	<0.005	<0.005	NS	<0.01	<0.01	NS	<0.05	NS	NS	<0.0005	<0.04	NS	0.020	<0.01	NS	<0.005	0.12
	6/8/2004	<0.10	<0.10	NS	<0.05	<0.02	NS	<0.05	<0.05	NS	<0.10	NS	NS	<0.0002	<0.05	NS	<0.10	<0.05	NS	<0.20	<0.05
	11/29/2004	<0.10	<0.10	NS	<0.05	<0.02	39	<0.05	<0.05	NS	<0.10	9.2	0.13	<0.0002	<0.05	9.1	<0.10	<0.05	330 D2	<0.20	0.05
	2/24/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	0.054
	5/25/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	<0.050
	10/11/2006	<0.0030	0.0043	NS	<0.0010	<0.0010	NS	0.0068	0.011	NS	0.0044	NS	NS	<0.00020	0.0071	NS	0.015	<0.0010	NS	<0.0010	0.029
	12/12/2006	<0.0030	0.0019	NS	<0.0010 V1	<0.0010	NS	0.0025	0.014	NS	0.0010	NS	NS	<0.00020	0.0029	NS	0.011	<0.0010	NS	<0.0010	0.019
	2/28/2007	<0.0030	0.0036	NS	<0.0010 V1	<0.0010	NS	0.0055	0.013	NS	0.0056	NS	NS	<0.00020	0.0062	NS	0.011	<0.0010	NS	<0.0010	0.037

Dissolved Metals (mg/L)

Well Number	Date Sampled	Antimony	Arsenic	Cadmium	Calcium	Chromium	Copper	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Zinc
		AWQS: 0.006*	AWQS: 0.05 *	AWQS: 0.005*	AWQS: NE	AWQS: 0.1*	AWQS: NE	AWQS: 0.05*	AWQS: NE	AWQS: NE	AWQS: 0.002*	AWQS: 0.1*	AWQS: NE	AWQS: 0.05*	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE
A-Zone Monitoring Wells																		
MW-1A	8/17/1993	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/16/2001	<0.05	<0.005	<0.005	NS	<0.01	<0.01	<0.05	NS	NS	<0.0005	<0.04	NS	0.092	<0.01	NS	NS	<0.02
	6/10/2004	<0.10	<0.10	<0.02	NS	<0.05	<0.05	<0.10	NS	NS	<0.0002	<0.05	NS	<0.10	<0.05	NS	NS	<0.05
	11/30/2004	<0.10	<0.10	<0.02	160	<0.05	<0.05	<0.10	28	0.44	<0.0002	<0.05	18	0.17	<0.05	840 D2	NS	<0.05
	2/21/2006	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.089	<0.0050	NS	NS	<0.050
	5/25/2006	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.11	<0.0050	NS	NS	<0.050
	10/10/2006	<0.0030	0.020	<0.0010	NS	<0.0010	0.013	<0.0010	NS	NS	<0.00020	0.013	NS	0.073	0.0012	NS	NS	<0.010
	12/1/2006	<0.0030	0.029	<0.0010	NS	0.0011	<0.015	<0.0010	NS	NS	<0.00020	0.017	NS	0.087	<0.0010	NS	NS	<0.010
	2/21/2007	<0.0030	0.013	<0.0010	NS	0.0012	0.012	<0.0010	NS	NS	<0.00020	0.013	NS	0.12	<0.0010	NS	NS	<0.010
	5/15/2007	<0.0030	0.014	<0.0010	NS	0.0016	0.012	<0.0010	NS	NS	<0.00020	0.012	NS	0.10	<0.0010	NS	NS	<0.010
	8/1/2007	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.11	<0.0050	NS	3.2	<0.050
	11/20/2007	<0.025 L1	<0.010	<0.0030	NS	0.013	0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.08	0.0077	NS	NS	0.10
	5/2/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2A	8/17/1993	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/16/2001	<0.05	<0.005	<0.005	NS	<0.01	<0.01	<0.05	NS	NS	<0.0005	<0.04	NS	0.010 M5	<0.01	NS	NS	<0.02
	6/10/2004	<0.10	<0.10	<0.02	NS	<0.05	<0.05	<0.10	NS	NS	<0.0002	<0.05	NS	<0.10	<0.05	NS	NS	<0.05
	11/30/2004	<0.10	<0.10	<0.02	92	<0.05	<0.05	<0.10	24	0.34	<0.0002	<0.05	7.5	<0.10	<0.05	360 D2	NS	<0.05
	2/21/2006	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.014	<0.050	NS	NS	<0.050
	5/19/2006	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	10/10/2006	<0.0030	0.0066	<0.0010	NS	<0.0010	0.0076	<0.0010	NS	NS	<0.00020	0.0099	NS	0.015	<0.0010	NS	NS	<0.010
	12/12/2006	<0.0030	0.0043	<0.0010	NS	<0.0010	0.0086	<0.0010	NS	NS	<0.00020	0.0063	NS	0.022	<0.0010	NS	NS	<0.010
	2/21/2007	<0.0030	0.0086	<0.0010	NS	<0.0010	0.0062	<0.0010	NS	NS	<0.00020	0.012	NS	0.032	<0.0010	NS	NS	<0.010
	5/15/2007	<0.0030	0.011	<0.0010	NS	0.0014	0.0073	<0.0010	NS	NS	<0.00020	0.011	NS	0.030	<0.0010	NS	NS	<0.010
	8/1/2007	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.025	<0.0050	NS	2.4	<0.050
	11/21/2007	<0.025	<0.010	<0.0030	NS	<0.010	0.024	<0.010	NS	NS	<0.0002	<0.010	NS	0.029	<0.0050	NS	NS	<0.050
	5/8/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/19/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3A	8/17/1993	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/16/2001	<0.05	<0.005	<0.005	NS	<0.01	<0.01	<0.05	NS	NS	<0.0002	<0.04	NS	0.12 M5	<0.01	NS	NS	0.03
	6/11/2004	0.065	<0.10	<0.0010	NS	0.035	<0.010	<0.015	NS	NS	<0.00020	0.036	NS	0.16	<0.010	NS	NS	0.084
	11/29/2004	<0.10	<0.10	<0.02	230	<0.05	<0.05	<0.10	49	<0.05	<0.0002	<0.05	21	0.19	<0.05	1200 D2	NS	0.09
	2/20/2006	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.18	<0.0050	NS	NS	<0.050
	5/18/2006	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.20	<0.0050	NS	NS	<0.050
	10/10/2006	<0.0030	0.012	<0.0010	NS	0.0029	0.019	<0.0010	NS	NS	<0.00020	0.0086	NS	0.21	<0.0010	NS	NS	0.012
	12/1/2006	<0.0030	0.019	<0.0010	NS	0.0033	0.030	<0.0010	NS	NS	<0.00020	0.016	NS	0.25	<0.0010	NS	NS	0.014
	2/21/2007	<0.0030	0.015	<0.0010	NS	0.0050	0.016	<0.0010	NS	NS	<0.00020	0.014	NS	0.21	<0.0010	NS	NS	0.022
	5/15/2007	<0.0030	0.018	<0.0010	NS	0.0085	0.017	<0.0010	NS	NS	<0.00020	0.012	NS	0.19	<0.0010	NS	NS	0.013
	8/1/2007	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.18	<0.0050	NS	9.0	<0.050
	11/21/2007	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.15	<0.0050	NS	NS	<0.050
	5/1/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/14/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4A	8/17/1993	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/8/2004	<0.10	<0.10	<0.02	NS	<0.05	<0.05	<0.10	NS	NS	<0.0002	<0.05	NS	<0.10	<0.05	NS	NS	<0.05
	11/29/2004	<0.10	<0.10	<0.02	180	<0.05	<0.05	<0.10	51	<0.05	<0.0002	<0.05	16	0.11	<0.05	880 D2	NS	<0.05
	2/22/2006	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.12	<0.0050	NS	NS	<0.050
	5/16/2006	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.13	<0.0050	NS	NS	<0.050
	10/11/2006	<0.0030	0.013	<0.0010	NS	0.0064	0.015	<0.0010	NS	NS	<0.00020	0.0075	NS	0.12	0.0016	NS	NS	<0.010
	12/12/2006	<0.0030	0.0073	<0.0010	NS	0.0086	0.015	<0.0010	NS	NS	<0.00020	0.0067	NS	0.065	<0.0010	NS	NS	<0.010
	2/27/2007	<0.015 D1	0.010 D1	<0.0050 D1	NS	<0.0050 D1	0.029 D1	<0.0050 D1	NS	NS	<0.00020	0.011 D1	NS	0.11 D1	<0.0050 D1	NS	NS	<0.050 D1
	5/24/2007	<0.0030	0.015	<0.0010	NS	0.011	0.016	<0.0010	NS	NS	<0.00020	0.011	NS	0.094	<0.0010	NS	NS	<0.010
	8/8/2007	<0.025	<0.010	<0.0030	NS	0.015	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.071	<0.0050	NS	NS	<0.050
	11/21/2007	<0.025	<0.010	<0.0030	NS	0.016	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.05	0.0054	NS	NS	<0.050
	5/2/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/14/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-5A	1/29/2002	<0.05	<0.005	0.008	NS	<0.01	<0.01	<0.05	NS	NS	<0.0005	<0.04	NS	0.020	<0.01	NS	NS	0.09
	6/7/2004	<0.10	<0.10	<0.02	NS	<0.05	<0.05	<0.10	NS	NS	<0.0002	<0.05	NS	<0.10	<0.05	NS	NS	<0.05
	11/23/2004	<0.10/<0.10	<0.10/<0.10	<0.02/<0.02	200/86	<0.05/<0.05	<0.05/<0.05	<0.10/<0.10	57/25	0.09/<0.05	<0.0002/<0.0002	<0.05/<0.05	25/11	<0.10/<0.10	<0.05/<0.05	950/ 550 D2	NS	<0.05/<0.05
	2/22/2006	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.034	<0.0050	NS	NS	<0.050
	5/16/2006	<0.025	<0.010	<0.0030	NS	0.010	<0.010	<0.010	NS	NS	<0.0002	0.014	NS	0.058	<0.0050	NS	NS	<0.050
	10/11/2006	<0.0030	0.015	<0.0010	NS	0.0097	0.0098	<0.0010	NS	NS	<0.00020	0.0079	NS	0.031	<0.0010	NS	NS	<0.010
	12/12/2006	<0.0030	0.0068	<0.0010	NS	0.0091	0.0120	<0.0010	NS	NS	<0.00020	0.0054	NS	0.033	<0.0010	NS	NS	<0.010
	2/27/2007	<0.0030	0.013	<0.0010	NS	0.0082	0.0160	<0.0010	NS	NS	<0.00020	0.0080	NS	0.045	<0.0010	NS	NS	<0.010
	5/24/2007	<0.030 D1	<0.010 D1	<0.010 D1	NS	<0.010 D1	0.011 D1	<0.0010 D1	NS	NS	<0.00020	0.011 D1	NS	0.075 D1	<0.010 D1	NS	NS	<0.10 D1
	8/7/2007	<0.025	<0.010	<0.0030	NS	0.011	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.036	<0.0050	NS	NS	<0.050
	11/19/2007	<0.025 L1	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.048	<0.0050	NS	NS	<0.050
	5/8/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/19/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-6A	1/30/2002	<0.05	<0.005	<0.005	NS	<0.01	<0.01	<0.05	NS	NS	<0.0005	<0.04	NS	0.020	<0.01	NS	NS	0.09
	6/8/2004	<0.10	<0.10	<0.02	NS	<0.05	<0.05	<0.10	NS	NS	<0.0002	<0.05	NS	<0.10	<0.05	NS	NS	<0.05
	11/29/2004	<0.10	<0.10	<0.02	28	<0.05	<0.05	<0.10	7.0	<0.05	<0.0002	<0.05	7.0	<0.10	<0.05	330 D2	NS	<0.05
	2/24/2006	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.010	<0.0050	NS	NS	<0.050
	5/25/2006	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	10/11/2006	<0.0030	0.0019	<0.0010	NS	0.0013	0.0069	<0.0010	NS	NS	<0.00020	0.0021	NS	0.013	<0.0010	NS	NS	<0.010
	12/12/2006	<0.0030	0.0015	<0.0010	NS	0.0018	0.0083	<0.0010	NS	NS	<0.00020	0.0025	NS	0.013	<0.0010	NS	NS	<0.010
	2/28/2007	<0.0030	0.0017	<0.0010	NS	<0.0010	0.0088	<0.0010	NS	NS	<0.00020	0.0024	NS	0.0061	<0.0010	NS	NS	<0.010

TABLE 2-8
TOTAL AND DISSOLVED METALS HISTORICALLY DETECTED IN GROUNDWATER
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well Number	Date Sampled	Total Metals (mg/L)																				Dissolved Metals (mg/L)																
		Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Zinc	Antimony	Arsenic	Cadmium	Calcium	Chromium	Copper	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Zinc
		AWQS: 0.006	AWQS: 0.05	AWQS: 2	AWQS: 0.004	AWQS: 0.005	AWQS: NE	AWQS: 0.1	AWQS: NE	AWQS: NE	AWQS: 0.05	AWQS: NE	AWQS: NE	AWQS: 0.002	AWQS: 0.1	AWQS: NE	AWQS: 0.05	AWQS: NE	AWQS: NE	AWQS: 0.002	AWQS: NE	AWQS: 0.006*	AWQS: 0.05 *	AWQS: 0.005*	AWQS: NE	AWQS: 0.1*	AWQS: NE	AWQS: 0.05*	AWQS: NE	AWQS: NE	AWQS: 0.002*	AWQS: 0.1*	AWQS: NE	AWQS: 0.05*	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE
MW-6A (cont)	5/24/2007	0.0061	0.0017	NS	<0.0010	<0.0010	NS	<0.0010	0.0062	NS	<0.0010	NS	NS	<0.00020	0.0012	NS	<0.0020	<0.0010	NS	<0.010 V1	<0.010	<0.0030	0.0017	<0.0010	NS	<0.0010	0.0062	<0.0010	NS	NS	<0.00020	0.0013	NS	<0.0020	<0.0010	NS	NS	<0.010
	8/7/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	0.065	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	11/19/2007	<0.025 L1	<0.010	NS	<0.0010	<0.0030	NS	0.16	0.012	NS	<0.010	NS	NS	<0.0002	0.014	NS	<0.025	<0.0050	NS	<0.050	<0.050	<0.025 L1	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	5/8/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.0085	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/19/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	<0.005	0.0095 D1	NA	<0.0025	NA	NA	<0.001	<0.005	NA	0.014 D1	<0.010	NA	<0.0025	<0.050	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-7A	6/11/2004	0.046	<0.10	NS	<0.0010	<0.0010	NS	0.066	0.047	NS	0.068	NS	NS	0.00033	0.059	NS	<0.10	<0.010	NS	<0.10	0.23	<0.040	<0.10	<0.0010	NS	0.011	<0.010	<0.015	NS	NS	<0.00020	0.018	NS	<0.10	<0.010	NS	NS	<0.050
	11/23/2004	<0.10	<0.10	NS	<0.05	<0.02	78	<0.05	<0.05	NS	<0.10	30	0.58	<0.0004 D1	<0.05	9.2	<0.10	<0.05	320 D2	<0.20	0.07	<0.10	<0.10	<0.02	81	<0.05	<0.05	<0.10	46	<0.05	<0.0002	<0.05	13	<0.10	<0.05	570 D2	NS	<0.05
	2/22/2006	<0.025	0.016	NS	0.0012	<0.0030	NS	0.011	<0.010	NS	<0.010	NS	NS	<0.0010 D1	<0.010	NS	<0.025	<0.0050	NS	<0.050	0.053	<0.025	0.012	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.010	<0.0050	NS	NS	<0.050
	5/18/2006	<0.025	0.027	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	<0.050	<0.025	0.029	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	10/3/2006	<0.0030	0.043	NS	<0.0010 V1	<0.0010	NS	0.0031	0.0077	NS	0.0023	NS	NS	<0.00020	0.0055	NS	0.0043	<0.0010	NS	<0.0010	0.012	<0.0030	<0.040	<0.0010	NS	0.0013	0.0054	<0.0010	NS	NS	<0.00020	0.0036	NS	<0.0020	<0.0010	NS	NS	<0.010
	12/12/2006	<0.0030	0.041	NS	<0.0010 V1	<0.0010	NS	0.0026	0.012	NS	0.0018	NS	NS	<0.00020	0.0041	NS	0.0029	<0.0010	NS	<0.0010	<0.010	<0.0030	0.036	<0.0010	NS	<0.0010	0.0093	<0.0010	NS	NS	<0.00020	0.0021	NS	<0.0020	<0.0010	NS	NS	<0.010
	5/14/2007	<0.0030	0.034	NS	<0.0010	<0.0010	NS	0.0033	0.0075	NS	0.0032	NS	NS	<0.00020	0.0063	NS	0.0074	<0.0010	NS	<0.0010	0.013	<0.0030	0.031	<0.0010	NS	0.0010	0.0046	<0.0010	NS	NS	<0.00020	0.0036	NS	0.0025	<0.0010	NS	NS	<0.010
	8/8/2007	<0.025	0.027	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	<0.050	<0.025	0.021	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	11/20/2007	<0.025	0.013	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	<0.050	<0.025 L1	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	5/8/2013	Free Product Detected, Well Not Sampled																																				
	11/19/2013	Free Product Detected, Well Not Sampled																																				
MW-8A	1/31/2005	<0.10	<0.10	NS	<0.05	<0.02	87 D2	<0.05	<0.05	NS	<0.10	31	0.08	<0.0002	<0.05	13	<0.10	<0.05	380 D2	<0.20	<0.05	<0.10	<0.10	<0.02	79 D2	<0.05	<0.05	<0.10	30	0.07	<0.0002	<0.05	11	<0.10	<0.05	380 D2	NS	<0.05
	2/24/2006	<0.025	<0.010	NS	0.0014	<0.0030	NS	0.015	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	0.40	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.010	<0.0050	NS	NS	0.24
	5/22/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	<0.050	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	10/5/2006	<0.0030	0.0033	NS	<0.0010	<0.0010	NS	0.014	0.0057	NS	0.0020	NS	NS	<0.00020	0.0056	NS	0.015	<0.0010	NS	<0.0010	0.011	<0.0030	0.0038	<0.0010	NS	0.012	0.0050	<0.0010	NS	NS	<0.00020	0.0040	NS	0.016	<0.0010	NS	NS	<0.010
	12/11/2006	<0.0030	0.0033	NS	<0.0010 V1	<0.0010	NS	0.011	0.013	NS	<0.0010	NS	NS	<0.00020	0.0052	NS	0.013	<0.0010	NS	<0.0010	<0.010	<0.0030	0.0028	<0.0010	NS	0.0090	0.0082	<0.0010	NS	NS	<0.00020	0.0027	NS	0.011	<0.0010	NS	NS	<0.010
	2/26/2007	<0.0030	0.0030	NS	<0.0010 V1	<0.0010	NS	0.0078	0.011	NS	<0.0010	NS	NS	<0.00020	0.0030	NS	0.015	<0.0010	NS	<0.0010	<0.010	<0.0030	0.0029	<0.0010	NS	0.0071	0.0110	<0.0010	NS	NS	<0.00020	0.0035	NS	0.014	<0.0010	NS	NS	<0.010
	5/21/2007	0.0057	0.0035	NS	<0.0010	<0.0010	NS	0.013	0.0086	NS	0.0011	NS	NS	<0.00020	0.010	NS	0.012	<0.0010	NS	<0.0010 V1	0.23	<0.0030	0.0034	<0.0010	NS	0.0067	0.0088	<0.0010	NS	NS	<0.00020	0.0080	NS	0.015	<0.0010	NS	NS	0.19
	8/6/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	<0.050	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	11/16/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	0.054	<0.025 L1	<0.010	<0.0030	NS	0.013	0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	5/7/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.0035	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/15/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	0.0070 D1	0.0083 D1	NA	<0.0025	NA	NA	<0.001	0.0060 D1	NA	0.0093 D1	<0.010	NA	<0.0025	<0.050	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-9A	1/31/2005	<0.10	<0.10	NS	<0.05	<0.02	160 D2	<0.05	<0.05	NS	<0.10	38	0.57	<0.0002	<0.05	26	<0.10	<0.05	800 D2	<0.20	0.09	<0.10	<0.10	<0.02	96 D2	<0.05	<0.05	<0.10	31	<0.05	<0.0002	<0.05	18	<0.10	<0.05	760 D2	NS	<0.05
	2/23/2006	<0.025	<0.010	NS	0.0013	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.050	<0.0050	NS	<0.050	0.073	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.046	<0.0050	NS	NS	<0.050
	5/16/2006	<0.025	<0.010	NS	0.0026	<0.0030	NS	0.086	<0.010	NS	<0.010	NS	NS	<0.0002	0.049	NS	0.053	<0.0050	NS	<0.050	0.34	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.047	<0.0050	NS	NS	<0.050
	10/5/2006	<0.0030	0.0051	NS	<0.0010 V1	<0.0010	NS	0.0069	0.013	NS	0.0031	NS	NS	<0.00020	0.0077	NS	0.062	<0.0010	NS	<0.0010	0.029	<0.015 D1	0.0044	<0.0050 D1	NS	0.0026	0.010	<0.0010	NS	NS	<0.00020	0.0063	NS	0.046 D1	<0.0050 D1	NS	NS	<0.010
	12/11/2006	<0.0030	0.0030	NS	<0.0010 V1	<0.0010	NS	0.0034	0.026	NS	<0.0010	NS	NS	<0.00020	0.0046	NS	0.049	<0.0010	NS	<0.0010	0.014	<0.0030	0.0024	<0.0010	NS	0.0023	0.016	<0.0010	NS	NS	<0.00020	0.0029	NS	0.045	<0.0010	NS	NS	<0.010
	2/21/2007	<0.0030	0.0033	NS	<0.0010	<0.0010	NS	0.0030	0.011	NS	0.0016	NS	NS	<0.00020	0.0044	NS	0.053	<0.0010	NS	<0.0010	0.014	<0.0030	0.0033	<0.0010	NS	0.0023	0.012	<0.0010	NS	NS	<0.00020	0.0060	NS	0.051	<0.0010	NS	NS	<0.010
	5/23/2007	<0.0030	0.0029	NS	<0.0010	<0.0010	NS	0.0031	0.014	NS	<0.0010	NS	NS	<0.00020	0.0039	NS	0.052	<0.0010	NS	<0.0010	0.014	<0.0030	0.0040	<0.0010	NS	0.0024	0.015	<0.0010	NS	NS	<0.00020	0.0046	NS	0.056	<0.0010	NS	NS	0.013
	8/2/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.048	<0.0050	NS	<0.050	0.074	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.20	<0.010	NS	0.047	<0.0050	NS	3.2	<0.050
	11/19/2007	<0.025 L1	<0.010	NS	<0.0010	<0.0030	NS	0.016	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.048	<0.0050	NS	<0.050	0.16	<0.025 L1	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.046	<0.0050	NS	NS	0.090
	4/24/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.036	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/11/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	<0.005	0.015 D1	NA	<0.0025	NA	NA	<0.001	0.0068 D1	NA	0.034 D1	<0.010	NA	<0.0025	<0.050	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-10A	1/31/2005	<0.10	<0.10	NS	<0.05	<0.02	90 D2	<0.05	<0.05	NS	<0.10	37	0.46	<0.0002	<0.05	13	<0.10	<0.05	NA	<0.20	<0.05	<0.10	<0.10	<0.02	130 D2	<0.05	<0.05	<0.10	31	0.09	<0.0002	<0.05	9.1	<0.10	<0.05	420 D2	NS	<0.05
	2/24/2006	<0.025	<0.010	NS	0.0016	<0.0030	NS	0.024	<0.010	NS	<0.010	NS	NS	<0.0002	0.010	NS	<0.025	<0.0050	NS	<0.050	0.16	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.018	<0.0050	NS	NS	<0.050
	5/24/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	<0.050	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	10/4/2006	<0.0030	0.0021	NS	<0.0010 V1	<0.0010	NS	0.012	0.0077	NS	0.0025	NS	NS	<0.00020	0.0056	NS	0.022	<0.0010	NS	<0.0010	0.024	<0.0030	0.0024	<0.0010	NS	0.0067	0.0057	<0.0010	NS	NS	<0.00020	0.0035	NS	0.018	<0.0010	NS	NS	<0.010
	12/11/2006	<0.0030	0.0013	NS	<0.0010 V1	<0.0010	NS	0.0067	0.014	NS	<0.0010	NS	NS	<0.00020	0.0027	NS	0.017	<0.0010	NS	<0.0010	<0.010	<0.0030	0.0013	<0.0010	NS	0.0066	0.013	<0.0010	NS	NS	<0.00020	0.0039	NS	0.018	<0.0010	NS	NS	<0.010
	2/20/2007	<0.0030	0.0018	NS	<0.0010	<0.0010	NS	0.011	0.0076	NS	0.0016	NS	NS	<0.00020	0.0043	NS	0.018	<0.0010	NS	<0.0010	0.016	<0.0030	0.0016	<0.0010	NS	0.0073	0.0071	<0.0010	NS	NS	<0.00020	0.0039	NS	0.013	<0.0010	NS	NS	<0.010
	5/23/2007	<0.0030	0.0014	NS	<0.0010	<0.0010	NS	0.0071	0.0085	NS	<0.0010	NS	NS	<0.00020	0.0022	NS	0.011	<0.0010	NS	<0.0010 V1	<0.010	<0.0030	0.0015	<0.0010	NS	0.0064	0.0086	<0.0010	NS	NS	<0.00020	0.0021	NS	0.014	<0.0010	NS	NS	<0.010
	8/2/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	<0.050	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.016	<0.0050	NS	1.3	<0.050
	11/19/2007	<0.025 L1	<0.010	NS	<0.0010	<0.0030	NS	0.016	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	0.067	<0.025 L1	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	4/24/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.022	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/11/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-11A	2/24/2006	<0.025	<0.010	NS	<0.010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	0.092	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.012	<0.0050	NS	NS	0.071
	5/17/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	0.052	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	0.055
	10/4/2006	<0.0030	0.009	NS	<0.0010 V1	<0.0010	NS	0.0086	0.011	NS	0.0043	NS	NS	<0.00020	0.0093	NS	0.074	<0.0010	NS	<0.0010	0.039	<0.0030	0.0072	<0.0010	NS	0.0015	0.0068	<0.0010	NS	NS	<0.00020	0.0067	NS	0.065	<0.0010	NS	NS	<0.010
	12/1/2006	<0.0030	0.0057	NS	<0.0010	<0.0010	NS	0.0053	0.0088	NS	0.0028	NS	NS	<0.00020	0.0069	NS	0.028	<0.0010	NS	<0.0010	0.014	<0.0030	0.0044	<0.0010	NS	0.0014	0.0074	<0.0010	NS	NS	<0.00020	0.0045	NS	0.026	<0.0010	NS	NS	<0.010
	2/20/2007	<0.030	0.0043	NS	<0.0010	<0.0010	NS	0.0032	0.0064	NS	<0.0010	NS	NS	<0.00020	0.0047	NS	0.029	<0.0010	NS	0.0011	<0.010	<0.0030	0.0038	<0.0010	NS	0.0011	0.0068	<0.0010	NS	NS	<0.00020	0.0059	NS	0.024	<0.0010	NS	NS	<0.010
	5/22/2007	<0.0030	0.0038	NS	<0.0010	<0.0010	NS	0.0019	0.0083	NS	<0.0010	NS	NS	<0.00020	0.0034	NS	0.026	<0.0010	NS	<0.0010	<0.010	<0.0030	0.0040	<0.0010	NS	0.0015	0.0083	<0.0010	NS	NS	<0.0020	0.0035	NS	0.028	<0.0010	NS	NS	<0.010
	7/31/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.034	<0.0050	NS	<0.050	<0.050	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.034	<0.0050	NS	2.4	<0.050
	11/14/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.031	<0.0050	NS	<0.050	0.056	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.03	<0.0050	NS	NS	0.055
	4/25/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.016	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/11/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-12A	4/6/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.0002	NS	NS	NS	NS	NS	NS	NS	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.019	<0.0050	NS	NS	<0.050
	5/23/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	<0.050	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	10/5/2006	<0.0030	0.0019	NS	<0.0010 V1	<0.0010	NS	0.0088	0.011	NS	0.0042	NS	NS	<0.00020	0.0053	NS	0.0075	<0.0010	NS	<0.0010	0.034	<0.0030	0.0016	<0.0010	NS	0.0012	0.0065	<0.0010	NS	NS	<0.00020	0.0017	NS	0.0052	<0.0010	NS	NS	<0.010
	12/8/2006	<0.0030	0.0017	NS	<0.0010 V1	<0.0010	NS	0.0099	0.019	NS	0.0041	NS	NS	<0.00020	0.0049	NS	0.0062	<0.0010	NS	<0.0010	0.027	<0.0030	<0.0010	<0.0010	NS	0.0016	0.012	<0.0010	NS	NS	<0.00020	0.0026	NS	0.0054	<0.0010	NS	NS	<0.010
	2/27/2007	<0.0030	0.0014	NS	<0.0010 V1	<0.0010	NS	0.0044	0.016	NS	0.0026	NS	NS	<0.00020	0.0031	NS	0.0046	<0.0010	NS	<0.0010	0.016	<0.0030	0.0013	<0.0010	NS	0.0010	0.0130	<0.0010	NS	NS	<0.00020	0.0024	NS	0.0063	<0.0010	NS	NS	<0.010
	5/24/2007	<0.0030	0.0012	NS	<0.0010	<0.0010	NS	0.0032	0.011	NS	0.0017	NS	NS	<0.00020	0.0024	NS	0.0043	<0.0010	NS	<0.0010 V1	<0.010	<0.0030	0.0010	<0.0010	NS	0.0013	0.010	<0.0010	NS	NS	<0.00020	0.0021	NS	0.0030	<0.0010	NS	NS	0.028
	8/2/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	0.011	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	<0.050	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	0.58	<0.050
	11/19/2007	<0.025 L1	<0.010	NS	<0.0010	<0.0030	NS	0.025	0.013	NS	<0.010	NS	NS	<0.0002	0.011	NS	<0.025	<0.0050	NS	<0.050	0.11	<0.025 L1	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	4/25/2013	Well Obstructed, Well Not Sampled																																				
	11/11/2013	Well Obstructed, Well Not Sampled																																				
MW-13A	4/11/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.0200 D1	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	<0.500 D1	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.024	<0.0050	NS	NS	0.091
	5/24/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	<0.050	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	10/4/2006	<0.0030	0.0020	NS	<0.0010 V1	<0.0010	NS	0.0069	0.0076	NS	<0.0050	NS	NS	<0.00020	0.0046	NS	0.011	<0.0010	NS	<0.0010	0.027	<0.0030	0.0020	<0.0010	NS	0.0024	0.0051	0.0012	NS	NS	<0.00020	0.0016	NS	0.0087	<0.0010	NS	NS	<0.010
	12/11/2006	<0.0030	0.0016	NS	<0.0010 V1	<0.0010	NS	0.0040	0.012	NS	0.0011	NS	NS	<0.00020	0.0028	NS	0.0051	<0.0010	NS	<0.0010	0.018	<0.0030	0.0011	<0.0010	NS	0.0016	0.0086	<0.0010	NS	NS	<0.00020	0.0024	NS	0.0062	<0.0010	NS	NS	0.011
	2/20/2007	<0.0030	0.0016	NS	<0.0010	<0.0010	NS	0.0047	0.0057	NS	0.0012	NS	NS	<0.00020	0.0024	NS	0.0072	<0.0010	NS	0.0010	0.013	<0.0030	0.0013	<0.0010	NS	0.0023	0.0054	<0.0010	NS	NS	<0.00020	0.0026	NS	0.0026	<0.0010	NS	NS	<0.010
	5/23/2007	0.0067	0.0016	NS	<0.0010	<0.0010	NS	0.0025	0.0056	NS	<0.0010	NS	NS	<0.00020	0.0015	NS	0.0037	<0.0010	NS	<0.0010	<0.010	0.0031	0.0013	<0.0010	NS	0.0016	0.0062	<0.0010	NS	NS	<0.00020	0.0011	NS	0.0056	<0.0010	NS	NS	<0.010
	7/31/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	<0.050	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.010	<0.0050	NS	0.44	<0.050
	11/15/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	0.011	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	<0.050	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	4/25/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.0054	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/11/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	<0.005	<0.005	NA	<0.0025	NA	NA	<0.001	0.0053 D1	NA	0.010 D1	<0.010	NA	<0.0025	<0.050	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TETRA TECH, INC.

Well Number	Date Sampled	Total Metals (mg/L)																			
		Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Zinc
		AWQS: 0.006	AWQS: 0.05	AWQS: 2	AWQS: 0.004	AWQS: 0.005	AWQS: NE	AWQS: 0.1	AWQS: NE	AWQS: NE	AWQS: 0.05	AWQS: NE	AWQS: NE	AWQS: 0.002	AWQS: 0.1	AWQS: NE	AWQS: 0.05	AWQS: NE	AWQS: NE	AWQS: 0.002	AWQS: NE
MW-14A	4/10/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	0.020	<0.0200 D1	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.084	<0.0050	NS	<0.050	<0.500 D1
	5/17/2006	<0.025	<0.010	NS	<0.0010	<0.0010	NS	0.071	<0.010	NS	<0.010	NS	NS	<0.0002	0.024	NS	0.11	<0.0050	NS	<0.050	0.17
	10/11/2006	<0.0030	0.0074	NS	<0.0010	<0.0010	NS	0.0078	0.017	NS	0.0019	NS	NS	<0.00023	0.0060	NS	0.097	<0.0010	NS	<0.0010	0.016
	12/11/2006	<0.0030	0.0039	NS	<0.0010 V1	<0.0010	NS	0.0049	0.019	NS	<0.0010	NS	NS	<0.00020	0.0044	NS	0.086	<0.0010	NS	<0.0010	<0.010
	2/22/2007	<0.0030	0.0048	NS	<0.0010	<0.0010	NS	0.0087	0.023	NS	0.0022	NS	NS	<0.00020	0.0055	NS	0.096	<0.0010	NS	<0.0010	0.019
	5/24/2007	<0.0030	0.0060	NS	<0.0010	<0.0010	NS	0.0049	0.013	NS	<0.0010	NS	NS	<0.00020	0.0051	NS	0.10	<0.0010	NS	<0.0010	<0.010
	8/2/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	0.013	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.13	<0.0050	NS	<0.050	<0.050
	11/19/2007	<0.025 L1	<0.010	NS	<0.0010	<0.0030	NS	0.039	<0.010	NS	<0.010	NS	NS	<0.0002	0.012	NS	0.13	<0.0050	NS	<0.050	0.16
	5/8/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.092	NS	NS	NS	NS
	11/19/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	<0.005	0.011 D1	NA	<0.0025	NA	NA	<0.001	<0.005	NA	0.060 D1	<0.010	NA	<0.0025	<0.050
MW-15A	4/6/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.0002	NS	NS	NS	NS	NS	NS	NS
	5/16/2006	<0.025	<0.010	NS	0.0013	<0.0030	NS	0.078	<0.010	NS	<0.010	NS	NS	<0.0002	0.029	NS	0.041	<0.0050	NS	<0.050	0.37
	10/5/2006	<0.0030	0.0051	NS	<0.0010 V1	<0.0010	NS	0.017	0.012	NS	0.0057	NS	NS	<0.00020	0.011	NS	0.053	<0.0010	NS	<0.0010	0.084
	11/30/2006	<0.0030	0.0056	NS	<0.0010	<0.0010	NS	0.022	0.016	NS	0.0069	NS	NS	<0.00020	0.018	NS	0.045	<0.0010	NS	<0.0010	0.11
	2/20/2007	<0.0030	0.0031	NS	<0.0010	<0.0010	NS	0.0091	0.011	NS	0.0029	NS	NS	<0.00020	0.0090	NS	0.042	<0.0010	NS	<0.0010	0.16
	5/25/2007	<0.015 D1	<0.0050 D1	NS	<0.0050 D1	<0.0050 D1	NS	<0.0050 D1	0.011 D1	NS	<0.0050 D1	NS	NS	<0.00020	<0.0050 D1	NS	0.036 D1	<0.0050 D1	NS	<0.0050 D1	0.062 D1
	7/31/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.033	<0.0050	NS	<0.050	<0.050
	11/20/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	<0.050
	4/25/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.02	NS	NS	NS	NS
	11/11/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	<0.005	0.017 D1	NA	<0.0025	NA	NA	<0.001	0.012 D1	NA	0.022 D1	<0.010	NA	<0.0025	<0.050
MW-16A	4/25/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.023	NS	NS	NS	NS
	11/12/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	<0.005	0.0096 D1	NA	<0.0025	NA	NA	<0.001	0.0085 D1	NA	0.026 D1	<0.010	NA	<0.0025	<0.050
MW-17A	12/6/2006	<0.0030	0.0024	NS	<0.0010 V1	<0.0010	NS	0.034	0.020	NS	0.0062	NS	NS	<0.00020	0.010	NS	0.012	<0.0010	NS	<0.0010	0.024
	2/28/2007	<0.0030	0.0013	NS	<0.0010 V1	<0.0010	NS	0.0018	0.0099	NS	<0.0010	NS	NS	<0.00020	0.0015	NS	0.010	<0.0010	NS	<0.0010	<0.010
	5/23/2007	<0.0030	0.0010	NS	<0.0010	<0.0010	NS	0.0015	0.0065	NS	<0.0010	NS	NS	<0.00020	0.0013	NS	0.0047	<0.0010	NS	<0.0010	<0.010
	7/31/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	<0.050
	11/15/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	0.012	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	<0.050
	4/25/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.024	NS	NS	NS	NS
	11/12/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	<0.005	0.013 D1	NA	<0.0025	NA	NA	<0.001	0.0060 D1	NA	0.018 D1	<0.010	NA	<0.0025	<0.050
MW-18A	12/4/2006	<0.0030	0.0025	NS	<0.0010 V1	<0.0010	NS	0.025	0.023	NS	0.0048	NS	NS	<0.00020	0.010	NS	0.014	<0.0010	NS	<0.0010	0.023
	2/26/2007	<0.0030	0.0021	NS	<0.0010 V1	<0.0010	NS	0.011	0.018	NS	0.0024	NS	NS	<0.00020	0.0061	NS	0.016	<0.0010	NS	<0.0010	0.016
	5/23/2007	<0.0030	0.0014	NS	<0.0010	<0.0010	NS	0.0031	0.0088	NS	0.0015	NS	NS	<0.00020	0.0044	NS	0.0060	<0.0010	NS	<0.0010	<0.010
	8/2/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	0.063
	11/16/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	0.030	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	0.062
	5/7/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.017	NS	NS	NS	NS
	11/14/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	<0.005	0.0094 D1	NA	<0.0025	NA	NA	<0.001	0.0064 D1	NA	0.018 D1	<0.010	NA	<0.0025	<0.050
MW-19A	112/6/06	<0.0030	0.0019	NS	<0.0010 V1	<0.0010	NS	0.011	0.015	NS	0.0016	NS	NS	<0.00020	0.0064	NS	0.020	<0.0010	NS	<0.0010	0.015
	2/20/2007	<0.0030	0.0016	NS	<0.0010	<0.0010	NS	0.0040	0.0070	NS	0.0021	NS	NS	<0.00020	0.0045	NS	0.0071	<0.0010	NS	<0.0010	0.017
	5/23/2007	<0.0030	<0.0010	NS	<0.0010	<0.0010	NS	0.0011	0.0086	NS	<0.0010	NS	NS	<0.00020	0.0034	NS	0.0058	<0.0010	NS	<0.0010 V1	<0.010
	8/6/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	<0.050
	11/21/2007	<0.025 L1	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	<0.050
	5/7/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.022	NS	NS	NS	NS
	11/18/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	<0.005	0.013 D1	NA	<0.0025	NA	NA	<0.001	0.0058 D1	NA	0.031 D1	<0.010	NA	<0.0025	<0.050
MW-20A	12/6/2006	<0.0030	0.0018	NS	<0.0010 V1	<0.0010	NS	0.013	0.016	NS	0.0023	NS	NS	<0.00020	0.0042	NS	0.010	<0.0010	NS	<0.0010	0.012
	2/21/2007	<0.0030	0.0013	NS	<0.0010	<0.0010	NS	0.0065	0.0058	NS	0.0011	NS	NS	<0.00020	0.0021	NS	0.0090	<0.0010	NS	<0.0010	<0.010
	5/23/2007	0.0064	0.0013	NS	<0.0010	<0.0010	NS	0.0021	0.0055	NS	<0.0010	NS	NS	<0.00020	0.0012	NS	0.0065	<0.0010	NS	<0.0010	<0.010
	8/6/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	0.011	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	<0.050
	11/19/2007	<0.025 L1	<0.010	NS	<0.0010	<0.0030	NS	0.045	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	0.55
	4/26/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.0079	NS	NS	NS	NS
	11/12/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	0.0070 D1	0.0097 D1	NA	<0.0025	NA	NA	<0.001	0.0062 D1	NA	0.020 D1	<0.010	NA	<0.0025	<0.050
MW-21A	5/20/2007	<0.0030	0.0046	NS	<0.0010	<0.0010	NS	0.012	0.011	NS	0.0017	NS	NS	<0.00020	0.020	NS	0.044	<0.0010	NS	<0.0010	0.67
	7/30/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	0.0008	<0.010	NS	0.067	<0.0050	NS	<0.050	<0.050
	11/13/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.052	<0.0050	NS	<0.050	<0.050
	4/25/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.061	NS	NS	NS	NS
	11/12/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	<0.005	0.0095 D1	NA	<0.0025	NA	NA	<0.001	0.011 D1	NA	0.050 D1	<0.010	NA	<0.0025	<0.050
MW-22A	5/8/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.066	NS	NS	NS	NS
	11/20/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	<0.005	0.013 D1	NA	<0.0025	NA	NA	<0.001	0.0057 D1	NA	0.054 D1	<0.010	NA	<0.0025	<0.050
MW-25A	5/2/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.27	NS	NS	NS	NS
	11/13/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-26A	5/2/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.058	NS	NS	NS	NS
	11/13/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	<0.005	0.016 D1	NA	<0.0025	NA	NA	<0.001	0.011 D1	NA	0.039 D1	<0.010	NA	<0.0025	<0.050
MW-27A	4/29/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.02	NS	NS	NS	NS
	11/14/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	<0.005	0.013 D1	NA	<0.0025	NA	NA	<0.001	0.010 D1	NA	0.0056 D1	<0.010	NA	<0.0025	0.075 D1
MW-101A	6/11/2001	<0.05	<0.005	NS	<0.005	<0.005	NS	<0.01	<0.01	NS	<0.05	NS	NS	<0.0005	<0.04	NS	0.34 M5	<0.01	NS	<0.005	<0.02
	6/9/2004	<0.10	<0.10	NS	<0.05	<0.02	NS	<0.05	<0.05	NS	<0.10	NS	NS	<0.0002	<0.05	NS	0.15	<0.05	NS	<0.20	<0.05
	11/29/2004	<0.10	<0.10	NS	<0.05	<0.02	250	<0.05	<0.05	NS	<0.10	64	<0.05	<0.0002	<0.05	23	0.16	<0.05	1100 D2	<0.20	<0.05
	2/23/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.16	<0.0050	NS	<0.050	<0.050
	5/16/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.16	<0.0050	NS	<0.050	0.10
	10/6/2006	<0.0030	0.014	NS	<0.0010 V1	<0.0010	NS	0.0032	0.014	NS	<0.0010	NS	NS	<0.00020	0.011	NS	0.22	<0.0010	NS	<0.0010	0.011
	12/12/2006	<0.0030	0.0095	NS	<0.0010 V1	<0.0010	NS	0.0029	0.039	NS	<0.0030 D1	NS	NS	<0.00020	0.0099	NS	0.20	<0.0010	NS	<0.0030 D1	<0.010
	2/19/2007	<0.0030	0.012	NS	<0.0010	<0.0010	NS	0.0031	0.019	NS	<0.0010	NS	NS	<0.00020	0.011	NS	0.21	<0.0010	NS	<0.0010	0.089
	5/22/2007	<0.0030	0.010	NS	<0.0010	<0.0010	NS	0.0023	0.022	NS	<0.0010	NS	NS	<0.00020	0.0084	NS	0.18	<0.0010	NS	<0.0010	<0.010
	7/31/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.17	<0.0050	NS	<0.050	0.41
	11/19/2007	<0.025 L1	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.13	<0.0050	NS	<0.050	0.059
	5/1/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.082	NS	NS	NS	NS
	11/14/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	<0.005	0.0053 D1	NA	<0.0025	NA	NA	<0.001	0.0088 D1	NA	0.062 D1	<0.010	NA	<0.0025	<0.050
MW-102A	6/16/2001	<0.05	<0.005	NS	<0.004	<0.005	NS	<0.01	<0.01	NS	<0.05	NS	NS	<0.0005	<0.04	NS	0.20 M5	<0.01	NS	<0.005	0.04
	6/10/2004	<0.10	<0.10	NS	<0.05	<0.02	NS	<0.05	<0.05	NS	<0.10	NS	NS	<0.0002	<0.05	NS	0.12	<0.05	NS	<0.20	0.56
	11/23/2004	<0.10/<0.10	<0.10/<0.10	NS/NS	<0.05/<0.05	<0.02/<0.02	240/300	<0.05/0.05	<0.05/<0.05	NS/NS	<0.10/<0.10	48/73	0.46/2.0	<0.0002/<0.0002	<0.05/<0.05	29/31	0.25/0.26	<0.05/<0.05	1300/ 1300 D2	<0.20/<0.20	<0.05/0.12
	2/21/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	0.012	<0.010	NS	<0.010	NS	NS	<0.0010 D1	0.015	NS	0.11	0.0061	NS	<0.050	<0.050
	5/18/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	0.026	<0.010	NS	<0.010	NS	NS	<0.0002	0.022	NS	0.16	0.017	NS	<0.050	0.12

Well Number	Date Sampled	Dissolved Metals (mg/L)																
		Antimony	Arsenic	Cadmium	Calcium	Chromium	Copper	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Zinc
		AWQS: 0.006*	AWQS: 0.05 *	AWQS: 0.005*	AWQS: NE	AWQS: 0.1*	AWQS: NE	AWQS: 0.05*	AWQS: NE	AWQS: NE	AWQS: 0.002*	AWQS: 0.1*	AWQS: NE	AWQS: 0.05*	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE
MW-14A	4/10/2006	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.10	<0.0050	NS	NS	0.085
	5/17/2006	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.10	<0.0050	NS	NS	<0.050
	10/11/2006	<0.0030	0.0054	<0.0010	NS	0.0050	0.012	<0.0010	NS	NS	<0.00020	0.0050	NS	0.088	<0.0010	NS	NS	<0.010
	12/11/2006	<0.0030	0.0041	<0.0010	NS	0.0041	0.1600	<0.0010	NS	NS	<0.00020	0.0064	NS	0.091	<0.0010	NS	NS	0.022
	2/22/2007	<0.0030	0.0058	<0.0010	NS	0.0036	0.0090	<0.0010	NS	NS	<0.00020	0.0059	NS	0.10	<0.0010	NS	NS	<0.010
	5/24/2007	<0.0030	0.0067	<0.0010	NS	0.0037	0.012	<0.0010	NS	NS	<0.00020	0.0046	NS	0.11	<0.0010	NS	NS	<0.010
	8/2/2007	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.13	<0.0050	NS	4.2	<0.050
	11/19/2007	<0.025 L1	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.12	<0.0050	NS	NS	<0.050
	5/8/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/19/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-15A	4/6/2006	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.034	<0.0050	NS	NS	0.62
	5/16/2006	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.037	<0.0050	NS	NS	0.076
	10/5/2006	<0.0030	0.0032	<0.0010	NS	0.0035	0.0074	<0.0010	NS	NS	<0.00020	0.0075	NS	0.046	<0.0010	NS	NS	0.024
	11/30/2006	<0.0030	<0.0050 D1	<0.0010	NS	0.0065 D1	0.013 D1	0.0012	NS	NS	<0.00020	0.012 D1	NS	0.043 D1	<0.0010	NS	NS	0.057 D1
	2/20/2007	<0.0030	0.0027	<0.0010	NS	0.0019	0.0094	<0.0010	NS	NS	<0.00020	0.0083	NS	0.038	<0.0010	NS	NS	0.038
	5/25/2007	<0.0030	0.0034	<0.0010	NS	0.0021	0.012	<0.0010	NS	NS	<0.00020	0.0076	NS	0.037	<0.0010	NS	NS	0.013
	7/31/2007	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.032	<0.0050	NS	3.4	<0.050
	11/20/2007	<0.025 L1	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.033	<0.0050	NS	NS	<0.050
	4/25/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/11/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-16A	4/25/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-17A	12/6/2006	<0.0030	0.0011	<0.0010	NS	<0.0010	0.0085	<0.0010	NS	NS	<0.00020	0.0035	NS	0.010	<0.0010	NS	NS	<0.010
	2/28/2007	<0.0030	0.0012	<0.0010	NS	<0.0010	0.0097	<0.0010	NS	NS	<0.00020	0.0021	NS	0.0067	<0.0010	NS	NS	<0.010
	5/23/2007	<0.0030	<0.0010	<0.0010	NS	<0.0010	0.0067	<0.0010	NS	NS	<0.00020	0.0016	NS	0.0070	<0.0010	NS	NS	<0.010
	7/31/2007	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.010	<0.0050	NS	0.81	<0.050
	11/15/2007	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	4/25/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-18A	12/4/2006	<0.0030	0.0013	<0.0010	NS	<0.0010	0.011	<0.0010	NS	NS	<0.00020	0.0057	NS	0.014	<0.0010	NS	NS	<0.010
	2/26/2007	<0.0030	0.0015	<0.0010	NS	<0.0010	0.013	<0.0010	NS	NS	<0.00020	0.0037	NS	0.016	<0.0010	NS	NS	<0.010
	5/23/2007	<0.0030	0.0010	<0.0010	NS	<0.0010	0.0078	<0.0010	NS	NS	<0.00020	0.0040	NS	0.0087	<0.0010	NS	NS	<0.010
	8/2/2007	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.012	<0.0050	NS	2.2	<0.050
	11/16/2007	<0.025 L1	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.03	<0.0050	NS	NS	<0.050
	5/7/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/14/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-19A	112/6/06	<0.0030	0.0014	<0.0010	NS	0.0013	0.0093	<0.0010	NS	NS	<0.00020	0.0056	NS	0.019	<0.0010	NS	NS	<0.010
	2/20/2007	<0.0030	0.0013	<0.0010	NS	<0.0010	0.0057	<0.0010	NS	NS	<0.00020	0.0048	NS	0.0028	<0.0010	NS	NS	<0.010
	5/23/2007	<0.0030	0.0012	<0.0010	NS	<0.0010	0.0079	<0.0010	NS	NS	<0.00020	0.0038	NS	0.0084	<0.0010	NS	NS	<0.010
	8/6/2007	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	11/21/2007	<0.025 L1	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	5/7/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-20A	12/6/2006	<0.0030	0.0013	<0.0010	NS	<0.0010	0.0092	<0.0010	NS	NS	<0.00020	0.0025	NS	0.0094	<0.0010	NS	NS	<0.010
	2/21/2007	<0.0030	0.0012	<0.0010	NS	0.0016	0.0051	0.0017	NS	NS	<0.00020	0.0024	NS	0.0050	<0.0010	NS	NS	<0.010
	5/23/2007	<0.0030	0.0011	<0.0010	NS	0.0013	0.0065	<0.0010	NS	NS	<0.00020	0.0012	NS	0.0086	<0.0010	NS	NS	<0.010
	8/6/2007	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	11/19/2007	<0.025 L1	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	4/26/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-21A	5/20/2007	<0.0030	0.0028	<0.0010	NS	<0.0010	0.0064	<0.0010	NS	NS	<0.00020	0.013	NS	0.043	<0.0010	NS	NS	0.52
	7/30/2007	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	0.0005	<0.010	NS	0.061	<0.0050	NS	NR	<0.050
	11/13/2007	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.05	<0.0050	NS	NS	<0.050
	4/25/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-22A	5/8/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/20/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-25A	5/2/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/13/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-26A	5/2/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/13/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-27A	4/29/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/14/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-101A	6/11/2001	<0.05	<0.005	<0.005	NS	0.02	<0.01	<0.05	NS	NS	<0.0005	<0.04	NS	0.46 M5	<0.01	NS	NS	<0.02
	6/9/2004	<0.10	<0.10	<0.02	NS	<0.05	<0.05	<0.10	NS	NS	<0.0002	<0.05	NS	0.14	<0.05	NS	NS	<0.05
	11/29/2004	<0.10	<0.10	<0.02	260	<0.05	<0.05	<0.10	66	<0.05	<0.0002	<0.05	24	0.17	<0.05	1200 D2	NS	<0.05
	2/23/2006	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.14	<0.0050	NS	NS	<0.050
	5/16/2006	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.16	<0.0050	NS	NS	<0.050
	10/6/2006	<0.015 D1	0.015 D1	<0.0050 D1	NS	<0.0050 D1	0.015 D1	<0.0050 D1	NS	NS	<0.00020	0.011 D1	NS	0.20 D1	<0.0050 D1	NS	NS	<0.050 D1
	12/12/2006	<0.0030	0.0095	<0.0010	NS	0.0032	0.032	<0.0010	NS	NS	<0.00020	0.011	NS	0.20	<0.0010	NS	NS	<0.010
	2/19/2007	<0.0030	0.012	<0.0010	NS	0.0028	0.017	<0.0010	NS	NS	<0.00020	0.010	NS	0.21	<0.0010	NS	NS	0.087
	5/22/2007	<0.0030	0.011	<0.0010	NS	0.0023	0.0087	<0.0010	NS	NS	<0.00020	0.0087	NS	0.19	<0.0010	NS	NS	<0.010
	7/31/2007	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.18	<0.0050	NS	NR	0.33
	11/19/2007	<0.025 L1	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.13	<0.0050	NS	NS	0.073
	5/1/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/14/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-102A	6/16/2001	<0.05	<0.005	<0.005	NS	<0.01	<0.01	<0.05	NS	NS	<0.0005	<0.04	NS	0.22 M5	<0.01	NS	NS	0.02
	6/10/2004	<0.10	<0.10	<0.02	NS	<0.05	<0.05	<0.10	NS	NS	<0.0002	<0.05	NS	0.12	<0.05	NS	NS	<0.05
	11/23/2004	<0.10/<0.10	<0.10/<0.10	<0.02/<0.02	250/230	<0.05/<0.05	<0.05/<0.05	<0.10/<0.10	48/45	0.46/0.41	<0.0002/ <0.0002	<0.05/<0.05	30/28	0.26/ 0.24	<0.05/ <0.05	1300/ 1200 D2	NS	<0.05/<0.05
	2/21/2006	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	0.012	NS	0.11	<0.0050	NS	NS	<0.050
	5/18/2006	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.16	<0.0050	NS	NS	<0.050

TETRA TECH, INC.

TABLE 2-8
TOTAL AND DISSOLVED METALS HISTORICALLY DETECTED IN GROUNDWATER
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well Number	Date Sampled	Total Metals (mg/L)																					Dissolved Metals (mg/L)																		
		Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Zinc	Antimony	Arsenic	Cadmium	Calcium	Chromium	Copper	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Zinc
		AWQS: 0.006	AWQS: 0.05	AWQS: 2	AWQS: 0.004	AWQS: 0.005	AWQS: NE	AWQS: 0.1	AWQS: NE	AWQS: NE	AWQS: 0.05	AWQS: NE	AWQS: NE	AWQS: 0.002	AWQS: 0.1	AWQS: NE	AWQS: 0.05	AWQS: NE	AWQS: NE	AWQS: 0.002	AWQS: NE	AWQS: 0.006*	AWQS: 0.05 *	AWQS: 0.005*	AWQS: NE	AWQS: 0.1*	AWQS: NE	AWQS: 0.05*	AWQS: NE	AWQS: NE	AWQS: 0.002*	AWQS: 0.1*	AWQS: NE	AWQS: 0.05*	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE
MW-102A (cont)	10/10/2006	<0.0030	0.018	NS	<0.0010	<0.0010	NS	0.011	0.016	NS	0.0026	NS	NS	<0.00020	0.017	NS	0.12	0.005	NS	<0.0010	0.045	<0.0030	0.014	<0.0010	NS	0.0013	0.016	<0.0010	NS	NS	<0.00020	0.011	NS	0.11	0.0011	NS	NS	<0.010
	12/12/2006	<0.15 D1	<0.050 D1	NS	<0.050 D1	<0.050 D1	NS	<0.050 D1	<0.050 D1	NS	<0.050 D1	NS	NS	<0.00020	<0.050 D1	NS	0.12 D1	<0.050 D1	NS	<0.050 D1	<0.50 D1	<0.0030	0.0094	<0.0010	NS	0.0015	0.018	<0.0010	NS	NS	<0.00020	0.0075	NS	0.12	<0.0010	NS	NS	<0.010
	2/21/2007	<0.0030	0.015	NS	<0.0010	<0.0010	NS	0.0095	0.014	NS	0.0020	NS	NS	<0.00020	0.013	NS	0.12	0.0034	NS	<0.0010	0.018	<0.0030	0.015	<0.0010	NS	0.0017	0.011	<0.0010	NS	NS	<0.00020	0.011	NS	0.13	<0.0010	NS	NS	<0.010
	5/15/2007	<0.0030	0.018	NS	<0.0010	<0.0010	NS	0.0065	0.013	NS	0.0014	NS	NS	<0.00020	0.012	NS	0.11	0.0010	NS	<0.0010	0.013	<0.0030	0.012	<0.0010	NS	0.0018	0.011	<0.0010	NS	NS	<0.00020	0.0073	NS	0.076	<0.0010	NS	NS	<0.010
	8/8/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.092	<0.0050	NS	<0.050	0.050	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.099	<0.0050	NS	NS	<0.050
	5/2/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.024	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/11/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
DWW-11	4/26/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.0016	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/20/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	<0.005	0.0075 D1	NA	<0.0025	NA	NA	<0.001	<0.005	NA	0.0035 D1	<0.010	NA	<0.0025	<0.050	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DMW-16	6/9/2004	<0.10	<0.10	NS	<0.05	<0.02	NS	<0.05	<0.05	NS	<0.10	NS	NS	<0.0002	<0.05	NS	<0.10	<0.05	NS	<0.20	<0.05	<0.10	<0.10	<0.02	NS	<0.05	<0.05	<0.10	NS	NS	<0.0002	<0.05	NS	<0.10	<0.05	NS	NS	<0.05
	11/22/2004	<0.10	<0.10	NS	<0.05	<0.02	220	<0.05	<0.05	NS	<0.10	74	0.4	<0.0004 D1	<0.05	14	<0.10	<0.05	440 D2	<0.20	<0.05	<0.10	<0.10	<0.02	220	<0.05	<0.05	<0.10	72	0.36	<0.0002	<0.05	14	<0.10	<0.05	420 D2	NS	<0.05
DMW-17	6/9/2004	<0.10	<0.10	NS	<0.05	<0.02	NS	<0.05	<0.05	NS	<0.10	NS	NS	<0.0002	<0.05	NS	<0.10	<0.05	NS	<0.20	0.05	<0.10	<0.10	<0.02	NS	<0.05	<0.05	<0.10	NS	NS	<0.0002	<0.05	NS	<0.10	<0.05	NS	NS	<0.05
	11/22/2004	<0.10	<0.10	NS	<0.05	<0.02	120	<0.05	<0.05	NS	<0.10	40	0.36	<0.0002	<0.05	13	<0.10	<0.05	590 D2	<0.20	<0.05	<0.10	<0.10	<0.02	120	<0.05	<0.05	<0.10	39	0.34	<0.0002	<0.05	12	<0.10	<0.05	560 D2	NS	<0.05
DMW-25	11/21/2007	<0.025 L1	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.12	<0.0050	NS	<0.050	<0.050	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.11	<0.0050	NS	NS	<0.050
	11/20/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	<0.005	0.014 D1	NA	<0.0025	NA	NA	<0.001	<0.005	NA	0.0079 D1	<0.010	NA	<0.0025	<0.050	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-Zone Monitoring Wells																																									
MW-8B	12/5/2006	<0.0030	0.013	NS	<0.0010 V1	<0.0010	NS	0.027	0.021	NS	<0.0010	NS	NS	<0.00020	0.012	NS	0.032	<0.0010	NS	<0.0010	0.019	<0.0030	0.017	<0.0010	NS	0.023	0.013	<0.0010	NS	NS	<0.00020	0.011	NS	0.031	<0.0010	NS	NS	<0.010
	2/26/2007	<0.0030	0.0068	NS	<0.0010 V1	<0.0010	NS	0.015	0.014	NS	<0.0010	NS	NS	<0.00020	0.0067	NS	0.027	<0.0010	NS	<0.0010	<0.010	<0.0030	0.0068	<0.0010	NS	0.014	0.014	<0.0010	NS	NS	<0.00020	0.0076	NS	0.028	<0.0010	NS	NS	<0.010
	5/21/2007	<0.0030	0.0075	NS	<0.0010	<0.0010	NS	0.014	0.011	NS	0.0012	NS	NS	<0.00020	0.011	NS	0.026	<0.0010	NS	<0.0010 V1	0.50	0.0031	0.0089	<0.0010	NS	0.012	0.010	<0.0010	NS	NS	<0.00020	0.0097	NS	0.027	<0.0010	NS	NS	0.21
	8/6 & 8/7/07	<0.025/NS	<0.010/<0.010	NS	<0.0010	<0.0030	150	<0.010/<0.010	<0.010/<0.010	0.64	<0.010/NS	NS/60	NS/NS	<0.0002/NS	<0.010/NS	NS/15	0.026/NS	<0.0050/NS	NS/580	<0.050/NS	0.10/NS	<0.025/NS	<0.010/NS	<0.0030/NS	NS/NS	<0.010/NS	<0.010/NS	<0.010/NS	NS/NS	NS/NS	<0.0002/NS	<0.010/NS	NS/NS	0.029/NS	<0.0050/NS	NS/NS	NS/NS	<0.050/NS
	11/16/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	0.095	<0.025 L1	<0.010	<0.0030	NS	<0.010	0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	0.070
	5/7/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.0083	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/15/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	<0.005	0.010 D1	NA	<0.0025	NA	NA	<0.001	0.0085 D1	NA	0.0057 D1	<0.010	NA	<0.0025	<0.050	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-18B	12/5/2006	<0.0030	0.0029	NS	<0.0010 V1	<0.0010	NS	0.016	0.012	NS	<0.0010	NS	NS	<0.00020	0.0070	NS	0.038	<0.0010	NS	<0.0010	0.026	<0.0030	0.0023	<0.0010	NS	0.015	0.0077	<0.0010	NS	NS	<0.00020	0.0068	NS	0.036	<0.0010	NS	NS	<0.010
	2/26/2007	<0.0030	0.0032	NS	<0.0010 V1	<0.0010	NS	0.0094	0.010	NS	<0.0010	NS	NS	<0.00020	0.0046	NS	0.045	<0.0010	NS	<0.0010	0.017	<0.0030	0.0032	<0.0010	NS	0.0090	0.0088	<0.0010	NS	NS	<0.00020	0.0042	NS	0.042	<0.0010	NS	NS	0.012
	5/22/2007	0.0039	0.0047	NS	<0.0010	<0.0010	NS	0.0088	0.0089	NS	0.0014	NS	NS	<0.00020	0.0073	NS	0.052	<0.0010	NS	<0.0010	0.67	<0.0030	0.0046	<0.0010	NS	0.0081	0.0074	<0.0010	NS	NS	<0.00020	0.0075	NS	0.051	<0.0010	NS	NS	0.65
	8/2/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.053	<0.0050	NS	<0.050	0.63	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.052	<0.0050	NS	3.1	0.52
	11/16/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.049	<0.0050	NS	<0.050	0.30	<0.025 L1	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.061	<0.0050	NS	NS	0.33
	5/8/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.044	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/20/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	<0.005	0.0096 D1	NA	<0.0025	NA	NA	<0.001	0.010 D1	NA	0.026 D1	<0.010	NA	<0.0025	<0.050	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-21B	5/20/2007	<0.0030	0.0044	NS	<0.0010	<0.0010	NS	0.028	0.018	NS	0.0035	NS	NS	<0.00020	0.028	NS	0.042	<0.0010	NS	<0.0010	0.64	<0.0030	0.0034	<0.0010	NS	<0.0010	0.0048	<0.0010	NS	NS	<0.00020	0.018	NS	0.044	<0.0010	NS	NS	0.43
	7/30/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	0.019	<0.010	NS	<0.010	NS	NS	<0.0002	0.018	NS	0.040	<0.0050	NS	<0.050	0.41	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	0.015	NS	0.035	<0.0050	NS	NR	0.33
	11/13/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	0.20	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	0.14
	5/7/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.062	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	<0.005	0.016 D1	NA	<0.0025	NA	NA	<0.001	0.010 D1	NA	0.072 D1	<0.010	NA	<0.0025	0.072 D1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-22B	11/14/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	0.055	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.088	<0.0050	NS	<0.050	0.14	<0.025	<0.010	<0.0030	NS	<0.010	0.038	<0.010	NS	NS	<0.0002	0.012	NS	0.081	<0.0050	NS	NS	0.095
	11/29/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	0.075	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.010	<0.0050	NS	NS	<0.050
	5/8/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.057	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/19/2013	<0.005	0.0060 D1	NA	<0.0025	<0.0025	NA	<0.005	0.014 D1	NA	<0.0025	NA	NA	<0.001	0.0064 D1	NA	0.050 D1	<0.010	NA	<0.0025	<0.050	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-23B	11/29/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	0.075	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.010	<0.0050	NS	NS	<0.050
	4/30/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.0057	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	<0.005	0.021 D1	NA	<0.0025	NA	NA	<0.001	0.0067 D1	NA	0.0091 D1	<0.010	NA	<0.0025	0.077 D1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-24B	5/1/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.024	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/13/2013	<0.005	0.0038 D1	NA	<0.0025	<0.0025	NA	<0.005	0.012 D1	NA	0.0034 D1	NA	NA	<0.001	0.0072 D1	NA	<0.0025	<0.010	NA	<0.0025	<0.050	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-25B	4/29/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.16	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/11/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-26B	4/30/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.0036	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/2013	<0.005	0.0027 D1	NA	<0.0025	<0.0025	NA	<0.005	0.0086 D1	NA	<0.0025	NA	NA	<0.001	0.0088 D1	NA	0.0052 D1	<0.010	NA	<0.0025	0.061 D1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-27B	4/29/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.003	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/11/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-28B	4/24/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/13/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	0.0084 D1	0.035 D1	NA	<0.0025	NA	NA	<0.001	0.011 D1	NA	0.0073 D1	<0.010	NA	<0.0025	<0.050	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-29B	4/24/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/13/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	<0.005	0.013 D1	NA	<0.0025	NA	NA	<0.001	0.0081 D1	NA	0.0075 D1	<0.010	NA	<0.0025	<0.050	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-30B	6/6/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.012	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/13/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	<0.005	0.019 D1	NA	<0.0025	NA	NA	<0.001	0.0074 D1	NA	0.016 D1	<0.010	NA	<0.0025	0.055 D1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-102B1	6/16/2001	<0.05	<0.005	NS	<0.004	<0.005	NS	<0.01	<0.01	NS	<0.05	NS	NS	<0.0005	<0.04	NS	0.097 M5	<0.01	NS	<0.005	0.11	<0.05	<0.005	<0.005	NS	<0.01	<0.01	<0.05	NS	NS	<0.0005	<0.04	NS	0.11 M5	<0.01	NS	NS	<0.02
	6/8/2004	<0.10	<0.10	NS	<0.05	0.02	NS	<0.05	<0.05	NS	<0.10	NS	NS	<0.0002	<0.05	NS	<0.10	<0.05	NS	<0.20	0.07	<0.10	<0.10	<0.02	NS	<0.05	<0.05	<0.10	NS	NS	<0.0002	<0.05	NS	<0.10	<0.05	NS	NS	<0.05
	11/23/2004	<0.10	<0.10	NS	<0.05	<0.02	400	<0.05	<0.05	NS	<0.10	120	<0.05	<0.0002	<0.05	24	0.15	<0.05	810 D2	<0.20	<0.05	<0.10	<0.10	<0.02	380	<0.05	<0.05	<0.10	110	<0.05	<0.0002	<0.05	23	0.15	<0.05	810 D2	NS	<0.05
	2/21/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.16	<0.0050	NS	<0.050	0.099	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.16	<0.0050	NS	NS	<0.050
	5/26/2006	<0.025	<0.010	NS	<0.0020 D1	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	0.16	<0.0050	NS	<0.050	1.3	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	0.15	<0.0050	NS	NS	0.71
	10/10/2006	<0.0030	0.012	NS	<0.0010	<0.0010	NS	0.0017	0.011	NS	<0.0010	NS	NS	<0.00020	0.013	NS	0.16	<0.0010	NS	<0.0010	0.021	<0.0030	0.011	<0.0010	NS	0.0015	0.011	<0.0010	NS	NS	<0.00020	0.014	NS	0.16	<0.0010	NS	NS	0.014
	12/7/2006	<0.0030	0.0043	NS	<0.0010 V1	0.0021	NS	0.0039	0.016	NS	0.0019	NS	NS	<0.00020	0.011	NS	0.061	<0.0010	NS	<0.0010	0.11	<0.0030	0.0038	<0.0010	NS	0.0010	0.013	<0.0010	NS	NS	<0.00020	0.011	NS	0.061	<0.0010	NS	NS	0.054
	2/23/2007	<0.0030	0.0042	NS	<0.0010	0.0068	NS	0.010	0.026	NS	0.0058	NS	NS	<0.00020	0.013	NS	0.029	<0.0010	NS	<0.0010	0.27	<0.0030	0.0033	0.0017	NS	<0.0010	0.013	0.0020	NS	NS	<0.00020	0.0073	NS	0.029	<0.0010	NS	NS	0.20
	5/24/2007	<0.030	<0.010	NS	<0.010	<0.010	NS	<0.010	0.035	NS	0.019	NS	NS	<0.00020	0.022	NS	<0.020	<0.010	NS	<0.010	0.27 D2	<0.030 D1	<0.010 D1	<0.010 D1	NS	<0.010 D1	<0.010 D1	<0.010 D1	NS	NS	<0.00020	<0.010 D1	NS	<0.020	<0.010 D1	NS	NS	<0.10 D1
	8/7/2007	<0.025	<0.010	NS	<0.0010	0.0031	NS	<0.010	<0.010	NS	0.013	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	0.17	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	11/21/2007	<0.025	<0.010	NS	<0.0010	0.0042	NS	<0.010	0.011	NS	0.012	NS	NS	<0.0002	0.011	NS	<0.025	<0.0050	NS	<0.050	0.11	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	5/2/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.064	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/11/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-102B2	6/16/2001	<0.05	<0.005	NS	<0.004	<0.005	NS	<0.01	0.02	NS	<0.05	NS	NS	<0.0005	<0.04	NS	<0.005	<0.01	NS	<0.005	0.13	<0.05	<0.005	0.007	NS	<0.01	<0.01	<0.05	NS	NS	<0.0005	0.04	NS	<0.005	<0.01	NS	NS	0.11
	6/8/2004	<0.10	<0.10	NS	<0.05	<0.02	NS	<0.05	<0.05	NS	<0.10	NS	NS	<0.0002	<0.05	NS	<0.10	<0.05	NS	<0.20	0.26	<0.10	<0.10	<0.02	NS	<0.05	<0.05	<0.10	NS	NS	<0.0002	<0.05	NS	<0.10	<0.05	NS	NS	<0.05
	11/23/2004	<0.10	<0.10	NS	<0.05	<0.02	290	<0.05	<0.05	NS	<0.10	120	0.34	<0.0002	<0.05	15	<0.10	<0.05	530 D2	<0.20	<0.05	<0.10	<0.10	<0.02	290	<0.05	<0.05	<0.10	130	0.30	<0.0002	<0.05	16	<0.10	<0.05	560 D2	NS	<0.05
	2/21/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	0.064	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.010	<0.0050	NS	NS	<0.050
	5/26/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	0.011	NS	<0.025	<0.0050	NS	<0.050	0.073	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	10/12/2006	0.0042	0.0025	NS	<0.0010	<0.0010	NS	0.0055	0.014	NS	0.0026	NS	NS	<0.00020	0.0081	NS	0.0033	<0.0010	NS	<0.0010	0.064	<0.0030	0.0025	<0.0010	NS	<0.0010	0.010	<0.0010	NS	NS	<0.00020	0.0064	NS	<0.0020	<0.0010	NS	NS	0.033
	12/7/2006	<0.0030	0.0027	NS	<0.0010 V1	0.0011	NS	0.016	0.020	NS	0.0039	NS	NS	<0.00020	0.025	NS	0.0031	<0.0010	NS	<0.0010	0.11	<0.0030	0.0022	<0.0010	NS	0.0042	0.012	0.0013	NS	NS	<0.00020	0.018	NS	0.0030	<0.0010	NS	NS	0.071
	2/23/2007	<0.0030	0.0028	NS	<0.0010	<0.0010	NS	0.0079	0.021	NS	0.0046	NS	NS	<0.00020	0.012	NS	0.0072	<0.0010	NS	<0.0010	0.24	<0.0030	0.0021	<0.0010	NS	<0.0010	0.011	0.0020	NS	NS	<0.00020	0.0076	NS	0.0054	<0.0010	NS	NS	0.19
	5/24/2007	<0.030	<0.010	NS	<0.010	0.010	NS	0.012	0.040	NS	0.020	NS	NS	<0.00020	0.030	NS	<0.020	<0.010	NS	<0.010	0.23 D2	<0.030 D1	<0.010 D1	<0.010 D1	NS	<0.010 D1	<0.010 D1	<0.010 D1	NS	NS	<0.00020	0.010 D1	NS	<0.020 D1	<0.010 D1	NS	NS	<0.10 D1
	8/7/2007	0.077	<0.010	NS	<0.0010	<0.0030	NS	0.012	0.018	NS	0.11	NS	NS	<0.0002	0.011	NS	<0.025	<0.0050	NS	<0.050	0.13	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050

TETRA TECH, INC.

TABLE 2-8
TOTAL AND DISSOLVED METALS HISTORICALLY DETECTED IN GROUNDWATER
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well Number	Date Sampled	Total Metals (mg/L)																					Dissolved Metals (mg/L)																	
		Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Zinc	Antimony	Arsenic	Cadmium	Calcium	Chromium	Copper	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Strontium	Zinc
		AWQS: 0.006	AWQS: 0.05	AWQS: 2	AWQS: 0.004	AWQS: 0.005	AWQS: NE	AWQS: 0.1	AWQS: NE	AWQS: NE	AWQS: 0.05	AWQS: NE	AWQS: NE	AWQS: 0.002	AWQS: 0.1	AWQS: NE	AWQS: 0.05	AWQS: NE	AWQS: NE	AWQS: 0.002	AWQS: NE	AWQS: 0.006*	AWQS: 0.05 *	AWQS: 0.005*	AWQS: NE	AWQS: 0.1*	AWQS: NE	AWQS: 0.05*	AWQS: NE	AWQS: NE	AWQS: 0.002*	AWQS: 0.1*	AWQS: NE	AWQS: 0.05*	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE
MW-102B2	11/21/2007	**0.037 L1**	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	**0.021**	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	**0.072**	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
(cont)	5/2/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**0.0048**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	<0.005	**0.023 D1**	NA	<0.0025	NA	NA	<0.001	**0.0065 D1**	NA	**0.0036 D1**	<0.010	NA	<0.0025	<0.050	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-103B	11/24/2004	<0.10	<0.10	NS	<0.05	<0.02	**420**	<0.05	<0.05	NS	<0.10	**170**	**1.4**	<0.0002	<0.05	**19**	<0.10	<0.05	**680 D2**	<0.20	<0.05	<0.10	<0.10	<0.02	**390**	<0.05	<0.05	<0.10	**160**	**1.3**	<0.0002	<0.05	**17**	<0.10	<0.05	**570 D2**	NS	<0.05
	2/21/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	**0.031**	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	**0.13**	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.10	<0.0050	NS	NS	<0.050
	5/25/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	**0.022**	NS	NS	<0.0002	**0.014**	NS	<0.025	<0.0050	NS	<0.050	**0.097**	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	10/12/2006	<0.0030	**0.0034**	NS	<0.0010	<0.0010	NS	**0.0038**	**0.014**	NS	**0.0045**	NS	NS	<0.00020	**0.0096**	NS	**0.0042**	<0.0010	NS	<0.0010	**0.046**	<0.0030	**0.0031**	<0.0010	NS	<0.0010	**0.0088**	**0.0040**	NS	NS	<0.00020	**0.0074**	NS	<0.0020	<0.0010	NS	NS	**0.028**
	12/7/2006	<0.0030	**0.0028**	NS	<0.0010 V1	<0.0010	NS	**0.032**	**0.020**	NS	**0.0051**	NS	NS	<0.00020	**0.046**	NS	**0.0060**	**0.0013**	NS	<0.0010	**0.061**	<0.0030	**0.0022**	<0.0010	NS	<0.0010	**0.013**	<0.0010	NS	NS	<0.00020	**0.030**	NS	**0.0075**	<0.0010	NS	NS	**0.034**
	2/23/2007	<0.0030	**0.0033**	NS	<0.0010	<0.0010	NS	**0.012**	**0.054**	NS	**0.0077**	NS	NS	<0.00020	**0.020**	NS	**0.0066**	<0.0010	NS	<0.0010	**0.26**	<0.0030	**0.0028**	<0.0010	NS	**0.0023**	**0.029**	**0.0027**	NS	NS	<0.00020	**0.013**	NS	**0.0048**	<0.0010	NS	NS	**0.22**
	5/22/2007	<0.0030	**0.043**	NS	**0.019**	**0.0045**	NS	**1.1**	**0.27**	NS	**0.14**	NS	NS	<0.0010 D1	**0.39**	NS	**0.034**	**0.015**	NS	**0.0012**	**2.5 D2**	<0.0030	**0.0041**	<0.0010	NS	**0.043**	**0.017**	**0.0061**	NS	NS	<0.00020	**0.060**	NS	**0.0065**	<0.0010	NS	NS	**0.11**
	8/7/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	**0.038**	<0.010	NS	**0.011**	NS	NS	<0.0002	**0.020**	NS	<0.025	<0.0050	NS	<0.050	**0.081**	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	11/20/2007	<0.025 L1	<0.010	NS	<0.0010	<0.0030	NS	**0.012**	<0.010	NS	<0.010	NS	NS	<0.0002	**0.011**	NS	<0.025	<0.0050	NS	<0.050	**0.095**	<0.025 L1	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	**0.056**
	5/1/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**0.029**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/11/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-104B	12/6/2004	<0.10	<0.10	NS	<0.05	<0.02	**350**	<0.05	<0.05	**14**	<0.10	**130**	**1.4**	<0.0002	<0.05	**25**	<0.10	<0.05	**62 D2**	<0.20	**0.11**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/22/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	**0.088**	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	**0.018**	<0.0050	NS	NS	**0.063**
	5/23/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	**0.089**	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	**0.064**
	10/11/2006	<0.0030	**0.0036**	NS	<0.0010	<0.0010	NS	**0.0022**	**0.010**	NS	<0.0010	NS	NS	<0.00020	**0.010**	NS	**0.012**	<0.0010	NS	<0.0010	**0.049**	<0.0030	**0.0039**	<0.0010	NS	<0.0010	**0.0089**	<0.0010	NS	NS	<0.00020	**0.0098**	NS	**0.013**	<0.0010	NS	NS	**0.034**
	12/8/2006	<0.030	**0.0039**	NS	<0.0010 V1	<0.0010	NS	**0.0040**	**0.021**	NS	**0.0042**	NS	NS	<0.00020	**0.011**	NS	**0.015**	<0.0010	NS	<0.0010	**0.056**	<0.0030	**0.0030**	<0.0010	NS	<0.0010	**0.013**	<0.0010	NS	NS	<0.00020	**0.010**	NS	**0.015**	<0.0010	NS	NS	**0.031**
	2/27/2007	<0.015 D1	<0.0050 D1	NS	<0.0050 D1,V1	<0.0050 D1	NS	<0.0050 D1	**0.017 D1**	NS	<0.0050 D1	NS	NS	<0.00020	**0.0094 D1**	NS	**0.025 D1**	<0.0050 D1	NS	<0.0050 D1	<0.050 D1	<0.015 D1	<0.0050 D1	<0.0050 D1	NS	<0.0050 D1	**0.016 D1**	<0.0050 D1	NS	NS	<0.00020	**0.011 D1**	NS	**0.011 D1**	<0.0050 D1	NS	NS	**0.060 D1**
	5/21/2007	**0.0065**	**0.0030**	NS	<0.0010	<0.0010	NS	**0.0049**	**0.012**	NS	**0.0025**	NS	NS	<0.00020	**0.012**	NS	**0.013**	<0.0010	NS	<0.0010 V1	**1.7**	<0.0030	**0.0042**	<0.0010	NS	**0.0016**	**0.029**	<0.0010	NS	NS	<0.00020	**0.029**	NS	**0.016**	<0.0010	NS	NS	**1.7**
	8/8/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	**0.72**	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	**0.63**
	11/15/2007	<0.025	<0.010	NS	>0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	**0.16**	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	**0.093**
	4/30/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**0.0083**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/14/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	<0.005	**0.020 D1**	NA	<0.0025	NA	NA	<0.001	**0.0098 D1**	NA	**0.0089 D1**	<0.010	NA	<0.0025	<0.050	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-Zone Monitoring Wells																																								
MW-8C	5/18/2007	<0.0030	**0.0020**	NS	<0.0010	<0.0010	NS	**0.0072**	**0.012**	NS	**0.0095**	NS	NS	<0.00020	**0.019**	NS	<0.0020	<0.0010	NS	<0.0010	**1.8**	<0.0030	**0.0014**	<0.0010	NS	**0.0011**	**0.0053**	**0.0018**	NS	NS	<0.00020	**0.018**	NS	**0.0034**	<0.0010	NS	NS	**1.4**
	8/6/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	**0.011**	<0.010	NS	<0.010	NS	NS	<0.0002	**0.013**	NS	<0.025	<0.0050	NS	<0.050	**0.96**	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	**0.010**	NS	<0.025	<0.0050	NS	NS	**0.16**
	11/16/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	**0.35**	<0.050	<0.025 L1	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	5/1/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**0.00089**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/15/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	<0.005	**0.011 D1**	NA	<0.0025	NA	NA	**0.0073 D1**	**0.0097 D1**	NA	**0.0046 D1**	<0.010	NA	<0.0025	<0.050	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-17C	9/24/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.050	NS	<0.050	**0.47**	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.010	<0.0050	NS	NS	**0.38 L1**
	11/15/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	**0.093**	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	4/30/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.0005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/11/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-21C	5/19/2007	<0.0030	**0.0042**	NS	<0.0010	<0.0010	NS	**0.022**	**0.013**	NS	**0.016**	NS	NS	<0.00020	**0.012**	NS	<0.0020	<0.0010	NS	<0.0010	**1.1**	**0.0035**	**0.0035**	<0.0010	NS	<0.0010	**0.0043**	<0.0010	NS	NS	<0.00020	**0.0072**	NS	**0.0026**	<0.0010	NS	NS	**0.53**
	8/1/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	**0.012**	**0.014**	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	**0.96**	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.010	<0.0050	NS	**1.7**	**0.50**
	11/29/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	**1.2**	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.010	<0.0050	NS	NS	<0.050
	4/30/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.0005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/12/2013	<0.005	**0.0038 D1**	NA	<0.0025	<0.0025	NA	<0.005	**0.031 D1**	NA	**0.0091 D1**	NA	NA	<0.001	**0.0098 D1**	NA	**0.0026 D1**	<0.010	NA	<0.0025	**0.090 D1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-103C	11/24/2004	<0.10	<0.10	NS	<0.05	<0.02	**180**	<0.05	<0.05	NS	<0.10	**63**	**0.19**	<0.0002	<0.05	**15**	<0.10	<0.05	**420 D2**	<0.20	<0.05	<0.10	<0.10	<0.02	**180**	<0.05	<0.05	<0.10	**62**	**0.15**	<0.0002	<0.05	**14**	<0.10	<0.05	**430 D2**	**NS**	<0.05
	2/21/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	**0.013**	NS	NS	<0.0002	**0.011**	NS	<0.025	<0.0050	NS	<0.050	**0.08**	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.010	<0.0050	NS	NS	<0.050
	5/25/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	**0.015**	NS	<0.010	NS	NS	<0.0002	**0.012**	NS	<0.025	<0.0050	NS	<0.050	<0.050	<0.025	<0.010	<0.0030	NS	<0.0010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	10/12/2006	<0.0030	**0.0045**	NS	<0.0010	**0.0018**	NS	**0.0082**	**0.023**	NS	**0.0056**	NS	NS	<0.00020	**0.014**	NS	**0.0047**	<0.0010	NS	<0.0010	**0.12**	<0.0030	**0.0039**	**0.0014**	NS	<0.0010	**0.015**	**0.0019**	NS	NS	<0.00020	**0.0085**	NS	<0.0020	<0.0010	NS	NS	**0.077**
	12/7/2006	<0.0030	**0.0032**	NS	<0.0010 V1	<0.0010	NS	**0.0055**	**0.015**	NS	**0.0027**	NS	NS	<0.00020	**0.011**	NS	**0.0031**	<0.0010	NS	<0.0010	**0.072**	<0.0030	**0.0027**	<0.0010	NS	**0.0012**	**0.0070**	<0.0010	NS	NS	<0.00020	**0.0094**	NS	**0.0029**	<0.0010	NS	NS	**0.035**
	2/22/2007	**0.0079**	**0.0035**	NS	<0.0010	<0.0010	NS	**0.010**	**0.017**	NS	**0.019**	NS	NS	<0.00020	**0.0095**	NS	**0.0043**	<0.0010	NS	<0.0010	**0.17**	<0.0030	**0.0028**	<0.0010	NS	**0.0019**	**0.0094**	**0.0043**	NS	NS	<0.00020	**0.0088**	NS	**0.0037**	<0.0010	NS	NS	**0.13**
	5/23/2007	**0.0058**	**0.0020**	NS	<0.0010	<0.0010	NS	**0.0049**	**0.013**	NS	**0.013**	NS	NS	<0.00020	**0.0093**	NS	<0.0020	<0.0010	NS	<0.0010 V1	**0.059**	<0.0030	**0.0018**	<0.0010	NS	<0.0010	**0.0051**	<0.0010	NS	NS	<0.00020	**0.0090**	NS	<0.0020	<0.0010	NS	NS	**0.013**
	8/7/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	**0.010**	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	**0.053**	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	11/20/2007	<0.025 L1	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	**0.12**	<0.025 L1	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	5/1/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.0005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/14/2013	<0.005	**0.0029 D1**	NA	<0.0025	<0.0025	NA	<0.005	**0.014 D1**	NA	<0.0025	NA	NA	<0.001	**0.0082 D1**	NA	<0.0025	<0.010	NA	<0.0025	<0.050	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-104C	12/6/2004	<0.10	<0.10	NS	<0.05	<0.02	**220**	<0.05	<0.05	**7.2**	<0.10	**55**	**0.61**	<0.0002	<0.05	**20**	<0.10	<0.05	**52 D2**	<0.20	**0.08**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/22/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	<0.050	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.010	<0.0050	NS	NS	<0.050
	5/23/2006	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	**0.083**	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	10/10/2006	<0.0030	**0.0060**	NS	<0.0010	<0.0010	NS	**0.0023**	**0.024**	NS	**0.0027**	NS	NS	<0.00020	**0.0069**	NS	**0.0036**	<0.0010	NS	<0.0010	**0.076**	<0.0030	**0.0059**	<0.0010	NS	<0.0010	**0.014**	<0.0010	NS	NS	<0.00020	**0.0071**	NS	<0.0020	<0.0010	NS	NS	**0.051**
	12/8/2006	<0.030	**0.0057**	NS	<0.0010 V1	<0.0010	NS	**0.0040**	**0.021**	NS	**0.0027**	NS	NS	<0.00020	**0.0075**	NS	**0.0040**	<0.0010	NS	<0.0010	**0.057**	<0.0030	**0.0050**	<0.0010	NS	<0.0010	**0.014**	<0.0010	NS	NS	<0.00020	**0.0079**	NS	**0.0036**	<0.0010	NS	NS	**0.040**
	2/27/2007	<0.015 D1	**0.0058 D1**	NS	<0.0050 D1,V1	<0.0050 D1	NS	<0.0050 D1	**0.016 D1**	NS	<0.0050 D1	NS	NS	<0.00020	**0.0076 D1**	NS	**0.015 D1**	<0.0050 D1	NS	<0.0050 D1	<0.050 D1	<0.0030	**0.0052**	<0.0010	NS	<0.0010	**0.012**	<0.0010	NS	NS	<0.00020	**0.0039**	NS	**0.0053**	<0.0010	NS	NS	**0.018**
	5/21/2007	**0.0030**	**0.0045**	NS	<0.0010	<0.0010	NS	**0.0040**	**0.011**	NS	**0.0047**	NS	NS	<0.00020	**0.0093**	NS	<0.0020	<0.0010	NS	<0.0010 V1	**1.6**	<0.0030	**0.0048**	<0.0010	NS	**0.0016**	**0.0092**	**0.0014**	NS	NS	<0.00020	**0.0083**	NS	<0.0020	<0.0010	NS	NS	**1.5**
	8/3/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	**0.72**	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.010	<0.0050	NS	**3.8**	**0.51**
	11/15/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	**0.22**	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.005	NS	NS	**0.18**
	4/23/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**0.0039**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/11/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Production Wells																																								
Ron Martin	11/30/2004	<0.10	<0.10	NS	<0.05	<0.02	**360**	<0.05	<0.05	NS	<0.10	**150**	**0.28**	<0.0002	<0.05	**17**	<0.10	<0.05	**410 D2**	<0.20	**1.4**	<0.10	<0.10	<0.02	**370**	<0.05	<0.05	<0.10	**150**	**0.29**	<0.0002	<0.05	**17**	<0.10	<0.05	**530 D2**	NS	**1.5**
	5/9/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**0.04**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
KL-1	6/11/2001	<0.05	<0.005	NS	<0.005	<0.005	NS	**0.11**	<0.01	NS	<0.05	NS	NS	<0.0005	**0.09**	NS	<0.005	<0.01	NS	<0.005	<0.02	<0.05	<0.005	<0.005	NS	**0.02**	<0.01	<0.05	NS	NS	<0.0005	<0.04	NS	<0.005	<0.01	NS	NS	<0.02
Byrne ‡	3/2/2007	<0.0030	**0.0021**	NS	<0.0010	<0.0010	NS	<0.0010	**0.015**	NS	<0.0010	NS	NS	<0.00020	**0.0034**	NS	**0.023**	<0.0010	NS	<0.0010	<0.010	<0.0030	**0.0020**	<0.0010	NS	<0.0010	**0.016**	<0.0010	NS	NS	<0.00020	**0.0049**	NS	**0.023**	<0.0010	NS	NS	<0.010
	5/25/2007	<0.015 D1	<0.0050 D1	NS	<0.0050 D1	<0.0050 D1	NS	<0.0050 D1	**0.0084 D1**	NS	<0.0050 D1	NS	NS	<0.00020	<0.0050 D1	NS	**0.032 D1**	<0.0050 D1	NS	<0.0050 D1	<0.050	<0.0030	**0.0023**	<0.0010	NS	<0.0010	**0.012**	<0.0010	NS	NS	<0.00020	**0.0055**	NS	**0.026**	<0.0010	NS	NS	<0.010
	8/3/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	<0.050	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	**0.023**	<0.0050	NS	**2.2**	<0.050
	11/20/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	<0.050	<0.025 L1	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	4/26/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**0.027**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/15/2013	<0.005	<0.0025	NA	<0.0025	<0.0025	NA	<0.005	**0.280 D1**	NA	**0.038 D1**	NA	NA	**0.0011 D1**	**0.011 D1**	NA	**0.025 D1**	<0.010	NA	<0.0025	<0.050	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
St. Francis †	2/22/2007	<0.0030	**0.0053**	NS	<0.0010	<0.0010	NS	<0.0010	**0.018**	NS	**0.018**	NS	NS	<0.00020	**0.069**	NS	**0.0037**	<0.0010	NS	<0.0010	**1.0**	<0.0030	**0.0050**	<0.0010	NS	<0.0010	**0.0086**	<0.0010	NS	NS	<0.00020	**0.038**	NS	<0.0020	<0.0010	NS	NS	**0.29**
	8/7/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	**0.087**	<0.025	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	**0.095**
	11/16/2007	<0.025	<0.010	NS	<0.0010	<0.0030	NS	<0.010	<0.010	NS	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	<0.050	<0.050	<0.025 L1	<0.010	<0.0030	NS	<0.010	<0.010	<0.010	NS	NS	<0.0002	<0.010	NS	<0.025	<0.0050	NS	NS	<0.050
	4/26/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**0.00064**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/15/2013	<0.005	**0.0045 D1**	NA	<0.0025	<0.0025	NA	<0.005	**0.014 D1**	NA	<0.0025	NA	NA	<0.001	**0.015 D1**	NA	**0.0055 D1**	<0.010	NA	<0.0025	**0.076 D1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

mg/L = milligrams per Liter
AWQS = Aquifer Water Quality Standard
NE = Not Established
* = AWQS for Total Metals
NS = Not Sampled
NA = the sample was not analyzed for the listed analysis

‡ Alice Byrne School
† St. Francis of Assisi School

15	Concentrations at or above the AQWS
0.2	Detected concentration below the AWQS

Silica was detected at 31 mg/L in MW-8B on 8/7/07; this was the only noted detection of this analyte

D1 - sample required dilution to matrix
D2 = Sample required dilution due to high concentration of target analyte
L1 = The associated blank spike recovery was above laboratory acceptance limits
M5 = Analyte concentration was determined by the method of standard addition
V1 = Calibration verification recovery was above method acceptance limits; this target analyte was not detected in the sample.

TETRA TECH, INC.

TABLE 2-9
SUMMARY OF SVOCs (ug/L) DETECTED IN GROUNDWATER
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well Number	Date Sampled	Phenol	Butyl Benzyl Phthalate	DEHP	Di-n-butylphthalate	Di-n-octylphthalate	2-Methylnapthalene	1,4-Dioxane
		AWQS: 2,100	AWQS: 1,400	AWQS: 6	AWQS: 700	AWQS: 2,800	AWQS: NE	AWQS: NE
A-Zone Groundwater Monitoring Wells								
MW-1A	7/30/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	**2.5**
	11/20/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	**3.6**
	2/28/2008	<5.0	<5.0	<3.0	<5.0	<25	<5.0	**6.4**
	11/18/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	**18**
MW-2A	11/19/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	**19**
MW-3A	6/16/2001	**7.0**	<5.0	<5.0	<5.0	<5.0	<5.0	NR
	11/14/2013	<5.0	<5.0	**7.0**	<5.0	<5.0	<5.0	<1.0
MW-4A	11/14/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<1.0
MW-5A	1/29/2002	<5	<5	<5	<5	<5	<5	NR
	8/7/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	**2.3**
	11/19/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	**1.0**
	2/25/2008	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	11/19/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	**7.9**
MW-6A	1/30/2002	<5	<5	<5	<5	<5	<5	NR
	8/7/2007	<5.0	<5.0	**30**	<5.0	<25	<5.0	<1.0
	11/19/2007	<5.0	<5.0	<3.0	<5.0	<25	**5.3**	<1.0
	2/25/2008	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	11/19/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<1.0
MW-7A	6/29/2007	NA	NA	NA	NA	NA	NA	<1.0
	11/19/2013	NS	NS	NS	NS	NS	NS	NS
MW-8A	6/29/2007	NA	NA	NA	NA	NA	NA	**11**
	8/6/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	11/16/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	**1.6**
	2/26/2008	<5.0	<5.0	<3.0	<5.0	<25	<5.0	**2.8 S10,E2**
	11/15/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	**1.2**
MW-9A	7/30/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	11/19/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	2/28/2008	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	11/11/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<1.0
MW-10A	7/30/2007	<5.0	<5.0	<3.0	**5.0**	<25	<5.0	<1.0
	11/19/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	2/21/2008	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	11/11/2013	NS	NS	NS	NS	NS	NS	NS
MW-11A	7/30/2007	<5.0	<5.0	**5.2**	<5.0	<25	<5.0	<1.0
	11/14/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	2/21/2008	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	11/11/2013	NS	NS	NS	NS	NS	NS	NS
MW-12A	7/30/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	11/19/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	2/25/2008	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	11/11/2013	NS	NS	NS	NS	NS	NS	NS
MW-13A	7/30/2007	<5.0	<5.0	**4.8**	<5.0	<25	<5.0	<1.0
	11/15/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	2/20/2008	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	11/11/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<1.0
MW-14A	7/30/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	11/19/2007	<5.0	<5.0	**3.3**	<5.0	<25	<5.0	<1.0
	2/25/2008	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	11/19/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<1.0
MW-15A	7/30/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	11/20/2007	<5.0	<5.0	**5.0**	<5.0	<25	<5.0	<1.0
	2/20/2008	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	11/11/2013	<5.0	<5.0	**8.8**	<5.0	<5.0	<5.0	<1.0
MW-16A	4/24/2008	<5.0	<5.0	**7.0**	<5.0	<25	<5.0	<1.0
	11/12/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<1.0
MW-17A	7/30/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	11/15/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	2/22/2008	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	11/12/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<1.0
MW-18A	7/30/2007	<5.0	<5.0	**15**	<5.0	<25	<5.0	<1.0
	11/16/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	2/25/2008	NA	NA	NA	NA	NA	NA	NA
	11/14/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<1.0
MW-19A	8/6/2007	<5.0	<5.0	**30**	<5.0	<25	<5.0	<1.0
	11/18/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<1.0
MW-20A	8/6/2007	<5.0	<5.0	**6.6**	<5.0	<25	<5.0	<1.0
	11/19/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	2/22/2008	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	11/12/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<1.0

TABLE 2-9
SUMMARY OF SVOCs (ug/L) DETECTED IN GROUNDWATER
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well Number	Date Sampled	Phenol	Butyl Benzyl Phthalate	DEHP	Di-n-butylphthalate	Di-n-octylphthalate	2-Methylnapthalene	1,4-Dioxane
		AWQS: 2,100	AWQS: 1,400	AWQS: 6	AWQS: 700	AWQS: 2,800	AWQS: NE	AWQS: NE
MW-21A	7/30/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	11/13/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	2/21/2008	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	4/16/2008	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	11/12/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<1.0
MW-22A	11/20/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	**1.6**
MW-26A	11/15/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	**1.1 S1**
MW-27A	11/14/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<1.0
MW-101A	6/11/2001	**7**	<5	<5	<5	<5	<5	NR
	7/30/2007	<5.0	<5.0	**14**	<5.0	<25	<5.0	<1.0
	11/19/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	2/26/2008	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	11/14/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<1.0
DMW-11	11/20/2013	<5.0	<5.0	**6.5**	<5.0	<5.0	<5.0	<1.0
DMW-25	11/20/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<1.0
B-Zone Groundwater Monitoring Wells								
EW-1	2/1/2008	<5.0	<5.0	<3.0	<5.0	<25	<5.0	**3.5**
	2/26/2008	<5.0	<5.0	<3.0	<5.0	<25	<5.0	**22**
MW-8B	6/29/2007	NA	NA	NA	NA	NA	NA	**56**
	8/6/2007	<5.0	<5.0	**34**	<5.0	<25	<5.0	**15**
	11/16/2007	<5.0	<5.0	**12**	<5.0	<25	<5.0	**15**
	2/26/2008	<5.0	<5.0	<3.0	<5.0	<25	<5.0	**12 S10**
	11/15/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<1.0
MW-18B	7/30/2007	<5.0	<5.0	**43**	<5.0	<25	<5.0	<1.0
	11/16/2007	<5.0	<5.0	**12**	<5.0	<25	<5.0	<1.0
	2/25/2008	<5.0	<5.0	**31**	<5.0	<25	<5.0	**1.4**
	11/20/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	**2.7**
MW-21B	7/30/2007	<5.0	<5.0	**64**	<5.0	<25	<5.0	<1.0
	11/13/2007	<5.0	<5.0	**60**	<5.0	<25	<5.0	<1.0
	2/21/2008	<5.0	<5.0	**120 E2**	<5.0	<25	<5.0	<1.0
	4/16/2008	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	11/18/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<1.0
MW-22B	11/14/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	**4.1**
	2/26/2008	<5.0	<5.0	**95 D1**	<15	<75	<15	**5.1 D1**
	11/19/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	**1.9**
MW-23B	11/29/2007	<5.0	<5.0	**10**	<5.0	<25	<5.0	<1.0
	2/20/2008	<5.0	<5.0	**16**	<5.0	<25	<5.0	<1.0
	11/12/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<1.0
MW-24B	1/31/2008	<5.0	<5.0	**94**	<5.0	<25	<5.0	**2.6**
	2/22/2008	<5.0	<5.0	**19**	<5.0	<25	<5.0	**1.7**
	11/13/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<1.0
MW-26B	11/12/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<1.0
MW-28B	11/13/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<1.0
MW-29B	11/13/2013	<5.0	<5.0	**3.8**	<5.0	<5.0	<5.0	<1.0
MW-30B	11/13/2013	<5.0	<5.0	**12**	<5.0	<5.0	<5.0	<1.0
MW-102B1	6/16/2001	<5	<5	**48**	<5	**5**	<5	NR
	11/11/2013	NS	NS	NS	NS	NS	NS	NS
MW-102B2	6/16/2001	<5	**8**	**62**	<5	**6**	<5	NR
	11/18/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<1.0
MW-103B	8/7/2007	<5.0	<5.0	**40**	<5.0	**27**	<5.0	<1.0
	11/20/2007	<5.0	<5.0	**30**	<5.0	<25	<5.0	<1.0
	2/27/2008	<25	<25	**44 D1**	<25	<125	<25	<5.0
	11/11/2013	NS	NS	NS	NS	NS	NS	NS
MW-104B	11/14/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<1.0
C-Zone Groundwater Monitoring Wells								
MW-8C*	6/29/2007	NA	NA	NA	NA	NA	NA	<1.1
	8/6/2007	<5.0	<5.0	**80**	<5.0	<25	<5.0	<1.0
	11/16/2007	<5.0	<5.0	**12**	<5.0	<25	<5.0	<1.0
	2/25/2008	<15	<15	**54 D1**	<15	<75	<15	<3.0
	11/15/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<1.0
MW-17C	9/24/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	11/16/2007	<5.0	<5.0	**24**	<5.0	<25	<5.0	<1.0
	2/22/2008	<5.0	<5.0	**11**	<5.0	<25	<5.0	<1.0
	11/11/2013	NS	NS	NS	NS	NS	NS	NS
MW-21C	7/30/2007	<5.0	<5.0	**87**	<5.0	<25	<5.0	<1.0
	11/29/2007	<5.0	<5.0	**8.9**	<5.0	<25	<5.0	<1.0
	2/27/2008	<25	<25	**56 D2**	<25	<125	<25	<5.0
	4/16/2008	<25	<25	**46 D1**	<25	<125	<25	<5.0
	11/13/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<1.0

TABLE 2-9
SUMMARY OF SVOCs (ug/L) DETECTED IN GROUNDWATER
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Well Number	Date Sampled	Phenol	Butyl Benzyl Phthalate	DEHP	Di-n-butylphthalate	Di-n-octylphthalate	2-Methylnapthalene	1,4-Dioxane
		AWQS: 2,100	AWQS: 1,400	AWQS: 6	AWQS: 700	AWQS: 2,800	AWQS: NE	AWQS: NE
MW-103C	8/7/2007	<5.0	<5.0	**81**	<5.0	**43**	<5.0	<1.0
	11/20/2007	<20	<20	**79 D2**	<20	<100	<20	<4.0
	2/28/2008	<5.0	<5.0	**29**	<5.0	<25	<5.0	<1.0
	11/14/2013	<5.0	<5.0	**3.8**	<5.0	<5.0	<5.0	<1.0
Alice Byrne ‡	8/3/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	11/20/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	2/29/2008	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	4/25/2008	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	11/15/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<1.0
St. Francis †	8/7/2007	<5.0	<5.0	<3.0	**5.3**	<25	<5.0	<1.0
	11/16/2007	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	2/27/2008	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	4/25/2008	<5.0	<5.0	<3.0	<5.0	<25	<5.0	<1.0
	11/15/2013	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<1.0
KL-1	6/11/2001	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NR

Notes:

AWQS = Aquifer Water Quality Standard (Arizona) January, 2009

DEHP - Di(2-ethylhexyl)phthalate

* Dimethylphthalate was detected in MW-8C at 8.0 micrograms/Liter in the sample collected on 11/15/2013

‡ Alice Byrne School

† St. Francis of Assisi School

5	Concentrations at or above AQWS
1	Detected concentrations below the AWQS

NE = Not Established

NS = not sampled

D1 = Sample required dilution due to matrix

D2 = Sample required dilution due to high concentration of target analyte

E2 = Concentration estimated; analyte exceeded calibration range; and reanalysis not performed due to sample matrix

S10 = Surrogate recovery was above laboratory and method acceptance limits

S1 = Surrogate recovery was above laboratory and method acceptance limits

TABLE 2-10
CHARACTERIZATION OF WDS WASTEWATERS AND SLUDGES
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Parameter	SRL R-SRL[1]	SRL NR-SRL	Minimum GPLs	6/11/2001 WDS-1 Sludge #	1/2/2002 WDS-1 Sludge	6/25/2001 WDS-4 Sludge	6/25/2001 WDS-5 Sludge	TCLP	AWQS	6/16/2001 Evap. Cooler Effluent	6/25/2001 WDS-2 Wastewater	6/25/2001 WDS-3 Wastewater	6/25/2001 WDS-4 Wastewater	6/25/2001 WDS-5 Wastewater
VOC's	mg/kg							ug/L						
Tetrachloroethylene (PCE)	0.51	13	0.80	**50**		**0.26**	<0.043	700	5	<0.5	**15**	<2.5	**6**	<0.5
1,1-Dichloroethylene (1,1-DCE)	120	410	0.85	<0.049		**0.67**	<0.043		7	<1.0	**9.7**	<5	**20**	<1
1,1-Dichloroethane (1,1-DCA)	0.28	6	51.72	<0.049		**0.42**	<0.043			<0.5	**49**	<2.5	**18**	<0.5
1,1,1,2-Tetrachloroethane	3.2	73		NA		NA	NA			<0.5	<2.5	<2.5	<2.5	<0.5
Trichloroethylene	3	65	0.76	<0.049		0.05	<0.050			<0.5	<2.5	<2.5	<2.5	<0.5
Bromodichloromethane	0.83	18	5.79	<0.049		<0.046	<0.043		100 ##	<0.5	<2.5	**5.9**	<2.5	<0.5
Dibromochloromethane	1.1	26	0.04	<0.049		<0.046	<0.043		100 ##	<0.5	<2.5	**4.2**	<2.5	<0.5
2-Butanone (MEK)	23,000	310,000		<0.20		<0.37	<0.17			<5.0	<25	<25	<25	**10**
1,4-Dichlorobenzene	3.5	79	27.77	<0.049		<0.046	0.075		75	<0.5	**19**	**5.6**	<2.5	**9.5**
Chloroform	0.94	20	5.84	<0.049		<0.046	<0.043			<1.0	**5.2**	**15**	<5	**2.2**
4-Isopropyltoluene				<0.049		<0.046	<0.043			<0.5	**120**	**120**	<2.5	<0.5
m,p-Xylenes[2]	270	420	31	<0.098		**0.14**	<0.085			<1.0	<5.0	<5.0	<5.0	<1
SVOCs	mg/kg							ug/L						
Bis(2-ethylhexyl) Phthalate (DEHP)	39	1,200	1,067.92	**1.9**		**200**	<0.6		6	<5	<10	<10	<5	<5
1,3-Dichlorobenzene	530	600		<0.6		<60	<0.6			<5	**22**	<10	<5	**8**
Diethyl Phthalate	49,000	490,000		<0.6		<60	<0.6			<5	<10	<10	<5	**14**
Formaldehyde	9,200	92,000		<0.5		NS	NS			54,000	NA	NA	NA	NA
Phenol	18,000	180,000		<0.6		<60	<0.6			<5	**11**	<10	<5	<5
3- and 4-Methylphenol [3]	310	3,100		<0.6		<60	<0.6			<5	**71**	**22**	<5	30
METALS, TOTAL	mg/kg							ug/L						
Cadmium	39	510		**18**		**14**	<1		5	<5	<50	<50	<50	<50
Chromium	30[4]	65[4]		**3,500**		**110**	**3**		100	<10	<10	50	30	<10
Copper	3,100	41,000		**550**		**620**	**23**			<10	10	30	30	<10
Lead	400	800		**180**		**160**	<5		50	<50	<50	<50	<50	<50
Mercury	23	310		**4.8**		**0.29**	0.07		2	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	1,600	20,000		**43**		**38**	<5		100	<40	<40	80	70	<40
Selenium	390	5,100		<5		<15	<5		50	<5	<5	<5	<25	<25
Silver	390	5,100		**140**		**12**	<1			<10	<10	<10	30	<10
Zinc	23,000	310,000		**350**		**390**	**26**			<20	150	330	30	60
CYANIDE **	mg/kg							ug/L						
Hydrogen Cyanide	11	35			NA									
Cyanide, Free (CN-WAD)	1,200	12,000		**230**		<2.5	2.2		200	NA	<50	<50	**380**	<50
Cyanide, Total				**2,600**	**1,990**	<2.5	**490**			NA	120	<50	**20,000**	<50
Cyanide and Compounds														
TCLP	ug/L													
PCE	0.51	13	0.80		**2,100**									
OTHER PARAMETERS														
pH				4.4	5.4	9.1	8.3							
Flash Point (Ignitability)				>200°F	NA	>200°F	>200°F							
Paint Filter Test				PASS	PASS	FAIL	PASS							

AWQS = Arizona Aquifer Water Quality Standard (Arizona)
GPL = Arizona Groundwater Protection Level
SRL = Arizona Soil Remediation Level
R-SRL = Arizona Residential SRL
NR-SRL = Non-Residential SRL (Arizona)

mg/kg = milligram per kilogram
ug/L = microgram per liter
NA = Not analyzed
VOCs = Volatile organic compounds
SVOCs = Semi-VOCs

In August 2001, vapor above sludge was found to contain 0.03 mg/m^3 HCN and 2 ppm H_2S
Total Trihalomethanes

* Mercuric Chloride
** Concentrations are compared to Hydrogen Cyanide SRLs for potential risk reasons
50 Concentrations exceeding the SRLs, GPLs or AWQSs

TETRA TECH, INC.

TABLE 2-11
CONCENTRATIONS OF ANALYTES DETECTED IN INDOOR AIR SAMPLES in 2004
20th Street and Factor Avenue WQARF Site, Yuma, Arizona
in microgram per cubic meter [ug/m3]

Sample Location	Date	Sample Type	Sample Height (in feet)	Volatile Organic Compounds (VOCs)																										Hydrogen Cyanide
				PCE	TCE	1,1-DCE	1,1,1-TCA	Benzene	Toulene	Ethylbenzene	m,p-Xylene	o-Xylene	Chloromethane	Acetone	2-Propanol	MC	Hexane	MEK	THF	Cyclohexane	2,2,4-TMP	Heptane	4-Methyl-2-Pentanone	2-Hexanone	Styrene	Freon 11	4-Ethyltoluene	1,3,5-TMB	1,2,4-TMB	HCN
INDOOR AIR SOIL VAPOR SAMPLES																														
H1-AIR-B1-1	3/28/2004		2 Feet Above Ground Surface	**10.17**	<2.69	<1.98	<2.73	<1.59	**4.52**	<2.17	<4.34	<2.17	**1.18**	<11.88	<2.46	<1.74	<1.76	**8.55**	7.96	<1.72	<2.34	<2.05	<4.10	<4.10	<2.13	<2.81	<2.46	<2.46	<2.46	<2.8
H1-AIR-B1-2	3/28/2004		4 Feet Above Ground Surface	<3.39	<2.69	<1.98	<2.73	**5.75**	**75.36**	**12.16**	**37.77**	**12.16**	**1.22**	**26.13**	**19.91**	<1.74	**3.88**	**14.15**	**11.80**	**2.89**	**2.85**	**5.74**	<4.10	<4.10	**3.53**	<2.81	**5.90**	**2.80**	**10.32**	<2.8
H1-AIR-B1-3	3/28/2004		4 Feet Above Ground Surface	<3.39	<2.69	<1.98	<2.73	**10.22**	**71.13**	**12.59**	**36.47**	**12.16**	**1.16**	**35.63**	**34.41**	<1.74	**4.93**	**13.57**	**10.32**	**4.13**	**3.83**	**8.20**	<4.10	<4.10	**3.96**	<2.81	**6.88**	**2.85**	**11.30**	<2.8
H1-AIR-B1-4	3/28/2004		4 Feet Above Ground Surface	**10.17**	<2.69	<1.98	<2.73	<1.59	**15.07**	<2.17	**5.21**	**3.04**	**1.28**	**12.83**	<2.46	<1.74	**4.23**	**21.53**	**23.00**	<1.72	<2.34	**2.62**	<4.10	<4.10	<2.13	<2.81	<2.46	<2.46	**4.33**	<2.8
H1-AIR-B1-5	3/28/2004		4 Feet Above Ground Surface	**12.89**	<2.69	<1.98	<2.73	**7.03**	**82.90**	**12.59**	**38.21**	**12.59**	**1.38**	**28.50**	**31.95**	<1.74	**4.58**	**16.51**	**15.92**	**2.24**	**3.41**	<2.05	<4.10	<4.10	**4.26**	<2.81	**6.88**	**3.05**	**11.30**	**4.0**
H1-AIR-B1-6	3/28/2004		4 Feet Above Ground Surface	<3.39	<2.69	<1.98	<2.73	**6.71**	**71.59**	**12.16**	**36.47**	**12.16**	**1.26**	**45.13**	**27.04**	<1.74	**3.88**	**13.57**	**10.91**	**2.07**	**3.27**	**6.15**	<4.10	<4.10	**3.58**	<2.81	**6.39**	**2.90**	**10.32**	<2.8
H1-AIR-B1-7A	3/28/2004		4 Feet Above Ground Surface	<3.39	<2.69	<1.98	<2.73	**9.26**	**82.90**	**12.16**	**38.21**	**12.16**	**1.28**	**40.38**	**39.32**	<1.74	**5.64**	**13.57**	**8.85**	**4.82**	**4.34**	**9.01**	<4.10	<4.10	**3.88**	<2.81	**6.39**	**2.80**	**10.81**	<2.9
H1-AIR-B1-7B	3/28/2004		2 Feet Above Ground Surface	**14.92**	<2.69	<1.98	<2.73	<1.59	**10.93**	<2.17	<4.34	<2.17	**1.42**	**17.81**	**9.34**	**2.32**	<1.76	**25.95**	**23.59**	<1.72	<2.34	<2.05	<4.10	<4.10	<2.13	<2.81	<2.46	<2.46	<2.46	<3.0
H1-AIR-B1-8	3/28/2004		4 Feet Above Ground Surface	<3.39	<2.69	<1.98	<2.73	**7.66**	**97.97**	**14.76**	**43.42**	**13.89**	**1.22**	**33.25**	**18.68**	<1.74	**2.93**	**22.41**	**15.92**	<1.72	**3.36**	**6.15**	<4.10	<4.10	**4.69**	**4.55**	**7.86**	**3.19**	**13.76**	<2.9
H1-AIR-B2-1	3/26/2004		4 Feet Above Ground Surface	<3.39	<2.69	<1.98	<2.73	**16.61**	**105.50**	**14.33**	**42.55**	**12.16**	**1.30**	**76.00**	**95.85**	<1.74	**8.81**	**17.1**	<5.90	<1.72	**4.25**	**12.29**	<4.10	<4.10	**4.26**	**5.11**	**6.88**	<2.46	**10.32**	<2.8
H1-AIR-B2-2	3/26/2004		4 Feet Above Ground Surface	<3.39	<2.69	<1.98	<2.73	**14.37**	**86.66**	**12.16**	**36.47**	**11.72**	<1.03	**71.25**	**56.53**	<1.74	**10.22**	**14.15**	<5.90	**5.51**	**5.14**	**13.11**	<4.10	<4.10	**4.13**	**2.98**	**6.88**	**2.80**	**10.32**	<2.8
H1-AIR-B4-1	3/26/2004		4 Feet Above Ground Surface	<3.39	<2.69	<1.98	<2.73	**13.41**	**116.81**	**15.20**	**47.76**	**13.5**	**1.24**	**68.88**	**98.31**	<1.74	**10.57**	**15.33**	<5.90	<1.72	**4.02**	**12.29**	<4.10	<4.10	**4.69**	**6.74**	**8.36**	**2.85**	**12.29**	<2.7
H1-AIR-B4-2	3/26/2004		4 Feet Above Ground Surface	<3.39	<2.69	<1.98	<2.73	**14.69**	**109.27**	**14.76**	**43.42**	**12.59**	**1.38**	**78.38**	**127.80 D2**	<1.74	**13.04**	**19.76**	<5.90	<1.72	**4.67**	**13.52**	<4.10	<4.10	**4.69**	**7.30**	**7.37**	**2.70**	**11.30**	<2.7
H1-AIR-B4-3	3/26/2004		4 Feet Above Ground Surface	<3.39	<2.69	<1.98	<2.73	**12.14**	**109.27**	**15.20**	**47.76**	**13.46**	**1.30**	**61.75**	**73.73**	<1.74	**7.05**	**15.63**	<5.90	<1.72	**3.74**	**11.06**	<4.10	<4.10	**4.26**	**7.30**	**8.36**	**2.85**	**12.29**	<2.8
H1-AIR-B4-4	3/26/2004		4 Feet Above Ground Surface	<3.39	<2.69	<1.98	<2.73	**15.97**	**135.65**	**19.10**	**60.78**	**16.06**	**1.34**	**76.00**	**98.31**	<1.74	**12.69**	**21.82**	<5.90	**5.51**	**6.54**	**13.93**	<4.10	<4.10	**6.81**	**11.2**	**9.8**	**3.54**	**15.28**	<2.8
H1-AIR-B4-5	3/26/2004		4 Feet Above Ground Surface	<3.39	<2.69	<1.98	<2.73	**15.97 N1**	**131.88 N1**	**18.67 N1**	**60.78 N1**	**16.06 N1**	**1.36 N1**	**76.00 N1**	**100.77 N1**	<1.74	**11.98**	**20.64 N1**	<5.90	**5.16 N1**	**5.61 N1**	**13.52 N1**	<4.10	<4.10	**5.11 N1**	**8.43 N1**	**9.34 N1**	**3.59 N1**	**15.28 N1**	<2.7
H1-AIR-BG-1	3/28/2004		4 Feet Above Ground Surface	<3.39	<2.69	<1.98	<2.73	**4,512.68 D2**	**86.66**	**13.89**	**39.94**	**13.46**	**1.49**	**380.02 E2**	**93.40**	<1.74	**8.81**	**147.44**	<5.90	<1.72	**4.67**	<2.05	**7.37**	**22.12**	**4.26**	<2.81	**7.37**	**3.24**	**12.29**	<2.7
H1-AIR-B5-1	4/4/2004		4 Feet Above Ground Surface	<3.39	<2.69	<1.98	<2.73	**5.75**	**113.04**	**6.08**	**18.23**	**6.51**	**1.34**	**47.50**	**46.70**	**12.85**	**6.70**	**9.14**	<5.90	**6.54**	**6.54**	**22.13**	<4.10	<4.10	**3.62**	<2.81	**4.08**	<2.46	**6.88**	<2.8
H1-AIR-B5-2A	4/4/2004		4 Feet Above Ground Surface	<3.39	<2.69	<1.98	<2.73	**8.62**	**120.58**	**6.08**	**17.4**	**6.51**	**1.24**	**47.50**	**46.70**	**12.85**	**7.05**	**9.14**	<5.90	**6.20**	**6.54**	**22.54**	<4.10	<4.10	**3.28**	<2.81	**3.78**	<2.46	**6.88**	<2.8
H1-AIR-B5-2B	4/4/2004		2 Feet Above Ground Surface	<3.39	<2.69	<1.98	<2.73	**6.07**	**120.58**	**6.08**	**19.54**	**6.95**	**1.26**	**68.88**	**41.78**	**10.77**	**6.34**	**9.44**	<5.90	**6.20**	**6.54**	**22.13**	<4.10	<4.10	**3.41**	<2.81	**4.18**	<2.46	**7.86**	<2.8
H1-AIR-B5-3	4/4/2004		4 Feet Above Ground Surface	<3.39	<2.69	<1.98	<2.73	**10.86**	**67.82**	**4.17**	**12.16**	**4.78**	**1.57**	**45.13**	**39.32**	**12.16**	**23.97**	**8.9**	<5.90	**12.74**	**29.89**	**21.72**	<4.10	<4.10	**2.73**	<2.81	<4.92	<2.46	**4.92**	<2.9
H1-AIR-111004	11/10/2004		4 Feet Above Ground Surface	<3.39	<2.69	<1.98	<2.73	<1.59	**6.03**	<2.17	4.34	<2.17	<1.03	**64.13**	**2.95**	<1.74	<1.76	<1.0	<5.90	<1.72	<2.34	<2.05	<4.10	<4.10	<2.13	<2.81	<2.46	<2.46	<4.92	<0.2**
ADHS AAAQG (1-hour)				1,300	810	130	57,000	1,700	4,400	4,500	5,400	5,400	770	20,000	NL	NL	5,400	600	6,100	NL	NL	17,000	NL	NL	NL	220,000	NL	1,400	1,400	100
ADHS AAAQG (24-hour)				640	210	63	15,000	44	3,000	3,500	3,500	3,500	200	14,000	NL	NL	1,400	160	4,700	NL	NL	16,000	NL	NL	NL	59,000	NL	990	990	40
ADHS AAAQG (Annual)				1.7	0.58	NL	NL	0.12	NL	NL	NL	NL	0.56	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL
EPA Residential RSL (November 2013)				9.4	0.43	210	5,200	0.31	5,200	0.97	100	100	94	32,000	NL	96	730	5,200	NL	6,300	NL	NL	3,100	31	1,000	730	NL	NL	7.3	0.83
EPA Industrial RSL (November 2013)				47	3	880	22,000	1.6	22,000	4.9	440	440	390	140,000	NL	1,200	3,100	22,000	NL	26,000	NL	NL	13,000	130	4,400	3,100	NL	NL	31	3.5

ADHS = Arizona Department of Health Services
AAAQG = Arizona Ambient Air Quality Guidelines
EPA = Environmental Protection Agency
RSL = Regional Screening Level (formerly Preliminary Remediation Goals)
PCE = Tetrachloroethene
TCE = Trichloroethene
1,1-DCE = 1,1 Dichloroethene
1,1,1-TCA = 1,1,1-Trichloroethane
MC = Methylene Chloride
MEK = 2-Butanone (Methyl Ethyl Ketone)
HCN = Hydrogen Cyanide
THF = Tetrahydrofuran
1,2,4-TMB = 1,2,4-Trimethylbenzene
1,3,5-TMB = 1,3,5-Trimethylbenzene
2,2,4-TMP = 2,2,4-Trimethylpentane
NL = Not listed in the EPA's December 2009 PRG Table and/or the 1999 DRAFT ADHS AAAQG Guidelines
bgs = below ground surface
VOCs were sampled and analyzed in accordance with EPA Method TO-15
Hydrogen Cyanide was sampled and analyzed in accordance with NIOSH Method 6010

* Units for VOC results were reported by laboratory as parts per billion volume (ppbv)
** Units for the cyanide results were reported by laboratory as µg/sample
¥ The cyanide soil vapor sample in Boring-1 was actually collected at 15 feet bgs, not 10 feet, as suggested by the table.
N1 = Orange cap was not on the canister when the canister was received by the laboratory. Sample may have been diluted or contaminated during shipping due to exposure of the sampling tip
D2 = Sample required dilution to high concentrations of target analyte
E2 = Concentration estimated. Analyte exceeded calibration range. Reanalysis not performed due to sample matrix
ŧ = Samples were analyzed for Cyanide and reported as filter/sampling solution

31 Concentrations shown in bold were detected at or above laboratory detection limit

TABLE 2-12
COMPARISON OF CYANIDE IN SOIL SAMPLES AND LEACHATE
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Sample ID	Soil (mg/kg)		Leachate (mg/L)		R(total)	R(free)
	Total CN	Amenable CN	Cyanide	Amenable CN		
HI-SS-01-04/02/04	**35**	< 2.0	**1.3**	< 0.020	26.9	-
HI-SS-02-04/02/04	**7.3**	< 2.0	**0.095**	< 0.020	76.8	-
HI-SS-03-04/02/04	**4.3**	**1.5**	**0.060**	< 0.020	71.7	-
HI-SS-04-04/02/04	**22**	**5.3**	**0.14**	**0.14**	157.1	37.9
HI-SS-05-04/02/04	**28**	**2.6**	**0.87**	**0.87**	32.2	3.0
HI-SS-06-04/02/04	< 2.0	N.M.	< 0.020	N.M.	-	-
HI-SS-07-04/02/04	**8.4**	**3.7**	**0.032**	< 0.020	262.5	-
HI-SS-08-04/02/04	**2.8**	< 2.0	**0.031**	**0.031**	90.3	-
HI-SS-09-04/02/04	< 2.0	N.M.	**0.028**	< 0.020	-	-
HI-SS-10-04/02/04	**5.5**	< 2.0	**0.072**	< 0.020	76.4	-
HI-SS-11-04/02/04	**3.4**	< 2.0	**0.051**	**0.022**	66.7	-
HI-SS-12-04/02/04	**2300**	**1700**	**2.6**	**0.37**	884.6	4594.6
HI-SS-13-04/02/04	**26**	< 2.0	**0.67**	**0.11**	38.8	-
HI-SS-14-04/02/04	**3600**	**3000**	**0.89**	**0.060**	4044.9	50000.0
HI-SS-15-04/02/04	**1300**	**600**	**1.2**	**0.03**	1083.3	20000.0
HI-SS-16-04/02/04	**5800**	< 2.0	**0.58**	**0.25**	10000.0	-
HI-SS-17-04/02/04	**180**	< 2.0	**0.51**	< 0.020	352.9	-
HI-SS-18-04/02/04	**360**	< 2.0	**0.71**	< 0.020	507.0	-
HI-SS-19-04/02/04	**170**	< 2.0	**0.45**	< 0.020	377.8	-
HI-SS-20-04/02/04	**2000**	**470**	**1.9**	**1.1**	1052.6	427.3
				Average	1066.8	12510.5

R = the ratio between total cyanide content in the soil and the SPLP leachate concentration.

TABLE 2-13
SOIL GAS JOHNSON AND ETTINGER MODEL OUTPUT
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Compound	Building 1				Building 2				Building 3				Building 4				Building 5			
	Average Concen.		Maximum Concen.		Average Concen.		Maximum Concen.		Average Concen.		Maximum Concen.		Average Concen.		Maximum Concen.		Average Concen.		Maximum Concen.	
	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
10 fbgs																				
TCE	1.97E-05	1.05E-02	2.57E-05	1.36E-02	3.90E-05	2.07E-02	5.09E-05	2.70E-02	5.03E-05	2.67E-02	6.56E-05	3.48E-02	2.00E-05	1.06E-02	2.61E-05	1.39E-02	2.79E-05	1.48E-02	3.65E-05	1.93E-02
PCE	4.01E-06	2.69E-02	7.36E-06	4.93E-02	7.73E-06	5.19E-02	1.42E-05	9.51E-02	9.81E-06	6.58E-02	1.80E-05	1.21E-01	4.08E-06	2.74E-02	7.49E-06	5.02E-02	5.63E-06	3.78E-02	1.03E-05	6.92E-02
1,1,1-TCA																				
1,1-DCA																				
HCN																				
Total	2.37E-05	3.73E-02	3.31E-05	6.30E-02	4.67E-05	7.25E-02	6.51E-05	1.22E-01	6.01E-05	9.24E-02	8.36E-05	1.55E-01	2.41E-05	3.80E-02	3.36E-05	6.41E-02	3.36E-05	5.26E-02	4.68E-05	8.86E-02
15fbgs																				
TCE																				
PCE																				
1,1,1-TCA																				
1,1-DCA																				
HCN	NA	1.36E-02	NA	1.56E-02	NA	3.05E-02	NA	3.50E-02	NA	4.30E-02	NA	4.93E-02	NA	1.37E-02	NA	1.57E-02	NA	2.02E-02	NA	2.31E-02
Total	0.00E+00	1.36E-02	0.00E+00	1.56E-02	0.00E+00	3.05E-02	0.00E+00	3.50E-02	0.00E+00	4.30E-02	0.00E+00	4.93E-02	0.00E+00	1.37E-02	0.00E+00	1.57E-02	0.00E+00	2.02E-02	0.00E+00	2.31E-02
20fbgs																				
TCE	1.97E-05	1.04E-02	3.81E-05	2.02E-02	3.21E-05	1.70E-02	6.22E-05	3.30E-02	3.72E-05	1.97E-02	7.20E-05	3.82E-02	2.04E-05	1.08E-02	3.94E-05	2.09E-02	2.59E-05	1.37E-02	5.01E-05	2.65E-02
PCE	4.61E-06	3.09E-02	6.51E-06	4.36E-02	7.35E-06	4.93E-02	1.04E-05	6.96E-02	8.43E-06	5.65E-02	1.19E-05	7.98E-02	4.78E-06	3.20E-02	6.74E-06	4.52E-02	6.00E-06	4.02E-02	8.47E-06	5.68E-02
1,1,1-TCA	NA	1.03E-04	NA	1.03E-04	NA	1.68E-04	NA	1.68E-04	NA	1.95E-04	NA	1.95E-04	NA	1.07E-04	NA	1.07E-04	NA	1.36E-04	NA	1.36E-04
1,1-DCA	5.42E-08	1.58E-04	5.42E-08	1.58E-04	8.71E-08	2.54E-04	8.71E-08	2.54E-04	1.00E-07	2.92E-04	1.00E-07	2.92E-04	5.62E-08	1.64E-04	5.62E-08	1.64E-04	7.08E-08	2.07E-04	7.08E-08	2.07E-04
HCN	NA	1.08E-02	NA	1.08E-02	NA	2.23E-02	NA	2.23E-02	NA	2.97E-02	NA	2.97E-02	NA	1.09E-02	NA	1.09E-02	NA	1.55E-02	NA	1.55E-02
Total	2.43E-05	5.24E-02	4.46E-05	7.49E-02	3.96E-05	8.91E-02	7.26E-05	1.25E-01	4.57E-05	1.06E-01	8.40E-05	1.48E-01	2.52E-05	5.40E-02	4.62E-05	7.73E-02	3.19E-05	6.98E-02	5.86E-05	9.92E-02
30fbgs																				
TCE	2.27E-05	1.20E-02	3.02E-05	1.60E-02	3.36E-05	1.78E-02	4.48E-05	2.37E-02	3.72E-05	1.97E-02	4.96E-05	2.63E-02	2.37E-05	1.26E-02	3.16E-05	1.68E-02	2.86E-05	1.52E-02	3.81E-05	2.02E-02
PCE	3.97E-06	2.66E-02	5.72E-06	3.84E-02	5.77E-06	3.87E-02	8.30E-06	5.57E-02	6.35E-06	4.25E-02	9.13E-06	6.12E-02	4.16E-06	2.79E-02	5.99E-06	4.02E-02	4.97E-06	3.33E-02	7.15E-06	4.79E-02
1,1,1-TCA																				
1,1-DCA																				
HCN	NA	6.82E-03	NA	1.40E-02	NA	1.27E-02	NA	1.91E-02	NA	1.57E-02	NA	3.22E-02	NA	6.97E-03	NA	1.43E-02	NA	9.44E-03	NA	1.94E-02
Total	2.67E-05	4.55E-02	3.60E-05	6.84E-02	3.93E-05	6.91E-02	5.31E-05	9.85E-02	4.36E-05	7.80E-02	5.88E-05	1.20E-01	2.79E-05	4.74E-02	3.76E-05	7.12E-02	3.36E-05	5.79E-02	4.53E-05	8.75E-02
35fbgs																				
TCE	1.55E-05	8.24E-03	2.74E-05	1.45E-02	2.20E-05	1.17E-02	3.88E-05	2.06E-02	2.44E-05	1.29E-02	4.30E-05	2.28E-02	1.63E-05	8.65E-03	2.88E-05	1.52E-02	1.93E-05	1.02E-02	3.41E-05	1.81E-02
PCE	5.63E-06	3.78E-02	6.64E-06	4.45E-02	7.83E-06	5.25E-02	9.23E-06	6.19E-02	8.60E-06	5.77E-02	1.01E-05	6.80E-02	5.92E-06	3.97E-02	6.98E-06	4.68E-02	6.94E-06	4.65E-02	8.18E-06	5.48E-02
1,1,1-TCA	NA	7.72E-05	NA	7.72E-05	NA	1.09E-04	NA	1.09E-04	NA	1.21E-04	NA	1.21E-04	NA	8.10E-05	NA	8.10E-05	NA	9.58E-05	NA	9.58E-05
1,1-DCA	7.74E-08	2.26E-04	7.74E-08	2.26E-04	1.08E-07	3.16E-04	1.08E-07	3.16E-04	1.19E-07	3.48E-04	1.19E-07	3.48E-04	8.13E-08	2.37E-04	8.13E-08	2.37E-04	9.56E-08	2.79E-04	9.56E-08	2.79E-04
HCN	NA	6.89E-03	NA	6.89E-03	NA	1.21E-02	NA	1.21E-02	NA	1.48E-02	NA	1.48E-02	NA	7.07E-03	NA	7.07E-03	NA	9.38E-03	NA	9.38E-03
Total	2.13E-05	5.32E-02	3.41E-05	6.62E-02	3.00E-05	7.67E-02	4.82E-05	9.50E-02	3.31E-05	8.59E-02	5.32E-05	1.06E-01	2.23E-05	5.57E-02	3.58E-05	6.94E-02	2.63E-05	6.65E-02	4.23E-05	8.27E-02

TABLE 2-13
SOIL GAS JOHNSON AND ETTINGER MODEL OUTPUT
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Compound	Building 1				Building 2				Building 3				Building 4				Building 5			
	Average Concen.		Maximum Concen.		Average Concen.		Maximum Concen.		Average Concen.		Maximum Concen.		Average Concen.		Maximum Concen.		Average Concen.		Maximum Concen.	
	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
40fbgs																				
TCE	1.88E-05	9.97E-03	2.51E-05	1.33E-02	2.60E-05	1.38E-02	3.46E-05	1.84E-02	2.84E-05	1.51E-02	3.79E-05	2.01E-02	1.98E-05	1.05E-02	2.64E-05	1.40E-02	2.31E-05	1.22E-02	3.08E-05	1.63E-02
PCE	3.86E-06	2.59E-02	5.71E-06	3.83E-02	5.24E-06	3.51E-02	7.74E-06	5.19E-02	5.69E-06	3.82E-02	8.42E-06	5.65E-02	4.07E-06	2.73E-02	6.02E-06	4.03E-02	4.70E-06	3.15E-02	6.95E-06	4.66E-02
1,1,1-TCA																				
1,1-DCA																				
PCE	3.89E-06	2.61E-02	5.01E-06	3.36E-02	5.09E-06	3.41E-02	6.55E-06	4.39E-02	5.44E-06	3.65E-02	7.01E-06	4.70E-02	4.12E-06	2.76E-02	5.30E-06	3.56E-02	4.65E-06	3.12E-02	5.99E-06	4.02E-02
1,1,1-TCA	NA	6.25E-05	NA	6.25E-05	NA	8.28E-05	NA	8.28E-05	NA	8.91E-05	NA	8.91E-05	NA	6.61E-05	NA	6.61E-05	NA	7.52E-05	NA	7.52E-05
1,1-DCA	3.01E-08	8.78E-05	3.01E-08	8.78E-05	3.96E-08	1.15E-04	3.96E-08	1.15E-04	4.24E-08	1.24E-04	4.24E-08	1.24E-04	3.19E-08	9.29E-05	3.19E-08	9.29E-05	3.61E-08	1.05E-04	3.61E-08	1.05E-04
HCN	NA	5.67E-03	NA	8.18E-03	NA	9.11E-03	NA	1.31E-02	NA	1.06E-02	NA	1.53E-02	NA	5.87E-03	NA	8.46E-03	NA	7.43E-03	NA	1.07E-02
Total	2.03E-05	4.06E-02	2.64E-05	5.32E-02	2.69E-05	5.50E-02	3.50E-05	7.23E-02	2.90E-05	5.98E-02	3.77E-05	7.87E-02	2.15E-05	4.28E-02	2.80E-05	5.62E-02	2.45E-05	4.93E-02	3.18E-05	6.47E-02
60fbgs																				
TCE	1.19E-05	6.32E-03	1.70E-05	9.03E-03	1.69E-05	8.97E-03	2.42E-05	1.28E-02	1.80E-05	9.54E-03	2.57E-05	1.36E-02	1.75E-05	9.29E-03	1.94E-05	1.03E-02	1.56E-05	8.25E-03	2.22E-05	1.18E-02
PCE	1.93E-06	1.29E-02	3.51E-06	2.35E-02	2.70E-06	1.81E-02	4.92E-06	3.30E-02	2.86E-06	1.92E-02	5.21E-06	3.49E-02	2.79E-06	1.87E-02	4.01E-06	2.69E-02	2.50E-06	1.68E-02	4.55E-06	3.05E-02
1,1,1-TCA																				
1,1-DCA																				
HCN																	NA	0.00E+00	NA	0.00E+00
Total	1.38E-05	1.92E-02	2.05E-05	3.25E-02	1.96E-05	2.71E-02	2.91E-05	4.58E-02	2.08E-05	2.87E-02	3.09E-05	4.85E-02	2.03E-05	2.80E-02	2.34E-05	3.72E-02	1.81E-05	2.50E-02	2.68E-05	4.23E-02
65fbgs																				
TCE	8.42E-06	4.47E-03	1.49E-05	7.88E-03	1.27E-05	6.75E-03	2.25E-05	1.19E-02	1.34E-05	7.10E-03	2.36E-05	1.25E-02	1.03E-05	5.46E-03	1.82E-05	9.63E-03	1.18E-05	6.25E-03	2.08E-05	1.10E-02
PCE	3.32E-06	2.22E-02	3.49E-06	2.34E-02	4.97E-06	3.33E-02	5.22E-06	3.50E-02	5.20E-06	3.49E-02	5.47E-06	3.66E-02	4.07E-06	2.73E-02	4.28E-06	2.87E-02	4.63E-06	3.10E-02	4.86E-06	3.26E-02
1,1,1-TCA	NA	4.17E-05	NA	4.17E-05	NA	6.30E-05	NA	6.30E-05	NA	6.62E-05	NA	6.62E-05	NA	5.10E-05	NA	5.10E-05	NA	5.84E-05	NA	5.84E-05
1,1-DCA	2.08E-08	6.06E-05	2.08E-08	6.06E-05	3.12E-08	9.10E-05	3.12E-08	9.10E-05	3.27E-08	9.54E-05	3.27E-08	9.54E-05	2.54E-08	7.42E-05	2.54E-08	7.42E-05	2.90E-08	8.45E-05	2.90E-08	8.45E-05
HCN	NA	2.01E-03	NA	2.01E-03	NA	3.45E-03	NA	3.45E-03	NA	3.87E-03	NA	3.87E-03	NA	2.33E-03	NA	2.33E-03	NA	2.92E-03	NA	2.92E-03
Total	1.18E-05	2.88E-02	1.84E-05	3.34E-02	1.77E-05	4.37E-02	2.77E-05	5.05E-02	1.86E-05	4.60E-02	2.91E-05	5.32E-02	1.44E-05	3.52E-02	2.25E-05	4.08E-02	1.64E-05	4.03E-02	2.57E-05	4.67E-02
70fbgs																				
TCE	1.20E-05	6.36E-03	2.77E-05	1.47E-02	1.82E-05	9.64E-03	4.20E-05	2.23E-02	1.88E-05	9.99E-03	4.35E-05	2.31E-02	1.48E-05	7.83E-03	3.41E-05	1.81E-02	1.69E-05	8.97E-03	3.90E-05	2.07E-02
PCE	1.69E-06	1.14E-02	3.78E-06	2.54E-02	2.55E-06	1.71E-02	5.69E-06	3.81E-02	2.63E-06	1.76E-02	5.87E-06	3.94E-02	2.10E-06	1.41E-02	4.68E-06	3.13E-02	2.38E-06	1.60E-02	5.32E-06	3.57E-02
1,1,1-TCA																				
1,1-DCA																				
HCN	NA	5.36E-03	NA	7.15E-03	NA	9.15E-03	NA	1.22E-02	NA	1.01E-02	NA	1.34E-02	NA	6.27E-03	NA	8.36E-03	NA	7.80E-03	NA	1.04E-02
Total	1.37E-05	2.31E-02	3.14E-05	4.72E-02	2.07E-05	3.59E-02	4.76E-05	7.26E-02	2.15E-05	3.77E-02	4.94E-05	7.58E-02	1.69E-05	2.81E-02	3.87E-05	5.78E-02	1.93E-05	3.28E-02	4.43E-05	6.68E-02

TABLE 4-1
Summary of Groundwater Field Parameters
November 2013
20th Street & Factor Avenue WQARF Site
Yuma, Arizona

Well	Date Recorded	Temperature Degrees (C°)	Dissolved Oxygen (mg/L)	Conductivity (ms/cm)	pH	Total Dissolved Solids (mg/L)	ORP (mV)	Turbidity (NTU)
A-Zone Groundwater Monitoring Wells								
MW-1A	11/18/2013	29.38	0.00	5.71	8.59	3.60	216	0.70
MW-2A	11/19/2013	28.86	0.00	3.54	8.54	2.27	207	41.40
MW-3A	11/14/2013	31.17	5.84	8.96	8.54	5.64	235	5.60
MW-4A	11/14/2013	29.75	4.86	4.44	8.63	2.84	311	0.10
MW-5A*	11/19/2013	29.92	6.20	4.61	8.64	2.95	359	0.70
MW-6A	11/19/2013	28.91	0.00	3.10	8.26	1.98	192	7.90
MW-7A**	Well not sampled							
MW-8A	11/15/2013	30.57	2.77	2.80	8.48	1.80	240	37.90
MW-9A	11/11/2013	30.34	2.86	4.31	8.74	2.76	169	2.90
MW-10A	Wells not sampled							
MW-11A								
MW-12A								
MW-13A	11/11/2013	31.45	0.82	2.65	8.65	1.70	177	0.50
MW-14A	11/19/2013	29.86	0.48	4.19	8.50	2.68	336	0.10
MW-15A	11/11/2013	30.62	2.61	3.42	8.78	2.19	163	3.60
MW-16A	11/12/2013	27.76	0.32	3.53	8.14	2.26	192	0.00
MW-17A	11/12/2013	30.13	6.92	3.35	8.92	2.15	174	0.30
MW-18A	11/14/2013	30.90	4.77	3.20	8.54	2.05	211	1.10
MW-19A	11/18/2013	29.82	5.02	5.18	8.58	3.26	201	0.00
MW-20A	11/12/2013	28.41	4.59	3.08	8.42	1.97	162	1.40
MW-21A	11/12/2013	30.35	6.25	4.49	8.44	2.88	148	0.00
MW-22A	11/20/2013	29.72	0.00	5.00	7.91	3.20	227	1.20
MW-25A	Well not sampled							
MW-26A	11/15/2013	30.56	0.00	6.12	7.99	3.85	137	1.10
MW-27A***	11/14/2013	31.01		4.57	7.94	2.92	160	1.80
MW-101A	11/14/2013	29.58	4.51	5.48	8.68	3.45	154	0.60
MW-102A	Wells not sampled							
PZ-1A								
PZ-2A								
DMW-6								
DMW-10								
DMW-11	Groundwater grab samples; Parameters not recorded							
DMW-16	Wells not sampled							
DMW-17								
DMW-18								
DMW-25	Groundwater grab samples; Parameters not recorded							
DEW-19	Well not sampled							
B-Zone Groundwater Monitoring and Extraction Wells								
MW-8B	11/15/2013	30.99	4.88	3.57	8.37	2.28	229	0.00
MW-18B	11/20/2013	31.53	0.00	4.00	8.45	2.56	270	0.00
MW-21B	11/18/2013	31.33	0.00	4.63	8.09	2.96	146	0.00
MW-22B	11/19/2013	30.16	0.00	6.51	8.09	4.10	233	0.00
MW-23B	11/12/2013	29.35	0.06	3.15	8.82	2.02	121	0.00
MW-24B	11/13/2013	31.93	0.00	4.35	8.19	2.79	225	0.00
MW-25B	Well not sampled							
MW-26B	11/12/2013	31.27	0.00	4.73	8.35	3.03	98	0.00
MW-27B	Well not sampled							
MW-28B	11/13/2013	31.37	0.00	4.01	8.12	2.57	-32	0.00
MW-29B	11/13/2013	31.15	0.00	3.33	7.90	2.10	-25	0.30
MW-30B	11/13/2013	29.89	0.00	3.76	7.99	2.40	22	0.00
MW-102B1	Well not sampled							
MW-102B2	11/18/2013	29.94	0.00	4.31	8.34	2.76	197	0.00
MW-103B	Well not sampled							
MW-104B	11/14/2013	30.27	0.00	4.60	8.13	2.94	132	0.00
PZ-1B	Wells not sampled							
PZ-2B								
EW-1								
C-Zone Groundwater Monitoring and Production Wells								
MW-8C	11/15/2013	33.06	0.00	3.96	8.09	2.53	17	0.00
MW-17C	Well not sampled							
MW-21C**	11/13/2013	33.28	0.00	4.14	8.47	2.65	-257	0.00
MW-103C	11/14/2013	31.53	0.00	3.37	8.29	2.16	-53	0.00
MW-104C	Wells not sampled							
PZ-1C								
PZ-2C								
Alice Byrne	Groundwater grab samples; Parameters not recorded							
St. Francis								

Notes:

Values shown are the median values over the time period

mg/L = milligrams per liter

uS/cm = microsiemens per centimeter

ORP = oxidation-reduction potential (Eh)

mV = millivolts

* = On November 19, 2013, the water from well MW-5A had a yellowish tint.

** = On November 13, 2013, the water from well MW-21C had a slight brownish-yellowish tint and produced a slight organic odor.

** = On November 14, 2013, dissolved oxygen was unable to be tested from the water from well MW-27A

TABLE 4-2

SUMMARY OF NATURAL ATTENTUATION COMPOUNDS DETECTED IN GROUNDWATER SAMPLES COLLECTED BY GEOTRANS - NOVEMBER 2004 THROUGH JANUARY 2005

20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Parameter	November 22-December 6, 2004																January 31, 2005		
	MW-1A	MW-2A	MW-3A	MW-4A	MW-5A P	MW-5A L	MW-6A	MW-101A	MW-102AP	MW-102AL	MW-102B1	MW-102B2	MW-103B	MW-103C	MW-104B	MW-104C	MW-8A	MW-9A	MW-10A
NATURAL ATTENUATION PARAMETERS (mg/L)																			
Total Organic Carbon	<10	<10	<10	<1.0	1.2	<5.0	<2.0	NT	<1.0	<1.0	<1.0	<1.0	NT	NT	NT	NT	NT	NT	NT
Methane, Ethane, Ethene	ND	ND	Methane 0.99	ND	ND	ND	ND	Methane 5.9	ND	ND	ND	ND	ND	Methane 0.89	NT	NT	Methane 1.1	Methane 1.6	Methane 2.4 Ethane 0.71
Sulfate	810.0	670	2100	1900	1000 D2	1600 D2	500	2500	1900 D2	2100 D2	1100 D2	780 D2	1400 D2	200 D2	960 D2	260 D2	520	1300	680
Total Sulfide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.5	<0.5	<0.5
Chloride	470	210	650	860	400 D2	920 D2	160	1000	1400 D2	1400 D2	1600 D2	1100 D2	1200 D2	930 D2	1100 D2	880 D2	250	460	260
Nitrate-Nitrite	25.00	4.5/0.020	4.6	6.8	20 D2	9.7	9	5.5	22 D2	22 D2	3	<0.50	<0.50	<0.50	0.85	4	14	5.2	3.4
Nitrite	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.027	0.027	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.051	0.071	<0.020	0.13
Alkalinity, Bicarbonate	200	270	120	120	150	150	230	130	110	110	120	170	170	170	170	170	200	260	250
pH	7.6	7.48	7.24	6.94	7.34	7.33	7.95	7.87	NR	7.98	7.67	7.31	7.33	7.58	NR	NR	NR	7.09*	7.79*
Dissolved Oxygen	1.38	1.54	5.04	4.9	1.84	0.68	2.88	1.58	NR	0.3	0.96	3.22	0.06	0.05	NR	NR	NR	4.18*	5.08*
Oxidation Reduction Potential	398	390	442	477	480	403	322	290	NR	300	71	208	175	124	NR	NR	NR	NR	NR
Ferrous Iron (field test)	<0.1 >0.0	0	0	0	0	0	0	<1.0 >0	NR	0	0	0	0	0	NT	NT	NT	NT	NT
METALS, TOTAL (mg/L)																			
Manganese	1.1	0.77	1.2	<0.05	<0.05	3.2	0.13	<0.05	2	0.46	<0.05	0.34	1.4	0.19	1.4	0.61	0.08	0.57	0.46
Sodium	700	360	1100	860	600 D2	940 D2	330	1100	1300 D2	1300 D2	810 D2	530 D2	680 D2	420 D2	62	52	380 D2	800 D2	420 D2
Potassium	26	14	31	16	12	40	9.1	23	31	29	24	15	19	15	25	20	13	26	13
Calcium	170	130	330	170	89	370	39	250	300	240	400	290	420	180	350	220	87 D2	160 D2	130 D2
Magnesium	31	32	60	50	26	81	9.2	64	73	48	120	120	170	63	130	55	31	38	37
METALS, DISSOLVED (mg/L)																			
Manganese	1.1	0.77	<0.05	<0.05	<0.05	0.09	<0.05	<0.05	0.41	0.46	<0.05	0.34	1.3	0.15	NS	NS	0.07	<0.05	0.09
Sodium	840 D2	360 D2	1200 D2	880 D2	550	950	330 D2	1200 D2	1200	1300 D2	810 D2	560 D2	570 D2	430	NS	NS	380 D2	760 D2	420 D2
Potassium	18	7.5	21	16	11	25	7	24	28	30	23	15	17	14	NS	NS	11	18	9.1
Calcium	160	92	230	170	86	200	28	260	230	250	380	290	390	180	NS	NS	79 D2	96 D2	90 D2
Magnesium	28	24	49	51	25	57	7	66	45	48	110	120	160	62	NS	NS	30	31	31

Notes: NT = Not Tested
NR = Not Recorded
D2 = Sample required dilution due to high concentration of target analyte
mg/L = milligram per liter
L = Low Flow Sample
P = 3-Volume Purge Sample
S = Duplicate Sample
* Averaged from stabilized parameter readings
Monitoring wells MW-7, MW-16, MW-17, MW-18, and Ron Martin were not selected to have natural attenuation parameters monitored

TABLE 4-3
GEOTECHNICAL PARAMETERS OF SOIL SAMPLES COLLECTED FROM BORINGS SB-1 AND SB-4
20th Street and Factor Avenue WQARF Site, Yuma, Arizona

Boring Number	Depth (feet)	In-Place Dry Density (pcf)	In-Place Dry Density (gcc)	In-Place Moisture %	Hydraulic Conductivity (cm/sec)	Total Organic Carbon %	Total Porosity %	Air Filled Porosity %	% Gravel	% Sand	% Silt	% Clay
SB-01	10	105.20	1.69	14.90	2.30E-03	0.30	36.9	11.8	10.1	83.8	2.9	3.2
SB-01	40	94.20	1.51	11.60	NM	0.16	43.3	25.9	5.9	63.8	15.1	15.2
SB-01	70	101.90	1.63	4.30	NM	0.30	37.8	30.8	8.1	83.8	6.7	1.4
Average SB-01		100.43	1.61	10.27	2.30E-03	0.25	39.3	22.8	8.0	77.1	8.2	6.6
SB-04	20	93.20	1.49	8.50	1.50E-03	0.12	43.4	30.7	0.0	69.1	24.5	6.4
SB-04	40	99.30	1.59	2.50	n.m.	0.06	39.8	35.9	0.2	97.3	1.6	0.9
SB-04	60	86.80	1.39	14.70	7.70E-05	0.10	47.8	27.4	0.0	53.8	20.2	25.9
SB-04	70	94.40	1.51	12.10	2.50E-03	0.20	42.5	30.1	0.0	71.3	11.2	17.4
Average SB-04		93.43	1.50	9.45	1.36E-03	0.12	43.4	31.0	0.05	72.9	14.4	12.7
Average All		96.93	1.55	9.86	1.83E-03	0.19	41.4	26.9	4.0	75.0	11.3	9.6

pfc = pounds per cubic foot
gcc = grams per cubic centimeter
cm/sec = centimeters per second
% = percent
NM = not measured

TABLE 6-2

SUMMARY OF WATER USERS IN SITE VICINITY
20th Street and Factor Avenue WQARF Site
Yuma, Arizona

Water Well Users	Address	Cadastral Location	ADWR Number	Well Depth (ft)	Screen Depth (ft)	Location
Alice Byrne School	811 W 16th Street, Yuma, AZ 85364	(C-08-23)33bba	55-613927	203	105-233	Northwest (downgradient) of the site
KL-1 (Markal Investments)	1195 S 5th Avenue, Yuma AZ 85364	(C-08-23)34caa	55-580030	240	200-240	Northwest (Downgradient) of the Site
Ron Martin	928 East 21st Street, Yuma, AZ 85365	(C-08-23)34cab	55-592009	180	Unknown	Southeast (upgradient) of the Site
Jose Pacheco	2333 Madison Avenue, Yuma, AZ 85364	(C-08-23)33cad	55-596380	200	Not Available	West (down- and cross-gradient) of the site
Woodard Jr. High School	2250 S 8th Avenue, Yuma, AZ 85364	(C-08-23)33cca	55-613924	300	Not Available	West (down- and cross-gradient) of the site
St. Francis of Assisi School	700 W 18th Street, Yuma, AZ 85264	(C-08-23)33bdb	55-626423	318	Not Available	West (down- and cross-gradient) of the site

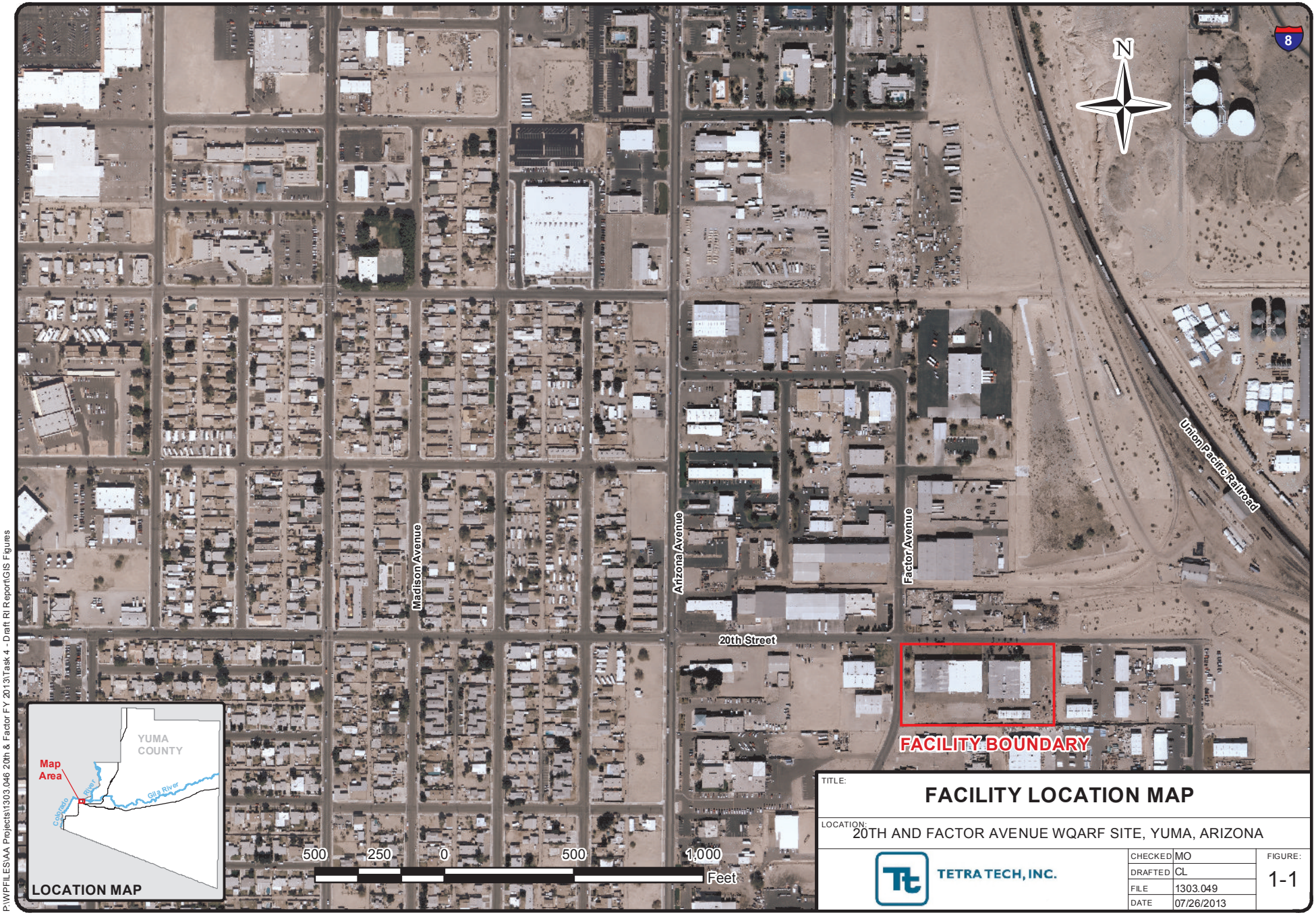
General Water Users

City of Yuma	Jay Simonton, Public Works Department - Utilities Manager, One City Plaza, Yuma AZ 85364-1436, FAX (928) 373-4501; email john.simonton@yumaaz.gov
Yuma County	Department of Development Services 2351 West 26th Street Yuma, AZ 85364; Fax (928) 817-5050 ; contact.dds@yumacountyaz.gov

ft = feet

ADWR = Arizona Department of Water Resources

FIGURES



TITLE:

FACILITY LOCATION MAP

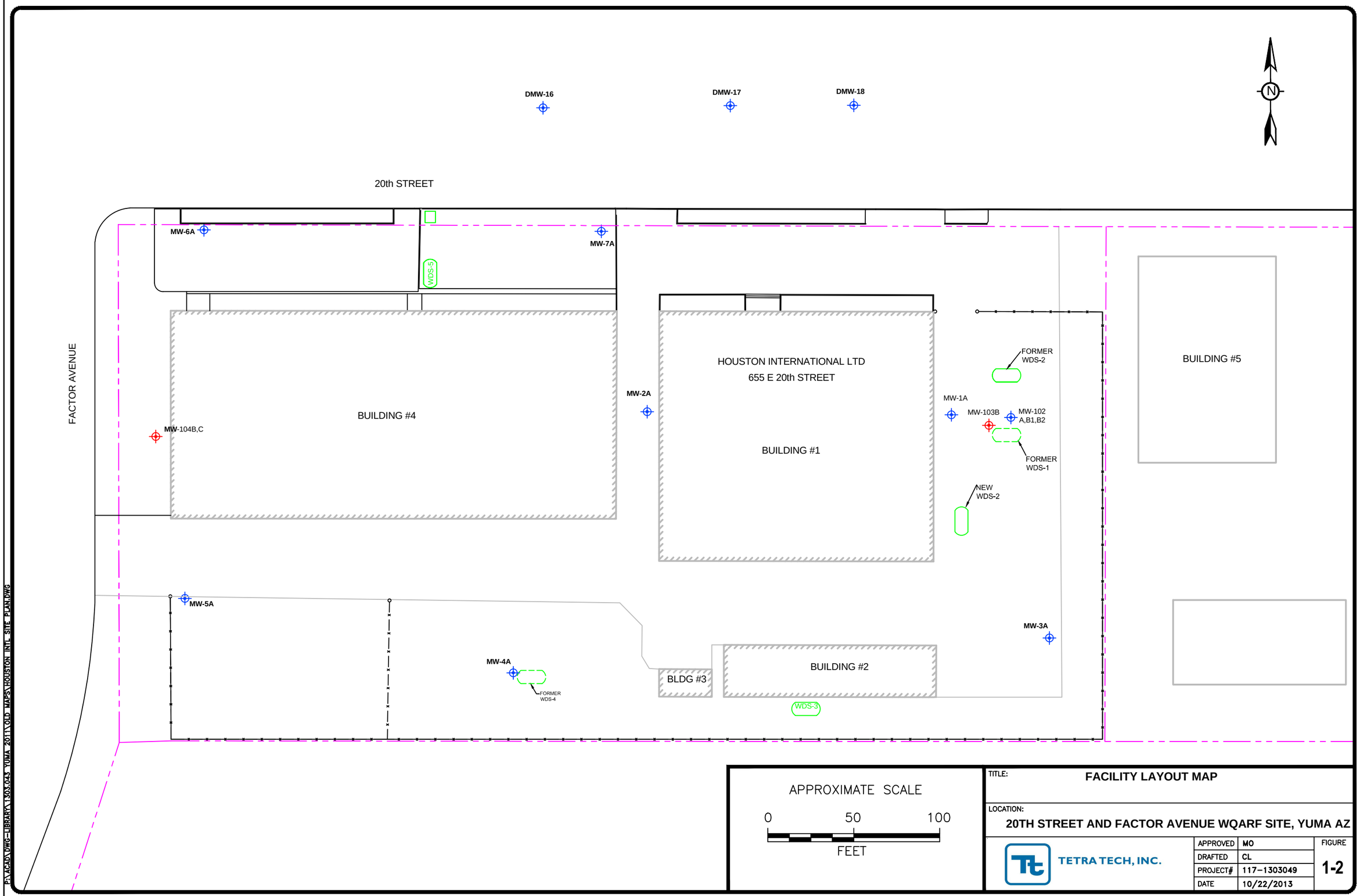
LOCATION: 20TH AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA

TETRA TECH, INC.

CHECKED	MO
DRAFTED	CL
FILE	1303.049
DATE	07/26/2013

FIGURE: 1-1

P:\WPFILES\AA Projects\1303.046 20th & Factor FY 2013\Task 4 - Draft RI Report\GIS Figures



TITLE: FACILITY LAYOUT MAP

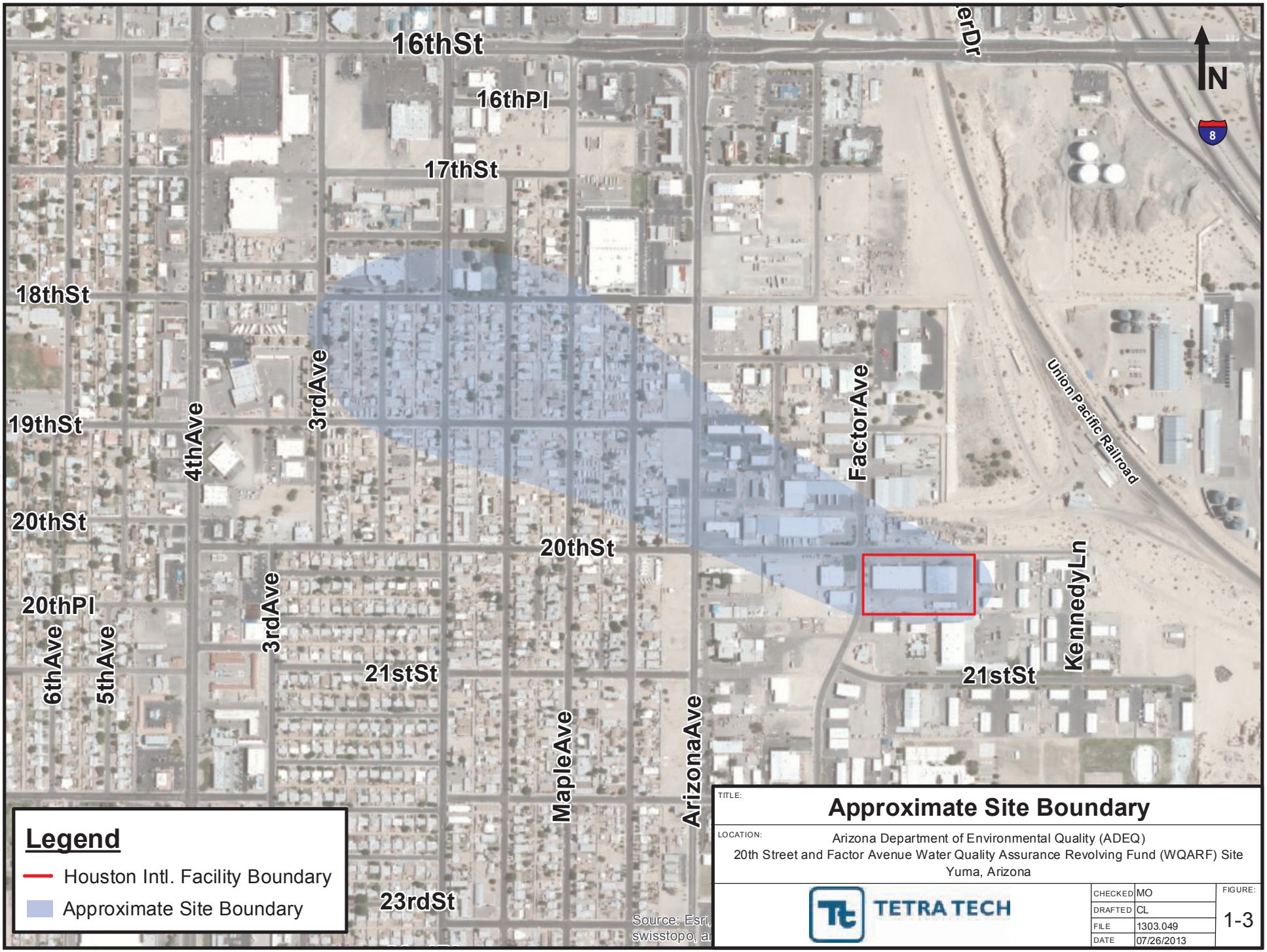
LOCATION: 20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA AZ

TETRA TECH, INC.

APPROVED	MO
DRAFTED	CL
PROJECT#	117-1303049
DATE	10/22/2013

FIGURE 1-2

P:\ACAD\DWG-LIBRARY\1303.043 YUMA 2011\OLD MAPS\HOUSTON INTL SITE PLAN.DWG



TITLE: **Approximate Site Boundary**

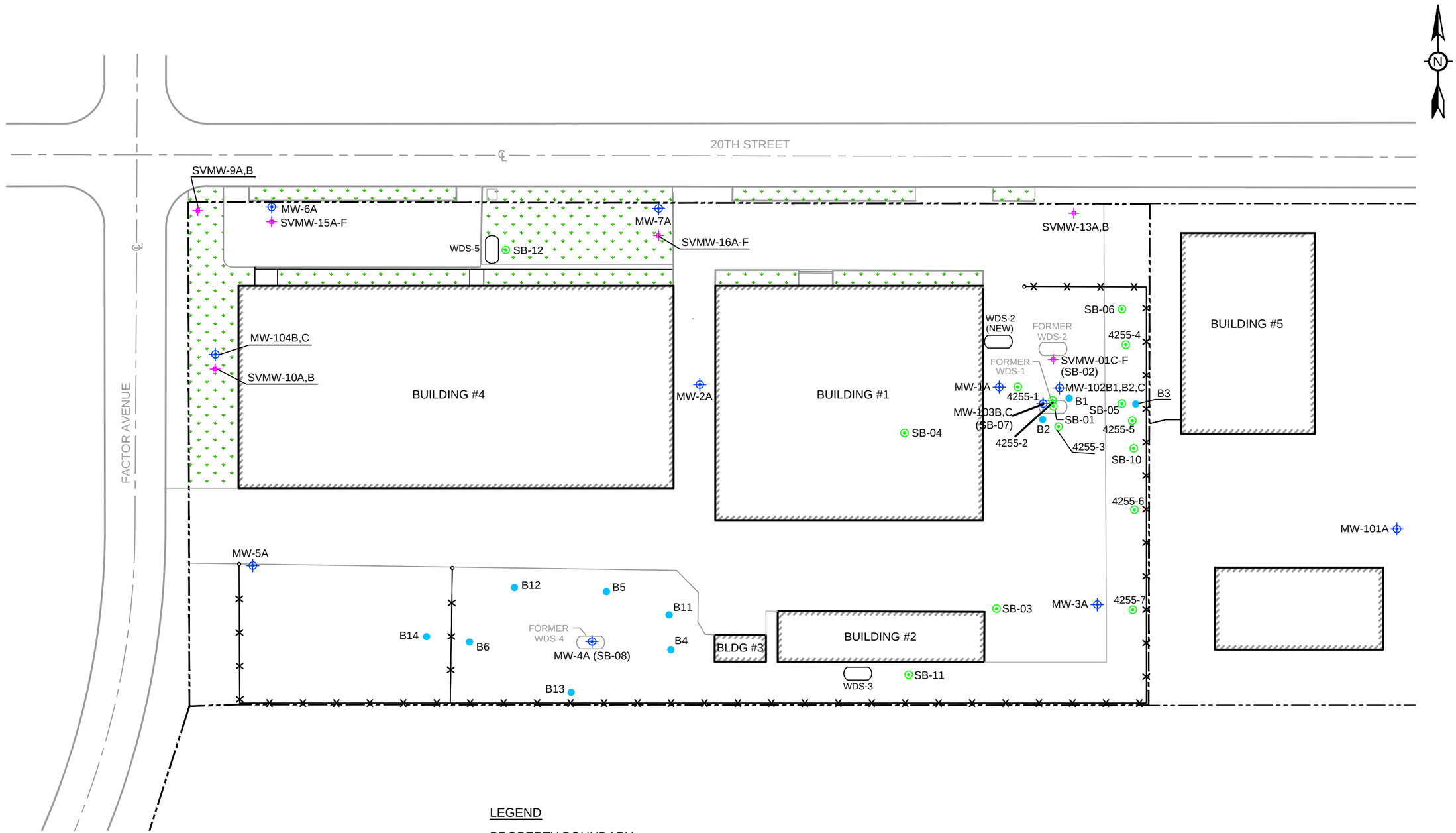
LOCATION: Arizona Department of Environmental Quality (ADEQ)
20th Street and Factor Avenue Water Quality Assurance Revolving Fund (WQARF) Site
Yuma, Arizona

TETRA TECH

CHECKED	MO
DRAFTED	CL
FILE	1303.049
DATE	07/26/2013

FIGURE: 1-3

P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\Site Boundary Fig.mxd



LEGEND

- PROPERTY BOUNDARY
- FENCE LINE
- SOIL VAPOR EXTRACTION WELL
- ABANDONED BOREHOLE
- GROUNDWATER MONITORING WELLS
- SOIL BORING

0 60 120

SCALE IN FEET

TITLE: **SITE DIAGRAM AND SOIL BORING LOCATIONS**

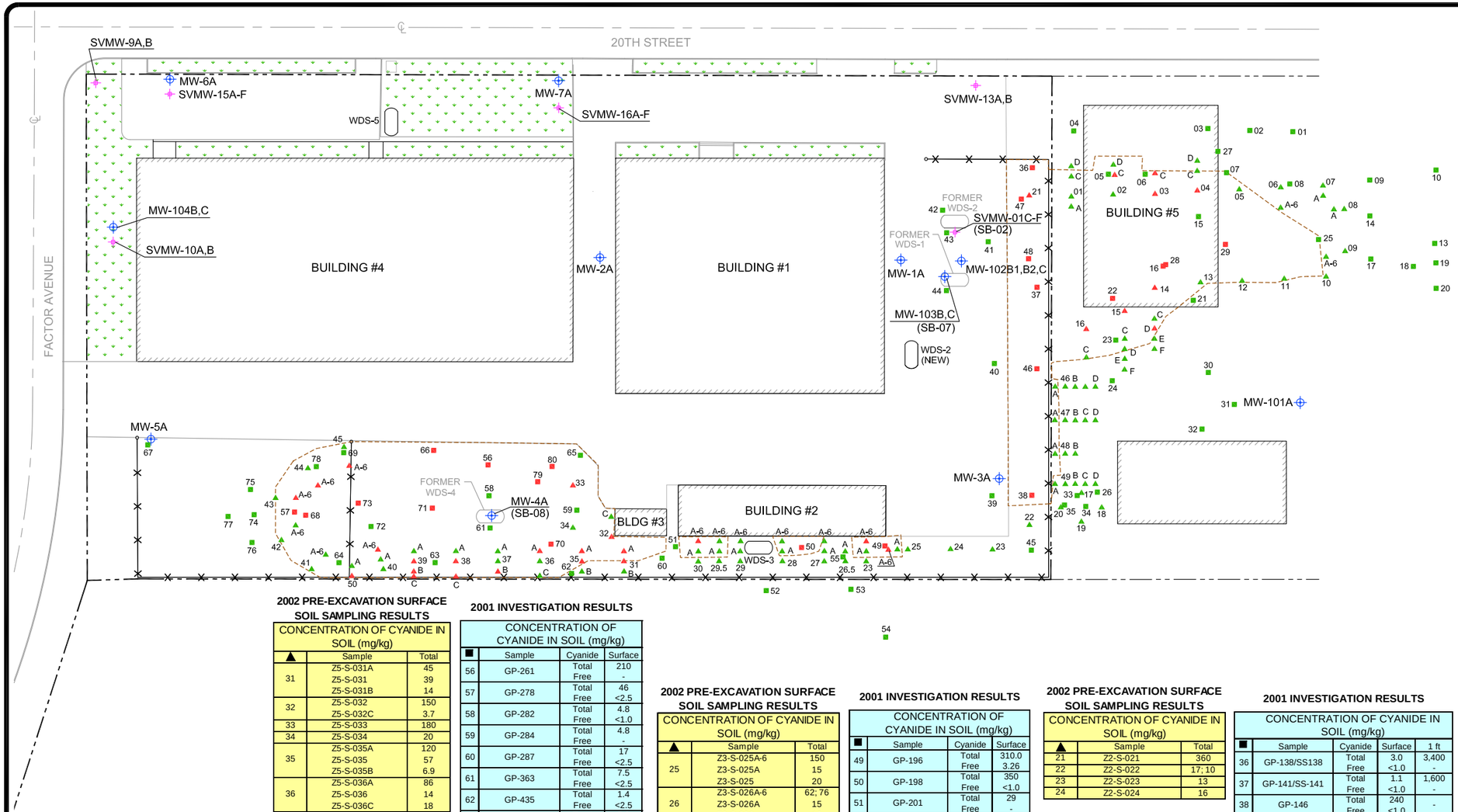
LOCATION: **20th Street and Factor Avenue WQARF Site Yuma, Arizona**

TETRA TECH

APPROVED	MO
DRAFTED	CP
PROJECT#	117-1303049
DATE	1/8/14

FIGURE **2-1**

P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\Updated Figures



2002 PRE-EXCAVATION SURFACE SOIL SAMPLING RESULTS

CONCENTRATION OF CYANIDE IN SOIL (mg/kg)		
▲	Sample	Total
31	Z5-S-031A	45
	Z5-S-031	39
	Z5-S-031B	14
32	Z5-S-032	150
	Z5-S-032C	3.7
33	Z5-S-033	180
34	Z5-S-034	20
35	Z5-S-035A	120
	Z5-S-035	57
	Z5-S-035B	6.9
36	Z5-S-036A	86
	Z5-S-036	14
	Z5-S-036C	18
37	Z5-S-037A	13
	Z5-S-037	35
	Z5-S-037B	54
38	Z5-S-038A	16; 13
	Z5-S-038	53; 34
	Z5-S-038C	62
39	Z5-S-039A	26
	Z5-S-039	52
	Z5-S-039B	74
	Z5-S-039C	38
40	Z5-S-040A-6	220
	Z5-S-040A	9.2
	Z5-S-040	27
41	Z5-S-041A-6	<1
	Z5-S-041	9.2
42	Z5-S-042A-6	4.4
	Z5-S-042	13
43	Z5-S-043A-6	36
	Z5-S-043	1.5
44	Z5-S-044A-6	39
	Z5-S-044	11
45	Z5-S-045A-6	49
	Z5-S-045	30
50	Z5-S-FEN-6 (A)	16
	Z5-S-FEN	120; 120

2001 INVESTIGATION RESULTS

CONCENTRATION OF CYANIDE IN SOIL (mg/kg)			
■	Sample	Cyanide	Surface
56	GP-261	Total Free	210 -
57	GP-278	Total Free	46 <2.5
58	GP-282	Total Free	4.8 <1.0
59	GP-284	Total Free	4.8 -
60	GP-287	Total Free	17 <2.5
61	GP-363	Total Free	7.5 <2.5
62	GP-435	Total Free	1.4 <2.5
63	GP-437	Total Free	5.2 -
64	GP-438	Total Free	<1.0 14
65	GP-439	Total Free	10 -
66	GP-443	Total Free	60 -
67	GP-444	Total Free	1.1 NA
68	GP-451	Total Free	760 <2.5
69	GP-452	Total Free	20 -
70	GP-453	Total Free	50 -
71	GP-455	Total Free	59 -
72	GP-456	Total Free	<1.0 NA
73	GP-457	Total Free	380 -
74	GP-459	Total Free	<1.0 NA
75	GP-460	Total Free	<1.0 NA
76	GP-461	Total Free	2.78 NA
77	GP-462	Total Free	2.1 NA
78	GP-463	Total Free	19.1 <1.0
79	GP-464	Total Free	35.5 1.19
80	GP-101	Total Free	690 13

2002 PRE-EXCAVATION SURFACE SOIL SAMPLING RESULTS

CONCENTRATION OF CYANIDE IN SOIL (mg/kg)		
▲	Sample	Total
25	Z3-S-025A-6	150
	Z3-S-025A	15
	Z3-S-025	20
26	Z3-S-026A-6	62; 76
	Z3-S-026A	15
	Z3-S-026	18
26.5	Z3-S-026.5A	29
	Z3-S-026.5	3.5
27	Z3-S-027A-6	31
	Z3-S-027A	29
	Z3-S-027	11
28	Z3-S-028A-6	11
	Z3-S-028A	13
	Z3-S-028	5.3;6.0
29	Z3-S-029A-6	3.4
	Z3-S-029A	6.2
	Z3-S-029	5.3
29.5	Z3-S-029.5A-6	7.3
	Z3-S-029.5A	8.9
	Z3-S-029.5	<1
30	Z3-S-030A-6	55
	Z3-S-030A	18
	Z3-S-030	9.2

2001 INVESTIGATION RESULTS

CONCENTRATION OF CYANIDE IN SOIL (mg/kg)			
■	Sample	Cyanide	Surface
49	GP-196	Total Free	310.0 3.26
50	GP-198	Total Free	350 <1.0
51	GP-201	Total Free	29 -
52	GP-203	Total Free	1.9 <2.5
53	GP-205	Total Free	<1.0 NA
54	GP-207	Total Free	<1.0 <2.5
55	GP-433	Total Free	<1.0 NA

2002 PRE-EXCAVATION SURFACE SOIL SAMPLING RESULTS

CONCENTRATION OF CYANIDE IN SOIL (mg/kg)		
▲	Sample	Total
21	Z2-S-021	360
22	Z2-S-022	17; 10
23	Z2-S-023	13
24	Z2-S-024	16

2001 INVESTIGATION RESULTS

CONCENTRATION OF CYANIDE IN SOIL (mg/kg)				
■	Sample	Cyanide	Surface	1 ft
36	GP-138/SS138	Total Free	3.0 <1.0	3,400 -
37	GP-141/SS-141	Total Free	1.1 <1.0	1,600 -
38	GP-146	Total Free	240 <1.0	-
39	GP-151	Total Free	<1.0 NA	-
40	GP-154	Total Free	<1.0 NA	-
41	GP-157	Total Free	<1.0 <2.5	-
42	GP-188	Total Free	<1.0 NA	-
43	GP-190	Total Free	4.1 <1.0	-
44	GP-194	Total Free	<1.0 NA	-
45	GP-431	Total Free	1.2 <1.0	-
46	GP-458	Total Free	170 -	-
47	GS-530-SS-1.0	Total Free	-	830 76
48	SS-101	Total Free	690 13	-

2002 PRE-EXCAVATION SURFACE SOIL SAMPLING RESULTS

CONCENTRATION OF CYANIDE IN SOIL (mg/kg)		
▲	Sample	Total
01	Z1-S-001A	2
	Z1-S-001	21
	Z1-S-001C	5.1
	Z1-S-001D	6
02	Z1-S-002	23
	Z1-S-002C	36
	Z1-S-002D	20
03	Z1-S-003	55; 25
	Z1-S-003C	40
04	Z1-S-004	39
	Z1-S-004C	10
	Z1-S-004D	6.1
05	Z1-S-005	19
06	Z1-S-006A-6	2.4
	Z1-S-006	1.5
07	Z1-S-007A	14
	Z1-S-007	3.7
08	Z1-S-008A	12
	Z1-S-008	9.2
09	Z1-S-009	2
10	Z1-S-010A-6	6.5; 1.2
	Z1-S-010	2.9
11	Z1-S-011	30
12	Z1-S-012	5.1
13	Z1-S-013	4
14	Z1-S-014	41
	Z1-S-014C	29
	Z1-S-014D	39
	Z1-S-014E	21
	Z1-S-014F	27
15	Z1-S-015	44
	Z1-S-015C	5.6
	Z1-S-015D	5.9
	Z1-S-015E	18
	Z1-S-015F	17
16	Z1-S-016	44
	Z1-S-016C	9.1
17	Z1-S-017	18; 13
18	Z1-S-018	24
19	Z1-S-019	35
20	Z1-S-020	29
46	Z1-S-046A	25
	Z1-S-046	18; 13
	Z1-S-046B	12
	Z1-S-046C	14
	Z1-S-046D	3.3
47	Z1-S-047A	17
	Z1-S-047	16
	Z1-S-047B	14
	Z1-S-047C	13
	Z1-S-047D	21
48	Z1-S-048A	11
	Z1-S-048	14
	Z1-S-048B	8.3
49	Z1-S-049A	29
	Z1-S-049	16
	Z1-S-049B	15
	Z1-S-049C	8.4
	Z1-S-049D	21

2001 INVESTIGATION RESULTS

CONCENTRATION OF CYANIDE IN SOIL (mg/kg)			
■	Sample	Cyanide	Surface
01	GP-025	Total Free	<1.0 NA
02	GP-026	Total Free	<1.0 NA
03	GP-027	Total Free	<1.0 NA
04	GP-030	Total Free	<1.0 <2.5
05	GP-032	Total Free	1.6 <1.0
06	GP-033	Total Free	1.6 <2.5
07	GP-035	Total Free	2.4 <2.5
08	GP-036	Total Free	<1.0 <1.0
09	GP-038	Total Free	<1.0 NA
10	GP-040	Total Free	<1.0 <2.5
11	GP-041	Total Free	<1.0 NA
12	GP-042	Total Free	<1.0 NA
13	GP-051	Total Free	<1.0 NA
14	GP-053	Total Free	<2.5 <2.5
15	GP-057	Total Free	1.7 <1.0
16	GP-063	Total Free	480 2.31
17	GP-068	Total Free	2.7 <2.5
18	GP-069	Total Free	1.9 <2.5
19	GP-070	Total Free	1.5 <1.0
20	GP-081	Total Free	<1.0 NA
21	GP-087	Total Free	<1.0 NA
22	GP-089	Total Free	230 2.37
23	GP-092	Total Free	<1.0 NA
24	GP-119	Total Free	7.0 NA
25	GP-429	Total Free	32 <1.0
26	GP-450	Total Free	7.6 <2.5
27	GP-454	Total Free	<1.0 NA
28	RMP-101	Total Free	650 5.3
29	RMP-102	Total Free	650 5.7
30	RMP-103	Total Free	9.6 <2.5
31	RMP-104	Total Free	<2.5 <2.5
32	RMP-105	Total Free	7.5 <2.5
33	RMP-106	Total Free	3.4 <2.5
34	RMP-107	Total Free	17 <2.5
35	RMP-108	Total Free	13 <2.5

EXPLANATION

- ■▲ SAMPLES WITH CONCENTRATIONS > 35 mg/Kg
- ■▲ SAMPLES WITH CONCENTRATIONS ≤ 35 mg/Kg
- NA NOT ANALYZED
- SOIL EXCAVATION BOUNDARY
- SAMPLE PREPARATION FOR EPA METHOD 9010B/9014 VARIED BETWEEN LABORATORIES WHICH MAY HAVE RESULTED IN LOWER DETECTED CONCENTRATIONS
- SAMPLE PREPARATION FOR EPA METHOD 9010B/9014 PERFORMED IN ACCORDANCE WITH STANDARD METHOD 4500-CN

LEGEND

- FACILITY BOUNDARY
- FENCE LINE
- SOIL VAPOR EXTRACTION WELL
- GROUNDWATER MONITORING WELLS

0 70 140
SCALE IN FEET

TITLE: **SURFACE AND SUBSURFACE SOIL SAMPLE LOCATIONS WITH CYANIDE CONCENTRATIONS**

LOCATION: **20th Street and Factor Avenue WQARF Site Yuma, Arizona**

TETRA TECH

APPROVED	MO	FIGURE
DRAFTED	CP	2-2
PROJECT#	117-1303046	
DATE	1-14-14	

P:\ACAD\1303-046-HOUS\1303046026A.DWG

TITLE: SOIL VAPOR MONITORING WELL LOCATION MAP

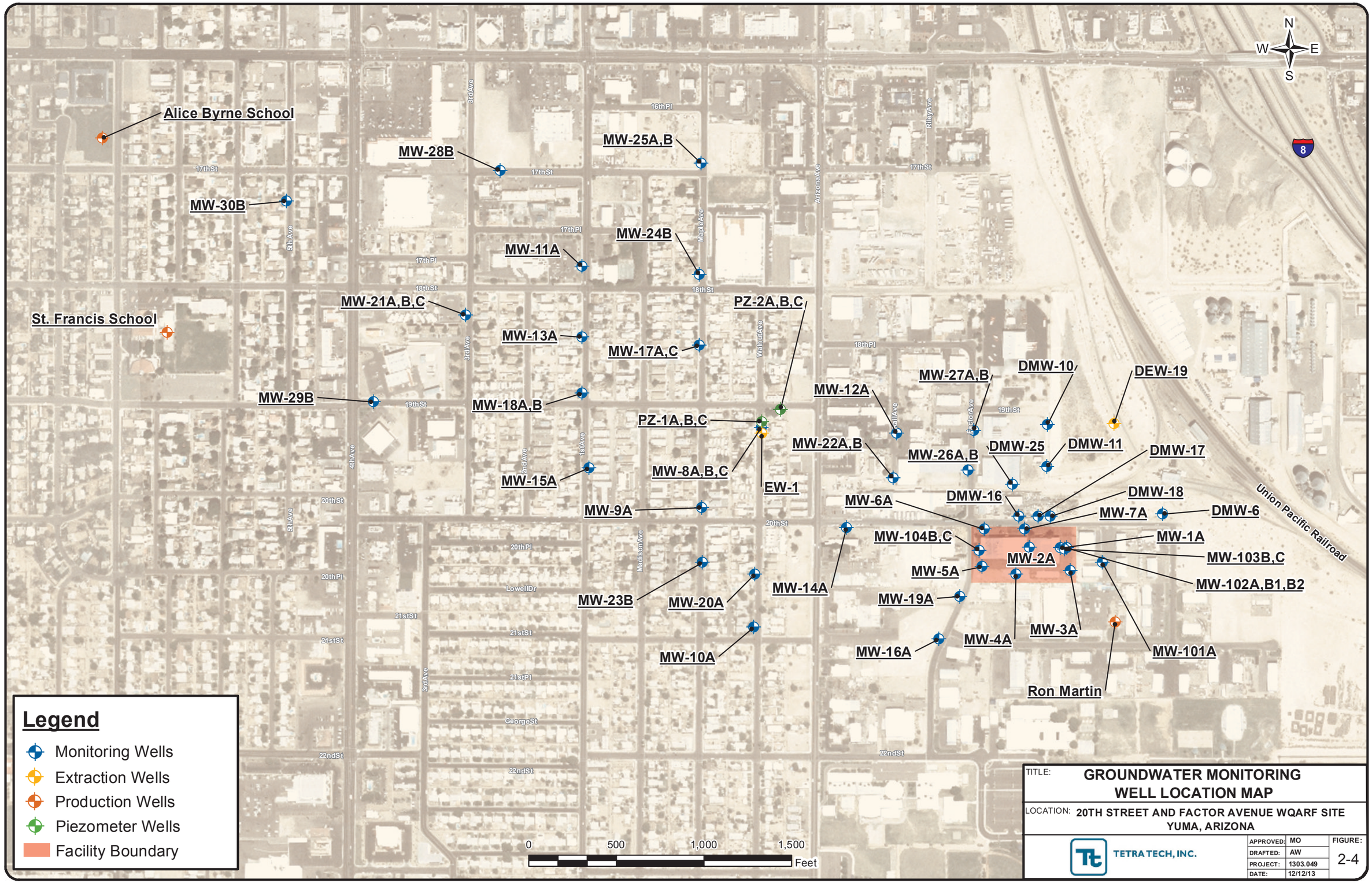
LOCATION: 20th Street and Factor Avenue WQARF Site, Yuma, Arizona

TETRA TECH, INC.

APPROVED	MO
DRAFTED	CP
PROJECT#	117-1303049
DATE	12/12/13

FIGURE 2-3

P:\GeoTrans Phoenix\Databases\Yuma 20th & Factor\GIS\2013\3-19-13 GW Elevations Zone A Map.mxd



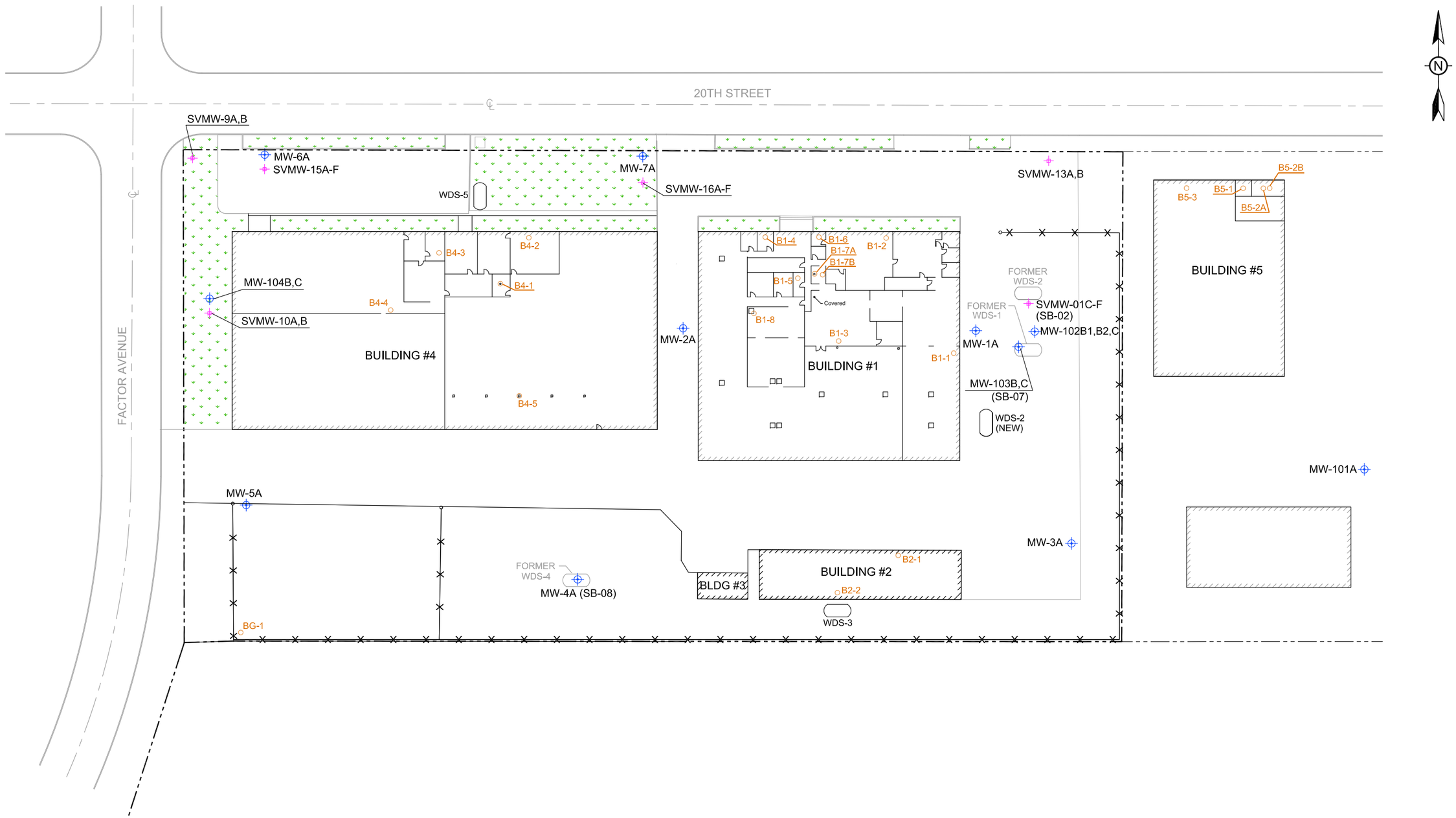
TITLE: GROUNDWATER MONITORING WELL LOCATION MAP

LOCATION: 20TH STREET AND FACTOR AVENUE WQARF SITE YUMA, ARIZONA

TETRA TECH, INC.

APPROVED:	MO
DRAFTED:	AW
PROJECT:	1303.049
DATE:	12/12/13

FIGURE: 2-4



LEGEND

- FACILITY BOUNDARY
- FENCE LINE
- SOIL VAPOR EXTRACTION WELL
- GROUNDWATER MONITORING WELLS
- CEILING VENTS
- FLOOR DRAINS
- BG-1* INDOOR AIR QUALITY SAMPLING LOCATION AND NUMBER ALL SAMPLES ARE TAKEN 4 FEET ABOVE THE FLOOR EXCEPT B1-1 AND B1-7B, WHICH ARE 2 FEET

* FULL SAMPLE NAME WILL BE HI-AIR-B5-1-MMDDYY

0 60 120
SCALE IN FEET

TITLE: **INDOOR AIR SAMPLING LOCATIONS**

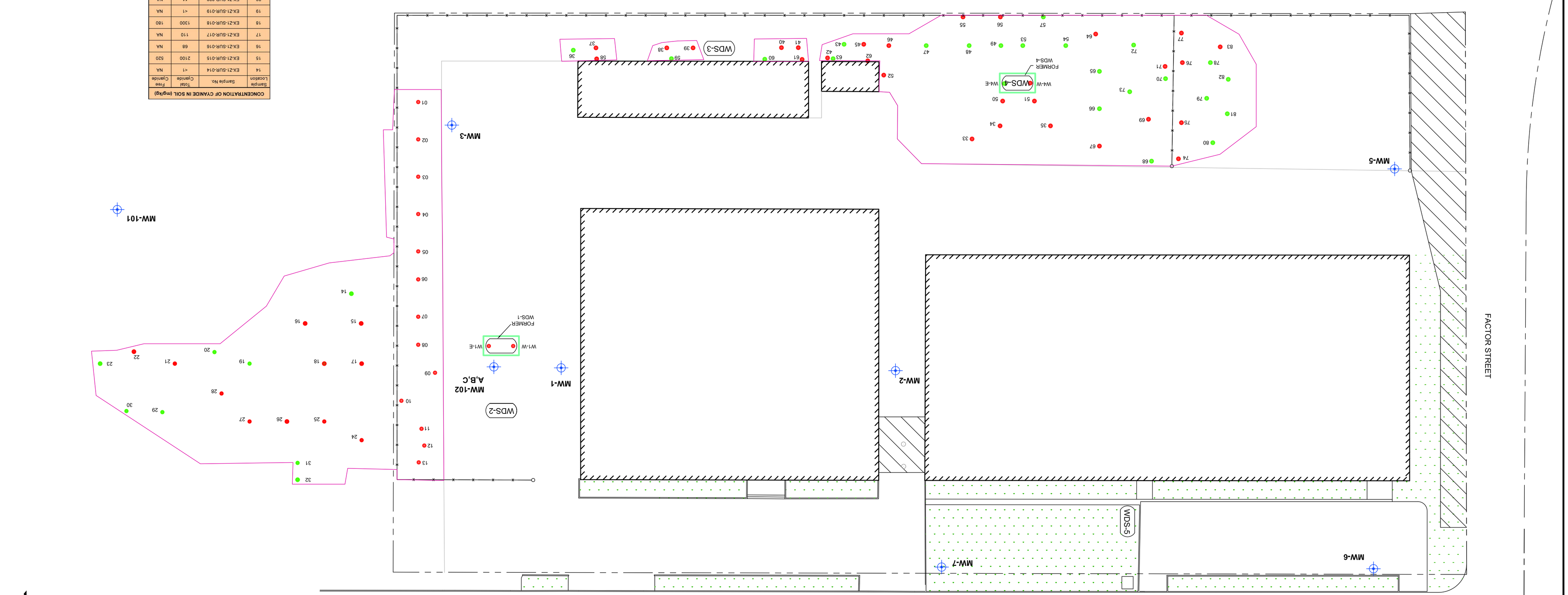
LOCATION: **20th Street and Factor Avenue WQARF Site Yuma, Arizona**

TETRA TECH

APPROVED	MO	FIGURE
DRAFTED	CP	2-5
PROJECT#	117-1303046	
DATE	1-14-14	

P:\ACAD\1303-046-HOUS\1303046027A.DWG

N
W
E
S
18thSt
19thSt
20thSt
18thPl
1stAve
MadisonAve
Maple Ave
WalnutAve
Arizona Ave
RailAve
FactorAve
SVMW-2A,B
PCE = <7.5, <7.8
TCE = <5.9, <6.2
HCN = <48.1, 121
SVS-8
PCE = 43
TCE = 11
HCN = NA
SVMW-3A,B
PCE = 21, 28
TCE = <6.6, <6.2
HCN = 117, <63.1
SVS-7
PCE = 10
TCE = <6.9
HCN = NA
SVS-9
PCE = <8.6
TCE = <6.8
HCN = NA
SVS-10
PCE = <8.1
TCE = <6.4
HCN = NA
SVS-3
PCE = <8.8
TCE = <6.9
HCN = NA
SVMW-4A,B
PCE = 11, 12
TCE = <6.5, <6.6
HCN = <63.1, <63.1
SVS-11
PCE = <8.2
TCE = <6.5
HCN = NA
SVS-5
PCE = <7.9
TCE = <6.3
HCN = NA
SVS-4
PCE = <8.8
TCE = <6.9
HCN = NA
SVS-29
PCE = <8.1
TCE = <6.4
HCN = NA
SVS-23
PCE = 17
TCE = 40
HCN = NA
SVS-22
PCE = <8.4
TCE = <6.6
HCN = NA
SVS-21
PCE = <8.2
TCE = <6.5
HCN = NA
SVS-30
PCE = <7.9
TCE = <5.9
HCN = NA
SVS-20
PCE = 10
TCE = <6.5
HCN = NA
SVS-19
PCE = <8.4
TCE = <6.6
HCN = NA
SVS-6
PCE = <8.6
TCE = <6.8
HCN = NA
SVS-24
PCE = 30
TCE = 7.4
HCN = NA
SVS-1
PCE = <8.8
TCE = <6.9
HCN = NA
SVS-25
PCE = 230
TCE = 41
HCN = NA
SVS-18
PCE = 97
TCE = <6.4
HCN = NA
SVS-2
PCE = <8.2
TCE = <6.5
HCN = NA
SVS-26
PCE = 1,700
TCE = 86
HCN = NA
SVS-17
PCE = 1,900
TCE = 17
HCN = NA
SVS-27
PCE = 4,800
TCE = 58
HCN = NA
SVS-16
PCE = 4,400
TCE = <17
HCN = NA
SVS-15
PCE = 2,400
TCE = 16
HCN = NA
SVS-14
PCE = 33
TCE = <6.6
HCN = NA
SVS-13
PCE = <7.9
TCE = <6.3
HCN = NA
SVS-12
PCE = <8.4
TCE = <6.6
HCN = NA
SVS-28
PCE = 1,400
TCE = 11
HCN = NA
Legend
Soil Vapor Survey Point
Soil Vapor Monitoring Wells
Facility Boundary
Results are presented in micrograms per cubic meter (ug/m3)
0
500
Feet
TITLE: SELECTED VOC AND HCN RESULTS FROM SEPTEMBER 2008 SOIL VAPOR SURVEY
LOCATION: 20th Street and Factor Avenue WQARF Site, Yuma, Arizona
TETRA TECH, INC.
CHECKED MO
DRAFTED CP
FILE 1303.049
DATE 1/14/14
FIGURE: 2-6



AREA WITH VARIOUS BURIED UTILITY
LINES AND OVERHEAD LINES

CONCENTRATION OF CYANIDE IN SOIL (mg/kg)					
Sample Location	Sample No.	Total Cyanide	Free Cyanide	Sample Location	Sample No.	Total Cyanide	Free Cyanide
33	EX-Z5-SUR-033	250 : 280	180 : 120	65	EX-Z5-SUR-065	7.4	NA
34	EX-Z5-SUR-034	98 : 310	NA	66	EX-Z5-SUR-066	5.7	NA
35	EX-Z5-SUR-035	16 : 56	NA	67	EX-Z5-SUR-067	300	140
42	EX-Z3-SUR-042	48	NA	68	EX-Z5-SUR-068	2.5	NA
43	EX-Z3-SUR-043	10 : 16	NA	69	EX-Z5-SUR-069	27 : 53	NA
45	EX-Z3-SUR-045	1,100	880	70	EX-Z5-SUR-070	22	NA
46	EX-Z3-SUR-046	45	NA	71	EX-Z5-SUR-071	18 : 250	NA
47	EX-Z3-SUR-047	17	NA	72	EX-Z5-SUR-072	15	NA
48	EX-Z3-SUR-048	26	NA	73	EX-Z5-SUR-073	5.2	NA
49	EX-Z3-SUR-049	12	NA	74	EX-Z5-SUR-074	37	NA
50	EX-Z5-SUR-050	330	NA	75	EX-Z5-SUR-075	560	NA
51	EX-Z5-SUR-051	76	NA	76	EX-Z5-SUR-076	50	NA
52	EX-Z5-SUR-052	190	NA	77	EX-Z5-SUR-077	280	NA
53	EX-Z5-SUR-053	28	NA	78	EX-Z5-SUR-078	11	NA
54	EX-Z5-SUR-054	5	NA	79	EX-Z5-SUR-079	18	18
55	EX-Z5-SUR-055	54	NA	80	EX-Z5-SUR-080	13	<1
56	EX-Z5-SUR-056	63	NA	81	EX-Z5-SUR-081	<5	NA
57	EX-Z5-SUR-057	30	NA	82	EX-Z5-SUR-082	5.7	NA
62	EX-Z5-SUR-062	39	NA	83	EX-Z5-SUR-083	52	10
63	EX-Z5-SUR-063	25	NA	W4-E	EX-MD54-010E	<5	NA
64	EX-Z5-SUR-064	130	NA	W4-W	EX-MD54-010W	54	<5

CONCENTRATION OF CYANIDE IN SOIL (mg/kg)			
Sample Location	Sample	Total Cyanide	Free Cyanide
36	EX-Z5-SUR-036	8	NA
37	EX-Z5-SUR-037	290	NA
38	EX-Z5-SUR-038	340	NA
39	EX-Z5-SUR-039	440	290
40	EX-Z5-SUR-040	400	61
41	EX-Z5-SUR-041	230	NA
58	EX-Z5-SUR-058	40	NA
59	EX-Z5-SUR-059	7	NA
60	EX-Z5-SUR-060	17	NA
61	EX-Z5-SUR-061	230	NA

CONCENTRATION OF CYANIDE IN SOIL (mg/kg)			
Sample Location	Sample No.	Total Cyanide	Free Cyanide
01	EX-Z2-SUR-001	160	<10
02	EX-Z2-SUR-002	100	<10
03	EX-Z2-SUR-003	90	27
04	EX-Z002-SUR-004	240	<20
05	EX-Z002-SUR-005	110	<6.7
06	EX-Z002-SUR-006	5,200	<500
07	EX-Z002-SUR-007	5,800	2,400
08	EX-Z002-SUR-008	2,800	NA
09	EX-Z002-SUR-009	4,100	NA
10	EX-Z002-SUR-010	820	NA
11	EX-Z002-SUR-011	4,400	NA
12	EX-Z002-SUR-012	5,600	3,200
13	EX-Z002-SUR-013	2,300	NA
W1-E	EX-MD51-012-E *	430	<200
W1-W	EX-MD51-012-W **	78	NA

* Also contains 0.50 mg/kg PCE
** Also contains 0.67 mg/kg PCE

CONCENTRATION OF CYANIDE IN SOIL (mg/kg)			
Sample Location	Sample No.	Total Cyanide	Free Cyanide
14	EX-Z1-SUR-014	<1	NA
15	EX-Z1-SUR-015	2100	520
16	EX-Z1-SUR-016	68	NA
17	EX-Z1-SUR-017	110	NA
18	EX-Z1-SUR-018	1300	180
19	EX-Z1-SUR-019	<1	NA
20	EX-Z1-SUR-020	11	NA
21	EX-Z1-SUR-021	58	NA
22	EX-Z1-SUR-022	410	NA
23	EX-Z1-SUR-023	14 : 16	NA
24	EX-Z1-SUR-024	1300	NA
25	EX-Z1-SUR-025	1100	NA
26	EX-Z1-SUR-026	550	NA
27	EX-Z1-SUR-027	310	NA
28	EX-Z1-SUR-028	350	NA
29	EX-Z1-SUR-029	74	NA
30	EX-Z1-SUR-030	17	NA
31	EX-Z1-SUR-031	1.3	NA
32	EX-Z1-SUR-032	1.8	NA

NOTE:
SAMPLE PREPARATION FOR EPA METHOD 9010B/9014 PERFORMED
IN ACCORDANCE WITH STANDARD METHOD 4500-CN

EXPLANATION

- SAMPLES WITH CONCENTRATIONS > 35 mg/kg
- SAMPLES WITH CONCENTRATIONS ≤ 35 mg/kg
- NA NOT ANALYZED
- SOIL EXCAVATION BOUNDARY
- WDS EXCAVATION BOUNDARY

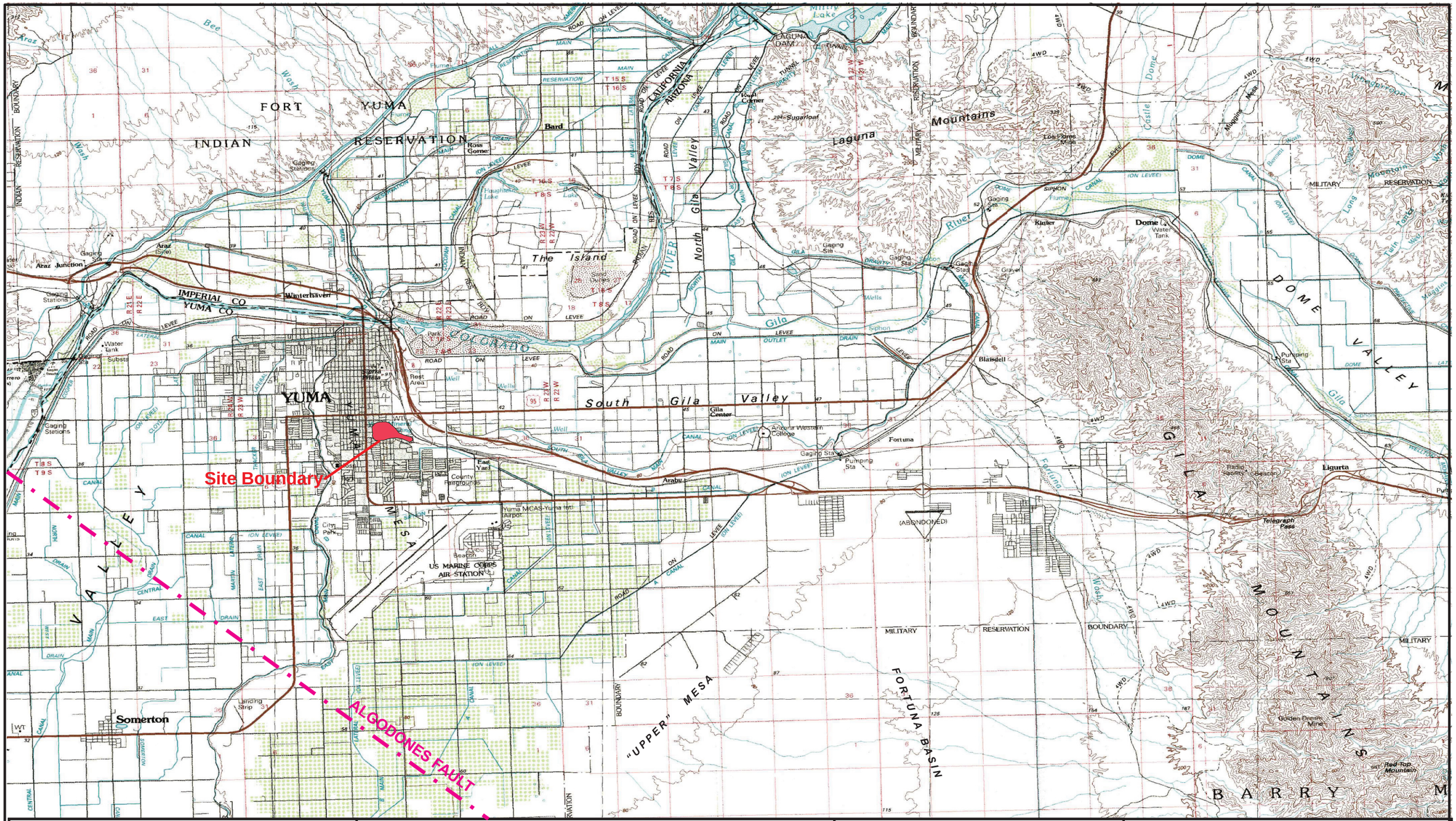
0 25 50
APPROXIMATE SCALE IN FEET

TITLE:
RESIDUAL CYANIDE CONCENTRATIONS - BOTTOM OF EXCAVATIONS
GPL EVALUATION FOR CYANIDES

PROJECT:
HOUSTON INTERNATIONAL FACILITY
20th STREET & FACTOR AVENUE WQARF SITE,
YUMA AZ

CHECKED	JZ	FIGURE:
DRAFTED	DBS	
PROJ. NO.	1303.049	2-7
DATE	12/12/13	

TETRA TECH, INC.



TETRA TECH, INC.

SCALE 1:100,000

1 CENTIMETER ON THE MAP REPRESENTS 1 KILOMETER ON THE GROUND

CONTOUR INTERVAL 40 METERS

* Lineament fault associated with Algodones Fault.

* Locations of "Upper" Mesa, Fortuna Basin, Algodones Fault, and Lineament Fault inferred.

SOURCE: USGS Yuma, AZ 30x60 minute topographic map, 1993

TITLE: YUMA AREA AND ALGODONES FAULT

LOCATION: YUMA COUNTY, ARIZONA

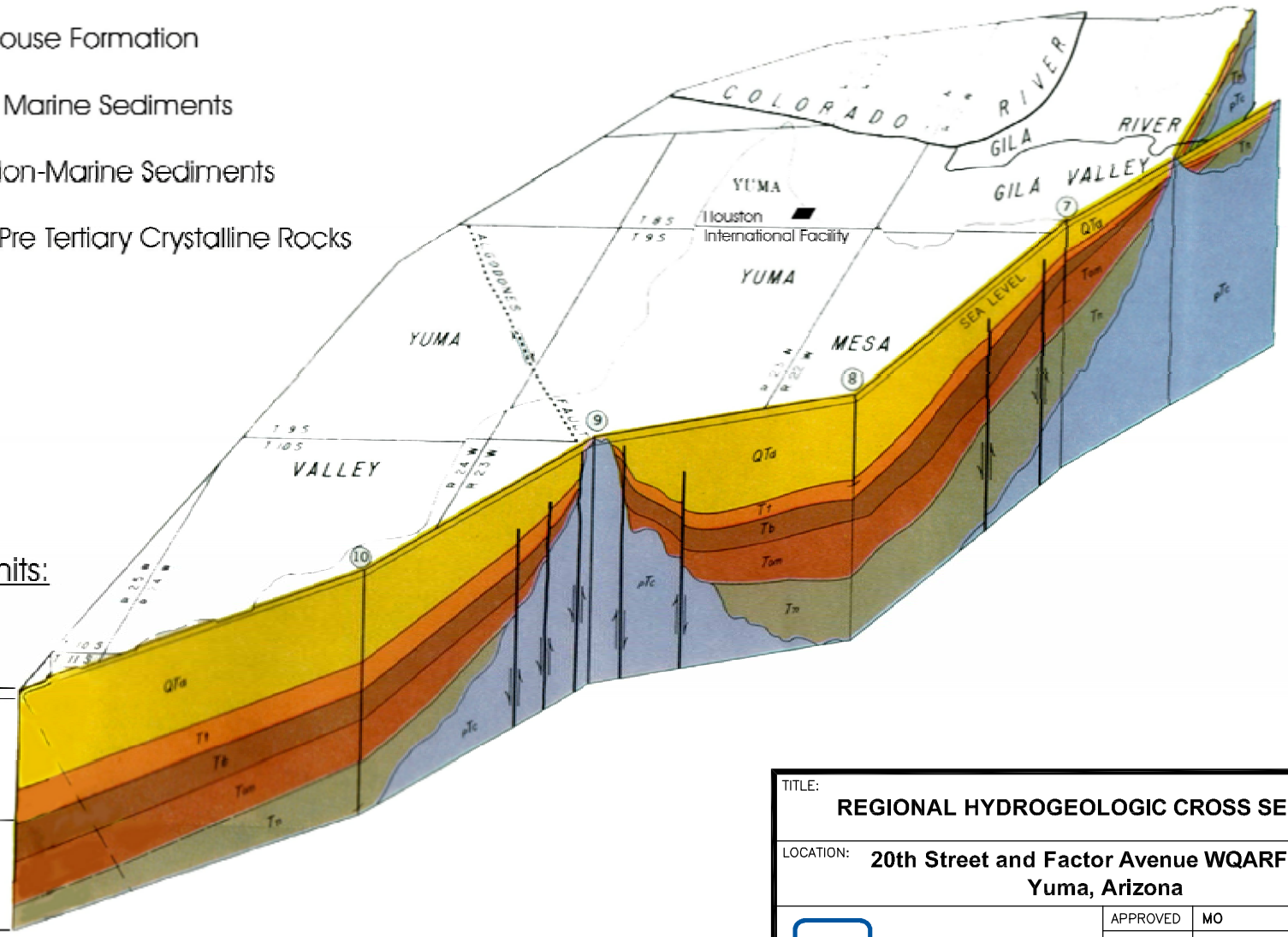
CHECKED	MO	DRAWN	12/11/13	FIGURE:
DRAFTED	CL	PROJECT#	1303.049	4-1

NOTES:

P:\ACAD\1303-046-HOUS\1303046014A.DWG

Geologic Units:

- QTa - (Older & Younger)
- Tt - Transition Zone
- Tb - Bouse Formation
- Tom - Marine Sediments
- Tn - Non-Marine Sediments
- pTC- Pre Tertiary Crystalline Rocks



Hydrologic Units:

Younger (Course Gravel and Upper Fine Grained Units)

Wedge Zone

Older Sediments

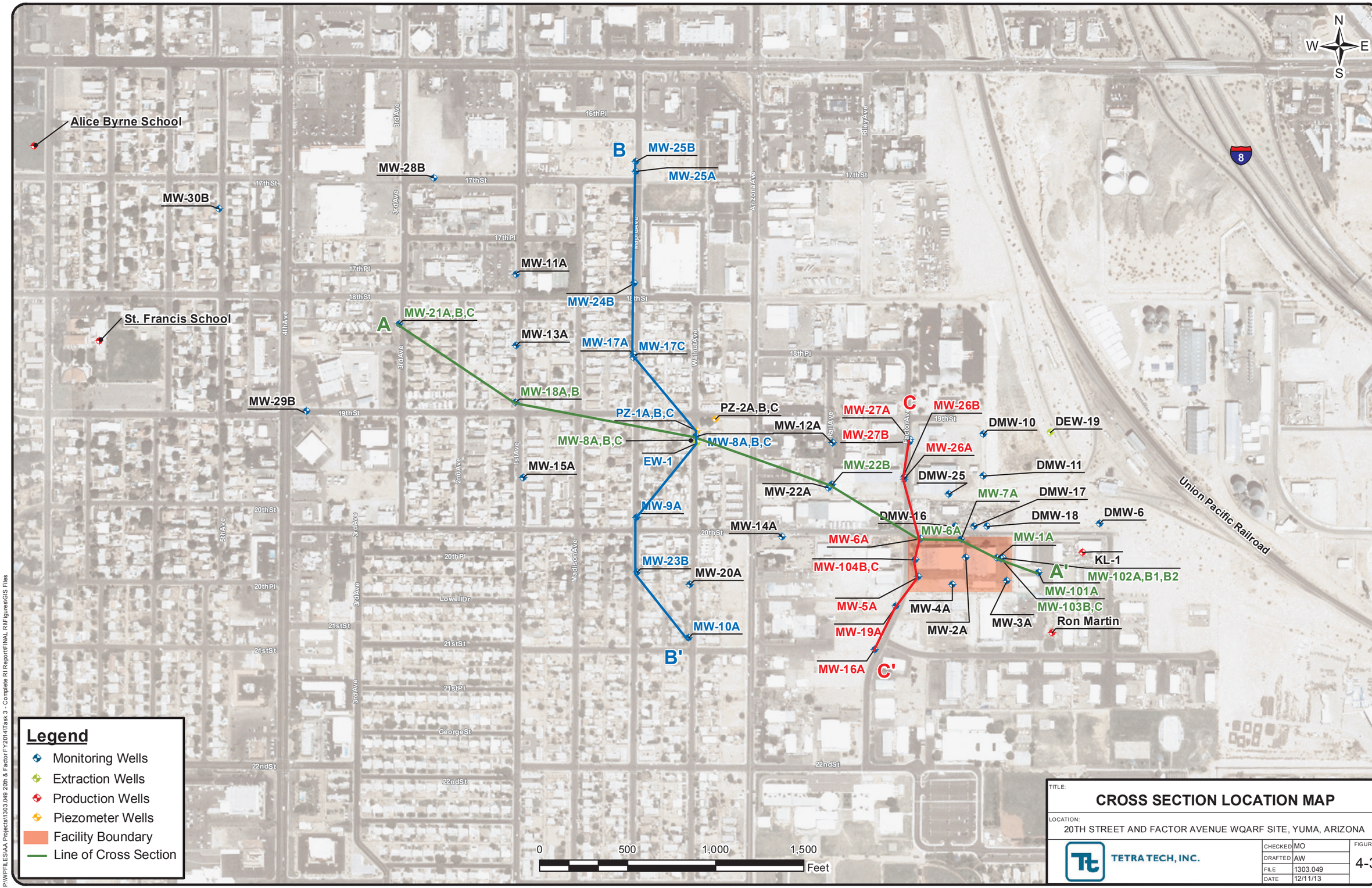
NOTE: Figure adapted from Geohydrology of the Yuma Area, Arizona and California (Olmsted, et al, 1973)

TITLE: **REGIONAL HYDROGEOLOGIC CROSS SECTION**

LOCATION: **20th Street and Factor Avenue WQARF Site Yuma, Arizona**

TETRA TECH

APPROVED	MO	FIGURE
DRAFTED	CP	4-2
PROJECT#	117-1303046	
DATE	1-14-14	



TITLE:

CROSS SECTION LOCATION MAP

LOCATION:

20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA

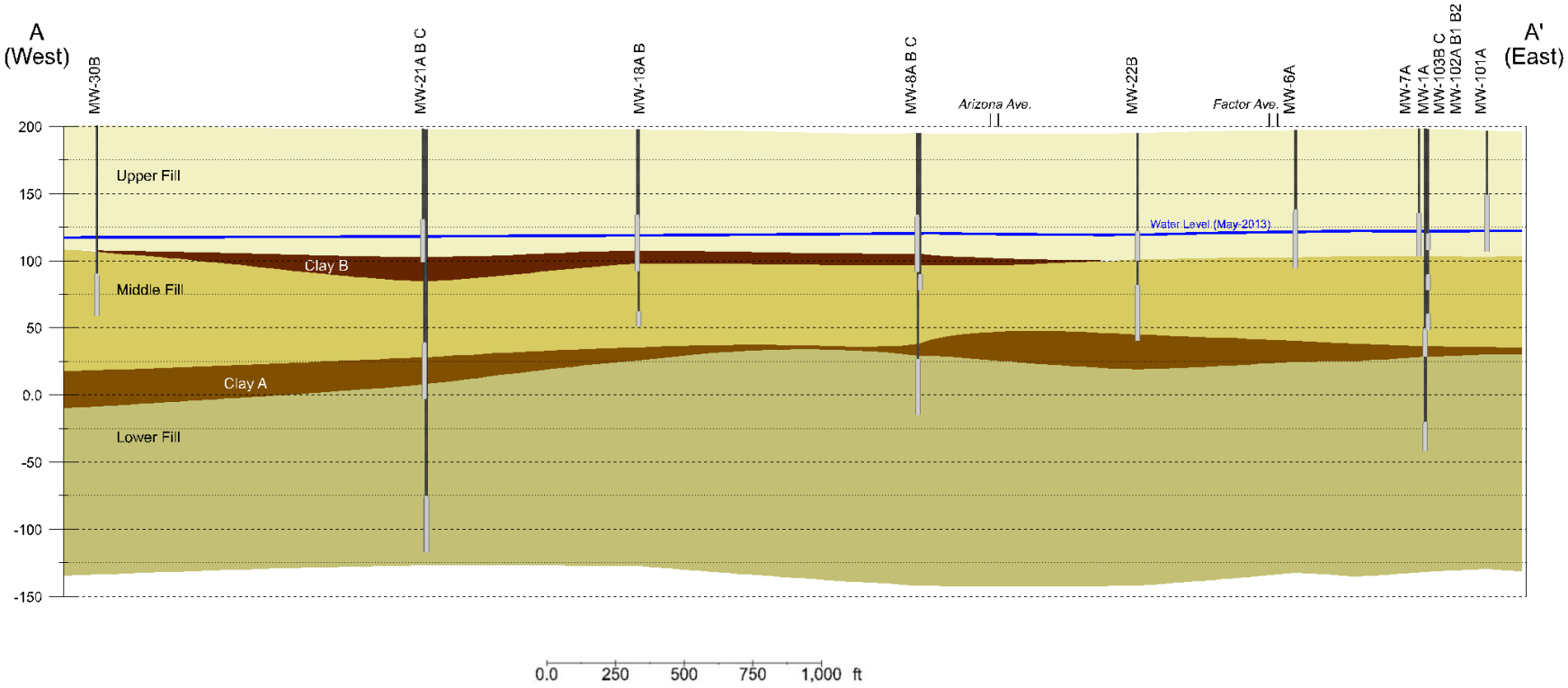
TETRA TECH, INC.

CHECKED	MO
DRAFTED	AW
FILE	1303.049
DATE	12/11/13

FIGURE: 4-3

P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\FINAL RI\Figures\GIS Files

P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\Updated Figures



TITLE:

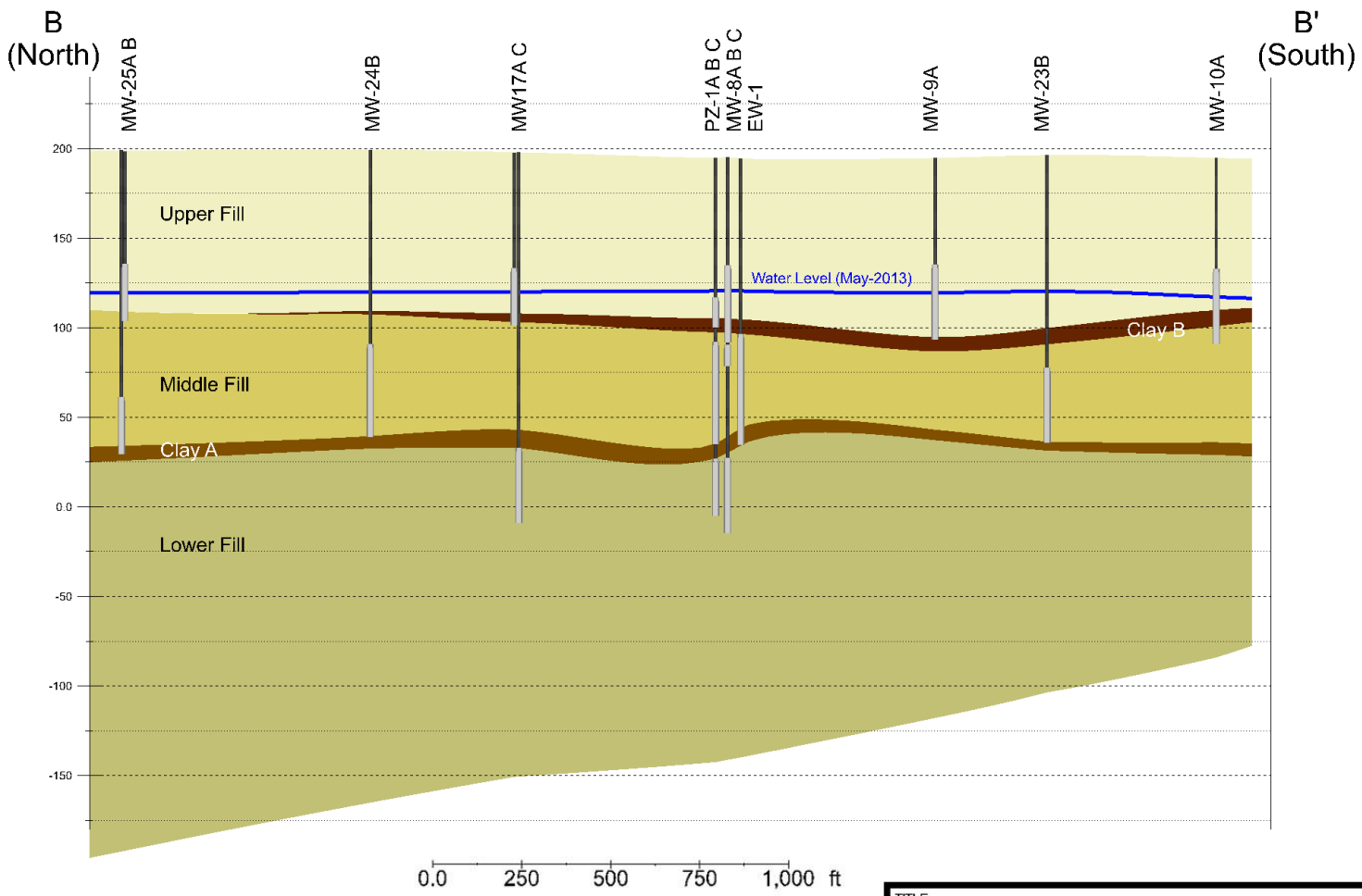
GEOLOGIC CROSS-SECTION FROM A – A'

LOCATION: **20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA**

TETRA TECH

APPROVED	MO	FIGURE
DRAFTED	AW	4-4
PROJECT#	1303.049	
DATE	05/20/13	

P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\Updated Figures



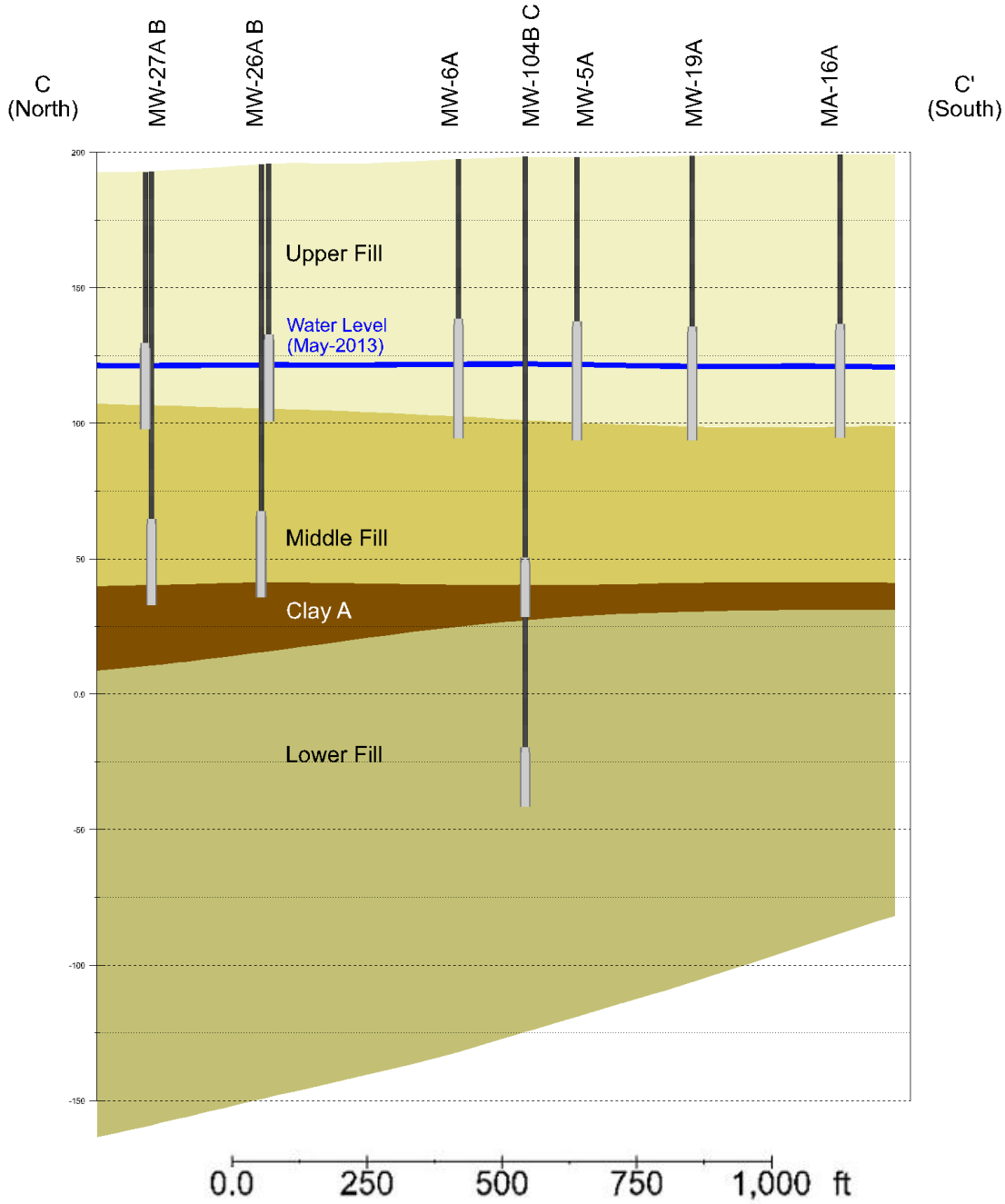
TITLE:

GEOLOGIC CROSS-SECTION FROM B – B'

LOCATION: **20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA**

TETRA TECH

APPROVED	MO	FIGURE
DRAFTED	AW	4-5
PROJECT#	1303.049	
DATE	05/20/13	



TITLE:

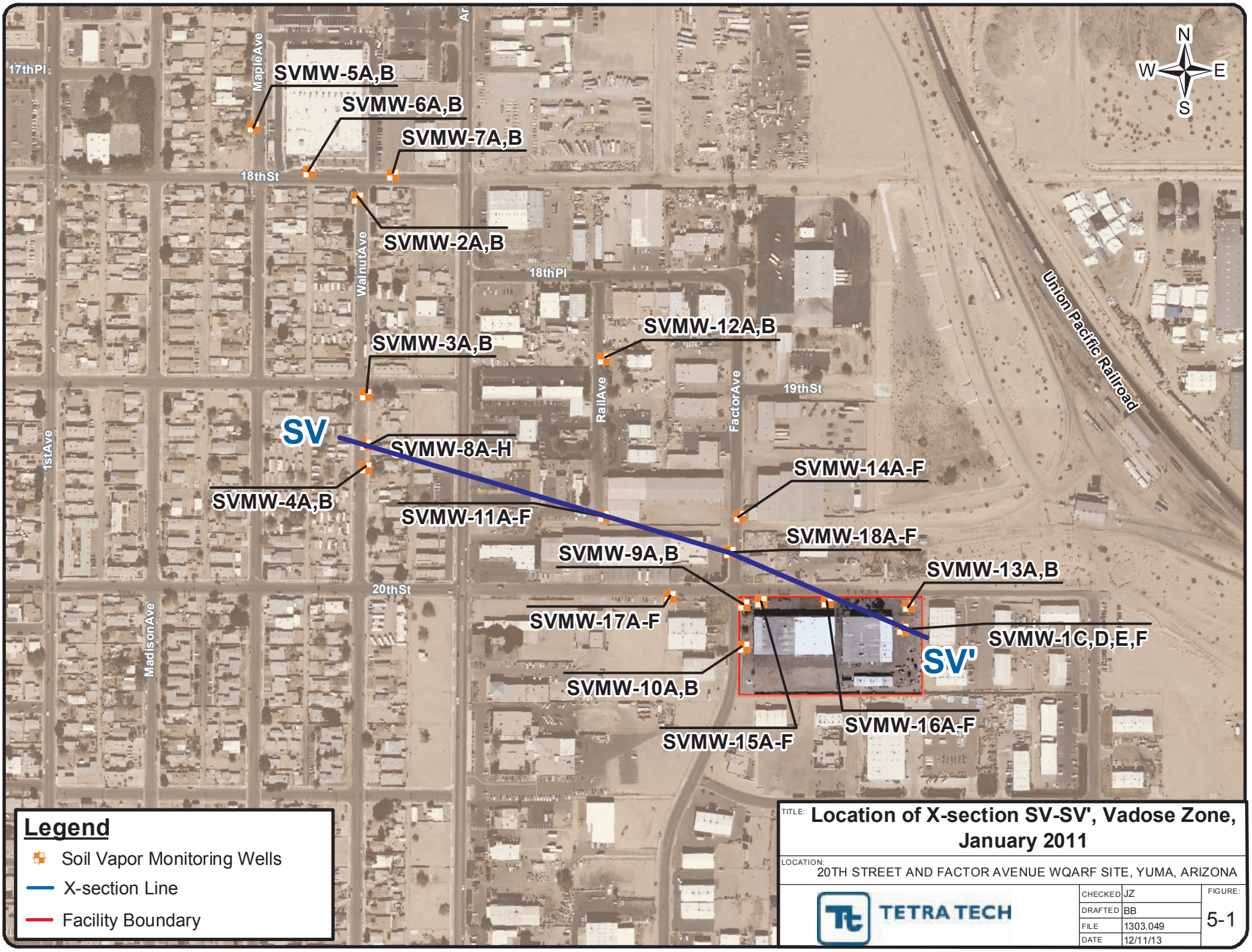
GEOLOGIC CROSS SECTION FROM C-C'

LOCATION: **20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA**

TETRA TECH

APPROVED	MO	FIGURE
DRAFTED	AW	4-6
PROJECT#	1303.049	
DATE	05/20/13	

P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\Updated Figures



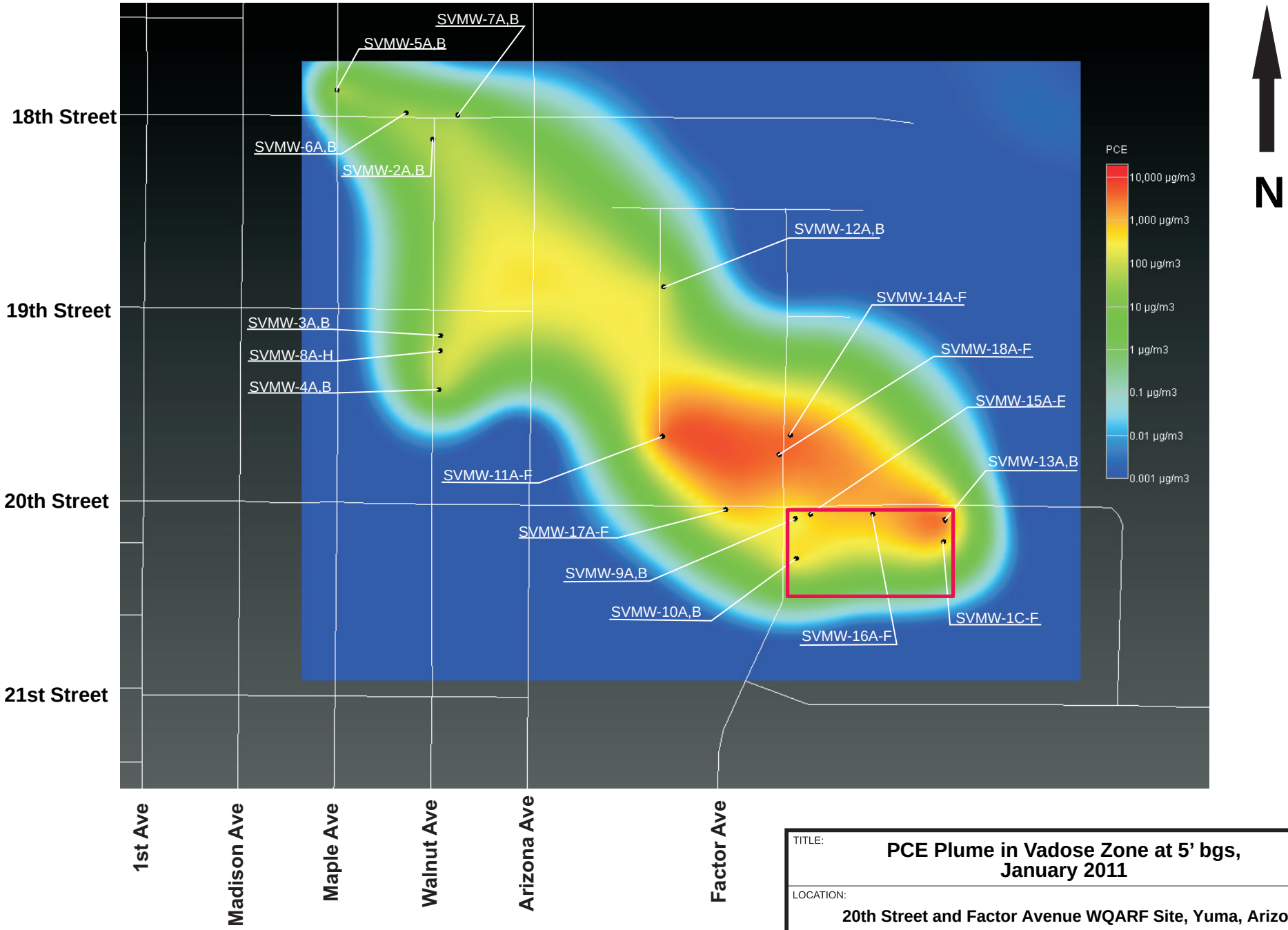
TITLE: Location of X-section SV-SV', Vadose Zone, January 2011

LOCATION: 20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA

TETRA TECH

CHECKED	JZ
DRAFTED	BB
FILE	1303.049
DATE	12/11/13

FIGURE: 5-1



*Note:

Facility Boundary

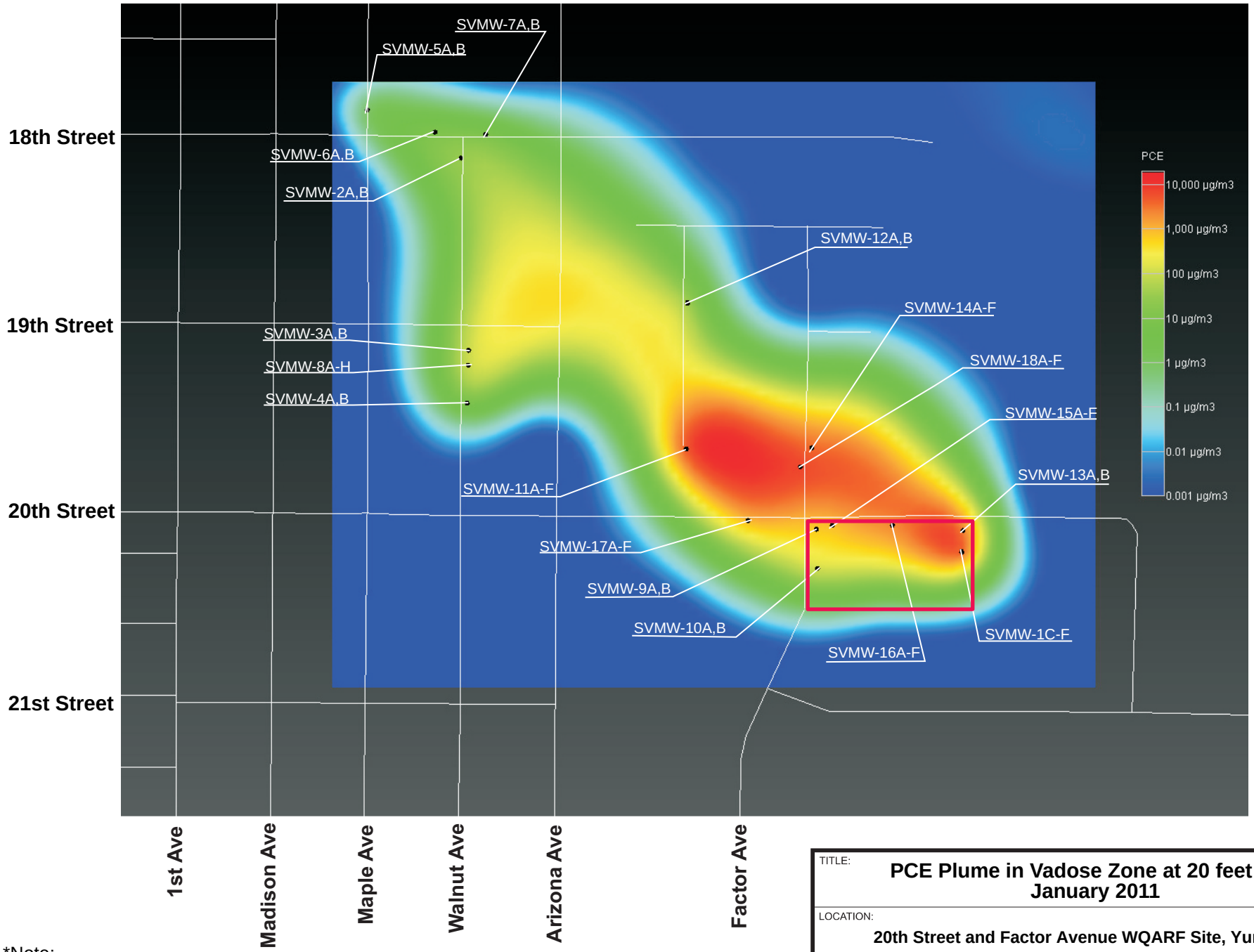
TITLE: **PCE Plume in Vadose Zone at 5' bgs, January 2011**

LOCATION: **20th Street and Factor Avenue WQARF Site, Yuma, Arizona**

TETRA TECH

APPROVED	JZ
DRAFTED	BB
PROJECT#	1303.049
DATE	12/11/13

FIGURE **5-2**



*Note:

Facility Boundary

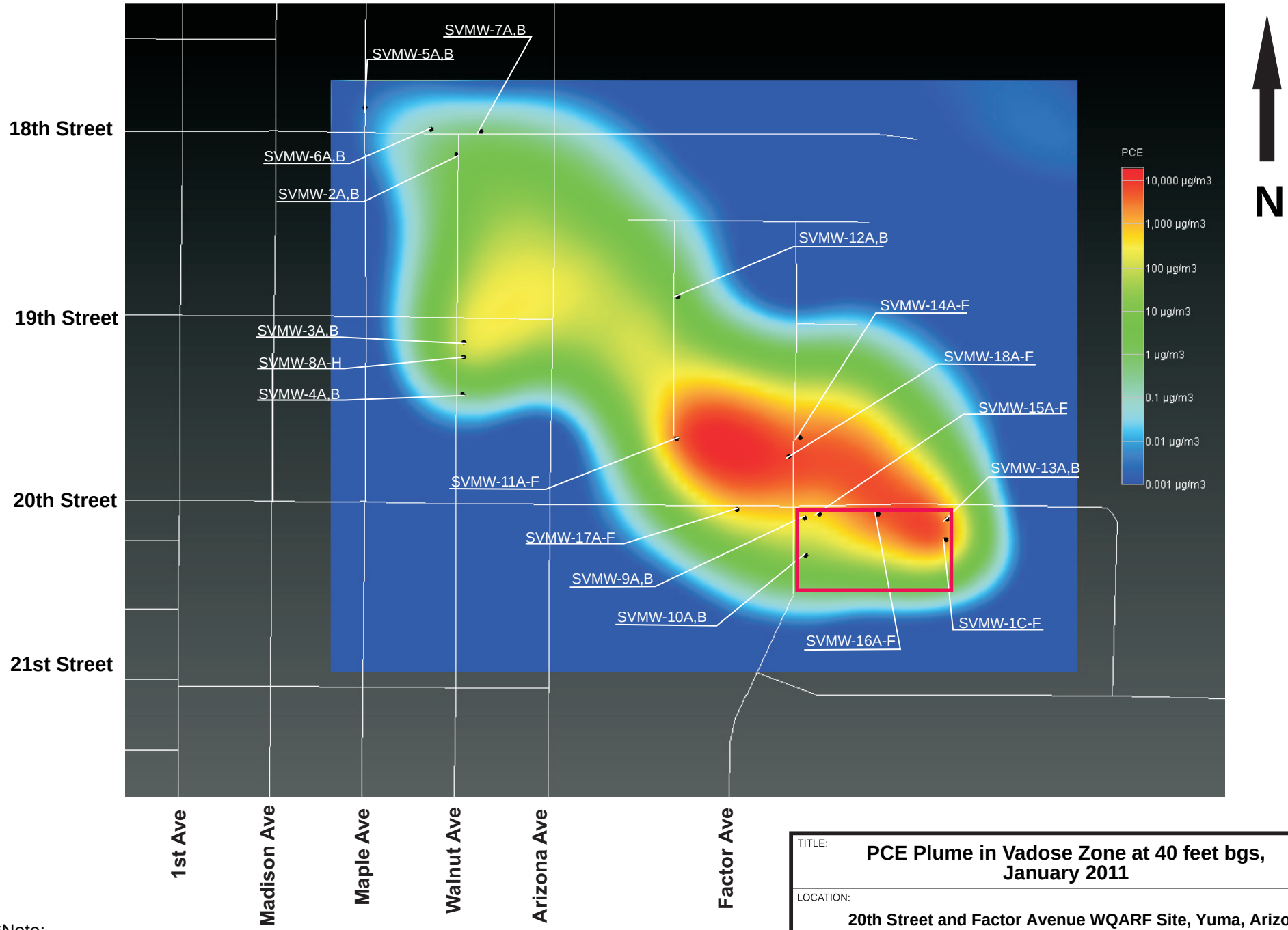
TITLE: **PCE Plume in Vadose Zone at 20 feet bgs, January 2011**

LOCATION: **20th Street and Factor Avenue WQARF Site, Yuma, Arizona**

TETRA TECH

APPROVED	JZ
DRAFTED	BB
PROJECT#	1303.049
DATE	12/11/13

FIGURE **5-3**



*Note:

Facility Boundary

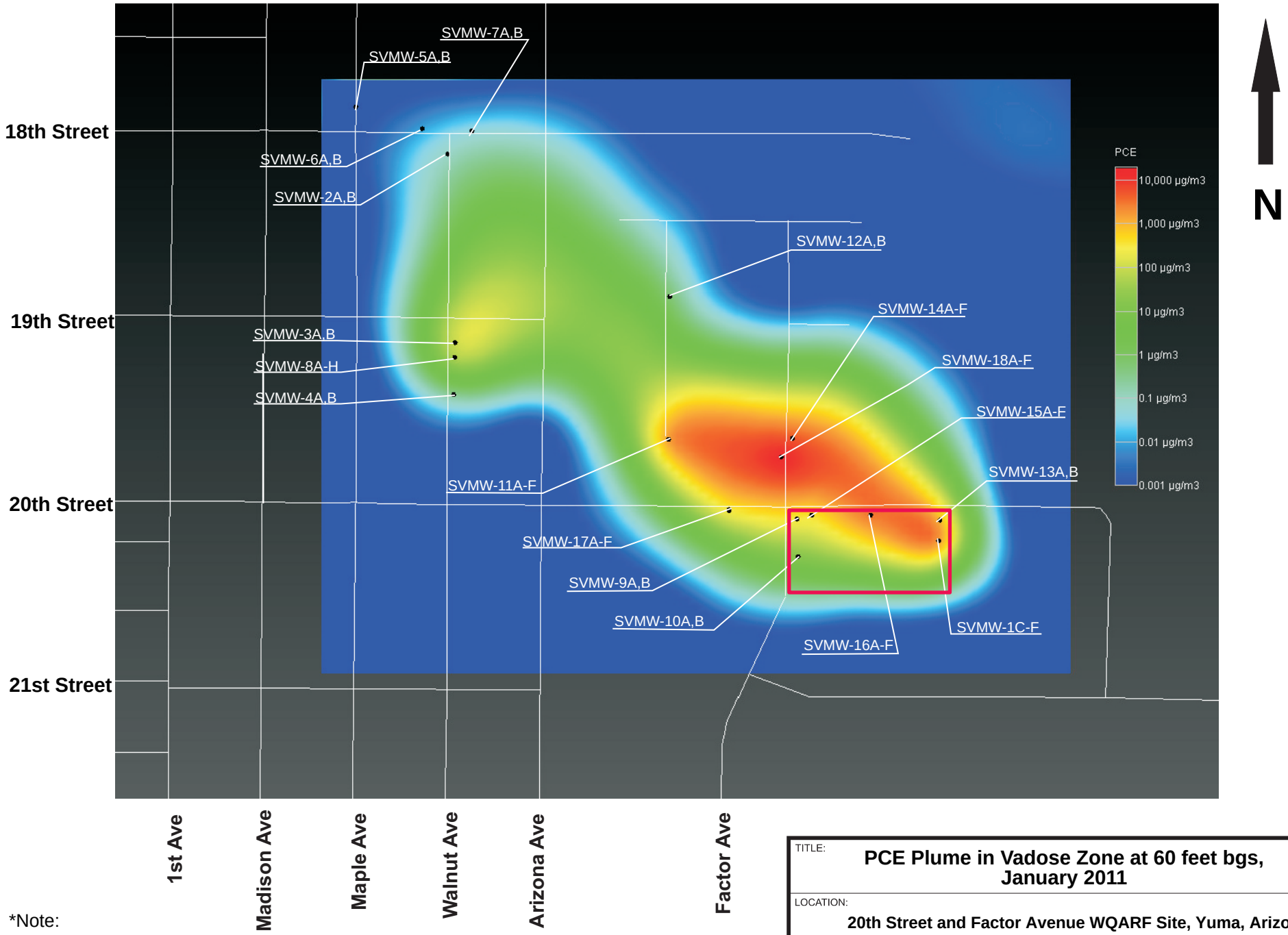
TITLE: **PCE Plume in Vadose Zone at 40 feet bgs, January 2011**

LOCATION: **20th Street and Factor Avenue WQARF Site, Yuma, Arizona**

TETRA TECH

APPROVED	JZ
DRAFTED	BB
PROJECT#	1303.049
DATE	12/11/13

FIGURE **5-4**



*Note:

Facility Boundary

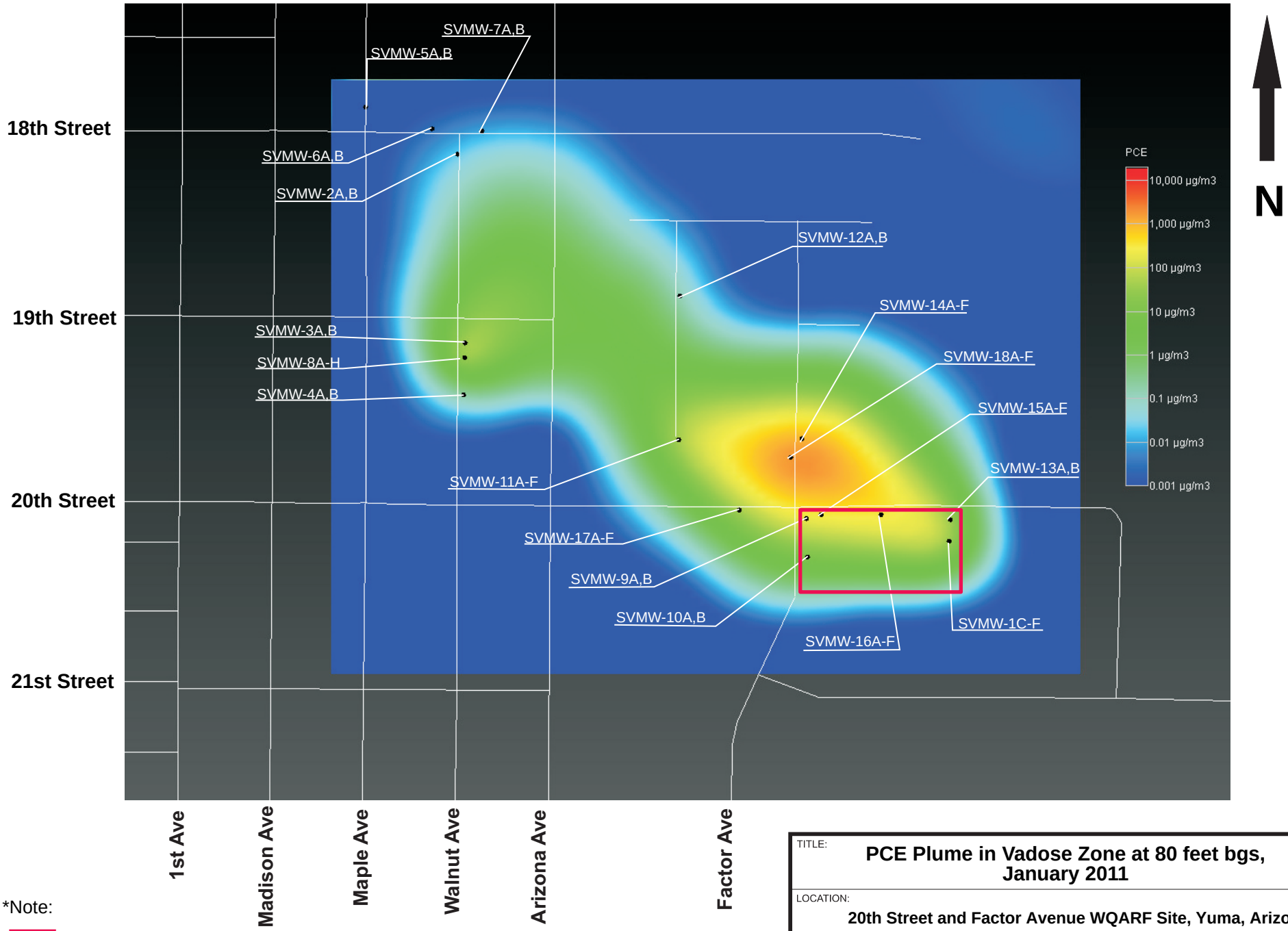
TITLE: **PCE Plume in Vadose Zone at 60 feet bgs, January 2011**

LOCATION: **20th Street and Factor Avenue WQARF Site, Yuma, Arizona**

TETRA TECH

APPROVED	JZ
DRAFTED	BB
PROJECT#	1303.049
DATE	12/11/13

FIGURE **5-5**



*Note:

Facility Boundary

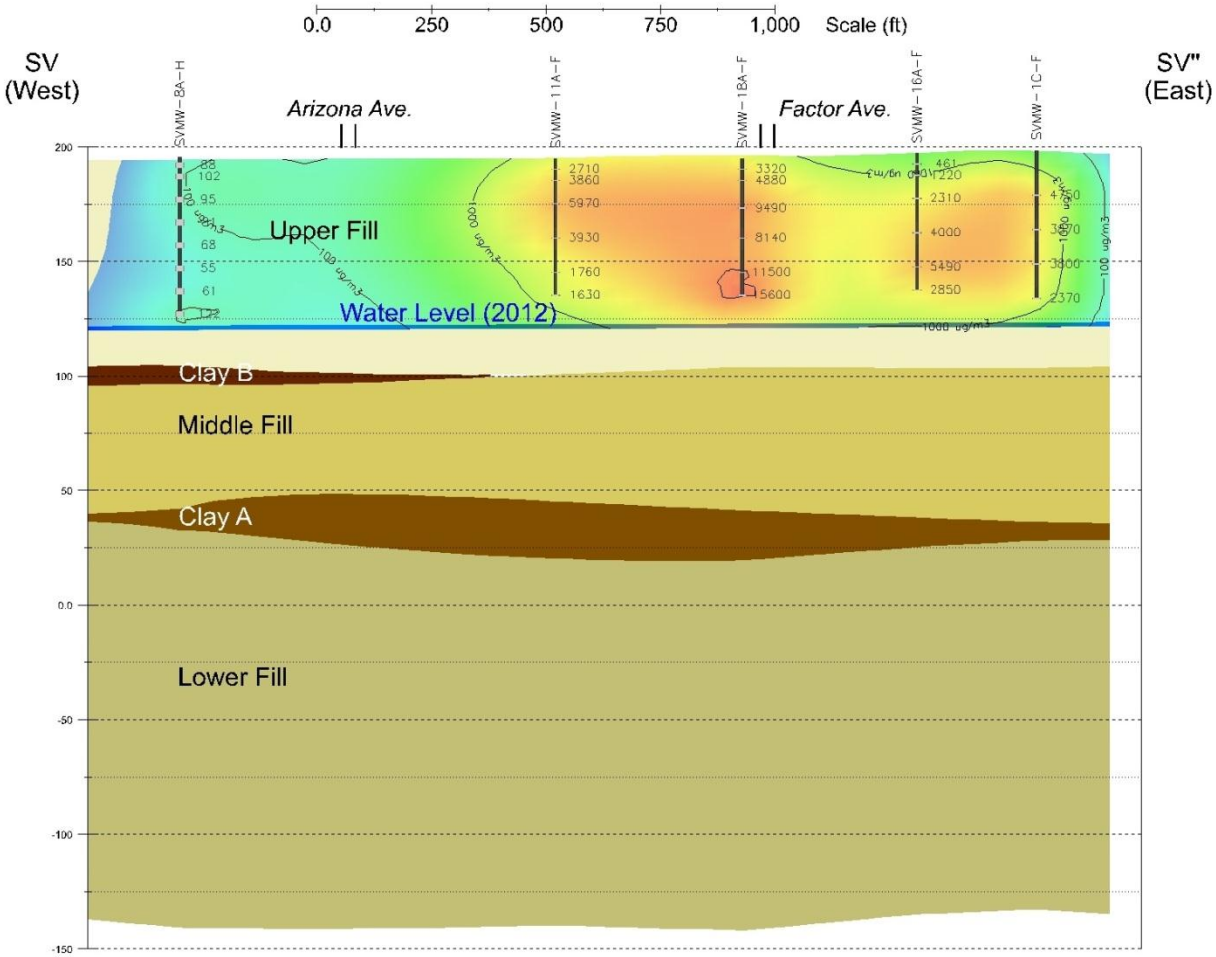
TITLE: **PCE Plume in Vadose Zone at 80 feet bgs, January 2011**

LOCATION: **20th Street and Factor Avenue WQARF Site, Yuma, Arizona**

TETRA TECH

APPROVED	JZ
DRAFTED	BB
PROJECT#	1303.049
DATE	12/11/13

FIGURE **5-6**

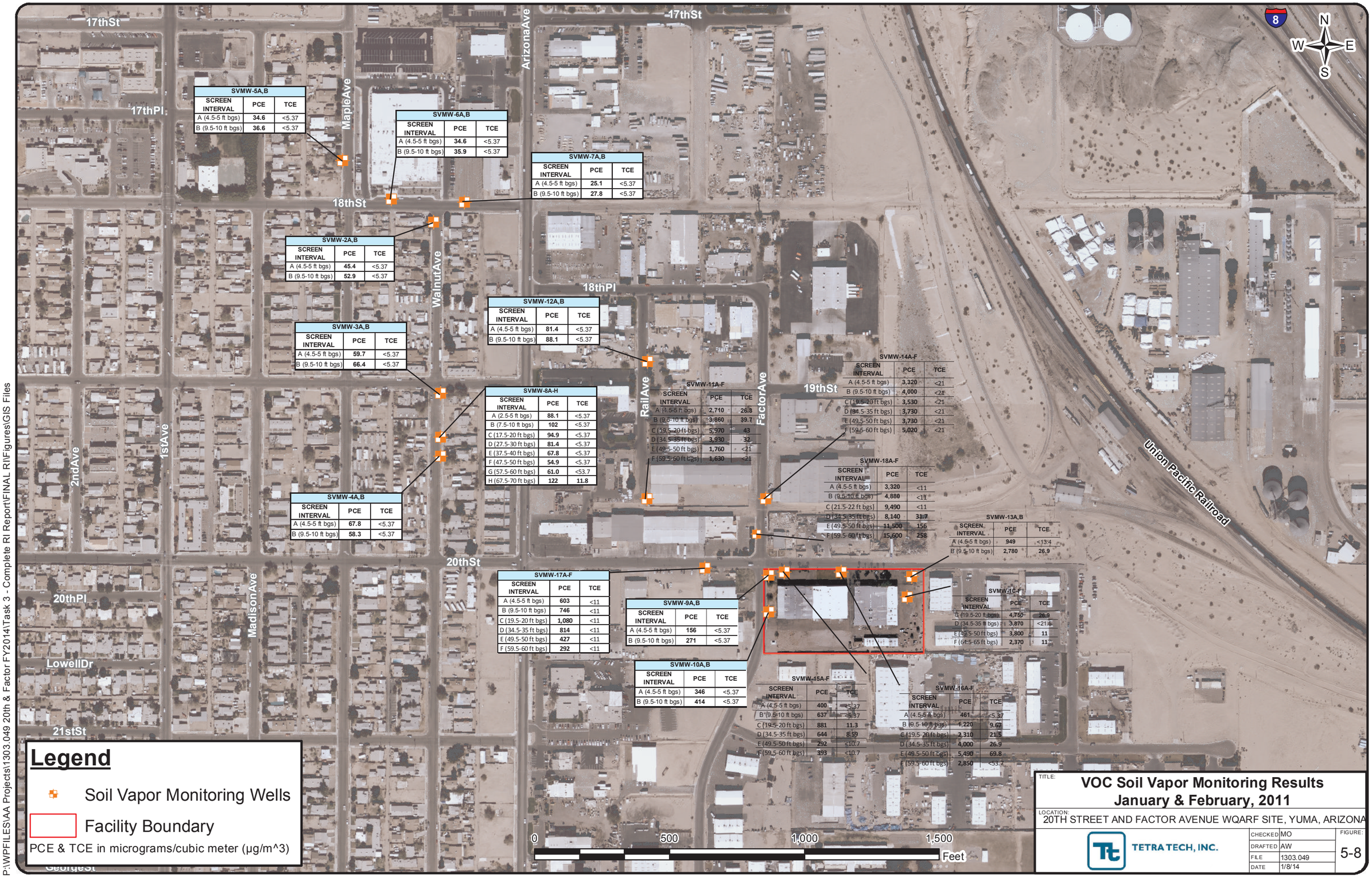


TITLE: **PCE Plume in Vadose Zone X-section SV-SV' January 2011**

LOCATION: **20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA**

TETRA TECH

APPROVED	MO	FIGURE
DRAFTED	AW	5-7
PROJECT#	1303.049	
DATE	01/22/14	



SVMW-5A,B

SCREEN INTERVAL	PCE	TCE
A (4.5-5 ft bgs)	34.6	<5.37
B (9.5-10 ft bgs)	36.6	<5.37

SVMW-6A,B

SCREEN INTERVAL	PCE	TCE
A (4.5-5 ft bgs)	34.6	<5.37
B (9.5-10 ft bgs)	35.9	<5.37

SVMW-7A,B

SCREEN INTERVAL	PCE	TCE
A (4.5-5 ft bgs)	25.1	<5.37
B (9.5-10 ft bgs)	27.8	<5.37

SVMW-2A,B

SCREEN INTERVAL	PCE	TCE
A (4.5-5 ft bgs)	45.4	<5.37
B (9.5-10 ft bgs)	52.9	<5.37

SVMW-12A,B

SCREEN INTERVAL	PCE	TCE
A (4.5-5 ft bgs)	81.4	<5.37
B (9.5-10 ft bgs)	88.1	<5.37

SVMW-3A,B

SCREEN INTERVAL	PCE	TCE
A (4.5-5 ft bgs)	59.7	<5.37
B (9.5-10 ft bgs)	66.4	<5.37

SVMW-8A-H

SCREEN INTERVAL	PCE	TCE
A (2.5-5 ft bgs)	88.1	<5.37
B (7.5-10 ft bgs)	102	<5.37
C (17.5-20 ft bgs)	94.9	<5.37
D (27.5-30 ft bgs)	81.4	<5.37
E (37.5-40 ft bgs)	67.8	<5.37
F (47.5-50 ft bgs)	54.9	<5.37
G (57.5-60 ft bgs)	61.0	<53.7
H (67.5-70 ft bgs)	122	11.8

SVMW-11A-F

SCREEN INTERVAL	PCE	TCE
A (4.5-5 ft bgs)	2,710	26.8
B (9.5-10 ft bgs)	3,860	39.7
C (19.5-20 ft bgs)	5,970	43
D (34.5-35 ft bgs)	3,930	32
E (49.5-50 ft bgs)	1,760	<21
F (59.5-60 ft bgs)	1,630	<21

SVMW-14A-F

SCREEN INTERVAL	PCE	TCE
A (4.5-5 ft bgs)	3,320	<21
B (9.5-10 ft bgs)	4,000	<21
C (19.5-20 ft bgs)	3,530	<21
D (34.5-35 ft bgs)	3,730	<21
E (49.5-50 ft bgs)	3,730	<21
F (59.5-60 ft bgs)	5,020	<21

SVMW-18A-F

SCREEN INTERVAL	PCE	TCE
A (4.5-5 ft bgs)	3,320	<11
B (9.5-10 ft bgs)	4,880	<11
C (21.5-22 ft bgs)	9,490	<11
D (34.5-35 ft bgs)	8,140	31.7
E (49.5-50 ft bgs)	11,500	156
F (59.5-60 ft bgs)	15,600	258

SVMW-13A,B

SCREEN INTERVAL	PCE	TCE
A (4.5-5 ft bgs)	949	<13.4
B (9.5-10 ft bgs)	2,780	26.9

SVMW-4A,B

SCREEN INTERVAL	PCE	TCE
A (4.5-5 ft bgs)	67.8	<5.37
B (9.5-10 ft bgs)	58.3	<5.37

SVMW-17A-F

SCREEN INTERVAL	PCE	TCE
A (4.5-5 ft bgs)	603	<11
B (9.5-10 ft bgs)	746	<11
C (19.5-20 ft bgs)	1,080	<11
D (34.5-35 ft bgs)	814	<11
E (49.5-50 ft bgs)	427	<11
F (59.5-60 ft bgs)	292	<11

SVMW-9A,B

SCREEN INTERVAL	PCE	TCE
A (4.5-5 ft bgs)	156	<5.37
B (9.5-10 ft bgs)	271	<5.37

SVMW-10A,B

SCREEN INTERVAL	PCE	TCE
A (4.5-5 ft bgs)	346	<5.37
B (9.5-10 ft bgs)	414	<5.37

SVMW-1C-F

SCREEN INTERVAL	PCE	TCE
C (19.5-20 ft bgs)	4,750	26.9
D (34.5-35 ft bgs)	3,870	<21.5
E (49.5-50 ft bgs)	3,800	11
F (64.5-65 ft bgs)	2,370	11

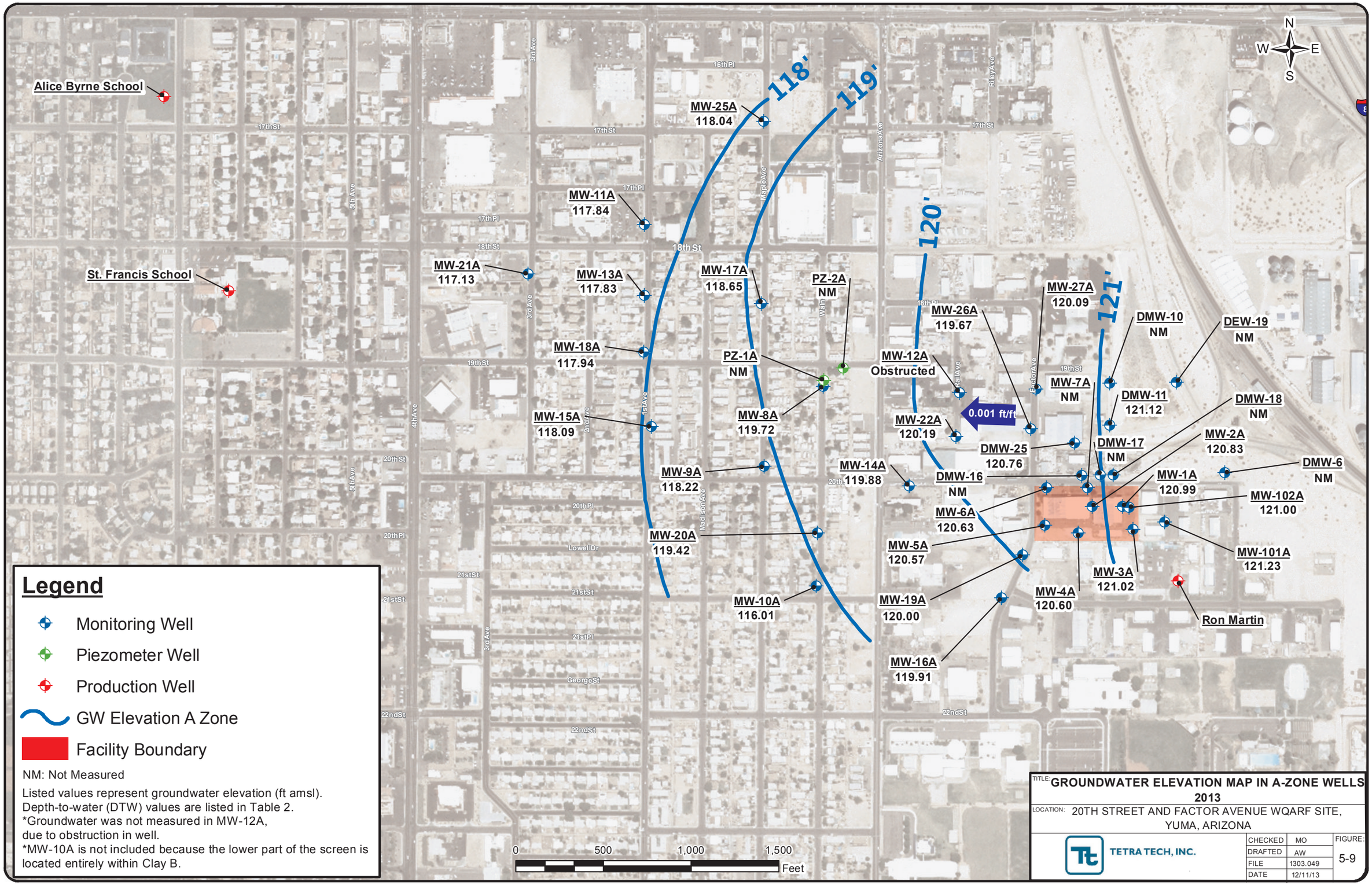
SVMW-15A-F

SCREEN INTERVAL	PCE	TCE
A (4.5-5 ft bgs)	400	<5.37
B (9.5-10 ft bgs)	637	<5.37
C (19.5-20 ft bgs)	881	11.3
D (34.5-35 ft bgs)	644	8.59
E (49.5-50 ft bgs)	292	<10.7
F (59.5-60 ft bgs)	393	<10.7

SVMW-16A-F

SCREEN INTERVAL	PCE	TCE
A (4.5-5 ft bgs)	461	<5.37
B (9.5-10 ft bgs)	1,220	9.67
C (19.5-20 ft bgs)	2,310	21.5
D (34.5-35 ft bgs)	4,000	26.9
E (49.5-50 ft bgs)	5,490	69.8
F (59.5-60 ft bgs)	2,850	<53.7

P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\FINAL RI\Figures\GIS Files



Legend

- Monitoring Well
- Piezometer Well
- Production Well
- GW Elevation A Zone
- Facility Boundary

NM: Not Measured

Listed values represent groundwater elevation (ft amsl).
Depth-to-water (DTW) values are listed in Table 2.
*Groundwater was not measured in MW-12A, due to obstruction in well.
*MW-10A is not included because the lower part of the screen is located entirely within Clay B.

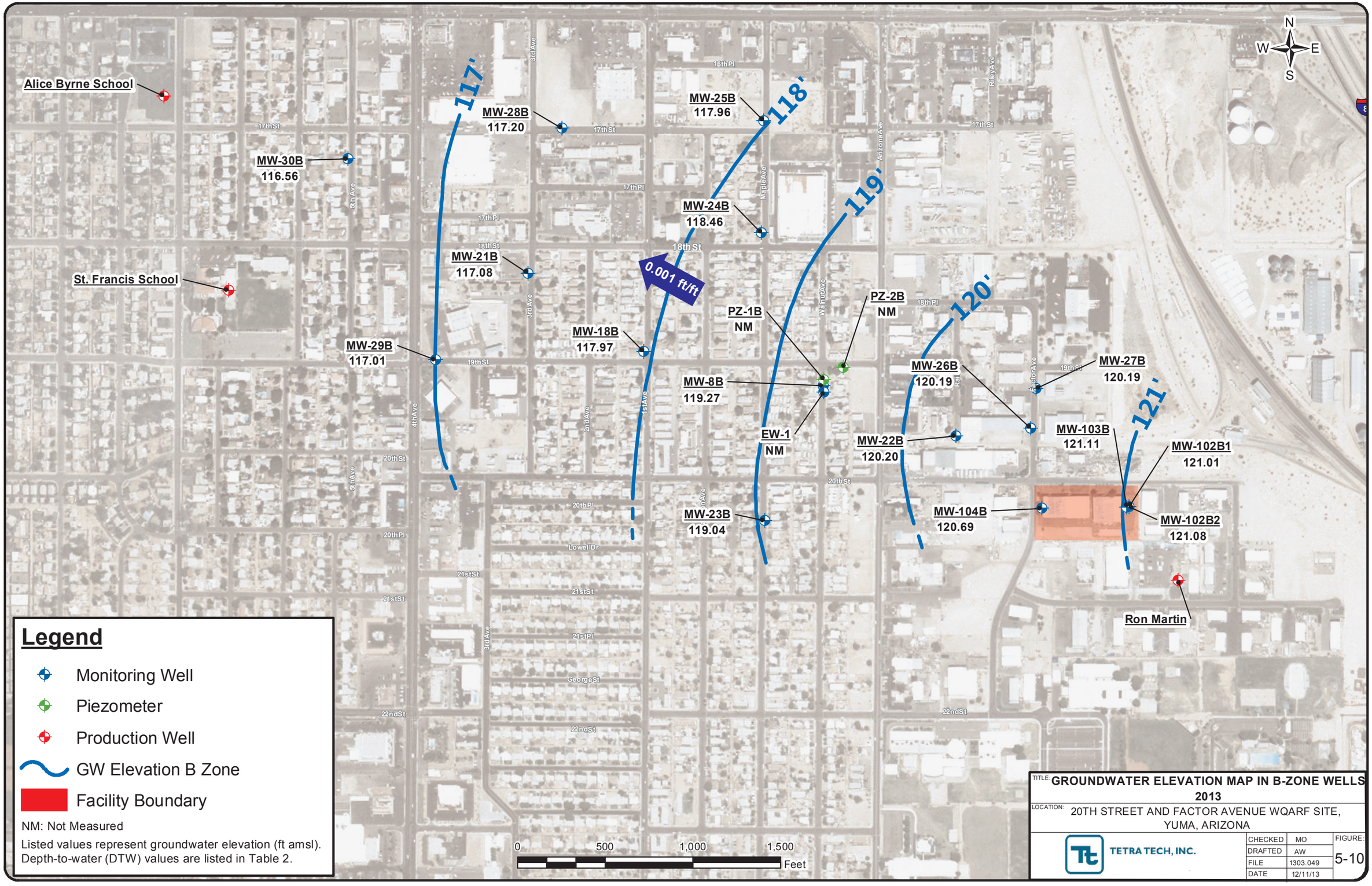
TITLE: GROUNDWATER ELEVATION MAP IN A-ZONE WELLS 2013

LOCATION: 20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA

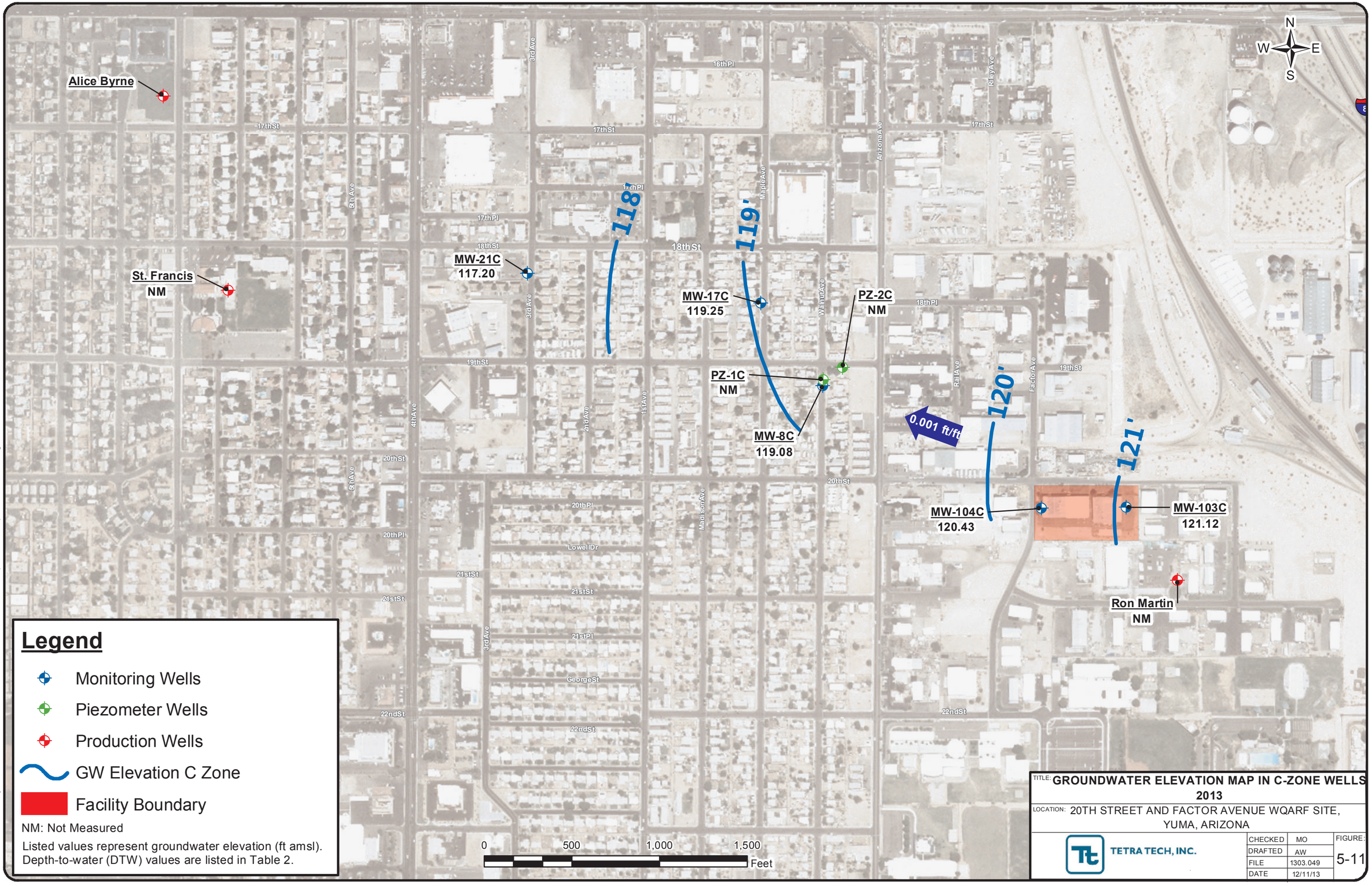
TETRA TECH, INC.

CHECKED	MO	FIGURE: 5-9
DRAFTED	AW	
FILE	1303.049	
DATE	12/11/13	

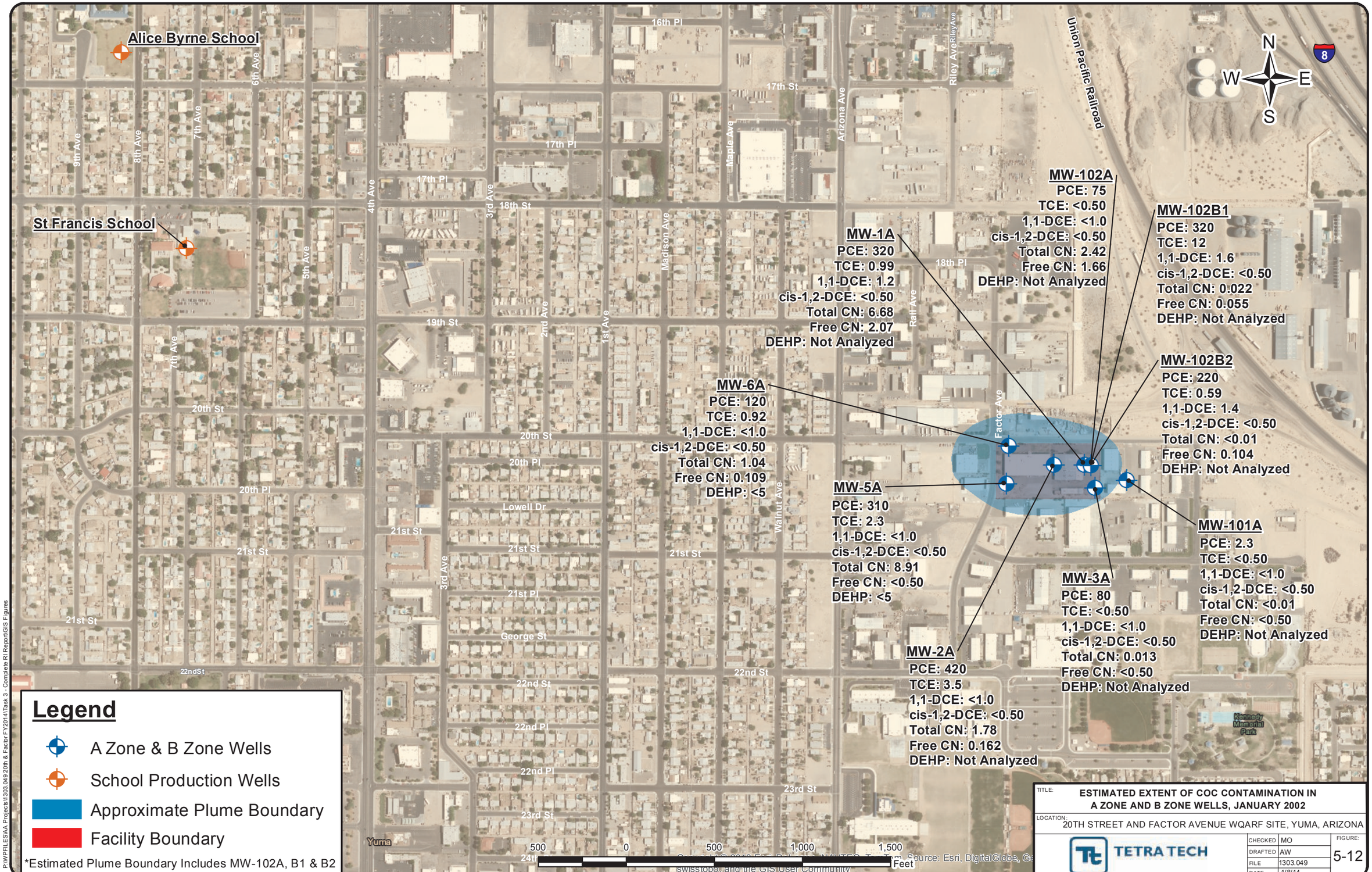
P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\FINAL RI\Figures\GIS Files



P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\FINAL RI\Figures\GIS Files



P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\FINAL RI\Figures\GIS Files



TITLE: ESTIMATED EXTENT OF COC CONTAMINATION IN A ZONE AND B ZONE WELLS, JANUARY 2002

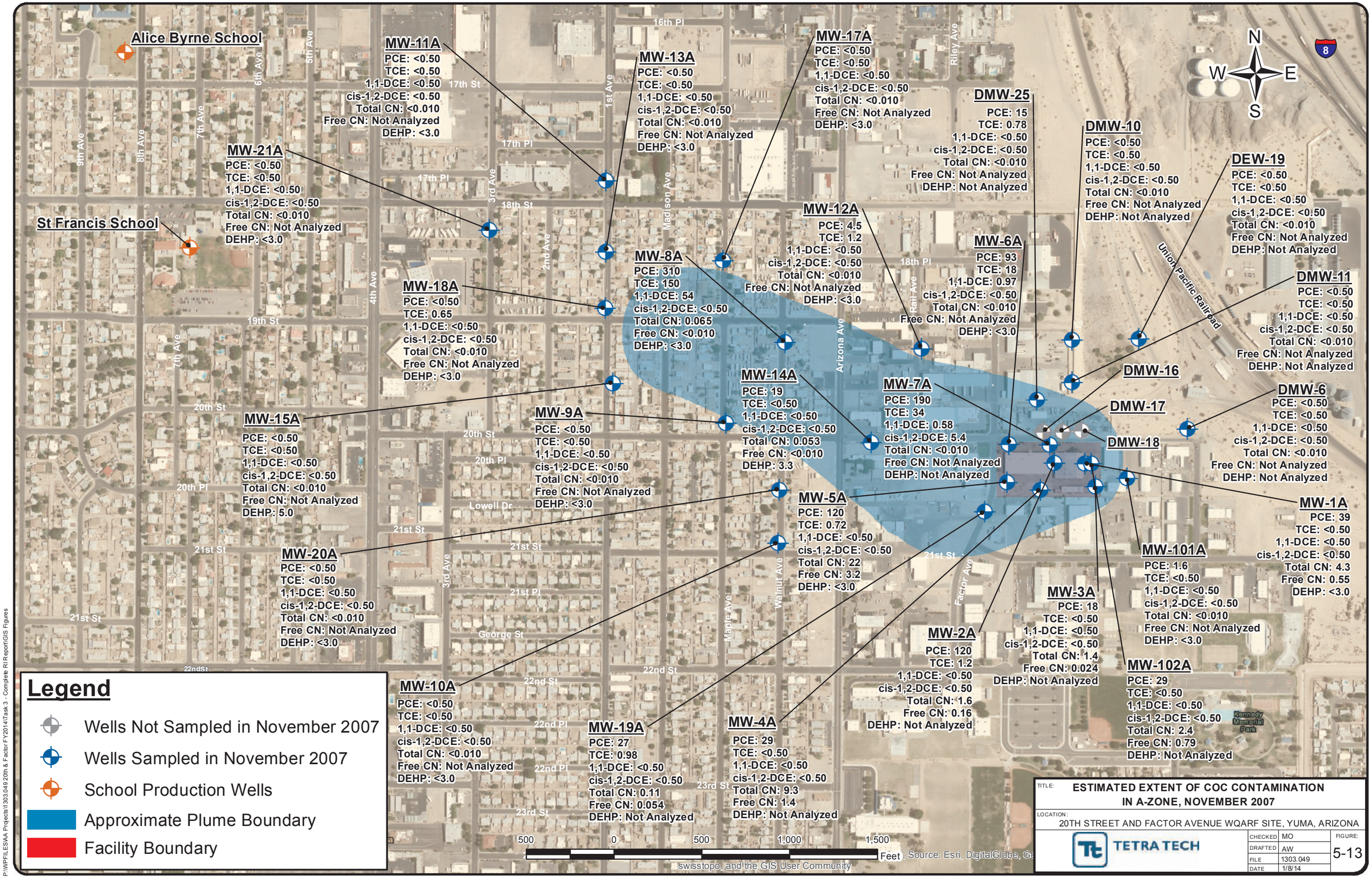
LOCATION: 20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA

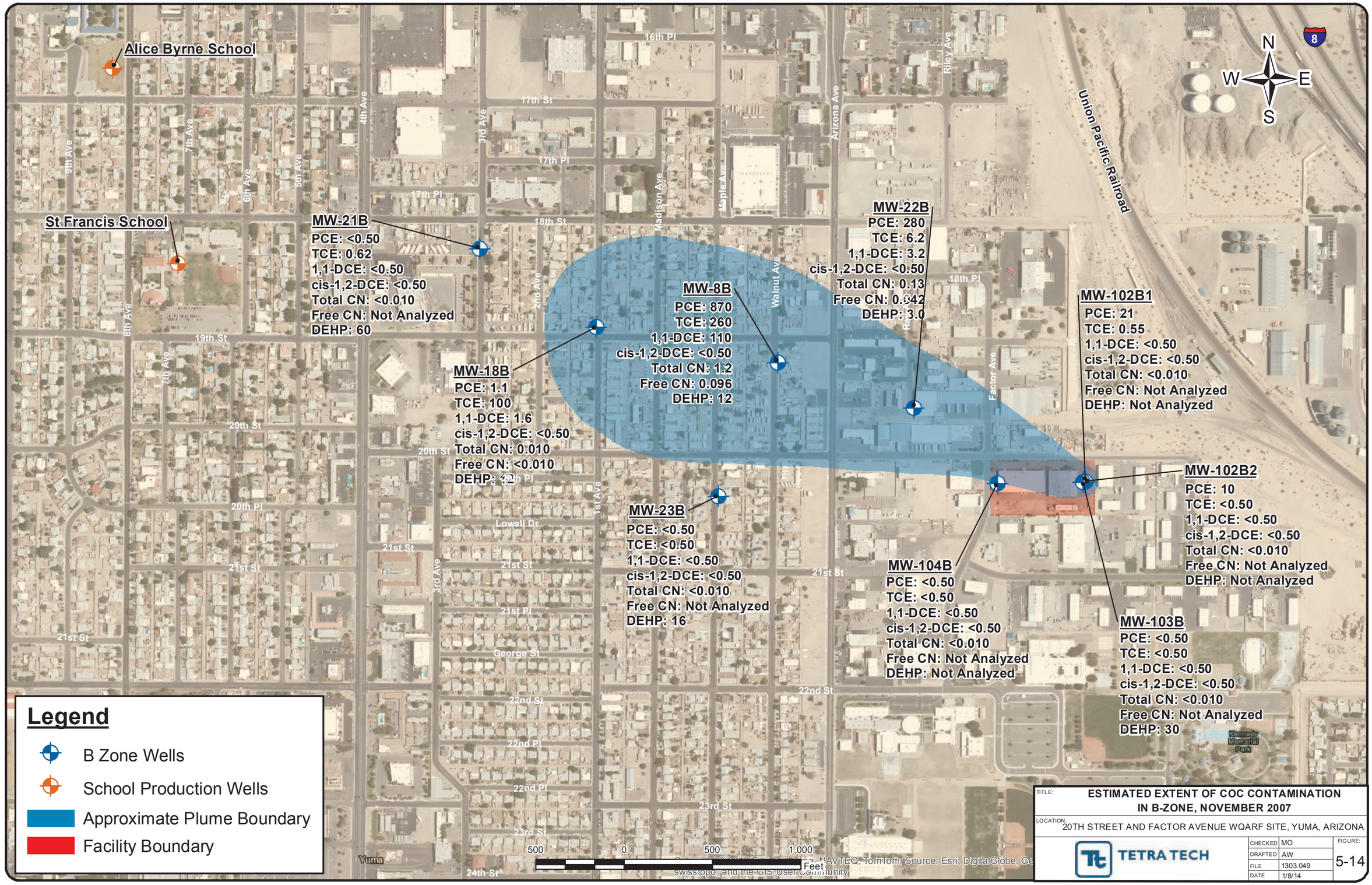
TETRA TECH

CHECKED	MO
DRAFTED	AW
FILE	1303.049
DATE	1/8/14

FIGURE: 5-12

P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\GIS Figures


Alice Byrne School
St Francis School
MW-11A
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: <0.010
Free CN: Not Analyzed
DEHP: <3.0
MW-13A
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: <0.010
Free CN: Not Analyzed
DEHP: <3.0
MW-17A
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: <0.010
Free CN: Not Analyzed
DEHP: <3.0
DMW-25
PCE: 15
TCE: 0.78
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: <0.010
Free CN: Not Analyzed
DEHP: Not Analyzed
DMW-10
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: <0.010
Free CN: Not Analyzed
DEHP: Not Analyzed
DEW-19
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: <0.010
Free CN: Not Analyzed
DEHP: Not Analyzed
MW-21A
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: <0.010
Free CN: Not Analyzed
DEHP: <3.0
MW-12A
PCE: 4.5
TCE: 1.2
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: <0.010
Free CN: Not Analyzed
DEHP: <3.0
MW-6A
PCE: 93
TCE: 18
1,1-DCE: 0.97
cis-1,2-DCE: <0.50
Total CN: <0.010
Free CN: Not Analyzed
DEHP: <3.0
MW-8A
PCE: 310
TCE: 150
1,1-DCE: 54
cis-1,2-DCE: <0.50
Total CN: 0.065
Free CN: <0.010
DEHP: <3.0
MW-18A
PCE: <0.50
TCE: 0.65
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: <0.010
Free CN: Not Analyzed
DEHP: <3.0
DMW-11
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: <0.010
Free CN: Not Analyzed
DEHP: Not Analyzed
DMW-16
MW-14A
PCE: 19
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: 0.053
Free CN: <0.010
DEHP: 3.3
MW-7A
PCE: 190
TCE: 34
1,1-DCE: 0.58
cis-1,2-DCE: 5.4
Total CN: <0.010
Free CN: Not Analyzed
DEHP: Not Analyzed
DMW-17
DMW-18
DMW-6
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: <0.010
Free CN: Not Analyzed
DEHP: Not Analyzed
MW-15A
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: <0.010
Free CN: Not Analyzed
DEHP: 5.0
MW-9A
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: <0.010
Free CN: Not Analyzed
DEHP: <3.0
MW-5A
PCE: 120
TCE: 0.72
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: 22
Free CN: 3.2
DEHP: <3.0
MW-1A
PCE: 39
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: 4.3
Free CN: 0.55
DEHP: <3.0
MW-20A
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: <0.010
Free CN: Not Analyzed
DEHP: <3.0
MW-101A
PCE: 1.6
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: <0.010
Free CN: Not Analyzed
DEHP: <3.0
MW-3A
PCE: 18
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: 1.4
Free CN: 0.024
DEHP: Not Analyzed
MW-2A
PCE: 120
TCE: 1.2
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: 1.6
Free CN: 0.16
DEHP: Not Analyzed
MW-102A
PCE: 29
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: 2.4
Free CN: 0.79
DEHP: Not Analyzed
MW-10A
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: <0.010
Free CN: Not Analyzed
DEHP: <3.0
MW-19A
PCE: 27
TCE: 0.98
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: 0.11
Free CN: 0.054
DEHP: Not Analyzed
MW-4A
PCE: 29
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: 9.3
Free CN: 1.4
DEHP: Not Analyzed
N
W
E
S
8
16th Pl
17th St
17th Pl
18th St
18th Pl
19th St
20th St
20th Pl
Lowell Dr
21st St
21st Pl
George St
22nd St
22nd Pl
23rd St
9th Ave
8th Ave
7th Ave
6th Ave
5th Ave
4th Ave
3rd Ave
2nd Ave
1st Ave
Madison Ave
Arizona Ave
Maple Ave
Walnut Ave
Factor Ave
Riley Ave
Rail Ave
Union Pacific Railroad
Kennedy Memorial Park
Legend
Wells Not Sampled in November 2007
Wells Sampled in November 2007
School Production Wells
Approximate Plume Boundary
Facility Boundary
500 0 500 1,000 1,500
Feet
swisstopo, and the GIS User Community
TITLE: ESTIMATED EXTENT OF COC CONTAMINATION IN A-ZONE, NOVEMBER 2007
LOCATION: 20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA
TETRA TECH
CHECKED MO
DRAFTED AW
FILE 1303.049
DATE 1/8/14
FIGURE: 5-13
P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\GIS Figures



TITLE: ESTIMATED EXTENT OF COC CONTAMINATION IN B-ZONE, NOVEMBER 2007

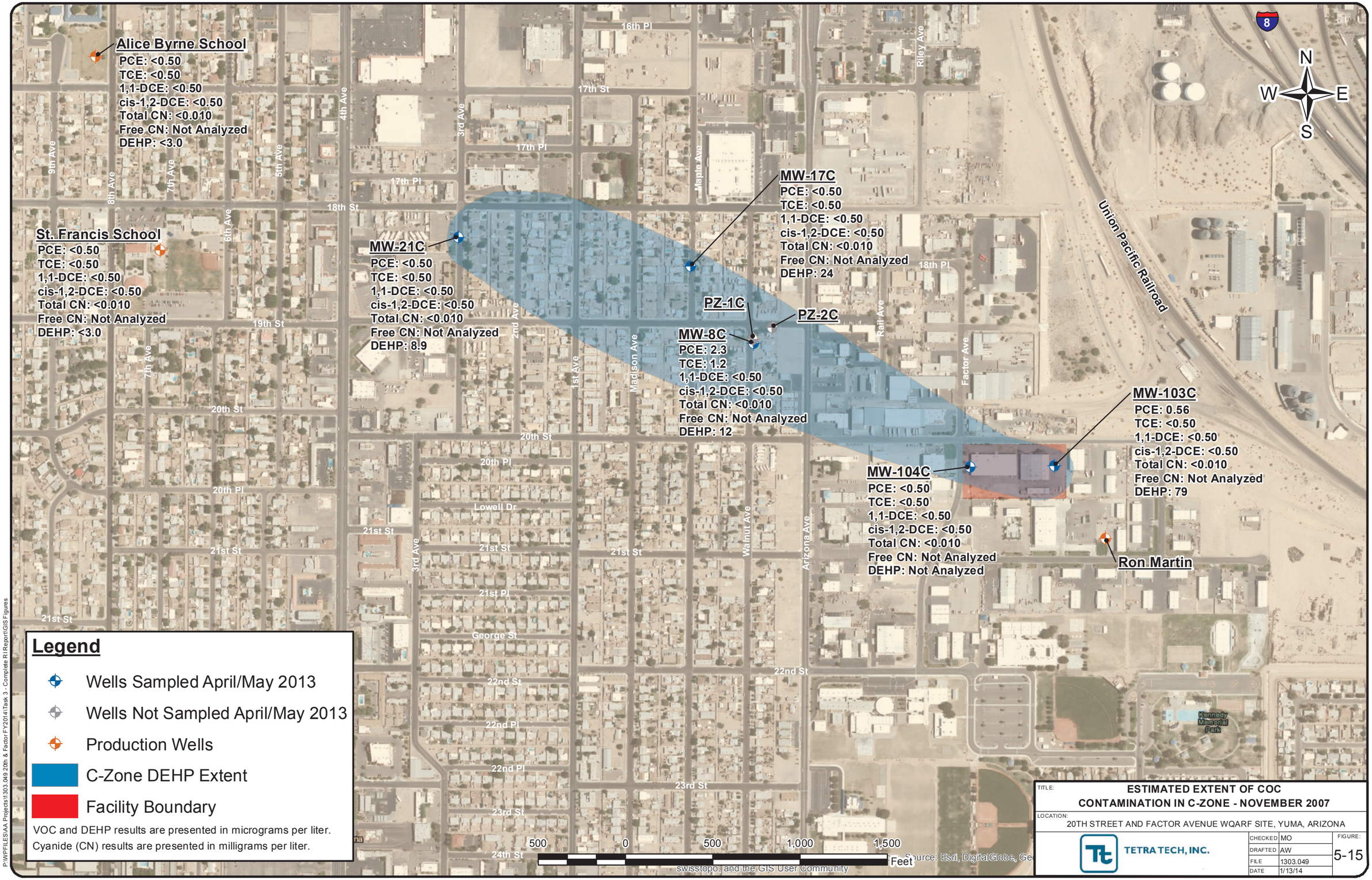
LOCATION: 20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA

TETRA TECH

CHECKED	MO
DRAFTED	AW
FILE	1303.049
DATE	1/8/14

FIGURE: 5-14

P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\GIS Figures



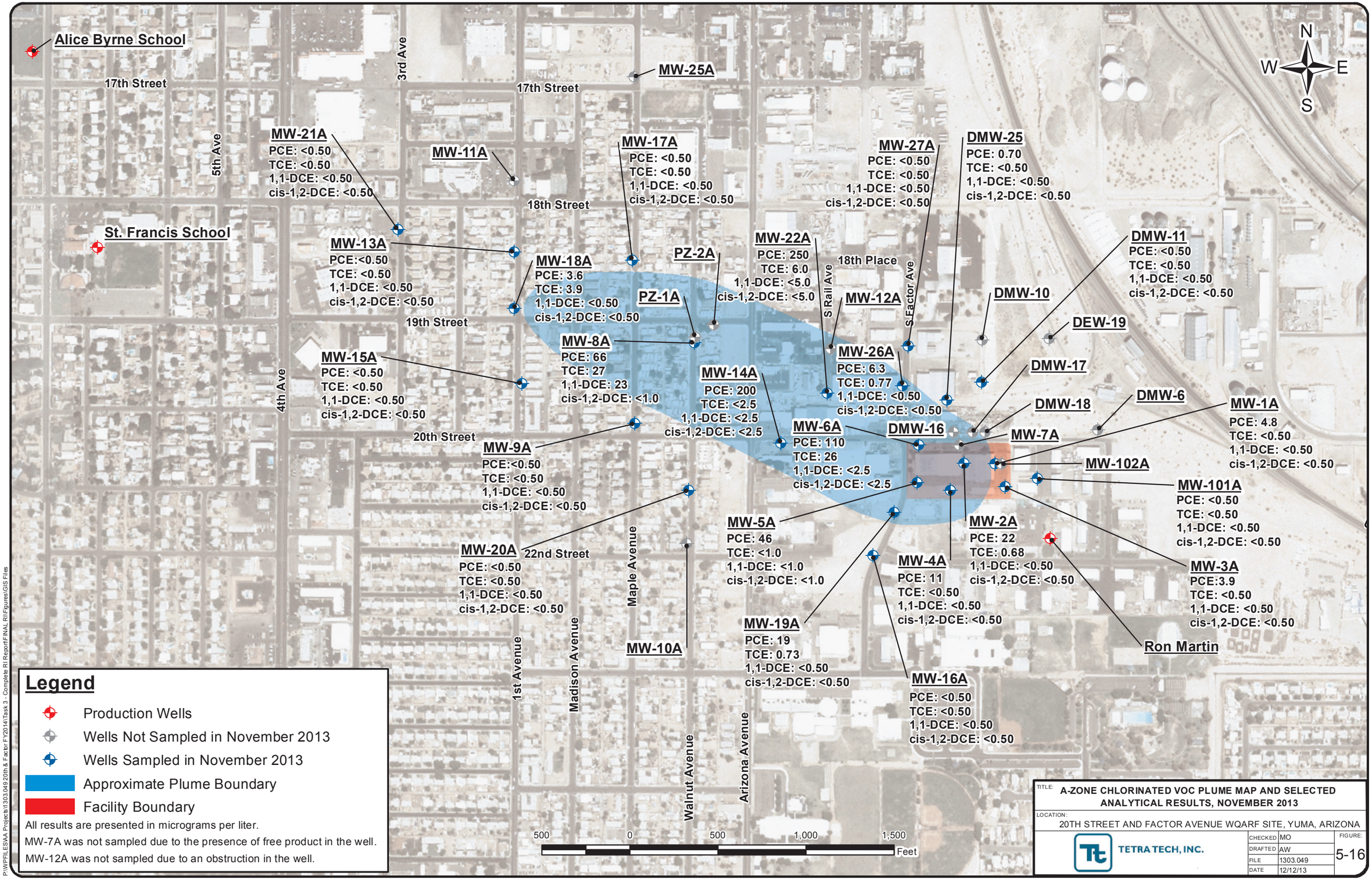
TITLE: ESTIMATED EXTENT OF COC CONTAMINATION IN C-ZONE - NOVEMBER 2007

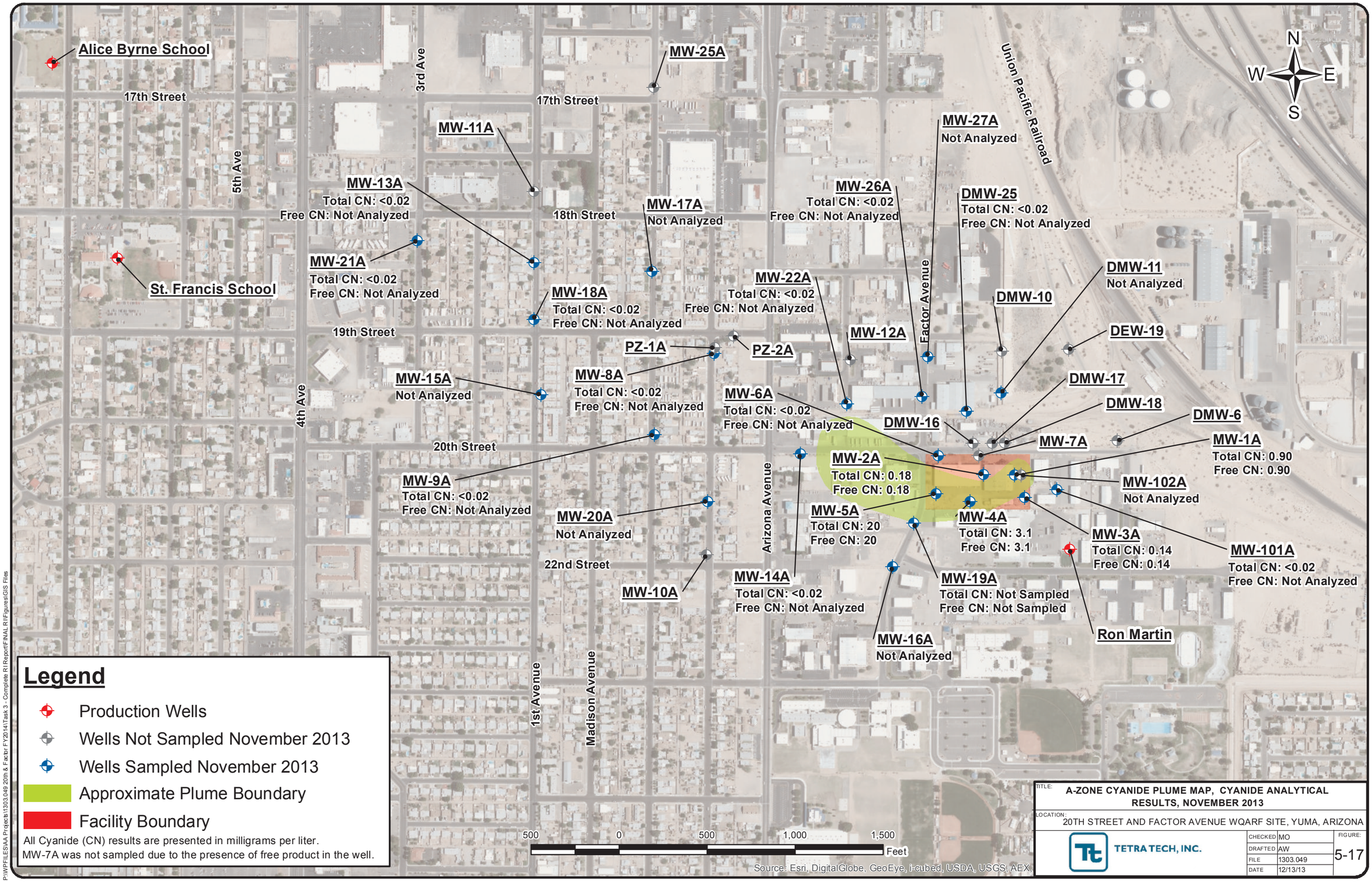
LOCATION: 20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA

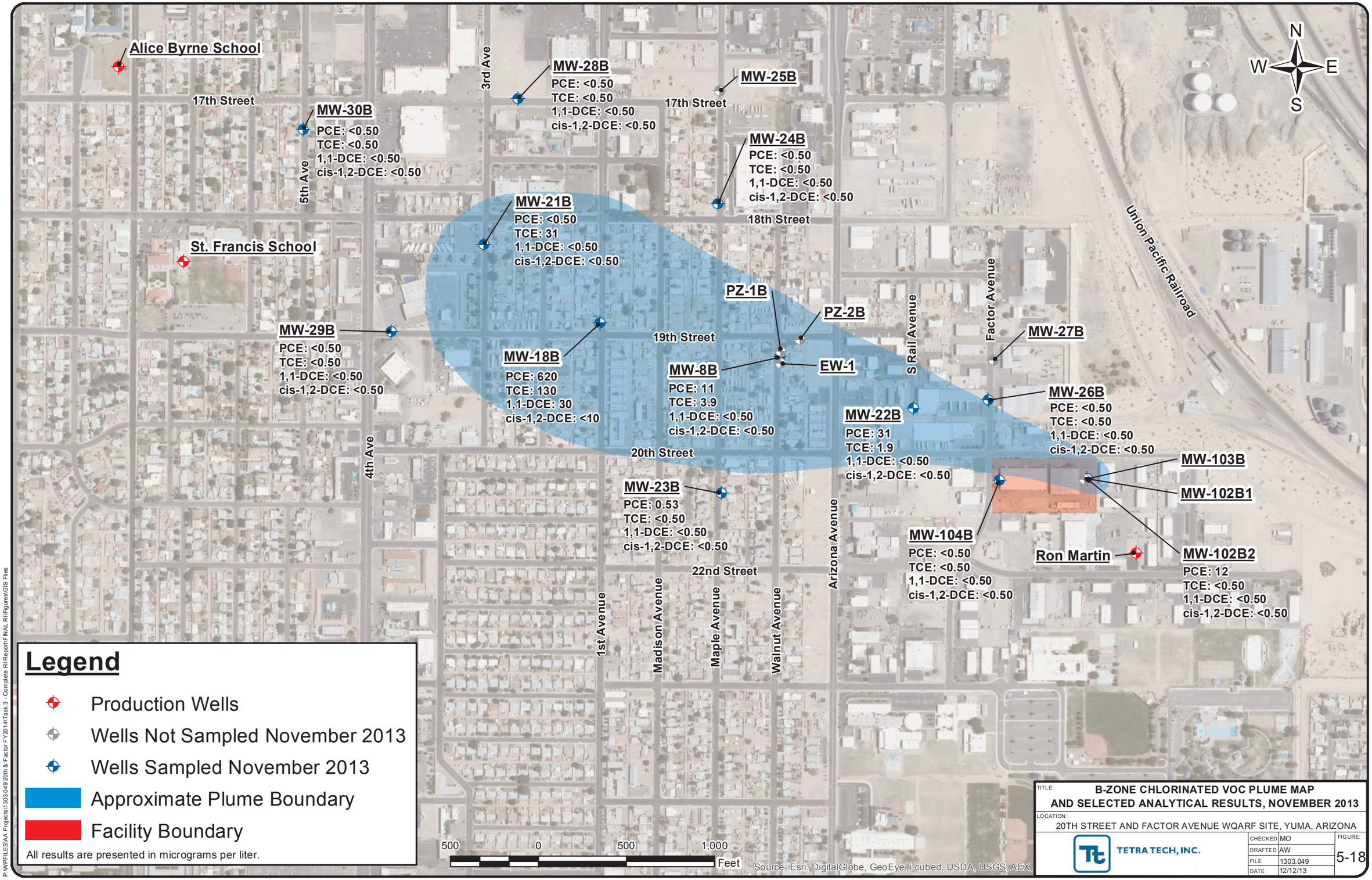
TETRA TECH, INC.

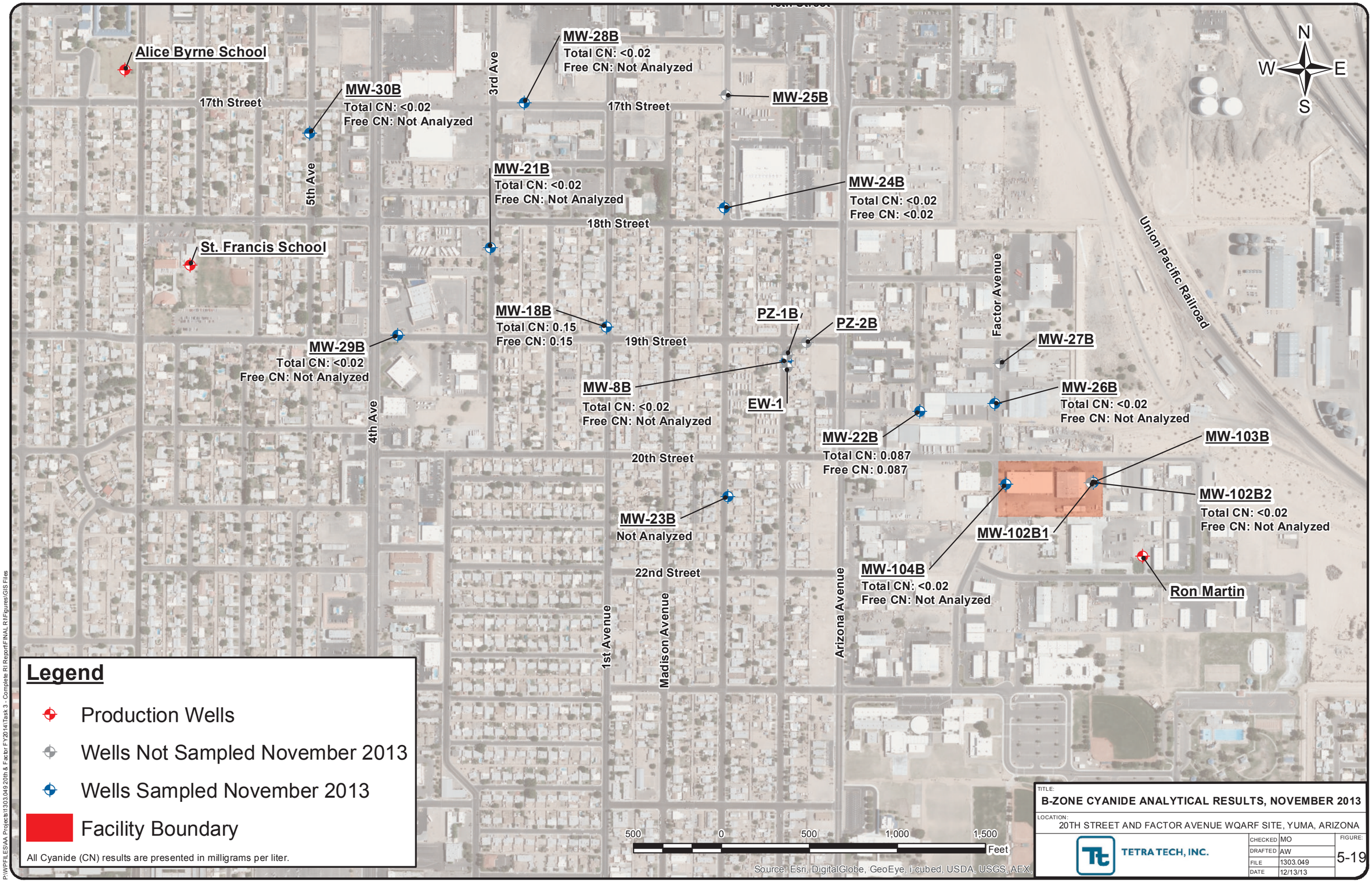
CHECKED	MO
DRAFTED	AW
FILE	1303.049
DATE	1/13/14

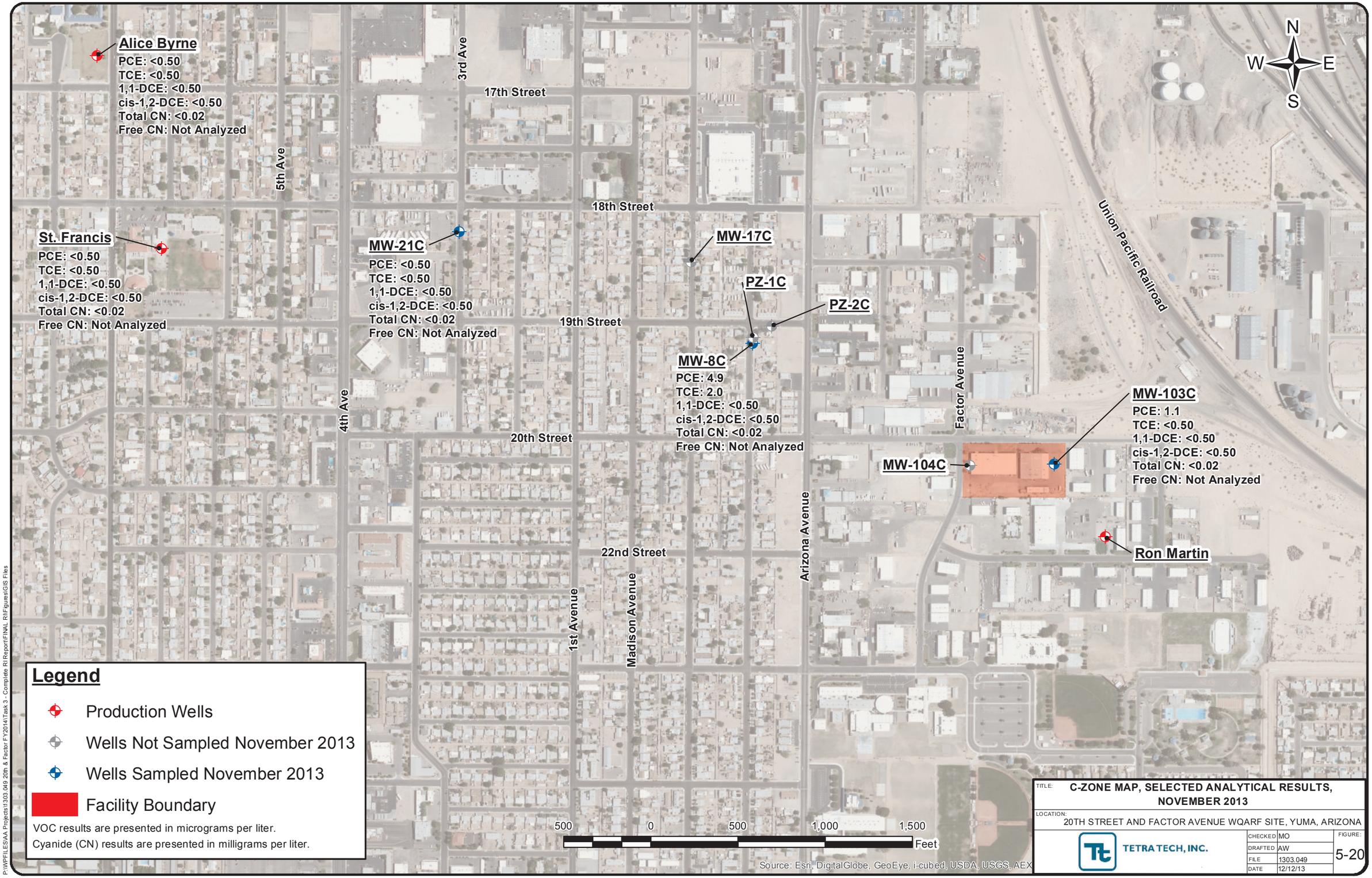
FIGURE: 5-15


Alice Byrne School
St. Francis School
17th Street
18th Street
19th Street
20th Street
22nd Street
18th Place
3rd Ave
5th Ave
4th Ave
1st Avenue
Madison Avenue
Maple Avenue
Walnut Avenue
Arizona Avenue
S Rail Ave
S Factor Ave
N
S
E
W
MW-25A
MW-21A
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
MW-11A
MW-17A
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
MW-27A
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
DMW-25
PCE: 0.70
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
MW-13A
PCE:<0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
MW-18A
PCE: 3.6
TCE: 3.9
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
PZ-2A
PZ-1A
MW-22A
PCE: 250
TCE: 6.0
1,1-DCE: <5.0
cis-1,2-DCE: <5.0
MW-12A
DMW-11
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
DMW-10
DEW-19
MW-8A
PCE: 66
TCE: 27
1,1-DCE: 23
cis-1,2-DCE: <1.0
MW-26A
PCE: 6.3
TCE: 0.77
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
DMW-17
MW-15A
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
MW-14A
PCE: 200
TCE: <2.5
1,1-DCE: <2.5
cis-1,2-DCE: <2.5
DMW-18
DMW-6
MW-1A
PCE: 4.8
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
MW-6A
PCE: 110
TCE: 26
1,1-DCE: <2.5
cis-1,2-DCE: <2.5
DMW-16
MW-7A
MW-9A
PCE:<0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
MW-102A
MW-101A
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
MW-5A
PCE: 46
TCE: <1.0
1,1-DCE: <1.0
cis-1,2-DCE: <1.0
MW-2A
PCE: 22
TCE: 0.68
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
MW-20A
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
MW-4A
PCE: 11
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
MW-3A
PCE:3.9
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
MW-19A
PCE: 19
TCE: 0.73
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
MW-10A
Ron Martin
MW-16A
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
500
0
500
1,000
1,500
Feet
Legend
Production Wells
Wells Not Sampled in November 2013
Wells Sampled in November 2013
Approximate Plume Boundary
Facility Boundary
All results are presented in micrograms per liter.
MW-7A was not sampled due to the presence of free product in the well.
MW-12A was not sampled due to an obstruction in the well.
TITLE: A-ZONE CHLORINATED VOC PLUME MAP AND SELECTED ANALYTICAL RESULTS, NOVEMBER 2013
LOCATION: 20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA
TETRA TECH, INC.
CHECKED MO
DRAFTED AW
FILE 1303.049
DATE 12/12/13
FIGURE: 5-16
P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\FINAL RI\Figures\GIS Files

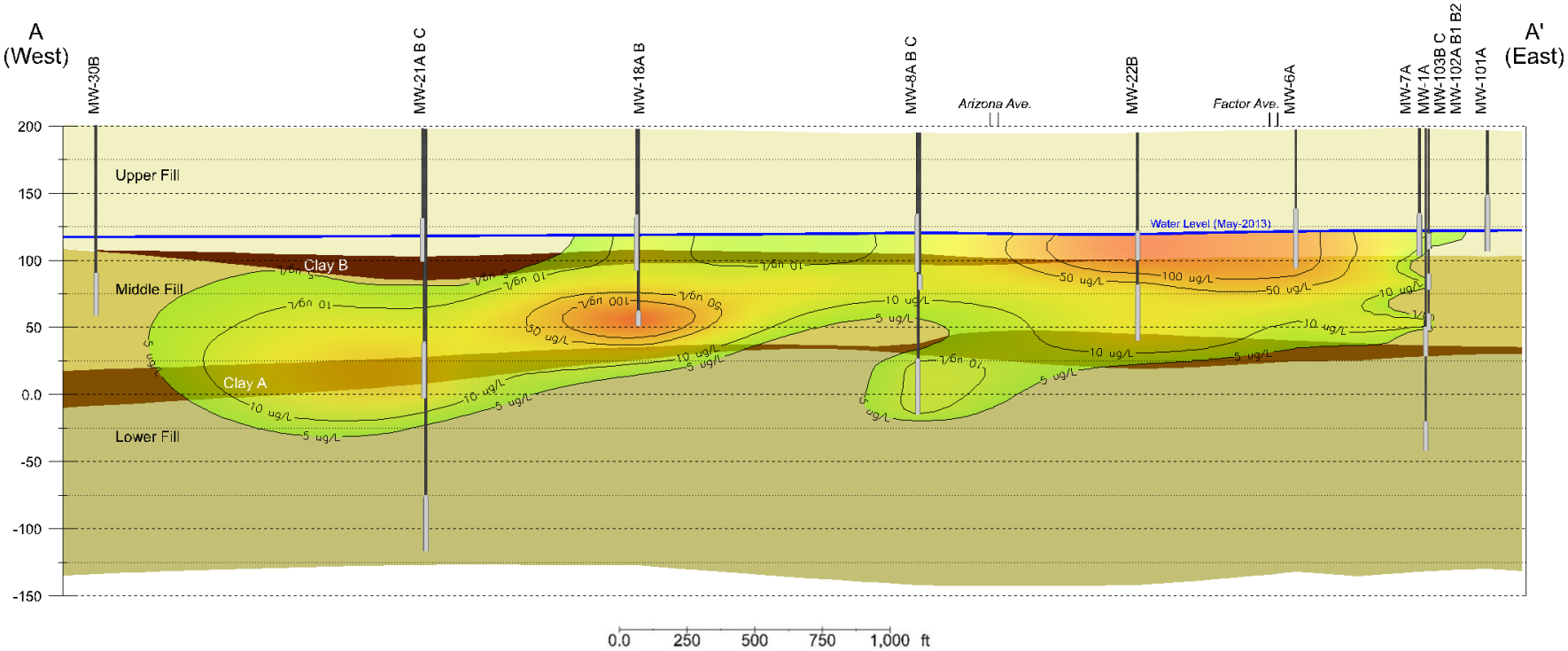

Alice Byrne School
St. Francis School
17th Street
18th Street
19th Street
20th Street
22nd Street
1st Avenue
3rd Ave
4th Ave
5th Ave
Madison Avenue
Arizona Avenue
Factor Avenue
Union Pacific Railroad
N
S
E
W
MW-25A
MW-11A
MW-13A
Total CN: <0.02
Free CN: Not Analyzed
MW-21A
Total CN: <0.02
Free CN: Not Analyzed
MW-17A
Not Analyzed
MW-18A
Total CN: <0.02
Free CN: Not Analyzed
MW-26A
Total CN: <0.02
Free CN: Not Analyzed
MW-27A
Not Analyzed
DMW-25
Total CN: <0.02
Free CN: Not Analyzed
MW-22A
Total CN: <0.02
Free CN: Not Analyzed
DMW-11
Not Analyzed
DMW-10
DEW-19
MW-12A
PZ-1A
PZ-2A
MW-8A
Total CN: <0.02
Free CN: Not Analyzed
MW-15A
Not Analyzed
MW-6A
Total CN: <0.02
Free CN: Not Analyzed
DMW-17
DMW-18
DMW-6
DMW-16
MW-7A
MW-1A
Total CN: 0.90
Free CN: 0.90
MW-2A
Total CN: 0.18
Free CN: 0.18
MW-102A
Not Analyzed
MW-9A
Total CN: <0.02
Free CN: Not Analyzed
MW-20A
Not Analyzed
MW-5A
Total CN: 20
Free CN: 20
MW-4A
Total CN: 3.1
Free CN: 3.1
MW-3A
Total CN: 0.14
Free CN: 0.14
MW-101A
Total CN: <0.02
Free CN: Not Analyzed
MW-10A
MW-14A
Total CN: <0.02
Free CN: Not Analyzed
MW-19A
Total CN: Not Sampled
Free CN: Not Sampled
MW-16A
Not Analyzed
Ron Martin
Legend
Production Wells
Wells Not Sampled November 2013
Wells Sampled November 2013
Approximate Plume Boundary
Facility Boundary
All Cyanide (CN) results are presented in milligrams per liter.
MW-7A was not sampled due to the presence of free product in the well.
500
0
500
1,000
1,500
Feet
Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX,
TITLE:
A-ZONE CYANIDE PLUME MAP, CYANIDE ANALYTICAL RESULTS, NOVEMBER 2013
LOCATION:
20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA
TETRA TECH, INC.
CHECKED MO
DRAFTED AW
FILE 1303.049
DATE 12/13/13
FIGURE:
5-17
P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\FINAL RI\Figures\GIS Files


Alice Byrne School
17th Street
3rd Ave
MW-28B
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
MW-25B
17th Street
MW-30B
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
5th Ave
MW-24B
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
18th Street
MW-21B
PCE: <0.50
TCE: 31
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
St. Francis School
PZ-1B
PZ-2B
MW-29B
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
19th Street
MW-18B
PCE: 620
TCE: 130
1,1-DCE: 30
cis-1,2-DCE: <10
MW-8B
PCE: 11
TCE: 3.9
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
EW-1
S Rail Avenue
Factor Avenue
MW-27B
Union Pacific Railroad
MW-26B
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
MW-22B
PCE: 31
TCE: 1.9
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
20th Street
4th Ave
MW-103B
MW-102B1
MW-23B
PCE: 0.53
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Arizona Avenue
MW-104B
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Ron Martin
MW-102B2
PCE: 12
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
22nd Street
1st Avenue
Madison Avenue
Maple Avenue
Walnut Avenue
N
W
E
S
Legend
Production Wells
Wells Not Sampled November 2013
Wells Sampled November 2013
Approximate Plume Boundary
Facility Boundary
All results are presented in micrograms per liter.
500
0
500
1,000
Feet
Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX,
TITLE:
B-ZONE CHLORINATED VOC PLUME MAP
AND SELECTED ANALYTICAL RESULTS, NOVEMBER 2013
LOCATION:
20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA
TETRA TECH, INC.
CHECKED MO
DRAFTED AW
FILE 1303.049
DATE 12/12/13
FIGURE:
5-18
P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\FINAL RI\Figures\GIS Files


Alice Byrne School
MW-30B
Total CN: <0.02
Free CN: Not Analyzed
17th Street
3rd Ave
MW-28B
Total CN: <0.02
Free CN: Not Analyzed
17th Street
MW-25B
5th Ave
MW-21B
Total CN: <0.02
Free CN: Not Analyzed
MW-24B
Total CN: <0.02
Free CN: <0.02
18th Street
St. Francis School
Union Pacific Railroad
Factor Avenue
MW-18B
Total CN: 0.15
Free CN: 0.15
19th Street
PZ-1B
PZ-2B
MW-27B
MW-29B
Total CN: <0.02
Free CN: Not Analyzed
MW-8B
Total CN: <0.02
Free CN: Not Analyzed
EW-1
MW-26B
Total CN: <0.02
Free CN: Not Analyzed
4th Ave
MW-22B
Total CN: 0.087
Free CN: 0.087
MW-103B
20th Street
MW-102B2
Total CN: <0.02
Free CN: Not Analyzed
MW-23B
Not Analyzed
MW-102B1
22nd Street
MW-104B
Total CN: <0.02
Free CN: Not Analyzed
Ron Martin
1st Avenue
Madison Avenue
Arizona Avenue
N
W
E
S
Legend
Production Wells
Wells Not Sampled November 2013
Wells Sampled November 2013
Facility Boundary
All Cyanide (CN) results are presented in milligrams per liter.
500
0
500
1,000
1,500
Feet
Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX,
TITLE:
B-ZONE CYANIDE ANALYTICAL RESULTS, NOVEMBER 2013
LOCATION:
20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA
TETRA TECH, INC.
CHECKED MO
DRAFTED AW
FILE 1303.049
DATE 12/13/13
FIGURE:
5-19
P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\FINAL RI\Figures\GIS Files


Alice Byrne
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: <0.02
Free CN: Not Analyzed
St. Francis
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: <0.02
Free CN: Not Analyzed
MW-21C
PCE: <0.50
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: <0.02
Free CN: Not Analyzed
MW-17C
PZ-1C
PZ-2C
MW-8C
PCE: 4.9
TCE: 2.0
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: <0.02
Free CN: Not Analyzed
MW-103C
PCE: 1.1
TCE: <0.50
1,1-DCE: <0.50
cis-1,2-DCE: <0.50
Total CN: <0.02
Free CN: Not Analyzed
MW-104C
Ron Martin
17th Street
18th Street
19th Street
20th Street
22nd Street
3rd Ave
5th Ave
4th Ave
1st Avenue
Madison Avenue
Arizona Avenue
Factor Avenue
Union Pacific Railroad
N
W
E
S
Legend
Production Wells
Wells Not Sampled November 2013
Wells Sampled November 2013
Facility Boundary
VOC results are presented in micrograms per liter.
Cyanide (CN) results are presented in milligrams per liter.
500
0
500
1,000
1,500
Feet
Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX
TITLE: C-ZONE MAP, SELECTED ANALYTICAL RESULTS, NOVEMBER 2013
LOCATION: 20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA
TETRA TECH, INC.
CHECKED MO
DRAFTED AW
FILE 1303.049
DATE 12/12/13
FIGURE: 5-20
P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\FINAL RI\Figures\GIS Files

P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\Updated Figures



TITLE: **TOTAL VOC CONTAMINATION ALONG A-A' FOURTH QUARTER 2013**

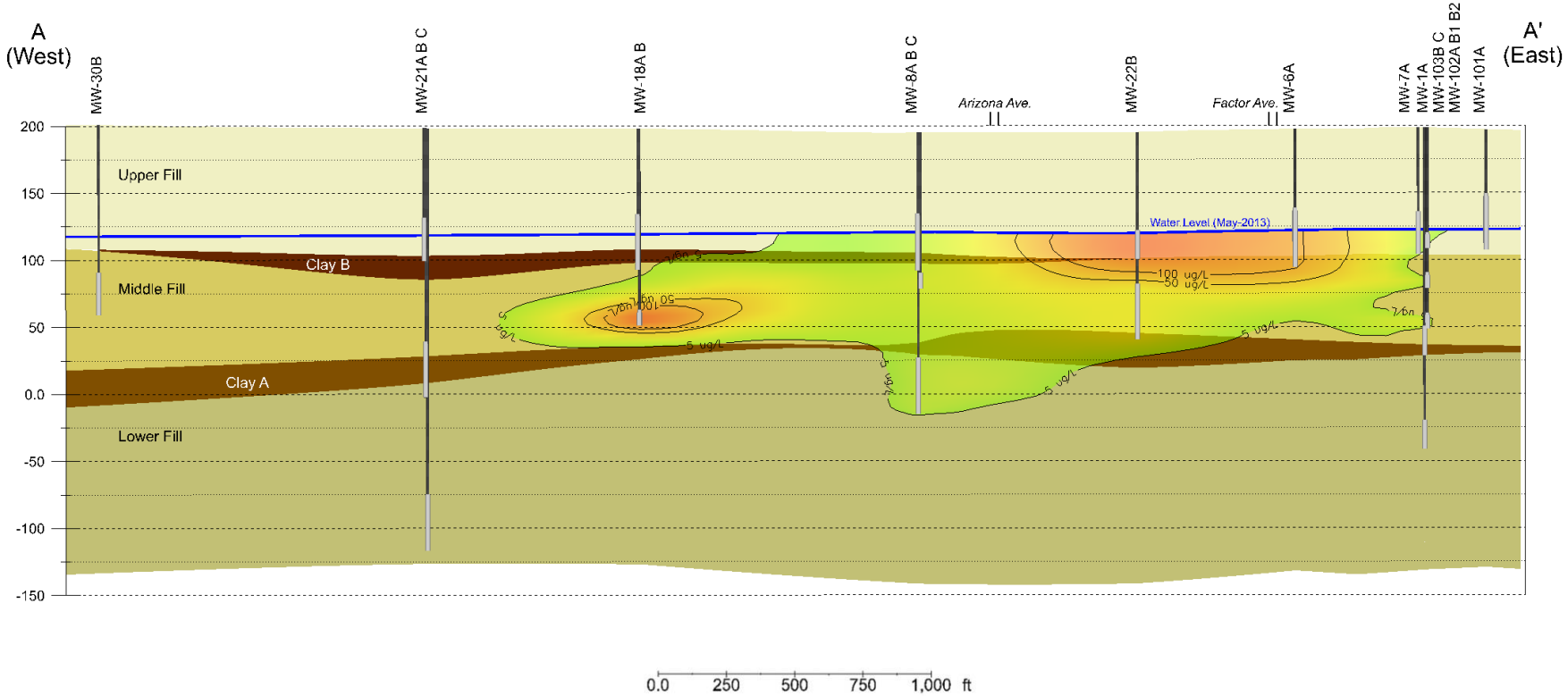
LOCATION: **20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA**

TETRA TECH

APPROVED	MO
DRAFTED	AW
PROJECT#	1303.049
DATE	05/20/13

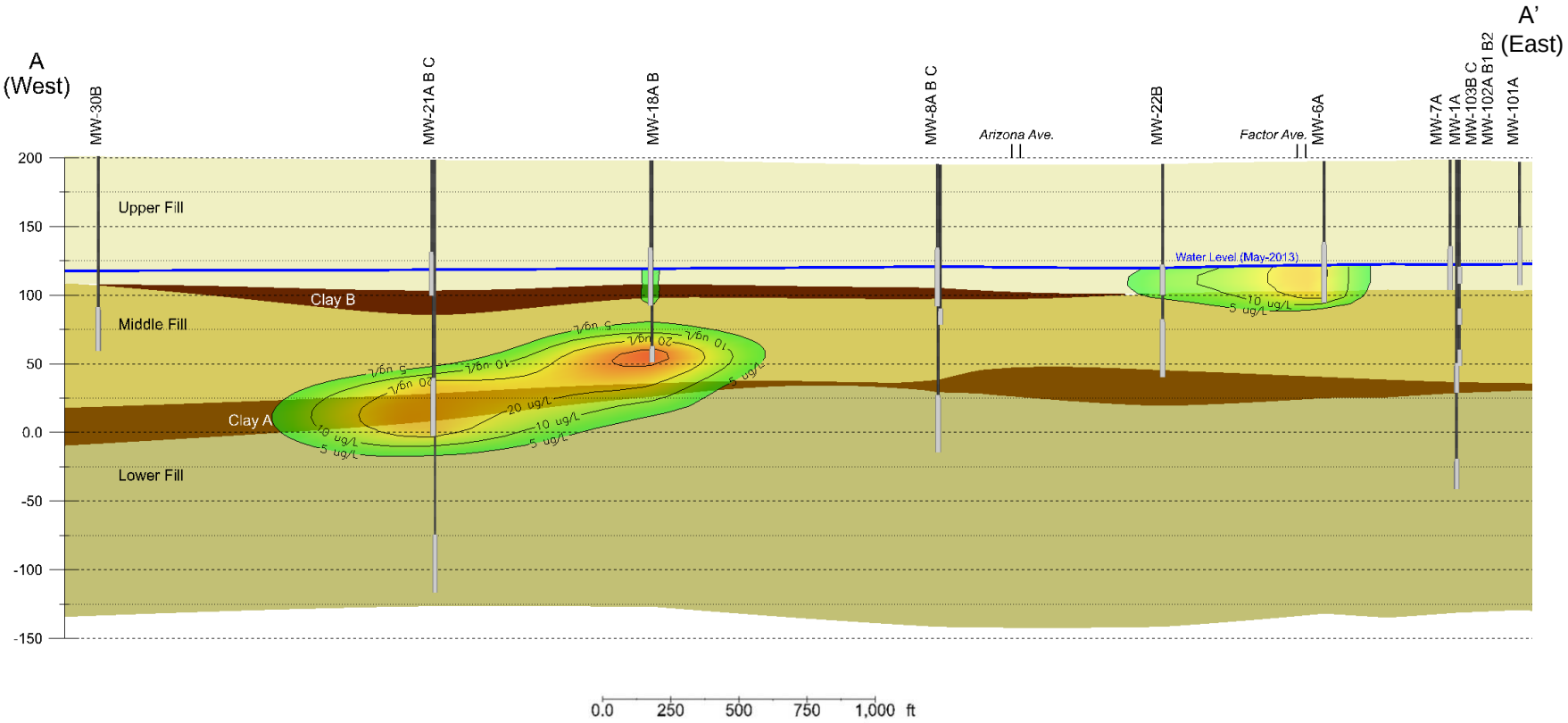
FIGURE **5-21**

P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\Updated Figures



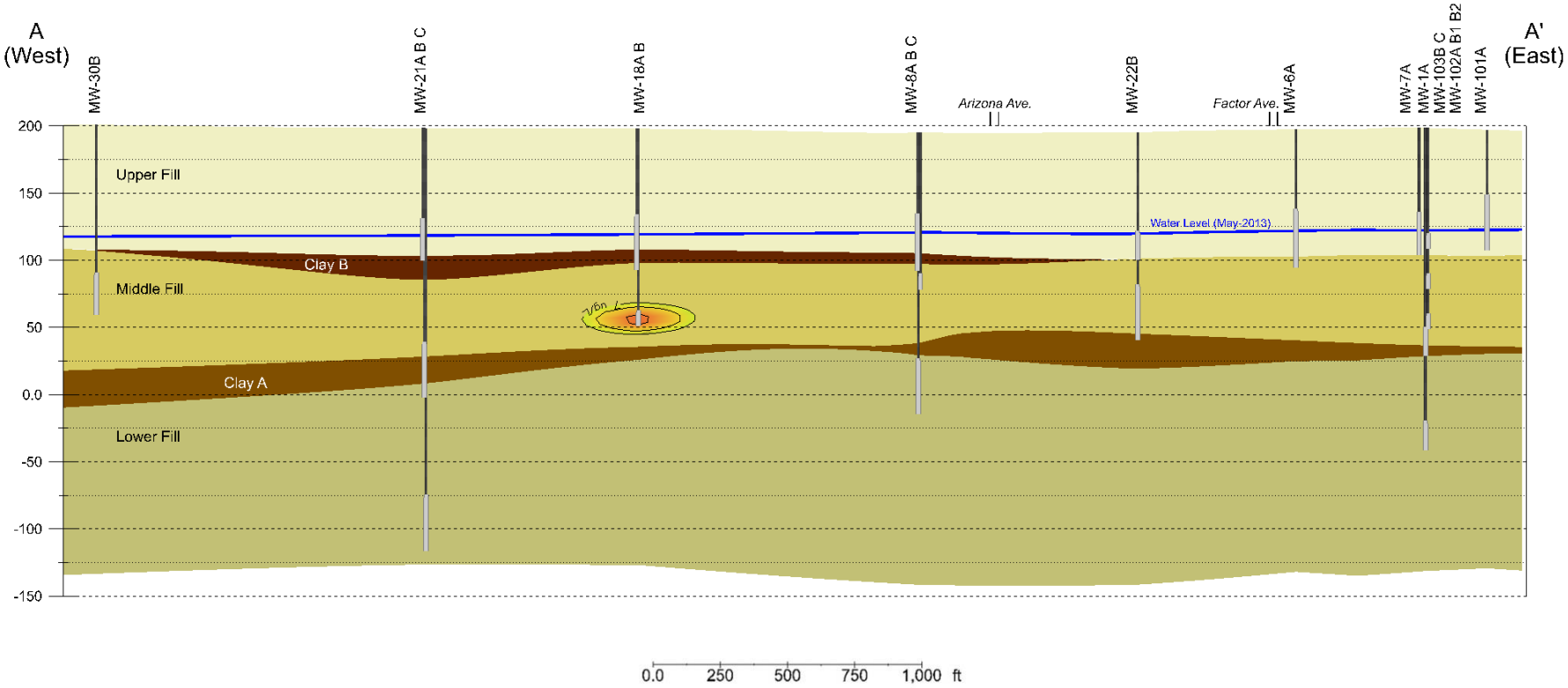
TITLE:	PCE CONTAMINATION ALONG A-A' FOURTH QUARTER 2013		
LOCATION:	20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA		
TETRA TECH	APPROVED	MO	FIGURE
	DRAFTED	AW	5-22
	PROJECT#	1303.049	
	DATE	05/20/13	

P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\Updated Figures



TITLE:	TCE CONTAMINATION ALONG A-A' FOURTH QUARTER 2013		
LOCATION:	20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA		
TETRA TECH	APPROVED	MO	FIGURE
	DRAFTED	AW	5-23
	PROJECT#	1303.049	
	DATE	05/20/13	

P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\Updated Figures

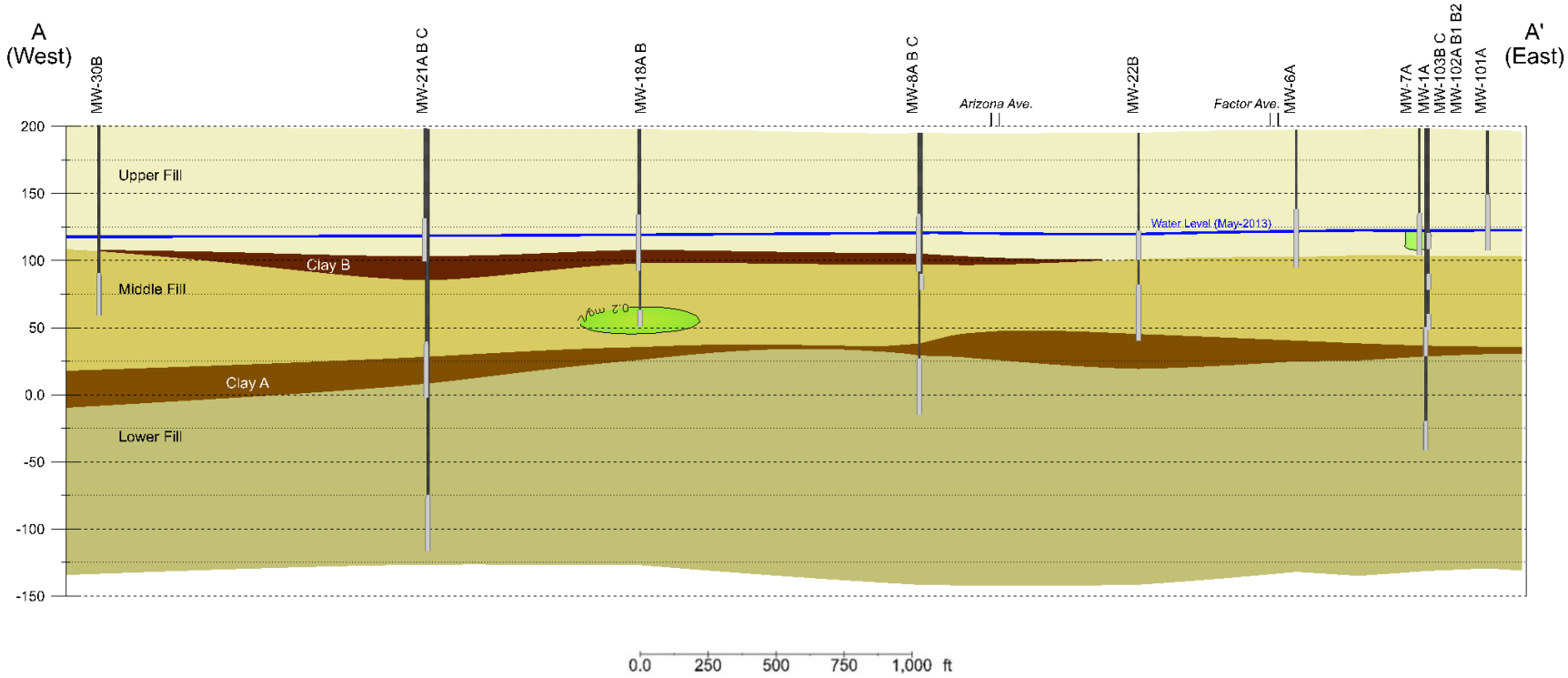


TITLE:	1,1-DCE CONTAMINATION ALONG A-A' FOURTH QUARTER 2013
LOCATION:	20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA

TETRA TECH

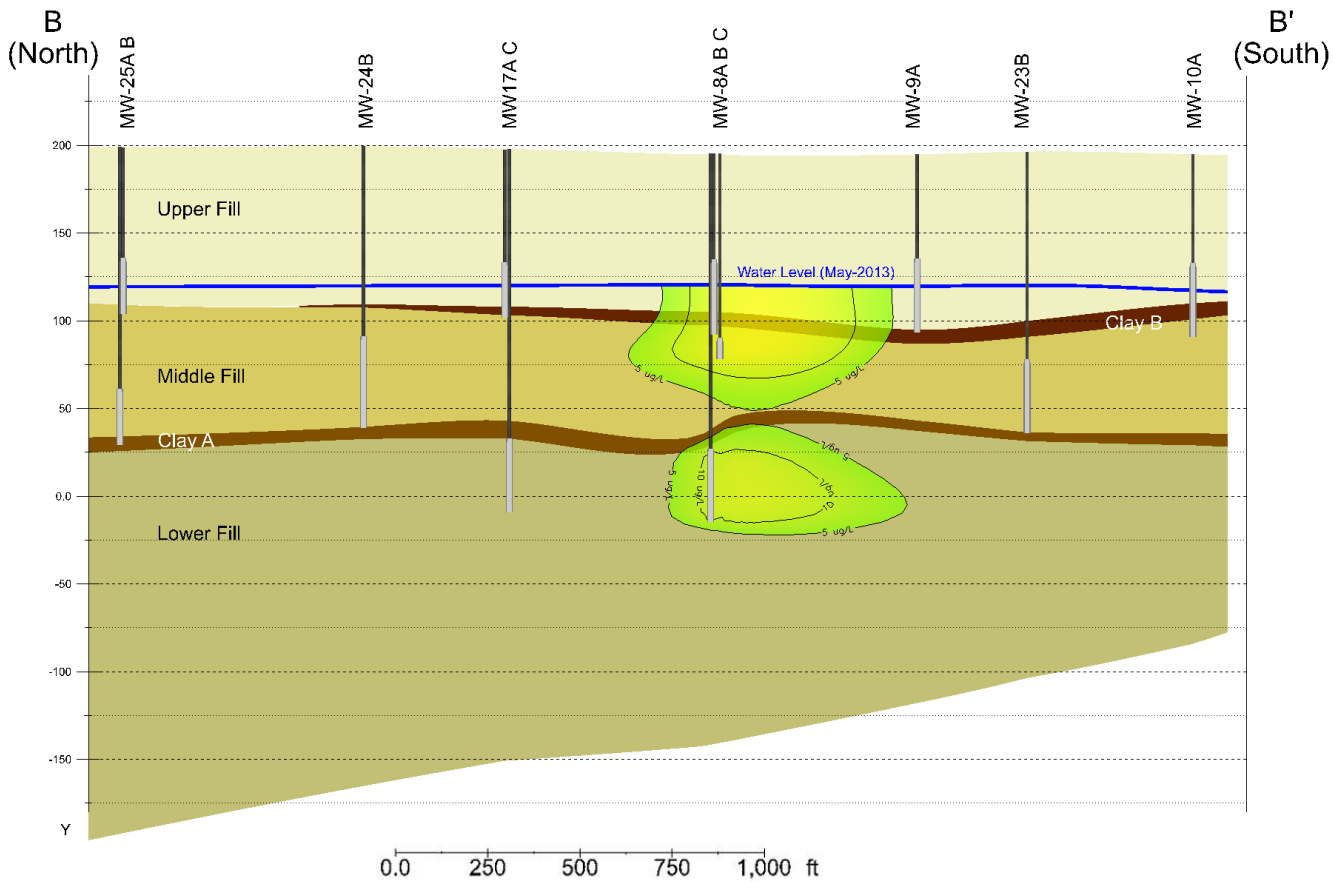
APPROVED	MO	FIGURE
DRAFTED	AW	5-24
PROJECT#	1303.049	
DATE	05/20/13	

P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\Updated Figures



TITLE:	CN CONTAMINATION ALONG A-A' FOURTH QUARTER 2013		
LOCATION:	20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA		
TETRA TECH	APPROVED	MO	FIGURE
	DRAFTED	AW	5-25
	PROJECT#	1303.049	
	DATE	05/20/13	

P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\Updated Figures



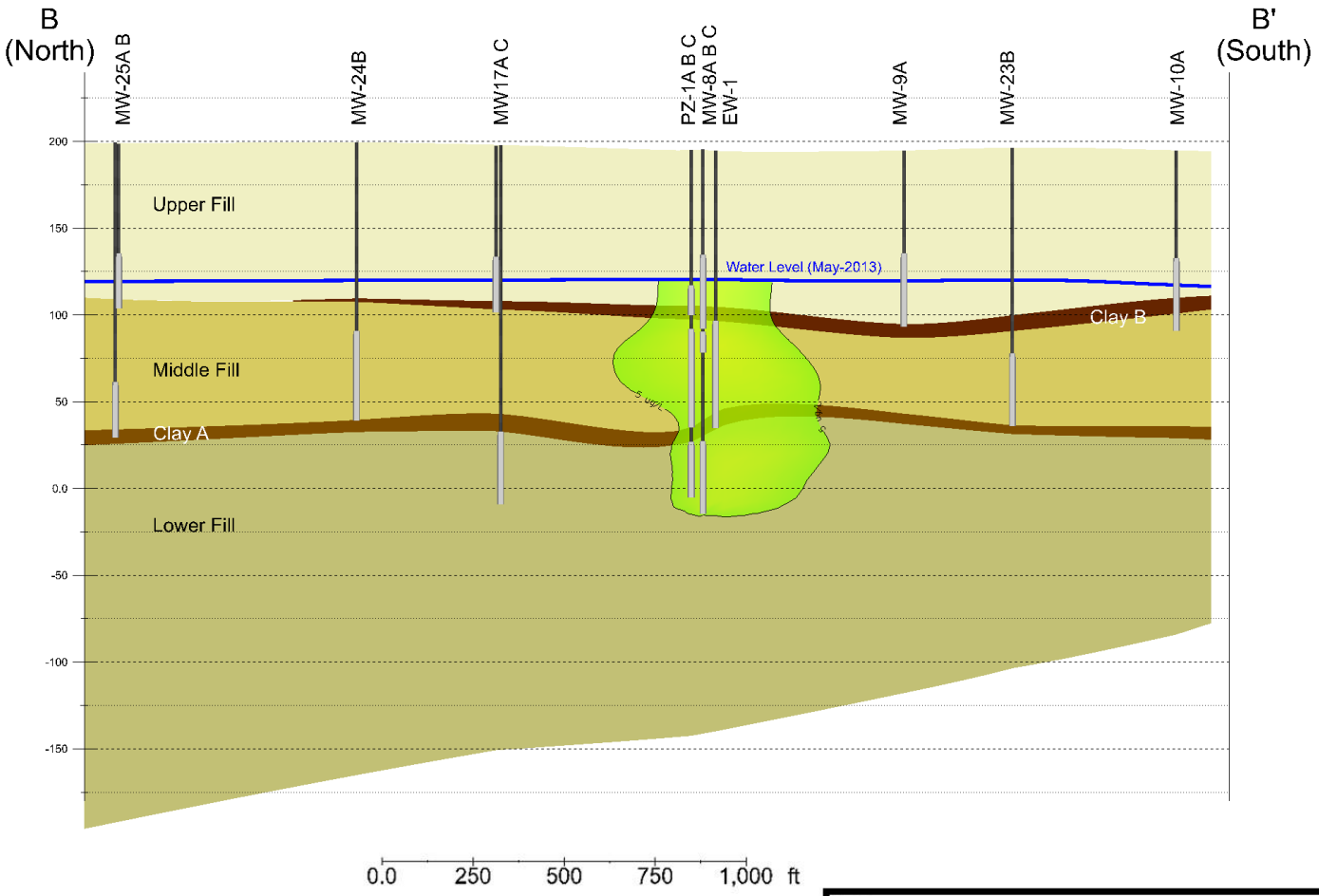
TITLE: **TOTAL VOC CONTAMINATION ALONG B-B' FOURTH QUARTER 2013**

LOCATION: **20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA**

TETRA TECH

APPROVED	MO	FIGURE
DRAFTED	AW	5-26
PROJECT#	1303.049	
DATE	05/20/13	

P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\Updated Figures

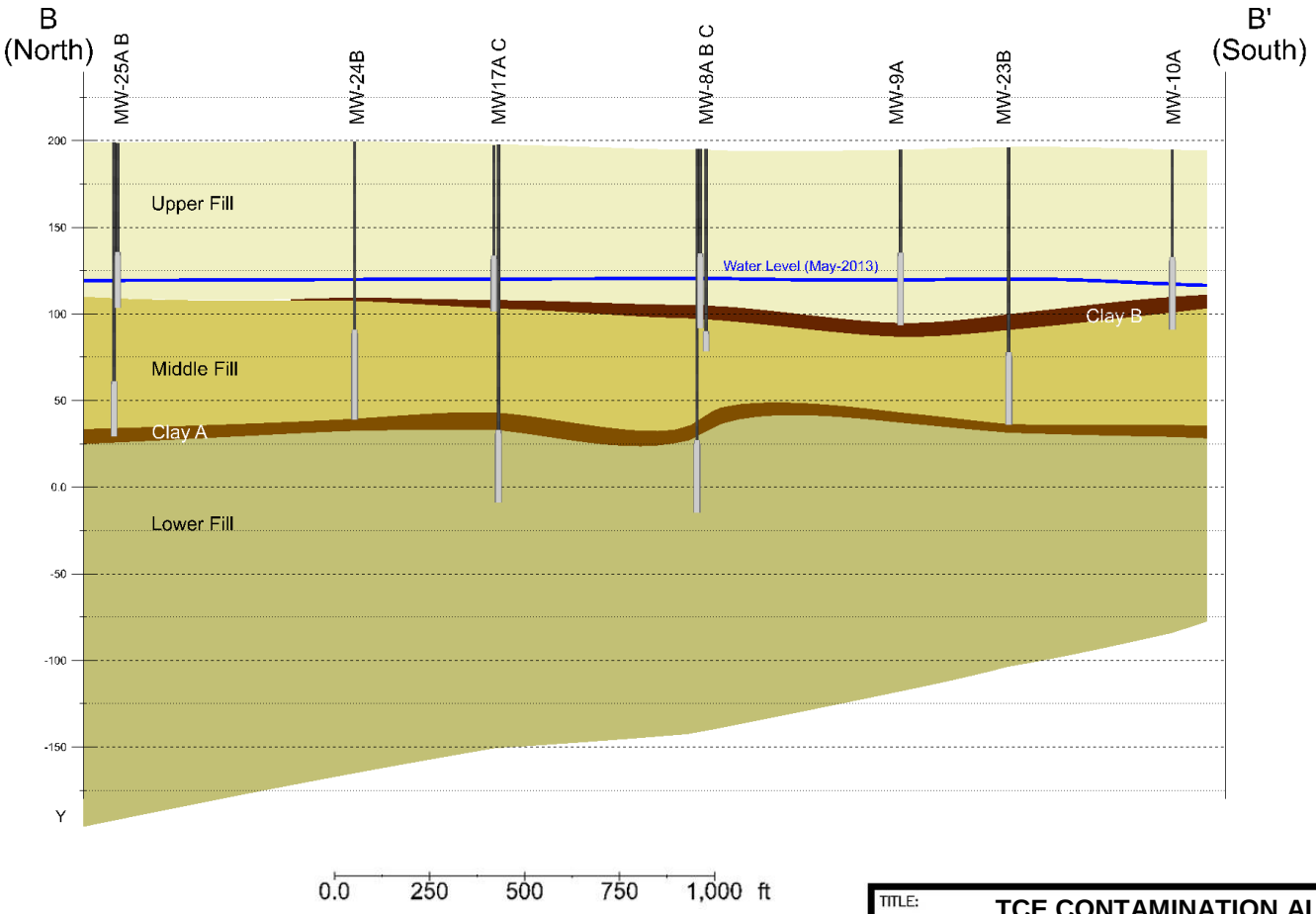


TITLE:	PCE CONTAMINATION ALONG B-B' FOURTH QUARTER 2013
LOCATION:	20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA

TETRA TECH

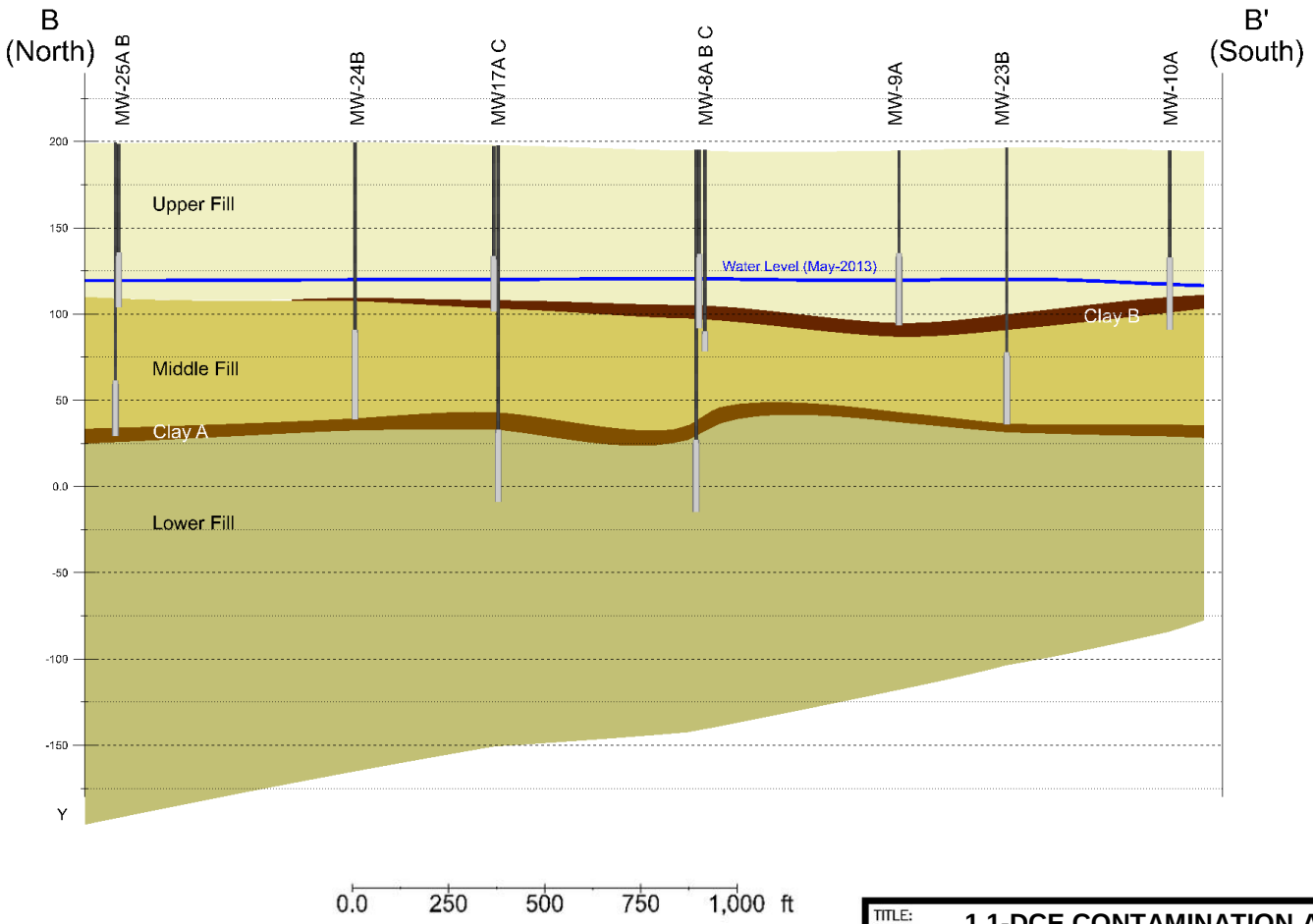
APPROVED	MO	FIGURE
DRAFTED	AW	5-27
PROJECT#	1303.049	
DATE	05/20/13	

P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\Updated Figures



TITLE:	TCE CONTAMINATION ALONG B-B' FOURTH QUARTER 2013		
LOCATION:	20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA		
TETRA TECH	APPROVED	MO	FIGURE
	DRAFTED	AW	5-28
	PROJECT#	1303.049	
	DATE	05/20/13	

P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\Updated Figures



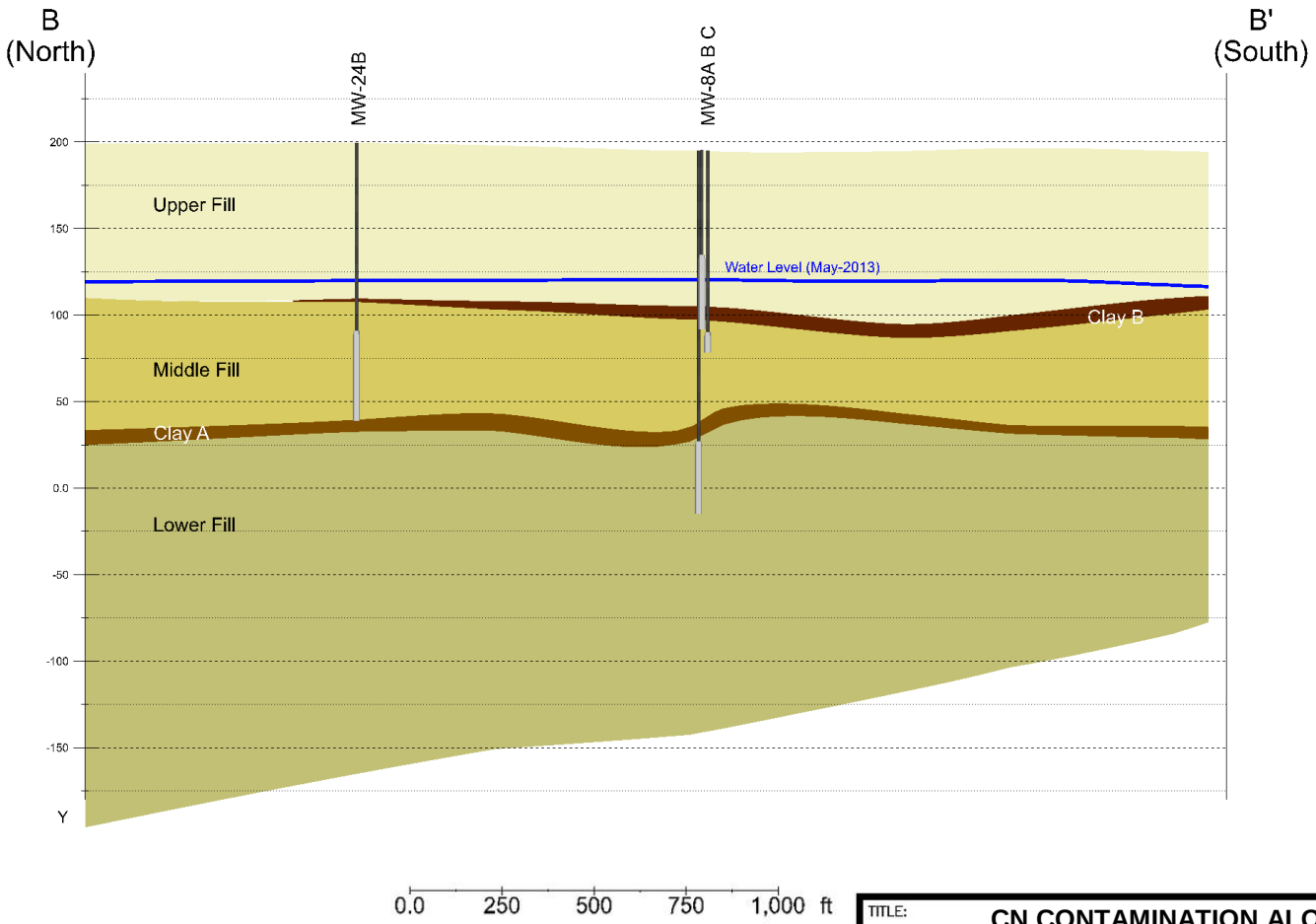
TITLE: **1,1-DCE CONTAMINATION ALONG B-B' FOURTH QUARTER 2013**

LOCATION: **20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA**

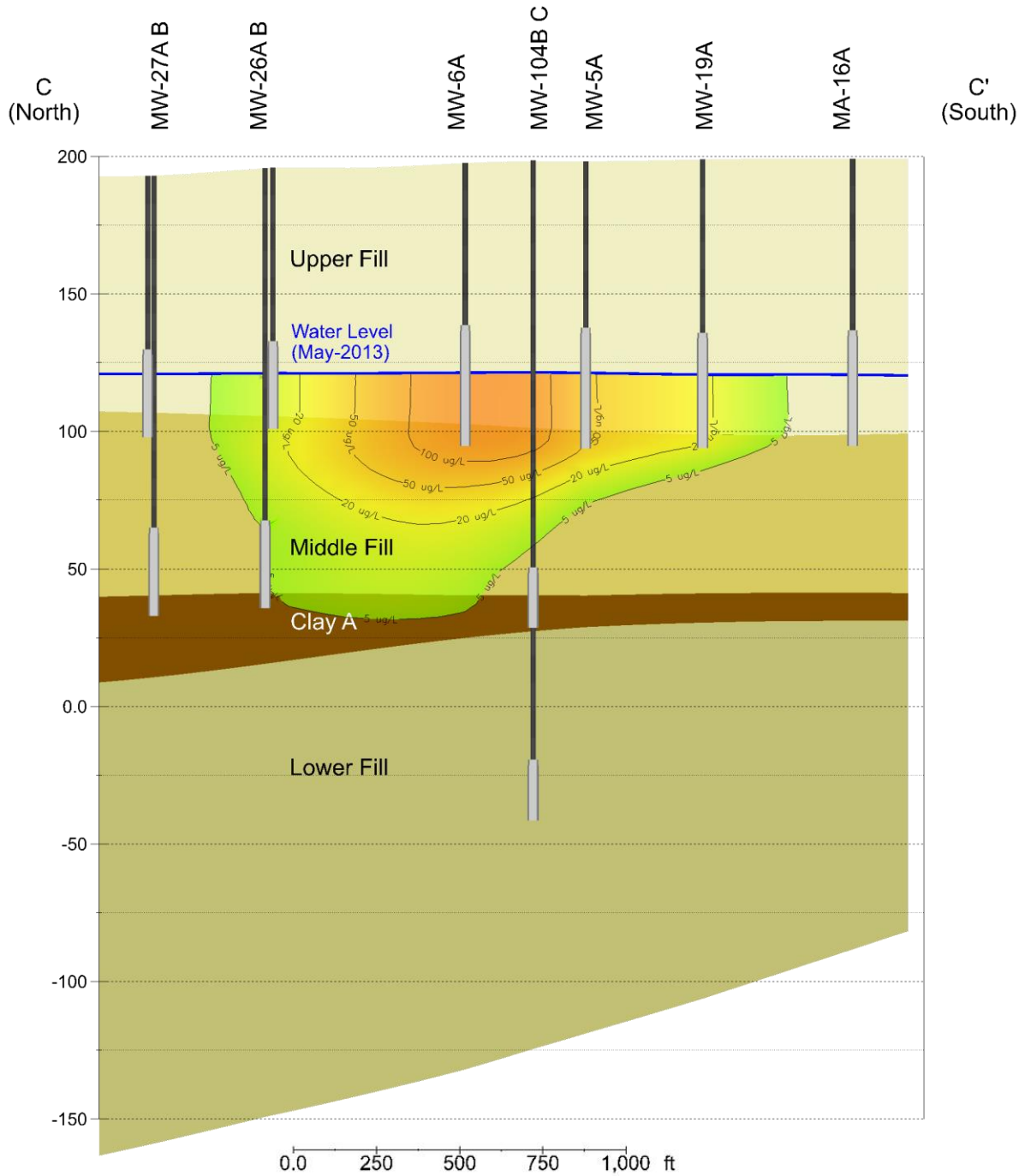
TETRA TECH

APPROVED	MO	FIGURE
DRAFTED	AW	5-29
PROJECT#	1303.049	
DATE	05/20/13	

P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\Updated Figures

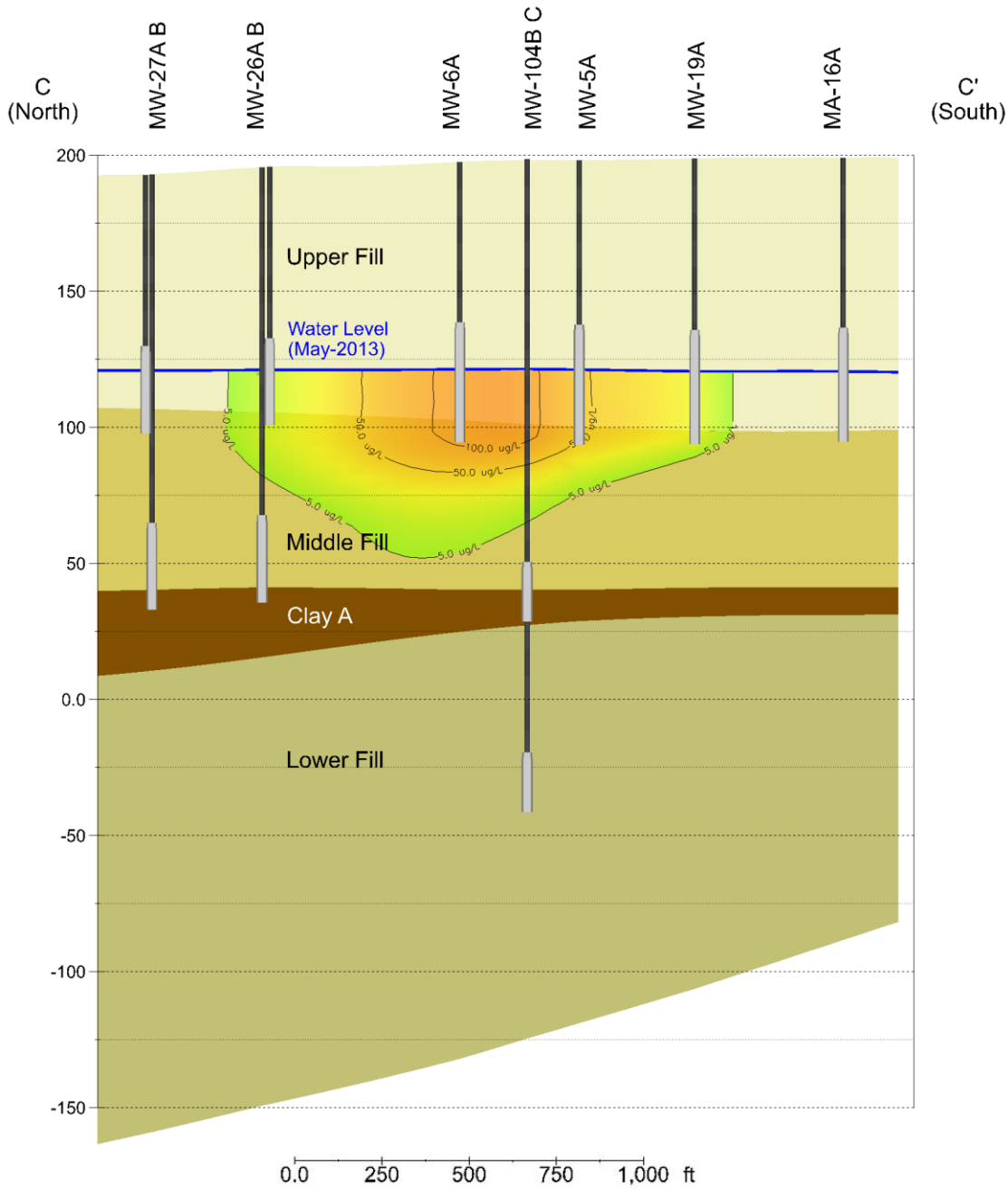


TITLE:	CN CONTAMINATION ALONG B-B' FOURTH QUARTER 2013		
LOCATION:	20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA		
TETRA TECH	APPROVED	MO	FIGURE
	DRAFTED	AW	5-30
	PROJECT#	1303.049	
	DATE	05/20/13	



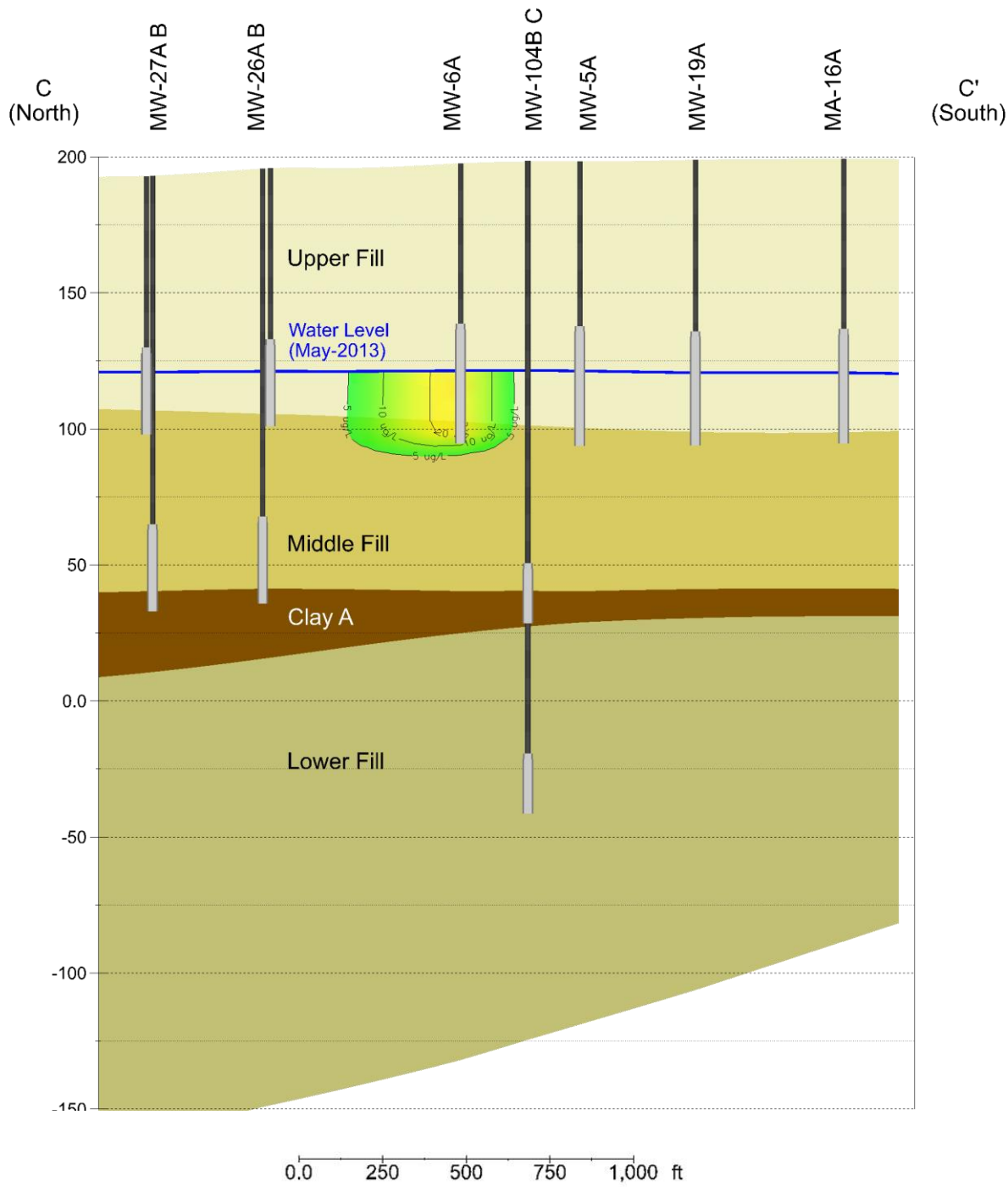
TITLE: TOTAL VOC CONTAMINATION ALONG C-C' FOURTH QUARTER 2013			
LOCATION: 20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA			
TETRA TECH	APPROVED	MO	FIGURE
	DRAFTED	AW	5-31
	PROJECT#	1303.049	
	DATE	05/20/13	

P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\Updated Figures



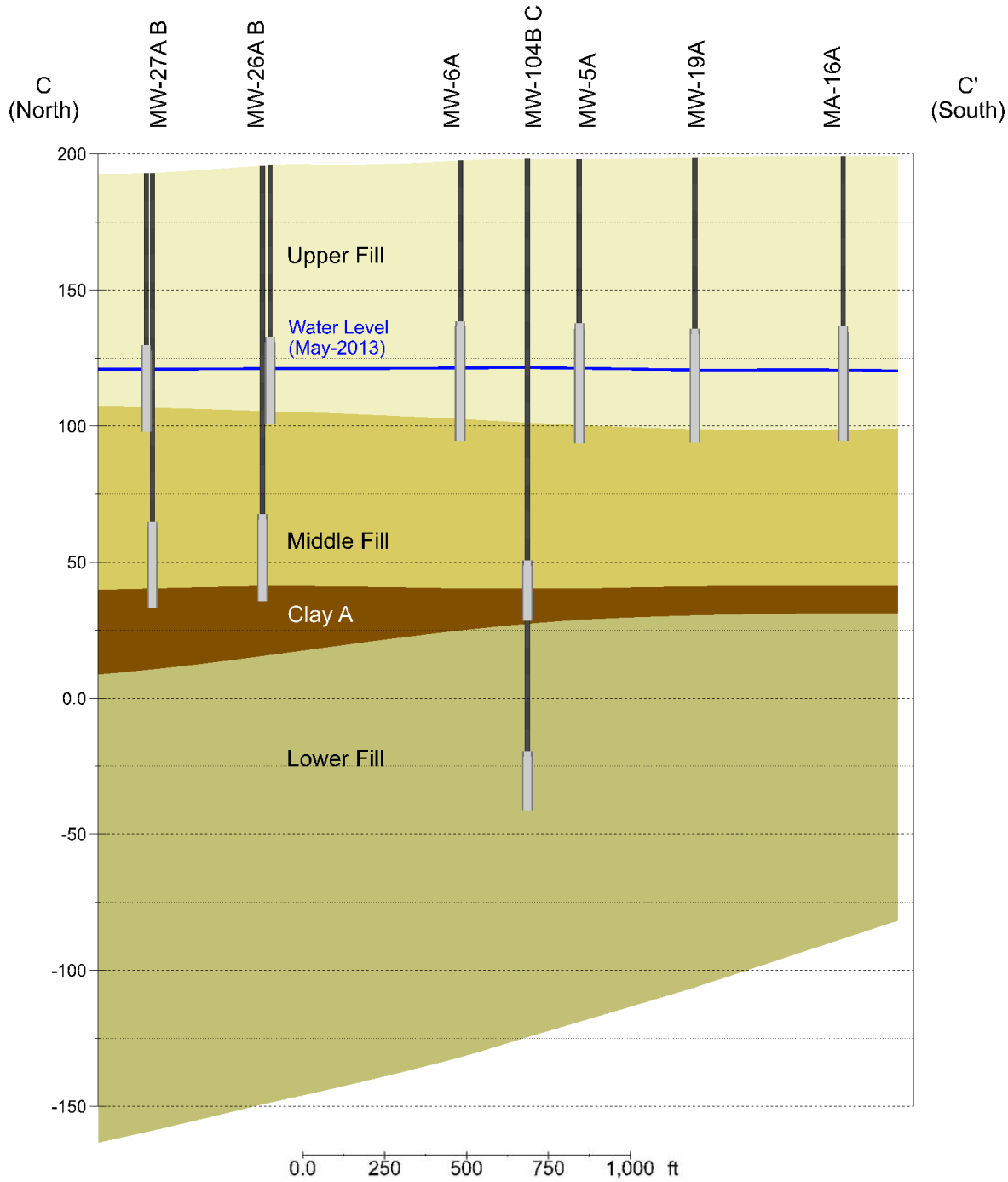
TITLE:	PCE CONTAMINATION ALONG C-C' FOURTH QUARTER 2013		
LOCATION:	20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA		
TETRA TECH	APPROVED	MO	FIGURE
	DRAFTED	AW	5-32
	PROJECT#	1303.049	
	DATE	05/20/13	

P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\Updated Figures



TITLE:	TCE CONTAMINATION ALONG C-C' FOURTH QUARTER 2013		
LOCATION:	20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA		
TETRA TECH	APPROVED	MO	FIGURE
	DRAFTED	AW	5-33
	PROJECT#	1303.049	
	DATE	05/20/13	

P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\Updated Figures



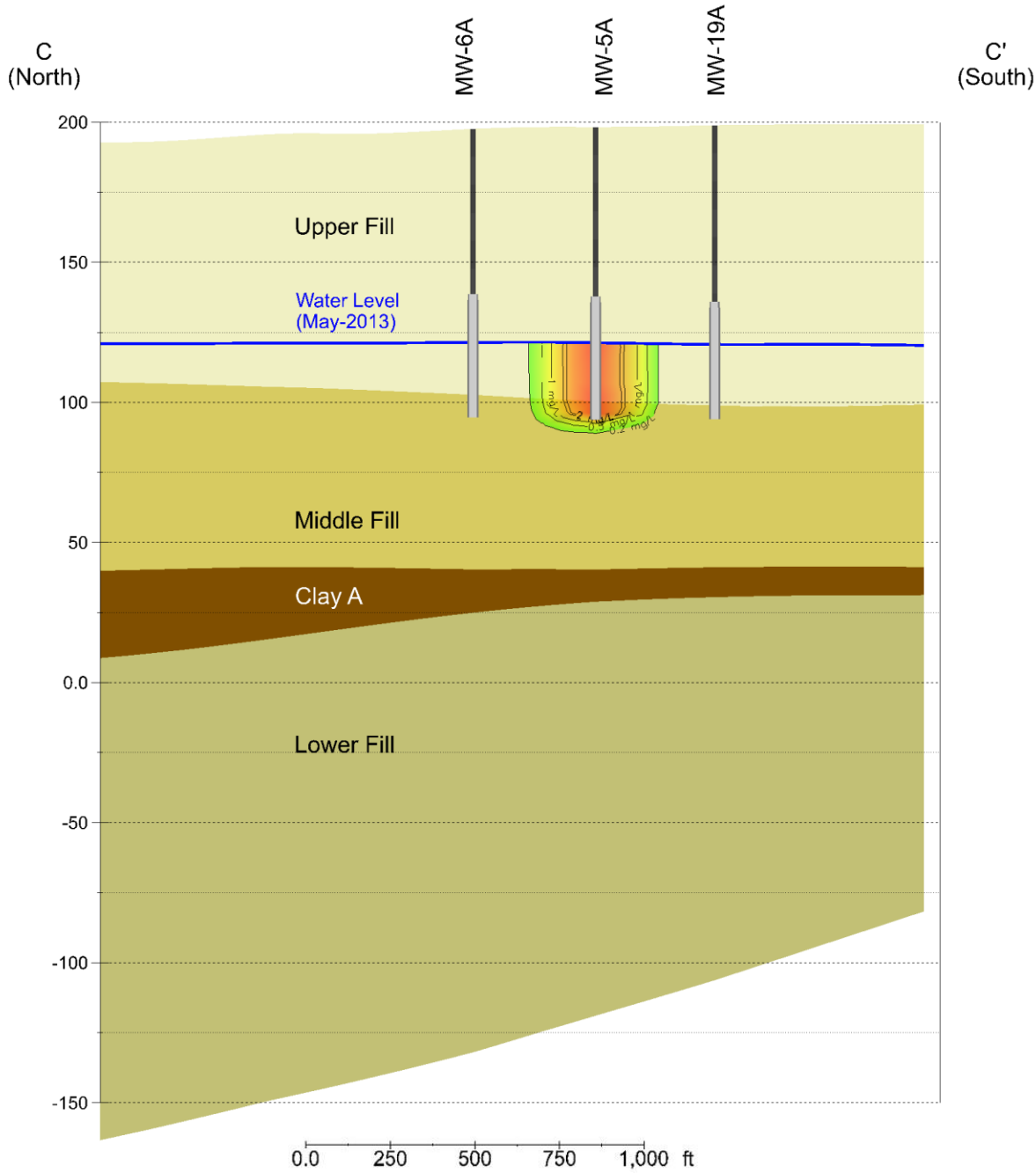
TITLE: **1,1-DCE CONTAMINATION ALONG C-C'**
FOURTH QUARTER 2013

LOCATION: **20TH STREET AND FACTOR AVENUE**
WQARF SITE, YUMA, ARIZONA

TETRA TECH

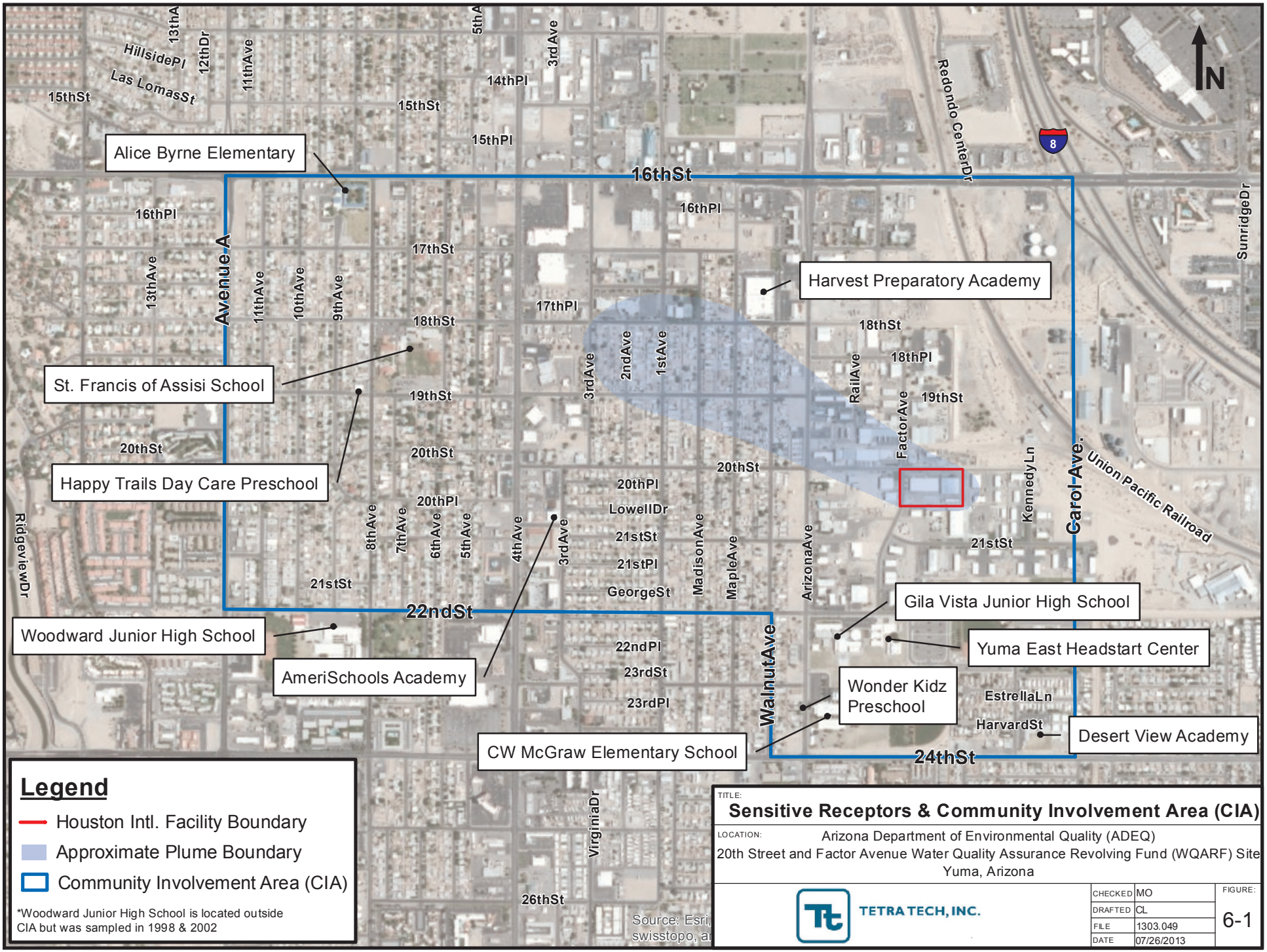
APPROVED	MO	FIGURE
DRAFTED	AW	5-34
PROJECT#	1303.049	
DATE	05/20/13	

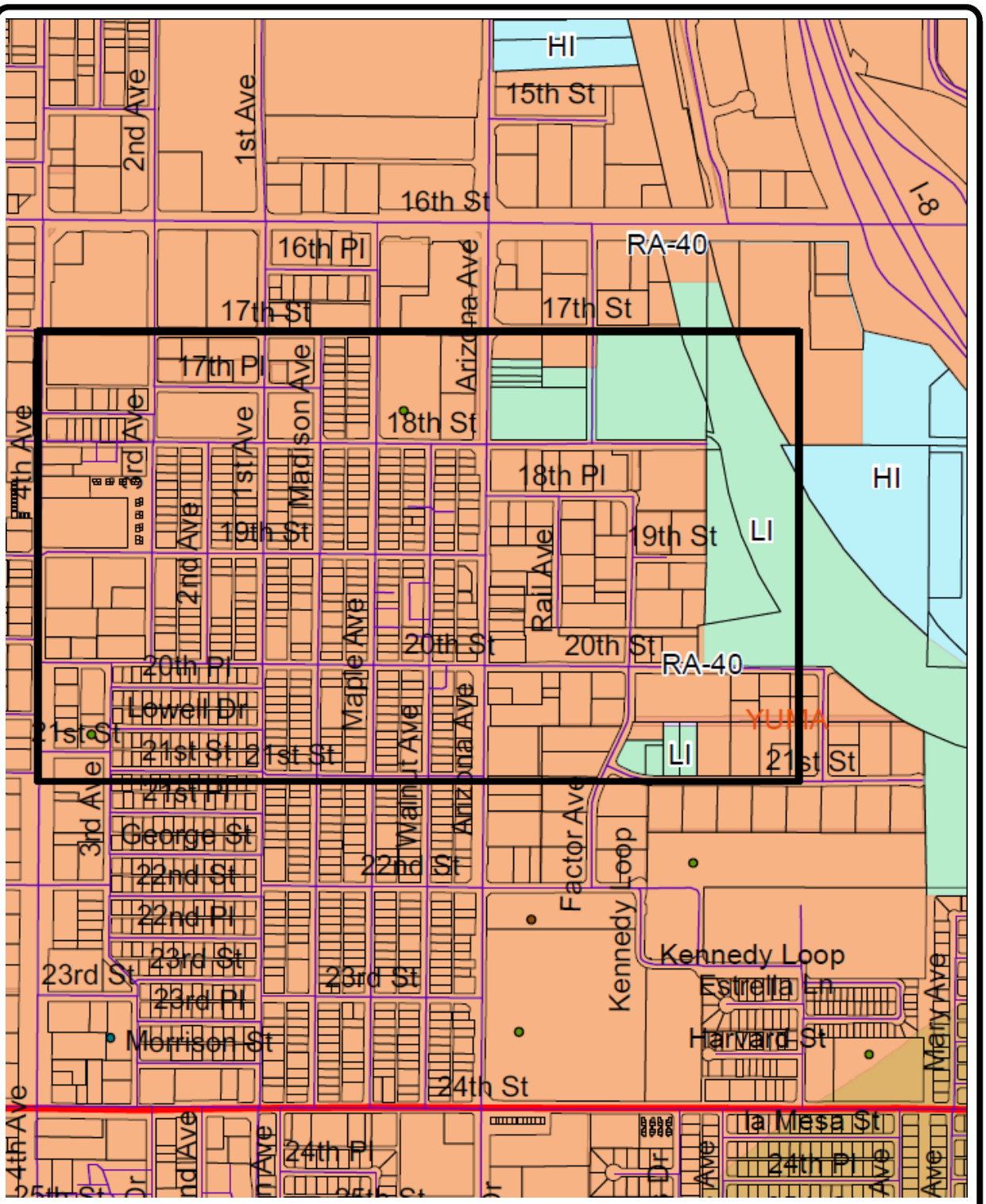
P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\Updated Figures



TITLE:	CN CONTAMINATION ALONG C-C' FOURTH QUARTER 2013		
LOCATION:	20TH STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA		
TETRA TECH	APPROVED	MO	FIGURE
	DRAFTED	AW	5-35
	PROJECT#	1303.049	
	DATE	05/20/13	

P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\Updated Figures


Alice Byrne Elementary
Harvest Preparatory Academy
St. Francis of Assisi School
Happy Trails Day Care Preschool
Woodward Junior High School
AmeriSchools Academy
Gila Vista Junior High School
Yuma East Headstart Center
Wonder Kidz Preschool
CW McGraw Elementary School
Desert View Academy
16thSt
22ndSt
24thSt
Avenue A
Carol Ave.
Walnut Ave
Union Pacific Railroad
Redondo Center Dr
Factor Ave
Rail Ave
Kennedy Ln
Madison Ave
Maple Ave
Arizona Ave
Lowell Dr
George St
Estrella Ln
Harvard St
Ridgeview Dr
Sunridge Dr
Virginia Dr
Hillside Pl
Las Lomas St
N
Legend
Houston Intl. Facility Boundary
Approximate Plume Boundary
Community Involvement Area (CIA)
*Woodward Junior High School is located outside CIA but was sampled in 1998 & 2002
Source: Esri, swisstopo, a
TITLE:
Sensitive Receptors & Community Involvement Area (CIA)
LOCATION:
Arizona Department of Environmental Quality (ADEQ)
20th Street and Factor Avenue Water Quality Assurance Revolving Fund (WQARF) Site
Yuma, Arizona
TETRA TECH, INC.
CHECKED MO
DRAFTED CL
FILE 1303.049
DATE 07/26/2013
FIGURE:
6-1
P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\FINAL RI\Figures\GIS Files



LEGEND

▬	Site Boundaries
○	County of Yuma Identified Public Educational Facilities
RA-40	Rural Areas – 40 Acre Minimum
HI	Heavy Industrial Zoning
LI	Light Industrial Zoning

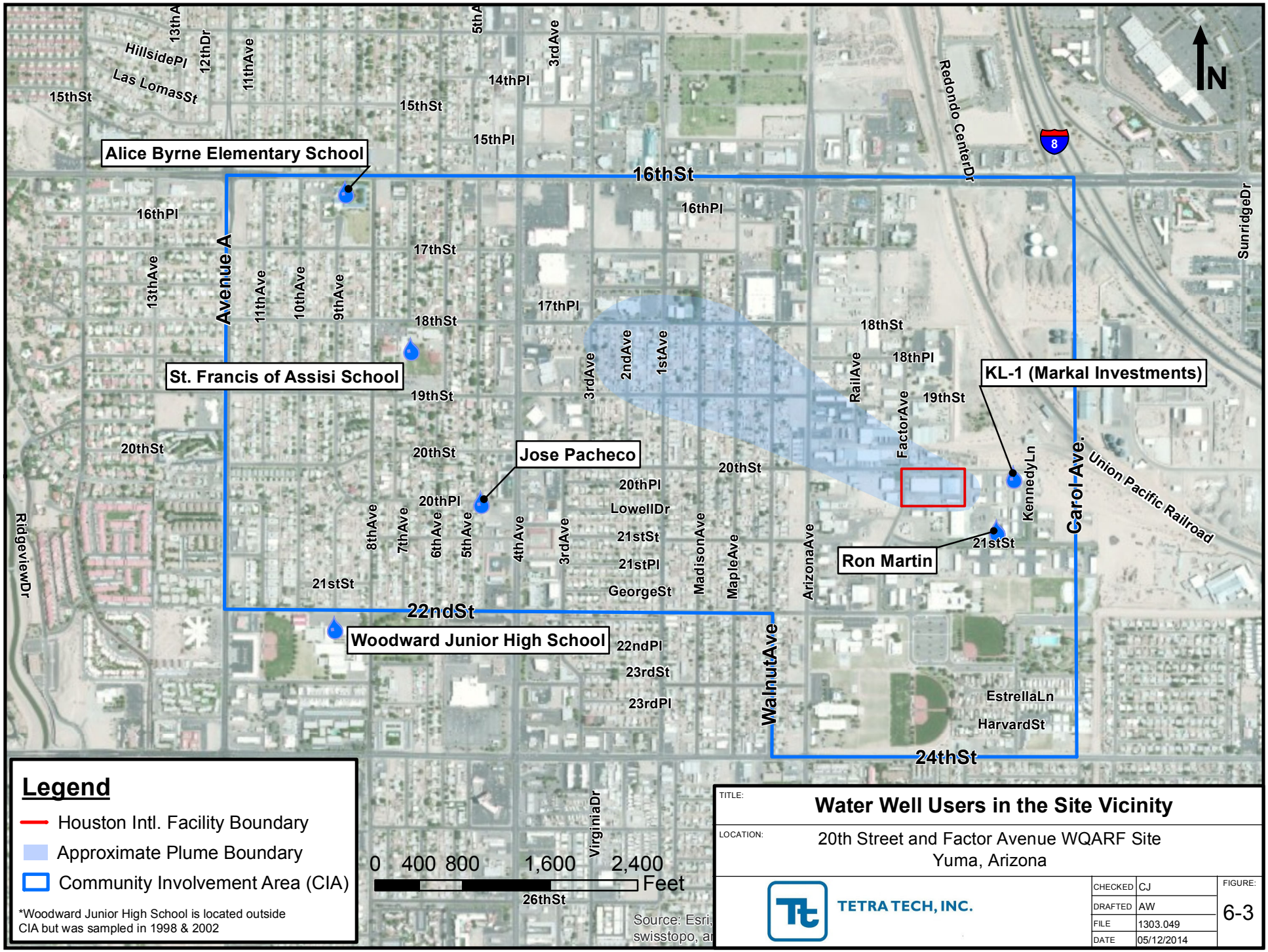
TITLE: **COUNTY OF YUMA LAND USE MAP**

LOCATION: **20th STREET AND FACTOR AVENUE WQARF SITE, YUMA, ARIZONA**

TETRA TECH

APPROVED	MO	FIGURE
DRAFTED	AW	6-2
PROJECT#	1303.049	
DATE	01/03/14	

P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\Updated Figures


Alice Byrne Elementary School
St. Francis of Assisi School
Jose Pacheco
Ron Martin
KL-1 (Markal Investments)
Woodward Junior High School
16thSt
22ndSt
24thSt
Avenue A
Carol Ave.
WalnutAve
Union Pacific Railroad
Redondo CenterDr
RailAve
FactorAve
KennedyLn
SunridgeDr
RidgeviewDr
VirginiaDr
HillsidePl
Las LomasSt
15thSt
15thPl
14thPl
16thPl
17thSt
17thPl
18thSt
18thPl
19thSt
20thSt
20thPl
LowellDr
21stSt
21stPl
GeorgeSt
22ndPl
23rdSt
23rdPl
EstrellaLn
HarvardSt
13thAve
11thAve
10thAve
9thAve
8thAve
7thAve
6thAve
5thAve
4thAve
3rdAve
2ndAve
1stAve
MadisonAve
MapleAve
ArizonaAve
N
0 400 800 1,600 2,400 Feet
Legend
Houston Intl. Facility Boundary
Approximate Plume Boundary
Community Involvement Area (CIA)
*Woodward Junior High School is located outside CIA but was sampled in 1998 & 2002
Source: Esri, swisstopo, a
TITLE: Water Well Users in the Site Vicinity
LOCATION: 20th Street and Factor Avenue WQARF Site Yuma, Arizona
TETRA TECH, INC.
CHECKED CJ
DRAFTED AW
FILE 1303.049
DATE 05/12/2014
FIGURE: 6-3
P:\WPFILES\AA Projects\1303.049 20th & Factor FY2014\Task 3 - Complete RI Report\FINAL RI\Figures\GIS Files

APPENDIX A

HGL REPORT
(on CD)

HGL
HydroGeoLogic, Inc
Exceeding Expectations

Phoenix Operations

VIA HAND DELIVERY

March 6, 2012

RECEIVED
MAR 6 2012
4189

Ana I. Vargas, Manager
Legal Support Unit
Arizona Department of Environmental Quality
1110 W. Washington Street
Phoenix, Arizona 85007

Re: Draft Final Letter Report – Remedial Investigation
20th Street and Factor Avenue WQARF Registry Site
Contract No. EV07-0046, ADEQ Task Assignment No. 09-0010
HGL Project No. AR5013

Dear Ms. Vargas:

On December 12, 2011, the Arizona Department of Environmental Quality (ADEQ) requested that HydroGeoLogic, Inc. (HGL) provide support in the preparation of the remedial investigation report for the 20th Street and Factor Avenue Water Quality Assurance Revolving Fund (WQARF) Registry Site (site). ADEQ tasked HGL to draft a letter report that summarizes the history of the WQARF site, including facilities located within the site boundary and information about their operations, chemical usage, waste stream, chemical releases, and regulatory involvement.

This letter report is divided into three sections. The first section provides a general overview of the 20th Street and Factor Avenue WQARF site and a summary of the industrial survey completed by HGL in 2007. The second section contains information regarding Yuma Recycling Center (YRC) and Houston International, Ltd. (Houston). YRC and Houston operated within the WQARF site boundary, and records available for these two facilities include detailed information about historical operations, chemical use, and regulatory involvement. The third section contains information regarding analytical results from groundwater monitoring and soil vapor surveys. An ownership history has not been conducted for this site and is not addressed in this letter report.

Documents used to draft this letter report have been assigned a six-character alpha code according to the source from which they were obtained and have been numbered sequentially within each source. When a document consisted of more than one page, each page rather than each document was numbered. These alpha codes and numbers follow a statement or group of statements and designate the source document(s) from which the information was extracted. The source documents and an index of the source documents can be found on the enclosed CD-ROM (Enclosure 1).

340 East Palm Lane, Suite A240, Phoenix, AZ 85004
Phone: (602) 307-0047 Fax: (602) 307-0048
www.hgl.com

GENERAL OVERVIEW

Site Background

The 20th Street and Factor Avenue WQARF site is located approximately 0.5 mile south of 16th Street (U.S. Highway 95) and approximately 0.75 mile east of Fourth Avenue (Interstate 8 Business Loop) in Yuma, Arizona [TFDEdQP 137].

The site is located in an industrial area in the eastern portion of Yuma County, Arizona, more specifically described as the North Half, Southwest Quarter of Section 34 in Township 8 South, Range 23 West of the Gila and Salt River Baseline and Meridian [TFDEQP 173].

The contaminants of concern (COCs) at the site include tetrachloroethene (PCE), trichloroethene (TCE), and cyanide [TFDEQP 140].

Industrial Survey Report

In 2007, HGL conducted an industrial survey for the 20th Street and Factor Avenue WQARF site. See the enclosed Figure 1 for a depiction of the industrial survey and WQARF site boundaries (Enclosure 2). The industrial survey involved researching Yuma city directories, ADEQ finding aids, and U.S. Environmental Protection Agency (EPA) Internet databases to identify businesses or activities within the industrial survey boundary that may have used the COCs [TFHGLC 1-46].

HGL identified 368 businesses within the industrial survey boundary through Yuma city directory research. Additionally, HGL identified 11 general business categories that are potentially significant users/generators of the WQARF site COCs. Of the 368 businesses identified in the industrial survey boundary, 145 could be assigned into the 11 business categories listed in Table 1 [TFHGLC 12].[1]

[1] Of the remaining 223 business, 196 consisted of retailers, wholesalers or other service-oriented companies that are not known to use COCs in their business operations. The business activities of 27 of the companies were not discernible [TFHGLC 12].

Table 1
General Business Categories
Potentially Significant Users or Generators of Site COCs

Business Categories	No. of Businesses
Chemical Dealers	4
Carpet Cleaners	3
Furniture & Store Fixture Builders/Finishers	10
Manufacturing Operations	11
Metal Fabrication/Welding Shops	4
Pest Control Services	1
Printers	19
Produce Growers/Shippers/Dealers	32
Vehicle Repair/Service	56
Photography Studio	4
Aircraft Repair	1
Total	**145**

The results of HGL's review of environmental files and databases for businesses within the industrial survey boundary are summarized in Table 2 [TFHGLC 39-41].

Table 2
File Review Results

File Type	Results	COC Use	Notes
EPA Envirofacts Multi-System Queries Database	Four facilities with Resource Conservation and Recovery Act (RCRA) identification numbers: • Sun Printing Company, • AA Sydcol, LLC, doing business as Sydcol, • Hughes Supply, Inc., and • Houston.	Not Available (N/A)	Sun Printing Company, Hughes Supply, Inc., and Houston were listed as active conditionally exempt small quantity generators. Sydcol was listed as an active small quantity generator.
RCRA Notification Files and Manifests	Eight facilities with RCRA notification and manifest files. Only three facilities listed COCs on their manifests: • Yuma Daily Sun, • Freedom Newspapers, and • Houston.	Yes	Manifests for the Yuma Daily Sun and Freedom Newspapers list petroleum distillates and PCE. Manifests for Houston list cyanide.

Table 2
File Review Results (Concluded)

File Type	Results	COC Use	Notes
RCRA Case Files, Compliance Log, and Archived Files	One RCRA closed case file for Houston.	N/A	File contained correspondence, sampling plans, and inspection reports.
Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Database	No facilities listed within the industrial survey boundary.	N/A	None.
Preliminary Assessment (PA)/Site Inspection (SI) Files	Two PA/SI files: • Houston, and • YRC.	Yes	Houston used PCE in its operations.
Underground Storage Tank (UST) and Leaking Underground Storage Tank Files	Seven facilities listed within the industrial survey boundary.*	No	Erwin's Auto Doc Repair facility listed two waste oil USTs.
ADEQ Water Quality Database	None listed within the industrial survey boundary.	N/A	None.
Registered Drywells	None listed within the industrial survey boundary.	N/A	None.
WQARF Files	One WQARF file for Houston.	Yes	Houston used photographic chemicals and water in its operations. Wastewater contained cyanide and silver. PCE was used for cleaning from 1975 to 1991.
Hazardous Waste Box Storage, Hazardous Materials Incident Logbook, and Hazardous Waste Inspections Databases	Two hazardous waste box storage files for Houston.	Yes	Files contained inspection reports from 1990, 1993, 1994, and 2004.

*The industrial survey only identifies Erwin's Auto Doc Repair as one of the seven facilities located within the industrial survey boundary.

Environmental records identified three facilities using COCs: Yuma Daily Sun, Freedom Newspapers, and Houston. A manifest for the Yuma Daily Sun notes that 400 pounds of petroleum distillates and PCE was shipped to Safety-Kleen Systems, Inc. (Safety-Kleen) in Denton, Texas, on July 24, 2003. A manifest for Freedom Newspapers notes that 385 pounds of petroleum distillates and PCE was shipped to Safety-Kleen in Denton, Texas, on June 16, 2005. A manifest for Houston notes that 2,400 pounds of cyanide-contaminated soil was shipped from the Houston facility to Fernley, Nevada, on behalf of ADEQ on March 2, 2005 [TFHGLC 39].

SITE OPERATORS

Yuma Recycling Center

YRC is located at 620 E. 20th Street, Yuma, Arizona. YRC occupies 0.93 acres of an industrial area. The site is bordered to the north by railroad tracks, to the south by 20th Street, to the west by Denny's Tile, and to the east by a vacant lot [TFDEQP 10].

Operational History

According to a 1994 ADEQ PA, an unidentified party purchased the property in 1960 and then sold it in 1986. During this time, the site was vacant desert land. YRC acquired the property in 1986 and placed a 4-inch-thick layer of aggregate-based coarse gravel on site. There were no sewer connections available on 20th Street, so a septic tank was installed with approval from the Yuma County Health Department. Site operations in 1994 included baling of aluminum cans, cardboard, and newspaper for transport to a recycler. Nonferrous metal parts were also accepted by YRC for recycling [TFDEQP 11-12].

Chemical Use

According to a 1994 PA, operations at YRC did not generate hazardous waste. YRC did, however, accept batteries, which are considered hazardous substances [TFDEQP 11-12].

Wastestream

According to a 1994 PA, batteries were sent to RSR Battery for recycling [TFDEQP 11-12].

Chemical Releases

During a "drive-by visit," approximately 20 batteries were observed lying in a pile on bare soil. Batteries were not officially accepted by YRC until June or July of 1994. The ADEQ Solid Waste Section recommended storing batteries three high on wooden pallets, with cardboard between the layers of batteries. This method of storage was adopted at the site. No stained areas were observed during a site visit. According to the PA, since the site was vacant until 1986 and only a small amount of batteries were stored on site, it is unlikely that a release of lead or sulfuric acid to groundwater has occurred [TFDEQP 14].

Regulatory Involvement

The YRC facility was identified as a potential hazardous waste site and entered into the CERCLIS database on April 19, 1994. An August 25, 1994, remedial site assessment decision document indicates conditions at the facility did not warrant further investigation under the Comprehensive Environmental Response, Compensation, and Liability Act [TFDEQP 10, 22].

Houston International. Ltd.

Houston was located at 655 E. 20th Street, Yuma, Arizona. The property was bound to the north by 20th Street, a recycling firm and a tile distributor; to the south by an automotive body shop and vacant land; to the east by vacant land; and to the west by Factor Avenue and the Arizona Periodicals warehouse [TFDEQP 596-597].

Operational History

Houston began operations as Houston Photo Products, Inc., in 1966, running a motion picture laboratory and manufacturing photographic film and paper processing equipment for the photo industry [TFDEQP 137]. Houston Photo Products, Inc., acquired Parcel 109-64-003 from Industrial Properties, Inc., in 1969 [TFDEQP 589].[2] In 1988, Houston Photo Products, Inc., changed its name to Houston International, Ltd. [TFDEQP 137]. The chemicals used at the facility included standard photographic chemicals, PCE, and small amounts of other chemicals. PCE was used in a heated vapor degreaser to clean parts until 1991 [TFDEQP 577].[3] By 1995, the motion picture laboratory was moved off site [TFDEQP 577].

Wastewater was treated to recover silver and disposed of in one of three ways. It was either discharged to water plants in front of the building, discharged to the soil in the southwest portion of the property via a sprinkler system and later to a sump, or discharged to a 1,000-gallon concrete underground sump on the east side of the property. When this sump was full, it was discharged to a disposal pond on the east side of the property. Wastewater from this disposal pond overflowed onto the adjacent property to the east of the site [TFDEQP 137-138].

The Houston facility contained four structures: main office building, west office building, carpenter shop, and paint shop. The main office building was located in the northeast side of the property and houses the administrative offices and photographic machine manufacturing area; this is also where the photographic developing process took place. The west office building was on the northwest side of the property. The east half of the building was used by the owner as a storage warehouse and a repair area for circuit boards associated with the photographic machine manufacturing operation. The west half of the building was leased to Dreamland Bedding as a mattress manufacturing facility. No chemicals were used in this building. The carpenter shop was located south of the main office building and was used for manufacturing wood and plastic panels for photographic machines. A small room contained a PCE wash tank, a nitric acid wash tank, and a water rinse tank. These tanks were drained annually, and the waste was spread into the soil. The paint shop is located west of the carpenter shop and was used for painting photographic machines and components [TFDEQP 597-598].

According to a review of aerial photographs from Landis Aerial Survey, the main office building and paint room were the only two structures on the property in 1966. In 1970, the west office

[2] HGL has not identified a lease or other documentation that would have allowed Houston to operate on the property prior to owning it.

[3] The exact year when Houston stopped using PCE in its operations is unclear. Sources are not consistent, but it appears to be somewhere between 1990 and 1992 [TFDEQP 41-42,137-138,583, 585].

building was under construction and the carpenter shop was present. A dark stain east of the property was also noted in the aerial photograph from this year. In 1973, all four structures were complete on the property, and the dark stained area was still present east of the property. A 1980 aerial photograph shows that the dark stain east of the property remained, but no other significant changes are visible. In 1984, the dark stain was significantly smaller than in previous years. In the 1988 photographs, the stained area seen in previous photographs is no longer visible [TFDEQP 603-604].

As of 2002, the facility was occupied by Houston Fearless International (a film processing equipment manufacturer), a dance studio, and a furniture warehouse. The facility was also being used for personal storage by Mr. Houston [TFDEQP 577].[4]

Chemical Use

According to a 1999 abbreviated PA report, Houston used 275 to 300 gallons of photographic chemicals per week in 1991. By 1994, this number had dropped to 500 gallons per month. Thousands of gallons of water were used in addition to the chemicals. Wastewater from the film developing process was treated to recover silver flake. Approximately 80 to 90 pounds of silver flake were generated per year [TFDEQP 42].[5]

According to a 1994 PA questionnaire completed by Houston, between 50 and 100 gallons of PCE were used each year from 1975 until 1990. This PCE was used in the evaporative degreaser for cleaning. Chemicals were stored in drums either outside on the pavement or inside on a concrete surface [TFDEQP 585].[6] A 1999 abbreviated PA states that PCE was used at the facility from 1975 until the early 1990s to clean stainless steel machine parts. PCE was kept in an on-site heating tank. Approximately 100 gallons of PCE were used per year until 1991 when the company stopped using PCE and switched to Industroclean [TFDEQP 42].[7]

In addition to PCE, potassium ferricyanide and sodium thiocyanide were also used during film processing and were discharged on the property. The amount of cyanide used during operations is unknown; however, on-site monitoring wells detected concentrations of cyanide above the Arizona Aquifer Water Quality Standard (AWQS) limit of 0.2 milligrams per liter (mg/L) [TFDEQP 578].

Wastestream

From 1975 until the early 1990s, Houston used PCE to clean stainless steel machine parts. In 1978, an employee drained 15 to 20 gallons from the bottom of the 50-gallon heated vapor

---

[4] The source document does not include any information regarding chemical usage for Houston Fearless International. Mr. Houston's first name is not included in the source document and it is unknown if this is the same person who owned Houston. No additional information has been found for Houston Fearless International.
[5] The type of photographic chemicals used is not identified in the source document.
[6] The PA questionnaire does not specify which chemicals were stored in drums.
[7] Industroclean consists of ethylene glycol monobutyl ether [TFDEQP 42].

degreaser into the wastewater sump. According to a PA questionnaire, no regulatory agencies were involved or notified and no cleanup action was taken [TFDEQP 42, 586].

In 1991, Houston was using approximately 275 to 300 gallons of photographic chemicals per week. By 1994, 500 gallons per month were being used. Wastewater generated by the film development operations was treated to recover silver flake. Treated wastewater was either discharged to water plants in front of the building, discharged to the soil in the southwest portion of the property, or discharged to a 1,000-gallon concrete underground sump on the east side of the property. When this sump was full, its contents were discharged to a disposal pond on the east side of the property. Wastewater from this disposal pond overflowed onto the adjacent property to the east of the site. Houston claimed to have stopped discharging wastewater to the ground in 1992 [TFDEQP 41-42, 137-138].[8]

According to a 1994 PA questionnaire completed by Houston, beginning in 1980 hazardous materials were transported off site by Powers & Hunt to a facility in San Diego, California. The 1994 questionnaire notes that currently hazardous materials were sent off site to Commodity Resource & Environmental, Inc. (CRE) in Mojave, California [TFDEQP 586].[9] CRE is a silver recovery company with a facility located in Phoenix, Arizona. Their services include selling silver recovery equipment, purchasing scrap black and white film, refining silver flake, and transporting bulk photographic chemical waste. CRE is also a licensed transporter of hazardous waste and maintains a facility for treatment and disposal of photographic chemical waste [TFINET 1-5].

Chemical Release

A June 1999 PA reported three sources of contamination on the property: PCE-contaminated soil, stained soil, and the underground tank.[10] In 1994, a soil vapor survey found PCE-contaminated soil near the stained soil, second building, and the 1,000-gallon underground tank.[11] The approximate area of the PCE-contaminated soil was 10,000 square feet. Samples collected by ADEQ in 1993 from the stained soil contained concentrations of chromium, silver, and zinc. The approximate area of the stained soil was 13,000 square feet. The underground tank collected PCE-laden wastewater and discharged it to the ground. As of 1999, wastewater was no longer generated or discharged, and the use and contents of the tank were unknown [TFDEQP 43].

[8] Although Houston claims to have discontinued the use of PCE in 1992, a soil vapor survey conducted in 1994 detected PCE concentrations of 7.9 micrograms per liter in the wastewater. A continuing source of PCE may have been present even though PCE was no longer being used [TFDEQP 68].
[9] The questionnaire does not specify whether the waste was designated for disposal, recycling, or sale.
[10] The 20th Street and Factor Avenue WQARF Site summary available on the ADEQ website refers to the underground tank as an underground sump [TFDEQP 138].
[11] HGL believes that the "second building" mentioned in the PA is the main building previously described in the operational history section of this report [TFDEQP 40, 597].

Regulatory Involvement

In 1990, a release of PCE from a 1,000-gallon underground tank was reported to the ADEQ UST Section. The underground tank was a concrete holding tank and did not meet the technical definition of a UST; therefore, the incident was reported to the ADEQ Hazardous Waste Section (HWS). ADEQ HWS required that a hazardous waste determination be performed for all waste generated by Houston [TFDEQP 41].

In 1990, Foree & Vann, Inc., a contractor to Houston, completed a Phase II environmental site assessment. Results of the assessment led to the installation of three groundwater monitoring wells. Table 3 summarizes the concentrations of PCE and TCE above the AWQS standard of 5 micrograms per liter (µg/L) from 1992 to 1996 [TFDEQP 149, 162].

Table 3
Groundwater Sampling Results, Foree & Vann, Inc., 1992–1996

COCs	1992	1993	1996
PCE	20,000 µg/L	270,000 µg/L	3,000 µg/L
TCE	ND	7.8 µg/L	ND

ND = Not detected above AWQS limit

On December 1, 1992, a complaint was reported to ADEQ regarding the Houston photography laboratory. The informant stated that the facility was discharging product in a field behind the facility through an aboveground sprinkler system. The field turned green in color. Trees were planted in the field, but they immediately died and the green color returned to the surface. A strong odor present in the surrounding area was also reported. The ADEQ Office of Waste Programs conducted a hazardous waste inspection on June 24, 1993, in response to the complaint. During the investigation Herb Houston, who is identified as a facility representative on the inspection report, told ADEQ that the wastewater had been sampled and determined to be nonhazardous, but he could not provide supporting documentation. Mr. Houston also stated that ADEQ had given approval for the continual discharge of the wastewater. Again, no documentation was provided to support his claim [TFDEQP 1-4].

In 1993, ADEQ HWS inspected the facility, and in 1994 entered into a compliance order with Houston. A soil vapor survey was conducted and found elevated concentrations of PCE in the samples. TCE and 1,1,1-trichloroethane were also detected in the soil vapor samples [TFDEQP 138]. On April 19, 1994, the facility was listed in CERCLIS as a conditionally exempt generator of hazardous waste [TFDEQP 41].

In 1994, a soil vapor survey indicated elevated concentrations of PCE, TCE and 1,1,1-trichloroethane in the soil. In 2001, ADEQ also found soils contaminated with hydrogen cyanide on the site with areas that exceeded the nonresidential soil remediation levels of 35 milligrams per kilogram (mg/kg) [TFDEQP 138-139].

In March 2000, the site was placed on the WQARF Registry with a score of 31 out of 120. In 2001, ADEQ began site investigation activities at the facility [TFDEQP 138, 578].

In June 2001, additional sampling of the wastewater disposal system and groundwater monitoring wells at the site began. Sample analysis detected PCE and cyanide. Cyanide was detected in the wastewater located in the sump/septic system at concentrations of 20 mg/L [TFDEQP 578]. In October 2001, soil sampling was conducted to further characterize cyanide contamination. The highest concentration of total cyanide detected was 2,000 mg/kg, found in the disposal pond located on the east side of the property. The contamination was also deepest in this area, with contaminates detected at a depth of 7 feet. Due to overflow from the disposal pond, cyanide contamination extended approximately 175 feet east of the property and to a depth of 5 feet in this area.

In the southwest portion of the property, cyanide contamination extended to a depth of approximately 2 to 3 feet. The highest concentrations of total cyanide detected in surface samples ranged from 400 to 800 mg/kg. In February 2002, subsurface gas sampling was completed to determine if the cyanide compounds were degrading to hydrogen cyanide. Samples were taken from a depth of 2 to 3 feet, but no hydrogen cyanide was detected [TFDEQP 580].

GeoTrans, Inc. (GeoTrans) conducted groundwater testing from 2001 to 2010 at the WQARF site. Concentrations of PCE were detected as high as 600 µg/L in 2001 and at 130 µg/L by 2008. The highest concentrations of TCE were 33 µg/L in 2001 and 23 µg/L in 2008. Cyanide was detected at 12 mg/L in 2001 and 18 mg/L in 2008. In 2010, only 6 of the 22 wells sampled had concentrations of contaminants above the AWQS limits. Cyanide was not detected above the AWQS limit in any of the wells. Results from the six wells sampled in 2010 are summarized in Table 4 [TFDEQP 216-224, 233].[12]

Table 4
Groundwater Sampling Results, GeoTrans, 2010

Sampling Location	Depth (ft bgs)	PCE (µg/L)	TCE (µg/L)	1,1-DCE (µg/L)
AWQS Limit		**5**	**5**	**7**
MW-8A	65.4-105.4	97	36	17
MW-8B	107-117	78	26	11
MW-8C	170-210	11	ND	ND
MW-18A	65.5-105.5	13	17	ND
MW-21B	161-201	ND	16	ND
MW-102B1	110-120	9.2	ND	ND

1,1-DCE - 1,1,1-dichloroethene ft bgs - feet below ground surface ND - Not detected above AWQS limit

[12] Historical sampling data was incomplete and did not include any information regarding the depths at which the samples were taken. Figure 3 of the GeoTrans report shows the location of each sample taken [TFDEQP 216-224, 228].

From 2003 to 2010, GeoTrans sampled between 4 and 32 wells for a soil vapor survey. In 2003, four wells were sampled, and the highest concentration of PCE was 240,000 micrograms per cubic meter ($\mu g/m^3$). In 2008, 10 wells were sampled, and the highest concentrations of PCE and TCE were 28,000 $\mu g/m^3$ and 70 $\mu g/m^3$, respectively [TFDEQP 203-204].[13] Table 5 summarizes the highest concentration of contaminants above the EPA Residential Regional Screening Level (RSL) in 2010 [TFDEQP 203-204,229].

Table 5
Soil Vapor Sampling Results, GeoTrans, 2010

Sampling Location	Depth (ft bgs)	PCE ($\mu g/m^3$)	TCE ($\mu g/m^3$)
EPA Residential RSL		**0.41**	**1.2**
1A	19.5-20	4,500	29
1B	34.5-35	5,200	27
1C	49.-50	3,500	22
1D	64.5-65	224	ND
2B	9.5-10	25	ND
3A	4.5-5	20	ND
3B	9.5-10	24	ND
4A	4.5-5	14	ND
4B	9.5-10	14	ND
6A	4.5-5	18	ND
6B	9.5-10	55	ND
8A	2.5-5	36	ND
8B	7.5-10	35	ND
8C	17.5-20	35	ND
8D	27.5-30	16	ND
8E	37.5-40	68	13
8F	47.5-50	12	ND
8G	57.5-60	16	ND
9A	4.5-5	95	ND
9B	9.5-10	163	ND
10A	4.5-5	251	ND
10B	9.5-10	515	7

[13] The soil vapor survey data was incomplete for 2003 to 2009 and did not include information regarding depth. Figure 3 of the GeoTrans report shows the location of each sample taken [TFDEQP 228].

Table 5
Soil Vapor Sampling Results, GeoTrans, 2010 (Concluded)

Sampling Location	Depth (ft bgs)	PCE ($\mu g/m^3$)	TCE ($\mu g/m^3$)
EPA Residential RSL		**0.41**	**1.2**
11A	4.5-5	3,100	ND
11B	9.5-10	4,500	59
12A	4.5-5	51	ND
12B	9.5-10	81	ND

ft bgs - feet below ground surface
ND - Not detected above EPA RSL limit

CONCLUSION

Records that provide information on historical site operations, chemical use, and regulatory involvement were found for only two facilities, Houston and YRC.

PCE was regularly used at the Houston facility from 1975 to the early 1990s. Houston discharged wastewater containing high concentrations of PCE at its facility. Groundwater and wastewater samples from 1993 through 2010 indicate concentrations of PCE and TCE above the AWQS of 5 µg/L, as well as concentrations of cyanide above the AWQS of 0.2 mg/L. Additionally, elevated PCE concentrations were detected during soil vapor surveys in 1994, after Houston had switched from using PCE to Industroclean.

A small amount of used batteries were the only hazardous substances stored at YRC, and it is unlikely that they contributed to contamination at the site.

Regulatory records for the Yuma Daily Sun and Freedom Newspapers did not contain information on the operations of these companies. However, the Yuma Daily Sun shipped 400 pounds of petroleum distillates and PCE to Safety-Kleen in 2003. Freedom Newspapers also shipped 385 pounds of petroleum distillates and PCE to Safety-Kleen in 2005. There is no evidence of discharge from these facilities [TFHGLC 39].

If you have any questions about this letter report, please contact me by telephone at (602) 476-5301 or by email at ilewisbravo@hgl.com.

Sincerely,

Irma Lewis Bravo
Project Manager

Enclosures (2)

cc: Chris Roman, HGL (w/ enclosures)

This page was intentionally left blank.

ENCLOSURE 1

SOURCE DOCUMENTS AND INDEX

This page was intentionally left blank.

ARIZ A DEPARTMENT OF ENVIRONM. TAL QUALITY
OFFICE OF WASTE PROGRAMS

HAZARDOUS WASTE INSPECTION REPORT

INSPECTION DATE: June 24, 1993

COMPANY NAME: Houston Photo Lab

EPA ID NUMBER: AZD983480963

STREET ADDRESS: 655 East 20th Street

CITY/STATE/ZIP: Yuma, Arizona 85365

TELEPHONE NUMBER: (602) 782-3677

MAILING ADDRESS: Same as above

FACILITY REPRESENTATIVE(S) AND TITLE(S):

1. Herb Houston

A.D.E.Q. REPRESENTATIVE(S):

1. Laura Manley
2. Dale Anderson

OTHER PARTICIPANTS/AGENCIES:

NOTE: All regulatory citations to 40 CFR are as adopted by the Arizona Administrative Codes (AAC) R18-8-201 et seq. Any omissions in this report shall not be construed as a determination of compliance with applicable regulations.

GENERAL INFORM. 'ION

On June 24, 1993, an inspection was conducted at the Houston Photo Lab (HPL) facility in Yuma, Arizona. The inspection was in response to complaint #C93-029 (attached). The complaint alleges that the facility is using an above ground sprinkler system to discharge an unknown product. The product is being discharged to a small field behind the facility. The complaint states that the field turned green in color and would not support any vegetation.

According to Mr. Houston, HPL is a developing company for motion picture film. The primary waste generated at this facility is wastewater from the film "washing" process. The wastewater is green in color, due to a dye additive. HPL has been discharding the wastewater to a small field directly behind the building. HPL has been using an above ground sprinkler system for discharging the wastewater. The use of the above ground system has been in affect for several years. Prior to this, HPL utilized an underground piping system. HPL currently discharges approximately several hundred gallons per day. According to Mr. Houston, the wastewater has been sampled and was listed non-hazardous, therefore non-regulated. Mr. Houston could not provide documentation to support this calssification. Mr. Houston stated that ADEQ had given approval for the continual discharge of the wastewater. This approval apparently came from a meeting with ADEQ to include Marc Lame, ADEQ's Ombudsman. Mr. Houston could not provide documentation supporting this approval. Mr. Houston stated that an Aquifer Protection Permit application had been submitted to the department and is undergoing a review.

Mr. Houston stated that HPL has investigation currently being conducted as a result of a Phase I Site Assessment Report. The Phase I Assessment was requested by the bank before a loan would be approved. Mr. Houston stated that the Phase I revealed soil and groundwater contaminated with PERC. Mr. Houston stated that the PERC contamination resulted from historical dumping that occurred at the facility.
HPL has contracted with Foree & Van to perform additional investigative and remedial actions at this site. Mr. Jeff Trembly with the Remedial Investigation Hydrology Unti has been overseeing the actions taken by HPL.

TABLE OF ATTACHMENT

Location: Houston Photo Lab

Date: June 24, 1993

Attachment A Complaint

M

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

HAZARDOUS WASTE COMPLAINTS, INCIDENTS, REFERRALS **FILE NUMBER** 93-029

DATE 12/01/92 **TIME** 11:15 A.M. **RECEIVED BY** R. Noyes **INITIALED** TJN

NAME OF SITE/OPERATOR Houston Photo Lab

EPA ID NO./GENERATOR STATUS:

ADDRESS **CITY** Yuma, AZ **PHONE**

X-STREETS

INFORMER'S NAME Chris Van Elk

ADDRESS **CITY** **PHONE** 944-8309

REFERRED BY **AGENCY** **PHONE**

COMPLAINT: Facility was discharging product to a field behind the facility through an above ground sprinkler system. The field turned green in color. The facility then plowed the field and installed an underground leaching system to discharge product. The facility planted trees in the field and they immediately died and the green color returned to the surface. A strong odor is present in the surrounding areas.

DISPOSITION/OTHER:

COPY TO/DATE:

REFERRED TO/DATE:

10/92

PRELIMINARY ASSESSMENT

YUMA RECYCLING CENTER

620 E. 20TH STREET
YUMA, ARIZONA 85364
YUMA COUNTY

EPA ID#: AZ0000124818

STATE ID#: 1251

PREPARED BY:
MARY E. HESSLER

AUGUST 25, 1994

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
WASTE PROGRAMS DIVISION
REMEDIAL PROJECTS SECTION
PREREMEDIAL UNIT

THIS REPORT IS PRINTED ON RECYCLED PAPER

PRELIMINARY ASSESSMENT

YUMA RECYCLING CENTER

TABLE OF CONTENTS

Section I — Page

1.0 INTRODUCTION 1

1.1 Apparent Problem 2

2.0 SITE DESCRIPTION 2

2.1 Site Location 2

2.2 Site Description 2

2.3 Operational History 3

2.4 Regulatory Involvement 4

3.0 HRS FACTORS 5

3.1 Sources of Contamination 5

3.2 Groundwater Pathway 6

3.3 Surface Water Pathway 7

3.4 Soil Exposure and Air Pathways 7

3.4.1 Physical Characteristics 7

3.4.2 Soil and Air Targets 7

3.4.3 Soil Exposure and Air Pathway Conclusions 8

4.0 EMERGENCY RESPONSE CONSIDERATIONS 9

5.0 SUMMARY 9

6.0 ADEQ MANAGEMENT REVIEW/CONCURRENCE 11

7.0 REMEDIAL SITE ASSESSMENT DECISION - EPA REGION IX 12

8.0 REFERENCES 13

List of Figures

Figure 1. Site Location Map 2A

Figure 2. Site Diagram 3A

List of Tables

Table 1. Population Within 4 Miles of the Yuma Recycling Center Site 8

Section II

APPENDICES

A. Contact Reports

B. Photographs

SECTION I

PRELIMINARY ASSESSMENT

YUMA RECYCLING CENTER

1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA), Region IX, under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization of 1986 (SARA) has tasked the Arizona Department of Environmental Quality (ADEQ) to conduct a Preliminary Assessment (PA) at Yuma Recycling Center (YRC), located in Yuma, Yuma County, Arizona. The purpose of the PA is to review existing information on the site and its environs to assess the threat(s), if any, posed to public health, welfare, or the environment and to determine if further investigation under CERCLA/SARA is warranted. The scope of the PA includes the review of information available from Federal, state, and local agencies, and performances of an on-site reconnaissance visit.

Using these sources of information, the site is then evaluated under EPA's Hazard Ranking System (HRS) criteria to assess the relative threat associated with actual or potential releases of hazardous substances at the site. The HRS has been adopted by the EPA to help set priorities for further evaluation and eventual remedial action at hazardous waste sites.

The HRS is the primary method of determining the site's eligibility for placement on EPA's National Priorities List (NPL). The NPL identifies sites at which EPA may conduct remedial

TFDEQP000009

response actions. This report summarizes the finding of these preliminary investigative activities.

The YRC site was identified as a potential hazardous waste site and entered into the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) on April 19, 1994, and was assigned CERCLIS ID# AZ0000124818.(1) The major concern was that undrained batteries were observed on bare soil.(2)

1.1 Apparent Problem

The apparent problem is a pile of approximately 20 batteries on bare soil which was observed at the site.(2)

2.0 SITE DESCRIPTION

2.1 Site Location

The Yuma Recycling Center (YRC) site is located at 620 E. 20th Street, Yuma, Arizona. The geographic coordinates of the site are 32° 41' 29" N latitude, 114° 36' 41" W longitude. The U. S. Geological Survey location is Township 8 South, Range 23 West, Section 34, SE¼, SW¼, NW¼ of the Gila & Salt River Baseline & Meridian [(C-8-23)34BCD].(3) Figure 1, the Site Location Map, shows the site location.

2.2 Site Description

The YRC site occupies approximately 0.93 acres in an industrial area.(4, 5) The site is bordered to the north by the railroad tracks. North of the railroad tracks is the Olfactory Corporation. The site is bordered to the east by a vacant lot and to the west by Denny's Tile. The site owner believes that the vacant lot east of the site may be part of a railroad yard. The

site is bordered to the south by 20th Street, and south of 20th Street is a business with no sign.(4)

The site is not paved, but is covered with a layer of aggregate-based coarse (ABC) gravel. There is one office building onsite. There is a covered area north of the building, and a storage building north of the covered area. There is a baler east of the buildings. Several bales of newspaper, aluminum cans, and cardboard were observed onsite. A pile of approximately 20 batteries was observed during the drive-by inspection, but no batteries were observed during the onsite visit. Pallets of used batteries are presently stored onsite. Nonferrous metal parts are accepted for recycling. They are stored in an empty drum in the covered area.(2, 4, 6) Figure 2, the Site Diagram, shows the site layout.

2.3 Operational History

The site has been privately owned since 1960 or before. One private owner acquired the property in 1960 and sold it in 1986. The site was vacant desert land in 1986, so it is believed that there were no onsite operations before 1986.

The present owner acquired the property in 1986. In 1986, the site owner placed a 4-inch thick layer of aggregate-based coarse gravel onsite. Sewer connection is not available on 20th Street. Approval for septic tank installation was received from the Yuma County Health Department, and a septic tank was installed. The septic tank received domestic sewage. The present owner operates the YRC business onsite.(4, 5, 7)

The site was a vacant lot until 1986. A photograph taken by the property owner in 1986 indicated that the site was vacant desert land.(See Appendix C) However, the surrounding businesses were already in operation in 1986, as indicated in the photograph. The present site

operations include baling of aluminum cans, cardboard, and newspaper for transport to a recycler. YRC also accepts nonferrous metal parts for recycling. These operations do not generate hazardous substances. However, used batteries, which are hazardous substances, are being accepted for recycling. It is unknown where the used batteries are being stored. Used batteries are sent to RSR Battery for recycling.(2, 4, 6)

2.4 Regulatory Involvement

Federal

There has been no regulatory involvement directly with the EPA.

State

The YRC site is not located within the boundaries of any Water Quality Assurance Revolving Fund (WQARF) Project Areas.

The ADEQ Hazardous Waste Section regulates companies pursuant to the resource Conservation and Recovery Act (RCRA). The site is not listed as a generator, or transport, storage, or disposal facility in the RCRA database (TSD). There is not a history of RCRA inspections or compliance actions involving the YRC site.(8, 9, 10)

The ADEQ Emergency Response Unit documents chemical spills and incidents from 1984 - 1992 in a series of annual hazardous materials incident logbooks. There have not been any incidents involving the YRC site.(11)

There are no onsite drywells registered with the ADEQ Industrial/Drywell Unit. No drywells were observed during the on-site visit.(4, 12)

There are no ADEQ Underground Storage Tanks (USTs) Section records for the site. No USTs were observed during the onsite visit.(4, 13, 14)

The ADEQ Aquifer Protection Permit (APP) Program regulates discharges to the surface or subsurface, such as surface impoundments and large septic systems, which may affect groundwater. Prior to the APP Program, a facility would have had to file a Notice of Disposal (NOD). The Water Pollution Compliance Unit (WPCU) Database tracks APPs and NODs. This database also tracks if any facility has obtained a National Pollutant Discharge and Elimination System (NPDES) permit. According to this database the YRC site has never filed a NOD nor an APP application, and does not have a NPDES permit.(15) No activities that would require a permit were observed during the onsite visit.(4)

The ADEQ Air Quality Division maintains records of air permits issued in Yuma County. A permit usually is indicative of activities associated with hazardous materials used on site. There are no air permits regarding the YRC site.(16)

Local

The City of Yuma Fire Department has no records of releases from the Yuma Recycling Center site.(17)

The Yuma County Health Department (YCHD) issued a construction permit for a septic tank at the YRC site. Later, the YCHD gave final approval for the septic tank.(7)

3.0 HRS FACTORS

3.1 Sources of Contamination

The following potential sources have been identified at the site:

- Undrained Batteries

There was a pile of approximately 20 batteries on bare soil observed during the drive-by visit. YRC did not officially accept batteries until June or July of 1994. The ADEQ Solid Waste Section recommended that batteries be stored three high on wooden pallets, with cardboard between the layers of batteries, and this practice has been adopted at the site. As of July, 1994, there were two pallets of batteries onsite. These batteries may contain lead or sulfuric acid, and both of these may be considered to be hazardous substances. Batteries are sent to RSR Battery for recycling. No stained areas were observed during the onsite visit.(2, 4, 6)

3.2 Groundwater Pathway

Depth to groundwater ranges from 58 to 75 feet in wells within ¼ mile of the YRC site, and the unsaturated zone is comprised primarily of sands. Groundwater flow beneath the site is to the northwest.(18, 19, 20)

The nearest drinking water well to the site is a domestic well located 1 mile from the site. There are 315 domestic wells within a 4-mile radius of the site. There is one public supply well for the town of Winterhaven, California, between 3 and 4 miles from the site. This well supplies drinking water to 202 service connections. Altogether, these wells supply drinking water to approximately 1,300 people.(20, 21, 22, 23, 24)

Groundwater occurs at 58 feet below the site, and the unsaturated zone is comprised primarily of sands. Groundwater withdrawn within 4 miles of the site supplies drinking water to approximately 1,300 people. Because the site was a vacant lot until 1986 and because only a small quantity of batteries are stored onsite, it is unlikely that a release of lead or sulfuric acid to groundwater has occurred.(18, 19, 20, 21, 22, 23, 24)

3.3 Surface Water Pathway

The nearest surface water is the B Canal, located approximately ½ mile uphill of the site. The nearest downhill surface water bodies are the South Gila Valley Main Canal, located approximately 1½ miles east of the site, and the Colorado River located more than 2 miles north of the site. The South Gila Valley Canal is bermed to prevent surface water runoff from entering it.(3) The site is located in the 100-500 year floodplain.(25) There are no drinking water intakes, wetlands, or fisheries located along the canals. Instead, canal water is used for irrigation.(26) A small number of sensitive environments are located in the Yuma area.(27, 28)

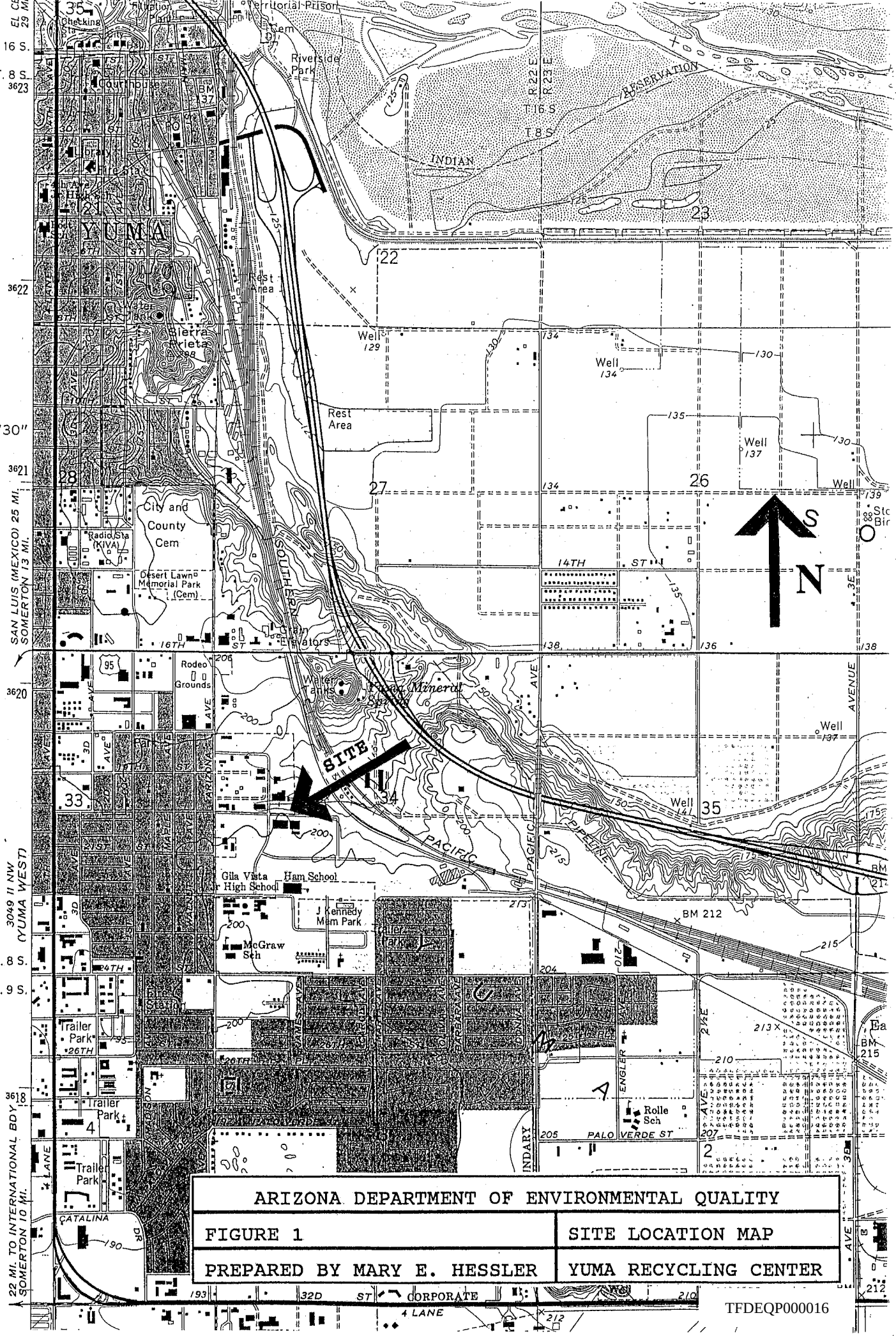
3.4 Soil Exposure and Air Pathways

3.4.1 Physical Characteristics

The site is a gravel-covered lot in an industrial area. There are two buildings and a covered area onsite. The covered area has a concrete floor. There is also some concrete around the baler. This site is fenced to prevent access.(4)

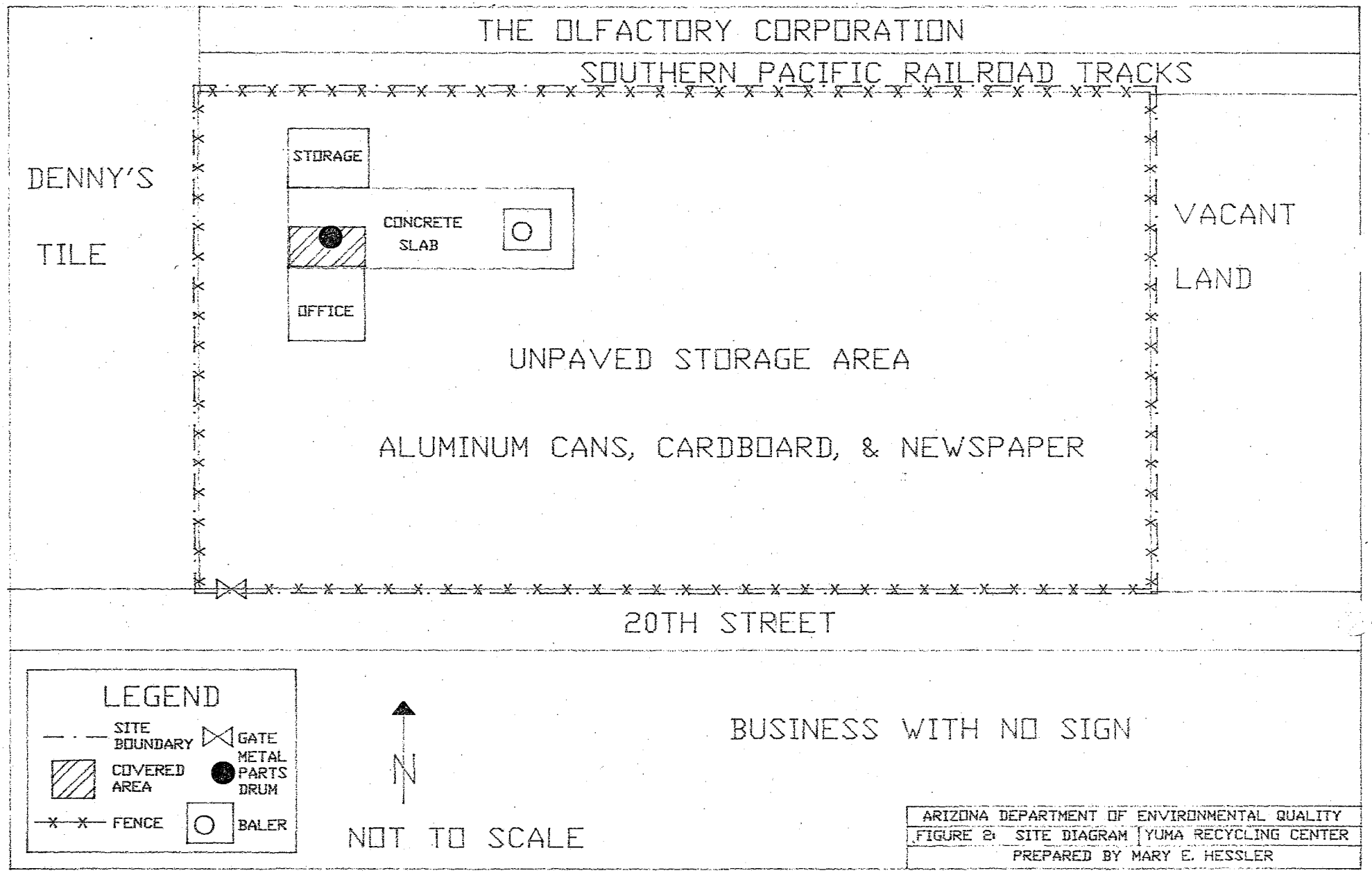
3.4.2 Soil and Air Targets

In the Yuma area, there are habitats for several special status species. The Yuma Clapper Rail, a federally listed endangered species, and the Northern Mexican Garter Snake, a federal candidate species, have been documented as occurring in the vicinity of the site. The habitat for the Yuma Clapper Rail is along streams and marshes. The habitat for the Northern Mexican Garter Snake is in permanent marshes and streams. The Flat-Tailed Horned Lizard, a federal candidate species, is not documented as occurring in the vicinity of the site. However, its habitat is in the sandy desert south and east of Yuma and west of the Gila and Tinajas Altas



ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY	
FIGURE 1	SITE LOCATION MAP
PREPARED BY MARY E. HESSLER	YUMA RECYCLING CENTER

TFDEQP000016



ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
FIGURE 2: SITE DIAGRAM | YUMA RECYCLING CENTER
PREPARED BY MARY E. HESSLER

Mountains. The site is located on the Rositas Sand, a sandy soil, in an industrial area.(27, 28, 29)

There are no onsite residents. There are 3 workers onsite. The dimensions of the site are 275 feet by 147 feet, so all workers would be within 200 feet of the battery pallets. The nearest schools to the site are the Ham School and the Gila Vista Junior High School, both located approximately ¼ mile south of the site. The nearest residential area is approximately ¼ mile west of the site. The Yuma Rodeo Grounds are located approximately ½ mile northwest of the site. The residents within 4 miles of the site are summarized in Table 1.(3, 4, 5, 29)

Table 1: Population within 4 miles of the Yuma Recycling Center Site

Distance	Population
0 - ¼ mile	639
¼ - ½ mile	2,131
½ - 1 mile	8,483
1 - 2 miles	15,942
2 - 3 miles	20,704
3 - 4 miles	21,997

3.4.3 Soil and Air Pathway Conclusions

There are a few small concrete-covered areas onsite; the remainder of the site is covered with gravel. There are no residents or schools onsite. There are 3 workers onsite. The site may be considered to be habitat for the Flat-Tailed Horned Lizard, a federal candidate species. (4, 5, 27, 28, 29)

4.0 EMERGENCY RESPONSE CONSIDERATIONS

The National Contingency Plan [40 CFR 300.415(b)(2)] authorizes the Environmental Protection Agency to consider emergency response actions at those sites which pose an imminent threat to human health or the environment. For the following reasons a referral to Region's IX's Emergency Response Section does not appear to be necessary:

- No indication of a release of hazardous substances into the environment

5.0 SUMMARY

The Yuma Recycling Center (YRC) site is located at 620 E. 20th Street, Yuma, Arizona. The geographic coordinates of the site are 32° 41' 29" N latitude, 114° 36' 41" W longitude. The U. S. Geological Survey location is Township 8 South, Range 23 West, Section 34, SE¼, SW¼, NW¼ of the Gila & Salt River Baseline & Meridian [(C-8-23)34BCD].(3)

The site occupies approximately 0.93 acres in an industrial area. The site is not paved, but is covered with a layer of aggregate-based coarse (ABC) gravel. There is one office building onsite. There is also a covered area and a baler onsite. Several bales of newspaper, aluminum cans, and cardboard were observed onsite. A pile of approximately 20 batteries was observed during the drive-by inspection. Batteries are presently stored on pallets.(2, 4, 6)

The site was a vacant lot until 1986. From 1986 until present, the site was operated as a recycling center where aluminum cans, cardboard, and newspaper are collected, baled, and shipped to a recycler.(4) YRC installed a septic tank for domestic sewage at the site, under a construction permit issued by the Yuma County Health Department. There has been no other regulatory involvement at this site.(7, 9, 10, 11, 12, 13, 14, 15, 16, 17)

Groundwater occurs at 58 feet below the site, and the unsaturated zone is comprised primarily of sands. Groundwater withdrawn within 4 miles of the site supplies drinking water to approximately 1,300 people. Because the site was a vacant lot until 1986 and because only a small quantity of batteries are stored onsite, it is unlikely that a release of lead or sulfuric acid to groundwater has occurred.(18, 19, 20, 21, 22, 23, 24)

The nearest surface water body is the B Canal, located approximately ½ mile uphill of the site. The other nearby surface water bodies are bermed to prevent runoff from entering them. There are no drinking water intakes or fisheries associated with nearby surface water; it is used for irrigation. There are a few sensitive environments located in the vicinity of the nearby surface water bodies.(3, 26, 27, 28)

No soil or air samples have been taken at the site. The gravel-covered site is surrounded by a fence. There are 3 workers onsite. There are no residents or schools directly onsite. However, some special status species have been documented as occurring in the vicinity of the site.(3, 4, 5, 27, 28)

The pertinent HRS factors for this site are:

- Small hazardous waste quantity
- No observed staining
- No onsite residences or schools

6.0 ADEQ MANAGEMENT REVIEW/CONCURRENCE:

Lowell Carty 8-30-94

Lowell Carty, Unit Manager, Date

OWP, Pre-Remedial Unit

A450 0170

REMEDIAL SITE ASSESSMENT DECISION - EPA REGION IX

Site Name: Yuma Recycling Center EPA ID#: AZØ 000124818

Alias Site Names:

City: Yuma County or Parish: Yuma State: AZ

Refer to Report Dated: August 25, 1994 Report type: Preliminary Assessment

Report developed by: Arizona Department of Environmental Quality

DECISION:

|X| 1. Further Remedial Site Assessment under CERCLA (Superfund) is not required because:

|X| 1a. Site does not qualify for further remedial site assessment under CERCLA (Site Evaluation Accomplished - SEA)

| | 1b. Site may qualify for further action, but is deferred to: | | RCRA | | NRC

| | 2. Further Assessment Needed Under CERCLA: 2a. (optional) Priority: | | Higher | | Lower

2b. Activity Type: | | PA | | SI | | ESI | | HRS evaluation

| | Other:

DISCUSSION/RATIONALE:

Conditions at the site do not warrant further evaluation under CERCLA

Report Reviewed, Approved, and Site Decision Made by: Signature: Carolyn J. Douglas Date: 9/1/95

EPA Form # 9100-3 Rev. 5/93

SITE RECONNAISSANCE INTERVIEW AND OBSERVATIONS REPORT

Arizona Department of Environmental Quality
3033 North Central Avenue
Phoenix, AZ 850012

OBSERVATIONS MADE BY: DATE: 6/9/94

Mary E. Hessler, Environmental Health Specialist II
Linda Burgess, Environmental Program Specialist

FACILITY REPRESENTATIVE and TITLE:

Larry Craig, Owner

SITE:

Yuma Recycling Center

EPA ID: AZ0000124818 STATE ID: 1251

INFORMATION RECEIVED:

The site was a vacant lot in an industrial area when Mr. Craig bought the land in 1986. The site was covered with 4 inches of aggregate-based coarse gravel. This area may have been developed since the 1930s.

The business is recycling of aluminum cans, cardboard, and nonferrous metals. Aluminum cans and cardboard are baled and sold. Nonferrous metal parts are collected in drums and sold. Occasionally, newspaper is baled and sold. This facility used to accept batteries, but no longer accepts them. However, some customers leave batteries onsite. There were no batteries onsite at the time of the visit.

No wells, drywells, surface impoundments, pits, sumps, above ground storage tanks, landfills, used oil, or chemicals were observed onsite. No staining was observed onsite. However, a black stain was observed along the railroad tracks immediately north of the site and in the railroad yard east of the site. There is one septic tank that receives sewage generated onsite. The septic tank was installed in 1986. Sewer connection is not available along 20th Street.

The site is bordered to the north by the railroad tracks and the Olfactory Corporation north of the railroad tracks. It is bordered to the south by 20th Street, and a business with no name south of 20th Street. It is bordered to the east by vacant land which may be part of a railroad yard, and to the west by Denny's Tile Company.

DRAFT

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY ASSURANCE REVOLVING FUND

REVISED ELIGIBILITY AND EVALUATION FORM

OCTOBER 2, 1996

EMERGENCY ACTION INFORMATION

SITE NAME: Houston International

EMERGENCY: _____ YES __X__ NO

DESCRIPTION: Known release of PCE-contaminated wastewater to the ground; process water, which contains PCE, is routinely discharged to the ground; PCE is present in onsite monitoring wells.

FACILITY INFORMATION

SITE NAME: Houston International

SITE ADDRESS: 655 E. 20th Street, Yuma, AZ 85365

SITE CONTACT: Herb Houston

ADDRESS: _____

COUNTY: Yuma

LAT/LONG: _____

OWNER: Houston International

OPERATOR: Same as Owner

ADDRESS: P. O. Box 5269
Yuma, AZ 85366

ADDRESS: _____

SCORING INFORMATION

A. RELEASE EVENT (10 pts)	7
B. SITE AND CONTAMINANT CHARACTERISTICS (30 pts)	22
C. HUMAN EXPOSURE ROUTES (65 pts)	0
D. ENVIRONMENTAL FACTORS (15 pts)	6
TOTAL SCORE	35

NOTE: GUIDANCE WILL BE DEVELOPED FOR COMPLETING THIS FORM

I. SCORING SUMMARY

A. RELEASE EVENT (10 pts)*				7
1. SOIL (3 pts)			3	
2. GROUNDWATER (4 pts)			4	
3. SURFACE WATER (3 pts)			0	
B. SITE AND CONTAMINANT CHARACTERISTICS (30 pts)				22
1. CONTAMINANT SPECIFIC (15 pts)			13	
a. Contaminant Hazard (5 pts)		4		
b. Extent of Contamination (4 pts)		4		
c. Mobility (3 pts)		3		
d. Persistence (2 pts)		2		
e. Bioaccumulation (1 pt)		0		
2. SITE SPECIFIC (15 pts)			9	
a. Groundwater (10 pts)		9		
i. DRASTIC Maps (5 pts)	4			
ii. Other Factors (5 pts)	5			
b. Surface Water (5 pts)		0		
i. Slope/Distance (3 pts)	0			
ii. Flood Frequency (1 pt)	0			
iii. Groundwater Recharge (1 pt)	0			
C. HUMAN EXPOSURE ROUTES (65 pts)				0
1. GROUNDWATER (30 pts)			0	
a. Drinking Water Wells Affected (20 pts)		0		
i. Actual - Population (10 pts)	0			
ii. Actual - Standards (5 pts)	0			
iii. Potential - Population (5 pts)	0			
b. Impacted Production Wells (5 pts)		0		
c. Primary Source of Drinking Water/ No Alternative Water Supply (5 pts)		0		
2. SURFACE WATER (20 pts)			0	
a. Population Affected (15 pts)		0		
i. Actual - Population (7 pts)	0			
ii. Actual - Standards (5 pts)	0			
iii. Potential - Population (3 pts)	0			
b. Uses of Surface Water (5 pts)		0		
3. SOIL (15 pts)			0	
a. Population (5 pts)		0		
b. Accessibility (5 pts)		0		
c. Sensitive Receptors (5 pts)		0		
D. ENVIRONMENTAL FACTORS (15 pts)				6
1. ECOLOGICAL FACTORS (9 pts)			6	
2. RECREATIONAL USES (3 pts)			0	
3. CULTURAL RESOURCES (3 pts)			0	

*Potential total points

A. RELEASE EVENT (10 pts) 7

If contaminants are present in the groundwater, surface water, or soil, score a known release to the appropriate media. If there is no release to groundwater, surface water, or soil, the remainder of the form should not be completed.

1. SOIL (3 pts)
Please use the following table:

Type of Release	Soil Score
Known	3
Unknown	1
None	0

3 Total Soil Score (A.1.)

2. GROUNDWATER (4 pts)

Type of Release	Groundwater Score
Known	4
Unknown	2
None	0

4 Total Groundwater Score (A.2.)

3. SURFACE WATER (3 pts)

Type of Release	Surface Water Score
Known	3
Unknown	1
None	0

0 Total Surface Water Score (A.3.)

7 **Total Release Event Score (A.1. + A.2. + A.3.)**

B. SITE AND CONTAMINANT CHARACTERISTICS (30 pts)

1. CONTAMINANT SPECIFIC (15 pts)

a. Contaminant Hazard ___4___

Contaminant hazard is the ratio (R) of the contaminant concentration to the benchmark for the substance. For groundwater:

R = C/Drinking Water HBGL

For Surface Water:

R = C/Drinking Water HBGL

For Soil:

R = C/Residential HBGL

Determine a score for each of the three media as follows: First, determine the highest possible value of R for each substance; then and add the R values together. Then add together the R values for the three media (groundwater, surface water, and soil). Finally, choose the highest score from the following table:

R	Score
R < 1	0
1 < R < 10	1
10 < R < 100	2
100 < R < 1,000	3
1,000 < R < 10,000	4
10,000 < R	5

b. Extent of Contamination ___4___

What is the extent of release of the hazardous substance? Use the quantity that yields the highest score. Please use the following table:

Criteria				Score
Volume of Soil (cu. yds.)	Ground-water* (wells)	Rivers/ Streams (miles)	Lakes (ac. of surface)	
> 1,000	> 15	> 1.0	> 100	4
101 - 1,000	10 - 15	0.5 - 1.0	26 - 100	3
10 - 100	5 - 9	0.2 - 0.5	5 - 25	2
< 10	1 - 4	< 0.2	< 5	1
Unknown	Unknown	Unknown	Unknown	0

*Production wells only

c. Mobility ___3___

The Groundwater Protection Levels (GPLs) are used as a measure of mobility, and onsite soil concentrations © will be compared to the GPL. If site-specific data is available, then the GPL will be calculated using the ADEQ model. If site-specific data is not available, then the minimum GPL will be used. Choose the highest score from the following table:

Criteria	Score
Groundwater Contamination at the Site	3
C > Site Specific GPL	2
C > Minimum GPL	1
C < Minimum GPL	0
No GPL Available	0

d. Persistence ___2___

Persistence is determined by the type of contaminant. Please choose the highest score from the following table:

Criteria	Score
Metals, Polycyclic Compounds, and Halogenated Hydrocarbons	2
Straight Chain Hydrocarbons, Substituted Ring Compounds, and Other Ring Compounds	1
Easily Biodegradable Compounds	0

e. Bioaccumulation ___0___

Look up the Food Chain Bioaccumulation value in the Superfund Chemical Data Matrix (SCDM). Please use the following table:

Criteria	Score
Bioaccumulation Value > 50	1
Bioaccumulation Value ≤ 50	0

___13___ Total Contaminant Specific Score (B.1.)
(B.1.a + B.1.b. + B.1.c. + B.1.d. + B.1.e.)

2. SITE SPECIFIC (15 pts)
   a. Groundwater (10 pts)
      i. DRASTIC Maps ____4____

The DRASTIC score will be determined from the county DRASTIC map. If pesticides are of concern at the site, use the Pesticide DRASTIC map; otherwise, use the General DRASTIC map. If no DRASTIC map is available, the attached instructions will be used to generate a pseudo-DRASTIC score. The score will be evaluated according to the following table:

Criteria	Score
200 ≤ DRASTIC Score	5
160 ≤ DRASTIC Score ≤ 199	4
120 ≤ DRASTIC Score ≤ 159	3
80 ≤ DRASTIC Score ≤ 119	2
DRASTIC Score ≤ 79	1

      ii. Other Factors ____5____

Other factors include depth from the bottom of contamination to groundwater and the groundwater to surface water flow. Please choose the highest score from the following table:

Criteria		Score
Depth from Contamination to Groundwater (feet)	0	5
	1- 25	4
	26-100	3
	101-300	2
	>300	1
Potential for Groundwater to Reach Surface Water	Groundwater Discharging to Surface Water	2
	Groundwater Wells Pumped to Surface Water	1

b. Surface Water (5 pts)

i. Slope/Distance ___0___

Determine the average slope between the site and surface water, and determine the distance to the nearest surface water. Use the following table to determine the slope/distance value:

Slope, %	Distance in Feet 0-100	101-500	501-1,000	>1,000
0 - 3	3	1	1	0
3 - 5	3	2	1	1
5 - 7	3	3	2	1
> 7	3	3	3	1

ii. Flood Frequency ___0___

Score 1 point if the site is located within the 100-year floodplain.

iii. Groundwater Recharge ___0___

Score 1 point if the site is located in an area of active groundwater recharge.

___9___ Total Site Specific Score (B.2.)
(B.2.a.i. + B.2.a.ii. + B.2.b.i. + B.2.b.ii. + B.2.b.iii.)

___22___ Total Site and Contaminant Characteristics Score (B.1 + B.2)

C. HUMAN EXPOSURE ROUTES (65 pts)

1. GROUNDWATER (30 pts)

If there is no release or threat of release to groundwater, do not complete this section (I.C.1.).

a. Drinking Water Wells Affected

i. Actual Contamination - Population ___0___

This will be evaluated if any contamination has been detected in drinking water wells. Please choose the highest score from the following table:

Population Served by Groundwater: Actual Contamination Choose the Highest Score	
Population served by groundwater	Score
0	0
1- 25	4
25- 999	6
1,000-4,999	8
≥5,000	10

ii. Actual Contamination - Standards ___0___

Score 5 points if any contamination has been detected in drinking water wells at concentrations exceeding the Maximum Contaminant Levels (MCLs).

iii. Potential Contamination - Population ___0___

This will be evaluated if (1) contamination has not impacted any drinking water wells, but may impact them in the future or (2) contamination has impacted drinking water wells, and it may spread to other drinking water wells. Choose the highest score from the following table:

Population Served by Groundwater: Potential Contamination Choose the Highest Score				
Population Served	Distance Down gradient from Contamination			
	0-¼ Mile	¼-1 Mile	1-4 Miles	>4 Miles
0	0	0	0	0
1 - 25	3	2	1	0
25 - 5,000	4	2	1	0
≥ 5,000	5	3	1	0

b. Impacted Production Wells ___0___
Score 5 points if contamination has been detected in any production wells, including wells closed due to contamination.*

c. Primary Source of Drinking Water/
No Alternative Drinking Water Supply ___0___
Score 5 points for sites where groundwater is the primary source of drinking water or where no alternative drinking water supply is available.

___0___ Total Groundwater Score (C.1.)
(C.1.a.i. + C.1.a.ii. + C.1.b. + C.1.c.)

2. SURFACE WATER (15 pts)
If there is no release or threat of release to surface water, do not complete this section (I.C.2.).

a. Drinking Water Intakes Affected
i. Actual Contamination - Population ___0___
This will be evaluated if contamination has impacted drinking water intakes. Please choose the highest score from the following table:

*The End Use Subcommittee is presently developing end use water quality standards. After these standards are developed, the Site Prioritization Subcommittee may recommend that 5 additional points be made available for impacted wells in excess of the end use water quality standards. These 5 points are not presently part of the model.

Population Served by Surface Water: Actual Contamination Choose the Highest Score	
Population served by surface water	Score
0	0
1- 25	3
25- 999	5
1,000-4,999	6
≥5,000	7

ii. Actual Contamination - Standards ___0___
Score 5 points if any contaminants have been detected at the drinking water intakes at concentrations exceeding Maximum Contaminant Levels (MCLs).

iii. Potential Contamination - Population ___0___
This will be evaluated if (1) contamination has not impacted any drinking water intakes, but may impact them in the future or (2) contamination has impacted drinking water intakes and it may spread to other drinking water intakes.

Population Served by Surface Water: Potential Contamination Choose the Highest Score			
Population Served	Distance Downgradient from Contamination		
	0 - 1 Mile	1 - 15 Miles	> 15 Miles
0	0	0	0
1 - 25	2	1	0
25 - 5,000	2	1	0
≥ 5,000	3	1	0

b. Uses of Surface Water ___0___

Please choose the highest score from the following table:

Criteria	Score
Drinking water or full body contact	5
Aquatic and wildlife/warm or cold water fishery or incidental human contact	4
Agriculture or livestock watering	2
Other uses	1
Not Applicable	0

___0___ Total Surface Water Score (C.2.)
(C.2.a.i. + C.2.a.ii. + C.2.b.)

3. SOIL (15 pts)

If there is no release to soil, do not complete this section (I.C.3.). If the contaminant concentration is below the Arizona Human Health-Based Guidance Level (HBGL), score 0 for this section. If the contaminant is not present in the upper 2 feet of soil, score 0 for this section.

a. Population Affected ___0___

Please choose the highest score from the following table:

Distance from Site	Population		
	1-100	100-500	>500
0 - ½ mile	3	4	5
½ - 1 mile	0	1	2

b. Sensitive Receptors ___0___

Sensitive receptors include schools, day care, hospitals, and nursing homes. Choose the highest score from the following table:

Criteria	Score
Sensitive Receptors Onsite	5
Adjacent to the Site	4
Within ¼ Mile	3
> ¼ Mile	0

c. Accessibility ___0___

If the contaminant concentration exceeds the HBGL and is present in the upper 2 feet of soil, then choose the highest score from the following table:

Criteria	Score
No Fence or Paving	5
Non-Maintained Fence or Paving	3
Maintained Fence or Paving	1
Maintained Fence and VEMUR	0

___0___ Total Soil Option 1 Score (C.3.)
(C.3.a. + C.3.b. + C.3.c.)

D. ENVIRONMENTAL FACTORS (15 pts)

1. ECOLOGICAL (9 pts) ___6___

   Evaluate ecological factors for conditions onsite. Choose the highest score from the table on the next page.

2. RECREATIONAL (3 pts) ___0___

   Score 3 points if the site is used for public recreation.

3. CULTURAL RESOURCES (3 pts) ___0___

   Score 3 points if any of the following are present onsite:

   - Historical Sites
   - Burial Grounds
   - Archaeological Sites
   - Impacts to other States or Indian Tribal Lands

___6___ **Total Environmental Factors Score (D.1.+ D.2. + D.3.)**

Ecological Factor	Score
Critical habitat[a] for Federal or State designated endangered species Critical areas identified under the Clean Lakes Program[b] National or State Park National or State Monument Designated Federal Wilderness area National Lakeshore Recreational Area	9
Special status species[c] documented as occurring in the vicinity of the site National Preserve National Forest National or State Wildlife Refuge Federal land designated for protection of natural ecosystems Administratively proposed Federal Wilderness Area Spawning areas critical[d] for the maintenance of fish/shellfish species within rivers or lakes Migratory pathways and feeding areas critical for maintenance of anadromous fish species within river reaches or areas in lakes in which the fish spend extended periods of time Terrestrial areas utilized for breeding by large or dense aggregations of animals National river reach designated as Recreational	6
Federal category 1 or category 2 candidate species or State candidate species documented as occurring in the vicinity of the site Federal or State designated Scenic or Wild River State land designated for wildlife or game management State designated Natural Areas Particular areas, relatively small in size, important to maintenance of unique biotic communities	3
State designated areas for protection or maintenance of aquatic life[e]	1

Notes:

[a]Critical habitat as defined in 50 CFR 424.02

[b]Clean Lakes Program critical areas (subareas within lakes, or in some cases entire small lakes) identified by State clean Lake Plans as critical habitat (Section 314 of Clean Water Act, as amended)

[c]Federal-listed endangered or threatened species, Federal-proposed endangered or threatened species, State-listed endangered or threatened species

[d]Limit to areas described as being used for intense or concentrated spawning by a given species.

[e]Areas designated under Section 305(a) of Clean Water Act, as amended.

II. SOCIAL/ECONOMIC FACTORS

Please attach a narrative regarding social/economic factors. The following factors should be considered:

- Responsible Parties
- Diminution of Property Value
- Brownfields Development
- Environmental Justice
- Remediation Feasibility
- Cost Effectiveness and No Action Cost
- Possible End Uses (Probability of Restoration)
- Loss of Business
- Loss of Resources
- Previous Agreements
- Already Initiated Remediation (Ongoing Remediation)
- Time/Schedule for Remediation
- California Project Management Issues
- Data Availability
- Data Confidence
- Other Factors

W-10100 1.3

ABBREVIATED PRELIMINARY ASSESSMENT REPORT

HOUSTON INTERNATIONAL

655 E. 20TH STREET
YUMA, ARIZONA 85365
YUMA COUNTY

EPA ID#: AZD983480963

STATE ID#: 1253

PREPARED BY:
MARY E. HESSLER AND SCOTT D. GOODWIN

JUNE 8, 1999

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
WASTE PROGRAMS DIVISION
SUPERFUND PROGRAMS SECTION
SITE ASSESSMENT UNIT

THIS REPORT IS PRINTED ON RECYCLED PAPER

PRELIMINARY ASSESSMENT

HOUSTON INTERNATIONAL

INTRODUCTION

The U.S. Environmental Protection Agency (EPA), Region IX, under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA) has tasked the Arizona Department of Environmental Quality (ADEQ) to conduct a Preliminary Assessment (PA) at the Houston International (HI) site, located at 655 E. 20th Street, Yuma, Yuma County, Arizona. The HI site was entered into the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) on April 19, 1994, and assigned an EPA ID number of AZD983480963. The EPA identified the site for CERCLIS through its investigation of Yuma County under the Border Initiative Program. The geographic coordinates of the site are 32° 41' 27" north latitude, 114° 36' 38" west longitude. The U.S. Geological Survey location of the site is Township 8 South, Range 23 West, Section 34, NW¼, NE¼, SW¼ of the Gila and Salt River Baseline and Meridian [(A-08-23)34cab]. Figure 1, Site Location Map, shows the location of the site.

SITE DESCRIPTION

The site occupies 3.6 acres in an industrial area. The site is bordered to the north by 20th Street and to the west by Factor Avenue. There are businesses north of 20th Street and west of Factor Avenue. The site is bordered to the east by a vacant lot and to the south by a vacant lot and vacant buildings. Figure 2, Site Diagram, shows the site layout.

There are four buildings onsite. The first building is near the northwest corner of the site, facing 20th Street. The building presently includes three businesses. The northwest corner of the building is an exercise studio. The southwest corner of the building is a warehouse for Yuma Furniture. The east half of the building is a storage area for J. Marcel. The building also includes the owner's office and is listed as 653 E. 20th Street.

The second building is located east of the first building and also faces 20th Street. It presently houses Houston Fearless International, a manufacturer of film processing equipment. The third building is located behind (south) of the second building and houses a carpentry shop. The fourth building is located west of the third building and houses the paint shop.

The site also includes a paved parking lot and landscaped areas north of the first two buildings, paved areas between the buildings, and unpaved areas along the fence on the east, south, and west sides of the site. The site is surrounded by a 7-foot chain-link fence with locking gates at the northeast and northwest corners of the facility. The fence encloses part of the HI site, as shown in Figure 2, Site Diagram.

HI conducted soil sampling, soil vapor sampling, and groundwater sampling at the site. Results indicated that PCE is present in soil at concentrations up to 140 micrograms per kilogram (µg/kg), that PCE is present in soil vapor at concentrations up to 52,000 micrograms per liter (µg/L) and that PCE is present in groundwater at concentrations up to 270,000 µg/L. Sampling locations are shown in Figures 3, 4, and 5. Analytical results are presented in Tables 1 through 13. A discussion of sampling results is included in Appendix B.

REGULATORY INVOLVEMENT

U. S. Environmental Protection Agency.

The site was listed on CERCLIS on April 19, 1994.

Houston International is listed in the Resource Conservation and Recovery Information System (RCRIS) as a conditionally exempt generator of hazardous waste.

Arizona Department of Environmental Quality

On October 9, 1990, the ADEQ Underground Storage Tank (UST) Section was informed that PCE had been released from the 1,000 gallon UT. The onsite UT is a concrete holding tank, and does not meet the definition of an underground storage tank (UST); therefore, on October 19, 1990, the ADEQ UST Section referred the HI site to the ADEQ Hazardous Waste Section (HWS).

On August 12, 1991, the HWS requested additional information from HI. On December 10, 1991, the HWS sent a letter of warning. The HWS required that a hazardous waste determination be performed for all wastes generated by HI. On April 8, 1992, the HWS referred the site to the ADEQ Water Pollution Compliance Unit (WPCU).

On June 29, 1992, the WPCU held a technical assistance meeting with HI. The WPCU identified several violations and requested a remedial action plan. In July 1992, HI claimed that they quit discharging wastewater to the ground. HI submitted a sampling plan dated July 28, 1992, to the WPCU, and the WPCU provided comments on October 26, 1992. On January 8, 1993, the WPCU referred the HI site to the Remedial Projects Section (RPS) for investigation under CERCLA. The RPS referred the site to the HWS.

On June 24, 1993, the site was inspected by the ADEQ Hazardous Waste Section (HWS). ADEQ and HI entered into a Compliance Order in June 1994. In response to the Compliance Order, HI submitted a Site Assessment Plan (SAP), dated July 1994, and addenda to the SAP, dated August and September 1994. ADEQ approved the SAP with associated addenda in October 1994. Soil sampling was reportedly conducted in December 1994 and January 1995. A hydropunch survey was reportedly conducted in May 1995. An upgradient monitoring well was installed in March 1996. A discussion of sampling results is included in Appendix B.

In addition, there is a septic tank north of the first building, and another septic tank east of the second building. There is an underground tank (UT) east of the second building. In addition, there are four onsite groundwater monitoring wells. Also, there is one offsite groundwater monitoring well. See Figure 2.

Based upon information provided by Houston International, city directories, and aerial photographs, the site history is as follows. The site was vacant desert land until 1966. In 1966, Houston Photo Products began its operation at the site. The 1967 aerial photograph shows the second building mentioned above. Stained soil was observed onsite and on the adjacent property to the east, beginning with the 1970 aerial photograph. In the 1984 aerial photograph, all four buildings were onsite. In 1988, the name was changed to Houston International.

HI was engaged in two operations. HI operated a motion picture laboratory under contract with the Yuma Proving Ground as well as a manufacturing facility for the manufacture of photographic film and paper processing equipment for the photo industry. The chemicals that have been used at the site include standard photographic chemicals, tetrachloroethylene (PCE), and small amounts of various other chemicals.

In 1991, HI indicated that 275 to 300 gallons per week of photographic chemicals were used each week. In 1994, HI indicated that 500 gallons per month were used. In addition, thousands of gallons of water were used. The wastewater from the film developing operation was treated to recover silver flake. This silver flake was sent to Powers & Hunt Company or Commodity Refining Exchange for silver recovery. Approximately 80 to 90 pounds per year of silver flake were generated. The treated wastewater was disposed in the following ways. Some of the wastewater was discharged to the 1,000-gallon, concrete, underground tank. When this tank was full, it was discharged to the ground east of the building. Second, wastewater was discharged directly to the ground. Third, wastewater was discharged to the ground by a sprinkler system. When wastewater was discharged to the ground, it flowed onto the adjacent property to the east of the site.

From 1975 until the early 1990s, HI used PCE to clean stainless steel machine parts. PCE was kept in an onsite heating tank. HI used approximately 100 gallons of PCE per year. In 1978, a HI employee drained 15 to 20 gallons from the bottom of the heating tank to the 1,000-gallon concrete underground tank. In 1991, HI began using Industroclean (which contains ethylene glycol monobutyl ether) in place of PCE.

HI has ceased its operations at the site. The first building now houses three businesses: an exercise studio, a furniture warehouse, and storage for J. Marcel. The second building houses Houston Fearless International (HFI), a manufacturer of film processing equipment. The process includes lamination of Formica to wood, gluing wood to make cabinets, placing titanium or stainless steel tanks into the cabinets, connecting piping to the tanks, and attaching remaining equipment. HFI uses small amounts of chemicals. HFI has a solvent cleaning tank in the third building. The solvents used include Industroclean and lacquer thinner.

The ADEQ HWS conducted groundwater sampling for metals and PCE in 1993. PCE, lead, and selenium concentrations exceeded the EPA Maximum Contaminants Levels (MCLs). The ADEQ HWS conducted soil sampling for metals in 1994. All metals concentrations in soil were below the Arizona Soil Remediation Levels. A discussion of sampling results is included in Appendix B.

The Arizona Water Quality Assurance Revolving Fund (WQARF) program is preparing a site registry report and map for the site. ADEQ anticipates that the site will be listed on the WQARF registry under the name "20th Street and Factor Avenue site." Under the WQARF program, ADEQ sampled private wells within a 1-mile radius of the site. PCE was not detected in any of the wells. A discussion of sampling results is included in Appendix B. The sample plan is included in Appendix C. The analytical results are included in Appendix D.

SOURCES OF CONTAMINATION

The following sources of contamination have been identified:

* PCE-contaminated soil. Based on the soil vapor survey conducted by Foree and Vann in 1994, contaminated soil is present in the vicinity of the onsite stained soils, the second building, and the 1,000-gallon, concrete, underground tank. PCE was detected in all soil vapor samples collected. The area of the PCE-contaminated soil was estimated as the area enclosed by the sampling points, shown on Figure 4. This estimated area is 10,000 square feet.

* Stained soil. Metals were detected in soil samples collected by ADEQ in 1993. The concentrations of chromium, silver, and zinc may be significantly elevated above background based upon one background sample. The approximate area of stained soil, based upon Figure 4, is 13,000 square feet.

* Underground tank. The tank collected PCE-laden wastewater and discharged it to the ground. Wastewater is no longer generated and discharged. The present condition of the tank and its contents is unknown. The volume of the tank is 1,000 gallons.

GROUNDWATER PATHWAY

The Yuma area is underlain by thick sequences of nonmarine and marine sedimentary rocks. However, only the upper several hundred feet of these sediments are hydrologically important. This is because the upper layers are extremely transmissive and yield sufficient quantities of water to wells. Therefore, only the three uppermost water-bearing units will be discussed. From lowest to uppermost, these are the wedge zone, the coarse-gravel zone, and the upper fine-grained zone. The wedge zone consists of interbedded sand and gravels. The coarse gravel zone is comprised of fine to coarse gravel and cobbles. The depth to the coarse gravel zone is approximately 180 feet beneath the Yuma Mesa. The thickness of this zone ranges from 0 to 100 feet in the Yuma area. The coarse gravel zone also is the major source of groundwater in the area.

The upper fine-grained zone is comprised predominantly of fine to medium sand and silt. However, sandy gravels and clay layers can be locally extensive. No clay layers are present in the well logs for the onsite wells. This zone is approximately 170-180 feet thick beneath the Yuma Mesa. Well logs for the onsite wells show that the sediments overlying the aquifer are comprised primarily of sands.

Depth to water is approximately 74 feet and the vadose zone overlying the aquifer is comprised of sand. Groundwater flow direction was projected to be to the west to west-northwest, based on maps of the Yuma area and groundwater level measurements at the site. The nearest drinking water wells are approximately ¼ mile upgradient of the site. There are approximately 350 domestic wells within 4 miles of the site, which supply drinking water to approximately 1,000 people.

There are four onsite groundwater monitoring wells and one offsite background groundwater monitoring well. Sampling results from 1996 indicate that PCE has been released from the site to groundwater, and that PCE is migrating vertically. Analytical results from 1998 indicate that PCE has not impacted any drinking water wells. A discussion of sampling results is included in Appendix B.

SURFACE WATER PATHWAY

The nearest surface water is the East Main Canal, located approximately 1½ miles west of the site. Surface water runoff drains north to 20th Street, or to low areas along the east and west sides of the property. Additionally, surface water runoff from adjacent properties to the south may drain to the HI site, and then to the low lying areas along the east and west sides of the site. The HI site is located in the 100-500 year floodplain.

SOIL EXPOSURE AND AIR PATHWAYS

The site is located in an industrial area. The climate is arid and soils may easily become airborne. There are four buildings onsite, as shown in Figure 2. Unpaved areas are present along the fence line and along the south side of the site. Paved areas are present south and east of the first two buildings, as shown in Figure 2. There are a landscaped area and a paved parking lot north of the first two buildings. The site is surrounded by a 7-foot chain- link fence with locking gates at the northeast and northwest corners of the site.

Stained soil has been observed onsite along the east and south sides of the fence. Stained soil has also been observed on the vacant lot adjacent to the site to the east. Results of soil sampling indicate that all metals concentrations are below the Arizona Soil Remediation Levels. However, the concentrations of chromium, silver, and zinc may be significantly elevated above background. A discussion of sampling results is included in Appendix B.

There are approximately 29 employees onsite. There are no residents or schools onsite. The nearest schools are the Ham School, the Gila Vista Junior High School, and the McGraw School, all located approximately ¼ mile south of the site. There is a day care facility approximately ¼ mile from the site. The nearest residential area is located approximately ¼ mile west of the site. The Yuma Rodeo

Grounds are approximately ½ mile northwest of the site. Additionally, there are commercial areas, residential areas, and rural areas within 4 miles of the site. There are approximately 68,000 residents within 4 miles of the site. The population within 4 miles of the site is summarized below.

Distance	Population
0 - ¼ mile	639
¼ - ½ mile	2,131
½ - 1 mile	8,483
1 - 2 miles	15,942
2 - 3 miles	20,704
3 - 4 miles	21,997

There are no sensitive environments onsite. However, habitat for the Yuma Clapper Rail and the Mexican Garter Snake occurs along the Colorado River, located approximately 2½ miles north of the site.

EMERGENCY RESPONSE CONSIDERATIONS

While an emergency response may not be required, an evaluation of actions to minimize leaching from the underground tank and PCE-contaminated soil, and vertical migration of PCE in groundwater may be appropriate.

HRS FACTORS

The following are HRS factors for the site:

* PCE has been released from the site to groundwater.

* PCE from the site has not impacted any drinking water wells.

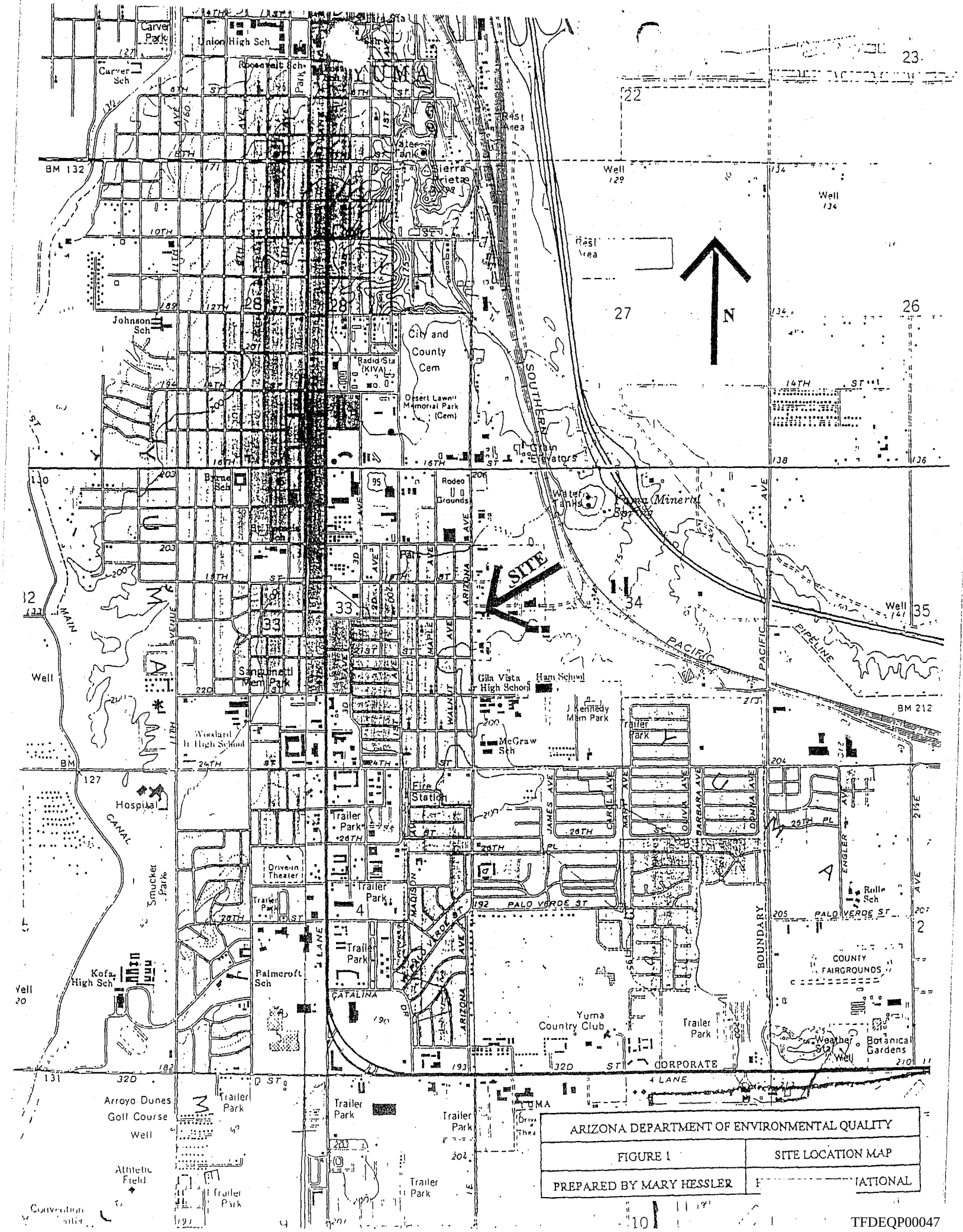
* Metal concentrations in soil are below the Arizona Soil Remediation Levels. These soils may become airborne due to the arid climate.

ADEQ MANAGEMENT REVIEW/CONCURRENCE

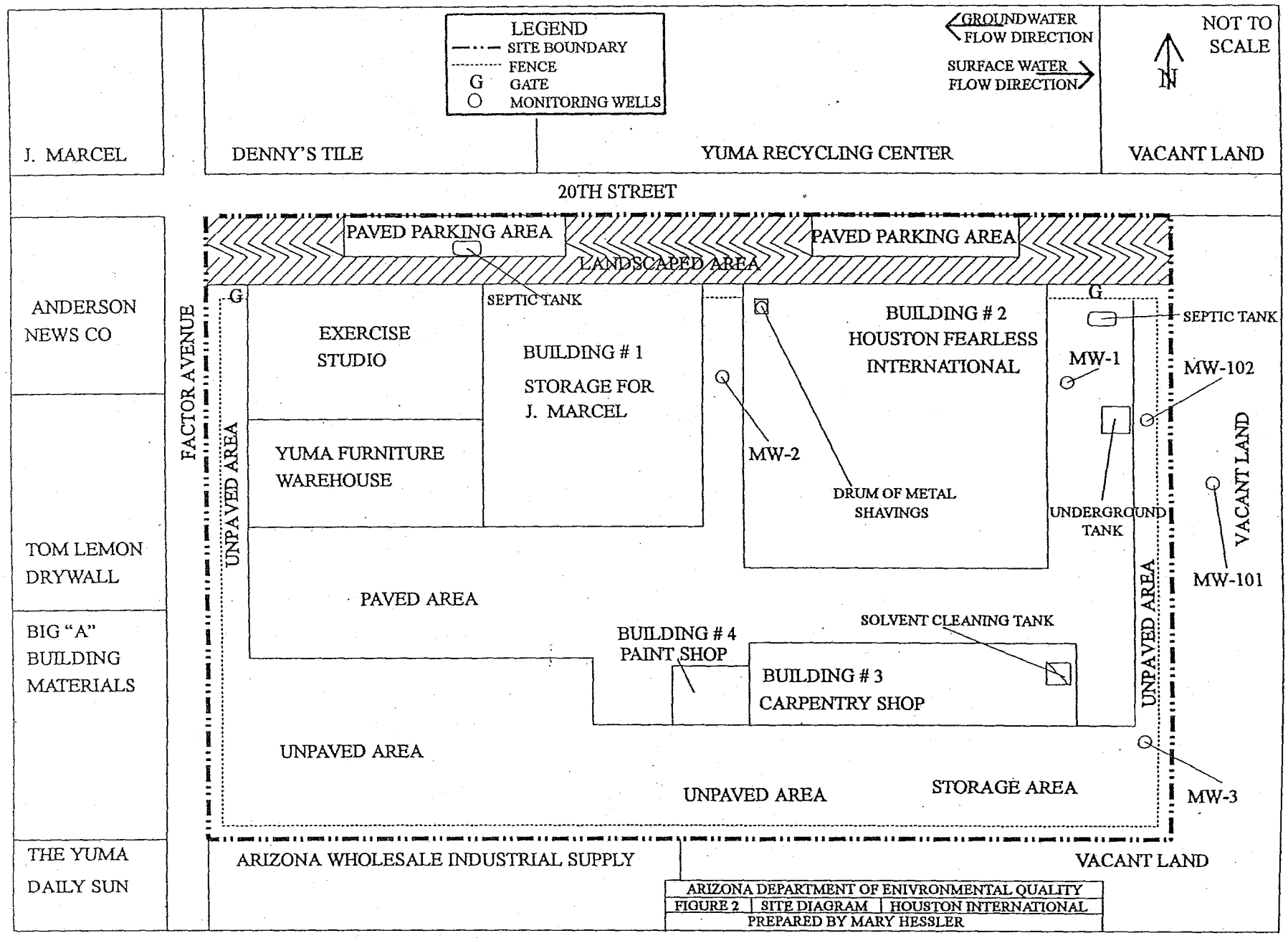
Site Name: Houston International EPA ID No: AZD983480963

Lowell Carty, Manager
Site Assessment Unit

6-11-99
Date

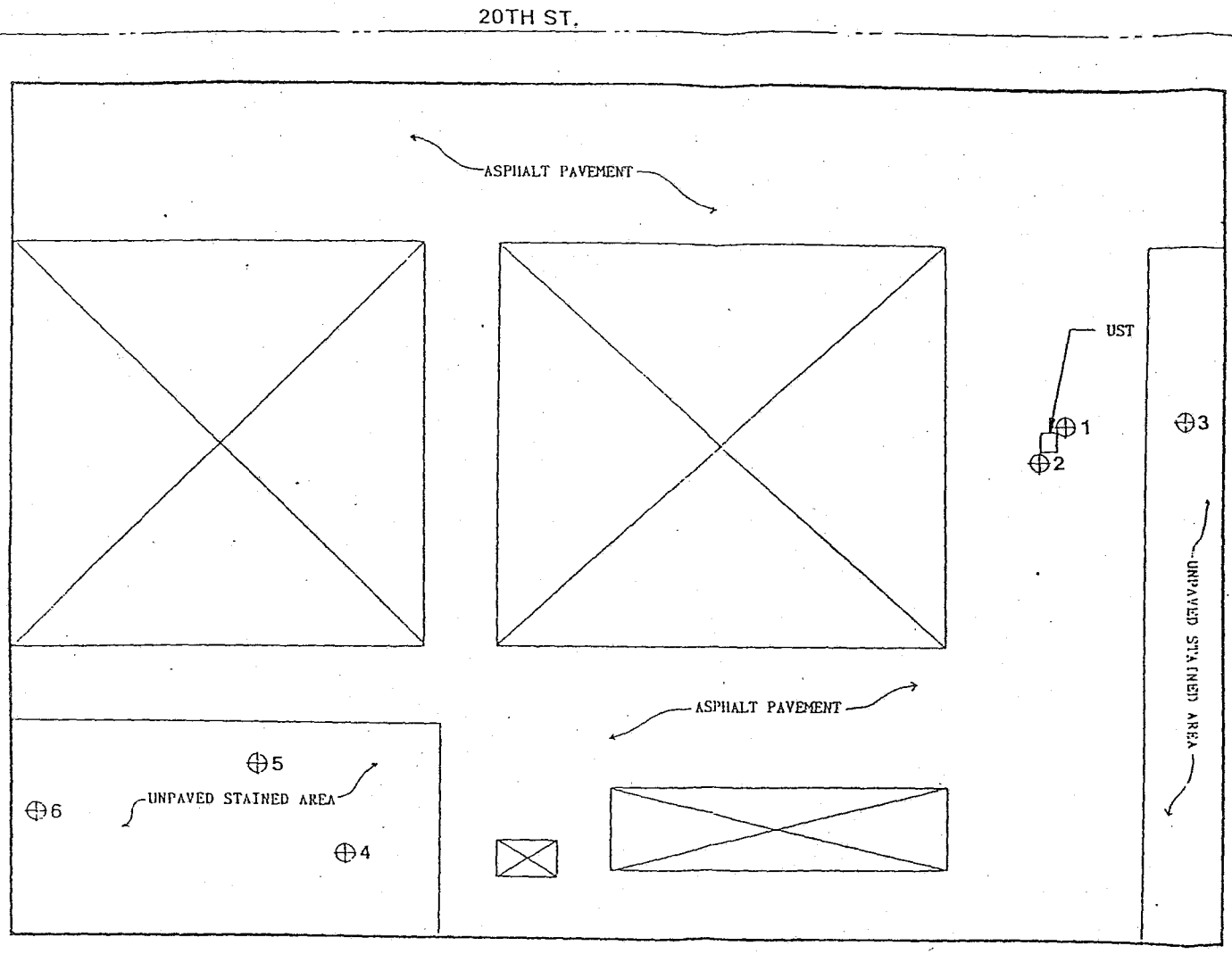


TFDEQP00047



ARIZONA DEPARTMENT OF ENIVRONMENTAL QUALITY
FIGURE 2 | SITE DIAGRAM | HOUSTON INTERNATIONAL
PREPARED BY MARY HESSLER

SITE PLAN



N

LEGEND KEY

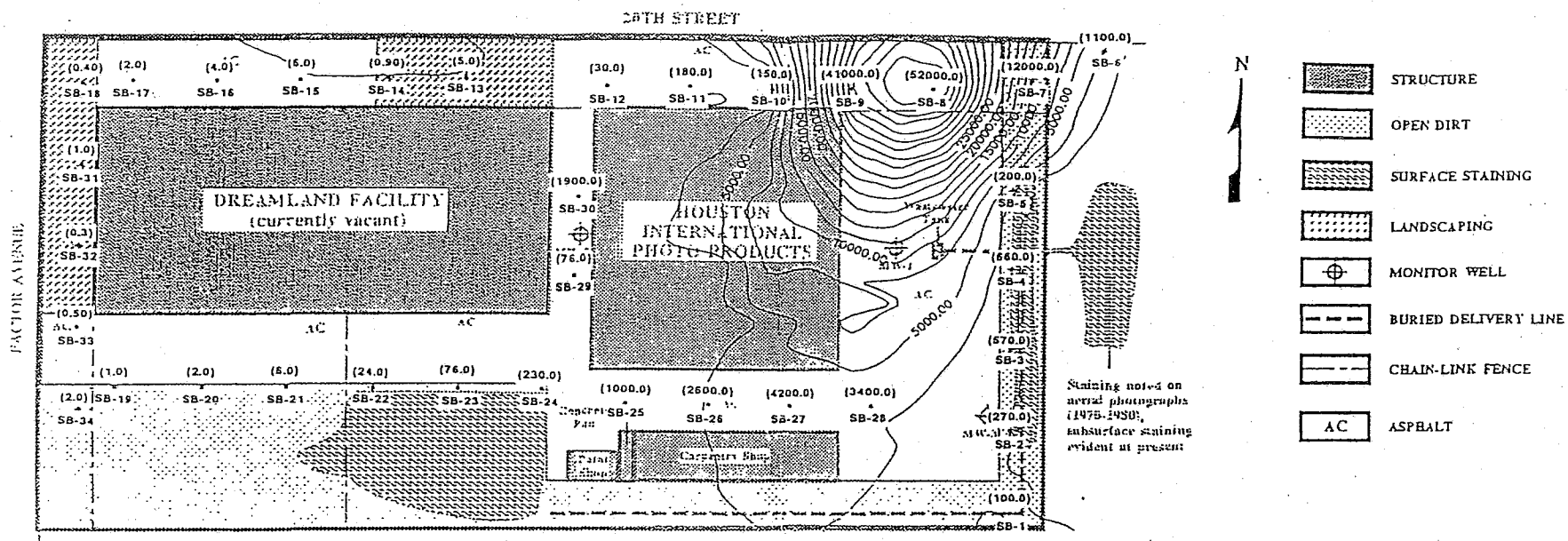
TEST BORING ⊕

STRUCTURE ⊠

SITE BOUNDARY

SCALE: 1" = 40'

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY	
FIGURE 3	SOIL SAMPLING LOCATIONS - 8/13/90 SOIL SAMPLING
SOURCE: FOREE & VANN	HOUSTON INTERNATIONAL



Contour Interval is 2500 micrograms per liter

Groundwater Flow Direction

FIGURE 4. PROJECTED PCE CONCENTRATIONS IN SOIL GAS

SCALE: 1" = 65'	APPROVED BY: FOREE & VANN, INC.	DRAWN BY WLS	
DATE: 5/5/94		REVISED	

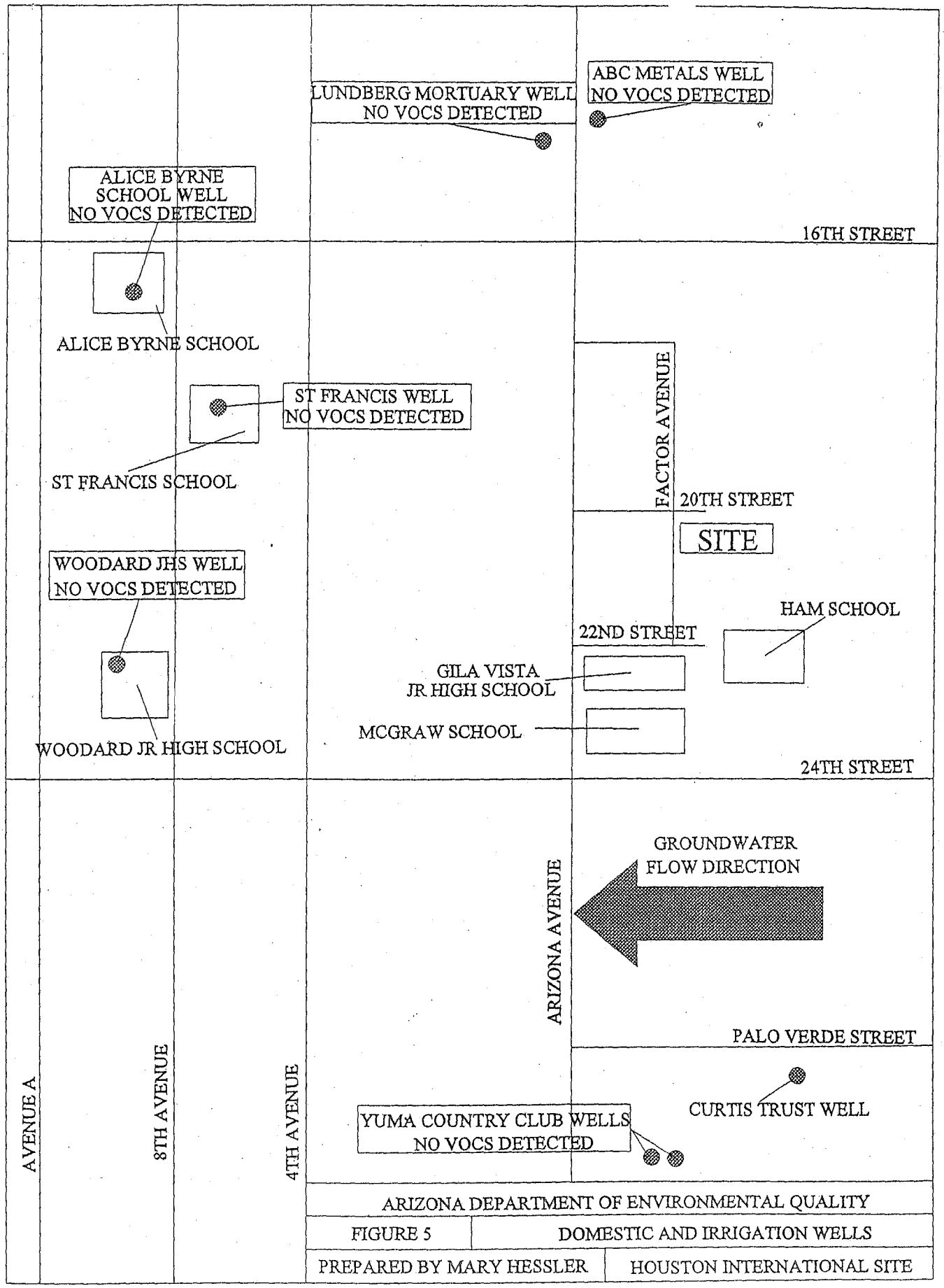
HOUSTON INTERNATIONAL PHOTO PRODUCTS
655 EAST 20TH STREET
YUMA, ARIZONA

PROJECT 4255

DRAWING NUMBER

TFDEQP000050

11 x 17 PRINTED ON NO 1000H CLEARPRINT 4


LUNDBERG MORTUARY WELL
NO VOCS DETECTED
ABC METALS WELL
NO VOCS DETECTED
ALICE BYRNE
SCHOOL WELL
NO VOCS DETECTED
16TH STREET
ALICE BYRNE SCHOOL
ST FRANCIS WELL
NO VOCS DETECTED
ST FRANCIS SCHOOL
FACTOR AVENUE
20TH STREET
SITE
WOODARD JHS WELL
NO VOCS DETECTED
HAM SCHOOL
22ND STREET
GILA VISTA
JR HIGH SCHOOL
MCGRAW SCHOOL
WOODARD JR HIGH SCHOOL
24TH STREET
GROUNDWATER
FLOW DIRECTION
ARIZONA AVENUE
PALO VERDE STREET
AVENUE A
8TH AVENUE
4TH AVENUE
CURTIS TRUST WELL
YUMA COUNTRY CLUB WELLS
NO VOCS DETECTED
ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
FIGURE 5
DOMESTIC AND IRRIGATION WELLS
PREPARED BY MARY HESSLER
HOUSTON INTERNATIONAL SITE

REMEDIAL SITE ASSESSMENT DECISION - EPA REGION IX

Site Name: Houston International **EPA ID#:** AZD983480963

Alias Site Names:

City: Yuma **County or Parish:** Yuma **State:** AZ

Refer to Report Dated: 6/8/99 **Report type:** Preliminary Assessment

Report developed by: Mary E. Hessler and Scott Goodwin

DECISION:

[X] **1. Further Remedial Site Assessment under CERCLA (Superfund) is not required because:**

[X] 1a. Site does not qualify for further remedial site assessment under CERCLA (Site Evaluation Accomplished - SEA)

| | 1b. Site may qualify for further action, but is deferred to: | | RCRA | | NRC

| | **2. Further Assessment Needed Under CERCLA:**

2a. (optional) Priority: | | Higher | | Lower

2b. Activity Type: | | PA | | ESI | | SI | | HRS evaluation

| | Other:

DISCUSSION/RATIONALE:

Site is significant source of contamination to soil and groundwater. However, low number of CERCLA targets (receptors) makes site ineligible for further assessment under CERCLA. Site should be addressed by state program.

Report Reviewed and Approved by: — **Signature:** — **Date:** —

Site Decision Made by: J M Johnson **Signature:** J M Johnson **Date:** 6.30.99

EPA Form # 9100-3

REFERENCE LIST

REPORTS

"Phase II Environmental Assessment, Houston International, Ltd., Photo Products Division, 655 E. 20th Street, Yuma, AZ," Foree and Vann, Project 4255, September 21, 1990.

Enclosed.

"Site Assessment and Remedial Action Plan, Houston International, Ltd., Photo Products Division, 655 East 20th Street, Yuma, Arizona," Foree and Vann, F&V Project 4255, July 28, 1992.

Enclosed.

"Technical Report, Installation of MW-1 and Response to ADEQ, Houston International, Ltd., Yuma, Arizona," Foree and Vann, F&V Project 4255, November 23, 1992.

Enclosed.

Phase II Environmental Assessment, Soil & Groundwater Sampling, Houston International, Ltd., Yuma, Arizona, Foree and Vann, Inc., F&V Project 4255, January 25, 1993.

Enclosed.

Hazardous Waste Inspection Report, Houston Photo Lab, 655 E. 20th Street, Yuma, Arizona, EPA ID No. AZD983480963, ADEQ Hazardous Waste Compliance Unit, June 24, 1993.

Enclosed.

Technical Report, Installation of MW-3 and Quarterly Monitoring Report 1, Houston International, Ltd., Yuma, Arizona, Foree and Vann, Inc., F&V Project 4255, July 21, 1993.

Enclosed.

"Supplemental Report: Hazardous Waste Inspection," Houston International, 655 E. 20th Street, Yuma, Arizona, EPA ID No. AZD983480963, ADEQ Hazardous Waste Compliance Unit, August 17, 1993.

Enclosed.

"Quarterly Groundwater Monitoring Report # 2, Houston International, Ltd., 655 E. 20th Street," Yuma, Arizona, Foree and Vann, Project # 4255, October 25, 1993.

Enclosed.

"Hazardous Waste Inspection, Supplemental Report, Houston International, 655 E. 20th Street, Yuma, Arizona," ADEQ Hazardous Waste Section, April 11 and 12, 1994.

Enclosed.

Soil Gas Survey, Houston International Photo Products and Dreamland Facilities, 655 and 635 East 20th Street, Yuma, Arizona, Foree and Vann, Inc., Project 4255, May 9, 1994.

Enclosed.

Site Assessment Plan, Houston International, Ltd., 655 East 20th Street, Yuma, Arizona, Foree and Vann, Project 4255, July 27, 1994.

Enclosed.

Monitoring Well Installation Workplan, Houston International, Ltd., Site, 655 East 20th Street, Yuma, Arizona, Geotechnical and Environmental Consultants, Inc., Project No. 96-0016.WP6, June 26, 1996.

Enclosed.

Upgradient Groundwater Monitoring Well Installation, Sampling, and Testing, Houston International, Ltd., Site, 655 East 20th Street, Yuma, Arizona, Geotechnical and Environmental Consultants, Inc., Project No. 96-0016.R02, July 23, 1996.

Enclosed.

Groundwater Sampling and Testing, Nested Groundwater Monitoring Well, Houston International Site, 655 East 20th Street, Yuma, Arizona, Geotechnical and Environmental Consultants, Inc., Project No. 96-0016.R05, February 27, 1997.

Enclosed.

QUESTIONNAIRE

Preliminary Assessment Questionnaire, Houston International, Ltd., 655 E. 20th Street, Yuma, Arizona, May 17, 1994.

Enclosed.

COMPLIANCE ORDER

Compliance Order No. D-77-94, ADEQ, June 27, 1994.

Enclosed.

FEBRUARY 1998 SAMPLING EVENT

Analytical Results, Arizona Department of Health Services State Laboratory, Laboratory ID Nos. 53350-53354, dated March 10, 1998.

Included in Appendix D.

MAY 1998 SAMPLING EVENT

Analytical Results, Arizona Department of Health Services Laboratory, Laboratory ID Nos. 54023-54028, dated May 21, 1998.

Included in Appendix D.

CORRESPONDENCE

ADEQ Incident Report, Bruce Ijirigho, ADEQ, October 9, 1990.

Enclosed.

Memorandum: Steve Hildreth, ADEQ Underground Storage Tanks Compliance Unit, to Al Brown, ADEQ Hazardous Waste Compliance Unit, UST Ref # 8779, October 19, 1990.

Enclosed.

Letter: James Clarke, Foree and Vann, to Herb Houston, Houston International, Ltd., RE: Addendum I, Phase II Environmental Site Assessment, December 20, 1990.

Enclosed.

Letter: Holly Wheeler-Benson, ADEQ Hazardous Waste Compliance Unit, to Herb Houston, Houston International, HWCU Ref #HW91-0387, August 12, 1991.

Enclosed.

Letter: Herb Houston, Houston International, to Holly Wheeler-Benson, ADEQ Hazardous Waste Compliance Unit, August 27, 1991.

Enclosed.

Letter: Holly Wheeler-Benson, ADEQ Hazardous Waste Compliance Unit, to Herb Houston, Houston International, HWCU Ref #HW91-0530, December 10, 1991.

Enclosed.

Letter: Herb Houston, Houston International, to Holly Wheeler-Benson, ADEQ Hazardous Waste Compliance Unit, December 30, 1991.

Enclosed.

Letter Holly Wheeler-Benson, ADEQ Hazardous Waste Compliance unit, to Herb Houston, Houston International, HWCU Ref #HW92-0617, January 22, 1992.

Enclosed.

Letter: Holly Wheeler-Benson, ADEQ Hazardous Waste Compliance Unit, to Herb Houston, Houston International, HWCU Ref #HW92-0749, March 11, 1992.

Enclosed.

Letter: Herb Houston, Houston International, to Holly Wheeler-Benson, ADEQ Hazardous Waste Compliance Unit, March 31, 1992.

Enclosed.

Memorandum: Holly Wheeler-Benson, ADEQ Hazardous Waste Compliance Unit, to Bill Engstrom, ADEQ Office of Water Quality, Ref #WCU92-0101, April 8, 1992.

Enclosed.

Letter: Eric Wilson, ADEQ Water Pollution Compliance Unit, to Herb Houston, Houston International, Ref # WP-92-799, June 30, 1992.

Enclosed.

Memorandum: Eric Wilson, ADEQ Water Pollution Compliance Unit, to Aolad Hossain, ADEQ Office of Water Quality, July 13, 1992.

Enclosed.

Letter: Herb Houston, Houston International, to Bill Solberg, ADEQ Office of Water Quality, July 21, 1992.

Enclosed.

Letter: Eric Wilson, ADEQ Water Pollution Compliance Unit, to Todd Blumeyer, Foree and Vann, Inc., Ref #WP92-978, October 26, 1992.

Enclosed.

Memorandum: Eric Wilson, Water Pollution Compliance Unit, to Michele Kennard, Remedial Investigations Hydrology Unit, Ref #WP-93-1075, January 8, 1993.

Enclosed.

Memorandum: Jacqueline Maye, Remedial Projects Unit, to Al Brown, Remedial Projects Section, January 25, 1993.

Enclosed.

Letter: Jeff Trembly, ADEQ, to Herb Houston, Houston International, RE: Groundwater Contamination at the Houston International Yuma Facility, July 27, 1993.

Enclosed.

Letter: Herb Houston, Houston International, to Laura Manley, ADEQ Hazardous Waste Inspections Unit, February 28, 1994.

Enclosed.

Letter: William Stefanov, Foree and Vann, to Laura Manley, ADEQ Hazardous Waste Inspections Unit, March 4, 1994.

Enclosed.

Letter: William Stefanov, Foree and Vann, to Steve Camp, ADEQ Hazardous Waste Compliance Unit, RE: "Addendum to Site Assessment Plan, Houston International, Ltd., 655 East 20th Street, Yuma, Arizona" August 2, 1994.

Enclosed.

Letter: William Stefanov, Foree and Vann, to Steve Camp, ADEQ Hazardous Waste Compliance Unit, RE: "Addendum 2 to Site Assessment Plan, Houston International, Ltd., 655 East 20th Street, Yuma, Arizona" October 13, 1994.

Enclosed.

Letter: Steve Camp, ADEQ Hazardous Waste Compliance Unit, to William Stefanov, Foree and Vann, RE: "Addendum 2 to Site Assessment Plan, Houston International, Ltd., 655 East 20th Street," November 2, 1994.

Enclosed.

Letter: Patrick Kuefler, ADEQ Hazardous Waste Compliance Unit, to Herb Houston, Houston International, July 24, 1995.

Enclosed.

Letter: Patrick Kuefler, ADEQ Hazardous Waste Compliance Unit, to Herb Houston, Houston International, August 28, 1995.

Enclosed.

Contact Report: GEC Consulting and Jeff Servoss, ADEQ Hazardous Waste Compliance Unit, March 14, 1996.

Enclosed.

Letter: Ken Baker, American Environmental Network (Arizona), Inc., to Kurt Zeppetello, ADEQ Remedial Investigations Hydrology Unit, December 3, 1996.

Enclosed.

Letter: Lupe Buys, ADEQ Hazardous Waste Compliance Unit; to Herb Houston, Houston International, Ltd.; RE: Review of and comments to the February 27, 1997, report entitled "Groundwater Sampling and Testing, Nested Groundwater Monitoring Well, Houston International Site," submitted by Geotechnical and Environmental Consultants on behalf of Houston International Ltd.; April 30, 1997.

Enclosed.

OTHER

"Yuma East Quadrangle," Arizona-California, U. S. Geological Survey, 7.5-Minute Series.

Included in EPA's files.

RCRIS V.7.0.0. Arizona Regional Database, April 1, 1998.

The current version of RCRIS is avaiable from ADEQ Customer Service.

Hydrogeology, Numerical Model, and Scenario Simulations of the Yuma Area Groundwater Flow Model, Arizona, California, and Mexico, Bradley M. Hill, Arizona Department of Water Resources, Modeling Report No. 7, Phoenix, Arizona, October 1993.

Included in EPA's files.

Marine Corps Air Station, Yuma, Arizona, Remedial Investigation/Feasibility Study Workplan Draft, Southwest Division, Naval Facilities Engineering Command, San Diego, California, October 1992.

Included in EPA's files.

Maps Showing Groundwater Conditions in the Yuma Area, Yuma County, Arizona--1975, U. S. Geological Survey Water Resources Investigations 78-62 Open-File Report, Tucson, Arizona, Prepared in Cooperation with the Arizona Water Commission, April 1978.

Available from the Phoenix Public Library.

Logs of Wells # 55-530716, 55-530717, and 55-512378, Arizona Department of Water Resources, Operations Division, 15 S. 15th Avenue, Phoenix, Arizona.

Enclosed.

Logs of Wells # 55-524603, 55-524604, and 55-523864, Arizona Department of Water Resources, Operations Division, 15 S. 15th Avenue, Phoenix, Arizona.

Enclosed.

Soil Survey of Yuma-Wellton Area, Parts of Yuma County, Arizona, and Imperial County, California, U. S. Department of Agriculture, Soil Conservation Service, December 1980.

Available from ADEQ Customer Service.

"Report of Phase I and Phase II Groundwater Impact, Chevron # 94567, 1450 E. 16th Street, Yuma, Arizona," Environmental Science and Engineering, March 9, 1995.

Included in ADEQ UST Facility File No. 0-001119, LUST File No. 1821.01. Available from the ADEQ UST Section.

"Second Quarter 1997 Groundwater Monitoring Report, Chevron # 94567, 1450 E. 16th Street, Yuma, Arizona," Holguin, Fahan, and Associates, June 19, 1997.

Included in ADEQ UST Facility File No. 0-001119, LUST File No. 1821.01. Available from the ADEQ UST Section.

"Remedial Investigation and Corrective Action Feasibility Assessment, Southwest Gas Corporation 630 E. 18th Place, Yuma, Arizona," Summit Envirosystems, July 27, 1996.

Included in ADEQ Facility File No. 0-008033, LUST File No. 2702.01. Available from the ADEQ UST Section.

Interim Hydrogeologic Investigation and Free-Product Removal Report, Southern Pacific Transportation Company, Yuma Yard Facility, Yuma, Arizona, Industrial Compliance, IC Project No. 03102163-02, October 27, 1993.

Included in ADEQ Facility File No. 0-004591, LUST File # 1238.01. Available from the ADEQ UST Section.

Hydrogeologic Investigation Report, Southern Pacific Transportation Company, Yuma Yard Facility, Yuma, Arizona, ADEQ LUST File #4715.1238, ADEQ Facility ID #0-004591, Industrial Compliance, IC Project No. 03102163, May 25, 1994.

Included in ADEQ Facility File No. 0-004591, LUST File # 1238.01. Available from the ADEQ UST Section.

Quarterly Ground Water Monitoring Report (March-May 1995), Southern Pacific Transportation Company, Yuma Yard, Yuma, Arizona, ADEQ LUST File #4715.1238, ADEQ Facility ID #0-004591, Industrial Compliance, IC Project No. 03102163, July 7, 1995.

Included in ADEQ Facility File No. 0-004591, LUST File # 1238.01. Available from the ADEQ UST Section.

Aquifer Analysis Technical Memorandum, Southern Pacific Transportation Company, Yuma Yard, Yuma, Arizona, Industrial Compliance, IC Project No. 03102163-04, August 23, 1995.

Included in ADEQ Facility File No. 0-004591, LUST File # 1238.01. Available from the ADEQ UST Section.

Groundwater Monitoring Report, August 1998, Former Gasoline UST System, Yuma Yard, Yuma, Arizona, ADEQ LUST No. 1238.01, Facility ID No. 0-004591, ERM, August 1998.

Included in ADEQ Facility File No. 0-004591, LUST File # 1238.01. Available from the ADEQ UST Section.

ADEQ Groundwater Database, August 27, 1997.

On-line database. Contact ADEQ for more information.

1990 Census of Population and Housing, P. L. 94-171 Data, Arizona State Data Center, DES Population Statistics Unit.

Available from the Arizona State Data Center.

Flood Insurance Rate Map, Yuma County, Arizona (Unincorporated Areas), Panel 860 of 1500, Community Panel Number 0400990860C, Federal Emergency Management Agency, November 15, 1985.

Available upon request from the ADEQ Site Assessment Unit.

Threatened Native Wildlife in Arizona, Arizona Game and Fish Department, 1988.

Available upon request from the ADEQ Site Assessment Unit.

Letter: Ron Christofferson, Arizona Game and Fish Department, to Virginia Demetrios, Bechtel Environmental, Inc., November 15, 1993.

Included in EPA's files.

Arizona Administrative Code, R18-7-201 through R18-7-209, December 31, 1997.

Available from ADEQ Rule Development Section.

CONTACT LOG AND CONTACT REPORTS ATTACHED

APPENDIX A

CONTACT LOG AND CONTACT REPORTS

PA/SI CONTACT LOG

Facility Name: Houston International

EPA ID Number: AZD983480963

NAME	AFFILIATION	PHONE	DATE	INFORMATION
	Yuma City Directories		8/20/97	See Contact Report
Valerie	Yuma County Assessor's Office	(520) 329-2025	8/27/97	See Contact Report
Art Hoffmeister	Arizona Department of Environmental Quality, Air Quality Division	(602) 207-2334	1/20/98	See Contact Report
Herb Houston	Houston International	(520) 329-9012	2/23/98	See Site Reconnaissance Interview and Observations Report
Wayne	City of Yuma Development Services	(520) 329-2290	2/23/98	See Contact Report
Mary Hessler	Arizona Department of Environmental Quality	(602) 207-4195	2/24/98	See Contact Report
Mary Hessler	Arizona Department of Environmental Quality	(602) 207-4195	5/4/98	See Contact Report

APPENDIX B

DISCUSSION OF ANALYTICAL DATA

APPENDIX B

DISCUSSION OF SAMPLING EVENTS

Foree and Vann - 1990

Foree and Vann, contractor for HI, conducted a Phase II Environmental Assessment in 1990. Blue-green soil staining was observed near the southwest corner of the site, and along the east boundary of the site. Foree and Vann drilled six exploratory borings. The locations of these borings are shown in Figure 3.

Soil borings 1, 2, and 3 were advanced near the east boundary of the site. Standing water and a hose connected to the 1,000-gallon, concrete, underground tank (UT) were observed in the stained area along the east boundary. Soil borings 1 and 2 were advanced in the vicinity of the UT, but no soil staining was reported in these borings. Soil boring 3 was advanced in the stained area east of the UT. The blue-green staining extended to 3.5 feet below land surface (bls), and light green staining was observed at 4 feet bls. No staining or odors were detected at 5 beet bls. A slight septic odor was detected at 19 feet bls. Soil borings 4, 5, and 6 were advanced near the southwest corner of the site and indicated that the blue-green staining extended only 1 to 3 inches bls. A sulfurous odor was present.

On August 13, 1990, samples were collected at depths of 5, 10, 15, and 20 feet bls in borings 1 and 2. The four samples from boring 1 were composited, and the four samples from boring 2 were composited. Borings 3 through 6 were drilled to a depth of 6 feet, with samples collected at 3 feet and 6 feet bls. An additional sample was collected from the ground surface at boring 6. The sample from boring 3 at 3 feet was analyzed. The samples from borings 4 through 6 were composited.

Seven days after sample collection (August 20, 1990), the samples were submitted to Copper State Analytical Lab. The samples were analyzed for EPTox metals and for volatile organic compounds (VOCs) by EPA Methods 8010/8020. The samples contained detectable concentrations of barium, cadmium, copper, lead, nickel, zinc, toluene, xylenes, chloroform, and PCE. No background samples were taken. Sampling results are presented in Tables 1 and 2.

Foree and Vann - 1992

On June 30, 1992, the ADEQ Water Pollution Compliance Unit requested that HI submit a Remedial Action Plan. In response, HI submitted a Site Assessment and Remedial Action Plan, prepared by Foree and Vann, dated July 28, 1992. ADEQ provided comments to HI in a letter dated October 26, 1992.

Foree and Vann, contractor for HI, began implementing the plan in October 1992. On October 22, 1992, Foree and Vann advanced one soil boring west (downgradient) of the underground tank and collected soil samples at depths of 11, 21, 31, 41, 51, 61, and 71 feet bls. Thirteen days later (November 4, 1992), these soil samples were submitted to Turner/CAS Laboratories for analysis for VOCs by EPA methods 8010/8020. All samples were non-detect for volatile organic

compounds (VOCs) with the exception of 140 µg/kg of PCE in the 11-foot sample. The detection limit for PCE was 50 µg/kg.

The soil boring was completed as groundwater monitoring well MW-1. The well is shown in Figure 2. Construction details are presented in Table 3. This well was developed and sampled on October 23, 1992. On October 26, 1992, the sample was submitted to Turner/CAS laboratories for analysis for VOCs by EPA method 502.2. The groundwater sample from MW-1 contained 20,000 micrograms per liter (µg/L) of PCE and 38 µg/L of toluene.

On December 9, 1992, Foree and Vann advanced four soil borings (B11 through B14) in the stained area on the south side of the site. Each boring was sampled at depths of 3 and 8 feet bls. In addition, a composite sample (COMP-1) of the top 6 inches of each boring was collected. On December 11, 1992, each soil sample was submitted to Turner/CAS Laboratories for analysis for VOCs by EPA methods 8010/8020. No VOCs were detected, but the detection limit for PCE was 50 µg/kg. The four samples taken at 8 feet were composited for metals analysis only and labeled B11-14@8'. Samples B11-14@8' and COMP-1 were analyzed for metals by TCLP. No TCLP metals were detected in any of the samples. COMP-1 was also analyzed for total metals by EPA method 3050/6010 and for mercury by EPA method 3050/7470. The metals arsenic at 6.0 milligrams per kilogram (mg/kg), barium at 55 mg/kg, chromium at 4.0 mg/kg, and silver at 31 mg/kg were detected in COMP-1. However, these concentrations are below the Arizona Soil Remediation Levels (SRLs).

On December 29, 1992, Foree and Vann advanced one soil boring west of the first building, which is also west (downgradient) of the underground tank and MW-1. This boring was completed as groundwater monitoring well MW-2. See Figure 2. The well was developed and sampled on January 7, 1993. On January 11, 1993, the groundwater sample was submitted to Turner/CAS Laboratories for analysis for VOCs by EPA method 502.2. Sample results are presented in Table 4.

Foree and Vann AND ADEQ - 1993

On March 18 and 19, 1993, Foree and Vann installed groundwater monitoring well MW-3 at the southeast corner of the site. See Figure 2. This well is cross-gradient of the underground tank. The well was developed on March 19, 1993. On April 21, 1993, groundwater samples were collected from all three monitoring wells. On April 26, 1993, the samples were submitted to Copper State Analytical Lab for analysis for VOCs by EPA method 502.2. The analytical results are presented in Table 5.

The ADEQ Hazardous Waste Section conducted an inspection on June 24, 1993. The HWS observed that HI was discharging wastewater to the ground via a sprinkler system. Wastewater was also discharged to a small field behind the building. Green staining was observed in the field. The HWS documented that the green color was from a dye additive.

On August 17, 1993, Foree and Vann (HI's contractor) collected groundwater samples from three onsite monitoring wells. On August 19, 1993, Foree and Vann submitted the samples to Turner/CAS Laboratories, Inc., for analysis for VOCs by EPA methods 601/602. The ADEQ Hazardous Waste Compliance Unit collected split samples. ADEQ submitted samples to the

State Laboratory for analysis for metals by the EPA 200 series methods. ADEQ also submitted samples to McKenzie Laboratories for analysis for VOCs by EPA methods 601/602. The chain-of-custody record for the ADEQ samples cannot be found. PCE was detected in all three monitoring wells. Several metals were detected also. Sampling results are presented in Tables 6 and 7.

ADEQ - 1994

The ADEQ HWS conducted an inspection on April 11 and 12, 1994. Blue-green soil staining was observed along the east fence line, an area formerly used to drain process water from the facility. Additional staining was observed in an area formerly used to spray wastewater with a sprinkler system.

The ADEQ Hazardous Waste Compliance Unit (HWCU) collected three surficial soil samples from the site on April 12, 1994. No map of soil sampling locations is available. One sample (HI-1) was collected from an area used to spray wastewater, and the third sample (HI-3) was collected from a stained area along the east side of the property used to drain wastewater. The second sample (HI-2) was collected from the south side of the property as a background sample. On April 14, 1994, the samples were submitted to the State Laboratory for analysis for total metals by EPA methods 3050/6010 and for mercury by EPA methods 3050/7471. Silver and zinc were detected in the stained soil samples (HI-1 and HI-3) only. Chromium was detected in HI-3 only. All of the metals concentrations (except arsenic) were below the SRLs. The detection limit for arsenic was 50 milligrams per kilogram, which exceeds the SRL of 10 milligrams per kilogram. Therefore, the sampling results are not sufficient to determine if the SRL for arsenic has been exceeded. Table 8 presents the sampling results.

Foree and Vann - 1994

Tracer Research, Inc., subcontractor to Foree and Vann, conducted a soil vapor survey of the site on April 11 - April 12, 1994. Tracer Research, Inc., also analyzed samples by an onsite gas chromatograph for PCE, trichloroethylene (TCE), and 1,1,1-trichloroethane (1,1,1-TCA). Samples were taken 4.5 to 6.5 feet bls. PCE concentrations up to 52,000 µg/L were detected, with the highest concentrations near the northeast corner of the facility, along the south side of the first building, and on the west side of the first building. Figure 4 shows the sampling locations and PCE concentrations.

Foree and Vann collected two wastewater samples on July 18, 1994. Samples 4255718-1 and 4255718-2 were collected from the color film processing waste stream. Samples 4255718-3 and 4255718-4 were collected from the black and white film processing waste stream. The samples were submitted to McKenzie Laboratories for analysis for VOCs by EPA method 502.2, for total metals by EPA method 200.7, and for mercury by EPA method 245.1. The results are presented in Table 9.

The color film processing waste stream samples contained bromodichloromethane, bromoform, chloroethane, chloroform, and dibromochloromethane. HI indicated that these VOCs are chemical and/or biological degradation products or reactants associated with the photo processing chemicals. Methylene chloride and PCE were also detected in the black and white processing

waste stream samples, but the source of these VOCs is unknown. The black and white processing waste stream is discharged to the underground tank. HI speculated that PCE may still be present in the underground tank, and that PCE was detected in the wastewater due to mixing. HI further speculated that methylene chloride may be a breakdown product of PCE. The PCE concentration of 7.9 µg/L exceeded the EPA Maximum Contaminant Level (MCL) of 5 µg/L.

Discussion - The soil vapor results indicate that The wastewater results indicate that PCE was present in the wastewater in 1994, even though PCE use was reportedly discontinued in 1991. This raises a concern that a continuing source of PCE may be present, even though PCE is no longer used.

GEC - 1996

A fourth monitoring well (MW-101)was installed upgradient (east) of the site, on an adjacent property in March 1996. The well was sampled on March 21, 1996, and samples were submitted to Del Mar Analytical and analyzed by EPA methods 601/602. This sample from the well indicated that 20 µg/L of PCE, 4.2 µg/L of bromodichloromethane, and 4.7 µg/L of chloroform were present.

Geotechnical and Environmental Consultants (GEC), contractor for HI, sampled the four monitoring wells in October 1996. However, the wells were purged on October 3, 1996, and sampled on October 4, 1996. This procedure is not acceptable, and, therefore, the sampling results are questionable. Samples were submitted to Del Mar Analytical and were analyzed by EPA methods 601/602. The Sampling results are shown in Table 10.

A fifth monitoring well (MW-102) was installed November 1996. The well was nested with three screened intervals (80-90 feet, 110-120 feet, 140-150 feet). The well was sampled on November 14, 1996, and samples were submitted to Del Mar Analytical for analysis by EPA methods 601/602. Sample results are presented in Table 11.

Discussion - The results indicate that PCE has been released from the site to groundwater. Results also seem to indicate that PCE is migrating vertically.

ADEQ - 1998

The ADEQ Site Assessment Unit (SAU) conducted a site inspection on February 23, 1998. In order to determine if production wells were impacted, ADEQ sampled seven wells within one mile of the site. On February 23 and 24, 1998, ADEQ collected groundwater samples from three production wells within 1 mile of the site. Four additional production wells were sampled on May 4, 1998. Construction details of the seven wells are listed in Table 12. No screened interval information is available for the wells.

Wells were sampled by turning on the pump, purging, and collecting a sample from the nearest available sampling point. Table 13 shows the available sampling points. The wells were purged until the groundwater parameters (temperature, pH, and specific conductivity) stabilized. Groundwater samples were collected in 40-milliliter amber glass vials. The vials were filled and capped so that no air bubbles were visible inside. The samples were submitted to the State

Laboratory for analysis by EPA method 502.2. Sampling results were non-detect for PCE for all samples. Results are presented in Table 13.

Other Investigations

Under the ADEQ Underground Storage Tanks program, investigations have been conducted at three nearby sites. The sites are Southwest Gas at 630 E. 18th Place, Chevron #94567 at 1450 E. 16th Street, and the Southern Pacific Yuma Yard at the end of 20th Street at the railroad tracks. These three sites are located downgradient, crossgradient, and upgradient of the HI site, respectively. The six monitoring wells at the Southwest Gas facility are sampled on a quarterly basis and analyzed by EPA method 524. No PCE has been detected. Samples from the Chevron facility were analyzed for chlorinated VOCs, and PCE at a concentration of 0.77 µg/L was found in monitoring well CW-15, near the northwest corner of the site. Since the Chevron site is located north-northeast of HI with no PCE detected in wells south of CW-15, it is unlikely that HI contributed to the PCE contamination at the Chevron site. Several of the wells at the Southern Pacific site were sampled and analyzed for chlorinated VOCs, but no chlorinated VOCs were detected in any of the samples.

DISCUSSION OF RESULTS

The composited soil sample results indicate that PCE and metals are present in onsite soils. However, the data are not depth-specific, and background samples were not collected. Therefore, the composited samples collected by Foree and Vann in August 1990 and December 1992 are not sufficient to document background concentrations or observed contamination.

The soil samples collected by Foree and Vann in October 1992 from MW-1 indicated that PCE was present at 140 µg/kg in the 11-foot interval. PCE was not detected in any of the other intervals of MW-1 and was not detected in any of the December 1992 samples collected from the stained soil on the south side of the building.

The April 1994 soil results for metals have one background sample. The results suggest that silver, chromium, and zinc may be present above background but below Arizona Soil Remediation Levels. Two background samples are normally used to document background levels for metals.

The soil vapor samples collected by Foree and Vann in April 1994 indicate that low concentrations of PCE (up to 6 µg/L) are present in the vicinity of the first building. Higher concentrations of PCE(24 to 570 µg/L) were observed near the stained soil areas south of the first building and east of the second building. The highest PCE concentrations (>1,000 µg/L) were observed in the vicinity of the second building and near the UT. These results indicate that PCE-contaminated soil is present onsite, in the vicinity of the stained soils, the second building, and the UT.

The soil vapor results appear to be inconsistent with the December 1992 soil results. The differing results most likely occurred because the actual soil concentrations were less than the detection limit of 50 µg/kg.

The groundwater results from October 1996 indicate that PCE has been released from the site to groundwater. The PCE concentration in background well MW-101 was 5.2 µg/L. Wells MW-1 and MW-2, which are downgradient of the UT, had PCE concentrations of 1,300 and 3,000 µg/L, respectively. Well MW-3, which is cross-gradient to the UT, had a PCE concentration of 150 µg/L. The concentrations in wells MW-1, MW-2, and MW-3 exceed three times the background concentration. Therefore, it is concluded that PCE has been released from the site to groundwater. In addition, the November 1992 results from nested well MW-102 indicate that PCE is migrating vertically. The February 1998 and May 1998 results indicate that PCE has not migrated from the site to nearby domestic wells.

Table 1: Results of Foree & Vann Soil Sampling for EPTox Metals - 8/13/90 Results in Milligrams per Liter (mg/L)				
Analyte	Sample ID			
	Composite 1-5, 1-10, 1-15, 1-20	Composite 2-5, 2-10, 2-15, 2-20	Sample 3-2	Composite 4-2, 4-5, 5-2, 5-5, 6-6, 6-5
Barium	0.3	0.1	0.9	0.5
Cadmium	0.14	0.18	0.08	0.24
Copper	0.8	0.8	1.3	0.3
Lead	1.3	1.6	<0.1	0.7
Nickel	1.2	1.1	1.3	1.0
Zinc	1.8	2.3	2.4	1.0

Table 2: Results of Foree & Vann Soil Sampling for Volatile Organic Compounds - 8/13/90 Results in Micrograms per Kilogram (µg/kg)					
Analyte	Minimum GPL	Sample ID			
		Composite 1-5, 1-10, 1-15, 1-20	Composite 2-5, 2-10, 2-15, 2-20	Sample 3-2	Composite 4-2, 4-5, 5-2, 5-5, 6-6, 6-5
Chloroform	NA	<40	<40	<40	60
Tetrachloroethylene (PCE)	1,300	90	<40	<40	60
Toluene	400,000	2,880	2,520	2,970	100
Total Xylenes	2,200,000	40	<40	<40	70

Table 3: Monitoring Wells at the HI Site				
Well Name	Cadastral Location	ADWR Number	Well Depth	Screened Interval
MW-1	(C-08-23)34cba	55-537043	95 Feet	65 - 95 Feet
MW-2	(C-08-23)34cba	55-537614	95 Feet	65 - 96 Feet
MW-3	(C-08-23)34cba	55-537615	84 Feet	64 - 84 Feet
MW-101	(C-08-23)34cab	55-555248	90 Feet	50 - 90 Feet
MW-102A	(C-08-23)34cb	55-556705	90 Feet	80 - 90 Feet
MW-102B	(C-08-23)34cb	55-556705	120 Feet	110 - 120 Feet
MW-102C	(C-08-23)34cb	55-556705	150 Feet	140 - 150 Feet

Table 4: Results of January 7, 1993, Groundwater Sampling Results in Micrograms per Liter (µg/L)		
Analyte	MCL	Concentration
Tetrachloroethylene (PCE)	5.0	8,700
Trichloroethylene (TCE)	5.0	7.8
1,1,1-Trichloroethane (1,1,1-TCA)	200.0	0.6
1,1,2-Trichloroethane (1,1,2-TCA)	3.0	0.7
1,1-Dichloroethylene (1,1-DCE)	7.0	5.7
1,1-Dichloroethane	NA	1.4
1,1,1,2-Tetrachloroethane	NA	1.3
1,2-Dichlorobenzene	600	2.4
Chloroform	NA	1.4
Methylene Chloride	5.0	2.6
Benzene	5.0	1.2
Toluene	1,000	1.8
Naphthalene	NA	0.5

Table 5: Results of 4/21/93 Groundwater Sampling Results in Micrograms per Liter (µg/L)				
Analyte	MCL	MW-1	MW-2	MW-3
Tetrachloroethylene (PCE)	5.0	18,300	6,860	270,000
Trichloroethylene (TCE)	5.0	5.2	5.4	<0.0008
1,1,1-Trichloroethane (1,1,1-TCA)	200.0	8.6	<0.0008	<0.0008
1,2-Dichlorobenzene	600	6.5	<0.0008	<0.0008
Benzene	5.0	7.6	28,100	3.6
o-Xylene	10,000	1.5	46,600	<0.0008
m-Xylene	10,000	<0.0008	46,500	<0.0008
Toluene	1,000	<0.0008	29,200	<0.0008
Ethylbenzene	700	<0.0008	21,900	<0.0008

Table 6: Results of Groundwater Sampling for Volatile Organic Compounds - 8/17/93 Results in Micrograms per Liter (µg/L)					
Sampler	Analyte	MW-1	MW-2	MW-2 (Dup)	MW-3
MCL	Tetrachloroethylene (PCE)	5.0			
Foree & Vann	Tetrachloroethylene (PCE)	20,000	6,500	7,300	8,700
ADEQ	Tetrachloroethylene (PCE)	27,000	10,000	Not Analyzed	5,000

Table 7: Results of Groundwater Sampling for Metals - 8/17/93 Sampling Conducted by ADEQ Results in Milligrams per Liter (mg/L)						
Analyte	EPA Method	MCL	MW-1	MW-2	MW-2 (Dup)	MW-3
Barium	200.7/208.1	2.0	0.41	0.70	0.72	0.18
Cadmium	213.2	0.0050	<0.0010	0.0019	0.0015	<0.0010
Calcium	200.7/215.1	NA	236	322	334	59.2
Chromium	218.2	0.10	0.011	<0.010	0.012	<0.010
Iron	220.7/236.1	NA	19.0	18.9	19.1	9.03
Lead	239.2	0.015	<0.005	0.079	0.070	<0.005
Magnesium	220.7/242.1	NA	51.2	82.0	84.5	18.4
Manganese	200.7/243.1	NA	0.27	0.18	0.31	<0.05
Mercury	245.1	0.0020	<0.0005	0.0005	<0.0005	<0.0005
Selenium	270.2	0.050	0.012	0.102	0.050	<0.025
Sodium	200.7/273.1	NA	646	1,280	1,270	790
Zinc	289.1	NA	<0.05	0.09	0.15	<0.05

Table 8: Results of ADEQ Soil Sampling for Metals - 4/12/94 Results in Milligrams per Kilogram (mg/kg)				
Analyte	SRL	Sample ID		
		HI-1	HI-2	HI-3
Arsenic	10	<50	<50	<50
Barium	5,300	48	120	58
Cadmium	38	<10	<10	<10
Chromium	2,100	<10	<10	14
Cobalt	4,600	<10	<10	<10
Copper	2,800	<10	<10	<10
Iron	NA	2,600	2,200	2,800
Lead	400	<50	<50	<50
Manganese	3,200	56	97	27
Mercury	6.7	<0.25	<0.25	<0.25
Nickel	1,500	<10	<10	<10
Selenium	380	<200	<200	<200
Silver	380	37	<10	62
Zinc	23,000	20	<10	16

Table 9: Results of Wastewater Sampling for VOCs and Metals Results in Micrograms per Liter (µg/L)					
Analyte	MCL	Color Film Processing Waste Stream		Black & White Film Processing Waste Stream	
		4255718-1	4255718-2	4255718-3	4255718-4
Bromodichloromethane	NA	NA	47	NA	<0.5
Bromoform	NA	NA	4.8	NA	<0.5
Chloroethane	NA	NA	41	NA	<0.5
Chloroform	NA	NA	<0.5	NA	<0.5
Dibromochloromethane	NA	NA	33	NA	<0.5
Methylene Chloride	5.0	NA	<2.0	NA	2.7
Tetrachloroethylene (PCE)	5.0	NA	<0.5	NA	7.9
Barium	2,000	140	NA	140	NA

Table 10: Results of 10/4/96 Groundwater Sampling - Houston International Results in Micrograms per Liter (µg/L)						
Sampler	Analyte	MCL	MW-101	MW-1	MW-2	MW-3
GEC	Tetrachloroethylene (PCE)	5.0	5.2	1,300	3,000	150

Table 11: Results of 11/14/96 Groundwater Sampling - Houston International Results in Micrograms per Liter (µg/L)					
Sampler	Analyte	MCL	Well & Screened Interval		
			MW-102A 80-90 Feet	MW-102B 110-120 Feet	MW-102C 140-150 Feet
ADEQ	Bromodichloromethane	NA	<0.5	Not Sampled	9.0
ADEQ	Bromoform	NA	<0.5	Not Sampled	2.2
ADEQ	Chloroform	NA	<0.5	Not Sampled	11
ADEQ	Dibromochloromethane	NA	<0.5	Not Sampled	14
ADEQ	1,1-Dichloroethane	NA	<0.5	Not Sampled	0.9
GEC	Tetrachloroethylene (PCE)	5.0	78	38	520
ADEQ	Tetrachloroethylene (PCE)	5.0	76	Not Sampled	470
ADEQ	1,1,1-Trichloroethane (TCA)	200.0	<0.5	Not Sampled	2.0

Table 12: Production Wells within One Mile of the HI Site				
Well Name	Cadastral Location	ADWR Number	Well Depth	Comments
Derrick/ABC Metals	(C-08-23)27ccb	55-561713	160 Feet	Northwest of site, downgradient
Alice Byrne School	(C-08-23)33bba	55-613927	203 Feet	Northwest of site, downgradient
Desert Lawn	(C-08-23)28ddb	55-552374	365 Feet	Northwest of site, downgradient
Yuma Golf & Country Club # 1	(C-09-23)03cbd	55-506741	Not Available	South of site, cross-gradient
Yuma Golf & Country Club # 2	(C-09-23)03cbd	55-534324	Not Available	South of site, cross-gradient
Woodard Junior High School	(C-08-23)33cca	55-613924	300 Feet	West of site, down- to cross-gradient
St. Francis School	(C-08-23)33bdb	55-626423	318 Feet	West of site, down- to cross-gradient

Table 13: Groundwater Sampling at Domestic and Irrigation Wells within One Mile of HI Results Presented in Micrograms per Liter				
Well Name	Sampling Point	Sampling Date	PCE	Chloroform
MCL			5.0	NA
Derrick/ABC Metals	Tap next to well	2/23/98	<0.5	<0.5
Alice Byrne School	Irrigation gate in field	2/24/98	<0.5	<0.5
Desert Lawn	Discharge pipe to lawn	2/23/98	<0.5	<0.5
Yuma Golf & Country Club # 1	Fountain	5/4/98	<0.5	<0.5
Yuma Golf & Country Club # 2	Fountain	5/4/98	<0.5	<0.5
Woodard Junior High School	Pump	5/4/98	<0.5	1.2
St. Francis School	Pump	5/4/98	<0.5	<0.5

APPENDIX C

SAMPLE PLAN

Arizona Department of Environmental Quality

ABRIDGED GROUNDWATER SAMPLE PLAN

File #(s): _____ ; _____

Date(s): _____

This abridged groundwater sample plan is intended for use in the following situations: 1) When the urgency of sampling prevents the completion of a full-length plan; 2) When the scope of sampling does not merit a full-length plan; or, 3) When ADEQ is splitting samples collected by another party during ambient, compliance, or remedial sampling.

ALL WORK DESCRIBED IN THIS SAMPLING PLAN SHALL BE CONDUCTED IN ACCORDANCE WITH PROCEDURES DESCRIBED IN THE MOST RECENT VERSION OF THE ADEQ QUALITY ASSURANCE PROJECT PLAN (QAPP).

I. SITE / GENERAL INFORMATION

FACILITY/SITE Houston International SITE ID# 140033-00

ANTICIPATED SAMPLING DATE(S) February 23-24, 1998 NAME OF ADEQ SAMPLER(S) SAU

GEN. SAMPLE LOCATION: T 8S, R 23W, Sec 34, DEQ Basin _____, County Yuma

NO. OF WELLS PROPOSED FOR SAMPLING (SEE PART IV FOR DETAILS): Sample 4 wells (domestic and irrigation)

[ ] SPLIT SAMPLE [X] AMBIENT [ ] COMPLIANCE [X] REMEDIAL

PROGRAM Site Assessment/WQARF PRIMARY SAMPLER D. Malone/T. Satterthwaite

[ ] URGENT REQUEST (EXPLAIN) _____

[X] OTHER (EXPLAIN) Data needed to provide additional information on the effects of possible PCE release from Houston

II. ENVIRONMENTAL SAMPLES REQUESTED & RATIONALE

LAB: [X] STATE LAB [ ] OTHER: _____

NO. OF SAMPLES	TEST	LAB METHOD	RATIONALE
6	Drinking Water VOCs	502.2	PCE is contaminant of concern; wells are mostly domestic use

III. QA/QC SAMPLES REQUESTED

NO. DUP	NO. BLK	TEST	DUPLICATE LOCATION	BLANK DESCRIPTION
	1	VOCs (502.2)		trip blank
1		VOCs (502.2)	55-561713	

CHAIN OF CUSTODY: [X] YES [ ] NO (EXPLAIN) _____

IV. WELLS PROPOSED FOR SAMPLING / FIELD PROTOCOLS

ANTICIPATED FIELD MEASUREMENTS: [X] pH [X] TEMPERATURE [X] ELECTRICAL CONDUCTANCE
[ ] WATER LEVEL [ ] DISCHARGE [ ] OTHER: _____

		OWNER NAME	SAMPLING POINT	PURGING/SAMPLING PROCEDURE
1.	55-561713	Derrick	spigot	No purging is required.
2.	55-552374	Desert Lawn	spigot	
3.	55-613924	Woodard Jr. High	spigot	
4.	55-613927	Byrne Elementary	spigot	
5.				
6.				

DECONTAMINATION NEEDED? [ ] YES [X] NO (IDENTIFY) _____

OTHER FIELD CONSIDERATIONS? _____

*Well lat/long and field notes will be needed when analytical data is input into ADEQ database.

V. SAMPLE CONTAINERS / PRESERVATION

TEST	NO. & TYPE OF BOTTLES		FILTERED?		
VOCs	2	40 ml	Yes	[X] No	HCL preservative, chilled, to 4C
			[ ] Yes	[ ] No	
			[ ] Yes	[ ] No	
			[ ] Yes	[ ] No	
			[ ] Yes	[ ] No	
			[ ] Yes	[ ] No	
			[ ] Yes	[ ] No	
			[ ] Yes	[ ] No	

FILTERING PROCEDURE: _____

REMARKS: _____

VI. HEALTH & SAFETY PRECAUTIONS

[X] HEAT/COLD STRESS water, first aid kit
[ ] GASES (TOXIC, CO_2, ETC..) _____
[X] SKIN/EYE CONTACT Acids in sample bottles
MECHANICAL/ELECTRICAL _____
[ ] FALLING OBJECTS/FOOTING _____
[ ] OTHER _____

NEAREST HOSPITAL EMERGENCY ROOM Yuma Regional Medical Center PHONE # (520) 344-2000
ADDRESS 2400 S. Avenue A, Yuma

ANTICIPATED PROTECTION LEVEL [ ] A [ ] B [ ] C [X] D

(CONSULT SUPERVISOR ABOUT USING THIS FORM IF PROTECTION LEVELS A, B, OR C ARE ANTICIPATED.)

VII. ATTACHMENTS

[X] VICINITY MAP
[X] SAMPLING LOCATION MAP
[ ] WELLS & WELL DATA TABLE
[ ] TABLE(S)
[ ] OTHER

VIII. SIGNATURES / APPROVALS

SAMPLE PLAN PREPARED BY: Debi Malone DATE: 2-18-98
1ST LEVEL SUPERVISOR: _____ DATE: _____
2ND LEVEL SUPERVISOR (IF NEEDED): _____ DATE: _____

APPENDIX D

ANALYTICAL RESULTS

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

March 10, 1998

BARBARA J. ERICKSON, Ph.D., BUREAU CHIEF

1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

DEBI MALONE	PR#:	EP 512820	TYPE OF SAMPLE:	GROUND WATER	Submitter's ID:TRAVEL BLANK
ADEQ/WPD/SFS/SA	PCA:	92001	Custody:	Y	
3033 N. CENTRAL	INDEX:	33300	Priority:	3	Date Sampled:
PHOENIX, AZ 85012	SITE CODE:	140033-00			Time Sampled:
	PWS NUMBER:				Date Lab Rec: 02/24/98

Note: All samples, including chain-of-custody, will be disposed of within 30 days unless a "Save Sample" form is received by the Chemistry Laboratory. All lab QA is within the limits defined in the SLS QA Manual unless otherwise noted in the report. "ND" means none detected at the MRL specified. "TR" means present at less than MRL, but not quantifiable.

Comments: None

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT	STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT	SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LM
53353		*						
	02/25/98	SDW Volatile Organic Cmpds			EPA 502.2		N/A	
		*Benzene	ND < 0.5 ug/l			0.5 ug/l		
		*Bromobenzene	ND < 0.5 ug/l			0.5 ug/l		
		*Bromochloromethane	ND < 0.5 ug/l			0.5 ug/l		
		*Bromodichloromethane	ND < 0.5 ug/l			0.5 ug/l		
		*Bromoform	ND < 0.5 ug/l			0.5 ug/l		
		*Bromomethane	ND < 0.5 ug/l			0.5 ug/l		
		*n-Butylbenzene	ND < 0.5 ug/l			0.5 ug/l		
		*sec-Butylbenzene	ND < 0.5 ug/l			0.5 ug/l		
		*tert-Butylbenzene	ND < 0.5 ug/l			0.5 ug/l		
		*Carbon Tetrachloride	ND < 0.5 ug/l			0.5 ug/l		
		*Chlorobenzene	ND < 0.5 ug/l			0.5 ug/l		
		*Chloroethane	ND < 0.5 ug/l			0.5 ug/l		
		*Chloroform	ND < 0.5 ug/l			0.5 ug/l		
		*Chloromethane	ND < 0.5 ug/l			0.5 ug/l		
		*2-Chlorotoluene	ND < 0.5 ug/l			0.5 ug/l		
		*4-Chlorotoluene	ND < 0.5 ug/l			0.5 ug/l		
		*Dibromochloromethane	ND < 0.5 ug/l			0.5 ug/l		
		*1,2-Dibromo-3-chloro-				0.5 ug/l		
		*propane	ND < 0.5 ug/l					
		*1,2-Dibromoethane	ND < 0.5 ug/l			0.5 ug/l		
		*Dibromomethane	ND < 0.5 ug/l			0.5 ug/l		
		*1,2-Dichlorobenzene	ND < 0.5 ug/l			0.5 ug/l		
		*1,3-Dichlorobenzene	ND < 0.5 ug/l			0.5 ug/l		
		*1,4-Dichlorobenzene	ND <0.5 ug/l			0.5 ug/l		
		*Dichlorodifluoromethane	ND < 0.5 ug/l			0.5 ug/l		
		*1,1-Dichloroethane	ND < 0.5 ug/l			0.5 ug/l		

Reviewed and Approved: Patricia A. Adler
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry

393

TFDEQP000081

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT	STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT	SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LM
53353		*1,2-Dichloroethane	ND < 0.5 ug/l			0.5 ug/l		
		*1,1-Dichloroethene	ND < 0.5 ug/l			0.5 ug/l		
		*cis-1,2-Dichloroethene	ND < 0.5 ug/l			0.5 ug/l		
		*trans-1,2-Dichloroethene	ND < 0.5 ug/l			0.5 ug/l		
		*1,2-Dichloropropane	ND < 0.5 ug/l			0.5 ug/l		
		*1,3-Dichloropropane	ND < 0.5 ug/l			0.5 ug/l		
		*2,2-Dichloropropane	ND < 0.5 ug/l			0.5 ug/l		
		*1,1-Dichloropropene	ND < 0.5 ug/l			0.5 ug/l		
		*c-1,3-Dichloropropene	ND < 0.5 ug/l			0.5 ug/l		
		*t-1,3-Dichloropropene	ND < 0.5 ug/l			0.5 ug/l		
		*Ethylbenzene	ND < 0.5 ug/l			0.5 ug/l		
		*Hexachlorobutadiene	ND < 0.5 ug/l			0.5 ug/l		
		*Isopropylbenzene	ND < 0.5 ug/l			0.5 ug/l		
		*p-Isopropyltoluene	ND < 0.5 ug/l			0.5 ug/l		
		*Methylene Chloride	ND < 0.5 ug/l			0.5 ug/l		
		*Naphthalene	ND < 0.5 ug/l			0.5 ug/l		
		*n-Propylbenzene	ND < 0.5 ug/l			0.5 ug/l		
		*Styrene	ND < 0.5 ug/l			0.5 ug/l		
		*1,1,1,2-Tetrachloroethane	ND < 0.5 ug/l			0.5 ug/l		
		*1,1,2,2-Tetrachloroethane	ND < 0.5 ug/l			0.5 ug/l		
		*Tetrachloroethene	ND < 0.5 ug/l			0.5 ug/l		
		*Toluene	ND < 0.5 ug/l			0.5 ug/l		
		*1,2,3-Trichlorobenzene	ND < 0.5 ug/l			0.5 ug/l		
		*1,2,4-Trichlorobenzene	ND < 0.5 ug/l			0.5 ug/l		
		*1,1,1-Trichloroethane	ND < 0.5 ug/l			0.5 ug/l		
		*1,1,2-Trichloroethane	ND < 0.5 ug/l			0.5 ug/l		
		*Trichloroethene	ND < 0.5 ug/l			0.5 ug/l		
		*Trichlorofluoromethane	ND < 0.5 ug/l			0.5 ug/l		

Reviewed and Approved: Patricia A. Adler
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry

2 of 3

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT	STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT	SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LM
53353								
		*1,2,3-Trichloropropane	ND < 0.5 ug/l			0.5 ug/l		
		*1,2,4-Trimethylbenzene	ND < 0.5 ug/l			0.5 ug/l		
		*1,3,5-Trimethylbenzene	ND < 0.5 ug/l			0.5 ug/l		
		*Vinyl Chloride	ND < 0.5 ug/l			0.5 ug/l		
		*Xylenes, Total	ND < 0.5 ug/l			0.5 ug/l		
		*Chlorofluorobenzene(ELCD)	104%			%		
		*Chlorofluorobenzene (PID)	102%			%		

Reviewed and Approved: Patricia A. Adler 3/3
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

BARBARA J. ERICKSON, Ph.D., BUREAU CHIEF
1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

March 10, 1998

DEBI MALONE	PR#:	EP 512820	TYPE OF SAMPLE:	GROUND WATER	Submitter's ID: 55-561713
ADEQ/WPD/SFS/SA	PCA:	92001	Custody:	Y	DERRICK/ABC METALS
3033 N. CENTRAL	INDEX:	33300	Priority:	3	Date Sampled: 02/23/98
PHOENIX, AZ 85012	SITE CODE:	140033-00			Time Sampled: 1452
	PWS NUMBER:				Date Lab Rec: 02/24/98

Note: All samples, including chain-of-custody, will be disposed of within 30 days unless a "Save Sample" form is received by the Chemistry Laboratory. All lab QA is within the limits defined in the SLS QA Manual unless otherwise noted in the report. "ND" means none detected at the MRL specified. "TR" means present at less than MRL, but not quantifiable.

Comments: A small bubble was detected in the vial before analysis.
+The reporting level for this analyte was raised due to matrix interference. The chlorofiurobenzene recovery was within acceptable QA/QC parameters for the 2/26/98 analysis.

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT	STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT	SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LM
53354		*						
	02/25/98	SDW Volatile Organic Cmpds			EPA 502.2		N/A	
	02/25/98	*Benzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Bromobenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Bromochloromethane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Bromodichloromethane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Bromoform	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Bromomethane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*n-Butylbenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*sec-Butylbenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*tert-Butylbenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Carbon Tetrachloride	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Chlorobenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Chloroethane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Chloroform	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Chloromethane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*2-Chlorotoluene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*4-Chlorotoluene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Dibromochloromethane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,2-Dibromo-3-chloro-				0.5 ug/l		
		*propane	ND < 0.5 ug/l					
	02/25/98	*1,2-Dibromoethane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Dibromomethane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,2-Dichlorobenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,3-Dichlorobenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,4-Dichlorobenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/26/98	*Dichlorodifluoromethane	ND < 1.0 + ug/l			0.5 ug/l		
	02/25/98	*1,1-Dichloroethane	ND < 0.5 ug/l			0.5 ug/l		

Reviewed and Approved: Patricia A. Adler
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT	STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT	SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LM
53354	02/25/98	*1,2-Dichloroethane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,1-Dichloroethene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*cis-1,2-Dichloroethene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*trans-1,2-Dichloroethene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,2-Dichloropropane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,3-Dichloropropane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*2,2-Dichloropropane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,1-Dichloropropene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*c-1,3-Dichloropropene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*t-1,3-Dichloropropene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Ethylbenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Hexachlorobutadiene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Isopropylbenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*p-Isopropyltoluene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Methylene Chloride	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Naphthalene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*n-Propylbenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Styrene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,1,1,2-Tetrachloroethane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,1,2,2-Tetrachloroethane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Tetrachloroethene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Toluene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,2,3-Trichlorobenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,2,4-Trichlorobenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,1,1-Trichloroethane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,1,2-Trichloroethane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Trichloroethene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Trichlorofluoromethane	ND < 0.5 ug/l			0.5 ug/l		

Reviewed and Approved: Patricia A. Adler
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT	STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT	SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LMT
53354								
	02/25/98	*1,2,3-Trichloropropane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,2,4-Trimethylbenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,3,5-Trimethylbenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Vinyl Chloride	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Xylenes, Total	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Chlorofluorobenzene(ELCD)	104%			%		
	02/25/98	*Chlorofluorobenzene (PID)	100%			%		

Reviewed and Approved: Patricia A. Adler
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry

373

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

March 10, 1998

BARBARA J. ERICKSON, Ph.D., BUREAU CHIEF

1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

DEBI MALONE	PR#:	EP 512820	TYPE OF SAMPLE:	GROUND WATER	Submitter's ID: 55-613927
ADEQ/WPD/SFS/SA	PCA:	92001	Custody:	Y	BYRNE SCHOOL
3033 N. CENTRAL	INDEX:	33300	Priority:	3	Date Sampled: 02/24/98
PHOENIX, AZ 85012	SITE CODE:	140033-00			Time Sampled: 0900
	PWS NUMBER:				Date Lab Rec: 02/24/98

Note: All samples, including chain-of-custody, will be disposed of within 30 days unless a "Save Sample" form is received by the Chemistry Laboratory. All lab QA is within the limits defined in the SLS QA Manual unless otherwise noted in the report. "ND" means none detected at the MRL specified. "TR" means present at less than MRL, but not quantifiable.

Comments: None

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT	STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT	SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LM
53352		*						
	02/25/98	SDW Volatile Organic Cmpds			EPA 502.2		N/A	
		*Benzene	ND < 0.5 ug/l			0.5 ug/l		
		*Bromobenzene	ND < 0.5 ug/l			0.5 ug/l		
		*Bromochloromethane	ND < 0.5 ug/l			0.5 ug/l		
		*Bromodichloromethane	ND < 0.5 ug/l			0.5 ug/l		
		*Bromoform	ND < 0.5 ug/l			0.5 ug/l		
		*Bromomethane	ND < 0.5 ug/l			0.5 ug/l		
		*n-Butylbenzene	ND < 0.5 ug/l			0.5 ug/l		
		*sec-Butylbenzene	ND < 0.5 ug/l			0.5 ug/l		
		*tert-Butylbenzene	ND < 0.5 ug/l			0.5 ug/l		
		*Carbon Tetrachloride	ND < 0.5 ug/l			0.5 ug/l		
		*Chlorobenzene	ND < 0.5 ug/l			0.5 ug/l		
		*Chloroethane	ND < 0.5 ug/l			0.5 ug/l		
		*Chloroform	ND < 0.5 ug/l			0.5 ug/l		
		*Chloromethane	ND < 0.5 ug/l			0.5 ug/l		
		*2-Chlorotoluene	ND < 0.5 ug/l			0.5 ug/l		
		*4-Chlorotoluene	ND < 0.5 ug/l			0.5 ug/l		
		*Dibromochloromethane	ND < 0.5 ug/l			0.5 ug/l		
		*1,2-Dibromo-3-chloro-				0.5 ug/l		
		*propane	ND < 0.5 ug/					
		*1,2-Dibromoethane	ND < 0.5 ug/			0.5 ug/l		
		*Dibromomethane	ND < 0.5 ug/l			0.5 ug/l		
		*1,2-Dichlorobenzene	ND < 0.5 ug/l			0.5 ug/l		
		*1,3-Dichlorobenzene	ND < 0.5 ug/l			0.5 ug/l		
		*1,4-Dichlorobenzene	ND < 0.5 ug/l			0.5 ug/l		
		*Dichlorodifluoromethane	ND < 0.5 ug/l			0.5 ug/l		
		*1,1-Dichloroethane	ND < 0.5 ug/l			0.5 ug/l		

Reviewed and Approved: Patricia Adler
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry

1 of 3

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT	STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT	SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LM
53352		*1,2-Dichloroethane	ND < 0.5 ug/l			0.5 ug/l		
		*1,1-Dichloroethene	ND < 0.5 ug/l			0.5 ug/l		
		*cis-1,2-Dichloroethene	ND < 0.5 ug/l			0.5 ug/l		
		*trans-1,2-Dichloroethene	ND < 0.5 ug/l			0.5 ug/l		
		*1,2-Dichloropropane	ND < 0.5 ug/l			0.5 ug/l		
		*1,3-Dichloropropane	ND < 0.5 ug/l			0.5 ug/l		
		*2,2-Dichloropropane	ND < 0.5 ug/l			0.5 ug/l		
		*1,1-Dichloropropene	ND < 0.5 ug/l			0.5 ug/l		
		*c-1,3-Dichloropropene	ND < 0.5 ug/l			0.5 ug/l		
		*t-1,3-Dichloropropene	ND < 0.5 ug/l			0.5 ug/l		
		*Ethylbenzene	ND < 0.5 ug/l			0.5 ug/l		
		*Hexachlorobutadiene	ND < 0.5 ug/l			0.5 ug/l		
		*Isopropylbenzene	ND < 0.5 ug/l			0.5 ug/l		
		*p-Isopropyltoluene	ND < 0.5 ug/l			0.5 ug/l		
		*Methylene Chloride	ND < 0.5 ug/l			0.5 ug/l		
		*Naphthalene	ND < 0.5 ug/l			0.5 ug/l		
		*n-Propylbenzene	ND < 0.5 ug/l			0.5 ug/l		
		*Styrene	ND < 0.5 ug/l			0.5 ug/l		
		*1,1,1,2-Tetrachloroethane	ND < 0.5 ug/l			0.5 ug/l		
		*1,1,2,2-Tetrachloroethane	ND < 0.5 ug/l			0.5 ug/l		
		*Tetrachloroethene	ND < 0.5 ug/l			0.5 ug/l		
		*Toluene	ND < 0.5 ug/l			0.5 ug/l		
		*1,2,3-Trichlorobenzene	ND < 0.5 ug/l			0.5 ug/l		
		*1,2,4-Trichlorobenzene	ND < 0.5 ug/l			0.5 ug/l		
		*1,1,1-Trichloroethane	ND < 0.5 ug/l			0.5 ug/l		
		*1,1,2-Trichloroethane	ND < 0.5 ug/l			0.5 ug/l		
		*Trichloroethene	ND < 0.5 ug/l			0.5 ug/l		
		*Trichlorofluoromethane	ND < 0.5 ug/l			0.5 ug/l		

Reviewed and Approved: Patricia A. Adler
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry

293

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT	STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT	SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LM
53352								
		*1,2,3-Trichloropropane	ND < 0.5 ug/l			0.5 ug/l		
		*1,2,4-Trimethylbenzene	ND < 0.5 ug/l			0.5 ug/l		
		*1,3,5-Trimethylbenzene	ND < 0.5 ug/l			0.5 ug/l		
		*Vinyl Chloride	ND < 0.5 ug/l			0.5 ug/l		
		*Xylenes, Total	ND < 0.5 ug/l			0.5 ug/l		
		*Chlorofluorobenzene(ELCD)	100% ug/l			%		
		*Chlorofluorobenzene (PID)	98% ug/l			%		

eviewed and Approved: Patricia A. Adler 3/3
atricia A. Adler, Chief
ffice of Environmental and Analytical Chemistry

TFDEQP000089

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

March 10, 1998

BARBARA J. ERICKSON, Ph.D., BUREAU CHIEF
1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

DEBI MALONE	PR#:	EP 512820	TYPE OF SAMPLE:	GROUND WATER		Submitter's ID:	55-552374
ADEQ/WPD/SFS/SA	PCA:	92001	Custody:	Y			DESERT LAWN
3033 N. CENTRAL	INDEX:	33300	Priority:	3		Date Sampled:	02/23/98
PHOENIX, AZ 85012	SITE CODE:	140033-00				Time Sampled:	1534
	PWS NUMBER:					Date Lab Rec:	02/24/98

Note: All samples, including chain-of-custody, will be disposed of within 30 days unless a "Save Sample" form is received by the Chemistry Laboratory. All lab QA is within the limits defined in the SLS QA Manual unless otherwise noted in the report. "ND" means none detected at the MRL specified. "TR" means present at less than MRL, but not quantifiable.

Comments: A small bubble was detected in the vial before analysis.

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT		STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT		SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING L
53351		*								
	02/25/98	SDW Volatile Organic Cmpds				EPA 502.2			N/A	
		*Benzene	0.6	ug/l			0.5	ug/l		
		*Bromobenzene	ND < 0.5	ug/l			0.5	ug/l		
		*Bromochloromethane	ND < 0.5	ug/l			0.5	ug/l		
		*Bromodichloromethane	ND < 0.5	ug/l			0.5	ug/l		
		*Bromoform	ND < 0.5	ug/l			0.5	ug/l		
		*Bromomethane	ND < 0.5	ug/l			0.5	ug/l		
		*n-Butylbenzene	ND < 0.5	ug/l			0.5	ug/l		
		*sec-Butylbenzene	ND < 0.5	ug/l			0.5	ug/l		
		*tert-Butylbenzene	ND < 0.5	ug/l			0.5	ug/l		
		*Carbon Tetrachloride	ND < 0.5	ug/l			0.5	ug/l		
		*Chlorobenzene	ND < 0.5	ug/l			0.5	ug/l		
		*Chloroethane	ND < 0.5	ug/l			0.5	ug/l		
		*Chloroform	ND < 0.5	ug/l			0.5	ug/l		
		*Chloromethane	ND < 0.5	ug/l			0.5	ug/l		
		*2-Chlorotoluene	ND < 0.5	ug/l			0.5	ug/l		
		*4-Chlorotoluene	ND < 0.5	ug/l			0.5	ug/l		
		*Dibromochloromethane	ND < 0.5	ug/l			0.5	ug/l		
		*1,2-Dibromo-3-chloro-					0.5	ug/l		
		*propane	ND < 0.5	ug/l						
		*1,2-Dibromoethane	ND < 0.5	ug/l			0.5	ug/l		
		*Dibromomethane	ND < 0.5	ug/l			0.5	ug/l		
		*1,2-Dichlorobenzene	ND < 0.5	ug/l			0.5	ug/l		
		*1,3-Dichlorobenzene	ND < 0.5	ug/l			0.5	ug/l		
		*1,4-Dichlorobenzene	ND < 0.5	ug/l			0.5	ug/l		
		*Dichlorodifluoromethane	ND < 0.5	ug/l			0.5	ug/l		
		*1,1-Dichloroethane	ND < 0.5	ug/l			0.5	ug/l		

Reviewed and Approved: Patricia A. Adler
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry
3/23

TFDEQP000090

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT	STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT	SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LM
53351		*1,2-Dichloroethane	ND < 0.5 ug/l			0.5 ug/l		
		*1,1-Dichloroethene	ND < 0.5 ug/l			0.5 ug/l		
		*cis-1,2-Dichloroethene	ND < 0.5 ug/l			0.5 ug/l		
		*trans-1,2-Dichloroethene	ND < 0.5 ug/l			0.5 ug/l		
		*1,2-Dichloropropane	ND < 0.5 ug/l			0.5 ug/l		
		*1,3-Dichloropropane	ND < 0.5 ug/l			0.5 ug/l		
		*2,2-Dichloropropane	ND < 0.5 ug/l			0.5 ug/l		
		*1,1-Dichloropropene	ND < 0.5 ug/l			0.5 ug/l		
		*c-1,3-Dichloropropene	ND < 0.5 ug/l			0.5 ug/l		
		*t-1,3-Dichloropropene	ND < 0.5 ug/l			0.5 ug/l		
		*Ethylbenzene	ND < 0.5 ug/l			0.5 ug/l		
		*Hexachlorobutadiene	ND < 0.5 ug/l			0.5 ug/l		
		*Isopropylbenzene	ND < 0.5 ug/l			0.5 ug/l		
		*p-Isopropyltoluene	ND < 0.5 ug/l			0.5 ug/l		
		*Methylene Chloride	ND < 0.5 ug/l			0.5 ug/l		
		*Naphthalene	ND < 0.5 ug/l			0.5 ug/l		
		*n-Propylbenzene	ND < 0.5 ug/l			0.5 ug/l		
		*Styrene	ND < 0.5 ug/l			0.5 ug/l		
		*1,1,1,2-Tetrachloroethane	ND < 0.5 ug/l			0.5 ug/l		
		*1,1,2,2-Tetrachloroethane	ND < 0.5 ug/l			0.5 ug/l		
		*Tetrachloroethene	ND < 0.5 ug/l			0.5 ug/l		
		*Toluene	ND < 0.5 ug/l			0.5 ug/l		
		*1,2,3-Trichlorobenzene	ND < 0.5 ug/l			0.5 ug/l		
		*1,2,4-Trichlorobenzene	ND < 0.5 ug/l			0.5 ug/l		
		*1,1,1-Trichloroethane	ND < 0.5 ug/l			0.5 ug/l		
		*1,1,2-Trichloroethane	ND < 0.5 ug/l			0.5 ug/l		
		*Trichloroethene	ND < 0.5 ug/l			0.5 ug/l		
		*Trichlorofluoromethane	ND < 0.5 ug/l			0.5 ug/l		

Reviewed and Approved: Patricia A. Adler
2/3
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT	STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT	SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LM
53351								
		*1,2,3-Trichloropropane	ND < 0.5 ug/l			0.5 ug/l		
		*1,2,4-Trimethylbenzene	ND < 0.5 ug/l			0.5 ug/l		
		*1,3,5-Trimethylbenzene	ND < 0.5 ug/l			0.5 ug/l		
		*Vinyl Chloride	ND < 0.5 ug/l			0.5 ug/l		
		*Xylenes, Total	ND < 0.5 ug/l			0.5 ug/l		
		*Chlorofluorobenzene(ElCD)	100% ug/l			%		
		*Chlorofluorobenzene (PID)	104% ug/l			%		

Reviewed and Approved: Patricia A. Adler 3/3
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

March 9, 1998

BARBARA J. ERICKSON, Ph.D., BUREAU CHIEF
1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

DEBI MALONE	PR#:	EP 512820	TYPE OF SAMPLE:	GROUND WATER		Submitter's ID:	55-5617130
ADEQ/WPD/SFS/SA	PCA:	92001	Custody:	Y			ABC METALS
3033 N. CENTRAL	INDEX:	33300	Priority:	3		Date Sampled:	02/23/98
PHOENIX, AZ 85012	SITE CODE:	140033-00				Time Sampled:	1453
	PWS NUMBER:					Date Lab Rec:	02/24/98

Note: All samples, including chain-of-custody, will be disposed of within 30 days unless a "Save Sample" form is received by the Chemistry Laboratory. All lab QA is within the limits defined in the SLS QA Manual unless otherwise noted in the report. "ND" means none detected at the MRL specified. "TR" means present at less than MRL, but not quantifiable.

Comments: A small bubble was detected in the vial before analysis. +The reporting level for this analyte was raised due to matrix interference. Chiroflurobenzene recoveries are within acceptance criteria for the 2/26/98 analysis.

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT	STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT	SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LM
53350		*						
	02/25/98	SDW Volatile Organic Cmpds			EPA 502.2		N/A	
	02/25/98	*Benzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Bromobenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Bromochloromethane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Bromodichloromethane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Bromoform	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Bromomethane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*n-Butylbenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*sec-Butylbenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*tert-Butylbenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Carbon Tetrachloride	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Chlorobenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Chloroethane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Chloroform	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Chloromethane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*2-Chlorotoluene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*4-Chlorotoluene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Dibromochloromethane	ND < 0.5 ug/l			0.5 ug/l		
		*1,2-Dibromo-3-chloro-				0.5 ug/l		
	02/25/98	*propane	ND < 0.5 ug/l					
	02/25/98	*1,2-Dibromoethane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Dibromomethane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,2-Dichlorobenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,3-Dichlorobenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,4-Dichlorobenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/26/98	*Dichlorodifluoromethane	ND < 1.0 + ug/l			0.5 ug/l		
	02/25/98	*1,1-Dichloroethane	ND < 0.5 ug/l			0.5 ug/l		

Reviewed and Approved: Patricia A. Adler 1/93
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT	STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT	SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LM
53350	02/25/98	*1,2-Dichloroethane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,1-Dichloroethene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*cis-1,2-Dichloroethene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*trans-1,2-Dichloroethene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,2-Dichloropropane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,3-Dichloropropane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*2,2-Dichloropropane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,1-Dichloropropene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*c-1,3-Dichloropropene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*t-1,3-Dichloropropene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Ethylbenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Hexachlorobutadiene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Isopropylbenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*p-Isopropyltoluene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Methylene Chloride	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Naphthalene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*n-Propylbenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Styrene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,1,1,2-Tetrachloroethane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,1,2,2-Tetrachloroethane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Tetrachloroethene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Toluene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,2,3-Trichlorobenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,2,4-Trichlorobenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,1,1-Trichloroethane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,1,2-Trichloroethane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Trichloroethene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Trichlorofluoromethane	ND < 0.5 ug/l			0.5 ug/l		

Reviewed and Approved: Patricia A. Adler
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry

2 of 3

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT	STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT	SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LMT
53350								
	02/25/98	*1,2,3-Trichloropropane	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,2,4-Trimethylbenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*1,3,5-Trimethylbenzene	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Vinyl Chloride	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Xylenes, Total	ND < 0.5 ug/l			0.5 ug/l		
	02/25/98	*Chlorofluorobenzene(ELCD)	100%			%		
	02/25/98	*Chlorofluorobenzene (PID)	99%			%		

eviewed and Approved: Patricia A. Adler
atricia A. Adler, Chief
ffice of Environmental and Analytical Chemistry

3g 3

Arizona Department of Health Services

BUREAU OF STATE LABORATORY SERVICES
1520 W. Adams Phoenix, AZ 85007
602-542-6108

REQUEST FOR CHEMICAL ANALYSES FORM

Date Received and Lab Number

PROJECT MANAGER: Debi Malone
PHONE NUMBER: 207-4453
AGENCY: ADEQ
OFFICE/SECTION/UNIT: WPD/SFS/SA
ADDRESS: 3033 N Central Ave 7th Floor
CITY: Phoenix
STATE: AZ ZIPCODE: 85012
SUBMITTER/SAMPLER: Debi Malone
PHONE NUMBER: 207-4453

CONTINUATION FORM USED? (YES) No
SAMPLE NAME/IDENTIFICATION/LOCATION: 55-561713 Lorick/ABC Metals
DATE SAMPLED: 8-23-98 TIME SAMPLED: 2:50p
OF CONTAINERS: 2
CHAIN OF CUSTODY? (YES) No
CALL RESULTS? (YES) No
NEED RESULTS BY: Verbals in 2 weeks (March 97)

ADEQ ONLY:
PR#: EP-512820 PCA: 92001
SITE CODE: 140033-00 INDEX: 33300

Priority:
- ☐ 1. Immediate health or environmental emergency
- ☐ 2. Chronic or potential health & environmental hazard
- ☒ 3. Routine Surveillance

SAMPLE MATRIX:
- ☒ Ground Water
- ☐ Surface Water
- ☐ Waste Water
- ☐ Drinking Water
- ☐ Food
- ☐ Hi Vol Filter
- ☐ I H Filter
- ☐ Sorbent Tube
- ☐ Soil/Sludge
- ☐ Haz Waste
- ☐ Bulk

Chlorinated? Yes/(No)
OTHER:

FOR DRINKING WATER COMPLIANCE TESTING SUPPLY PWS NUMBER: DWAR? YES NO

MULTI-PARAMETER TESTS

INORGANICS ONLY

SAFE DRINKING WATER
- ☐ A1 All inorganics
- ☐ A8 Lead & Copper only

AMBIENT SURFACE WATER
- ☐ B1 All inorganics
- ☐ A11 Priority pollutant metals-dissolved
- ☐ A10 Priority pollutant metals-total

INORGANICS - WATERS ONLY
- ☐ A5 Alkalinity
- ☐ E11 Ammonia-nitrogen (NH3-N)
- ☐ A6 Carbonate/Bicarbonate
- ☐ E4 Chloride
- ☐ E5 Conductivity, specific
- ☐ E6 Cyanide amenable
- ☐ E7 Cyanide free
- ☐ E8 Cyanide total
- ☐ E9 Fluoride
- ☐ E10 Hardness
- ☐ E12 Nitrate-nitrogen(NO3-N)
- ☐ E13 Nitrite-nitrogen (NO2-N)
- ☐ E16 Nitrogen, Kjeldhal (TKN)
- ☐ E15 Nitrogen-total (NO2/NO3-N)
- ☐ E17 pH, water
- ☐ E19 Phosphorus, total
- ☐ E20 Sulfate (SO4)
- ☐ E22 TDS
- ☐ E23 TSS
- ☐ E24 Turbidity

HI-VOL FILTER
- ☐ D2 PM10

METALS-ALL MATRICES

PROCESSING NEEDED:
- ☐ F3 Dissolved (field filtered)
- ☐ F4 Dissolved (lab filtered)
- ☐ F2 Total recoverable (waters only)
- ☐ F1 Total digested (solid/sludges only)

METALS:
- ☐ F5 Aluminum
- ☐ F6 Antimony
- ☐ F7 Arsenic
- ☐ F8 Barium
- ☐ F9 Beryllium
- ☐ F10 Boron
- ☐ F11 Cadmium
- ☐ F12 Calcium
- ☐ F32 Chromium-hexavalent
- ☐ F13 Chromium-total
- ☐ F14 Cobalt
- ☐ F15 Copper
- ☐ F16 Iron
- ☐ F17 Lead
- ☐ F18 Magnesium
- ☐ F19 Manganese
- ☐ F20 Mercury
- ☐ F21 Molybdenum
- ☐ F30 Nickel
- ☐ F22 Potassium
- ☐ F23 Selenium
- ☐ F33 Silicon
- ☐ F24 Silver
- ☐ F25 Sodium
- ☐ F31 Strontium
- ☐ F26 Thallium
- ☐ F27 Tin
- ☐ F34 Titanium
- ☐ F28 Vanadium
- ☐ F29 Zinc

MULTI-ELEMENT METALS SCREEN:
- ☐ G11 Soil
- ☐ A4 Water

SOILS / SLUDGES OR HAZARDOUS MATERIALS
- ☐ G12 Cyanide, total
- ☐ G3 Flash point
- ☐ A00 Percent solids
- ☐ G8 Percent water (KF)
- ☐ G1 pH, corrosivity
- ☐ G2 pH, soil
- ☐ G7 Unknown ID

TCLP METALS
- ☐ H1 TCLP extraction
- ☐ H2 TC Arsenic
- ☐ H3 TC Barium
- ☐ H4 TC Cadmium
- ☐ H5 TC Chromium
- ☐ H6 TC Lead
- ☐ H7 TC Mercury
- ☐ H8 TC Selenium
- ☐ H9 TC Silver

SOLVENTS
- ☒ I2 SDW VOCs (502.2)
- ☐ I3 VOCs (601/602)
- ☐ I4 BTEX only

SYNTHETIC ORGANIC CHEMICALS (SOCs)
- ☐ J4 Chlorinated pesticide screen
- ☐ K5 Custom GC/MS screen
- ☐ J10 EDB/DBCP screen
- ☐ J9 GWPL screen
  - ☐ Pesticides
  - ☐ Herbicides
  - ☐ Carbamates
- ☐ J8 PCBs screen
- ☐ J1 SDW Carbamates
- ☐ J3 SDW Herbicides

INDUSTRIAL HYGIENE ANALYSES:
- ☐ SLC ☐ LAB

SPECIAL REQUESTS:

PRESERVATIVES USED:
- ☒ Cooled (Ice in chest)
- ☐ Cooled (Temp: _____)
- ☐ Mineral acid
- ☐ Base
- ☐ Thiosulfate
- ☐ Ascorbic acid
- ☐ Monochloroacetic acid
- ☐ Zinc acetate

COMMENTS: (FOR LAB USE ONLY)

TFDEQP000096

B[illegible] OF STATE LABORATORY [illegible]ES
1520 West Adams Street Phoenix, Arizona 85007
(602) 542-6108

REQUEST FOR CHEMICAL ANALYSIS
SAMPLE CONTINUATION FORM

Note: All samples must be of the same matrix. All tests must be the same for each sample.

Laboratory's Sample Number	Sampler's Identification/ Description	Date Sampled	Time Sampled	Number of Containers
53350	55-561713D / ABC Metals	2-23-98	2:53p	2
53351	55-552574 / Desert Lawn	2-23-98	3:34p	2
53352	55-613927 / Byrne School	2-24-98	9:02A	2
53353	Travel Blank	—	—	2
53354	55-561713 / Derrick / ABC Metals	2-23-98	2:52P	2

*1
#2

Chain of Custody Needed? ☑ Yes ☐ No
If yes, then complete lower section of document.

Comments for Lab use only: *1 small Bubbles VOC / ½
#2 Small bubbles VOC / ½

CHAIN OF CUSTODY RECORD

Agency Name: ADEQ

Sampler's Signature: Debi Malone

Print Name: Debi Malone

For Sampler's Use Only

Samples offered? ☐ Yes ☐ No Samples Refused? ☐

Samples offered to/refused by:

Signature: _____

Title: _____

Date: _____

Relinquished by: (Signature)	(Print name)	Received by: (Signature)	(Print name)	Date/Time
Debi Malone	Debi Malone	[illegible]	JOE Hammond	2/24/98 16:05

Final disposal: Date disposed _____ Signature: _____

TFDEQP000097

RCAF.SCF 8/97

Original-Chem Office; White-Section; Canary-Submitter

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

May 21, 1998

BARBARA J. ERICKSON, Ph.D., BUREAU CHIEF
1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

DEBI MALONE	PR#:	EP 512820	TYPE OF SAMPLE:	GROUND WATER	Submitter's ID: YCC-1
ADEQ/WPD/SPS/SAU	PCA:	92001	Custody:	Y	
3033 N. CENTRAL	INDEX:	33300	Priority:	2	Date Sampled: 05/04/98
PHOENIX, AZ 85012	SITE CODE:				Time Sampled: 1245
	PWS NUMBER:				Date Lab Rec: 05/05/98

Note: All samples, including chain-of-custody, will be disposed of within 30 days unless a "Save Sample" form is received by the Chemistry Laboratory. All lab QA is within the limits defined in the SLS QA Manual unless otherwise noted in the report. "ND" means none detected at the MRL specified. "TR" means present at less than MRL, but not quantifiable.

Comments: None

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT	STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT	SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LMT
54023		*						
	05/08/98	SDW Volatile Organic Cmpds			EPA 502.2		N/A	
		*Benzene	ND			0.5 ug/l		
		*Bromobenzene	ND			0.5 ug/l		
		*Bromochloromethane	ND			0.5 ug/l		
		*Bromodichloromethane	ND			0.5 ug/l		
		*Bromoform	ND			0.5 ug/l		
		*Bromomethane	ND			0.5 ug/l		
		*n-Butylbenzene	ND			0.5 ug/l		
		*sec-Butylbenzene	ND			0.5 ug/l		
		*tert-Butylbenzene	ND			0.5 ug/l		
		*Carbon Tetrachloride	ND			0.5 ug/l		
		*Chlorobenzene	ND			0.5 ug/l		
		*Chloroethane	ND			0.5 ug/l		
		*Chloroform	ND			0.5 ug/l		
		*Chloromethane	ND			0.5 ug/l		
		*2-Chlorotoluene	ND			0.5 ug/l		
		*4-Chlorotoluene	ND			0.5 ug/l		
		*Dibromochloromethane	ND			0.5 ug/l		
		*1,2-Dibromo-3-chloro-				0.5 ug/l		
		*propane	ND					
		*1,2-Dibromoethane	ND			0.5 ug/l		
		*Dibromomethane	ND			0.5 ug/l		
		*1,2-Dichlorobenzene	ND			0.5 ug/l		
		*1,3-Dichlorobenzene	ND			0.5 ug/l		
		*1,4-Dichlorobenzene	ND			0.5 ug/l		
		*Dichlorodifluoromethane	ND			0.5 ug/l		
		*1,1-Dichloroethane	ND			0.5 ug/l		

Reviewed and Approved: Patricia A. Adler 5/21
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT	STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT	SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LMT
54023		*1,2-Dichloroethane	ND			0.5 ug/l		
		*1,1-Dichloroethene	ND			0.5 ug/l		
		*cis-1,2-Dichloroethene	ND			0.5 ug/l		
		*trans-1,2-Dichloroethene	ND			0.5 ug/l		
		*1,2-Dichloropropane	ND			0.5 ug/l		
		*1,3-Dichloropropane	ND			0.5 ug/l		
		*2,2-Dichloropropane	ND			0.5 ug/l		
		*1,1-Dichloropropene	ND			0.5 ug/l		
		*c-1,3-Dichloropropene	ND			0.25 ug/l		
		*t-1,3-Dichloropropene	ND			0.25 ug/l		
		*1,3 Dichloroproene, Total	ND			0.5 ug/l		
		*Ethylbenzene	ND			0.5 ug/l		
		*Hexachlorobutadiene	ND			0.5 ug/l		
		*Isopropylbenzene	ND			0.5 ug/l		
		*p-Isopropyltoluene	ND			0.5 ug/l		
		*Methylene Chloride	ND			0.5 ug/l		
		*Naphthalene	ND			0.5 ug/l		
		*n-Propylbenzene	ND			0.5 ug/l		
		*Styrene	ND			0.5 ug/l		
		*1,1,1,2-Tetrachloroethane	ND			0.5 ug/l		
		*1,1,2,2-Tetrachloroethane	ND			0.5 ug/l		
		*Tetrachloroethene	ND			0.5 ug/l		
		*Toluene	ND			0.5 ug/l		
		*1,2,3-Trichlorobenzene	ND			0.5 ug/l		
		*1,2,4-Trichlorobenzene	ND			0.5 ug/l		
		*1,1,1-Trichloroethane	ND			0.5 ug/l		
		*1,1,2-Trichloroethane	ND			0.5 ug/l		
		*Trichloroethene	ND			0.5 ug/l		

Reviewed and Approved: Patricia A. Adler 9/21
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry

2 of 3

TFDEQP000099

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT		STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT		SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LMT
54023		*Trichlorofluoromethane	ND				0.5	ug/l		
		*1,2,3-Trichloropropane	ND				0.5	ug/l		
		*1,2,4-Trimethylbenzene	ND				0.5	ug/l		
		*1,3,5-Trimethylbenzene	ND				0.5	ug/l		
		*Vinyl Chloride	ND				0.5	ug/l		
		*Xylenes, Total	ND				0.5	ug/l		
		*Chlorofluorobenzene(ELCD)	100	%				%		
		*Chlorofluorobenzene (PID)	101	%				%		

Reviewed and Approved: Patricia Adler 5/21
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry 3q3

TFDEQP000100

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

May 21, 1998

BARBARA J. ERICKSON, Ph.D., BUREAU CHIEF
1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

DEBI MALONE	PR#:	EP 512820	TYPE OF SAMPLE: GROUND WATER	Submitter's ID: YCC-2	Duplicate of YCC-1
ADEQ/WPD/SPS/SAU	PCA:	92001	Custody: Y		
3033 N. CENTRAL	INDEX:	33300	Priority: 2	Date Sampled: 05/04/98	
PHOENIX, AZ 85012	SITE CODE:			Time Sampled: 1250	
	PWS NUMBER:			Date Lab Rec: 05/05/98	

Note: All samples, including chain-of-custody, will be disposed of within 30 days unless a "Save Sample" form is received by the Chemistry Laboratory. All lab QA is within the limits defined in the SLS QA Manual unless otherwise noted in the report. "ND" means none detected at the MRL specified. "TR" means present at less than MRL, but not quantifiable.

Comments: A small bubble was detected in the vial at the time of submission and at the time of analysis.

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT	STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT	SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LMT
54024		*						
	05/08/98	SDW Volatile Organic Cmpds			EPA 502.2		N/A	
		*Benzene	ND			0.5 ug/l		
		*Bromobenzene	ND			0.5 ug/l		
		*Bromochloromethane	ND			0.5 ug/l		
		*Bromodichloromethane	ND			0.5 ug/l		
		*Bromoform	ND			0.5 ug/l		
		*Bromomethane	ND			0.5 ug/l		
		*n-Butylbenzene	ND			0.5 ug/l		
		*sec-Butylbenzene	ND			0.5 ug/l		
		*tert-Butylbenzene	ND			0.5 ug/l		
		*Carbon Tetrachloride	ND			0.5 ug/l		
		*Chlorobenzene	ND			0.5 ug/l		
		*Chloroethane	ND			0.5 ug/l		
		*Chloroform	ND			0.5 ug/l		
		*Chloromethane	ND			0.5 ug/l		
		*2-Chlorotoluene	ND			0.5 ug/l		
		*4-Chlorotoluene	ND			0.5 ug/l		
		*Dibromochloromethane	ND			0.5 ug/l		
		*1,2-Dibromo-3-chloro-				0.5 ug/l		
		*propane	ND					
		*1,2-Dibromoethane	ND			0.5 ug/l		
		*Dibromomethane	ND			0.5 ug/l		
		*1,2-Dichlorobenzene	ND			0.5 ug/l		
		*1,3-Dichlorobenzene	ND			0.5 ug/l		
		*1,4-Dichlorobenzene	ND			0.5 ug/l		
		*Dichlorodifluoromethane	ND			0.5 ug/l		
		*1,1-Dichloroethane	ND			0.5 ug/l		

Reviewed and Approved: Patricia A. Adler 5/21
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry

TFDEQP000101

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT	STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT	SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LMT
54024		*1,2-Dichloroethane	ND			0.5 ug/l		
		*1,1-Dichloroethene	ND			0.5 ug/l		
		*cis-1,2-Dichloroethene	ND			0.5 ug/l		
		*trans-1,2-Dichloroethene	ND			0.5 ug/l		
		*1,2-Dichloropropane	ND			0.5 ug/l		
		*1,3-Dichloropropane	ND			0.5 ug/l		
		*2,2-Dichloropropane	ND			0.5 ug/l		
		*1,1-Dichloropropene	ND			0.5 ug/l		
		*c-1,3-Dichloropropene	ND			0.25 ug/l		
		*t-1,3-Dichloropropene	ND			0.25 ug/l		
		*1,3 Dichloroproene, Total	ND			0.5 ug/l		
		*Ethylbenzene	ND			0.5 ug/l		
		*Hexachlorobutadiene	ND			0.5 ug/l		
		*Isopropylbenzene	ND			0.5 ug/l		
		*p-Isopropyltoluene	ND			0.5 ug/l		
		*Methylene Chloride	ND			0.5 ug/l		
		*Naphthalene	ND			0.5 ug/l		
		*n-Propylbenzene	ND			0.5 ug/l		
		*Styrene	ND			0.5 ug/l		
		*1,1,1,2-Tetrachloroethane	ND			0.5 ug/l		
		*1,1,2,2-Tetrachloroethane	ND			0.5 ug/l		
		*Tetrachloroethene	ND			0.5 ug/l		
		*Toluene	ND			0.5 ug/l		
		*1,2,3-Trichlorobenzene	ND			0.5 ug/l		
		*1,2,4-Trichlorobenzene	ND			0.5 ug/l		
		*1,1,1-Trichloroethane	ND			0.5 ug/l		
		*1,1,2-Trichloroethane	ND			0.5 ug/l		
		*Trichloroethene	ND			0.5 ug/l		

Reviewed and Approved: Patricia A. Adler 5/21
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry

293

TFDEQP000102

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT		STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT		SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LMT
54024		*Trichlorofluoromethane	ND				0.5	ug/l		
		*1,2,3-Trichloropropane	ND				0.5	ug/l		
		*1,2,4-Trimethylbenzene	ND				0.5	ug/l		
		*1,3,5-Trimethylbenzene	ND				0.5	ug/l		
		*Vinyl Chloride	ND				0.5	ug/l		
		*Xylenes, Total	ND				0.5	ug/l		
		*Chlorofluorobenzene(ELCD)	99	%				%		
		*Chlorofluorobenzene (PID)	100	%				%		

Reviewed and Approved: Patricia A. Adler 5/21
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry
373

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

May 21, 1998

BARBARA J. ERICKSON, Ph.D., BUREAU CHIEF
1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

DEBI MALONE	PR#:	EP 512820	TYPE OF SAMPLE:	GROUND WATER		Submitter's ID:	YCC-3
ADEQ/WPD/SPS/SAU	PCA:	92001	Custody:	Y			
3033 N. CENTRAL	INDEX:	33300	Priority:	2		Date Sampled:	05/04/98
PHOENIX, AZ 85012	SITE CODE:					Time Sampled:	1300
	PWS NUMBER:					Date Lab Rec:	05/05/98

Note: All samples, including chain-of-custody, will be disposed of within 30 days unless a "Save Sample" form is received by the Chemistry Laboratory. All lab QA is within the limits defined in the SLS QA Manual unless otherwise noted in the report. "ND" means none detected at the MRL specified. "TR" means present at less than MRL, but not quantifiable.

Comments: A small bubble was detected in the vial at the time of submission and at the time of analysis.

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT	STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT	SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LMT
54025		*						
	05/08/98	SDW Volatile Organic Cmpds			EPA 502.2		N/A	
		*Benzene	ND			0.5 ug/l		
		*Bromobenzene	ND			0.5 ug/l		
		*Bromochloromethane	ND			0.5 ug/l		
		*Bromodichloromethane	ND			0.5 ug/l		
		*Bromoform	ND			0.5 ug/l		
		*Bromomethane	ND			0.5 ug/l		
		*n-Butylbenzene	ND			0.5 ug/l		
		*sec-Butylbenzene	ND			0.5 ug/l		
		*tert-Butylbenzene	ND			0.5 ug/l		
		*Carbon Tetrachloride	ND			0.5 ug/l		
		*Chlorobenzene	ND			0.5 ug/l		
		*Chloroethane	ND			0.5 ug/l		
		*Chloroform	ND			0.5 ug/l		
		*Chloromethane	ND			0.5 ug/l		
		*2-Chlorotoluene	ND			0.5 ug/l		
		*4-Chlorotoluene	ND			0.5 ug/l		
		*Dibromochloromethane	ND			0.5 ug/l		
		*1,2-Dibromo-3-chloro-				0.5 ug/l		
		*propane	ND					
		*1,2-Dibromoethane	ND			0.5 ug/l		
		*Dibromomethane	ND			0.5 ug/l		
		*1,2-Dichlorobenzene	ND			0.5 ug/l		
		*1,3-Dichlorobenzene	ND			0.5 ug/l		
		*1,4-Dichlorobenzene	ND			0.5 ug/l		
		*Dichlorodifluoromethane	ND			0.5 ug/l		
		*1,1-Dichloroethane	ND			0.5 ug/l		

Reviewed and Approved: Patricia A. Adler 5/21/93
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT	STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT	SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LMT
54025		*1,2-Dichloroethane	ND			0.5 ug/l		
		*1,1-Dichloroethene	ND			0.5 ug/l		
		*cis-1,2-Dichloroethene	ND			0.5 ug/l		
		*trans-1,2-Dichloroethene	ND			0.5 ug/l		
		*1,2-Dichloropropane	ND			0.5 ug/l		
		*1,3-Dichloropropane	ND			0.5 ug/l		
		*2,2-Dichloropropane	ND			0.5 ug/l		
		*1,1-Dichloropropene	ND			0.5 ug/l		
		*c-1,3-Dichloropropene	ND			0.25 ug/l		
		*t-1,3-Dichloropropene	ND			0.25 ug/l		
		*1,3 Dichloroproene, Total	ND			0.5 ug/l		
		*Ethylbenzene	ND			0.5 ug/l		
		*Hexachlorobutadiene	ND			0.5 ug/l		
		*Isopropylbenzene	ND			0.5 ug/l		
		*p-Isopropyltoluene	ND			0.5 ug/l		
		*Methylene Chloride	ND			0.5 ug/l		
		*Naphthalene	ND			0.5 ug/l		
		*n-Propylbenzene	ND			0.5 ug/l		
		*Styrene	ND			0.5 ug/l		
		*1,1,1,2-Tetrachloroethane	ND			0.5 ug/l		
		*1,1,2,2-Tetrachloroethane	ND			0.5 ug/l		
		*Tetrachloroethene	ND			0.5 ug/l		
		*Toluene	ND			0.5 ug/l		
		*1,2,3-Trichlorobenzene	ND			0.5 ug/l		
		*1,2,4-Trichlorobenzene	ND			0.5 ug/l		
		*1,1,1-Trichloroethane	ND			0.5 ug/l		
		*1,1,2-Trichloroethane	ND			0.5 ug/l		
		*Trichloroethene	ND			0.5 ug/l		

Reviewed and Approved: Patricia A. Adler 5/21
Patricia A. Adler, Chief

293

TFDEQP000105

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT		STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT		SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LMT
54025		*Trichlorofluoromethane	ND				0.5	ug/l		
		*1,2,3-Trichloropropane	ND				0.5	ug/l		
		*1,2,4-Trimethylbenzene	ND				0.5	ug/l		
		*1,3,5-Trimethylbenzene	ND				0.5	ug/l		
		*Vinyl Chloride	ND				0.5	ug/l		
		*Xylenes, Total	ND				0.5	ug/l		
		*Chlorofluorobenzene(ELCD)	102	%				%		
		*Chlorofluorobenzene (PID)	102	%				%		

Reviewed and Approved: Patricia A. Adler 5/21
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry

3 of 3

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

May 21, 1998

BARBARA J. ERICKSON, Ph.D., BUREAU CHIEF
1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

DEBI MALONE	PR#:	EP 512820	TYPE OF SAMPLE:	GROUND WATER		Submitter's ID:	WJH
ADEQ/WPO/SPS/SAU	PCA:	92001	Custody:	Y			
3033 N. CENTRAL	INDEX:	33300	Priority:	2		Date Sampled:	05/04/98
PHOENIX, AZ 85012	SITE CODE:					Time Sampled:	1345
	PWS NUMBER:					Date Lab Rec:	05/05/98

Note: All samples, including chain-of-custody, will be disposed of within 30 days unless a "Save Sample" form is received by the Chemistry Laboratory. All lab QA is within the limits defined in the SLS QA Manual unless otherwise noted in the report. "ND" means none detected at the MRL specified. "TR" means present at less than MRL, but not quantifiable.

Comments: A small bubble was detected in the vial at the time of submission and at the time of analysis.

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT		STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT		SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LMT
54026		*								
	05/08/98	SDW Volatile Organic Cmpds				EPA 502.2			N/A	
		*Benzene	ND				0.5	ug/l		
		*Bromobenzene	ND				0.5	ug/l		
		*Bromochloromethane	ND				0.5	ug/l		
		*Bromodichloromethane	ND				0.5	ug/l		
		*Bromoform	ND				0.5	ug/l		
		*Bromomethane	ND				0.5	ug/l		
		*n-Butylbenzene	ND				0.5	ug/l		
		*sec-Butylbenzene	ND				0.5	ug/l		
		*tert-Butylbenzene	ND				0.5	ug/l		
		*Carbon Tetrachloride	ND				0.5	ug/l		
		*Chlorobenzene	ND				0.5	ug/l		
		*Chloroethane	ND				0.5	ug/l		
		*Chloroform	1.2	ug/l			0.5	ug/l		
		*Chloromethane	ND				0.5	ug/l		
		*2-Chlorotoluene	ND				0.5	ug/l		
		*4-Chlorotoluene	ND				0.5	ug/l		
		*Dibromochloromethane	ND				0.5	ug/l		
		*1,2-Dibromo-3-chloro-					0.5	ug/l		
		*propane	ND							
		*1,2-Dibromoethane	ND				0.5	ug/l		
		*Dibromomethane	ND				0.5	ug/l		
		*1,2-Dichlorobenzene	ND				0.5	ug/l		
		*1,3-Dichlorobenzene	ND				0.5	ug/l		
		*1,4-Dichlorobenzene	ND				0.5	ug/l		
		*Dichlorodifluoromethane	ND				0.5	ug/l		
		*1,1-Dichloroethane	ND				0.5	ug/l		

Reviewed and Approved: Patricia A. Adler 5/21
Patricia A. Adler, Chief
Chemistry

19 3

TFDEQP000107

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT	STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT	SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LMT
54026		*1,2-Dichloroethane	ND			0.5 ug/l		
		*1,1-Dichloroethene	ND			0.5 ug/l		
		*cis-1,2-Dichloroethene	ND			0.5 ug/l		
		*trans-1,2-Dichloroethene	ND			0.5 ug/l		
		*1,2-Dichloropropane	ND			0.5 ug/l		
		*1,3-Dichloropropane	ND			0.5 ug/l		
		*2,2-Dichloropropane	ND			0.5 ug/l		
		*1,1-Dichloropropene	ND			0.5 ug/l		
		*c-1,3-Dichloropropene	ND			0.25 ug/l		
		*t-1,3-Dichloropropene	ND			0.25 ug/l		
		*1,3 Dichloroproene, Total	ND			0.5 ug/l		
		*Ethylbenzene	ND			0.5 ug/l		
		*Hexachlorobutadiene	ND			0.5 ug/l		
		*Isopropylbenzene	ND			0.5 ug/l		
		*p-Isopropyltoluene	ND			0.5 ug/l		
		*Methylene Chloride	ND			0.5 ug/l		
		*Naphthalene	ND			0.5 ug/l		
		*n-Propylbenzene	ND			0.5 ug/l		
		*Styrene	ND			0.5 ug/l		
		*1,1,1,2-Tetrachloroethane	ND			0.5 ug/l		
		*1,1,2,2-Tetrachloroethane	ND			0.5 ug/l		
		*Tetrachloroethene	ND			0.5 ug/l		
		*Toluene	ND			0.5 ug/l		
		*1,2,3-Trichlorobenzene	ND			0.5 ug/l		
		*1,2,4-Trichlorobenzene	ND			0.5 ug/l		
		*1,1,1-Trichloroethane	ND			0.5 ug/l		
		*1,1,2-Trichloroethane	ND			0.5 ug/l		
		*Trichloroethene	ND			0.5 ug/l		

TFDEQP000108

Reviewed and Approved: Patricia A. Adler 5/21
Patricia A. Adler, Chief

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT		STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT		SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LMT
54026		*Trichlorofluoromethane	ND				Ø.5	ug/l		
		*1,2,3-Trichloropropane	ND				Ø.5	ug/l		
		*1,2,4-Trimethylbenzene	ND				Ø.5	ug/l		
		*1,3,5-Trimethylbenzene	ND				Ø.5	ug/l		
		*Vinyl Chloride	ND				Ø.5	ug/l		
		*Xylenes, Total	ND				Ø.5	ug/l		
		*Chlorofluorobenzene(ELCD)	1Ø1	%				%		
		*Chlorofluorobenzene (PID)	1Ø3	%				%		

Reviewed and Approved: Patricia A. Adler 5/21
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry

3 of 3

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

May 21, 1998

BARBARA J. ERICKSON, Ph.D., BUREAU CHIEF
1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

DEBI MALONE	PR#:	EP 512820	TYPE OF SAMPLE:	GROUND WATER	Submitter's ID:	SFA
ADEQ/WPD/SPS/SAU	PCA:	92001	Custody:	Y		
3033 N. CENTRAL	INDEX:	33300	Priority:	2	Date Sampled:	05/04/98
PHOENIX, AZ 85012	SITE CODE:				Time Sampled:	1415
	PWS NUMBER:				Date Lab Rec:	05/05/98

Note: All samples, including chain-of-custody, will be disposed of within 30 days unless a "Save Sample" form is received by the Chemistry Laboratory. All lab QA is within the limits defined in the SLS QA Manual unless otherwise noted in the report. "ND" means none detected at the MRL specified. "TR" means present at less than MRL, but not quantifiable.

Comments: A small bubble was detected in the vial at the time of submission and at the time of analysis.

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT	STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT	SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LMT
54027		*						
	05/08/98	SDW Volatile Organic Cmpds			EPA 502.2		N/A	
		*Benzene	ND			0.5 ug/l		
		*Bromobenzene	ND			0.5 ug/l		
		*Bromochloromethane	ND			0.5 ug/l		
		*Bromodichloromethane	ND			0.5 ug/l		
		*Bromoform	ND			0.5 ug/l		
		*Bromomethane	ND			0.5 ug/l		
		*n-Butylbenzene	ND			0.5 ug/l		
		*sec-Butylbenzene	ND			0.5 ug/l		
		*tert-Butylbenzene	ND			0.5 ug/l		
		*Carbon Tetrachloride	ND			0.5 ug/l		
		*Chlorobenzene	ND			0.5 ug/l		
		*Chloroethane	ND			0.5 ug/l		
		*Chloroform	ND			0.5 ug/l		
		*Chloromethane	ND			0.5 ug/l		
		*2-Chlorotoluene	ND			0.5 ug/l		
		*4-Chlorotoluene	ND			0.5 ug/l		
		*Dibromochloromethane	ND			0.5 ug/l		
		*1,2-Dibromo-3-chloro-				0.5 ug/l		
		*propane	ND					
		*1,2-Dibromoethane	ND			0.5 ug/l		
		*Dibromomethane	ND			0.5 ug/l		
		*1,2-Dichlorobenzene	ND			0.5 ug/l		
		*1,3-Dichlorobenzene	ND			0.5 ug/l		
		*1,4-Dichlorobenzene	ND			0.5 ug/l		
		*Dichlorodifluoromethane	ND			0.5 ug/l		
		*1,1-Dichloroethane	ND			0.5 ug/l		

Reviewed and Approved: Patricia A. Adler 5/21
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry 173

TFDEQP000110

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT	STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT	SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LMT
54027		*1,2-Dichloroethane	ND			0.5 ug/l		
		*1,1-Dichloroethene	ND			0.5 ug/l		
		*cis-1,2-Dichloroethene	ND			0.5 ug/l		
		*trans-1,2-Dichloroethene	ND			0.5 ug/l		
		*1,2-Dichloropropane	ND			0.5 ug/l		
		*1,3-Dichloropropane	ND			0.5 ug/l		
		*2,2-Dichloropropane	ND			0.5 ug/l		
		*1,1-Dichloropropene	ND			0.5 ug/l		
		*c-1,3-Dichloropropene	ND			0.25 ug/l		
		*t-1,3-Dichloropropene	ND			0.25 ug/l		
		*1,3 Dichloroproene, Total	ND			0.5 ug/l		
		*Ethylbenzene	ND			0.5 ug/l		
		*Hexachlorobutadiene	ND			0.5 ug/l		
		*Isopropylbenzene	ND			0.5 ug/l		
		*p-Isopropyltoluene	ND			0.5 ug/l		
		*Methylene Chloride	ND			0.5 ug/l		
		*Naphthalene	ND			0.5 ug/l		
		*n-Propylbenzene	ND			0.5 ug/l		
		*Styrene	ND			0.5 ug/l		
		*1,1,1,2-Tetrachloroethane	ND			0.5 ug/l		
		*1,1,2,2-Tetrachloroethane	ND			0.5 ug/l		
		*Tetrachloroethene	ND			0.5 ug/l		
		*Toluene	ND			0.5 ug/l		
		*1,2,3-Trichlorobenzene	ND			0.5 ug/l		
		*1,2,4-Trichlorobenzene	ND			0.5 ug/l		
		*1,1,1-Trichloroethane	ND			0.5 ug/l		
		*1,1,2-Trichloroethane	ND			0.5 ug/l		
		*Trichloroethene	ND			0.5 ug/l		

Reviewed and Approved: Patricia A. Adler 5/21
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry 293

TFDEQP000111

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT		STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT		SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LMT
54027		*Trichlorofluoromethane	ND				0.5	ug/l		
		*1,2,3-Trichloropropane	ND				0.5	ug/l		
		*1,2,4-Trimethylbenzene	ND				0.5	ug/l		
		*1,3,5-Trimethylbenzene	ND				0.5	ug/l		
		*Vinyl Chloride	ND				0.5	ug/l		
		*Xylenes, Total	ND				0.5	ug/l		
		*Chlorofluorobenzene(ELCD)	103	%				%		
		*Chlorofluorobenzene (PID)	104	%				%		

Reviewed and Approved: Patricia A. Adler 5/21
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry

3 of 3

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

May 21, 1998

BARBARA J. ERICKSON, Ph.D., BUREAU CHIEF
1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

DEBI MALONE	PR#:	EP 512820	TYPE OF SAMPLE:	GROUND WATER		Submitter's ID:	TRIP BLANK
ADEQ/WPD/SPS/SAU	PCA:	92001	Custody:	Y			
3033 N. CENTRAL	INDEX:	33300	Priority:	2		Date Sampled:	
PHOENIX, AZ 85012	SITE CODE:	QA/QC				Time Sampled:	
	PWS NUMBER:					Date Lab Rec:	05/05/98

Note: All samples, including chain-of-custody, will be disposed of within 30 days unless a "Save Sample" form is received by the Chemistry Laboratory. All lab QA is within the limits defined in the SLS QA Manual unless otherwise noted in the report. "ND" means none detected at the MRL specified. "TR" means present at less than MRL, but not quantifiable.

Comments: None

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT	STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT	SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LMT
54028		*						
	05/08/98	SDW Volatile Organic Cmpds			EPA 502.2		N/A	
		*Benzene	ND			0.5 ug/l		
		*Bromobenzene	ND			0.5 ug/l		
		*Bromochloromethane	ND			0.5 ug/l		
		*Bromodichloromethane	ND			0.5 ug/l		
		*Bromoform	ND			0.5 ug/l		
		*Bromomethane	ND			0.5 ug/l		
		*n-Butylbenzene	ND			0.5 ug/l		
		*sec-Butylbenzene	ND			0.5 ug/l		
		*tert-Butylbenzene	ND			0.5 ug/l		
		*Carbon Tetrachloride	ND			0.5 ug/l		
		*Chlorobenzene	ND			0.5 ug/l		
		*Chloroethane	ND			0.5 ug/l		
		*Chloroform	ND			0.5 ug/l		
		*Chloromethane	ND			0.5 ug/l		
		*2-Chlorotoluene	ND			0.5 ug/l		
		*4-Chlorotoluene	ND			0.5 ug/l		
		*Dibromochloromethane	ND			0.5 ug/l		
		*1,2-Dibromo-3-chloro-				0.5 ug/l		
		*propane	ND					
		*1,2-Dibromoethane	ND			0.5 ug/l		
		*Dibromomethane	ND			0.5 ug/l		
		*1,2-Dichlorobenzene	ND			0.5 ug/l		
		*1,3-Dichlorobenzene	ND			0.5 ug/l		
		*1,4-Dichlorobenzene	ND			0.5 ug/l		
		*Dichlorodifluoromethane	ND			0.5 ug/l		
		*1,1-Dichloroethane	ND			0.5 ug/l		

Reviewed and Approved: Patricia A. Adler 5/21
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT	STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT	SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LMT
54028		*1,2-Dichloroethane	ND			0.5 ug/l		
		*1,1-Dichloroethene	ND			0.5 ug/l		
		*cis-1,2-Dichloroethene	ND			0.5 ug/l		
		*trans-1,2-Dichloroethene	ND			0.5 ug/l		
		*1,2-Dichloropropane	ND			0.5 ug/l		
		*1,3-Dichloropropane	ND			0.5 ug/l		
		*2,2-Dichloropropane	ND			0.5 ug/l		
		*1,1-Dichloropropene	ND			0.5 ug/l		
		*c-1,3-Dichloropropene	ND			0.25 ug/l		
		*t-1,3-Dichloropropene	ND			0.25 ug/l		
		*1,3 Dichloroproene, Total	ND			0.5 ug/l		
		*Ethylbenzene	ND			0.5 ug/l		
		*Hexachlorobutadiene	ND			0.5 ug/l		
		*Isopropylbenzene	ND			0.5 ug/l		
		*p-Isopropyltoluene	ND			0.5 ug/l		
		*Methylene Chloride	ND			0.5 ug/l		
		*Naphthalene	ND			0.5 ug/l		
		*n-Propylbenzene	ND			0.5 ug/l		
		*Styrene	ND			0.5 ug/l		
		*1,1,1,2-Tetrachloroethane	ND			0.5 ug/l		
		*1,1,2,2-Tetrachloroethane	ND			0.5 ug/l		
		*Tetrachloroethene	ND			0.5 ug/l		
		*Toluene	ND			0.5 ug/l		
		*1,2,3-Trichlorobenzene	ND			0.5 ug/l		
		*1,2,4-Trichlorobenzene	ND			0.5 ug/l		
		*1,1,1-Trichloroethane	ND			0.5 ug/l		
		*1,1,2-Trichloroethane	ND			0.5 ug/l		
		*Trichloroethene	ND			0.5 ug/l		

Reviewed and Approved: Patricia A. Adler 5/21
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry

2 of 3

ARIZONA DEPARTMENT OF HEALTH SERVICES

State Laboratory

1520 West Adams, Phoenix, Arizona 85007
(602) 542-6108

-- ANALYTICAL RESULTS --

LAB #	DATE ANALYZED	COMPOUND	RESULT		STORET NUMBER	WATER METHOD REFERENCE	WATER METHOD REPORTING LMT		SOLIDS METHOD REFERENCE	SOLID METHOD REPORTING LMT
54028		*Trichlorofluoromethane	ND				0.5	ug/l		
		*1,2,3-Trichloropropane	ND				0.5	ug/l		
		*1,2,4-Trimethylbenzene	ND				0.5	ug/l		
		*1,3,5-Trimethylbenzene	ND				0.5	ug/l		
		*Vinyl Chloride	ND				0.5	ug/l		
		*Xylenes, Total	ND				0.5	ug/l		
		*Chlorofluorobenzene(ELCD)	96	%				%		
		*Chlorofluorobenzene (PID)	102	%				%		

Reviewed and Approved: Patricia A. Adler 5/21
Patricia A. Adler, Chief
Office of Environmental and Analytical Chemistry 3,3

Arizona Department of Health Services

BUREAU OF [illegible] LABORATORY SERVICES

1520 W. Adams Phoenix, AZ 85007
602-542-6108

REQUEST FOR CHEMICAL ANALYSES FORM

Date Received and Lab Number

PROJECT MANAGER: [illegible]
PHONE NUMBER: [illegible]
AGENCY: [illegible]
OFFICE/SECTION/UNIT: [illegible]
ADDRESS: [illegible]
CITY: [illegible]
STATE: [illegible] ZIPCODE: [illegible]
SUBMITTER/SAMPLER: [illegible]
PHONE NUMBER: [illegible]

CONTINUATION FORM USED? (YES) No
SAMPLE NAME/IDENTIFICATION/LOCATION:
DATE SAMPLED: TIME SAMPLED:
OF CONTAINERS:
CHAIN OF CUSTODY? (YES) No
CALL RESULTS? (YES) No
NEED RESULTS BY: 5-23-10

ADEQ ONLY:

PR#: [illegible] PCA: [illegible]
SITE CODE: [illegible] INDEX: [illegible]

Priority:
- ☐ 1. Immediate health or environmental emergency
- ☑ 2. Chronic or potential health & environmental hazard
- ☐ 3. Routine Surveillance

SAMPLE MATRIX:

- ☑ Ground Water
- ☐ Surface Water
- ☐ Waste Water
- ☐ Drinking Water
- ☐ Food
- ☐ Hi Vol Filter
- ☐ I H Filter
- ☐ Sorbent Tube
- ☐ Soil/Sludge
- ☐ Haz Waste
- ☐ Bulk

Chlorinated? Yes/(No) OTHER:

FOR DRINKING WATER COMPLIANCE TESTING SUPPLY PWS NUMBER: DWAR? YES NO

MULTI-PARAMETER TESTS

INORGANICS ONLY

SAFE DRINKING WATER
- ☐ A1 All inorganics
- ☐ A8 Lead & Copper only

AMBIENT SURFACE WATER
- ☐ B1 All inorganics
- ☐ A11 Priority pollutant metals-dissolved
- ☐ A10 Priority pollutant metals-total

INORGANICS - WATERS ONLY

- ☐ A5 Alkalinity
- ☐ E11 Ammonia-nitrogen (NH3-N)
- ☐ A6 Carbonate/Bicarbonate
- ☐ E4 Chloride
- ☐ E5 Conductivity, specific
- ☐ E6 Cyanide amenable
- ☐ E7 Cyanide free
- ☐ E8 Cyanide total
- ☐ E9 Fluoride
- ☐ E10 Hardness
- ☐ E12 Nitrate-nitrogen(NO3-N)
- ☐ E13 Nitrite-nitrogen (NO2-N)
- ☐ E16 Nitrogen, Kjeldhal (TKN)
- ☐ E15 Nitrogen-total (NO2/NO3-N)
- ☐ E17 pH, water
- ☐ E19 Phosphorus, total
- ☐ E20 Sulfate (SO4)
- ☐ E22 TDS
- ☐ E23 TSS
- ☐ E24 Turbidity

HI-VOL FILTER

- ☐ D2 PM10

METALS-ALL MATRICES

PROCESSING NEEDED:
- ☐ F3 Dissolved (field filtered)
- ☐ F4 Dissolved (lab filtered)
- ☐ F2 Total recoverable (waters only)
- ☐ F1 Total digested (solid/sludges only)

METALS:
- ☐ F5 Aluminum
- ☐ F6 Antimony
- ☐ F7 Arsenic
- ☐ F8 Barium
- ☐ F9 Beryllium
- ☐ F10 Boron
- ☐ F11 Cadmium
- ☐ F12 Calcium
- ☐ F32 Chromium-hexavalent
- ☐ F13 Chromium-total
- ☐ F14 Cobalt
- ☐ F15 Copper
- ☐ F16 Iron
- ☐ F17 Lead
- ☐ F18 Magnesium
- ☐ F19 Manganese
- ☐ F20 Mercury
- ☐ F21 Molybdenum
- ☐ F30 Nickel
- ☐ F22 Potassium
- ☐ F23 Selenium
- ☐ F33 Silicon
- ☐ F24 Silver
- ☐ F25 Sodium
- ☐ F31 Strontium
- ☐ F26 Thallium
- ☐ F27 Tin
- ☐ F34 Titanium
- ☐ F28 Vanadium
- ☐ F29 Zinc

MULTI-ELEMENT METALS SCREEN:
- ☐ G11 Soil
- ☐ A4 Water

SOILS / SLUDGES OR HAZARDOUS MATERIALS

- ☐ G12 Cyanide, total
- ☐ G3 Flash point
- ☐ A00 Percent solids
- ☐ G8 Percent water (KF)
- ☐ G1 pH, corrosivity
- ☐ G2 pH, soil
- ☐ G7 Unknown ID

TCLP METALS

- ☐ H1 TCLP extraction
- ☐ H2 TC Arsenic
- ☐ H3 TC Barium
- ☐ H4 TC Cadmium
- ☐ H5 TC Chromium
- ☐ H6 TC Lead
- ☐ H7 TC Mercury
- ☐ H8 TC Selenium
- ☐ H9 TC Silver

SOLVENTS

- ☑ I2 SDW VOCs (502.2)
- ☐ I3 VOCs (601/602)
- ☐ I4 BTEX only

SYNTHETIC ORGANIC CHEMICALS (SOCs)

- ☐ J4 Chlorinated pesticide screen
- ☐ K5 Custom GC/MS screen
- ☐ J10 EDB/DBCP screen
- ☐ J9 GWPL screen
  - ☐ Pesticides
  - ☐ Herbicides
  - ☐ Carbamates
- ☐ J8 PCBs screen
- ☐ J1 SDW Carbamates
- ☐ J3 SDW Herbicides

INDUSTRIAL HYGIENE ANALYSES:

☐ SLC ☐ LAB

SPECIAL REQUESTS:

PRESERVATIVES USED:

- ☑ Cooled (Ice in chest)
- ☐ Cooled (Temp:)
- ☑ Mineral acid
- ☐ Base
- ☐ Thiosulfate
- ☐ Ascorbic acid
- ☐ Monochloroacetic acid
- ☐ Zinc acetate

COMMENTS: (FOR LAB USE ONLY)

TFDEQP000116

BUREAU OF STATE LABORATORY SERVICES

1520 West Adams Street Phoenix, Arizona 85007

(602) 542-6108

REQUEST FOR CHEMICAL ANALYSIS SAMPLE CONTINUATION FORM

Note: All samples must be of the same matrix. All tests must be the same for each sample.

Laboratory's Sample Number	Sampler's Identification/ Description	Date Sampled	Time Sampled	Number of Containers	
[illegible]	YCC-1	5-4-98	1645p	2	*
[illegible]	YCC-2	5-4-98	[illegible]p	2	[illegible]
[illegible]	YCC-3	5-4-98	1:00p	2	**
[illegible]	WTH	5-4-98	[illegible]:15p	2	**
[illegible]	SFA	5-4-98	2:15p	2	**
[illegible]	Trip Blank	N/A	N/A	2	✓

Chain of Custody Needed? ☐ Yes ☐ No

If yes, then complete lower section of document.

Comments for Lab use only: * [illegible] } [illegible] 5/5/98

CHAIN OF CUSTODY RECORD

Agency Name:	For Sampler's Use Only
AIEG	Samples offered? ☐ Yes ☐ No . Samples Refused? ☐
Sampler's Signature: Deborah Malone	Samples offered to/refused by:
	Signature:
Print Name: Deborah Malone	Title:
	Date:

Relinquished by: (Signature)	(Print name)	Received by: (Signature)	(Print name)	Date/Time
Deborah Malone	Deb Malone	[illegible]	[illegible]	5/5/98 [illegible]55

Final disposal: Date disposed _____ Signature: _____

TFDEQP000117

LATITUDE AND LONGITUDE CALCULATION WORKSHEET #1
LI USING CUSTOM RULER OR COORDINATOR™

SITE NAME: Houston International CERCLIS #: AZD983480963

AKA: Houston Fearless International SSID: 1253

ADDRESS: 655 E20th Street

CITY: Yuma STATE: Az ZIP CODE: 85365

SITE REFERENCE POINT: NE Corner of East Building

USGS QUAD MAP NAME: Yuma East TOWNSHIP: 8 N/(S) RANGE: 23 E/(W)

SCALE: 1:24,000 MAP DATE: 1979 SECTION: 34 1/4 SW 1/4 ____ 1/4

MAP DATUM: (1927) 1983 (CIRCLE ONE) MERIDIAN: Gila & Salt River Baseline & Meridian

COORDINATES FROM LOWER RIGHT (SOUTHEAST) CORNER OF 7.5' MAP (attach photocopy):

LONGITUDE: 114 ° 30 ' 00 " LATITUDE: 32° ° 37 ' 30 "

COORDINATES FROM LOWER RIGHT (SOUTHEAST) CORNER OF 2.5' GRID CELL:

LONGITUDE: 114 ° 35 00 " LATITUDE: 32 ° 40 00

CALCULATIONS: LATITUDE (7.5' QUADRANGLE MAP)

A) ALIGN THE BOTTOM OF THE SCALE WITH BOTTOM OF GRID. ALIGN THE TOP OF THE SCALE WITH THE TOP OF GRID. POSITION EDGE OF RULER OVER SITE REFERENCE POINT WHILE KEEPING TOP AND BOTTOM ALIGNED.

B) READ TICS ON RULER AT 1- OR 0.5-SECOND INTERVALS (INTERPOLATE).

C) EXPRESS IN MINUTES AND SECONDS (1' = 60"): 1 ' 27 . ____ "

D) ADD TO STARTING LATITUDE: 32 ° 40 ' 00 . ____ " + 1 ' 27 . ____ =

SITE LATITUDE: 32 ° 41 ' 27 . ____ "

CALCULATIONS: LONGITUDE (7.5' QUADRANGLE MAP)

A) ALIGN THE BOTTOM OF THE SCALE WITH RIGHT SIDE OF GRID. ALIGN THE TOP OF THE SCALE WITH THE LEFT SIDE OF GRID. POSITION EDGE OF RULER OVER SITE REFERENCE POINT WHILE KEEPING TOP AND BOTTOM ALIGNED.

B) READ TICS ON RULER AT 1- or 0.5-SECOND INTERVALS. (INTERPOLATE)

C) EXPRESS IN MINUTES AND SECONDS (1' = 60"): 1 ' 38 . ____ "

D) ADD TO STARTING LONGITUDE: 114 ° 35 ' 00 . ____ " + 1 ' 38 . ____ =

SITE LONGITUDE: 114 ° 36 ' 38 . ____ "

INVESTIGATOR: Mary E. Haesler DATE: 5/29/98

APPENDIX A

CERCLA ELIGIBILITY QUESTIONNAIRE

Site Name: Houston International

City: Yuma State: AZ

EPA ID Number: AZD983480963

		Yes	No
I	CERCLA ELIGIBILITY		
	Did the facility cease operations prior to November 19, 1980?	___	✓
	If answer YES, STOP, facility is probably a CERCLA site.		
	If answer NO, Continue to Part II		
II	RCRA ELIGIBILITY	Yes	No
	Did the facility file a RCRA Part A application?	___	✓
	if YES:		
	1 Does the facility currently have interim status?	___	___
	2 Did the facility withdraw its Part A application?	___	___
	3 Is the facility a known or possible protective filer? (facility filed in error)	___	___
	4 Type of facility: Generator _____ Transporter _____ Recycler _____ TSD (Treatment/Storage/Disposal) _____		
	Does the facility have a RCRA operating or post closure permit?	___	✓
	Is the facility a late (after 11/19/80) or non-filer that has been identified by the EPA or the State? (facility did not know it needed to file under RCRA)	___	✓
	If all answers to questions in Part II are NO, STOP, the facility is a CERCLA eligible site.		
	If answer to #2 or #3 is YES, STOP, the facility is a CERCLA eligible site.		
	If answer #2 and #3 are NO, and any OTHER answer is YES, site is RCRA, continue to Part III.		
III	RCRA SITES ELIGIBLE FOR NPL	Yes	No
	Has the facility owner filed for bankruptcy under federal or state laws?	___	✓
	Has the facility lost RCRA authorization to operate or shown probable unwillingness to carry out corrective action?	___	✓
	Is the facility a TSD that converted to a generator, transporter, or recycler facility after November 19, 1980?	___	✓

OMB Approval Number: 2050-0095
Approved for Use Through: 1/92

EPA Potential Hazardous Waste Site Preliminary Assessment Form

Identification

State: AZ
CERCLIS Number: AZD983480963
CERCLIS Discovery Date: 4/19/94

1. General Site Information

Name: Houston International
Street Address: 655 E 20th Street
City: Yuma
State: AZ
Zip Code: 85365
County: Yuma
Co. Code:
Cong. Dist:
Latitude: 32 ° 41 ' 27 . _ "
Longitude: 114 ° 36 ' 38 . _ "
Approximate Area of Site: 3.96 Acres _____ Square Ft
Status of Site: ☐ Active ☐ Not Specified ☐ Inactive ☐ NA (GW plume, etc.)

2. Owner/Operator Information

Owner: Houston International, Ltd
Street Address: PO Box 5269, Photo Products DIV
City: Yuma
State: AZ
Zip Code: 85366
Telephone: (520) 329-9012

Operator: Houston Fearless International
Street Address: 655 E 20th Street
City: Yuma
State: AZ
Zip Code: 85365
Telephone: (520) 782-3677

Type of Ownership:
☒ Private
☐ Federal Agency
Name _____
☐ State
☐ Indian
☐ County
☐ Municipal
☐ Not Specified
☐ Other _____

How Initially Identified:
☐ Citizen Complaint
☐ PA Petition
☐ State/Local Program
☐ RCRA/CERCLA Notification
☒ Federal Program
☐ Incidental
☐ Not Specified
☐ Other _____

3. Site Evaluator Information

Name of Evaluator: Mary Hessler
Agency/Organization: ADEQ
Date Prepared: 5/28/99
Street Address: 3033 N Central Ave #724
City: Phoenix
State: AZ
Name of EPA or State Agency Contact: Mary Hessler
Street Address: 3033 N Central Ave #724
City: Phoenix
State: AZ
Telephone: (602) 207-4195

4. Site Disposition (for EPA use only)

Emergency Response/Removal Assessment Recommendation:
☐ Yes
☐ No
Date: _____

CERCLIS Recommendation:
☐ Higher Priority SI
☐ Lower Priority SI
☐ NFRAP
☒ RCRA
☐ Other _____
Date: _____

Signature:
Name (typed):
Position:

TFDEQP000120

EPA Potential Hazardous Waste Site
Preliminary Assessment Form - Page 2 of 4

CERCLIS Number: AZD983480963

5. General Site Characteristics

Predominant Land Uses Within 1 Mile of Site (check all that apply):
- [x] Industrial
- [x] Commercial
- [x] Residential
- [ ] Forest/Fields
- [ ] Agriculture
- [ ] Mining
- [ ] DOD
- [ ] DOE
- [ ] DOI
- [ ] Other Federal Facility _____
- [ ] Other _____

Site Setting:
- [x] Urban
- [ ] Suburban
- [ ] Rural

Years of Operation:
Beginning Year 1966(?)
Ending Year Present
[ ] Unknown

Type of Site Operations (check all that apply):
- [ ] Manufacturing (must check subcategory)
  - [ ] Lumber and Wood Products
  - [ ] Inorganic Chemicals
  - [ ] Plastic and/or Rubber Products
  - [ ] Paints, Varnishes
  - [ ] Industrial Organic Chemicals
  - [ ] Agricultural Chemicals (e.g., pesticides, fertilizers)
  - [ ] Miscellaneous Chemical Products (e.g., adhesives, explosives, ink)
  - [ ] Primary Metals
  - [ ] Metal Coating, Plating, Engraving
  - [ ] Metal Forging, Stamping
  - [ ] Fabricated Structural Metal Products
  - [ ] Electronic Equipment
  - [x] Other Manufacturing Film Processing Equipment
- [ ] Mining
  - [ ] Metals
  - [ ] Coal
  - [ ] Oil and Gas
  - [ ] Non-metallic Minerals
- [ ] Retail
- [ ] Recycling
- [ ] Junk/Salvage Yard
- [ ] Municipal Landfill
- [ ] Other Landfill
- [ ] DOD
- [ ] DOE
- [ ] DOI
- [ ] Other Federal Facility _____
- [ ] RCRA
  - [ ] Treatment, Storage, or Disposal
  - [ ] Large Quantity Generator
  - [ ] Small Quantity Generator
  - [ ] Subtitle D
    - [ ] Municipal
    - [ ] Industrial
  - [ ] "Converter"
  - [ ] "Protective Filer"
  - [ ] "Non- or Late Filer"
- [ ] Not Specified
- [x] Other Film Processing

Waste Generated:
- [x] Onsite
- [ ] Offsite
- [ ] Onsite and Offsite

Waste Deposition Authorized By:
- [x] Present Owner
- [ ] Former Owner
- [ ] Present & Former Owner
- [ ] Unauthorized
- [ ] Unknown

Waste Accessible to the Public:
- [x] Yes
- [ ] No

Distance to Nearest Dwelling, School, or Workplace: 0 Feet

6. Waste Characteristics Information

Source Type: (check all that apply)	Source Waste Quantity: (include units)	Tier*:
[ ] Landfill		
[ ] Surface Impoundment		
[ ] Drums		
[x] Tanks and Non-Drum Containers	1,000 Gal	V
[ ] Chemical Waste Pile		
[ ] Scrap Metal or Junk Pile		
[ ] Tailings Pile		
[ ] Trash Pile (open dump)		
[ ] Land Treatment		
[ ] Contaminated Ground Water Plume (unidentified source)		
[ ] Contaminated Surface Water/Sediment (unidentified source)		
[x] Contaminated Soil	3,000 Square feet	A
[ ] Other _____		
[ ] No Sources		

* C = Constituent, W = Wastestream, V = Volume, A = Area

General Types of Waste (check all that apply)
- [x] Metals
- [x] Organics
- [ ] Inorganics
- [x] Solvents
- [ ] Paints/Pigments
- [ ] Laboratory/Hospital Waste
- [ ] Radioactive Waste
- [ ] Construction/Demolition Waste
- [ ] Pesticides/Herbicides
- [ ] Acids/Bases
- [ ] Oily Waste
- [ ] Municipal Waste
- [ ] Mining Waste
- [ ] Explosives
- [ ] Other _____

Physical State of Waste as Deposited (check all that apply):
- [ ] Solid
- [ ] Sludge
- [ ] Powder
- [x] Liquid
- [ ] Gas

CERCLIS Number: AZD983480963

7. Ground Water Pathway

Is Ground Water Used for Drinking Water Within 4 Miles:
- [x] Yes
- [ ] No

Type of Drinking Water Wells Within 4 Miles (check all that apply):
- [ ] Municipal
- [x] Private
- [ ] None

Is There a Suspected Release to Ground Water:
- [x] Yes
- [ ] No

Have Primary Target Drinking Water Wells Been Identified:
- [ ] Yes
- [x] No

If Yes, Enter Primary Target Population: _____ People

Depth to Shallowest Aquifer: 74 Feet

Karst Terrain/Aquifer Present:
- [ ] Yes
- [x] No

Nearest Designated Wellhead Protection Area:
- [ ] Underlies Site
- [ ] > 0 - 4 Miles
- [x] None Within 4 Miles

List Secondary Target Population Served by Ground Water Withdrawn From:

0 - ¼ Mile	3
> ¼ - ½ Mile	3
> ½ - 1 Mile	26
> 1 - 2 Miles	146
> 2 - 3 Miles	166
> 3 - 4 Miles	674
Total Within 4 Miles	1,018

8. Surface Water Pathway

Type of Surface Water Draining Site and 15 Miles Downstream (check all that apply):
- [ ] Stream
- [ ] River
- [ ] Pond
- [ ] Lake
- [ ] Bay
- [ ] Ocean
- [x] Other Canal

Shortest Overland Distance From Any Source to Surface Water:
- _____ Feet
- 1½ Miles

Is There a Suspected Release to Surface Water:
- [ ] Yes
- [x] No

Site is Located in:
- [ ] Annual - 10 yr Floodplain
- [ ] > 10 yr - 100 yr Floodplain
- [x] > 100 yr - 500 yr Floodplain
- [ ] > 500 yr Floodplain

Drinking Water Intakes Located Along the Surface Water Migration Path:
- [ ] Yes
- [x] No

Have Primary Target Drinking Water Intakes Been Identified:
- [ ] Yes
- [x] No

If Yes, Enter Population Served by Primary Target Intakes: _____ People

List All Secondary Target Drinking Water Intakes:

Name	Water Body	Flow (cfs)	Population Served

Total within 15 Miles _____

Fisheries Located Along the Surface Water Migration Path:
- [x] Yes
- [ ] No

Have Primary Target Fisheries Been Identified:
- [ ] Yes
- [x] No

List All Secondary Target Fisheries:

Water Body/Fishery Name	Flow (cfs)

CERCLIS Number: AZD983480763

8. Surface Water Pathway (continued)

Wetlands Located Along the Surface Water Migration Path:
- ☐ Yes
- ☒ No

Have Primary Target Wetlands Been Identified:
- ☐ Yes
- ☒ No

List Secondary Target Wetlands:

Water Body	Flow (cfs)	Frontage Miles

Other Sensitive Environments Located Along the Surface Water Migration Path:
- ☐ Yes
- ☒ No

Have Primary Target Sensitive Environments Been Identified:
- ☐ Yes
- ☒ No

List Secondary Target Sensitive Environments:

Water Body	Flow (cfs)	Sensitive Environment Type

9. Soil Exposure Pathway

Are People Occupying Residences or Attending School or Daycare on or Within 200 Feet of Areas of Known or Suspected Contamination:
- ☐ Yes
- ☒ No

If Yes, Enter Total Resident Population:

_____ People

Number of Workers Onsite:
- ☐ None
- ☒ 1 - 100
- ☐ 101 - 1,000
- ☐ >1,000

Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination:
- ☐ Yes
- ☒ No

If Yes, List Each Terrestrial Sensitive Environment:

10. Air Pathway

Is There a Suspected Release to Air:
- ☒ Yes
- ☐ No

Enter Total Population on or Within:

Onsite	30
0 - ¼ Mile	639
> ¼ - ½ Mile	2,131
> ½ - 1 Mile	8,483
> 1 - 2 Miles	15,942
> 2 - 3 Miles	20,704
> 3 - 4 Miles	21,997
Total Within 4 Miles	69,926

Wetlands Located Within 4 Miles of the Site:
- ☐ Yes
- ☒ No

Other Sensitive Environments Located Within 4 Miles of the Site:
- ☒ Yes
- ☐ No

List All Sensitive Environments Within ½ Mile of the Site:

Distance	Sensitive Environment Type/Wetlands Area (acres)
Onsite	None.
0 - ¼ Mile	
> ¼ - ½ Mile	

EPA REGION IX SITE SCREENING CHECKLIST

This review checklist is to be used by individual site screening staff when reviewing sites which have been brought to the attention of EPA or the State. Each site is reviewed on the merits of the discovery documentation and additional information gathered during the screening process. The guiding principal in evaluating a given site is to use common sense in assessing the information and subsequently presenting the site and its known hazardous potential to the SST.

1.0 GENERAL INSTRUCTIONS

Complete Section 1 for the site using readily available information and contacting appropriate individuals. A contact log (Attachment A) should be used to document information gained through correspondence, interviews, and telephone calls. Handwriting is acceptable if it is legible. Attach extra pages if necessary.

1.1 Site Information

Site Name: Houston International

Alias Name: Houston Fearless International

Site Street Address: 655 E. 20th Street

City, County, State: Yuma, Yuma, Arizona 85365

EPA ID Number: AZD983480963

Site Screener: Mary Hessler Date: May 29, 1998

Date of Discovery: April 19, 1994

Discovery Vehicle:

[ ] County Referral
[ ] Citizen Petition
[ ] RCRA Referral
[ ] State Referral
[ ] State PA/SI Grant
[ ] Nonemergency Release Report
[ ] Lawsuit
[ ] Removal
[ ] Newspaper
[X] Other - EPA Border Initiative Program

Is this site part of an NPL site? [ ] Yes [X] No

CERCLIS Status:
[ ] Other (specify): _____
[X] Discovery PA
[ ] SI
[ ] NFRAP
[ ] Not in CERCLIS

State oversight role:
PA/SI Cooperative Agreement [X] Yes [ ] No [ ] Not applicable
Cooperative Agreement Number: V999705-01-0

EPA Project Officer: Jere Johnson

RCRA Status:
[X] Generator
[ ] TSDF
[ ] Transporter
[ ] Not listed in RCRIS

In a State Database(s)? [X] Yes [ ] No If yes, specify. ACIDS ID # 1253

TEDEQP009124
EPA9-01/97

1.2 CERCLA Eligibility

If the answer to question 1 is "No", or if the answer to any question of 2 through 8 is "Yes", the site is ineligible for CERCLA evaluation and the decision at the bottom of this page is "No Further Action Under CERCLA". The answers to questions 9 through 16 should be used to identify sites that may not be appropriate for CERCLA evaluation without further justification. If a question cannot be answered, explain why in the Comments section below.

1.	Has a release of hazardous substances, pollutants, or contaminants occurred?	[X] Yes	[ ] No
2.	Does the release or threat of release consist only of crude oil or unaltered petroleum product?	[ ] Yes	[X] No
3.	Is the site subject to corrective action under RCRA Subtitle C (hazardous waste treatment, storage, or disposal facility)?	[ ] Yes	[X] No
4.	Does the release or threatened release fall under the jurisdiction of the Uranium Mill Tailings Radiation Control Act (UMTRCA)?	[ ] Yes	[X] No
5.	Does the release or threatened release fall under the jurisdiction of the Atomic Energy Act (AEA)?	[ ] Yes	[X] No
6.	Is the release or threatened release a result of a legal application of pesticides under Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)?	[ ] Yes	[X] No
7.	Is the release or threatened release regulated under the Oil Pollution Act (OPA)?	[ ] Yes	[X] No
8.	Is the release or threatened release permitted under the Nuclear Regulatory Commission (NRC)?	[ ] Yes	[X] No
9.	Is the site a federal facility?	[ ] Yes	[X] No
10.	Is the site outside of U.S. boundaries?	[ ] Yes	[X] No
11.	Is the site outside of EPA, Region IX borders?	[ ] Yes	[X] No
12.	Is the site within Native American Tribal lands?	[ ] Yes	[X] No
13.	Is the site currently under the control and management of a state/local agency? If yes, which agencies?	[ ] Yes	[X] No
14.	Is the site currently operating?	[X] Yes	[ ] No
15.	Is the site address valid?	[X] Yes	[ ] No
16.	Has the site been investigated under an alias?	[ ] Yes	[X] No

Comments: _____

DECISION: [ ] **No Further Action Under CERCLA**
Go to Section 7

[X] **Go to Section 2**

2.0 TECHNICAL INFORMATION

This section contains information about site's operational history and environmental sampling. Complete the following section by filling in the blanks or checking the appropriate boxes. If a question cannot be answered, explain why. If a drive-by is performed, complete Attachment B.

2.1 Operational History

1a. List present site owner(s) and operator(s). [Include dates of ownership]:

Houston International, Ltd. (Owner), Late 1960s - Present
Houston Fearless International (Operator), 1998
Yuma Furniture (Warehouse) (Operator), 1998
J. Marcel (Warehouse) (Operator), 1998
Exercise Studio (Operator), 1998

1b. Are hazardous substances presently on site? [X] Yes [ ] No

If yes, how and where are substances stored and used?

Industroclean used in solvent cleaning tank. Reportedly, there is no sludge, and solvent is added to the tank as needed. Industroclean contains ethylene glycol monobutyl ether.
Lacquer thinner is also used to degrease parts.
Two 500-gallon tanks of purge water are also stored onsite. Purge water is contaminated with PCE.

2a. List historic site owner(s) and operator(s). [Include dates of ownership]:

Houston Photo Products (Operator), 1966(?) - 1986
Houston International (Operator), 1987 - 1997(?)
Dreamland Bedding and Factory Showroom (Operator), 1991

2b. Were hazardous substances present on site in the past? [X] Yes [ ] No

If yes, how and where were substances stored and used?

Tetrachloroethylene(PCE) was used in a vapor degreaser from 1975 until the early 1990s. In 1978, 15 to 20 gallons of PCE were discharged to an underground tank that drains to the ground. In 1994, Houston International's contractor collected two wastewater samples. One of the samples contained 7.9 micrograms per liter of PCE.
Methyl Ethyl Ketone was used for solvent welding. MEK was also applied to towels and used to clean parts. Waste towels were stored in closed containers.
Standard photographic chemicals, which contain silver, were used for film processing. In 1991, Houston International (HI) estimated that 275 to 300 gallons of photograhic chemicals and 15,000 to 18,000 gallons of water were used each week. Wastewater was discharged to a 1,000-gallon underground tank. This tank was pumped to the ground when full. In 1994, HI estimated that approximately 500 gallons of photo chemicals and 12,000 to 13,000 gallons of water were used per month. Wastewater was passed through silver recovery units prior to discharge.
Nitric acid was also used at the site in the past.

Additional comments:

2.2 Contaminant(s):

List any hazardous substances, pollutants, or contaminants that have been identified at the site and indicate whether they have been quantified (e.g., by sampling).

		Suspected	Identified	Quantified	Comments
[ ]	Ammonia	[ ]	[ ]	[ ]	
[ ]	Arsenic	[ ]	[ ]	[ ]	
[ ]	Beryllium	[ ]	[ ]	[ ]	
[X]	Bromodichloromethane	[X]	[ ]	[ ]	
[X]	Bromoform	[X]	[ ]	[ ]	
[X]	Cadmium	[ ]	[X]	[ ]	
[ ]	Carbon tetrachloride	[ ]	[ ]	[ ]	
[ ]	Chloroform	[ ]	[X]	[ ]	
[X]	Chromium (+3 or +6)	[ ]	[X]	[ ]	
[ ]	Copper	[ ]	[ ]	[ ]	
[ ]	Cyanide	[ ]	[ ]	[ ]	
[X]	Dibromochloromethane	[X]	[ ]	[ ]	
[ ]	Dichloroethene,1,1-	[ ]	[ ]	[ ]	
[ ]	Dioxin	[ ]	[ ]	[ ]	
[ ]	Ethyl benzene	[ ]	[ ]	[ ]	
[X]	Lead	[ ]	[X]	[ ]	
[ ]	Mercury	[ ]	[ ]	[ ]	
[X]	Methylene chloride	[X]	[ ]	[ ]	
[X]	Nickel	[ ]	[X]	[ ]	
[ ]	P-Dichlorobenzene	[ ]	[ ]	[ ]	
[ ]	Pentachlorophenol	[ ]	[ ]	[ ]	
[ ]	Phenol	[ ]	[ ]	[ ]	
[ ]	Polychlorinated biphenyls (PCBs)	[ ]	[ ]	[ ]	
[ ]	Polycyclic aromatic hydrocarbons (PAHs)	[ ]	[ ]	[ ]	
[X]	Toluene	[ ]	[X]	[ ]	
[ ]	Trichloroethylene	[ ]	[ ]	[ ]	
[ ]	Vinyl chloride	[ ]	[ ]	[ ]	
[X]	Xylene	[ ]	[X]	[ ]	
[X]	Zinc	[ ]	[X]	[ ]	
[X]	Other chemicals (List): Barium	[ ]	[X]	[ ]	
	Chloroethane	[X]	[ ]	[ ]	
	Copper	[ ]	[X]	[ ]	
	Manganese	[ ]	[X]	[ ]	
	Methyl Ethyl Ketone	[X]	[ ]	[ ]	
	Selenium	[ ]	[X]	[ ]	
	Silver	[X]	[X]	[ ]	
	Tetrachloroethylene (PCE)	[X]	[X]	[X]	

Additional Comments: Several metals (barium, chromium, cadmium, copper, lead, manganse, nickel, silver, and zinc) were detected in soil samples collected at the site. Some of these metals (barium, cadmium, chromium, lead, manganese, and zinc) were also detected in groundwater samples. Selenium was detected in groundwater samples, but not in soil samples. Since no background samples are available, the signifigance of these results is unclear. Toluene and tetrachloroethylene (PCE) have been detected in both soil and groundwater samples. Chloroform and xylenes were detected in soil samples only. In addition, tetrachloroethylene (PCE), methylene chloride, bromodichloroethane, bromoform, chloroethane, and dibromochloromethane were detected in wastewater samples in 1994.

2.3 Has a release as defined in CERCLA Section 101(22) occurred?

[X] Yes [ ] Suspected [ ] No

Identify the source(s) of the release or suspected release (e.g., drums, landfill, surface impoundment, waste pile, etc.): Underground wastewater collection tank discharged wastewater to the ground.

2.4 Pathway(s) of contaminant migration:

[X] Air [X] Groundwater [ ] Surface Water [X] Soil

Briefly describe any identified pathway: Groundwater: PCE has been detected in both soil and groundwater. However, there are no known active drinking water wells within one mile downgradient of the site. The nearest wells are used for irrigation and industrial purposes. These wells were sampled, and no VOCs were detected. Soil: Metals are present in onsite soils. However, no background samples are available for comparison. In addition, offsite soils have not been sampled. The offsite stained soil is in a vacant lot. Air: Onsite and offsite stained soils may become airborne and migrate to nearby properties.

2.5 Sampling History

1. Has sampling been conducted? [X] Yes [ ] No

2. If environmental sampling has been conducted, use the Sampling Event Summary Table, Attach-ment C, to record the information.

2.6 Additional Information

Use this space to present additional information that may be used to support site screening decisions.

3.0 REMOVAL ASSESSMENT CRITERIA — NCP EVALUATION

Use the following criteria to determine if the site should be referred to EPA's Removal Section. If the answer to any question is yes, get EPA concurrence for the decision. If all answers are no, go to Section 4. If a question cannot be answered, explain why in the Comments section below.

1.	Is there actual or potential exposure to nearby populations, animals, or the food chain from hazardous substances, pollutants, or contaminants?	[X] Yes	[ ] No
2.	Is there actual or potential contamination of drinking supplies or sensitive ecosystems?	[X] Yes	[ ] No
3.	Are hazardous substances, pollutants, or contaminants in drums, barrels, tanks, or other bulk storage containers which may pose a threat of release?	[X] Yes	[ ] No
4.	Are there high levels of hazardous substances, pollutants, or contaminants is soils largely at or near the surface, which may migrate and affect populations or the environment?	[X] Yes	[ ] No
5.	Could weather conditions cause hazardous substances, pollutants, or contaminants to migrate or be released?	[ ] Yes	[X] No
6.	Is there a threat of fire or explosion?	[ ] Yes	[X] No
7.	Are there appropriate Federal or State response mechanisms to respond to the release or potential release?	[X] Yes	[ ] No
8.	Are there other situations or factors which may pose threats to public health, welfare, or the environment?	[ ] Yes	[X] No
9.	< Reserved >	[ ] Yes	[ ] No
10.	For the situation where there appears to be primarily a groundwater contamination problem, is there a near-surface source which can be removed?	[X] Yes	[ ] No

Comments: 1,2 - The Yuma area includes habitat for the flat-tailed horned lizard, a state-listed endangered species. The site is adjacent to vacant desert land. Wastewater was discharged from the site to this vacant land. No soil sampling has been conducted on the vacant land. 3, 4, 10 - There is one underground collection tank onsite. This tank held contaminated wastewater, and then discharged it to the ground. The tank is no longer used. However, contaminants could still be present and could leak to surrounding soils. Also, there are two septic tanks onsite. These septic tanks have never been investigated. In addition, there are offsite stained soils that have not been sampled. Metals are the contaminants of concern in the offsite soils. If metals concentrations exceed the Arizona Soil Remediation Levels (SRLs), then a removal should be done.

DECISION:

[X] **Removal Assessment**
Go to Section 7

[ ] **Expanded Removal Assessment**
Go to Section 7

[ ] **Not Appropriate For Removal Action**
Go to Section 4

Assign a high, medium, or low priority category to each of the following factors and then use these factors to help make preliminary recommendations in Section 5. A high priority influence may indicate that a Preliminary Assessment should be conducted as a high priority without regard to other screening factors.

Other Influences	High	Medium	Low
1. Site remedial/ removal history	[X] None	[ ] Some	[ ] All wastes removed
2. Regulatory involvement	[X] Other agency currently active	[ ] Somewhat involved	[ ] No involvement
3. Environmental justice	[X] Site is in low income/minority neighborhood		[ ] Site is not in low income or minority neighborhood
4. Brownfields/Redevelop-ment	[ ] Possible candidate		[X] Not a likely candidate
5. Political attention	[ ] Very visible/vocal	[ ] Some involve-ment	[X] None
6. Public attention	[ ] Very visible/vocal	[ ] Some involve-ment	[X] None
7. Remedial Costs	[X] Likely very expensive or diffi-cult		[ ] Easy and relatively cheap

Comments:
2 - The ADEQ Hazardous Waste Compliance Unit is currently active at the site.

OTHER INFLUENCING FACTORS CATEGORY:

HIGH **MEDIUM** LOW

5.0 PRELIMINARY RECOMMENDATIONS

Use the information in sections 1 through 4 and professional judgement to make a preliminary determination of the need for further investigation of the actual or potential threat posed by hazardous substance contamination at this site. Select one of the following options for site disposition.

5.1. Prioritize for Site Assessment

Further site assessment appears warranted.

5.1.a. Prioritize for Site Assessment under State Lead [X]

Complete Section 6 to determine if site should be high, medium, or low priority for further assessment.

5.1.b. Prioritize for Site Assessment under EPA Cooperative Agreement [X]

Complete Section 6 to determine if site should be high, medium, or low priority for further assessment.

5.2. High Priority Site Assessment [ ]

The influencing factors in Section 4 suggest that further site assessment be conducted as a high priority. Go to Section 7.

5.3. Referral To Hazardous Waste Management Program [ ]

Recommend for sites that can be remediated as a Corrective Action under H&S Code 25187. Go to Section 7.

5.4. Referral To Water Quality Program [ ]

Recommend referral to Water Quality Control Program for sites that fall under its authority and for which it is providing oversight of investigation/remediation. Go to Section 7.

5.5 Referral to another agency [ ]

Recommend to another agency for sites where it is providing or has provided oversight. Go to Section 7.

5.6 No Futher Action Under CERCLA [ ]

Recommend No Further Action for sites where documented contamination is not significant by EPA standards and the presence of greater contamination is unlikely. Go to Section 7.

Comments: The site is a candidate for removal action. The main concerns are (1) the underground tank may still contain contaminants and may need to be removed and (2) the offsite stained soils are in a vacant lot and accessible to the public. The soil may need to be removed if metals concentrations exceed SRLs.

6.0 SITE PRIORITIZATION WORKSHEET

Site Name: Houston International **Site Screener:** Mary Hessler
EPA ID Number: AZD983480963 **Date:** _____
Site Assessment Phase: Preliminary Assessment

The following risk-based criteria should be used as a guideline to assist in the prioritization of pre-CERCLIS and CERCLIS sites. These guidelines can be used in various stages of assessment. When interpreting the information provided below, one should understand that conservative assumptions were made where information is lacking and the risk value is subjective.

Site screeners should complete this form by using the categories as guidelines. The "Notes" sections should be used to document assumptions made, data sources, or other information pertinent to determining risk prioritization.

6.1 HAZARDS IDENTIFICATION

Complete the sections below for the suspected contaminants of greatest concern. Use SCDMs as a reference for assigning hazardous substance risk category. Assign a Hazard Factor for each hazardous substance evaluated and then assign an Overall Hazard Factor Value combining the separate Hazard Factors. If only one hazardous substance is evaluated, the Overall Hazard Factor Value will be the same as the Hazard Factor for A.

HAZARDOUS SUBSTANCE A: Tetrachloroethylene

Estimate the risk associated with the hazard properties for this hazardous substance.

Hazard Property	HIGH	MEDIUM	LOW
Quantity	[X] ≥10,000 lbs; or or 5 mil. gals; or or 25,000 yds^3	[ ] <10,000 lbs and ≥100 lbs; or <5 mil. gals and ≥50,000 gals; or <25,000 yds^3 and ≥250 yds^3	[ ] <100 lbs. or 50,000 gals. or 250 yds^3
Toxicity	[ ]≥10,000	[X] <10,000 and ≥100	[ ] <100
Mobility	[X] 1	[ ] <1 and ≥0.001	[ ] <0.001
Bioavailability	[ ] ≥1,000	[X] <1,000 and ≥10	[ ] <10
Concentration (if known)	[X] ≥benchmark = _____	[ ] near benchmark = _____	[ ] low relative to benchmark = _____
Level of Containment	[X] None	[ ] Partial	[ ] Full
Hazard Factor for A	HIGH	MEDIUM	LOW

Comments: Quantity - The film processing operation used 15,000 gallons of water per week at one point. Thus, it is projected that millions of gallons of wastewtaer were generated each year. Mobility - PCE is already in groundwater. Concentration - PCE concentrations exceed the EPA Maximum Contaminant Level of 5 micrograms per liter.

HAZARDOUS SUBSTANCE B: Silver

Estimate the risk associated with the hazard properties for this hazardous substance.

Hazard Property	HIGH	MEDIUM	LOW
Quantity	[X] ≥10,000 lbs; or or 5 mil. gals; or or 25,000 yds^3	[ ] <10,000 lbs and ≥100 lbs; or <5 mil. gals and ≥50,000 gals; or <25,000 yds^3 and ≥250 yds^3	[ ] <100 lbs. or 50,000 gals. or 250 yds^3
Toxicity	[ ] ≥10,000	[X] <10,000 and ≥100	[ ] <100
Mobility	[ ] 1	[X] <1 and ≥0.001	[ ] <0.001
Bioavailabilty	[ ] ≥1,000	[X] <1,000 and ≥10	[ ] <10
Concentration (if known)	[ ] ≥benchmark = _____	[ ] near benchmark = _____	[X] low relative to benchmark = _____
Level of Containment	[X] None	[ ] Partial	[ ] Full
Hazard Factor for B	HIGH	**MEDIUM**	LOW

Comments: Quantity - The film processing operation generated thousands of gallons of wastewater each week. It is projected that millions of gallons of wastewater were generated each year. Mobility - The mobility in groundwater is 0.01. The air mobility of particulates is 0.02 in the Yuma area. Concentration - The concentrations are below the Arizona Soil Remediation Level of 380 milligrams per kilogram. Silver has not been detected in the groundwater.

OVERALL HAZARD FACTOR VALUE: **HIGH** MEDIUM LOW

6.2 VULNERABILITY ANALYSIS

Assign a risk category to each of the following vulnerability factors. Assign an Overall Vulnerability Factor Value for the site based on the dominant vulnerability risk categories.

Vulnerability Factor	High	Medium	Low
1. Environmental Setting - Land use within 0.5 miles of the site	[X] Residential	[ ] Agricultural/ Commercial	[ ] Industrial
2. Sensitive Populations - Children, the elderly, or groups with poor health live:	[X] Within 0.25 miles of site		[ ] More than 0.25 miles from site
3. Population Density - Evaluate within 0.5 miles.	[X] Dense	[ ] Moderate	[ ] Sparse
4. Groundwater Use - Wells used for drinking water are located:	[ ] Within 0.5 miles of the site	[ ] 0.5 to 2 miles from site	[X] More than 2 miles from site
5. Groundwater Contamination - Evaluate groundwater contamination within 2 miles of the site.	[X] Known	[ ] Possible	[ ] Not likely
6. Surface Water Location - Distance to nearest surface water body. If used for drinking water or known to be contaminated, bump to next higher risk category.	[ ] Within 0.5 miles of the site	[X] 0.5 to 2 miles from site	[ ] More than 2 miles from site
7. Sensitive Habitats - Distance to nearest sensitive habitat. If known or projected contamination within habitat, bump to next higher risk category.	[X] Within 0.5 miles of the site	[ ] 0.5 to 2 miles from site	[ ] More than 2 miles from site
8. Soil/Air Contamination - Evaluate the potential for exposure to individuals from contaminated soil or air releases.	[ ] Documented or probable exposure	[X] Potential for exposure	[ ] Exposure not likely
9. Sampling Data Confidence - Evaluate the quality of any data available for the site.	[ ] No oversight; no QA/QC; no data	[X] Regulatory oversight; EPA methods; partial or unknown QA/QC	[ ] Regulatory oversight; EPA methods; QA/QC validation

Notes: 1 - There is a residential area west of Arizona Avenue. 2 - There are three schools ¼ mile south of the site. There is a day care center approximately ¼ mile from the site at 20th Street and Arizona Avenue. 4 - Groundwater is not used for drinking water in the Yuma area. 7 - The Yuma area includes habitat for the flat-tailed horned lizard, a state-listed endangered species. 8 - Onsite stained soils were sampled, and metals were present below the Arizona Soil Remediation Levels. Offsite soils have not been sampled. Due to the arid climate in the Yuma area, soils become airborne and can be carried to nearby properties. 9 - Some of the early sampling had little or no QA/QC. The most recent data, however, were analyzed by EPA methods with oversight by the ADEQ Hazardous Waste Section. However, no data validation has been conducted.

OVERALL VULNERABILITY FACTOR VALUE:HIGH **MEDIUM** LOW

6.3 PRIORITIZATION SCREENING RISK ANALYSIS

Assign a Site Priority Level based on the dominant risk categories given for the hazard and vulnerability factor values.

HAZARD FACTOR VALUE	HIGH	MEDIUM	LOW
VULNERABILITY FACTOR VALUE	HIGH	MEDIUM	LOW
SITE PRIORITY LEVEL	**HIGH**	**MEDIUM**	**LOW**

Additional Comments: There are no residents onsite or on the adjacent vacant lot. The groundwater is not used for drinking water in the area. For these reasons, it is anticipated that, if a removal assessment is completed, the site will not merit further EPA attention.

7.0 SITE RECOMMENDATION

Site Name: Houston International **Site Screener:** Mary Hessler
EPA ID Number: AZD983480963 **Date:** _____

7.1. Futher Site Assessment Warranted

7.1.a Under State Lead
High Priority [ ] **Medium Priority** [ ] **Low Priority** [ ]

Recommend further site investigation under State lead.

7.1.b Under EPA Cooperative Agreement
High Priority [ ] **Medium Priority** [ ] **Low Priority** [ ]

Recommend further site investigation under the EPA cooperative agreement.

7.2. Recommended for Removal Assessment [ ]
or Expanded Removal Assessment [ ]

Recommend referral to EPA's Removal Section.

7.3. Referral To Hazardous Waste Management Program [ ]

Recommend hazardous waste management program for sites that can be remediated as a Corrective Action under H&S Code 25187.

7.4 Referral to Water Quality Control Program [ ]

Recommend Water Quality Program referral for sites that fall under its authority and for which it is providing oversight of investigation/remediation.

7.5 Referral to another agency [ ]

Recommend referral to another agency for sites where it is providing or has provided oversight.

7.6 No Futher Action Under CERCLA [ ]

Recommend No Further Action for sites where documented contamination is not significant by EPA standards and the presence of greater contamination is unlikely.

Comments: ADEQ recommends that the EPA consider conducting a removal action at this site. Removal of the underground tank may prevent a continuing release to groundwater.

EPA CONCURRENCE: _____
signature date

20th Street and Factor Avenue

Water Quality Assurance Revolving Fund (WQARF) Site

Boundaries:

The 20th Street and Factor Avenue Site (Site) is located approximately one-half mile south of 16th Street (U.S. Highway 95) and approximately three-quarters of a mile east of Fourth Avenue (Interstate 8 Business Loop) in Yuma, Arizona.

The plume boundaries depicted on the Site map represent the Arizona Department of Environmental Quality's (ADEQ) interpretation of data available at the time the map was constructed. The map is intended to provide the public with basic information as to the estimated extent of known contamination as of the date of map production. The actual extent of contamination may be different. Therefore, the plume may change in the future as new information becomes available.

Site Status Update:

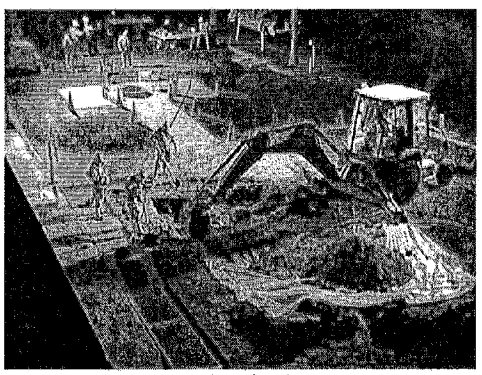
ADEQ continues to investigate the Site to identify the extent of the groundwater contamination. A shallow soil vapor investigation was performed to help identify potential source areas. Additional soil vapor and groundwater sampling will be conducted during the first quarter of 2011.

Community Involvement Activities:

ADEQ distributes fact sheets and public notices to the nearby community when significant events occur.

Site History:

1966-1988: Houston Photo Products (HPP) operated a motion picture laboratory and a facility which also manufactured photographic film and paper processing equipment for the photo industry. In 1988, HPP changed its name to Houston International, Limited (HIL). The chemicals used at the facility include standard photographic chemicals, namely tetrachloroethene (PCE), small amounts of various other photographic chemicals and water. The wastewater at the facility was treated to recover silver. The treated wastewater was disposed in three ways:



Uncovering a Septic System at the Houston Facility

TFDEQP000137

1) Some of the wastewater was discharged to a 1,000-gallon concrete underground sump on the east side of the property. When this sump was full, it was discharged to a disposal pond on the east side of the property. Wastewater from this disposal pond overflowed onto the adjacent property to the east of the Site.

2) Wastewater was used to water plants in landscaped areas at the front of the building.

3) Wastewater was discharged to the ground in the southwest portion of the property by a sprinkler system and later to a sump.

Beginning in 1975, HPP/HIL used PCE to clean stainless steel machine parts. On one occasion in 1978, PCE was discharged to the 1,000-gallon concrete underground tank.

1990-1995: HIL reported a leaking tank to the ADEQ Underground Storage Tanks (UST) Section. The ADEQ UST Section referred the facility to the ADEQ Water Pollution Compliance Unit. Consultants for HIL conducted soil and groundwater investigations under the oversight of the Water Pollution Compliance Unit.

In 1990, PCE and metals were detected in on-site soils. Subsequent soil investigations indicated that PCE was present in soil at concentrations below the Arizona residential Soil Remediation Level (SRL) of 53,000 micrograms per kilogram (µg/kg). In 1991, HIL began to use Industroclean (which contains ethylene glycol monobutyl ether) in place of PCE. Consultants for HIL installed three groundwater monitor wells (MW-1, MW-2, and MW-3) and performed groundwater sampling in 1993. The PCE concentrations exceeded the Arizona Aquifer Water Quality Standard (AWQS) for PCE of 5.0 micrograms per liter (µg/l).

Also in 1993, the ADEQ Hazardous Waste Section (HWS) inspected the facility, and in 1994, HIL and the ADEQ HWS entered into a compliance order. Consultants for HIL conducted additional soil and groundwater investigations under the compliance order. In 1994, a soil vapor survey was conducted. Elevated concentrations of PCE were present in the soil vapor samples. Trichloroethene (TCE) and 1,1,1-trichloroethane were also detected in soil vapor samples. HIL moved its motion picture laboratory operation off-site. The facility is currently occupied by the offices of Houston Film Labs and a dance studio. This operation does not generate wastewater.

1996: One nested groundwater monitoring well (MW-102) and one upgradient monitor well (MW-101) were installed at the Site. The maximum PCE concentration detected was 520 µg/l in MW-2 at 140 to 150 feet below ground surface (bgs).

1998-2000: In 1998, the ADEQ Hazardous Waste Section referred the facility to the ADEQ Superfund Programs Section, Site Assessment Unit. The Site was placed on the WQARF Registry in March 2000 with a score of 31 out of a possible 120.

2001: ADEQ began Site investigation activities at the facility. A review of the Material Safety Data Sheets of the chemicals used at the facility indicated that two cyanide compounds, potassium ferricyanide and sodium thiocyanate, were also used at the facility. Both of the cyanide compounds used at the facility can degrade to hydrogen cyanide in sunlight or in an

environment with a near neutral pH. Analyses of wastewater in the septic systems indicated that elevated cyanide concentrations were present in the wastewater disposal system. Cyanide was also detected in groundwater samples above the AWQS of 0.2 milligrams per liter (mg/l).

ADEQ completed the characterization of cyanide-contaminated soils at the Site. Several areas on the Site exceed the non-residential SRL of 35 milligrams per kilogram (mg/kg) for hydrogen cyanide.

2002: ADEQ completed an early response action (ERA) at the Site which included excavation and disposal of the upper foot of cyanide-contaminated surface soils. Approximately 1,700 tons of contaminated soils were removed from the Site. A one-foot cap of aggregate base coarse material was placed over the remaining cyanide-contaminated soils. This cap helps prevent direct exposure to the underlying contaminated soils remaining at the Site. The ERA also included the removal of two unused sumps and the cleaning of three active septic systems at the Site. Approximately 15,000 gallons of PCE and cyanide-contaminated wastewater and sludge were removed from the disposal system during cleaning operations. The removal of this source material addressed a continuing source of groundwater contamination.

2003: Soil and soil vapor samples were collected from six borings at the Site. Samples were collected to evaluate the vertical extent of PCE contamination. Sampling results indicated that the concentrations of PCE remaining in the soil did not exceed regulatory standards.

2004: ADEQ collected indoor air data from the buildings on the property and one building adjacent to the property. This data was collected as part of an ongoing risk assessment of the indoor air at the Site. ADEQ also drilled and sampled four deep borings beneath two of the remaining septic tanks and the former disposal pond area. The purpose of these borings was to evaluate the cyanide contamination at depth in these areas. Cyanide contamination above the non-residential SRL extends to a depth of approximately 17 feet bgs in some areas of the Site. ADEQ used these data and other information to develop groundwater protection levels for the cyanide contaminated soils remaining in place.

Also, ADEQ drilled and sampled two deep groundwater monitor wells at the Site. Analysis of groundwater samples from these deep wells did not indicate PCE or cyanide contamination above an AWQS.

2005-2006: ADEQ drilled and sampled ten additional groundwater monitor wells to further define the extent of the contaminant plume. Laboratory analyses from these monitor wells indicate that the contaminant plume extends approximately ½ mile downgradient of the Site. The lateral extent of the plume has not yet been fully characterized.

2007: Installation of additional deep groundwater monitor wells indicated that groundwater was present in three distinct zones: shallow (50 to 90 feet bgs); middle (105 to 170 feet bgs) and deep (starting at 170 feet bgs). Each zone is divided by separate clay units. Groundwater samples from each zone indicated that the majority of the contaminant plume was located within the middle zone.

2008: ADEQ installed one groundwater extraction well in the middle of the contaminant plume. An aquifer test was completed to determine aquifer characteristics. The last remaining septic

system on the HIL property was taken out of service and replaced with a new system and leach field located away from contaminated soil. Additional information was gathered north of the HIL property to locate potential sources areas.

2009: A shallow soil vapor investigation was performed to help identify potential source areas. The soil vapor investigation included the installation of several permanent soil vapor monitor probes and performing a soil vapor survey.

2010: In November, additional permanent soil vapor monitor probes were installed to help identify potential source areas. Results of the soil vapor investigation will be pending following the collection of samples in the First Quarter of 2011.

Contaminants:

The current contaminants of concern at the Site include tetrachloroethene (PCE), trichloroethene (TCE) and cyanide. Contaminants of concern at the Site may change as new data become available.

Public Health Impact:

No irrigation, drinking water or City of Yuma production wells have been impacted by the volatile organic compounds or cyanide contamination from the Site. However, PCE, TCE and cyanide are present in the groundwater monitor wells at the Site at concentrations above the AWQS. A soil cap prevents direct exposure to the underlying cyanide contaminated soils remaining at the Site.

The City of Yuma is the main municipal water provider at this Site. No one is known to be drinking contaminated water from this Site. However, if you are drinking water from a private well within the boundaries of the Site, please contact the ADEQ Project Manager.

Site Hydrogeology:

The Yuma area is underlain by thick sequences of non-marine and marine sedimentary rocks. However, only the upper several hundred feet of these sediments are hydrologically important. This is because the upper layers are extremely transmissive and yield sufficient quantities of water to wells.

From lowest to uppermost, the upper layers are described as the wedge zone, the coarse gravel zone, and the upper fine-grained zone. The wedge zone overlies the marine sedimentary Bouse formation and consists of interbedded sands, gravels and cobbles. The wedge zone is approximately 2,500 feet thick in the area and pinches out against the basin bounding ranges.

The coarse gravel zone overlies the wedge zone, varying from zero to 100 feet in thickness. The coarse gravel zone consists of fluvial deposits of coarse gravels, including cobbles and boulder size material. The coarse gravel zone is the principal aquifer for the Yuma area. The coarse gravel zone is generally found at a depth of 100 feet in the low lying valley areas near the Site,

and at a depth of about 180 feet below the Yuma Mesa where the Site is located. However, the coarse gravel zone is not present beneath the Site.

The upper fine-grained zone is the uppermost saturated unit which overlies the coarse gravel zone. The upper fine-grained zone is up to 200 feet thick and is characterized as sands and silts and may have an extensive clay layer which can locally affect groundwater movement. The Yuma Mesa is a remnant of the upper fine-grained zone which is mostly missing in the nearby low lying valley areas.

Depth to groundwater at the Site is approximately 75 feet below ground surface (bgs). Groundwater flow direction at the Site is generally to the northwest.

Contacts:

Name	Phone/Fax	E-mail
Tina Le Page, ADEQ Project Manager	(520) 628-6663* (520) 628-6745 fax	lepage.tina@azdeq.gov
Eileen Palese, ADEQ Community Involvement Coordinator	(520) 628-6712*/ (520) 628-6745 fax	ep1@azdeq.gov

*In Arizona, but outside the Tucson area, call toll-free at (888) 271-9302.

Information Repository:

The complete official Site file is located in Phoenix at the ADEQ Central Office at 1110 W. Washington Street; however, select documents are also available in Tucson at the Southern Regional Office at 400 W. Congress, Suite 433. Files are available for review Monday through Friday from 8:30 a.m. to 4:30 p.m. Please call (520) 628-6715 or toll-free (888) 271-9302 to arrange a file review appointment at the Southern Regional Office.

To arrange for a time to review the Site file at the main ADEQ Phoenix office, please call the ADEQ Records Management Center with 24-hour notice at (602) 771-4380 or (800) 234-5677. Once all documents requested have been collected, you will be contacted for a review Monday through Friday from 8:30 a.m. to 4:30 p.m. at the ADEQ Records Management Center, 1110 W. Washington Street in Phoenix, AZ.

SITE REGISTRY REPORT

WATER QUALITY ASSURANCE REVOLVING FUND SITE
20TH STREET AND FACTOR AVENUE
Yuma, Yuma County, Arizona
March 30, 2000

The 20th Street and Factor Avenue Water Quality Assurance Revolving Fund (WQARF) site is located on the south side of 20th Street, east of Arizona Avenue, in Yuma, Arizona. The site is approximately bounded by 19th Street to the north, 21st Street to the south, Kennedy Lane to the east, and Rail Avenue to the west. The attached map shows the actual site boundary.

The facility at 655 E. 20th Street has operated from the mid-1960s until present. Its operations included film processing and manufacturing photographic products. According to reports prepared by the property owner's consultants, wastewater was discharged to an underground collection tank. When the tank was full, the wastewater was discharged to the ground on east and south sides of the facility. Soil staining was oberved on the east and south sides of the facility and also on the vacant lot adjacent to the east side of the facility. This indicates that wastewater from the site likely flowed onto the vacant lot. Additionally, wastewater was used to water plants in the landscaped areas at the facility. The facility has modified its operations so that, at present, no wastewater is generated.

The contaminants of concern are tetrachloroethylene (PCE) and metals. PCE was used in a vapor degreaser, and, in 1978, 15 to 20 gallons of PCE were accidentally discharged to the underground collection tank. In 1994, PCE was detected in the wastewater. PCE has also been detected in the onsite and offsite groundwater monitoring wells at levels that exceed the Arizona Aquifer Water Quality Standard of 5.0 micrograms per liter for PCE. The most recent sampling results from the onsite monitoring wells indicate that PCE is present at concentrations ranging from 5.2 to 1,300 micrograms per liter. The nearest downgradient domestic and irrigation wells have been sampled, and PCE was not detected in any of them. These wells are not used for drinking water.

Metals have been detected in onsite soils and groundwater. Lead and selenium have been detected in one onsite groundwater monitoring well above the Arizona Aquifer Water Quality Standards of 15 micrograms per liter for lead and 50 micrograms per liter for selenium. Metals are not expected to migrate to the nearest domestic and irrigation wells. This is because metals have much lower mobility than PCE, and PCE was not detected in any of the domestic and irrigation wells.

No actual public health impacts have been identified. However, PCE may travel to the nearby wells, and that, at some point in the future, incidental exposure may occur through irrigation and/or spraying the water.

The Eligibility and Evaluation (E&E) score for this site is 31. The Arizona Department of

Environmental Quality (ADEQ) proposes that the 20th Street and Factor Avenue site be added to the WQARF Registry established pursuant to Arizona Revised Statutes (ARS) § 287.01(D).

This Site Registry Report (SRR) was prepared to meet the requirements of ARS § 287.01(B). The attached Eligibility and Evaluation (E&E) score was prepared in accordance with the E&E model dated October 2, 1996, developed by the Ground Water Cleanup Task Force. ARS § 287.01(C) outlines the process for listing a site on the WQARF Registry. The process includes a 15-day owner/operator comment period followed by a 30-day public comment period. At the conclusion of the public comment period, ADEQ will consider any comments made before issuing a final E&E score and placing the site on the Registry.

This Site Registry Report is based upon information available as of the date shown. Site boundaries depicted on the attached Site Boundary Map represent ADEQ's interpretation of data available at the time the map was constructed. The map is intended to provide the public with basic information as to the estimated geographic extent of known contamination as of the date of the SRR. The actual extent of contamination may be different. Therefore, the geographic boundaries for this site may change in the future as new information becomes available.

An updated SRR and associated Site Boundary Map will not be issued. As new information becomes available, during the remedial investigation or otherwise, it will be made available for public review through placement in the public file.

FILE INFORMATION

WATER QUALITY ASSURANCE REVOLVING FUND
20TH STREET AND FACTOR AVENUE SITE
YUMA, YUMA COUNTY, ARIZONA

The Arizona Department of Environmental Quality Site Assessment Unit has the following files regarding this site:

! 20th Street and Factor Avenue Site Registry File

! Houston International PA/SI File

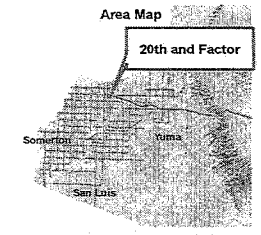
To review any of these files, please contact the ADEQ Records Center at (602) 207-4378 to arrange an appointment to review the files.

The Arizona Department of Environmental Quality Hazardous Waste Section has a closed case file for Houston International. To review this file, contact Wayne Hood, Jr., at (602) 207-4234 to set an appointment.

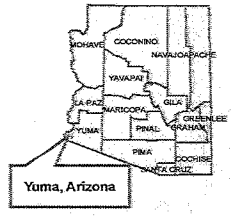
20th Street and Factor Avenue WQARF Site - Yuma, Arizona

ADEQ
Arizona Department of Environmental Quality

Area Map



State of Arizona



Legend

Estimated Plume Boundary

N

0 250 500

Feet

Map Date: July, 2011

WASTE PROGRAMS DIVISION
Remedial Projects Unit

Map produced by Arizona Department of Environmental Quality (ADEQ), Data Management and GIS Unit, TS Summers

D:\superfund\statewide\2011\20thfact\projects2011\20thfact2011.mxd.

Data Sources:
Arizona Department of Environmental Quality
Arizona Land Resources Information System
Arizona Department of Transportation.
Image: State Wide

"Site boundaries depicted on the site map represent ADEQ's interpretation of data available at the time the map was constructed. The map is intended to provide the public with basic information as to the estimated geographic extent of known contamination as of the date of map production. The actual extent of contamination may be different. Therefore, the geographic boundaries for this site may change in the future as new information becomes available."

W-10100 3.14.3

GROUNDWATER MONITORING WELL INSTALLATION AND SAMPLING SUMMARY REPORT FOR 2002

20th AND FACTOR WQARF SITE YUMA, ARIZONA

Prepared for
Arizona Department of Environmental Quality
1110 West Washington St.
Phoenix, AZ 85007

prepared by
GEOTRANS, INC.
4665 South Ash Avenue, Suite G-1
Tempe, Arizona 85282
(480) 839-2800

June 27, 2003

REGISTERED GEOLOGIST
CERTIFICATE NO.
34503
DAVID
BROERMANN
Date Signed 06/30/03
ARIZONA, U.S.A.

Jasenka Zbozinek, Ph.D.
Project Manager

David Broermann, R.G.
Senior Geologist

TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1
- 1.1 BACKGROUND 1
- 1.2 SUMMARY OF HISTORIC DATA 1
- 1.3 SCOPE OF WORK 3
- 1.4 OBJECTIVE OF MONITORING WELL INSTALLATION AND SAMPLING 3

2.0 FIELD ACTIVITIES 4
- 2.1 GROUNDWATER MONITOR WELL INSTALLATION 4
- 2.2 WATER LEVEL MEASUREMENTS 4
- 2.3 GROUNDWATER SAMPLING 5
- 2.3 DEVIATIONS FROM THE SCOPE OF WORK 6

3.0 MONITORING AND SAMPLING RESULTS 7
- 3.1 WATER LEVEL MEASUREMENTS 7
- 3.2 GROUNDWATER SAMPLE ANALYTICAL RESULTS 7

4.0 QUALITY ASSURANCE/QUALITY CONTROL 9
- 4.1 EQUIPMENT DECONTAMINATION 9
- 4.2 FIELD QUALITY ASSURANCE AND LABORATORY METHOD CHECK 9
  - 4.2.1 Sample Preservation and Shipment 9
  - 4.2.2 Chain-of-Custody Protocols 9
  - 4.2.3 Labeling 10
- 4.3 LABORATORY QA/QC 10
- 4.4 CORRECTIVE ACTIONS 10

5.0 CONCLUSIONS AND RECOMMENDATIONS 11
- 5.1 GROUNDWATER ELEVATIONS 11
- 5.2 ANALYTICAL RESULTS FOR CONTAMINANTS OF CONCERN 11
  - 5.2.1 VOCs 11
  - 5.2.2 Cyanides 11
  - 5.2.3 Metals 12
- 5.3 RECOMMENDATIONS 12
  - 5.3.1 Determination of Groundwater Flow Direction and Extent of Contamination in the Western Portion of the Site and Off-Site to the West 12
  - 5.3.2 Determination of the Extent of Off-Site Migration of Contaminated Groundwater to the North 13
  - 5.3.3 Determination of Vertical Extent of On-Site and Off-Site Groundwater Contamination 13
  - 5.3.4 Determination of the Extent of Off-Site Groundwater Contamination to the East 13

6.0 REFERENCES 14

LIST OF TABLES

Table 1 Historic Groundwater Sample Results for Compounds Detected in Groundwater Samples, 20th and Factor WQARF Site, Yuma, AZ (Prior to 1997)
Table 2 Monitor Well Construction Details, 20th and Factor WQARF Site, Yuma, AZ
Table 3 Depth to Groundwater and Groundwater Elevations, 20th and Factor WQARF Site, Yuma, AZ
Table 4 Summary of Compounds Detected in January 28 and 29, 2002 Groundwater Samples, 20th and Factor WQARF Site, Yuma, AZ
Table 5 Summary of Historic and January 2002 Groundwater Sample Results for Compounds Detected in Groundwater Samples Collected by GeoTrans, 20th and Factor WQARF Site, Yuma, AZ

LIST OF FIGURES

Figure 1 Vicinity Map
Figure 2 Site Well Location Map
Figure 3 Groundwater Elevations, January 29, 2002
Figure 4 Groundwater Elevations, October 1, 2002

LIST OF APPENDICES

Appendix A Certified Analytical Laboratory Reports For Soil Samples Collected From Borings
Appendix B Manifest For Soil Cuttings Disposal and Monitor Well Construction Summary
Appendix C Certified Analytical Laboratory Reports for Groundwater Samples
Appendix D January 2002 Field Sample Sheets and October 2002 Liquid Level Measurement Sheet

DISTRIBUTION

1.0 INTRODUCTION

This report documents the installation and sampling of groundwater monitor wells, by GeoTrans Inc. (GeoTrans), at the Yuma 20th and Factor Water Quality Assurance Revolving Fund (WQARF) Site (Site) located in Yuma, Arizona (Figure 1). In January 2002, GeoTrans installed three groundwater monitor wells and collected groundwater samples at the new wells and existing groundwater monitoring well on behalf of the Arizona Department of Environmental Quality (ADEQ). The scope of these services is based on the Contract Number 99-0017, Task Assignment Scope of Work (TASOW) Number 01-0017, and subsequent ADEQ decisions and approvals.

1.1 BACKGROUND

The Site is located in an industrial area in the eastern portion of Yuma County, Arizona, which has not been annexed by the Town of Yuma.[1] The Site is located southeast of 20th Street and Factor Avenue (Figure 1). The approximate geographical coordinates of the Site are 32° 41' 27" north latitude, 114° 36' 38" west longitude. The cadastral location of the site is N ½ of the SW ¼ of Section 34, Township 8 South, Range 23 West of the Gila and Salt River Baseline and Meridian (ADEQ, 1999).

The Site includes an industrial property (Property) that is identified by the Yuma County Assessor's Office as Parcel 33 in Book 109 of Map 64. The Property was undeveloped land prior to early 1965. Starting in 1966, the Property was occupied by Houston Photo Products, Inc. The company name was later changed to Houston International, Ltd. (Houston International). From 1966 to 1995, Houston International occupied the Property, and thereafter the Property has been occupied by other businesses, including Houston Fearless 76, Inc. (Houston Fearless), a manufacturer of film processing machines. Wastewater resulting from film development and/or processes associated with manufacturing of film processing machines by Houston International were discharged to five wastewater disposal systems (WDSs) and/or to the ground. Chemicals of concern (COC) contained in the wastewater may have included volatile organic compounds (VOCs), semi-VOCs (SVOC), metals, and cyanides, thus resulting in impacting the soil and groundwater underlying the Site, including the parcel immediately east of the Property.

1.2 SUMMARY OF HISTORIC DATA

Foree & Vann, Inc. (Foree & Vann), a contractor for Houston International, conducted a Phase II Environmental Site Assessment (EIS) in 1990 (Foree & Vann, 1990a and 1990b). Based on the results of the Phase II EIS, Foree & Vann installed a total of three groundwater monitor wells MW-1, MW-2 and MW-3 (Figure 2). Analytical results of groundwater samples collected from these wells are summarized in Table 1.

[1] The Site is located in a Yuma County island, within the City of Yuma.

1993c). Analytical results for the samples collected by Foree & Vann and ADEQ are shown in Table 1. Tetrachloroethylene (PCE) was detected in the ADEQ split samples from monitor wells MW-1 (27,000 micrograms per liter [µg/L]), MW-2 (10,000 µg/L), and MW-3 (5,000 µg/L) (ADEQ, 1999). Analytical results of groundwater samples collected by ADEQ for metals indicate the presence of lead and selenium in concentrations exceeding their respective Aquifer Water Quality Standards (AWQSs).

On May 22 to 23, 1995, Foree & Vann collected HydroPunch™ groundwater samples from one location at depths of 75, 82, 85, 96, and 102 feet below ground surface (bgs) (Foree & Vann, 1996). The exact location of this HydroPunch™ investigation could not be identified by GeoTrans based on the documents currently present in the ADEQ WQARF files. The collected groundwater samples were screened for trichloroethylene (TCE), PCE, and benzene, toluene, ethylbenzene, and total xylenes (BTEX); only PCE was detected as follows:

- 75 feet bgs: 620 µg/L PCE;
- 82 feet bgs: 580 µg/L PCE;
- 85 feet bgs: 2,400 µg/L PCE;
- 96 feet bgs: 1,100 µg/L PCE; and,
- 102 feet bgs: 1,200 µg/L PCE.

In March 1996, Geotechnical and Environmental Consultants, Inc. (GEC) installed and sampled an upgradient monitor well (MW-101) on an adjacent property located to the east (Figure 2) (GEC, 1996). On October 3, 1996, GEC purged monitor wells MW-1, MW-2, MW-3, and MW-101, and collected the groundwater samples on the following day from the previously purged wells. Analytical results of the groundwater samples collected from these wells are analyzed in Table 1. GEC concluded the concentrations of PCE in groundwater samples collected by GEC were significantly lower than concentrations of PCE in groundwater samples previously collected by Foree & Vann (GEC, 1997).

In November 1996, monitor well MW-102 was installed by GEC and completed as a nested well, with screen intervals of 80 to 90 feet bgs (MW-102A), 110 to120 feet bgs (MW-102B), and 140 to 150 feet bgs (MW-102C). On November 6, 1996, GEC developed the wells, and sampled them on November 14, 1996. The corresponding analytical results indicated that PCE was present in the groundwater samples from MW-102A (78 µg/L), MW-102B (38 µg/L), and MW-102C (520 µg/L) (GEC, 1997) (Table 1). GEC concluded that the vertical extent of PCE in groundwater was not delineated. Duplicate groundwater samples were also collected by ADEQ from monitor wells MW-102A and MW-102C; the corresponding results are included in Table 1.

In order to determine if production wells in the area were impacted by contaminants detected in the Site wells, the ADEQ Site Assessment Unit collected groundwater samples from seven production wells within a one-mile radius of the Site on February 23 and 24, 1998 and May 4, 1998. PCE was not detected in any of the off-Site wells sampled by ADEQ; however, chloroform (1.2 µg/L) was detected in the Woodard R. Pete Junior High School well located to the west, thus down- and cross-gradient, of the Site (ADEQ, 1999).

1.3 SCOPE OF WORK

The scope of work summarized in this report included the installation of three groundwater monitor wells (MW-5, MW-6, and MW-7), collection, preparation, and shipping of groundwater samples from the new and existing groundwater monitor wells (MW-1, MW-2, MW-3, MW-5, MW-6, and MW-7, MW-101, and MW-102 A, B, C) in accordance with the Draft Quality Assurance Project Plan (GeoTrans, 2001a), Draft Field Sampling Plan (GeoTrans, 2001b), and subsequent ADEQ decisions and approvals. Additionally, the scope of work summarized in this report included collecting water levels at each of the wells, disposing of Investigation Derived Waste (IDW) generated by purging of groundwater monitor wells, sampling of ADEQ-selected off-Site water supply wells, and coordination with the ADEQ Project Manager. Groundwater monitor well MW-4 was not drilled and installed when groundwater monitoring wells MW-5, MW-6 and MW-7 were installed, because ADEQ and GeoTrans agreed that the well should not be installed until wastewater disposal system (WDS) number four (WDS-4) was excavated and removed. However, due to ADEQ's budgetary cutbacks, MW-4, one additional shallow groundwater monitor well (MW-8), and three deep groundwater monitor wells will not be installed until funding is obtained.

1.4 OBJECTIVE OF MONITORING WELL INSTALLATION AND SAMPLING

The objective of the groundwater monitoring well installations and sampling was to further assess the direction of groundwater flow and its gradient and the extent of groundwater contamination by PCE, cyanides, and other possible COCs that exceeded AWQSs in the area near the Property boundary (Figure 2).

Three groundwater monitor wells were installed during the week of January 14, 2002 by GeoTrans. Groundwater sampling activities were performed on January 28 and 29, 2002 by GeoTrans personnel. On May 22, 2003, two off-Site water supply wells, Woodard R. Pete Junior High School and Alice Byrne School, were also sampled. Groundwater elevation measurement activities were also performed on October 1, 2002. Deviations from the planned scope of work are presented in Section 2.3.

2.1 GROUNDWATER MONITOR WELL INSTALLATION

During the week of January 14, 2002, Geomechanics Southwest, Inc. (GSI), under the supervision of GeoTrans, installed groundwater monitoring wells MW-5, MW-6, and MW-7 (Figure 2). Construction details for the these new wells and the existing wells are provided in Table 2. Groundwater monitor well locations were selected based on water quality and water level measurements collected using existing wells. The wells were drilled using a CME 75 hollow stem auger drill rig, and completed using schedule 40 PVC casing and screen, as described in monitor well construction summaries, well construction diagrams and boring logs attached in Appendix B. Groundwater monitoring wells MW-5 and MW-6 were developed using a bailer that was 10 feet in length and approximately three inches in diameter. Groundwater monitoring well MW-7 was not developed, because liquid phase hydrocarbon (LPH) was noted in the boring and well. The LPH identified in the well is presumably diesel fuel from the releases at the railroad facility north of the Site.

Two soil samples were collected when drilling MW-7 and submitted to Columbia Analytical Services (CAS) under proper chain-of-custody protocols for analysis of VOCs using EPA Test Method 8260. Analytical results are included in Appendix A. Soil cuttings produced when drilling monitor wells MW-6 and MW-7 were placed into a roll-off bin and sampled. Soil cuttings produced when drilling MW-5 were placed on and covered with visqueen and sampled. All soil cuttings were analyzed for disposal purposes. Based on analytical results for soil cuttings from MW-5, the cuttings were left at Site, and soil cuttings from MW-6 and MW-7 were disposed of at Copper Mountain Landfill near Yuma, Arizona. Copies of the laboratory report and manifest documenting the disposal of soil cuttings from MW-6 and MW7 are included in Appendices A and B, respectively.

The installation of groundwater monitor well MW-4 was temporally postponed until after wastewater disposal system (WDS) number four (WDS-4) could be excavated, inspected, and removed. As discussed with, and agreed to by ADEQ, MW-4 was to be installed after the excavation of WDS-4 and cyanide-impacted soil in the vicinity of WDS-4, to prevent damage of a newly installed well.

2.2 WATER LEVEL MEASUREMENTS

GeoTrans collected water level measurements at monitor wells MW-1, MW-2, MW-3, MW-5, MW-6, MW-101, and MW-102 A, B, C, on January 28 and 29, 2002 and October 1, 2002. Water level measurements were collected using a Slope Indicator electric water sounder, and liquid phase

thickness was measured using an interface probe. The depth to water was referenced to the surveyed point at each monitor well. Groundwater elevations and groundwater contours for the shallow aquifer are provided on Figures 3 and 4.

2.3 GROUNDWATER SAMPLING

During January 28 and 29, 2002 sampling event, groundwater samples were collected using standard three-volume well purging techniques. Groundwater samples were collected from groundwater wells MW-1, MW-2, MW-3, MW-5, MW-6, MW-101, and MW-102 A, B, C. Groundwater monitor wells MW-1, MW-2, and MW-3 were purged using new, 1.5-inch diameter, disposable bailer's due to the water level in the wells and/or the known capacities and yields of the groundwater wells previously sampled by GeoTrans. Historically, when attempting to purge these wells using a 2-inch diameter, variable frequency Grundfos sampling pump, the wells were pumped dry no mater how low the flow rate was adjusted. GeoTrans utilized a 2-inch diameter, variable frequency Grundfos sampling pumps to purge and sample monitor well MW-102 A, B, C, and 3-inch diameter, variable frequency Grundfos sampling pumps to purge and sample monitor wells MW-5 and MW-6. Access to MW-101 prevented the use of pumps to purge MW-101; therefore, MW-101 was purged and sampled by hand, using a new disposable 3-inch diameter bailer.[2]

As the monitor wells were purged, discharge water was monitored for the following parameters using a Hydrolabs Quanta-G multi-parameter hydrochemistry instrument: pH, conductivity, temperature, dissolved oxygen (DO), and oxidation-reduction potential (ORP). Sampling techniques called for purging to continue until three well volumes had been purged and successive measurements were within ±0.1 for pH, ±3% for conductivity, ±10 millivolts for oxygen redox potential (ORP), and ±10% for DO, or until the parameters had reached asymptotic values for 10 minutes, or 45 minutes of purging had occurred.

After a minimum of three well-volumes had been purged from monitor wells, and after monitoring parameters had stabilized, groundwater samples were collected by lowering a 1.5-inch diameter disposable plastic bailer on synthetic bailing twine down each well. The bailer was then retrieved, and a low-flow sampling tip was used to collect a sample using pre-preserved laboratory sample containers. Immediately after sampling, the sample containers were labeled, placed in a cooler with wet ice, and logged on the chain-of-custody form.

All the samples were submitted under proper chain-of-custody protocol to CAS for analysis of total cyanide (EPA Test Method 335.2), free cyanide (Standard Method 4500-CN) and VOCs (EPA Test Method 8260B). Groundwater samples from MW-5 and MW-6 were also analyzed for SVOCs (EPA Test Method 8270) and total and dissolved (field filtered) priority pollutant metals (EPA Test Methods 3010A/3020A with 6010B/7060A/7470/7841, as applicable). Additional groundwater samples collected from groundwater monitor wells MW-2, MW-5, MW-6, and MW-101 were also submitted under chain-of-custody protocols to Transwest Geochem (TWG) for analysis of total and free cyanide (Standard Method 4500-CN), also referred to as amenable cyanide. The samples were

---

[2] Because access to MW-1 using a vehicle was restricted for health and safety reasons, GeoTrans personnel accessed the well from the south by foot, and carried needed equipment to purge and sample the well.

delivered to CAS and TWG on January 31, 2002. Groundwater sampling forms for this event are presented in Appendix D.

On May 22, 2002, GeoTrans also collected groundwater samples from two off-Site water production wells used for irrigation at two schools west of the Site. The schools, Woodard R. Pete Junior High School and Alice Byrne School are located at 2250 S. 8th Avenue and at 811 W. 16th Street, respectively. Samples were submitted under chain-of- custody protocols to TWG for analysis of total and free cyanide (Standard Methods 4500-CN) and VOCs (EPA Test Method 8260B).

2.3 DEVIATIONS FROM THE SCOPE OF WORK

No specific deviations from the planned scope of work detailed in the draft Field Sampling Plan (GeoTrans, 2001b) and other agreements between ADEQ and GeoTrans were noted during these sampling round, with the exception of sampling MW-7. This monitor well was not sampled due to the presence LPH.

3.0 MONITORING AND SAMPLING RESULTS

3.1 WATER LEVEL MEASUREMENTS

A summary of depth-to-water and groundwater elevation measurements is provided in Table 3. Based on the depth-to-water measurements collected by GeoTrans on January 28 and 29, 2003 and October 1, 2002, the general groundwater flow direction in Subunit A is believed to be toward the west. The groundwater gradient near the center portion of the Site was calculated to be approximately 0.0012 feet per foot (ft/ft). The groundwater gradient in the western portion of the Site, near Factor Avenue, was also calculated to be approximately 0.0012 ft/ft. Based on water level elevation measurements collected in October 2002, it appears that groundwater flow may have shifted from a westward direction to a more northwest direction. The lack of monitor wells in the northeast portion of the Property and the south-central portion of the Site precludes a better understanding of the groundwater flow regime.

3.2 GROUNDWATER SAMPLE ANALYTICAL RESULTS

A summary of compounds detected in groundwater samples collected by GeoTrans in January 2002 is shown in Table 4. A summary of the results of all GeoTrans' groundwater sampling events related to the Site are shown in Table 5. On January 28 and 29, 2002 PCE was detected in the groundwater samples collected from monitor wells MW-1 (320 µg/L), MW-2 (420 µg/L), MW-3 (80 µg/L), MW-5 (310 µg/L), MW-6 (120 µg/L), MW-101 (2.3 µg/L), and MW-102 A (75 µg/L), MW-102 B (320 µg/L), MW-102 C (220 µg/L). The AWQS for PCE is 5 µg/L. No other VOCs reported using EPA Test Method 8260B were detected above the AWQSs in the groundwater samples analyzed by CAS, with the exception of TCE, detected in the sample collected from MW-102B (12 µg/L). The ADEQ AWQS for TCE is 5 µg/L.

Cadmium was detected in monitor well MW-5 (0.008 milligrams per liter [mg/L]); the AWQS for cadmium is 0.005 mg/L.

Groundwater samples from monitor wells MW-1, MW-2, MW-5, MW-6, and MW-102 A, B, C were analyzed by CAS for total and free cyanides. Free cyanide was detected in the groundwater samples collected from monitor wells MW-1 (2.07 mg/L), MW-2 (0.162 mg/L), MW-5 (0.4 mg/L), MW-6 (0.24 mg/L), MW-102 A (1.66 mg/L), MW-102 B (0.055 mg/L), and MW-102 C (0.104 mg/L). The AWQS for free cyanide is 0.2 mg/L. Total cyanides were also detected in the groundwater samples collected from monitor wells MW-1 (6.88 mg/L), MW-2 (1.78 mg/L), MW-3 (0.013 mg/L), MW-5 (8.91 mg/L), MW-6 (1.04 mg/L), MW-102 A (2.42 mg/L), and MW-102 B (0.022 mg/L).

Groundwater samples analyzed by TWG for cyanides amenable to chlorination included samples collected from monitor wells MW-2 (<0.010 mg/L), MW-5 (0.40 mg/L), and MW-6 (0.24 mg/L). Total cyanides were also detected by TWG in the groundwater samples collected from monitor wells MW-2 (1.6 mg/L), MW-5 (17 mg/L), and MW-6 (1.2 mg/L). Cyanides were not detected by TWG in the groundwater sample from MW-101 (<0.010 mg/L).

No VOCs were detected in the groundwater samples collected from at the off-Site school wells, with the exception of chloroform in the sample collected at Woodard R. Pete Junior High School, located at 2255 S. 8th Avenue. Cyanides were not detected in the samples collected from either of these wells.

4.0 QUALITY ASSURANCE/QUALITY CONTROL

4.1 EQUIPMENT DECONTAMINATION

GeoTrans utilized an electric well sounder for water level measurements and Grundfos portable, submersible pumps to purge water from selected monitor wells. Each piece of equipment was decontaminated prior to initial use and between sampling locations by the following procedures:

- Non-phosphatic detergent wash (Alconox or equivalent);
- Tap water rinse; and,
- Final rinse with distilled (or deionized) water.

The sampling pump was decontaminated by pumping solution through the pump and integrated hose, and was cleaned externally in the same detergent wash. Tap water was then pumped through the pump and integrated hoses to complete decontamination.

4.2 FIELD QUALITY ASSURANCE AND LABORATORY METHOD CHECK

Field quality assurance during this January 2002 sampling round included daily field instrument calibration and collection and analysis of one duplicate sample. The duplicate sample was analyzed for VOCs using EPA Test Method 8260B. The duplicate sample was collected from monitor well MW-5, and was used to evaluate laboratory performance.

PCE was detected at a concentration of 310 µg/L in the original groundwater sample and 290 µg/L in the duplicate groundwater sample (Table 4). A trip blank was submitted with the samples collected on January 28 and 29, 2002. The trip blank sample did not contain any detectable concentrations of VOCs.

4.2.1 Sample Preservation and Shipment

GeoTrans utilized appropriate preservatives or preserved sample containers for sample collection and storage. Samples were provided to the laboratory in an insulated cooler at a temperature of 4°C (41°F). Temperature was maintained using water ice. Water ice was placed in water-tight bags to minimize risk of contact between samples and melt water.

4.2.2 Chain-of-Custody Protocols

Immediately after a sample was collected and labeled, the sample was logged on a chain-of-custody form which accompanied the samples to the laboratory (Appendix A). When the primary laboratory received the samples, a unique sample identification number was assigned to each sample container. This number was recorded on the chain-of-custody and was used to identify the sample in all subsequent internal chain-of-custody records, analytical records, and chain-of-custody documents forwarded to any secondary subcontractor laboratories.

4.2.3 Labeling

Each sample container was labeled immediately after the sample was collected. The label included the following information on each sample container:

- Sample identification number;
- Project number;
- Sampler's identification;
- Date and time of collection; and,
- Preservation, if any.

4.3 LABORATORY QA/QC

Groundwater samples were analyzed by CAS in accordance with method criteria. CAS noted a number of difficulties that were experienced during the analysis of the January 2002 sample set. These are explained and presented in the case narrative in Appendix A. The difficulties included the following items:

- Matrix spike recoveries for various VOCs were high, but did not effect the VOC concentrations detected in the samples, and;
- Lab Control Spike/Duplicate Lab Control Sample recoveries were high for several of the percent recovery limits, but were within the relative percent recovery limits.

These difficulties do not appear to significantly impact the overall quality of the results.

4.4 CORRECTIVE ACTIONS

No deviations requiring corrective action occurred during this sampling and monitoring round. GeoTrans does recommend redevelopment of the monitor wells installed prior to 2001, which may allow more consistent purging and sampling methods between wells.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 GROUNDWATER ELEVATIONS

GeoTrans collected groundwater level measurements from existing and new groundwater monitor wells at the Site on January 29, 2002. Groundwater elevations calculated for January 29, 2002 indicate a general groundwater flow direction towards the west. The groundwater gradient was calculated at approximately 0.0012 ft/ft in the western portion of the site and 0.0012 ft/ft in the eastern portion of the Site. Based on groundwater level measurements collected, it appears that groundwater flow directions have shifted to more northwesterly direction at the Site.

Groundwater elevations appear to be affected by evaporative cooler discharges to the ground at the Property. Based on discussions with property owners upgradient from the Site, the development of parcels east and south of the Site will include landscaping that will require water. Therefore, GeoTrans recommends continued groundwater monitoring to determine if there are seasonal groundwater elevation trends.

5.2 ANALYTICAL RESULTS FOR CONTAMINANTS OF CONCERN

ADEQ initially identified PCE as the VOC COC at the Site; however, cyanides, selenium, and cadmium were also identified as COCs by ADEQ based on analytical results of the Site ERA findings.

5.2.1 VOCs

PCE was detected in all of the groundwater samples collected from monitor wells on January 28 and 29, 2002. Concentrations of PCE detected in the samples collected at the Property ranged from 420 µg/L to 75 µg/L, and 2.3 µg/L PCE was detected in the sample collected from the Site upgradient groundwater monitor well MW-101. The AWQS for PCE is 5 µg/L. No other VOCs reported using EPA Test Method 8260B were detected above the AWQSs in the groundwater samples analyzed by CAS, with the exception of TCE detected in the sample collected from MW-102B (12 µg/L). The AWQS for TCE is 5 µg/L.

No VOCs were detected in the groundwater samples collected from the off-Site school wells, with the exception of chloroform in the sample collected at 2250 S. 8th Avenue.

5.2.2 Cyanides

Free cyanide was detected in the groundwater samples collected from monitor wells MW-1 (2.07 mg/L), MW-2 (0.162 mg/L), MW-5 (0.4 mg/L), MW-6 (0.24 mg/L), MW-102 A (1.66 mg/L), MW-102 B (0.055 mg/L), and MW-102 C (0.104 mg/L). The AWQS for free cyanide is 0.2 mg/L. Total cyanides were also detected in the groundwater samples collected from monitor wells MW-1 (6.88 mg/L), MW-2 (1.78 mg/L), MW-3 (0.013 mg/L), MW-5 (8.91 mg/L), MW-6 (1.04 mg/L), MW-102 A (2.42 mg/L), and MW-102 B (0.022 mg/L).

Groundwater samples analyzed by TWG for cyanides amenable to chlorination included samples collected from monitor wells MW-2 (<0.010 mg/L), MW-5 (0.40 mg/L), and MW-6 (0.24 mg/L). Total cyanides were also detected by TWG in the groundwater samples collected from monitor wells MW-2 (1.6 mg/L), MW-5 (17 mg/L), and MW-6 (1.2 mg/L). Cyanides were not detected by TWG in the groundwater sample from MW-101 (<0.010 mg/L).

Cyanides were not detected in the samples collected from the off-Site school wells.

5.2.3 Metals

Groundwater samples collected previously by GeoTrans from on-Site wells were analyzed at least once for total priority pollutant metals to determine if metals released at the Site had impacted the underlying groundwater. Groundwater samples from the new monitor wells (MW-5 and MW-6) were analyzed for total priority pollutant metals. Cadmium was detected in groundwater samples from monitor well MW-5 (0.008 mg/L), but was not detected in the sample collected from monitor well MW-6. The AWQS for cadmium is 0.005 mg/L. Historically, cadmium (0.007 mg/L) has only been detected in one other groundwater sample collected by GeoTrans, which was collected on June 16, 2001 from monitor well MW-102C.

Historically, selenium (0.102 mg/L) was detected in groundwater samples collected from on-Site monitor well MW-2 in August 1993. On June 16, 2001, selenium was detected in groundwater samples from on-Site wells MW-1, MW-3, and MW-102 A, B in concentrations exceeding the AWQS of 0.05 mg/L, in on-Site well MW-2 in a concentration of 0.001 mg/L (thus below the AWQS), and in the upgradient well MW-101 in a concentration exceeding the AWQS. In January 2002, selenium was detected in the groundwater samples collected from downgradient wells MW-5 and MW-6 in concentrations of 0.02 mg/L.

Analytical results indicate that the elevated concentrations of metals detected in groundwater may be localized rather than regional, and future sampling and analysis for metals may be warranted.

5.3 RECOMMENDATIONS

5.3.1 Determination of Groundwater Flow Direction and Extent of Contamination in the Western Portion of the Site and Off-Site to the West

Based on the location and spacing of the Site monitor wells, it is difficult to accurately assess groundwater flow direction and contaminant concentrations across the Site. There is a variation in groundwater flow directions in the western portion of the Site, where data from three monitor wells have to be used to determine groundwater flow directions. Analytical results indicate that the extent of impacted groundwater is not defined to the west. GeoTrans thus recommends the installation of a shallow groundwater monitor well MW-4 (next to the former location of WDS-4) to assist with the determination of groundwater flow direction in the western portion of the Site. GeoTrans also recommends installation of three additional shallow downgradient wells to further assess the extent of impacted groundwater to the west.

5.3.2 Determination of the Extent of Off-Site Migration of Contaminated Groundwater to the North

Currently there are only two monitor wells located along the northern Site boundary: MW-7 has LPH in the well and has not been sampled, and MW-6 is located in the northwest corner of the Site. Since cyanides and PCE were detected in monitor wells located on the adjacent property to the north (across 20th Street), GeoTrans recommends installing an additional well (MW-8) in the vicinity of the northeast corner of the Property. GeoTrans also recommends co-monitoring (i.e., collecting split samples and water level measurements) of the existing monitor wells to the north of the Property in conjunction with the Site wells. The resulting data would be used to better evaluate off-Site migration of cyanide- and PCE-impacted groundwater to the north.

5.3.3 Determination of Vertical Extent of On-Site and Off-Site Groundwater Contamination

Analytical data for the on-Site deeper wells MW-102 B, C indicate increased concentrations of PCE with depth, but the vertical extent is not defined. GeoTrans thus recommends installing three additional deep wells, in accordance with the draft Field Sampling Plan (GeoTrans, 2001b).

5.3.4 Determination of the Extent of Off-Site Groundwater Contamination to the East

Two water supply wells have been installed within a half mile of the Property: the Kennedy Lane well (KL-1) and Ron Martin well. KL-1 was installed in the vicinity of Kennedy Lane and 20th Street, to supply water to two business/commercial parcels located east, adjacent to the Site. When GeoTrans contacted the well owner, he indicated the quality of the water purged from the well was questionable, and therefore, well water was not used as a source of drinking water. Water supply well KL-1 was sampled by GeoTrans on June 11, 2001, and PCE was not detected in the collected sample. The water supply well installed by Mr. Ron Martin in or about April 2002 on the adjacent property to the southeast of the Property was not sampled by GeoTrans.

GeoTrans also recommends having the well on-site and off-site locations and elevations surveyed, to evaluate groundwater flow at depth.

Consequently, GeoTrans recommends quarterly or biannual sampling of KL-1 and Ron Martin water supply wells to document water quality, and to determine if the use of either of these wells should be restricted by the users due to releases of COCs at the Site.

TABLE 1
SUMMARY OF HISTORICAL ANALYTICAL RESULTS DETECTED IN GROUNDWATER SAMPLES
20th and Factor WQARF Site, Yuma, AZ

Parameter	AWQS (µg/L)	10/22/1992	1/7/1993		4/21/1993			8/17/1993			3/21/1996	10/4/1996				11/14/1996		
		MW-1	MW-1	MW-2	MW-1	MW-2	MW-3	MW-1[a]	MW-2[b]	MW-3[a]	MW-101	MW-1	MW-2	MW-3	MW-101	MW-102A[a]	MW-102B	MW-102C[a]
VOCs (ug/L)																		
Tetrachloroethylene (PCE)	5	**20,000**	**20,000**	**8,700**	**18,300**	**6,860**	**270,000**	**20,000/27,000**	**6,500/7,300/10,000**	**8,700/5,000**	**20**	**1,300**	**3,000**	**150**	**5.2**	**78/76D**	**38**	**520/470D**
Trichloroethylene (TCE)	5	<25	<25	**7.8**	**5.2**	**5.4**	<0.8	<1,000/<500	<1,000/<400/<500	<200/<250	<0.50	<50	<50	<2.5	<0.5	<2.5/<0.5	<1.0	<25/<0.5
1,1,1-Trichloroethane (1,1,1-TCA)	200	<25	<25	0.6	8.6	NA	NA	<1,000/<500	<1,000/<400/<500	<200/<250	<0.50	<50	<50	<2.5	<0.5	<2.5/0.6	<1.0	<25/2.0
1,1,2-TCA	5	<25	<25	0.7	<0.8	<0.8	<0.8	NA/<500	NA/NA/<500	NA<250	<0.50	<50	<50	<2.5	<0.5	<2.5/<0.5	<1.0	<25/<0.5
1,1-Dichloroethylene (1,1-DCE)	7	<25	<26	5.7	<0.8	<0.8	<0.8	<1,000/<500	<1,000/<400/<500	<200/<250	<0-.50	<50	<50	<2.5	<0.5	<2.5/<0.5	<1.0	<25/<0.5
1,1-Dichloroethane (1,1-DCA)		<25	<25	1.4	NA	NA	NA	<1,000/<500	<1,000/<400/<500	<200/<250	<0.50	<50	<50	<2.5	<0.5	<2.5/<0.5	<1.0	<25/0.9
1,1,1,2-Tetrachloroethane		<25	<25	1.3	<0.8	<0.8	<0.8	NA/NA	NA/NA/NA	NA/NA	NA	NA	NA	NA	NA	NA/<1.0	NA	NA/1.0
Bromodichloromethane	100 ##	<50	<50	<1.0	<0.8	<0.8	<0.8	<1,000<500	<1,000/<400/<500	<200/<250	4.2	<50	<50	<2.5	<0.5	<2.5/<0.5	<1.0	<25/9.0
Dibromochloromethane	100 ##	<25	<25	<0.5	<0.8	<0.8	<0.8	<1,000/<500	<1,000/<400/<500	<200/<250	<0.50	<50	<50	<2.5	<0.5	<2.5/<0.5	<1.0	<25/14
1,2-Dichlorobenzene	75	<50	<50	2.4	6.5	<0.8	<0.8	<1,000/<500	<1,000/<400/<500	<200/<250	<1.0	<100	<100	<5.0	<1.0	<2.5/<0.5	<2.0	<50/<0.5
Chloroform		<25	<25	1.4	<0.8	<0.8	<0.8	<1,000/<500	<1,000/<400/<500	<200/<250	4.7	<50	<50	<2.5	<0.5	<2.5/<0.5	<1.0	<25/11.0
Bromoform		<50	<50	NA	<0.8	<0.8	<0.8	<1,000/<1,000	<1,000/<400/<1,000	<200/<500	<0.50	<50	<50	<2.5	<0.5	<2.5/<0.5	<1.0	<25/2.2
Methylene Chloride		<100	<100	2.6	NA	NA	NA	<5,000/5,000	<5,000/<2,000/5,000	<1,000/<2,500	<5.0	<50	<50	<2.5	<5.0	<25/<2.0	<10	<250/<2.0
Benzene	5	<25	<25	1.2	**7.6**	**28,100**	3.6	<1,000/<1,000	<1,000/<400/<1,000	<200/<500	<0.50	<50	<50	<2.5	<0.5	<2.5/<0.5	<1.0	<25/<0.5
Toluene	1,000	38	38	0.8	<0.8	**29,200**	<0.8	<1,000/<1,000	<1,000/<400/<1,000	<200/<500	<0.50	<50	<50	<2.5	<0.5	<2.5/<0.5	<1.0	<25/<0.5
Ethylbenzene	700	<25	<25	<0.5	<0.8	**21,900**	<0.8	<1,000/<1,000	<1,000/<400/<1,000	<200/<500	<0.50	<50	<50	<2.5	<0.5	<2.5/<0.5	<1.0	<25/<0.5
o-Xylene	10,000 #	NA	<50	<1.0	1.5	**46,600**	<0.8	NA/<500	NA/NA/<500	NA/<250	NA	NA	NA	NA	NA	<2.5/<0.5	<3.0	<25/<0.5
m-Xylene	10,000 #	NA	<50	<1.0	<0.8	**46,500**	<0.8	NA/<1,000	NA/NA/<1,000	NA/<500	NA	NA	NA	NA	NA	<2.5/<0.5	<3.0	<25/<0.5
Naphthalene		<25	<25	0.5	<0.8	<0.8	<0.8	NA/NA	NA/NA/NA	NA/NA	NA	NA	NA	NA	NA	NA/NA	NA	NA/NA
Metals (mg/L)																		
Barium	2	NA	NA	NA	NA	NA	NA	0.41	0.7/0.72	0.18	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	0.005	NA	NA	NA	NA	NA	NA	<0.001	0.0019/0.0015	<0.001	NA	NA	NA	NA	NA	NA	NA	NA
Calcium		NA	NA	NA	NA	NA	NA	236	322/334	59.2	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	0.1	NA	NA	NA	NA	NA	NA	0.011	<0.010/0.012	<0.010	NA	NA	NA	NA	NA	NA	NA	NA
Iron		NA	NA	NA	NA	NA	NA	19	18.9/19.1	9.03	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.05	NA	NA	NA	NA	NA	NA	<0.005	**0.079/0.070**	<0.005	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium		NA	NA	NA	NA	NA	NA	51.2	82/84.5	18.4	NA	NA	NA	NA	NA	NA	NA	NA
Manganese		NA	NA	NA	NA	NA	NA	0.27	0.18/0.31	<0.05	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.002	NA	NA	NA	NA	NA	NA	<0.0005	0.0005	<0.0005	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	NA	NA	NA	NA	NA	NA	0.012	**0.102/0.05**	<0.025	NA	NA	NA	NA	NA	NA	NA	NA
Sodium		NA	NA	NA	NA	NA	NA	646	1280/1,270	790	NA	NA	NA	NA	NA	NA	NA	NA
Zink		NA	NA	NA	NA	NA	NA	<0.05	0.09/0.15	<0.05	NA	NA	NA	NA	NA	NA	NA	NA

NOTE: 1) Only detected compounds are shown
2) Bold indicates concentrations exceding the AWQS
3) The second number corresponds to a duplicate sample analyzed by ADEQ
4) The second and third numbers correspond to duplicate sample analysis by consultant and ADEQ, respectively

AWAS Aquifer Water Quality Standard
D Sample analyzed under dilution
NA Not analyzed
mg/L Milligram per liter
µg/L Microgram per liter
VOCs Volatile organic compouonds
Total xylenes
Total trihalomethanes

TABLE 2
MONITOR WELL CONSTRUCTION DETAILS
20th and Factor WQARF Site, Yuma AZ

Compounds	Cadastral Location	ADWR Number	Depth (feet)	Screened Interval (feet)
MW-1	(C-08-23)34cba	55-537043	95	65 - 95
MW-2	(C-08-23)34cba	55-537614	95	65 - 95
MW-3	(C-08-23)34cba	55-537615	84	64 - 84
MW-5	(C-08-23)34abc	55-588281	105	62.5 - 104.5
MW-6	(C-08-23)34abc	55-588282	103.5	61 - 103
MW-7	(C-08-23)34abc	55-588279	110	62.5 - 103.5
MW-101	(C-08-23)34cab	55-555248	90	50 - 90
MW-102A	(C-08-23)34cb	55-556705	90	80 - 90
MW-102B	(C-08-23)34cb	55-556705	120	110 - 120
MW-102C	(C-08-23)34cb	55-556705	150	140 - 150

TABLE 3
DEPTH TO GROUNDWATER AND GROUNDWATER ELEVATION MEASUREMENTS
20th and Factor WQARF Site, Yuma AZ

Date	MW-1		MW-2		MW-3		MW-5		MW-6		MW-7		MW-101		MW-102A		MW-102B		MW-102C	
	DTW	Elevation	DTW	Elevation	DTW	Elevation	DTW	Elevation	DTW	Elevation	DTW	Elevation	DTW	Elevation	DTW	Elevation	DTW	Elevation	DTW	Elevation
10/26/1992	74.20	124.64																		
1/7/1993	NM		72.21	126.87																
3/19/1993	72.44	126.4	72.33	126.75	72.16	126.54														
4/21/1993	72.58	126.26	72.54	126.54	72.32	126.38														
6/2/1993	72.66	126.18	72.56	126.52	72.40	126.3														
3/21/1996	72.39	126.45	72.33	126.75	72.13	126.57							70.27	126.77						
10/3/1996	72.6	126.24	73.00	126.08	72.35	126.35							70.49	126.55						
11/14/1996	NM		NM		NM								NM		72.17	126.31	72.13	126.31	72.18	126.33
6/11/2001 #	76.89	121.95	77.37	121.71	76.68	122.02							74.81	122.23	76.53	121.95	76.49	121.95	76.57	121.94
6/16/2001 #	76.89	121.95	77.31	121.77	76.71	121.99									76.57	121.91	76.53	121.91	76.62	121.89
6/25/2001 #	76.89	121.95	77.41	121.67	76.7	122							74.84	122.2	76.54	121.94	76.5	121.94	76.6	121.91
1/29/2002 #	77.09	121.75	77.54	121.54	76.86	121.84	77.01	121.24	76.38	121.25	77.69	119.68	74.96	122.08	76.71	121.77	76.69	121.75	76.65	121.86
10/1/2002 #	76.82	122.02	77.23	121.85	76.56	122.14	76.67	121.58	76.12	121.51	77.27	120.15	74.96	122.08	76.44	122.04	76.37	122.07	76.39	122.12

NM = Not Measured

Monitor wells measured by GeoTrans in 2001 and 2002. Well casing elevations are assumed to be the same, and have not changed.

Well not in existance

TABLE 4
SUMMARY OF COUMPOUNDS DETECTED IN GROUNDWATER SAMPLES COLLECTED JANUARY 28 AND 29, 2002
20th and Factor WQARF Site, Yuma, AZ

Parameter	AWQS	1/29-30/2002								
		MW-1	MW-2	MW-3	MW-5	MW-6	MW-101	MW-102A	MW-102B	MW-102C
VOCs		ug/L								
Tetrachloroethylene (PCE)	5	**320 D2**	**420 D2**	**80**	**310 D2; 290 D2**	**120 D2**	2.3	**75**	**320 D2**	**220 D2**
Trichloroethylene (TCE)	5	0.99	3.5	<0.50	2.3; 2.2	0.92	<0.50	<0.50	12	0.59
1,1,1-Trichloroethane (1,1,1-TCA)	200	1.6	0.54	<0.50	<0.50; <0.50	<0.50	<0.50	0.92	6.2	6.1
1,1-Dichloroethylene (1,1-DCE)	7	1.2 L1	<1.0 L1	<1.0 L1	<1.0; <1.0	<1.0 L1	<1.0	<1.0 L1	1.6 L1	1.4 L1
1,1-Dichloroethane (1,1-DCA)		6 L1	1.8	<0.50 L1	<0.50 L1; <0.50 L1	<0.50 L1	<0.50 L1	0.89	7	5.3
Bromodichloromethane	100 #	<0.50	<0.50	<0.50	<0.50; <0.50	<0.50	<0.50	<0.50	7.3	5
Dibromochloromethane	100 #	<0.50	<0.50	<0.50	<0.50; <0.50	<0.50	<0.50	<0.50	6.8	4.3
Chloroform		<1.0	3.3	<1.0	1.1; 1	1.1	<1.0	<1.0	6.7	5.9
Benzene	5	<0.50	<0.50	<0.50	<0.50; <0.50	<0.50	<0.50	<0.50	0.79	2.3
Acetone		<10	<10	10	<10; <10	<10	<10	11	18	18
SVOCs		ug/L								
Phenol		NS	NS	NS	<5	<5	NS	NS	NS	NS
Bis(2-ethylhexyl) Phthalate		NS	NS	NS	<5	<5	NS	NS	NS	NS
Butyl Benzyl Phthalate		NS	NS	NS	<5	<5	NS	NS	NS	NS
Di-n-octyl Phthalate		NS	NS	NS	<5	<5	NS	NS	NS	NS
METALS, TOTAL		mg/L								
Cadmium	0.005	NS	NS	NS	<0.005	<0.005	NS	NS	NS	NS
Chromium	0.1	NS	NS	NS	<0.01	<0.01	NS	NS	NS	NS
Copper		NS	NS	NS	<0.01	<0.01	NS	NS	NS	NS
Nickel	0.1	NS	NS	NS	<0.04	<0.04	NS	NS	NS	NS
Selenium	0.05	NS	NS	NS	0.021	0.02	NS	NS	NS	NS
Zinc		NS	NS	NS	0.4	0.12	NS	NS	NS	NS
METALS, DISSOLVED		mg/L								
Cadmium	0.005 *	NS	NS	NS	**0.008**	<0.005	NS	NS	NS	NS
Chromium	0.1 *	NS	NS	NS	<0.01	<0.01	NS	NS	NS	NS
Copper		NS	NS	NS	<0.01	<0.01	NS	NS	NS	NS
Nickel	0.1 *	NS	NS	NS	<0.04	<0.04	NS	NS	NS	NS
Selenium	0.05 *	NS	NS	NS	0.02	0.02	NS	NS	NS	NS
Zinc		NS	NS	NS	0.09	0.09	NS	NS	NS	NS
CYANIDE **		mg/L								
Cyanide, Free	0.2	**2.07**	0.162; <0.01	<0.05	<0.05; **0.4**	0.109; **0.24**	<0.05	**1.66**	0.055	0.104
Cyanide, Total		**6.68 D2**	**1.78 D2; 1.6**	0.013	**8.91 D2; 17**	**1.04 D2; 1.2**	<0.01; <0.01	**2.42 D2**	0.022	<0.01

AWQS = Aquifer Water Quality Standard
NS = Not Sampled
D2 = Sample required dilution due to high concentration of target analyte
L1 = The associated blank spike recovery was above laboratory acceptance limits
ug/L = microgram per liter
mg/L = milligram per liter
SVOCs = Semi-VOCs
VOCs = Volatile organic compounds

Total trihalomethanes
* AWQS for Total Metals
** Concentrations compared to AWQS for free cyanide for potential risk reasons
Notes: (1) Only detected compounds are shown
(2) Bold indicates concentrations exceeding the AWQSs shown in Table 9

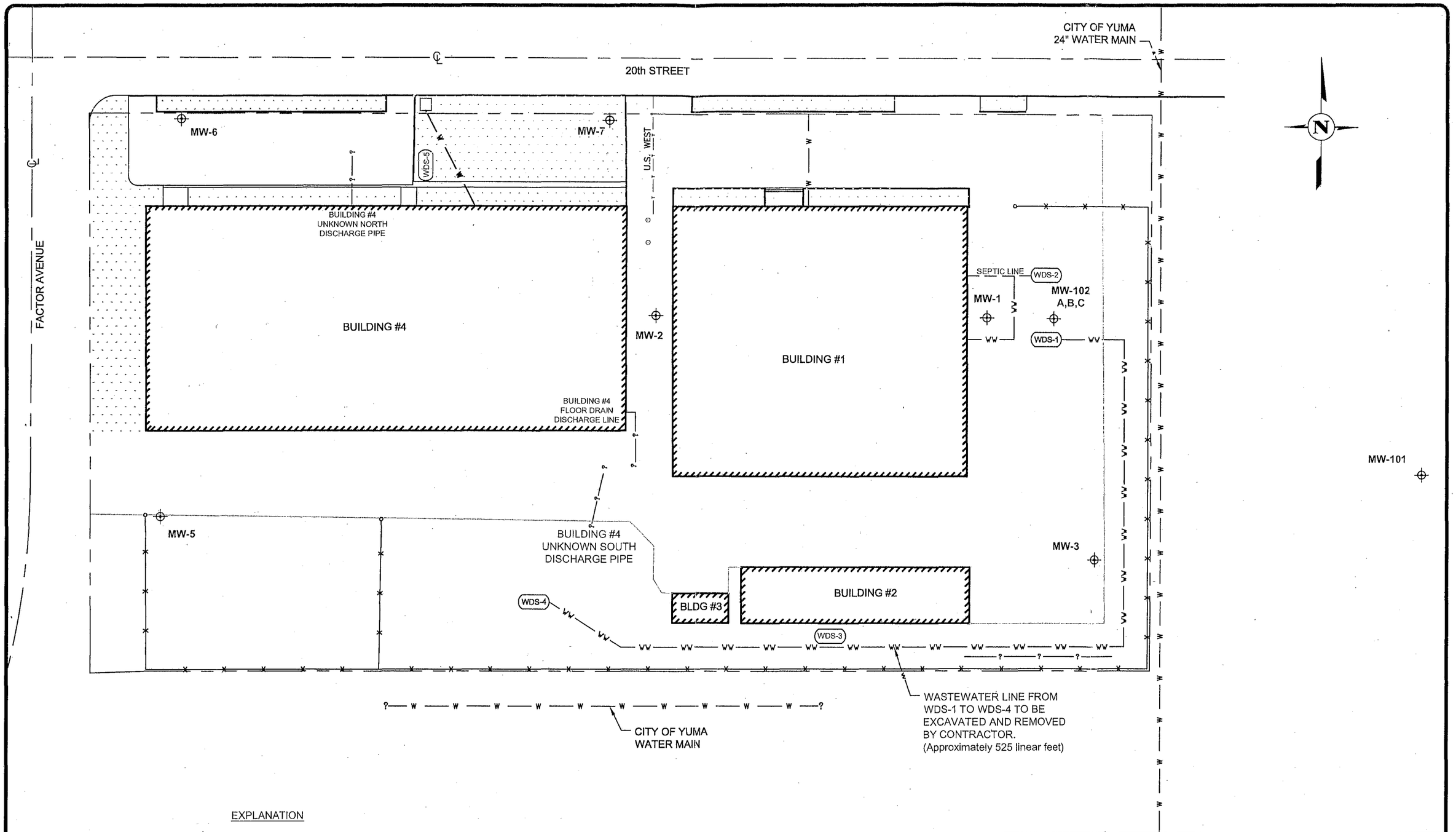
TABLE 5
SUMMARY OF COMPOUNDS DETECTED IN GROUNDWATER SAMPLES COLLECTED BY GEOTRANS
20th Street and Factor Avenue WQARF Site, Yuma, AZ

Parameter	AWQS	6/11/2001	6/16/2001							6/25/2001							1/29-30/2002								
		KL-1	MW-1	MW-2	MW-3	MW-101	MW-102A	MW-102B	MW-102C	MW-1	MW-2	MW-3	MW-101	MW-102A	MW-102B	MW-102C	MW-1	MW-2	MW-3	MW-5	MW-6	MW-101	MW-102A	MW-102B	MW-102C
VOC's	ug/L																								
Tetrachloroethylene (PCE)	5	<0.5	**220 D2**	**390 D2**	**9.8**	4.3	**62**	**410 D2**	**56**	NS	NS	NS	NS	NS	NS	NS	**320 D2**	**420 D2**	**80**	**310 D2; 290 D2**	**120 D2**	2.3	**75**	**320 D2**	**220 D2**
Trichloroethylene (TCE)	5	<0.5	0.95	2.1	<0.5	<0.5	<0.5	0.78	<0.5	NS	NS	NS	NS	NS	NS	NS	0.99	3.5	<0.50	2.3; 2.2	0.92	<0.50	<0.50	12	0.59
1,1,1-Trichloroethane (1,1,1-TCA)	200	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3.0	1.2	NS	NS	NS	NS	NS	NS	NS	1.6	0.54	<0.50	<0.50; <0.50	<0.50	<0.50	0.92	6.2	6.1
1,1-Dichloroethylene (1,1-DCE)	7	<1.0 L2	<1.0 L2	<1.0 L2	<1.0 L2	<1.0 L2	<1.0 L2	2 L2	<1.0 L2	NS	NS	NS	NS	NS	NS	NS	1.2 L1	<1.0 L1	<1.0 L1	<1.0; <1.0	<1.0 L1	<1.0	<1.0 L1	1.6 L1	1.4 L1
1,1-Dichloroethane (1,1-DCA)		<0.5	3.2	1.5	<0.5	<0.5	<0.5	8.2	1.3	NS	NS	NS	NS	NS	NS	NS	6 L1	1.8	<0.50 L1	<0.50 L1; <0.50 L1	<0.50 L1	<0.50 L1	0.89	7	5.3
Bromodichloromethane	100 #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.81	NS	NS	NS	NS	NS	NS	NS	<0.50	<0.50	<0.50	<0.50; <0.50	<0.50	<0.50 L1	<0.50	7.3	5
Dibromochloromethane	100 #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.62	NS	NS	NS	NS	NS	NS	NS	<0.50	<0.50	<0.50	<0.50; <0.50	<0.50	<0.50	<0.50	6.8	4.3
Chloroform		<1.0	<1.0	2.2	<1.0	<1.0	<1.0	<1.0	1.3	NS	NS	NS	NS	NS	NS	NS	<1.0	3.3	<1.0	1.1; 1	1.1	<1.0	<1.0	6.7	5.9
Benzene	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3.1	NS	NS	NS	NS	NS	NS	NS	<0.50	<0.50	<0.50	<0.50; <0.50	<0.50	<0.50	<0.50	0.79	2.3
Acetone		<10	<10	<10	<10	<10	<10	<10	11	NS	NS	NS	NS	NS	NS	NS	<10	<10	10	<10; <10	<10	<10	11	18	18
SVOCs	ug/L																								
Phenol		<5	<5	<5	7	7	<5	<5	<5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<5	<5	NS	NS	NS	NS
Bis(2-ethylhexyl) Phthalate		<5	<5	<5	<5	<5	<5	48	62	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<5	<5	NS	NS	NS	NS
Butyl Benzyl Phthalate		<5	<5	<5	<5	<5	<5	<5	8	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<5	<5	NS	NS	NS	NS
Di-n-octyl Phthalate		<5	<5	<5	<5	<5	<5	5	6	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<5	<5	NS	NS	NS	NS
METALS, TOTAL	mg/L																								
Cadmium	0.005	<0.005	<0.005	<0.005	<0.005	NS	<0.005	<0.005	<0.005	NS	NS	NS	NA	NS	NS	NS	NS	NS	NS	<0.005	<0.005	NS	NS	NS	NS
Chromium	0.1	**0.11**	<0.01	<0.01	0.01	NS	<0.01	<0.01	<0.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.01	<0.01	NS	NS	NS	NS
Copper		<0.01	<0.01	<0.01	<0.01	NS	<0.01	<0.01	0.02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.01	<0.01	NS	NS	NS	NS
Nickel	0.1	0.09	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.04	<0.04	NS	NS	NS	NS
Selenium	0.05	<0.005	**0.16 M5**	0.009 M5	**0.2 M5**	**0.34 M5**	**0.2 M5**	**0.097**	<0.05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.021	0.02	NS	NS	NS	NS
Zinc		<0.02	<0.02	<0.02	0.03	<0.02	0.04	0.11	0.13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.4	0.12	NS	NS	NS	NS
METALS, DISSOLVED	mg/L																								
Cadmium	0.005 *	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.007	NS	NS	NS	NA	NS	NS	NS	NS	NS	NS	**0.008**	<0.005	NS	NS	NS	NS
Chromium	0.1 *	0.03	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.01	<0.01	NS	NS	NS	NS
Copper		<0-.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.01	<0.01	NS	NS	NS	NS
Nickel	0.1 *	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.04	<0.04	NS	NS	NS	NS
Selenium	0.05 *	<0.005	**0.092**	0.01 M5	**0.12 M5**	**0.46 M5**	**0.22 M5**	**0.11 M5**	<0.005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.02	0.02	NS	NS	NS	NS
Zinc		<0.02	<0.02	<0.02	0.03	NS	0.02	<0.02	0.11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.09	0.09	NS	NS	NS	NS
CYANIDE **	mg/L																								
Cyanide, Free	0.2	NS	NS	NS	NS	NS	NS	NS	NS	<0.05	**0.97**	**0.25**	<0.05	<0.05	<0.05	<0.05	**2.07**	0.162; <0.01	<0.05	**<0.05; 0.4**	**0.109; 0.24**	<0.05	**1.66**	0.055	0.104
Cyanide, Total		NS	NS	NS	NS	NS	NS	NS	NS	<0.05	**3.4**	**0.22**	<0.05	**7.1**	**12**	<0.05	**6.68 D2**	**1.78 D2; 1.6**	0.013	**8.91 D2; 17**	**1.04 D2; 1.2**	<0.01; <0.01	**2.42 D2**	0.022	<0.01

AWQS = Aquifer Water Quality Standard
NS = Not Sampled
D2 = Sample required dilution due to high concentration of target analyte
L1 = The associated blank spike recovery was above laboratory acceptance limits
M5 = Analyte concentration was determined by the method of standard addition (MSA)
ug/L = microgram per liter
mg/L = milligram per liter
VOCs = Volatile organic compounds
SVOCs = Semi-VOCs
# Total trihalomethanes
* AWQS for Total Metals
** Concentrations compared to AWQS for free cyanide for potential risk reasons

Notes: (1) Only detected compounds are shown
(2) Bold indicates concentrations exceeding the AWQSs

P:\ACAD\dwg-library\ERA - 20th & Factor WQARF Yuma, AZ\E034\C50\SITE PLAN.dwg, 05/30/2003 04:07:31 PM



TITLE: SITE PLAN
20TH & FACTOR WQARF SITE

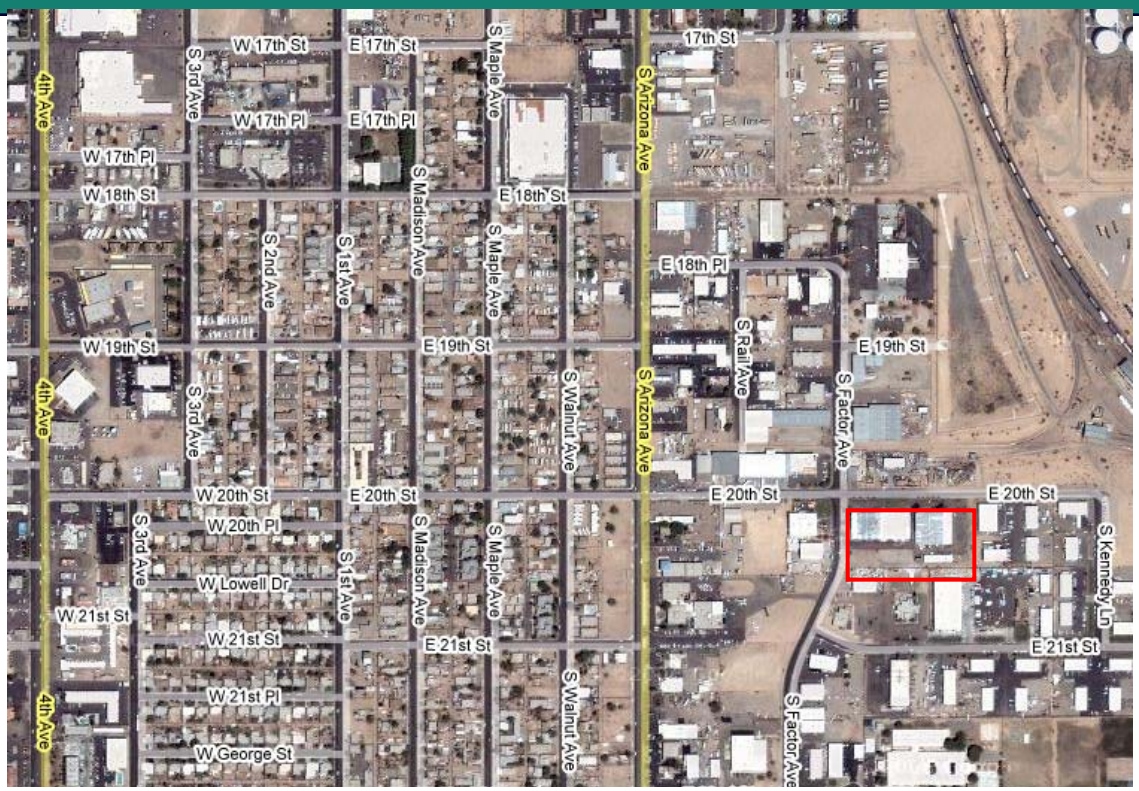
LOCATION: YUMA, ARIZONA

GeoTrans, Inc. A TETRA TECH COMPANY

CHECKED	KD
DRAFTED	DBS
PROJECT	E034-C50
DATE	4/10/02

FIGURE 2

TFDEQP000167



SOIL VAPOR INVESTIGATION AND WELL INSTALLATION AND SAMPLING SEPTEMBER 2008 THROUGH APRIL 2010 20th AND FACTOR WQARF SITE YUMA, ARIZONA

July 20, 2010

Prepared for:

Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, Arizona 85007

GeoTrans, Inc.
4801 East Washington Street Suite 260
Phoenix, Arizona 85034
(602) 682-3320

SOIL VAPOR INVESTIGATION AND WELL INSTALLATION AND SAMPLING SEPTEMBER 2008 THROUGH APRIL 2010
20th and Factor WQARF Site
Yuma, Arizona

The material and data in this report were prepared under the supervision and direction of the undersigned.

Michelle E. Oakley
Senior Project Geologist

Registered Professional Engineer (Environmental)
CERTIFICATE NO. 34613
JEFFREY W. RACKOW
Date Signed 07/21/10
ARIZONA, U.S.A.
Expires: 03/31/12

Jeff W. Rackow, P.E.
Senior Environmental Engineer

Jasenka V. Zbozinek, Ph.D.
Operations Manager

TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 BACKGROUND 1
1.2 SOIL VAPOR 1
1.3 GROUNDWATER 2
1.4 DEVIATIONS FROM THE SCOPE OF WORK 3
1.5 REPORT ORGANIZATION 3
2.0 SITE ACTIVITIES – 2008 4
2.1 ACTIVE SOIL VAPOR SURVEY – SEPTEMBER 2008 4
2.1.1 Methodology 4
2.1.2 Results 5
2.2 SAMPLING OF SVMWS – SEPTEMBER 2008 5
2.2.1 Methodology 5
2.2.2 Results 6
2.2.2.1 A-Wells 6
2.2.2.2 B-Wells 7
2.3 SAMPLING OF SVMWS – OCTOBER 7, 2008 7
2.3.1 Methodology 7
2.3.2 Results 8
2.3.2.1 A-Wells 8
2.3.2.2 B-Wells 8
2.4 SAMPLING OF SVMWS – OCTOBER 21, 2008 9
2.4.1 Methodology 9
2.4.2 Results 10
2.4.2.1 Sampling Without Purging 10
2.4.2.2 Sampling with Purging 11
2.5 SAMPLING OF SVMWS – NOVEMBER 2008 12
2.5.1 Methodology 12
2.5.2 Results 12
2.5.2.1 A-Wells 12
2.5.2.2 B-Wells 13
3.0 SITE ACTIVITIES – 2009 14
3.1 GROUNDWATER MONITORING AND SAMPLING EVENT–JANUARY 2009 .. 14
3.1.1 Groundwater Elevation Measurements and Flow Conditions 14
3.1.2 Groundwater Sampling 14
3.2 INSTALLATION OF DUAL-NESTED SOIL VAPOR MONITORING WELLS 14
3.3 INVESTIGATION-DERIVED WASTE MANAGEMENT 15
3.4 SAMPLING OF SVMWS–MARCH 2009 15
3.4.1 Methodology 15
3.4.2 Results 15
3.4.2.1 A-Wells 15
3.4.2.2 B-Wells 16

4.0 SITE ACTIVITIES – 2010 ..... **17**
4.1 INSTALLATION OF SOIL VAPOR MONITORING WELLS–FEBRUARY 2010 .. 17
4.1.1 Dual-Nested Wells 17
4.1.2 Multi-Nested Well 17
4.1.3 Investigation-Derived Waste Management 18
4.2 SAMPLING OF SVMWS – MARCH 2010 18
4.2.1 Methodology 18
4.2.2 Results 19
4.2.2.1 A-Wells *19*
4.2.2.2 B-Wells *19*
4.2.2.3 C-Wells *20*
4.2.2.4 D-Wells *21*
4.2.2.5 E-Well *21*
4.2.2.6 F-Well *22*
4.2.2.7 G-Well *22*
4.2.2.8 H-Well *22*
4.3 INSTALLATION OF GROUNDWATER MONITORING WELLS–MARCH 2010 . 23
4.3.1 Installation 23
4.3.2 Development 23
4.3.3 Surveying 23
4.3.4 Investigation-Derived Waste Management 24
4.4 GROUNDWATER MONITORING AND SAMPLING – APRIL 2010 24
4.4.1 Groundwater Elevation Measurements and Flow Conditions 24
4.4.2 Groundwater Sampling 25
4.4.2.1 A-Zone Wells *25*
4.4.2.2 B-Zone Wells *26*
4.4.2.3 C-Zone Wells *26*
4.4.3 Quality Assurance/Quality Control (QA/QC) 27
5.0 REFERENCES **28**

TABLES

Table 1 Concentrations of Compounds Detected During Active Soil Vapor Survey
Table 2 Concentrations of Compounds Detected in Soil Vapor Samples, December 2003 through March 2010
Table 3 Depth to Groundwater Measurements and Groundwater Elevations, October 1992 through April 2010
Table 4 Well Construction Details
Table 5 Summary of Selected VOCs (µg/L) and Cyanides (mg/L) Historically Detected in Groundwater Since 2001

FIGURES

Figure 1	Property Location Map
Figure 2	Results of September 2008 Active Soil Vapor Survey and Sampling of SVMW-2A,B through SVMW-4A,B
Figure 3	Well Location Map
Figure 4	April 2010 Soil Vapor Sampling Results and Groundwater Plume Footprint
Figure 5a	Groundwater Elevation Map in A-Zone Wells, April 26, 2010
Figure 5b	Groundwater Elevation Map in B-Zone Wells, April 26, 2010
Figure 5c	Groundwater Elevation Map in C-Zone Wells, April 26, 2010
Figure 6	April 2010 Groundwater Sampling Results and Groundwater Plume Footprint

APPENDICES

Appendix A	Soil Vapor Analytical Laboratory Reports
Appendix B	Soil Vapor Monitoring Well Construction Diagrams
Appendix C	IDW Laboratory Reports and Disposal Documentation
Appendix D	Soil Boring Log for MW-25B; Construction Details for MW-25A and MW-25B; and Well Drillers Report and Well Log for MW-25A and MW-25B
Appendix E	Well Development Details
Appendix F	MW-25A and MW-25 B Survey Reports
Appendix G	Groundwater Analytical Laboratory Reports
Appendix H	Groundwater Sampling Field Data Sheets
Appendix I	Groundwater Hydrographs

1.0 INTRODUCTION

This report documents the results of field activities conducted by GeoTrans, Inc. (GeoTrans) at the 20th and Factor Water Quality Assurance Revolving Fund (WQARF) site in Yuma, Arizona (the Site) during the period of September 2008 through April 2010.

This work was conducted as part of the Arizona Department of Environmental Quality (ADEQ) Arizona Superfund Response Action Contract (ASRAC) Number EV03-0073, Task Assignment Number 04-0049, and ASRAC Number EV09-0100, Task Assignment Number 10-0081. The work described in this report has been conducted in general accordance with the ADEQ-approved *Work Plan and Field Sampling Plan for Remedial Investigations, 20th and Factor WQARF Site, Yuma, Arizona* (Work Plan) (GeoTrans, 2004), the ADEQ-approved *Remedial Investigation and Early Response Actions* (GeoTrans, 2008), and subsequent ADEQ decisions and approvals.

1.1 BACKGROUND

The Site consists of an industrial property (the Property; see Figure 1), and the areas west-northwest and north of the Property. The Property is located in an industrial area on the eastern portion of Yuma, Arizona, which has not been annexed by the City of Yuma. The legal description of the Property location is the N/2 of the SW/4 of Section 34, Township 8 South, Range 23 West of the Gila and Salt River Baseline and Meridian (ADEQ, 1999).

The Property was undeveloped land prior to early 1965. In 1966, the Property was occupied by Houston Photo Products, Inc. The company name was later changed to Houston International, Ltd. (Houston International). From 1966 to 1995, Houston International occupied the Property; thereafter, the Property has been occupied by other businesses, including Houston Fearless 76, Inc., a manufacturer of film-processing machines. Wastewater resulting from film development and/or film manufacturing by Houston International was discharged to five wastewater disposal systems and/or to the ground. Chemicals of concern (COCs) contained in the wastewater may have included chlorinated volatile organic compounds (VOCs) (e.g., tetrachloroethene [PCE], trichloroethene [TCE], and 1,1-dichloroethene [1,1-DCE]), and cyanide compounds, thus resulting in impacts to soil and groundwater underlying the Site, including the parcel immediately east of the Property.

1.2 SOIL VAPOR

GeoTrans completed the following activities:

- September, 2008: Active soil vapor survey, consisting of collection of 30 in-situ soil vapor samples, and collection of soil vapor samples from the following soil vapor monitoring wells (SVMWs): SVMW-2A,B; SVMW-3A,B; and SVMW-4A,B;

- Early October, 2008: Collection of soil vapor samples from: SVMW-2A,B; SVMW-3A,B; and SVMW-4A,B;

- Late October, 2008: Collection of soil vapor samples from: SVMW-2A,B; SVMW-3A,B; and SVMW-4A,B;

- November, 2008: Collection of soil vapor samples from: SVMW-2A,B; SVMW-3A,B; and SVMW-4A,B;

- February, 2009: Installation of the following SVMWs: SVMW-5A,B; SVMW-6A,B; and SVMW-7A,B;

- March, 2009: Collection of soil vapor samples from: SVMW-5A,B; SVMW-6A,B; and SVMW-7A,B;

- February and March, 2010: Installation of the following SVMWs: SVMW-8A through H; SVMW-9A,B; SVMW-10A,B; SVMW-11A,B; and SVMW-12A,B;

- March, 2010: Sampling of: SVMW-1A through D; SVMW-2A,B through 7A,B; SVMW-8A through H; and SVMW-9A,B through SVMW-12A,B;

- Submittal of the collected soil vapor samples for analysis of VOCs using EPA Method TO-15, and cyanides using National Institute for Occupational Safety and Health (NIOSH) Method 6010;

- Management of investigation-derived waste (IDW) generated by SVMW installation activities; and

- Coordination with the ADEQ Project Manager and subcontractors/vendors.

1.3 GROUNDWATER

GeoTrans completed the following activities:

- January, 2009:
  - Collection of depth-to-water measurements from groundwater monitoring well MW-21C;
  - Collection of groundwater samples from wells MW-21C, St. Francis, and Alice Byrne.

- March, 2010: Installation of MW-25A and MW-25B groundwater monitoring wells;

- April, 2010:
  - Collection of depth-to-water measurements from the following monitoring wells: DMW-11; MW-8A,B,C; MW-9A; MW-12A; MW-13A; MW-15A; MW-16A; MW-17A,C; MW-18A; MW-

21A,B,C; MW-23B; MW-24B; MW-25A, B; MW-101A; MW-102B1; and MW-103C;

- Collection of groundwater samples from the following wells: DMW-11; MW-8A,B,C; MW-9A; MW-12A; MW-13A; MW-15A; MW-16A; MW-17A,C; MW-18A; MW-21A,B,C; MW-23B; MW-24B; MW-25A,B; MW-101A; MW-102B1; MW-103C; St. Francis, and Alice Byrne;

- Submittal of the collected groundwater samples for the following analyses: VOCs using U.S. Environmental Protection Agency (EPA) Method 8260B, and cyanides using Standard Method (SM) 4500 CN;

- Management of IDW generated by well installation, development and/or purging activities; and

- Coordination with the ADEQ project manager and subcontractors/vendors.

1.4 DEVIATIONS FROM THE SCOPE OF WORK

There were no deviations from the project scope of work.

1.5 REPORT ORGANIZATION

The above field activities and the corresponding results are presented in this report in chronological order.

During 2008, GeoTrans performed the following soil vapor investigation events:

- September, 2008:
  - Active soil vapor survey consisting of collection of 30 in-situ soil vapor samples; and
  - Collection of soil vapor samples from: SVMW-2A,B; SVMW-3A,B; and SVMW-4A,B;

- October, 2008: Collection of two rounds of soil vapor samples from: SVMW-2A,B; SVMW-3A,B; and SVMW-4A,B:
  - October 7, 2008; and
  - October 21, 2008;

- November, 2008: Collection of soil vapor samples from SVMW-2A,B and SVMW-3A,B;

2.1 ACTIVE SOIL VAPOR SURVEY – SEPTEMBER 2008

2.1.1 Methodology

On September 10 through September 12, 2008, GeoTrans conducted an active soil vapor survey at the Site. The active soil vapor survey was generally bounded by 18th Street to the north, the alley between Walnut and Maple Avenues to the west, 20th Street to the south, and Factor Avenue to the east. The survey consisted of colleting 30 soil vapor samples (SVS-1 through SVS-30) at individual locations illustrated on Figure 2. Soil vapor samples were collected using a GeoProbe direct-push drilling rig owned and operated by Johnson Drilling of Fountain Hills, Arizona. The soil vapor samples were collected in accordance with GeoTrans' Standard Operating Procedure (SOP) for an Active Soil Vapor Survey.

At each sample location, samples were collected for VOC analyses only. The clean / decontaminated rod drive pipe, with an expendable point (rubber nipple), was advanced to a total depth of approximately 5 feet below ground surface (bgs). Once at 5 feet bgs, the rod drive pipe was retracted from the expendable point to allow the collection of a soil vapor sample in the created void. Clean, unused plastic tubing was then inserted for collection of the sample. Using a vacuum pump, each location was purged a total of two probe volumes from the piping, or approximately 16 liters of air (0.56 cubic feet). Purge volumes were calculated in the field using the volume of a cylinder equation. The purge rate used to evacuate the two well volumes was approximately 1.0 liters per minute (L/min). Following the purging at each location, soil vapor samples were collected in 1-L SUMMA containers.

2.1.2 Results

The discussion of soil vapor sampling results in this report includes the following Site COCs only: PCE, TCE, 1,1-DCE, and cyanide. Concentrations of these select Site COCs are compared to the following regulatory limits: EPA Residential and Industrial Regional Screening Levels (RSLs) (formerly Preliminary Remediation Goals [PRGs]), and 1-hour, 24-hour, and annual Arizona Ambient Air Quality Guidelines (AAAQGs). Analytical results from this event are presented in Table 1, illustrated on Figure 2, and the laboratory reports are included in Appendix A. The following is a discussion of the analytical results for samples collected as part of the active soil vapor survey at SVS-1 through SVS-30.

- PCE was detected above its laboratory reporting limit (LRL) in 14 of the 30 soil vapor samples collected, with concentrations ranging from 10 micrograms per cubic meter ($\mu g/m^3$) in SVS-7 to 4,800 $\mu g/m^3$ in SVS-27. The highest concentrations, ranging from 1,400 $\mu g/m^3$ to 4,800 $\mu g/m^3$, were detected along Rail Avenue and Factor Avenue, north of 20th Street, but south of 19th Street. All detected concentrations exceeded the PCE EPA Residential and Industrial RSLs of 0.41 $\mu g/m^3$ and 2.1 $\mu g/m^3$, respectively, and annual AAAQG of 1.7 $\mu g/m^3$. LRLs in all 16 samples with non-detect concentrations of PCE ranged from 7.9 $\mu g/m^3$ to 8.8 $\mu g/m^3$, thus exceeding these regulatory limits.

- TCE was detected above LRLs in 9 of the 30 soil vapor samples collected, with concentrations ranging from 7.4 $\mu g/m^3$ in sample SVS-24 to 86 $\mu g/m^3$ in sample SVS-26. The highest concentrations, ranging from 41 $\mu g/m^3$ to 86 $\mu g/m^3$, were detected along Rail Avenue, north of 20th Street, but south of 19th Street. All detected concentrations exceeded the TCE EPA Residential and Industrial RSLs of 1.2 $\mu g/m^3$ and 6.1 $\mu g/m^3$, respectively, and annual AAAQG of 0.58 $\mu g/m^3$. LRLs in all 21 samples with non-detect concentrations of TCE ranged from 6.3 $\mu g/m^3$ to 6.8 $\mu g/m^3$, thus exceeded these regulatory limits.

- 1,1-DCE was not detected in any of the collected soil vapor samples at or above the LRLs, ranging from 4.6 $\mu g/m^3$ to 12 $\mu g/m^3$. These LRLs were below the established regulatory limits for 1,1-DCE.

2.2 SAMPLING OF SVMWS – SEPTEMBER 2008

2.2.1 Methodology

On September 12, 2008, during the active soil vapor survey discussed in the section above, soil vapor samples were also collected from wells SVMW-2A,B, SVMW-3A,B, and SVMW-4A,B that were installed in August 2008. Prior to collecting the samples, two well casing volumes were purged from each of these dual-nested SVMWs. A total of approximately 8 cubic feet of vapors were purged from each of the "A" wells, and approximately 16 cubic feet were purged from each of the "B" wells. Purge volumes were calculated in the field using the volume of a cylinder equation.

Samples were collected for both VOC and cyanide analyses. Samples for VOC analyses were collected using SUMMA canisters, and the sample collection method did not vary between the sampling events. A laboratory-provided, pre-cleaned, evacuated 1-L SUMMA canister and individual flow regulator was placed in-line at the well and opened to collect a sample. The canisters and flow regulators are maintained and calibrated by the analytical laboratory.

Samples for cyanide analyses were collected using laboratory-provided soda lime sorbent tubes, sampling pumps, and flow regulators. The sorbent tube was located "upstream" of the pump. The sampling pumps and flow regulators are maintained and calibrated by the analytical laboratory. At each sampling location, a sampling pump with associated tubing and an in-line air flow meter was connected to the SVMW. The sampling rate for collecting the cyanide samples was pre-determined by the laboratory to be 0.15 L/min.

New polyethylene flexible tubing was used at each SVMW sampling location. Air-tight connections were made at all fittings and sampling ports/valves on the sampling train. The vapor sampling pump was purged between individual SVMWs.

Samples for cyanide analyses were collected by drawing 3.2 to 4.2 liters of soil vapors for each sample.

2.2.2 Results

The VOC samples were analyzed using EPA Method TO-15. Cyanide analyses consisted of analyses for cyanide ion and cyanide ion-particulate by NIOSH Method 6010. Hydrogen cyanide and hydrogen cyanide-particulate were then calculated and reported by the laboratory using analytical results for cyanide ion and cyanide ion-particulate. For purposes of this report, we will only discuss the hydrogen cyanide, as regulatory guidelines (RSLs and AAQQG) have not been established for cyanide ion.

Analytical results are presented in Table 2, along with historical data compiled since December 2003. The corresponding laboratory reports are included in Appendix A. Since there were no detects of cis-1,2-DCE or trans-1,2-DCE in any of the collected samples, these two analytes are not included in Table 2.

2.2.2.1 A-Wells

- PCE was detected above its LRL in 2 of the 3 wells sampled: 21 $\mu g/m^3$ in SVMW-3A and 11 $\mu g/m^3$ in SVMW-4A. Both concentrations exceeded the PCE EPA Residential and Industrial RSLs of 0.41 $\mu g/m^3$ and 2.1 $\mu g/m^3$, respectively, and the annual AAAQG of 1.7 $\mu g/m^3$. The LRL of 7.5 $\mu g/m^3$ in the SVMW-2A sample with non-detect concentrations of PCE exceeded the regulatory limits.

- TCE and 1,1-DCE were not detected at or above their LRLs in the collected samples. The LRL for TCE (5.9 $\mu g/m^3$ to 6.6 $\mu g/m^3$) exceeded its regulatory limit; however, LRLs for 1,1-DCE were below the regulatory limits.

- Hydrogen cyanide was calculated to be present in 1 of the 3 samples collected: 121 μg/m³ in SVMW-3A. This concentration is above the EPA Residential and Industrial RSLs of 3.1 μg/m³ and 13 μg/m³, respectively. No annual AAAQG has been established for hydrogen cyanide; however, the detected concentration exceeded both the 1-hour and 24-hour AAAQG for hydrogen cyanide of 100 μg/m³ and 40 μg/m³, respectively. The calculated hydrogen cyanide LRLs for the two samples with non-detect concentrations (48.1 μg/m³ in SVMW-2A and 63.1 μg/m³in SVMW-4A) exceeded the above regulatory limits, as well.

2.2.2.2 B-Wells

- PCE was detected above its LRL in 2 of the 3 wells sampled: 28 μg/m³ in SVMW-3B and 12 μg/m³ in SVMW-4B. Both concentrations exceeded the PCE EPA Residential and Industrial RSLs of 0.41 μg/m³ and 2.1 μg/m³, respectively, and the annual AAAQG of 1.7 μg/m³. The PCE LRL of 7.8 μg/m³ for SVMW-2B (with non-detect concentrations of PCE) exceeded the regulatory limits.

- TCE and 1,1-DCE were not detected at or above their LRLs. The LRL for TCE (6.2 μg/m³ to 6.6 μg/m³) exceeded its regulatory limit; however, the LRLs for 1 1,1-DCE were below the regulatory limits.

- Hydrogen cyanide was calculated to be present in 1 of the 3 samples collected: 122 μg/m³ in SVMW-2B. This concentration exceeded the EPA Residential and Industrial RSLs of 3.1 μg/m³ and 13 μg/m³, respectively. No annual AAAQG has been established for hydrogen cyanide; however, the detected concentration exceeded both the 1-hour and 24-hour AAAQG for hydrogen cyanide of 100 μg/m³ and 40 μg/m³, respectively. The calculated hydrogen cyanide LRL (63.1 μg/m³) for the two samples with non-detect hydrogen cyanide concentrations (SVMW-3B and SVMW-4B) exceeded the above regulatory limits, as well.

2.3 SAMPLING OF SVMWS – OCTOBER 7, 2008

2.3.1 Methodology

On October 7, 2008, soil vapor samples were collected from wells SVMW-2A,B, SVMW-3A,B, and SVMW-4A,B for VOC and cyanide analyses, as follows.

Samples were collected for both VOC and cyanide analyses. Samples for VOC analyses were collected using SUMMA canisters, and the sample collection method did not vary between the sampling events. A laboratory-provided, pre-cleaned, evacuated 1-L SUMMA canister and individual flow regulator was placed in-line at the well and opened to collect a sample. The canisters and flow regulators are maintained and calibrated by the analytical laboratory.

Samples for cyanide analyses were collected using laboratory-provided soda lime sorbent tubes, sampling pumps, and flow regulators. The sorbent tube was located "upstream" of the

pump. The sampling pumps and flow regulators are maintained and calibrated by the analytical laboratory. At each sampling location, a sampling pump with associated tubing and an in-line air flow meter was connected to the SVMW. The sampling rate for collecting the cyanide samples was pre-determined by the laboratory to be 0.15 L/min.

New polyethylene flexible tubing was used at each SVMW sampling location. Air-tight connections were made at all fittings and sampling ports/valves on the sampling train. The vapor sampling pump was purged between individual SVMWs.

Wells were not purged before sampling. Samples for cyanide analyses were collected by drawing 3.2 liters of soil vapors for each sample.

2.3.2 Results

The collected samples were analyzed as discussed in Section 2.2.2 above. Analytical results are presented in Table 2, along with historical data compiled since December 2003. The corresponding laboratory reports are included in Appendix A.

2.3.2.1 A-Wells

- PCE was detected above its LRL in all 3 A-wells sampled: 5.1 μ/m^3 in SVMW-2A; 54 μ/m^3 in SVMW-3A; and 12 μ/m^3 in SVMW-4A. All three concentrations exceeded the PCE EPA Residential and Industrial RSLs of 0.41 $\mu g/m^3$ and 2.1 $\mu g/m^3$, respectively, and the annual AAAQG of 1.7 $\mu g/m^3$.

- TCE was detected above its LRL in 2 of the 3 A-wells sampled: 18 μ/m^3 in SVMW-2A and 70 μ/m^3 in SVMW-3A. Both concentrations exceeded the TCE EPA Residential and Industrial RSLs of 1.2 $\mu g/m^3$ and 6.1 $\mu g/m^3$, respectively, and the annual AAAQG of 0.58 $\mu g/m^3$. The LRL of 2.69 $\mu g/m^3$ for SVMW-4A (with non-detect TCE concentrations) exceeded the EPA Residential RSL and the annual AAAQG limits.

- 1,1-DCE was not detected at or above the LRL of 1.98 $\mu g/m^3$. The LRL was below the regulatory limits.

- Cyanide ion and cyanide ion-particulate were not detected at or above their laboratory detection limits. Consequently, hydrogen cyanide was not calculated to be present in these samples. The calculated hydrogen cyanide LRL for all three samples (65.6 $\mu g/m^3$) exceeded the EPA RSLs and 24-hour AAAQG limits.

2.3.2.2 B-Wells

- PCE was detected above its LRL in 2 of the 3 B-wells sampled: 130 μ/m^3 in SVMW-3B and 24 μ/m^3 in SVMW-4B. Both concentrations exceeded the PCE EPA Residential and Industrial RSLs of 0.41 $\mu g/m^3$ and 2.1 $\mu g/m^3$, respectively, and the annual AAAQG of 1.7 $\mu g/m^3$. The PCE LRL of 3.39

μg/m³ in the SVMW-2B sample (with non-detect concentrations of PCE) exceeded these regulatory limits.

- TCE was detected above its LRL in 2 of the 3 A-wells sampled: 37 μ/m³ in SVMW-3B and 5.9 μ/m³ in SVMW-4B. Both concentrations exceeded the TCE EPA Residential and Industrial RSLs of 1.2 μg/m³ and 6.1 μg/m³, respectively, and the annual AAAQG of 0.58 μg/m³. The TCE LRL of 2.69 μg/m³ in SVMW-2B (with non-detect concentrations of PCE) exceeded the EPA Residential RSL and the annual AAAQG limits.

- 1,1-DCE was not detected at or above the LRL of 1.98 μg/m³. The LRL was below the regulatory limits.

- Cyanide ion and cyanide ion-particulate were not detected at or above their laboratory detection limits. Consequently, hydrogen cyanide was not calculated to be present in these samples. It should be noted that the calculated hydrogen cyanide LRL for all three samples (65.6 μg/m³) exceeded the EPA RSLs and the 24-hour AAAQG limits.

2.4 SAMPLING OF SVMWS – OCTOBER 21, 2008

2.4.1 Methodology

On October 21, 2008, soil vapor samples were collected from wells SVMW-2A,B, SVMW-3A,B, and SVMW-4A,B as follows.

Samples were collected for both VOC and cyanide analyses. Samples for VOC analyses were collected using SUMMA canisters, and the sample collection method did not vary between the sampling events. A laboratory-provided, pre-cleaned, evacuated 1-L SUMMA canister and individual flow regulator was placed in-line at the well and opened to collect a sample. The canisters and flow regulators are maintained and calibrated by the analytical laboratory.

Samples for cyanide analyses were collected using laboratory-provided soda lime sorbent tubes, sampling pumps, and flow regulators. The sorbent tube was located "upstream" of the pump. The sampling pumps and flow regulators are maintained and calibrated by the analytical laboratory. At each sampling location, a sampling pump with associated tubing and an in-line air flow meter was connected to the SVMW. The sampling rate for collecting the cyanide samples was pre-determined by the laboratory to be 0.15 L/min.

New polyethylene flexible tubing was used at each SVMW sampling location. Air-tight connections were made at all fittings and sampling ports/valves on the sampling train. The vapor sampling pump was purged between individual SVMWs.

To evaluate impacts of well purging on concentrations of analytes in the collected samples, the wells were first sampled without purging. Following the collection of the pre-purge samples, each of the SVMWs was purged a total of two well volumes (8 liters for the "A" wells and 16 liters for the "B" wells) and then sampled. Samples for cyanide analyses were collected by drawing 3.2 liters of soil vapors from each well.

2.4.2 Results

The collected samples were analyzed as discussed in Section 2.2.2 above. Analytical results are presented in Table 2, along with historical data compiled since December 2003. The corresponding laboratory reports are included in Appendix A.

2.4.2.1 Sampling Without Purging

A-Wells:

- PCE was detected above its LRL in all 3 wells: 8.8 μg/m³ in SVMW-2A; 34 μg/m³ in SVMW-3A; and 23 μg/m³ SVMW-4A. All three concentrations exceeded the PCE EPA Residential and Industrial RSLs of 0.41 μg/m³ and 2.1 μg/m³, respectively, and the annual AAAQG of 1.7 μg/m³.

- TCE and 1,1-DCE were not detected above their LRLs in any of the samples. The LRL for TCE (6.0 μg/m³ to 6.5 μg/m³) exceeded its EPA RSL and AAAQD limits; however, LRLs for 1,1-DCE (4.4 μg/m³ to 4.8 μg/m³) were below the regulatory limits.

- Cyanide ion and cyanide ion-particulate were not detected at or above their laboratory detection limits. Consequently, hydrogen cyanide was not calculated to be present in these samples. It should be noted that the calculated hydrogen cyanide LRL for all three samples (65.6 μg/m³) exceeded the EPA RSLs and the 24-hour AAAQG limits.

B-Wells:

- PCE was detected above its LRL in all 3 wells: 12 μg/m³ in SVMW-2A; 34 μg/m³ in SVMW-3A; and 25 μg/m³ SVMW-4A. All three concentrations exceeded the PCE EPA Residential and Industrial RSLs of 0.41 μg/m³ and 2.1 μg/m³, respectively, and the annual AAAQG of 1.7 μg/m³.

- TCE and 1,1-DCE were not detected above their LRLs. The LRL for TCE (6.2 μg/m³ to 6.9 μg/m³) exceeded its EPA RSL and AAAQD limits; however, the LRLs for 1,1-DCE (4.5 μg/m³ to 5.1 μg/m³) were below the regulatory limits.

- Cyanide ion and cyanide ion-particulate were not detected at or above their laboratory detection limits. Consequently, hydrogen cyanide was not calculated to be present in these samples. It should be noted that the calculated hydrogen cyanide LRL for all three samples (65.6 μg/m³) exceeded the EPA RSLs and the 24-hour AAAQG limits.

2.4.2.2 Sampling with Purging

A-Wells:

- PCE was detected above its LRL in all 3 wells: 13 μg/m³ in SVMW-2A; 33 μg/m³ in SVMW-3A; and 50 μg/m³ in SVMW-4A. All three concentrations exceeded the PCE EPA Residential and Industrial RSLs of 0.41 μg/m³ and 2.1 μg/m³, respectively, and the annual AAAQG of 1.7 μg/m³.

- TCE and 1,1-DCE were not detected at or above their LRLs. The LRL for TCE (6.4 μg/m³ to 6.8 μg/m³) exceeded its EPA RSL and AAAQD limits; however, reporting limits for 1,1-DCE (4.7 μg/m³ to 5.0 μg/m³) were below the established regulatory limits.

- Cyanide ion and cyanide ion-particulate were not detected at or above their laboratory detection limits. Consequently, hydrogen cyanide was not calculated to be present in these samples. The calculated hydrogen cyanide LRL for all three samples (65.6 μg/m³) exceeded the EPA RSLs and the 24-hour AAAQG limits.

B-Wells:

- PCE was detected above its LRL in all 3 wells: 9.9 μg/m³ in SVMW-2B; 38 μg/m³ in SVMW-3B; and 23 μg/m³ in SVMW-4B. All three concentrations exceeded the EPA Residential and Industrial RSLs of 0.41 μg/m³ and 2.1 μg/m³, respectively, and the annual AAAQG of 1.7 μg/m³.

- TCE was detected above its LRL in 1 of 3 wells: 8.7 μg/m³ in SVMW-3B. This concentration exceeded the EPA Residential and Industrial RSLs of 1.2 μg/m³ and 6.1 μg/m³, respectively, and the annual AAAQG of 0.58 μg/m³. The LRL for TCE (6.2 μg/m³ and 6.3 μg/m³) in SVMW-2B and SVMW-4B samples (with non-detect TCE concentrations) exceeded its EPA RSLs and AAAQD limits.

- 1,1-DCE was not detected at or above the LRLs of 4.5 μg/m³ and 4.6 μg/m³. The LRLs for 1,1-DCE were below the established regulatory limits.

- Cyanide ion and cyanide ion-particulate were not detected at or above the laboratory detection limits. Consequently, hydrogen cyanide was not calculated to be present in these samples. The calculated hydrogen cyanide LRL for all three samples (65.6 μg/m³) exceeded the EPA RSLs and 24-hour AAAQG limits.

2.5 SAMPLING OF SVMWS – NOVEMBER 2008

2.5.1 Methodology

On November 12, 2008, soil vapor samples were collected from wells SVMW-2A,B and SVMW-3A,B, as follows.

Samples were collected for both VOC and cyanide analyses. Samples for VOC analyses were collected using SUMMA canisters, and the sample collection method did not vary between the sampling events. A laboratory-provided, pre-cleaned, evacuated 1-L SUMMA canister and individual flow regulator was placed in-line at the well and opened to collect a sample. The canisters and flow regulators are maintained and calibrated by the analytical laboratory.

Samples for cyanide analyses were collected using laboratory-provided soda lime sorbent tubes, sampling pumps, and flow regulators. The sorbent tube was located "upstream" of the pump. The sampling pumps and flow regulators are maintained and calibrated by the analytical laboratory. At each sampling location, a sampling pump with associated tubing and an in-line air flow meter was connected to the SVMW. The sampling rate for collecting the cyanide samples was pre-determined by the laboratory to be 0.15 L/min.

New polyethylene flexible tubing was used at each SVMW sampling location. Air-tight connections were made at all fittings and sampling ports/valves on the sampling train. The vapor sampling pump was purged between individual SVMWs.

The wells were not purged before sampling. Samples for cyanide analyses were collected by drawing 20 liters of soil vapors from each well.

2.5.2 Results

The collected samples were analyzed as discussed in Section 2.2.2 above. Analytical results are presented in Table 2, along with historical data compiled since December 2003. The corresponding laboratory reports are included in Appendix A.

2.5.2.1 A-Wells

- PCE was detected above its LRL in 1 of the 2 samples collected: 24 $\mu g/m^3$ in SVMW-3A. This concentration exceeded the EPA Residential and Industrial RSLs of 0.41 $\mu g/m^3$ and 2.1 $\mu g/m^3$, respectively, and the annual AAAQG of 1.7 $\mu g/m^3$. The PCE LRL of 3.39 $\mu g/m^3$ in SVMW-2A (i.e., sample with non-detect concentration of PCE) exceeded these regulatory limits.

- TCE was detected above its LRL in 1 of the 2 samples collected: 4.5 $\mu g/m^3$ in SVMW-3A. This concentration exceeded the EPA Residential and Industrial RSLs of 1.2 $\mu g/m^3$ and 6.1 $\mu g/m^3$, respectively, and annual AAAQG of 0.58 $\mu g/m^3$. The TCE LRL of 2.69 $\mu g/m^3$ in SVMW-2A (i.e., sample with non-detect concentration of PCE) exceeded these regulatory limits.

- 1,1-DCE was not detected at or above the LRL of 1.98 μg/m³. The LRL for 1,1-DCE was below the regulatory limits.

- Cyanide ion and cyanide ion-particulate were not detected at or above the laboratory detection limits. Consequently, hydrogen cyanide was not calculated to be present in these samples. The calculated hydrogen cyanide LRL for both samples (7.78 μg/m³) was below the EPA Industrial RSL limit of 13 μg/m³, but exceeded the EPA Residential RSL limit of 3.1 μg/m³.

2.5.2.2 B-Wells

- PCE was detected above its LRL in both wells: 6.8 μg/m³ in SVMW-2B and 81 μg/m³ in SVMW-3B. Both concentrations exceeded the EPA Residential and Industrial RSLs of 0.41 μg/m³ and 2.1 μg/m³, respectively, and the annual AAAQG of 1.7 μg/m³.

- TCE was detected above its LRL in 1 of the 2 samples collected: 12 μg/m³ in SVMW-3B. This concentration exceeded the EPA Residential and Industrial RSLs of 1.2 μg/m³ and 6.1 μg/m³, respectively, and the annual AAAQG of 0.58 μg/m³. The TCE LRL of 2.69 μg/m³ in the SVMW-2B sample (i.e., sample with non-detect concentration of PCE) exceeded the EPA Residential RSL and the AAAQG limits.

- 1,1-DCE was not detected at or above the LRL of 1.98 μg/m³. The LRL for 1,1-DCE was below the regulatory limits.

- Cyanide ion and cyanide ion-particulate were not detected at or above the laboratory detection limits. Consequently, hydrogen cyanide was not calculated to be present in these samples. The calculated hydrogen cyanide LRL for both samples (7.78 μg/m³) was below the EPA Industrial RSL of 13 μg/m³, but exceeded the EPA Residential RSL limit of 3.1 μg/m³.

During 2009, GeoTrans conducted groundwater monitoring and sampling, installed SVMWs, and conducted soil vapor sampling subsequent to the well installations.

3.1 GROUNDWATER MONITORING AND SAMPLING EVENT – JANUARY 2009

3.1.1 Groundwater Elevation Measurements and Flow Conditions

In January 2009, GeoTrans measured depth to water in groundwater monitoring well MW-21C. Depth-to-groundwater measurements were not recorded for the two school production wells at St. Francis and Alice Byrne schools. Because only one water elevation measurement was collected in January 2009, groundwater flow conditions during the January 2009 could not be calculated. Depth-to-groundwater measurements and groundwater elevations for the period October 1992 through April 2010 are provided in Table 3.

3.1.2 Groundwater Sampling

In January 2009, GeoTrans sampled one monitoring well, MW-21C, and two production wells, Alice Byrne and St. Francis. The collected samples were analyzed for VOCs and cyanides. All LRLs were below the respective Aquifer Water Quality Standards (AWQSs). The corresponding laboratory reports are included in Appendix G, and copies of the completed groundwater sampling field data sheets are provided in Appendix H.

3.2 INSTALLATION OF DUAL-NESTED SOIL VAPOR MONITORING WELLS

On February 16 and 17, 2009, GeoTrans performed oversight of the drilling and installation of dual-nested SVMW-5A,B, SVMW-6A,B, and SVMW-7A,B. These wells are located on the west side of Maple Avenue, south of 17th Place (across from the Harvest Preparatory School), on 18th Street (immediately south of the school), and on 18th Street (immediately east of Walnut Avenue and the school), respectively.

Locations of these new and the existing Site SVMWs are illustrated on Figure 3; construction diagrams of the new wells are provided in Appendix B. All drilling locations were air-knifed to depths of 5 feet bgs, followed by auger drilling to total depths.

These dual-nested, shallow SVMWs were drilled to a depth of 12 feet bgs. The wells were then constructed using 1-inch, Schedule-40 polyvinyl chloride (PVC) casing and 1-inch, Schedule 40, 0.020-inch machine-slotted PVC screen. Wells SVMW-5A, SVMW-6A, and SVMW-7A were constructed to a total depth of 5 feet bgs and were screened from depths of 4.5 feet to 5 feet bgs. Wells SVMW-5B, SVMW-6B, and SVMW-7B were constructed to a total depth of 10 feet bgs and were screened from depths of 9.5 feet to 10 feet bgs.

Construction details of the dual-nested shallow SVMWs are shown on Figure B-1 in Appendix B.

3.3 INVESTIGATION-DERIVED WASTE MANAGEMENT

The drill cuttings were the only major IDW category generated during the SVMW drilling and installation. Soil cuttings were transported from each drilling site to the Houston facility and placed in an Arizona Department of Transportation (ADOT)-approved roll-off bin. These drill cuttings were combined with drill cuttings from the March 2010 installation of groundwater monitoring wells (see Section 4.3.4). The IDW was sampled and profiled, and then disposed of at the Copper Mountain Landfill in Wellton, Arizona. The corresponding laboratory reports and disposal documentation are provided in Appendix C.

3.4 SAMPLING OF SVMWS – MARCH 2009

3.4.1 Methodology

On March 8 through 10, 2009, soil vapor samples were collected from wells SVMW-5A,B; SVMW-6A,B; and SVMW-7A,B as follows.

The samples were collected for both VOC and cyanide analyses. Samples for VOC analyses were collected using SUMMA canisters, and the sample collection method did not vary between the sampling events. A laboratory-provided, pre-cleaned, evacuated 1-L SUMMA canister and individual flow regulator was placed in-line at the well and opened to collect a sample. The canisters and flow regulators are maintained and calibrated by the analytical laboratory.

Samples for cyanide analyses were collected using laboratory-provided soda lime sorbent tubes, sampling pumps, and flow regulators. The sorbent tube was located "upstream" of the pump. The sampling pumps and flow regulators are maintained and calibrated by the analytical laboratory. At each sampling location, a sampling pump with associated tubing and an in-line air flow meter was connected to the SVMW. The sampling rate for collecting the cyanide samples was pre-determined by the laboratory to be 0.15 L/min.

New polyethylene flexible tubing was used at each SVMW sampling location. Air-tight connections were made at all fittings and sampling ports/valves on the sampling train. The vapor sampling pump was purged between individual SVMWs.

Samples for cyanide analyses were collected by drawing 20 liters of soil vapors from each well.

3.4.2 Results

The collected samples were analyzed as discussed in Section 2.2.2 above. Analytical results are shown in Table 2, along with all historical soil vapor concentrations compiled since December 2003. Copies of the laboratory reports for are provided in Appendix A.

3.4.2.1 A-Wells

- PCE was not detected at or above its LRL of 17 $\mu g/m^3$ in any of the 3 wells sampled. The LRL exceeded the EPA RSLs and annual AAAQG limits.

- TCE was not detected at or above its LRL of 13.4 μg/m³ in any of the 3 wells. The LRL exceeded the EPA RSLs and annual AAAQG limits.

- 1,1-DCE was not detected at or above the LRLs of 9.91 μg/m³ and 10.1 μg/m³. The LRLs for 1,1-DCE was below the regulatory limits.

- Cyanide ion and cyanide ion-particulate were not detected at or above the laboratory detection limits. Consequently, hydrogen cyanide was not calculated to be present in these samples. The calculated hydrogen cyanide LRL for all 3 samples (7.78 μg/m³) was below the EPA Industrial RSL of 13 μg/m³, but exceeded the EPA Residential RSL limit of 3.1 μg/m³.

3.4.2.2 B-Wells

- PCE was detected above its LRL in 2 of the 3 wells sampled: 6.3 μg/m³ in SVMW-5B and 24 μg/m³ in SVMW-6B. The concentrations exceeded the EPA Residential and Industrial RSLs of 0.41 μg/m³ and 2.1 μg/m³, respectively, and the annual AAAQG of 1.7 μg/m³. The LRL in SVMW-7B (with non-detect PCE concentration) exceeded the EPA RSLs and annual AAAQG limits.

- TCE was detected above its LRL in 2 of 3 wells samples: 3.6 μg/m³ in SVMW-5B and 29 μg/m³ in SVMW-7B. These concentrations exceeded the EPA Residential RSLs of 1.2 μg/m³ and the annual AAAQG of 0.58 μg/m³. The LRL in SVMW-6B (with non-detect TCE concentration) exceeded the EPA RSLs and annual AAAQG limits.

- 1,1-DCE was not detected at or above the LRLs of 4.0 μg/m³ and 9.9 μg/m³. The LRLs for 1,1-DCE was below the regulatory limits.

- Cyanide ion and cyanide ion-particulate were not detected at or above the laboratory detection limits. Consequently, hydrogen cyanide was not calculated to be present in these samples. The calculated hydrogen cyanide LRL for all 3 samples (7.78 μg/m³) exceeded the EPA Residential RSL limit of 3.1 μg/m³.

4.0 SITE ACTIVITIES – 2010

During 2010, Geotrans installed soil vapor monitoring wells, groundwater monitoring wells, and also conducted monitoring and sampling events at SVMWs and MWs.

4.1 INSTALLATION OF SOIL VAPOR MONITORING WELLS – FEBRUARY 2010

4.1.1 Dual-Nested Wells

From February 26 to March 2, 2010, GeoTrans performed oversight of the drilling and installation of dual-nested SVMW-9A,B, SVMW-10A,B, SVMW-11A,B, and SVMW-12A,B. Wells SVMW-9A,B and SVMW-10A,B were installed on the west side of the Property, along Factor Avenue. SVMW-11A,B was installed on the east side of Rail Avenue, approximately 45 feet north of the dead-end of Rail Avenue, south of the existing groundwater monitoring well MW-22. SVMW-12A,B was installed further north along the east side of Rail Avenue, 270 feet south of 18th Place.

Locations of these new SVMWs are illustrated on Figure 3; construction diagrams of the new wells are provided in Appendix B. All drilling locations were air-knifed to depths of 5 feet bgs, followed by auger drilling to total depths.

These dual-nested, shallow SVMWs were drilled to a depth of 12 feet bgs. The wells were then constructed using 1-inch, Schedule-40 polyvinyl chloride (PVC) casing and 1-inch, Schedule 40, 0.020-inch machine-slotted PVC screen. Wells SVMW-9A, SVMW-10A, SVMW-11A, and SVMW-12A were constructed to a total depth of 5 feet bgs and were screened from depths of 4.5 feet to 5 feet bgs. Wells SVMW-9B, SVMW-10B, SVMW-11B, and SVMW-12B were constructed to a total depth of 10 feet bgs and were screened from depths of 9.5 feet to 10 feet bgs.

Construction details of the dual-nested shallow SVMWs are shown on Figure B-1 in Appendix B.

4.1.2 Multi-Nested Well

On February 24 to 26, 2010, GeoTrans performed oversight of the drilling and installation of one multi-nested well SVMW-8A through H. The well was installed on the east side of Walnut Avenue, just south of groundwater monitoring well cluster MW-8A,B,C. The wells were installed using 1-inch, Schedule-40 PVC casing and 1-inch, Schedule-40, 0.020-inch machine-slotted PVC screen. The depths of multi-nested SVMW probes were set at 5 feet and 10 feet bgs, and then at 10-foot intervals to first encountered groundwater, located approximately 70 feet bgs, just above measured groundwater level in the vicinity of the wells. Each well has a 2.5-foot screen interval. Construction details of the multi-nested SVMW are shown on Figure B-2 in Appendix B.

4.1.3 Investigation-Derived Waste Management

The drill cuttings were the only major IDW category generated during the SVMW drilling and installation. Soil cuttings were transported from each drilling site to the Houston facility and placed in an ADOT-approved roll-off bin. These drill cuttings were combined with drill cuttings from the March 2010 installation of groundwater monitoring wells (see Section 4.3.4). The IDW was sampled and profiled, and then disposed of at the Copper Mountain Landfill in Wellton, Arizona. The corresponding laboratory reports and disposal documentation are provided in Appendix C.

4.2 SAMPLING OF SVMWS – MARCH 2010

4.2.1 Methodology

On March 8 through 11, 2010, GeoTrans collected soil vapor samples from the following 32 SVMWs without purging:

- 12 A-wells: SVMW-1A through SVMW-12A;
- 12 B-wells: SVMW-1B through SVMW-12B;
- 2 C-wells: SVMW-1C and SVMW-8C;
- 2 D-wells: SVMW-1D and SVMW-8D;
- 1 E-well: SVMW-8E;
- 1 F-well: SVMW-8F;
- 1-G-well: SVMW-8G; and
- 1 H-well: SVMW-8H.

The samples were collected for both VOC and cyanide analyses. Samples for VOC analyses were collected using SUMMA canisters, and the sample collection method did not vary between the sampling events. A laboratory-provided, pre-cleaned, evacuated 1-L SUMMA canister and individual flow regulator was placed in-line at the well and opened to collect a sample. The canisters and flow regulators are maintained and calibrated by the analytical laboratory.

Samples for cyanide analyses were collected using laboratory-provided soda lime sorbent tubes, sampling pumps, and flow regulators. The sorbent tube was located "upstream" of the pump. The sampling pumps and flow regulators are maintained and calibrated by the analytical laboratory. At each sampling location, a sampling pump with associated tubing and an in-line air flow meter was connected to the SVMW. The sampling rate for collecting the cyanide samples was pre-determined by the laboratory to be 0.15 L/min.

New polyethylene flexible tubing was used at each SVMW sampling location. Air-tight connections were made at all fittings and sampling ports/valves on the sampling train. The vapor sampling pump was purged between individual SVMWs.

Samples for cyanides were collected by drawing 20 liters of soil vapors from each well.

4.2.2 Results

The collected samples were analyzed as described in Section 2.2.2 above. Analytical results are presented in Table 2, along with historical data compiled since December 2003, and also illustrated on Figure 4. The corresponding laboratory reports are included in Appendix A.

4.2.2.1 A-Wells

- PCE was detected in 9 of 12 wells sampled as follows: 4,500 μ/m^3 in SVMW-1A (located on the Property); 3,100 μ/m^3 in SVMW-11A (located at the south end of Rail Avenue, north of 20th Street); 251 μ/m^3 in SVMW-10A (located on the Property); 95 μ/m^3 in SVMW-9A (located on the Property); 51 μ/m^3 in SVMW-12A (located on the Property); 26 μ/m^3 in SVMW-8A; 20 μ/m^3 in SVMW-3A; 18 μ/m^3 in SVMW6A; and 14 μ/m^3 in SVMW-4A. All detected concentrations exceeded the EPA Residential and Industrial RSLs of 0.41 $\mu g/m^3$ and 2.1 $\mu g/m^3$, respectively, and the annual AAAQG of 1.7 $\mu g/m^3$. Laboratory detection limits in the 3 wells with non-detect concentrations of PCE (17 $\mu g/m^3$ in SVMW-2A, 6.8 $\mu g/m^3$ in SVMW-5A, and 17 $\mu g/m^3$ in SVMW-7A) were above the EPA RSLs and annual AAAQG limits.

- TCE was detected in 1 of 12 wells sampled: 29 $\mu g/m^3$ in SVMW-1A (located on the Property). This concentration exceeded the EPA RSLs and the AAAQG limits. Laboratory detection limits of 5.4 $\mu g/m^3$ to 13 $\mu g/m^3$ in the remaining 11 wells with non-detect concentrations of TCE were above the EPA RSLs and the annual AAAQG limits.

- 1,1-DCE was detected in 1 of 12 wells sampled: 19 μ/m^3 in SVMW-1A (located on the Property). This concentration was below the EPA RSLs and AAAQGs limits. Laboratory detection limits for the remaining 11 wells with non-detect concentrations of 1,1-DCE were below the EPA RSLs and annual AAAQG limits.

- Cyanide ion and cyanide ion-particulate were not detected at or above the laboratory detection limits. Consequently, hydrogen cyanide was not calculated to be present in these samples. The calculated hydrogen cyanide LRL for all samples (7.78 $\mu g/m^3$) was below the EPA Industrial RSL of 13 $\mu g/m^3$, but exceeded the EPA Residential RSL limit of 3.1 $\mu g/m^3$.

4.2.2.2 B-Wells

- PCE was detected in the following 10 of 12 wells sampled: 5,200 $\mu g/m^3$ in SVMW-1B (located on the Property); 4,500 $\mu g/m^3$ in SVMW-11B (located at the south end of Rail Avenue, north of 20th Street); 515 $\mu g/m^3$ in SVMW-10B (located on the Property); 163 $\mu g/m^3$ in SVMW-9B (located on the Property); 81 $\mu g/m^3$ in SVMW-12B (located on Rail Avenue, north of 19th Street); 55 $\mu g/m^3$ in SVMW-6B; 35 $\mu g/m^3$ in SVMW-8B; 25 $\mu g/m^3$ in SVMW-2B; 24 $\mu g/m^3$ in SVMW-3B; and 14 $\mu g/m^3$ in SVMW-4B. All detected concentrations

exceeded the EPA Residential and Industrial RSLs of 0.41 μg/m³ and 2.1 μg/m³, respectively, and annual AAAQG of 1.7 μg/m³. Laboratory detection limits in the 2 wells with non-detect concentrations of PCE (6.8 μ/m³ SVMW-5B and 17 μ/m³ in SVMW-7B), were above the EPA RSLs and the annual AAAQG limits.

- TCE was detected in 3 of the 12 wells sampled: 27 μg/m³ in SVMW-1B (located on the Property); 59 μg/m³ in SVMW-11B; and 7 μg/m³ in SVMW-10B. These concentrations exceeded the EPA Residential and Industrial RSLs of 1.2 μg/m³ and 6.1 μg/m³, respectively, and the annual AAAQG of 0.58 μg/m³. The laboratory detection limit of 5.4 μg/m³ in 5 wells with non-detect TCE concentrations (SVMW-3B, SVMW-4B, SVMW-5B, SVMW-8B, and SVMW-9B), was above the EPA Residential RSL and the annual AAAQG limits, but below the EPA Industrial RSL. The laboratory detection limit of 13 μg/m³ in 4 wells with non-detect TCE concentrations (SVMW-2B, SVMW-6B, SVMW-7B, and SVMW-12B) was above both EPA RSLs and annual AAAQG limits.

- 1,1-DCE was detected in 1 of 12 wells sampled: 14 μg/m³ SVMW-1B (located on the Property). This concentration was below the established EPA RSLs and AAAQGs limits. Laboratory detection limits for the remaining 11 wells with non-detect concentrations of 1,1-DCE were below the established EPA RSLs and AAAQG limits.

- Cyanide ion and cyanide ion-particulate were not detected at or above the laboratory detection limits. Consequently, hydrogen cyanide was not calculated to be present in these samples. The calculated hydrogen cyanide LRL for all samples (7.78 μg/m³) was below the EPA Industrial RSL of 13 μg/m³, but exceeded the EPA Residential RSL limit of 3.1 μg/m³.

4.2.2.3 C-Wells

- PCE was detected in both existing C-wells: 3,500 μg/m³ in SVMW-1C (located on the Property) and 35 μg/m³ in SVMW-8C. These concentrations exceeded the EPA Residential and Industrial RSLs of 0.41 μg/m³ and 2.1 μg/m³, respectively, and the annual AAAQG of 1.7 μg/m³.

- TCE was detected in 1 of the 2 existing C-wells: 22 μg/m³ in SVMW-1C (located on the Property). This concentration exceeded the EPA Residential and Industrial RSLs of 1.2 μg/m³ and 6.1 μg/m³, respectively, and the annual AAAQG of 0.58 μg/m³. The laboratory detection limit of 5.4 μg/m³ in SVMW-8C was above the EPA Residential RSL and annual AAAQG limits, but below the EPA Industrial RSL of 6.1 μg/m³.

- 1,1-DCE was detected in 1 of the 2 wells sampled: 11 μg/m³ in SVMW-1C (located on the Property). This concentration was below the established EPA RSLs and AAAQGs limits. The laboratory detection limit of in SVMW-8C of 4.0 μg/m³ was below the established EPA RSLs and AAAQG limits.

- Cyanide ion and cyanide ion-particulate were not detected at or above the laboratory detection limits. Consequently, hydrogen cyanide was not calculated to be present in these samples. The calculated hydrogen cyanide LRL for all samples (7.78 $\mu g/m^3$) was below the EPA Industrial RSL of 13 $\mu g/m^3$, but exceeded the EPA Residential RSL limit of 3.1 $\mu g/m^3$.

4.2.2.4 D-Wells

- PCE was detected in both existing D-wells: 224 $\mu g/m^3$ in SVMW-1D (located on the Property) and 16 $\mu g/m^3$ in SVMW-8D. These concentrations exceeded the EPA Residential and Industrial RSLs of 0.41 $\mu g/m^3$ and 2.1 $\mu g/m^3$, respectively, and the annual AAAQG of 1.7 $\mu g/m^3$.

- TCE was not detected in the two existing D-well in concentrations at or above its LRL of 5.4 $\mu g/m^3$. This reporting limit was above the EPA Residential RSL and annual AAAQG limits, but below the EPA Industrial RSL of 6.1 $\mu g/m^3$.

- 1,1-DCE was not detected at or above its LRL of 4 $\mu g/m^3$. This reporting limit was below the established EPA RSLs and AAAQG limits.

- Cyanide ion and cyanide ion-particulate were not detected at or above the laboratory detection limits. Consequently, hydrogen cyanide was not calculated to be present in these samples. The calculated hydrogen cyanide LRL for all samples (7.78 $\mu g/m^3$) was below the EPA Industrial RSL of 13 $\mu g/m^3$, but exceeded the EPA Residential RSL limit of 3.1 $\mu g/m^3$.

4.2.2.5 E-Well

- PCE was detected in the only existing E-well: 68 $\mu g/m^3$ in SVMW-8E. This concentration exceeded the EPA Residential and Industrial RSLs of 0.41 $\mu g/m^3$ and 2.1 $\mu g/m^3$, respectively, and the annual AAAQG of 1.7 $\mu g/m^3$.

- TCE was detected in the only existing E-well: 13 $\mu g/m^3$ in SVMW-8E. This concentration exceeded the EPA Residential and Industrial RSLs of 1.2 $\mu g/m^3$ and 6.1 $\mu g/m^3$, respectively, and the annual AAAQG of 0.58 $\mu g/m^3$.

- 1,1-DCE was not detected at or above the LRL of 4.0 $\mu g/m^3$. The LRL for 1,1-DCE was below the regulatory limits.

- Cyanide ion and cyanide ion-particulate were not detected at or above the laboratory detection limits. Consequently, hydrogen cyanide was not calculated to be present in the sample. The calculated hydrogen cyanide LRL for all samples (7.78 $\mu g/m^3$) was below the EPA Industrial RSL of 13 $\mu g/m^3$, but exceeded the EPA Residential RSL limit of 3.1 $\mu g/m^3$.

4.2.2.6 F-Well

- PCE was detected in the only existing F-well: 12 $\mu g/m^3$ in SVMW-8F. This concentration exceeded the EPA Residential and Industrial RSLs of 0.41 $\mu g/m^3$ and 2.1 $\mu g/m^3$, respectively, and the annual AAAQG of 1.7 $\mu g/m^3$.

- TCE was not detected at or above its LRL of 5.4 $\mu g/m^3$. This reporting limit exceeded the EPA Residential RSL of 1.2 $\mu g/m^3$ and the annual AAAQG of 0.58 $\mu g/m^3$, but was below the EPA Industrial RSL of 6.1 $\mu g/m^3$.

- 1,1-DCE was not detected at or above the LRL of 4.0 $\mu g/m^3$. The LRL for 1,1-DCE was below the regulatory limits.

- Cyanide ion and cyanide ion-particulate were not detected at or above the laboratory detection limits. Consequently, hydrogen cyanide was not calculated to be present in the sample. The calculated hydrogen cyanide LRL for all samples (7.78 $\mu g/m^3$) was below the EPA Industrial RSL of 13 $\mu g/m^3$, but exceeded the EPA Residential RSL limit of 3.1 $\mu g/m^3$.

4.2.2.7 G-Well

- PCE was detected in the only existing G-well: 16 $\mu g/m^3$ in SVMW-8G. This concentration exceeded the EPA Residential and Industrial RSLs of 0.41 $\mu g/m^3$ and 2.1 $\mu g/m^3$, respectively, and the annual AAAQG of 1.7 $\mu g/m^3$.

- TCE and 1,1-DCE were not detected at or above their LRLs. The LRL for TCE of 5.4 $\mu g/m^3$ exceeded the EPA Residential RSL of 1.2 $\mu g/m^3$ and the annual AAAQG of 0.58 $\mu g/m^3$, but was below the EPA Industrial RSL of 6.1 $\mu g/m^3$. The LRL for 1,1-DCE of 4.0 $\mu g/m^3$ was below the regulatory limits.

- Cyanide ion and cyanide ion-particulate were not detected at or above the laboratory detection limits. Consequently, hydrogen cyanide was not calculated to be present in the sample. The calculated hydrogen cyanide LRL for all samples (7.78 $\mu g/m^3$) was below the EPA Industrial RSL of 13 $\mu g/m^3$, but exceeded the EPA Residential RSL limit of 3.1 $\mu g/m^3$.

4.2.2.8 H-Well

- PCE, TCE, and 1,1-DCE were not detected in the only existing G-well at or above their LRLs. The LRLs for PCE (6.8 $\mu g/m^3$) and TCE (5.4 $\mu g/m^3$) exceeded their established EPA RSLs and AAAQG limits. The LRL for 1,1-DCE of 4.0 $\mu g/m^3$ was below the regulatory limits.

- Cyanide ion and cyanide ion-particulate were not detected at or above the laboratory detection limits. Consequently, hydrogen cyanide was not calculated to be present in the sample. The calculated hydrogen cyanide LRL for all

samples (7.78 μg/m³) was below the EPA Industrial RSL of 13 μg/m³, but exceeded the EPA Residential RSL limit of 3.1 μg/m³.

4.3 INSTALLATION OF GROUNDWATER MONITORING WELLS – MARCH 2010

4.3.1 Installation

During the period of March 2 through March 11, 2010, GeoTrans installed two groundwater monitoring wells, MW-25A and MW-25B. Both drilling locations were first air-knifed to depths of 5 feet bgs by Yellow Jacket Drilling (Yellow Jacket). Subsequently, the MW-25A boring was drilled to a total depth of 96 feet bgs using a CME 85 hollow-stem auger rig, and the MW-25B boring to a total depth of 178 feet bgs using a mud rotary drill rig. Groundwater monitoring wells MW-25A and MW-25B were installed on the west side of Maple Avenue, just north of 17th Street, thus northwest of the Harvest Preparatory School. MW-25A was installed to a total depth of approximately 95 feet bgs, and screened from 65 feet to 95 feet bgs. MW-25B was installed to a total depth of 170 feet bgs, and screened from 140 feet to 170 feet bgs.

Because the goal of the installation of MW-25B was to place this well in the B-Zone, lithological logging was conducted every 5 feet from 80 feet 140 feet bgs. Clay B was encountered at 130 feet bgs and was approximately 5 feet thick. Once the presence of Clay B was established, drilling continued without lithological logging, unless a change in lithology was encountered. As such, a 1-foot thick gravely clay was encountered at approximately 163 feet bgs. No other lithological samples were collected. A lithological log is provided on Figure D-1 in Appendix D.

The groundwater monitoring wells were installed using 4-inch, Schedule-40 PVC casing and 4-inch, Schedule 40, 0.02-inch machine-slotted PVC screen. A sandpack was placed from the bottom of the borehole to approximately 3 feet above the screen interval, and an approximate 5-foot thick bentonite chip seal was placed above the top of the sandpack in the well. The annular space was sealed with bentonite cement grout from the top of the bentonite chip seal to 1 feet bgs. A 4-inch locking cap was placed at the top of the PVC casing, and a flush-grade well vault was installed to protect the wellhead. Well construction details are provided in Table 4 and on Figures D-2 (MW-25A) and D-3 (MW-5B) in Appendix D.

4.3.2 Development

Following installation, the wells were developed on March 12, 2010 by surging, bailing, and pumping with a Smeal pump rig. The wells were purged until purge water hydrochemistry parameters (pH, temperature, conductivity, turbidity, total dissolved solids, and redox potential) stabilized for successive measurements. Well development details are presented in Appendix E.

4.3.3 Surveying

Following installation of MW-25A and MW-25B, the locations and elevations of the two groundwater monitoring wells were surveyed. Surveyed elevations are presented in Table 3, and the surveyor's reports are presented in Appendix F.

4.3.4 Investigation-Derived Waste Management

Soil cuttings were transported from each drilling location to the Property, where they were combined with the drill cuttings generated during installation of SVMWs (see Sections 3.3 and 4.4). All soil cuttings were stored in two lined ADOT-approved roll-off bins for subsequent profiling, transport, and disposal. Samples of the stored drill cuttings were collected for waste profiling, as required by the disposal facility. One composite sample was collected from each bin and analyzed for disposal purposes for VOCs (EPA Method 8260B), semi-volatile organic compounds (SVOCs) (EPA Method 8270), total Resource Conservation Recovery Act (RCRA) metals (EPA Method 6010 and 7471), RCRA Toxicity Characteristic Leaching Procedure (TCLP) (EPA Methods 6010 and 7470), total petroleum hydrocarbon (TPH) (Method 8015AZR1), ignitability (SW1010), and pH (SM4500-H). The corresponding laboratory reports are provided in Appendix C. Soil cuttings were disposed of at the Copper Mountain Landfill; the corresponding disposal documents are provided in Appendix C.

The development water was transported from the well sites to the Property via a water wagon, containerized in a polyethylene tank, and disposed of at the Copper Mountain Landfill. Disposal documentation is provided in Appendix C.

4.4 GROUNDWATER MONITORING AND SAMPLING – APRIL 2010

4.4.1 Groundwater Elevation Measurements and Flow Conditions

On April 26, 2010, depth-to-water measurements were collected from the following groundwater wells: DMW-11; MW-8A,B,C; MW-9A; MW-12A; MW-13A; MW-15A; MW-16A; MW-17A,C; MW-18A; MW-21A,B,C; MW-23B; MW-24B; MW-25A, B; MW-101A; MW-102B1; and MW-103C. Details of individual monitoring well construction and measuring point elevations at the Site are presented in Table 4. Depth to water and groundwater elevations data compiled since October 1992 are shown in Table 3.

In April 2010, the groundwater gradients were calculated to be as follows:

- A-Zone[1] wells: approximately 0.001 feet per foot (ft/ft) to the west across the Property and to the west-northwest across the Site (Figure 5a);
- B-Zone[1] wells: approximately 0.001 ft/ft to the west-northwest across the Site (Figure 5b); and
- C-Zone[1] wells: approximately 0.001 ft/ft to the west across the Property, and approximately 0.002 ft/ft to the west across the Site (Figure 5c).

[1] Wells ending in "A" are screened within the shallow zone (A-Zone) of the aquifer (screened approximately 50 to 105 feet bgs). Wells ending in "B" are screened within the middle zone (B-Zone) of the aquifer (screened approximately 105 to 170 feet bgs, or between Clay A and Clay B layers present beneath the Site. Wells ending in "C" are screened within the deep zone (C-Zone) of the aquifer (screened approximately 170 to 318 feet bgs).

4.4.2 Groundwater Sampling

During the April 2010 groundwater sampling event, GeoTrans sampled the following groundwater monitoring and production wells at the Site: DMW-11; MW-8A,B,C; MW-9A; MW-12A; MW-13A; MW-15A; MW-16A; MW-17A,C; MW-18A; MW-21A,B,C; MW-23B; MW-24B; MW-25A,B; MW-101A; MW-102B1; MW-103C; St. Francis; and Alice Byrne. The collected samples were analyzed for VOCs and cyanides. All LRLs were below their respective AWQSs. The laboratory reports are included in Appendix G, and copies of the completed groundwater sampling field data sheets are included in Appendix H. A summary of selected VOCs and cyanides detected in groundwater at the Site since 2001 is presented in Table 5.

A summary of COCs detected in the shallow zone (A-Zone), middle zone (B-Zone), and deep zone (C-Zone) of the aquifer in April 2010 is presented below and on Figure 6. Graphs showing groundwater elevations and concentrations of COC VOCs as a function of time for groundwater monitoring, extraction, and piezometer wells at the Site are presented in Appendix I.

4.4.2.1 A-Zone Wells

Analytical results of the groundwater samples collected from the A-Zone wells during the April 2010 sampling event are summarized below, presented in Table 5, and illustrated on Figure 6:

- PCE was detected above its LRL in groundwater samples collected from 3 A-Zone monitoring wells: 97 µg/L in well MW-8A; 13 milligrams per liter (mg/L) at well MW-18A; and 2.1 µg/L in well MW-12A. The PCE concentrations detected in well MW-8A and MW-13A were above the AWQS for PCE of 5 µg/L;

- TCE was detected above its LRL in the groundwater samples collected from the following two A-Zone monitoring wells: 36 µg/L in well MW-8A and 14 µg/L in well MW-18A. Both concentrations exceed the AWQS for TCE of 5 µg/L;

- 1,1-DCE was detected above its LRL in the groundwater sample collected from the following 2 A-Zone wells: 17 µg/L in MW-8A and 4.4 µg/L in MW-18A. The concentration in MW-8A is above the AWQS for 1,1-DCE of 7 µg/L;

- No other COC VOCs were detected at or above their LRLs in the groundwater samples collected from the A-Zone wells during the April 2010 sampling event; and

- Total cyanide was detected only in the groundwater sample collected from A-Zone well MW-8A, at a concentration of 0.19 mg/L. The sample was then analyzed for amenable (free) cyanide, which was also detected at a concentration of 0.19 mg/L. Both detected cyanide concentrations were below

the AWQS for amenable (free) cyanide of 0.2 mg/L. There is no AWQS currently established for total cyanide.

4.4.2.2 B-Zone Wells

Analytical results of the groundwater samples collected from the B-Zone wells during the April 2010 sampling event are summarized below, in Table 5, and illustrated on Figure 6:

- PCE was detected above its LRL in groundwater samples collected from 2 B-Zone wells: 78 µg/L in MW-8B and 9.2 µg/L in MW-102B1. Both concentrations were above the AWQS for PCE of 5 µg/L;

- TCE was detected above its LRL in groundwater samples collected from 3 B-Zone wells: 26 µg/L in MW-8B; 16 µg/L MW-21B; and 0.57 µg/L in MW-102B1. Only the TCE concentrations detected in wells MW-8B and MW-21B were above the AWQS for TCE of 5 µg/L;

- 1,1-DCE was detected above its LRL in of the groundwater samples collected from B-Zone wells: 11 µg/L in MW-8B, exceeding the AWQS of 7 µg/L;

- No other COC VOCs were detected above their LRLs; and

- Total cyanide was detected in groundwater samples collected from wells MW-8B and MW-24B, at concentrations of 0.032 mg/L and 0.64 mg/L, respectively. Samples with detected concentrations of total cyanide were also analyzed for amenable (free) cyanide. Free cyanide was detected in both samples, at concentrations of 0.032 mg/L in MW-8B and 0.64 mg/L in MW-24B. The detected cyanide concentrations in MW-24B exceeded the AWQS for amenable (free) cyanide of 0.2 mg/L. There is no AWQS currently established for total cyanide.

4.4.2.3 C-Zone Wells

Analytical results of the groundwater samples collected from the C-Zone wells and water production wells located at Alice Byrne and St. Francis schools during the April 2010 sampling event are presented below, in Table 5, and illustrated on Figure 6:

- PCE was detected above its LRL in groundwater samples collected from the following 2 C-Zone wells: 11 µg/L in MW-8C and 3.1 µg/L in MW-103C. The concentration of PCE detected in well MW-8C exceeded the AWQS of 5 µg/L;

- TCE was detected above its LRL in groundwater samples collected from the following 2 C-Zone wells: 3.7 µg/L in MW-8C and 1.0 µg/L in MW-103C. Neither of these concentrations exceeded the AWQS of 5 µg/L;

- 1,1-DCE was detected above its LRL in one of the groundwater samples collected from C-Zone wells, 1.2 µg/L in MW-8C, below the AWQS of 7 µg/L;

- VOCs were not detected at or above their LRLs in the groundwater samples collected from the Alice Byrne or St. Francis production wells during this groundwater sampling event; and

- Total cyanide was not detected at or above its LRL in the C-Zone monitoring wells or the Alice Byrne and St. Francis production wells.[2] Thus, these samples were not analyzed for amenable (free) cyanide.

4.4.3 Quality Assurance/Quality Control (QA/QC)

Due to budgetary constraints, field quality assurance during the January 2009 and April 2010 groundwater sampling event included only daily field instrument calibration and the collection and analysis of trip blanks. No analytes were detected in the trip blanks in concentrations at or above their LRLs.

[2] Historically, with the exception of 0.011 mg/L of cyanide detected at St. Francis during the July 2007 groundwater sampling event, cyanides have not been detected above the laboratory reporting limit in the Alice Byrne or St. Francis production wells.

5.0 REFERENCES

ADEQ, 1999. *Abbreviated Preliminary Assessment Report; Houston International, 655 E. 20th and Street, Yuma, Arizona 85365, Yuma County; EPA ID#: AZD983480963; State ID#: 1253.* June 8, 1999.

GeoTrans, 2004. *Work Plan and Field Sampling Plan for Remedial Investigation Activities at the 20th and Factor WQARF Site, Yuma, Arizona.* November 2004.

GeoTrans, 2008. *Remedial Investigation and Early Response Actions, 20th and Factor WQARF Site, Yuma, Arizona, Request for Amendment No. 13.* June 2.

TABLES

TABLE 1

Concentrations of Compounds Detected During Active Soil Vapor Survey
September 2008
20th and Factor WQARF Site
Yuma, Arizona
in micrograms per cubic meter (µg/m3)

Volatile Organic Compounds	AAAQG (1-hour)	AAAQG (24-hour)	AAAQG (Annual)	EPA RES RSL	EPA IND RSL	SVS-1	SVS-2	SVS-3	SVS-4	SVS-5	SVS-6	SVS-7	SVS-8	SVS-9	SVS-10	SVS-11	SVS-12	SVS-13	SVS-14	SVS-15	SVS-16	SVS-17	SVS-18	SVS-19	SVS-20	SVS-21	SVS-22	SVS-23	SVS-24	SVS-25	SVS-26	SVS-27	SVS-28	SVS-29	SVS-30
PCE	1,300	640	1.7	0.41	2.08	<8.8	<8.2	<8.8	<8.8	<7.9	<8.6	10	43	<8.6	<8.1	<8.2	<8.4	<7.9	33	2,400	4,400	1,900	97	<8.4	10	<8.2	<8.4	17	30	230	1,700	4,800	1,400	<8.1	<7.9
TCE	810	210	0.58	1.2	6.13	<6.9	<6.5	<6.9	<6.9	<6.3	<6.8	<6.9	11	<6.8	<6.4	<6.5	<6.6	<6.3	<6.6	16	<17	17	<6.4	<6.6	<6.5	<6.5	<6.6	40	7.4	41	86	58	11	<6.4	<6.3
1,1-DCE	130	63	NL	210	876	<5.1	<4.8	<5.1	<5.1	<4.6	<5.0	<5.1	<4.9	<5.0	<4.7	<4.8	<4.9	<4.6	<4.9	<4.8	<12	<5.1	<4.7	<4.9	<4.8	<4.8	<4.9	<5.0	<4.9	<4.8	<4.7	<9.1	<4.6	<4.7	<4.6
cis-1,2-DCE	NL	NL	NL	NL	NL	<5.1	<4.8	<5.1	<5.1	<4.6	<5.0	<5.1	<4.9	<5.0	<4.7	<4.8	<4.9	<4.6	<4.9	<4.8	<12	<5.1	<4.7	<4.9	<4.8	<4.8	<4.9	<5.0	<4.9	<4.8	<4.7	<9.1	<4.6	<4.7	<4.6
trans-1,2-DCE	NL	NL	NL	63	263	<5.1	<4.8	<5.1	<5.1	<4.6	<5.0	<5.1	<4.9	<5.0	<4.7	<4.8	<4.9	<4.6	<4.9	<4.8	<12	<5.1	<4.7	<4.9	<4.8	<4.8	<4.9	<5.0	<4.9	<4.8	<4.7	<9.1	<4.6	<4.7	<4.6
Benzene	1,700	44	0.12	0.31	1.57	<4.1	5.7	8.3	4.3	17	7.6	10	9.7	23	200	37	<3.9	24	190	3.8	<10	4.1	5.1	6.9	8.5	4.9	4.5	<4.0	6.5	4.0	5.6	<7.3	6.3	<3.8	24
Toulene	4,400	3,000	NL	5,200	21,900	<4.9	8.3	13	<4.9	53	11	12	54	40	310	54	6.6	35	320	<4.6	<12	6.7	6.6	15	19	9.3	5.4	8.0	14	5.4	7.8	<8.6	12	<4.5	39
Ethylbenzene	4,500	3,500	NL	0.97	4.91	<5.6	<5.2	<5.6	<5.6	9.5	5.8	<5.6	11	17	100	20	11	14	99	<5.2	<14	<5.6	<5.2	<5.4	9.1	21	7.5	<5.5	7.8	12	<5.2	<9.9	5.9	<5.2	13
m,p-Xylene	5,400	3,500	NL	730	3,070	<5.6	<5.2	5.9	<5.6	28	10	6.3	43	21	78	17	38	29	110	5.7	<14	<5.6	<5.2	5.8	7.3	73	17	10	11	41	7.2	<9.9	10	<5.2	14
o-Xylene	5,400	3,500	NL	730	3,070	<5.6	<5.2	<5.6	<5.6	19	<5.5	<5.6	22	10	51	12	6.0	8.0	65	<5.2	<14	<5.6	<5.2	<5.4	<5.2	8.1	<5.4	<5.5	<5.4	5.6	<5.2	<9.9	<5.0	<5.2	<5.0
Ethanol	57,000	15,000	NL	NL	NL	22	12	24	<9.7	56	47	38	110	540	590	150	180	48	300	16	<24	15	16	21	<9.1	13	<9.3	33	26	18	22	<17	<8.8	<9.0	45
Chloromethane	770	200	0.56	94	394	<11	<10	<11	<11	<9.6	<10	<11	<10	<10	9.6 J	<10	<10	<9.6	<10	<10	<26	<11	<9.8	<10	<10	<10	<10	<10	<10	<10	<9.8	<19	<9.6	<9.8	<9.6
1,3-Butadiene	5.0	1.3	NL	0.081	0.41	<2.8	<2.7	4.9	<2.8	12	4.7	6.2	3.7	<2.8	12	<2.7	<2.7	3.7	17	5.9	<6.9	3.9	<2.6	6.8	<2.7	5.2	3.2	<2.8	3.8	<2.7	6.0	<5.1	7.9	<2.6	<2.6
Chloroethane	NL	NL	NL	NL	NL	<3.4	<3.2	<3.4	<3.4	<3.1	<3.3	<3.4	<3.2	4.5	4.7	<3.2	<3.2	<3.1	<3.2	<3.2	<8.2	4.7	<3.1	<3.2	<3.2	4.2	<3.2	<3.3	<3.2	<3.2	<3.1	<6.0	<3.1	<3.1	<3.1
Freon 11	NL	NL	NL	730	3,070	<7.2	<6.8	<7.2	<7.2	<6.5	<7.1	<7.2	<6.9	<7.1	<6.7	<6.8	<6.9	<6.5	<6.9	30	<18	<7.2	<6.7	<6.9	<6.8	<6.8	<6.9	<7.1	<6.9	<6.8	<6.7	17	30	<6.7	<6.5
Acetone	20,000	14,000	NL	32,000	135,000	54	50	190	180	440	190	310	530	1,700 E	2,100 E	750	130	220	1,500 E	150	83	72	130	150	220	68	55	390	120	140	150	49	59	40	200
2-Propanol	NL	NL	NL	NL	NL	<13	<12	15	<13	67	16	21	25	160	110	40	36	18	110	<12	<31	<13	<12	<12	<12	<12	<12	14	12	16	14	<22	16	<12	130
CD	90	24	NL	730	3,070	4.6	28	18	62	13	14	6.2	25	29	170	33	<3.8	5.6	31	12	13	23	12	18	28	9.5	6.7	19	11	13	12	<7.1	5.4	7.3	25
MC	NL	NL	NL	5.2	26.1	<4.5	<4.2	<4.5	<4.5	68	<4.4	<4.5	<4.3	18	<4.1	<4.2	<4.3	<4.0	<4.3	5.1	<11	<4.5	<4.1	<4.3	<4.2	<4.2	<4.3	<4.4	<4.3	<4.2	<4.1	<8.0	<4.0	<4.1	25
Hexane	5,400	1,400	NL	730	3,070	<4.5	6.5	12	5.0	13	9.0	8.3	11.0	35	67	11	<4.4	16	180	<4.3	<11	<4.5	8.0	8.0	16	<4.3	<4.4	10	16	<4.3	4.2	<8.1	10	<4.2	13
MEK	600	160	NL	5,200	21,900	25	18	39	34	66	37	53	120	370	430	180	64	87	470	34	18	14	22	28	33	17	12	25	18	17	16	14	19	9.5	40
Chloroform	60	16	0.043	0.11	0.533	<6.3	<5.9	<6.3	<6.3	25	<6.2	7.5	<6.0	8.2	<5.8	<5.9	<6.0	<5.7	<6.0	100	<15	280	6.3	<6.0	9.6	220	59	<6.2	11	25	29	<11	150	<5.8	19
Cyclohexane	NL	NL	NL	6,300	26,300	<4.4	<4.2	<4.4	<4.4	<4.0	<4.4	<4.4	6.6	<4.4	16	4.2	<4.2	<4.0	18	<4.2	<11	<4.4	<4.1	4.4	6.4	<4.2	<4.2	<4.4	<4.2	<4.2	<4.1	<7.9	<4.0	<4.1	<4.0
2,2,4-TMP	NL	NL	NL	NL	NL	<6.0	<5.6	<6.0	<6.0	<5.4	<5.9	<6.0	<5.8	<5.9	<5.6	<5.6	<5.8	<5.4	9.2	<5.6	<14	<6.0	<5.6	<5.8	<5.6	<5.6	<5.8	<5.9	<5.8	<5.6	<5.6	<11	<5.4	<5.6	<5.4
Heptane	17,000	16,000	NL	NL	NL	<5.3	7.0	9.7	<5.3	11	6.7	8.4	19	32	100	17	<5.1	17	140	<5.0	<13	<5.3	<4.9	7.1	11	<5.0	<5.1	<5.2	7.9	<5.0	<4.9	<9.4	7.7	<4.9	9.3
BDCM	78	21	0.056	0.066	0.331	<8.6	<8.1	<8.6	<8.6	<7.8	<8.5	<8.6	<8.3	<8.5	<8.0	<8.1	<8.3	<7.8	<8.3	16	<21	95	<8.0	<8.3	<8.1	70	<8.3	<8.5	<8.3	<8.1	<8.0	<15	12	<8.0	10
4-Methyl-2-Pentanone	NL	NL	NL	3,100	13,100	<5.3	<5.0	<5.3	<5.3	<4.8	<5.2	<5.3	<5.0	11	11	<5.0	5.3	<4.8	21	<5.0	<13	<5.3	<4.9	<5.0	<5.0	<5.0	<5.0	<5.2	<5.0	<5.0	<4.9	<9.4	<4.8	<4.9	<4.8
2-Hexanone	NL	NL	NL	31	131	<21	<20	<21	<21	<19	<21	<21	<20	22	27	<20	<20	<19	60	<20	<51	<21	<19	<20	<20	<20	<20	<21	<20	<20	<19	<38	<19	<19	<19
Stryene	NL	NL	NL	1,000	4,380	<5.5	<5.2	<5.5	<5.5	<5.0	<5.4	<5.5	<5.3	<5.4	33	6.8	<5.3	<5.0	8.2	<5.2	<13	<5.5	<5.1	<5.3	<5.2	<5.2	<5.3	<5.4	<5.3	<5.2	<5.1	<9.8	<5.0	<5.1	<5.0
Cumene	NL	NL	NL	420	1,750	<6.3	<5.9	<6.3	<6.3	<5.7	<6.2	<6.3	<6.1	<6.2	10	<5.9	<6.1	<5.7	14	<5.9	<15	<6.3	<5.8	<6.1	<5.9	<5.9	<6.1	<6.2	<6.1	<5.9	<5.8	<11	<5.7	<5.8	<5.7
Propylbenzene	NL	NL	NL	1,000	4,380	<6.3	<5.9	<6.3	<6.3	<5.7	<6.2	<6.3	<6.1	<6.2	21	<5.9	<6.1	<5.7	32	<5.9	<15	<6.3	<5.8	<6.1	<5.9	<5.9	<6.1	<6.2	<6.1	<5.9	<5.8	<11	<5.7	<5.8	<5.7
4-Ethyltoluene	NL	NL	NL	NL	NL	<6.3	<5.9	<6.3	<6.3	<5.7	<6.2	<6.3	18	11	29	8.3	<6.1	<5.7	35	<5.9	<15	<6.3	<5.8	<6.1	<5.9	<5.9	<6.1	<6.2	<6.1	<5.9	<5.8	<11	<5.7	<5.8	<5.7
1,3,5-TMB	1,400	990	NL	NL	NL	<6.3	<5.9	<6.3	<6.3	<5.7	<6.2	<6.3	14	<6.2	<5.8	<5.9	<6.1	<5.7	<6.1	<5.9	<15	<6.3	<5.8	<6.1	<5.9	<5.9	<6.1	<6.2	<6.1	<5.9	<5.8	<11	<5.7	<5.8	<5.7
1,2,4-TMB	1,400	990	NL	7.3	30.7	<6.3	<5.9	<6.3	<6.3	11	<6.2	<6.3	37	12	19	6.6	<6.1	<5.7	26	<5.9	<15	<6.3	<5.8	<6.1	<5.9	<5.9	<6.1	<6.2	<6.1	<5.9	<5.8	<11	<5.7	<5.8	<5.7

Notes:

ADHS = Arizona Department of Health Services

AAAQG = Arizona Ambient Air Quality Guidelines

EPA RES RSL = EPA Residential Regional Screening Level (formerly Preliminary Remediation Goal [PRG])

EPA IND RSL = EPA Industrial Regional Screening Level (formerly Preliminary Remediation Goal [PRG])

PCE = Tetrachloroethene

TCE = Trichloroethene

1,1-DCE = 1,1 Dichloroethene

BDCM = Bromodichloromethane

CD = Carbon Disulfide

MC = Methylene Chloride

MEK = 2-Butanone (Methyl Ethyl Ketone)

1,2,4-TMB = 1,2,4-Trimethylbenzene

1,3,5-TMB = 1,3,5-Trimethylbenzene

2,2,4-TMP = 2,2,4-Trimethylpentane

22	Concentrations detected at or above the laboratory reporting limit
10	Concentrations detected at or above the EPA Residential RSL

E = Exceeds instrument calibration range

J = Estimated value

NL = Not listed in the EPA's May 2010 RSL Table and/or the 1999 DRAFT ADHS AAAQG Guidelines

VOCs were sampled and analyzed in accordance with EPA Method TO-15.

TABLE 2

CONCENTRATIONS OF COMPOUNDS DETECTED IN SOIL VAPOR SAMPLES
DECEMBER 2003 THROUGH MARCH 2010
20th and Factor WQARF Site, Yuma, Arizona
in microgram per cubic meter [ug/m3]

Sample Location	Date	Sample Type	Sample Probe Screened Interval (in feet bgs)	Volatile Organic Compounds (VOCs)																															Hydrogen Cyanide
				PCE	TCE	1,1-DCE	1,1,1-TCA	Benzene	Toulene	Ethylbenzene	m,p-Xylene	o-Xylene	Ethanol	Chloromethane	Chloroethane	Acetone	2-Propanol	CD	MC	Hexane	MEK	THF	Chloroform	Cyclohexane	2,2,4-TMP	Heptane	BDCM	4-Methyl-2-Pentanone	2-Hexanone	Stryene	Propylbenzene	4-Ethyltoluene	1,3,5-TMB	1,2,4-TMB	HCN
SVMW-1A	12/18/2003	Post Purge	19.5 to 20	160,000	<5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS
	1/8/2004	Post Purge		20,000 D2	<250	<250	<250*	<250	<250	<250	<500	<250	NR	<250	<250	<2,500	<500	<250	<250	<250	<500	<1,000	<250	<250	<250	<250	<250	<500	<500	<250	NR	<250	<250	<250	140
	4/24/2008	Post Purge		28,000 D2	<550	<410	<550	<320	<380	<440	<880	<440	NR	<210	<270	<2,400	<1,000	<320	<350	<360	<600	<1,200	<500	<350	<470	<420	<680	<830	<830	<430	NR	<440	<500	<500	<10
	3/11/2010	No Purge		4,500	29	19	131	4.5	24	<4.3	14	9.1	NR	37	<2.6	57	<10	1,100 D2	<3.5	4.2	10	<12	54	<3.4	<4.7	<4.1	9.4	<8.2	<8.2	<4.3	NR	<8.2	<4.9	6.4	<7.78
SVMW-1B	12/18/2003	Post Purge	34.5 to 35	170,000	<10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS
	1/8/2004	Post Purge		36,000 D2	<250	250 D2	270 D2	<250	<250	<250	<500	<250	NR	<250	<250	<2,500	<500	<250	<250	<250	<500	<1,000	<250	<250	<250	<250	<250	<500	<500	<250	NR	<250	<250	<250	110
	4/24/2008	Post Purge		8,300 D2	<280	<210	<210	<160	<190	<220	<440	<220	NR	<50	<50	<1,200	<500	<160	<180	<180	<300	<600	<250	<170	<240	<210	<340	<420	<420	<220	NR	<220	<250	<250	<10
	3/11/2010	No Purge		5,200 D2	27	14	66	8.0	22	<4.3	<8.7	4.3	NR	352 D2	34	90	<10	5,900 D2	<3.5	<3.5	17	<12	59	<3.4	<4.7	12	10	<8.2	<8.2	<4.3	NR	<4.9	<4.9	6.4	<7.78
SVMW-1C	12/18/2003	Post Purge	49.5 to 50	200,000	<10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS
	1/8/2004	Post Purge		35,000 D2	<250	<250	280 D2	<250	<250	<250	<500	<250	NR	<250	<250	<2,500	<500	<250	<250	<250	<500	<1,000	<250	<250	<250	<250	<250	<500	<500	<250	NR	<250	<250	<250	110
	4/25/2008	Post Purge		13,000 D2	<280	<200	<280	<160	<190	<220	<440	<220	NR	<100	<130	<1,200	<500	<160	<180	<180	<300	<600	<250	<170	<240	<180	<340	<420	<420	<220	NR	<220	<250	<250	<10.4
	3/11/2010	No Purge		3,500 D2	22	11	87	6.1	26	4.8	19	11	NR	104 D2	11	81	<10	2,200 D2	<3.5	<3.5	12	<12	46	<3.4	<4.7	<4.1	3,500	<8.2	<8.2	<4.3	NR	<4.9	6.9	14	<7.78
SVMW-1D	12/18/2003	Post Purge	64.5 to 65	240,000	<10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS
	1/8/2004	Post Purge		32,000 D2	<250	<250	270 D2	<250	<250	<250	<500	<250	NR	<250	<250	<2,500	<500	<250	<250	<250	<500	<1,000	<250	<250	<250	<250	<250	<500	<500	<250	NR	<250	<250	<250	<100
	4/25/2008	Post Purge		7,600 D2	<280	<200	<280	<160	<190	<220	<440	<220	NR	<100	<130	<1,200	<500	<160	<180	<180	<300	<600	<250	<170	<240	<210	<340	<420	<420	<220	NR	<220	<250	<250	<9.46
	3/11/2010	No Purge		224	<5.4	<4.0	32	3.5	75	<4.3	<8.7	4.3	NR	7.0	<2.6	45	<10	159 D2	<3.5	<3.5	11	<12	<4.6	<3.4	<4.7	<4.1	<6.7	<8.2	<8.2	<4.3	NR	<4.9	<4.9	8.4	<7.78
SVMW-2A	9/12/2008	Post Purge	4.5 to 5	<7.5	<5.9	<4.4	<6.0	<3.5	<4.1	31	100	11	12	<9.1	<2.9	25	59	23	<3.8	<3.9	7.4	<3.2	7.8	<3.8	<5.1	<4.5	<7.4	<4.5	<18	<4.7	<5.4	<5.4	<5.4	<5.4	<48.1
	10/7/2008	Pre Purge		5.1	18	<1.98	<2.73	3.1	60	19	56	19	NR	<1.03	<1.32	<11.9	5.3	<1.56	2	5.6	<2.95	<5.90	13	5.2	13	3.4	<3.35	<4.10	5.3	18	NR	12	11	33	<65.6
	10/21/2008	Pre Purge		8.8	<6.0	<4.4	<6.1	32	67	30	120	32	16	12	<3.0	130	36	26	8.4	<3.9	22	<3.3	8.8	<3.8	<5.2	<4.6	<7.5	<4.6	<18	<4.8	<5.5	22	6.5	25	<65.6
	10/21/2008	Post Purge		13	<6.4	<4.7	<6.5	29	81	42	170	48	16	<9.8	<3.1	78	84	<3.7	11	<4.2	13	<3.5	14	<4.1	<5.6	<4.9	<8.0	<4.9	<19	<5.1	6.5	29	8.8	31	<65.6
	11/11/2008	Pre Purge		<3.39	<2.69	<1.98	<2.73	7.7	16	18	65	14	NR	5.0	<1.32	26	10	17	4.9	2.6	5.6	<5.90	9.3	<1.72	<2.34	<2.05	<3.35	<4.10	<4.10	6.4	NR	4.9	3.8	15	<7.78
	3/8/2010	No Purge		<17	<13	<9.9	<14	8.6	57	<11	23	<11	NR	<10	<6.6	<60	<25	<7.8	<8.7	<8.8	<15	<30	17	<8.6	<12	<10	<17	<21	<21	<11	NR	<12	<12	<12	<7.78
SVMW-2B	9/12/2008	Post Purge	9.5 to 10	<7.8	<6.2	<4.5	<6.2	8.6	<4.3	<5.0	<5.0	<5.0	<8.6	<9.4	<3.0	25	<11	17	<4.0	<4.0	4.9	<3.4	9.9	<3.9	<5.3	<4.7	<7.7	<4.7	<19	<4.9	<5.6	<5.6	<5.6	<5.6	121
	10/7/2008	Pre Purge		<3.39	<2.69	<1.98	<2.73	<1.60	42	14	33	9.1	NR	<1.03	<1.32	74	9.3	8.1	1.7	2.8	8.3	<5.90	14	<1.72	<2.34	<2.05	<3.35	4.1	<4.10	17	NR	9.8	6.9	20	<65.6
	10/21/2008	Pre Purge		12	<6.2	<4.5	<6.2	40	82	38	140	41	17	170	<3.0	130	47	11	11	<4.0	17	<3.4	13	<3.9	<5.3	<4.7	<7.7	<4.7	<19	<4.9	5.8	24	7.0	26	<65.6
	10/21/2008	Post Purge		9.9	<6.2	<4.5	<6.2	32	72	34	130	38	10	23	<3.0	48	<11	<3.6	6.9	<4.0	13	7.2	19	<3.9	<5.3	<4.7	<7.7	<4.7	<19	<4.9	5.7	25	7.9	29	<65.6
	11/11/2008	Pre Purge		6.8	<2.69	<1.98	<2.73	12	35	21	78	17	NR	91	<1.32	59	6.4	14	3.8	4.9	9.7	<5.90	13	2.2	<2.34	3.7	<3.35	<4.10	<4.10	6.0	NR	5.9	4.1	17	<7.78
	3/8/2010	No Purge		25	<13	<9.9	<14	<8.0	34	<11	<22	<11	NR	23	<6.6	<60	<25	21	<8.7	<8.8	<15	<30	20	<8.6	<12	<10	<17	<21	<21	<11	NR	<12	<12	<12	<7.78
SVMW-3A	9/12/2008	Post Purge	4.5 to 5	21	<6.6	<4.9	<6.73	<3.9	<4.6	6.1	20	<5.4	<9.3	<10	<3.2	24	22	7.2	<4.3	<4.4	5.7	<3.6	8.8	<4.2	<5.8	<5.1	<8.3	<5.0	<20	<5.3	<6.1	<6.1	<6.1	<6.1	117
	10/7/2008	Pre Purge		54	70	<1.98	<2.73	3.8	130	43	170	74	NR	<1.03	<1.32	24	<4.92	3.1	<1.74	4.9	<2.95	<5.90	4.9	2.5	<2.34	4.5	<3.35	<4.10	<4.10	19	NR	37	27	76	<65.6
	10/21/2008	Pre Purge		34	<6.5	<4.8	<6.6	75	150	56	220	62	32	22	<3.2	130	46	24	16	4.7	26	8.4	7.1	<4.2	<5.6	<5.0	<8.1	<5.0	<20	5.3	9.4	41	12	43	<65.6
	10/21/2008	Post Purge		33	<6.6	<4.9	<6.7	62	150	56	220	64	26	<10	<3.2	110	36	<3.8	15	4.6	23	9.1	7.3	<4.2	<5.8	<5.1	<8.3	<5.0	<20	<5.3	9.2	39	12	40	<65.6
	11/12/2008	Pre Purge		24	4.5	<1.98	<2.73	8.6	18	22	83	18	NR	7.9	<1.32	31	6.6	15	3.5	1.9	7.4	<5.90	5.4	<1.72	<2.34	<2.05	<3.35	<4.10	<4.10	7.7	NR	5.9	4.3	18	<7.78
	3/9/2010	No Purge		20	<5.4	<4.0	<5.5	<3.2	12	<4.3	24	11	NR	<4.1	<2.6	29	<10	4.0	<3.5	<3.5	<5.9	<12	<4.9	<3.4	<4.7	<4.1	<6.7	<8.2	<8.2	<4.3	NR	<4.9	5.4	13	<7.78
SVMW-3B	9/12/2008	Post Purge	9.5 to 10	28	<6.2	<4.5	<6.2	<3.6	<4.3	9.7	31	<5.0	12	<9.4	<3.0	56	14	7.3	<4.0	<4.0	10	<3.4	9.4	<3.9	<5.3	<4.7	<7.7	<4.7	<19	<4.9	<5.6	<5.6	<5.6	<5.6	<63.1
	10/7/2008	Pre Purge		130	37	<1.98	<2.73	2.2	57	17	61	18	NR	<1.03	<1.32	5	<4.92	1.6	7.3	5.6	8.9	<5.90	8.8	2.3	<2.34	2.9	<3.35	4.5	<4.10	20	NR	16	12	32	<65.6
	10/21/2008	Pre Purge		34	<6.5	<4.8	<6.6	81	130	60	230	62	37	240	<3.2	120	47	30	16	5.1	24	5.3	8.1	<4.2	<5.6	<5.0	<8.1	<5.0	<20	5.1	8.9	37	11	38	<65.6
	10/21/2008	Post Purge		38	8.7	<4.5	<6.2	74	140	51	210	55	32	<9.4	<3.0	140	42	<3.6	17	4.9	36	9.4	9.1	<3.9	<5.3	6.3	<7.7	<4.7	<19	<4.9	8.0	34	10	38	<65.6
	11/12/2008	Pre Purge		81	12	<1.98	<2.73	9.9	22	22	83	18	NR	130	1.5	40	8.9	21	4.9	<1.76	8.0	<5.90	6.8	<1.72	<2.34	<2.05	<3.35	<4.10	<4.10	7.2	NR	11	7.9	30	<7.78
	3/9/2010	No Purge		24	<5.4	<4.0	<5.5	<3.2	13	<4.3	10	<4.3	NR	37	<2.6	<24	<10	11	<3.5	<3.5	<5.9	<12	5.4	<3.4	<4.7	<4.1	<6.7	<8.2	<8.2	<4.3	NR	<4.9	<4.9	<4.9	<7.78
SVMW-4A	9/12/2008	Post Purge	4.5 to 5	11	<6.5	<4.8	<6.6	<3.9	<4.6	5.4	16	<5.2	<9.1	<10	<3.2	51	16	12	<4.2	<4.3	8.6	<3.6	<5.9	<4.2	<5.6	<5.0	<8.1	<5.0	<20	<5.2	<5.9	<5.9	<5.9	<5.9	<63.1
	10/7/2008	Pre Purge		12	<2.69	<1.98	<2.73	<1.60	49	16	38	11	NR	<1.03	<1.32	71	<4.92	2.2	<1.74	3.5	11	<5.90	<2.44	1.9	<2.34	<2.05	<3.35	4.1	<4.10	20	NR	12	6.9	19	<65.6
	10/21/2008	Pre Purge		23	<6.4	<4.7	<6.5	210	110	56	220	59	44	24	<3.1	160	81	25	17	4.7	28	4.4	<5.8	<4.1	<5.6	<4.9	<8.0	<4.9	<19	<5.1	7.8	34	9.6	32	<65.6
	10/21/2008	Post Purge		50	<6.8	<5.0	<6.9	81	130	55	230	59	26	<10	<3.3	100	39	<3.9	16	4.6	14	4.1	<6.2	<4.4	<5.9	<5.2	<8.5	<5.2	<21	<5.4	8.8	37	11	37	<65.6
	3/10/2010	No Purge		14	<5.4	<4.0	<5.5	<3.2	15	<4.3	<8.7	<4.3	NR	<4.1	<2.6	26	<10	4.7	<3.5	3.9	<5.9	<12	<4.9	<3.4	<4.7	<4.1	<6.7	<8.2	<8.2	<4.3	NR	<4.9	<4.9	<4.9	<7.78
SVMW-4B	9/12/2008	Post Purge	9.5 to 10	12	<6.6	<4.9	<6.7	<3.9	<4.6	5.7	18	<5.4	<9.3	<10	<3.2	30	12	<3.8	<4.3	<4.4	6.9	<3.6	<6.0	<4.2	<5.8	<5.1	<8.3	<5.0	<20	<5.3	<6.1	<6.1	<6.1	<6.1	<63.1
	10/7/2008	Pre Purge		24	5.9	<1.98	<2.73	3.1	57	17	43	13	NR	<1.03	<1.32	33	<4.92	2.2	1.9	3	6.5	<5.90	<2.44	2.6	<2.34	2.6	<3.35	<4.10	<4.10	21	NR	17	8.4	26	<65.6
	10/21/2008	Pre Purge		25	<6.9	<5.1	<7.0	97	90	50	200	54	58	260	3.8	260	100	23	14	<4.5	30	6.7	<6.3	<4.4	<6.0	<5.3	<8.6	<5.3	<21	<5.5	7.4	32	10	34	<65.6
	10/21/2008	Post Purge		23	<6.3	<4.6	<6.4	240	100	54	210	55	39	<9.6	<3.1	120	35	<3.6	13	4.3	40	8.5	<5.7	<4.0	<5.4	5.4	<7.8	<4.8	<19	4.9	8.0	32	9.5	32	<65.6
	3/10/2010	No Purge		14	<5.4	<4.0	<5.5	13	64	10	91	33	NR	33	<2.6	<24	<10	15	<3.5	12	<5.9	<12	<4.9	<3.4	11	7.4	<6.7	<8.2	<8.2	<4.3	NR	15	12	36	<7.78

TABLE 2
CONCENTRATIONS OF COMPOUNDS DETECTED IN SOIL VAPOR SAMPLES
DECEMBER 2003 THROUGH MARCH 2010
20th and Factor WQARF Site, Yuma, Arizona
in microgram per cubic meter [ug/m3]

Sample Location	Date	Sample Type	Sample Probe Screened Interval (in feet bgs)	Volatile Organic Compounds (VOCs)																													Hydrogen Cyanide
				PCE	TCE	1,1-DCE	1,1,1-TCA	Benzene	Toulene	Ethylbenzene	m,p-Xylene	o-Xylene	Ethanol	Chloromethane	Chloroethane	Acetone	2-Propanol	CD	MC	Hexane	MEK	THF	Chloroform	Cyclohexane	2,2,4-TMP	Heptane	BDCM	4-Methyl-2-Pentanone	2-Hexanone	Stryene	Propylbenzene	4-Ethyltoluene	1,3,5-TMB	1,2,4-TMB	HCN
SVMW-5A	3/9/2009	No Purge	4.5 to 5	<17	<13.4	<10.1	<13.6	<7.99	31	24	160	87	NR	<5.16	<6.60	<59.4	37	11	30	11	38	50	16	<8.61	<11.7	11	<16.8	<20.5	<20.5	<10.6	NR	98	180	320	<7.78
	3/9/2010	No Purge		<6.8	<5.4	<4.0	<5.5	<3.1	17	<4.3	16	8.2	NR	<4.1	<2.6	<24	<10	3.7	<3.5	<3.5	<5.9	<12	33	<3.4	<4.7	<4.1	<6.7	<8.2	<8.2	<4.3	NR	<4.9	4.9	9.8	<7.78
SVMW-5B	3/9/2009	No Purge	9.5 to 10	6.3	3.6	<1.98	<2.73	4.8	87	31	110	33	NR	7.4	<1.32	57	<4.92	30	3.5	<1.76	68	110	36	4.5	3.8	<2.05	<3.35	12	5.3	10	NR	43	79	190	<7.78
	3/9/2010	No Purge		<6.8	<5.4	<4.0	<5.5	<3.1	15	<4.3	<8.7	<4.3	NR	4.1	<2.6	29	<10	13	<3.5	<3.5	<5.9	<12	33	<3.4	<4.7	<4.1	<6.7	<8.2	<8.2	<4.3	NR	<4.9	<4.9	<4.9	<7.78
SVMW-6A	3/10/2009	No Purge	4.5 to 5	<17.0	<13.4	<9.91	<13.6	<7.99	25	<10.9	65	38	NR	<5.16	<6.60	<59.4	<24.6	16	13	12	41	35	<12.2	<8.61	<11.7	<10.2	<16.8	<20.5	<20.5	<10.6	NR	47	89	160	<7.78
	3/8/2010	No Purge		16	<13	<9.9	<14	<8.0	24	<11	<22	<11	NR	<10	<6.6	<60	<25	<7.8	<8.7	<8.8	<15	<30	<12	<8.6	<12	<10	<17	<21	<21	<11	NR	<12	<12	<12	<7.78
SVMW-6B	3/10/2009	No Purge	9.5 to 10	10	<2.69	<1.98	<2.73	6.7	110	30	100	29	NR	12	<1.32	90	<4.92	16	5.9	<1.76	130	91	9.8	6.2	4.2	<2.05	<3.35	24	9.8	9.4	NR	42	54	140	<7.78
	3/8/2010	No Purge		55	<13	<9.9	<14	<8.0	25	<11	<22	<11	NR	<10	<6.6	<60	<25	13	<8.7	<8.8	<15	<30	<12	<8.6	<12	<10	<17	<21	<21	<11	NR	<12	16	43	<7.78
SVMW-7A	3/10/2009	No Purge	4.5 to 5	<17.0	<13.4	<9.91	<13.6	<7.99	34	<10.9	33	4.8	NR	<5.16	<6.60	<59.4	27	17	13	<8.81	38	44	<12.2	<8.61	<11.7	<10.2	<16.8	<20.5	<20.5	<10.6	NR	<12.3	<12.3	<12.3	<7.78
	3/8/2010	No Purge		<17	<13	<9.9	<14	<8.0	15.0	<11	<22	<11	NR	<10	<6.6	<60	<25	<7.8	<8.7	<8.8	<15	<30	49	<8.6	<12	<10	<17	<21	<21	<11	NR	<12	<12	<12	<7.78
SVMW-7B	3/10/2009	No Purge	9.5 to 10	<17.0	29	<9.91	<13.6	<7.99	57	14	42	<10.9	NR	<5.16	<6.60	74	<24.3	<7.78	10	<8.81	64	53	16	<8.61	<11.7	<10.2	<16.8	<20.5	<20.5	<10.6	NR	<12.3	<12.3	<12.3	<7.78
	3/8/2010	No Purge		<17	<13	<9.9	<14	<8.0	45	<11	100	59	NR	<10	<6.6	<60	<25	<7.8	<8.7	<8.8	<5.0	<10	11	<8.6	<12	11	<17	<21	<21	<11	NR	13	31	33	<7.78
SVMW-8A	3/10/2010	No Purge	2.5 to 5	26	<13	<9.9	<14	<3.2	14	<4.3	9.5	<4.3	NR	<4.1	<2.6	43	<10	12	<3.5	9.5	<5.9	<12	6.8	<3.4	<4.7	<4.1	<6.7	<8.2	<8.2	<4.3	NR	<4.9	<4.9	7.4	<7.78
SVMW-8B	3/10/2010	No Purge	7.5 to 10	35	<5.4	<4.0	<5.5	<3.2	17	12	334	308 D2	NR	5.0	<2.6	40	<10	21	<3.5	4.2	<5.9	<12	9.3	<3.4	<4.7	4.5	<6.7	<8.2	<8.2	<4.3	NR	89	241	590 D2	<7.78
SVMW-8C	3/10/2010	No Purge	17.5 to 20	35	<5.4	<4.0	<5.5	6.7	139	6.1	15	5.6	NR	39	<2.6	90	<10	72	<3.5	6.3	<5.9	<12	12	<3.4	<4.7	9.0	<6.7	<8.2	<8.2	<4.3	NR	<4.9	<4.9	9.8	<7.78
SVMW-8D	3/10/2010	No Purge	27.5 to 30	16	<5.4	<4.0	<5.5	5.1	16	<4.3	<8.7	<4.3	NR	5.8	<2.6	81	<10	9.0	<3.5	3.5	<5.9	<12	<4.9	<3.4	<4.7	4.9	<6.7	<8.2	<8.2	<4.3	NR	<4.9	<4.9	6.4	<7.78
SVMW-8E	3/10/2010	No Purge	37.5 to 40	68	13	<4.0	<5.5	<3.2	14	<4.3	12	5.2	NR	<4.1	<2.6	55	<10	16	<3.5	<3.5	13	<12	24	<3.4	<4.7	<4.1	<6.7	<8.2	<8.2	<4.3	NR	<4.9	6.4	15	<7.78
SVMW-8F	3/10/2010	No Purge	47.5 to 50	12	<5.4	<4.0	<5.5	12	49	4.3	13	6.1	NR	56	4.2	309 D2	<10	65	3.8	<3.5	47	<12	6.8	<3.4	<4.7	18	<6.7	<8.2	<8.2	<4.3	NR	<4.9	<4.9	7.4	<7.78
SVMW-8G	3/11/2010	No Purge	57.5 to 60	16	<5.4	<4.0	<5.5	5.7	21	<4.3	13	5.2	NR	13	<2.6	107	<10	17	<3.5	5.6	11	<12	<4.9	<3.4	<4.7	7.0	<6.7	<8.2	<8.2	<4.3	NR	<4.9	<4.9	6.4	<7.78
SVMW-8H	3/11/2010	No Purge	67.5 to 70	<6.8	<5.4	<4.0	<5.5	<3.2	14	<4.3	<8.7	<4.3	NR	<4.1	<2.6	60	<10	<3.1	<3.5	3.5	8.3	<12	<4.9	<3.4	<4.7	4.5	<6.7	<8.2	<8.2	<4.3	NR	<4.9	<4.9	<4.9	<7.78
SVMW-9A	3/12/2010	No Purge	4.5 to 5	95	<5.4	<4.0	<5.5	12	53	5.2	30	12	NR	<4.1	<2.6	131 D2	<10	14	<3.5	6.3	12	<12	21	<3.4	5.6	<4.1	<6.7	<8.2	<8.2	<4.3	NR	5.4	5.4	11	<7.78
SVMW-9B	3/12/2010	No Purge	9.5 to 10	163	<5.4	<4.0	<5.5	4.8	49	<4.3	17	8.7	NR	18	<2.6	36	<10	8.1	<3.5	4.9	<5.9	<12	45.0	<3.4	5.1	<4.1	22	<8.2	<8.2	<4.3	NR	<4.9	11	12	<7.78
SVMW-10A	3/11/2010	No Purge	4.5 to 5	251	<5.4	<4.0	<5.5	30	83	65	256	139	NR	<4.1	<2.6	238 D2	<10	131	<3.5	<3.5	32	<12	6.3	<3.4	14	25.0	<6.7	<8.2	<8.2	<4.3	NR	74	167	187	<7.78
SVMW-10B	3/11/2010	No Purge	9.5 to 10	515 D2	7.0	<4.0	<5.5	6.1	113	4.8	20	8.7	NR	23	<2.6	164 D2	<10	22	<3.5	<3.5	30	<12	16	<3.4	<4.7	<4.1	<6.7	<8.2	<8.2	<4.3	NR	<4.9	<4.9	10	<7.78
SVMW-11A	3/9/2010	No Purge	4.5 to 5	3,100	<54	<41	<55	<32	<38	<43	<87	<43	NR	<41	<26	<238	<98	<31	<35	<35	<59	<118	<49	<34	<47	<41	<67	<82	<82	<43	NR	<49	<49	<49	<7.78
SVMW-11B	3/9/2010	No Purge	9.5 to 10	4,500	59	<41	<55	<32	41	<43	<87	<43	NR	<41	<26	309 D2	<98	<31	<35	<35	<59	<118	73	<34	<47	<41	<67	<82	<82	<43	NR	<49	<49	<49	<7.78
SVMW-12A	3/9/2010	No Purge	4.5 to 5	51	<13	<9.9	<14	11	26	<11	24	<11	NR	<10	<6.6	160 D2	<25	34	<8.7	<8.8	<15	<30	22	<8.6	<12	<10	<17	<21	<21	<11	NR	<12	<12	<12	<7.78
SVMW-12B	3/9/2010	No Purge	9.5 to 10	81	<13	<9.9	<14	11	64	<11	<18	<4.3	NR	23	<6.6	330 D2	<25	34	<8.7	<8.8	<15	<30	36	<8.6	<12	11	<17	<21	<21	<11	NR	<12	<12	<12	<7.78
ADHS AAAQG (1-hour)				1,300	810	130	57,000	1,700	4,400	4,500	5,400	5,400	57,000	770	NL	20,000	NL	90	NL	5,400	600	6,100	60	NL	NL	17,000	78	NL	NL	NL	NL	NL	1,400	1,400	100
ADHS AAAQG (24-hour)				640	210	63	15,000	44	3,000	3,500	3,500	3,500	15,000	200	NL	14,000	NL	24	NL	1,400	160	4,700	16	NL	NL	16,000	21	NL	NL	NL	NL	NL	990	990	40
ADHS AAAQG (Annual)				1.7	0.58	NL	NL	0.12	NL	NL	NL	NL	NL	0.56	NL	NL	NL	NL	NL	NL	NL	NL	0.043	NL	NL	NL	0.056	NL	NL	NL	NL	NL	NL	NL	NL
EPA Residential RSL				0.41	1.2	210	5,200	0.31	5,200	0.97	730	730	NL	94	NL	32,000	NL	730	5.2	730	5,200	NL	0.11	6,300	NL	NL	0.066	3,100	31	1,000	1,000	NL	NL	7.3	3.1
EPA Industrial RSL				2.08	6.13	876	21,900	1.57	21,900	4.91	3,070	3,070	NL	394	NL	135,000	NL	3,070	26.1	3,070	21,900	NL	0.533	26,300	NL	NL	0.331	13,100	131	4,380	4,380	NL	NL	30.7	13.1

ADHS = Arizona Department of Health Services

AAAQG = Arizona Ambient Air Quality Guidelines

EPA = Environmental Protection Agency

RSL = Regional Screening Level (formerly Preliminary Remediation Goal [PRG])

PCE = Tetrachloroethene

TCE = Trichloroethene

1,1-DCE = 1,1 Dichloroethene

1,1,1-TCA = 1,1,1-Trichloroethane

BDCM = Bromodichloromethane

CD = Carbon Disulfide

MC = Methylene Chloride

MEK = 2-Butanone (Methyl Ethyl Ketone)

THF = Tetrahydrofuran

1,2,4-TMB = 1,2,4-Trimethylbenzene

1,3,5-TMB = 1,3,5-Trimethylbenzene

2,2,4-TMP = 2,2,4-Trimethylpentane

NL = Not listed in the EPA's May 2010 RSL Table and/or the 1999 DRAFT ADHS AAAQG Guidelines

NR = Compound was not reported in laboratory analytical reports.

NS = Not Sampled

NA = Not analyzed

bgs = below ground surface

VOCs were sampled and analyzed in accordance with EPA Method TO-15.

Hydrogen Cyanide was sampled and analyzed in accordance with NIOSH Method 6010

During the March 2010 sampling event, all soil vapor samples required dilution to matrix effects, except samples collected from SVMW-1A/B/C/D, SVMW-8B, SVMW-8F, SVMW-11A/B, SVMW-12A/B.

D2 = Sample required dilution to high concentrations of target analyte.

* = 1,1,1-TCA was detected in the duplicate sample at a concentration of 260 ppbv.

31	Concentrations shown in bold were detected at or above laboratory detection limit
12	Concentrations at or above the EPA Residential PRGs

TABLE 3
DEPTH TO GROUNDWATER MEASUREMENTS AND GROUNDWATER ELEVATIONS
October 1992 through April 2010

20th and Factor WQARF Site, Yuma, Arizona

WELL	DATE	DTW	CASING ELEVATION	ELEVATION
		feet	ft amsl	ft amsl
A-Zone Groundwater Monitoring Wells				
MW-1A	10/26/1992	74.20	198.84	124.64
	3/19/1993	72.44	198.84	126.40
	4/21/1993	72.58	198.84	126.26
	6/2/1993	72.66	198.84	126.18
	3/21/1996	72.39	198.84	126.45
	10/3/1996	72.60	198.84	126.24
	6/11/2001	76.89	198.84	121.95
	6/16/2001	76.89	198.84	121.95
	6/25/2001	76.89	198.84	121.95
	1/29/2002	77.09	198.84	121.75
	10/1/2002	76.82	198.84	122.02
	6/7/2004	78.08	198.84	120.76
	11/22/2004	78.17	198.84	120.67
	3/2/2005	78.10	198.84	120.74
	5/31/2005	78.13	198.84	120.71
	10/25/2005	78.34	198.84	120.50
	1/4/2006	78.09	198.84	120.75
	2/20/2006	78.19	198.84	120.65
	3/27/2006	78.18	198.84	120.66
	4/27/2006	78.31	198.84	120.53
	5/15/2006	78.42	198.84	120.42
	10/2/2006	77.40	198.84	121.44
	11/28/2006	78.37	198.84	120.47
	2/19/2007	78.43	198.84	120.41
	5/11/2007	78.39	198.84	120.45
	7/30/2007	78.28	198.84	120.56
	11/12/2007	77.75	198.84	121.09
	2/18/2008	77.42	198.84	121.42
	5/12/2008	77.36	198.84	121.48
	8/4/2008	77.22	198.84	121.62
MW-2A	1/7/1993	72.21	199.11	126.90
	3/19/1993	72.33	199.11	126.78
	4/21/1993	72.54	199.11	126.57
	6/2/1993	72.56	199.11	126.55
	3/21/1996	72.33	199.11	126.78
	10/3/1996	73.00	199.11	126.11
	6/11/2001	77.37	199.11	121.74
	6/16/2001	77.31	199.11	121.80
	6/25/2001	77.41	199.11	121.70
	1/29/2002	77.54	199.11	121.57
	10/1/2002	77.23	199.11	121.88
	6/7/2004	78.58	199.11	120.53
	11/22/2004	78.60	199.11	120.51
	3/2/2005	78.49	199.11	120.62
	5/31/2005	78.16	199.11	120.95
	10/25/2005	78.81	199.11	120.30
	1/4/2006	78.51	199.11	120.60
	2/20/2006	78.61	199.11	120.50
	3/27/2006	78.61	199.11	120.50
	4/27/2006	78.75	199.11	120.36
	5/15/2006	78.87	199.11	120.24
	10/2/2006	78.72	199.11	120.39
	11/28/2006	78.73	199.11	120.38
	2/19/2007	78.78	199.11	120.33
	5/11/2007	78.74	199.11	120.37
	7/30/2007	78.66	199.11	120.45
	11/12/2007	78.16	199.11	120.95
	2/18/2008	77.83	199.11	121.28
	5/12/2008	77.71	199.11	121.40
	8/4/2008	77.60	199.11	121.51
MW-3A	3/19/1993	72.16	198.70	126.54
	4/21/1993	72.32	198.70	126.38
	6/2/1993	72.40	198.70	126.30
	3/21/1996	72.13	198.70	126.57
	10/3/1996	72.35	198.70	126.35
	6/11/2001	76.68	198.70	122.02
	6/16/2001	76.71	198.70	121.99
	6/25/2001	76.70	198.70	122.00
	1/29/2002	76.86	198.70	121.84

TABLE 3
DEPTH TO GROUNDWATER MEASUREMENTS AND GROUNDWATER ELEVATIONS
October 1992 through April 2010

20th and Factor WQARF Site, Yuma, Arizona

WELL	DATE	DTW	CASING ELEVATION	ELEVATION
		feet	ft amsl	ft amsl
MW-3A	10/1/2002	76.56	198.70	122.14
	6/7/2004	77.88	198.70	120.82
	11/22/2004	77.97	198.70	120.73
	3/2/2005	77.88	198.70	120.82
	5/31/2005	77.96	198.70	120.74
	10/25/2005	78.13	198.70	120.57
	1/4/2006	77.84	198.70	120.86
	2/20/2006	77.95	198.70	120.75
	3/27/2006	77.97	198.70	120.73
	4/27/2006	78.09	198.70	120.61
	5/15/2006	78.22	198.70	120.48
	10/2/2006	78.10	198.70	120.60
	11/28/2006	78.10	198.70	120.60
	2/19/2007	78.17	198.70	120.53
	5/11/2007	78.13	198.70	120.57
	7/30/2007	78.05	198.70	120.65
	11/12/2007	77.50	198.70	121.20
	2/18/2008	77.21	198.70	121.49
	5/12/2008	77.11	198.70	121.59
	8/4/2008	76.95	198.70	121.75
MW-4A	6/7/2004	77.43	197.90	120.47
	11/22/2004	77.43	197.90	120.47
	3/2/2005	77.47	197.90	120.43
	5/31/2005	77.50	197.90	120.40
	10/25/2005	77.71	197.90	120.19
	1/4/2006	77.32	197.90	120.58
	2/20/2006	77.47	197.90	120.43
	3/27/2006	77.48	197.90	120.42
	4/27/2006	77.64	197.90	120.26
	5/15/2006	77.74	197.90	120.16
	10/2/2006	77.54	197.90	120.36
	11/28/2006	77.51	197.90	120.39
	2/19/2007	77.58	197.90	120.32
	5/11/2007	77.56	197.90	120.34
	7/30/2007	77.47	197.90	120.43
	11/12/2007	76.96	197.90	120.94
	2/18/2008	76.63	197.90	121.27
	5/12/2008	76.46	197.90	121.44
	8/4/2008	76.34	197.90	121.56
MW-5A	1/29/2002	77.01	198.25	121.24
	10/1/2002	76.67	198.25	121.58
	6/7/2004	78.00	198.25	120.25
	11/22/2004	78.13	198.25	120.12
	3/2/2005	78.08	198.25	120.17
	5/31/2005	77.49	198.25	120.76
	10/25/2005	78.29	198.25	119.96
	1/4/2006	77.87	198.25	120.38
	2/20/2006	78.03	198.25	120.22
	3/27/2006	78.01	198.25	120.24
	4/27/2006	78.21	198.25	120.04
	5/15/2006	78.28	198.25	119.97
	10/2/2006	78.09	198.25	120.16
	11/28/2006	78.03	198.25	120.22
	2/19/2007	78.10	198.25	120.15
	5/11/2007	78.08	198.25	120.17
	7/30/2007	78.01	198.25	120.24
	11/12/2007	77.49	198.25	120.76
	2/18/2008	77.12	198.25	121.13
	5/12/2008	76.94	198.25	121.31
	8/4/2008	76.88	198.25	121.37
MW-6A	1/29/2002	76.38	197.63	121.25
	10/1/2002	76.12	197.63	121.51
	6/7/2004	77.41	197.63	120.22
	11/22/2004	77.46	197.63	120.17
	3/2/2005	77.32	197.63	120.31
	5/31/2005	77.37	197.63	120.26
	10/25/2005	77.64	197.63	119.99
	1/4/2006	77.29	197.63	120.34
	2/20/2006	77.40	197.63	120.23
	3/27/2006	77.39	197.63	120.24
	4/27/2006	77.54	197.63	120.09

TABLE 3
DEPTH TO GROUNDWATER MEASUREMENTS AND GROUNDWATER ELEVATIONS
October 1992 through April 2010

20th and Factor WQARF Site, Yuma, Arizona

WELL	DATE	DTW	CASING ELEVATION	ELEVATION
		feet	ft amsl	ft amsl
MW-6A	5/15/2006	77.65	197.63	119.98
	10/2/2006	77.54	197.63	120.09
	11/28/2006	77.49	197.63	120.14
	2/19/2007	77.51	197.63	120.12
	5/11/2007	77.55	197.63	120.08
	7/30/2007	77.44	197.63	120.19
	11/12/2007	76.92	197.63	120.71
	2/18/2008	76.57	197.63	121.06
	5/12/2008	76.42	197.63	121.21
	8/4/2008	76.35	197.63	121.28
MW-7A	1/29/2002	77.69	197.56	119.87
	10/1/2002	77.27	197.56	120.29
	6/7/2004	77.34	197.56	120.22
	11/22/2004	77.07	197.56	120.49
	3/2/2005	77.02	197.56	120.54
	5/31/2005	76.84	197.56	120.72
	10/25/2005	77.15	197.56	120.41
	1/4/2006	76.89	197.56	120.67
	2/20/2006	76.79	197.56	120.77
	3/27/2006	77.22	197.56	120.34
	4/27/2006	77.02	197.56	120.54
	5/15/2006	77.10	197.56	120.46
	10/2/2006	77.04	197.56	120.52
	11/28/2006	77.25	197.56	120.31
	2/19/2007	77.21	197.56	120.35
	5/11/2007	77.10	197.56	120.46
	7/30/2007	77.30	197.56	120.26
	11/12/2007	76.67	197.56	120.89
	2/18/2008	76.32	197.56	121.24
	5/12/2008	76.39	197.56	121.17
	8/4/2008	76.07	197.56	121.49
MW-8A	1/31/2005	76.74	195.38	118.64
	3/2/2005	76.37	195.38	119.01
	5/26/2005	76.28	195.38	119.10
	10/25/2005	76.66	195.38	118.72
	1/4/2006	76.24	195.38	119.14
	2/20/2006	76.25	195.38	119.13
	3/27/2006	76.26	195.38	119.12
	4/27/2006	76.36	195.38	119.02
	5/15/2006	76.44	195.38	118.94
	10/2/2006	76.35	195.38	119.03
	11/28/2006	76.25	195.38	119.13
	2/19/2007	76.23	195.38	119.15
	5/11/2007	76.20	195.38	119.18
	7/30/2007	76.17	195.38	119.21
	11/12/2007	75.76	195.38	119.62
	2/28/2008	75.72	195.38	119.66
	5/12/2008	75.09	195.38	120.29
	8/4/2008	75.07	195.38	120.31
	11/10/08	75.14	195.38	120.24
MW-9A	1/31/2005	77.69	194.78	117.09
	3/2/2005	77.51	194.78	117.27
	5/26/2005	77.34	194.78	117.44
	10/25/2005	77.71	194.78	117.07
	1/4/2006	77.17	194.78	117.61
	2/20/2006	77.22	194.78	117.56
	3/27/2006	77.28	194.78	117.50
	4/27/2006	77.41	194.78	117.37
	5/15/2006	77.41	194.78	117.37
	10/2/2006	77.30	194.78	117.48
	11/28/2006	77.12	194.78	117.66
	2/19/2007	77.18	194.78	117.60
	5/11/2007	77.07	194.78	117.71
	7/30/2007	77.08	194.78	117.70
	11/12/2007	76.61	194.78	118.17
	2/18/2008	76.12	194.78	118.66
	5/12/2008	75.86	194.78	118.92
	8/4/2008	75.87	194.78	118.91
	11/10/08	75.98	194.78	118.80
	4/26/2010	76.11	194.78	118.67
MW-10A	1/31/2005	80.63	194.86	114.23

TABLE 3
DEPTH TO GROUNDWATER MEASUREMENTS AND GROUNDWATER ELEVATIONS
October 1992 through April 2010

20th and Factor WQARF Site, Yuma, Arizona

WELL	DATE	DTW	CASING ELEVATION	ELEVATION
		feet	ft amsl	ft amsl
MW-10A	3/2/2005	79.76	194.86	115.10
	5/26/2005	79.62	194.86	115.24
	10/25/2005	79.84	194.86	115.02
	1/4/2006	79.24	194.86	115.62
	2/20/2006	79.42	194.86	115.44
	3/27/2006	79.49	194.86	115.37
	4/27/2006	79.63	194.86	115.23
	5/15/2006	79.69	194.86	115.17
	10/2/2006	79.50	194.86	115.36
	11/28/2006	79.34	194.86	115.52
	2/19/2007	79.40	194.86	115.46
	5/11/2007	79.30	194.86	115.56
	7/30/2007	79.27	194.86	115.59
	11/12/2007	78.80	194.86	116.06
	2/28/2008	78.22	194.86	116.64
	5/12/2008	77.94	194.86	116.92
	8/4/2008	78.01	194.86	116.85
MW-11A	5/26/2005	98.00	197.98	99.98
	10/25/2005	81.29	197.98	116.69
	1/4/2006	80.94	197.98	117.04
	2/20/2006	80.91	197.98	117.07
	3/27/2006	80.97	197.98	117.01
	4/27/2006	81.06	197.98	116.92
	5/15/2006	81.07	197.98	116.91
	10/2/2006	80.64	197.98	117.34
	11/28/2006	80.99	197.98	116.99
	2/19/2007	80.99	197.98	116.99
	5/11/2007	80.90	197.98	117.08
	7/30/2007	80.95	197.98	117.03
	11/12/2007	80.62	197.98	117.36
	2/18/2008	80.13	197.98	117.85
	5/12/2008	79.87	197.98	118.11
	8/4/2008	79.92	197.98	118.06
MW-12A	4/27/2006	75.89	195.43	119.54
	5/15/2006	75.98	195.43	119.45
	10/2/2006	75.83	195.43	119.60
	11/28/2006	75.79	195.43	119.64
	2/19/2007	75.77	195.43	119.66
	5/11/2007	75.70	195.43	119.73
	7/30/2007	75.70	195.43	119.73
	11/12/2007	75.24	195.43	120.19
	2/18/2008	74.92	195.43	120.51
	5/12/2008	74.76	195.43	120.67
	8/4/2008	74.77	195.43	120.66
	11/10/08	74.75	195.43	120.68
	4/26/2010	74.68	195.43	120.75
MW-13A	4/27/2006	81.47	198.35	116.88
	5/15/2006	81.48	198.35	116.87
	10/2/2006	81.33	198.35	117.02
	11/28/2006	81.07	198.35	117.28
	2/19/2007	81.24	198.35	117.11
	5/11/2007	81.07	198.35	117.28
	7/30/2007	81.14	198.35	117.21
	11/12/2007	80.77	198.35	117.58
	2/18/2008	80.30	198.35	118.05
	5/12/2008	80.05	198.35	118.30
	8/4/2008	80.06	198.35	118.29
	11/10/08	80.13	198.35	118.22
	4/26/2010	80.20	198.35	118.15
MW-14A	4/27/2006	77.48	196.68	119.20
	5/15/2006	77.53	196.68	119.15
	10/2/2006	77.41	196.68	119.27
	11/28/2006	77.28	196.68	119.40
	2/19/2007	77.34	196.68	119.34
	5/11/2007	77.31	196.68	119.37
	7/30/2007	77.28	196.68	119.40
	11/12/2007	76.81	196.68	119.87
	2/18/2008	76.36	196.68	120.32
	5/12/2008	76.11	196.68	120.57
	8/4/2008	76.09	196.68	120.59
MW-15A	4/27/2006	82.06	199.14	117.08

TABLE 3
DEPTH TO GROUNDWATER MEASUREMENTS AND GROUNDWATER ELEVATIONS
October 1992 through April 2010

20th and Factor WQARF Site, Yuma, Arizona

WELL	DATE	DTW	CASING ELEVATION	ELEVATION
		feet	ft amsl	ft amsl
MW-15A	5/15/2006	82.05	199.14	117.09
	10/2/2006	81.98	199.14	117.16
	11/28/2006	81.79	199.14	117.35
	2/19/2007	81.80	199.14	117.34
	5/11/2007	81.65	199.14	117.49
	7/30/2007	81.68	199.14	117.46
	11/12/2007	81.29	199.14	117.85
	2/18/2008	80.70	199.14	118.44
	5/12/2008	80.40	199.14	118.74
	8/4/2008	80.45	199.14	118.69
	11/10/08	80.59	199.14	118.55
	4/26/2010	80.72	199.14	118.42
MW-16A	5/12/2008	78.33	199.22	120.89
	8/4/2008	78.38	199.22	120.84
	11/10/08	78.43	199.22	120.79
	4/26/2010	78.61	199.22	120.61
MW-17A	11/28/2006	79.48	197.55	118.07
	2/19/2007	79.52	197.55	118.03
	5/11/2007	79.42	197.55	118.13
	7/30/2007	79.43	197.55	118.12
	11/12/2007	79.07	197.55	118.48
	2/19/2008	79.05	197.55	118.50
	5/12/2008	78.35	197.55	119.20
	8/4/2008	78.36	197.55	119.19
	11/10/08	78.36	197.55	119.19
	4/26/2010	78.52	197.55	119.03
MW-18A	11/28/2006	80.80	198.01	117.21
	2/19/2007	80.81	198.01	117.20
	5/11/2007	80.72	198.01	117.29
	7/30/2007	80.72	198.01	117.29
	11/12/2007	80.31	198.01	117.70
	2/18/2008	79.80	198.01	118.21
	5/12/2008	79.51	198.01	118.50
	8/4/2008	79.52	198.01	118.49
	11/10/08	79.64	198.01	118.37
	4/26/2010	79.77	198.01	118.24
MW-19A	11/28/2006	79.17	198.90	119.73
	2/19/2007	79.40	198.90	119.50
	5/11/2007	79.24	198.90	119.66
	7/30/2007	79.21	198.90	119.69
	11/12/2007	78.67	198.90	120.23
	2/18/2008	78.21	198.90	120.69
	5/12/2008	77.98	198.90	120.92
	8/4/2008	77.99	198.90	120.91
MW-20A	11/28/2006	78.02	196.93	118.91
	2/19/2007	78.05	196.93	118.88
	5/11/2007	77.99	196.93	118.94
	7/30/2007	77.98	196.93	118.95
	11/12/2007	77.48	196.93	119.45
	2/28/2008	76.91	196.93	120.02
	5/12/2008	76.66	196.93	120.27
	8/4/2008	76.74	196.93	120.19
MW-21A	5/11/2007	82.25	198.58	116.33
	7/30/2007	82.29	198.58	116.29
	11/12/2007	81.91	198.58	116.67
	2/18/2008	81.31	198.58	117.27
	4/16/2008	81.24	198.58	117.34
	5/12/2008	81.05	198.58	117.53
	6/12/2008	81.52	198.58	117.06
	8/4/2008	81.05	198.58	117.53
	11/10/08	81.21	198.58	117.37
	4/26/2010	81.27	198.58	117.31
MW-25A	4/26/2010	80.63	198.72	118.09
MW-101A	3/21/1996	70.27	197.20	126.93
	10/3/1996	70.49	197.20	126.71
	6/11/2001	74.81	197.20	122.39
	6/25/2001	74.84	197.20	122.36
	1/29/2002	74.96	197.20	122.24
	10/1/2002	74.96	197.20	122.24
	6/7/2004	76.09	197.20	121.11

TABLE 3
DEPTH TO GROUNDWATER MEASUREMENTS AND GROUNDWATER ELEVATIONS
October 1992 through April 2010

20th and Factor WQARF Site, Yuma, Arizona

WELL	DATE	DTW	CASING ELEVATION	ELEVATION
		feet	ft amsl	ft amsl
MW-101A	11/22/2004	76.22	197.20	120.98
	3/2/2005	76.13	197.20	121.07
	5/31/2005	76.19	197.20	121.01
	10/25/2005	76.37	197.20	120.83
	1/4/2006	76.18	197.20	121.02
	2/20/2006	76.20	197.20	121.00
	3/27/2006	76.21	197.20	120.99
	4/27/2006	76.38	197.20	120.82
	5/15/2006	76.46	197.20	120.74
	10/2/2006	76.49	197.20	120.71
	11/28/2006	76.42	197.20	120.78
	2/19/2007	76.55	197.20	120.65
	5/11/2007	76.51	197.20	120.69
	7/30/2007	76.42	197.20	120.78
	11/12/2007	75.83	197.20	121.37
	2/18/2008	75.51	197.20	121.69
	5/12/2008	75.49	197.20	121.71
	8/4/2008	75.35	197.20	121.85
	11/10/08	75.27	197.20	121.93
	4/26/2010	75.20	197.20	122.00
MW-102A	11/14/1996	72.17	198.48	126.31
	6/11/2001	76.53	198.48	121.95
	6/16/2001	76.57	198.48	121.91
	6/25/2001	76.54	198.48	121.94
	1/29/2002	76.71	198.48	121.77
	10/1/2002	76.44	198.48	122.04
	6/7/2004	77.70	198.48	120.78
	11/22/2004	77.70	198.48	120.78
	3/2/2005	77.65	198.48	120.83
	5/31/2005	77.72	198.48	120.76
	10/25/2005	77.96	198.48	120.52
	1/4/2006	77.70	198.48	120.78
	2/20/2006	77.82	198.48	120.66
	3/27/2006	77.81	198.48	120.67
	4/27/2006	77.92	198.48	120.56
	5/15/2006	78.04	198.48	120.44
	10/2/2006	78.01	198.48	120.47
	11/28/2006	78.03	198.48	120.45
	2/19/2007	78.05	198.48	120.43
	5/11/2007	77.99	198.48	120.49
	7/30/2007	77.92	198.48	120.56
	11/12/2007	77.38	198.48	121.10
	2/18/2008	77.05	198.48	121.43
	5/12/2008	77.01	198.48	121.47
	8/4/2008	76.98	198.48	121.50
PZ-1A	2/18/2008	75.47	195.03	119.56
	5/12/2008	75.26	195.03	119.77
	8/4/2008	75.15	195.03	119.88
PZ-2A	2/18/2008	76.22	195.85	119.63
	5/12/2008	75.89	195.85	119.96
	8/4/2008	75.87	195.85	119.98
DMW-6	1/4/2006	64.37	185.87	121.50
	2/24/2006	64.38	185.87	121.49
	3/27/2006	64.38	185.87	121.49
	4/27/2006	64.51	185.87	121.36
	5/15/2006	64.59	185.87	121.28
	10/3/2006	65.11	185.87	120.76
	11/28/2006	65.09	185.87	120.78
	2/19/2007	65.05	185.87	120.82
	5/11/2007	64.88	185.87	120.99
	7/30/2007	64.87	185.87	121.00
	11/12/2007	64.21	185.87	121.66
	2/19/2008	64.02	185.87	121.85
	5/12/2008	64.18	185.87	121.69
	8/4/2008	63.89	185.87	121.98
DMW-10	1/4/2006	70.77	191.26	120.49
	2/24/2006	70.84	191.26	120.42
	3/27/2006	70.82	191.26	120.44
	4/27/2006	70.95	191.26	120.31
	5/15/2006	71.00	191.26	120.26
	10/3/2006	71.08	191.26	120.18

TABLE 3
DEPTH TO GROUNDWATER MEASUREMENTS AND GROUNDWATER ELEVATIONS
October 1992 through April 2010

20th and Factor WQARF Site, Yuma, Arizona

WELL	DATE	DTW	CASING ELEVATION	ELEVATION
		feet	ft amsl	ft amsl
DMW-10	11/28/2006	71.05	191.26	120.21
	2/19/2007	71.01	191.26	120.25
	5/11/2007	70.92	191.26	120.34
	7/30/2007	70.89	191.26	120.37
	11/12/2007	70.26	191.26	121.00
	2/19/2008	70.11	191.26	121.15
	5/12/2008	70.14	191.26	121.12
	8/4/2008	69.89	191.26	121.37
DMW-11	1/4/2006	72.21	192.77	120.56
	2/24/2006	72.25	192.77	120.52
	3/27/2006	72.25	192.77	120.52
	4/27/2006	72.37	192.77	120.40
	5/15/2006	72.45	192.77	120.32
	10/3/2006	72.56	192.77	120.21
	11/28/2006	72.54	192.77	120.23
	2/19/2007	72.52	192.77	120.25
	5/11/2007	72.39	192.77	120.38
	7/30/2007	72.31	192.77	120.46
	11/12/2007	71.71	192.77	121.06
	2/19/2008	71.54	192.77	121.23
	5/12/2008	71.57	192.77	121.20
	8/4/2008	71.30	192.77	121.47
	11/10/08	71.47	192.77	121.30
DMW-16	6/7/2004	78.75	196.49	117.74
	11/22/2004	78.69	196.49	117.80
DMW-17	6/7/2004	79.53	196.88	117.35
	11/22/2004	79.34	196.88	117.54
DMW-18	6/7/2004	80.56	197.27	116.71
	11/22/2004	80.51	197.27	116.76
DMW-25	1/4/2006	72.54	192.84	120.30
	2/24/2006	72.55	192.84	120.29
	3/27/2006	72.62	192.84	120.22
	4/27/2006	72.75	192.84	120.09
	5/15/2006	72.83	192.84	120.01
	10/3/2006	72.75	192.84	120.09
	11/28/2006	72.76	192.84	120.08
	2/19/2007	72.73	192.84	120.11
	5/11/2007	72.67	192.84	120.17
	7/30/2007	72.59	192.84	120.25
	11/12/2007	72.05	192.84	120.79
	2/19/2008	71.88	192.84	120.96
	5/12/2008	71.80	192.84	121.04
	8/4/2008	71.59	192.84	121.25
DEW-19	1/4/2006	65.10	186.04	120.94
	2/24/2006	65.14	186.04	120.90
	3/27/2006	65.09	186.04	120.95
	4/27/2006	65.16	186.04	120.88
	5/15/2006	65.27	186.04	120.77
	10/2/2006	65.76	186.04	120.28
	11/28/2006	65.73	186.04	120.31
	2/19/2007	65.65	186.04	120.39
	5/11/2007	65.41	186.04	120.63
	7/30/2007	65.37	186.04	120.67
	11/12/2007	64.58	186.04	121.46
	2/19/2008	64.38	186.04	121.66
	5/12/2008	64.70	186.04	121.34
	8/4/2008	64.39	186.04	121.65
B-Zone Groundwater Monitoring Wells				
MW-8B	11/28/2006	75.94	195.25	119.31
	2/19/2007	76.56	195.25	118.69
	5/11/2007	76.48	195.25	118.77
	7/30/2007	76.48	195.25	118.77
	11/12/2007	76.06	195.25	119.19
	2/18/2008	75.59	195.25	119.66
	5/12/2008	75.37	195.25	119.88
	8/4/2008	75.36	195.25	119.89
	11/10/08	75.43	195.25	119.82
	4/26/2010	75.62	195.25	119.63
MW-18B	11/28/2006	80.68	197.99	117.31
	2/19/2007	80.78	197.99	117.21

TABLE 3
DEPTH TO GROUNDWATER MEASUREMENTS AND GROUNDWATER ELEVATIONS
October 1992 through April 2010

20th and Factor WQARF Site, Yuma, Arizona

WELL	DATE	DTW	CASING ELEVATION	ELEVATION
		feet	ft amsl	ft amsl
MW-18B	5/11/2007	80.69	197.99	117.30
	7/30/2007	80.70	197.99	117.29
	11/12/2007	80.30	197.99	117.69
	2/19/2008	79.72	197.99	118.27
	5/12/2008	79.47	197.99	118.52
	8/4/2008	79.45	197.99	118.54
MW-21B	5/11/2007	82.11	198.51	116.40
	7/30/2007	82.23	198.51	116.28
	11/12/2007	81.87	198.51	116.64
	2/18/2008	81.29	198.51	117.22
	4/16/2008	81.23	198.51	117.28
	5/12/2008	81.07	198.51	117.44
	6/12/2008	81.53	198.51	116.98
	8/4/2008	81.09	198.51	117.42
	11/10/08	81.27	198.51	117.24
	4/26/2010	81.27	198.51	117.24
MW-22B	11/12/2007	76.06	195.29	119.23
	2/18/2008	75.84	195.29	119.45
	5/12/2008	75.69	195.29	119.60
	8/4/2008	75.63	195.29	119.66
MW-23B	11/12/2007	76.80	196.40	119.60
	2/18/2008	76.57	196.40	119.83
	5/12/2008	76.20	196.40	120.20
	8/4/2008	76.32	196.40	120.08
	11/10/08	76.46	196.40	119.94
	4/26/2010	76.56	196.40	119.84
MW-24B	2/18/2008	79.99	199.52	119.53
	5/12/2008	80.72	199.52	118.80
	8/4/2008	80.81	199.52	118.71
	11/10/08	80.85	199.52	118.67
	4/26/2010	80.76	199.52	118.76
MW-25B	4/26/2010	80.94	199.06	118.12
MW-102B1	11/14/1996	72.13	198.44	126.31
	6/11/2001	76.49	198.44	121.95
	6/16/2001	76.53	198.44	121.91
	6/25/2001	76.50	198.44	121.94
	1/29/2002	76.69	198.44	121.75
	10/1/2002	76.37	198.44	122.07
	6/7/2004	77.70	198.44	120.74
	11/22/2004	77.76	198.44	120.68
	3/2/2005	77.72	198.44	120.72
	5/31/2005	77.73	198.44	120.71
	10/25/2005	77.92	198.44	120.52
	1/4/2006	77.61	198.44	120.83
	2/20/2006	77.75	198.44	120.69
	3/27/2006	77.76	198.44	120.68
	4/27/2006	77.91	198.44	120.53
	5/15/2006	78.01	198.44	120.43
	10/2/2006	77.92	198.44	120.52
	11/28/2006	77.88	198.44	120.56
	2/19/2007	77.96	198.44	120.48
	5/11/2007	77.94	198.44	120.50
	7/30/2007	77.84	198.44	120.60
	11/12/2007	77.29	198.44	121.15
	2/18/2008	76.99	198.44	121.45
	5/12/2008	76.84	198.44	121.60
	8/4/2008	76.73	198.44	121.71
	11/10/08	76.75	198.44	121.69
	4/26/2010	76.70	198.44	121.74
MW-102B2	11/14/1996	72.18	198.51	126.33
	6/11/2001	76.57	198.51	121.94
	6/16/2001	76.62	198.51	121.89
	6/25/2001	76.60	198.51	121.91
	1/29/2002	76.65	198.51	121.86
	10/1/2002	76.39	198.51	122.12
	6/7/2004	77.80	198.51	120.71
	11/22/2004	77.80	198.51	120.71
	3/2/2005	77.65	198.51	120.86
	5/31/2005	77.83	198.51	120.68
	10/25/2005	78.00	198.51	120.51
	1/4/2006	77.59	198.51	120.92

TABLE 3
DEPTH TO GROUNDWATER MEASUREMENTS AND GROUNDWATER ELEVATIONS
October 1992 through April 2010

20th and Factor WQARF Site, Yuma, Arizona

WELL	DATE	DTW	CASING ELEVATION	ELEVATION
		feet	ft amsl	ft amsl
MW-102B2	2/20/2006	77.74	198.51	120.77
	3/27/2006	77.76	198.51	120.75
	4/27/2006	77.93	198.51	120.58
	5/15/2006	78.04	198.51	120.47
	10/2/2006	77.98	198.51	120.53
	11/28/2006	77.77	198.51	120.74
	2/19/2007	77.90	198.51	120.61
	5/11/2007	77.98	198.51	120.53
	7/30/2007	77.81	198.51	120.70
	11/12/2007	77.34	198.51	121.17
	2/18/2008	76.97	198.51	121.54
	5/12/2008	76.74	198.51	121.77
	8/4/2008	76.76	198.51	121.75
MW-103B	11/22/2004	77.88	198.63	120.75
	3/2/2005	77.94	198.63	120.69
	5/31/2005	77.98	198.63	120.65
	10/25/2005	78.11	198.63	120.52
	1/4/2006	77.67	198.63	120.96
	2/20/2006	77.84	198.63	120.79
	3/27/2006	77.87	198.63	120.76
	4/27/2006	78.04	198.63	120.59
	5/15/2006	78.14	198.63	120.49
	10/2/2006	78.00	198.63	120.63
	11/28/2006	77.90	198.63	120.73
	2/19/2007	78.05	198.63	120.58
	5/11/2007	78.33	198.63	120.30
	7/30/2007	77.98	198.63	120.65
	11/12/2007	77.47	198.63	121.16
	2/18/2008	77.19	198.63	121.44
	5/12/2008	76.88	198.63	121.75
	8/4/2008	76.84	198.63	121.79
MW-104B	11/22/2004	80.10	198.59	118.49
	3/2/2005	78.28	198.59	120.31
	5/31/2005	78.32	198.59	120.27
	10/25/2005	78.56	198.59	120.03
	1/4/2006	78.11	198.59	120.48
	2/20/2006	78.26	198.59	120.33
	3/27/2006	78.29	198.59	120.30
	4/27/2006	78.45	198.59	120.14
	5/15/2006	78.52	198.59	120.07
	10/2/2006	78.32	198.59	120.27
	11/28/2006	78.29	198.59	120.30
	2/19/2007	78.37	198.59	120.22
	5/11/2007	78.44	198.59	120.15
	7/30/2007	78.30	198.59	120.29
	11/12/2007	77.79	198.59	120.80
	2/18/2008	77.47	198.59	121.12
	5/12/2008	77.19	198.59	121.40
	8/4/2008	77.24	198.59	121.35
PZ-1B	2/18/2008	75.40	194.99	119.59
	5/12/2008	75.14	194.99	119.85
	8/4/2008	75.12	194.99	119.87
PZ-2B	2/18/2008	76.12	195.79	119.67
	5/12/2008	75.85	195.79	119.94
	8/4/2008	75.85	195.79	119.94
EW-1	2/18/2008	74.75	194.60	119.85
	5/12/2008	74.80	194.60	119.80
	8/4/2008	74.77	194.60	119.83
C-Zone Groundwater Monitoring Wells				
MW-8C	5/11/2007	76.69	195.24	118.55
	7/30/2007	76.73	195.24	118.51
	11/12/2007	76.31	195.24	118.93
	2/18/2008	75.72	195.24	119.52
	5/12/2008	75.53	195.24	119.71
	8/4/2008	75.60	195.24	119.64
	11/10/08	75.69	195.24	119.55
	4/26/2010	75.72	195.24	119.52
MW-17C	11/12/2007	79.01	197.94	118.93
	2/18/2008	78.43	197.94	119.51
	5/12/2008	78.19	197.94	119.75

TABLE 3
DEPTH TO GROUNDWATER MEASUREMENTS AND GROUNDWATER ELEVATIONS
October 1992 through April 2010

20th and Factor WQARF Site, Yuma, Arizona

WELL	DATE	DTW	CASING ELEVATION	ELEVATION
		feet	ft amsl	ft amsl
MW-17C	8/4/2008	78.27	197.94	119.67
	11/10/08	78.27	197.94	119.67
	4/26/2010	78.31	197.94	119.63
MW-21C	5/11/2007	81.75	198.39	116.64
	7/30/2007	82.01	198.39	116.38
	11/12/2007	81.71	198.39	116.68
	2/18/2008	81.07	198.39	117.32
	4/16/2008	81.02	198.39	117.37
	5/12/2008	80.85	198.39	117.54
	6/12/2008	81.33	198.39	117.06
	8/4/2008	80.89	198.39	117.50
	9/19/2008	80.89	198.39	117.50
	10/24/08	81.03	198.39	117.36
	11/10/08	81.10	198.39	117.29
	12/19/2008	81.00	198.39	117.39
	4/26/2010	81.10	198.39	117.29
MW-103C	11/22/2004	77.98	198.60	120.62
	3/2/2005	78.12	198.60	120.48
	5/31/2005	77.08	198.60	121.52
	10/25/2005	78.25	198.60	120.35
	1/4/2006	77.65	198.60	120.95
	2/20/2006	77.86	198.60	120.74
	3/27/2006	77.91	198.60	120.69
	4/27/2006	78.09	198.60	120.51
	5/15/2006	78.20	198.60	120.40
	10/2/2006	78.02	198.60	120.58
	11/28/2006	77.90	198.60	120.70
	2/19/2007	78.04	198.60	120.56
	5/11/2007	78.69	198.60	119.91
	7/30/2007	77.94	198.60	120.66
	11/12/2007	77.59	198.60	121.01
	2/18/2008	77.15	198.60	121.45
	5/12/2008	76.92	198.60	121.68
	8/4/2008	76.88	198.60	121.72
	11/10/08	76.85	198.60	121.75
	4/26/2010	76.90	198.60	121.70
MW-104C	11/22/2004	81.00	198.62	117.62
	3/2/2005	78.82	198.62	119.80
	5/31/2005	78.74	198.62	119.88
	10/25/2005	79.03	198.62	119.59
	1/4/2006	78.44	198.62	120.18
	2/20/2006	78.63	198.62	119.99
	3/27/2006	78.65	198.62	119.97
	4/27/2006	78.83	198.62	119.79
	5/15/2006	78.88	198.62	119.74
	10/2/2006	78.71	198.62	119.91
	11/28/2006	78.63	198.62	119.99
	2/19/2007	78.72	198.62	119.90
	5/11/2007	78.96	198.62	119.66
	7/30/2007	78.66	198.62	119.96
	11/12/2007	78.15	198.62	120.47
	2/18/2008	77.86	198.62	120.76
	5/12/2008	77.50	198.62	121.12
	8/4/2008	77.66	198.62	120.96
PZ-1C	2/18/2008	75.55	194.91	119.36
	5/12/2008	75.25	194.91	119.66
	8/4/2008	75.22	194.91	119.69
PZ-2C	2/18/2008	76.27	195.75	119.48
	5/12/2008	75.98	195.75	119.77
	8/4/2008	76.02	195.75	119.73

NOTES:
DTW = Depth to Water
ft amsl = Feet Above Mean Sea Level
DTW measurement were not collected in monitoring Wells DMW-16, DMW-17, and DMW-18 due to presence of diesel product.

TABLE 4
MONITORING WELL CONSTRUCTION DETAILS
20th and Factor WQARF Site, Yuma, Arizona

Current Well ID	Previous Well ID	Cadastral Location	ADWR Number	Surveyed Measuring Point (ft amsl)	Diameter (inches)	Total Depth of Borehole (feet)	Screened Interval (feet bgs)
A-Zone Groundwater Monitoring Wells							
MW-1A	MW-1	(C-08-23)34cba	55-537043	198.84	2	95	65 - 95
MW-2A	MW-2	(C-08-23)34cba	55-537614	199.11	2	95	65 - 95
MW-3A	MW-3	(C-08-23)34cba	55-537615	198.70	2	84	64 - 84
MW-4A	MW-4	(C-08-23)34cba	55-201459	197.90	4	105	65 - 105
MW-5A	MW-5	(C-08-23)34abc	55-588281	198.25	4	105	62.5 - 104.5
MW-6A	MW-6	(C-08-23)34abc	55-588282	197.63	4	103.5	61 - 103
MW-7A	MW-7	(C-08-23)34abc	55-588279	197.56	4	110	62.5 - 103.5
MW-8A	MW-8	(C-08-23)33add	55-203693	195.38	4	105.4	65.4 - 105.4
MW-9A	MW-9	(C-08-23)33add	55-203692	194.78	4	101.4	61.4 - 101.4
MW-10A	MW-10	(C-08-23)33daa	55-203691	194.86	4	104	64 - 104
MW-11A	MW-11	(C-08-23)33abd	55-902168	197.98	4	105	63 - 105
MW-12A	MW-12	(C-08-23)34bcc	55-904512	195.43	4	107.75	64.75 - 104.75
MW-13A	MW-13	(C-08-23)33ada	55-904513	198.35	4	105	62 - 102
MW-14A	MW-14	(C-08-23)34cbb	55-904514	196.68	4	108	65 - 105
MW-15A	MW-15	(C-08-23)33adc	55-904515	199.14	4	96[1]	66 - 96
MW-16A	MW-16A	(C-08-23)34cba	55-908808	199.22	4	162	64.5 - 104.5
MW-17A	MW-17	(C-08-23)33adc	55-905870	197.55	4	98	66 - 96
MW-18A	MW-18A	(C-08-23)33aca	55-905871	198.01	4	107	65.5 - 105.5
MW-19A	MW-19	(C-08-23)34cba	55-905873	198.90	4	105	65 - 105
MW-20A	MW-20	(C-08-23)33dda	55-905865	196.93	4	118	65 - 105
MW-21A	MW-21A	(C-08-23)33acb	55-906700	198.58	4	99	69 - 99
MW-25A	MW-25A	(C-08-23)33aad	55-911959	198.72	4	96	65 - 95
MW-101A	MW-101	(C-08-23)34cab	55-555248	197.20	4	90	50 - 90
MW-102A	MW-102A	(C-08-23)34cab	55-556705	198.48	2	90	80 - 90
PZ-1A	PZ-1A	(C-08-23)33add	55-908373	195.03	1.5	95[3]	80 - 95
PZ-2A	PZ-2A	(C-08-23)33add	55-908375	195.85	1.5	105[3]	85 - 100
DMW-6	DMW-6	(C-08-23)34bdd		185.87	4	70.5	50.5 - 70.5
DMW-10	DMW-10	(C-08-23)34bdd		191.26	4	90	60 - 90
DMW-11	DMW-11	(C-08-23)34bdd		192.77	4	90	60 - 90
DMW-16	DMW-16	(C-08-23)34bcc	55-594862	196.49	4	92.5	62 - 92
DMW-17	DMW-17	(C-08-23)34bcc	55-594863	196.88	4	92.5	62 - 92
DMW-18	DMW-18	(C-08-23)34bdd	55-900294	197.27	4	85	52 - 85
DMW-25	DMW-25	(C-08-23)34add	55-901535	192.84	4	93	62.5 - 92.5
DEW-19	DEW-19	(C-08-23)34bdd		186.04[2]	1; 4	87	57 - 87
B-Zone Groundwater Monitoring Wells							
MW-8B	MW-16	(C-08-23)33add	55-905867	195.25	4	117	107 - 117
MW-18B	MW-18B	(C-08-23)33aca	55-905869	197.99	4	148	137 - 147
MW-21B	MW-21B	(C-08-23)33acb	55-906704	198.51	4	205	161 - 201
MW-22B	MW-22B	(C-08-23)33dab	55-908037	195.29	4	180	115 -155
MW-23B	MW-23B	(C-08-23)33dab	55-908038	196.40	4	185	120.5 - 160.5
MW-24B	MW-24B	(C-08-23)33adc	55-908311	199.52	4	170	110.5 - 160.5
MW-25B	MW-25B	(C-08-23)33aad	55-911960	199.34	4	178	140 - 170
MW-102B1	MW-102B	(C-08-23)34cab	55-556705	198.44	2	120	110 - 120
MW-102B2	MW-102C	(C-08-23)34cab	55-556705	198.51	2	150	140 - 150
MW-103B	MW-103D	(C-08-23)34cab	55-201457	198.63	2	170	150 - 170
MW-104B	MW-104D	(C-08-23)34cab	55-205754	198.59	4	170	150 - 170
PZ-1B	PZ-1B	(C-08-23)33add	55-908373	194.99	1.5	170[3]	105 - 160
PZ-2B	PZ-2B	(C-08-23)33add	55-908375	195.79	1.5	160[3]	105 - 160
EW-1	EW-1	(C-08-23)33add	55-908295	194.60	12	178	100-160
C-Zone Groundwater Monitoring Wells							
MW-8C	MW-22	(C-08-23)33add	55-906702	195.24	4	225	170 - 210
MW-17C	MW-17C	(C-08-23)33adc	55-907658	197.94	4	207	167-207
MW-21C	MW-21C	(C-08-23)33acb	55-906703	198.39	4	325	275 - 315
MW-103C	MW-103E	(C-08-23)34cab	55-201457	198.60	2	245	220 - 240
MW-104C	MW-104E	(C-08-23)34cab	55-205754	198.62	4	240	220 - 240
PZ-1C	PZ-1C	(C-08-23)33add	55-908373	194.91	1.5	200	170 - 200
PZ-2C	PZ-2C	(C-08-23)33add	55-908375	195.75	1.5	200	170 - 200
Alice Byrne	Alice Byrne	(C-08-23)33bba	55-613927	Unknown	12	203*	Unknown
St. Francis	St. Francis	(C-08-23)33bdb	55-626423	Unknown	10	318*	Unknown

ft amls = feet above mean sea level
ADWR = Arizona Department of Water Resources
A-Zone Groundwater Monitoring Wells are screened approximately 50 feet to 105 feet bgs.
B-Zone Groundwater Monitoring Wells are screened approximately 105 feet to 170 feet bgs, or in between the two identified clay layers underlying the Site.
C-Zone Groundwater Monitoring Wells are screened approximately 170 feet to 318 feet bgs.
[1] Plugged at 96 feet bgs
[2] DEW-19A surveyed measuring point (ft amsl) corresponds to the top of the 1-inch casing
[3] = Depth of bentonite plugs between nested wells. Total depth of piezometer boreholes was 200 feet bgs.
bgs = below ground surface
DMW, DEW = Monitoring wells owned by Union Pacific Railroad

TABLE 5
SUMMARY OF SELECTED VOCs (µg/L) AND CYANIDES (mg/L) HISTORICALLY DETECTED IN GROUNDWATER SINCE 2001
20th and Factor WQARF Site, Yuma, Arizona

WELL	DATE	PCE (µg/L)	TCE (µg/L)	1,1,1-TCA (µg/L)	1,1-DCE (µg/L)	1,1-DCA (µg/L)	Cis-1,2-DCE (µg/L)	VC (µg/L)	BCM (µg/L)	BDCM (µg/L)	DBCM (µg/L)	Bromoform (µg/L)	Chloroform (µg/L)	Benzene (µg/L)	MTBE (µg/L)	2-Butanone (µg/L)	n-Butyl benzene (µg/L)	sec-Butyl benzene (µg/L)	CD (µg/L)	Ethyl benzene (µg/L)	Isopropyl benzene (µg/L)	4-Isopropyl toluene (µg/L)	Naphthalene (µg/L)	n-Propyl benzene (µg/L)	Toluene (µg/L)	1,2,4-Trimethyl benzene (µg/L)	1,3,5-Trimethyl benzene (µg/L)	Xylenes Total (µg/L)	Acetone (µg/L)	Cyanide, Free ## (mg/L)	Cyanide, Total ** (mg/L)
		AWQS: 5	AWQS: 5	AWQS: 200	AWQS: 7	AWQS: NE	AWQS: 70	AWQS: 2	AWQS: NE	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 5	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 700	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 1,000	AWQS: NE	AWQS: NE	AWQS: 10,000	AWQS: 10,000	AWQS: 0.2	AWQS: NE
A-Zone Groundwater Monitoring Wells																															
MW-1A	6/16/2001	220	0.95	<0.5	<1.0	3.2	<1.0	<1.0	<0.50	<0.5	<0.5	<1.0	<1.0	<0.5	<1.0	<5.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.05	<0.05
	1/29/2002	320	0.99	1.6	1.2	6	<0.50	<1.0	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<1.0	<5.0	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	2.07	6.68
	6/10/2004	150;180	1.1;1.4	0.57;0.64	0.9;1.1	3.0;3.2	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<1.0;<1.0	2.2;2.3	<0.50;<0.50	<2.0;<2.0	<5.0;<5.0	<2.5;<2.5	<1.5;<1.5	<0.50;<0.50	<2.0;<2.0	<2.5;<2.5	<1.5;<1.5	<5.0;<5.0	<2.0;<2.0	<3.0;<3.0	<2.0;<2.0	<1.5;<1.5	<3.0;<3.0	<10;<10	0.35;0.5	2.5;2.6
	11/30/2004	130	0.61	<0.50	0.56	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.9	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	1.2	2.3
	6/3/2005	76	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.73	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.99	3.1
	2/21/2006	69	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.4	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.34	2.5
	5/25/2006	35	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.3	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.13	1.6
	10/10/2006	33	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<3.0	<20	1.6	4.8
	12/1/2006	56	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.7	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	0.38	6.2
	2/21/2007	49	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	0.24 D2	3.4 D2
	5/15/2007	54	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	0.35	3.0 D2
	8/1/2007	57	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.1	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	4.1 D2
	11/20/2007	39	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.54	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.55	4.3 D2
	2/25/2008	25	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	0.49 D2	4.1 D2
	5/22/2008	22	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	0.79	0.90 D2
	8/11/2008	19	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.77	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	0.38	0.38 D2
MW-2A	6/16/2001	390	2.1	<0.5	<1.0	1.5	<0.50	<1.0	<0.5	<0.5	<0.5	<1.0	2.2	<0.5	<1.0	<5.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	0.97	3.4
	1/30/2002	420	3.5	0.54	<1.0	1.8	<0.50	<1.0	<0.50	<0.50	<0.50	<1.0	3.3	<0.50	<1.0	<5.0	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.01	1.6
	6/10/2004	220	3.5	<0.50	0.52	1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.3	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.038	1.1
	11/30/2004	160	2.1	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.9	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	1.2
	6/2/2005	160	2.2	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	4.6	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.076	0.71
	2/21/2006	99	1.7	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	6	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.041	0.66
	5/19/2006	110	1.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	6.4	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.068	0.75
	10/10/2006	160	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.6	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<3.0	<20	0.021	0.78
	12/12/2006	140 D2	1.3	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	NA	1.0
	2/21/2007	140 D2	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.4	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	0.30 D1	1.2 D2
	5/15/2007	98	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.2	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	0.37	1.6 D2
	8/1/2007	110	1.1	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	4.2	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	2.1 D2
	11/21/2007	120	1.2	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	4.9	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.16	1.6 D2
	2/21/2008	88	0.91	<0.50	<1.0	0.75	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	4.7	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	<0.02	2.1
	5/21/2008	87	0.63	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	<0.02	0.4
	8/12/2008	67	0.80	<0.50	<1.0	0.68	<1.0	<0.50	<0.50	1.4	1.4	<0.50	5.0	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	2.4	2.4 D2
MW-3A	6/16/2001	9.8	<0.5	<0.5	<1.0	<0.5	<0.50	<1.0	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<1.0	<5.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	0.25	0.22
	1/29/2002	80	<0.50	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<1.0	<5.0	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.05	0.013
	6/11/2004	9.8	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.020
	11/29/2004	20	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	6/3/2005	3.5	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	2/20/2006	9.3	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.023	<0.010
	5/18/2006	3.1	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.031	<0.010
	10/10/2006	3.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	0.025
	12/1/2006	5.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	0.011	0.047
	2/21/2007	19	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	0.23 D2	1.0 D2
	5/15/2007	19	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	1.4	1.4 D2
	8/1/2007	17	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	1.2 D2
	11/21/2007	18	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.024	1.4 D2
	2/19/2008	13	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	1.2	1.2
	5/21/2008	9.4	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	0.20	0.20
	8/6/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	0.51	0.51 D2
MW-4A	6/8/2004	120	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.059	0.51
	11/29/2004	45	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.030	0.28
	6/1/2005	37;34	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<1.0;<1.0	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<1.0;<1.0	<0.50;<0.50	<0.50;<0.50	<2.0;<2.0	<5.0;<5.0	<2.5;<2.5	<1.5;<1.5	<0.50;<0.50	<2.0;<2.0	<2.5;<2.5	<1.5;<1.5	<5.0;<5.0	<2.0;<2.0	<3.0;<3.0	<2.0;<2.0	<1.5;<1.5	<3.0;<3.0	<20;<20	0.2	0.84
	2/22/2006	32;32	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<1.0;<1.0	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<1.0;<1.0	<0.50;<0.50	<0.50;<0.50	<2.0;<2.0	<5.0;<5.0	<2.5;<2.5	<1.5;<1.5	<0.50;<0.50	<2.0;<2.0	<2.5;<2.5	<1.5;<1.5	<5.0;<5.0	<2.0;<2.0	<3.0;<3.0	<2.0;<2.0	<1.5;<1.5	<3.0;<3.0	<20;<20	0.06;<0.010	0.73;0.53
	5/16/2006	110	1.2	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	6.4	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.079	1.2
	10/11/2006	27	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<3.0	<20	0.51	4.1
	12/12/2006	36	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	NA	4.8
	2/27/2007	16	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	0.43 D2	1.9 D2
	5/24/2007	26	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	0.41	5.9
	8/8/2007	30	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	1.6	11 D2
	11/21/2007	29	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	1.4	9.3 D2
	2/25/2008	18	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.68	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	1.6 D2	11 D2
	5/16/2008	23	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.66	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	4.5	4.5 D2
	8/11/2008	20	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.91	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	1.3	1.3 D2
MW-5A	1/29/2002	310;290	2.3;2.2	<0.50;<0.50	<1.0;<1.0	<0.50;<0.50	<0.50;<0.50	<1.0;<1.0	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<1.0;<1.0	1.1;1	<0.50;<0.50	<1.0;<1.0	<5.0;<5.0	<0.50;<0.50	<0.50;<0.50	<2.0;<2.0	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<3.0;<3.0	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<1.0;<1.0	<10;<10	0.4	17
	6/7/2004	210	0.79	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.98	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.71	8.4
	11/23/2004	200;220	0.75;0.82	<0.50;<0.50	<0.50;<0.50	<1.0;<1.0	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<1.0;<1.0	1.2;1.2	<0.50;<0.50	<2.0;<2.0	<5.0;<5.0	<2.5;<2.5	<1.5;<1.5	<0.50;<0.50	<2.0;<2.0	<2.5;<2.5	<1.5;<1.5	<5.0;<5.0	<2.0;<2.0	<3.0;<3.0	<2.0;<2.0	<1.5;<1.5	<3.0;<3.0	<20;<20	0.46;0.47	6.6;6.4
	6/2/2005	180	0.91	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.45	11
	2/22/2006	220	1.1	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.1	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.39	9.3
	5/16/2006	140	1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.3	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	1.5	10
	10/11/2006	230	1.4	<1.0	<1.0	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.2	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<3.0	<20	1.37	9.6

TABLE 5
SUMMARY OF SELECTED VOCs (µg/L) AND CYANIDES (mg/L) HISTORICALLY DETECTED IN GROUNDWATER SINCE 2001

20th and Factor WQARF Site, Yuma, Arizona

WELL	DATE	PCE (µg/L)	TCE (µg/L)	1,1,1-TCA (µg/L)	1,1-DCE (µg/L)	1,1-DCA (µg/L)	Cis-1,2-DCE (µg/L)	VC (µg/L)	BCM (µg/L)	BDCM (µg/L)	DBCM (µg/L)	Bromoform (µg/L)	Chloroform (µg/L)	Benzene (µg/L)	MTBE (µg/L)	2-Butanone (µg/L)	n-Butyl benzene (µg/L)	sec-Butyl benzene (µg/L)	CD (µg/L)	Ethyl benzene (µg/L)	Isopropyl benzene (µg/L)	4-Isopropyl toluene (µg/L)	Naphthalene (µg/L)	n-Propyl benzene (µg/L)	Toluene (µg/L)	1,2,4-Trimethyl benzene (µg/L)	1,3,5-Trimethyl benzene (µg/L)	Xylenes Total (µg/L)	Acetone (µg/L)	Cyanide, Free ## (mg/L)	Cyanide, Total ** (mg/L)
		AWQS: 5	AWQS: 5	AWQS: 200	AWQS: 7	AWQS: NE	AWQS: 70	AWQS: 2	AWQS: NE	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 5	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 700	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 1,000	AWQS: NE	AWQS: NE	AWQS: 10,000	AWQS: 10,000	AWQS: 0.2	AWQS: NE
MW-5A	12/12/2006	230 D2	1.7	<1.0	<1.0	2.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.9	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	NA	12
	2/27/2007	200 D2	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<30	<200	1.6 D2	15 D2
	5/24/2007	180 D2	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	9.3	17
	8/7/2007	130	0.80	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.73	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	4.5	18 D2
	11/19/2007	120	0.72	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.56	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	3.2	22 D2
	2/25/2008	63	0.69	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	4.4 D2	18 D2
	5/19/2008	84	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	4.5 D2	18 D2
	8/12/2008	95	0.72	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.75	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	13	13 D2
MW-6A	1/30/2002	120	0.92	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<1.0	1.1	<0.50	<1.0	<5.0	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	0.24	1.2
	6/8/2004	46;46	1.4;1.5	<0.50;<0.50	<0.50;<0.50	<1.0;<1.0	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<1.0;<1.0	1.5;1.4	<0.50;<0.50	<2.0;<2.0	<5.0;<5.0	<2.5;<2.5	<1.5;<1.5	<0.50;<0.50	<2.0;<2.0	<2.5;<2.5	<1.5;<1.5	<5.0;<5.0	<2.0;<2.0	<3.0;<3.0	<2.0;<2.0	<1.5;<1.5	<3.0;<3.0	<20;<20	<0.010	<0.010
	11/29/2004	69	4.3	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.7	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	6	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	6/2/2005	64	8.8	<0.50	0.61	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.9	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	6	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/24/2006	55	7.8	<0.50	0.87	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	3.5	0.54	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	6	<2.0	<3.0	<2.0	2.7	<3.0	<20	NA	<0.010
	5/25/2006	45	8.1	<0.50	0.71	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	3.9	0.59	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	10/11/2006	29	1.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.6	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	12/12/2006	30	2.9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.8	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	NA	<0.0080
	2/28/2007	36	6.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.2	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	5/24/2007	77	16	<1.0	1.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.0	1.5	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	2.8	3.0	<3.0	<20	<0.025	<0.025
	8/7/2007	87	16	<0.50	1.4	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	3.5	1.4	<2.0	<5.0	<2.5	<1.5	0.50	<2.0	<2.5	<1.5	7.7	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	0.011
	11/19/2007	93	18	<0.50	0.97	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	4.3	1.4	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	6.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/25/2008	77	14	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	4.5	0.86	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	5.6	<0.50	<0.50	<0.50	<0.50	2.6	<5.0	NA	<0.02
	5/19/2008	65	11	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	3.6	0.7	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.2	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/13/2008	75	16	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	5.84	0.87	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.2	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
MW-7A	6/11/2004	600	33	<0.50	1.0	2.7	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	0.85	<2.0	<5.0	39	28	1.3	4.9	12	25	550	21	3	380	48	46	<20	NA	0.16
	11/23/2004	290	28	<0.50	1.1	3.5	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	0.88	<2.0	<5.0	<2.5	1.8	2.1	<2.0	<2.5	2	120	2.4	<3.0	14	7.3	16	<20	<0.010	0.069
	6/2/2005	160	23	<0.50	0.64	3.3	0.50	0.87	<0.50	<0.50	<0.50	<1.0	<0.50	1.1	<2.0	<5.0	<2.5	<1.5	2.7	<2.0	<2.5	1.9	50	<2.0	<3.0	9.8	6.9	9.6	<20	NA	<0.010
	2/22/2006	230	20	<0.50	0.6	2.6	<0.50	0.64	<0.50	<0.50	<0.50	<1.0	<0.50	0.96	<2.0	<5.0	<2.5	<1.5	2.0	<2.0	<2.5	<2.5	14	<2.0	<3.0	<2.0	1.6	3.3	<20	NA	<0.010
	5/18/2006	130	20	<0.50	0.53	2.6	0.7	0.65	<0.50	<0.50	<0.50	<1.0	<0.50	0.96	<2.0	<5.0	<2.5	<1.5	2.7	<2.0	<2.5	<2.5	18	<2.0	<3.0	<2.0	<1.5	3.4	<20	NA	<0.010
	10/3/2006	91	19	<1.0	<1.0	2.4	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	2.5	<20	<0.0080	<0.0080
	12/12/2006	150 D2	24	<1.0	<1.0	2.6	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	27	<1.0	<1.0	5.4	<1.0	4.5	<20	NA	0.017
	3/2/2007	180 D2	36	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	78	<5.0	<5.0	18	6.6	9.6	<100	0.014	0.057
	5/14/2007	200 D2	33	<1.0	<1.0	1.9	3.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	<5.0	<1.0	1.2	1.1	<1.0	1.0	1.3	16	1.2	1.0	9.1	4.8	6.9	<20	<0.0080	0.012
	8/8/2007	140 D2	36	<0.50	<0.50	1.9	5.4	<0.20	<0.50	<0.50	<0.50	<1.0	<0.50	1.5	<2.0	<5.0	<2.5	<1.5	2.0	<2.0	<2.5	<1.5	35	<2.0	<3.0	2.2	<1.5	5.7	<20	<0.010	0.012
	11/20/2007	190 D2	34	<0.50	0.58	1.4	5.4	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	1.6	<2.0	<5.0	<2.5	<1.5	0.96	<2.0	<2.5	<1.5	29	<2.0	<3.0	<1.5	<1.5	5.0	<20	NA	<0.010
	2/19/2008	100 D2	23 D2	<2.5	<5.0	<2.5	<5.0	<2.5	<2.5	<5.0	<2.5	<2.5	<2.5	<2.5	<5.0	<50	<2.5	<2.5	<5.0	<2.5	<2.5	<2.5	26 D2	<2.5	<2.5	<2.5	<2.5	<2.0	<25	<0.02	<0.02
	5/15/2008	130 D1	19 D1	<0.50	<2.0	<1.0	<2.0	<0.50	<0.50	<1.0	<1.0	<0.50	<1.0	1.1 D1	<2.0	<20	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	36 D1	<0.50	<0.50	<0.50	<0.50	<4.0	<5.0	NA	<0.02
	8/6/2008	120 D2	23 D2	<1.0	<2.0	<1.0	2.9 D2	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.8 D2	<2.0	<40	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	70 D2	<1.0	<1.0	<1.0	<1.0	<2.0	<10	NA	<0.02
MW-8A	1/31/2004	190	88	<0.50	25	<1.0	<1.0	<0.50	<0.50	9.4	6.8	<1.0	13	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	0.22
	5/26/2005	130	66	<0.50	23	<1.0	<0.50	0.59	<0.50	2.7	1.9	<1.0	5.4	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<3.0	0.018	0.18
	2/24/2006	90	40	<0.50	13	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.6	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	0.036
	5/22/2006	70	76	<0.50	24	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	2.0	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	10/5/2006	210	83	<1.0	29	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.1	<1.0	1.2	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<3.0	<20	0.018	0.13
	12/11/2006	370 D2	170 D2	<1.0	56	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.4	<1.0	2.2	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	NA	0.27
	2/26/2007	350 D2	150 D2	<10	48	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<30	<200	0.069 D1	0.30 D1
	5/21/2007	480 D2	160 D2	<10	43	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<30	<200	0.072	0.26 D1
	8/6/2007	320 D2	120	<0.50	44	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.8	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	11/16/2007	310 D2	150	<0.50	54	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	3.1	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	0.65
	2/26/2008	100	35	<0.50	10	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.7	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	<0.02	<0.02
	5/19/2008	770 D2	190 D2	<5.0	54 D2	<5.0	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<10	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<50	0.027	0.027
	8/29/2008	440 D2	130 D2	<5.0	59 D2	<5.0	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<10	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<50	0.69	0.69 D2
	11/13/2008	700 D2	160 D2	<5.0	90 D2	<5.0	<10	<5.0	<5.0	<10	<5.0	<5.0	5.4 D2	<5.0	<10	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<50	0.40	0.40 D2
	4/28/2010	97	36	<0.50	17	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.3	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	0.19	0.19
MW-9A	1/31/2004	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	0.61	<0.50	<1.0	3.2	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<3.0	<0.010	<0.010
	5/26/2005	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<1.0;<1.0	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<1.0;<1.0	1.0;1.1	<0.50;<0.50	<2.0;<2.0	<5.0;<5.0	<2.5;<2.5	<1.5;<1.5	<0.50;<0.50	<2.0;<2.0	<2.5;<2.5	<1.5;<1.5	<5.0;<5.0	<2.0;<2.0	<3.0;<3.0	<2.0;<2.0	<1.5;<1.5	<3.0;<3.0	<20;<20	NA	<0.010
	2/23/2006	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<1.0;<1.0	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<1.0;<1.0	1.7;1.6	<0.50;<0.50	<2.0;<2.0	<5.0;<5.0	<2.5;<2.5	<1.5;<1.5	<0.50;<0.50	<2.0;<2.0	<2.5;<2.5	<1.5;<1.5	<5.0;<5.0	<2.0;<2.0	<3.0;<3.0	<2.0;<2.0	<1.5;<1.5	<3.0;<3.0	<20;<20	NA;NA	<0.010;<0.010
	5/16/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	1.0	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	10/5/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	12/11/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	NA	<0.0080
	2/21/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	5/23/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.6	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.025	<0.025
	8/2/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.5	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	11/19/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.3	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/20/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.2	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/15/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/7/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.0	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	11/11/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.8	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	4/27/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.6	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
MW-10A	1/31/2004	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	5	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	5/26/2005	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	1.1	0.86	<1.0	3.6	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	10	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.0050
	2/24/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	3.7	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	5/24/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	4.4	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010

TABLE 5
SUMMARY OF SELECTED VOCs (µg/L) AND CYANIDES (mg/L) HISTORICALLY DETECTED IN GROUNDWATER SINCE 2001
20th and Factor WQARF Site, Yuma, Arizona

WELL	DATE	PCE (µg/L)	TCE (µg/L)	1,1,1-TCA (µg/L)	1,1-DCE (µg/L)	1,1-DCA (µg/L)	Cis-1,2-DCE (µg/L)	VC (µg/L)	BCM (µg/L)	BDCM (µg/L)	DBCM (µg/L)	Bromoform (µg/L)	Chloroform (µg/L)	Benzene (µg/L)	MTBE (µg/L)	2-Butanone (µg/L)	n-Butyl benzene (µg/L)	sec-Butyl benzene (µg/L)	CD (µg/L)	Ethyl benzene (µg/L)	Isopropyl benzene (µg/L)	4-Isopropyl toluene (µg/L)	Naphthalene (µg/L)	n-Propyl benzene (µg/L)	Toluene (µg/L)	1,2,4-Trimethyl benzene (µg/L)	1,3,5-Trimethyl benzene (µg/L)	Xylenes Total (µg/L)	Acetone (µg/L)	Cyanide, Free ## (mg/L)	Cyanide, Total ** (mg/L)
		AWQS: 5	AWQS: 5	AWQS: 200	AWQS: 7	AWQS: NE	AWQS: 70	AWQS: 2	AWQS: NE	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 5	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 700	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 1,000	AWQS: NE	AWQS: NE	AWQS: 10,000	AWQS: 10,000	AWQS: 0.2	AWQS: NE
MW-10A	10/4/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.0	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	12/11/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.2	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	NA	<0.0080
	2/20/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.5	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	5/23/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.025	<0.025
	8/2/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	6.3	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	11/19/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	6.4	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/21/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	6.9	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/14/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	6.5	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/6/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	9.0	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
MW-11A	5/26/2005	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	1.1	0.86	<1.0	5.9	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	10	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/24/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	4.5	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.0050
	5/17/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	4.7	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	10/4/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.1	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	12/1/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	2/20/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	5/22/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.7	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	7/31/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	4.1	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	11/14/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	3.2	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/21/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	3.1	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/14/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.5	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/6/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.9	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
MW-12A	5/23/2006	4.8	2.1	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.2	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	10/5/2006	3.6	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	12/8/2006	3.4	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	NA	<0.0080
	2/27/2007	3.4	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	0.0099
	5/24/2007	4.0	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.025	<0.025
	8/2/2007	4.1	1.4	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.88	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	11/19/2007	4.5	1.2	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.83	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/28/2008	2.8	1.2	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.88	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/16/2008	2.8	1.0	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.7	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	0.043	0.043
	8/8/2008	2.5	1.0	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.71	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	0.065	0.065
	11/13/2008	2.1	0.74	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.2	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	4/28/2010	2.1	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	3.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
MW-13A	5/24/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.4	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	10/4/2006	110	19	<1.0	<1.0	2.4	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	3.3	<20	<0.0080	<0.0080
	12/11/2006	4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	NA	<0.0080
	2/20/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	5/23/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.7	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.025	<0.025
	7/31/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.9	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	11/15/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.1	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/20/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.4	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/13/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.3	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/6/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.9	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	11/11/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.8	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	4/27/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.6	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
MW-14A	5/17/2006	160	3.0	<0.50	0.69	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.3	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.49	2.0
	10/11/2006	94	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<3.0	<20	0.2	0.5
	12/11/2006	57	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.6	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	NA	0.19
	2/22/2007	66	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.5	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	0.042	0.11
	5/24/2007	53	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.8	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	0.035	0.056
	8/2/2007	13	0.54	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.9	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	0.014
	11/19/2007	19	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.6	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	0.053
	2/25/2008	9.5	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.4	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	<0.02	<0.02
	5/16/2008	150	1.1	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.9	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	0.034	0.034
	8/12/2008	60	0.90	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.7	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	0.22	0.22
MW-15A	5/16/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.7	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	10/5/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.3	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	11/30/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.5	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	2/20/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.2	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	5/23/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.8	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	7/31/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.7	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	11/20/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.6	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/22/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.4	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/13/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/5/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.7	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	11/11/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	3.0	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	4/29/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.8	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
MW-16A	4/24/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.3	2.3	<1.0	<10	<0.50	<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/13/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.83	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/5/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.92	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	11/12/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.93	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02

TABLE 5
SUMMARY OF SELECTED VOCs (µg/L) AND CYANIDES (mg/L) HISTORICALLY DETECTED IN GROUNDWATER SINCE 2001
20th and Factor WQARF Site, Yuma, Arizona

WELL	DATE	PCE (µg/L)	TCE (µg/L)	1,1,1-TCA (µg/L)	1,1-DCE (µg/L)	1,1-DCA (µg/L)	Cis-1,2-DCE (µg/L)	VC (µg/L)	BCM (µg/L)	BDCM (µg/L)	DBCM (µg/L)	Bromoform (µg/L)	Chloroform (µg/L)	Benzene (µg/L)	MTBE (µg/L)	2-Butanone (µg/L)	n-Butyl benzene (µg/L)	sec-Butyl benzene (µg/L)	CD (µg/L)	Ethyl benzene (µg/L)	Isopropyl benzene (µg/L)	4-Isopropyl toluene (µg/L)	Naphthalene (µg/L)	n-Propyl benzene (µg/L)	Toluene (µg/L)	1,2,4-Trimethyl benzene (µg/L)	1,3,5-Trimethyl benzene (µg/L)	Xylenes Total (µg/L)	Acetone (µg/L)	Cyanide, Free ## (mg/L)	Cyanide, Total ** (mg/L)
		AWQS: 5	AWQS: 5	AWQS: 200	AWQS: 7	AWQS: NE	AWQS: 70	AWQS: 2	AWQS: NE	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 5	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 700	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 1,000	AWQS: NE	AWQS: NE	AWQS: 10,000	AWQS: 10,000	AWQS: 0.2	AWQS: NE
MW-16A	4/27/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.0	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
MW-17A	12/6/2006	5.0	11	<1.0	3.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	12	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	1.0	<1.0	<1.0	<3.0	<20	NA	NA
	2/28/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	13	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	5/23/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	15	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.025	0.027
	7/31/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	14	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	11/18/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	8.7	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/22/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	5.8	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/14/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	3.9	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/6/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	4.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	11/12/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	3.0	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	4/27/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.0	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
MW-18A	12/4/2006	1.5	2.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.6	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	NA	<0.0080
	2/26/2007	3.6	5.9	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	0.0093
	5/23/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.1	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.025	<0.025
	8/2/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.9	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	11/16/2007	<0.50	0.65	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.7	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/25/2008	2.2	3.8	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.6	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/20/2008	5.4	7.1	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/12/2008	6.6	10	<0.50	1.8	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.8	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	11/13/2008	<0.50	0.53	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.5	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	4/28/2010	13	14	<0.50	4.4	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.9	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
MW-19A	12/6/2006	12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.8	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	3.1	<1.0	<1.0	<3.0	<20	NA	0.049
	2/20/2007	18	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	0.008	0.076
	5/23/2007	24	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.1	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	0.062	0.089
	8/6/2007	27	1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.9	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.0069	0.11
	11/21/2007	27	0.98	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.4	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.054	0.11
	2/22/2008	17	0.53	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.8	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	<0.002	0.11
	5/19/2008	14	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.6	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/11/2008	15	0.97	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	0.049	0.049
MW-20A	12/6/2006	1.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.8	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	NA	<0.0080
	2/21/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.7	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	5/23/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7.8	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.025	<0.025
	8/6/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	8.4	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	11/19/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	6.4	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/22/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	6.2	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/14/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	5.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/7/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	7.5	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
MW-21A	5/20/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.8	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	7/30/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.93	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	11/13/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.0	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/21/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.1	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	4/16/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.0	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5.5	1.6	3.8	<5.0	NA	<0.02
	5/16/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.91	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	6/12/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.94	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/8/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.5	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	11/12/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.3	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	4/28/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
MW-25A	4/26/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
MW-101A	6/16/2001	4.3	<0.5	<0.5	<1.0	<0.5	<0.50	<1.0	<0.50	<0.5	<0.50	<1.0	<1.0	<0.5	<1.0	<5.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.05	<0.05
	1/30/2002	2.3	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.5	<1.0	<5.0	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	6	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.05	<0.01
	6/9/2004	0.97	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.01	<0.01
	11/29/2004	1.4	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	6/1/2005	0.52	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	10	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/23/2006	1.5	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	5/16/2006	0.87	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	10/6/2006	2.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	12/12/2006	5.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	NA	<0.0080
	2/19/2007	3.9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	5/22/2007	2.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	7/31/2007	2.1	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	11/19/2007	1.6	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/26/2008	1.6	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/15/2008	0.58	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/7/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	11/12/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	4/27/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
MW-102A	6/16/2001	62	<0.5	<0.5	<1.0	<0.5	<0.50	<1.0	<0.5	<0.5	<0.50	<1.0	<1.0	<0.5	<1.0	<5.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.05	7.1
	1/30/2002	75	<0.50	0.92	<1.0	0.89	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<1.0	<5.0	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	11	1.66	2.42
	6/10/2004	64;72	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<1.0;<1.0	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<1.0;<1.0	2.2;2.3	<0.50;<0.50	<2.0;<2.0	<5.0;<5.0	<2.5;<2.5	<1.5;<1.5	<0.50;<0.50	<2.0;<2.0	<2.5;<2.5	<1.5;<1.5	<5.0;<5.0	<2.0;<2.0	<3.0;<3.0	<2.0;<2.0	<1.5;<1.5	<3.0;<3.0	<2.0;<2.0	0.2	0.87
	11/23/2004	19;23	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<1.0;<1.0	<0.50;<0.50	<0.5;<0.5	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<1.0;<1.0	<0.50;<0.50	<0.50;<0.50	<2.0;<2.0	<5.0;<5.0	<2.5;<2.5	<1.5;<1.5	<0.50;<0.50	<2.0;<2.0	<2.5;<2.5	<1.5;<1.5	<5.0;<5.0	<2.0;<2.0	<3.0;<3.0	<2.0;<2.0	<1.5;<1.5	<3.0;<3.0	<2.0;<2.0	1.6;0.73	2.6;2.4
	2/21/2006	69	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.9	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.33	10

TABLE 5
SUMMARY OF SELECTED VOCs (µg/L) AND CYANIDES (mg/L) HISTORICALLY DETECTED IN GROUNDWATER SINCE 2001
20th and Factor WQARF Site, Yuma, Arizona

WELL	DATE	PCE (µg/L)	TCE (µg/L)	1,1,1-TCA (µg/L)	1,1-DCE (µg/L)	1,1-DCA (µg/L)	Cis-1,2-DCE (µg/L)	VC (µg/L)	BCM (µg/L)	BDCM (µg/L)	DBCM (µg/L)	Bromoform (µg/L)	Chloroform (µg/L)	Benzene (µg/L)	MTBE (µg/L)	2-Butanone (µg/L)	n-Butyl benzene (µg/L)	sec-Butyl benzene (µg/L)	CD (µg/L)	Ethyl benzene (µg/L)	Isopropyl benzene (µg/L)	4-Isopropyl toluene (µg/L)	Naphthalene (µg/L)	n-Propyl benzene (µg/L)	Toluene (µg/L)	1,2,4-Trimethyl benzene (µg/L)	1,3,5-Trimethyl benzene (µg/L)	Xylenes Total (µg/L)	Acetone (µg/L)	Cyanide, Free ## (mg/L)	Cyanide, Total ** (mg/L)
		AWQS: 5	AWQS: 5	AWQS: 200	AWQS: 7	AWQS: NE	AWQS: 70	AWQS: 2	AWQS: NE	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 5	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 700	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 1,000	AWQS: NE	AWQS: NE	AWQS: 10,000	AWQS: 10,000	AWQS: 0.2	AWQS: NE
MW-102A	5/18/2006	54	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.3	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	1.3	9.2
	10/10/2006	35	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<3.0	<20	1.2	5.7
	12/12/2006	31	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	NA	5.6
	2/21/2007	33	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	2.5 D2	7.0 D2
	5/15/2007	34	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	3.2	5.8 D2
	8/8/2007	34	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	1.2	3.6 D2
	11/21/2007	29	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.79	2.4 D2
	2/25/2008	12	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	2.2	2.4	<0.50	1.6	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	1.2 D1	3.6 D1
	5/22/2008	14	0.91	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	3.6	4.7	1.1	2.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	0.21	0.32 D2
	8/12/2008	17	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	1.3	1.2	<0.50	1.5	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	6.0	6.0 D2
PZ-2A	8/11/2008	30	11	<0.50	5.5	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.8	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	0.036	0.036
DMW-6	2/24/2006	<0.50	<0.50	<0.50	<1.0	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	5/17/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	10/3/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	11/29/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	2/19/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	5/14/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	8/1/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.83	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	11/14/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	0.68	0.56	<1.0	1.2	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/19/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.95	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/13/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.70	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/4/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.79	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
DMW-10	2/24/2006	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<1.0;<1.0	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<0.50;<0.50	<1.0;<1.0	<0.50;<0.50	<0.50;<0.50	<2.0;<2.0	<5.0;<5.0	<2.5;<2.5	<1.5;<1.5	<0.50;<0.50	<2.0;<2.0	<2.5;<2.5	<1.5;<1.5	<5.0;<5.0	<2.0;<2.0	<3.0;<3.0	<2.0;<2.0	<1.5;<1.5	<3.0;<3.0	<2.0;<2.0	NA	<0.010
	5/17/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	10/3/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	11/29/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	2/19/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	5/14/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	8/1/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	11/14/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/19/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/13/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/4/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
DMW-11	2/24/2006	<0.50	<0.50	<0.50	<1.0	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	5/17/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	10/3/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	11/29/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	2/19/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	5/14/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	8/1/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.63	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	11/14/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/19/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/13/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/13/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.75	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	11/10/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	4/26/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
DMW-16	6/9/2004	210	13	<0.50	0.84	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.95	0.91	<2.0	7.5	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	49	2.1	<3.0	19	5.3	10	25	0.44	5.3
	11/22/2004	49	21	<0.50	2.1	2.1	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.83	2.1	<2.0	18	<2.5	1.9	<0.50	7.3	2.5	1.9	89	3.7	<3.0	31	8.9	20	<20	0.18	2.4
DMW-17	6/9/2004	85	7.5	<0.50	<0.50	1.3	<0.50	1.1	<0.50	<0.50	<0.50	<1.0	0.72	2.1	<2.0	<5.0	26	17	<0.50	15	8.8	15	<5	16	<3.0	78	21	24	<20	<0.010	2.6
	11/22/2004	40	5.9	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	2.5	<2.0	17	<2.5	1.7	7.4	9.4	2.8	1.5	97	3.9	<3.0	21	4.8	15	20	0.027	1.8
DMW-18	6/9/2004	28	10	<0.50	0.53	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.93	0.84	<2.0	<5.0	<2.5	<1.5	<0.50	3.3	<2.5	<1.5	21	<2.0	<3.0	9.2	1.7	5	21	<0.010	2.6
	6/3/2005	48	9.7	<0.50	<0.50	<0.50	3.5	<0.50	<0.50	<0.50	<0.50	<1.0	0.85	0.61	<2.0	38	<2.5	<1.5	<0.50	4.3	<2.5	<1.5	29	2	<3.0	9.4	<1.5	5.3	<20	0.074	0.62
DMW-25	6/3/2005	5.6	0.56	<0.50	<1.0	<0.5	<0.50	<0.50	<0.50	<0.50	0.69	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/24/2006	9.1	0.91	<0.50	<1.0	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	5/17/2006	11	1.2	<0.50	<0.50	<0.50	3.5	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	10/3/2006	18	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.4	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	11/29/2006	20	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	2/19/2007	28	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.7	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	5/14/2007	26	1.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.1	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	8/1/2007	24	1.3	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.20	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	11/14/2007	15	0.78	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.9	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/19/2008	11	0.55	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	4.2	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/13/2008	14	0.56	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.8	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/4/2008	17	1.1	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.9	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
DEW-19	2/24/2006	<0.50	<0.50	<0.50	<1.0	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	5/17/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	10/3/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.9	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	11/29/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.4	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	2/19/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	5/14/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.4	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	8/1/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	3.7	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010

TABLE 5
SUMMARY OF SELECTED VOCs (µg/L) AND CYANIDES (mg/L) HISTORICALLY DETECTED IN GROUNDWATER SINCE 2001
20th and Factor WQARF Site, Yuma, Arizona

WELL	DATE	PCE (µg/L)	TCE (µg/L)	1,1,1-TCA (µg/L)	1,1-DCE (µg/L)	1,1-DCA (µg/L)	Cis-1,2-DCE (µg/L)	VC (µg/L)	BCM (µg/L)	BDCM (µg/L)	DBCM (µg/L)	Bromoform (µg/L)	Chloroform (µg/L)	Benzene (µg/L)	MTBE (µg/L)	2-Butanone (µg/L)	n-Butyl benzene (µg/L)	sec-Butyl benzene (µg/L)	CD (µg/L)	Ethyl benzene (µg/L)	Isopropyl benzene (µg/L)	4-Isopropyl toluene (µg/L)	Naphthalene (µg/L)	n-Propyl benzene (µg/L)	Toluene (µg/L)	1,2,4-Trimethyl benzene (µg/L)	1,3,5-Trimethyl benzene (µg/L)	Xylenes Total (µg/L)	Acetone (µg/L)	Cyanide, Free ## (mg/L)	Cyanide, Total ** (mg/L)
		AWQS: 5	AWQS: 5	AWQS: 200	AWQS: 7	AWQS: NE	AWQS: 70	AWQS: 2	AWQS: NE	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 5	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 700	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 1,000	AWQS: NE	AWQS: NE	AWQS: 10,000	AWQS: 10,000	AWQS: 0.2	AWQS: NE
DEW-19	11/14/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/19/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/13/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/4/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
B-Zone Groundwater Monitoring Wells																															
MW-8B	12/5/2006	910 D2	290 D2	<1.0	140 D2	3.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7.3	<1.0	4.3	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	5.2	<1.0	<1.0	<3.0	<20	NA	5.8
	2/26/2007	1,000 D2	320 D2	<10	140 D2	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<30	<200	0.21	3.3
	5/21/2007	950 D2	350 D2	<10	19	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10	<10	<30	<200	1.7 D2	2.2 D2
	8/6/2007	1,200 D2	320 D2	<0.50	28	2.7	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	7.5	1.2	9.1	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.864	1.5 D2
	11/16/2007	870 D2	260 D2	<0.50	110	2.3	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	6.5	1.1	6.4	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.096	1.2 D2
	2/26/2008	750 D2	220 D2	<5.0	26 D2	<5.0	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<10	<100	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<50	0.88 D2	1.5 D2
	5/20/2008	570 D2	140 D2	<5.0	23 D2	<5.0	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<10	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<50	1.0	1.0 D2
	8/29/2008	500 D2	130 D2	<5.0	42 D2	<5.0	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<10	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<50	0.79	0.79 D2
	11/13/2008	330 D2	86 D2	<5.0	35 D2	<5.0	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<10	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<50	0.23	0.23 D2
	4/28/2010	78	26	<0.50	11	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	4.4	<0.50	2.1	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	0.032	0.032
MW-18B	12/5/2006	<1.0	31	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.1	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	25	<1.0	<1.0	<3.0	<20	NA	<0.0080
	2/26/2007	<1.0	29	<1.0	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	5/22/2007	1.5	45	<1.0	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	8/2/2007	0.67	34	<0.50	0.68	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.4	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	11/16/2007	1.1	100	<0.50	1.6	<1.0	<0.50	<0.50	<0.50	0.73	0.53	<1.0	1.8	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	0.010
	2/25/2008	8.9 D2	210 D2	<2.5	<5.0	<2.5	<5.0	<2.5	<2.5	<5.0	<2.5	<2.5	<2.5	<2.5	<5.0	<50	<2.5	<2.5	<5.0	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<10	<25	NA	<0.02
	5/20/2008	<0.50	200 D2	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/12/2008	2.6 D2	71 D2	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<40	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<10	NA	<0.02
MW-21B	5/20/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.1	4.6	<1.0	5.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	7/30/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	3.1	3.2	<1.0	3.7	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	11/13/2007	<0.50	0.62	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	4.0	4.6	1.3	4.1	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/21/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	2.4	2.6	0.56	2.8	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	4/16/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	2.7	2.8	0.58	2.7	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/15/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	2.2	1.5	<0.50	2.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	6/12/2008	<0.50	0.59	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	1.8	0.66	<0.50	2.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/8/2008	<0.50	3.3	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	1.5	<0.50	<0.50	2.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	11/12/2008	<0.50	6.0	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.1	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	4/28/2010	<0.50	16	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.62	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
MW-22B	11/14/2007	280 D2	6.2	<0.50	3.2	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	9.9	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	41	0.042	0.13
	2/26/2008	65	1.7	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	1.3	<0.50	0.53	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/19/2008	390 D2	7.2 D2	<5.0	<10	<5.0	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<10	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<50	0.15	0.15
	8/29/2008	650	12	<5.0	<10	<5.0	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<10	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<50	0.76	0.76 D2
MW-23B	11/29/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.86	<0.50	<2.0	8.7 L1	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/20/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.69	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	<0.02	<0.02
	5/14/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.67	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/6/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.98	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	11/11/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.90	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	4/27/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.95	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
MW-24B	1/31/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.1	<0.50	<1.0	NR	<0.50	<0.50	<1.0	NR	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	NR	NA	<0.02
	2/22/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.6	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/16/2008	0.64	2.3	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.96	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/7/2008	<0.50	2.4	<0.50	2.7	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.6	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	1.2	1.2 D2
	11/12/2008	0.52	1.7	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.5	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	1.1	1.1 D2
	4/28/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	0.64	0.64
MW-25B	4/27/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
MW-102B1	6/16/2001	410	0.78	3.0	2 L2	8.2	<0.50	<1.0	<0.50	<0.5	<0.50	<1.0	<1.0	<0.5	<1.0	<5.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.05	12
	1/30/2002	320	12	6.2	1.6	7	<0.50	<0.50	<0.50	7.3	6.8	<1.0	6.7	0.79	<1.0	<5.0	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	6	<0.50	<0.50	<0.50	<0.50	<1.0	<10	0.055	0.022
	6/8/2004	200	7.8	<0.50	0.81	4.8	0.61	<0.50	<0.50	<0.50	<0.50	<1.0	2.7	1.6	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	11/23/2004	1.3	0.79	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	0.053
	6/1/2005	1.6	0.57	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	0.019
	2/21/2006	0.9	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	0.029
	5/26/2006	4.2	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	0.024
	10/10/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<3.0	<20	0.008	0.02
	12/7/2006	8.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.8	5.8	1.7	3.6	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	NA	0.010
	2/23/2007	16 D1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<15.0	<100	<0.0080	0.015
	5/24/2007	24 D1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<15.0	<100	<0.025	<0.025
	8/7/2007	10	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	4.0	3.2	<1.0	5.8	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	0.013
	11/21/2007	21	0.55	<0.50	<0.50	<1.0	<0.50	<0.50	1.6	0.60	0.65	<1.0	4.6	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/25/2008	16	1.3	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	3.9	4.6	0.85	3.8	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/22/2008	16	1.8	<0.50	<1.0	<0.50	<1.0	<0.50	0.74	1.5	2.0	<0.50	2.2	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/12/2008	5.8	0.55	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	4.7	4.1	1.1	5.3	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	11/14/2008	8.6	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	1.5	1.3	1.6	0.64	4.3	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	4/29/2010	9.2	0.57	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	7.2	7.7	2.1	6.5	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
MW-102B2	6/16/2001	56	<0.5	1.2	<1.0	1.3	<0.50	<1.0	<0.50	0.81	0.62	<1.0	1.3	3.1	<1.0	<5.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	11	<0.05	<0.05

TABLE 5
SUMMARY OF SELECTED VOCs (µg/L) AND CYANIDES (mg/L) HISTORICALLY DETECTED IN GROUNDWATER SINCE 2001

20th and Factor WQARF Site, Yuma, Arizona

WELL	DATE	PCE (µg/L)	TCE (µg/L)	1,1,1-TCA (µg/L)	1,1-DCE (µg/L)	1,1-DCA (µg/L)	Cis-1,2-DCE (µg/L)	VC (µg/L)	BCM (µg/L)	BDCM (µg/L)	DBCM (µg/L)	Bromoform (µg/L)	Chloroform (µg/L)	Benzene (µg/L)	MTBE (µg/L)	2-Butanone (µg/L)	n-Butyl benzene (µg/L)	sec-Butyl benzene (µg/L)	CD (µg/L)	Ethyl benzene (µg/L)	Isopropyl benzene (µg/L)	4-Isopropyl toluene (µg/L)	Naphthalene (µg/L)	n-Propyl benzene (µg/L)	Toluene (µg/L)	1,2,4-Trimethyl benzene (µg/L)	1,3,5-Trimethyl benzene (µg/L)	Xylenes Total (µg/L)	Acetone (µg/L)	Cyanide, Free ## (mg/L)	Cyanide, Total ** (mg/L)
		AWQS: 5	AWQS: 5	AWQS: 200	AWQS: 7	AWQS: NE	AWQS: 70	AWQS: 2	AWQS: NE	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 5	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 700	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 1,000	AWQS: NE	AWQS: NE	AWQS: 10,000	AWQS: 10,000	AWQS: 0.2	AWQS: NE
MW-102B2	1/30/2002	220	0.59	6.1	1.4	5.3	<0.50	<0.50	<0.50	5	4.3	<1.0	5.9	2.3	<1.0	<5.0	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	6	<0.50	<0.50	<0.50	<0.50	<1.0	<10	0.104	<0.01
	6/8/2004	71	1.6	<0.50	0.65	3.8	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	3.0	3.4	2.2	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	1/23/2004	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	0.053
	6/1/2005	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<1.0	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	10	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/21/2006	41	1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	2.0	<0.50	<2.0	<5.0	<2.5	<1.5	0.80	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	5/26/2006	36	0.89	<0.5	<1.0	<0.5	<0.5	<1.0	<0.50	<0.50	<0.50	<1.0	1.2	<0.50	<2.0	<5.0	<2.5	<1.5	0.84	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	10/12/2006	4.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	6.3	5	1.4	5.9	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	12/7/2006	2.9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	1.2	<1.0	2.6	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	NA	<0.0080
	2/23/2007	11 D1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<15.0	<100	<0.0080	0.0085
	5/24/2007	13 D1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<15.0	<100	<0.025	<0.025
	8/7/2007	7.3	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	5.3	4.0	<1.0	7.7	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	11/21/2007	10	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	2.0	0.59	0.50	<1.0	6.4	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/28/2008	9.3	0.70	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	4.6	5.3	1.0	4.5	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/21/2008	10	1.40	<0.50	<1.0	<0.50	<1.0	<0.50	0.66	3.4	4.4	1.0	3.6	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/12/2008	2.9	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	2.3	1.8	<0.50	2.7	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
MW-103B	11/24/2004	0.52	<0.50	<0.5	<1.0	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	6/1/2005	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	0.59	<0.50	<0.50	<0.50	<1.0	4.5	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/21/2006	1.1	<0.50	<0.50	<0.50	<1.0	<0.50	0.57	0.64	<0.50	<0.50	<1.0	2.2	<0.50	<2.0	<5.0	<2.5	<1.5	0.59	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	5/25/2006	1.3	<0.50	<0.50	<0.50	<1.0	<0.50	0.61	0.5	<0.50	<0.50	<1.0	1.5	<0.50	<2.0	<5.0	<2.5	<1.5	0.66	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	21	<0.010	0.015
	10/12/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.6	4.3	1.3	2.8	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	12/7/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.0	5.7	1.8	4.2	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	NA	<0.0080
	2/23/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	5/22/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	8/7/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	4.9	3.8	<1.0	5.5	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	11/20/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	0.73	1.9	1.9	<1.0	3.6	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/27/2008	20	5.2	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	1.1	1.1	<0.50	1.6	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/22/2008	10	1.7	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	4.3	5.7	1.3	3.0	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	1.9	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	8.6	0.18	0.18
	8/12/2008	3.4	0.79	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	11	11	2.9	11	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
MW-104B	12/6/2004	<0.50	<0.50	<0.50	<1.0	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	6/2/2005	1.9	<0.50	<0.50	<1.0	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/22/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	5/23/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	10/11/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	12/8/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	NA	<0.0080
	2/27/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	5/21/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	8/8/2007	1.6	0.73	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	1.3	1.2	<1.0	1.5	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	11/15/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	0.65	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/20/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	0.57	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/14/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/6/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
PZ-2B	8/11/2008	460 D2	140 D2	<2.5	52 D2	<2.5	<5.0	<2.5	<2.5	<5.0	<2.5	<2.5	18 D2	<2.5	<5.0	<100	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.0	<25	0.49	0.49 D2
EW-1	2/1/2008	1000 D2	98 D2	<5.0	32 D2	<5.0	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<10	NR	<5.0	<5.0	NR	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20	NR	NA	<0.02
	2/26/2008	2100 D2	110 D2	<10	53 D2	<10	<20	<10	<10	<20	<10	<10	<10	<10	<20	<200	<10	<10	<20	<10	<10	<10	<10	<10	<10	<10	<10	<40	<100	NA	<0.02
	5/20/2008	410 D2	130 D2	<2.5	31 D2	<2.5	<5.0	<2.5	<2.5	<5.0	<2.5	<2.5	<2.5	<2.5	<5.0	<100	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<10	<25	0.077	0.077
	8/29/2008	390 D2	120 D2	<5.0	42 D2	<5.0	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	3.2 D2, E4	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<50	0.076	0.076
C-Zone Groundwater Monitoring Wells																															
MW-8C	5/18/2007	2.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.4	2.7	<1.0	4.2	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	8/6/2007	2.9	1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	2.3	2.5	<1.0	4.4	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.033	0.12
	11/16/2007	2.3	1.2	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/28/2008	1.2	0.69	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	<0.02	0.12
	5/15/2008	0.8	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/8/2008	2.4	1.1	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	11/12/2008	7.2	2.6	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	4/28/2010	11	3.7	<0.50	1.2	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
MW-17C	9/24/2007	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	11/15/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/22/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/15/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	0.039	0.039
	8/7/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.6	<0.50	<0.50	0.54	<0.50	<2.0	<5.0	NA	<0.02
	11/12/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	4/27/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
MW-21C	5/19/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	1.2	<1.0	2.6	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	8/1/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	0.93	0.78	<1.0	2.1	<0.50	<2.0	<5.0	<2.5	<1.5	0.74	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	11/29/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	0.86	0.51	<1.0	2.0	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/27/2008	2.4	0.74	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	1.2	1.4	<0.50	1.2	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	3/19/2008	1.4	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.74	<0.50	<1.0	<10	<0.50	<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.4	<5.0	NA	NA
	4/16/2008	0.98	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.84	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/20/2008	2.5	2.0	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	0.83	<0.50	0.89	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02

TABLE 5
SUMMARY OF SELECTED VOCs (µg/L) AND CYANIDES (mg/L) HISTORICALLY DETECTED IN GROUNDWATER SINCE 2001
20th and Factor WQARF Site, Yuma, Arizona

WELL	DATE	PCE (µg/L)	TCE (µg/L)	1,1,1-TCA (µg/L)	1,1-DCE (µg/L)	1,1-DCA (µg/L)	Cis-1,2-DCE (µg/L)	VC (µg/L)	BCM (µg/L)	BDCM (µg/L)	DBCM (µg/L)	Bromoform (µg/L)	Chloroform (µg/L)	Benzene (µg/L)	MTBE (µg/L)	2-Butanone (µg/L)	n-Butyl benzene (µg/L)	sec-Butyl benzene (µg/L)	CD (µg/L)	Ethyl benzene (µg/L)	Isopropyl benzene (µg/L)	4-Isopropyl toluene (µg/L)	Naphthalene (µg/L)	n-Propyl benzene (µg/L)	Toluene (µg/L)	1,2,4-Trimethyl benzene (µg/L)	1,3,5-Trimethyl benzene (µg/L)	Xylenes Total (µg/L)	Acetone (µg/L)	Cyanide, Free ## (mg/L)	Cyanide, Total ** (mg/L)
		AWQS: 5	AWQS: 5	AWQS: 200	AWQS: 7	AWQS: NE	AWQS: 70	AWQS: 2	AWQS: NE	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 5	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 700	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 1,000	AWQS: NE	AWQS: NE	AWQS: 10,000	AWQS: 10,000	AWQS: 0.2	AWQS: NE
MW-21C	6/12/2008	1.6	1.6	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	1.2	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/11/2008	1.5	0.54	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	3.2	3.0	0.99	4.0	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	9/19/2008	1.8	0.7	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	2.3	<0.50	3.5	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NS	<0.02
	10/24/2008	1.4	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	4.3	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	11/14/2008	3.6	1.4	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	2.4	2.9	1.1	4.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	12/19/2008	1.9	1.6	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	2.3	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	01/26/2009	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<5.0	<0.50	<1.0	<0.50	<1.0	<5.0	<1.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	NA	<0.02
	4/28/2010	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.68	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
MW-103C	11/24/2004	2.9	<0.50	<0.50	<1.0	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	6/1/2005	<0.50	<0.50	<0.50	<1.0	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/21/2006	1.8	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	1.3	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	0.071
	5/25/2006	5.0	1.7	<0.5	<1.0	<0.5	<0.5	<1.0	<0.50	4.3	4.0	1.3	4.7	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	0.023
	10/12/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.5	3.0	<1.0	3.6	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<3.0	<20	0.0091	0.068
	12/7/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.6	1.4	<1.0	3.5	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	NA	0.026
	2/22/2007	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<15.0	<100	0.002	0.0080
	5/23/2007	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.2 D1	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<15.0	<100	<0.025	<0.025
	8/7/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	3.6	2.9	<1.0	4.1	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.011	0.011
	11/20/2007	0.56	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	1.5	1.1	0.98	<1.0	5.8	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/28/2008	5.8	0.98	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	4.3	5.1	0.95	3.5	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	<0.02	<0.02
	5/21/2008	6.3	2.5	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	2.4	2.3	0.61	2.4	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/12/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	11/14/2008	<2.5	<2.5	<2.5	<5.0	<2.5	<5.0	<2.5	<2.5	5.3 D1	5.5 D1	<2.5	7.1 D1	<2.5	<5.0	<100	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.0	<25	NA	<0.02
	4/29/2010	3.1	1.0	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	7.1	7.4	2.0	6.7	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
MW-104C	12/6/2004	<0.50	<0.50	<0.50	<1.0	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	6/2/2005	<0.50	<0.50	<0.50	<1.0	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/22/2006	<0.50	<0.50	<0.50	<1.0	<0.5	<0.50	<0.50	<0.50	<0.50	0.69	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	5/23/2006	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	0.78	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	10/10/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	12/8/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	NA	<0.0080
	2/27/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	5/21/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	8/3/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.54	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	11/15/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/20/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/14/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/6/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	1.0	<0.50	0.72	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
Alice Byrne	5/22/2002	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	NS	<2.0	NS	<1.5	NS	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.01
	2/22/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	5/25/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	8/3/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
	11/20/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/29/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	4/25/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/16/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	6/12/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/8/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	0.53	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	9/19/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NS	<0.02
	10/24/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	11/20/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	01/23/2009	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<5.0	<0.50	<1.0	<0.50	<1.0	<5.0	<1.0	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	NA	<0.02
St. Francis	6/3/2005	<0.50	<0.50	<0.50	<1.0	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/22/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<2.0	<1.0	<1.0	<1.0	<3.0	<20	<0.0080	<0.0080
	8/7/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	0.011	0.011
	11/16/2007	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.010
	2/27/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	4/25/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	5/16/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	6/12/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	8/8/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	9/19/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NS	<0.02
	10/24/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	11/14/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	12/19/2008	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
	01/23/2009	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	NA	<0.02
Ron Martin	11/30/2004	<0.50	<0.50	<0.50	<1.0	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<2.0	<5.0	<2.5	<1.5	<0.50	<2.0	<2.5	<1.5	<5.0	<2.0	<3.0	<2.0	<1.5	<3.0	<20	<0.010	<0.010
KL-1	6/11/2001	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<1.0	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<1.0	<5.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<3.0	<0.50	<0.50	<0.50	<0.50	<1.0	<10	NA	NA
Woodward JHS	5/22/2002	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.92	<0.50	<2.0	<5.0	<2.5	<1.5	NS	<2.0	NS	<1.5	NS	<2.0	<3.0	<2.0	<1.5	<3.0	<20	NA	<0.01

TABLE 5
SUMMARY OF SELECTED VOCs (µg/L) AND CYANIDES (mg/L) HISTORICALLY DETECTED IN GROUNDWATER SINCE 2001
20th and Factor WQARF Site, Yuma, Arizona

WELL	DATE	PCE (µg/L)	TCE (µg/L)	1,1,1-TCA (µg/L)	1,1-DCE (µg/L)	1,1-DCA (µg/L)	Cis-1,2-DCE (µg/L)	VC (µg/L)	BCM (µg/L)	BDCM (µg/L)	DBCM (µg/L)	Bromoform (µg/L)	Chloroform (µg/L)	Benzene (µg/L)	MTBE (µg/L)	2-Butanone (µg/L)	n-Butyl benzene (µg/L)	sec-Butyl benzene (µg/L)	CD (µg/L)	Ethyl benzene (µg/L)	Isopropyl benzene (µg/L)	4-Isopropyl toluene (µg/L)	Naphthalene (µg/L)	n-Propyl benzene (µg/L)	Toluene (µg/L)	1,2,4-Trimethyl benzene (µg/L)	1,3,5-Trimethyl benzene (µg/L)	Xylenes Total (µg/L)	Acetone (µg/L)	Cyanide, Free ## (mg/L)	Cyanide, Total ** (mg/L)
		AWQS: 5	AWQS: 5	AWQS: 200	AWQS: 7	AWQS: NE	AWQS: 70	AWQS: 2	AWQS: NE	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 100♦	AWQS: 5	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 700	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: NE	AWQS: 1,000	AWQS: NE	AWQS: NE	AWQS: 10,000	AWQS: 10,000	AWQS: 0.2	AWQS: NE

NOTES:

BCM = Bromochloromethane
BDCM = Bromodichloromethane
CD = Carbon disulfide
DBCM = Dibromochloromethane

1,1-DCA = 1,1-Dichloroethane
cis-1,2-DCE = cis-1,2-Dichloroethene
1,1-DCE = 1,1-Dichloroethene
MTBE = Methyl tert-butyl ether

PCE = Tetrachloroethene
1,1,1-TCA = 1,1,1-Trichloroethane
TCE = Trichloroethene
VC = Vinyl chloride

AWQS = Aquifer Water Quality Standard (Arizona)
µg/L = Micrograms per Liter
mg/L = Milligrams per Liter
D1 = Sample required dilution due to matrix.
D2 = Sample required dilution due to high concentration of target analyte.
NE = Not Established
NA = Not Analyzed

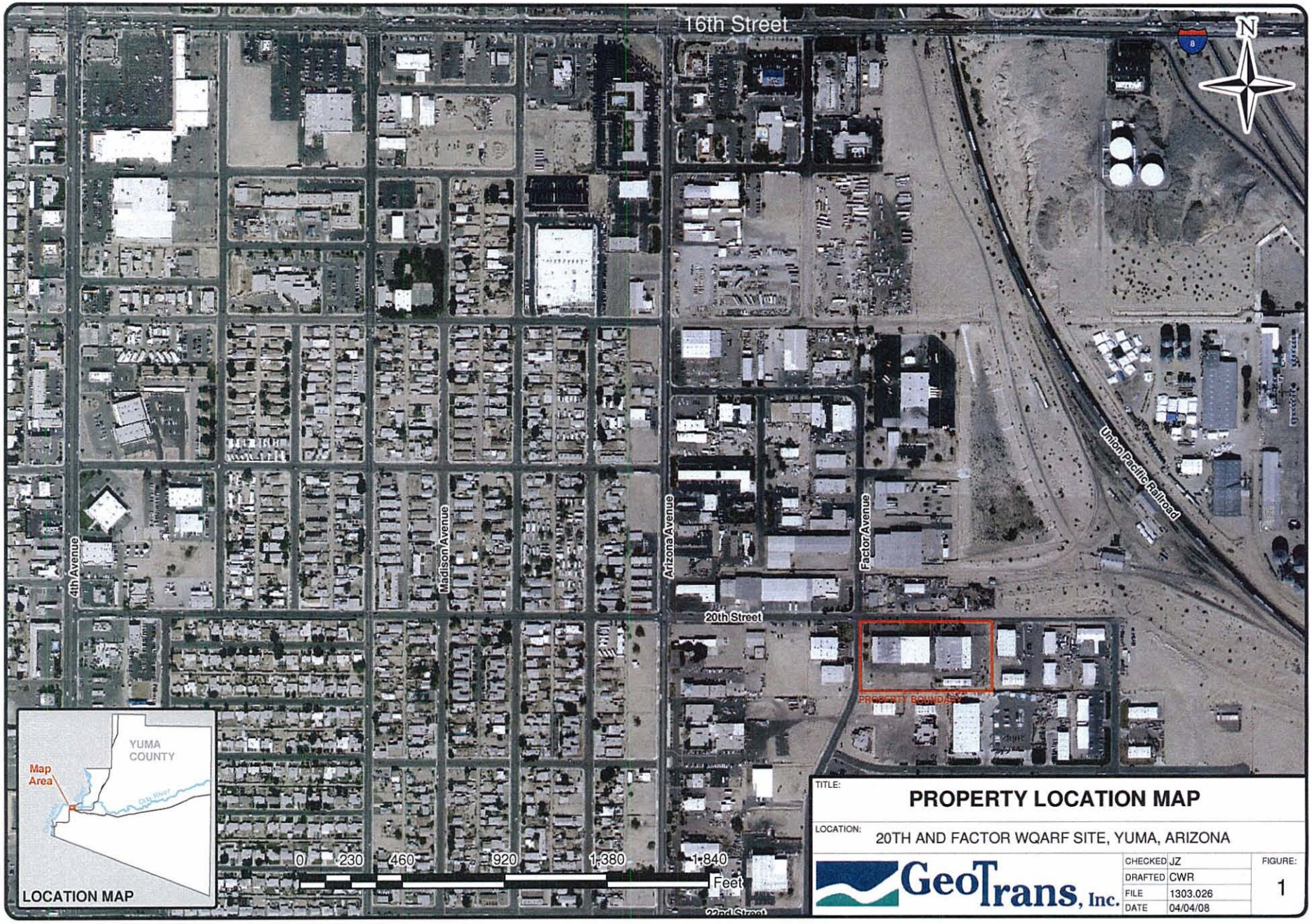
15 Concentrations at or above the AQWS
0.2 Detected concentration below the AWQS

♦ Total trihalomethanes
Cyanide amenable to chlorination
** Concentrations compared to AWQS for free cyanide for potential risk

<0.50 = Concentration not detected at or above laboratory detection limits.

VOCs analyzed by EPA Method 8260B
Free(Amenable) Cyanide analyzed by Standard Method 4500 CN
Total Cyanide analyzed by Standard Method 4500 CN

FIGURES

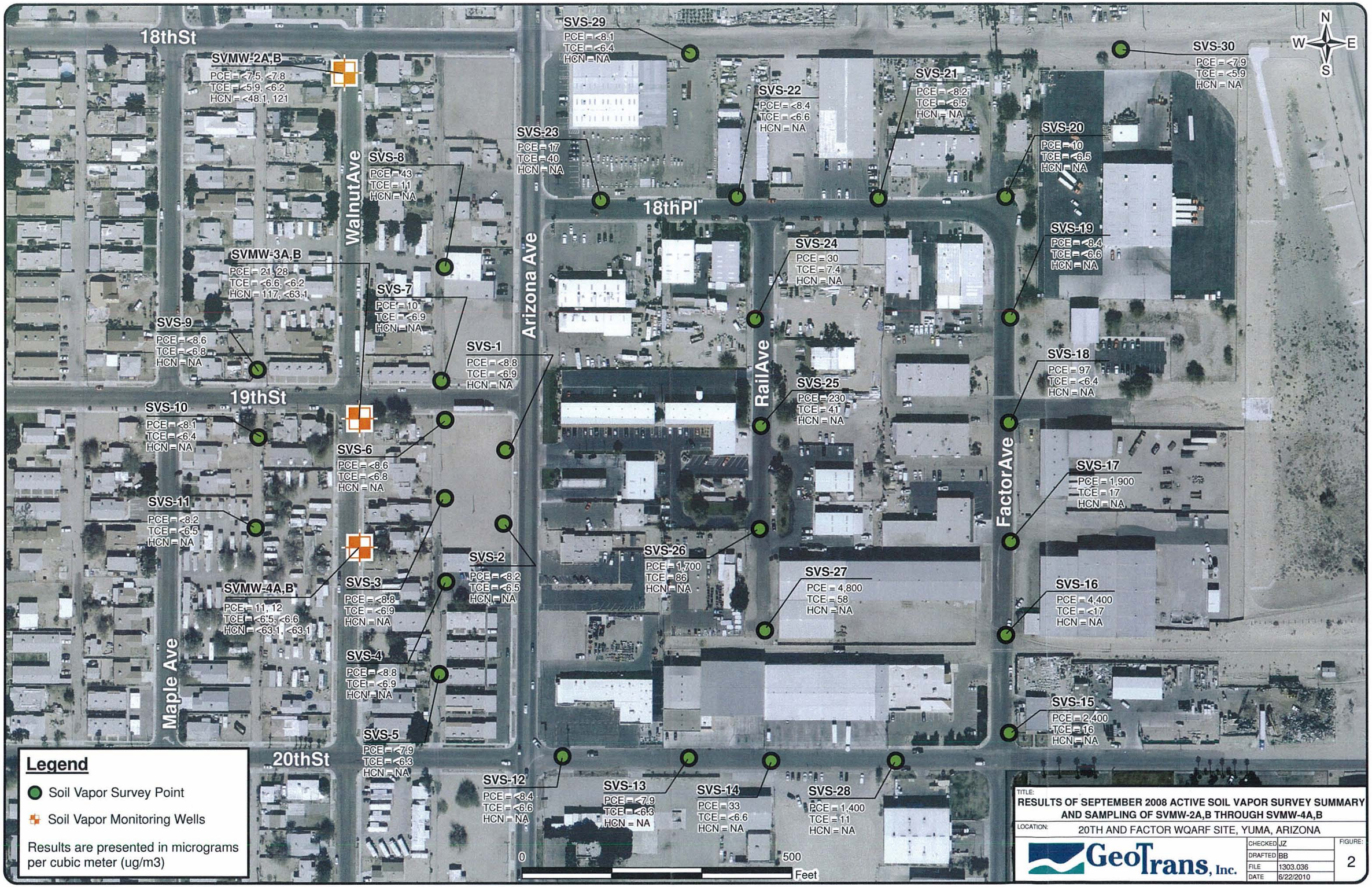


TITLE: **PROPERTY LOCATION MAP**

LOCATION: 20TH AND FACTOR WQARF SITE, YUMA, ARIZONA

GeoTrans, Inc.

CHECKED	JZ	FIGURE:
DRAFTED	CWR	1
FILE	1303.026	
DATE	04/04/08	

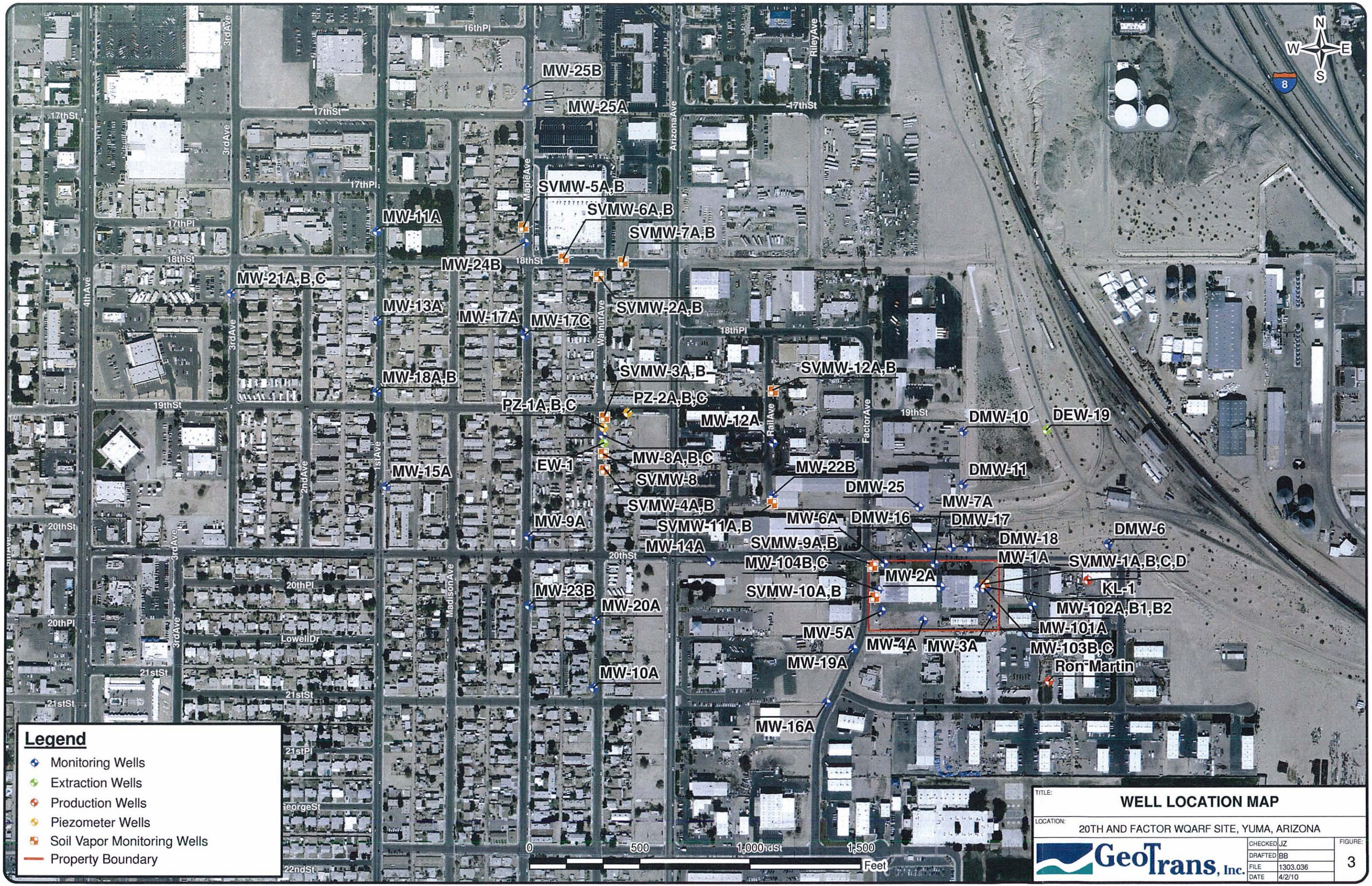


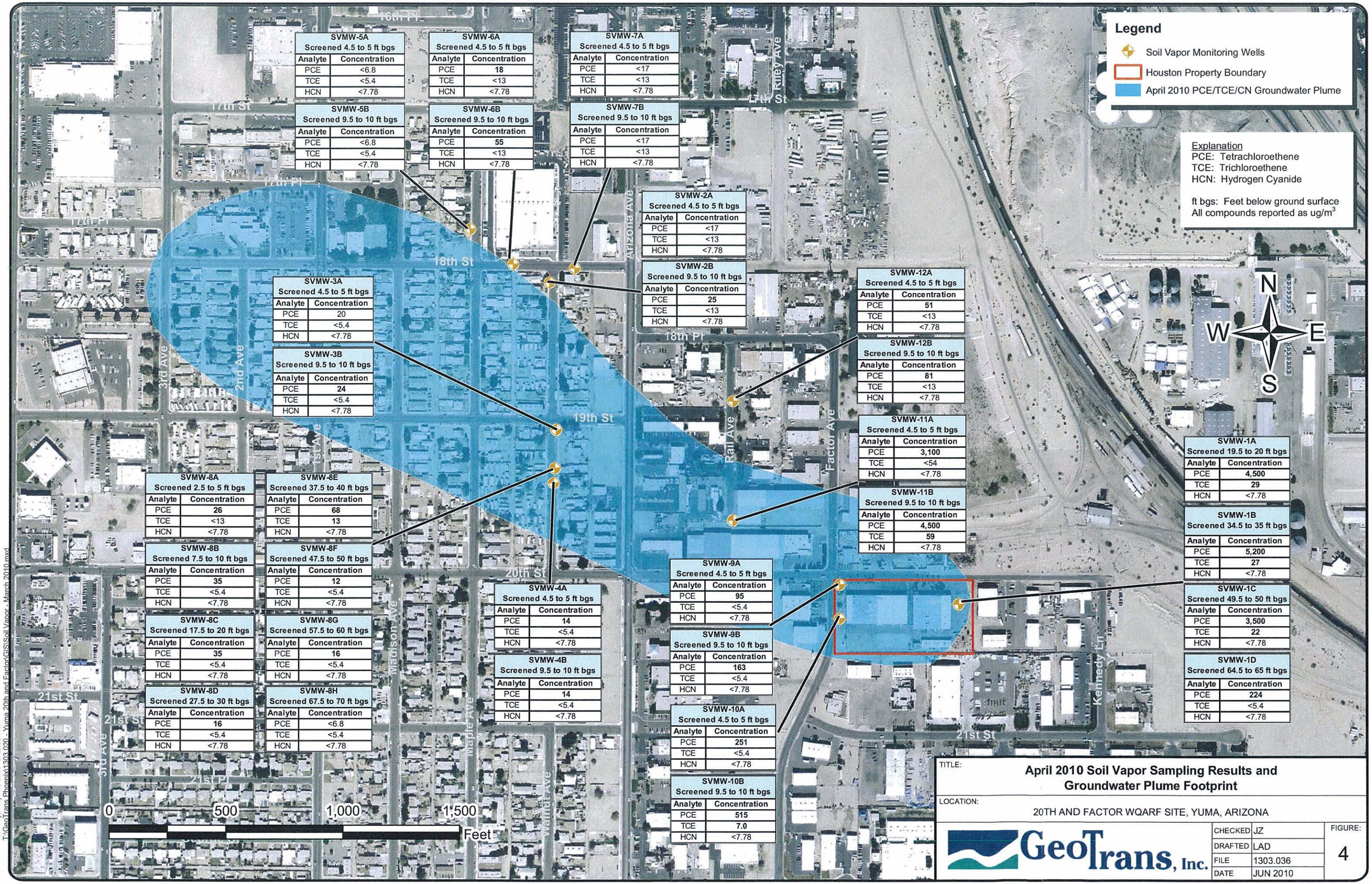
TITLE: RESULTS OF SEPTEMBER 2008 ACTIVE SOIL VAPOR SURVEY SUMMARY AND SAMPLING OF SVMW-2A,B THROUGH SVMW-4A,B

LOCATION: 20TH AND FACTOR WQARF SITE, YUMA, ARIZONA

GeoTrans, Inc.

CHECKED	JZ	FIGURE: 2
DRAFTED	BB	
FILE	1303.036	
DATE	6/22/2010	


MW-25B
MW-25A
SVMW-5A,B
SVMW-6A,B
SVMW-7A,B
MW-11A
MW-24B
MW-21A,B,C
MW-13A
MW-17A
MW-17C
SVMW-2A,B
MW-18A,B
SVMW-3A,B
SVMW-12A,B
PZ-1A,B,C
PZ-2A,B,C
MW-12A
DMW-10
DEW-19
EW-1
MW-8A,B,C
MW-15A
SVMW-8
MW-22B
DMW-11
DMW-25
SVMW-4A,B
MW-7A
MW-9A
MW-6A
DMW-16
DMW-17
SVMW-11A,B
DMW-6
DMW-18
MW-14A
SVMW-9A,B
MW-1A
SVMW-1A,B,C,D
MW-104B,C
MW-2A
KL-1
MW-23B
SVMW-10A,B
MW-20A
MW-102A,B1,B2
MW-101A
MW-5A
MW-4A
MW-3A
MW-103B,C
MW-19A
Ron Martin
MW-10A
MW-16A
16thPl
17thSt
17thPl
18thSt
18thPl
19thSt
20thSt
20thPl
21stSt
21stPl
22ndSt
LowellDr
3rdAve
4thAve
2ndAve
1stAve
MadisonAve
MapleAve
ArizonaAve
WalnutAve
RailAve
FactorAve
RileyAve
8
N
S
E
W
0
500
1,000
1,500
Feet
Legend
Monitoring Wells
Extraction Wells
Production Wells
Piezometer Wells
Soil Vapor Monitoring Wells
Property Boundary
TITLE:
WELL LOCATION MAP
LOCATION:
20TH AND FACTOR WQARF SITE, YUMA, ARIZONA
GeoTrans, Inc.
CHECKED JZ
DRAFTED BB
FILE 1303.036
DATE 4/2/10
FIGURE:
3



SVMW-5A Screened 4.5 to 5 ft bgs	
Analyte	Concentration
PCE	<6.8
TCE	<5.4
HCN	<7.78

SVMW-5B Screened 9.5 to 10 ft bgs	
Analyte	Concentration
PCE	<6.8
TCE	<5.4
HCN	<7.78

SVMW-6A Screened 4.5 to 5 ft bgs	
Analyte	Concentration
PCE	18
TCE	<13
HCN	<7.78

SVMW-6B Screened 9.5 to 10 ft bgs	
Analyte	Concentration
PCE	55
TCE	<13
HCN	<7.78

SVMW-7A Screened 4.5 to 5 ft bgs	
Analyte	Concentration
PCE	<17
TCE	<13
HCN	<7.78

SVMW-7B Screened 9.5 to 10 ft bgs	
Analyte	Concentration
PCE	<17
TCE	<13
HCN	<7.78

SVMW-2A Screened 4.5 to 5 ft bgs	
Analyte	Concentration
PCE	<17
TCE	<13
HCN	<7.78

SVMW-2B Screened 9.5 to 10 ft bgs	
Analyte	Concentration
PCE	25
TCE	<13
HCN	<7.78

SVMW-3A Screened 4.5 to 5 ft bgs	
Analyte	Concentration
PCE	20
TCE	<5.4
HCN	<7.78

SVMW-3B Screened 9.5 to 10 ft bgs	
Analyte	Concentration
PCE	24
TCE	<5.4
HCN	<7.78

SVMW-12A Screened 4.5 to 5 ft bgs	
Analyte	Concentration
PCE	51
TCE	<13
HCN	<7.78

SVMW-12B Screened 9.5 to 10 ft bgs	
Analyte	Concentration
PCE	81
TCE	<13
HCN	<7.78

SVMW-11A Screened 4.5 to 5 ft bgs	
Analyte	Concentration
PCE	3,100
TCE	<54
HCN	<7.78

SVMW-11B Screened 9.5 to 10 ft bgs	
Analyte	Concentration
PCE	4,500
TCE	59
HCN	<7.78

SVMW-1A Screened 19.5 to 20 ft bgs	
Analyte	Concentration
PCE	4,500
TCE	29
HCN	<7.78

SVMW-1B Screened 34.5 to 35 ft bgs	
Analyte	Concentration
PCE	5,200
TCE	27
HCN	<7.78

SVMW-1C Screened 49.5 to 50 ft bgs	
Analyte	Concentration
PCE	3,500
TCE	22
HCN	<7.78

SVMW-1D Screened 64.5 to 65 ft bgs	
Analyte	Concentration
PCE	224
TCE	<5.4
HCN	<7.78

SVMW-8A Screened 2.5 to 5 ft bgs	
Analyte	Concentration
PCE	26
TCE	<13
HCN	<7.78

SVMW-8B Screened 7.5 to 10 ft bgs	
Analyte	Concentration
PCE	35
TCE	<5.4
HCN	<7.78

SVMW-8C Screened 17.5 to 20 ft bgs	
Analyte	Concentration
PCE	35
TCE	<5.4
HCN	<7.78

SVMW-8D Screened 27.5 to 30 ft bgs	
Analyte	Concentration
PCE	16
TCE	<5.4
HCN	<7.78

SVMW-8E Screened 37.5 to 40 ft bgs	
Analyte	Concentration
PCE	68
TCE	13
HCN	<7.78

SVMW-8F Screened 47.5 to 50 ft bgs	
Analyte	Concentration
PCE	12
TCE	<5.4
HCN	<7.78

SVMW-8G Screened 57.5 to 60 ft bgs	
Analyte	Concentration
PCE	16
TCE	<5.4
HCN	<7.78

SVMW-8H Screened 67.5 to 70 ft bgs	
Analyte	Concentration
PCE	<6.8
TCE	<5.4
HCN	<7.78

SVMW-4A Screened 4.5 to 5 ft bgs	
Analyte	Concentration
PCE	14
TCE	<5.4
HCN	<7.78

SVMW-4B Screened 9.5 to 10 ft bgs	
Analyte	Concentration
PCE	14
TCE	<5.4
HCN	<7.78

SVMW-9A Screened 4.5 to 5 ft bgs	
Analyte	Concentration
PCE	95
TCE	<5.4
HCN	<7.78

SVMW-9B Screened 9.5 to 10 ft bgs	
Analyte	Concentration
PCE	163
TCE	<5.4
HCN	<7.78

SVMW-10A Screened 4.5 to 5 ft bgs	
Analyte	Concentration
PCE	251
TCE	<5.4
HCN	<7.78

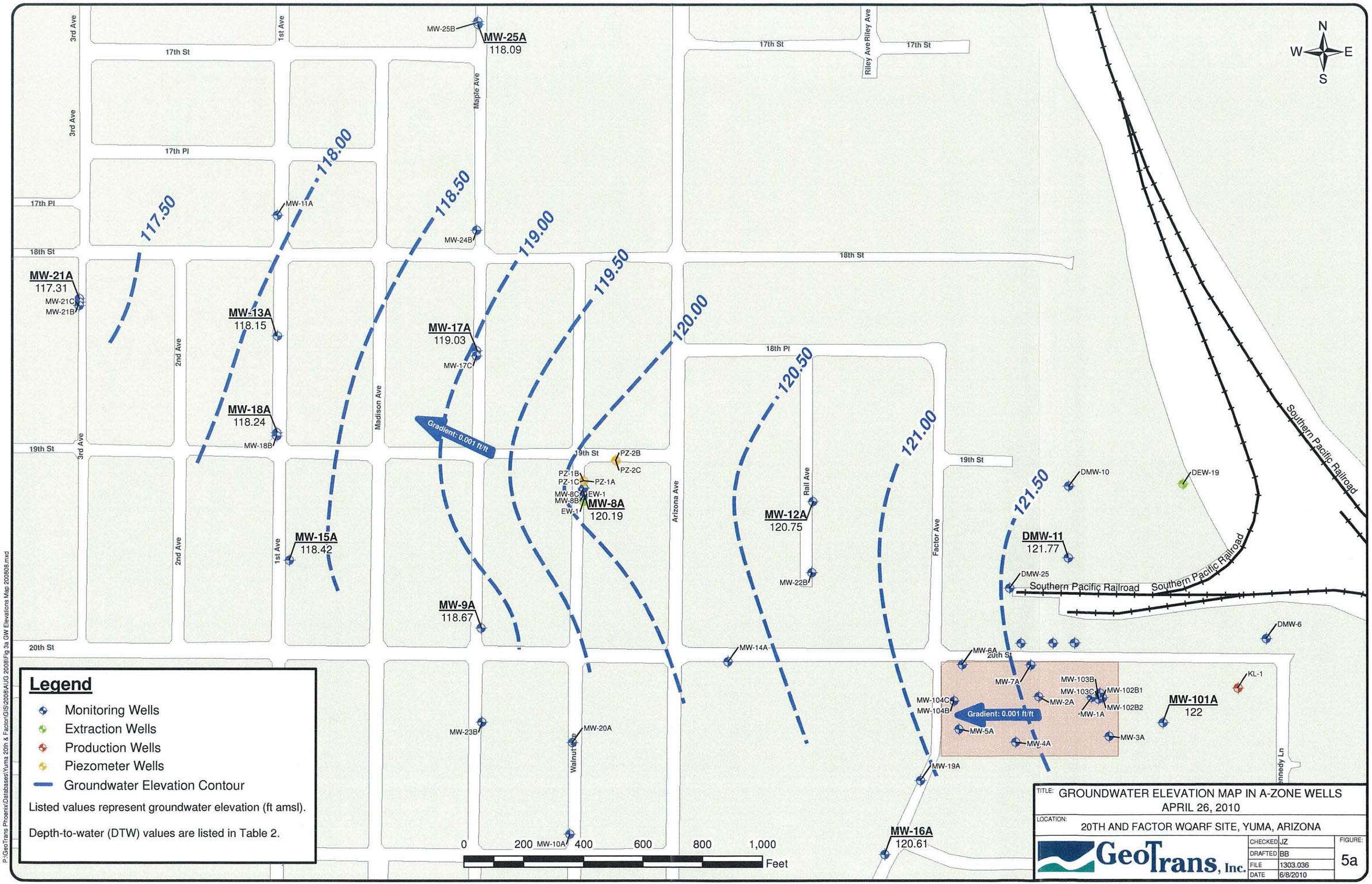
SVMW-10B Screened 9.5 to 10 ft bgs	
Analyte	Concentration
PCE	515
TCE	7.0
HCN	<7.78

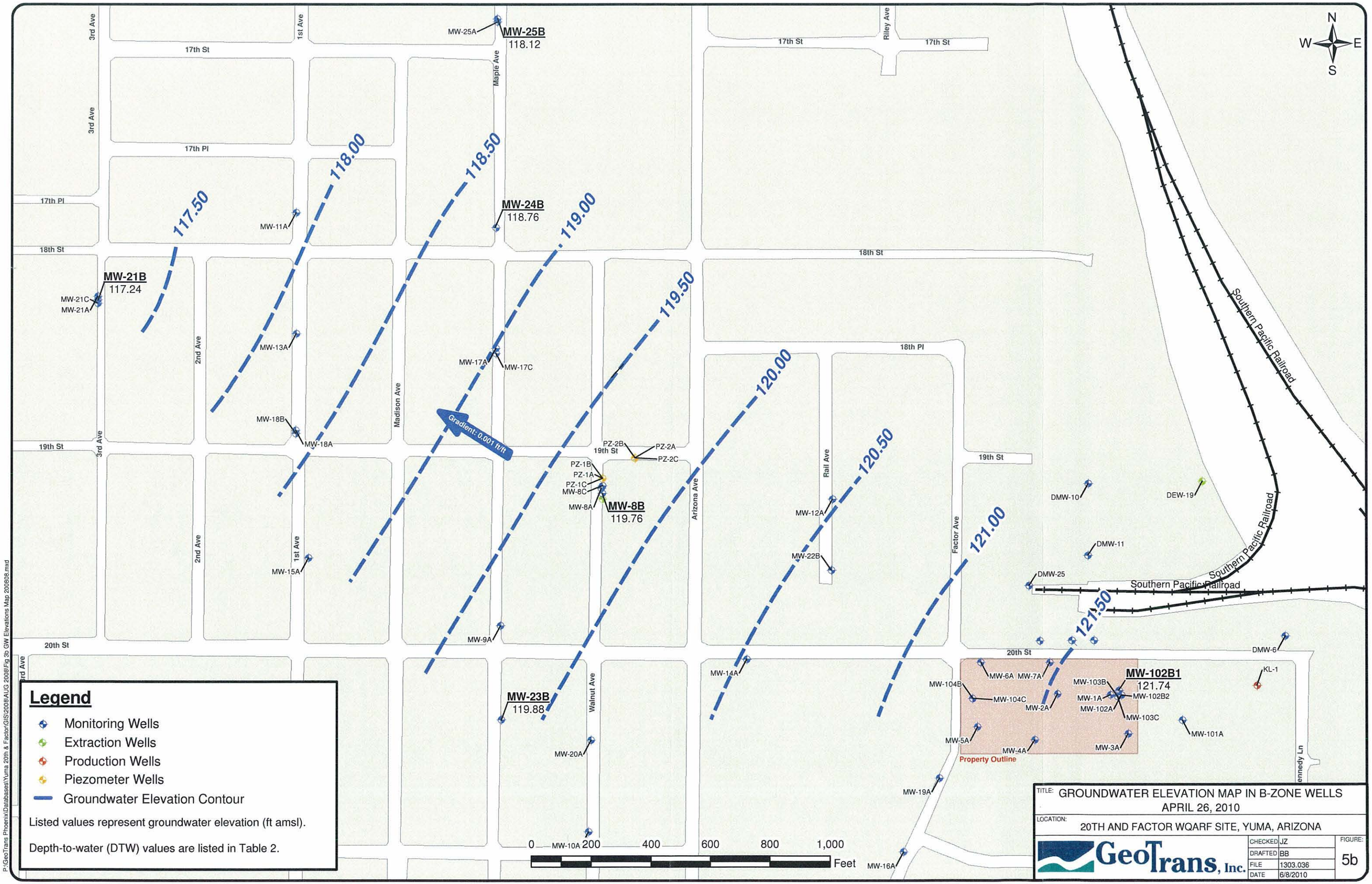
TITLE: **April 2010 Soil Vapor Sampling Results and Groundwater Plume Footprint**

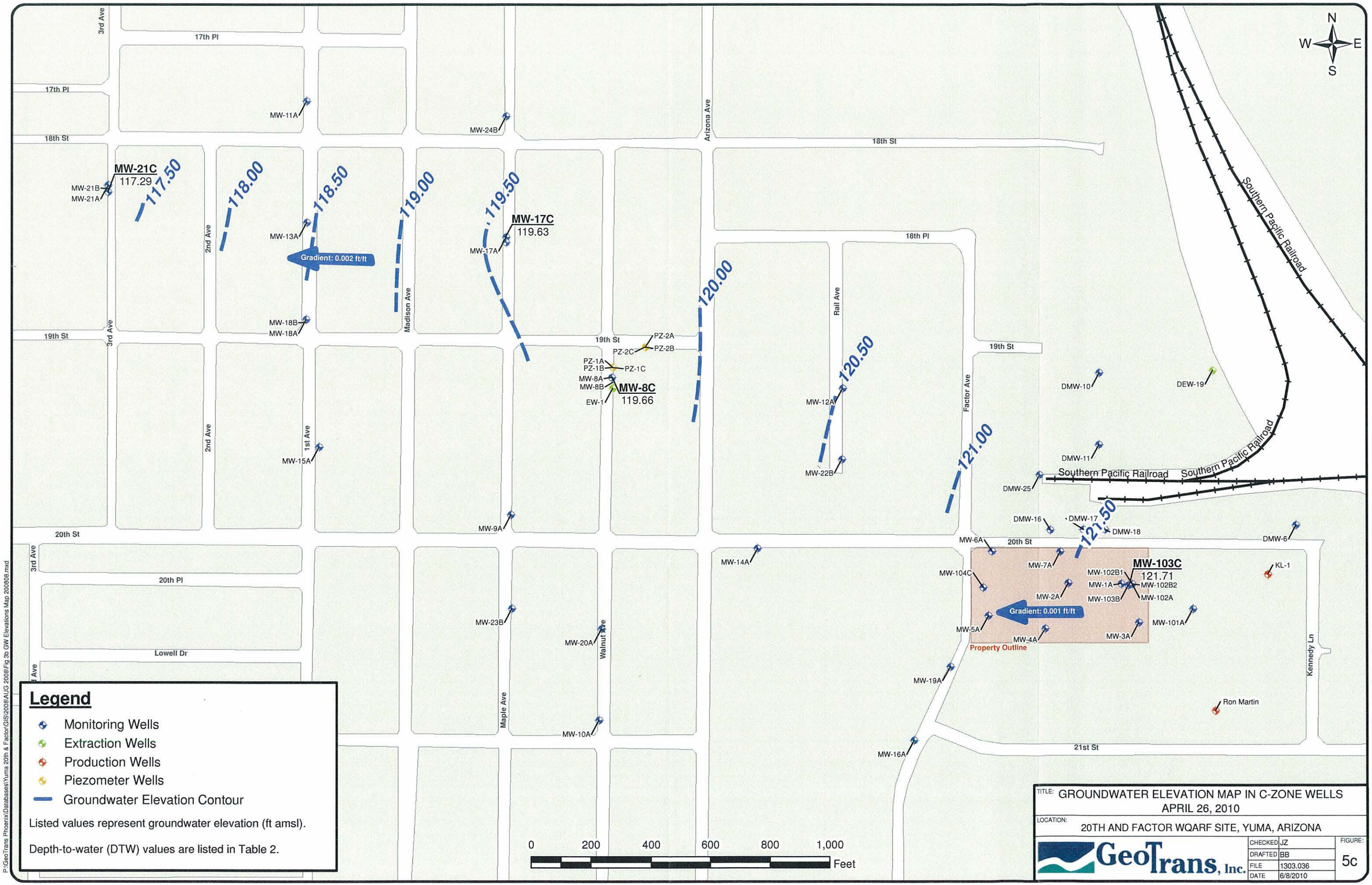
LOCATION: 20TH AND FACTOR WQARF SITE, YUMA, ARIZONA

GeoTrans, Inc.

CHECKED	JZ	FIGURE:
DRAFTED	LAD	4
FILE	1303.036	
DATE	JUN 2010	


N
W
E
S
3rd Ave
1st Ave
17th St
17th Pl
18th St
18th Pl
19th St
20th St
2nd Ave
Madison Ave
Maple Ave
Arizona Ave
Rail Ave
Factor Ave
Riley Ave
Walnut Ave
Kennedy Ln
Southern Pacific Railroad
MW-25A
118.09
MW-25B
MW-11A
MW-24B
MW-21A
117.31
MW-21C
MW-21B
MW-13A
118.15
MW-17A
119.03
MW-17C
MW-18A
118.24
MW-18B
MW-15A
118.42
MW-9A
118.67
MW-8A
120.19
PZ-2B
PZ-2C
PZ-1B
PZ-1C
PZ-1A
MW-8C
EW-1
MW-8B
EW-1
MW-12A
120.75
MW-22B
MW-14A
MW-23B
MW-20A
MW-10A
MW-19A
MW-16A
120.61
DMW-10
DEW-19
DMW-11
121.77
DMW-25
DMW-6
KL-1
MW-101A
122
MW-6A
MW-7A
MW-103B
MW-103C
MW-102B1
MW-102B2
MW-2A
MW-1A
MW-104C
MW-104B
MW-5A
MW-4A
MW-3A
Gradient: 0.001 ft/ft
Gradient: 0.001 ft/ft
117.50
118.00
118.50
119.00
119.50
120.00
120.50
121.00
121.50
0
200
400
600
800
1,000
Feet
Legend
Monitoring Wells
Extraction Wells
Production Wells
Piezometer Wells
Groundwater Elevation Contour
Listed values represent groundwater elevation (ft amsl).
Depth-to-water (DTW) values are listed in Table 2.
TITLE: GROUNDWATER ELEVATION MAP IN A-ZONE WELLS
APRIL 26, 2010
LOCATION: 20TH AND FACTOR WQARF SITE, YUMA, ARIZONA
GeoTrans, Inc.
CHECKED JZ
DRAFTED BB
FILE 1303.036
DATE 6/8/2010
FIGURE: 5a
P:\GeoTrans Phoenix\Databases\Yuma 20th & Factor\GIS\2006\AUG 2008\Fig 3a GW Elevations Map 200808.mxd


N
W
E
S
3rd Ave
1st Ave
17th St
17th Pl
18th St
19th St
20th St
18th Pl
Riley Ave
Maple Ave
2nd Ave
Madison Ave
Walnut Ave
Arizona Ave
Rail Ave
Factor Ave
Southern Pacific Railroad
Kennedy Ln
117.50
118.00
118.50
119.00
119.50
120.00
120.50
121.00
121.50
Gradient: 0.001 ft/ft
MW-25A
MW-25B
118.12
MW-24B
118.76
MW-11A
MW-21B
117.24
MW-21C
MW-21A
MW-13A
MW-17A
MW-17C
MW-18B
MW-18A
PZ-2B
PZ-2A
PZ-2C
PZ-1B
PZ-1A
PZ-1C
MW-8C
MW-8A
MW-8B
119.76
MW-15A
MW-12A
MW-22B
DMW-10
DEW-19
DMW-11
DMW-25
DMW-6
KL-1
MW-9A
MW-14A
MW-23B
119.88
MW-20A
MW-10A
MW-16A
MW-19A
MW-6A
MW-7A
MW-104B
MW-104C
MW-2A
MW-103B
MW-1A
MW-102B2
MW-102A
MW-103C
MW-102B1
121.74
MW-101A
MW-5A
MW-4A
MW-3A
Property Outline
Legend
Monitoring Wells
Extraction Wells
Production Wells
Piezometer Wells
Groundwater Elevation Contour
Listed values represent groundwater elevation (ft amsl).
Depth-to-water (DTW) values are listed in Table 2.
0
200
400
600
800
1,000
Feet
TITLE: GROUNDWATER ELEVATION MAP IN B-ZONE WELLS
APRIL 26, 2010
LOCATION: 20TH AND FACTOR WQARF SITE, YUMA, ARIZONA
GeoTrans, Inc.
CHECKED JZ
DRAFTED BB
FILE 1303.036
DATE 6/8/2010
FIGURE: 5b
P:\GeoTrans Phoenix\Databases\Yuma 20th & Factor\GIS\2008\AUG 2008\Fig 3b GW Elevations Map 200808.mxd



Legend

- Monitoring Wells
- Extraction Wells
- Production Wells
- Piezometer Wells
- Groundwater Elevation Contour

Listed values represent groundwater elevation (ft amsl).

Depth-to-water (DTW) values are listed in Table 2.

TITLE: GROUNDWATER ELEVATION MAP IN C-ZONE WELLS
APRIL 26, 2010

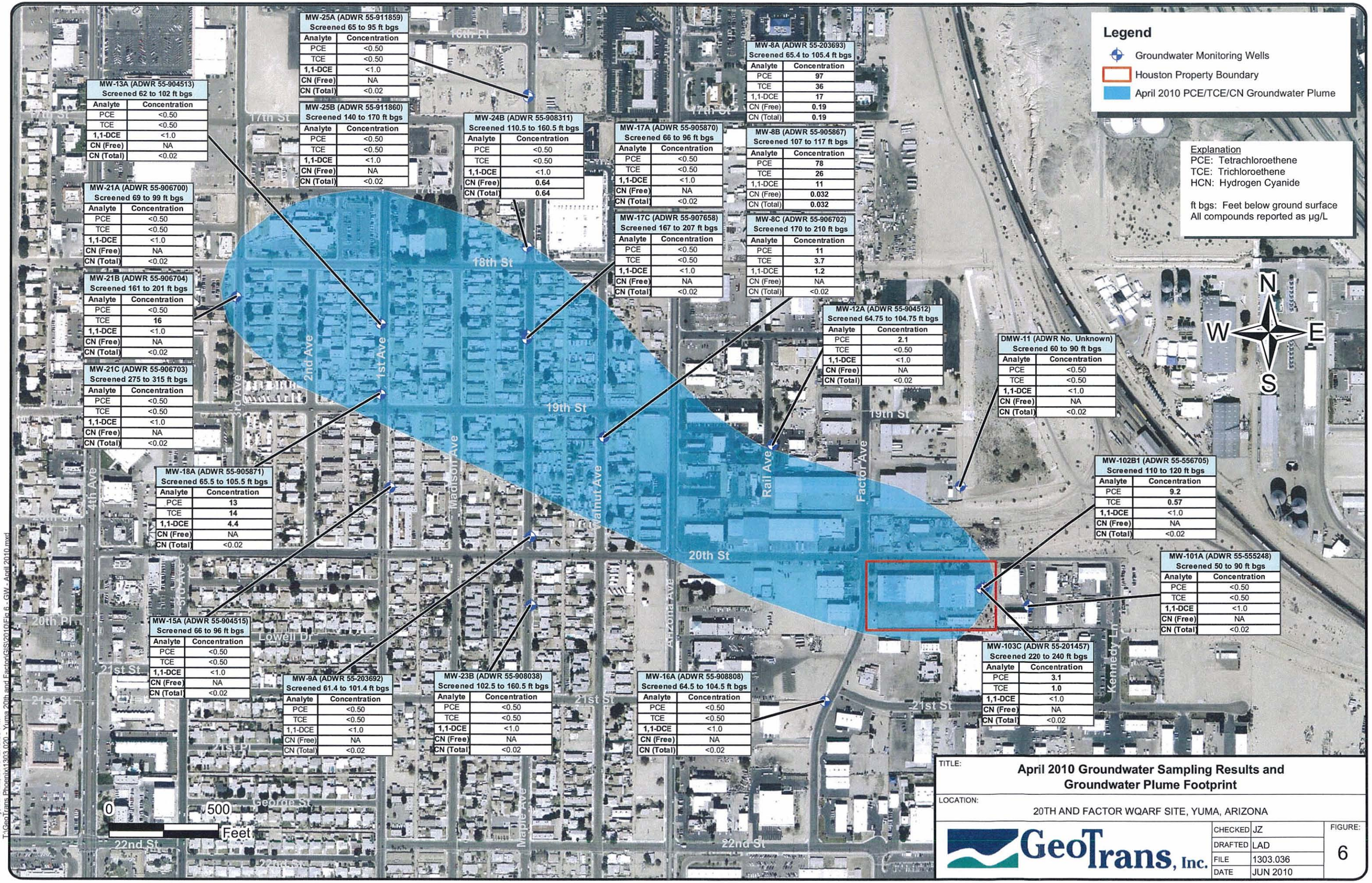
LOCATION: 20TH AND FACTOR WQARF SITE, YUMA, ARIZONA

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	BB
FILE	1303.036
DATE	6/8/2010

FIGURE: 5c

P:\GeoTrans Phoenix\Databases\Yuma 20th & Factor\GIS\2008\AUG 2008\Fig 3b GW Elevations Map 200808.mxd



MW-25A (ADWR 55-911859)
Screened 65 to 95 ft bgs

Analyte	Concentration
PCE	<0.50
TCE	<0.50
1,1-DCE	<1.0
CN (Free)	NA
CN (Total)	<0.02

MW-13A (ADWR 55-904513)
Screened 62 to 102 ft bgs

Analyte	Concentration
PCE	<0.50
TCE	<0.50
1,1-DCE	<1.0
CN (Free)	NA
CN (Total)	<0.02

MW-25B (ADWR 55-911860)
Screened 140 to 170 ft bgs

Analyte	Concentration
PCE	<0.50
TCE	<0.50
1,1-DCE	<1.0
CN (Free)	NA
CN (Total)	<0.02

MW-24B (ADWR 55-908311)
Screened 110.5 to 160.5 ft bgs

Analyte	Concentration
PCE	<0.50
TCE	<0.50
1,1-DCE	<1.0
CN (Free)	0.64
CN (Total)	0.64

MW-8A (ADWR 55-203693)
Screened 65.4 to 105.4 ft bgs

Analyte	Concentration
PCE	97
TCE	36
1,1-DCE	17
CN (Free)	0.19
CN (Total)	0.19

MW-17A (ADWR 55-905870)
Screened 66 to 96 ft bgs

Analyte	Concentration
PCE	<0.50
TCE	<0.50
1,1-DCE	<1.0
CN (Free)	NA
CN (Total)	<0.02

MW-8B (ADWR 55-905867)
Screened 107 to 117 ft bgs

Analyte	Concentration
PCE	78
TCE	26
1,1-DCE	11
CN (Free)	0.032
CN (Total)	0.032

MW-21A (ADWR 55-906700)
Screened 69 to 99 ft bgs

Analyte	Concentration
PCE	<0.50
TCE	<0.50
1,1-DCE	<1.0
CN (Free)	NA
CN (Total)	<0.02

MW-17C (ADWR 55-907658)
Screened 167 to 207 ft bgs

Analyte	Concentration
PCE	<0.50
TCE	<0.50
1,1-DCE	<1.0
CN (Free)	NA
CN (Total)	<0.02

MW-8C (ADWR 55-906702)
Screened 170 to 210 ft bgs

Analyte	Concentration
PCE	11
TCE	3.7
1,1-DCE	1.2
CN (Free)	NA
CN (Total)	<0.02

MW-21B (ADWR 55-906704)
Screened 161 to 201 ft bgs

Analyte	Concentration
PCE	<0.50
TCE	16
1,1-DCE	<1.0
CN (Free)	NA
CN (Total)	<0.02

MW-12A (ADWR 55-904512)
Screened 64.75 to 104.75 ft bgs

Analyte	Concentration
PCE	2.1
TCE	<0.50
1,1-DCE	<1.0
CN (Free)	NA
CN (Total)	<0.02

DMW-11 (ADWR No. Unknown)
Screened 60 to 90 ft bgs

Analyte	Concentration
PCE	<0.50
TCE	<0.50
1,1-DCE	<1.0
CN (Free)	NA
CN (Total)	<0.02

MW-21C (ADWR 55-906703)
Screened 275 to 315 ft bgs

Analyte	Concentration
PCE	<0.50
TCE	<0.50
1,1-DCE	<1.0
CN (Free)	NA
CN (Total)	<0.02

MW-102B1 (ADWR 55-556705)
Screened 110 to 120 ft bgs

Analyte	Concentration
PCE	9.2
TCE	0.57
1,1-DCE	<1.0
CN (Free)	NA
CN (Total)	<0.02

MW-18A (ADWR 55-905871)
Screened 65.5 to 105.5 ft bgs

Analyte	Concentration
PCE	13
TCE	14
1,1-DCE	4.4
CN (Free)	NA
CN (Total)	<0.02

MW-101A (ADWR 55-555248)
Screened 50 to 90 ft bgs

Analyte	Concentration
PCE	<0.50
TCE	<0.50
1,1-DCE	<1.0
CN (Free)	NA
CN (Total)	<0.02

MW-15A (ADWR 55-904515)
Screened 66 to 96 ft bgs

Analyte	Concentration
PCE	<0.50
TCE	<0.50
1,1-DCE	<1.0
CN (Free)	NA
CN (Total)	<0.02

MW-103C (ADWR 55-201457)
Screened 220 to 240 ft bgs

Analyte	Concentration
PCE	3.1
TCE	1.0
1,1-DCE	<1.0
CN (Free)	NA
CN (Total)	<0.02

MW-9A (ADWR 55-203692)
Screened 61.4 to 101.4 ft bgs

Analyte	Concentration
PCE	<0.50
TCE	<0.50
1,1-DCE	<1.0
CN (Free)	NA
CN (Total)	<0.02

MW-23B (ADWR 55-908038)
Screened 102.5 to 160.5 ft bgs

Analyte	Concentration
PCE	<0.50
TCE	<0.50
1,1-DCE	<1.0
CN (Free)	NA
CN (Total)	<0.02

MW-16A (ADWR 55-908808)
Screened 64.5 to 104.5 ft bgs

Analyte	Concentration
PCE	<0.50
TCE	<0.50
1,1-DCE	<1.0
CN (Free)	NA
CN (Total)	<0.02

TITLE: **April 2010 Groundwater Sampling Results and Groundwater Plume Footprint**

LOCATION: 20TH AND FACTOR WQARF SITE, YUMA, ARIZONA

GeoTrans, Inc.

CHECKED	JZ	FIGURE:
DRAFTED	LAD	6
FILE	1303.036	
DATE	JUN 2010	

Tuesday, June 22, 2010 2:18:50 PM
T:\GeoTrans Phoenix\1303.020 - Yuma 20th and Factor\GIS\2010\Fig 6 - GW - April 2010.mxd

APPENDIX A

Soil Vapor Analytical Laboratory Reports

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Jasenka Zbozinek	Work Order #:	1003104
Company:	Geotrans, Inc	Project Name:	20th & Factor
Address:	4801 E. Washington St., Suite 260 Phoenix, AZ 85034	Project Number:	1303.036
		Received Date:	03/12/10

Dear Client:

Airtech Environmental Laboratories received thirty two (32) samples for analysis.

All analyses met laboratory QA/QC with any exceptions addressed in the Case Narrative.

If you have any questions or concerns regarding your samples analysis, please contact the laboratory at 480-968-5888

Sincerely,

Yu Min Shi

ADHS License No. AZ0740

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Jasenka Zbozinek	Work Order #:	1003104
Company:	Geotrans, Inc	Project Name:	20th & Factor
Address:	4801 E. Washington St., Suite 260 Phoenix, AZ 85034	Project Number:	1303.036
		Received Date:	03/12/10

SAMPLE SUMMARY

LAB ID	CLIENT ID	METHOD	SAMPLED DATE	SAMPLED TIME
1003104-01	HI-SVMW2A-030810	TO-15 Full List	3/8/2010	1149
1003104-02	HI-SVMW2B-030810	TO-15 Full List	3/8/2010	1150
1003104-03	HI-SVMW6A-030810	TO-15 Full List	3/8/2010	1518
1003104-04	HI-SVMW6B-030810	TO-15 Full List	3/8/2010	1518
1003104-05	HI-SVMW7B-030810	TO-15 Full List	3/8/2010	1838
1003104-06	HI-SVMW7A-030810	TO-15 Full List	3/8/2010	1838
1003104-07	HI-SVMW5A-030910	TO-15 Full List	3/9/2010	0721
1003104-08	HI-SVMW5B-030910	TO-15 Full List	3/9/2010	0721
1003104-09	HI-SVMW3A-030910	TO-15 Full List	3/9/2010	1045
1003104-10	HI-SVMW3B-030910	TO-15 Full List	3/9/2010	1045
1003104-11	HI-SVMW12A-030910	TO-15 Full List	3/9/2010	1415
1003104-12	HI-SVMW12B-030910	TO-15 Full List	3/9/2010	1415
1003104-13	HI-SVMW11A-030910	TO-15 Full List	3/9/2010	1751
1003104-14	HI-SVMW11B-030910	TO-15 Full List	3/9/2010	1751
1003104-15	HI-SVMW4A-031010	TO-15 Full List	3/10/2010	0717
1003104-16	HI-SVMW4B-031010	TO-15 Full List	3/10/2010	0717
1003104-17	HI-SVMW8-5-031010	TO-15 Full List	3/10/2010	1014
1003104-18	HI-SVMW8-10-031010	TO-15 Full List	3/10/2010	1014
1003104-19	HI-SVMW8-20-031010	TO-15 Full List	3/10/2010	1407
1003104-20	HI-SVMW8-30-031010	TO-15 Full List	3/10/2010	1407
1003104-21	HI-SVMW8-40-031010	TO-15 Full List	3/10/2010	1600
1003104-22	HI-SVMW8-50-031010	TO-15 Full List	3/10/2010	1600
1003104-23	HI-SVMW8-60-031110	TO-15 Full List	3/11/2010	0735
1003104-24	HI-SVMW8-70-031110	TO-15 Full List	3/11/2010	0735
1003104-25	HI-SVMW1-20-031110	TO-15 Full List	3/11/2010	1100
1003104-26	HI-SVMW1-35-031110	TO-15 Full List	3/11/2010	1100
1003104-27	HI-SVMW1-50-031110	TO-15 Full List	3/11/2010	1400

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Jasenka Zbozinnek	Work Order #:	1003104
Company:	Geotrans, Inc	Project Name:	20th & Factor
Address:	4801 E. Washington St., Suite 260 Phoenix, AZ 85034	Project Number:	1303.036
		Received Date:	03/12/10

SAMPLE SUMMARY

LAB ID	CLIENT ID	METHOD	SAMPLED DATE	SAMPLED TIME
1003104-28	HI-SVMW1-65-031110	TO-15 Full List	3/11/2010	1400
1003104-29	HI-SVMW10A-031110	TO-15 Full List	3/11/2010	1720
1003104-30	HI-SVMW10B-031110	TO-15 Full List	3/11/2010	1720
1003104-31	HI-SVMW9A-031210	TO-15 Full List	3/12/2010	0744
1003104-32	HI-SVMW9B-031210	TO-15 Full List	3/12/2010	0744

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Jasenka Zbozinek	Work Order #:	1003104
Company:	Geotrans, Inc	Project Name:	20th & Factor
Address:	4801 E. Washington St., Suite 260	Project Number:	1303.04
	Phoenix, AZ 85034	Received Date:	03/12/10

Case Narrative

All samples and QC associated with your samples met the quality control objectives. Data qualifiers in this report are in accordance with ADEQ Data Qualifiers.

Due to high concentrations of non-target compounds AEL was not able to analyze this workorder at a 1X dilution. The non-target compounds present at the highest concentrations were Thiirane (Ethylene Sulfide), Pentamethylheptane and Methylethylbenze , respectively.

D1: Sample required dilution due to matrix effects.
D2 : Sample required dilution due to high concentration of target analyte.

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client: Geotrans, Inc
Project: 20th & Factor
Lab Order: 1003104
Lab ID: 01

Client Sample ID: HI-SVMW2A-030810
Project Number: 1303.036
Collection: 3/8/2010
Matrix: SoilVapor

Analyses	ppbv Result	ppbv Limit	µg/M³ Result	µg/M³ Limit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
1,1,1-Trichloroethane	< 2.5	2.5	< 14	14		5	3/15/2010
1,1,2,2-Tetrachloroethane	< 2.5	2.5	< 17	17		5	3/15/2010
1,1,2-Trichloroethane	< 2.5	2.5	< 14	14		5	3/15/2010
1,1-Dichloroethane	< 2.5	2.5	< 10	10		5	3/15/2010
1,1-Dichloroethene	< 2.5	2.5	< 9.9	9.9		5	3/15/2010
1,2,4-Trichlorobenzene	< 10	10	< 74	74		5	3/15/2010
1,2,4-Trimethylbenzene	< 2.5	2.5	< 12	12		5	3/15/2010
1,2-Dibromoethane	< 2.5	2.5	< 19	19		5	3/15/2010
1,2-Dichlorobenzene	< 2.5	2.5	< 15	15		5	3/15/2010
1,2-Dichloroethane	< 2.5	2.5	< 10	10		5	3/15/2010
1,2-Dichloropropane	< 2.5	2.5	< 12	12		5	3/15/2010
1,3,5-Trimethylbenzene	< 2.5	2.5	< 12	12		5	3/15/2010
1,3-Butadiene	< 2.5	2.5	< 5.5	5.5		5	3/15/2010
1,3-Dichlorobenzene	< 2.5	2.5	< 15	15		5	3/15/2010
1,4-Dichlorobenzene	< 2.5	2.5	< 15	15		5	3/15/2010
1,4-Dioxane	< 10	10	< 36	36		5	3/15/2010
2,2,4-Trimethylpentane	< 2.5	2.5	< 12	12		5	3/15/2010
2-Butanone (MEK)	< 5.0	5.0	< 15	15		5	3/15/2010
2-Hexanone	< 5.0	5.0	< 21	21		5	3/15/2010
2-Propanol (IPA)	< 10	10	< 25	25		5	3/15/2010
4-Ethyltoluene	< 2.5	2.5	< 12	12		5	3/15/2010
4-Methyl-2-pentanone (MIK)	< 5.0	5.0	< 21	21		5	3/15/2010
Acetone	< 25	25	< 60	60		5	3/15/2010
Allyl chloride	< 2.5	2.5	< 7.8	7.8		5	3/15/2010
Benzene	**2.7**	**2.5**	**8.6**	**8.0**	D1	5	3/15/2010
Benzyl chloride	< 10	10	< 52	52		5	3/15/2010
Bromodichloromethane	< 2.5	2.5	< 17	17		5	3/15/2010
Bromoethene(Vinyl Bromide)	< 2.5	2.5	< 11	11		5	3/15/2010
Bromoform	< 2.5	2.5	< 26	26		5	3/15/2010
Bromomethane	< 2.5	2.5	< 9.7	9.7		5	3/15/2010
Carbon disulfide	< 2.5	2.5	< 7.8	7.8		5	3/15/2010
Carbon tetrachloride	< 2.5	2.5	< 16	16		5	3/15/2010
Chlorobenzene	< 2.5	2.5	< 12	12		5	3/15/2010
Chloroethane	< 2.5	2.5	< 6.6	6.6		5	3/15/2010
Chloroform	**3.4**	**2.5**	**17**	**12**	D1	5	3/15/2010
Chloromethane	< 5.0	5.0	< 10	10		5	3/15/2010
cis-1,2-Dichloroethene	< 2.5	2.5	< 9.9	9.9		5	3/15/2010
cis-1,3-Dichloropropene	< 2.5	2.5	< 11	11		5	3/15/2010
Cyclohexane	< 2.5	2.5	< 8.6	8.6		5	3/15/2010
Dibromochloromethane	< 2.5	2.5	< 21	21		5	3/15/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW2A-030810
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/8/2010
Lab ID:	01	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
Dichlorodifluoromethane(F-12)	< 5.0	5.0	< 25	25		5	3/15/2010
Dichlorotetrafluoroethane(F-114)	< 2.5	2.5	< 17	17		5	3/15/2010
Ethyl Acetate	< 2.5	2.5	< 9.0	9.0		5	3/15/2010
Ethylbenzene	< 2.5	2.5	< 11	11		5	3/15/2010
Heptane	< 2.5	2.5	< 10	10		5	3/15/2010
Hexachlorobutadiene	< 5.0	5.0	< 53	53		5	3/15/2010
Hexane	< 2.5	2.5	< 8.8	8.8		5	3/15/2010
m&p-Xylene	**5.2**	**5.0**	**23**	**22**	D1	5	3/15/2010
Methyl tert-butyl ether	< 5.0	5.0	< 18	18		5	3/15/2010
Methylene chloride	< 2.5	2.5	< 8.7	8.7		5	3/15/2010
o-Xylene	< 2.5	2.5	< 11	11		5	3/15/2010
Propene (Propylene)	< 2.5	2.5	< 4.3	4.3		5	3/15/2010
Styrene	< 2.5	2.5	< 11	11		5	3/15/2010
Tetrachloroethene	< 2.5	2.5	< 17	17		5	3/15/2010
Tetrahydrofuran	< 10	10	< 30	30		5	3/15/2010
Toluene	**15**	**2.5**	**57**	**9.4**	D1	5	3/15/2010
trans-1,2-Dichloroethene	< 2.5	2.5	< 9.9	9.9		5	3/15/2010
trans-1,3-Dichloropropene	< 2.5	2.5	< 11	11		5	3/15/2010
Trichloroethene	< 2.5	2.5	< 13	13		5	3/15/2010
Trichlorofluoromethane(F-11)	< 2.5	2.5	< 14	14		5	3/15/2010
Trichlorotrifluoroethane(F-113)	< 2.5	2.5	< 19	19		5	3/15/2010
Vinyl acetate	< 2.5	2.5	< 8.8	8.8		5	3/15/2010
Vinyl chloride	< 2.5	2.5	< 6.4	6.4		5	3/15/2010
Surr: 4-Bromofluorobenzene	117	70-130	%REC				

4620 E.Elwood Street, Suite 13, Phoenix AZ 85040 Phone: 480-968-5888, Fax: 480-966-1888

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW2B-030810
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/8/2010
Lab ID:	02	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
1,1,1-Trichloroethane	< 2.5	2.5	< 14	14		5	3/15/2010
1,1,2,2-Tetrachloroethane	< 2.5	2.5	< 17	17		5	3/15/2010
1,1,2-Trichloroethane	< 2.5	2.5	< 14	14		5	3/15/2010
1,1-Dichloroethane	< 2.5	2.5	< 10	10		5	3/15/2010
1,1-Dichloroethene	< 2.5	2.5	< 9.9	9.9		5	3/15/2010
1,2,4-Trichlorobenzene	< 10	10	< 74	74		5	3/15/2010
1,2,4-Trimethylbenzene	< 2.5	2.5	< 12	12		5	3/15/2010
1,2-Dibromoethane	< 2.5	2.5	< 19	19		5	3/15/2010
1,2-Dichlorobenzene	< 2.5	2.5	< 15	15		5	3/15/2010
1,2-Dichloroethane	< 2.5	2.5	< 10	10		5	3/15/2010
1,2-Dichloropropane	< 2.5	2.5	< 12	12		5	3/15/2010
1,3,5-Trimethylbenzene	< 2.5	2.5	< 12	12		5	3/15/2010
1,3-Butadiene	< 2.5	2.5	< 5.5	5.5		5	3/15/2010
1,3-Dichlorobenzene	< 2.5	2.5	< 15	15		5	3/15/2010
1,4-Dichlorobenzene	< 2.5	2.5	< 15	15		5	3/15/2010
1,4-Dioxane	< 10	10	< 36	36		5	3/15/2010
2,2,4-Trimethylpentane	< 2.5	2.5	< 12	12		5	3/15/2010
2-Butanone (MEK)	< 5.0	5.0	< 15	15		5	3/15/2010
2-Hexanone	< 5.0	5.0	< 21	21		5	3/15/2010
2-Propanol (IPA)	< 10	10	< 25	25		5	3/15/2010
4-Ethyltoluene	< 2.5	2.5	< 12	12		5	3/15/2010
4-Methyl-2-pentanone (MIK)	< 5.0	5.0	< 21	21		5	3/15/2010
Acetone	< 25	25	< 60	60		5	3/15/2010
Allyl chloride	< 2.5	2.5	< 7.8	7.8		5	3/15/2010
Benzene	< 2.5	2.5	< 8.0	8.0		5	3/15/2010
Benzyl chloride	< 10	10	< 52	52		5	3/15/2010
Bromodichloromethane	< 2.5	2.5	< 17	17		5	3/15/2010
Bromoethene(Vinyl Bromide)	< 2.5	2.5	< 11	11		5	3/15/2010
Bromoform	< 2.5	2.5	< 26	26		5	3/15/2010
Bromomethane	< 2.5	2.5	< 9.7	9.7		5	3/15/2010
Carbon disulfide	**6.7**	**2.5**	**21**	**7.8**	D1	5	3/15/2010
Carbon tetrachloride	< 2.5	2.5	< 16	16		5	3/15/2010
Chlorobenzene	< 2.5	2.5	< 12	12		5	3/15/2010
Chloroethane	< 2.5	2.5	< 6.6	6.6		5	3/15/2010
Chloroform	**4.1**	**2.5**	**20**	**12**	D1	5	3/15/2010
Chloromethane	**11**	**5.0**	**23**	**10**	D1	5	3/15/2010
cis-1,2-Dichloroethene	< 2.5	2.5	< 9.9	9.9		5	3/15/2010
cis-1,3-Dichloropropene	< 2.5	2.5	< 11	11		5	3/15/2010
Cyclohexane	< 2.5	2.5	< 8.6	8.6		5	3/15/2010
Dibromochloromethane	< 2.5	2.5	< 21	21		5	3/15/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW2B-030810
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/8/2010
Lab ID:	02	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
Dichlorodifluoromethane(F-12)	< 5.0	5.0	< 25	25		5	3/15/2010
Dichlorotetrafluoroethane(F-114)	< 2.5	2.5	< 17	17		5	3/15/2010
Ethyl Acetate	< 2.5	2.5	< 9.0	9.0		5	3/15/2010
Ethylbenzene	< 2.5	2.5	< 11	11		5	3/15/2010
Heptane	< 2.5	2.5	< 10	10		5	3/15/2010
Hexachlorobutadiene	< 5.0	5.0	< 53	53		5	3/15/2010
Hexane	< 2.5	2.5	< 8.8	8.8		5	3/15/2010
m&p-Xylene	< 5.0	5.0	< 22	22		5	3/15/2010
Methyl tert-butyl ether	< 5.0	5.0	< 18	18		5	3/15/2010
Methylene chloride	< 2.5	2.5	< 8.7	8.7		5	3/15/2010
o-Xylene	< 2.5	2.5	< 11	11		5	3/15/2010
Propene (Propylene)	< 2.5	2.5	< 4.3	4.3		5	3/15/2010
Styrene	< 2.5	2.5	< 11	11		5	3/15/2010
Tetrachloroethene	**3.7**	**2.5**	**25**	**17**	D1	5	3/15/2010
Tetrahydrofuran	< 10	10	< 30	30		5	3/15/2010
Toluene	**9.0**	**2.5**	**34**	**9.4**	D1	5	3/15/2010
trans-1,2-Dichloroethene	< 2.5	2.5	< 9.9	9.9		5	3/15/2010
trans-1,3-Dichloropropene	< 2.5	2.5	< 11	11		5	3/15/2010
Trichloroethene	< 2.5	2.5	< 13	13		5	3/15/2010
Trichlorofluoromethane(F-11)	< 2.5	2.5	< 14	14		5	3/15/2010
Trichlorotrifluoroethane(F-113)	< 2.5	2.5	< 19	19		5	3/15/2010
Vinyl acetate	< 2.5	2.5	< 8.8	8.8		5	3/15/2010
Vinyl chloride	< 2.5	2.5	< 6.4	6.4		5	3/15/2010
Surr: 4-Bromofluorobenzene	115	70-130	%REC				

4620 E.Elwood Street, Suite 13, Phoenix AZ 85040 Phone: 480-968-5888, Fax: 480-966-1888

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW6A-030810
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/8/2010
Lab ID:	03	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
1,1,1-Trichloroethane	< 2.5	2.5	< 14	14		5	3/15/2010
1,1,2,2-Tetrachloroethane	< 2.5	2.5	< 17	17		5	3/15/2010
1,1,2-Trichloroethane	< 2.5	2.5	< 14	14		5	3/15/2010
1,1-Dichloroethane	< 2.5	2.5	< 10	10		5	3/15/2010
1,1-Dichloroethene	< 2.5	2.5	< 9.9	9.9		5	3/15/2010
1,2,4-Trichlorobenzene	< 10	10	< 74	74		5	3/15/2010
1,2,4-Trimethylbenzene	< 2.5	2.5	< 12	12		5	3/15/2010
1,2-Dibromoethane	< 2.5	2.5	< 19	19		5	3/15/2010
1,2-Dichlorobenzene	< 2.5	2.5	< 15	15		5	3/15/2010
1,2-Dichloroethane	< 2.5	2.5	< 10	10		5	3/15/2010
1,2-Dichloropropane	< 2.5	2.5	< 12	12		5	3/15/2010
1,3,5-Trimethylbenzene	< 2.5	2.5	< 12	12		5	3/15/2010
1,3-Butadiene	< 2.5	2.5	< 5.5	5.5		5	3/15/2010
1,3-Dichlorobenzene	< 2.5	2.5	< 15	15		5	3/15/2010
1,4-Dichlorobenzene	< 2.5	2.5	< 15	15		5	3/15/2010
1,4-Dioxane	< 10	10	< 36	36		5	3/15/2010
2,2,4-Trimethylpentane	< 2.5	2.5	< 12	12		5	3/15/2010
2-Butanone (MEK)	< 5.0	5.0	< 15	15		5	3/15/2010
2-Hexanone	< 5.0	5.0	< 21	21		5	3/15/2010
2-Propanol (IPA)	< 10	10	< 25	25		5	3/15/2010
4-Ethyltoluene	< 2.5	2.5	< 12	12		5	3/15/2010
4-Methyl-2-pentanone (MIK)	< 5.0	5.0	< 21	21		5	3/15/2010
Acetone	< 25	25	< 60	60		5	3/15/2010
Allyl chloride	< 2.5	2.5	< 7.8	7.8		5	3/15/2010
Benzene	< 2.5	2.5	< 8.0	8.0		5	3/15/2010
Benzyl chloride	< 10	10	< 52	52		5	3/15/2010
Bromodichloromethane	< 2.5	2.5	< 17	17		5	3/15/2010
Bromoethene(Vinyl Bromide)	< 2.5	2.5	< 11	11		5	3/15/2010
Bromoform	< 2.5	2.5	< 26	26		5	3/15/2010
Bromomethane	< 2.5	2.5	< 9.7	9.7		5	3/15/2010
Carbon disulfide	< 2.5	2.5	< 7.8	7.8		5	3/15/2010
Carbon tetrachloride	< 2.5	2.5	< 16	16		5	3/15/2010
Chlorobenzene	< 2.5	2.5	< 12	12		5	3/15/2010
Chloroethane	< 2.5	2.5	< 6.6	6.6		5	3/15/2010
Chloroform	< 2.5	2.5	< 12	12		5	3/15/2010
Chloromethane	< 5.0	5.0	< 10	10		5	3/15/2010
cis-1,2-Dichloroethene	< 2.5	2.5	< 9.9	9.9		5	3/15/2010
cis-1,3-Dichloropropene	< 2.5	2.5	< 11	11		5	3/15/2010
Cyclohexane	< 2.5	2.5	< 8.6	8.6		5	3/15/2010
Dibromochloromethane	< 2.5	2.5	< 21	21		5	3/15/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW6A-030810
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/8/2010
Lab ID:	03	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
Dichlorodifluoromethane(F-12)	< 5.0	5.0	< 25	25		5	3/15/2010
Dichlorotetrafluoroethane(F-114)	< 2.5	2.5	< 17	17		5	3/15/2010
Ethyl Acetate	< 2.5	2.5	< 9.0	9.0		5	3/15/2010
Ethylbenzene	< 2.5	2.5	< 11	11		5	3/15/2010
Heptane	< 2.5	2.5	< 10	10		5	3/15/2010
Hexachlorobutadiene	< 5.0	5.0	< 53	53		5	3/15/2010
Hexane	< 2.5	2.5	< 8.8	8.8		5	3/15/2010
m&p-Xylene	< 5.0	5.0	< 22	22		5	3/15/2010
Methyl tert-butyl ether	< 5.0	5.0	< 18	18		5	3/15/2010
Methylene chloride	< 2.5	2.5	< 8.7	8.7		5	3/15/2010
o-Xylene	< 2.5	2.5	< 11	11		5	3/15/2010
Propene (Propylene)	< 2.5	2.5	< 4.3	4.3		5	3/15/2010
Styrene	< 2.5	2.5	< 11	11		5	3/15/2010
Tetrachloroethene	**2.6**	**2.5**	**18**	**17**	D1	5	3/15/2010
Tetrahydrofuran	< 10	10	< 30	30		5	3/15/2010
Toluene	**6.3**	**2.5**	**24**	**9.4**	D1	5	3/15/2010
trans-1,2-Dichloroethene	< 2.5	2.5	< 9.9	9.9		5	3/15/2010
trans-1,3-Dichloropropene	< 2.5	2.5	< 11	11		5	3/15/2010
Trichloroethene	< 2.5	2.5	< 13	13		5	3/15/2010
Trichlorofluoromethane(F-11)	< 2.5	2.5	< 14	14		5	3/15/2010
Trichlorotrifluoroethane(F-113)	< 2.5	2.5	< 19	19		5	3/15/2010
Vinyl acetate	< 2.5	2.5	< 8.8	8.8		5	3/15/2010
Vinyl chloride	< 2.5	2.5	< 6.4	6.4		5	3/15/2010
Surr: 4-Bromofluorobenzene	112	70-130	%REC				

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW6B-030810
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/8/2010
Lab ID:	04	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
1,1,1-Trichloroethane	< 2.5	2.5	< 14	14		5	3/15/2010
1,1,2,2-Tetrachloroethane	< 2.5	2.5	< 17	17		5	3/15/2010
1,1,2-Trichloroethane	< 2.5	2.5	< 14	14		5	3/15/2010
1,1-Dichloroethane	< 2.5	2.5	< 10	10		5	3/15/2010
1,1-Dichloroethene	< 2.5	2.5	< 9.9	9.9		5	3/15/2010
1,2,4-Trichlorobenzene	< 10	10	< 74	74		5	3/15/2010
1,2,4-Trimethylbenzene	**8.7**	**2.5**	**43**	**12**	D1	5	3/15/2010
1,2-Dibromoethane	< 2.5	2.5	< 19	19		5	3/15/2010
1,2-Dichlorobenzene	< 2.5	2.5	< 15	15		5	3/15/2010
1,2-Dichloroethane	< 2.5	2.5	< 10	10		5	3/15/2010
1,2-Dichloropropane	< 2.5	2.5	< 12	12		5	3/15/2010
1,3,5-Trimethylbenzene	**3.2**	**2.5**	**16**	**12**	D1	5	3/15/2010
1,3-Butadiene	< 2.5	2.5	< 5.5	5.5		5	3/15/2010
1,3-Dichlorobenzene	< 2.5	2.5	< 15	15		5	3/15/2010
1,4-Dichlorobenzene	< 2.5	2.5	< 15	15		5	3/15/2010
1,4-Dioxane	< 10	10	< 36	36		5	3/15/2010
2,2,4-Trimethylpentane	< 2.5	2.5	< 12	12		5	3/15/2010
2-Butanone (MEK)	< 5.0	5.0	< 15	15		5	3/15/2010
2-Hexanone	< 5.0	5.0	< 21	21		5	3/15/2010
2-Propanol (IPA)	< 10	10	< 25	25		5	3/15/2010
4-Ethyltoluene	< 2.5	2.5	< 12	12		5	3/15/2010
4-Methyl-2-pentanone (MIK)	< 5.0	5.0	< 21	21		5	3/15/2010
Acetone	< 25	25	< 60	60		5	3/15/2010
Allyl chloride	< 2.5	2.5	< 7.8	7.8		5	3/15/2010
Benzene	< 2.5	2.5	< 8.0	8.0		5	3/15/2010
Benzyl chloride	< 10	10	< 52	52		5	3/15/2010
Bromodichloromethane	< 2.5	2.5	< 17	17		5	3/15/2010
Bromoethene(Vinyl Bromide)	< 2.5	2.5	< 11	11		5	3/15/2010
Bromoform	< 2.5	2.5	< 26	26		5	3/15/2010
Bromomethane	< 2.5	2.5	< 9.7	9.7		5	3/15/2010
Carbon disulfide	**4.3**	**2.5**	**13**	**7.8**	D1	5	3/15/2010
Carbon tetrachloride	< 2.5	2.5	< 16	16		5	3/15/2010
Chlorobenzene	< 2.5	2.5	< 12	12		5	3/15/2010
Chloroethane	< 2.5	2.5	< 6.6	6.6		5	3/15/2010
Chloroform	< 2.5	2.5	< 12	12		5	3/15/2010
Chloromethane	< 5.0	5.0	< 10	10		5	3/15/2010
cis-1,2-Dichloroethene	< 2.5	2.5	< 9.9	9.9		5	3/15/2010
cis-1,3-Dichloropropene	< 2.5	2.5	< 11	11		5	3/15/2010
Cyclohexane	< 2.5	2.5	< 8.6	8.6		5	3/15/2010
Dibromochloromethane	< 2.5	2.5	< 21	21		5	3/15/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW6B-030810
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/8/2010
Lab ID:	04	**Matrix:**	SoilVapor

	ppbv		µg/M³					
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**	
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst:	JJ
Dichlorodifluoromethane(F-12)	< 5.0	5.0	< 25	25		5	3/15/2010	
Dichlorotetrafluoroethane(F-114)	< 2.5	2.5	< 17	17		5	3/15/2010	
Ethyl Acetate	< 2.5	2.5	< 9.0	9.0		5	3/15/2010	
Ethylbenzene	< 2.5	2.5	< 11	11		5	3/15/2010	
Heptane	< 2.5	2.5	< 10	10		5	3/15/2010	
Hexachlorobutadiene	< 5.0	5.0	< 53	53		5	3/15/2010	
Hexane	< 2.5	2.5	< 8.8	8.8		5	3/15/2010	
m&p-Xylene	< 5.0	5.0	< 22	22		5	3/15/2010	
Methyl tert-butyl ether	< 5.0	5.0	< 18	18		5	3/15/2010	
Methylene chloride	< 2.5	2.5	< 8.7	8.7		5	3/15/2010	
o-Xylene	< 2.5	2.5	< 11	11		5	3/15/2010	
Propene (Propylene)	< 2.5	2.5	< 4.3	4.3		5	3/15/2010	
Styrene	< 2.5	2.5	< 11	11		5	3/15/2010	
Tetrachloroethene	**8.1**	**2.5**	**55**	**17**	D1	5	3/15/2010	
Tetrahydrofuran	< 10	10	< 30	30		5	3/15/2010	
Toluene	**6.5**	**2.5**	**25**	**9.4**	D1	5	3/15/2010	
trans-1,2-Dichloroethene	< 2.5	2.5	< 9.9	9.9		5	3/15/2010	
trans-1,3-Dichloropropene	< 2.5	2.5	< 11	11		5	3/15/2010	
Trichloroethene	< 2.5	2.5	< 13	13		5	3/15/2010	
Trichlorofluoromethane(F-11)	< 2.5	2.5	< 14	14		5	3/15/2010	
Trichlorotrifluoroethane(F-113)	< 2.5	2.5	< 19	19		5	3/15/2010	
Vinyl acetate	< 2.5	2.5	< 8.8	8.8		5	3/15/2010	
Vinyl chloride	< 2.5	2.5	< 6.4	6.4		5	3/15/2010	
Surr: 4-Bromofluorobenzene	114	70-130	%REC					

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW7B-030810
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/8/2010
Lab ID:	05	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
1,1,1-Trichloroethane	< 2.5	2.5	< 14	14		5	3/15/2010
1,1,2,2-Tetrachloroethane	< 2.5	2.5	< 17	17		5	3/15/2010
1,1,2-Trichloroethane	< 2.5	2.5	< 14	14		5	3/15/2010
1,1-Dichloroethane	< 2.5	2.5	< 10	10		5	3/15/2010
1,1-Dichloroethene	< 2.5	2.5	< 9.9	9.9		5	3/15/2010
1,2,4-Trichlorobenzene	< 10	10	< 74	74		5	3/15/2010
1,2,4-Trimethylbenzene	**6.7**	**2.5**	**33**	**12**	D1	5	3/15/2010
1,2-Dibromoethane	< 2.5	2.5	< 19	19		5	3/15/2010
1,2-Dichlorobenzene	< 2.5	2.5	< 15	15		5	3/15/2010
1,2-Dichloroethane	< 2.5	2.5	< 10	10		5	3/15/2010
1,2-Dichloropropane	< 2.5	2.5	< 12	12		5	3/15/2010
1,3,5-Trimethylbenzene	**6.4**	**2.5**	**31**	**12**	D1	5	3/15/2010
1,3-Butadiene	< 2.5	2.5	< 5.5	5.5		5	3/15/2010
1,3-Dichlorobenzene	< 2.5	2.5	< 15	15		5	3/15/2010
1,4-Dichlorobenzene	< 2.5	2.5	< 15	15		5	3/15/2010
1,4-Dioxane	< 10	10	< 36	36		5	3/15/2010
2,2,4-Trimethylpentane	< 2.5	2.5	< 12	12		5	3/15/2010
2-Butanone (MEK)	< 5.0	5.0	< 15	15		5	3/15/2010
2-Hexanone	< 5.0	5.0	< 21	21		5	3/15/2010
2-Propanol (IPA)	< 10	10	< 25	25		5	3/15/2010
4-Ethyltoluene	**2.7**	**2.5**	**13**	**12**	D1	5	3/15/2010
4-Methyl-2-pentanone (MIK)	< 5.0	5.0	< 21	21		5	3/15/2010
Acetone	< 25	25	< 60	60		5	3/15/2010
Allyl chloride	< 2.5	2.5	< 7.8	7.8		5	3/15/2010
Benzene	< 2.5	2.5	< 8.0	8.0		5	3/15/2010
Benzyl chloride	< 10	10	< 52	52		5	3/15/2010
Bromodichloromethane	< 2.5	2.5	< 17	17		5	3/15/2010
Bromoethene(Vinyl Bromide)	< 2.5	2.5	< 11	11		5	3/15/2010
Bromoform	< 2.5	2.5	< 26	26		5	3/15/2010
Bromomethane	< 2.5	2.5	< 9.7	9.7		5	3/15/2010
Carbon disulfide	< 2.5	2.5	< 7.8	7.8		5	3/15/2010
Carbon tetrachloride	< 2.5	2.5	< 16	16		5	3/15/2010
Chlorobenzene	< 2.5	2.5	< 12	12		5	3/15/2010
Chloroethane	< 2.5	2.5	< 6.6	6.6		5	3/15/2010
Chloroform	**11**	**2.5**	**54**	**12**	D1	5	3/15/2010
Chloromethane	< 5.0	5.0	< 10	10		5	3/15/2010
cis-1,2-Dichloroethene	< 2.5	2.5	< 9.9	9.9		5	3/15/2010
cis-1,3-Dichloropropene	< 2.5	2.5	< 11	11		5	3/15/2010
Cyclohexane	< 2.5	2.5	< 8.6	8.6		5	3/15/2010
Dibromochloromethane	< 2.5	2.5	< 21	21		5	3/15/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW7B-030810
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/8/2010
Lab ID:	05	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
Dichlorodifluoromethane(F-12)	< 5.0	5.0	< 25	25		5	3/15/2010
Dichlorotetrafluoroethane(F-114)	< 2.5	2.5	< 17	17		5	3/15/2010
Ethyl Acetate	< 2.5	2.5	< 9.0	9.0		5	3/15/2010
Ethylbenzene	< 2.5	2.5	< 11	11		5	3/15/2010
Heptane	**2.6**	**2.5**	**11**	**10**	D1	5	3/15/2010
Hexachlorobutadiene	< 5.0	5.0	< 53	53		5	3/15/2010
Hexane	< 2.5	2.5	< 8.8	8.8		5	3/15/2010
m&p-Xylene	**24**	**5.0**	**100**	**22**	D1	5	3/15/2010
Methyl tert-butyl ether	< 5.0	5.0	< 18	18		5	3/15/2010
Methylene chloride	< 2.5	2.5	< 8.7	8.7		5	3/15/2010
o-Xylene	**14**	**2.5**	**59**	**11**	D1	5	3/15/2010
Propene (Propylene)	< 2.5	2.5	< 4.3	4.3		5	3/15/2010
Styrene	< 2.5	2.5	< 11	11		5	3/15/2010
Tetrachloroethene	< 2.5	2.5	< 17	17		5	3/15/2010
Tetrahydrofuran	< 10	10	< 30	30		5	3/15/2010
Toluene	**12**	**2.5**	**45**	**9.4**	D1	5	3/15/2010
trans-1,2-Dichloroethene	< 2.5	2.5	< 9.9	9.9		5	3/15/2010
trans-1,3-Dichloropropene	< 2.5	2.5	< 11	11		5	3/15/2010
Trichloroethene	< 2.5	2.5	< 13	13		5	3/15/2010
Trichlorofluoromethane(F-11)	< 2.5	2.5	< 14	14		5	3/15/2010
Trichlorotrifluoroethane(F-113)	< 2.5	2.5	< 19	19		5	3/15/2010
Vinyl acetate	< 2.5	2.5	< 8.8	8.8		5	3/15/2010
Vinyl chloride	< 2.5	2.5	< 6.4	6.4		5	3/15/2010
Surr: 4-Bromofluorobenzene	111	70-130	%REC				

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW7A-030810
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/8/2010
Lab ID:	06	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
1,1,1-Trichloroethane	< 2.5	2.5	< 14	14		5	3/15/2010
1,1,2,2-Tetrachloroethane	< 2.5	2.5	< 17	17		5	3/15/2010
1,1,2-Trichloroethane	< 2.5	2.5	< 14	14		5	3/15/2010
1,1-Dichloroethane	< 2.5	2.5	< 10	10		5	3/15/2010
1,1-Dichloroethene	< 2.5	2.5	< 9.9	9.9		5	3/15/2010
1,2,4-Trichlorobenzene	< 10	10	< 74	74		5	3/15/2010
1,2,4-Trimethylbenzene	< 2.5	2.5	< 12	12		5	3/15/2010
1,2-Dibromoethane	< 2.5	2.5	< 19	19		5	3/15/2010
1,2-Dichlorobenzene	< 2.5	2.5	< 15	15		5	3/15/2010
1,2-Dichloroethane	< 2.5	2.5	< 10	10		5	3/15/2010
1,2-Dichloropropane	< 2.5	2.5	< 12	12		5	3/15/2010
1,3,5-Trimethylbenzene	< 2.5	2.5	< 12	12		5	3/15/2010
1,3-Butadiene	< 2.5	2.5	< 5.5	5.5		5	3/15/2010
1,3-Dichlorobenzene	< 2.5	2.5	< 15	15		5	3/15/2010
1,4-Dichlorobenzene	< 2.5	2.5	< 15	15		5	3/15/2010
1,4-Dioxane	< 10	10	< 36	36		5	3/15/2010
2,2,4-Trimethylpentane	< 2.5	2.5	< 12	12		5	3/15/2010
2-Butanone (MEK)	< 5.0	5.0	< 15	15		5	3/15/2010
2-Hexanone	< 5.0	5.0	< 21	21		5	3/15/2010
2-Propanol (IPA)	< 10	10	< 25	25		5	3/15/2010
4-Ethyltoluene	< 2.5	2.5	< 12	12		5	3/15/2010
4-Methyl-2-pentanone (MIK)	< 5.0	5.0	< 21	21		5	3/15/2010
Acetone	< 25	25	< 60	60		5	3/15/2010
Allyl chloride	< 2.5	2.5	< 7.8	7.8		5	3/15/2010
Benzene	< 2.5	2.5	< 8.0	8.0		5	3/15/2010
Benzyl chloride	< 10	10	< 52	52		5	3/15/2010
Bromodichloromethane	< 2.5	2.5	< 17	17		5	3/15/2010
Bromoethene(Vinyl Bromide)	< 2.5	2.5	< 11	11		5	3/15/2010
Bromoform	< 2.5	2.5	< 26	26		5	3/15/2010
Bromomethane	< 2.5	2.5	< 9.7	9.7		5	3/15/2010
Carbon disulfide	< 2.5	2.5	< 7.8	7.8		5	3/15/2010
Carbon tetrachloride	< 2.5	2.5	< 16	16		5	3/15/2010
Chlorobenzene	< 2.5	2.5	< 12	12		5	3/15/2010
Chloroethane	< 2.5	2.5	< 6.6	6.6		5	3/15/2010
Chloroform	**10**	**2.5**	**49**	**12**	D1	5	3/15/2010
Chloromethane	< 5.0	5.0	< 10	10		5	3/15/2010
cis-1,2-Dichloroethene	< 2.5	2.5	< 9.9	9.9		5	3/15/2010
cis-1,3-Dichloropropene	< 2.5	2.5	< 11	11		5	3/15/2010
Cyclohexane	< 2.5	2.5	< 8.6	8.6		5	3/15/2010
Dibromochloromethane	< 2.5	2.5	< 21	21		5	3/15/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW7A-030810
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/8/2010
Lab ID:	06	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
Dichlorodifluoromethane(F-12)	< 5.0	5.0	< 25	25		5	3/15/2010
Dichlorotetrafluoroethane(F-114)	< 2.5	2.5	< 17	17		5	3/15/2010
Ethyl Acetate	< 2.5	2.5	< 9.0	9.0		5	3/15/2010
Ethylbenzene	< 2.5	2.5	< 11	11		5	3/15/2010
Heptane	< 2.5	2.5	< 10	10		5	3/15/2010
Hexachlorobutadiene	< 5.0	5.0	< 53	53		5	3/15/2010
Hexane	< 2.5	2.5	< 8.8	8.8		5	3/15/2010
m&p-Xylene	< 5.0	5.0	< 22	22		5	3/15/2010
Methyl tert-butyl ether	< 5.0	5.0	< 18	18		5	3/15/2010
Methylene chloride	< 2.5	2.5	< 8.7	8.7		5	3/15/2010
o-Xylene	< 2.5	2.5	< 11	11		5	3/15/2010
Propene (Propylene)	< 2.5	2.5	< 4.3	4.3		5	3/15/2010
Styrene	< 2.5	2.5	< 11	11		5	3/15/2010
Tetrachloroethene	< 2.5	2.5	< 17	17		5	3/15/2010
Tetrahydrofuran	< 10	10	< 30	30		5	3/15/2010
Toluene	**4.0**	**2.5**	**15**	**9.4**		5	3/15/2010
trans-1,2-Dichloroethene	< 2.5	2.5	< 9.9	9.9		5	3/15/2010
trans-1,3-Dichloropropene	< 2.5	2.5	< 11	11		5	3/15/2010
Trichloroethene	< 2.5	2.5	< 13	13		5	3/15/2010
Trichlorofluoromethane(F-11)	< 2.5	2.5	< 14	14		5	3/15/2010
Trichlorotrifluoroethane(F-113)	< 2.5	2.5	< 19	19		5	3/15/2010
Vinyl acetate	< 2.5	2.5	< 8.8	8.8		5	3/15/2010
Vinyl chloride	< 2.5	2.5	< 6.4	6.4		5	3/15/2010
Surr: 4-Bromofluorobenzene	109	70-130	%REC				

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW5A-030910
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/9/2010
Lab ID:	07	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
1,1,1-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/16/2010
1,1,2,2-Tetrachloroethane	< 1.0	1.0	< 6.9	6.9		2	3/16/2010
1,1,2-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/16/2010
1,1-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010
1,1-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
1,2,4-Trichlorobenzene	< 4.0	4.0	< 30	30		2	3/16/2010
1,2,4-Trimethylbenzene	**2.0**	**1.0**	**9.8**	**4.9**	D1	2	3/16/2010
1,2-Dibromoethane	< 1.0	1.0	< 7.7	7.7		2	3/16/2010
1,2-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,2-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010
1,2-Dichloropropane	< 1.0	1.0	< 4.6	4.6		2	3/16/2010
1,3,5-Trimethylbenzene	**1.0**	**1.0**	**4.9**	**4.9**	D1	2	3/16/2010
1,3-Butadiene	< 1.0	1.0	< 2.2	2.2		2	3/16/2010
1,3-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,4-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,4-Dioxane	< 4.0	4.0	< 14	14		2	3/16/2010
2,2,4-Trimethylpentane	< 1.0	1.0	< 4.7	4.7		2	3/16/2010
2-Butanone (MEK)	< 2.0	2.0	< 5.9	5.9		2	3/16/2010
2-Hexanone	< 2.0	2.0	< 8.2	8.2		2	3/16/2010
2-Propanol (IPA)	< 4.0	4.0	< 10	10		2	3/16/2010
4-Ethyltoluene	< 1.0	1.0	< 4.9	4.9		2	3/16/2010
4-Methyl-2-pentanone (MIK)	< 2.0	2.0	< 8.2	8.2		2	3/16/2010
Acetone	< 10	.10	< 24	24		2	3/16/2010
Allyl chloride	< 1.0	1.0	< 3.1	3.1		2	3/16/2010
Benzene	< 1.0	1.0	< 3.2	3.2		2	3/16/2010
Benzyl chloride	< 4.0	4.0	< 21	21		2	3/16/2010
Bromodichloromethane	< 1.0	1.0	< 6.7	6.7		2	3/16/2010
Bromoethene(Vinyl Bromide)	< 1.0	1.0	< 4.4	4.4		2	3/16/2010
Bromoform	< 1.0	1.0	< 10	10		2	3/16/2010
Bromomethane	< 1.0	1.0	< 3.9	3.9		2	3/16/2010
Carbon disulfide	**1.2**	**1.0**	**3.7**	**3.1**	D1	2	3/16/2010
Carbon tetrachloride	< 1.0	1.0	< 6.3	6.3		2	3/16/2010
Chlorobenzene	< 1.0	1.0	< 4.6	4.6		2	3/16/2010
Chloroethane	< 1.0	1.0	< 2.6	2.6		2	3/16/2010
Chloroform	**6.7**	**1.0**	**33**	**4.9**	D1	2	3/16/2010
Chloromethane	< 2.0	2.0	< 4.1	4.1		2	3/16/2010
cis-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
cis-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/16/2010
Cyclohexane	< 1.0	1.0	< 3.4	3.4		2	3/16/2010
Dibromochloromethane	< 1.0	1.0	< 8.5	8.5		2	3/16/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW5A-030910
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/9/2010
Lab ID:	07	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
Dichlorodifluoromethane(F-12)	< 2.0	2.0	< 10	10		2	3/16/2010
Dichlorotetrafluoroethane(F-114)	< 1.0	1.0	< 7.0	7.0		2	3/16/2010
Ethyl Acetate	< 1.0	1.0	< 3.6	3.6		2	3/16/2010
Ethylbenzene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Heptane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010
Hexachlorobutadiene	< 2.0	2.0	< 21	21		2	3/16/2010
Hexane	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
m&p-Xylene	**3.6**	**2.0**	**16**	**8.7**	D1	2	3/16/2010
Methyl tert-butyl ether	< 2.0	2.0	< 7.2	7.2		2	3/16/2010
Methylene chloride	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
o-Xylene	**1.9**	**1.0**	**8.2**	**4.3**	D1	2	3/16/2010
Propene (Propylene)	< 1.0	1.0	< 1.7	1.7		2	3/16/2010
Styrene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Tetrachloroethene	< 1.0	1.0	< 6.8	6.8		2	3/16/2010
Tetrahydrofuran	< 4.0	4.0	< 12	12		2	3/16/2010
Toluene	**4.4**	**1.0**	**17**	**3.8**	D1	2	3/16/2010
trans-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
trans-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/16/2010
Trichloroethene	< 1.0	1.0	< 5.4	5.4		2	3/16/2010
Trichlorofluoromethane(F-11)	< 1.0	1.0	< 5.6	5.6		2	3/16/2010
Trichlorotrifluoroethane(F-113)	< 1.0	1.0	< 7.7	7.7		2	3/16/2010
Vinyl acetate	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
Vinyl chloride	< 1.0	1.0	< 2.6	2.6		2	3/16/2010
Surr: 4-Bromofluorobenzene	112	70-130	%REC				

4620 E.Elwood Street, Suite 13, Phoenix AZ 85040 Phone: 480-968-5888, Fax: 480-966-1888

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW5B-030910
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/9/2010
Lab ID:	08	**Matrix:**	SoilVapor

Analyses	ppbv Result	ppbv Limit	µg/M³ Result	µg/M³ Limit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
1,1,1-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/16/2010
1,1,2,2-Tetrachloroethane	< 1.0	1.0	< 6.9	6.9		2	3/16/2010
1,1,2-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/16/2010
1,1-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010
1,1-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
1,2,4-Trichlorobenzene	< 4.0	4.0	< 30	30		2	3/16/2010
1,2,4-Trimethylbenzene	< 1.0	1.0	< 4.9	4.9		2	3/16/2010
1,2-Dibromoethane	< 1.0	1.0	< 7.7	7.7		2	3/16/2010
1,2-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,2-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010
1,2-Dichloropropane	< 1.0	1.0	< 4.6	4.6		2	3/16/2010
1,3,5-Trimethylbenzene	< 1.0	1.0	< 4.9	4.9		2	3/16/2010
1,3-Butadiene	< 1.0	1.0	< 2.2	2.2		2	3/16/2010
1,3-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,4-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,4-Dioxane	< 4.0	4.0	< 14	14		2	3/16/2010
2,2,4-Trimethylpentane	< 1.0	1.0	< 4.7	4.7		2	3/16/2010
2-Butanone (MEK)	< 2.0	2.0	< 5.9	5.9		2	3/16/2010
2-Hexanone	< 2.0	2.0	< 8.2	8.2		2	3/16/2010
2-Propanol (IPA)	< 4.0	4.0	< 10	10		2	3/16/2010
4-Ethyltoluene	< 1.0	1.0	< 4.9	4.9		2	3/16/2010
4-Methyl-2-pentanone (MIK)	< 2.0	2.0	< 8.2	8.2		2	3/16/2010
Acetone	**12**	**10**	**29**	**24**	D1	2	3/16/2010
Allyl chloride	< 1.0	1.0	< 3.1	3.1		2	3/16/2010
Benzene	< 1.0	1.0	< 3.2	3.2		2	3/16/2010
Benzyl chloride	< 4.0	4.0	< 21	21		2	3/16/2010
Bromodichloromethane	< 1.0	1.0	< 6.7	6.7		2	3/16/2010
Bromoethene(Vinyl Bromide)	< 1.0	1.0	< 4.4	4.4		2	3/16/2010
Bromoform	< 1.0	1.0	< 10	10		2	3/16/2010
Bromomethane	< 1.0	1.0	< 3.9	3.9		2	3/16/2010
Carbon disulfide	**4.1**	**1.0**	**13**	**3.1**	D1	2	3/16/2010
Carbon tetrachloride	< 1.0	1.0	< 6.3	6.3		2	3/16/2010
Chlorobenzene	< 1.0	1.0	< 4.6	4.6		2	3/16/2010
Chloroethane	< 1.0	1.0	< 2.6	2.6		2	3/16/2010
Chloroform	**6.7**	**1.0**	**33**	**4.9**	D1	2	3/16/2010
Chloromethane	**2.0**	**2.0**	**4.1**	**4.1**	D1	2	3/16/2010
cis-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
cis-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/16/2010
Cyclohexane	< 1.0	1.0	< 3.4	3.4		2	3/16/2010
Dibromochloromethane	< 1.0	1.0	< 8.5	8.5		2	3/16/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW5B-030910
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/9/2010
Lab ID:	08	**Matrix:**	SoilVapor

Analyses	ppbv Result	ppbv Limit	µg/M³ Result	µg/M³ Limit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
Dichlorodifluoromethane(F-12)	< 2.0	2.0	< 10	10		2	3/16/2010
Dichlorotetrafluoroethane(F-114)	< 1.0	1.0	< 7.0	7.0		2	3/16/2010
Ethyl Acetate	< 1.0	1.0	< 3.6	3.6		2	3/16/2010
Ethylbenzene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Heptane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010
Hexachlorobutadiene	< 2.0	2.0	< 21	21		2	3/16/2010
Hexane	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
m&p-Xylene	< 2.0	2.0	< 8.7	8.7		2	3/16/2010
Methyl tert-butyl ether	< 2.0	2.0	< 7.2	7.2		2	3/16/2010
Methylene chloride	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
o-Xylene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Propene (Propylene)	< 1.0	1.0	< 1.7	1.7		2	3/16/2010
Styrene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Tetrachloroethene	< 1.0	1.0	< 6.8	6.8		2	3/16/2010
Tetrahydrofuran	< 4.0	4.0	< 12	12		2	3/16/2010
Toluene	**4.1**	**1.0**	**15**	**3.8**	D1	2	3/16/2010
trans-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
trans-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/16/2010
Trichloroethene	< 1.0	1.0	< 5.4	5.4		2	3/16/2010
Trichlorofluoromethane(F-11)	< 1.0	1.0	< 5.6	5.6		2	3/16/2010
Trichlorotrifluoroethane(F-113)	< 1.0	1.0	< 7.7	7.7		2	3/16/2010
Vinyl acetate	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
Vinyl chloride	< 1.0	1.0	< 2.6	2.6		2	3/16/2010
Surr: 4-Bromofluorobenzene	116	70-130	%REC				

4620 E.Elwood Street, Suite 13, Phoenix AZ 85040 Phone: 480-968-5888, Fax: 480-966-1888

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW3A-030910
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/9/2010
Lab ID:	09	**Matrix:**	SoilVapor

Analyses	ppbv Result	ppbv Limit	µg/M³ Result	µg/M³ Limit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
1,1,1-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/16/2010
1,1,2,2-Tetrachloroethane	< 1.0	1.0	< 6.9	6.9		2	3/16/2010
1,1,2-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/16/2010
1,1-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010
1,1-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
1,2,4-Trichlorobenzene	< 4.0	4.0	< 30	30		2	3/16/2010
1,2,4-Trimethylbenzene	**2.6**	**1.0**	**13**	**4.9**	D1	2	3/16/2010
1,2-Dibromoethane	< 1.0	1.0	< 7.7	7.7		2	3/16/2010
1,2-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,2-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010
1,2-Dichloropropane	< 1.0	1.0	< 4.6	4.6		2	3/16/2010
1,3,5-Trimethylbenzene	**1.1**	**1.0**	**5.4**	**4.9**	D1	2	3/16/2010
1,3-Butadiene	< 1.0	1.0	< 2.2	2.2		2	3/16/2010
1,3-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,4-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,4-Dioxane	< 4.0	4.0	< 14	14		2	3/16/2010
2,2,4-Trimethylpentane	< 1.0	1.0	< 4.7	4.7		2	3/16/2010
2-Butanone (MEK)	< 2.0	2.0	< 5.9	5.9		2	3/16/2010
2-Hexanone	< 2.0	2.0	< 8.2	8.2		2	3/16/2010
2-Propanol (IPA)	< 4.0	4.0	< 10	10		2	3/16/2010
4-Ethyltoluene	< 1.0	1.0	< 4.9	4.9		2	3/16/2010
4-Methyl-2-pentanone (MIK)	< 2.0	2.0	< 8.2	8.2		2	3/16/2010
Acetone	**12**	**10**	**29**	**24**	D1	2	3/16/2010
Allyl chloride	< 1.0	1.0	< 3.1	3.1		2	3/16/2010
Benzene	< 1.0	1.0	< 3.2	3.2		2	3/16/2010
Benzyl chloride	< 4.0	4.0	< 21	21		2	3/16/2010
Bromodichloromethane	< 1.0	1.0	< 6.7	6.7		2	3/16/2010
Bromoethene(Vinyl Bromide)	< 1.0	1.0	< 4.4	4.4		2	3/16/2010
Bromoform	< 1.0	1.0	< 10	10		2	3/16/2010
Bromomethane	< 1.0	1.0	< 3.9	3.9		2	3/16/2010
Carbon disulfide	**1.3**	**1.0**	**4.0**	**3.1**	D1	2	3/16/2010
Carbon tetrachloride	< 1.0	1.0	< 6.3	6.3		2	3/16/2010
Chlorobenzene	< 1.0	1.0	< 4.6	4.6		2	3/16/2010
Chloroethane	< 1.0	1.0	< 2.6	2.6		2	3/16/2010
Chloroform	< 1.0	1.0	< 4.9	4.9		2	3/16/2010
Chloromethane	< 2.0	2.0	< 4.1	4.1		2	3/16/2010
cis-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
cis-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/16/2010
Cyclohexane	< 1.0	1.0	< 3.4	3.4		2	3/16/2010
Dibromochloromethane	< 1.0	1.0	< 8.5	8.5		2	3/16/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW3A-030910
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/9/2010
Lab ID:	09	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
Dichlorodifluoromethane(F-12)	< 2.0	2.0	< 10	10		2	3/16/2010
Dichlorotetrafluoroethane(F-114)	< 1.0	1.0	< 7.0	7.0		2	3/16/2010
Ethyl Acetate	< 1.0	1.0	< 3.6	3.6		2	3/16/2010
Ethylbenzene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Heptane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010
Hexachlorobutadiene	< 2.0	2.0	< 21	21		2	3/16/2010
Hexane	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
m&p-Xylene	**5.5**	**2.0**	**24**	**8.7**	D1	2	3/16/2010
Methyl tert-butyl ether	< 2.0	2.0	< 7.2	7.2		2	3/16/2010
Methylene chloride	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
o-Xylene	**2.6**	**1.0**	**11**	**4.3**	D1	2	3/16/2010
Propene (Propylene)	< 1.0	1.0	< 1.7	1.7		2	3/16/2010
Styrene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Tetrachloroethene	**3.0**	**1.0**	**20**	**6.8**	D1	2	3/16/2010
Tetrahydrofuran	< 4.0	4.0	< 12	12		2	3/16/2010
Toluene	**3.2**	**1.0**	**12**	**3.8**	D1	2	3/16/2010
trans-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
trans-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/16/2010
Trichloroethene	< 1.0	1.0	< 5.4	5.4		2	3/16/2010
Trichlorofluoromethane(F-11)	< 1.0	1.0	< 5.6	5.6		2	3/16/2010
Trichlorotrifluoroethane(F-113)	< 1.0	1.0	< 7.7	7.7		2	3/16/2010
Vinyl acetate	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
Vinyl chloride	< 1.0	1.0	< 2.6	2.6		2	3/16/2010
Surr: 4-Bromofluorobenzene	113	70-130	%REC				

4620 E.Elwood Street, Suite 13, Phoenix AZ 85040 Phone: 480-968-5888, Fax: 480-966-1888

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW3B-030910
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/9/2010
Lab ID:	10	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
1,1,1-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/16/2010
1,1,2,2-Tetrachloroethane	< 1.0	1.0	< 6.9	6.9		2	3/16/2010
1,1,2-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/16/2010
1,1-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010
1,1-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
1,2,4-Trichlorobenzene	< 4.0	4.0	< 30	30		2	3/16/2010
1,2,4-Trimethylbenzene	< 1.0	1.0	< 4.9	4.9		2	3/16/2010
1,2-Dibromoethane	< 1.0	1.0	< 7.7	7.7		2	3/16/2010
1,2-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,2-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010
1,2-Dichloropropane	< 1.0	1.0	< 4.6	4.6		2	3/16/2010
1,3,5-Trimethylbenzene	< 1.0	1.0	< 4.9	4.9		2	3/16/2010
1,3-Butadiene	< 1.0	1.0	< 2.2	2.2		2	3/16/2010
1,3-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,4-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,4-Dioxane	< 4.0	4.0	< 14	14		2	3/16/2010
2,2,4-Trimethylpentane	< 1.0	1.0	< 4.7	4.7		2	3/16/2010
2-Butanone (MEK)	< 2.0	2.0	< 5.9	5.9		2	3/16/2010
2-Hexanone	< 2.0	2.0	< 8.2	8.2		2	3/16/2010
2-Propanol (IPA)	< 4.0	4.0	< 10	10		2	3/16/2010
4-Ethyltoluene	< 1.0	1.0	< 4.9	4.9		2	3/16/2010
4-Methyl-2-pentanone (MIK)	< 2.0	2.0	< 8.2	8.2		2	3/16/2010
Acetone	< 10	10	< 24	24		2	3/16/2010
Allyl chloride	< 1.0	1.0	< 3.1	3.1		2	3/16/2010
Benzene	< 1.0	1.0	< 3.2	3.2		2	3/16/2010
Benzyl chloride	< 4.0	4.0	< 21	21		2	3/16/2010
Bromodichloromethane	< 1.0	1.0	< 6.7	6.7		2	3/16/2010
Bromoethene(Vinyl Bromide)	< 1.0	1.0	< 4.4	4.4		2	3/16/2010
Bromoform	< 1.0	1.0	< 10	10		2	3/16/2010
Bromomethane	< 1.0	1.0	< 3.9	3.9		2	3/16/2010
Carbon disulfide	**3.6**	**1.0**	**11**	**3.1**	D1	2	3/16/2010
Carbon tetrachloride	< 1.0	1.0	< 6.3	6.3		2	3/16/2010
Chlorobenzene	< 1.0	1.0	< 4.6	4.6		2	3/16/2010
Chloroethane	< 1.0	1.0	< 2.6	2.6		2	3/16/2010
Chloroform	**1.1**	**1.0**	**5.4**	**4.9**	D1	2	3/16/2010
Chloromethane	**18**	**2.0**	**37**	**4.1**	D1	2	3/16/2010
cis-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
cis-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/16/2010
Cyclohexane	< 1.0	1.0	< 3.4	3.4		2	3/16/2010
Dibromochloromethane	< 1.0	1.0	< 8.5	8.5		2	3/16/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW3B-030910
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/9/2010
Lab ID:	10	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
Dichlorodifluoromethane(F-12)	< 2.0	2.0	< 10	10		2	3/16/2010
Dichlorotetrafluoroethane(F-114)	< 1.0	1.0	< 7.0	7.0		2	3/16/2010
Ethyl Acetate	< 1.0	1.0	< 3.6	3.6		2	3/16/2010
Ethylbenzene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Heptane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010
Hexachlorobutadiene	< 2.0	2.0	< 21	21		2	3/16/2010
Hexane	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
m&p-Xylene	**2.4**	**2.0**	**10**	**8.7**	D1	2	3/16/2010
Methyl tert-butyl ether	< 2.0	2.0	< 7.2	7.2		2	3/16/2010
Methylene chloride	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
o-Xylene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Propene (Propylene)	< 1.0	1.0	< 1.7	1.7		2	3/16/2010
Styrene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Tetrachloroethene	**3.5**	**1.0**	**24**	**6.8**	D1	2	3/16/2010
Tetrahydrofuran	< 4.0	4.0	< 12	12		2	3/16/2010
Toluene	**3.4**	**1.0**	**13**	**3.8**	D1	2	3/16/2010
trans-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
trans-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/16/2010
Trichloroethene	< 1.0	1.0	< 5.4	5.4		2	3/16/2010
Trichlorofluoromethane(F-11)	< 1.0	1.0	< 5.6	5.6		2	3/16/2010
Trichlorotrifluoroethane(F-113)	< 1.0	1.0	< 7.7	7.7		2	3/16/2010
Vinyl acetate	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
Vinyl chloride	< 1.0	1.0	< 2.6	2.6		2	3/16/2010
Surr: 4-Bromofluorobenzene	113	70-130	%REC				

4620 E.Elwood Street, Suite 13, Phoenix AZ 85040 Phone: 480-968-5888, Fax: 480-966-1888

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW12A-030910
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/9/2010
Lab ID:	11	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
1,1,1-Trichloroethane	< 2.5	2.5	< 14	14		5	3/16/2010
1,1,2,2-Tetrachloroethane	< 2.5	2.5	< 17	17		5	3/16/2010
1,1,2-Trichloroethane	< 2.5	2.5	< 14	14		5	3/16/2010
1,1-Dichloroethane	< 2.5	2.5	< 10	10		5	3/16/2010
1,1-Dichloroethene	< 2.5	2.5	< 9.9	9.9		5	3/16/2010
1,2,4-Trichlorobenzene	< 10	10	< 74	74		5	3/16/2010
1,2,4-Trimethylbenzene	< 2.5	2.5	< 12	12		5	3/16/2010
1,2-Dibromoethane	< 2.5	2.5	< 19	19		5	3/16/2010
1,2-Dichlorobenzene	< 2.5	2.5	< 15	15		5	3/16/2010
1,2-Dichloroethane	< 2.5	2.5	< 10	10		5	3/16/2010
1,2-Dichloropropane	< 2.5	2.5	< 12	12		5	3/16/2010
1,3,5-Trimethylbenzene	< 2.5	2.5	< 12	12		5	3/16/2010
1,3-Butadiene	< 2.5	2.5	< 5.5	5.5		5	3/16/2010
1,3-Dichlorobenzene	< 2.5	2.5	< 15	15		5	3/16/2010
1,4-Dichlorobenzene	< 2.5	2.5	< 15	15		5	3/16/2010
1,4-Dioxane	< 10	10	< 36	36		5	3/16/2010
2,2,4-Trimethylpentane	< 2.5	2.5	< 12	12		5	3/16/2010
2-Butanone (MEK)	< 5.0	5.0	< 15	15		5	3/16/2010
2-Hexanone	< 5.0	5.0	< 21	21		5	3/16/2010
2-Propanol (IPA)	< 10	10	< 25	25		5	3/16/2010
4-Ethyltoluene	< 2.5	2.5	< 12	12		5	3/16/2010
4-Methyl-2-pentanone (MIK)	< 5.0	5.0	< 21	21		5	3/16/2010
Acetone	**67**	**25**	**160**	**60**	D2	5	3/16/2010
Allyl chloride	< 2.5	2.5	< 7.8	7.8		5	3/16/2010
Benzene	**3.4**	**2.5**	**11**	**8.0**		5	3/16/2010
Benzyl chloride	< 10	10	< 52	52		5	3/16/2010
Bromodichloromethane	< 2.5	2.5	< 17	17		5	3/16/2010
Bromoethene(Vinyl Bromide)	< 2.5	2.5	< 11	11		5	3/16/2010
Bromoform	< 2.5	2.5	< 26	26		5	3/16/2010
Bromomethane	< 2.5	2.5	< 9.7	9.7		5	3/16/2010
Carbon disulfide	**11**	**2.5**	**34**	**7.8**		5	3/16/2010
Carbon tetrachloride	< 2.5	2.5	< 16	16		5	3/16/2010
Chlorobenzene	< 2.5	2.5	< 12	12		5	3/16/2010
Chloroethane	< 2.5	2.5	< 6.6	6.6		5	3/16/2010
Chloroform	**4.5**	**2.5**	**22**	**12**		5	3/16/2010
Chloromethane	< 5.0	5.0	< 10	10		5	3/16/2010
cis-1,2-Dichloroethene	< 2.5	2.5	< 9.9	9.9		5	3/16/2010
cis-1,3-Dichloropropene	< 2.5	2.5	< 11	11		5	3/16/2010
Cyclohexane	< 2.5	2.5	< 8.6	8.6		5	3/16/2010
Dibromochloromethane	< 2.5	2.5	< 21	21		5	3/16/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW12A-030910
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/9/2010
Lab ID:	11	**Matrix:**	SoilVapor

Analyses	ppbv Result	ppbv Limit	µg/M³ Result	µg/M³ Limit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
Dichlorodifluoromethane(F-12)	< 5.0	5.0	< 25	25		5	3/16/2010
Dichlorotetrafluoroethane(F-114)	< 2.5	2.5	< 17	17		5	3/16/2010
Ethyl Acetate	< 2.5	2.5	< 9.0	9.0		5	3/16/2010
Ethylbenzene	< 2.5	2.5	< 11	11		5	3/16/2010
Heptane	< 2.5	2.5	< 10	10		5	3/16/2010
Hexachlorobutadiene	< 5.0	5.0	< 53	53		5	3/16/2010
Hexane	< 2.5	2.5	< 8.8	8.8		5	3/16/2010
m&p-Xylene	**5.6**	**5.0**	**24**	**22**		5	3/16/2010
Methyl tert-butyl ether	< 5.0	5.0	< 18	18		5	3/16/2010
Methylene chloride	< 2.5	2.5	< 8.7	8.7		5	3/16/2010
o-Xylene	< 2.5	2.5	< 11	11		5	3/16/2010
Propene (Propylene)	< 2.5	2.5	< 4.3	4.3		5	3/16/2010
Styrene	< 2.5	2.5	< 11	11		5	3/16/2010
Tetrachloroethene	**7.5**	**2.5**	**51**	**17**		5	3/16/2010
Tetrahydrofuran	< 10	10	< 30	30		5	3/16/2010
Toluene	**7.0**	**2.5**	**26**	**9.4**		5	3/16/2010
trans-1,2-Dichloroethene	< 2.5	2.5	< 9.9	9.9		5	3/16/2010
trans-1,3-Dichloropropene	< 2.5	2.5	< 11	11		5	3/16/2010
Trichloroethene	< 2.5	2.5	< 13	13		5	3/16/2010
Trichlorofluoromethane(F-11)	< 2.5	2.5	< 14	14		5	3/16/2010
Trichlorotrifluoroethane(F-113)	< 2.5	2.5	< 19	19		5	3/16/2010
Vinyl acetate	< 2.5	2.5	< 8.8	8.8		5	3/16/2010
Vinyl chloride	< 2.5	2.5	< 6.4	6.4		5	3/16/2010
Surr: 4-Bromofluorobenzene	113	70-130	%REC				

4620 E.Elwood Street, Suite 13, Phoenix AZ 85040 Phone: 480-968-5888, Fax: 480-966-1888

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW12B-030910
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/9/2010
Lab ID:	12	**Matrix:**	SoilVapor

Analyses	ppbv Result	ppbv Limit	µg/M³ Result	µg/M³ Limit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
1,1,1-Trichloroethane	< 2.5	2.5	< 14	14		5	3/16/2010
1,1,2,2-Tetrachloroethane	< 2.5	2.5	< 17	17		5	3/16/2010
1,1,2-Trichloroethane	< 2.5	2.5	< 14	14		5	3/16/2010
1,1-Dichloroethane	< 2.5	2.5	< 10	10		5	3/16/2010
1,1-Dichloroethene	< 2.5	2.5	< 9.9	9.9		5	3/16/2010
1,2,4-Trichlorobenzene	< 10	10	< 74	74		5	3/16/2010
1,2,4-Trimethylbenzene	< 2.5	2.5	< 12	12		5	3/16/2010
1,2-Dibromoethane	< 2.5	2.5	< 19	19		5	3/16/2010
1,2-Dichlorobenzene	< 2.5	2.5	< 15	15		5	3/16/2010
1,2-Dichloroethane	< 2.5	2.5	< 10	10		5	3/16/2010
1,2-Dichloropropane	< 2.5	2.5	< 12	12		5	3/16/2010
1,3,5-Trimethylbenzene	< 2.5	2.5	< 12	12		5	3/16/2010
1,3-Butadiene	< 2.5	2.5	< 5.5	5.5		5	3/16/2010
1,3-Dichlorobenzene	< 2.5	2.5	< 15	15		5	3/16/2010
1,4-Dichlorobenzene	< 2.5	2.5	< 15	15		5	3/16/2010
1,4-Dioxane	< 10	10	< 36	36		5	3/16/2010
2,2,4-Trimethylpentane	< 2.5	2.5	< 12	12		5	3/16/2010
2-Butanone (MEK)	< 5.0	5.0	< 15	15		5	3/16/2010
2-Hexanone	< 5.0	5.0	< 21	21		5	3/16/2010
2-Propanol (IPA)	< 10	10	< 25	25		5	3/16/2010
4-Ethyltoluene	< 2.5	2.5	< 12	12		5	3/16/2010
4-Methyl-2-pentanone (MIK)	< 5.0	5.0	< 21	21		5	3/16/2010
Acetone	**140**	**25**	**330**	**60**	D2	5	3/16/2010
Allyl chloride	< 2.5	2.5	< 7.8	7.8		5	3/16/2010
Benzene	**3.4**	**2.5**	**11**	**8.0**		5	3/16/2010
Benzyl chloride	< 10	10	< 52	52		5	3/16/2010
Bromodichloromethane	< 2.5	2.5	< 17	17		5	3/16/2010
Bromoethene(Vinyl Bromide)	< 2.5	2.5	< 11	11		5	3/16/2010
Bromoform	< 2.5	2.5	< 26	26		5	3/16/2010
Bromomethane	< 3	2.5	< 9.7	9.7		5	3/16/2010
Carbon disulfide	**11**	**2.5**	**34**	**7.8**		5	3/16/2010
Carbon tetrachloride	< 2.5	2.5	< 16	16		5	3/16/2010
Chlorobenzene	< 2.5	2.5	< 12	12		5	3/16/2010
Chloroethane	< 2.5	2.5	< 6.6	6.6		5	3/16/2010
Chloroform	**7.4**	**2.5**	**36**	**12**		5	3/16/2010
Chloromethane	**11**	**5.0**	**23**	**10**		5	3/16/2010
cis-1,2-Dichloroethene	< 2.5	2.5	< 9.9	9.9		5	3/16/2010
cis-1,3-Dichloropropene	< 2.5	2.5	< 11	11		5	3/16/2010
Cyclohexane	< 2.5	2.5	< 8.6	8.6		5	3/16/2010
Dibromochloromethane	< 2.5	2.5	< 21	21		5	3/16/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW12B-030910
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/9/2010
Lab ID:	12	**Matrix:**	SoilVapor

Analyses	ppbv Result	ppbv Limit	µg/M³ Result	µg/M³ Limit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
Dichlorodifluoromethane(F-12)	< 5.0	5.0	< 25	25		5	3/16/2010
Dichlorotetrafluoroethane(F-114)	< 2.5	2.5	< 17	17		5	3/16/2010
Ethyl Acetate	< 2.5	2.5	< 9.0	9.0		5	3/16/2010
Ethylbenzene	< 2.5	2.5	< 11	11		5	3/16/2010
Heptane	**2.8**	**2.5**	**11**	**10**		5	3/16/2010
Hexachlorobutadiene	< 5.0	5.0	< 53	53		5	3/16/2010
Hexane	< 2.5	2.5	< 8.8	8.8		5	3/16/2010
m&p-Xylene	< 5.0	5.0	< 22	22		5	3/16/2010
Methyl tert-butyl ether	< 5.0	5.0	< 18	18		5	3/16/2010
Methylene chloride	< 2.5	2.5	< 8.7	8.7		5	3/16/2010
o-Xylene	< 2.5	2.5	< 11	11		5	3/16/2010
Propene (Propylene)	< 2.5	2.5	< 4.3	4.3		5	3/16/2010
Styrene	< 2.5	2.5	< 11	11		5	3/16/2010
Tetrachloroethene	**12**	**2.5**	**81**	**17**		5	3/16/2010
Tetrahydrofuran	< 10	10	< 30	30		5	3/16/2010
Toluene	**17**	**2.5**	**64**	**9.4**		5	3/16/2010
trans-1,2-Dichloroethene	< 2.5	2.5	< 9.9	9.9		5	3/16/2010
trans-1,3-Dichloropropene	< 2.5	2.5	< 11	11		5	3/16/2010
Trichloroethene	< 2.5	2.5	< 13	13		5	3/16/2010
Trichlorofluoromethane(F-11)	< 2.5	2.5	< 14	14		5	3/16/2010
Trichlorotrifluoroethane(F-113)	< 2.5	2.5	< 19	19		5	3/16/2010
Vinyl acetate	< 2.5	2.5	< 8.8	8.8		5	3/16/2010
Vinyl chloride	< 2.5	2.5	< 6.4	6.4		5	3/16/2010
Surr: 4-Bromofluorobenzene	108	70-130	%REC				

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW11A-030910
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/9/2010
Lab ID:	13	**Matrix:**	SoilVapor

Analyses	ppbv Result	ppbv Limit	µg/M³ Result	µg/M³ Limit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
1,1,1-Trichloroethane	< 10	10	< 55	55		20	3/16/2010
1,1,2,2-Tetrachloroethane	< 10	10	< 69	69		20	3/16/2010
1,1,2-Trichloroethane	< 10	10	< 55	55		20	3/16/2010
1,1-Dichloroethane	< 10	10	< 41	41		20	3/16/2010
1,1-Dichloroethene	< 10	10	< 40	40		20	3/16/2010
1,2,4-Trichlorobenzene	< 40	40	< 297	297		20	3/16/2010
1,2,4-Trimethylbenzene	< 10	10	< 49	49		20	3/16/2010
1,2-Dibromoethane	< 10	10	< 77	77		20	3/16/2010
1,2-Dichlorobenzene	< 10	10	< 60	60		20	3/16/2010
1,2-Dichloroethane	< 10	10	< 41	41		20	3/16/2010
1,2-Dichloropropane	< 10	10	< 46	46		20	3/16/2010
1,3,5-Trimethylbenzene	< 10	10	< 49	49		20	3/16/2010
1,3-Butadiene	< 10	10	< 22	22		20	3/16/2010
1,3-Dichlorobenzene	< 10	10	< 60	60		20	3/16/2010
1,4-Dichlorobenzene	< 10	10	< 60	60		20	3/16/2010
1,4-Dioxane	< 40	40	< 144	144		20	3/16/2010
2,2,4-Trimethylpentane	< 10	10	< 47	47		20	3/16/2010
2-Butanone (MEK)	< 20	20	< 59	59		20	3/16/2010
2-Hexanone	< 20	20	< 82	82		20	3/16/2010
2-Propanol (IPA)	< 40	40	< 98	98		20	3/16/2010
4-Ethyltoluene	< 10	10	< 49	49		20	3/16/2010
4-Methyl-2-pentanone (MIK)	< 20	20	< 82	82		20	3/16/2010
Acetone	< 100	100	< 238	238		20	3/16/2010
Allyl chloride	< 10	10	< 31	31		20	3/16/2010
Benzene	< 10	10	< 32	32		20	3/16/2010
Benzyl chloride	< 40	40	< 207	207		20	3/16/2010
Bromodichloromethane	< 10	10	< 67	67		20	3/16/2010
Bromoethene(Vinyl Bromide)	< 10	10	< 44	44		20	3/16/2010
Bromoform	< 10	10	< 103	103		20	3/16/2010
Bromomethane	< 10	10	< 39	39		20	3/16/2010
Carbon disulfide	< 10	10	< 31	31		20	3/16/2010
Carbon tetrachloride	< 10	10	< 63	63		20	3/16/2010
Chlorobenzene	< 10	10	< 46	46		20	3/16/2010
Chloroethane	< 10	10	< 26	26		20	3/16/2010
Chloroform	< 10	10	< 49	49		20	3/16/2010
Chloromethane	< 20	20	< 41	41		20	3/16/2010
cis-1,2-Dichloroethene	< 10	10	< 40	40		20	3/16/2010
cis-1,3-Dichloropropene	< 10	10	< 45	45		20	3/16/2010
Cyclohexane	< 10	10	< 34	34		20	3/16/2010
Dibromochloromethane	< 10	10	< 85	85		20	3/16/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW11A-030910
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/9/2010
Lab ID:	13	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
Dichlorodifluoromethane(F-12)	< 20	20	< 99	99		20	3/16/2010
Dichlorotetrafluoroethane(F-114)	< 10	10	< 70	70		20	3/16/2010
Ethyl Acetate	< 10	10	< 36	36		20	3/16/2010
Ethylbenzene	< 10	10	< 43	43		20	3/16/2010
Heptane	< 10	10	< 41	41		20	3/16/2010
Hexachlorobutadiene	< 20	20	< 213	213		20	3/16/2010
Hexane	< 10	10	< 35	35		20	3/16/2010
m&p-Xylene	< 20	20	< 87	87		20	3/16/2010
Methyl tert-butyl ether	< 20	20	< 72	72		20	3/16/2010
Methylene chloride	< 10	10	< 35	35		20	3/16/2010
o-Xylene	< 10	10	< 43	43		20	3/16/2010
Propene (Propylene)	< 10	10	< 17	17		20	3/16/2010
Styrene	< 10	10	< 43	43		20	3/16/2010
Tetrachloroethene	**460**	**10**	**3,100**	**68**	D2	20	3/16/2010
Tetrahydrofuran	< 40	40	< 118	118		20	3/16/2010
Toluene	< 10	10	< 38	38		20	3/16/2010
trans-1,2-Dichloroethene	< 10	10	< 40	40		20	3/16/2010
trans-1,3-Dichloropropene	< 10	10	< 45	45		20	3/16/2010
Trichloroethene	< 10	10	< 54	54		20	3/16/2010
Trichlorofluoromethane(F-11)	< 10	10	< 56	56		20	3/16/2010
Trichlorotrifluoroethane(F-113)	< 10	10	< 77	77		20	3/16/2010
Vinyl acetate	< 10	10	< 35	35		20	3/16/2010
Vinyl chloride	< 10	10	< 26	26		20	3/16/2010
Surr: 4-Bromofluorobenzene	103	70-130	%REC				

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW11B-030910
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/9/2010
Lab ID:	14	**Matrix:**	SoilVapor

Analyses	ppbv Result	ppbv Limit	µg/M³ Result	µg/M³ Limit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
1,1,1-Trichloroethane	< 10	10	< 55	55		20	3/16/2010
1,1,2,2-Tetrachloroethane	< 10	10	< 69	69		20	3/16/2010
1,1,2-Trichloroethane	< 10	10	< 55	55		20	3/16/2010
1,1-Dichloroethane	< 10	10	< 41	41		20	3/16/2010
1,1-Dichloroethene	< 10	10	< 40	40		20	3/16/2010
1,2,4-Trichlorobenzene	< 40	40	< 297	297		20	3/16/2010
1,2,4-Trimethylbenzene	< 10	10	< 49	49		20	3/16/2010
1,2-Dibromoethane	< 10	10	< 77	77		20	3/16/2010
1,2-Dichlorobenzene	< 10	10	< 60	60		20	3/16/2010
1,2-Dichloroethane	< 10	10	< 41	41		20	3/16/2010
1,2-Dichloropropane	< 10	10	< 46	46		20	3/16/2010
1,3,5-Trimethylbenzene	< 10	10	< 49	49		20	3/16/2010
1,3-Butadiene	< 10	10	< 22	22		20	3/16/2010
1,3-Dichlorobenzene	< 10	10	< 60	60		20	3/16/2010
1,4-Dichlorobenzene	< 10	10	< 60	60		20	3/16/2010
1,4-Dioxane	< 40	40	< 144	144		20	3/16/2010
2,2,4-Trimethylpentane	< 10	10	< 47	47		20	3/16/2010
2-Butanone (MEK)	< 20	20	< 59	59		20	3/16/2010
2-Hexanone	< 20	20	< 82	82		20	3/16/2010
2-Propanol (IPA)	< 40	40	< 98	98		20	3/16/2010
4-Ethyltoluene	< 10	10	< 49	49		20	3/16/2010
4-Methyl-2-pentanone (MIK)	< 20	20	< 82	82		20	3/16/2010
Acetone	**130**	**100**	**309**	**238**	D2	20	3/16/2010
Allyl chloride	< 10	10	< 31	31		20	3/16/2010
Benzene	< 10	10	< 32	32		20	3/16/2010
Benzyl chloride	< 40	40	< 207	207		20	3/16/2010
Bromodichloromethane	< 10	10	< 67	67		20	3/16/2010
Bromoethene(Vinyl Bromide)	< 10	10	< 44	44		20	3/16/2010
Bromoform	< 10	10	< 103	103		20	3/16/2010
Bromomethane	< 10	10	< 39	39		20	3/16/2010
Carbon disulfide	< 10	10	< 31	31		20	3/16/2010
Carbon tetrachloride	< 10	10	< 63	63		20	3/16/2010
Chlorobenzene	< 10	10	< 46	46		20	3/16/2010
Chloroethane	< 10	10	< 26	26		20	3/16/2010
Chloroform	**15**	**10**	**73**	**49**		20	3/16/2010
Chloromethane	< 20	20	< 41	41		20	3/16/2010
cis-1,2-Dichloroethene	< 10	10	< 40	40		20	3/16/2010
cis-1,3-Dichloropropene	< 10	10	< 45	45		20	3/16/2010
Cyclohexane	< 10	10	< 34	34		20	3/16/2010
Dibromochloromethane	< 10	10	< 85	85		20	3/16/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW11B-030910
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/9/2010
Lab ID:	14	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
Dichlorodifluoromethane(F-12)	< 20	20	< 99	99		20	3/16/2010
Dichlorotetrafluoroethane(F-114)	< 10	10	< 70	70		20	3/16/2010
Ethyl Acetate	< 10	10	< 36	36		20	3/16/2010
Ethylbenzene	< 10	10	< 43	43		20	3/16/2010
Heptane	< 10	10	< 41	41		20	3/16/2010
Hexachlorobutadiene	< 20	20	< 213	213		20	3/16/2010
Hexane	< 10	10	< 35	35		20	3/16/2010
m&p-Xylene	< 20	20	< 87	87		20	3/16/2010
Methyl tert-butyl ether	< 20	20	< 72	72		20	3/16/2010
Methylene chloride	< 10	10	< 35	35		20	3/16/2010
o-Xylene	< 10	10	< 43	43		20	3/16/2010
Propene (Propylene)	< 10	10	< 17	17		20	3/16/2010
Styrene	< 10	10	< 43	43		20	3/16/2010
Tetrachloroethene	**670**	**10**	**4,500**	**68**	D2	20	3/16/2010
Tetrahydrofuran	< 40	40	< 118	118		20	3/16/2010
Toluene	**11**	**10**	**41**	**38**		20	3/16/2010
trans-1,2-Dichloroethene	< 10	10	< 40	40		20	3/16/2010
trans-1,3-Dichloropropene	< 10	10	< 45	45		20	3/16/2010
Trichloroethene	**11**	**10**	**59**	**54**		20	3/16/2010
Trichlorofluoromethane(F-11)	< 10	10	< 56	56		20	3/16/2010
Trichlorotrifluoroethane(F-113)	< 10	10	< 77	77		20	3/16/2010
Vinyl acetate	< 10	10	< 35	35		20	3/16/2010
Vinyl chloride	< 10	10	< 26	26		20	3/16/2010
Surr: 4-Bromofluorobenzene	105	70-130	%REC				

4620 E.Elwood Street, Suite 13, Phoenix AZ 85040 Phone: 480-968-5888, Fax: 480-966-1888

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW4A-031010
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/10/2010
Lab ID:	15	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
1,1,1-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/16/2010
1,1,2,2-Tetrachloroethane	< 1.0	1.0	< 6.9	6.9		2	3/16/2010
1,1,2-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/16/2010
1,1-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010
1,1-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
1,2,4-Trichlorobenzene	< 4.0	4.0	< 30	30		2	3/16/2010
1,2,4-Trimethylbenzene	< 1.0	1.0	< 4.9	4.9		2	3/16/2010
1,2-Dibromoethane	< 1.0	1.0	< 7.7	7.7		2	3/16/2010
1,2-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,2-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010
1,2-Dichloropropane	< 1.0	1.0	< 4.6	4.6		2	3/16/2010
1,3,5-Trimethylbenzene	< 1.0	1.0	< 4.9	4.9		2	3/16/2010
1,3-Butadiene	< 1.0	1.0	< 2.2	2.2		2	3/16/2010
1,3-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,4-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,4-Dioxane	< 4.0	4.0	< 14	14		2	3/16/2010
2,2,4-Trimethylpentane	**1.0**	**1.0**	**4.7**	**4.7**	D1	2	3/16/2010
2-Butanone (MEK)	< 2.0	2.0	< 5.9	5.9		2	3/16/2010
2-Hexanone	< 2.0	2.0	< 8.2	8.2		2	3/16/2010
2-Propanol (IPA)	< 4.0	4.0	< 10	10		2	3/16/2010
4-Ethyltoluene	< 1.0	1.0	< 4.9	4.9		2	3/16/2010
4-Methyl-2-pentanone (MIK)	< 2.0	2.0	< 8.2	8.2		2	3/16/2010
Acetone	**11**	**10**	**26**	**24**	D1	2	3/16/2010
Allyl chloride	< 1.0	1.0	< 3.1	3.1		2	3/16/2010
Benzene	< 1.0	1.0	< 3.2	3.2		2	3/16/2010
Benzyl chloride	< 4.0	4.0	< 21	21		2	3/16/2010
Bromodichloromethane	< 1.0	1.0	< 6.7	6.7		2	3/16/2010
Bromoethene(Vinyl Bromide)	< 1.0	1.0	< 4.4	4.4		2	3/16/2010
Bromoform	< 1.0	1.0	< 10	10		2	3/16/2010
Bromomethane	< 1.0	1.0	< 3.9	3.9		2	3/16/2010
Carbon disulfide	**1.5**	**1.0**	**4.7**	**3.1**	D1	2	3/16/2010
Carbon tetrachloride	< 1.0	1.0	< 6.3	6.3		2	3/16/2010
Chlorobenzene	< 1.0	1.0	< 4.6	4.6		2	3/16/2010
Chloroethane	< 1.0	1.0	< 2.6	2.6		2	3/16/2010
Chloroform	< 1.0	1.0	< 4.9	4.9		2	3/16/2010
Chloromethane	< 2.0	2.0	< 4.1	4.1		2	3/16/2010
cis-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
cis-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/16/2010
Cyclohexane	< 1.0	1.0	< 3.4	3.4		2	3/16/2010
Dibromochloromethane	< 1.0	1.0	< 8.5	8.5		2	3/16/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW4A-031010
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/10/2010
Lab ID:	15	**Matrix:**	SoilVapor

Analyses	ppbv Result	ppbv Limit	µg/M³ Result	µg/M³ Limit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
Dichlorodifluoromethane(F-12)	< 2.0	2.0	< 10	10		2	3/16/2010
Dichlorotetrafluoroethane(F-114)	< 1.0	1.0	< 7.0	7.0		2	3/16/2010
Ethyl Acetate	< 1.0	1.0	< 3.6	3.6		2	3/16/2010
Ethylbenzene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Heptane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010
Hexachlorobutadiene	< 2.0	2.0	< 21	21		2	3/16/2010
Hexane	**1.1**	**1.0**	**3.9**	**3.5**	D1	2	3/16/2010
m&p-Xylene	< 2.0	2.0	< 8.7	8.7		2	3/16/2010
Methyl tert-butyl ether	< 2.0	2.0	< 7.2	7.2		2	3/16/2010
Methylene chloride	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
o-Xylene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Propene (Propylene)	< 1.0	1.0	< 1.7	1.7		2	3/16/2010
Styrene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Tetrachloroethene	**2.0**	**1.0**	**14**	**6.8**	D1	2	3/16/2010
Tetrahydrofuran	< 4.0	4.0	< 12	12		2	3/16/2010
Toluene	**3.9**	**1.0**	**15**	**3.8**	D1	2	3/16/2010
trans-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
trans-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/16/2010
Trichloroethene	< 1.0	1.0	< 5.4	5.4		2	3/16/2010
Trichlorofluoromethane(F-11)	< 1.0	1.0	< 5.6	5.6		2	3/16/2010
Trichlorotrifluoroethane(F-113)	< 1.0	1.0	< 7.7	7.7		2	3/16/2010
Vinyl acetate	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
Vinyl chloride	< 1.0	1.0	< 2.6	2.6		2	3/16/2010
Surr: 4-Bromofluorobenzene	110	70-130	%REC				

4620 E.Elwood Street, Suite 13, Phoenix AZ 85040 Phone: 480-968-5888, Fax: 480-966-1888

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW4B-031010
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/10/2010
Lab ID:	16	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
1,1,1-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/16/2010
1,1,2,2-Tetrachloroethane	< 1.0	1.0	< 6.9	6.9		2	3/16/2010
1,1,2-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/16/2010
1,1-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010
1,1-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
1,2,4-Trichlorobenzene	< 4.0	4.0	< 30	30		2	3/16/2010
1,2,4-Trimethylbenzene	**7.3**	**1.0**	**36**	**4.9**	D1	2	3/16/2010
1,2-Dibromoethane	< 1.0	1.0	< 7.7	7.7		2	3/16/2010
1,2-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,2-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010
1,2-Dichloropropane	< 1.0	1.0	< 4.6	4.6		2	3/16/2010
1,3,5-Trimethylbenzene	**2.5**	**1.0**	**12**	**4.9**	D1	2	3/16/2010
1,3-Butadiene	< 1.0	1.0	< 2.2	2.2		2	3/16/2010
1,3-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,4-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,4-Dioxane	< 4.0	4.0	< 14	14		2	3/16/2010
2,2,4-Trimethylpentane	**2.4**	**1.0**	**11**	**4.7**	D1	2	3/16/2010
2-Butanone (MEK)	< 2.0	2.0	< 5.9	5.9		2	3/16/2010
2-Hexanone	< 2.0	2.0	< 8.2	8.2		2	3/16/2010
2-Propanol (IPA)	< 4.0	4.0	< 10	10		2	3/16/2010
4-Ethyltoluene	**3.0**	**1.0**	**15**	**4.9**	D1	2	3/16/2010
4-Methyl-2-pentanone (MIK)	< 2.0	2.0	< 8.2	8.2		2	3/16/2010
Acetone	< 10	10	< 24	24		2	3/16/2010
Allyl chloride	< 1.0	1.0	< 3.1	3.1		2	3/16/2010
Benzene	**4.0**	**1.0**	**13**	**3.2**	D1	2	3/16/2010
Benzyl chloride	< 4.0	4.0	< 21	21		2	3/16/2010
Bromodichloromethane	< 1.0	1.0	< 6.7	6.7		2	3/16/2010
Bromoethene(Vinyl Bromide)	< 1.0	1.0	< 4.4	4.4		2	3/16/2010
Bromoform	< 1.0	1.0	< 10	10		2	3/16/2010
Bromomethane	< 1.0	1.0	< 3.9	3.9		2	3/16/2010
Carbon disulfide	**4.9**	**1.0**	**15**	**3.1**	D1	2	3/16/2010
Carbon tetrachloride	< 1.0	1.0	< 6.3	6.3		2	3/16/2010
Chlorobenzene	< 1.0	1.0	< 4.6	4.6		2	3/16/2010
Chloroethane	< 1.0	1.0	< 2.6	2.6		2	3/16/2010
Chloroform	< 1.0	1.0	< 4.9	4.9		2	3/16/2010
Chloromethane	**16**	**2.0**	**33**	**4.1**	D1	2	3/16/2010
cis-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
cis-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/16/2010
Cyclohexane	< 1.0	1.0	< 3.4	3.4		2	3/16/2010
Dibromochloromethane	< 1.0	1.0	< 8.5	8.5		2	3/16/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW4B-031010
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/10/2010
Lab ID:	16	**Matrix:**	SoilVapor

Analyses	ppbv Result	ppbv Limit	µg/M³ Result	µg/M³ Limit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
Dichlorodifluoromethane(F-12)	< 2.0	2.0	< 10	10		2	3/16/2010
Dichlorotetrafluoroethane(F-114)	< 1.0	1.0	< 7.0	7.0		2	3/16/2010
Ethyl Acetate	< 1.0	1.0	< 3.6	3.6		2	3/16/2010
Ethylbenzene	**2.3**	**1.0**	**10**	**4.3**	D1	2	3/16/2010
Heptane	**1.8**	**1.0**	**7.4**	**4.1**	D1	2	3/16/2010
Hexachlorobutadiene	< 2.0	2.0	< 21	21		2	3/16/2010
Hexane	**3.3**	**1.0**	**12**	**3.5**	D1	2	3/16/2010
m&p-Xylene	**21**	**2.0**	**91**	**8.7**	D1	2	3/16/2010
Methyl tert-butyl ether	< 2.0	2.0	< 7.2	7.2		2	3/16/2010
Methylene chloride	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
o-Xylene	**7.7**	**1.0**	**33**	**4.3**	D1	2	3/16/2010
Propene (Propylene)	< 1.0	1.0	< 1.7	1.7		2	3/16/2010
Styrene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Tetrachloroethene	**2.1**	**1.0**	**14**	**6.8**	D1	2	3/16/2010
Tetrahydrofuran	< 4.0	4.0	< 12	12		2	3/16/2010
Toluene	**17**	**1.0**	**64**	**3.8**	D1	2	3/16/2010
trans-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
trans-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/16/2010
Trichloroethene	< 1.0	1.0	< 5.4	5.4		2	3/16/2010
Trichlorofluoromethane(F-11)	< 1.0	1.0	< 5.6	5.6		2	3/16/2010
Trichlorotrifluoroethane(F-113)	< 1.0	1.0	< 7.7	7.7		2	3/16/2010
Vinyl acetate	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
Vinyl chloride	< 1.0	1.0	< 2.6	2.6		2	3/16/2010
Surr: 4-Bromofluorobenzene	108	70-130	%REC				

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW8-5-031010
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/10/2010
Lab ID:	17	**Matrix:**	SoilVapor

	ppbv		µg/M³					
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**	
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst:	JJ
1,1,1-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/16/2010	
1,1,2,2-Tetrachloroethane	< 1.0	1.0	< 6.9	6.9		2	3/16/2010	
1,1,2-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/16/2010	
1,1-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010	
1,1-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010	
1,2,4-Trichlorobenzene	< 4.0	4.0	< 30	30		2	3/16/2010	
1,2,4-Trimethylbenzene	**1.5**	**1.0**	**7.4**	**4.9**	D1	2	3/16/2010	
1,2-Dibromoethane	< 1.0	1.0	< 7.7	7.7		2	3/16/2010	
1,2-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010	
1,2-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010	
1,2-Dichloropropane	< 1.0	1.0	< 4.6	4.6		2	3/16/2010	
1,3,5-Trimethylbenzene	< 1.0	1.0	< 4.9	4.9		2	3/16/2010	
1,3-Butadiene	< 1.0	1.0	< 2.2	2.2		2	3/16/2010	
1,3-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010	
1,4-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010	
1,4-Dioxane	< 4.0	4.0	< 14	14		2	3/16/2010	
2,2,4-Trimethylpentane	< 1.0	1.0	< 4.7	4.7		2	3/16/2010	
2-Butanone (MEK)	< 2.0	2.0	< 5.9	5.9		2	3/16/2010	
2-Hexanone	< 2.0	2.0	< 8.2	8.2		2	3/16/2010	
2-Propanol (IPA)	< 4.0	4.0	< 10	10		2	3/16/2010	
4-Ethyltoluene	< 1.0	1.0	< 4.9	4.9		2	3/16/2010	
4-Methyl-2-pentanone (MIK)	< 2.0	2.0	< 8.2	8.2		2	3/16/2010	
Acetone	**18**	**10**	**43**	**24**	D1	2	3/16/2010	
Allyl chloride	< 1.0	1.0	< 3.1	3.1		2	3/16/2010	
Benzene	< 1.0	1.0	< 3.2	3.2		2	3/16/2010	
Benzyl chloride	< 4.0	4.0	< 21	21		2	3/16/2010	
Bromodichloromethane	< 1.0	1.0	< 6.7	6.7		2	3/16/2010	
Bromoethene(Vinyl Bromide)	< 1.0	1.0	< 4.4	4.4		2	3/16/2010	
Bromoform	< 1.0	1.0	< 10	10		2	3/16/2010	
Bromomethane	< 1.0	1.0	< 3.9	3.9		2	3/16/2010	
Carbon disulfide	**4.0**	**1.0**	**12**	**3.1**	D1	2	3/16/2010	
Carbon tetrachloride	< 1.0	1.0	< 6.3	6.3		2	3/16/2010	
Chlorobenzene	< 1.0	1.0	< 4.6	4.6		2	3/16/2010	
Chloroethane	< 1.0	1.0	< 2.6	2.6		2	3/16/2010	
Chloroform	**1.4**	**1.0**	**6.8**	**4.9**	D1	2	3/16/2010	
Chloromethane	< 2.0	2.0	< 4.1	4.1		2	3/16/2010	
cis-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010	
cis-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/16/2010	
Cyclohexane	< 1.0	1.0	< 3.4	3.4		2	3/16/2010	
Dibromochloromethane	< 1.0	1.0	< 8.5	8.5		2	3/16/2010	

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW8-5-031010
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/10/2010
Lab ID:	17	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
Dichlorodifluoromethane(F-12)	< 2.0	2.0	< 10	10		2	3/16/2010
Dichlorotetrafluoroethane(F-114)	< 1.0	1.0	< 7.0	7.0		2	3/16/2010
Ethyl Acetate	< 1.0	1.0	< 3.6	3.6		2	3/16/2010
Ethylbenzene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Heptane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010
Hexachlorobutadiene	< 2.0	2.0	< 21	21		2	3/16/2010
Hexane	**1.3**	**1.0**	**4.6**	**3.5**	D1	2	3/16/2010
m&p-Xylene	**2.2**	**2.0**	**9.5**	**8.7**	D1	2	3/16/2010
Methyl tert-butyl ether	< 2.0	2.0	< 7.2	7.2		2	3/16/2010
Methylene chloride	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
o-Xylene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Propene (Propylene)	< 1.0	1.0	< 1.7	1.7		2	3/16/2010
Styrene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Tetrachloroethene	**3.8**	**1.0**	**26**	**6.8**	D1	2	3/16/2010
Tetrahydrofuran	< 4.0	4.0	< 12	12		2	3/16/2010
Toluene	**3.7**	**1.0**	**14**	**3.8**	D1	2	3/16/2010
trans-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
trans-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/16/2010
Trichloroethene	< 1.0	1.0	< 5.4	5.4		2	3/16/2010
Trichlorofluoromethane(F-11)	< 1.0	1.0	< 5.6	5.6		2	3/16/2010
Trichlorotrifluoroethane(F-113)	< 1.0	1.0	< 7.7	7.7		2	3/16/2010
Vinyl acetate	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
Vinyl chloride	< 1.0	1.0	< 2.6	2.6		2	3/16/2010
Surr: 4-Bromofluorobenzene	106	70-130	%REC				

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW8-10-031010
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/10/2010
Lab ID:	18	**Matrix:**	SoilVapor

Analyses	ppbv Result	ppbv Limit	µg/M³ Result	µg/M³ Limit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
1,1,1-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/16/2010
1,1,2,2-Tetrachloroethane	< 1.0	1.0	< 6.9	6.9		2	3/16/2010
1,1,2-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/16/2010
1,1-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010
1,1-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
1,2,4-Trichlorobenzene	< 4.0	4.0	< 30	30		2	3/16/2010
1,2,4-Trimethylbenzene	**120**	**1.0**	**590**	**4.9**	D2	2	3/16/2010
1,2-Dibromoethane	< 1.0	1.0	< 7.7	7.7		2	3/16/2010
1,2-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,2-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010
1,2-Dichloropropane	< 1.0	1.0	< 4.6	4.6		2	3/16/2010
1,3,5-Trimethylbenzene	**49**	**1.0**	**241**	**4.9**		2	3/16/2010
1,3-Butadiene	< 1.0	1.0	< 2.2	2.2		2	3/16/2010
1,3-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,4-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,4-Dioxane	< 4.0	4.0	< 14	14		2	3/16/2010
2,2,4-Trimethylpentane	< 1.0	1.0	< 4.7	4.7		2	3/16/2010
2-Butanone (MEK)	< 2.0	2.0	< 5.9	5.9		2	3/16/2010
2-Hexanone	< 2.0	2.0	< 8.2	8.2		2	3/16/2010
2-Propanol (IPA)	< 4.0	4.0	< 10	10		2	3/16/2010
4-Ethyltoluene	**18**	**1.0**	**89**	**4.9**		2	3/16/2010
4-Methyl-2-pentanone (MIK)	< 2.0	2.0	< 8.2	8.2		2	3/16/2010
Acetone	**17**	**10**	**40**	**24**		2	3/16/2010
Allyl chloride	< 1.0	1.0	< 3.1	3.1		2	3/16/2010
Benzene	< 1.0	1.0	< 3.2	3.2		2	3/16/2010
Benzyl chloride	< 4.0	4.0	< 21	21		2	3/16/2010
Bromodichloromethane	< 1.0	1.0	< 6.7	6.7		2	3/16/2010
Bromoethene(Vinyl Bromide)	< 1.0	1.0	< 4.4	4.4		2	3/16/2010
Bromoform	< 1.0	1.0	< 10	10		2	3/16/2010
Bromomethane	< 1.0	1.0	< 3.9	3.9		2	3/16/2010
Carbon disulfide	**6.9**	**1.0**	**21**	**3.1**		2	3/16/2010
Carbon tetrachloride	< 1.0	1.0	< 6.3	6.3		2	3/16/2010
Chlorobenzene	< 1.0	1.0	< 4.6	4.6		2	3/16/2010
Chloroethane	< 1.0	1.0	< 2.6	2.6		2	3/16/2010
Chloroform	**1.9**	**1.0**	**9.3**	**4.9**		2	3/16/2010
Chloromethane	**2.4**	**2.0**	**5.0**	**4.1**		2	3/16/2010
cis-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
cis-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/16/2010
Cyclohexane	< 1.0	1.0	< 3.4	3.4		2	3/16/2010
Dibromochloromethane	< 1.0	1.0	< 8.5	8.5		2	3/16/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW8-10-031010
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/10/2010
Lab ID:	18	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
Dichlorodifluoromethane(F-12)	< 2.0	2.0	< 10	10		2	3/16/2010
Dichlorotetrafluoroethane(F-114)	< 1.0	1.0	< 7.0	7.0		2	3/16/2010
Ethyl Acetate	< 1.0	1.0	< 3.6	3.6		2	3/16/2010
Ethylbenzene	**2.8**	**1.0**	**12**	**4.3**		2	3/16/2010
Heptane	**1.1**	**1.0**	**4.5**	**4.1**		2	3/16/2010
Hexachlorobutadiene	< 2.0	2.0	< 21	21		2	3/16/2010
Hexane	**1.2**	**1.0**	**4.2**	**3.5**		2	3/16/2010
m&p-Xylene	**77**	**2.0**	**334**	**8.7**		2	3/16/2010
Methyl tert-butyl ether	< 2.0	2.0	< 7.2	7.2		2	3/16/2010
Methylene chloride	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
o-Xylene	**71**	**1.0**	**308**	**4.3**	D2	2	3/16/2010
Propene (Propylene)	< 1.0	1.0	< 1.7	1.7		2	3/16/2010
Styrene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Tetrachloroethene	**5.1**	**1.0**	**35**	**6.8**		2	3/16/2010
Tetrahydrofuran	< 4.0	4.0	< 12	12		2	3/16/2010
Toluene	**4.5**	**1.0**	**17**	**3.8**		2	3/16/2010
trans-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
trans-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/16/2010
Trichloroethene	< 1.0	1.0	< 5.4	5.4		2	3/16/2010
Trichlorofluoromethane(F-11)	< 1.0	1.0	< 5.6	5.6		2	3/16/2010
Trichlorotrifluoroethane(F-113)	< 1.0	1.0	< 7.7	7.7		2	3/16/2010
Vinyl acetate	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
Vinyl chloride	< 1.0	1.0	< 2.6	2.6		2	3/16/2010

Surr: 4-Bromofluorobenzene	107	70-130	%REC

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW8-20-031010
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/10/2010
Lab ID:	19	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
1,1,1-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/16/2010
1,1,2,2-Tetrachloroethane	< 1.0	1.0	< 6.9	6.9		2	3/16/2010
1,1,2-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/16/2010
1,1-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010
1,1-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
1,2,4-Trichlorobenzene	< 4.0	4.0	< 30	30		2	3/16/2010
1,2,4-Trimethylbenzene	**2.0**	**1.0**	**9.8**	**4.9**	D1	2	3/16/2010
1,2-Dibromoethane	< 1.0	1.0	< 7.7	7.7		2	3/16/2010
1,2-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,2-Dichloroethane	**1.4**	**1.0**	**5.7**	**4.1**	D1	2	3/16/2010
1,2-Dichloropropane	< 1.0	1.0	< 4.6	4.6		2	3/16/2010
1,3,5-Trimethylbenzene	< 1.0	1.0	< 4.9	4.9		2	3/16/2010
1,3-Butadiene	< 1.0	1.0	< 2.2	2.2		2	3/16/2010
1,3-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,4-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,4-Dioxane	< 4.0	4.0	< 14	14		2	3/16/2010
2,2,4-Trimethylpentane	< 1.0	1.0	< 4.7	4.7		2	3/16/2010
2-Butanone (MEK)	< 2.0	2.0	< 5.9	5.9		2	3/16/2010
2-Hexanone	< 2.0	2.0	< 8.2	8.2		2	3/16/2010
2-Propanol (IPA)	< 4.0	4.0	< 10	10		2	3/16/2010
4-Ethyltoluene	< 1.0	1.0	< 4.9	4.9		2	3/16/2010
4-Methyl-2-pentanone (MIK)	< 2.0	2.0	< 8.2	8.2		2	3/16/2010
Acetone	**38**	**10**	**90**	**24**	D1	2	3/16/2010
Allyl chloride	< 1.0	1.0	< 3.1	3.1		2	3/16/2010
Benzene	**2.1**	**1.0**	**6.7**	**3.2**	D1	2	3/16/2010
Benzyl chloride	< 4.0	4.0	< 21	21		2	3/16/2010
Bromodichloromethane	< 1.0	1.0	< 6.7	6.7		2	3/16/2010
Bromoethene(Vinyl Bromide)	< 1.0	1.0	< 4.4	4.4		2	3/16/2010
Bromoform	< 1.0	1.0	< 10	10		2	3/16/2010
Bromomethane	< 1.0	1.0	< 3.9	3.9		2	3/16/2010
Carbon disulfide	**23**	**1.0**	**72**	**3.1**	D1	2	3/16/2010
Carbon tetrachloride	< 1.0	1.0	< 6.3	6.3		2	3/16/2010
Chlorobenzene	< 1.0	1.0	< 4.6	4.6		2	3/16/2010
Chloroethane	< 1.0	1.0	< 2.6	2.6		2	3/16/2010
Chloroform	**2.5**	**1.0**	**12**	**4.9**	D1	2	3/16/2010
Chloromethane	**19**	**2.0**	**39**	**4.1**	D1	2	3/16/2010
cis-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
cis-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/16/2010
Cyclohexane	< 1.0	1.0	< 3.4	3.4		2	3/16/2010
Dibromochloromethane	< 1.0	1.0	< 8.5	8.5		2	3/16/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW8-20-031010
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/10/2010
Lab ID:	19	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
Dichlorodifluoromethane(F-12)	< 2.0	2.0	< 10	10		2	3/16/2010
Dichlorotetrafluoroethane(F-114)	< 1.0	1.0	< 7.0	7.0		2	3/16/2010
Ethyl Acetate	< 1.0	1.0	< 3.6	3.6		2	3/16/2010
Ethylbenzene	**1.4**	**1.0**	**6.1**	**4.3**	D1	2	3/16/2010
Heptane	**2.2**	**1.0**	**9.0**	**4.1**	D1	2	3/16/2010
Hexachlorobutadiene	< 2.0	2.0	< 21	21		2	3/16/2010
Hexane	**1.8**	**1.0**	**6.3**	**3.5**	D1	2	3/16/2010
m&p-Xylene	**3.4**	**2.0**	**15**	**8.7**	D1	2	3/16/2010
Methyl tert-butyl ether	< 2.0	2.0	< 7.2	7.2		2	3/16/2010
Methylene chloride	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
o-Xylene	**1.3**	**1.0**	**5.6**	**4.3**	D1	2	3/16/2010
Propene (Propylene)	< 1.0	1.0	< 1.7	1.7		2	3/16/2010
Styrene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Tetrachloroethene	**5.2**	**1.0**	**35**	**6.8**	D1	2	3/16/2010
Tetrahydrofuran	< 4.0	4.0	< 12	12		2	3/16/2010
Toluene	**37**	**1.0**	**139**	**3.8**	D1	2	3/16/2010
trans-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
trans-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/16/2010
Trichloroethene	< 1.0	1.0	< 5.4	5.4		2	3/16/2010
Trichlorofluoromethane(F-11)	< 1.0	1.0	< 5.6	5.6		2	3/16/2010
Trichlorotrifluoroethane(F-113)	< 1.0	1.0	< 7.7	7.7		2	3/16/2010
Vinyl acetate	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
Vinyl chloride	< 1.0	1.0	< 2.6	2.6		2	3/16/2010
Surr: 4-Bromofluorobenzene	111	70-130	%REC				

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW8-30-031010
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/10/2010
Lab ID:	20	**Matrix:**	SoilVapor

	ppbv		µg/M³					
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**	
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst:	JJ
1,1,1-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/16/2010	
1,1,2,2-Tetrachloroethane	< 1.0	1.0	< 6.9	6.9		2	3/16/2010	
1,1,2-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/16/2010	
1,1-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010	
1,1-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010	
1,2,4-Trichlorobenzene	< 4.0	4.0	< 30	30		2	3/16/2010	
1,2,4-Trimethylbenzene	**1.3**	**1.0**	**6.4**	**4.9**	D1	2	3/16/2010	
1,2-Dibromoethane	< 1.0	1.0	< 7.7	7.7		2	3/16/2010	
1,2-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010	
1,2-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010	
1,2-Dichloropropane	< 1.0	1.0	< 4.6	4.6		2	3/16/2010	
1,3,5-Trimethylbenzene	< 1.0	1.0	< 4.9	4.9		2	3/16/2010	
1,3-Butadiene	< 1.0	1.0	< 2.2	2.2		2	3/16/2010	
1,3-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010	
1,4-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010	
1,4-Dioxane	< 4.0	4.0	< 14	14		2	3/16/2010	
2,2,4-Trimethylpentane	< 1.0	1.0	< 4.7	4.7		2	3/16/2010	
2-Butanone (MEK)	< 2.0	2.0	< 5.9	5.9		2	3/16/2010	
2-Hexanone	< 2.0	2.0	< 8.2	8.2		2	3/16/2010	
2-Propanol (IPA)	< 4.0	4.0	< 10	10		2	3/16/2010	
4-Ethyltoluene	< 1.0	1.0	< 4.9	4.9		2	3/16/2010	
4-Methyl-2-pentanone (MIK)	< 2.0	2.0	< 8.2	8.2		2	3/16/2010	
Acetone	**34**	**10**	**81**	**24**	D1	2	3/16/2010	
Allyl chloride	< 1.0	1.0	< 3.1	3.1		2	3/16/2010	
Benzene	**1.6**	**1.0**	**5.1**	**3.2**	D1	2	3/16/2010	
Benzyl chloride	< 4.0	4.0	< 21	21		2	3/16/2010	
Bromodichloromethane	< 1.0	1.0	< 6.7	6.7		2	3/16/2010	
Bromoethene(Vinyl Bromide)	< 1.0	1.0	< 4.4	4.4		2	3/16/2010	
Bromoform	< 1.0	1.0	< 10	10		2	3/16/2010	
Bromomethane	< 1.0	1.0	< 3.9	3.9		2	3/16/2010	
Carbon disulfide	**2.9**	**1.0**	**9.0**	**3.1**	D1	2	3/16/2010	
Carbon tetrachloride	< 1.0	1.0	< 6.3	6.3		2	3/16/2010	
Chlorobenzene	< 1.0	1.0	< 4.6	4.6		2	3/16/2010	
Chloroethane	< 1.0	1.0	< 2.6	2.6		2	3/16/2010	
Chloroform	< 1.0	1.0	< 4.9	4.9		2	3/16/2010	
Chloromethane	**2.8**	**2.0**	**5.8**	**4.1**	D1	2	3/16/2010	
cis-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010	
cis-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/16/2010	
Cyclohexane	< 1.0	1.0	< 3.4	3.4		2	3/16/2010	
Dibromochloromethane	< 1.0	1.0	< 8.5	8.5		2	3/16/2010	

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW8-30-031010
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/10/2010
Lab ID:	20	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
Dichlorodifluoromethane(F-12)	< 2.0	2.0	< 10	10		2	3/16/2010
Dichlorotetrafluoroethane(F-114)	< 1.0	1.0	< 7.0	7.0		2	3/16/2010
Ethyl Acetate	< 1.0	1.0	< 3.6	3.6		2	3/16/2010
Ethylbenzene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Heptane	**1.2**	**1.0**	**4.9**	**4.1**	D1	2	3/16/2010
Hexachlorobutadiene	< 2.0	2.0	< 21	21		2	3/16/2010
Hexane	**1.0**	**1.0**	**3.5**	**3.5**	D1	2	3/16/2010
m&p-Xylene	< 2.0	2.0	< 8.7	8.7		2	3/16/2010
Methyl tert-butyl ether	< 2.0	2.0	< 7.2	7.2		2	3/16/2010
Methylene chloride	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
o-Xylene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Propene (Propylene)	< 1.0	1.0	< 1.7	1.7		2	3/16/2010
Styrene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Tetrachloroethene	**2.3**	**1.0**	**16**	**6.8**	D1	2	3/16/2010
Tetrahydrofuran	< 4.0	4.0	< 12	12		2	3/16/2010
Toluene	**4.3**	**1.0**	**16**	**3.8**	D1	2	3/16/2010
trans-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
trans-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/16/2010
Trichloroethene	< 1.0	1.0	< 5.4	5.4		2	3/16/2010
Trichlorofluoromethane(F-11)	< 1.0	1.0	< 5.6	5.6		2	3/16/2010
Trichlorotrifluoroethane(F-113)	< 1.0	1.0	< 7.7	7.7		2	3/16/2010
Vinyl acetate	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
Vinyl chloride	< 1.0	1.0	< 2.6	2.6		2	3/16/2010
Surr: 4-Bromofluorobenzene	109	70-130	%REC				

4620 E.Elwood Street, Suite 13, Phoenix AZ 85040 Phone: 480-968-5888, Fax: 480-966-1888

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW8-40-031010
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/10/2010
Lab ID:	21	**Matrix:**	SoilVapor

	ppbv		µg/M³					
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**	
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst:	JJ
1,1,1-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/16/2010	
1,1,2,2-Tetrachloroethane	< 1.0	1.0	< 6.9	6.9		2	3/16/2010	
1,1,2-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/16/2010	
1,1-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010	
1,1-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010	
1,2,4-Trichlorobenzene	< 4.0	4.0	< 30	30		2	3/16/2010	
1,2,4-Trimethylbenzene	**3.1**	**1.0**	**15**	**4.9**	D1	2	3/16/2010	
1,2-Dibromoethane	< 1.0	1.0	< 7.7	7.7		2	3/16/2010	
1,2-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010	
1,2-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010	
1,2-Dichloropropane	< 1.0	1.0	< 4.6	4.6		2	3/16/2010	
1,3,5-Trimethylbenzene	**1.3**	**1.0**	**6.4**	**4.9**	D1	2	3/16/2010	
1,3-Butadiene	< 1.0	1.0	< 2.2	2.2		2	3/16/2010	
1,3-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010	
1,4-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010	
1,4-Dioxane	< 4.0	4.0	< 14	14		2	3/16/2010	
2,2,4-Trimethylpentane	< 1.0	1.0	< 4.7	4.7		2	3/16/2010	
2-Butanone (MEK)	**4.4**	**2.0**	**13**	**5.9**	D1	2	3/16/2010	
2-Hexanone	< 2.0	2.0	< 8.2	8.2		2	3/16/2010	
2-Propanol (IPA)	< 4.0	4.0	< 10	10		2	3/16/2010	
4-Ethyltoluene	< 1.0	1.0	< 4.9	4.9		2	3/16/2010	
4-Methyl-2-pentanone (MIK)	< 2.0	2.0	< 8.2	8.2		2	3/16/2010	
Acetone	**23**	**10**	**55**	**24**	D1	2	3/16/2010	
Allyl chloride	< 1.0	1.0	< 3.1	3.1		2	3/16/2010	
Benzene	< 1.0	1.0	< 3.2	3.2		2	3/16/2010	
Benzyl chloride	< 4.0	4.0	< 21	21		2	3/16/2010	
Bromodichloromethane	< 1.0	1.0	< 6.7	6.7		2	3/16/2010	
Bromoethene(Vinyl Bromide)	< 1.0	1.0	< 4.4	4.4		2	3/16/2010	
Bromoform	< 1.0	1.0	< 10	10		2	3/16/2010	
Bromomethane	< 1.0	1.0	< 3.9	3.9		2	3/16/2010	
Carbon disulfide	**5.2**	**1.0**	**16**	**3.1**	D1	2	3/16/2010	
Carbon tetrachloride	< 1.0	1.0	< 6.3	6.3		2	3/16/2010	
Chlorobenzene	< 1.0	1.0	< 4.6	4.6		2	3/16/2010	
Chloroethane	< 1.0	1.0	< 2.6	2.6		2	3/16/2010	
Chloroform	**5.0**	**1.0**	**24**	**4.9**	D1	2	3/16/2010	
Chloromethane	< 2.0	2.0	< 4.1	4.1		2	3/16/2010	
cis-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010	
cis-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/16/2010	
Cyclohexane	< 1.0	1.0	< 3.4	3.4		2	3/16/2010	
Dibromochloromethane	< 1.0	1.0	< 8.5	8.5		2	3/16/2010	

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW8-40-031010
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/10/2010
Lab ID:	21	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
Dichlorodifluoromethane(F-12)	< 2.0	2.0	< 10	10		2	3/16/2010
Dichlorotetrafluoroethane(F-114)	< 1.0	1.0	< 7.0	7.0		2	3/16/2010
Ethyl Acetate	< 1.0	1.0	< 3.6	3.6		2	3/16/2010
Ethylbenzene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Heptane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010
Hexachlorobutadiene	< 2.0	2.0	< 21	21		2	3/16/2010
Hexane	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
m&p-Xylene	**2.8**	**2.0**	**12**	**8.7**	D1	2	3/16/2010
Methyl tert-butyl ether	< 2.0	2.0	< 7.2	7.2		2	3/16/2010
Methylene chloride	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
o-Xylene	**1.2**	**1.0**	**5.2**	**4.3**	D1	2	3/16/2010
Propene (Propylene)	< 1.0	1.0	< 1.7	1.7		2	3/16/2010
Styrene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Tetrachloroethene	**10**	**1.0**	**68**	**6.8**	D1	2	3/16/2010
Tetrahydrofuran	< 4.0	4.0	< 12	12		2	3/16/2010
Toluene	**3.7**	**1.0**	**14**	**3.8**	D1	2	3/16/2010
trans-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
trans-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/16/2010
Trichloroethene	**2.5**	**1.0**	**13**	**5.4**	D1	2	3/16/2010
Trichlorofluoromethane(F-11)	< 1.0	1.0	< 6	5.6		2	3/16/2010
Trichlorotrifluoroethane(F-113)	< 1.0	1.0	< 7.7	7.7		2	3/16/2010
Vinyl acetate	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
Vinyl chloride	< 1.0	1.0	< 2.6	2.6		2	3/16/2010

Surr: 4-Bromofluorobenzene	108	70-130	%REC

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW8-50-031010
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/10/2010
Lab ID:	22	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
1,1,1-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/16/2010
1,1,2,2-Tetrachloroethane	< 1.0	1.0	< 6.9	6.9		2	3/16/2010
1,1,2-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/16/2010
1,1-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010
1,1-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
1,2,4-Trichlorobenzene	< 4.0	4.0	< 30	30		2	3/16/2010
1,2,4-Trimethylbenzene	**1.5**	**1.0**	**7.4**	**4.9**		2	3/16/2010
1,2-Dibromoethane	< 1.0	1.0	< 7.7	7.7		2	3/16/2010
1,2-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,2-Dichloroethane	**2.1**	**1.0**	**8.5**	**4.1**		2	3/16/2010
1,2-Dichloropropane	< 1.0	1.0	< 4.6	4.6		2	3/16/2010
1,3,5-Trimethylbenzene	< 1.0	1.0	< 4.9	4.9		2	3/16/2010
1,3-Butadiene	< 1.0	1.0	< 2.2	2.2		2	3/16/2010
1,3-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,4-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,4-Dioxane	< 4.0	4.0	< 14	14		2	3/16/2010
2,2,4-Trimethylpentane	< 1.0	1.0	< 4.7	4.7		2	3/16/2010
2-Butanone (MEK)	**16**	**2.0**	**47**	**5.9**		2	3/16/2010
2-Hexanone	< 2.0	2.0	< 8.2	8.2		2	3/16/2010
2-Propanol (IPA)	< 4.0	4.0	< 10	10		2	3/16/2010
4-Ethyltoluene	< 1.0	1.0	< 4.9	4.9		2	3/16/2010
4-Methyl-2-pentanone (MIK)	< 2.0	2.0	< 8.2	8.2		2	3/16/2010
Acetone	**130**	**10**	**309**	**24**	D2	2	3/16/2010
Allyl chloride	< 1.0	1.0	< 3.1	3.1		2	3/16/2010
Benzene	**3.9**	**1.0**	**12**	**3.2**		2	3/16/2010
Benzyl chloride	< 4.0	4.0	< 21	21		2	3/16/2010
Bromodichloromethane	< 1.0	1.0	< 6.7	6.7		2	3/16/2010
Bromoethene(Vinyl Bromide)	< 1.0	1.0	< 4.4	4.4		2	3/16/2010
Bromoform	< 1.0	1.0	< 10	10		2	3/16/2010
Bromomethane	< 1.0	1.0	< 3.9	3.9		2	3/16/2010
Carbon disulfide	**21**	**1.0**	**65**	**3.1**		2	3/16/2010
Carbon tetrachloride	< 1.0	1.0	< 6.3	6.3		2	3/16/2010
Chlorobenzene	< 1.0	1.0	< 4.6	4.6		2	3/16/2010
Chloroethane	**1.6**	**1.0**	**4.2**	**2.6**		2	3/16/2010
Chloroform	**1.4**	**1.0**	**6.8**	**4.9**		2	3/16/2010
Chloromethane	**27**	**2.0**	**56**	**4.1**		2	3/16/2010
cis-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
cis-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/16/2010
Cyclohexane	< 1.0	1.0	< 3.4	3.4		2	3/16/2010
Dibromochloromethane	< 1.0	1.0	< 8.5	8.5		2	3/16/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW8-50-031010
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/10/2010
Lab ID:	22	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
Dichlorodifluoromethane(F-12)	< 2.0	2.0	< 10	10		2	3/16/2010
Dichlorotetrafluoroethane(F-114)	< 1.0	1.0	< 7.0	7.0		2	3/16/2010
Ethyl Acetate	< 1.0	1.0	< 3.6	3.6		2	3/16/2010
Ethylbenzene	**1.0**	**1.0**	**4.3**	**4.3**		2	3/16/2010
Heptane	**4.4**	**1.0**	**18**	**4.1**		2	3/16/2010
Hexachlorobutadiene	< 2.0	2.0	< 21	21		2	3/16/2010
Hexane	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
m&p-Xylene	**3.1**	**2.0**	**13**	**8.7**		2	3/16/2010
Methyl tert-butyl ether	< 2.0	2.0	< 7.2	7.2		2	3/16/2010
Methylene chloride	**1.1**	**1.0**	**3.8**	**3.5**		2	3/16/2010
o-Xylene	**1.4**	**1.0**	**6.1**	**4.3**		2	3/16/2010
Propene (Propylene)	< 1.0	1.0	< 1.7	1.7		2	3/16/2010
Styrene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Tetrachloroethene	**1.7**	**1.0**	**12**	**6.8**		2	3/16/2010
Tetrahydrofuran	< 4.0	4.0	< 12	12		2	3/16/2010
Toluene	**13**	**1.0**	**49**	**3.8**		2	3/16/2010
trans-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
trans-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/16/2010
Trichloroethene	< 1.0	1.0	< 5.4	5.4		2	3/16/2010
Trichlorofluoromethane(F-11)	< 1.0	1.0	< 5.6	5.6		2	3/16/2010
Trichlorotrifluoroethane(F-113)	< 1.0	1.0	< 7.7	7.7		2	3/16/2010
Vinyl acetate	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
Vinyl chloride	< 1.0	1.0	< 2.6	2.6		2	3/16/2010

Surr: 4-Bromofluorobenzene	110	70-130	%REC

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW8-60-031110
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/11/2010
Lab ID:	23	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
1,1,1-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/16/2010
1,1,2,2-Tetrachloroethane	< 1.0	1.0	< 6.9	6.9		2	3/16/2010
1,1,2-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/16/2010
1,1-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010
1,1-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
1,2,4-Trichlorobenzene	< 4.0	4.0	< 30	30		2	3/16/2010
1,2,4-Trimethylbenzene	**1.3**	**1.0**	**6.4**	**4.9**	D1	2	3/16/2010
1,2-Dibromoethane	< 1.0	1.0	< 7.7	7.7		2	3/16/2010
1,2-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,2-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/16/2010
1,2-Dichloropropane	< 1.0	1.0	< 4.6	4.6		2	3/16/2010
1,3,5-Trimethylbenzene	< 1.0	1.0	< 4.9	4.9		2	3/16/2010
1,3-Butadiene	< 1.0	1.0	< 2.2	2.2		2	3/16/2010
1,3-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,4-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/16/2010
1,4-Dioxane	< 4.0	4.0	< 14	14		2	3/16/2010
2,2,4-Trimethylpentane	< 1.0	1.0	< 4.7	4.7		2	3/16/2010
2-Butanone (MEK)	**3.8**	**2.0**	**11**	**5.9**	D1	2	3/16/2010
2-Hexanone	< 2.0	2.0	< 8.2	8.2		2	3/16/2010
2-Propanol (IPA)	< 4.0	4.0	< 10	10		2	3/16/2010
4-Ethyltoluene	< 1.0	1.0	< 4.9	4.9		2	3/16/2010
4-Methyl-2-pentanone (MIK)	< 2.0	2.0	< 8.2	8.2		2	3/16/2010
Acetone	**45**	**10**	**107**	**24**	D1	2	3/16/2010
Allyl chloride	< 1.0	1.0	< 3.1	3.1		2	3/16/2010
Benzene	**1.8**	**1.0**	**5.7**	**3.2**	D1	2	3/16/2010
Benzyl chloride	< 4.0	4.0	< 21	21		2	3/16/2010
Bromodichloromethane	< 1.0	1.0	< 6.7	6.7		2	3/16/2010
Bromoethene(Vinyl Bromide)	< 1.0	1.0	< 4.4	4.4		2	3/16/2010
Bromoform	< 1.0	1.0	< 10	10		2	3/16/2010
Bromomethane	< 1.0	1.0	< 3.9	3.9		2	3/16/2010
Carbon disulfide	**5.6**	**1.0**	**17**	**3.1**	D1	2	3/16/2010
Carbon tetrachloride	< 1.0	1.0	< 6.3	6.3		2	3/16/2010
Chlorobenzene	< 1.0	1.0	< 4.6	4.6		2	3/16/2010
Chloroethane	< 1.0	1.0	< 2.6	2.6		2	3/16/2010
Chloroform	< 1.0	1.0	< 4.9	4.9		2	3/16/2010
Chloromethane	**6.2**	**2.0**	**13**	**4.1**	D1	2	3/16/2010
cis-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
cis-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/16/2010
Cyclohexane	< 1.0	1.0	< 3.4	3.4		2	3/16/2010
Dibromochloromethane	< 1.0	1.0	< 8.5	8.5		2	3/16/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW8-60-031110
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/11/2010
Lab ID:	23	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
Dichlorodifluoromethane(F-12)	< 2.0	2.0	< 10	10		2	3/16/2010
Dichlorotetrafluoroethane(F-114)	< 1.0	1.0	< 7.0	7.0		2	3/16/2010
Ethyl Acetate	< 1.0	1.0	< 3.6	3.6		2	3/16/2010
Ethylbenzene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Heptane	**1.7**	**1.0**	**7.0**	**4.1**	D1	2	3/16/2010
Hexachlorobutadiene	< 2.0	2.0	< 21	21		2	3/16/2010
Hexane	**1.6**	**1.0**	**5.6**	**3.5**	D1	2	3/16/2010
m&p-Xylene	**3.0**	**2.0**	**13**	**8.7**	D1	2	3/16/2010
Methyl tert-butyl ether	< 2.0	2.0	< 7.2	7.2		2	3/16/2010
Methylene chloride	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
o-Xylene	**1.2**	**1.0**	**5.2**	**4.3**	D1	2	3/16/2010
Propene (Propylene)	< 1.0	1.0	< 1.7	1.7		2	3/16/2010
Styrene	< 1.0	1.0	< 4.3	4.3		2	3/16/2010
Tetrachloroethene	**2.3**	**1.0**	**16**	**6.8**	D1	2	3/16/2010
Tetrahydrofuran	< 4.0	4.0	< 12	12		2	3/16/2010
Toluene	**5.7**	**1.0**	**21**	**3.8**	D1	2	3/16/2010
trans-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/16/2010
trans-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/16/2010
Trichloroethene	< 1.0	1.0	< 5.4	5.4		2	3/16/2010
Trichlorofluoromethane(F-11)	< 1.0	1.0	< 5.6	5.6		2	3/16/2010
Trichlorotrifluoroethane(F-113)	< 1.0	1.0	< 7.7	7.7		2	3/16/2010
Vinyl acetate	< 1.0	1.0	< 3.5	3.5		2	3/16/2010
Vinyl chloride	< 1.0	1.0	< 2.6	2.6		2	3/16/2010

Surr: 4-Bromofluorobenzene	104	70-130	%REC

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW8-70-031110
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/11/2010
Lab ID:	24	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
1,1,1-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/17/2010
1,1,2,2-Tetrachloroethane	< 1.0	1.0	< 6.9	6.9		2	3/17/2010
1,1,2-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/17/2010
1,1-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/17/2010
1,1-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/17/2010
1,2,4-Trichlorobenzene	< 4.0	4.0	< 30	30		2	3/17/2010
1,2,4-Trimethylbenzene	< 1.0	1.0	< 4.9	4.9		2	3/17/2010
1,2-Dibromoethane	< 1.0	1.0	< 7.7	7.7		2	3/17/2010
1,2-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,2-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/17/2010
1,2-Dichloropropane	< 1.0	1.0	< 4.6	4.6		2	3/17/2010
1,3,5-Trimethylbenzene	< 1.0	1.0	< 4.9	4.9		2	3/17/2010
1,3-Butadiene	< 1.0	1.0	< 2.2	2.2		2	3/17/2010
1,3-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,4-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,4-Dioxane	< 4.0	4.0	< 14	14		2	3/17/2010
2,2,4-Trimethylpentane	< 1.0	1.0	< 4.7	4.7		2	3/17/2010
2-Butanone (MEK)	**2.8**	**2.0**	**8.3**	**5.9**	D1	2	3/17/2010
2-Hexanone	< 2.0	2.0	< 8.2	8.2		2	3/17/2010
2-Propanol (IPA)	< 4.0	4.0	< 10	10		2	3/17/2010
4-Ethyltoluene	< 1.0	1.0	< 4.9	4.9		2	3/17/2010
4-Methyl-2-pentanone (MIK)	< 2.0	2.0	< 8.2	8.2		2	3/17/2010
Acetone	**25**	**10**	**60**	**24**	D1	2	3/17/2010
Allyl chloride	< 1.0	1.0	< 3.1	3.1		2	3/17/2010
Benzene	< 1.0	1.0	< 3.2	3.2		2	3/17/2010
Benzyl chloride	< 4.0	4.0	< 21	21		2	3/17/2010
Bromodichloromethane	< 1.0	1.0	< 6.7	6.7		2	3/17/2010
Bromoethene(Vinyl Bromide)	< 1.0	1.0	< 4.4	4.4		2	3/17/2010
Bromoform	< 1.0	1.0	< 10	10		2	3/17/2010
Bromomethane	< 1.0	1.0	< 3.9	3.9		2	3/17/2010
Carbon disulfide	< 1.0	1.0	< 3.1	3.1		2	3/17/2010
Carbon tetrachloride	< 1.0	1.0	< 6.3	6.3		2	3/17/2010
Chlorobenzene	< 1.0	1.0	< 4.6	4.6		2	3/17/2010
Chloroethane	< 1.0	1.0	< 2.6	2.6		2	3/17/2010
Chloroform	< 1.0	1.0	< 4.9	4.9		2	3/17/2010
Chloromethane	< 2.0	2.0	< 4.1	4.1		2	3/17/2010
cis-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/17/2010
cis-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/17/2010
Cyclohexane	< 1.0	1.0	< 3.4	3.4		2	3/17/2010
Dibromochloromethane	< 1.0	1.0	< 8.5	8.5		2	3/17/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW8-70-031110
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/11/2010
Lab ID:	24	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
Dichlorodifluoromethane(F-12)	< 2.0	2.0	< 10	10		2	3/17/2010
Dichlorotetrafluoroethane(F-114)	< 1.0	1.0	< 7.0	7.0		2	3/17/2010
Ethyl Acetate	< 1.0	1.0	< 3.6	3.6		2	3/17/2010
Ethylbenzene	< 1.0	1.0	< 4.3	4.3		2	3/17/2010
Heptane	**1.1**	**1.0**	**4.5**	**4.1**	D1	2	3/17/2010
Hexachlorobutadiene	< 2.0	2.0	< 21	21		2	3/17/2010
Hexane	**1.0**	**1.0**	**3.5**	**3.5**	D1	2	3/17/2010
m&p-Xylene	< 2.0	2.0	< 8.7	8.7		2	3/17/2010
Methyl tert-butyl ether	< 2.0	2.0	< 7.2	7.2		2	3/17/2010
Methylene chloride	< 1.0	1.0	< 3.5	3.5		2	3/17/2010
o-Xylene	< 1.0	1.0	< 4.3	4.3		2	3/17/2010
Propene (Propylene)	< 1.0	1.0	< 1.7	1.7		2	3/17/2010
Styrene	< 1.0	1.0	< 4.3	4.3		2	3/17/2010
Tetrachloroethene	< 1.0	1.0	< 6.8	6.8		2	3/17/2010
Tetrahydrofuran	< 4.0	4.0	< 12	12		2	3/17/2010
Toluene	**3.6**	**1.0**	**14**	**3.8**	D1	2	3/17/2010
trans-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/17/2010
trans-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/17/2010
Trichloroethene	< 1.0	1.0	< 5.4	5.4		2	3/17/2010
Trichlorofluoromethane(F-11)	< 1.0	1.0	< 5.6	5.6		2	3/17/2010
Trichlorotrifluoroethane(F-113)	< 1.0	1.0	< 7.7	7.7		2	3/17/2010
Vinyl acetate	< 1.0	1.0	< 3.5	3.5		2	3/17/2010
Vinyl chloride	< 1.0	1.0	< 2.6	2.6		2	3/17/2010
Surr: 4-Bromofluorobenzene	109	70-130	%REC				

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW1-20-031110
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/11/2010
Lab ID:	25	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
1,1,1-Trichloroethane	**24**	**1.0**	**131**	**5.5**		2	3/17/2010
1,1,2,2-Tetrachloroethane	< 1.0	1.0	< 6.9	6.9		2	3/17/2010
1,1,2-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/17/2010
1,1-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/17/2010
1,1-Dichloroethene	**4.9**	**1.0**	**19**	**4.0**		2	3/17/2010
1,2,4-Trichlorobenzene	< 4.0	4.0	< 30	30		2	3/17/2010
1,2,4-Trimethylbenzene	**1.3**	**1.0**	**6.4**	**4.9**		2	3/17/2010
1,2-Dibromoethane	< 1.0	1.0	< 7.7	7.7		2	3/17/2010
1,2-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,2-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/17/2010
1,2-Dichloropropane	< 1.0	1.0	< 4.6	4.6		2	3/17/2010
1,3,5-Trimethylbenzene	< 1.0	1.0	< 4.9	4.9		2	3/17/2010
1,3-Butadiene	< 1.0	1.0	< 2.2	2.2		2	3/17/2010
1,3-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,4-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,4-Dioxane	< 4.0	4.0	< 14	14		2	3/17/2010
2,2,4-Trimethylpentane	< 1.0	1.0	< 4.7	4.7		2	3/17/2010
2-Butanone (MEK)	**3.5**	**2.0**	**10**	**5.9**		2	3/17/2010
2-Hexanone	< 2.0	2.0	< 8.2	8.2		2	3/17/2010
2-Propanol (IPA)	< 4.0	4.0	< 10	10		2	3/17/2010
4-Ethyltoluene	< 1.0	1.0	< 4.9	4.9		2	3/17/2010
4-Methyl-2-pentanone (MIK)	< 2.0	2.0	< 8.2	8.2		2	3/17/2010
Acetone	**24**	**10**	**57**	**24**		2	3/17/2010
Allyl chloride	< 1.0	1.0	< 3.1	3.1		2	3/17/2010
Benzene	**1.4**	**1.0**	**4.5**	**3.2**		2	3/17/2010
Benzyl chloride	< 4.0	4.0	< 21	21		2	3/17/2010
Bromodichloromethane	**1.4**	**1.0**	**9.4**	**6.7**		2	3/17/2010
Bromoethene(Vinyl Bromide)	< 1.0	1.0	< 4.4	4.4		2	3/17/2010
Bromoform	< 1.0	1.0	< 10	10		2	3/17/2010
Bromomethane	< 1.0	1.0	< 3.9	3.9		2	3/17/2010
Carbon disulfide	**340**	**10**	**1,100**	**31**	D2	20	3/17/2010
Carbon tetrachloride	< 1.0	1.0	< 6.3	6.3		2	3/17/2010
Chlorobenzene	< 1.0	1.0	< 4.6	4.6		2	3/17/2010
Chloroethane	< 1.0	1.0	< 2.6	2.6		2	3/17/2010
Chloroform	**11**	**1.0**	**54**	**4.9**		2	3/17/2010
Chloromethane	**18**	**2.0**	**37**	**4.1**		2	3/17/2010
cis-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/17/2010
cis-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/17/2010
Cyclohexane	< 1.0	1.0	< 3.4	3.4		2	3/17/2010
Dibromochloromethane	< 1.0	1.0	< 8.5	8.5		2	3/17/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW1-20-031110
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/11/2010
Lab ID:	25	**Matrix:**	SoilVapor

Analyses	ppbv Result	ppbv Limit	µg/M³ Result	µg/M³ Limit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
Dichlorodifluoromethane(F-12)	< 2.0	2.0	< 10	10		2	3/17/2010
Dichlorotetrafluoroethane(F-114)	< 1.0	1.0	< 7.0	7.0		2	3/17/2010
Ethyl Acetate	< 1.0	1.0	< 3.6	3.6		2	3/17/2010
Ethylbenzene	< 1.0	1.0	< 4.3	4.3		2	3/17/2010
Heptane	< 1.0	1.0	< 4.1	4.1		2	3/17/2010
Hexachlorobutadiene	< 2.0	2.0	< 21	21		2	3/17/2010
Hexane	**1.2**	**1.0**	**4.2**	**3.5**		2	3/17/2010
m&p-Xylene	**3.3**	**2.0**	**14**	**8.7**		2	3/17/2010
Methyl tert-butyl ether	< 2.0	2.0	< 7.2	7.2		2	3/17/2010
Methylene chloride	< 1.0	1.0	< 3.5	3.5		2	3/17/2010
o-Xylene	**2.1**	**1.0**	**9.1**	**4.3**		2	3/17/2010
Propene (Propylene)	< 1.0	1.0	< 1.7	1.7		2	3/17/2010
Styrene	< 1.0	1.0	< 4.3	4.3		2	3/17/2010
Tetrachloroethene	**670**	**10**	**4,500**	**68**		20	3/17/2010
Tetrahydrofuran	< 4.0	4.0	< 12	12		2	3/17/2010
Toluene	**6.3**	**1.0**	**24**	**3.8**		2	3/17/2010
trans-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/17/2010
trans-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/17/2010
Trichloroethene	**5.4**	**1.0**	**29**	**5.4**		2	3/17/2010
Trichlorofluoromethane(F-11)	**1.4**	**1.0**	**7.9**	**5.6**		2	3/17/2010
Trichlorotrifluoroethane(F-113)	**1.4**	**1.0**	**11**	**7.7**		2	3/17/2010
Vinyl acetate	< 1.0	1.0	< 3.5	3.5		2	3/17/2010
Vinyl chloride	< 1.0	1.0	< 2.6	2.6		2	3/17/2010
Surr: 4-Bromofluorobenzene	109	70-130	%REC				

4620 E.Elwood Street, Suite 13, Phoenix AZ 85040 Phone: 480-968-5888, Fax: 480-966-1888

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW1-35-031110
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/11/2010
Lab ID:	26	**Matrix:**	SoilVapor

Analyses	ppbv Result	ppbv Limit	µg/M³ Result	µg/M³ Limit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
1,1,1-Trichloroethane	**12**	**1.0**	**66**	**5.5**		2	3/17/2010
1,1,2,2-Tetrachloroethane	< 1.0	1.0	< 6.9	6.9		2	3/17/2010
1,1,2-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/17/2010
1,1-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/17/2010
1,1-Dichloroethene	**3.6**	**1.0**	**14**	**4.0**		2	3/17/2010
1,2,4-Trichlorobenzene	< 4.0	4.0	< 30	30		2	3/17/2010
1,2,4-Trimethylbenzene	**1.3**	**1.0**	**6.4**	**4.9**		2	3/17/2010
1,2-Dibromoethane	< 1.0	1.0	< 7.7	7.7		2	3/17/2010
1,2-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,2-Dichloroethane	**2.2**	**1.0**	**8.9**	**4.1**		2	3/17/2010
1,2-Dichloropropane	< 1.0	1.0	< 4.6	4.6		2	3/17/2010
1,3,5-Trimethylbenzene	< 1.0	1.0	< 4.9	4.9		2	3/17/2010
1,3-Butadiene	< 1.0	1.0	< 2.2	2.2		2	3/17/2010
1,3-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,4-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,4-Dioxane	< 4.0	4.0	< 14	14		2	3/17/2010
2,2,4-Trimethylpentane	< 1.0	1.0	< 4.7	4.7		2	3/17/2010
2-Butanone (MEK)	**5.8**	**2.0**	**17**	**5.9**		2	3/17/2010
2-Hexanone	< 2.0	2.0	< 8.2	8.2		2	3/17/2010
2-Propanol (IPA)	< 4.0	4.0	< 10	10		2	3/17/2010
4-Ethyltoluene	< 1.0	1.0	< 4.9	4.9		2	3/17/2010
4-Methyl-2-pentanone (MIK)	< 2.0	2.0	< 8.2	8.2		2	3/17/2010
Acetone	**38**	**10**	**90**	**24**		2	3/17/2010
Allyl chloride	< 1.0	1.0	< 3.1	3.1		2	3/17/2010
Benzene	**2.5**	**1.0**	**8.0**	**3.2**		2	3/17/2010
Benzyl chloride	< 4.0	4.0	< 21	21		2	3/17/2010
Bromodichloromethane	**1.5**	**1.0**	**10**	**6.7**		2	3/17/2010
Bromoethene(Vinyl Bromide)	< 1.0	1.0	< 4.4	4.4		2	3/17/2010
Bromoform	< 1.0	1.0	< 10	10		2	3/17/2010
Bromomethane	< 1.0	1.0	< 3.9	3.9		2	3/17/2010
Carbon disulfide	**1900**	**50**	**5,900**	**156**	D2	100	3/17/2010
Carbon tetrachloride	< 1.0	1.0	< 6.3	6.3		2	3/17/2010
Chlorobenzene	< 1.0	1.0	< 4.6	4.6		2	3/17/2010
Chloroethane	**13**	**1.0**	**34**	**2.6**		2	3/17/2010
Chloroform	**12**	**1.0**	**59**	**4.9**		2	3/17/2010
Chloromethane	**170**	**20**	**352**	**41**	D2	20	3/17/2010
cis-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/17/2010
cis-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/17/2010
Cyclohexane	< 1.0	1.0	< 3.4	3.4		2	3/17/2010
Dibromochloromethane	< 1.0	1.0	< 8.5	8.5		2	3/17/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW1-35-031110
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/11/2010
Lab ID:	26	**Matrix:**	SoilVapor

Analyses	ppbv Result	ppbv Limit	µg/M³ Result	µg/M³ Limit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
Dichlorodifluoromethane(F-12)	< 2.0	2.0	< 10	10		2	3/17/2010
Dichlorotetrafluoroethane(F-114)	< 1.0	1.0	< 7.0	7.0		2	3/17/2010
Ethyl Acetate	< 1.0	1.0	< 3.6	3.6		2	3/17/2010
Ethylbenzene	< 1.0	1.0	< 4.3	4.3		2	3/17/2010
Heptane	**2.9**	**1.0**	**12**	**4.1**		2	3/17/2010
Hexachlorobutadiene	< 2.0	2.0	< 21	21		2	3/17/2010
Hexane	< 1.0	1.0	< 3.5	3.5		2	3/17/2010
m&p-Xylene	< 2.0	2.0	< 8.7	8.7		2	3/17/2010
Methyl tert-butyl ether	< 2.0	2.0	< 7.2	7.2		2	3/17/2010
Methylene chloride	< 1.0	1.0	< 3.5	3.5		2	3/17/2010
o-Xylene	**1.0**	**1.0**	**4.3**	**4.3**		2	3/17/2010
Propene (Propylene)	< 1.0	1.0	< 1.7	1.7		2	3/17/2010
Styrene	< 1.0	1.0	< 4.3	4.3		2	3/17/2010
Tetrachloroethene	**770**	**10**	**5,200**	**68**	D2	20	3/17/2010
Tetrahydrofuran	< 4.0	4.0	< 12	12		2	3/17/2010
Toluene	**5.9**	**1.0**	**22**	**3.8**		2	3/17/2010
trans-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/17/2010
trans-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/17/2010
Trichloroethene	**5.0**	**1.0**	**27**	**5.4**		2	3/17/2010
Trichlorofluoromethane(F-11)	**1.5**	**1.0**	**8.4**	**5.6**		2	3/17/2010
Trichlorotrifluoroethane(F-113)	< 1.0	1.0	< 7.7	7.7		2	3/17/2010
Vinyl acetate	< 1.0	1.0	< 3.5	3.5		2	3/17/2010
Vinyl chloride	**14**	**1.0**	**36**	2.6		2	3/17/2010
Surr: 4-Bromofluorobenzene	109	70-130	%REC				

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW1-50-031110
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/11/2010
Lab ID:	27	**Matrix:**	SoilVapor

Analyses	ppbv Result	ppbv Limit	µg/M³ Result	µg/M³ Limit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
1,1,1-Trichloroethane	**16**	**1.0**	**87**	**5.5**		2	3/17/2010
1,1,2,2-Tetrachloroethane	< 1.0	1.0	< 6.9	6.9		2	3/17/2010
1,1,2-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/17/2010
1,1-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/17/2010
1,1-Dichloroethene	**2.7**	**1.0**	**11**	**4.0**		2	3/17/2010
1,2,4-Trichlorobenzene	< 4.0	4.0	< 30	30		2	3/17/2010
1,2,4-Trimethylbenzene	**2.8**	**1.0**	**14**	**4.9**		2	3/17/2010
1,2-Dibromoethane	< 1.0	1.0	< 7.7	7.7		2	3/17/2010
1,2-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,2-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/17/2010
1,2-Dichloropropane	< 1.0	1.0	< 4.6	4.6		2	3/17/2010
1,3,5-Trimethylbenzene	**1.4**	**1.0**	**6.9**	**4.9**		2	3/17/2010
1,3-Butadiene	< 1.0	1.0	< 2.2	2.2		2	3/17/2010
1,3-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,4-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,4-Dioxane	< 4.0	4.0	< 14	14		2	3/17/2010
2,2,4-Trimethylpentane	< 1.0	1.0	< 4.7	4.7		2	3/17/2010
2-Butanone (MEK)	**4.0**	**2.0**	**12**	**5.9**		2	3/17/2010
2-Hexanone	< 2.0	2.0	< 8.2	8.2		2	3/17/2010
2-Propanol (IPA)	< 4.0	4.0	< 10	10		2	3/17/2010
4-Ethyltoluene	< 1.0	1.0	< 4.9	4.9		2	3/17/2010
4-Methyl-2-pentanone (MIK)	< 2.0	2.0	< 8.2	8.2		2	3/17/2010
Acetone	**34**	**10**	**81**	**24**		2	3/17/2010
Allyl chloride	< 1.0	1.0	< 3.1	3.1		2	3/17/2010
Benzene	**1.9**	**1.0**	**6.1**	**3.2**		2	3/17/2010
Benzyl chloride	< 4.0	4.0	< 21	21		2	3/17/2010
Bromodichloromethane	**1.3**	**1.0**	**8.7**	**6.7**		2	3/17/2010
Bromoethene(Vinyl Bromide)	< 1.0	1.0	< 4.4	4.4		2	3/17/2010
Bromoform	< 1.0	1.0	< 10	10		2	3/17/2010
Bromomethane	< 1.0	1.0	< 3.9	3.9		2	3/17/2010
Carbon disulfide	**710**	**10**	**2,200**	**31**	D2	20	3/17/2010
Carbon tetrachloride	< 1.0	1.0	< 6.3	6.3		2	3/17/2010
Chlorobenzene	< 1.0	1.0	< 4.6	4.6		2	3/17/2010
Chloroethane	**4.0**	**1.0**	**11**	**2.6**		2	3/17/2010
Chloroform	**9.5**	**1.0**	**46**	**4.9**		2	3/17/2010
Chloromethane	**50**	**2.0**	**104**	**4.1**	D2	2	3/17/2010
cis-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/17/2010
cis-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/17/2010
Cyclohexane	< 1.0	1.0	< 3.4	3.4		2	3/17/2010
Dibromochloromethane	< 1.0	1.0	< 8.5	8.5		2	3/17/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW1-50-031110
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/11/2010
Lab ID:	27	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
Dichlorodifluoromethane(F-12)	< 2.0	2.0	< 10	10		2	3/17/2010
Dichlorotetrafluoroethane(F-114)	< 1.0	1.0	< 7.0	7.0		2	3/17/2010
Ethyl Acetate	< 1.0	1.0	< 3.6	3.6		2	3/17/2010
Ethylbenzene	**1.1**	**1.0**	**4.8**	**4.3**		2	3/17/2010
Heptane	< 1.0	1.0	< 4.1	4.1		2	3/17/2010
Hexachlorobutadiene	< 2.0	2.0	< 21	21		2	3/17/2010
Hexane	< 1.0	1.0	< 3.5	3.5		2	3/17/2010
m&p-Xylene	**4.4**	**2.0**	**19**	**8.7**		2	3/17/2010
Methyl tert-butyl ether	< 2.0	2.0	< 7.2	7.2		2	3/17/2010
Methylene chloride	< 1.0	1.0	< 3.5	3.5		2	3/17/2010
o-Xylene	**2.5**	**1.0**	**11**	**4.3**		2	3/17/2010
Propene (Propylene)	< 1.0	1.0	< 1.7	1.7		2	3/17/2010
Styrene	< 1.0	1.0	< 4.3	4.3		2	3/17/2010
Tetrachloroethene	**510**	**10**	**3500**	**68**	D2	20	3/17/2010
Tetrahydrofuran	< 4.0	4.0	< 12	12		2	3/17/2010
Toluene	**6.8**	**1.0**	**26**	**3.8**		2	3/17/2010
trans-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/17/2010
trans-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/17/2010
Trichloroethene	**4.1**	**1.0**	**22**	**5.4**		2	3/17/2010
Trichlorofluoromethane(F-11)	**1.1**	**1.0**	**6.2**	**5.6**		2	3/17/2010
Trichlorotrifluoroethane(F-113)	< 1.0	1.0	< 7.7	7.7		2	3/17/2010
Vinyl acetate	< 1.0	1.0	< 3.5	3.5		2	3/17/2010
Vinyl chloride	< 1.0	1.0	< 2.6	2.6		2	3/17/2010
Surr: 4-Bromofluorobenzene	112	70-130	%REC				

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW1-65-031110
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/11/2010
Lab ID:	28	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
1,1,1-Trichloroethane	**5.8**	**1.0**	**32**	**5.5**		2	3/17/2010
1,1,2,2-Tetrachloroethane	< 1.0	1.0	< 6.9	6.9		2	3/17/2010
1,1,2-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/17/2010
1,1-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/17/2010
1,1-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/17/2010
1,2,4-Trichlorobenzene	< 4.0	4.0	< 30	30		2	3/17/2010
1,2,4-Trimethylbenzene	**1.7**	**1.0**	**8.4**	**4.9**		2	3/17/2010
1,2-Dibromoethane	< 1.0	1.0	< 7.7	7.7		2	3/17/2010
1,2-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,2-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/17/2010
1,2-Dichloropropane	< 1.0	1.0	< 4.6	4.6		2	3/17/2010
1,3,5-Trimethylbenzene	< 1.0	1.0	< 4.9	4.9		2	3/17/2010
1,3-Butadiene	< 1.0	1.0	< 2.2	2.2		2	3/17/2010
1,3-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,4-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,4-Dioxane	< 4.0	4.0	< 14	14		2	3/17/2010
2,2,4-Trimethylpentane	< 1.0	1.0	< 4.7	4.7		2	3/17/2010
2-Butanone (MEK)	**3.7**	**2.0**	**11**	**5.9**		2	3/17/2010
2-Hexanone	< 2.0	2.0	< 8.2	8.2		2	3/17/2010
2-Propanol (IPA)	< 4.0	4.0	< 10	10		2	3/17/2010
4-Ethyltoluene	< 1.0	1.0	< 4.9	4.9		2	3/17/2010
4-Methyl-2-pentanone (MIK)	< 2.0	2.0	< 8.2	8.2		2	3/17/2010
Acetone	**19**	**10**	**45**	**24**		2	3/17/2010
Allyl chloride	< 1.0	1.0	< 3.1	3.1		2	3/17/2010
Benzene	**1.1**	**1.0**	**3.5**	**3.2**		2	3/17/2010
Benzyl chloride	< 4.0	4.0	< 21	21		2	3/17/2010
Bromodichloromethane	< 1.0	1.0	< 6.7	6.7		2	3/17/2010
Bromoethene(Vinyl Bromide)	< 1.0	1.0	< 4.4	4.4		2	3/17/2010
Bromoform	< 1.0	1.0	< 10	10		2	3/17/2010
Bromomethane	< 1.0	1.0	< 3.9	3.9		2	3/17/2010
Carbon disulfide	**51**	**1.0**	**159**	**3.1**	D2	2	3/17/2010
Carbon tetrachloride	< 1.0	1.0	< 6.3	6.3		2	3/17/2010
Chlorobenzene	< 1.0	1.0	< 4.6	4.6		2	3/17/2010
Chloroethane	< 1.0	1.0	< 2.6	2.6		2	3/17/2010
Chloroform	< 1.0	1.0	< 4.9	4.9		2	3/17/2010
Chloromethane	**3.4**	**2.0**	**7.0**	**4.1**		2	3/17/2010
cis-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/17/2010
cis-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/17/2010
Cyclohexane	< 1.0	1.0	< 3.4	3.4		2	3/17/2010
Dibromochloromethane	< 1.0	1.0	< 8.5	8.5		2	3/17/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW1-65-031110
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/11/2010
Lab ID:	28	**Matrix:**	SoilVapor

Analyses	ppbv Result	ppbv Limit	µg/M³ Result	µg/M³ Limit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
Dichlorodifluoromethane(F-12)	< 2.0	2.0	< 10	10		2	3/17/2010
Dichlorotetrafluoroethane(F-114)	< 1.0	1.0	< 7.0	7.0		2	3/17/2010
Ethyl Acetate	**1.6**	**1.0**	**5.8**	**3.6**		2	3/17/2010
Ethylbenzene	< 1.0	1.0	< 4.3	4.3		2	3/17/2010
Heptane	< 1.0	1.0	< 4.1	4.1		2	3/17/2010
Hexachlorobutadiene	< 2.0	2.0	< 21	21		2	3/17/2010
Hexane	< 1.0	1.0	< 3.5	3.5		2	3/17/2010
m&p-Xylene	< 2.0	2.0	< 8.7	8.7		2	3/17/2010
Methyl tert-butyl ether	< 2.0	2.0	< 7.2	7.2		2	3/17/2010
Methylene chloride	< 1.0	1.0	< 3.5	3.5		2	3/17/2010
o-Xylene	**1.0**	**1.0**	**4.3**	**4.3**		2	3/17/2010
Propene (Propylene)	< 1.0	1.0	< 1.7	1.7		2	3/17/2010
Styrene	< 1.0	1.0	< 4.3	4.3		2	3/17/2010
Tetrachloroethene	**36**	**1.0**	**244**	**6.8**		2	3/17/2010
Tetrahydrofuran	< 4.0	4.0	< 12	12		2	3/17/2010
Toluene	**20**	**1.0**	**75**	**3.8**		2	3/17/2010
trans-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/17/2010
trans-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/17/2010
Trichloroethene	< 1.0	1.0	< 5.4	5.4		2	3/17/2010
Trichlorofluoromethane(F-11)	< 1.0	1.0	< 5.6	5.6		2	3/17/2010
Trichlorotrifluoroethane(F-113)	< 1.0	1.0	< 7.7	7.7		2	3/17/2010
Vinyl acetate	< 1.0	1.0	< 3.5	3.5		2	3/17/2010
Vinyl chloride	< 1.0	1.0	< 2.6	2.6		2	3/17/2010
Surr: 4-Bromofluorobenzene	114	70-130	%REC				

4620 E.Elwood Street, Suite 13, Phoenix AZ 85040 Phone: 480-968-5888, Fax: 480-966-1888

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW10A-031110
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/11/2010
Lab ID:	29	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
1,1,1-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/17/2010
1,1,2,2-Tetrachloroethane	< 1.0	1.0	< 6.9	6.9		2	3/17/2010
1,1,2-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/17/2010
1,1-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/17/2010
1,1-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/17/2010
1,2,4-Trichlorobenzene	< 4.0	4.0	< 30	30		2	3/17/2010
1,2,4-Trimethylbenzene	**38**	**1.0**	**187**	**4.9**		2	3/17/2010
1,2-Dibromoethane	< 1.0	1.0	< 7.7	7.7		2	3/17/2010
1,2-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,2-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/17/2010
1,2-Dichloropropane	< 1.0	1.0	< 4.6	4.6		2	3/17/2010
1,3,5-Trimethylbenzene	**34**	**1.0**	**167**	**4.9**		2	3/17/2010
1,3-Butadiene	< 1.0	1.0	< 2.2	2.2		2	3/17/2010
1,3-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,4-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,4-Dioxane	< 4.0	4.0	< 14	14		2	3/17/2010
2,2,4-Trimethylpentane	**3.1**	**1.0**	**14**	**4.7**		2	3/17/2010
2-Butanone (MEK)	**11**	**2.0**	**32**	**5.9**		2	3/17/2010
2-Hexanone	< 2.0	2.0	< 8.2	8.2		2	3/17/2010
2-Propanol (IPA)	< 4.0	4.0	< 10	10		2	3/17/2010
4-Ethyltoluene	**15**	**1.0**	**74**	**4.9**		2	3/17/2010
4-Methyl-2-pentanone (MIK)	< 2.0	2.0	< 8.2	8.2		2	3/17/2010
Acetone	**150**	**100**	**357**	**238**	D2	20	3/23/2010
Allyl chloride	< 1.0	1.0	< 3.1	3.1		2	3/17/2010
Benzene	**9.3**	**1.0**	**30**	**3.2**		2	3/17/2010
Benzyl chloride	< 4.0	4.0	< 21	21		2	3/17/2010
Bromodichloromethane	< 1.0	1.0	< 6.7	6.7		2	3/17/2010
Bromoethene(Vinyl Bromide)	< 1.0	1.0	< 4.4	4.4		2	3/17/2010
Bromoform	< 1.0	1.0	< 10	10		2	3/17/2010
Bromomethane	< 1.0	1.0	< 3.9	3.9		2	3/17/2010
Carbon disulfide	**42**	**1.0**	**131**	**3.1**		2	3/17/2010
Carbon tetrachloride	< 1.0	1.0	< 6.3	6.3		2	3/17/2010
Chlorobenzene	< 1.0	1.0	< 4.6	4.6		2	3/17/2010
Chloroethane	< 1.0	1.0	< 2.6	2.6		2	3/17/2010
Chloroform	**1.3**	**1.0**	**6.3**	**4.9**		2	3/17/2010
Chloromethane	< 2.0	2.0	< 4.1	4.1		2	3/17/2010
cis-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/17/2010
cis-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/17/2010
Cyclohexane	< 1.0	1.0	< 3.4	3.4		2	3/17/2010
Dibromochloromethane	< 1.0	1.0	< 8.5	8.5		2	3/17/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW10A-031110
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/11/2010
Lab ID:	29	**Matrix:**	SoilVapor

Analyses	ppbv Result	ppbv Limit	µg/M³ Result	µg/M³ Limit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
Dichlorodifluoromethane(F-12)	< 2.0	2.0	< 10	10		2	3/17/2010
Dichlorotetrafluoroethane(F-114)	< 1.0	1.0	< 7.0	7.0		2	3/17/2010
Ethyl Acetate	**1.4**	**1.0**	**5.0**	**3.6**		2	3/17/2010
Ethylbenzene	**15**	**1.0**	**65**	**4.3**		2	3/17/2010
Heptane	**6.0**	**1.0**	**25**	**4.1**		2	3/17/2010
Hexachlorobutadiene	< 2.0	2.0	< 21	21		2	3/17/2010
Hexane	< 1.0	1.0	< 3.5	3.5		2	3/17/2010
m&p-Xylene	**59**	**2.0**	**256**	**8.7**		2	3/17/2010
Methyl tert-butyl ether	< 2.0	2.0	< 7.2	7.2		2	3/17/2010
Methylene chloride	< 1.0	1.0	< 3.5	3.5		2	3/17/2010
o-Xylene	**32**	**1.0**	**139**	**4.3**		2	3/17/2010
Propene (Propylene)	< 1.0	1.0	< 1.7	1.7		2	3/17/2010
Styrene	< 1.0	1.0	< 4.3	4.3		2	3/17/2010
Tetrachloroethene	**37**	**1.0**	**251**	**6.8**		2	3/17/2010
Tetrahydrofuran	< 4.0	4.0	< 12	12		2	3/17/2010
Toluene	**22**	**1.0**	**83**	**3.8**		2	3/17/2010
trans-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/17/2010
trans-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/17/2010
Trichloroethene	< 1.0	1.0	< 5.4	5.4		2	3/17/2010
Trichlorofluoromethane(F-11)	< 1.0	1.0	< 5.6	5.6		2	3/17/2010
Trichlorotrifluoroethane(F-113)	< 1.0	1.0	< 7.7	7.7		2	3/17/2010
Vinyl acetate	< 1.0	1.0	< 3.5	3.5		2	3/17/2010
Vinyl chloride	< 1.0	1.0	< 2.6	2.6		2	3/17/2010
Surr: 4-Bromofluorobenzene	115	70-130	%REC				

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW10B-031110
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/11/2010
Lab ID:	30	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
1,1,1-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/17/2010
1,1,2,2-Tetrachloroethane	< 1.0	1.0	< 6.9	6.9		2	3/17/2010
1,1,2-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/17/2010
1,1-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/17/2010
1,1-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/17/2010
1,2,4-Trichlorobenzene	< 4.0	4.0	< 30	30		2	3/17/2010
1,2,4-Trimethylbenzene	**2.1**	**1.0**	**10**	**4.9**		2	3/17/2010
1,2-Dibromoethane	< 1.0	1.0	< 7.7	7.7		2	3/17/2010
1,2-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,2-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/17/2010
1,2-Dichloropropane	< 1.0	1.0	< 4.6	4.6		2	3/17/2010
1,3,5-Trimethylbenzene	< 1.0	1.0	< 4.9	4.9		2	3/17/2010
1,3-Butadiene	< 1.0	1.0	< 2.2	2.2		2	3/17/2010
1,3-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,4-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,4-Dioxane	< 4.0	4.0	< 14	14		2	3/17/2010
2,2,4-Trimethylpentane	< 1.0	1.0	< 4.7	4.7		2	3/17/2010
2-Butanone (MEK)	**10**	**2.0**	**30**	**5.9**		2	3/17/2010
2-Hexanone	< 2.0	2.0	< 8.2	8.2		2	3/17/2010
2-Propanol (IPA)	< 4.0	4.0	< 10	10		2	3/17/2010
4-Ethyltoluene	< 1.0	1.0	< 4.9	4.9		2	3/17/2010
4-Methyl-2-pentanone (MIK)	< 2.0	2.0	< 8.2	8.2		2	3/17/2010
Acetone	**69**	**10**	**164**	**24**	D2	2	3/17/2010
Allyl chloride	< 1.0	1.0	< 3.1	3.1		2	3/17/2010
Benzene	**1.9**	**1.0**	**6.1**	**3.2**		2	3/17/2010
Benzyl chloride	< 4.0	4.0	< 21	21		2	3/17/2010
Bromodichloromethane	< 1.0	1.0	< 6.7	6.7		2	3/17/2010
Bromoethene(Vinyl Bromide)	< 1.0	1.0	< 4.4	4.4		2	3/17/2010
Bromoform	< 1.0	1.0	< 10	10		2	3/17/2010
Bromomethane	< 1.0	1.0	< 3.9	3.9		2	3/17/2010
Carbon disulfide	**7.1**	**1.0**	**22**	**3.1**		2	3/17/2010
Carbon tetrachloride	< 1.0	1.0	< 6.3	6.3		2	3/17/2010
Chlorobenzene	< 1.0	1.0	< 4.6	4.6		2	3/17/2010
Chloroethane	< 1.0	1.0	< 2.6	2.6		2	3/17/2010
Chloroform	**3.2**	**1.0**	**16**	**4.9**		2	3/17/2010
Chloromethane	**11**	**2.0**	**23**	**4.1**		2	3/17/2010
cis-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/17/2010
cis-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/17/2010
Cyclohexane	< 1.0	1.0	< 3.4	3.4		2	3/17/2010
Dibromochloromethane	< 1.0	1.0	< 8.5	8.5		2	3/17/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW10B-031110
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/11/2010
Lab ID:	30	**Matrix:**	SoilVapor

Analyses	ppbv Result	ppbv Limit	µg/M³ Result	µg/M³ Limit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
Dichlorodifluoromethane(F-12)	< 2.0	2.0	< 10	10		2	3/17/2010
Dichlorotetrafluoroethane(F-114)	< 1.0	1.0	< 7.0	7.0		2	3/17/2010
Ethyl Acetate	< 1.0	1.0	< 3.6	3.6		2	3/17/2010
Ethylbenzene	**1.1**	**1.0**	**4.8**	**4.3**		2	3/17/2010
Heptane	< 1.0	1.0	< 4.1	4.1		2	3/17/2010
Hexachlorobutadiene	< 2.0	2.0	< 21	21		2	3/17/2010
Hexane	< 1.0	1.0	< 3.5	3.5		2	3/17/2010
m&p-Xylene	**4.6**	**2.0**	**20**	**8.7**		2	3/17/2010
Methyl tert-butyl ether	< 2.0	2.0	< 7.2	7.2		2	3/17/2010
Methylene chloride	< 1.0	1.0	< 3.5	3.5		2	3/17/2010
o-Xylene	**2.0**	**1.0**	**8.7**	**4.3**		2	3/17/2010
Propene (Propylene)	< 1.0	1.0	< 1.7	1.7		2	3/17/2010
Styrene	< 1.0	1.0	< 4.3	4.3		2	3/17/2010
Tetrachloroethene	**76**	**1.0**	**515**	**6.8**	D2	2	3/17/2010
Tetrahydrofuran	< 4.0	4.0	< 12	12		2	3/17/2010
Toluene	**30**	**1.0**	**113**	**3.8**		2	3/17/2010
trans-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/17/2010
trans-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/17/2010
Trichloroethene	**1.3**	**1.0**	**7.0**	**5.4**		2	3/17/2010
Trichlorofluoromethane(F-11)	< 1.0	1.0	< 5.6	5.6		2	3/17/2010
Trichlorotrifluoroethane(F-113)	< 1.0	1.0	< 7.7	7.7		2	3/17/2010
Vinyl acetate	< 1.0	1.0	< 3.5	3.5		2	3/17/2010
Vinyl chloride	< 1.0	1.0	< 2.6	2.6		2	3/17/2010
Surr: 4-Bromofluorobenzene	113	70-130	%REC				

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW9A-031210
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/12/2010
Lab ID:	31	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
1,1,1-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/17/2010
1,1,2,2-Tetrachloroethane	< 1.0	1.0	< 6.9	6.9		2	3/17/2010
1,1,2-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/17/2010
1,1-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/17/2010
1,1-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/17/2010
1,2,4-Trichlorobenzene	< 4.0	4.0	< 30	30		2	3/17/2010
1,2,4-Trimethylbenzene	**2.3**	**1.0**	**11**	**4.9**		2	3/17/2010
1,2-Dibromoethane	< 1.0	1.0	< 7.7	7.7		2	3/17/2010
1,2-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,2-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/17/2010
1,2-Dichloropropane	< 1.0	1.0	< 4.6	4.6		2	3/17/2010
1,3,5-Trimethylbenzene	**1.1**	**1.0**	**5.4**	**4.9**		2	3/17/2010
1,3-Butadiene	< 1.0	1.0	< 2.2	2.2		2	3/17/2010
1,3-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,4-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,4-Dioxane	< 4.0	4.0	< 14	14		2	3/17/2010
2,2,4-Trimethylpentane	**1.2**	**1.0**	**5.6**	**4.7**		2	3/17/2010
2-Butanone (MEK)	**3.9**	**2.0**	**12**	**5.9**		2	3/17/2010
2-Hexanone	< 2.0	2.0	< 8.2	8.2		2	3/17/2010
2-Propanol (IPA)	< 4.0	4.0	< 10	10		2	3/17/2010
4-Ethyltoluene	**1.1**	**1.0**	**5.4**	**4.9**		2	3/17/2010
4-Methyl-2-pentanone (MIK)	< 2.0	2.0	< 8.2	8.2		2	3/17/2010
Acetone	**55**	**10**	**131**	**24**	D2	2	3/17/2010
Allyl chloride	< 1.0	1.0	< 3.1	3.1		2	3/17/2010
Benzene	**3.9**	**1.0**	**12**	**3.2**		2	3/17/2010
Benzyl chloride	< 4.0	4.0	< 21	21		2	3/17/2010
Bromodichloromethane	< 1.0	1.0	< 6.7	6.7		2	3/17/2010
Bromoethene(Vinyl Bromide)	< 1.0	1.0	< 4.4	4.4		2	3/17/2010
Bromoform	< 1.0	1.0	< 10	10		2	3/17/2010
Bromomethane	< 1.0	1.0	< 3.9	3.9		2	3/17/2010
Carbon disulfide	**4.4**	**1.0**	**14**	**3.1**		2	3/17/2010
Carbon tetrachloride	< 1.0	1.0	< 6.3	6.3		2	3/17/2010
Chlorobenzene	< 1.0	1.0	< 4.6	4.6		2	3/17/2010
Chloroethane	< 1.0	1.0	< 2.6	2.6		2	3/17/2010
Chloroform	**4.4**	**1.0**	**21**	**4.9**		2	3/17/2010
Chloromethane	< 2.0	2.0	< 4.1	4.1		2	3/17/2010
cis-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/17/2010
cis-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/17/2010
Cyclohexane	< 1.0	1.0	< 3.4	3.4		2	3/17/2010
Dibromochloromethane	< 1.0	1.0	< 8.5	8.5		2	3/17/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW9A-031210
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/12/2010
Lab ID:	31	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
Dichlorodifluoromethane(F-12)	< 2.0	2.0	< 10	10		2	3/17/2010
Dichlorotetrafluoroethane(F-114)	< 1.0	1.0	< 7.0	7.0		2	3/17/2010
Ethyl Acetate	< 1.0	1.0	< 3.6	3.6		2	3/17/2010
Ethylbenzene	**1.2**	**1.0**	**5.2**	**4.3**		2	3/17/2010
Heptane	< 1.0	1.0	< 4.1	4.1		2	3/17/2010
Hexachlorobutadiene	< 2.0	2.0	< 21	21		2	3/17/2010
Hexane	**1.8**	**1.0**	**6.3**	**3.5**		2	3/17/2010
m&p-Xylene	**6.9**	**2.0**	**30**	**8.7**		2	3/17/2010
Methyl tert-butyl ether	< 2.0	2.0	< 7.2	7.2		2	3/17/2010
Methylene chloride	< 1.0	1.0	< 3.5	3.5		2	3/17/2010
o-Xylene	**2.8**	**1.0**	**12**	**4.3**		2	3/17/2010
Propene (Propylene)	< 1.0	1.0	< 1.7	1.7		2	3/17/2010
Styrene	< 1.0	1.0	< 4.3	4.3		2	3/17/2010
Tetrachloroethene	**14**	**1.0**	**95**	**6.8**		2	3/17/2010
Tetrahydrofuran	< 4.0	4.0	< 12	12		2	3/17/2010
Toluene	**14**	**1.0**	**53**	**3.8**		2	3/17/2010
trans-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/17/2010
trans-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/17/2010
Trichloroethene	< 1.0	1.0	< 5.4	5.4		2	3/17/2010
Trichlorofluoromethane(F-11)	< 1.0	1.0	< 5.6	5.6		2	3/17/2010
Trichlorotrifluoroethane(F-113)	< 1.0	1.0	< 7.7	7.7		2	3/17/2010
Vinyl acetate	< 1.0	1.0	< 3.5	3.5		2	3/17/2010
Vinyl chloride	< 1.0	1.0	< 2.6	2.6		2	3/17/2010
Surr: 4-Bromofluorobenzene	112	70-130	%REC				

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW9B-031210
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/12/2010
Lab ID:	32	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR	**TO-15**						Analyst: JJ
1,1,1-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/17/2010
1,1,2,2-Tetrachloroethane	< 1.0	1.0	< 6.9	6.9		2	3/17/2010
1,1,2-Trichloroethane	< 1.0	1.0	< 5.5	5.5		2	3/17/2010
1,1-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/17/2010
1,1-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/17/2010
1,2,4-Trichlorobenzene	< 4.0	4.0	< 30	30		2	3/17/2010
1,2,4-Trimethylbenzene	**2.4**	**1.0**	**12**	**4.9**	D1	2	3/17/2010
1,2-Dibromoethane	< 1.0	1.0	< 7.7	7.7		2	3/17/2010
1,2-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,2-Dichloroethane	< 1.0	1.0	< 4.1	4.1		2	3/17/2010
1,2-Dichloropropane	< 1.0	1.0	< 4.6	4.6		2	3/17/2010
1,3,5-Trimethylbenzene	**2.2**	**1.0**	**11**	**4.9**	D1	2	3/17/2010
1,3-Butadiene	< 1.0	1.0	< 2.2	2.2		2	3/17/2010
1,3-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,4-Dichlorobenzene	< 1.0	1.0	< 6.0	6.0		2	3/17/2010
1,4-Dioxane	< 4.0	4.0	< 14	14		2	3/17/2010
2,2,4-Trimethylpentane	**1.1**	**1.0**	**5.1**	**4.7**	D1	2	3/17/2010
2-Butanone (MEK)	< 2.0	2.0	< 5.9	5.9		2	3/17/2010
2-Hexanone	< 2.0	2.0	< 8.2	8.2		2	3/17/2010
2-Propanol (IPA)	< 4.0	4.0	< 10	10		2	3/17/2010
4-Ethyltoluene	< 1.0	1.0	< 4.9	4.9		2	3/17/2010
4-Methyl-2-pentanone (MIK)	< 2.0	2.0	< 8.2	8.2		2	3/17/2010
Acetone	**15**	**10**	**36**	**24**	D1	2	3/17/2010
Allyl chloride	< 1.0	1.0	< 3.1	3.1		2	3/17/2010
Benzene	**1.5**	**1.0**	**4.8**	**3.2**	D1	2	3/17/2010
Benzyl chloride	< 4.0	4.0	< 21	21		2	3/17/2010
Bromodichloromethane	**3.3**	**1.0**	**22**	**6.7**	D1	2	3/17/2010
Bromoethene(Vinyl Bromide)	< 1.0	1.0	< 4.4	4.4		2	3/17/2010
Bromoform	< 1.0	1.0	< 10	10		2	3/17/2010
Bromomethane	< 1.0	1.0	< 3.9	3.9		2	3/17/2010
Carbon disulfide	**2.6**	**1.0**	**8.1**	**3.1**	D1	2	3/17/2010
Carbon tetrachloride	< 1.0	1.0	< 6.3	6.3		2	3/17/2010
Chlorobenzene	< 1.0	1.0	< 4.6	4.6		2	3/17/2010
Chloroethane	< 1.0	1.0	< 2.6	2.6		2	3/17/2010
Chloroform	**9.2**	**1.0**	**45**	**4.9**	D1	2	3/17/2010
Chloromethane	**8.5**	**2.0**	**18**	**4.1**	D1	2	3/17/2010
cis-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/17/2010
cis-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/17/2010
Cyclohexane	< 1.0	1.0	< 3.4	3.4		2	3/17/2010
Dibromochloromethane	< 1.0	1.0	< 8.5	8.5		2	3/17/2010

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client:	Geotrans, Inc	**Client Sample ID:**	HI-SVMW9B-031210
Project:	20th & Factor	**Project Number:**	1303.036
Lab Order:	1003104	**Collection:**	3/12/2010
Lab ID:	32	**Matrix:**	SoilVapor

	ppbv		µg/M³				
Analyses	**Result**	**Limit**	**Result**	**Limit**	**Qual**	**DF**	**Date Analyzed**
VOLATILE ORGANICS IN AIR		**TO-15**					Analyst: JJ
Dichlorodifluoromethane(F-12)	< 2.0	2.0	< 10	10		2	3/17/2010
Dichlorotetrafluoroethane(F-114)	< 1.0	1.0	< 7.0	7.0		2	3/17/2010
Ethyl Acetate	< 1.0	1.0	< 3.6	3.6		2	3/17/2010
Ethylbenzene	< 1.0	1.0	< 4.3	4.3		2	3/17/2010
Heptane	< 1.0	1.0	< 4.1	4.1		2	3/17/2010
Hexachlorobutadiene	< 2.0	2.0	< 21	21		2	3/17/2010
Hexane	**1.4**	**1.0**	**4.9**	**3.5**	D1	2	3/17/2010
m&p-Xylene	**3.9**	**2.0**	**17**	**8.7**	D1	2	3/17/2010
Methyl tert-butyl ether	< 2.0	2.0	< 7.2	7.2		2	3/17/2010
Methylene chloride	< 1.0	1.0	< 3.5	3.5		2	3/17/2010
o-Xylene	**2.0**	**1.0**	**8.7**	**4.3**	D1	2	3/17/2010
Propene (Propylene)	< 1.0	1.0	< 1.7	1.7		2	3/17/2010
Styrene	< 1.0	1.0	< 4.3	4.3		2	3/17/2010
Tetrachloroethene	**24**	**1.0**	**163**	**6.8**	D1	2	3/17/2010
Tetrahydrofuran	< 4.0	4.0	< 12	12		2	3/17/2010
Toluene	**13**	**1.0**	**49**	**3.8**	D1	2	3/17/2010
trans-1,2-Dichloroethene	< 1.0	1.0	< 4.0	4.0		2	3/17/2010
trans-1,3-Dichloropropene	< 1.0	1.0	< 4.5	4.5		2	3/17/2010
Trichloroethene	< 1.0	1.0	< 5.4	5.4		2	3/17/2010
Trichlorofluoromethane(F-11)	< 1.0	1.0	< 5.6	5.6		2	3/17/2010
Trichlorotrifluoroethane(F-113)	< 1.0	1.0	< 7.7	7.7		2	3/17/2010
Vinyl acetate	< 1.0	1.0	< 3.5	3.5		2	3/17/2010
Vinyl chloride	< 1.0	1.0	< 2.6	2.6		2	3/17/2010
Surr: 4-Bromofluorobenzene	112	70-130	%REC				

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client: Geotrans, Inc
Project: 20th & Factor
Lab Order: 1003104
Lab ID: LCS/LCSD 0315

Client Sample ID:
Tag Number:
Collection:
Matrix:

Analyses	LCS Result	LCS %REC	LCSD Result	LCSD %REC	T.V.	%RPD	Unit	Pass/fail LCS	LCSD	RPD	Date Analyzed
VOLATILE ORGANICS IN AIR	**TO-15**							70-130%	70-130%	<25%	Analyst: JJ
2 T Propene (Propylene)	11.5	114.5	10.4	104	10.0	10.0	ppbv				3/15/2010
3 T Dichlorodifluoromethane(F-12)	9.9	98.6	10.6	106	10.0	7.1	ppbv				3/15/2010
4 T Chloromethane	10.4	104	10.3	103	10.0	1.0	ppbv				3/15/2010
5 T Dichlorotetrafluoroethane(F-114)	10.1	101	10.4	104	10.0	3.2	ppbv				3/15/2010
6 T Vinyl Chloride	10.2	102	10.6	106	10.0	4.1	ppbv				3/15/2010
7 T 1,3-Butadiene	10.5	105	10.7	107	10.0	2.1	ppbv				3/15/2010
8 T Bromomethane	9.8	97.6	10.2	102	10.0	3.9	ppbv				3/15/2010
9 T Chloroethane	9.5	95.4	10.0	100	10.0	4.8	ppbv				3/15/2010
10 T Bromoethene(Vinyl Bromide)	10.1	101	10.1	101	10.0	0.1	ppbv				3/15/2010
11 T Trichlorofluoromethane (F-11)	9.3	92.7	9.2	91.9	10.0	0.9	ppbv				3/15/2010
12 T Acetone	10.7	107	11.1	111	10.0	3.7	ppbv				3/15/2010
13 T Isopropyl Alcohol (2-Propanol)	9.6	96.4	10.7	107	10.0	10.1	ppbv				3/15/2010
14 T 1,1-Dichloroethene	8.8	87.8	9.0	89.6	10.0	2.0	ppbv				3/15/2010
15 T Trichlorotrifluoroethane (F-113)	9.2	91.6	9.2	92.1	10.0	0.5	ppbv				3/15/2010
16 T Methylene Chloride	9.5	94.5	9.3	93.2	10.0	1.4	ppbv				3/15/2010
17 T Allyl Chloride	10.0	99.7	10.9	109	10.0	8.5	ppbv				3/15/2010
18 T Carbon disulfide	10.6	106	10.5	105	10.0	1.2	ppbv				3/15/2010
19 T trans-1,2-Dichloroethene	10.1	101	10.3	103	10.0	2.5	ppbv				3/15/2010
20 T Methyl tert-butyl ether	10.1	101	10.6	106	10.0	5.5	ppbv				3/15/2010
21 T 1,1-Dichloroethane	9.7	96.7	9.6	95.5	10.0	1.2	ppbv				3/15/2010
22 T Vinyl acetate	11.4	114	11.9	119	10.0	3.8	ppbv				3/15/2010
23 T 2-Butanone (MEK)	9.0	89.8	9.2	92.2	10.0	2.6	ppbv				3/15/2010
24 T Hexane	11.5	115	11.5	115	10.0	0.0	ppbv				3/15/2010
25 T cis-1,2-Dichloroethene	9.9	98.9	9.7	97.3	10.0	1.6	ppbv				3/15/2010
26 T Ethyl Acetate	11.1	111	11.2	112	10.0	0.8	ppbv				3/15/2010
27 T Chloroform	9.3	92.9	9.3	92.7	10.0	0.2	ppbv				3/15/2010
28 T Tetrahydrofuran	10.3	103	10.7	107	10.0	3.9	ppbv				3/15/2010

4620 E.Elwood Street, Suite 13, Phoenix AZ 85040 Phone: 480-968-5888, Fax: 480-966-1888

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client: Geotrans, Inc
Project: 20th & Factor
Lab Order: 1003104
Lab ID: LCS/LCSD 0315

Client Sample ID:
Tag Number:
Collection:
Matrix:

Analyses	LCS Result	LCS %REC	LCSD Result	LCSD %REC	T.V.	RPD	Unit	Pass/fail LCS	LCSD	RPD	Date Analyzed
VOLATILE ORGANICS IN AIR	TO-15							70-130%	70-130%	<25%	
29 T 1,1,1-Trichloroethane	8.6	86.1	8.6	85.6	10.0	0.6	ppbv				3/15/2010
30 T 1,2-Dichloroethane	9.3	92.9	9.2	92.0	10.0	1.0	ppbv				3/15/2010
31 T Benzene	10.8	108	10.9	109	10.0	0.8	ppbv				3/15/2010
32 T Carbon tetrachloride	9.5	94.8	9.2	92.3	10.0	2.7	ppbv				3/15/2010
33 T Cyclohexane	11.2	112	11.0	110	10.0	2.0	ppbv				3/15/2010
35 T 2,2,4-Trimethylpentane	10.5	105	10.3	103	10.0	2.1	ppbv				3/15/2010
36 T Heptane	10.4	104	9.7	97.2	10.0	7.0	ppbv				3/15/2010
37 T 1,2-Dichloropropane	10.0	100	9.8	98.0	10.0	2.1	ppbv				3/15/2010
38 T Trichloroethene	9.0	89.7	8.7	86.7	10.0	3.4	ppbv				3/15/2010
39 T Bromodichloromethane	9.9	98.6	9.5	95.0	10.0	3.7	ppbv				3/15/2010
40 T 1,4-Dioxane	8.7	87.3	8.7	86.6	10.0	0.8	ppbv				3/15/2010
41 T cis-1,3-Dichloropropene	10.7	107	10.0	100	10.0	6.3	ppbv				3/15/2010
42 T 4-methyl-2-pentanone	9.2	91.5	8.9	88.9	10.0	2.9	ppbv				3/15/2010
43 T trans-1,3-Dichloropropene	8.5	85.3	8.4	83.7	10.0	1.9	ppbv				3/15/2010
44 T Toluene	11.0	110	10.5	105	10.0	4.6	ppbv				3/15/2010
45 T 1,1,2-Trichloroethane	10.1	101	9.4	94.3	10.0	6.5	ppbv				3/15/2010
46 T 2-Hexanone	9.1	90.7	8.7	86.6	10.0	4.6	ppbv				3/15/2010
47 T Dibromochloromethane	10.5	105	9.9	98.7	10.0	5.8	ppbv				3/15/2010
48 T 1,2-Dibromoethane	10.1	101	9.4	94.1	10.0	7.4	ppbv				3/15/2010
49 T Tetrachloroethene	10.0	99.7	9.1	90.6	10.0	9.6	ppbv				3/15/2010
51 T Chlorobenzene	10.0	100	9.7	96.8	10.0	3.5	ppbv				3/15/2010
52 T Ethylbenzene	11.4	114	11.2	112	10.0	2.0	ppbv				3/15/2010
53 T m&p-Xylene	23.2	116	22.6	113	20.0	2.8	ppbv				3/15/2010
54 T Bromoform	12.3	123	11.9	119	10.0	3.6	ppbv				3/15/2010
55 T Styrene	10.5	105	10.2	102	10.0	2.9	ppbv				3/15/2010
56 T o-Xylene	11.9	119	11.3	113	10.0	4.9	ppbv				3/15/2010

4620 E.Elwood Street, Suite 13, Phoenix AZ 85040 Phone: 480-968-5888, Fax: 480-966-1888

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client: Geotrans, Inc
Project: 20th & Factor
Lab Order: 1003104
Lab ID: LCS/LCSD 0315

Client Sample ID:
Tag Number:
Collection:
Matrix:

Analyses	LCS Result	LCS %REC	LCSD Result	LCSD %REC	T.V.	RPD	Unit	Pass/fail LCS	LCSD	RPD	Date Analyzed
VOLATILE ORGANICS IN AIR	**TO-15**							70-130%	70-130%	<25%	
57 T 1,1,2,2-Tetrachloroethane	11.0	110	10.4	104	10.0	5.2	ppbv				3/15/2010
59 T 4-Ethyltoluene	10.5	105	10.0	99.6	10.0	5.6	ppbv				3/15/2010
60 T 1,3,5-Trimethylbenzene	12.4	124	11.7	117	10.0	6.1	ppbv				3/15/2010
61 T 1,2,4-Trimethylbenzene	10.5	105	10.1	101	10.0	4.3	ppbv				3/15/2010
62 T 1,3-Dichlorobenzene	12.5	125	11.7	117	10.0	6.7	ppbv				3/15/2010
63 T Benzyl chloride	10.1	101	9.7	97.0	10.0	4.3	ppbv				3/15/2010
64 T 1,4-Dichlorobenzene	12.7	127	11.7	117	10.0	7.8	ppbv				3/15/2010
65 T 1,2-Dichlorobenzene	12.4	124	11.5	115	10.0	7.3	ppbv				3/15/2010
66 T 1,2,4-Trichlorobenzene	9.7	96.8	9.3	92.9	10.0	4.1	ppbv				3/15/2010
67 T Hexachlorobutadiene	9.6	95.7	9.0	90.2	10.0	5.9	ppbv				3/15/2010
Surr: 4-Bromofluorobenzene	11.1	111	11.12	111			%REC				
		70-130%		70-130%							

4620 E.Elwood Street, Suite 13, Phoenix AZ 85040
Phone: 480-968-5888, Fax: 480-966-1888

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client: Geotrans, Inc
Project: 20th & Factor
Lab Order: 1003104
Lab ID: LCS/LCSD 0316

Client Sample ID:
Tag Number:
Collection:
Matrix:

Analyses	LCS Result	LCS %REC	LCSD Result	LCSD %REC	T.V.	%RPD	Unit	Pass/fail LCS	LCSD	RPD	Date Analyzed
VOLATILE ORGANICS IN AIR	**TO-15**							70-130%	70-130%	<25%	Analyst: JJ
2 T Propene (Propylene)	7.1	71.1	7.1	71.3	10.0	0.3	ppbv				3/16/2010
3 T Dichlorodifluoromethane(F-12)	10.4	104	10.4	104	10.0	0.3	ppbv				3/16/2010
4 T Chloromethane	8.3	83.3	8.1	81.1	10.0	2.7	ppbv				3/16/2010
5 T Dichlorotetrafluoroethane(F-114)	8.5	85.0	8.3	83.1	10.0	2.3	ppbv				3/16/2010
6 T Vinyl Chloride	8.0	80.1	7.9	79.0	10.0	1.4	ppbv				3/16/2010
7 T 1,3-Butadiene	9.5	95.3	9.0	90.0	10.0	5.7	ppbv				3/16/2010
8 T Bromomethane	7.9	78.6	7.9	79.0	10.0	0.5	ppbv				3/16/2010
9 T Chloroethane	7.8	78.4	7.9	78.7	10.0	0.4	ppbv				3/16/2010
10 T Bromoethene(Vinyl Bromide)	8.6	85.6	8.5	85.2	10.0	0.5	ppbv				3/16/2010
11 T Trichlorofluoromethane (F-11)	8.5	85.0	8.7	87.3	10.0	2.7	ppbv				3/16/2010
12 T Acetone	9.0	90.2	9.3	92.5	10.0	2.5	ppbv				3/16/2010
13 T Isopropyl Alcohol (2-Propanol)	10.8	108	11.3	113	10.0	4.4	ppbv				3/16/2010
14 T 1,1-Dichloroethene	9.7	96.6	9.7	96.9	10.0	0.3	ppbv				3/16/2010
15 T Trichlorotrifluoroethane (F-113)	9.4	94.2	9.8	98.2	10.0	4.2	ppbv				3/16/2010
16 T Methylene Chloride	7.4	74.2	7.8	77.6	10.0	4.5	ppbv				3/16/2010
17 T Allyl Chloride	9.4	94.1	10.1	101	10.0	7.4	ppbv				3/16/2010
18 T Carbon disulfide	9.4	93.5	9.9	99.4	10.0	6.1	ppbv				3/16/2010
19 T trans-1,2-Dichloroethene	10.0	99.8	10.6	106	10.0	5.6	ppbv				3/16/2010
20 T Methyl tert-butyl ether	11.8	118	12.8	128	10.0	7.8	ppbv				3/16/2010
21 T 1,1-Dichloroethane	9.2	92.4	9.6	95.9	10.0	3.7	ppbv				3/16/2010
22 T Vinyl acetate	9.5	95.4	10.3	103	10.0	7.8	ppbv				3/16/2010
23 T 2-Butanone (MEK)	9.0	89.5	9.7	96.9	10.0	7.9	ppbv				3/16/2010
24 T Hexane	9.6	95.9	10.1	101	10.0	4.7	ppbv				3/16/2010
25 T cis-1,2-Dichloroethene	9.7	96.7	10.2	102	10.0	5.5	ppbv				3/16/2010
26 T Ethyl Acetate	10.0	100	11.0	110	10.0	9.2	ppbv				3/16/2010
27 T Chloroform	10.8	108	11.1	111	10.0	3.1	ppbv				3/16/2010
28 T Tetrahydrofuran	8.1	81.2	9.2	91.5	10.0	11.9	ppbv				3/16/2010

4620 E.Elwood Street, Suite 13, Phoenix AZ 85040 Phone: 480-968-5888, Fax: 480-966-1888

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client: Geotrans, Inc
Project: 20th & Factor
Lab Order: 1003104
Lab ID: LCS/LCSD 0316

Client Sample ID:
Tag Number:
Collection:
Matrix:

Analyses	LCS Result	LCS %REC	LCSD Result	LCSD %REC	T.V.	RPD	Unit	Pass/fail LCS	LCSD	RPD	Date Analyzed
VOLATILE ORGANICS IN AIR	**TO-15**							70-130%	70-130%	<25%	
29 T 1,1,1-Trichloroethane	11.3	113	11.4	114	10.0	0.6	ppbv				3/16/2010
30 T 1,2-Dichloroethane	12.7	127	12.5	125	10.0	1.7	ppbv				3/16/2010
31 T Benzene	9.6	95.8	10.2	102	10.0	5.9	ppbv				3/16/2010
32 T Carbon tetrachloride	12.1	121	12.0	120	10.0	0.1	ppbv				3/16/2010
33 T Cyclohexane	9.1	90.6	9.6	96.0	10.0	5.8	ppbv				3/16/2010
35 T 2,2,4-Trimethylpentane	9.3	92.9	9.1	91.3	10.0	1.7	ppbv				3/16/2010
36 T Heptane	10.5	105	9.8	98.1	10.0	6.7	ppbv				3/16/2010
37 T 1,2-Dichloropropane	8.7	86.6	8.7	87.4	10.0	0.9	ppbv				3/16/2010
38 T Trichloroethene	9.7	97.1	9.6	95.7	10.0	1.5	ppbv				3/16/2010
39 T Bromodichloromethane	12.3	123	11.9	119	10.0	3.5	ppbv				3/16/2010
40 T 1,4-Dioxane	10.8	108	11.5	115	10.0	6.0	ppbv				3/16/2010
41 T cis-1,3-Dichloropropene	11.1	111	11.1	111	10.0	0.5	ppbv				3/16/2010
42 T 4-methyl-2-pentanone	9.2	91.9	9.3	92.7	10.0	0.9	ppbv				3/16/2010
43 T trans-1,3-Dichloropropene	10.2	102	10.1	101	10.0	0.3	ppbv				3/16/2010
44 T Toluene	10.8	108	11.0	110	10.0	1.6	ppbv				3/16/2010
45 T 1,1,2-Trichloroethane	10.1	101	10.3	103	10.0	2.5	ppbv				3/16/2010
46 T 2-Hexanone	9.2	92.2	9.3	93.4	10.0	1.3	ppbv				3/16/2010
47 T Dibromochloromethane	12.4	124	12.1	121	10.0	2.9	ppbv				3/16/2010
48 T 1,2-Dibromoethane	10.9	109	11.0	110	10.0	0.6	ppbv				3/16/2010
49 T Tetrachloroethene	10.9	109	10.7	107	10.0	2.1	ppbv				3/16/2010
51 T Chlorobenzene	10.1	101	10.4	104	10.0	3.2	ppbv				3/16/2010
52 T Ethylbenzene	11.1	111	11.6	116	10.0	5.0	ppbv				3/16/2010
53 T m&p-Xylene	21.8	109	22.8	114	20.0	4.5	ppbv				3/16/2010
54 T Bromoform	11.9	119	12.1	121	10.0	0.9	ppbv				3/16/2010
55 T Styrene	9.5	95.2	10.2	102	10.0	6.8	ppbv				3/16/2010
56 T o-Xylene	10.9	109	11.5	115	10.0	5.9	ppbv				3/16/2010

4620 E.Elwood Street, Suite 13, Phoenix AZ 85040 Phone: 480-968-5888, Fax: 480-966-1888

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client: Geotrans, Inc
Project: 20th & Factor
Lab Order: 1003104
Lab ID: LCS/LCSD 0316

Client Sample ID:
Tag Number:
Collection:
Matrix:

Analyses	LCS Result	LCS %REC	LCSD Result	LCSD %REC	T.V.	RPD	Unit	Pass/fail LCS	LCSD	RPD	Date Analyzed
VOLATILE ORGANICS IN AIR	**TO-15**							70-130%	70-130%	<25%	
57 T 1,1,2,2-Tetrachloroethane	9.1	90.8	9.8	97.8	10.0	7.4	ppbv				3/16/2010
59 T 4-Ethyltoluene	10.1	101	10.7	107	10.0	5.5	ppbv				3/16/2010
60 T 1,3,5-Trimethylbenzene	11.9	119	12.5	125	10.0	5.1	ppbv				3/16/2010
61 T 1,2,4-Trimethylbenzene	10.2	102	10.7	107	10.0	5.1	ppbv				3/16/2010
62 T 1,3-Dichlorobenzene	10.9	109	11.1	111	10.0	2.4	ppbv				3/16/2010
63 T Benzyl chloride	9.8	98.1	10.1	101	10.0	3.2	ppbv				3/16/2010
64 T 1,4-Dichlorobenzene	10.9	109	11.1	111	10.0	2.0	ppbv				3/16/2010
65 T 1,2-Dichlorobenzene	10.9	109	11.2	112	10.0	2.7	ppbv				3/16/2010
66 T 1,2,4-Trichlorobenzene	11.5	115	11.4	114	10.0	1.1	ppbv				3/16/2010
67 T Hexachlorobutadiene	12.3	123	12.2	122	10.0	0.4	ppbv				3/16/2010
Surr: 4-Bromofluorobenzene	10.7	107	10.3	103			%REC				
		70-130%		70-130%							

4620 E.Elwood Street, Suite 13, Phoenix AZ 85040
Phone: 480-968-5888, Fax: 480-966-1888

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client: Geotrans, Inc
Project: 20th & Factor
Lab Order: 1003104
Lab ID: LCS/LCSD 0323

Client Sample ID:
Tag Number:
Collection:
Matrix:

Analyses	LCS Result	LCS %REC	LCSD Result	LCSD %REC	T.V.	%RPD	Unit	Pass/fail LCS	LCSD	RPD	Date Analyzed
VOLATILE ORGANICS IN AIR	**TO-15**							70-130%	70-130%	<25%	Analyst: JJ
12 T Acetone	10.4	104.2	10.1	101.1	10.0	3.0	ppbv				3/23/2010
Surr: 4-Bromofluorobenzene	11.3	113	11.29	113			%REC				
		70-130%		70-130%							

4620 E.Elwood Street, Suite 13, Phoenix AZ 85040
Phone: 480-968-5888, Fax: 480-966-1888

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client: Geotrans, Inc
Project: 20th & Factor
Lab Order: 1003104
Lab ID: Blank 0315

Client Sample ID:
Tag Number:
Collection:
Matrix:

Analyses	Result	Limit	Unit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR	TO-15					Analyst: JJ
1,1,1-Trichloroethane	< 0.5	0.5	ppbv		1	3/15/2010
1,1,2,2-Tetrachloroethane	< 0.5	0.5	ppbv		1	3/15/2010
1,1,2-Trichloroethane	< 0.5	0.5	ppbv		1	3/15/2010
1,1-Dichloroethane	< 0.5	0.5	ppbv		1	3/15/2010
1,1-Dichloroethene	< 0.5	0.5	ppbv		1	3/15/2010
1,2,4-Trichlorobenzene	< 2.0	2.0	ppbv		1	3/15/2010
1,2,4-Trimethylbenzene	< 0.5	0.5	ppbv		1	3/15/2010
1,2-Dibromoethane	< 0.5	0.5	ppbv		1	3/15/2010
1,2-Dichlorobenzene	< 0.5	0.5	ppbv		1	3/15/2010
1,2-Dichloroethane	< 0.5	0.5	ppbv		1	3/15/2010
1,2-Dichloropropane	< 0.5	0.5	ppbv		1	3/15/2010
1,3,5-Trimethylbenzene	< 0.5	0.5	ppbv		1	3/15/2010
1,3-Butadiene	< 0.5	0.5	ppbv		1	3/15/2010
1,3-Dichlorobenzene	< 0.5	0.5	ppbv		1	3/15/2010
1,4-Dichlorobenzene	< 0.5	0.5	ppbv		1	3/15/2010
1,4-Dioxane	< 2.0	2.0	ppbv		1	3/15/2010
2,2,4-Trimethylpentane	< 0.5	0.5	ppbv		1	3/15/2010
2-Butanone (MEK)	< 1.0	1.0	ppbv		1	3/15/2010
2-Hexanone	< 1.0	1.0	ppbv		1	3/15/2010
2-Propanol (IPA)	< 2.0	2.0	ppbv		1	3/15/2010
4-Ethyltoluene	< 0.5	0.5	ppbv		1	3/15/2010
4-Methyl-2-pentanone (MIK)	< 1.0	1.0	ppbv		1	3/15/2010
Acetone	< 5.0	5.0	ppbv		1	3/15/2010
Allyl chloride	< 0.5	0.5	ppbv		1	3/15/2010
Benzene	< 0.5	0.5	ppbv		1	3/15/2010
Benzyl chloride	< 2.0	2.0	ppbv		1	3/15/2010
Bromodichloromethane	< 0.5	0.5	ppbv		1	3/15/2010
Bromoethene(Vinyl Bromide)	< 0.5	0.5	ppbv		1	3/15/2010
Bromoform	< 0.5	0.5	ppbv		1	3/15/2010
Bromomethane	< 0.5	0.5	ppbv		1	3/15/2010
Carbon disulfide	< 0.5	0.5	ppbv		1	3/15/2010
Carbon tetrachloride	< 0.5	0.5	ppbv		1	3/15/2010
Chlorobenzene	< 0.5	0.5	ppbv		1	3/15/2010
Chloroethane	< 0.5	0.5	ppbv		1	3/15/2010
Chloroform	< 0.5	0.5	ppbv		1	3/15/2010
Chloromethane	< 1.0	1.0	ppbv		1	3/15/2010
cis-1,2-Dichloroethene	< 0.5	0.5	ppbv		1	3/15/2010
cis-1,3-Dichloropropene	< 0.5	0.5	ppbv		1	3/15/2010
Cyclohexane	< 0.5	0.5	ppbv		1	3/15/2010
Dibromochloromethane	< 0.5	0.5	ppbv		1	3/15/2010

4620 E.Elwood Street, Suite 13, Phoenix AZ 85040 Phone: 480-968-5888, Fax: 480-966-1888

Airtech Environmental Laboratories - AZ 0740

Date: March 24, 2010

Client: Geotrans, Inc
Project: 20th & Factor
Lab Order: 1003104
Lab ID: Blank 0315

Client Sample ID:
Tag Number:
Collection:
Matrix:

Analyses	Result	Limit	Unit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR	**TO-15**					Analyst: JJ
Dichlorodifluoromethane(F-12)	< 1.0	1.0	ppbv		1	3/15/2010
Dichlorotetrafluoroethane(F-114)	< 0.5	0.5	ppbv		1	3/15/2010
Ethyl Acetate	< 0.5	0.5	ppbv		1	3/15/2010
Ethylbenzene	< 0.5	0.5	ppbv		1	3/15/2010
Heptane	< 0.5	0.5	ppbv		1	3/15/2010
Hexachlorobutadiene	< 1.0	1.0	ppbv		1	3/15/2010
Hexane	< 0.5	0.5	ppbv		1	3/15/2010
m&p-Xylene	< 1.0	1.0	ppbv		1	3/15/2010
Methyl tert-butyl ether	< 1.0	1.0	ppbv		1	3/15/2010
Methylene chloride	< 0.5	0.5	ppbv		1	3/15/2010
o-Xylene	< 0.5	0.5	ppbv		1	3/15/2010
Propene (Propylene)	< 0.5	0.5	ppbv		1	3/15/2010
Styrene	< 0.5	0.5	ppbv		1	3/15/2010
Tetrachloroethene	< 0.5	0.5	ppbv		1	3/15/2010
Tetrahydrofuran	< 2.0	2.0	ppbv		1	3/15/2010
Toluene	< 0.5	0.5	ppbv		1	3/15/2010
trans-1,2-Dichloroethene	< 0.5	0.5	ppbv		1	3/15/2010
trans-1,3-Dichloropropene	< 0.5	0.5	ppbv		1	3/15/2010
Trichloroethene	< 0.5	0.5	ppbv		1	3/15/2010
Trichlorofluoromethane(F-11)	< 0.5	0.5	ppbv		1	3/15/2010
Trichlorotrifluoroethane(F-113)	< 0.5	0.5	ppbv		1	3/15/2010
Vinyl acetate	< 0.5	0.5	ppbv		1	3/15/2010
Vinyl chloride	< 0.5	0.5	ppbv		1	3/15/2010
Surr: 4-Bromofluorobenzene	90.3	70-130	%REC			

4620 E.Elwood Street, Suite 13, Phoenix AZ 85040 Phone: 480-968-5888, Fax: 480-966-1888

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: March 24, 2010

Client: Geotrans, Inc
Project: 20th & Factor
Lab Order: 1003104
Lab ID: Blank 0316

Client Sample ID:
Tag Number:
Collection:
Matrix:

Analyses	Result	Limit	Unit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR	**TO-15**					Analyst: JJ
1,1,1-Trichloroethane	< 0.5	0.5	ppbv		1	3/16/2010
1,1,2,2-Tetrachloroethane	< 0.5	0.5	ppbv		1	3/16/2010
1,1,2-Trichloroethane	< 0.5	0.5	ppbv		1	3/16/2010
1,1-Dichloroethane	< 0.5	0.5	ppbv		1	3/16/2010
1,1-Dichloroethene	< 0.5	0.5	ppbv		1	3/16/2010
1,2,4-Trichlorobenzene	< 2.0	2.0	ppbv		1	3/16/2010
1,2,4-Trimethylbenzene	< 0.5	0.5	ppbv		1	3/16/2010
1,2-Dibromoethane	< 0.5	0.5	ppbv		1	3/16/2010
1,2-Dichlorobenzene	< 0.5	0.5	ppbv		1	3/16/2010
1,2-Dichloroethane	< 0.5	0.5	ppbv		1	3/16/2010
1,2-Dichloropropane	< 0.5	0.5	ppbv		1	3/16/2010
1,3,5-Trimethylbenzene	< 0.5	0.5	ppbv		1	3/16/2010
1,3-Butadiene	< 0.5	0.5	ppbv		1	3/16/2010
1,3-Dichlorobenzene	< 0.5	0.5	ppbv		1	3/16/2010
1,4-Dichlorobenzene	< 0.5	0.5	ppbv		1	3/16/2010
1,4-Dioxane	< 2.0	2.0	ppbv		1	3/16/2010
2,2,4-Trimethylpentane	< 0.5	0.5	ppbv		1	3/16/2010
2-Butanone (MEK)	< 1.0	1.0	ppbv		1	3/16/2010
2-Hexanone	< 1.0	1.0	ppbv		1	3/16/2010
2-Propanol (IPA)	< 2.0	2.0	ppbv		1	3/16/2010
4-Ethyltoluene	< 0.5	0.5	ppbv		1	3/16/2010
4-Methyl-2-pentanone (MIK)	< 1.0	1.0	ppbv		1	3/16/2010
Acetone	< 5.0	5.0	ppbv		1	3/16/2010
Allyl chloride	< 0.5	0.5	ppbv		1	3/16/2010
Benzene	< 0.5	0.5	ppbv		1	3/16/2010
Benzyl chloride	< 2.0	2.0	ppbv		1	3/16/2010
Bromodichloromethane	< 0.5	0.5	ppbv		1	3/16/2010
Bromoethene(Vinyl Bromide)	< 0.5	0.5	ppbv		1	3/16/2010
Bromoform	< 0.5	0.5	ppbv		1	3/16/2010
Bromomethane	< 0.5	0.5	ppbv		1	3/16/2010
Carbon disulfide	< 0.5	0.5	ppbv		1	3/16/2010
Carbon tetrachloride	< 0.5	0.5	ppbv		1	3/16/2010
Chlorobenzene	< 0.5	0.5	ppbv		1	3/16/2010
Chloroethane	< 0.5	0.5	ppbv		1	3/16/2010
Chloroform	< 0.5	0.5	ppbv		1	3/16/2010
Chloromethane	< 1.0	1.0	ppbv		1	3/16/2010
cis-1,2-Dichloroethene	< 0.5	0.5	ppbv		1	3/16/2010
cis-1,3-Dichloropropene	< 0.5	0.5	ppbv		1	3/16/2010
Cyclohexane	< 0.5	0.5	ppbv		1	3/16/2010
Dibromochloromethane	< 0.5	0.5	ppbv		1	3/16/2010

4620 E.Elwood Street, Suite 13, Phoenix AZ 85040 Phone: 480-968-5888, Fax: 480-966-1888

Airtech Environmental Laboratories - AZ 0740

Date: March 24, 2010

Client: Geotrans, Inc
Project: 20th & Factor
Lab Order: 1003104
Lab ID: Blank 0316

Client Sample ID:
Tag Number:
Collection:
Matrix:

Analyses	Result	Limit	Unit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR	**TO-15**					Analyst: JJ
Dichlorodifluoromethane(F-12)	< 1.0	1.0	ppbv		1	3/16/2010
Dichlorotetrafluoroethane(F-114)	< 0.5	0.5	ppbv		1	3/16/2010
Ethyl Acetate	< 0.5	0.5	ppbv		1	3/16/2010
Ethylbenzene	< 0.5	0.5	ppbv		1	3/16/2010
Heptane	< 0.5	0.5	ppbv		1	3/16/2010
Hexachlorobutadiene	< 1.0	1.0	ppbv		1	3/16/2010
Hexane	< 0.5	0.5	ppbv		1	3/16/2010
m&p-Xylene	< 1.0	1.0	ppbv		1	3/16/2010
Methyl tert-butyl ether	< 1.0	1.0	ppbv		1	3/16/2010
Methylene chloride	< 0.5	0.5	ppbv		1	3/16/2010
o-Xylene	< 0.5	0.5	ppbv		1	3/16/2010
Propene (Propylene)	< 0.5	0.5	ppbv		1	3/16/2010
Styrene	< 0.5	0.5	ppbv		1	3/16/2010
Tetrachloroethene	< 0.5	0.5	ppbv		1	3/16/2010
Tetrahydrofuran	< 2.0	2.0	ppbv		1	3/16/2010
Toluene	< 0.5	0.5	ppbv		1	3/16/2010
trans-1,2-Dichloroethene	< 0.5	0.5	ppbv		1	3/16/2010
trans-1,3-Dichloropropene	< 0.5	0.5	ppbv		1	3/16/2010
Trichloroethene	< 0.5	0.5	ppbv		1	3/16/2010
Trichlorofluoromethane(F-11)	< 0.5	0.5	ppbv		1	3/16/2010
Trichlorotrifluoroethane(F-113)	< 0.5	0.5	ppbv		1	3/16/2010
Vinyl acetate	< 0.5	0.5	ppbv		1	3/16/2010
Vinyl chloride	< 0.5	0.5	ppbv		1	3/16/2010
Surr: 4-Bromofluorobenzene	92	70-130	%REC			

4620 E.Elwood Street, Suite 13, Phoenix AZ 85040 Phone: 480-968-5888, Fax: 480-966-1888

Airtech Environmental Laboratories (AEL) - AZ 0740

Date: #REF!

Client:	Geotrans, Inc	**Client Sample ID:**	
Project:	20th & Factor	**Tag Number:**	
Lab Order:	1003104	**Collection:**	
Lab ID:	Blank 0323	**Matrix:**	

Analyses	Result	Limit	Unit	Qual	DF	Date Analyzed
VOLATILE ORGANICS IN AIR	**TO-15**					Analyst: JJ
Acetone	< 5.0	5.0	ppbv		1	3/23/2010
Surr: 4-Bromofluorobenzene	114	70-130	%REC			

Airtech Environmental Laboratories (AEL) - AZ 0740

Client: Geotrans, Inc
Project: 20th & Factor
Lab Order: 1003104
Lab ID: Standards

Client Sample ID:
Project Number:
Collection:
Matrix:

AEL ID#	STD Name	Vedor	SGI Order#	Description	CONC.	Accuracy	Exp.Date
S-090930-02	Stock	Spectra Gases	151778	TO-14 39 Analytes	1.0 ppmv	± 5%	9/22/2010
S-090930-03	Stock	Spectra Gases	152837	TO-15 25 Analytes	1.0 ppmv	± 5%	9/24/2010
S-091123-01	Stock	Spectra Gases	155562	TO-15 IS 4 Compounds	1.0 ppmv	± 5%	11/20/2010
A-100223-02	Working Std	AEL Dilution		TO-15 64 Analytes	20 ppbv	± 5%	5/23/2010
A-100315-01	Working IS	AEL Dilution		TO-15 IS 4 Compounds	25 ppbv	± 5%	6/15/2010

4620 E.Elwood Street, Suite 13, Phoenix AZ 85040
Phone: 480-968-5888, Fax: 480-966-1888

Airtech Environmental Laboratories (AEL) - AZ 0740

Client: Geotrans, Inc
Project: 20th & Factor
Lab Order: 1003104
Lab ID: Sampling Kits QC

Client Sample ID:
Tag Number:
Collection:
Matrix:

		Canister				Time Integrated Sampler				Grab Sampler	
AEL#	Client ID	SN#	Clean Batch#	Vacuum before sampled Hg inch	Vacuum after sampled psia	SN#	Clean Batch#	Cal. Flow Rate before sampled ml/min	Flow Rate after sampled ml/min	SN#	Clean Batch#
1003104-01	HI-SVMW2A-030810	1830	1002-01	29.5	14.62					073	0912-02
1003104-02	HI-SVMW2B-030810	1838	1002-01	29.5	14.50					066	1002-01
1003104-03	HI-SVMW6A-030810	1844	1002-03	29.1	14.76					025	1002-03
1003104-04	HI-SVMW6B-030810	1813	1002-03	29.1	14.68					076	1002-03
1003104-05	HI-SVMW7B-030810	1818	1002-04	29.0	15.10					089	0912-02
1003104-06	HI-SVMW7A-030810	1850	1002-05	29.1	15.08					080	1002-03
1003104-07	HI-SVMW5A-030910	1831	1002-05	29.1	15.39					082	1002-01
1003104-08	HI-SVMW5B-030910	1852	1002-04	29.0	15.36					040	1002-03
1003104-09	HI-SVMW3A-030910	1869	1002-01	29.5	14.82					034	0911-03
1003104-10	HI-SVMW3B-030910	1857	1002-01	29.5	14.92					060	1002-01
1003104-11	HI-SVMW12A-030910	1835	1002-01	29.5	13.18					041	0911-03
1003104-12	HI-SVMW12B-030910	0197	1002-01	29.4	14.38					075	1002-01
1003104-13	HI-SVMW11A-030910	1800	1002-01	29.4	14.94					081	1002-01
1003104-14	HI-SVMW11B-030910	1867	1002-01	29.4	15.15					072	1002-01
1003104-15	HI-SVMW4A-031010	0223	1002-01	29.4	15.74					088	0912-02
1003104-16	HI-SVMW4B-031010	1876	1002-02	29.4	15.78					056	1002-01
1003104-17	HI-SVMW8-5-031010	1866	1002-01	29.5	15.03					067	1002-01
1003104-18	HI-SVMW8-10-031010	1853	1002-02	29.3	14.67					026	0911-03
1003104-19	HI-SVMW8-20-031010	1816	1002-05	29.1	14.53					068	1002-03
1003104-20	HI-SVMW8-30-031010	1871	1002-04	29.1	14.54					085	1002-03
1003104-21	HI-SVMW8-40-031010	1843	1002-04	29.0	14.41					087	1002-03
1003104-22	HI-SVMW8-50-031010	1808	1003-03	29.2	14.38					058	1001-02
1003104-23	HI-SVMW8-60-031110	1812	1002-05	29.1	15.39					032	0911-03
1003104-24	HI-SVMW8-70-031110	1790	1002-04	29.1	15.37					044	0911-03

Airtech Environmental Laboratories (AEL) - AZ 0740

Client: Geotrans, Inc
Project: 20th & Factor
Lab Order: 1003104
Lab ID: Sampling Kits QC

Client Sample ID:
Tag Number:
Collection:
Matrix:

		Canister				Time Integrated Sampler				Grab Sampler	
AEL#	Client ID	SN#	Clean Batch#	Vacuum before sampled Hg inch	Vacuum after sampled psia	SN#	Clean Batch#	Cal. Flow Rate before sampled ml/min	Flow Rate after sampled ml/min	SN#	Clean Batch#
1003104-25	HI-SVMW1-20-031110	1854	1003-03	29.1	14.86					006	0911-03
1003104-26	HI-SVMW1-35-031110	1873	1002-03	28.9	14.87					057	1002-03
1003104-27	HI-SVMW1-50-031110	1817	1002-04	29.0	14.73					063	1002-03
1003104-28	HI-SVMW1-65-031110	0743	1002-04	29.0	14.75					083	1002-01
1003104-29	HI-SVMW10A-031110	1810	1002-05	29.0	14.57					053	1002-03
1003104-30	HI-SVMW10B-031110	1806	1002-04	29.0	14.73					078	0912-02
1003104-31	HI-SVMW9A-031210	0265	1002-05	29.2	15.58					055	1002-01
1003104-32	HI-SVMW9B-031210	0272	1002-05	29.2	15.60					054	1002-03

I Introduction

II Team Organization

III Staff & Qualifications

IV Project Experience

V Knowledge of Regulations and Statutes

V Company Stability

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

4625 East Cotton Center Blvd. Ste 189 Phoenix, AZ 85040 * (602) 437-3340 * Fax (602) 454-9303

March 18, 2010

LABORATORY REPORT

Client:
GeoTrans
4801 E. Washington St. Suite 260
Phoenix, AZ 85034
Attn: Jasenka Zbozinek

Work Order:	PTC0695
Project Name:	ADEQ Yuma
Project Number:	20th & Factor WQARF / 1303.036
Date Received:	03/12/10
Final Report:	03/18/10 10:22

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica.

TestAmerica Laboratories, Inc., Phoenix Laboratory certifies that the analytical results contained herein apply only to the specific sample(s) analyzed.

This entire report was reviewed and approved for release.

If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-(602)437-3340

Analyses included in this report were performed by the laboratory shown at the top of this report unless otherwise indicated.

CASE NARRATIVE: SAMPLE RECEIPT: Samples were received intact, at 26.2°C and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the TestAmerica Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: No significant observations were made.

SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.

Approved By:

Denise Harrington

Denise Harrington
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
4625 East Cotton Center Blvd. Ste 189 Phoenix, AZ 85040 * (602) 437-3340 * Fax (602) 454-9303

GeoTrans 4801 E. Washington St. Suite 260 Phoenix, AZ 85034 Jasenka Zbozinek	Work Order: Project: Project Number:	PTC0695 ADEQ Yuma 20th & Factor WQARF / 1303.036	Received: Reported:	03/12/10 03/18/10 10:22

SAMPLE IDENTIFICATION	LAB NUMBER	COLLECTION DATE	CONTAINER TYPE
HI-SVMW2A-030810	PTC0695-01	03/08/10	Soda Lime tube, 200/400 mg
HI-SVMW2B-030810	PTC0695-02	03/08/10	Soda Lime tube, 200/400 mg
HI-SVMW6A-030810	PTC0695-03	03/08/10	Soda Lime tube, 200/400 mg
HI-SVMW6B-030810	PTC0695-04	03/08/10	Soda Lime tube, 200/400 mg
HI-SVMW7A-030810	PTC0695-05	03/08/10	Soda Lime tube, 200/400 mg
HI-SVMW7B-030810	PTC0695-06	03/08/10	Soda Lime tube, 200/400 mg
HI-SVMW5A-030910	PTC0695-07	03/09/10	Soda Lime tube, 200/400 mg
HI-SVMW5B-030910	PTC0695-08	03/09/10	Soda Lime tube, 200/400 mg
HI-SVMW3A-030910	PTC0695-09	03/09/10	Soda Lime tube, 200/400 mg
HI-SVMW3B-030910	PTC0695-10	03/09/10	Soda Lime tube, 200/400 mg
HI-SVMW12A-030910	PTC0695-11	03/09/10	Soda Lime tube, 200/400 mg
HI-SVMW12B-030910	PTC0695-12	03/09/10	Soda Lime tube, 200/400 mg
HI-SVMW11A-030910	PTC0695-13	03/09/10	Soda Lime tube, 200/400 mg
HI-SVMW11B-030910	PTC0695-14	03/09/10	Soda Lime tube, 200/400 mg
HI-SVMW4A-031010	PTC0695-15	03/10/10	Soda Lime tube, 200/400 mg
HI-SVMW4B-031010	PTC0695-16	03/10/10	Soda Lime tube, 200/400 mg
HI-SVMW8-5-031010	PTC0695-17	03/10/10	Soda Lime tube, 200/400 mg
HI-SVMW8-10-031010	PTC0695-18	03/10/10	Soda Lime tube, 200/400 mg
HI-SVMW8-20-031010	PTC0695-19	03/10/10	Soda Lime tube, 200/400 mg
HI-SVMW8-30-031010	PTC0695-20	03/10/10	Soda Lime tube, 200/400 mg
HI-SVMW8-40-031010	PTC0695-21	03/10/10	Soda Lime tube, 200/400 mg
HI-SVMW8-50-031010	PTC0695-22	03/10/10	Soda Lime tube, 200/400 mg
HI-SVMW8-60-031110	PTC0695-23	03/11/10	Soda Lime tube, 200/400 mg
HI-SVMW8-70-031110	PTC0695-24	03/11/10	Soda Lime tube, 200/400 mg
HI-SVMW1-20-031110	PTC0695-25	03/11/10	Soda Lime tube, 200/400 mg
HI-SVMW1-35-031110	PTC0695-26	03/11/10	Soda Lime tube, 200/400 mg
HI-SVMW1-50-031110	PTC0695-27	03/11/10	Soda Lime tube, 200/400 mg
HI-SVMW1-65-031110	PTC0695-28	03/11/10	Soda Lime tube, 200/400 mg
HI-SVMW10A-031110	PTC0695-29	03/11/10	Soda Lime tube, 200/400 mg
HI-SVMW10B-031110	PTC0695-30	03/11/10	Soda Lime tube, 200/400 mg
HI-SVMW9A-031210	PTC0695-31	03/12/10	Soda Lime tube, 200/400 mg
HI-SVMW9B-031210	PTC0695-32	03/12/10	Soda Lime tube, 200/400 mg

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
4625 East Cotton Center Blvd. Ste 189 Phoenix, AZ 85040 * (602) 437-3340 * Fax (602) 454-9303

GeoTrans 4801 E. Washington St. Suite 260 Phoenix, AZ 85034 Jasenka Zbozinek	Work Order: PTC0695 Project: ADEQ Yuma Project Number: 20th & Factor WQARF / 1303.036	Received: 03/12/10 Reported: 03/18/10 10:22	

ANALYTICAL REPORT

Analyte	Result			Qual	Date Analyzed	Analyst	Rpt Limit (ug, Total)	Method
Hydrogen Cyanide by NIOSH 6010								
Sample ID: PTC0695-01 (HI-SVMW2A-030810)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/08/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 15:43**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	—		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-02 (HI-SVMW2B-030810)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/08/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 15:43**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	—		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-03 (HI-SVMW6A-030810)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/08/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 15:43**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	—		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-04 (HI-SVMW6B-030810)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/08/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 15:43**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	—		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-05 (HI-SVMW7A-030810)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/08/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 15:43**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	—		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-06 (HI-SVMW7B-030810)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/08/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 15:43**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	—		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-07 (HI-SVMW5A-030910)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/09/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 15:43**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	—		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-08 (HI-SVMW5B-030910)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/09/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 15:43**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	—		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-09 (HI-SVMW3A-030910)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/09/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 15:43**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	—		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-10 (HI-SVMW3B-030910)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/09/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 15:43**	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
4625 East Cotton Center Blvd. Ste 189 Phoenix, AZ 85040 * (602) 437-3340 * Fax (602) 454-9303

GeoTrans 4801 E. Washington St. Suite 260 Phoenix, AZ 85034 Jasenka Zbozinek	Work Order: PTC0695 Project: ADEQ Yuma Project Number: 20th & Factor WQARF / 1303.036	Received: 03/12/10 Reported: 03/18/10 10:22	

Analyte	Result			Qual	Date Analyzed	Analyst	Rpt Limit (ug, Total)	Method
Hydrogen Cyanide by NIOSH 6010 - cont.								
Sample ID: PTC0695-10 (HI-SVMW3B-030910) - cont.		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/09/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 15:43**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	—		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-11 (HI-SVMW12A-030910)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/09/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 15:43**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	—		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-12 (HI-SVMW12B-030910)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/09/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 16:32**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	—		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-13 (HI-SVMW11A-030910)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/09/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 16:32**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	—		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-14 (HI-SVMW11B-030910)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/09/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 16:32**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	—		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-15 (HI-SVMW4A-031010)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/10/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 16:32**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	—		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-16 (HI-SVMW4B-031010)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/10/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 16:32**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	—		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-17 (HI-SVMW8-5-031010)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/10/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 16:32**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	—		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-18 (HI-SVMW8-10-031010)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/10/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 16:32**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	—		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-19 (HI-SVMW8-20-031010)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/10/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 16:32**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	—		3/17/2010	ZN	0.212	NIOSH 6010

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
4625 East Cotton Center Blvd. Ste 189 Phoenix, AZ 85040 * (602) 437-3340 * Fax (602) 454-9303

GeoTrans 4801 E. Washington St. Suite 260 Phoenix, AZ 85034 Jasenka Zbozinek	Work Order: PTC0695 Project: ADEQ Yuma Project Number: 20th & Factor WQARF / 1303.036	Received: 03/12/10 Reported: 03/18/10 10:22	

Analyte	Result			Qual	Date Analyzed	Analyst	Rpt Limit (ug, Total)	Method
Hydrogen Cyanide by NIOSH 6010 - cont.								
Sample ID: PTC0695-20 (HI-SVMW8-30-031010)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/10/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 16:32**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	—		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-21 (HI-SVMW8-40-031010)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/10/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 16:38**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	—		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-22 (HI-SVMW8-50-031010)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/10/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 16:38**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	—		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-23 (HI-SVMW8-60-031110)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/11/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 16:38**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	---		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-24 (HI-SVMW8-70-031110)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/11/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 16:38**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	—		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-25 (HI-SVMW1-20-031110)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/11/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 16:38**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	---		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-26 (HI-SVMW1-35-031110)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/11/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 16:38**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	---		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-27 (HI-SVMW1-50-031110)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/11/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 16:38**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	—		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-28 (HI-SVMW1-65-031110)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/11/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 16:38**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	---		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-29 (HI-SVMW10A-031110)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/11/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 16:38**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	—		3/17/2010	ZN	0.212	NIOSH 6010

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
4625 East Cotton Center Blvd. Ste 189 Phoenix, AZ 85040 * (602) 437-3340 * Fax (602) 454-9303

GeoTrans 4801 E. Washington St. Suite 260 Phoenix, AZ 85034 Jasenka Zbozinek	Work Order: PTC0695 Project: ADEQ Yuma Project Number: 20th & Factor WQARF / 1303.036	Received: 03/12/10 Reported: 03/18/10 10:22	

Analyte	Result			Qual	Date Analyzed	Analyst	Rpt Limit (ug, Total)	Method
Hydrogen Cyanide by NIOSH 6010 - cont.								
Sample ID: PTC0695-30 (HI-SVMW10B-031110)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/11/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 16:38**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	---		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-31 (HI-SVMW9A-031210)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/12/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 16:38**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	---		3/17/2010	ZN	0.212	NIOSH 6010
Sample ID: PTC0695-32 (HI-SVMW9B-031210)		**Tube**		**Sample Air Volume:27L**			**Sampled: 03/12/10**	
	ug, Total	mg/m3	ppm				**Prepared: 03/17/10 16:38**	
Hydrogen Cyanide	<0.210	<0.007778	<0.007035		3/17/2010	ZN	0.210	NIOSH 6010
Hydrogen Cyanide-Particulate	<0.212	<0.007852	—		3/17/2010	ZN	0.212	NIOSH 6010

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
4625 East Cotton Center Blvd. Ste 189 Phoenix, AZ 85040 * (602) 437-3340 * Fax (602) 454-9303

GeoTrans 4801 E. Washington St. Suite 260 Phoenix, AZ 85034 Jasenka Zbozinek	Work Order: PTC0695 Project: ADEQ Yuma Project Number: 20th & Factor WQARF / 1303.036	Received: 03/12/10 Reported: 03/18/10 10:22	

PROJECT QUALITY CONTROL DATA

Blank

Analyte	Blank Value	Q	Units	Q.C. Batch	Target Range	Lab Number	Analyzed Date
Hydrogen Cyanide by NIOSH 6010							
10C0568-BLK1							
Hydrogen Cyanide-Particulate	<0.212		ug, Total	10C0568		10C0568-BLK1	03-17-2010
10C0569-BLK1							
Hydrogen Cyanide - Back	<0.210		ug, Total	10C0569		10C0569-BLK1	03-17-2010
Hydrogen Cyanide	<0.210		ug, Total	10C0569		10C0569-BLK1	03-17-2010

LCS

Analyte	Known Val.	Analyzed Val	Q	Units	% Rec.	Target Range	Batch	Analyzed Date
Hydrogen Cyanide by NIOSH 6010								
10C0569-BS1								
Hydrogen Cyanide	0.624	0.5772		ug, Total	93%	70-130	10C0569	03-17-2010

LCS Dup

Analyte	Orig. Val.	Duplicate	Q	Units	Spike Conc	% Rec.	Target Range	RPD	Limit	Batch	Sample Duplicated	Analyzed Date
Hydrogen Cyanide by NIOSH 6010												
10C0569-BSD1												
Hydrogen Cyanide		0.6402		ug, Total	0.624	103%	70-130	10.3	30	10C0569		03-17-2010

4625 East Cotton Center Blvd. Ste 189 Phoenix, AZ 85040 * (602) 437-3340 * Fax (602) 454-9303

GeoTrans 4801 E. Washington St. Suite 260 Phoenix, AZ 85034 Jasenka Zbozinek	Work Order: Project: Project Number:	PTC0695 ADEQ Yuma 20th & Factor WQARF / 1303.036	Received: Reported:	03/12/10 03/18/10 10:22

CERTIFICATION SUMMARY

Analyses included in this report were performed by TestAmerica Phoenix, 4625 E. Cotton Center Boulevard, Building 3, Suite 189, Phoenix, AZ 85040.

TestAmerica Phoenix (Lab ID 154268) is accredited by the American Industrial Hygiene Association (AIHA) in the industrial hygiene program for the analytical techniques noted on the scope of accreditation for the following methods: NIOSH 0500, NIOSH 0600, NIOSH 1003, NIOSH 1005, NIOSH 1007, NIOSH 1010, NIOSH 1015, NIOSH 1022, NIOSH 1300, NIOSH 1400, NIOSH 1401, NIOSH 1403, NIOSH 1405, NIOSH 1450, NIOSH 1457, NIOSH 1500, NIOSH 1501, NIOSH 1550, NIOSH 1602, NIOSH 1604, NIOSH 1606, NIOSH 1609, NIOSH 1610, NIOSH 1611, NIOSH, 1613, NIOSH 1615, NIOSH 2000, NIOSH 2016, NIOSH 2532, NIOSH 2546, NIOSH 2551, NIOSH 5000, NIOSH 5503, NIOSH 5506, NIOSH 5600, NIOSH 6006, NIOSH 6009, NIOSH 6010, NIOSH 7300, NIOSH 7303, NIOSH 7600, NIOSH 7903, NIOSH 9100, NIOSH 9102, EPA IP-6A, EPA IP-6C, OSHA PV2120, OSHA 7, OSHA 42, OSHA 47, OSHA 48, OSHA 64, OSHA 69, OSHA 111, OSHA ID-140, OSHA ID-121, OSHA ID-125G, OSHA IS-215, OSHA 1001, OSHA 1002, OSHA 1003, OSHA 1004, OSHA 1005 and OSHA Chemical and Sampling Information for Silane. Volatile organic compounds on 3M Organic Vapor Monitors, Assay Technology Passive Monitors and SKC Passive Monitors. Formaldehyde and other aldehydes and ketones on Assay Technology Passive Monitor. Aldehydes and ketones by EPA TO-11A.

The TestAmerica Phoenix is also licensed through the State of Arizona (AZ0728) for EPA method TO-15.

TestAmerica Phoenix also holds NELAC accreditation through the State of Oregon (AZ100001) for the analytical techniques noted on the scope of accreditation and the State of New York (11898) for NIOSH 6009.

Samples were analyzed using methods outlined in references such as:

-OSHA - Occupational Safety and Health Administration, U. S. Department of Labor, OSHA Analytical Methods Manual.
-NIOSH - National Institute for Occupational Safety and Health, U. S. Department of Health and Human Services, NIOSH Manual of Analytical Methods, Fourth Edition, 1994, and Updates. NIOSH Method 7300 analyses are performed using a modified digestion procedure to eliminate the use of perchloric acid.
-EPA - U. S. Environmental Protection Agency, Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition, 1999.
-EPA - U. S. Environmental Protection Agency, Analytical Methods, Emission Measurement Center (EMC).

Analytical Comments:

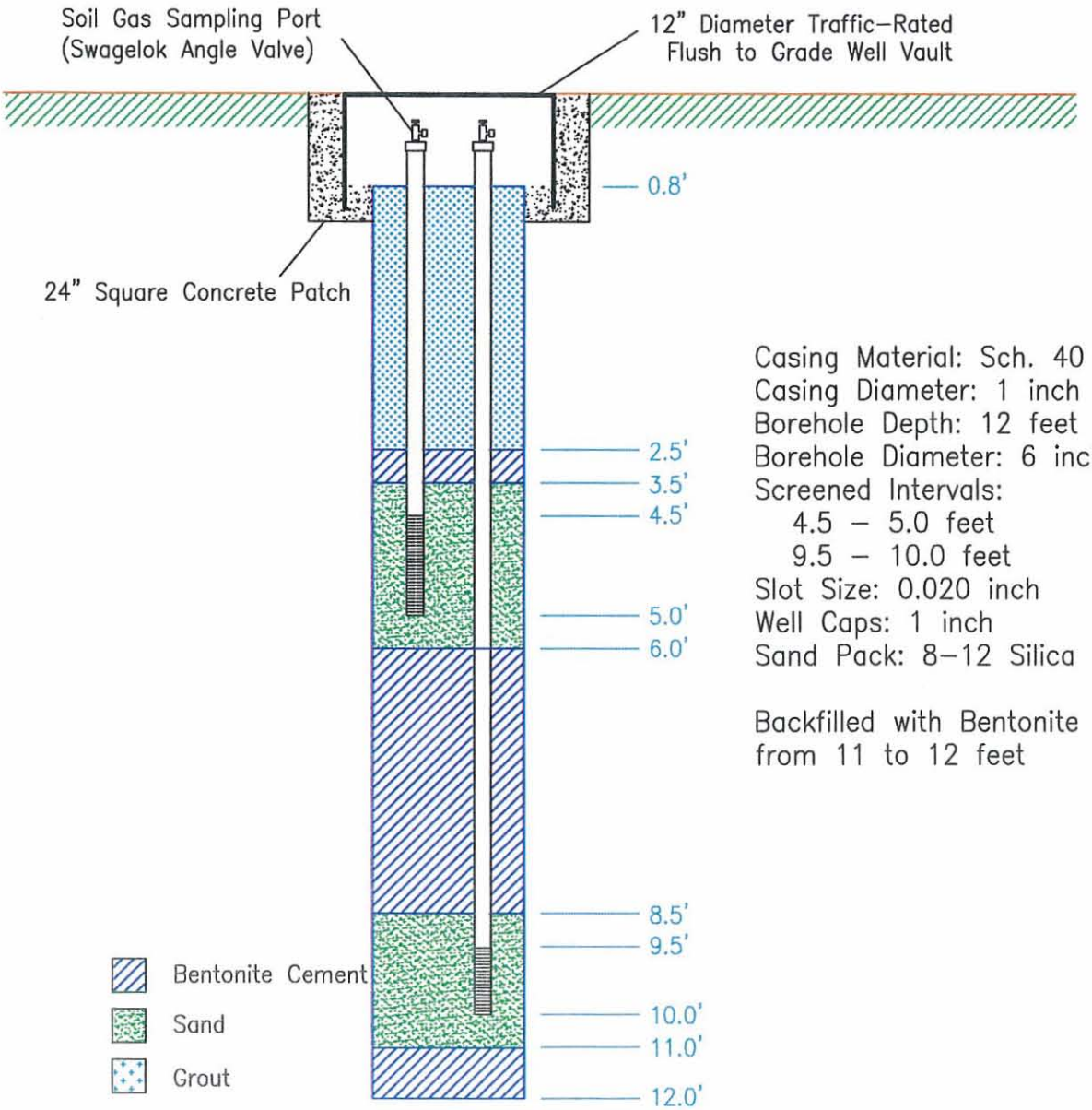
Unless otherwise noted, all method blanks and laboratory control spikes met method and/or laboratory quality control objectives for the analyses included in this report.

Unless otherwise noted, sample results have been corrected for method blank values.

For information concerning certifications of this facility or another TestAmerica facility, please visit our website at www.TestAmericaInc.com

APPENDIX B

Soil Vapor Monitoring Well Construction Diagrams



Casing Material: Sch. 40 PVC
Casing Diameter: 1 inch
Borehole Depth: 12 feet
Borehole Diameter: 6 inch
Screened Intervals:
4.5 – 5.0 feet
9.5 – 10.0 feet
Slot Size: 0.020 inch
Well Caps: 1 inch
Sand Pack: 8–12 Silica

Backfilled with Bentonite
from 11 to 12 feet

NOT TO SCALE

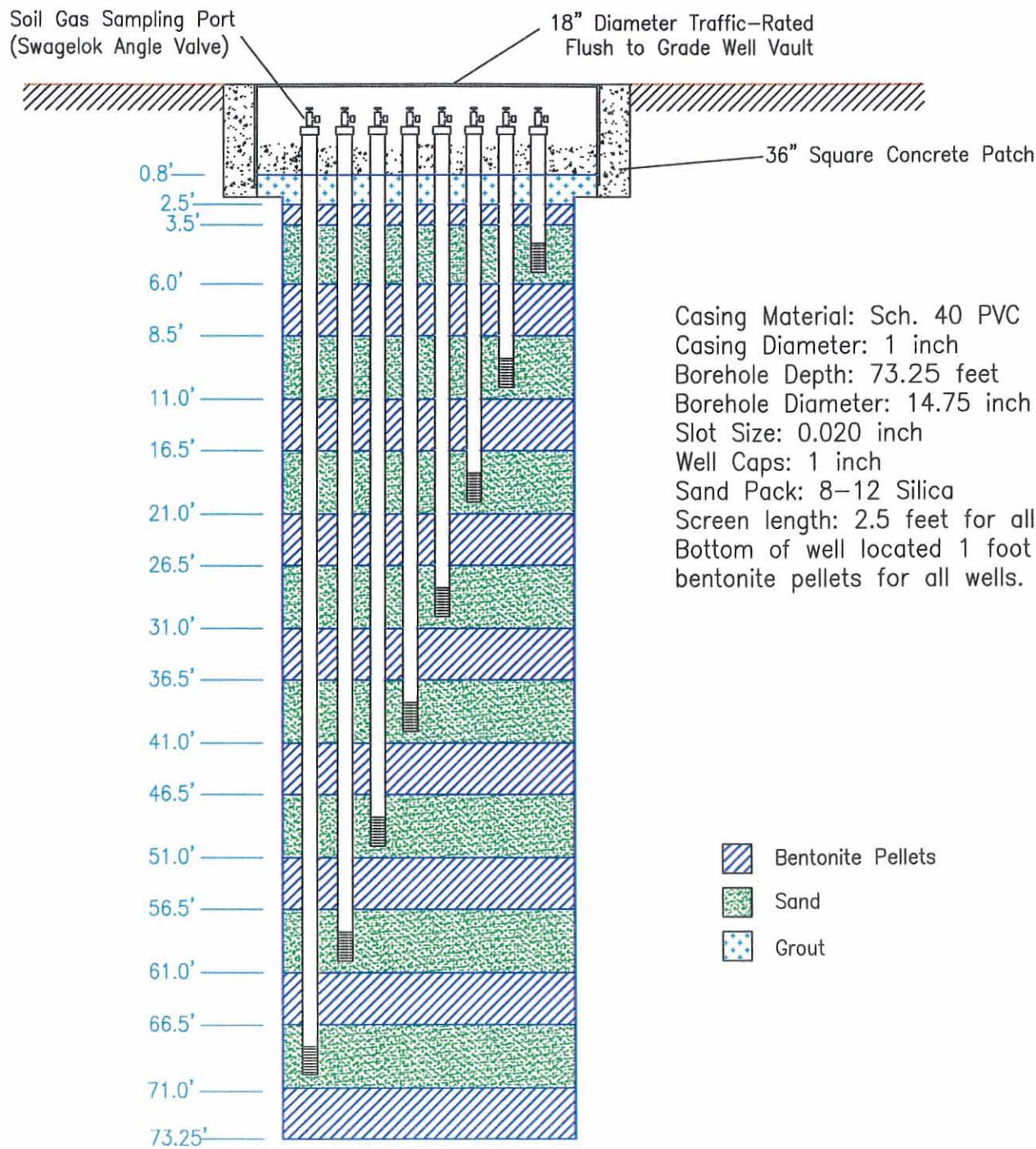
TITLE: WELL CONSTRUCTION DIAGRAM FOR DUAL NESTED SVMW–5A,B THROUGH SVMW–7A,B & SVMW–9A,B THROUGH SVMW–12A,B

LOCATION: 20TH AND FACTOR WQARF SITE, YUMA, ARIZONA

GeoTrans, Inc. A TETRA TECH COMPANY

CHECKED	JZ/MO
DRAFTED	BB
PROJECT	1303.036
DATE	4/2/1(

FIGURE B–1



NOT TO SCALE

TITLE:	WELL CONSTRUCTION DIAGRAM FOR MULTI-NESTED SVMW-8
LOCATION:	20TH AND FACTOR WQARF SITE, YUMA, ARIZONA

GeoTrans, Inc. A TETRA TECH COMPANY

CHECKED	JZ/MO	FIGURE
DRAFTED	BB	B-2
PROJECT	1303.036	
DATE	4/2/2010	

APPENDIX C

IDW Laboratory Reports and Disposal Documentation

Sunset Analytical
LABORATORY

2219 South 48th Street, Suite B
Tempe, Arizona 85282
(602) 437-0741
(6020 436-1456 Fax

Client:	Jasenka Zbozinek	Work Order #:	1003033
Company:	Geotrans, Inc.	Project Name:	20th & Factor WQARF
Address:	4801 E. Washington, Suite 260	Project Number:	NA
Address:	Phoenix, AZ 85034	Report date:	03/24/10

Dear Client:

Sunset Analytical Laboratory received two (2) samples for analysis on 03/12/10.

All analyses met laboratory QA/QC with any exceptions addressed in the Case Narrative.

Portions of this work order were subcontracted Environmental Science Corp.
Their entire report is included.

If you have any questions or concerns regarding your samples analysis, please contact the laboratory at (602) 437-0741.

Sincerely,

Vic Nielsen

ADHS License No. AZ0729

Sunset Analytical
LABORATORY

Client:	Jasenka Zbozinek	Work Order #:	1003033
Company:	Geotrans, Inc.	Project Name:	20th & Factor WQARF
Address:	4801 E. Washington, Suite 260	Project Number:	NA
Address:	Phoenix, AZ 85034	Received Date:	03/12/10

Case Narrative

All samples and QC associated with your samples met the quality control objectives. Any discrepancies will be addressed in this case narrative. Data qualifiers in this report are in accordance with ADEQ Data Qualifiers.

L2 The associated blank spike recovery was below laboratory acceptance limits.

Definitions

CCV	Continuing Calibration Verification: A solution of one or more compounds used to evaluate the performance of the instrument system with respect to a defined set of method criteria.
Duplicate	Two aliquots of the same sample analyzed separately with identical procedures. Analyses of the sample and duplicate indicates precision associated with laboratory procedures.
LCS	Laboratory Control Sample: An aliquot of a blank matrix to which known quantities of the method analytes are added in the laboratory. The LCS is analyzed exactly like a sample, and its purpose is to determine whether the methodology is in control, and whether the laboratory is making accurate and precise measurements.
LCSD	Laboratory Control Sample Duplicate: A duplicate analyses of an LCS. It is an indication of precision and accuracy.
MS	Matrix Spike: An aliquot of an environmental sample to which known quantities of the method analytes are added in the laboratory. The MS is analyzed exactly like a sample, and its purpose is to determine whether the sample matrix contributes bias to the analytical results.
MSD	Matrix Spike Duplicate: A duplicate analyses of an MS. It also is an indication of precision and accuracy.
RPD	Reported Percent Difference. RPD is simply a QC measurement used by taking the difference of two results, and dividing by the average of the two results, and converting that number to a percent.
Surrogate	A pure analyte, which is extremely unlikely to be found in any sample, and which is added to a sample in known amounts before analyzing. It is measured with the same procedures used to measure other sample components. The purpose of the surrogate is to monitor method performance with each sample.

Sunset Analytical
LABORATORY

Cllient:	Jasenka Zbozinek	Work Order #:	1003033
Company	Geotrans, Inc.	Project Name:	20th & Factor WQARF
Address:	4801 E. Washington, Suite 260	Project Number:	NA
Address:	Phoenix, AZ 85034	Received Date:	03/12/10

Sample Temperature	5.2
Samples received intact	Y
Correct container	Y
Correct preservation	Y

SAMPLE SUMMARY

LAB ID	CLIENT ID	METHOD	SAMPLED DATE	SAMPLED TIME
1003033-01	IDW-SB-031210	8260 / 8270	03/12/10	10:30:00
	IDW-SB-031210	8015 / 8310	03/12/10	10:30:00
	IDW-SB-031210	pH / 8 RCRA	03/12/10	10:30:00
	IDW-SB-031210	Ignitability	03/12/10	10:30:00
	IDW-SB-031210	Paint Filter	03/12/10	10:30:00
1003033-02	IDW-NB-031210	8260 / 8270	03/12/10	10:30:00
	IDW-NB-031210	8015 / 8310	03/12/10	10:30:00
	IDW-NB-031210	pH / 8 RCRA	03/12/10	10:30:00
	IDW-NB-031210	Ignitability	03/12/10	10:30:00
	IDW-NB-031210	Paint Filter	03/12/10	10:30:00

Sunset Analytical
LABORATORY

Sample Report - 8260 Soil

Lab ID:	1003033-01	**Sample Date:**	03/12/10
Client ID:	IDW-SB-031210	**Sample Time:**	10:30:00
Project Name:	20th & Factor WQARF	**Analysis Date:**	03/20/10
Analyst:	BP	**Batch ID:**	S031210A

Compound	Conc.	Units	Dil	Qual.
1,1,1,2-Tetrachloroethane	<0.05	mg/Kg	1	
1,1,1-Trichloroethane	<0.05	mg/Kg	1	
1,1,2,2-Tetrachloroethane	<0.05	mg/Kg	1	
1,1,2-Trichloroethane	<0.05	mg/Kg	1	
1,1-Dichloroethane	<0.05	mg/Kg	1	
1,1-Dichloroethene	<0.05	mg/Kg	1	
1,1-Dichloropropene	<0.05	mg/Kg	1	
1,2,3-Trichlorobenzene	<0.10	mg/Kg	1	
1,2,3-Trichloropropane	<0.10	mg/Kg	1	
1,2,4-Trichlorobenzene	<0.10	mg/Kg	1	
1,2,4-Trimethylbenzene	**0.053**	mg/Kg	1	
1,3,5-Trimethylbenzene	<0.05	mg/Kg	1	
1,2-Dibromo-3-chloropropane	<0.50	mg/Kg	1	
1,2-Dibromoethane	<0.05	mg/Kg	1	
1,2-Dichlorobenzene	<0.05	mg/Kg	1	
1,2-Dichloroethane	<0.05	mg/Kg	1	
1,2-Dichloropropane	<0.05	mg/Kg	1	
1,3-Dichlorobenzene	<0.05	mg/Kg	1	
1,3-Dichloropropane	<0.05	mg/Kg	1	
1,4-Dichlorobenzene	<0.05	mg/Kg	1	
2,2-Dichloropropane	<0.10	mg/Kg	1	
2-Butanone	<0.25	mg/Kg	1	
2-Chloroethylvinyl ether	<0.25	mg/Kg	1	
2-Chlorotoluene	<0.05	mg/Kg	1	
2-Hexanone	<0.25	mg/Kg	1	
4-Chlorotoluene	<0.05	mg/Kg	1	
4-Isopropyltoluene	<0.05	mg/Kg	1	
4-Methyl-2-pentanone	<0.25	mg/Kg	1	
Acetone	<1.00	mg/Kg	1	
Benzene	<0.05	mg/Kg	1	
Bromobenzene	<0.05	mg/Kg	1	
Bromochloromethane	<0.05	mg/Kg	1	
Bromodichloromethane	<0.05	mg/Kg	1	
Bromoform	<0.25	mg/Kg	1	

Compound	Conc.	Units	Dil	Qual.
Bromomethane	<0.10	mg/Kg	1	L2
Carbon disulfide	<0.10	mg/Kg	1	
Carbon Tetrachloride	<0.05	mg/Kg	1	
Chlorobenzene	<0.05	mg/Kg	1	
Chloroethane	<0.05	mg/Kg	1	
Chloroform	<0.05	mg/Kg	1	
Chloromethane	<0.25	mg/Kg	1	
cis-1,2-Dichloroethene	<0.05	mg/Kg	1	
cis-1,3-Dichloropropene	<0.05	mg/Kg	1	
Dibromochloromethane	<0.05	mg/Kg	1	
Dibromomethane	<0.05	mg/Kg	1	
Dichlorodifluoromethane	<0.05	mg/Kg	1	L2
Ethylbenzene	<0.05	mg/Kg	1	
Hexachlorobutadiene	<0.10	mg/Kg	1	
Iodomethane	<0.25	mg/Kg	1	
Isopropylbenzene	<0.05	mg/Kg	1	
Methyl tert-butyl ether	<0.05	mg/Kg	1	
Methylene Chloride	<0.50	mg/Kg	1	
Naphthalene	<0.25	mg/Kg	1	
n-Butylbenzene	<0.05	mg/Kg	1	
n-Propylbenzene	<0.05	mg/Kg	1	
sec-Butylbenzene	<0.05	mg/Kg	1	
Styrene	<0.05	mg/Kg	1	
tert-Butylbenzene	<0.05	mg/Kg	1	
Tetrachloroethene	<0.05	mg/Kg	1	
Toluene	<0.05	mg/Kg	1	
trans-1,2-Dichloroethene	<0.05	mg/Kg	1	
trans-1,3-Dichloropropene	<0.05	mg/Kg	1	
Trichloroethene	<0.05	mg/Kg	1	
Trichlorofluoromethane	<0.05	mg/Kg	1	
Vinyl acetate	<0.05	mg/Kg	1	
Vinyl Chloride	<0.05	mg/Kg	1	
Xylenes, Total	<0.15	mg/Kg	1	

Surrogate	Rec	%	Qual.	Limits
Dibromofluoromethane	41.0	82.0		70-130
1,2-Dichloroethane-d4	43.8	87.5		51.9-184.1
Toluene-d8	47.5	95.0		70-130
4-Bromofluorobenzene	46.7	93.4		62.4-111.6

PRIVILEGED & CONFIDENTIAL

Sunset Analytical
LABORATORY

Sample Report - 8260 Soil

Lab ID:	1003033-02	**Sample Date:**	03/12/10
Client ID:	IDW-NB-031210	**Sample Time:**	10:30:00
Project Name:	20th & Factor WQARF	**Analysis Date:**	03/17/10
Analyst:	JJ	**Batch ID:**	S031210A

Compound	Conc.	Units	Dil	Qual.
1,1,1,2-Tetrachloroethane	<0.05	mg/Kg	1	
1,1,1-Trichloroethane	<0.05	mg/Kg	1	
1,1,2,2-Tetrachloroethane	<0.05	mg/Kg	1	
1,1,2-Trichloroethane	<0.05	mg/Kg	1	
1,1-Dichloroethane	<0.05	mg/Kg	1	
1,1-Dichloroethene	<0.05	mg/Kg	1	
1,1-Dichloropropene	<0.05	mg/Kg	1	
1,2,3-Trichlorobenzene	<0.10	mg/Kg	1	
1,2,3-Trichloropropane	<0.10	mg/Kg	1	
1,2,4-Trichlorobenzene	<0.10	mg/Kg	1	
1,2,4-Trimethylbenzene	<0.05	mg/Kg	1	
1,3,5-Trimethylbenzene	<0.05	mg/Kg	1	
1,2-Dibromo-3-chloropropane	<0.50	mg/Kg	1	
1,2-Dibromoethane	<0.05	mg/Kg	1	
1,2-Dichlorobenzene	<0.05	mg/Kg	1	
1,2-Dichloroethane	<0.05	mg/Kg	1	
1,2-Dichloropropane	<0.05	mg/Kg	1	
1,3-Dichlorobenzene	<0.05	mg/Kg	1	
1,3-Dichloropropane	<0.05	mg/Kg	1	
1,4-Dichlorobenzene	<0.05	mg/Kg	1	
2,2-Dichloropropane	<0.10	mg/Kg	1	
2-Butanone	<0.25	mg/Kg	1	
2-Chloroethylvinyl ether	<0.25	mg/Kg	1	
2-Chlorotoluene	<0.05	mg/Kg	1	
2-Hexanone	<0.25	mg/Kg	1	
4-Chlorotoluene	<0.05	mg/Kg	1	
4-Isopropyltoluene	<0.05	mg/Kg	1	
4-Methyl-2-pentanone	<0.25	mg/Kg	1	
Acetone	<1.00	mg/Kg	1	
Benzene	<0.05	mg/Kg	1	
Bromobenzene	<0.05	mg/Kg	1	
Bromochloromethane	<0.05	mg/Kg	1	
Bromodichloromethane	<0.05	mg/Kg	1	
Bromoform	<0.25	mg/Kg	1	

Compound	Conc.	Units	Dil	Qual.
Bromomethane	<0.10	mg/Kg	1	L2
Carbon disulfide	<0.10	mg/Kg	1	
Carbon Tetrachloride	<0.05	mg/Kg	1	
Chlorobenzene	<0.05	mg/Kg	1	
Chloroethane	<0.05	mg/Kg	1	
Chloroform	<0.05	mg/Kg	1	
Chloromethane	<0.25	mg/Kg	1	
cis-1,2-Dichloroethene	<0.05	mg/Kg	1	
cis-1,3-Dichloropropene	<0.05	mg/Kg	1	
Dibromochloromethane	<0.05	mg/Kg	1	
Dibromomethane	<0.05	mg/Kg	1	
Dichlorodifluoromethane	<0.05	mg/Kg	1	L2
Ethylbenzene	<0.05	mg/Kg	1	
Hexachlorobutadiene	<0.10	mg/Kg	1	
Iodomethane	<0.25	mg/Kg	1	
Isopropylbenzene	<0.05	mg/Kg	1	
Methyl tert-butyl ether	<0.05	mg/Kg	1	
Methylene Chloride	<0.50	mg/Kg	1	
Naphthalene	<0.25	mg/Kg	1	
n-Butylbenzene	<0.05	mg/Kg	1	
n-Propylbenzene	<0.05	mg/Kg	1	
sec-Butylbenzene	<0.05	mg/Kg	1	
Styrene	<0.05	mg/Kg	1	
tert-Butylbenzene	<0.05	mg/Kg	1	
Tetrachloroethene	<0.05	mg/Kg	1	
Toluene	<0.05	mg/Kg	1	
trans-1,2-Dichloroethene	<0.05	mg/Kg	1	
trans-1,3-Dichloropropene	<0.05	mg/Kg	1	
Trichloroethene	<0.05	mg/Kg	1	
Trichlorofluoromethane	<0.05	mg/Kg	1	
Vinyl acetate	<0.05	mg/Kg	1	
Vinyl Chloride	<0.05	mg/Kg	1	
Xylenes, Total	<0.15	mg/Kg	1	

Surrogate	Rec	%	Qual.	Limits
Dibromofluoromethane	42.7	85.3		70-130
1,2-Dichloroethane-d4	44.3	88.6		51.9-184.1
Toluene-d8	47.2	94.3		70-130
4-Bromofluorobenzene	46.3	92.5		62.4-111.6

PRIVILEGED & CONFIDENTIAL

Sunset Analytical
LABORATORY

Method Blank - 8260 Soil

Analysis Date: 03/17/10
Analyst: JJ
Work Order: 1003033
Batch ID: S031210A

Compound	Limits	Units	Qualifiers
1,1,1,2-Tetrachloroethane	<0.05	mg/Kg	
1,1,1-Trichloroethane	<0.05	mg/Kg	
1,1,2,2-Tetrachloroethane	<0.05	mg/Kg	
1,1,2-Trichloroethane	<0.05	mg/Kg	
1,1-Dichloroethane	<0.05	mg/Kg	
1,1-Dichloroethene	<0.05	mg/Kg	
1,1-Dichloropropene	<0.05	mg/Kg	
1,2,3-Trichlorobenzene	<0.10	mg/Kg	
1,2,3-Trichloropropane	<0.10	mg/Kg	
1,2,4-Trichlorobenzene	<0.10	mg/Kg	
1,2,4-Trimethylbenzene	<0.05	mg/Kg	
1,3,5-Trimethylbenzene	<0.05	mg/Kg	
1,2-Dibromo-3-chloropropane	<0.50	mg/Kg	
1,2-Dibromoethane	<0.05	mg/Kg	
1,2-Dichlorobenzene	<0.05	mg/Kg	
1,2-Dichloroethane	<0.05	mg/Kg	
1,2-Dichloropropane	<0.05	mg/Kg	
1,3-Dichlorobenzene	<0.05	mg/Kg	
1,3-Dichloropropane	<0.05	mg/Kg	
1,4-Dichlorobenzene	<0.05	mg/Kg	
2,2-Dichloropropane	<0.10	mg/Kg	
2-Butanone	<0.25	mg/Kg	
2-Chloroethylvinyl ether	<0.25	mg/Kg	
2-Chlorotoluene	<0.05	mg/Kg	
2-Hexanone	<0.25	mg/Kg	
4-Chlorotoluene	<0.05	mg/Kg	
4-Isopropyltoluene	<0.05	mg/Kg	
4-Methyl-2-pentanone	<0.25	mg/Kg	
Acetone	<1.00	mg/Kg	
Benzene	<0.05	mg/Kg	
Bromobenzene	<0.05	mg/Kg	
Bromochloromethane	<0.05	mg/Kg	
Bromodichloromethane	<0.05	mg/Kg	
Bromoform	<0.25	mg/Kg	

Compound	Limits	Units	Qualifiers
Bromomethane	<0.10	mg/Kg	
Carbon disulfide	<0.10	mg/Kg	
Carbon Tetrachloride	<0.05	mg/Kg	
Chlorobenzene	<0.05	mg/Kg	
Chloroethane	<0.05	mg/Kg	
Chloroform	<0.05	mg/Kg	
Chloromethane	<0.25	mg/Kg	
cis-1,2-Dichloroethene	<0.05	mg/Kg	
cis-1,3-Dichloropropene	<0.05	mg/Kg	
Dibromochloromethane	<0.05	mg/Kg	
Dibromomethane	<0.05	mg/Kg	
Dichlorodifluoromethane	<0.05	mg/Kg	
Ethylbenzene	<0.05	mg/Kg	
Hexachlorobutadiene	<0.10	mg/Kg	
Iodomethane	<0.25	mg/Kg	
Isopropylbenzene	<0.05	mg/Kg	
m,p-Xylene	<0.10	mg/Kg	
Methyl tert-butyl ether	<0.05	mg/Kg	
Methylene Chloride	<0.50	mg/Kg	
Naphthalene	<0.25	mg/Kg	
n-Butylbenzene	<0.05	mg/Kg	
n-Propylbenzene	<0.05	mg/Kg	
o-Xylene	<0.05	mg/Kg	
sec-Butylbenzene	<0.05	mg/Kg	
Styrene	<0.05	mg/Kg	
tert-Butylbenzene	<0.05	mg/Kg	
Tetrachloroethene	<0.05	mg/Kg	
Toluene	<0.05	mg/Kg	
trans-1,2-Dichloroethene	<0.05	mg/Kg	
trans-1,3-Dichloropropene	<0.05	mg/Kg	
Trichloroethene	<0.05	mg/Kg	
Trichlorofluoromethane	<0.05	mg/Kg	
Vinyl acetate	<0.05	mg/Kg	
Vinyl Chloride	<0.05	mg/Kg	

Surrogate	Conc. ug/L	Surr. %	Limits
Dibromofluoromethane	44.4	88.8	70-130
1,2-Dichloroethane-d4	46.5	92.9	51.9-184.1
Toluene-d4	49.7	99.3	70-130
4-Bromofluorobenzene	48.0	96.0	62.4-111.6

Sunset Analytical
LABORATORY

Method Blank - 8260 Soil

Analysis Date: 03/20/10
Analyst: JJ
Work Order: 1003033
Batch ID: S031210A

Compound	Limits	Units	Qualifiers
1,1,1,2-Tetrachloroethane	<0.05	mg/Kg	
1,1,1-Trichloroethane	<0.05	mg/Kg	
1,1,2,2-Tetrachloroethane	<0.05	mg/Kg	
1,1,2-Trichloroethane	<0.05	mg/Kg	
1,1-Dichloroethane	<0.05	mg/Kg	
1,1-Dichloroethene	<0.05	mg/Kg	
1,1-Dichloropropene	<0.05	mg/Kg	
1,2,3-Trichlorobenzene	<0.10	mg/Kg	
1,2,3-Trichloropropane	<0.10	mg/Kg	
1,2,4-Trichlorobenzene	<0.10	mg/Kg	
1,2,4-Trimethylbenzene	<0.05	mg/Kg	
1,3,5-Trimethylbenzene	<0.05	mg/Kg	
1,2-Dibromo-3-chloropropane	<0.50	mg/Kg	
1,2-Dibromoethane	<0.05	mg/Kg	
1,2-Dichlorobenzene	<0.05	mg/Kg	
1,2-Dichloroethane	<0.05	mg/Kg	
1,2-Dichloropropane	<0.05	mg/Kg	
1,3-Dichlorobenzene	<0.05	mg/Kg	
1,3-Dichloropropane	<0.05	mg/Kg	
1,4-Dichlorobenzene	<0.05	mg/Kg	
2,2-Dichloropropane	<0.10	mg/Kg	
2-Butanone	<0.25	mg/Kg	
2-Chloroethylvinyl ether	<0.25	mg/Kg	
2-Chlorotoluene	<0.05	mg/Kg	
2-Hexanone	<0.25	mg/Kg	
4-Chlorotoluene	<0.05	mg/Kg	
4-Isopropyltoluene	<0.05	mg/Kg	
4-Methyl-2-pentanone	<0.25	mg/Kg	
Acetone	<1.00	mg/Kg	
Benzene	<0.05	mg/Kg	
Bromobenzene	<0.05	mg/Kg	
Bromochloromethane	<0.05	mg/Kg	
Bromodichloromethane	<0.05	mg/Kg	
Bromoform	<0.25	mg/Kg	

Compound	Limits	Units	Qualifiers
Bromomethane	<0.10	mg/Kg	
Carbon disulfide	<0.10	mg/Kg	
Carbon Tetrachloride	<0.05	mg/Kg	
Chlorobenzene	<0.05	mg/Kg	
Chloroethane	<0.05	mg/Kg	
Chloroform	<0.05	mg/Kg	
Chloromethane	<0.25	mg/Kg	
cis-1,2-Dichloroethene	<0.05	mg/Kg	
cis-1,3-Dichloropropene	<0.05	mg/Kg	
Dibromochloromethane	<0.05	mg/Kg	
Dibromomethane	<0.05	mg/Kg	
Dichlorodifluoromethane	<0.05	mg/Kg	
Ethylbenzene	<0.05	mg/Kg	
Hexachlorobutadiene	<0.10	mg/Kg	
Iodomethane	<0.25	mg/Kg	
Isopropylbenzene	<0.05	mg/Kg	
m,p-Xylene	<0.10	mg/Kg	
Methyl tert-butyl ether	<0.05	mg/Kg	
Methylene Chloride	<0.50	mg/Kg	
Naphthalene	<0.25	mg/Kg	
n-Butylbenzene	<0.05	mg/Kg	
n-Propylbenzene	<0.05	mg/Kg	
o-Xylene	<0.05	mg/Kg	
sec-Butylbenzene	<0.05	mg/Kg	
Styrene	<0.05	mg/Kg	
tert-Butylbenzene	<0.05	mg/Kg	
Tetrachloroethene	<0.05	mg/Kg	
Toluene	<0.05	mg/Kg	
trans-1,2-Dichloroethene	<0.05	mg/Kg	
trans-1,3-Dichloropropene	<0.05	mg/Kg	
Trichloroethene	<0.05	mg/Kg	
Trichlorofluoromethane	<0.05	mg/Kg	
Vinyl acetate	<0.05	mg/Kg	
Vinyl Chloride	<0.05	mg/Kg	

Surrogate	Conc. ug/L	Surr. %	Limits
Dibromofluoromethane	44.0	88.1	70-130
1,2-Dichloroethane-d4	44.4	88.8	51.9-184.1
Toluene-d4	47.9	95.8	70-130
4-Bromofluorobenzene	47.7	95.3	62.4-111.6

Sunset Analytical
LABORATORY

Method Blank - 8260 Soil

Analysis Date: 03/23/10
Analyst: BP
Work Order: 1003033
Batch ID: S031210A

Compound	Limits	Units	Qualifiers
1,1,1,2-Tetrachloroethane	<0.05	mg/Kg	
1,1,1-Trichloroethane	<0.05	mg/Kg	
1,1,2,2-Tetrachloroethane	<0.05	mg/Kg	
1,1,2-Trichloroethane	<0.05	mg/Kg	
1,1-Dichloroethane	<0.05	mg/Kg	
1,1-Dichloroethene	<0.05	mg/Kg	
1,1-Dichloropropene	<0.05	mg/Kg	
1,2,3-Trichlorobenzene	<0.10	mg/Kg	
1,2,3-Trichloropropane	<0.10	mg/Kg	
1,2,4-Trichlorobenzene	<0.10	mg/Kg	
1,2,4-Trimethylbenzene	<0.05	mg/Kg	
1,3,5-Trimethylbenzene	<0.05	mg/Kg	
1,2-Dibromo-3-chloropropane	<0.50	mg/Kg	
1,2-Dibromoethane	<0.05	mg/Kg	
1,2-Dichlorobenzene	<0.05	mg/Kg	
1,2-Dichloroethane	<0.05	mg/Kg	
1,2-Dichloropropane	<0.05	mg/Kg	
1,3-Dichlorobenzene	<0.05	mg/Kg	
1,3-Dichloropropane	<0.05	mg/Kg	
1,4-Dichlorobenzene	<0.05	mg/Kg	
2,2-Dichloropropane	<0.10	mg/Kg	
2-Butanone	<0.25	mg/Kg	
2-Chloroethylvinyl ether	<0.25	mg/Kg	
2-Chlorotoluene	<0.05	mg/Kg	
2-Hexanone	<0.25	mg/Kg	
4-Chlorotoluene	<0.05	mg/Kg	
4-Isopropyltoluene	<0.05	mg/Kg	
4-Methyl-2-pentanone	<0.25	mg/Kg	
Acetone	<1.00	mg/Kg	
Benzene	<0.05	mg/Kg	
Bromobenzene	<0.05	mg/Kg	
Bromochloromethane	<0.05	mg/Kg	
Bromodichloromethane	<0.05	mg/Kg	
Bromoform	<0.25	mg/Kg	

Compound	Limits	Units	Qualifiers
Bromomethane	<0.10	mg/Kg	
Carbon disulfide	<0.10	mg/Kg	
Carbon Tetrachloride	<0.05	mg/Kg	
Chlorobenzene	<0.05	mg/Kg	
Chloroethane	<0.05	mg/Kg	
Chloroform	<0.05	mg/Kg	
Chloromethane	<0.25	mg/Kg	
cis-1,2-Dichloroethene	<0.05	mg/Kg	
cis-1,3-Dichloropropene	<0.05	mg/Kg	
Dibromochloromethane	<0.05	mg/Kg	
Dibromomethane	<0.05	mg/Kg	
Dichlorodifluoromethane	<0.05	mg/Kg	
Ethylbenzene	<0.05	mg/Kg	
Hexachlorobutadiene	<0.10	mg/Kg	
Iodomethane	<0.25	mg/Kg	
Isopropylbenzene	<0.05	mg/Kg	
m,p-Xylene	<0.10	mg/Kg	
Methyl tert-butyl ether	<0.05	mg/Kg	
Methylene Chloride	<0.50	mg/Kg	
Naphthalene	<0.25	mg/Kg	
n-Butylbenzene	<0.05	mg/Kg	
n-Propylbenzene	<0.05	mg/Kg	
o-Xylene	<0.05	mg/Kg	
sec-Butylbenzene	<0.05	mg/Kg	
Styrene	<0.05	mg/Kg	
tert-Butylbenzene	<0.05	mg/Kg	
Tetrachloroethene	<0.05	mg/Kg	
Toluene	<0.05	mg/Kg	
trans-1,2-Dichloroethene	<0.05	mg/Kg	
trans-1,3-Dichloropropene	<0.05	mg/Kg	
Trichloroethene	<0.05	mg/Kg	
Trichlorofluoromethane	<0.05	mg/Kg	
Vinyl acetate	<0.05	mg/Kg	
Vinyl Chloride	<0.05	mg/Kg	

Surrogate	Conc. ug/L	Surr. %	Limits
Dibromofluoromethane	43.5	87.0	70-130
1,2-Dichloroethane-d4	43.3	86.5	51.9-184.1
Toluene-d4	48.0	95.9	70-130
4-Bromofluorobenzene	48.5	96.9	62.4-111.6

Sunset Analytical
LABORATORY

CCV - 8260 Soil

Analysis Date: 03/17/10 **Work Order:** 1003033
Analyst: JJ **Batch ID:** S031210A

Compound List	CCV Recovery	True Value	% Recovery	Limits %	Qualifiers
1,1,1,2-Tetrachloroethane	19.3	20.0	96.5	80-120	
1,1,1-Trichloroethane	18.9	20.0	94.3	80-120	
1,1,2,2-Tetrachloroethane	18.5	20.0	92.6	80-120	
1,1,2-Trichloroethane	20.2	20.0	101	80-120	
1,1-Dichloroethane	19.8	20.0	99.2	80-120	
1,1-Dichloroethene	20.1	20.0	100	80-120	
1,1-Dichloropropene	19.8	20.0	99.2	80-120	
1,2,3-Trichlorobenzene	19.1	20.0	95.3	43.6-164.0	
1,2,3-Trichloropropane	20.1	20.0	101	71.6-129.3	
1,2,4-Trichlorobenzene	19.2	20.0	96.2	33.2-184.2	
1,2,4-Trimethylbenzene	19.5	20.0	97.6	76.0-128.0	
1,2-Dibromo-3-chloropropane	18.7	20.0	93.4	57.2-158.5	
1,2-Dibromoethane	20.3	20.0	102	80-120	
1,2-Dichlorobenzene	19.4	20.0	97.1	80-120	
1,2-Dichloroethane	19.4	20.0	96.8	80-120	
1,2-Dichloropropane	20.0	20.0	100	80-120	
1,3,5-trimethylbenzene	19.7	20.0	98.6	80-120	
1,3-Dichlorobenzene	19.7	20.0	98.5	80-120	
1,3-Dichloropropane	19.7	20.0	98.3	80-120	
1,4-Dichlorobenzene	19.5	20.0	97.5	80-120	
2,2-Dichloropropane	19.3	20.0	96.4	50.4-166.5	
2-Butanone	19.8	20.0	99.2	53.9-139.1	
2-Chloroethylvinyl ether	19.1	20.0	95.3	68.7-115.9	
2-Chlorotoluene	18.9	20.0	94.7	80-120	
2-Hexanone	20.0	20.0	99.9	58.8-154.3	
4-Chlorotoluene	19.0	20.0	95.1	80-120	
4-Isopropyltoluene	19.7	20.0	98.5	74.9-135.6	
4-Methyl-2-pentanone	19.7	20.0	98.3	73.0-128.0	
Acetone	20.9	20.0	104	24.4-162.4	
Benzene	19.7	20.0	98.5	80-120	
Bromobenzene	19.4	20.0	96.9	80-120	
Bromochloromethane	20.4	20.0	102	80-120	
Bromodichloromethane	19.0	20.0	95.0	80-120	
Bromoform	19.3	20.0	96.4	80-120	
Bromomethane	20.4	20.0	102	62.0-137.1	
Carbon disulfide	19.8	20.0	99.1	70.0-122.4	
Carbon Tetrachloride	19.6	20.0	97.9	80-120	
Chlorobenzene	20.2	20.0	101	80-120	
Chloroethane	20.3	20.0	101	62.4-132.4	
Chloroform	19.8	20.0	99.2	80-120	
Chloromethane	20.2	20.0	101	80-120	
cis-1,2-Dichloroethene	19.8	20.0	98.8	80-120	
cis-1,3-Dichloropropene	18.7	20.0	93.6	77.3-118.0	
Dibromochloromethane	18.8	20.0	94.1	77.4-109.0	
Dibromomethane	21.4	20.0	107	80-120	
Dichlorodifluoromethane	19.9	20.0	99.6	66.8-138.9	

Sunset Analytical
LABORATORY

CCV - 8260 Soil

Analysis Date: 03/17/10 **Work Order:** 1003033
Analyst: JJ **Batch ID:** S031210A

Compound List	CCV Recovery	True Value	% Recovery	Limits %	Qualifiers
Ethylbenzene	20.0	20.0	100	80-120	
Hexachlorobutadiene	19.6	20.0	98.1	70.1-135.2	
Iodomethane	20.1	20.0	100	70.5-135.6	
Isopropylbenzene	20.7	20.0	103	86.8-123.7	
m,p-Xylene	40.2	40.0	100	80-120	
Methyl tert-butyl ether	17.1	20.0	85.5	60.0-139.1	
Methylene Chloride	19.5	20.0	97.3	55.3-133.1	
Naphthalene	16.9	20.0	84.7	7.89-197.1	
n-Butylbenzene	19.4	20.0	96.8	50.5-167.2	
n-Propylbenzene	19.7	20.0	98.4	80-120	
o-Xylene	20.2	20.0	101	80-120	
sec-Butylbenzene	20.0	20.0	99.9	76.9-133.7	
Styrene	21.0	20.0	105	80-120	
tert-Butylbenzene	19.8	20.0	99.2	81.3-128.1	
Tetrachloroethene	20.6	20.0	103	80-120	
Toluene	20.0	20.0	100	80-120	
trans-1,2-Dichloroethene	19.7	20.0	98.7	63.7-131.6	
trans-1,3-Dichloropropene	17.8	20.0	89.2	65.7-126.5	
Trichloroethylene	20.8	20.0	104	80-120	
Trichlorofluoromethane	20.4	20.0	102	68.6-129.9	
Vinyl acetate	19.8	20.0	99.2	65.9-127.9	
Vinyl Chloride	20.5	20.0	102	80-120	

Surrogate	Conc. ug/L	Surr. %	Limits	Qualifiers
Dibromofluoromethane	49.9	99.8	70-130	
1,2-Dichloroethane-d4	48.8	97.6	51.9-184.1	
Toluene-d4	50.6	101	70-130	
4-Bromofluorobenzene	49.5	99.1	62.4-111.6	

Sunset Analytical
LABORATORY

CCV - 8260 Soil

Analysis Date: 03/20/10 **Work Order:** 1003033
Analyst: JJ **Batch ID:** S031210A

Compound List	CCV Recovery	True Value	% Recovery	Limits %	Qualifiers
1,1,1,2-Tetrachloroethane	18.9	20.0	94.3	80-120	
1,1,1-Trichloroethane	18.5	20.0	92.3	80-120	
1,1,2,2-Tetrachloroethane	19.3	20.0	96.3	80-120	
1,1,2-Trichloroethane	20.4	20.0	102.1	80-120	
1,1-Dichloroethane	19.6	20.0	97.9	80-120	
1,1-Dichloroethene	19.6	20.0	97.9	80-120	
1,1-Dichloropropene	19.7	20.0	98.6	80-120	
1,2,3-Trichlorobenzene	23.0	20.0	114.9	43.6-164.0	
1,2,3-Trichloropropane	21.3	20.0	106.3	71.6-129.3	
1,2,4-Trichlorobenzene	23.4	20.0	117.0	33.2-184.2	
1,2,4-Trimethylbenzene	21.7	20.0	108.5	76.0-128.0	
1,2-Dibromo-3-chloropropane	26.7	20.0	133.6	57.2-158.5	
1,2-Dibromoethane	20.6	20.0	103.0	80-120	
1,2-Dichlorobenzene	20.3	20.0	101.3	80-120	
1,2-Dichloroethane	18.4	20.0	92.1	80-120	
1,2-Dichloropropane	20.3	20.0	101.6	80-120	
1,3,5-trimethylbenzene	21.2	20.0	105.8	80-120	
1,3-Dichlorobenzene	20.5	20.0	102.4	80-120	
1,3-Dichloropropane	19.8	20.0	99.1	80-120	
1,4-Dichlorobenzene	20.4	20.0	101.9	80-120	
2,2-Dichloropropane	19.4	20.0	96.8	50.4-166.5	
2-Butanone	21.4	20.0	107.2	53.9-139.1	
2-Chloroethylvinyl ether	20.2	20.0	101.2	68.7-115.9	
2-Chlorotoluene	19.5	20.0	97.3	80-120	
2-Hexanone	25.2	20.0	125.9	58.8-154.3	
4-Chlorotoluene	19.6	20.0	97.9	80-120	
4-Isopropyltoluene	22.1	20.0	110.5	74.9-135.6	
4-Methyl-2-pentanone	21.7	20.0	108.6	73.0-128.0	
Acetone	22.1	20.0	110.7	24.4-162.4	
Benzene	19.9	20.0	99.4	80-120	
Bromobenzene	19.8	20.0	99.2	80-120	
Bromochloromethane	20.6	20.0	103.1	80-120	
Bromodichloromethane	18.4	20.0	91.9	80-120	
Bromoform	19.1	20.0	95.4	80-120	
Bromomethane	17.2	20.0	85.8	62.0-137.1	
Carbon disulfide	20.2	20.0	100.8	70.0-122.4	
Carbon Tetrachloride	18.5	20.0	92.5	80-120	
Chlorobenzene	20.4	20.0	102.1	80-120	
Chloroethane	19.2	20.0	96.0	62.4-132.4	
Chloroform	19.4	20.0	97.0	80-120	
Chloromethane	20.3	20.0	101.4	80-120	
cis-1,2-Dichloroethene	20.1	20.0	100.7	80-120	
cis-1,3-Dichloropropene	19.0	20.0	95.2	77.3-118.0	
Dibromochloromethane	18.0	20.0	90.2	77.4-109.0	
Dibromomethane	21.5	20.0	107.7	80-120	
Dichlorodifluoromethane	18.9	20.0	94.7	66.8-138.9	

Sunset Analytical
LABORATORY

CCV - 8260 Soil

Analysis Date: 03/20/10 **Work Order:** 1003033
Analyst: JJ **Batch ID:** S031210A

Compound List	CCV Recovery	True Value	% Recovery	Limits %	Qualifiers
Ethylbenzene	20.5	20.0	102.3	80-120	
Hexachlorobutadiene	21.8	20.0	109.2	70.1-135.2	
Iodomethane	19.3	20.0	96.5	70.5-135.6	
Isopropylbenzene	21.2	20.0	105.8	86.8-123.7	
m,p-Xylene	41.4	40.0	103.6	80-120	
Methyl tert-butyl ether	17.5	20.0	87.7	60.0-139.1	
Methylene Chloride	19.7	20.0	98.3	55.3-133.1	
Naphthalene	23.3	20.0	116.7	7.89-197.1	
n-Butylbenzene	23.5	20.0	117.6	50.5-167.2	
n-Propylbenzene	20.4	20.0	102.0	80-120	
o-Xylene	20.8	20.0	103.9	80-120	
sec-Butylbenzene	21.6	20.0	108.1	76.9-133.7	
Styrene	21.6	20.0	107.8	80-120	
tert-Butylbenzene	21.0	20.0	104.9	81.3-128.1	
Tetrachloroethene	20.2	20.0	101.2	80-120	
Toluene	20.3	20.0	101.3	80-120	
trans-1,2-Dichloroethene	20.0	20.0	100.1	63.7-131.6	
trans-1,3-Dichloropropene	18.3	20.0	91.3	65.7-126.5	
Trichloroethylene	20.6	20.0	103.1	80-120	
Trichlorofluoromethane	18.6	20.0	93.1	68.6-129.9	
Vinyl acetate	20.6	20.0	103.0	65.9-127.9	
Vinyl Chloride	20.2	20.0	100.9	80-120	

Surrogate	Conc. ug/L	Surr. %	Limits	Qualifiers
Dibromofluoromethane	48.9	97.7	70-130	
1,2-Dichloroethane-d4	47.2	94.5	51.9-184.1	
Toluene-d4	50.6	101	70-130	
4-Bromofluorobenzene	50.2	100	62.4-111.6	

Sunset Analytical
LABORATORY

CCV - 8260 Soil

Analysis Date: 03/23/10 **Work Order:** 1003033
Analyst: BP **Batch ID:** S031210A

Compound List	CCV Recovery	True Value	% Recovery	Limits %	Qualifiers
1,1,1,2-Tetrachloroethane	20.0	20.0	100.0	80-120	
1,1,1-Trichloroethane	18.7	20.0	93.4	80-120	
1,1,2,2-Tetrachloroethane	19.9	20.0	99.5	80-120	
1,1,2-Trichloroethane	21.5	20.0	107.3	80-120	
1,1-Dichloroethane	20.3	20.0	101.7	80-120	
1,1-Dichloroethene	20.1	20.0	100.7	80-120	
1,1-Dichloropropene	20.3	20.0	101.6	80-120	
1,2,3-Trichlorobenzene	23.4	20.0	117.2	43.6-164.0	
1,2,3-Trichloropropane	21.8	20.0	109.1	71.6-129.3	
1,2,4-Trichlorobenzene	23.5	20.0	117.4	33.2-184.2	
1,2,4-Trimethylbenzene	21.5	20.0	107.3	76.0-128.0	
1,2-Dibromo-3-chloropropane	22.3	20.0	111.7	57.2-158.5	
1,2-Dibromoethane	21.4	20.0	107.2	80-120	
1,2-Dichlorobenzene	20.8	20.0	103.9	80-120	
1,2-Dichloroethane	19.7	20.0	98.5	80-120	
1,2-Dichloropropane	21.1	20.0	105.6	80-120	
1,3,5-trimethylbenzene	21.2	20.0	106.1	80-120	
1,3-Dichlorobenzene	21.0	20.0	105.1	80-120	
1,3-Dichloropropane	21.0	20.0	105.2	80-120	
1,4-Dichlorobenzene	20.9	20.0	104.5	80-120	
2,2-Dichloropropane	18.8	20.0	93.8	50.4-166.5	
2-Butanone	22.5	20.0	112.3	53.9-139.1	
2-Chloroethylvinyl ether	20.9	20.0	104.5	68.7-115.9	
2-Chlorotoluene	19.8	20.0	99.1	80-120	
2-Hexanone	23.1	20.0	115.6	58.8-154.3	
4-Chlorotoluene	20.1	20.0	100.3	80-120	
4-Isopropyltoluene	22.5	20.0	112.4	74.9-135.6	
4-Methyl-2-pentanone	22.6	20.0	113.1	73.0-128.0	
Acetone	24.8	20.0	123.8	24.4-162.4	
Benzene	20.6	20.0	103.0	80-120	
Bromobenzene	20.3	20.0	101.7	80-120	
Bromochloromethane	22.2	20.0	110.8	80-120	
Bromodichloromethane	19.5	20.0	97.6	80-120	
Bromoform	20.2	20.0	101.1	80-120	
Bromomethane	16.9	20.0	84.4	62.0-137.1	
Carbon disulfide	20.6	20.0	102.8	70.0-122.4	
Carbon Tetrachloride	19.0	20.0	95.2	80-120	
Chlorobenzene	21.3	20.0	106.7	80-120	
Chloroethane	20.5	20.0	102.5	62.4-132.4	
Chloroform	20.3	20.0	101.6	80-120	
Chloromethane	21.8	20.0	109.2	80-120	
cis-1,2-Dichloroethene	20.8	20.0	104.0	80-120	
cis-1,3-Dichloropropene	19.5	20.0	97.5	77.3-118.0	
Dibromochloromethane	19.3	20.0	96.3	77.4-109.0	
Dibromomethane	21.9	20.0	109.7	80-120	
Dichlorodifluoromethane	19.2	20.0	96.1	66.8-138.9	

Sunset Analytical
LABORATORY

CCV - 8260 Soil

Analysis Date: 03/23/10 **Work Order:** 1003033
Analyst: BP **Batch ID:** S031210A

Compound List	CCV Recovery	True Value	% Recovery	Limits %	Qualifiers
Ethylbenzene	20.9	20.0	104.5	80-120	
Hexachlorobutadiene	21.5	20.0	107.7	70.1-135.2	
Iodomethane	19.1	20.0	95.3	70.5-135.6	
Isopropylbenzene	21.6	20.0	108.2	86.8-123.7	
m,p-Xylene	42.2	40.0	105.5	80-120	
Methyl tert-butyl ether	17.9	20.0	89.3	60.0-139.1	
Methylene Chloride	21.0	20.0	104.9	55.3-133.1	
Naphthalene	22.4	20.0	111.9	7.89-197.1	
n-Butylbenzene	23.9	20.0	119.6	50.5-167.2	
n-Propylbenzene	20.8	20.0	103.8	80-120	
o-Xylene	21.3	20.0	106.5	80-120	
sec-Butylbenzene	22.1	20.0	110.4	76.9-133.7	
Styrene	22.5	20.0	112.4	80-120	
tert-Butylbenzene	21.2	20.0	106.1	81.3-128.1	
Tetrachloroethene	20.1	20.0	100.6	80-120	
Toluene	20.7	20.0	103.3	80-120	
trans-1,2-Dichloroethene	20.4	20.0	102.1	63.7-131.6	
trans-1,3-Dichloropropene	18.7	20.0	93.4	65.7-126.5	
Trichloroethylene	21.1	20.0	105.3	80-120	
Trichlorofluoromethane	19.4	20.0	96.8	68.6-129.9	
Vinyl acetate	21.2	20.0	106.0	65.9-127.9	
Vinyl Chloride	21.0	20.0	105.1	80-120	

Surrogate	Conc. ug/L	Surr. %	Limits	Qualifiers
Dibromofluoromethane	49.2	98.4	70-130	
1,2-Dichloroethane-d4	47.8	95.6	51.9-184.1	
Toluene-d4	49.6	99.2	70-130	
4-Bromofluorobenzene	49.4	98.8	62.4-111.6	

Sunset Analytical
LABORATORY

LCS-LCSD - 8260 Soil

Analysis Date: 03/17/10 **Work Order:** 1003033
Analyst: JJ **Batch ID:** S031210A

Compound List	LCS Recovery	LCS % Rec	LCSD Recovery	LCSD % Rec	True Value	Limits %	RPD	Qualifiers
1,1,1,2-Tetrachloroethane	16.9	84.4	17.2	86.1	20.0	71.3-99.9	1.9	
1,1,1-Trichloroethane	16.8	84.0	17.2	86.2	20.0	73.5-105.3	2.5	
1,1,2,2-Tetrachloroethane	15.9	79.7	16.4	81.8	20.0	71.7-101.7	2.7	
1,1,2-Trichloroethane	18.3	91.4	18.8	94.0	20.0	80-120	2.8	
1,1-Dichloroethane	18.1	90.6	18.4	91.9	20.0	80-120	1.4	
1,1-Dichloroethene	16.3	81.3	16.4	82.0	20.0	63.5-120.8	0.9	
1,1-Dichloropropene	18.3	91.7	18.5	92.6	20.0	80-120	1.0	
1,2,3-Trichlorobenzene	18.9	94.3	19.2	96.2	20.0	70.9-119.4	2.0	
1,2,3-Trichloropropane	14.8	74.2	15.8	79.0	20.0	72.5-107.4	6.3	
1,2,4-Trichlorobenzene	19.3	96.6	19.4	96.8	20.0	73.4-118.3	0.2	
1,2,4-Trimethylbenzene	19.7	98.7	19.3	96.5	20.0	78.5-113.7	2.2	
1,2-Dibromo-3-chloropropane	18.5	92.3	18.3	91.5	20.0	65.7-135.7	0.8	
1,2-Dibromoethane	18.1	90.6	18.6	92.9	20.0	80-120	2.6	
1,2-Dichlorobenzene	18.9	94.3	19.4	97.1	20.0	80-120	2.9	
1,2-Dichloroethane	18.2	90.8	18.5	92.6	20.0	77.9-111.6	2.0	
1,2-dichloropropane	18.6	93.1	19.3	96.4	20.0	80-120	3.5	
1,3,5-trimethylbenzene	19.9	99.3	19.7	98.6	20.0	80-120	0.8	
1,3-Dichlorobenzene	19.4	97.0	19.7	98.5	20.0	80-120	1.5	
1,3-Dichloropropane	18.3	91.5	18.9	94.3	20.0	80-120	3.1	
1,4-Dichlorobenzene	19.3	96.6	19.6	97.8	20.0	80-120	1.2	
2,2-Dichloropropane	16.1	80.6	16.4	82.1	20.0	71.7-103.4	1.8	
2-Butanone	17.5	87.3	18.2	91.2	20.0	60.0-128.1	4.4	
2-Chloroethylvinyl ether	15.3	76.4	16.1	80.5	20.0	69.1-110.2	5.2	
2-Chlorotoluene	19.0	95.0	19.2	95.9	20.0	80-120	1.0	
2-Hexanone	16.2	81.2	17.2	86.0	20.0	67.1-100.6	5.7	
4-Chlorotoluene	18.7	93.5	18.7	93.5	20.0	80-120	0.1	
4-Isopropyltoluene	19.9	99.7	19.5	97.4	20.0	74.7-112.8	2.3	
4-Methyl-2-pentanone	13.6	67.8	14.1	70.5	20.0	55.2-88.4	3.9	
Acetone	17.6	88.1	18.2	90.9	20.0	46.8-134.7	3.1	
Benzene	19.0	94.8	19.4	97.1	20.0	80-120	2.4	
Bromobenzene	19.3	96.7	19.3	96.3	20.0	80-120	0.4	
Bromochloromethane	19.3	96.3	19.8	99.1	20.0	80-120	2.9	
Bromodichloromethane	16.6	83.0	16.9	84.3	20.0	71.3-96.0	1.6	
Bromoform	15.5	77.4	16.1	80.3	20.0	62.8-93.3	3.7	
Bromomethane	11.4	56.8	13.3	66.4	20.0	57.5-117.7	15.7	L2
Carbon disulfide	13.6	67.8	13.8	69.1	20.0	57.3-97.9	1.8	
Carbon Tetrachloride	17.1	85.7	17.3	86.7	20.0	67.3-100.4	1.2	
Chlorobenzene	19.7	98.5	19.9	99.6	20.0	80-120	1.1	
Chloroethane	7.5	37.3	7.6	37.8	20.0	12.7-50.5	1.2	
Chloroform	19.1	95.6	19.3	96.5	20.0	80-120	1.0	
Chloromethane	16.6	83.2	16.4	81.9	20.0	80-120	1.6	
cis-1,2-Dichloroethene	19.4	97.2	19.8	98.8	20.0	80-120	1.6	
cis-1,3-Dichloropropene	15.5	77.7	16.0	79.8	20.0	74.2-96.3	2.6	
Dibromochloromethane	15.2	76.0	15.6	77.8	20.0	62.6-88.0	2.4	
Dibromomethane	19.6	97.8	20.2	101.0	20.0	80-120	3.2	

Sunset Analytical
LABORATORY

LCS-LCSD - 8260 Soil

Analysis Date: 03/17/10 **Work Order:** 1003033
Analyst: JJ **Batch ID:** S031210A

Compound List	LCS Recovery	LCS % Rec	LCSD Recovery	LCSD % Rec	True Value	Limits %	RPD	Qualifiers
Dichlorodifluoromethane	12.8	64.1	12.5	62.4	20.0	74.5-149.1	2.7	L2
Ethylbenzene	19.6	97.9	19.6	98.2	20.0	80-120	0.4	
Hexachlorobutadiene	18.1	90.4	18.0	90.1	20.0	78.4-104.2	0.3	
Iodomethane	14.6	72.8	16.3	81.7	20.0	64.5-112.2	11.6	
Isopropylbenzene	17.4	87.0	17.5	87.3	20.0	80-120	0.3	
m,p-Xylene	39.4	98.6	39.6	98.9	40.0	80-120	0.3	
Methyl tert-butyl ether	15.6	78.0	16.2	81.2	20.0	59.4-112.3	4.1	
Methylene Chloride	18.5	92.6	18.5	92.4	20.0	62.7-127.6	0.2	
Naphthalene	15.4	77.1	16.4	82.2	20.0	58.7-109.9	6.4	
n-Butylbenzene	21.0	105.0	20.1	100.7	20.0	65.2-130.1	4.2	
n-Propylbenzene	19.4	97.0	19.5	97.6	20.0	80-120	0.6	
o-Xylene	19.8	98.8	19.9	99.4	20.0	80-120	0.6	
sec-Butylbenzene	20.0	100.1	19.8	99.2	20.0	80-120	0.9	
Styrene	20.6	102.8	20.6	103.0	20.0	80-120	0.2	
tert-Butylbenzene	17.8	88.8	17.8	89.2	20.0	80-120	0.4	
Tetrachloroethene	18.4	91.8	18.9	94.3	20.0	80-120	2.7	
Toluene	19.5	97.7	19.6	98.1	20.0	80-120	0.4	
trans-1,2-Dichloroethene	18.0	89.9	18.4	92.1	20.0	57.7-124.7	2.5	
trans-1,3-Dichloropropene	13.7	68.7	14.0	69.9	20.0	60.9-89.4	1.7	
Trichloroethylene	19.4	96.9	19.7	98.5	20.0	80-120	1.6	
Trichlorofluoromethane	16.5	82.5	16.5	82.6	20.0	72.6-119.4	0.1	
Vinyl acetate	16.6	83.1	17.6	87.8	20.0	58.4-94.6	5.4	
Vinyl Chloride	19.5	97.7	19.4	97.1	20.0	75.5-146.3	0.6	

Surrogate	LCS Recovery	Percent	LCSD Recovery	Percent	RPD	Limits	Qualifiers
Dibromofluoromethane	48.3	96.5	49.9	99.7	3.30	70-130	
1,2-Dichloroethane-d4	47.5	95.0	49.3	98.6	3.72	51.9-184.1	
Toluene-d4	49.8	99.5	50.5	101	1.50	70-130	
4-Bromofluorobenzene	50.2	100	50.1	100	0.08	62.4-111.6	

Sunset Analytical
LABORATORY

MS/MSD - 8260 Soil

Analysis Date: 03/23/10
Analyst: BP
Sample Spk: 1003033-02

Work Order: 1003033
Batch ID: S031210A

Compound List	MS Recovery	MS % Rec	MSD Recovery	MSD % Rec	True Value	Limits %	RPD	Qualifiers
1,1,1,2-Tetrachloroethane	18.3	91.7	18.9	94.3	20.0	68.6-113.8	2.85	
1,1,1-Trichloroethane	18.0	90.0	17.8	89.2	20.0	66.8-120.5	0.89	
1,1,2,2-Tetrachloroethane	16.7	83.4	19.2	96.1	20.0	40.7-193.1	14.16	
1,1,2-Trichloroethane	19.2	96.0	21.4	106.8	20.0	88.3-138.2	10.66	
1,1-Dichloroethane	19.9	99.6	20.2	100.9	20.0	70-130	1.30	
1,1-Dichloroethene	19.1	95.5	19.0	95.1	20.0	58.6-122.5	0.42	
1,1-Dichloropropene	20.0	100.1	19.8	98.8	20.0	70-130	1.36	
1,2,3-Trichlorobenzene	20.5	102.3	23.8	119.1	20.0	53.6-128.2	15.18	
1,2,3-Trichloropropane	15.5	77.5	18.0	89.8	20.0	73.0-166.2	14.77	
1,2,4-Trichlorobenzene	21.7	108.5	23.6	117.8	20.0	60.2-122.9	8.27	
1,2,4-Trimethylbenzene	21.5	107.4	22.1	110.3	20.0	70-130	2.67	
1,2-Dibromo-3-chloropropane	17.9	89	24.2	121.0	20.0	61.0-185.2	30.00	
1,2-Dibromoethane	19.1	95.6	20.8	103.9	20.0	70-130	8.27	
1,2-Dichlorobenzene	19.6	97.9	20.2	101.2	20.0	69.7-124	3.27	
1,2-Dichloroethane	18.9	94.6	19.6	98.0	20.0	67.8-120.2	3.53	
1,2-Dichloropropane	20.6	103.1	21.1	105.5	20.0	70-130	2.30	
1,3,5-trimethylbenzene	21.1	105.5	21.6	108.1	20.0	68.4-122.6	2.44	
1,3-Dichlorobenzene	20.4	101.9	20.3	101.7	20.0	70-130	0.15	
1,3-Dichloropropane	19.3	96.5	21.2	106.1	20.0	92.6-131.7	9.53	
1,4-Dichlorobenzene	20.0	100.1	20.2	100.9	20.0	70-130	0.85	
2,2-Dichloropropane	18.0	90.0	17.0	85.2	20.0	62.3-120.4	5.48	
2-Butanone	18.2	90.9	21.2	106.0	20.0	43.9-132.5	15.35	
2-Chloroethylvinyl ether	18.6	92.9	20.8	104.2	20.0	41.3-123.2	11.47	
2-Chlorotoluene	19.8	98.9	19.8	99.1	20.0	70-130	0.15	
2-Hexanone	18.5	92.5	21.3	106.7	20.0	53.8-117.6	14.21	
4-Chlorotoluene	19.4	97.1	19.6	98.2	20.0	70-130	1.18	
4-Isopropyltoluene	21.9	109.4	22.8	114.2	20.0	70-130	4.34	
4-Methyl-2-pentanone	14.7	73.3	17.9	89.3	20.0	39.6-97.2	19.75	
Acetone	21.0	105	23.0	114.9	20.0	27.2-163.1	9.15	
Benzene	20.1	100.5	20.4	102.2	20.0	70-130	1.63	
Bromobenzene	19.9	99.6	20.0	100.1	20.0	70-130	0.50	
Bromochloromethane	21.0	104.9	21.4	106.8	20.0	70-130	1.75	
Bromodichloromethane	17.7	88.3	17.7	88.5	20.0	70-130	0.23	
Bromoform	16.3	81.7	17.9	89.5	20.0	62.5-91.8	9.06	
Bromomethane	15.4	77.0	13.4	67.1	20.0	59.9-118.3	13.68	
Carbon disulfide	17.9	89.5	16.8	84.2	20.0	43.4-124.6	6.11	
Carbon Tetrachloride	18.3	91.6	18.0	90.2	20.0	63.3-112.6	1.54	
Chlorobenzene	20.4	102.1	20.8	104.2	20.0	70-130	2.04	
Chloroethane	7.2	36.2	7.0	35.1	20.0	2.0-91.0	3.09	
Chloroform	19.7	98.6	20.1	100.5	20.0	70-130	1.91	
Chloromethane	22.9	114.5	23.2	115.8	20.0	70-130	1.09	
cis-1,2-Dichloroethene	20.8	104.0	20.5	102.7	20.0	70-130	1.21	
cis-1,3-Dichloropropene	17.4	86.8	17.5	87.5	20.0	64.8-116.8	0.80	

Sunset Analytical
LABORATORY

MS/MSD - 8260 Soil

Analysis Date: 03/23/10
Analyst: BP
Sample Spk: 1003033-02

Work Order: 1003033
Batch ID: S031210A

Compound List	MS Recovery	MS % Rec	MSD Recovery	MSD % Rec	True Value	Limits %	RPD	Qualifiers
Dibromochloromethane	16.2	80.9	16.9	84.3	20.0	67.0-98.9	4.18	
Dibromomethane	20.0	100.2	21.3	106.3	20.0	70-130	5.96	
Dichlorodifluoromethane	22.4	112.1	22.8	114.2	20.0	79.5-138.1	1.81	
Ethylbenzene	20.5	102.3	21.1	105.5	20.0	70-130	3.03	
Hexachlorobutadiene	19.8	98.9	22.1	110.4	20.0	67.1-125.2	11.04	
Iodomethane	17.8	88.9	14.1	70.4	20.0	57.7-115.0	23.23	
Isopropylbenzene	18.0	89.8	18.7	93.7	20.0	70-130	4.20	
m,p-Xylene	40.9	102.1	42.2	105.4	40.0	70-130	3.18	
Methyl tert-butyl ether	16.2	80.9	18.0	90.2	20.0	48.0-126.0	10.93	
Methylene Chloride	20.2	101.2	20.5	102.6	20.0	61.6-126.0	1.37	
Naphthalene	18.9	94.3	23.1	115.4	20.0	58.3-118.0	20.08	
n-Butylbenzene	23.7	118.3	25.1	125.5	20.0	70-130	5.95	
n-Propylbenzene	20.4	102.2	21.0	104.9	20.0	70-130	2.56	
o-Xylene	20.7	103.5	21.3	106.5	20.0	70-130	2.81	
sec-Butylbenzene	21.7	108.3	22.4	112.2	20.0	70-130	3.54	
Styrene	21.3	106	21.9	109.7	20.0	70-130	3.15	
tert-Butylbenzene	18.8	93.9	19.3	96.4	20.0	68.3-108.3	2.68	
Tetrachloroethene	19.4	96.8	19.4	96.8	20.0	70-130	0.05	
Toluene	20.2	100.8	20.6	103.0	20.0	67.5-126.6	2.11	
trans-1,2-Dichloroethene	20.1	100	19.7	98.4	20.0	46.6-131.7	1.91	
trans-1,3-Dichloropropene	15.1	75.6	15.4	77.1	20.0	62.5-99.6	1.90	
Trichloroethylene	20.9	104.7	21.1	105.5	20.0	70-130	0.81	
Trichlorofluoromethane	18.2	90.9	17.7	88.7	20.0	70-130	2.45	
Vinyl acetate	19.2	95.8	21.0	105.2	20.0	23.1-114.4	9.31	
Vinyl Chloride	24.6	123.0	25.3	126.7	20.0	79.4-155.4	3.00	

Surrogate	MS Recovery	Percent	MSD Recovery	Percent	RPD	Limits	Qualifiers
Dibromofluoromethane	45.3	90.6	46.2	92.4	1.94	70-130	
1,2-Dichloroethane-d4	42.3	84.6	45.0	90.0	6.23	51.9-184.1	
Toluene-d4	45.9	91.8	48.1	96.2	4.70	70-130	
4-Bromofluorobenzene	46.9	93.9	49.1	98.2	4.54	62.4-111.6	

SUNSET ANALYTICAL LABORATORY

2219 S. 48th Street Suite B, Tempe, AZ. 85282 602-437-0741

CHAIN OF CUSTODY

Page 1 of 1

Laboratory ID: 1025253

Client Name/Address: Ecohazous, Inc, 5th E Washington St. Ste 200, Phoenix, AZ 85034

Project Name/Number: 20th & Fracture Wharf

Sampler: Bryan Baden | Preservative: V | Seals: N | Total Containers: 2 | Temperature: 5.2

Lab #	Client ID:	Date:	Time:	Matrix:	# of cont:	8260	8270 ~~8021~~	8015	8310	pH	8 RCRA	Ign.T.	Paint Filter	Comments/Appearance:
1	1DW-SB-031210	3/12/10	10:30	Soil	1	X	X	X	X	X	X	X	X	
2	1DW-NB-031210	3/12/10	10:30	Soil	1	X	X	X	X	X	X	X	X	

3/12/10

Relinquished by:	Received by:	Date:	Time:	Notes or Special Instructions:
[signature]	[signature]	3/12/10	14:30	

TFDEQP000350

Sunset Analytical
LABORATORY

JVJ
3-22-10

Extraction Date: 3/12/10
Method: 8260
Analyst Initials: M
Batch: 5031210A
Solvent: MeOH
Vol. Disp. Check: 10ml

Extraction Log

Line Number	Lab Sample I.D.	Client I.D.	Extraction Time	Sample Weight	Solvent amount	Comments
1	RB	NA	1515		10ml	
2	LCS					
3	LCSD					
4	1003053 - 1	IDW-SB-031210		10g		
5	-2	IDW-NB-031210				
6	MS - 2					
7	MSD - 2		1520			
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295

For: Sunset Analytical Laboratory
Yuma

L449295

Lab SampleID.	Client ID
L449295-01	IDW-SB-031210
L449295-02	IDW-NB-031210

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295

For: Sunset Analytical Laboratory
Project: Yuma
March 18, 2010

Sample Receiving and Handling

All sample aliquots were received at the correct temperature, in the proper containers, and with the appropriate preservatives. All method specified holding times were met.

Paint Filter Test by Method 9095B

Laboratory Control Sample

Samples L449295-01 and 02 were analyzed in analytical batch WG467841. The laboratory control sample associated with these samples was within the laboratory control limits.

Sample Duplicate Analysis

For analytical batch WG467841 sample duplicate analysis was performed on sample L449272-02. The relative percent differences were within the method limits.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Ignitability by Method D93/1010A

Laboratory Control Sample

Samples L449295-02 and 01 were analyzed in analytical batch WG468217. The laboratory control sample associated with these samples was within the laboratory control limits.

Sample Duplicate Analysis

For analytical batch WG468217 sample duplicate analysis was performed on sample L449507-01. The relative percent differences were within the method limits.

For analytical batch WG468217 sample duplicate analysis was performed on sample L449182-02. The relative percent differences were within the method limits.

For analytical batch WG468217 sample duplicate analysis was performed on sample L449348-06. The relative percent differences were within the method limits.

Matrix Spike/Matrix Spike Duplicate

Precision for batch WG468217 was evaluated using the LCS / LCSD. The RPDs were within method limits.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

pH by Method 9045D

Laboratory Control Sample

Samples L449295-01 and 02 were analyzed in analytical batch WG468253. The laboratory control sample associated with these samples was within the laboratory control limits.

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295

For: Sunset Analytical Laboratory
Project: Yuma
March 18, 2010

Sample Duplicate Analysis
For analytical batch WG468253 sample duplicate analysis was performed on sample L449585-21. The relative percent differences were within the method limits.

For analytical batch WG468253 sample duplicate analysis was performed on sample L449585-31. The relative percent differences were within the method limits.

Matrix Spike/Matrix Spike Duplicate
Precision for batch WG468253 was evaluated using the LCS / LCSD. The RPDs were within method limits.

Blank Analysis
The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Mercury by Method 7471
Laboratory Control Sample
Samples L449295-02 and 01 were analyzed in analytical batch WG467638. The laboratory control sample associated with these samples was within the laboratory control limits.

Sample Duplicate Analysis
For analytical batch WG467638 sample duplicate analysis was performed on sample L449211-13. The relative percent differences were within the method limits.

Matrix Spike/Matrix Spike Duplicate
For analytical batch WG467638, matrix spike/matrix spike duplicate analysis was performed on sample L449211-13. The spike recoveries and relative percent differences were within laboratory control limits.

Blank Analysis
The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Trace Metals by Method 6010B
Laboratory Control Sample
Samples L449295-01 and 02 were analyzed in analytical batch WG467777. The laboratory control sample associated with these samples was within the laboratory control limits for all compounds.

Samples L449295-02 and 01 were analyzed in analytical batch WG468108. The laboratory control sample associated with these samples was within the laboratory control limits for all compounds.

Sample Duplicate Analysis
For analytical batch WG467777 sample duplicate analysis was performed on sample L449295-02. The relative percent difference exceeded the method limits for Barium.

For analytical batch WG468108 sample duplicate analysis was performed on sample L449415-05. The relative percent differences were within the method limits.

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295

For: Sunset Analytical Laboratory
Project: Yuma
March 18, 2010

Matrix Spike/Matrix Spike Duplicate
For analytical batch WG467777 matrix spike/matrix spike duplicate analysis was performed on sample L449295-02. The matrix spike recoveries were above laboratory control limits for Barium. The spike recoveries for the remaining target compounds were within limits. The relative percent difference exceeded laboratory limits for Barium. Post digestion spike recoveries were within the method limits.

For analytical batch WG468108 matrix spike/matrix spike duplicate analysis was performed on sample L449415-05. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes.

Blank Analysis
The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Semi-volatile Organic Compounds by Method 8270C
Laboratory Control Sample
Samples L449295-01 and 02 were analyzed in analytical batch WG467671. The laboratory control sample associated with these samples had all target compounds within method limits except for 2,4-Dimethylphenol.

Matrix Spike/Matrix Spike Duplicate
For analytical batch WG467671 matrix spike/matrix spike duplicate analysis was performed on sample L449149-04. The matrix spike recoveries were above laboratory control limits for 2,4-Dimethylphenol. The spike recoveries for the remaining target compounds were within limits. The relative percent difference was within laboratory limits for all compounds.

Blank Analysis
The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Diesel Range Organics by Method 8015
Laboratory Control Sample
Samples L449295-01 and 02 were analyzed in analytical batch WG467805. The laboratory control sample associated with these samples was within the laboratory control limits.

Matrix Spike/Matrix Spike Duplicate
For analytical batch WG467805, matrix spike/matrix spike duplicate analysis was performed on sample L449295-01. The spike recoveries and relative percent differences were within laboratory control limits.

Blank Analysis
The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Polynucluear Aromatic Hydrocarbons by Method 8310
Laboratory Control Sample
Samples L449295-01 and 02 were analyzed in analytical batch WG467808. The laboratory control sample associated with these samples was within the laboratory control limits for all compounds.

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295

For: Sunset Analytical Laboratory
Project: Yuma
March 18, 2010

Matrix Spike/Matrix Spike Duplicate
For analytical batch WG467808 matrix spike/matrix spike duplicate analysis was performed on sample L449295-02. The matrix spike recoveries were below laboratory control limits for Indeno(1,2,3-cd)pyrene. The spike recoveries for the remaining target compounds were within limits. The relative percent difference exceeded laboratory limits for Fluoranthene.

Blank Analysis
The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

For L449295-02, on the Semi-volatile Organic Compounds by Method 8270C analysis in WG467671, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(g,h,i)perylene, Benzo(a)pyrene, Dibenz(a,h)anthracene, and Indeno(1,2,3-cd)pyrene the internal standard exhibited poor recovery due to sample matrix interference. The analytical results will be biased high. BDL results will be unaffected.

Nancy F. Winters
ESC Representative
ESC Lab Sciences

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Victor Nielsen
Sunset Analytical Laboratory
2219 S. 48th Street, Ste B
Tempe, AZ 85282

Report Summary

Thursday March 18, 2010

Report Number: L449295
Samples Received: 03/13/10
Client Project: 1003033

Description: Yuma

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Daphne R Richards
Daphne Richards , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002,NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

This report may not be reproduced, except in full, without written approval from ESC Lab Sciences.
Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295

For: Sunset Analytical Laboratory
Yuma

L449295

Lab SampleID.	Client ID
L449295-01	IDW-SB-031210
L449295-02	IDW-NB-031210

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

SAMPLE NUMBER
IDW-SB-031210

Customer :	Sunset Analytical Laboratory	Project :	1003033
Source :		Date Sampled :	3/12/2010 10:30 AM
Location :	Yuma	Sampled By :	
Lab Sample ID :	**L449295-01**	Date Received :	3/13/2010

D93/1010A

Analytic Batch: WG468217 | Analysis Date: 3/17/2010 | Analysis Time: 6:00 PM
Instrument: KOEHLER | Analyst: 504 | Preparation Date:
Method: D93/1010A | Dilution: 1

CAS NO	Analyte	RL Deg. F	RESULTS Deg. F	FLAG
	Ignitability		**SEE FOOTNOTE**	

9045D

Analytic Batch: WG468253 | Analysis Date: 3/18/2010 | Analysis Time: 1:17 PM
Instrument: ACCUMET AB | Analyst: 477 | Preparation Date:
Method: 9045D | Dilution: 1

CAS NO	Analyte	RL su	RESULTS su	FLAG
00010-29-7	pH		**9.9**	

9095B

Analytic Batch: WG467841 | Analysis Date: 3/16/2010 | Analysis Time: 1:15 PM
Instrument: NONE | Analyst: 479 | Preparation Date:
Method: 9095B | Dilution: 1

CAS NO	Analyte	RL %	RESULTS %	FLAG
	Paint Filter Test		**SEE FOOTNOTE**	

Comments:
1) Sample results are reported as rounded values.
2) These results are applicable only to the items tested.

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

SAMPLE NUMBER
IDW-SB-031210

Customer :	Sunset Analytical Laboratory	Project :	1003033
Source :		Date Sampled :	3/12/2010 10:30 AM
Location :	Yuma	Sampled By :	
Lab Sample ID :	**L449295-01**	Date Received :	3/13/2010

7471

Analytic Batch: WG467638 | Analysis Date: 3/16/2010 | Analysis Time: 1:08 PM
Instrument: CVAA3 | Analyst: 448 | Preparation Date: 3/14/2010 12:04
Method: 7471 | Dilution: 1

CAS NO	Analyte	RL mg/kg	RESULTS mg/kg	FLAG
7439-97-6	Mercury	0.020	< 0.020	

6010B

Analytic Batch: WG467777 | Analysis Date: 3/16/2010 | Analysis Time: 6:29 PM
Instrument: ICP6 | Analyst: 178 | Preparation Date: 3/15/2010 2:08
Method: 6010B | Dilution: 1

CAS NO	Analyte	RL mg/kg	RESULTS mg/kg	FLAG
7440-38-2	Arsenic	1.0	**1.7**	
7440-39-3	Barium	0.25	**160**	
7440-43-9	Cadmium	0.25	< 0.25	
7439-92-1	Lead	0.25	**3.9**	
7782-49-2	Selenium	1.0	< 1.0	
7440-22-4	Silver	0.50	< 0.50	

6010B

Analytic Batch: WG468108 | Analysis Date: 3/17/2010 | Analysis Time: 10:09
Instrument: ICP6 | Analyst: 428 | Preparation Date: 3/17/2010 9:56
Method: 6010B | Dilution: 1

CAS NO	Analyte	RL mg/kg	RESULTS mg/kg	FLAG
7440-47-3	Chromium	0.50	**13**	

Comments:
1) Sample results are reported as rounded values.
2) These results are applicable only to the items tested.

ESC LAB SCIENCES
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

SAMPLE NUMBER
IDW-SB-031210

Customer :	Sunset Analytical Laboratory	Project :	1003033
Source :		Date Sampled :	3/12/2010 10:30 AM
Location :	Yuma	Sampled By :	
Lab Sample ID :	**L449295-01**	Date Received :	3/13/2010

8015D/DRO_AZ

Analytic Batch: WG467805 | Analysis Date: 3/17/2010 | Analysis Time: 5:56
Instrument: SVGC2 | Analyst: 280 | Preparation Date: 3/15/2010 11:00
Method: 8015D/DRO_AZ | Dilution: 1

CAS NO	Analyte	RL mg/kg	RESULTS mg/kg	FLAG
	C10-C22 Hydrocarbons	30	< 30	
	C22-C32 Hydrocarbons	50	< 50	

Surrogates

Analyte	PERCENT RECOVERY	QUALIFIERS	FLAG
o-Terphenyl	**82.2**		

8270C

Analytic Batch: WG467671 | Analysis Date: 3/16/2010 | Analysis Time: 8:50 PM
Instrument: BNAMS4 | Analyst: 145 | Preparation Date: 3/14/2010 3:01
Method: 8270C | Dilution: 1

CAS NO	Analyte	RL mg/kg	RESULTS mg/kg	FLAG
83-32-9	Acenaphthene	0.033	< 0.033	
208-96-8	Acenaphthylene	0.033	< 0.033	
120-12-7	Anthracene	0.033	< 0.033	
92-87-5	Benzidine	0.33	< 0.33	
56-55-3	Benzo(a)anthracene	0.033	< 0.033	
205-99-2	Benzo(b)fluoranthene	0.033	< 0.033	
207-08-9	Benzo(k)fluoranthene	0.033	< 0.033	
191-24-2	Benzo(g,h,i)perylene	0.033	< 0.033	
50-32-8	Benzo(a)pyrene	0.033	< 0.033	
111-91-1	Bis(2-chlorethoxy)methane	0.33	< 0.33	
111-44-4	Bis(2-chloroethyl)ether	0.33	< 0.33	
108-60-1	Bis(2-chloroisopropyl)ether	0.33	< 0.33	
101-55-3	4-Bromophenyl-phenylether	0.33	< 0.33	
91-58-7	2-Chloronaphthalene	0.033	< 0.033	
7005-72-3	4-Chlorophenyl-phenylether	0.33	< 0.33	
218-01-9	Chrysene	0.033	< 0.033	
53-70-3	Dibenz(a,h)anthracene	0.033	< 0.033	
91-94-1	3,3-Dichlorobenzidine	0.33	< 0.33	

Comments:
1) Sample results are reported as rounded values.
2) These results are applicable only to the items tested.

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

SAMPLE NUMBER
IDW-SB-031210

Customer :	Sunset Analytical Laboratory	Project :	1003033
Source :		Date Sampled :	3/12/2010 10:30 AM
Location :	Yuma	Sampled By :	
Lab Sample ID :	**L449295-01**	Date Received :	3/13/2010

8270C

Analytic Batch: WG467671 | Analysis Date: 3/16/2010 | Analysis Time: 8:50 PM
Instrument: BNAMS4 | Analyst: 145 | Preparation Date: 3/14/2010 3:01
Method: 8270C | Dilution: 1

CAS NO	Analyte	RL mg/kg	RESULTS mg/kg	FLAG
121-14-2	2,4-Dinitrotoluene	0.33	< 0.33	
606-20-2	2,6-Dinitrotoluene	0.33	< 0.33	
206-44-0	Fluoranthene	0.033	< 0.033	
86-73-7	Fluorene	0.033	< 0.033	
118-74-1	Hexachlorobenzene	0.33	< 0.33	
87-68-3	Hexachloro-1,3-butadiene	0.33	< 0.33	
77-47-4	Hexachlorocyclopentadiene	0.33	< 0.33	
67-72-1	Hexachloroethane	0.33	< 0.33	
193-39-5	Indeno(1,2,3-cd)pyrene	0.033	< 0.033	
78-59-1	Isophorone	0.33	< 0.33	
91-20-3	Naphthalene	0.033	< 0.033	
98-95-3	Nitrobenzene	0.33	< 0.33	
62-75-9	n-Nitrosodimethylamine	0.33	< 0.33	
86-30-6	n-Nitrosodiphenylamine	0.33	< 0.33	
621-64-7	n-Nitrosodi-n-propylamine	0.33	< 0.33	
85-01-8	Phenanthrene	0.033	< 0.033	
85-68-7	Benzylbutyl phthalate	0.33	< 0.33	
117-81-7	Bis(2-ethylhexyl)phthalate	0.33	< 0.33	
84-74-2	Di-n-butyl phthalate	0.33	< 0.33	
84-66-2	Diethyl phthalate	0.33	< 0.33	
131-11-3	Dimethyl phthalate	0.33	< 0.33	
117-84-0	Di-n-octyl phthalate	0.33	< 0.33	
129-00-0	Pyrene	0.033	< 0.033	
120-82-1	1,2,4-Trichlorobenzene	0.33	< 0.33	
59-50-7	4-Chloro-3-methylphenol	0.33	< 0.33	
95-57-8	2-Chlorophenol	0.33	< 0.33	
120-83-2	2,4-Dichlorophenol	0.33	< 0.33	
105-67-9	2,4-Dimethylphenol	0.33	< 0.33	L1
534-52-1	4,6-Dinitro-2-methylphenol	0.33	< 0.33	
51-28-5	2,4-Dinitrophenol	0.33	< 0.33	
88-75-5	2-Nitrophenol	0.33	< 0.33	
100-02-7	4-Nitrophenol	0.33	< 0.33	
87-86-5	Pentachlorophenol	0.33	< 0.33	

Comments:
1) Sample results are reported as rounded values.
2) These results are applicable only to the items tested.

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

SAMPLE NUMBER
IDW-SB-031210

Customer :	Sunset Analytical Laboratory	Project :	1003033
Source :		Date Sampled :	3/12/2010 10:30 AM
Location :	Yuma	Sampled By :	
Lab Sample ID :	**L449295-01**	Date Received :	3/13/2010

8270C

Analytic Batch: WG467671 | Analysis Date: 3/16/2010 | Analysis Time: 8:50 PM
Instrument: BNAMS4 | Analyst: 145 | Preparation Date: 3/14/2010 3:01
Method: 8270C | Dilution: 1

CAS NO	Analyte	RL mg/kg	RESULTS mg/kg	FLAG
108-95-2	Phenol	0.33	< 0.33	
88-06-2	2,4,6-Trichlorophenol	0.33	< 0.33	

Surrogates

Analyte	PERCENT RECOVERY	QUALIFIERS	FLAG
2-Fluorophenol	**71.9**		
Phenol-d5	**76.8**		
Nitrobenzene-d5	**56.2**		
2-Fluorobiphenyl	**78.1**		
2,4,6-Tribromophenol	**83.8**		
p-Terphenyl-d14	**98.8**		

8310

Analytic Batch: WG467808 | Analysis Date: 3/17/2010 | Analysis Time: 4:41 PM
Instrument: HPLC2 | Analyst: 169 | Preparation Date: 3/15/2010 3:16
Method: 8310 | Dilution: 1

CAS NO	Analyte	RL mg/kg	RESULTS mg/kg	FLAG
120-12-7	Anthracene	0.020	< 0.020	
83-32-9	Acenaphthene	0.020	< 0.020	
208-96-8	Acenaphthylene	0.020	< 0.020	
56-55-3	Benzo(a)anthracene	0.020	< 0.020	
50-32-8	Benzo(a)pyrene	0.020	< 0.020	
205-99-2	Benzo(b)fluoranthene	0.020	< 0.020	
191-24-2	Benzo(g,h,i)perylene	0.020	< 0.020	
207-08-9	Benzo(k)fluoranthene	0.020	< 0.020	
218-01-9	Chrysene	0.020	< 0.020	
53-70-3	Dibenz(a,h)anthracene	0.020	< 0.020	
206-44-0	Fluoranthene	0.020	< 0.020	
86-73-7	Fluorene	0.020	< 0.020	
193-39-5	Indeno(1,2,3-cd)pyrene	0.020	< 0.020	

Comments:
1) Sample results are reported as rounded values.
2) These results are applicable only to the items tested.

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

SAMPLE NUMBER
IDW-SB-031210

Customer :	Sunset Analytical Laboratory	Project :	1003033
Source :		Date Sampled :	3/12/2010 10:30 AM
Location :	Yuma	Sampled By :	
Lab Sample ID :	**L449295-01**	Date Received :	3/13/2010

8310

Analytic Batch: WG467808	Analysis Date: 3/17/2010	Analysis Time: 4:41 PM
Instrument: HPLC2	Analyst: 169	Preparation Date: 3/15/2010 3:16
Method: 8310	Dilution: 1	

CAS NO	Analyte	RL mg/kg	RESULTS mg/kg	FLAG
91-20-3	Naphthalene	0.020	< 0.020	
85-01-8	Phenanthrene	0.020	< 0.020	
129-00-0	Pyrene	0.020	< 0.020	

Surrogates

Analyte	PERCENT RECOVERY	QUALIFIERS	FLAG
p-Terphenyl-d14	**122**		

LEGEND

RL - Reporting Limit
Did Not Ignite @ 170 F
Contains No Free Liquid
9.9@19.5c

QUALIFIERS

L1 - The associated blank spike recovery was above laboratory acceptance limits.

Comments: 1) Sample results are reported as rounded values.
2) These results are applicable only to the items tested.

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

SAMPLE NUMBER
IDW-NB-031210

Customer :	Sunset Analytical Laboratory	Project :	1003033
Source :		Date Sampled :	3/12/2010 10:30 AM
Location :	Yuma	Sampled By :	
Lab Sample ID :	**L449295-02**	Date Received :	3/13/2010

D93/1010A

Analytic Batch: WG468217 | Analysis Date: 3/17/2010 | Analysis Time: 6:00 PM
Instrument: KOEHLER | Analyst: 504 | Preparation Date:
Method: D93/1010A | Dilution: 1

CAS NO	Analyte	RL Deg. F	RESULTS Deg. F	FLAG
	Ignitability		**SEE FOOTNOTE**	

9045D

Analytic Batch: WG468253 | Analysis Date: 3/18/2010 | Analysis Time: 1:17 PM
Instrument: ACCUMET AB | Analyst: 477 | Preparation Date:
Method: 9045D | Dilution: 1

CAS NO	Analyte	RL su	RESULTS su	FLAG
00010-29-7	pH		**8.9**	

9095B

Analytic Batch: WG467841 | Analysis Date: 3/16/2010 | Analysis Time: 1:15 PM
Instrument: NONE | Analyst: 479 | Preparation Date:
Method: 9095B | Dilution: 1

CAS NO	Analyte	RL %	RESULTS %	FLAG
	Paint Filter Test		**SEE FOOTNOTE**	

Comments:
1) Sample results are reported as rounded values.
2) These results are applicable only to the items tested.

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

SAMPLE NUMBER
IDW-NB-031210

Customer :	Sunset Analytical Laboratory	Project :	1003033
Source :		Date Sampled :	3/12/2010 10:30 AM
Location :	Yuma	Sampled By :	
Lab Sample ID :	**L449295-02**	Date Received :	3/13/2010

7471

Analytic Batch: WG467638 | Analysis Date: 3/16/2010 | Analysis Time: 1:10 PM
Instrument: CVAA3 | Analyst: 448 | Preparation Date: 3/14/2010 12:04
Method: 7471 | Dilution: 1

CAS NO	Analyte	RL mg/kg	RESULTS mg/kg	FLAG
7439-97-6	Mercury	0.020	< 0.020	

6010B

Analytic Batch: WG467777 | Analysis Date: 3/16/2010 | Analysis Time: 5:16 PM
Instrument: ICP6 | Analyst: 178 | Preparation Date: 3/15/2010 2:08
Method: 6010B | Dilution: 1

CAS NO	Analyte	RL mg/kg	RESULTS mg/kg	FLAG
7440-38-2	Arsenic	1.0	**1.2**	
7440-39-3	Barium	0.25	**30**	M1R2R8
7440-43-9	Cadmium	0.25	< 0.25	
7439-92-1	Lead	0.25	**2.6**	
7782-49-2	Selenium	1.0	< 1.0	
7440-22-4	Silver	0.50	< 0.50	

6010B

Analytic Batch: WG468108 | Analysis Date: 3/17/2010 | Analysis Time: 10:13
Instrument: ICP6 | Analyst: 428 | Preparation Date: 3/17/2010 9:56
Method: 6010B | Dilution: 1

CAS NO	Analyte	RL mg/kg	RESULTS mg/kg	FLAG
7440-47-3	Chromium	0.50	**2.2**	

Comments:
1) Sample results are reported as rounded values.
2) These results are applicable only to the items tested.

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

SAMPLE NUMBER
IDW-NB-031210

Customer :	Sunset Analytical Laboratory	Project :	1003033
Source :		Date Sampled :	3/12/2010 10:30 AM
Location :	Yuma	Sampled By :	
Lab Sample ID :	**L449295-02**	Date Received :	3/13/2010

8015D/DRO_AZ

Analytic Batch: WG467805 | Analysis Date: 3/17/2010 | Analysis Time: 6:16
Instrument: SVGC2 | Analyst: 280 | Preparation Date: 3/15/2010 11:00
Method: 8015D/DRO_AZ | Dilution: 1

CAS NO	Analyte	RL mg/kg	RESULTS mg/kg	FLAG
	C10-C22 Hydrocarbons	30	**54**	
	C22-C32 Hydrocarbons	50	< 50	

Surrogates

Analyte	PERCENT RECOVERY	QUALIFIERS	FLAG
o-Terphenyl	77.7		

8270C

Analytic Batch: WG467671 | Analysis Date: 3/16/2010 | Analysis Time: 9:06 PM
Instrument: BNAMS4 | Analyst: 145 | Preparation Date: 3/14/2010 3:01
Method: 8270C | Dilution: 1

CAS NO	Analyte	RL mg/kg	RESULTS mg/kg	FLAG
83-32-9	Acenaphthene	0.033	< 0.033	
208-96-8	Acenaphthylene	0.033	< 0.033	
120-12-7	Anthracene	0.033	< 0.033	
92-87-5	Benzidine	0.33	< 0.33	
56-55-3	Benzo(a)anthracene	0.033	< 0.033	
205-99-2	Benzo(b)fluoranthene	0.033	< 0.033	
207-08-9	Benzo(k)fluoranthene	0.033	< 0.033	
191-24-2	Benzo(g,h,i)perylene	0.033	< 0.033	
50-32-8	Benzo(a)pyrene	0.033	< 0.033	
111-91-1	Bis(2-chlorethoxy)methane	0.33	< 0.33	
111-44-4	Bis(2-chloroethyl)ether	0.33	< 0.33	
108-60-1	Bis(2-chloroisopropyl)ether	0.33	< 0.33	
101-55-3	4-Bromophenyl-phenylether	0.33	< 0.33	
91-58-7	2-Chloronaphthalene	0.033	< 0.033	
7005-72-3	4-Chlorophenyl-phenylether	0.33	< 0.33	
218-01-9	Chrysene	0.033	< 0.033	
53-70-3	Dibenz(a,h)anthracene	0.033	< 0.033	
91-94-1	3,3-Dichlorobenzidine	0.33	< 0.33	

Comments:
1) Sample results are reported as rounded values.
2) These results are applicable only to the items tested.

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

SAMPLE NUMBER
IDW-NB-031210

Customer :	Sunset Analytical Laboratory	Project :	1003033
Source :		Date Sampled :	3/12/2010 10:30 AM
Location :	Yuma	Sampled By :	
Lab Sample ID :	**L449295-02**	Date Received :	3/13/2010

8270C

Analytic Batch: WG467671 | Analysis Date: 3/16/2010 | Analysis Time: 9:06 PM
Instrument: BNAMS4 | Analyst: 145 | Preparation Date: 3/14/2010 3:01
Method: 8270C | Dilution: 1

CAS NO	Analyte	RL mg/kg	RESULTS mg/kg	FLAG
121-14-2	2,4-Dinitrotoluene	0.33	< 0.33	
606-20-2	2,6-Dinitrotoluene	0.33	< 0.33	
206-44-0	Fluoranthene	0.033	< 0.033	
86-73-7	Fluorene	0.033	< 0.033	
118-74-1	Hexachlorobenzene	0.33	< 0.33	
87-68-3	Hexachloro-1,3-butadiene	0.33	< 0.33	
77-47-4	Hexachlorocyclopentadiene	0.33	< 0.33	
67-72-1	Hexachloroethane	0.33	< 0.33	
193-39-5	Indeno(1,2,3-cd)pyrene	0.033	< 0.033	
78-59-1	Isophorone	0.33	< 0.33	
91-20-3	Naphthalene	0.033	< 0.033	
98-95-3	Nitrobenzene	0.33	< 0.33	
62-75-9	n-Nitrosodimethylamine	0.33	< 0.33	
86-30-6	n-Nitrosodiphenylamine	0.33	< 0.33	
621-64-7	n-Nitrosodi-n-propylamine	0.33	< 0.33	
85-01-8	Phenanthrene	0.033	< 0.033	
85-68-7	Benzylbutyl phthalate	0.33	< 0.33	
117-81-7	Bis(2-ethylhexyl)phthalate	0.33	< 0.33	
84-74-2	Di-n-butyl phthalate	0.33	< 0.33	
84-66-2	Diethyl phthalate	0.33	< 0.33	
131-11-3	Dimethyl phthalate	0.33	< 0.33	
117-84-0	Di-n-octyl phthalate	0.33	< 0.33	
129-00-0	Pyrene	0.033	< 0.033	
120-82-1	1,2,4-Trichlorobenzene	0.33	< 0.33	
59-50-7	4-Chloro-3-methylphenol	0.33	< 0.33	
95-57-8	2-Chlorophenol	0.33	< 0.33	
120-83-2	2,4-Dichlorophenol	0.33	< 0.33	
105-67-9	2,4-Dimethylphenol	0.33	< 0.33	L1
534-52-1	4,6-Dinitro-2-methylphenol	0.33	< 0.33	
51-28-5	2,4-Dinitrophenol	0.33	< 0.33	
88-75-5	2-Nitrophenol	0.33	< 0.33	
100-02-7	4-Nitrophenol	0.33	< 0.33	
87-86-5	Pentachlorophenol	0.33	< 0.33	

Comments:
1) Sample results are reported as rounded values.
2) These results are applicable only to the items tested.

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

SAMPLE NUMBER
IDW-NB-031210

Customer :	Sunset Analytical Laboratory	Project :	1003033
Source :		Date Sampled :	3/12/2010 10:30 AM
Location :	Yuma	Sampled By :	
Lab Sample ID :	**L449295-02**	Date Received :	3/13/2010

8270C

Analytic Batch: WG467671 | Analysis Date: 3/16/2010 | Analysis Time: 9:06 PM
Instrument: BNAMS4 | Analyst: 145 | Preparation Date: 3/14/2010 3:01
Method: 8270C | Dilution: 1

CAS NO	Analyte	RL mg/kg	RESULTS mg/kg	FLAG
108-95-2	Phenol	0.33	< 0.33	
88-06-2	2,4,6-Trichlorophenol	0.33	< 0.33	

Surrogates

Analyte	PERCENT RECOVERY	QUALIFIERS	FLAG
2-Fluorophenol	**74.3**		
Phenol-d5	**74.8**		
Nitrobenzene-d5	**63.3**		
2-Fluorobiphenyl	**72.4**		
2,4,6-Tribromophenol	**75.6**		
p-Terphenyl-d14	**107**		

8310

Analytic Batch: WG467808 | Analysis Date: 3/17/2010 | Analysis Time: 5:08 PM
Instrument: HPLC2 | Analyst: 169 | Preparation Date: 3/15/2010 3:16
Method: 8310 | Dilution: 1

CAS NO	Analyte	RL mg/kg	RESULTS mg/kg	FLAG
120-12-7	Anthracene	0.020	< 0.020	
83-32-9	Acenaphthene	0.020	< 0.020	
208-96-8	Acenaphthylene	0.020	< 0.020	
56-55-3	Benzo(a)anthracene	0.020	< 0.020	
50-32-8	Benzo(a)pyrene	0.020	< 0.020	
205-99-2	Benzo(b)fluoranthene	0.020	< 0.020	
191-24-2	Benzo(g,h,i)perylene	0.020	< 0.020	
207-08-9	Benzo(k)fluoranthene	0.020	< 0.020	
218-01-9	Chrysene	0.020	< 0.020	
53-70-3	Dibenz(a,h)anthracene	0.020	< 0.020	
206-44-0	Fluoranthene	0.020	< 0.020	R5
86-73-7	Fluorene	0.020	< 0.020	
193-39-5	Indeno(1,2,3-cd)pyrene	0.020	< 0.020	M2

Comments:
1) Sample results are reported as rounded values.
2) These results are applicable only to the items tested.

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

SAMPLE NUMBER
IDW-NB-031210

Customer :	Sunset Analytical Laboratory	Project :	1003033
Source :		Date Sampled :	3/12/2010 10:30 AM
Location :	Yuma	Sampled By :	
Lab Sample ID :	**L449295-02**	Date Received :	3/13/2010

8310

Analytic Batch: WG467808	Analysis Date: 3/17/2010	Analysis Time: 5:08 PM
Instrument: HPLC2	Analyst: 169	Preparation Date: 3/15/2010 3:16
Method: 8310	Dilution: 1	

CAS NO	Analyte	RL mg/kg	RESULTS mg/kg	FLAG
91-20-3	Naphthalene	0.020	< 0.020	
85-01-8	Phenanthrene	0.020	< 0.020	
129-00-0	Pyrene	0.020	< 0.020	

Surrogates

Analyte	PERCENT RECOVERY	QUALIFIERS	FLAG
p-Terphenyl-d14	**85.5**		

LEGEND

RL - Reporting Limit
Did Not Ignite @ 170 F
Contains No Free Liquid
8.9@19.5c

QUALIFIERS

M1 -	Matrix spike recovery was high, the method control sample recovery was acceptable.
R2 -	RPD/RSD exceeded the laboratory acceptance limit.
R8 -	Sample RPD exceeded the method acceptance limit.
L1 -	The associated blank spike recovery was above laboratory acceptance limits.
R5 -	MS/MSD RPD exceeded the laboratory acceptance limit. Recovery met acceptance criteria.
M2 -	Matrix spike recovery was low, the method control sample recovery was acceptable.

Comments: 1) Sample results are reported as rounded values.
2) These results are applicable only to the items tested.

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Ignitability by Method D93/1010A		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG468217**
Analysis Date:	3/17/2010 6:00:00 PM	Analyst:	504
Instrument ID:	KOEHLER	Extraction Date:	3/17/2010
Sample Numbers:	L449295-02, -01		

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Ignitability	82.0	79.0	96.3	93 - 107	

Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Ignitability	82.0	80.0	97.6	93 - 107	

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Ignitability by Method D93/1010A		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG468217**
Analysis Date:	3/17/2010 6:00:00 PM	Analyst:	504
Instrument ID:	KOEHLER	Extraction Date:	3/17/2010
Sample Numbers:	L449295-02, -01		

Laboratory Control Sample/ Laboratory Control Sample Duplicate

Analyte	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	Qualifier	% RPD	Control Limits	Qualifier
Ignitability	82.0	79.0	96.3	80.0	97.6	93-107		1.3	20	

Sample Duplicate
L449507-01

Name	Sample Results	Duplic Results	%RPD	Limit	Qualifiers
Ignitability	0.000	0.000			

Sample Duplicate
L449182-02

Name	Sample Results	Duplic Results	%RPD	Limit	Qualifiers
Ignitability	0.000	0.000			

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Ignitability by Method D93/1010A		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG468217**
Analysis Date:	3/17/2010 6:00:00 PM	Analyst:	504
Instrument ID:	KOEHLER	Extraction Date:	3/17/2010
Sample Numbers:	L449295-02, -01		

Sample Duplicate
L449348-06

Name	Sample Results	Duplic Results	%RPD	Limit	Qualifiers
Ignitability	0.000	0.000			

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Paint Filter Test by Method 9095B		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467841**
Analysis Date:	3/16/2010 1:15:00 PM	Analyst:	479
Instrument ID:	NONE	Extraction Date:	3/15/2010
Sample Numbers:	L449295-01, -02		

Sample Duplicate
L449272-02

Name	Sample Results	Duplic Results	%RPD	Limit	Qualifiers
Paint Filter Test	0.000	0.000			

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	pH by Method 9045D		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG468253**
Analysis Date:	3/18/2010 1:17:00 PM	Analyst:	477
Instrument ID:	ACCUMET AB	Extraction Date:	3/17/2010
Sample Numbers:	L449295-01, -02		

Method Blank

Analyte	CAS	PQL	Qualifiers
pH		4.80	

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
pH	6.46	6.40	99.1	97.9 - 100.8	

Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
pH	6.46	6.40	99.1	97.9 - 100.8	

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	pH by Method 9045D		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG468253**
Analysis Date:	3/18/2010 1:17:00 PM	Analyst:	477
Instrument ID:	ACCUMET AB	Extraction Date:	3/17/2010
Sample Numbers:	L449295-01, -02		

Laboratory Control Sample/ Laboratory Control Sample Duplicate

Analyte	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	Qualifier	% RPD	Control Limits	Qualifier
pH	6.46	6.40	99.1	6.40	99.1	97.9-100.8		0.0	20	

Sample Duplicate
L449585-21

Name	Sample Results	Duplic Results	%RPD	Limit	Qualifiers
pH	6.40	6.40	0.0	1	

Sample Duplicate
L449585-31

Name	Sample Results	Duplic Results	%RPD	Limit	Qualifiers
pH	7.30	7.30	0.0	1	

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Mercury by Method 7471		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467638**
Analysis Date:	3/16/2010 1:10:00 PM	Analyst:	448
Instrument ID:	CVAA3	Extraction Date:	3/14/2010
Sample Numbers:	L449295-02, -01		

Method Blank

Analyte	CAS	PQL	Qualifiers
Mercury		<0.020	

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Mercury	8.77	10.5	120	71.6 - 127.7	

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Mercury by Method 7471		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467638**
Analysis Date:	3/16/2010 1:10:00 PM	Analyst:	448
Instrument ID:	CVAA3	Extraction Date:	3/14/2010
Sample Numbers:	L449295-02, -01		

Sample Duplicate
L449211-13

Name	Sample Results	Duplic Results	%RPD	Limit	Qualifiers
Mercury	0.020	0.021			

Matrix Spike/Matrix Spike Duplicate
L449211-13

Analyte	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qualifier	% RPD	Control Limits	RPD Qual
Mercury	0.250	0.020	0.295	110	0.312	117	70-130		5.6	20	

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Trace Metals by Method 6010B		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467777**
Analysis Date:	3/16/2010	Analyst:	178
Instrument ID:	ICP6	Extraction Date:	3/15/2010
Sample Numbers:	L449295-01, -02		

Method Blank

Analyte	CAS	PQL	Qualifiers
Arsenic	7440-38-2	<1.00	
Barium	7440-39-3	<0.250	
Cadmium	7440-43-9	<0.250	
Lead	7439-92-1	<0.250	
Selenium	7782-49-2	<1.00	
Silver	7440-22-4	<0.500	

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Arsenic	192	161	83.9	78.6 - 120.8	
Barium	420	379	90.2	78.8 - 121.4	
Cadmium	70.1	57.1	81.5	78.5 - 121.5	
Lead	113	100	88.5	77.3 - 122.1	
Selenium	176	144	81.8	75.6 - 125	
Silver	115	107	93.0	66 - 133.9	

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Trace Metals by Method 6010B		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG468108**
Analysis Date:	3/17/2010	Analyst:	428
Instrument ID:	ICP6	Extraction Date:	3/17/2010
Sample Numbers:	L449295-02, -01		

Method Blank

Analyte	CAS	PQL	Qualifiers
Chromium	7440-47-3	<0.500	

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Chromium	168	148	88.1	80.4 - 120.2	

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Trace Metals by Method 6010B		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467777**
Analysis Date:	3/16/2010	Analyst:	178
Instrument ID:	ICP6	Extraction Date:	3/15/2010
Sample Numbers:	L449295-01, -02		

Sample Duplicate
L449295-02

Name	Sample Results	Duplic Results	%RPD	Limit	Qualifiers
Arsenic	1.22	1.20	1.7	20	
Barium	47.9	30.0	46	20	R8
Cadmium	0.0000	0.0000			
Lead	2.44	2.60	6.3	20	
Selenium	0.0000	0.0000			
Silver	0.0000	0.0000			

Matrix Spike/Matrix Spike Duplicate
L449295-02

Analyte	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qualifier	% RPD	Control Limits	RPD Qual
Arsenic	50.0	1.20	46.4	90.4	43.7	85.0	75-125		6.0	20	
Barium	50.0	30.0	192	324	99.2	138	75-125	M1	64	20	R2
Cadmium	50.0	0.0000	43.2	86.4	41.0	82.0	75-125		5.2	20	
Lead	50.0	2.60	48.2	91.2	45.4	85.6	75-125		6.0	20	
Selenium	50.0	0.0000	42.7	85.4	40.1	80.2	75-125		6.3	20	
Silver	50.0	0.0000	48.1	96.2	46.1	92.2	75-125		4.2	20	

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Trace Metals by Method 6010B		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG468108**
Analysis Date:	3/17/2010	Analyst:	428
Instrument ID:	ICP6	Extraction Date:	3/17/2010
Sample Numbers:	L449295-02, -01		

Sample Duplicate
L449415-05

Name	Sample Results	Duplic Results	%RPD	Limit	Qualifiers
Chromium	7.74	7.80	0.8	20	

Matrix Spike/Matrix Spike Duplicate
L449415-05

Analyte	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qualifier	% RPD	Control Limits	RPD Qual
Chromium	50.0	7.80	52.2	88.8	54.7	93.8	75-125		4.7	20	

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Diesel Range Organics by Method 8015		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467805**
Analysis Date:	3/17/2010	Analyst:	280
Instrument ID:	SVGC2	Extraction Date:	3/15/2010
Sample Numbers:	L449295-01, -02		

Method Blank

Analyte	CAS	PQL	Qualifiers
C10-C22 Hydrocarbons		<4.0	
C22-C32 Hydrocarbons		<50.0	

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
C10-C32 Hydrocarbons	60.0	49.3	82.1	70 - 130	

Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
C10-C32 Hydrocarbons	60.0	50.4	84.1	70 - 130	

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Diesel Range Organics by Method 8015		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467805**
Analysis Date:	3/17/2010	Analyst:	280
Instrument ID:	SVGC2	Extraction Date:	3/15/2010
Sample Numbers:	L449295-01, -02		

Surrogate Summary

Laboratory Sample ID	o-terphenylD ppm	% Rec
Blank WG467805	0.681	85.2
LCS WG467805	0.638	79.8
LCSD WG467805	0.652	81.5
MS WG467805	0.662	82.8
MSD WG467805	0.628	78.5
L449295-01	0.657	82.1
L449295-02	0.621	77.7

o-terphenyl Limits - 70 - 130

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Diesel Range Organics by Method 8015		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467805**
Analysis Date:	3/17/2010	Analyst:	280
Instrument ID:	SVGC2	Extraction Date:	3/15/2010
Sample Numbers:	L449295-01, -02		

Laboratory Control Sample/ Laboratory Control Sample Duplicate

Analyte	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	Qualifier	% RPD	Control Limits	Qualifier
C10-C32 Hydrocarbons	60.0	49.3	82.1	50.4	84.1	70-130		2.4	20	

Matrix Spike/Matrix Spike Duplicate

L449295-01

Analyte	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qualifier	% RPD	Control Limits	RPD Qual
C10-C32 Hydrocarbons	60.0	0.0	67.8	113	74.6	124	70-130		9.6	20	

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Semi-Volatiles by Method 8270C		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467671**
Analysis Date:	3/16/2010	Analyst:	145
Instrument ID:	BNAMS2	Extraction Date:	3/14/2010
Sample Numbers:	L449295-01, -02		

Method Blank

Analyte	CAS	PQL	Qualifiers
n-Nitrosodimethylamine	62-75-9	<0.330	
Bis(2-chloroethyl)ether	111-44-4	<0.330	
Phenol	108-95-2	<0.330	
2-Chlorophenol	95-57-8	<0.330	
Bis(2-chloroisopropyl)ether	108-60-1	<0.330	
Hexachloroethane	67-72-1	<0.330	
n-Nitrosodi-n-propylamine	621-64-7	<0.330	
Nitrobenzene	98-95-3	<0.330	
Isophorone	78-59-1	<0.330	
2-Nitrophenol	88-75-5	<0.330	
2,4-Dimethylphenol	105-67-9	<0.330	
Bis(2-chlorethoxy)methane	111-91-1	<0.330	
2,4-Dichlorophenol	120-83-2	<0.330	
1,2,4-Trichlorobenzene	120-82-1	<0.330	
Naphthalene	91-20-3	<0.033	
Hexachloro-1,3-butadiene	87-68-3	<0.330	
4-Chloro-3-methylphenol	59-50-7	<0.330	
Hexachlorocyclopentadiene	77-47-4	<0.330	
2,4,6-Trichlorophenol	88-06-2	<0.330	
2-Chloronaphthalene	91-58-7	<0.033	
Acenaphthylene	208-96-8	<0.033	
Dimethyl phthalate	131-11-3	<0.330	
2,6-Dinitrotoluene	606-20-2	<0.330	
Acenaphthene	83-32-9	<0.033	
2,4-Dinitrophenol	51-28-5	<0.330	
2,4-Dinitrotoluene	121-14-2	<0.330	
4-Nitrophenol	100-02-7	<0.330	
Fluorene	86-73-7	<0.033	
4-Chlorophenyl-phenylether	7005-72-3	<0.330	
Diethyl phthalate	84-66-2	<0.330	
4,6-Dinitro-2-methylphenol	534-52-1	<0.330	
n-Nitrosodiphenylamine	86-30-6	<0.330	
4-Bromophenyl-phenylether	101-55-3	<0.330	
Hexachlorobenzene	118-74-1	<0.330	
Pentachlorophenol	87-86-5	<0.330	

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Semi-Volatiles by Method 8270C		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467671**
Analysis Date:	3/16/2010	Analyst:	145
Instrument ID:	BNAMS2	Extraction Date:	3/14/2010
Sample Numbers:	L449295-01, -02		

Method Blank

Analyte	CAS	PQL	Qualifiers
Phenanthrene	85-01-8	<0.033	
Anthracene	120-12-7	<0.033	
Di-n-butyl phthalate	84-74-2	<0.330	
Fluoranthene	206-44-0	<0.033	
Benzidine	92-87-5	<0.330	
Pyrene	129-00-0	<0.033	
Benzylbutyl phthalate	85-68-7	<0.330	
3,3-Dichlorobenzidine	91-94-1	<0.330	
Benzo(a)anthracene	56-55-3	<0.033	
Chrysene	218-01-9	<0.033	
Bis(2-ethylhexyl)phthalate	117-81-7	<0.330	
Di-n-octyl phthalate	117-84-0	<0.330	
Benzo(b)fluoranthene	205-99-2	<0.033	
Benzo(k)fluoranthene	207-08-9	<0.033	
Benzo(a)pyrene	50-32-8	<0.033	
Indeno(1,2,3-cd)pyrene	193-39-5	<0.033	
Dibenz(a,h)anthracene	53-70-3	<0.033	
Benzo(g,h,i)perylene	191-24-2	<0.033	

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Semi-volatile Organic Compounds by Method 8270C		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467671**
Analysis Date:	3/16/2010 8:50:00 PM	Analyst:	145
Instrument ID:	BNAMS4	Extraction Date:	3/14/2010
Sample Numbers:	L449295-01, -02		

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
1,2,4-Trichlorobenzene	0.333	0.268	80.6	46 - 99	
2,4,6-Trichlorophenol	0.333	0.275	82.6	56 - 109	
2,4-Dichlorophenol	0.333	0.295	88.5	54 - 107	
2,4-Dimethylphenol	0.333	0.445	134	58 - 119	L1
2,4-Dinitrophenol	0.333	0.266	79.9	16 - 130	
2,4-Dinitrotoluene	0.333	0.336	101	53 - 120	
2,6-Dinitrotoluene	0.333	0.324	97.4	56 - 113	
2-Chloronaphthalene	0.333	0.278	83.5	55 - 103	
2-Chlorophenol	0.333	0.284	85.4	52 - 108	
2-Nitrophenol	0.333	0.314	94.4	38 - 110	
3,3-Dichlorobenzidine	0.333	0.261	78.4	24 - 123	
4,6-Dinitro-2-methylphenol	0.333	0.241	72.4	34 - 111	
4-Bromophenyl-phenylether	0.333	0.297	89.3	47 - 98	
4-Chloro-3-methylphenol	0.333	0.316	95.0	54 - 116	
4-Chlorophenyl-phenylether	0.333	0.306	91.8	55 - 106	
4-Nitrophenol	0.333	0.282	84.8	34 - 123	
Acenaphthene	0.333	0.299	89.7	54 - 102	
Acenaphthylene	0.333	0.321	96.3	56 - 104	
Anthracene	0.333	0.331	99.5	57 - 112	
Benzidine	0.333	0.00195	0.6	0 - 13	
Benzo(a)anthracene	0.333	0.322	96.8	55 - 105	
Benzo(a)pyrene	0.333	0.371	111	59 - 114	
Benzo(b)fluoranthene	0.333	0.339	102	44 - 116	
Benzo(g,h,i)perylene	0.333	0.372	112	41 - 127	
Benzo(k)fluoranthene	0.333	0.358	107	36 - 119	
Benzylbutyl phthalate	0.333	0.363	109	57 - 130	
Bis(2-chlorethoxy)methane	0.333	0.337	101	52 - 107	
Bis(2-chloroethyl)ether	0.333	0.309	92.7	38 - 115	
Bis(2-chloroisopropyl)ether	0.333	0.326	98.0	49 - 106	
Bis(2-ethylhexyl)phthalate	0.333	0.364	109	50 - 130	
Chrysene	0.333	0.328	98.4	54 - 103	
Dibenz(a,h)anthracene	0.333	0.355	107	42 - 128	
Diethyl phthalate	0.333	0.333	100	57 - 110	
Dimethyl phthalate	0.333	0.322	96.7	57 - 108	
Di-n-butyl phthalate	0.333	0.330	99.1	56 - 121	

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Semi-volatile Organic Compounds by Method 8270C		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467671**
Analysis Date:	3/16/2010 8:50:00 PM	Analyst:	145
Instrument ID:	BNAMS4	Extraction Date:	3/14/2010
Sample Numbers:	L449295-01, -02		

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Di-n-octyl phthalate	0.333	0.382	115	50 - 128	
Fluoranthene	0.333	0.342	103	51 - 109	
Fluorene	0.333	0.315	94.7	53 - 106	
Hexachloro-1,3-butadiene	0.333	0.292	87.6	46 - 110	
Hexachlorobenzene	0.333	0.263	79.0	51 - 117	
Hexachlorocyclopentadiene	0.333	0.276	83.0	21 - 127	
Hexachloroethane	0.333	0.262	78.8	43 - 104	
Indeno(1,2,3-cd)pyrene	0.333	0.364	109	42 - 127	
Isophorone	0.333	0.299	89.8	56 - 116	
Naphthalene	0.333	0.296	88.9	46 - 97	
Nitrobenzene	0.333	0.295	88.6	46 - 102	
n-Nitrosodimethylamine	0.333	0.332	99.8	35 - 111	
n-Nitrosodi-n-propylamine	0.333	0.342	103	54 - 113	
n-Nitrosodiphenylamine	0.333	0.310	92.9	66 - 126	
Pentachlorophenol	0.333	0.249	74.9	37 - 118	
Phenanthrene	0.333	0.303	90.9	56 - 102	
Phenol	0.333	0.295	88.5	55 - 115	
Pyrene	0.333	0.315	94.5	53 - 111	

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Semi-volatile Organic Compounds by Method 8270C		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467671**
Analysis Date:	3/16/2010 8:50:00 PM	Analyst:	145
Instrument ID:	BNAMS4	Extraction Date:	3/14/2010
Sample Numbers:	L449295-01, -02		

Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
1,2,4-Trichlorobenzene	0.333	0.258	77.4	46 - 99	
2,4,6-Trichlorophenol	0.333	0.257	77.3	56 - 109	
2,4-Dichlorophenol	0.333	0.284	85.3	54 - 107	
2,4-Dimethylphenol	0.333	0.420	126	58 - 119	L1
2,4-Dinitrophenol	0.333	0.247	74.1	16 - 130	
2,4-Dinitrotoluene	0.333	0.289	86.8	53 - 120	
2,6-Dinitrotoluene	0.333	0.296	88.8	56 - 113	
2-Chloronaphthalene	0.333	0.267	80.3	55 - 103	
2-Chlorophenol	0.333	0.272	81.6	52 - 108	
2-Nitrophenol	0.333	0.292	87.7	38 - 110	
3,3-Dichlorobenzidine	0.333	0.237	71.2	24 - 123	
4,6-Dinitro-2-methylphenol	0.333	0.232	69.8	34 - 111	
4-Bromophenyl-phenylether	0.333	0.305	91.7	47 - 98	
4-Chloro-3-methylphenol	0.333	0.301	90.5	54 - 116	
4-Chlorophenyl-phenylether	0.333	0.294	88.3	55 - 106	
4-Nitrophenol	0.333	0.229	68.9	34 - 123	
Acenaphthene	0.333	0.290	87.2	54 - 102	
Acenaphthylene	0.333	0.298	89.5	56 - 104	
Anthracene	0.333	0.308	92.5	57 - 112	
Benzidine	0.333	0.00179	0.5	0 - 13	
Benzo(a)anthracene	0.333	0.313	93.9	55 - 105	
Benzo(a)pyrene	0.333	0.352	106	59 - 114	
Benzo(b)fluoranthene	0.333	0.325	97.7	44 - 116	
Benzo(g,h,i)perylene	0.333	0.352	106	41 - 127	
Benzo(k)fluoranthene	0.333	0.349	105	36 - 119	
Benzylbutyl phthalate	0.333	0.382	115	57 - 130	
Bis(2-chlorethoxy)methane	0.333	0.322	96.6	52 - 107	
Bis(2-chloroethyl)ether	0.333	0.289	86.7	38 - 115	
Bis(2-chloroisopropyl)ether	0.333	0.313	94.0	49 - 106	
Bis(2-ethylhexyl)phthalate	0.333	0.387	116	50 - 130	
Chrysene	0.333	0.307	92.1	54 - 103	
Dibenz(a,h)anthracene	0.333	0.346	104	42 - 128	
Diethyl phthalate	0.333	0.305	91.6	57 - 110	
Dimethyl phthalate	0.333	0.314	94.2	57 - 108	
Di-n-butyl phthalate	0.333	0.330	99.1	56 - 121	

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Semi-volatile Organic Compounds by Method 8270C		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467671**
Analysis Date:	3/16/2010 8:50:00 PM	Analyst:	145
Instrument ID:	BNAMS4	Extraction Date:	3/14/2010
Sample Numbers:	L449295-01, -02		

Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Di-n-octyl phthalate	0.333	0.366	110	50 - 128	
Fluoranthene	0.333	0.300	90.0	51 - 109	
Fluorene	0.333	0.284	85.2	53 - 106	
Hexachloro-1,3-butadiene	0.333	0.283	84.9	46 - 110	
Hexachlorobenzene	0.333	0.270	81.2	51 - 117	
Hexachlorocyclopentadiene	0.333	0.272	81.6	21 - 127	
Hexachloroethane	0.333	0.249	74.6	43 - 104	
Indeno(1,2,3-cd)pyrene	0.333	0.343	103	42 - 127	
Isophorone	0.333	0.281	84.3	56 - 116	
Naphthalene	0.333	0.283	84.9	46 - 97	
Nitrobenzene	0.333	0.280	84.0	46 - 102	
n-Nitrosodimethylamine	0.333	0.307	92.1	35 - 111	
n-Nitrosodi-n-propylamine	0.333	0.330	99.1	54 - 113	
n-Nitrosodiphenylamine	0.333	0.301	90.4	66 - 126	
Pentachlorophenol	0.333	0.240	72.1	37 - 118	
Phenanthrene	0.333	0.284	85.4	56 - 102	
Phenol	0.333	0.290	87.2	55 - 115	
Pyrene	0.333	0.317	95.1	53 - 111	

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Semi-Volatiles by Method 8270C		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467671**
Analysis Date:	3/16/2010	Analyst:	145
Instrument ID:	BNAMS2	Extraction Date:	3/14/2010
Sample Numbers:	L449295-01, -02		

Surrogate Summary

Laboratory	NBZ		FBP		TPH		2FP		PHL		TBP	
Sample ID	ppb	% Rec	ppb	% Rec	ppb	% Rec	ppb	% Rec	ppb	% Rec	ppb	% Rec
LCS WG467671	9070	90.7	8640	86.4	10400	104	18300	91.4	19100	95.6	17100	85.4
LCSD WG467671	8720	87.2	8230	82.3	9580	95.8	17700	88.5	18000	89.8	16700	83.6
Blank WG467671	7840	78.4	8510	85.1	10100	101	17900	89.6	18000	90.0	15100	75.5
MS WG467671	8250	82.5	8080	80.8	9800	98.0	17100	85.3	17300	86.5	18300	91.6
MSD WG467671	8420	84.2	8360	83.6	10900	109	17300	86.5	17600	87.8	18600	92.9
L449295-01	5630	56.2	7810	78.1	9880	98.8	14400	71.9	15400	76.8	16800	83.8
L449295-02	6330	63.3	7240	72.4	10700	107	14900	74.3	15000	74.8	15100	75.6

NBZ - Nitrobenzene-d5	18-119
FBP - 2-Fluorobiphenyl	30-120
TPH - Terphneyl-d14	23-143
2FP - 2-Fluorophenol	26-130
PHL - Phenol-d5	37-141
TBP - 2,4,6-Tribromophenol	25-137

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Semi-volatile Organic Compounds by Method 8270C		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467671**
Analysis Date:	3/16/2010 8:50:00 PM	Analyst:	145
Instrument ID:	BNAMS4	Extraction Date:	3/14/2010
Sample Numbers:	L449295-01, -02		

Matrix Spike/Matrix Spike Duplicate
L449149-04

Analyte	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qualifier	% RPD	Control Limits	RPD Qual
1,2,4-Trichlorobenzene	0.333	0.00000	0.246	74.0	0.242	72.6	37-104		1.9	26	
2,4,6-Trichlorophenol	0.333	0.00000	0.269	80.8	0.272	81.8	27-128		1.1	31	
2,4-Dichlorophenol	0.333	0.00000	0.286	85.8	0.287	86.1	39-116		0.3	23	
2,4-Dimethylphenol	0.333	0.00000	0.408	123	0.403	121	50-119	M6	1.3	27	
2,4-Dinitrophenol	0.333	0.00000	0.251	75.3	0.241	72.5	10-123		3.9	42	
2,4-Dinitrotoluene	0.333	0.00000	0.328	98.5	0.343	103	52-121		4.5	23	
2,6-Dinitrotoluene	0.333	0.00000	0.310	93.2	0.322	96.8	53-114		3.8	22	
2-Chloronaphthalene	0.333	0.00000	0.268	80.5	0.272	81.5	52-101		1.3	20	
2-Chlorophenol	0.333	0.00000	0.266	79.8	0.270	81.0	41-112		1.6	27	
2-Nitrophenol	0.333	0.00000	0.307	92.3	0.303	91.1	23-117		1.3	31	
3,3-Dichlorobenzidine	0.333	0.00000	0.241	72.5	0.245	73.6	10-133		1.5	41	
4,6-Dinitro-2-methylphenol	0.333	0.00000	0.238	71.4	0.240	72.0	10-124		0.9	38	
4-Bromophenyl-phenylether	0.333	0.00000	0.282	84.6	0.282	84.7	37-103		0.0	23	
4-Chloro-3-methylphenol	0.333	0.00000	0.297	89.1	0.317	95.2	52-119		6.6	24	
4-Chlorophenyl-phenylether	0.333	0.00000	0.309	92.8	0.315	94.6	53-105		1.9	20	
4-Nitrophenol	0.333	0.00000	0.288	86.4	0.305	91.6	15-140		5.8	40	
Acenaphthene	0.333	0.00000	0.283	84.9	0.288	86.5	52-102		1.8	23	
Acenaphthylene	0.333	0.00000	0.307	92.2	0.311	93.3	54-103		1.2	22	
Anthracene	0.333	0.00000	0.305	91.5	0.308	92.4	55-114		0.9	21	
Benzidine	0.333	0.00000	0.00096	0.3	0.00106	0.3	0-45		9.6	50	
Benzo(a)anthracene	0.333	0.00000	0.301	90.2	0.305	91.5	37-124		1.4	33	
Benzo(a)pyrene	0.333	0.00000	0.344	103	0.342	103	44-129		0.6	27	
Benzo(b)fluoranthene	0.333	0.00000	0.351	105	0.342	103	28-135		2.6	33	
Benzo(g,h,i)perylene	0.333	0.00000	0.217	65.0	0.213	63.8	25-123		1.9	35	
Benzo(k)fluoranthene	0.333	0.00000	0.379	114	0.374	112	41-116		1.4	34	
Benzylbutyl phthalate	0.333	0.00000	0.353	106	0.368	110	45-143		4.2	39	
Bis(2-chlorethoxy)methane	0.333	0.00000	0.297	89.1	0.307	92.1	48-108		3.3	23	
Bis(2-chloroethyl)ether	0.333	0.00000	0.259	77.9	0.293	87.9	36-115		12	30	
Bis(2-chloroisopropyl)ether	0.333	0.00000	0.294	88.2	0.294	88.3	44-109		0.1	27	
Bis(2-ethylhexyl)phthalate	0.333	0.00000	0.344	103	0.361	108	40-128		4.8	34	
Chrysene	0.333	0.00000	0.307	92.1	0.313	94.0	39-119		2.1	31	
Dibenz(a,h)anthracene	0.333	0.00000	0.237	71.0	0.236	70.9	29-123		0.2	30	
Diethyl phthalate	0.333	0.00000	0.323	97.1	0.332	99.6	51-113		2.5	21	
Dimethyl phthalate	0.333	0.00000	0.317	95.1	0.332	99.7	54-108		4.8	23	
Di-n-butyl phthalate	0.333	0.00000	0.323	96.9	0.333	99.9	49-121		3.0	22	

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Semi-volatile Organic Compounds by Method 8270C		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467671**
Analysis Date:	3/16/2010 8:50:00 PM	Analyst:	145
Instrument ID:	BNAMS4	Extraction Date:	3/14/2010
Sample Numbers:	L449295-01, -02		

Matrix Spike/Matrix Spike Duplicate

L449149-04

Analyte	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qualifier	% RPD	Control Limits	RPD Qual
Di-n-octyl phthalate	0.333	0.00000	0.364	109	0.387	116	40-132		6.0	27	
Fluoranthene	0.333	0.00000	0.318	95.6	0.330	99.0	23-143		3.5	29	
Fluorene	0.333	0.00000	0.299	89.9	0.306	91.9	53-107		2.3	22	
Hexachloro-1,3-butadiene	0.333	0.00000	0.289	86.7	0.274	82.2	39-113		5.3	26	
Hexachlorobenzene	0.333	0.00000	0.248	74.4	0.247	74.2	49-108		0.4	27	
Hexachlorocyclopentadiene	0.333	0.00000	0.208	62.5	0.220	66.1	10-131		5.7	39	
Hexachloroethane	0.333	0.00000	0.240	72.0	0.239	71.9	25-118		0.2	35	
Indeno(1,2,3-cd)pyrene	0.333	0.00000	0.229	68.6	0.235	70.5	28-125		2.7	32	
Isophorone	0.333	0.00000	0.267	80.3	0.271	81.5	51-115		1.4	22	
Naphthalene	0.333	0.00000	0.269	80.7	0.267	80.2	41-100		0.7	26	
Nitrobenzene	0.333	0.00000	0.263	79.0	0.256	76.8	40-102		2.8	24	
n-Nitrosodimethylamine	0.333	0.00000	0.298	89.6	0.302	90.6	20-116		1.1	38	
n-Nitrosodi-n-propylamine	0.333	0.00000	0.299	89.7	0.320	96.2	54-110		7.1	23	
n-Nitrosodiphenylamine	0.333	0.00000	0.283	85.0	0.288	86.5	54-138		1.8	26	
Pentachlorophenol	0.333	0.00000	0.263	79.1	0.265	79.7	10-146		0.8	35	
Phenanthrene	0.333	0.00000	0.271	81.3	0.281	84.2	37-125		3.6	27	
Phenol	0.333	0.00000	0.261	78.3	0.269	80.8	52-111		3.1	22	
Pyrene	0.333	0.00000	0.278	83.5	0.286	85.9	22-151		2.8	38	

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Semi-volatile Organic Compounds by Method 8270C		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467671**
Analysis Date:	3/16/2010 8:50:00 PM	Analyst:	145
Instrument ID:	BNAMS4	Extraction Date:	3/14/2010
Sample Numbers:	L449295-01, -02		

Laboratory Control Sample/ Laboratory Control Sample Duplicate

Analyte	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	Qualifier	% RPD	Control Limits	Qualifier
1,2,4-Trichlorobenzene	0.333	0.268	80.6	0.258	77.4	46-99		4.0	24	
2,4,6-Trichlorophenol	0.333	0.275	82.6	0.257	77.3	56-109		6.6	20	
2,4-Dichlorophenol	0.333	0.295	88.5	0.284	85.3	54-107		3.7	21	
2,4-Dimethylphenol	0.333	0.445	134	0.420	126	58-119	L1	5.8	23	
2,4-Dinitrophenol	0.333	0.266	79.9	0.247	74.1	16-130		7.6	45	
2,4-Dinitrotoluene	0.333	0.336	101	0.289	86.8	53-120		15	23	
2,6-Dinitrotoluene	0.333	0.324	97.4	0.296	88.8	56-113		9.3	22	
2-Chloronaphthalene	0.333	0.278	83.5	0.267	80.3	55-103		3.9	20	
2-Chlorophenol	0.333	0.284	85.4	0.272	81.6	52-108		4.5	24	
2-Nitrophenol	0.333	0.314	94.4	0.292	87.7	38-110		7.4	24	
3,3-Dichlorobenzidine	0.333	0.261	78.4	0.237	71.2	24-123		9.6	35	
4,6-Dinitro-2-methylphenol	0.333	0.241	72.4	0.232	69.8	34-111		3.7	33	
4-Bromophenyl-phenylether	0.333	0.297	89.3	0.305	91.7	47-98		2.7	23	
4-Chloro-3-methylphenol	0.333	0.316	95.0	0.301	90.5	54-116		4.8	23	
4-Chlorophenyl-phenylether	0.333	0.306	91.8	0.294	88.3	55-106		3.9	22	
4-Nitrophenol	0.333	0.282	84.8	0.229	68.9	34-123		21	36	
Acenaphthene	0.333	0.299	89.7	0.290	87.2	54-102		2.8	20	
Acenaphthylene	0.333	0.321	96.3	0.298	89.5	56-104		7.3	20	
Anthracene	0.333	0.331	99.5	0.308	92.5	57-112		7.3	21	
Benzidine	0.333	0.00195	0.6	0.00179	0.5	0-13		8.5	50	
Benzo(a)anthracene	0.333	0.322	96.8	0.313	93.9	55-105		3.0	21	
Benzo(a)pyrene	0.333	0.371	111	0.352	106	59-114		5.2	22	
Benzo(b)fluoranthene	0.333	0.339	102	0.325	97.7	44-116		4.2	33	
Benzo(g,h,i)perylene	0.333	0.372	112	0.352	106	41-127		5.6	29	
Benzo(k)fluoranthene	0.333	0.358	107	0.349	105	36-119		2.6	37	
Benzylbutyl phthalate	0.333	0.363	109	0.382	115	57-130		5.2	27	
Bis(2-chlorethoxy)methane	0.333	0.337	101	0.322	96.6	52-107		4.7	21	
Bis(2-chloroethyl)ether	0.333	0.309	92.7	0.289	86.7	38-115		6.7	28	
Bis(2-chloroisopropyl)ether	0.333	0.326	98.0	0.313	94.0	49-106		4.2	25	
Bis(2-ethylhexyl)phthalate	0.333	0.364	109	0.387	116	50-130		6.1	29	
Chrysene	0.333	0.328	98.4	0.307	92.1	54-103		6.6	23	
Dibenz(a,h)anthracene	0.333	0.355	107	0.346	104	42-128		2.6	28	
Diethyl phthalate	0.333	0.333	100	0.305	91.6	57-110		8.8	20	
Dimethyl phthalate	0.333	0.322	96.7	0.314	94.2	57-108		2.7	20	
Di-n-butyl phthalate	0.333	0.330	99.1	0.330	99.1	56-121		0.0	22	

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Semi-volatile Organic Compounds by Method 8270C		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467671**
Analysis Date:	3/16/2010 8:50:00 PM	Analyst:	145
Instrument ID:	BNAMS4	Extraction Date:	3/14/2010
Sample Numbers:	L449295-01, -02		

Laboratory Control Sample/ Laboratory Control Sample Duplicate

Analyte	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	Qualifier	% RPD	Control Limits	Qualifier
Di-n-octyl phthalate	0.333	0.382	115	0.366	110	50-128		4.5	26	
Fluoranthene	0.333	0.342	103	0.300	90.0	51-109		13	26	
Fluorene	0.333	0.315	94.7	0.284	85.2	53-106		11	20	
Hexachloro-1,3-butadiene	0.333	0.292	87.6	0.283	84.9	46-110		3.2	25	
Hexachlorobenzene	0.333	0.263	79.0	0.270	81.2	51-117		2.8	24	
Hexachlorocyclopentadiene	0.333	0.276	83.0	0.272	81.6	21-127		1.7	40	
Hexachloroethane	0.333	0.262	78.8	0.249	74.6	43-104		5.4	27	
Indeno(1,2,3-cd)pyrene	0.333	0.364	109	0.343	103	42-127		5.9	28	
Isophorone	0.333	0.299	89.8	0.281	84.3	56-116		6.4	21	
Naphthalene	0.333	0.296	88.9	0.283	84.9	46-97		4.6	23	
Nitrobenzene	0.333	0.295	88.6	0.280	84.0	46-102		5.3	23	
n-Nitrosodimethylamine	0.333	0.332	99.8	0.307	92.1	35-111		8.1	35	
n-Nitrosodi-n-propylamine	0.333	0.342	103	0.330	99.1	54-113		3.7	21	
n-Nitrosodiphenylamine	0.333	0.310	92.9	0.301	90.4	66-126		2.8	22	
Pentachlorophenol	0.333	0.249	74.9	0.240	72.1	37-118		3.8	28	
Phenanthrene	0.333	0.303	90.9	0.284	85.4	56-102		6.2	20	
Phenol	0.333	0.295	88.5	0.290	87.2	55-115		1.5	22	
Pyrene	0.333	0.315	94.5	0.317	95.1	53-111		0.7	26	

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Semi-Volatiles by Method 8270C		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467671**
Analysis Date:	3/16/2010	Analyst:	145
Instrument ID:	BNAMS4	Extraction Date:	3/14/2010
Sample Numbers:	L449295-01, -02		

Internal Standard Response and Retention Time Summary

FileID:0316_02.D Date:3/16/2010 Time:10:46 AM

	IS1		IS2		IS3	
	Response	RT	Response	RT	Response	RT
12 Hour Std	100038	5.24	378311	5.98	204150	7.01
Upper Limit	200076	5.74	756622	6.48	408300	7.51
Lower Limit	50019	4.74	189155.5	5.48	102075	6.51
Sample ID	Response	RT	Response	RT	Response	RT
Blank WG467671	103349	5.25	394810	5.99	213334	7.02
LCS WG467671	93623	5.25	365233	5.99	207943	7.02
LCSD WG467671	103121	5.25	403793	5.99	228294	7.02
MS WG467671	70219	5.26	275947	5.99	155405	7.02
MSD WG467671	75262	5.26	302186	5.99	173215	7.02

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Semi-Volatiles by Method 8270C		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467671**
Analysis Date:	3/16/2010	Analyst:	145
Instrument ID:	BNAMS4	Extraction Date:	3/14/2010
Sample Numbers:	L449295-01, -02		

Internal Standard Response and Retention Time Summary

FileID:0316_02.D Date:3/16/2010 Time:10:46 AM

	IS4		IS5		IS6	
	Response	RT	Response	RT	Response	RT
12 Hour Std	309992	7.88	268605	9.91	229867	12.11
Upper Limit	619984	8.38	537210	10.41	459734	12.61
Lower Limit	154996	7.38	134302.5	9.41	114933.5	11.61
Sample ID	Response	RT	Response	RT	Response	RT
Blank WG467671	285067	7.88	178697	9.91	130287	12.12
LCS WG467671	320269	7.88	248349	9.91	197638	12.12
LCSD WG467671	315909	7.88	216616	9.91	160569	12.12
MS WG467671	257776	7.89	214230	9.92	125922	12.12
MSD WG467671	286039	7.89	241144	9.92	148259	12.12

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Semi-Volatiles by Method 8270C		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467671**
Analysis Date:	3/16/2010	Analyst:	145
Instrument ID:	BNAMS2	Extraction Date:	3/14/2010
Sample Numbers:	L449295-01, -02		

Internal Standard Response and Retention Time Summary

FileID:0316_04.D Date:3/16/2010 Time:11:21 AM

	IS1		IS2		IS3	
	Response	RT	Response	RT	Response	RT
12 Hour Std	39889	4.79	153743	5.55	76790	6.57
Upper Limit	79778	5.29	307486	6.05	153580	7.07
Lower Limit	19944.5	4.29	76871.5	5.05	38395	6.07
Sample ID	Response	RT	Response	RT	Response	RT
L449295-01	38085	4.79	157237	5.55	81330	6.57
L449295-02	33745	4.79	137261	5.54	71326	6.57

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Semi-Volatiles by Method 8270C		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467671**
Analysis Date:	3/16/2010	Analyst:	145
Instrument ID:	BNAMS2	Extraction Date:	3/14/2010
Sample Numbers:	L449295-01, -02		

Internal Standard Response and Retention Time Summary

FileID:0316_04.D Date:3/16/2010 Time:11:21 AM

	IS4		IS5		IS6		
	Response	RT	Response	RT	Response	RT	
12 Hour Std	125256	7.44	103603	8.98	93675	10.07	
Upper Limit	250512	7.94	207206	9.48	187350	10.57	
Lower Limit	62628	6.94	51801.5	8.48	46837.5	9.57	
Sample ID	Response	RT	Response	RT	Response	RT	
L449295-01	132769	7.44	92649	8.98	52139	10.07	
L449295-02	116509	7.44	75208	8.98	24155	10.07	*

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Polynucluear Aromatic Hydrocarbons by Method 8310		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467808**
Analysis Date:	3/17/2010	Analyst:	169
Instrument ID:	HPLC2	Extraction Date:	3/15/2010
Sample Numbers:	L449295-01, -02		

Method Blank

Analyte	CAS	PQL	Qualifiers
Naphthalene	91-20-3	<0.0200	
Acenaphthylene	208-96-8	<0.0200	
Acenaphthene	83-32-9	<0.0200	
Fluorene	86-73-7	<0.0200	
Phenanthrene	85-01-8	<0.0200	
Anthracene	120-12-7	<0.0200	
Fluoranthene	206-44-0	<0.0200	
Pyrene	129-00-0	<0.0200	
Benzo(a)anthracene	56-55-3	<0.0200	
Chrysene	218-01-9	<0.0200	
Benzo(b)fluoranthene	205-99-2	<0.0200	
Benzo(k)fluoranthene	207-08-9	<0.0200	
Benzo(a)pyrene	50-32-8	<0.0200	
Dibenz(a,h)anthracene	53-70-3	<0.0200	
Benzo(g,h,i)perylene	191-24-2	<0.0200	
Indeno(1,2,3-cd)pyrene	193-39-5	<0.0200	

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Polynucluear Aromatic Hydrocarbons by Method 8310		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467808**
Analysis Date:	3/17/2010	Analyst:	169
Instrument ID:	HPLC2	Extraction Date:	3/15/2010
Sample Numbers:	L449295-01, -02		

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Naphthalene	1.32	0.977	74.0	11 - 104	
Acenaphthylene	1.32	1.00	75.9	33 - 118	
Acenaphthene	1.32	1.01	76.9	22 - 139	
Fluorene	1.32	1.03	78.2	47 - 126	
Phenanthrene	1.32	1.05	79.2	63 - 118	
Anthracene	1.32	1.01	76.9	65 - 119	
Fluoranthene	1.32	1.07	81.2	76 - 121	
Pyrene	1.32	1.04	78.8	77 - 125	
Benzo(a)anthracene	1.32	1.05	79.2	77 - 123	
Chrysene	1.32	1.04	79.2	79 - 125	
Benzo(b)fluoranthene	1.32	0.999	75.7	68 - 110	
Benzo(k)fluoranthene	1.32	0.983	74.4	70 - 124	
Benzo(a)pyrene	1.32	0.997	75.5	68 - 118	
Dibenz(a,h)anthracene	1.32	0.939	71.2	64 - 121	
Benzo(g,h,i)perylene	1.32	1.03	78.3	57 - 118	
Indeno(1,2,3-cd)pyrene	1.32	0.905	68.5	62 - 121	

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Polynucluear Aromatic Hydrocarbons by Method 8310		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467808**
Analysis Date:	3/17/2010	Analyst:	169
Instrument ID:	HPLC2	Extraction Date:	3/15/2010
Sample Numbers:	L449295-01, -02		

Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Naphthalene	1.32	0.958	72.6	11 - 104	
Acenaphthylene	1.32	1.02	77.1	33 - 118	
Acenaphthene	1.32	1.03	78.0	22 - 139	
Fluorene	1.32	1.06	80.0	47 - 126	
Phenanthrene	1.32	1.08	81.9	63 - 118	
Anthracene	1.32	1.06	80.0	65 - 119	
Fluoranthene	1.32	1.13	85.6	76 - 121	
Pyrene	1.32	1.10	83.6	77 - 125	
Benzo(a)anthracene	1.32	1.11	83.8	77 - 123	
Chrysene	1.32	1.11	83.9	79 - 125	
Benzo(b)fluoranthene	1.32	1.06	80.4	68 - 110	
Benzo(k)fluoranthene	1.32	1.04	78.6	70 - 124	
Benzo(a)pyrene	1.32	1.06	80.0	68 - 118	
Dibenz(a,h)anthracene	1.32	0.997	75.5	64 - 121	
Benzo(g,h,i)perylene	1.32	1.10	83.3	57 - 118	
Indeno(1,2,3-cd)pyrene	1.32	0.962	72.8	62 - 121	

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Polynucluear Aromatic Hydrocarbons by Method 8310		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467808**
Analysis Date:	3/17/2010	Analyst:	169
Instrument ID:	HPLC2	Extraction Date:	3/15/2010
Sample Numbers:	L449295-01, -02		

Surrogate Summary

Laboratory Sample ID	p-TRP ppm	% Rec
Blank WG467808	0.147	88.2
LCS WG467808	0.133	79.8
LCSD WG467808	0.137	82.2
MS WG467808	0.152	91.2
MSD WG467808	0.182	109
L449295-01	0.203	122
L449295-02	0.143	85.5

p-Terphenyl-d14 0.16665 ppm Limits - 62 - 137

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Polynucluear Aromatic Hydrocarbons by Method 8310		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467808**
Analysis Date:	3/17/2010	Analyst:	169
Instrument ID:	HPLC2	Extraction Date:	3/15/2010
Sample Numbers:	L449295-01, -02		

Matrix Spike/Matrix Spike Duplicate

L449295-02

Analyte	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qualifier	% RPD	Control Limits	RPD Qual
Naphthalene	1.32	0.0000	0.615	46.6	0.733	55.5	10-122		18	63	
Acenaphthylene	1.32	0.0000	0.687	52.0	0.865	65.5	22-133		23	40	
Acenaphthene	1.32	0.0000	0.692	52.4	0.875	66.3	10-159		23	44	
Fluorene	1.32	0.0000	0.720	54.5	0.906	68.7	21-144		23	49	
Phenanthrene	1.32	0.0000	0.698	52.9	0.898	68.0	45-135		25	28	
Anthracene	1.32	0.0000	1.17	88.3	1.38	104	47-137		17	26	
Fluoranthene	1.32	0.0000	0.794	60.1	0.992	75.2	49-140		22	20	R5
Pyrene	1.32	0.0000	0.985	74.6	1.18	89.7	38-161		18	31	
Benzo(a)anthracene	1.32	0.0000	0.684	51.8	0.853	64.6	44-147		22	26	
Chrysene	1.32	0.0000	0.640	48.5	0.812	61.5	48-150		24	26	
Benzo(b)fluoranthene	1.32	0.0000	0.648	49.1	0.815	61.8	47-121		23	28	
Benzo(k)fluoranthene	1.32	0.0000	0.627	47.5	0.785	59.5	47-135		22	24	
Benzo(a)pyrene	1.32	0.0000	0.613	46.4	0.765	58.0	46-129		22	25	
Dibenz(a,h)anthracene	1.32	0.0000	0.606	45.9	0.749	56.8	39-134		21	29	
Benzo(g,h,i)perylene	1.32	0.0000	0.620	47.0	0.790	59.9	39-125		24	35	
Indeno(1,2,3-cd)pyrene	1.32	0.0000	0.547	41.4	0.678	51.4	42-131	M2	21	32	

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L449295
Sunset Analytical Laboratory

Test:	Polynucluear Aromatic Hydrocarbons by Method 8310		
Project No:	1003033	Matrix:	Soil - mg/kg
Project:	Yuma	EPA ID:	TN00003
Collection Date:	3/12/2010	**Analytic Batch:**	**WG467808**
Analysis Date:	3/17/2010	Analyst:	169
Instrument ID:	HPLC2	Extraction Date:	3/15/2010
Sample Numbers:	L449295-01, -02		

Laboratory Control Sample/ Laboratory Control Sample Duplicate

Analyte	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	Qualifier	% RPD	Control Limits	Qualifier
Naphthalene	1.32	0.977	74.0	0.958	72.6	11-104		1.9	49	
Acenaphthylene	1.32	1.00	75.9	1.02	77.1	33-118		1.6	35	
Acenaphthene	1.32	1.01	76.9	1.03	78.0	22-139		1.5	36	
Fluorene	1.32	1.03	78.2	1.06	80.0	47-126		2.2	28	
Phenanthrene	1.32	1.05	79.2	1.08	81.9	63-118		3.4	20	
Anthracene	1.32	1.01	76.9	1.06	80.0	65-119		4.0	20	
Fluoranthene	1.32	1.07	81.2	1.13	85.6	76-121		5.3	20	
Pyrene	1.32	1.04	78.8	1.10	83.6	77-125		5.9	20	
Benzo(a)anthracene	1.32	1.05	79.2	1.11	83.8	77-123		5.6	20	
Chrysene	1.32	1.04	79.2	1.11	83.9	79-125		5.8	20	
Benzo(b)fluoranthene	1.32	0.999	75.7	1.06	80.4	68-110		6.0	20	
Benzo(k)fluoranthene	1.32	0.983	74.4	1.04	78.6	70-124		5.4	20	
Benzo(a)pyrene	1.32	0.997	75.5	1.06	80.0	68-118		5.7	20	
Dibenz(a,h)anthracene	1.32	0.939	71.2	0.997	75.5	64-121		5.9	25	
Benzo(g,h,i)perylene	1.32	1.03	78.3	1.10	83.3	57-118		6.1	28	
Indeno(1,2,3-cd)pyrene	1.32	0.905	68.5	0.962	72.8	62-121		6.1	26	

Company Name/Address

Sunset Analytical Lab

2219 S. 48th St., Suite B
Tempe, AZ 85282

Alternate Billing

Report to: Vic Nielsen

E-mail to: vic@sunsetlaboratory.com

Analysis/Container/Preservative

Chain of Custody
Page 1 of 1

Prepared by: B179

ENVIRONMENTAL Science corp
12065 Lebanon Road
Mt. Juliet TN 37122

Phone (615)758-5858
Phone (800) 767-5859
FAX (615)758-5859

Project Description: YUMA

City/State Collected: AZ

PHONE: 602-437-0741
FAX: 602-437-1456

Client Project No. 1003033

Lab Project # 1003033

Collected by:

Site/Facility ID#

P.O.#

Collected by(signature):

Packed on Ice N___ Y___

Rush? (Lab MUST be Notified)
_____Next Day.....100%
_____Two Day.....50%
_____Three Day.....25%

Date Results Needed

Email?__No_X__Yes
FAX?__X__No__Yes

CoCode (lab use only)
SUNLABTAZ
Template/Prelogin

Shipped Via: Phoenix Service Center

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No of Cntrs	8270	8015	8310	PH	8 RCRA	TSS	Paint Filter		Remarks/contaminant	Sample # (lab only)
IDW-SB-031210	Grab	SS	NA	3/12/10	1030	1	X	X	X	X	X	X	X		1003033-1	L449295 -01
IDW-NB-031210	↓	↓	↓	↓	1030	1	X	X	X	X	X	X	X		↓ 2	-02

3/12/10

*Matrix: SS-Soil/Solid GW-Groundwater WW-Wastewater DW-Drinking Water OT- Other_____

pH_____ Temp_____

Remarks:

Flow_____ Other_____

Relinquisher by:(Signature)	Date:	Time:	Received by:(Signature)	Samples returned via: FedEx__ UPS__Other__		Condition (lab use only)
	3/12/10	1540				OK
Relinquisher by:(Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.4°C	Bottles Received: 2	COC SI
Relinquisher by:(Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 3-13-10	Time: 0900	pH Checked: NCF: 56 of 56

800 4662 5850

REPUBLIC SERVICES, INC.

SPECIAL WASTE PROFILE

Requested Disposal Facility: Copper Mountain LF AZ 4133

Waste Profile #
Sales Rep #.

Saveable fill in form. Restricted printing until all required (yellow) fields are completed.

I. Generator Information

Generator Name: Arizona Department of Environmental Quality			
Generator Site Address: 20th & Factor WQARF Site, 655 East 20th Street			
City: Yuma	County: Yuma	State: Arizona	Zip: 85365
State ID/Reg No: N/A	State Approval/Waste Code: N/A (if applicable)		NAICS # : N/A
Generator Mailing Address (if different): ADEQ, 400 West Congress Street, Suite 433			
City: Tucson	County: Pima	State: Arizona	Zip: 85701
Generator Contact Name: Tina LePage		Email: lepage.tina@azdeq.gov	
Phone Number: (520) 628-6663	Ext:	Fax Number: (520) 628-6745	

IIa. Transporter Information

Transporter Name: MP Environmental		Contact Name: Craig Miller	
Transporter Address: 3045 South 51st Avenue			
City: Phoenix	County: Maricopa	State: AZ	Zip: 85043
Phone Number:	Fax Number:	State Transportation Number:	

IIb. Billing Information

Bill To: GeoTrans, Inc,		Contact Name: Jasenka Zbozinek	
Billing Address: 4801 E Washington St, Suite 260		Email:	
City: Phoenix	State: AZ	Zip: 85034	Phone: (602) 682-3320

III. Waste Stream Information

Name of Waste: Non-hazardous purged groundwater

Process Generating Waste:

Purged groundwater was generated during the well development and quarterly sampling in February through April 2010. In good faith we can state that based on historical investigations, the source of the contamination is not known. The chemicals of concern are PCE, TCE, and cyanide.

Physical State: ☐ SOLID ☐ SEMI-SOLID ☐ POWDER ☑ LIQUID

Method of Shipment: ☑ BULK ☐ DRUM ☐ BAGGED ☐ OTHER:

Estimated Annual Volume: 5,000 Gallons

Frequency: ☑ ONE TIME ☐ ANNUAL

Disposal Consideration: ☐ LANDFILL ☑ SOLIDIFICATION ☐ BIOREMEDIATION

IV. Representative Sample Certification

☐ NO SAMPLE TAKEN

Is the representative sample collected to prepare this profile and laboratory analysis, collected in accordance with U.S. EPA 40 CFR 261.20(c) guidelines or equivalent rules?	☑ YES or ☐ NO
Sample Date: 4/26-4/30, 2010	Type of Sample: ☐ COMPOSITE SAMPLE ☑ GRAB SAMPLE
Sample ID Numbers: Please see Attached Sheet	

©Republic Service Inc. April 2009

REPUBLIC SERVICES, INC.

SPECIAL WASTE PROFILE (continued)

Waste Profile #

V. Physical Characteristics of Waste

Characteristic Components	% by Weight (range)
1. Liquid	99.000
2. Sediment	1.000
3.	
4.	
5.	

Color	Odor (describe)	Does Waste Contain Free Liquids?	% Solids	pH:	Flash Point
Clear	None	☑ Yes or ☐ No	1.00	5-9	N/A °F

Attach Laboratory Analytical Report (and/or Material Safety Data Sheet) Including Chain of Custody and Required Parameters Provided for this Profile

Does this waste or generating process contain regulated concentrations of the following Pesticides and/or Herbicides: Chlordane, Endrin, Heptachlor (and it epoxides), Lindane, Methoxychlor, Toxaphene, 2,4-D, or 2,4,5-TP Silvex as defined in 40 CFR 261.33?	☐ Yes or ☑ No
Does this waste contain reactive sulfides (greater than 500 ppm) or reactive cyanide (greater than 250 ppm) [reference 40 CFR 261.23(a)(5)]?	☐ Yes or ☑ No
Does this waste contain regulated concentrations of Polychlorinated Biphenyls (PCBs) as defined in 40 CFR Part 761?	☐ Yes or ☑ No
Does this waste contain concentrations of listed hazardous wastes defined in 40 CFR 261.31, 261.32, 261.33, including RCRA F-Listed Solvents?	☐ Yes or ☑ No
Does this waste exhibit a Hazardous Characteristic as defined by Federal and/or State regulations?	☐ Yes or ☑ No
Does this waste contain regulated concentrations of 2,3,7,8-Tetrachlorodibenzodioxin (2,3,7,8-TCCD), or any other dioxin as defined in 40 CFR 261.31?	☐ Yes or ☑ No
Is this a regulated Radioactive Waste as defined by Federal and/or State regulations?	☐ Yes or ☑ No
Is this a regulated Medical or Infectious Waste as defined by Federal and/or State regulations?	☐ Yes or ☑ No
Is this waste a reactive or heat generating waste?	☐ Yes or ☑ No
Does the waste contain sulfur or sulfur by-products?	☐ Yes or ☑ No
Is this waste generated at a Federal Superfund Clean Up Site?	☐ Yes or ☑ No
Is this waste from a TSD facility, TSD-like facility or waste consolidator?	☐ Yes or ☑ No

VI. Certification

I hereby certify that to the best of my knowledge and belief, the information contained herein is a true, complete and accurate description of the waste material being offered for disposal and all known or suspected hazards have been disclosed. All Analytical Results/Material Safety Data Sheets submitted are truthful and complete and are representative of the waste.

I further certify that by utilizing this profile, neither I nor any other employee of the company will deliver for disposal or attempt to deliver for disposal any waste which is classified as toxic waste, hazardous waste or infectious waste, or any other waste material this facility is prohibited from accepting by law. I shall immediately give written notice of any change or condition pertaining to the waste not provided herein. Our company hereby agrees to fully indemnify this disposal facility against any damages resulting from this certification being inaccurate or untrue.

I further certify that the company has not altered the form or content of this profile sheet as provided by Republic Services Inc.

Tina LePage	Arizona Department of Environmental Quality
Authorized Representative Name/Title (Type or Print)	Company Name
Tina LePage	[redacted]
Authorized Representative Signature	Date

© Republic Services Inc. April 2009

Sample ID Numbers:

DMW-11-042610, MW-25A-0402610, MW-25B-0402710, MW-16A-0402710, MW-13A-0402710, MW-23B-0402710, MW-17C-0402710, MW-17A-0402710, MW-9A-0402710, MW-101A-0402710, MW-8C-0402810, MW-24B-0402810, MW-21A-0402810, MW-21B-0402810, MW-21C-0402810, MW-12A-0402810, MW-18A-0402810, MW-8B-0402810, MW-8A-0402810, MW-15A-0402910, MW-103C-0402910, MW-102B1-0402910

I hereby certify that the samples listed above are representative of the waste in the original profile.

Tina Le Page

Tina Le Page

Signature

Arizona Department of Environmental Quality

4/8/2010

Date

REPUBLIC SERVICES, INC.

SPECIAL WASTE PROFILE

Requested Disposal Facility: Copper Mountain LF AZ 4133

Waste Profile #
Sales Rep #.

Saveable fill in form. Restricted printing until all required (yellow) fields are completed.

I. Generator Information

Generator Name: Arizona Department of Environmental Quality			
Generator Site Address: 20th & Factor WQARF Site, 655 East 20th Street			
City: Yuma	County: Yuma	State: Arizona	Zip: 85365
State ID/Reg No: N/A	State Approval/Waste Code: N/A (if applicable)		NAICS # : N/A
Generator Mailing Address (if different): ADEQ, 400 West Congress Street, Suite 433			
City: Tucson	County: Pima	State: Arizona	Zip: 85701
Generator Contact Name: Tina LePage		Email: lepage.tina@azdeq.gov	
Phone Number: (520) 628-6663	Ext:	Fax Number: (520) 628-6745	

IIa. Transporter Information

Transporter Name: MP Environmental		Contact Name: Craig Miller	
Transporter Address: 3045 South 51st Avenue			
City: Phoenix	County: Maricopa	State: AZ	Zip: 85043
Phone Number: 602 389.6233	Fax Number:	State Transportation Number:	

IIb. Billing Information

Bill To: GeoTrans, Inc,		Contact Name: Jasenka Zbozinek	
Billing Address: 4801 E Washington St, Suite 260		Email:	
City: Phoenix	State: AZ	Zip: 85034	Phone: (602) 682-3320

III. Waste Stream Information

Name of Waste: Non-hazardous soil cuttings, trash, and asphalt

Process Generating Waste:

Soil cuttings were generated during the installation of soil vapor and groundwater monitoring wells during February and March 2010. In good faith we can state that based on historical investigations, the source of the contamination is not known. The chemicals of concern are PCE, TCE, and cyanide.

Physical State: ☑ SOLID ☐ SEMI-SOLID ☐ POWDER ☐ LIQUID

Method of Shipment: ☑ BULK ☐ DRUM ☐ BAGGED ☐ OTHER:

Estimated Annual Volume: 40 Tons

Frequency: ☑ ONE TIME ☐ ANNUAL

Disposal Consideration: ☑ LANDFILL ☐ SOLIDIFICATION ☐ BIOREMEDIATION

IV. Representative Sample Certification

☐ NO SAMPLE TAKEN

Is the representative sample collected to prepare this profile and laboratory analysis, collected in accordance with U.S. EPA 40 CFR 261.20(c) guidelines or equivalent rules?	☑ YES or ☐ NO
Sample Date: 3/12/2010	Type of Sample: ☑ COMPOSITE SAMPLE ☐ GRAB SAMPLE
Sample ID Numbers: IDW-SB-031210, IDW-NB-031210	

© Republic Service Inc. April 2009

REPUBLIC SERVICES, INC.

SPECIAL WASTE PROFILE (continued)

Waste Profile #

V. Physical Characteristics of Waste

Characteristic Components	% by Weight (range)
1. Soil	97.000
2. Trash	2.000
3. Asphalt	1.000
4.	
5.	

Color	Odor (describe)	Does Waste Contain Free Liquids?	% Solids	pH:	Flash Point
Brown	None	☐ Yes or ☑ No	100.00	9.9	<170 °F

Attach Laboratory Analytical Report (and/or Material Safety Data Sheet) Including Chain of Custody and Required Parameters Provided for this Profile

Does this waste or generating process contain regulated concentrations of the following Pesticides and/or Herbicides: Chlordane, Endrin, Heptachlor (and it epoxides), Lindane, Methoxychlor, Toxaphene, 2,4-D, or 2,4,5-TP Silvex as defined in 40 CFR 261.33?	☐ Yes or ☑ No
Does this waste contain reactive sulfides (greater than 500 ppm) or reactive cyanide (greater than 250 ppm) [reference 40 CFR 261.23(a)(5)]?	☐ Yes or ☑ No
Does this waste contain regulated concentrations of Polychlorinated Biphenyls (PCBs) as defined in 40 CFR Part 761?	☐ Yes or ☑ No
Does this waste contain concentrations of listed hazardous wastes defined in 40 CFR 261.31, 261.32, 261.33, including RCRA F-Listed Solvents?	☐ Yes or ☑ No
Does this waste exhibit a Hazardous Characteristic as defined by Federal and/or State regulations?	☐ Yes or ☑ No
Does this waste contain regulated concentrations of 2,3,7,8-Tetrachlorodibenzodioxin (2,3,7,8-TCCD), or any other dioxin as defined in 40 CFR 261.31?	☐ Yes or ☑ No
Is this a regulated Radioactive Waste as defined by Federal and/or State regulations?	☐ Yes or ☑ No
Is this a regulated Medical or Infectious Waste as defined by Federal and/or State regulations?	☐ Yes or ☑ No
Is this waste a reactive or heat generating waste?	☐ Yes or ☑ No
Does the waste contain sulfur or sulfur by-products?	☐ Yes or ☑ No
Is this waste generated at a Federal Superfund Clean Up Site?	☐ Yes or ☑ No
Is this waste from a TSD facility, TSD-like facility or waste consolidator?	☐ Yes or ☑ No

VI. Certification

I hereby certify that to the best of my knowledge and belief, the information contained herein is a true, complete and accurate description of the waste material being offered for disposal and all known or suspected hazards have been disclosed. All Analytical Results/Material Safety Data Sheets submitted are truthful and complete and are representative of the waste.

I further certify that by utilizing this profile, neither I nor any other employee of the company will deliver for disposal or attempt to deliver for disposal any waste which is classified as toxic waste, hazardous waste or infectious waste, or any other waste material this facility is prohibited from accepting by law. I shall immediately give written notice of any change or condition pertaining to the waste not provided herein. Our company hereby agrees to fully indemnify this disposal facility against any damages resulting from this certification being inaccurate or untrue.

I further certify that the company has not altered the form or content of this profile sheet as provided by Republic Services Inc.

Tina LePage	Arizona Department of Environmental Quality
Authorized Representative Name/Title (Type or Print)	Company Name
Tina LePage	03/26/2010
Authorized Representative Signature	Date

COPY

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number:
2. Page 1 of 1
3. Emergency Response Phone:
4. Waste Tracking Number: 330462310

5. Generator's Name and Mailing Address: ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY, 1110 W. WASHINGTON ST., PHOENIX, AZ 85007
Generator's Site Address (if different than mailing address):
Generator's Phone: (520) 628-6663

6. Transporter 1 Company Name: MPE
U.S. EPA ID Number:

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address: COPPER MOUNTAIN LANDFILL, AVE 34 E, COUNTY 12th STREET, WELLTON AZ 85356
U.S. EPA ID Number: AZR000002428
Facility's Phone: 928-785-3792

9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. MONITORING WELL PURGE WATER	1	BULK	5,000	GAL	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information
PROFILE #4133-10-8446

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Generator's/Offeror's Printed/Typed Name: Tina L. Page / ADEQ
Signature: Tina L. Page
Month 06 Day 23 Year 10

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Mike Shaughnessy
Signature: Mike Shaughnessy
Month 06 Day 23 Year 10
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator)
U.S. EPA ID Number:
Facility's Phone:
17c. Signature of Alternate Facility (or Generator)
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 17a
Printed/Typed Name: Samuel Lanic
Signature: Samuel Lanic
Month 6 Day 23 Year 10

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

5-NHM-C-SO-1158

DESIGNATED FACILITY TO DESTINATION

3503553

COPPER MOUNTAIN LANDFILL
36 E & COUNTY 14TH ST
WELLTON, AZ 85356

000071
GEOTRANS INC.
4801 E WASHINGTON ST., STE 260

PHOENIX, AZ 85034

SITE	TICKET	GRID
07	123024	

WEIGHMASTER: SR00050 SHARON R

DATE IN	TIME IN
23 June 2010	11:54 am
DATE OUT 23 June 2010	TIME OUT 12:44 pm

VEHICLE	ROLL OFF
MP623	

REFERENCE	ORIGIN

00 Gross Weight 65,600.00 lb
Tare Weight 31,800.00 lb
Net Weight 33,800.00 lb 16.90 TN

Inbound - SCALE TICKET

16.90	TN	VY	SW-SPECIAL WASTE-LIQUID				
1.00	LD	[illegible]	ENVIRONMENTAL FEE				
1.00	LD	[illegible]	FUEL RECOVERY FEE				

Contract: #4133108446
330462310

TENDERED
CHANGE
CHECK NO.

ALLIED WASTE

SIGNATURE M Raeuing

AW-F0

COPY

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number:
2. Page 1 of 1
3. Emergency Response Phone:
4. Waste Tracking Number: 20100623

5. Generator's Name and Mailing Address: ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY, 1110 W. WASHINGTON ST. PHOENIX, AZ 85007
Generator's Site Address (if different than mailing address):
Generator's Phone: (520) 628-6663

6. Transporter 1 Company Name: MPE
U.S. EPA ID Number:

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address: COPPER MOUNTAIN LANDFILL, AVE 34 E. COUNTY 12th ST, WELTON, AZ 85356
U.S. EPA ID Number: AZR000002428
Facility's Phone: (928) 785-3797

9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. MONITORING WELL DRILL CUTTINGS/TRASH	2	ROLL-OFFS	40	TONS	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information
PROFILE # 4133-10-8351
Bin # 4597-4454

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Generator's/Offeror's Printed/Typed Name: Tina L Page / ADEQ
Signature: Tina L Page
Month 06 Day 23 Year 10

15. International Shipments: ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Joey Lockmanese (MPE)
Signature:
Month 06 Day 23 Year 10
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

17. Discrepancy
17a. Discrepancy Indication Space: ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator):
U.S. EPA ID Number:
Facility's Phone:
17c. Signature of Alternate Facility (or Generator):
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 17a
Printed/Typed Name: Samuel Price
Signature:
Month 6 Day 23 Year 10

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

6-NHM-C-SO-1158

1-DESIGNATED FACILITY TO DESTINATION

TFDEQP000415

3503554

COPPER MOUNTAIN LANDFILL
36 E & COUNTY 14TH ST
WELLTON, AZ 85356

000071
BEDTRANS INC.
4801 E WASHINGTON ST., STE 260

PHOENIX, AZ 85034

SITE	TICKET	GRID
07	123025	

WEIGHMASTER: SR00050 SHARON R

DATE IN	TIME IN
23 June 2010	11:50 am
DATE OUT June 2010	TIME OUT pm

VEHICLE	ROLL OFF
MP 613	

REFERENCE	ORIGIN
	CALIFORNIA

00 Gross Weight 72,980.00 lb
Tare Weight 40,820.00 lb
Net Weight 32,160.00 lb 16.08 TN

Inbound - SCALE TICKET

QTY	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
16.05	TN	VG SW-CONT SOIL				
1.00	LD	[illegible] ENVIRONMENTAL FEE				
1.00	LD	[illegible]1 FUEL RECOVERY FEE				

Contract: #4133108351
20100623

NET AMOUNT
TENDERED
CHANGE
CHECK NO.

ALLIED WASTE

SIGNATURE

AW-

APPENDIX D

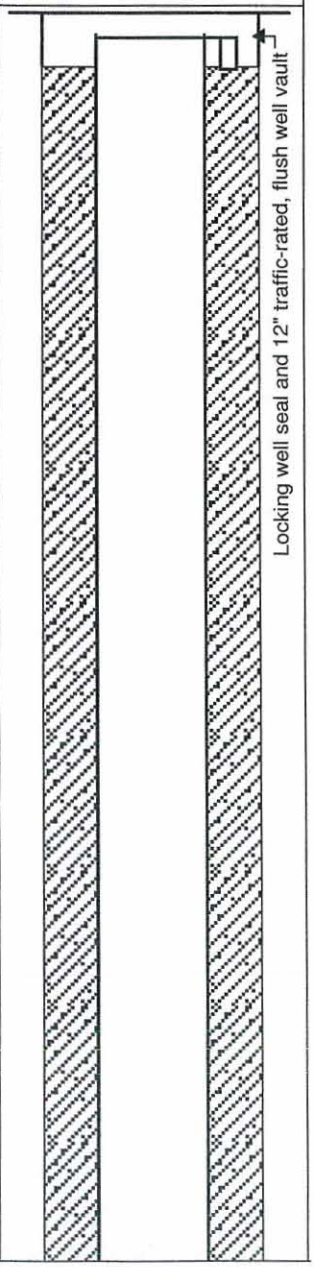
Soil Boring Log for MW-25B,
Construction Details for MW-25A and MW-25B, and
Well Drillers Report and Well Log for MW-25A and MW-25B

GeoTrans, Inc.
A TETRA TECH COMPANY

4801 E Washington St
Suite 260
Phoenix, AZ 85034
(602) 682-3320

Project Name: WQARF 20th & Factor Ave.
Project Number: 117-1303.036.02
Client: ADEQ
Location: Yuma, AZ
Drill Date: 3/8-12/2010
Reviewed By: Jasenka Zbozinek

Well ID: MW-25B
Drill Method: Mud Rotary
Angle From Vertical: NA
Sample Method: 18" Split Spoon
Logged By: Tyson Glock
Driller: Yellow Jacket

Depth (ft.)	USCS Symbol	Lithology	Description and Comments	Well Construction
			Straight drill to 60' bgs (no samples taken)	
1.0				
2.0				
3.0				
4.0				
5.0				
6.0				
7.0				
8.0				
9.0				
10.0				
11.0				
12.0				
13.0				
14.0				
15.0				
16.0				
17.0				
18.0				
19.0				
20.0				

Date Compiled: 6/2/2010

GeoTrans, Inc.
A TETRA TECH COMPANY

4801 E Washington St
Suite 260
Phoenix, AZ 85034
(602) 682-3320

Project Name: WQARF 20th & Factor Ave.
Project Number: 117-1303.036.02
Client: ADEQ
Location: Yuma, AZ
Drill Date: 3/8-12/2010
Reviewed By: Jasenka Zbozinek

Well ID: MW-25B
Drill Method: Mud Rotary
Angle From Vertical: NA
Sample Method: 18" Split Spoon
Logged By: Tyson Glock
Driller: Yellow Jacket

Depth (ft.)	USCS Symbol	Lithology	Description and Comments	Well Construction
			Straight drill to 60' bgs (no samples taken)	
21.0				
22.0				Bentonite cement grout annular seal
23.0				
24.0				
25.0				
26.0				
27.0				
28.0				
29.0				
30.0				
31.0				
32.0				Schedule 40 PVC casing
33.0				
34.0				
35.0				
36.0				
37.0				
38.0				
39.0				
40.0				

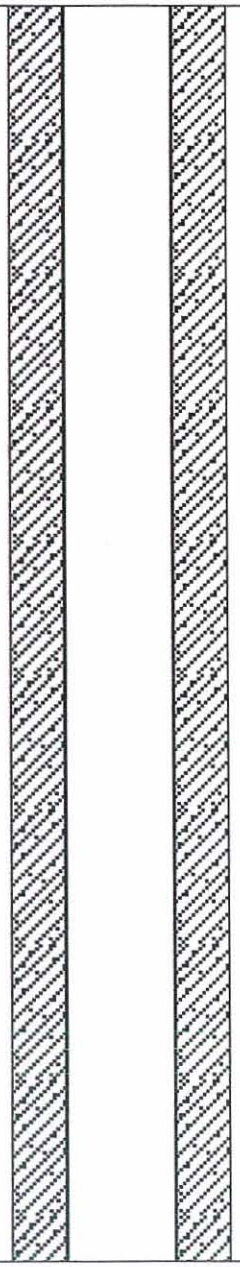
GeoTrans, Inc.
A TETRA TECH COMPANY

4801 E Washington St
Suite 260
Phoenix, AZ 85034
(602) 682-3320

Project Name: WQARF 20th & Factor Ave.
Project Number: 117-1303.036.02
Client: ADEQ
Location: Yuma, AZ
Drill Date: 3/8-12/2010
Reviewed By: Jasenka Zbozinek

Well ID: MW-25B
Drill Method: Mud Rotary
Angle From Vertical: NA
Sample Method: 18" Split Spoon
Logged By: Tyson Glock
Driller: Yellow Jacket

Depth (ft.)	USCS Symbol	Lithology	Description and Comments	Well Construction
			Straight drill to 60' bgs (no samples taken)	
41.0				
42.0				
43.0				
44.0				
45.0				
46.0				
47.0				
48.0				
49.0				
50.0				
51.0				
52.0				
53.0				
54.0				
55.0				
56.0				
57.0				
58.0				
59.0				
60.0				



GeoTrans, Inc.
A TETRA TECH COMPANY

4801 E Washington St
Suite 260
Phoenix, AZ 85034
(602) 682-3320

Project Name: WQARF 20th & Factor Ave.
Project Number: 117-1303.036.02
Client: ADEQ
Location: Yuma, AZ
Drill Date: 3/8-12/2010
Reviewed By: Jasenka Zbozinek

Well ID: MW-25B
Drill Method: Mud Rotary
Angle From Vertical: NA
Sample Method: 18" Split Spoon
Logged By: Tyson Glock
Driller: Yellow Jacket

Depth (ft.)	USCS Symbol	Lithology	Description and Comments	Well Construction
61.0	SW		**Well Graded Sand** fine to medium grained sand, weak cementation	
62.0				
63.0			**Recovery complications; straight drill to 80' bgs.**	
64.0				
65.0				
66.0				
67.0				
68.0				
69.0				
70.0				
71.0				
72.0				
73.0				
74.0				
75.0				
76.0				
77.0				
78.0				
79.0				
80.0				

Date Compiled: 6/2/2010

GeoTrans, Inc.
A TETRA TECH COMPANY

4801 E Washington St
Suite 260
Phoenix, AZ 85034
(602) 682-3320

Project Name: WQARF 20th & Factor Ave.
Project Number: 117-1303.036.02
Client: ADEQ
Location: Yuma, AZ
Drill Date: 3/8-12/2010
Reviewed By: Jasenka Zbozinek

Well ID: MW-25B
Drill Method: Mud Rotary
Angle From Vertical: NA
Sample Method: 18" Split Spoon
Logged By: Tyson Glock
Driller: Yellow Jacket

Depth (ft.)	USCS Symbol	Lithology	Description and Comments	Well Construction
81.0 – 85.0	SP		**Poorly Graded Sand** 100% medium grained sand, 7.5YR 7/4 pink, moist, weak cementation	
85.0 – 90.0	SP		**Poorly Graded Sand** 100% fine grained sand, 7.5YR 6/3 light brown, moist, weak cementation	
90.0 – 100.0	SW		**Well Graded Sand** 50% medium grained sand, 30% fine grained sand, 20% coarse grained sand, 7.5YR 6/4 light brown, moist, weak cementation	Measured depth to water

GeoTrans, Inc.
A TETRA TECH COMPANY

4801 E Washington St
Suite 260
Phoenix, AZ 85034
(602) 682-3320

Project Name: WQARF 20th & Factor Ave.
Project Number: 117-1303.036.02
Client: ADEQ
Location: Yuma, AZ
Drill Date: 3/8-12/2010
Reviewed By: Jasenka Zbozinek

Well ID: MW-25B
Drill Method: Mud Rotary
Angle From Vertical: NA
Sample Method: 18" Split Spoon
Logged By: Tyson Glock
Driller: Yellow Jacket

Depth (ft.)	USCS Symbol	Lithology	Description and Comments	Well Construction
101.0 102.0 103.0 104.0 105.0	SW		**Well Graded Sand** 70% medium grained sand, 30% fine grained sand, 7.5YR 7/4 pink, moist, weak cementation	
106.0 107.0 108.0 109.0 110.0	SW		**Well Graded Sand** 70% medium grained sand, 30% fine grained sand, 7.5YR 6/2 pinkish grey, moist, weak cementation	
111.0 112.0 113.0 114.0 115.0	SW		**Well Graded Sand** 70% fine grained sand, 30% medium grained sand, 7.5YR 6/2 pinkish grey, moist, weak cementation	
116.0 117.0 118.0 119.0 120.0	SW		**Well Graded Sand** 90% medium grained sand, 10% fine grained sand, 7.5YR 6/3 light brown, moist, weak cementation	

GeoTrans, Inc.
A TETRA TECH COMPANY

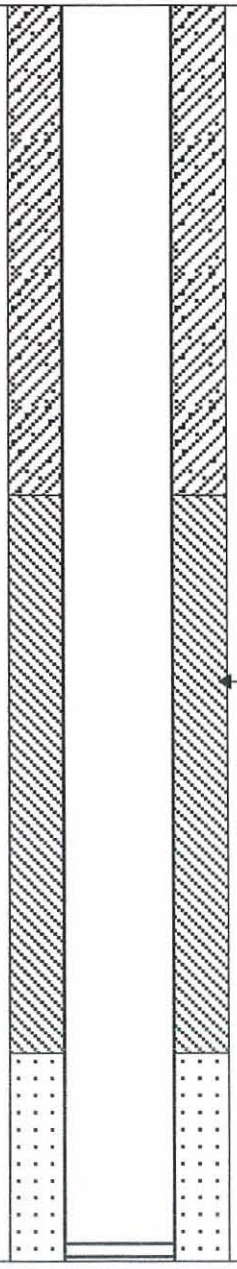
4801 E Washington St
Suite 260
Phoenix, AZ 85034
(602) 682-3320

Project Name: WQARF 20th & Factor Ave.
Project Number: 117-1303.036.02
Client: ADEQ
Location: Yuma, AZ
Drill Date: 3/8-12/2010
Reviewed By: Jasenka Zbozinek

Well ID: MW-25B
Drill Method: Mud Rotary
Angle From Vertical: NA
Sample Method: 18" Split Spoon
Logged By: Tyson Glock
Driller: Yellow Jacket

Depth (ft.)	USCS Symbol	Lithology	Description and Comments
121.0			
122.0			
123.0			
124.0			
125.0			
126.0			
127.0			
128.0			
129.0			
130.0	CL		**Clay with Trace Sand** 95% clay, 5% fine grained sand, 7.5YR 7/3 pink, moist, moderate cementation
131.0	CL		**Gravelly Clay with Trace Sand** 65% clay, 30% gravel, 5% fine grained sand, 7.5YR 7/3 pink, moist, weak cementation
132.0			
133.0	CL		**Clay** 100% clay, 7.5YR 6/3 light brown, moist, moderate cementation
134.0	GC		**Clayey Gravel with Trace Sand** 60% gravel, 35% clay, 5% fine grained sand, 7.5YR 6/3 light brown, moist, weak cementation
135.0	CL		**Sandy Clay** 80% clay, 20% fine grained sand, 7.5YR 6/3 light brown, moist, weak cementation
136.0	SW		**Well Graded Sand** 50% fine grained sand, 50% medium grained sand, 7.5 YR 7/3 pink, moist, weak cementation
137.0			
138.0			
139.0			
140.0			

Well Construction



Date Compiled: 6/2/2010

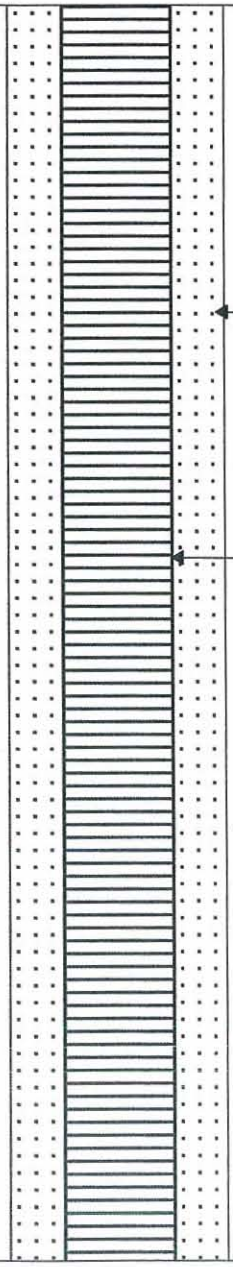
GeoTrans, Inc.
A TETRA TECH COMPANY

4801 E Washington St
Suite 260
Phoenix, AZ 85034
(602) 682-3320

Project Name: WQARF 20th & Factor Ave.
Project Number: 117-1303.036.02
Client: ADEQ
Location: Yuma, AZ
Drill Date: 3/8-12/2010
Reviewed By: Jasenka Zbozinek

Well ID: MW-25B
Drill Method: Mud Rotary
Angle From Vertical: NA
Sample Method: 18" Split Spoon
Logged By: Tyson Glock
Driller: Yellow Jacket

Depth (ft.)	USCS Symbol	Lithology	Description and Comments	Well Construction
141.0	SW		**Well Graded Sand with Gravel** 40% fine grained sand, 20% medium grained sand, 20% coarse grained sand, 15% gravel, 7.5YR 6/2 pinkish grey, moist, weak cementation	
142.0				
143.0			**Recovery complications; straight drill to 163' bgs.**	
144.0				
145.0				Silica sandpack
146.0				
147.0				
148.0				
149.0				Factory-slotted PVC well screen (slot aperture 0.020 inches)
150.0				
151.0				
152.0				
153.0				
154.0				
155.0				
156.0				
157.0				
158.0				
159.0				
160.0				



Date Compiled: 6/2/2010

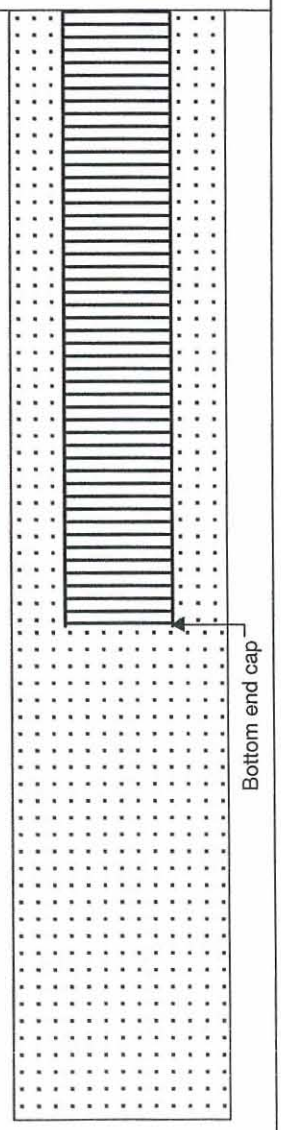
GeoTrans, Inc.
A TETRA TECH COMPANY

4801 E Washington St
Suite 260
Phoenix, AZ 85034
(602) 682-3320

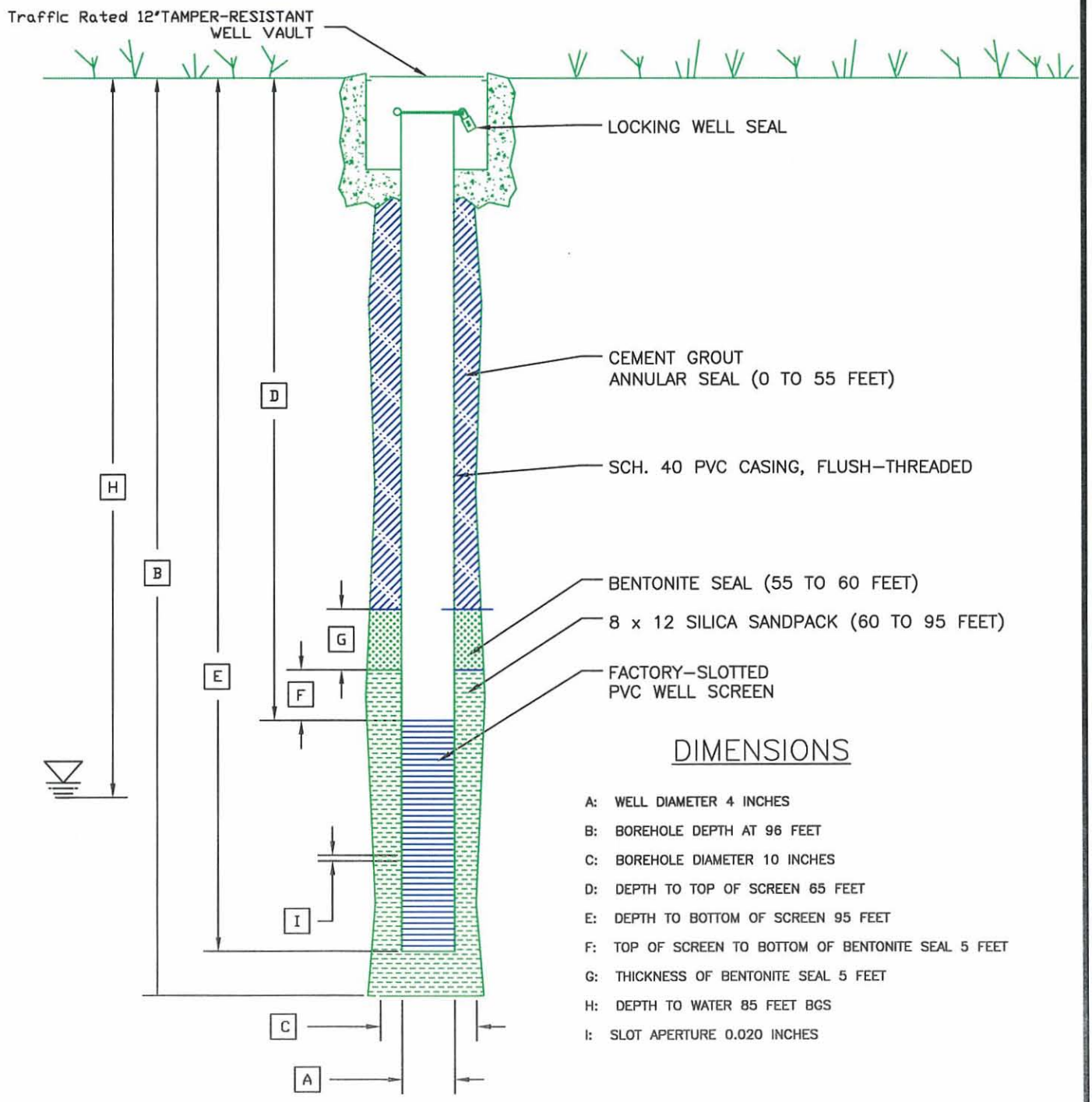
Project Name: WQARF 20th & Factor Ave.
Project Number: 117-1303.036.02
Client: ADEQ
Location: Yuma, AZ
Drill Date: 3/8-12/2010
Reviewed By: Jasenka Zbozinek

Well ID: MW-25B
Drill Method: Mud Rotary
Angle From Vertical: NA
Sample Method: 18" Split Spoon
Logged By: Tyson Glock
Driller: Yellow Jacket

Depth (ft.)	USCS Symbol	Lithology	Description and Comments	Well Construction
161.0				
162.0				
163.0			**Recovery complications; suspected gravelly clay at 163' bgs.**	
164.0				
165.0	**SP**		**Poorly Graded Sand** 100% fine sand, 7.5YR 6/4 light brown, moist, weak cementation	
166.0				
167.0			**Recovery complications; straight drill to 178' bgs.**	
168.0				
169.0				
170.0				
171.0				
172.0				
173.0				
174.0				
175.0				
176.0				
177.0				
178.0			**Total borehole depth: 178' bgs**	
179.0				
180.0				



Date Compiled: 6/2/2010



DIMENSIONS

A: WELL DIAMETER 4 INCHES

B: BOREHOLE DEPTH AT 96 FEET

C: BOREHOLE DIAMETER 10 INCHES

D: DEPTH TO TOP OF SCREEN 65 FEET

E: DEPTH TO BOTTOM OF SCREEN 95 FEET

F: TOP OF SCREEN TO BOTTOM OF BENTONITE SEAL 5 FEET

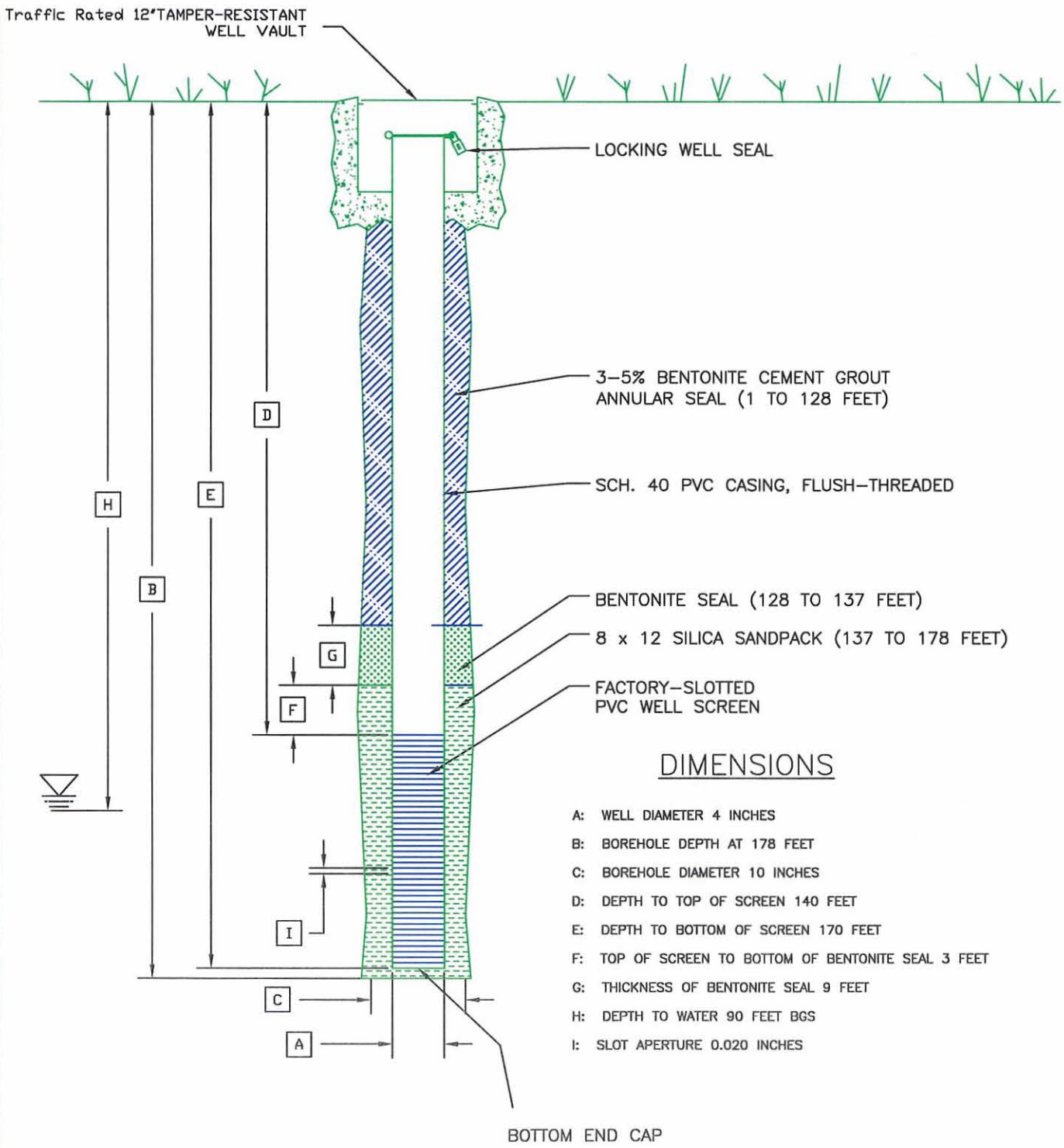
G: THICKNESS OF BENTONITE SEAL 5 FEET

H: DEPTH TO WATER 85 FEET BGS

I: SLOT APERTURE 0.020 INCHES

* NOT TO SCALE

TITLE: MW-25A GROUNDWATER MONITORING WELL CONSTRUCTION DIAGRAM			
LOCATION: 20TH AND FACTOR WQARF SITE, YUMA, ARIZONA			
GeoTrans, Inc. A TETRA TECH COMPANY	CHECKED	JZ/MO	FIGURE
	DRAFTED	BB	D-1
	PROJECT	1303.036	
	DATE	4/2/10	



DIMENSIONS

A: WELL DIAMETER 4 INCHES

B: BOREHOLE DEPTH AT 178 FEET

C: BOREHOLE DIAMETER 10 INCHES

D: DEPTH TO TOP OF SCREEN 140 FEET

E: DEPTH TO BOTTOM OF SCREEN 170 FEET

F: TOP OF SCREEN TO BOTTOM OF BENTONITE SEAL 3 FEET

G: THICKNESS OF BENTONITE SEAL 9 FEET

H: DEPTH TO WATER 90 FEET BGS

I: SLOT APERTURE 0.020 INCHES

* NOT TO SCALE

TITLE: MW–25B GROUNDWATER MONITORING WELL CONSTRUCTION DIAGRAM			
LOCATION: 20TH AND FACTOR WQARF SITE, YUMA, ARIZONA			
GeoTrans, Inc. A TETRA TECH COMPANY	CHECKED	JZ/MO	FIGURE
	DRAFTED	BB	D–2
	PROJECT	1303.036	
	DATE	4/2/10	

Arizona Department of Water Resources
Information Management Unit
P.O. Box 33589 • Phoenix, Arizona 85067-3589
(602) 771-8627 • (800) 352-8488
www.water.az.gov

Well Driller Report and Well Log

THIS REPORT MUST BE FILED WITHIN **30 DAYS** OF COMPLETING THE WELL

PLEASE PRINT CLEARLY USING BLACK OR BLUE INK

COPY

FILE NUMBER
C(8-23)33 AAD
WELL REGISTRATION NUMBER
55 - 911859
PERMIT NUMBER (IF ISSUED)

SECTION 1. DRILLING AUTHORIZATION

Drilling Firm — Mail To:

NAME: YELLOW JACKET DRILLING SERVICES L L C	DWR LICENSE NUMBER: 78
ADDRESS: P.O. BOX 801	TELEPHONE NUMBER: 602-453-3252
CITY / STATE / ZIP: GILBERT, AZ, 85299-0801	FAX: 602453 3258

SECTION 1. REGISTRY INFORMATION

Well Owner

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: Arizona Department of Environmental Quality

MAILING ADDRESS: 400 West Congress, Suite 433

CITY / STATE / ZIP: Tucson, AZ, 85701

CONTACT PERSON NAME AND TITLE: Tina LePage Project Manager

TELEPHONE NUMBER: 520 628-6733

FAX:

WELL NAME (e.g., MW-1, PZ-3, lot 25 Well, Smith Well, etc.): MW-25A

Location of Well

WELL LOCATION ADDRESS (IF ANY): Yuma Row

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
8S	23W	33	NE 1/4	NE 1/4	SE 1/4

LATITUDE			LONGITUDE		
32 °	41 '	49.3 "N	114 °	37 '	05.4 "W

METHOD OF LATITUDE/LONGITUDE (CHECK ONE): USGS Quad Map; Conventional Survey; ✓ *GPS: Hand-Held; *GPS: Survey-Grade

LAND SURFACE ELEVATION AT WELL: 183' Feet Above Sea Level

METHOD OF ELEVATION (CHECK ONE): USGS Quad Map; Conventional Survey; ✓ *GPS: Hand-Held; *GPS: Survey-Grade

*IF GPS WAS USED, GEOGRAPHIC COORDINATE DATUM (CHECK ONE): ✓ NAD-83; Other (please specify)

COUNTY: Yuma

ASSESSOR'S PARCEL ID NUMBER (MOST RECENT): BOOK; MAP; PARCEL

SECTION 3. WELL CONSTRUCTION DETAILS

Drilling Method — CHECK ONE
- Air Rotary
- ✓ Bored or Augered
- Cable Tool
- Dual Rotary
- Mud Rotary
- Reverse Circulation
- Driven
- Jetted
- Air Percussion / Odex Tubing
- Other (please specify)

Method of Well Development — CHECK ONE
- Airlift
- ✓ Bail
- ✓ Surge Block
- Surge Pump
- ✓ Other (please specify) Pump

Method of Sealing at Reduction Points — CHECK ONE
- None
- Packed
- Swedged
- Welded
- Other (please specify) No reduction points

Condition of Well — CHECK ONE
- ✓ Capped
- Pump Installed

Construction Dates
DATE WELL CONSTRUCTION STARTED: 3-2-10
DATE WELL CONSTRUCTION COMPLETED: 3-4-10

I state that this notice is filed in compliance with A.R.S. § 45-596 and is complete and correct to the best of my knowledge and belief.

SIGNATURE OF QUALIFYING PARTY: R. LeDane

DATE: 4.5.10

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 911859

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILD) (attach additional page if needed)

Depth

DEPTH OF BORING: 100 Feet Below Land Surface

DEPTH OF COMPLETED WELL: 95 Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL: 78 Feet Below Land Surface

DATE MEASURED: 3-3-10

TIME MEASURED:

IF FLOWING WELL, METHOD OF FLOW REGULATION: Valve Other:

Borehole

DEPTH FROM SURFACE FROM (feet)	TO (feet)	BOREHOLE DIAMETER (inches)
0	100	10

Installed Casing

DEPTH FROM SURFACE FROM (feet)	TO (feet)	OUTER (inches)	MATERIAL TYPE (T): STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	PERFORATION TYPE (T): BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE (inches)
0	65	4.5		✓			✓						
65	95	4.5		✓							✓		0.010

Installed Annular Material

DEPTH FROM SURFACE FROM (feet)	TO (feet)	ANNULAR MATERIAL TYPE (T): NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	BENTONITE: GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	FILTER PACK: SAND	GRAVEL	SIZE
0	58				✓							
58	63						✓					
63	98									✓		8-12

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 911859

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	**Description** Describe material, grain size, color, etc.	Check (T) every interval where water was encountered (if known)
0	100	Sand w/ clay stringers	
		TD 100'	
		▽ 78'	

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 911859

SECTION 6 WELL SITE PLAN

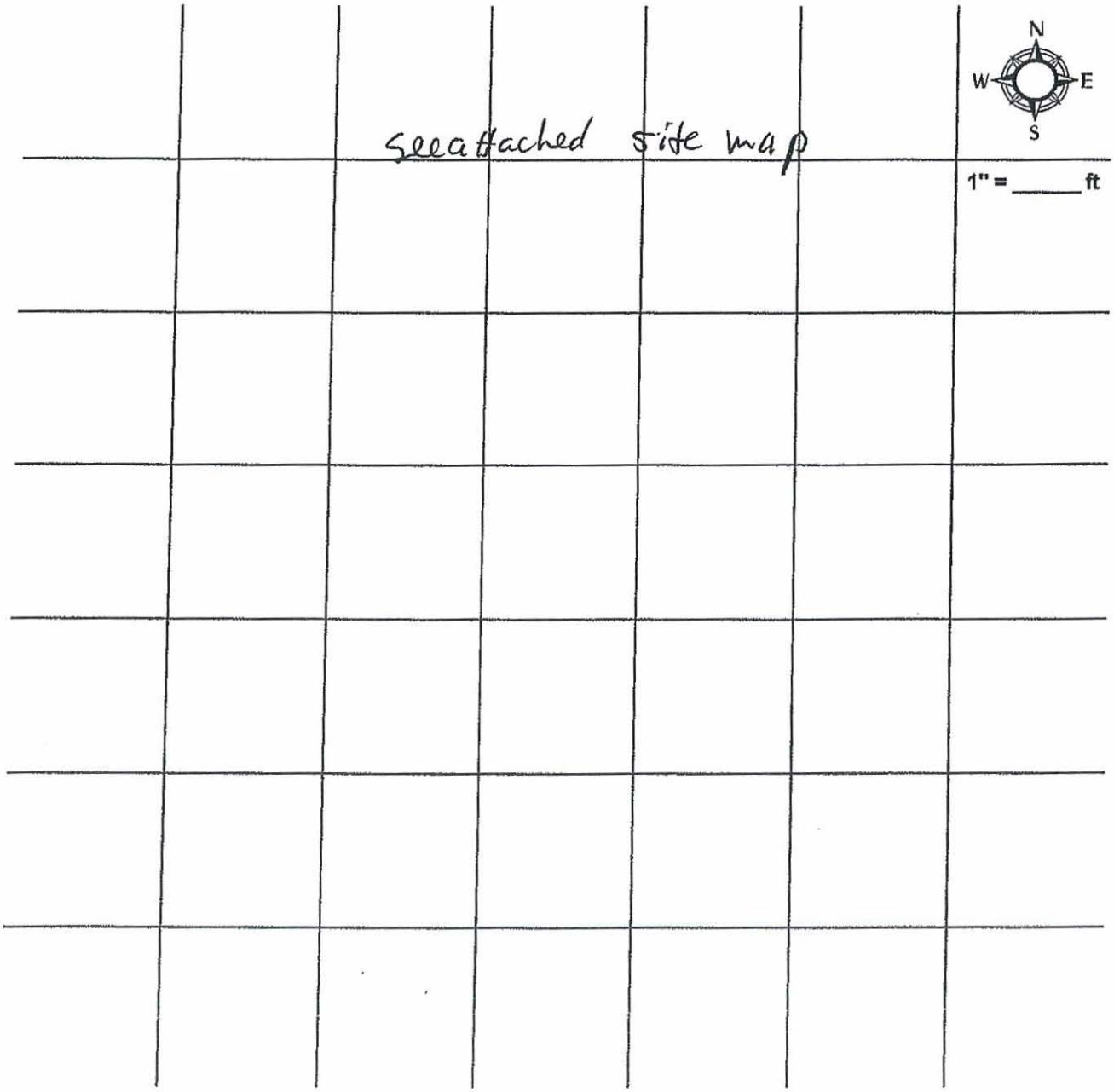
NAME OF WELL OWNER

Arizona Department of Environmental Quality

COUNTY ASSESSOR'S PARCEL ID NUMBER (MOST RECENT)

BOOK	MAP	PARCEL

- Please draw the following: (1) the boundaries of property on which the well was located; (2) the well location; (3) the locations of all septic tank systems and sewer systems on the property or within 100 feet of the well location, even if on neighboring properties; and (4) any permanent structures on the property that may aid in locating the well.
- Please indicate the distance between the well location and any septic tank system or sewer system.



OWNER ADRESS LABEL PAGE

Arizona Department of Environmental Quality
400 West Congress, Suite 433
Tucson, AZ 85701

ARIZONA DEPARTMENT OF WATER RESOURCES
3550 N. Central Avenue Suite 200, Phoenix, Arizona 85012
Telephone (602) 771-8500
Fax (602) 771-8691

Tuesday, March 23, 2010

Janice K. Brewer
Governor

Herbert R. Guenther
Director

Arizona Department of Environmental Quality
400 West Congress, Suite 433
Tucson, AZ 85701

Registration No. 55- 911859
File No. C(8-23)33 AAD

Dear Applicant:

Enclosed is a copy of the Notice of Intent to Drill a Monitor/Piezometer/Environmental Well ("NOI") which you recently filed with this Department pursuant to A.R.S. § 45-596. This is to inform you that the Department has approved the NOI and has mailed (or otherwise provided) a drilling card authorizing the drilling of the well to the well driller identified in the NOI. The driller may not begin drilling until he has received the drilling card which he must keep in his posssession at the well site during drilling. Well drilling activities must be completed within one year after the date the NOI was filed with the Department. If drilling is not completed within one year, you must file a new NOI before proceeding with further drilling.

If it is necessary to change the location of the proposed well, you may not proceed with drilling until you file a new NOI with the Department and the Department issues an amended drilling card to the driller. If you change drillers, you must notify the Department of the new driller's identity. A new driller may not begin drilling until he receives a new drilling card from the Department. If in the course of drilling the well, it is determined that the well cannot be successfully completed as initially intended (dry hole, cave in, lost tools, etc.), the well must be properly abandoned and a Well Abandonment Completion Report filed as required by A.A.C. R12-15-816(F).

A.R.S. § 45-600 requires the driller to file a complete and accurate Well Drillers Report and Well Log (DWR Form 55-55) with the Department within 30 days after completion of drilling. That form was mailed to your driller with the drilling card.

Please be advised that A.R.S. § 45-593(C) requires the person to whom a well is registered to notify the Department of a change in ownership of the well and/or information pertaining to the physical characteristics of the well in order to keep this well registration file current and accurate. Any change in well information or a request to change well driller must be filed on a Request to Change Well Information form (DWR form 55-71A) that may be downloaded from the ADWR Internet website at
http://www.azwater.gov/dwr/Content/Find_by_Category/Permits_Forms_Applications/default.htm.

ARIZONA DEPARTMENT OF WATER RESOURCES
3550 N. Central Avenue Suite 200
Phoenix, Arizona 85012

DRILLING CARD
SPECIAL REQUIRMENTS APPLY (WQARF/SUPERFUND) VARIANCE GRANTED

THIS AUTHORIZATION SHALL BE IN POSSESSION OF THE DRILLER DURING ALL DRILLING OPERATIONS

WELL REGISTRATION NO: **55-911859** 25A

AUTHORIZED DRILLER: **YELLOW JACKET DRILLING SERVICES L L C** LICENSE NO: **78**

NOTICE OF INTENT TO **DRILL A MONITOR WELL** HAS BEEN FILED WITH THE DEPARTMENT BY:

WELL OWNER: **Arizona Department of Environmental Quality**

ADDRESS: **400 West Congress, Suite 433, Tucson, AZ, 85701**

THE WELL(S) IS/ARE TO BE LOCATED IN THE:

SE 1/4 of the **NE** 1/4 of the **NE** 1/4 Section **33** Township **08 S** Range **23 W**

NO. OF WELLS IN THIS PROJECT: **1**

THIS AUTHORIZATION EXPIRES AT MIDNIGHT ON THE DAY OF **3/22/2011**

THE DRILLER MUST FILE A WELL DRILLER REPORT AND WELL LOG WITHIN 30 DAYS OF COMPLETION OF DRILLING

This drilling or abandonment authority was granted based upon the certifications made by the above-named Driller in the notice of intent to drill or abandon. Those certifications, along with any variances granted, are listed below. By drilling or abandoning the well pursuant to this authorization, the above-named driller acknowledges the accuracy of the driller certifications. If the certifications are in error, this authorization is invalid and driller must contact the Department of Water Resource's NOI Section in writing at the address above to correct.

Variance(s) Granted To Driller:

- Thermoplastic Casing Surface Seal Variance in upper 20' of well.

Certification(s) Made By Driller:

- ☑ By checking this box, I certify that I have all necessary Registrar of Contractor (ROC) licenses in all necessary license categories for this drilling or abandonment project and that those licenses are current.
- ☑ If the landowner and the well owner are not the same, by checking this box, I certify that I have obtained written approval from the landowner in order to conduct this drilling or abandonment project. A copy of the written approval shall be submitted to ADWR with the Well Driller Report and Well Log or Well Abandonment Completion Report within 30 days of completion of drilling or abandonment.
- ☑ By checking this box, I certify that I have read the applicable substantive policy statement regarding each variance that I am requesting, and that I shall comply with all of the requirements set forth therein.
- ☑ I understand that this well site is located within the boundaries of a contamination area and that special construction or abandonment requirements shall be complied with, and by checking this box, I certify that I have read the applicable special requirements, and that I shall comply with those standards.
- ☑ By checking this box, I certify that this NOI application is not an application to replace, deepen, or modify an existing well.

☑ By checking this box, I certify that I have been authorized by the above-named well owner to submit this Notice of Intent on the well owner's behalf.

☑ By checking this box, I certify that the information above is complete and correct, and that the well shall be drilled or abandoned in compliance with all pertinent statutes and rules, including any special standards that may be required to protect the aquifer or other water sources.

Arizona Department of Water Resources
Information Management Unit
P.O. Box 33589 • Phoenix, Arizona 85067-3589
(602) 771-8627 • (800) 352-8488
www.water.az.gov

Well Driller Report and Well Log

COPY

THIS REPORT MUST BE FILED WITHIN **30 DAYS** OF COMPLETING THE WELL.

PLEASE PRINT CLEARLY USING BLACK OR BLUE INK

FILE NUMBER
C(8-23)33 AAD

WELL REGISTRATION NUMBER
55 - 911860

PERMIT NUMBER (IF ISSUED)

SECTION 1: DRILLING AUTHORIZATION

Drilling Firm — Mail To:

NAME: YELLOW JACKET DRILLING SERVICES L L C	DWR LICENSE NUMBER: 78
ADDRESS: P.O. BOX 801	TELEPHONE NUMBER: 602-453-3252
CITY / STATE / ZIP: GILBERT, AZ, 85299-0801	FAX: 602 453 3258

SECTION 1: REGISTRY INFORMATION

Well Owner

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: Arizona Department of Environmental Quality

MAILING ADDRESS: 400 W Congress

CITY / STATE / ZIP: Tucson, AZ, 85701

CONTACT PERSON NAME AND TITLE: Tina LePage Project Manager

TELEPHONE NUMBER: 520 628-6733

FAX:

WELL NAME (e.g., MW-1, PZ-3, lot 25 Well, Smith Well, etc.): MW-25B

Location of Well

WELL LOCATION ADDRESS (IF ANY): Yuma ROW

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
8S	23W	33	NE 1/4	NE 1/4	SE 1/4

LATITUDE			LONGITUDE		
114 °	37 '	05.6 "N	32 °	41 '	49.4 "W

METHOD OF LATITUDE/LONGITUDE (CHECK ONE): USGS Quad Map / Conventional Survey / ✓GPS: Hand-Held / *GPS: Survey-Grade

LAND SURFACE ELEVATION AT WELL: 96' Feet Above Sea Level

METHOD OF ELEVATION (CHECK ONE): USGS Quad Map / Conventional Survey / ✓GPS: Hand-Held / *GPS: Survey-Grade

*IF GPS WAS USED, GEOGRAPHIC COORDINATE DATUM (CHECK ONE): ✓NAD-83 / Other (please specify)

COUNTY: Yuma

ASSESSOR'S PARCEL ID NUMBER (MOST RECENT): BOOK / MAP / PARCEL

SECTION 3: WELL CONSTRUCTION DETAILS

Drilling Method — CHECK ONE
- Air Rotary
- Bored or Augered
- Cable Tool
- Dual Rotary
- ✓Mud Rotary
- Reverse Circulation
- Driven
- Jetted
- Air Percussion / Odex Tubing
- Other (please specify)

Method of Well Development — CHECK ONE
- Airlift
- ✓Bail
- ✓Surge Block
- Surge Pump
- ✓Other (please specify) pump

Method of Sealing at Reduction Points — CHECK ONE
- None
- Packed
- Swedged
- Welded
- Other (please specify) No reduction points

Condition of Well — CHECK ONE
- ✓Capped
- Pump Installed

Construction Dates

DATE WELL CONSTRUCTION STARTED: 3-8-10

DATE WELL CONSTRUCTION COMPLETED: 3-12-10

I state that this notice is filed in compliance with A.R.S. § 45-596 and is complete and correct to the best of my knowledge and belief.

SIGNATURE OF QUALIFYING PARTY: R LeBlanc

DATE: 4.5.10

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 911860

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILD) (attach additional page if needed)

Depth

DEPTH OF BORING		DEPTH OF COMPLETED WELL	
178	Feet Below Land Surface	170	Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL		DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION	
90	Feet Below Land Surface	3-11-10		Valve	Other:

Borehole

DEPTH FROM SURFACE FROM (feet)	TO (feet)	BOREHOLE DIAMETER (inches)
0	178	10

Installed Casing

DEPTH FROM SURFACE FROM (feet)	TO (feet)	OUTER (inches)	MATERIAL TYPE (T): STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	PERFORATION TYPE (T): BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE (inches)
0	140	4.5		✓			✓						
140	170	4.5		✓							✓		0.010"

Installed Annular Material

DEPTH FROM SURFACE FROM (feet)	TO (feet)	ANNULAR MATERIAL TYPE (T): NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	BENTONITE: GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	FILTER PACK: SAND	GRAVEL	SIZE
0	20				✓							
20	128					✓						
128	137							✓				
137	178									✓		8-12

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 911860

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	Description Describe material, grain size, color, etc.	Check (T) every interval where water was encountered (if known)
0	178	Sand w/ clay lenses.	
		TD 178'	
		▽ 90	

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 911860

SECTION 6. WELL SITE PLAN

NAME OF WELL OWNER

Arizona Department of Environmental Quality

COUNTY ASSESSOR'S PARCEL ID NUMBER (MOST RECENT)

BOOK	MAP	PARCEL

- Please draw the following: (1) the boundaries of property on which the well was located; (2) the well location; (3) the locations of all septic tank systems and sewer systems on the property or within 100 feet of the well location, even if on neighboring properties; and (4) any permanent structures on the property that may aid in locating the well.
- Please indicate the distance between the well location and any septic tank system or sewer system.

see attached site map

N
W E
S

1" = _____ ft

OWNER ADRESS LABEL PAGE

Arizona Department of Environmental Quality
400 W Congress
Tucson, AZ 85701

ARIZONA DEPARTMENT OF WATER RESOURCES
3550 N. Central Avenue Suite 200, Phoenix, Arizona 85012
Telephone (602) 771-8500
Fax (602) 771-8691

Tuesday, March 23, 2010

Janice K. Brewer
Governor

Herbert R. Guenther
Director

Arizona Department of Environmental Quality
400 W Congress
Tucson, AZ 85701

Registration No. 55- 911860
File No. C(8-23)33 AAD

Dear Applicant:

Enclosed is a copy of the Notice of Intent to Drill a Monitor/Piezometer/Environmental Well ("NOI") which you recently filed with this Department pursuant to A.R.S. § 45-596. This is to inform you that the Department has approved the NOI and has mailed (or otherwise provided) a drilling card authorizing the drilling of the well to the well driller identified in the NOI. The driller may not begin drilling until he has received the drilling card which he must keep in his posssession at the well site during drilling. Well drilling activities must be completed within one year after the date the NOI was filed with the Department. If drilling is not completed within one year, you must file a new NOI before proceeding with further drilling.

If it is necessary to change the location of the proposed well, you may not proceed with drilling until you file a new NOI with the Department and the Department issues an amended drilling card to the driller. If you change drillers, you must notify the Department of the new driller's identity. A new driller may not begin drilling until he receives a new drilling card from the Department. If in the course of drilling the well, it is determined that the well cannot be successfully completed as initially intended (dry hole, cave in, lost tools, etc.), the well must be properly abandoned and a Well Abandonment Completion Report filed as required by A.A.C. R12-15-816(F).

A.R.S. § 45-600 requires the driller to file a complete and accurate Well Drillers Report and Well Log (DWR Form 55-55) with the Department within 30 days after completion of drilling. That form was mailed to your driller with the drilling card.

Please be advised that A.R.S. § 45-593(C) requires the person to whom a well is registered to notify the Department of a change in ownership of the well and/or information pertaining to the physical characteristics of the well in order to keep this well registration file current and accurate. Any change in well information or a request to change well driller must be filed on a Request to Change Well Information form (DWR form 55-71A) that may be downloaded from the ADWR Internet website at
http://www.azwater.gov/dwr/Content/Find_by_Category/Permits_Forms_Applications/default.htm.

ARIZONA DEPARTMENT OF WATER RESOURCES
3550 N. Central Avenue Suite 200
Phoenix, Arizona 85012

DRILLING CARD
SPECIAL REQUIRMENTS APPLY (WQARF/SUPERFUND) VARIANCE GRANTED

THIS AUTHORIZATION SHALL BE IN POSSESSION OF THE DRILLER DURING ALL DRILLING OPERATIONS

WELL REGISTRATION NO: **55-911860** 25B

AUTHORIZED DRILLER: **YELLOW JACKET DRILLING SERVICES L L C** LICENSE NO: **78**

NOTICE OF INTENT TO **DRILL A MONITOR WELL** HAS BEEN FILED WITH THE DEPARTMENT BY:

WELL OWNER: **Arizona Department of Environmental Quality**

ADDRESS: **400 W Congress, Tucson, AZ, 85701**

THE WELL(S) IS/ARE TO BE LOCATED IN THE:

SE 1/4 of the **NE** 1/4 of the **NE** 1/4 Section **33** Township **08 S** Range **23 W**

NO. OF WELLS IN THIS PROJECT: **1**

THIS AUTHORIZATION EXPIRES AT MIDNIGHT ON THE DAY OF **3/22/2011**

THE DRILLER MUST FILE A WELL DRILLER REPORT AND WELL LOG WITHIN 30 DAYS OF COMPLETION OF DRILLING

This drilling or abandonment authority was granted based upon the certifications made by the above-named Driller in the notice of intent to drill or abandon. Those certifications, along with any variances granted, are listed below. By drilling or abandoning the well pursuant to this authorization, the above-named driller acknowledges the accuracy of the driller certifications. If the certifications are in error, this authorization is invalid and driller must contact the Department of Water Resource's NOI Section in writing at the address above to correct.

Variance(s) Granted To Driller:

- Thermoplastic Casing Surface Seal Variance in upper 20' of well.

Certification(s) Made By Driller:

- ☑ By checking this box, I certify that I have all necessary Registrar of Contractor (ROC) licenses in all necessary license categories for this drilling or abandonment project and that those licenses are current.
- ☑ If the landowner and the well owner are not the same, by checking this box, I certify that I have obtained written approval from the landowner in order to conduct this drilling or abandonment project. A copy of the written approval shall be submitted to ADWR with the Well Driller Report and Well Log or Well Abandonment Completion Report within 30 days of completion of drilling or abandonment.
- ☑ By checking this box, I certify that I have read the applicable substantive policy statement regarding each variance that I am requesting, and that I shall comply with all of the requirements set forth therein.
- ☑ I understand that this well site is located within the boundaries of a contamination area and that special construction or abandonment requirements shall be complied with, and by checking this box, I certify that I have read the applicable special requirements, and that I shall comply with those standards.
- ☑ By checking this box, I certify that this NOI application is not an application to replace, deepen, or modify an existing well.

☑ By checking this box, I certify that I have been authorized by the above-named well owner to submit this Notice of Intent on the well owner's behalf.

☑ By checking this box, I certify that the information above is complete and correct, and that the well shall be drilled or abandoned in compliance with all pertinent statutes and rules, including any special standards that may be required to protect the aquifer or other water sources.

ARIZONA DEPARTMENT OF WATER RESOURCES

Electronic Filing - NOI Report

3550 N. Central Avenue Suite 200
Phoenix, Arizona 85012

NOI Type: Notice of Intent to Drill, Deepen, Modify a Monitor/Piezometer/Environmental Well
Well Type: MONITOR
Date Received at ADWR Website: 3/23/2010 2:25:06 PM

Fee Paid: $150.00 Order Number: VSGE4ECE95BB

Well Registration Number: 55 - 911860
Number of Wells/Holes: 1 Drilling Authority Expires On: 3/22/2011

Driller's ADWR License Number: 78

Authorized Driller: YELLOW JACKET DRILLING SERVICES L L C
ROC License Number Entered By Driller: 78
Qualifying Party License Categories: A-4

Well Owner Name: Arizona Department of Environmental Quality
Well Owner Address: 400 W Congress
Well Owner City, State - Zip: Tucson, AZ - 85701
Well Owner Phone: 520 628-6733

Book: Map: Parcel:

Is the Land Owner the same as the Well Owner?: No

Land Owner Name: City of Yuma
Land Owner Address: One City Plaza
Land Owner City, State - Zip: Yuma, AZ - 85701
Land Owner Phone: 928 373-5000

Well Location: **SE** 1/4 of the **NE** 1/4 of the **NE** 1/4 Section **33** Township **8 S** Range **23 W**

AMA: NOT WITHIN ANY AMA OR INA
County: YUMA
Contamination Site: WITHIN 1 MILE OF A WQARF SITE

Primary Water Use: MONITORING
Secondary Water Use(s): N/A

Is any portion of the land, on which the well is to be located, within 100 feet of a designated municipal provider's operating water distribution system as shown on the municipal provider's most recent digitized service area map filed by the municipal provider with the director of ADWR. N/A

Proximity to a designated municipal provider's operating water distribution system exemption type:
N/A

Will you be installing a dedicated pump ?: N/A

Will the installed pump have a pumping capacity of greater than 35 GPM, or will the well will be used to withdraw greater than 10 Acre Feet per year?: N/A

Is this NOI an application to replace, deepen, or modify an existing well? No

Variance(s) Granted To Driller:

- Thermoplastic Casing Surface Seal Variance in upper 20' of well.

Certification(s) Made By Driller:

- ☑ By checking this box, I certify that I have all necessary Registrar of Contractor (ROC) licenses in all necessary license categories for this drilling or abandonment project and that those licenses are current.
- ☑ If the landowner and the well owner are not the same, by checking this box, I certify that I have obtained written approval from the landowner in order to conduct this drilling or abandonment project. A copy of the written approval shall be submitted to ADWR with the Well Driller Report and Well Log or Well Abandonment Completion Report within 30 days of completion of drilling or abandonment.
- ☑ By checking this box, I certify that I have read the applicable substantive policy statement regarding each variance that I am requesting, and that I shall comply with all of the requirements set forth therein.
- ☑ I understand that this well site is located within the boundaries of a contamination area and that special construction or abandonment requirements shall be complied with, and by checking this box, I certify that I have read the applicable special requirements, and that I shall comply with those standards.
- ☑ By checking this box, I certify that this NOI application is not an application to replace, deepen, or modify an existing well.
- ☑ By checking this box, I certify that I have been authorized by the above-named well owner to submit this Notice of Intent on the well owner's behalf.
- ☑ By checking this box, I certify that the information above is complete and correct, and that the well shall be drilled or abandoned in compliance with all pertinent statutes and rules, including any special standards that may be required to protect the aquifer or other water sources.

APPENDIX E

Well Development Details

WELL SAMPLING / DEVELOPMENT RECORD

GeoTrans, Inc. A TETRA TECH COMPANY

Project Name/Client _____

Well Number MW-25A

Date 3/12/10

Project Number _____ Sampler(s) _____

Elevation of Measuring Point (MP) _____ ft. (a)

Elevation of Ground Surface _____ ft. (b)

Well Depth (below ground surface) 96.5 TOC ft. (c)

Casing Inside Diameter 4" in. (d)

CALCULATION OF CASING VOLUME

Depth of Water Below MP 83.5 ft. (e)

Water Level Elevation (a-e) _____ ft. (f)

Step 1: Height of Water in Well, H= f - (b-c)= 13 ft.

Step 2: Cross-sectional Area of Casing, A=Π x d^2/576= 0.0872 ft^2

Step 3: Volume of Water in Casing, V=A x H x 7.48= 8.48 gal

Sampling/Development System (check one) Dedicated ☐ Non-dedicated ☒

Purging Apparatus: Type: Surge/bail and pump

Sampling Apparatus: Type: _____

Cleaning Methods _____

FIELD OBSERVATIONS

Weather Conditions Sunn 60's

Well Head Conditions Good New

Comments _____

Project Name/Client _____ Well Number MW-25A Date 3/12/10

Bailing well

FIELD MEASUREMENTS

Time	Pump Rate (gpm)	Cumulative Vol. Removed (gal)	Temp (°C)	pH	Spec. Cond. (umhos/cm at 25° C)	NTU / TDS g/L / ORP Particulates/Odor/Clarity/Color		
1214	—	~50	29.67	6.23	5.57	532	3.51	285
1307	5gpm	165	31.47	7.14	6.47	298	4.04	261
1313	5gpm	195	31.99	7.25	6.48	712	4.08	262
1320	5gpm	230	32.36	7.21	6.57	276	4.14	266
1329	5gpm	275	32.64	7.22	6.35	145	4.00	265
1339	5gpm	325	32.25	7.22	6.61	186	4.16	269
1348	5gpm	370	32.52	7.22	6.70	264	4.22	280
1358	5gpm	420	32.80	7.20	6.60	19.2	4.16	278
1407	5gpm	455	32.77	7.26	6.79	13.5	4.28	277

Total Vol. Purged 460 (gal) Casing Vol. Purged 54.25

Final Water Level After Purging 81.5 ft. Below MP; Time 1429

Fate of Purged Water Bunker tank

105 gal bailed pump rate 5gpm start time 1257

SAMPLE INVENTORY

Label	Time	Number of Bottles	Analysis	F	P	Remarks

F = Filtered (Y,N) P = Preservative (Type)

Sampler(s) _____ Signatures(s) _____

WELL SAMPLING / DEVELOPMENT RECORD

GeoTrans, Inc. A TETRA TECH COMPANY

Project Name/Client _____

Well Number MW-25B

Date 3/12/10

Project Number _____ Sampler(s) _____

Elevation of Measuring Point (MP) _____ ft. (a)

Elevation of Ground Surface _____ ft. (b)

Well Depth (below ground surface) 169' 10" ft. (c)

Casing Inside Diameter 4 in. (d)

CALCULATION OF CASING VOLUME

Depth of Water Below MP _____ ft. (e)

Water Level Elevation (a-e) _____ ft. (f)

Step 1: Height of Water in Well, H= f - (b-c)= _____ ft.

Step 2: Cross-sectional Area of Casing, A=Π x d^2/576= 0.0872 ft^2

Step 3: Volume of Water in Casing, V=A x H x 7.48= _____ gal 56

Sampling/Development System (check one) Dedicated ☐ Non-dedicated ☐

Purging Apparatus: Type: _____

Sampling Apparatus: Type: _____

Cleaning Methods _____

FIELD OBSERVATIONS

Weather Conditions Sunny 60's

Well Head Conditions New

Comments _____

Project Name/Client _____ Well Number MW-25B Date 3/12/10

FIELD MEASUREMENTS								
Time	Pump Rate (gpm)	Cumulative Vol. Removed (gal)	Temp (°C)	pH	Spec. Cond. (umhos/cm at 25° C)	NTU	TDS g/L	ORP Particulates/Odor/Clarity/Color
1718	10gpm	305	32.2	7.12	4.87	794	3.12	118
1724	10gpm	365	31.63	7.38	4.82	400	3.08	176
1730	10gpm	425	31.53	7.40	4.88	302	3.12	168
1737	10gpm	495	31.38	7.39	4.88	230	3.12	180
1831	10gpm	660	30.62	7.19	4.86	199	3.11	165
1840	10gpm	750	30.91	7.16	4.86	180	3.11	139
1850	10gpm	850	30.88	7.19	4.89	149	3.13	150
1900	10gpm	950	30.39	7.29	4.86	149	3.11	171
2007	10gpm	1150	30.30	7.14	4.84	130	3.09	157

Total Vol. Purged _____ (gal) Casing Vol. Purged _____

Final Water Level After Purging _____ ft. Below MP; Time _____

Fate of Purged Water

Bailed 185 gal flow rate 10 Start time 1705
continue time 1815
Break @ 1740
Break @ 1917 continue @ 1943

SAMPLE INVENTORY

Label	Time	Number of Bottles	Analysis	F	P	Remarks

F = Filtered (Y,N) P = Preservative (Type)

Sampler(s) _____ Signatures(s) _____

_____ _____

Project Name/Client _____ Well Number MW-25B Date 3/12/10

FIELD MEASUREMENTS								
Time	Pump Rate (gpm)	Cumulative Vol. Removed (gal)	Temp (°C)	pH	Spec. Cond. (umhos/cm at 25° C)	NTU	TDS g/L	ORS
						Particulates/Odor/Clarity/Color		
2025	10gpm	1,330	30.26	7.13	4.87	112	3.09	151
2037	10gpm	1,450	29.95	7.28	4.87	103	3.12	187

Total Vol. Purged 1450 (gal) Casing Vol. Purged _____

Final Water Level After Purging 81.5 ft. Below MP; Time _____

Fate of Purged Water _____

SAMPLE INVENTORY

Label	Time	Number of Bottles	Analysis	F	P	Remarks

F = Filtered (Y,N) P = Preservative (Type)

Sampler(s) _____ Signatures(s) _____

APPENDIX F

MW-25A and MW-25B Survey Reports

NICKLAUS ENGINEERING, INC.
1851 W. 24th Street
YUMA, AZ 85364
(928) 344-8374
FAX (928) 726-6994

JOB WQARF SITE (HOUSTON PROJ), YUMA, AZ
SHEET NO. 1 OF 1
CALCULATED BY R.S. DATE 4/21/10
CHECKED BY T.V.E. DATE 4/22/10
SCALE N.A.

LOCAL DATUM

NORTHING (FT.)	EASTING (FT.)	ELEV. (FT.)	M.W. DESCRIPTION
12111.742,	9336.421,	199.34	"25B RIM"
12111.716,	9336.430,	199.06	"25B CASING",
12102.032,	9336.892,	199.31	"25A RIM"
12102.002,	9337.036,	198.72	"25A CASING"

ARIZONA WEST DATUM

NORTHING (FT.)	EASTING (FT.)	ELEV. (FT.)	M.W. DESCRIPTION
618426.013,	432914.830,	199.34	"25B RIM"
618425.995,	432914.849,	199.06	"25B CASING"
618416.337,	432915.314,	199.31	"25A RIM"
618416.269,	432915.462,	198.72	"25A CASING"

LATTITUDE	LONGITUDE	M.W. DESCRIPTION
32°41'49.37570"N	114°37'05.47975"W	MW 25B RIM
32°41'49.37544"N	114°37'05.47965"W	MW 25B CASING
32°41'49.27966"N	114°37'05.47333"W	MW 25A RIM
32°41'49.27938"N	114°37'05.47164"W	MW 25A CASING

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
16810
TIMOTHY V.
EISENMANN
DATE SIGNED 4/22/10
ARIZONA, U.S.A.

Timothy Eisenmann
EXPIRES 9/30/11

APPENDIX G

Groundwater Analytical Laboratory Reports

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (480) 736-0960 Fax (480) 736-0970

LABORATORY REPORT FORM

ORANGE COAST ANALYTICAL, INC.

3002 Dow Suite 532 Tustin, CA 92780

(714) 832-0064

Laboratory Certification (ELAP) No.: 2576
Expiration Date: 2011
Los Angeles County Sanitation District Lab ID# 10206

Laboratory Director's Name:
Mark Noorani

Client: GeoTrans, Inc.

Laboratory Reference: GTI AZ6377

Project Name: 20th & Factor

Project Number: 1303.036.02

Date Received: 4/29/2010

Date Reported: 5/10/2010

Chain of Custody Received: ☑

Analytical Method: 8260B, SM4500-CN G, SM4500-CN E,

Mark Noorani, Laboratory Director

© This report may only be reproduced in full. Any partial reproduction of this report requires written permission from Orange Coast Analytical, Inc.

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
DMW-11-042610	AZ6377-001	4/29/2010	4/26/2010	5/3/2010	5/3/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	<0.50
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	<0.50	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	<0.50
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	<1.0			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	113	63-150 %
Toluene-d8:	102	52-130 %
4-Bromofluorobenzene:	100	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
MW-25A-042610	AZ6377-002	4/29/2010	4/26/2010	5/3/2010	5/3/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	<0.50
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	1.4	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	<0.50
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	<1.0			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	120	63-150 %
Toluene-d8:	104	52-130 %
4-Bromofluorobenzene:	103	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
MW-25B-042710	AZ6377-003	4/29/2010	4/27/2010	5/3/2010	5/3/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	<0.50
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	1.4	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	<0.50
Dibromochloromethane	124-48-1	0.72	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	<1.0			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	116	63-150 %
Toluene-d8:	101	52-130 %
4-Bromofluorobenzene:	97	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
MW-16A-042710	AZ6377-004	4/29/2010	4/27/2010	5/3/2010	5/3/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	<0.50
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	1.0	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	<0.50
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	<1.0			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	115	63-150 %
Toluene-d8:	102	52-130 %
4-Bromofluorobenzene:	100	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
MW-13A-042710	AZ6377-005	4/29/2010	4/27/2010	5/3/2010	5/3/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	<0.50
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	1.6	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	<0.50
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	<1.0			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	116	63-150 %
Toluene-d8:	99	52-130 %
4-Bromofluorobenzene:	98	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
MW-23B-042710	AZ6377-006	4/29/2010	4/27/2010	5/3/2010	5/3/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	<0.50
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	0.95	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	<0.50
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	<1.0			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	123	63-150 %
Toluene-d8:	101	52-130 %
4-Bromofluorobenzene:	99	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
MW-17C-042710	AZ6377-007	4/29/2010	4/27/2010	5/3/2010	5/3/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	<0.50
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	<0.50	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	<0.50
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	<1.0			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	118	63-150 %
Toluene-d8:	103	52-130 %
4-Bromofluorobenzene:	102	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
MW-17A-042710	AZ6377-008	4/29/2010	4/27/2010	5/3/2010	5/3/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	<0.50
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	2.0	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	<0.50
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	<1.0			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	119	63-150 %
Toluene-d8:	101	52-130 %
4-Bromofluorobenzene:	97	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
MW-9A-042710	AZ6377-009	4/29/2010	4/27/2010	5/3/2010	5/3/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	<0.50
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	1.6	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	<0.50
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	<1.0			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	121	63-150 %
Toluene-d8:	102	52-130 %
4-Bromofluorobenzene:	100	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
MW-101A-042710	AZ6377-010	4/29/2010	4/27/2010	5/3/2010	5/3/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	<0.5
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	<0.5	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	<0.5
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	<1.0			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	119	63-150 %
Toluene-d8:	100	52-130 %
4-Bromofluorobenzene:	101	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
MW-8C-042810	AZ6377-011	4/29/2010	4/28/2010	5/3/2010	5/3/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	11
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	<0.50	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	3.7
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	1.2			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	123	63-150 %
Toluene-d8:	101	52-130 %
4-Bromofluorobenzene:	98	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
MW-24B-042810	AZ6377-012	4/29/2010	4/28/2010	5/3/2010	5/3/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	<0.50
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	1.4	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	<0.50
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	<1.0			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	119	63-150 %
Toluene-d8:	102	52-130 %
4-Bromofluorobenzene:	101	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
MW-21A-042810	AZ6377-013	4/29/2010	4/28/2010	5/3/2010	5/3/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	<0.50
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	2.1	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	<0.50
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	<1.0			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	123	63-150 %
Toluene-d8:	102	52-130 %
4-Bromofluorobenzene:	99	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
MW-21B-042810	AZ6377-014	4/29/2010	4/28/2010	5/3/2010	5/3/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	<0.50
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	0.62	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	16
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	<1.0			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	117	63-150 %
Toluene-d8:	103	52-130 %
4-Bromofluorobenzene:	100	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
MW-21C-042810	AZ6377-015	4/29/2010	4/28/2010	5/3/2010	5/3/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	<0.50
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	0.68	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	<0.50
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	<1.0			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	123	63-150 %
Toluene-d8:	102	52-130 %
4-Bromofluorobenzene:	99	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
MW-12A-042810	AZ6377-016	4/29/2010	4/28/2010	5/3/2010	5/3/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	2.1
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	3.4	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	<0.50
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	<1.0			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	113	63-150 %
Toluene-d8:	101	52-130 %
4-Bromofluorobenzene:	97	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
MW-18A-042810	AZ6377-017	4/29/2010	4/28/2010	5/3/2010	5/3/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	13
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	1.9	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	14
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	4.4			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	121	63-150 %
Toluene-d8:	102	52-130 %
4-Bromofluorobenzene:	99	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
MW-8B-042810	AZ6377-018	4/29/2010	4/28/2010	5/7/2010	5/7/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	2.1
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	78
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	4.4	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	26
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	11			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	98	63-150 %
Toluene-d8:	96	52-130 %
4-Bromofluorobenzene:	89	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
MW-8A-042810	AZ6377-019	4/29/2010	4/28/2010	5/7/2010	5/7/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	97
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	2.3	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	36
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	17			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	102	63-150 %
Toluene-d8:	96	52-130 %
4-Bromofluorobenzene:	91	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
MW-15A-042910	AZ6377-020	4/29/2010	4/29/2010	5/6/2010	5/6/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	<0.50
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	2.8	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	<0.50
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	<1.0			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	93	63-150 %
Toluene-d8:	96	52-130 %
4-Bromofluorobenzene:	93	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
MW-103C-042910	AZ6377-021	4/29/2010	4/29/2010	5/7/2010	5/7/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	7.1	Isopropylbenzene	98-82-8	<0.5
Bromoform	75-25-2	2.0	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	3.1
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	6.7	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	1.0
Dibromochloromethane	124-48-1	7.4	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	<1.0			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	102	63-150 %
Toluene-d8:	96	52-130 %
4-Bromofluorobenzene:	93	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
MW-102B1-042910	AZ6377-022	4/29/2010	4/29/2010	5/6/2010	5/6/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	7.2	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	2.1	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	9.2
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	6.5	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	0.57
Dibromochloromethane	124-48-1	7.7	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	<1.0			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	98	63-150 %
Toluene-d8:	96	52-130 %
4-Bromofluorobenzene:	92	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
Trip Blank	AZ6377-023	4/29/2010		5/6/2010	5/6/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride.	56-23-5	<0.50	Tetrachloroethene	127-18-4	<0.50
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	<0.50	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	<0.50
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	<1.0			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	99	63-150 %
Toluene-d8:	95	52-130 %
4-Bromofluorobenzene:	92	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
Method Blank	MBTT0503101			5/3/2010	5/3/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	<0.50
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	<0.50	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	<0.50
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	<1.0			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	112	63-150 %
Toluene-d8:	102	52-130 %
4-Bromofluorobenzene:	99	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
Method Blank	MBTT0506101			5/6/2010	5/6/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	<0.50
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	<0.50	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	<0.50
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	<1.0			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	99	63-150 %
Toluene-d8:	97	52-130 %
4-Bromofluorobenzene:	94	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
Method Blank	MBTT0507101			5/7/2010	5/3/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	<0.50
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	<0.50	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	<0.50
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	<1.0			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	98	63-150 %
Toluene-d8:	96	52-130 %
4-Bromofluorobenzene:	94	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference #: GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Inorganics

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Matrix
DMW-11-042610	AZ6377-001	4/29/2010	4/26/2010	Water

ANALYTE	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Total	SM4500-CN E	5/3/2010	5/4/2010	<0.02	mg/L	--

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Matrix
MW-25A-042610	AZ6377-002	4/29/2010	4/26/2010	Water

ANALYTE	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Total	SM4500-CN E	5/3/2010	5/4/2010	<0.02	mg/L	--

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Matrix
MW-25B-042710	AZ6377-003	4/29/2010	4/27/2010	Water

ANALYTE	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Total	SM4500-CN E	5/3/2010	5/4/2010	<0.02	mg/L	--

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Matrix
MW-16A-042710	AZ6377-004	4/29/2010	4/27/2010	Water

ANALYTE	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Total	SM4500-CN E	5/3/2010	5/4/2010	<0.02	mg/L	--

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Matrix
MW-13A-042710	AZ6377-005	4/29/2010	4/27/2010	Water

ANALYTE	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Total	SM4500-CN E	5/3/2010	5/3/2010	<0.02	mg/L	--

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Matrix
MW-23B-042710	AZ6377-006	4/29/2010	4/27/2010	Water

ANALYTE	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Total	SM4500-CN E	5/3/2010	5/4/2010	<0.02	mg/L	--

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Matrix
MW-17C-042710	AZ6377-007	4/29/2010	4/27/2010	Water

ANALYTE	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Total	SM4500-CN E	5/3/2010	5/4/2010	<0.02	mg/L	--

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Matrix
MW-17A-042710	AZ6377-008	4/29/2010	4/27/2010	Water

ANALYTE	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Total	SM4500-CN E	5/3/2010	5/4/2010	<0.02	mg/L	--

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Matrix
MW-9A-042710	AZ6377-009	4/29/2010	4/27/2010	Water

ANALYTE	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Total	SM4500-CN E	5/3/2010	5/4/2010	<0.02	mg/L	--

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference #: GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Inorganics

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Matrix
MW-101A-042710	AZ6377-010	4/29/2010	4/27/2010	Water

ANALYTE	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Total	SM4500-CN E	5/3/2010	5/4/2010	<0.02	mg/L	--

MW-8C-042810	AZ6377-011	4/29/2010	4/28/2010	Water

ANALYTE	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Total	SM4500-CN E	5/3/2010	5/4/2010	<0.02	mg/L	--

MW-24B-042810	AZ6377-012	4/29/2010	4/28/2010	Water

ANALYTE	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Amenable	SM4500-CN G	5/6/2010	5/6/2010	0.64	mg/L	--
Cyanide, Total	SM4500-CN E	5/3/2010	5/4/2010	0.64	mg/L	--

MW-21A-042810	AZ6377-013	4/29/2010	4/28/2010	Water

ANALYTE	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Total	SM4500-CN E	5/3/2010	5/4/2010	<0.02	mg/L	--

MW-21B-042810	AZ6377-014	4/29/2010	4/28/2010	Water

ANALYTE	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Total	SM4500-CN E	5/3/2010	5/4/2010	<0.02	mg/L	--

MW-21C-042810	AZ6377-015	4/29/2010	4/28/2010	Water

ANALYTE	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Total	SM4500-CN E	5/3/2010	5/4/2010	<0.02	mg/L	--

MW-12A-042810	AZ6377-016	4/29/2010	4/28/2010	Water

ANALYTE	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Total	SM4500-CN E	5/3/2010	5/4/2010	<0.02	mg/L	--

MW-18A-042810	AZ6377-017	4/29/2010	4/28/2010	Water

ANALYTE	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Total	SM4500-CN E	5/3/2010	5/4/2010	<0.02	mg/L	--

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference #: GTI AZ6377
Project Name: 20th & Factor
Project #: 1303.036.02

Inorganics

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Matrix
MW-8B-042810	AZ6377-018	4/29/2010	4/28/2010	Water

ANALYTE	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Amenable	SM4500-CN G	5/6/2010	5/6/2010	0.032	mg/L	--
Cyanide, Total	SM4500-CN E	5/3/2010	5/4/2010	0.032	mg/L	--

MW-8A-042810	AZ6377-019	4/29/2010	4/28/2010	Water

ANALYTE	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Amenable	SM4500-CN G	5/6/2010	5/6/2010	0.19	mg/L	--
Cyanide, Total	SM4500-CN E	5/4/2010	5/4/2010	0.19	mg/L	--

MW-15A-042910	AZ6377-020	4/29/2010	4/29/2010	Water

ANALYTE	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Total	SM4500-CN E	5/4/2010	5/4/2010	<0.02	mg/L	--

MW-103C-042910	AZ6377-021	4/29/2010	4/29/2010	Water

ANALYTE	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Total	SM4500-CN E	5/4/2010	5/4/2010	<0.02	mg/L	--

MW-102B1-042910	AZ6377-022	4/29/2010	4/29/2010	Water

ANALYTE	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Total	SM4500-CN E	5/4/2010	5/4/2010	<0.02	mg/L	--

Method Blank	Water

ANALYTE	MB ID	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Total	MBIR0503101	SM4500-CN E	5/3/2010	5/4/2010	<0.02	mg/L	--

Method Blank	Water

ANALYTE	MB ID	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Amenable	MBIR0506101	SM4500-CN G	5/6/2010	5/6/2010	<0.02	mg/L	--
Cyanide, Total	MBIR0504101	SM4500-CN E	5/4/2010	5/4/2010	<0.02	mg/L	--

QA/QC Report
for
Volatile Organic Compounds (EPA 8260B)
Reporting units: ppb

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Date of Extraction: 5/3/2010
Date of Analysis: 5/3/2010
Dup Date of Analysis: 5/3/2010
Laboratory Sample #: AZ6377-001
MS/MSD Qualifiers: M1,
Reference #: GTI AZ6377

Analyte	R1	SP CONC	MS	MSD	%MS	%MSD	RPD	ACP %MS	ACP RPD	Qual
1,1-Dichloroethene	0.0	25	29	32	116	128	10	47-155	38	☐
Benzene	0.0	25	33	35	132	140	6	55-134	15	☑
Trichloroethene	0.0	25	29	31	116	124	7	42-151	15	☐
Toluene	0.0	25	32	33	128	132	3	52-145	19	☐
Chlorobenzene	0.0	25	33	33	132	132	0	56-143	18	☐

Surrogate Recoveries for Spike Samples

Surrogate (%RC)	MS	MSD	Qual	LCS	Qual	ACP % RC
Dibromofluoromethane	113	121	☐	112	☐	63-150 %
Toluene-d8	104	101	☐	103	☐	52-130 %
4-Bromofluorobenzene	102	98	☐	99	☐	53-130 %

Laboratory Control Sample

Date of Extraction: 5/3/2010
Date of Analysis: 5/3/2010
Laboratory Sample #: TT0503101
LCS Qualifiers: None

Analyte	SP CONC	Results	% Recovery	Acceptable %	Qual
1,1-Dichloroethene	25	29	116	34-169	☐
Benzene	25	31	124	53-137	☐
Trichloroethene	25	29	116	49-147	☐
Toluene	25	31	124	54-144	☐
Chlorobenzene	25	31	124	53-146	☐

QA/QC Report
for
Volatile Organic Compounds (EPA 8260B)
Reporting units: ppb

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Date of Extraction: 5/6/2010
Date of Analysis: 5/6/2010
Dup Date of Analysis: 5/6/2010
Laboratory Sample #: AZ6377-020
MS/MSD Qualifiers: None
Reference #: GTI AZ6377

Analyte	R1	SP CONC	MS	MSD	%MS	%MSD	RPD	ACP %MS	ACP RPD	Qual
1,1-Dichloroethene	0.0	25	18	23	72	92	24	47-155	38	☐
Benzene	0.0	25	26	25	104	100	4	55-134	15	☐
Trichloroethene	0.0	25	26	24	104	96	8	42-151	15	☐
Toluene	0.0	25	27	25	108	100	8	52-145	19	☐
Chlorobenzene	0.0	25	27	27	108	108	0	56-143	18	☐

Surrogate Recoveries for Spike Samples

Surrogate (%RC)	MS	MSD	Qual	LCS	Qual	ACP % RC
Dibromofluoromethane	96	97	☐	94	☐	63-150 %
Toluene-d8	94	95	☐	94	☐	52-130 %
4-Bromofluorobenzene	93	93	☐	94	☐	53-130 %

Laboratory Control Sample

Date of Extraction: 5/6/2010
Date of Analysis: 5/6/2010
Laboratory Sample #: TT0506101
LCS Qualifiers: None

Analyte	SP CONC	Results	% Recovery	Acceptable %	Qual
1,1-Dichloroethene	25	22	88	34-169	☐
Benzene	25	27	108	53-137	☐
Trichloroethene	25	27	108	49-147	☐
Toluene	25	28	112	54-144	☐
Chlorobenzene	25	29	116	53-146	☐

QA/QC Report
for
Volatile Organic Compounds (EPA 8260B)
Reporting units: ppb

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Date of Extraction: 5/7/2010
Date of Analysis: 5/7/2010
Dup Date of Analysis: 5/7/2010
Laboratory Sample #: AZ6376-001
MS/MSD Qualifiers: R5,
Reference #: GTI AZ6377

Analyte	R1	SP CONC	MS	MSD	%MS	%MSD	RPD	ACP %MS	ACP RPD	Qual
1,1-Dichloroethene	0.0	25	15	21	60	84	33	47-155	38	☐
Benzene	0.0	25	22	32	88	128	37	55-134	15	☑
Trichloroethene	0.0	25	21	31	84	124	38	42-151	15	☑
Toluene	0.0	25	22	31	88	124	34	52-145	19	☑
Chlorobenzene	0.0	25	24	32	96	128	29	56-143	18	☑

Surrogate Recoveries for Spike Samples

Surrogate (%RC)	MS	MSD	Qual	LCS	Qual	ACP % RC
Dibromofluoromethane	96	100	☐	83	☐	63-150 %
Toluene-d8	94	94	☐	95	☐	52-130 %
4-Bromofluorobenzene	90	91	☐	94	☐	53-130 %

Laboratory Control Sample

Date of Extraction: 5/7/2010
Date of Analysis: 5/7/2010
Laboratory Sample #: TT0507101
LCS Qualifiers: None

Analyte	SP CONC	Results	% Recovery	Acceptable %	Qual
1,1-Dichloroethene	25	23	92	34-169	☐
Benzene	25	27	108	53-137	☐
Trichloroethene	25	26	104	49-147	☐
Toluene	25	27	108	54-144	☐
Chlorobenzene	25	28	112	53-146	☐

QA/QC Report
for Inorganics
Reporting units: ppm

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Reference #: GTI AZ6377

Analyte	Date Extracted	Date Analyzed	QC Sample	R1	SP CONC	MS	MSD	%MS	%MSD	RPD	ACP %MS	ACP RPD	Qual
Cyanide, Total	5/4/2010	5/4/2010	AZ6377-019	0.19	0.15	0.289	0.277	66	58	4	56-136	14	--
Cyanide, Total	5/3/2010	5/4/2010	AZ6377-011	0	0.15	0.118	0.108	79	72	9	56-136	14	--
Cyanide, Total	5/3/2010	5/4/2010	AZ6377-001	0	0.15	0.115	0.114	77	76	1	56-136	14	--

Laboratory Control Sample

Analyte	Date Extracted	Date Analyzed	QC Sample	SP CONC	Results	% LCS	ACP %	Qual
Cyanide, Total	5/4/2010	5/4/2010	IR0504101	0.15	0.148	99	90-110	--
Cyanide, Total	5/3/2010	5/4/2010	IR0503101	0.15	0.136	91	90-110	--

Data Qualifier Definitions

Qualifier

M1 = Matrix spike recovery was high, the associated blank spike recovery was acceptable.

AZ6377-001	8260B	Benzene	MSD

R5 = MS/MSD RPD exceeded the laboratory acceptance limit. Recovery met acceptance criteria.

AZ6376-001	8260B	Benzene	MS
AZ6376-001	8260B	Chlorobenzene	MS
AZ6376-001	8260B	Toluene	MS
AZ6376-001	8260B	Trichloroethene	MS

Definition of terms:

R1	Results Of Laboratory Sample Number
SP CONC	Spike Concentration Added to Sample
MS	Matrix Spike Results
MSD	Matrix Spike Duplicate Results
%MS	Percent Recovery Of MS: {(MS-R1) / SP} x100
%MSD	Percent Recovery Of MSD: {(MSD-R1) / SP} x 100
RPD	Relative Percent Difference: {(MS-MSD) / (MS+MSD)} x 100 x 2
LCS	Laboratory Control Sample Results
LCSD	Laboratory Control Sample Duplicate Results
%LCS	Percent Recovery Of LCS: {(LCS-R1) / SP} x100
%LCSD	Percent Recovery Of LCSD: {(LCSD-R1) / SP} x 100
RPD (for LCS/LCSD)	Relative Percent Difference: {(LCS-LCSD) / (LCS+LCSD)} x 100 x 2
ACP %MS(MSD)	Acceptable Range of Percent
ACP RPD	Acceptable Relative Percent Difference
D	Detectable, result must be greater than zero
Qual	A checked box indicates a data qualifier was required for this analyte; see attached explanation.
ND	Analyte Not Detected

Analysis Request and Chain of Custody Record

ORANGE COAST ANALYTICAL, INC. www.ocalab.com
3002 Dow, Suite 532
Tustin, CA 92780
(714) 832-0064 Fax (714) 832-0067

4620 E. Elwood, Suite 4
Phoenix, AZ 85040
(480) 736-0960 Fax (480) 736-0970

Lab Job No: AZ6377
Page 1 of 2

REQUIRED TURN AROUND TIME: Standard: X
72 Hours: 48 Hours: 24 Hours:

CUSTOMER INFORMATION	PROJECT INFORMATION
COMPANY: GeoTrans	PROJECT NAME: 20th & Factor
SEND REPORT TO: Jessica Zbozinek	NUMBER: 1303.076.02
EMAIL: JZbozinek@geotransinc.com	ADDRESS: 4801 E Washington Suite 260, Phoenix, AZ 85034
ADDRESS: 4801 E Washington Suite 260 Phoenix, AZ 85034	P.O.#:
PHONE: 602-682-3320 FAX: 602-682-3310	SAMPLED BY: T. Glock / B. Barden

ANALYSIS REQUEST/ PRESERVATIVE: 8260B; EPA SM4500CN

SAMPLE ID	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER TYPE	8260B	EPA SM4500CN	REMARKS/PRECAUTIONS
DMW-11-042610	3	4/26/10	1515	H_2O	glass	X	X	AZ6377-001
MW25A-042610	3	4/26/10	1809	H_2O	glass			002
MW-25B-042710		4/27/10	0856					003
MW-16A-042710		4/27/10	1021					004
MW-13A-042710		4/27/10	1125					005
MW-23B-042710		4/27/10	1240					006
MW-17C-042710		4/27/10	1420					007
MW-17A-042710		4/27/10	1450					008
MW-9A-042710		4/27/10	1540					009
MW-101A-042710		4/27/10	1610					010
MW-8C-042810		4/28/10	0902					011
MW-24B-042810		4/28/10	1015					012
MW-21A-042810		4/28/10	1058					013
MW-21B-042810		4/28/10	1200					014

Total No. of Samples: 23 Method of Shipment: Hand

Preservative: 1 = Ice 2 = HCl 3 = HNO_3 4 = H_2SO_4 5 = NaOH 6 = Other

Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	4/29/10 1400	Tim Pollman	4/29/10 1400
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received For Lab By:	Date/Time:

Sample Matrix:
WW - Wastewater
DW - Drinking Water
SS - Soil/Solid
GW - Groundwater
OT- Other

Sample Integrity:
Intact _____ On Ice Yes 1 °C

By signing above, client acknowledges responsibility for payment of all services requested on this chain of custody form and any additional services provided in support of this project.

Analysis Request and Chain of Custody Record

ORANGE COAST ANALYTICAL, INC. www.ocalab.com

3002 Dow, Suite 532
Tustin, CA 92780
(714) 832-0064 Fax (714) 832-0067

4620 E. Elwood, Suite 4
Phoenix, AZ 85040
(480) 736-0960 Fax (480) 736-0970

Lab Job No: AZ 377
Page 2 of 2

REQUIRED TURN AROUND TIME: Standard: X
72 Hours: 48 Hours: 24 Hours:

CUSTOMER INFORMATION

COMPANY: GeoTrans
SEND REPORT TO: Jasonka Zbozinek
EMAIL: JZbozinek@geotrans.com
ADDRESS: 4801 E Washington St, Suite 260
Phoenix, AZ 85034
PHONE: 602-682-3320 FAX: -3318

PROJECT INFORMATION

PROJECT NAME: 20th & Factor
NUMBER: 1303.036.02
ADDRESS:
P.O. #:
SAMPLED BY: T. Glock / B. Bolen

ANALYSIS REQUEST / PRESERVATIVE: 8260B, EPA 5035/8260B

SAMPLE ID	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER TYPE	8260B	EPA 5035/8260B	REMARKS/PRECAUTIONS
MW-2K-042810	3	4/28/10	1417	H_2O	glass	X	X	AZ6377-015
MW-12A-042810	↓	4/28/10	1515	↓	↓	↓	↓	016
MW-18A-042810	↓	4/28/10	1552	↓	↓	↓	↓	017
MW-8B-042810	↓	4/28/10	1636	↓	↓	↓	↓	018
MW-8A-042810	↓	4/28/10	1710	↓	↓	↓	↓	019
MW-15A-042810	↓	4/29/10	0837	↓	↓	↓	↓	020
MW-103C-042910	↓	4/29/10	0926	↓	↓	↓	↓	021
MW-102B1-042910	↓	4-29-10	0957	↓	↓	↓	↓	022
Trip blank	1	—	—	H_2O	glass	X		023

Total No. of Samples: 23 Method of Shipment: Hand Preservative: 1 = Ice 2 = HCl 3 = HNO_3 4 = H_2SO_4 5 = NaOH 6 = Other

Relinquished By	Date/Time	Received By	Date/Time
[signature]	4/29/10 1400	Tom [signature]	4/29/10 1400
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received For Lab By:	Date/Time:

Sample Matrix: DW - Drinking Water; GW - Groundwater; WW - Wastewater; SS - Soil/Solid; OT- Other

Sample Integrity: Intact _____ On Ice Yes 1 °C

By signing above, client acknowledges responsibility for payment of all services requested on this chain of custody form and any additional services provided in support of this project. Paym

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (480) 736-0960 Fax (480) 736-0970

LABORATORY REPORT FORM

ORANGE COAST ANALYTICAL, INC.

4620 East Elwood Street, Suite 4 Phoenix, AZ 85040

(480) 736-0960

Laboratory Certification (ADHS) No.: AZ0558, AZ0646, AZM499
Expiration Date: 2010

Laboratory Director's Name:
Mark Noorani

Client: GeoTrans, Inc.

Laboratory Reference: GTI AZ6382

Project Name: 20th & Factor

Project Number: 130.036.02

Date Received: 5/4/2010

Date Reported: 5/10/2010

Chain of Custody Received: ☑

Analytical Method: 8260B, SM4500-CN E,

Mark Noorani, Laboratory Director

© This report may only be reproduced in full. Any partial reproduction of this report requires written permission from Orange Coast Analytical, Inc.

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6382
Project Name: 20th & Factor
Project #: 130.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
St Francis - 043010	AZ6382-001	5/4/2010	4/30/2010	5/6/2010	5/6/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	<0.50
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	<0.50	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	<0.50
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	<1.0			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	98	63-150 %
Toluene-d8:	92	52-130 %
4-Bromofluorobenzene:	91	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6382
Project Name: 20th & Factor
Project #: 130.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
Alice - 043010	AZ6382-002	5/4/2010	4/30/2010	5/6/2010	5/6/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	<0.50
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	<0.50	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	<0.50
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	<1.0			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	99	63-150 %
Toluene-d8:	94	52-130 %
4-Bromofluorobenzene:	94	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6382
Project Name: 20th & Factor
Project #: 130.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
Trip Blank	AZ6382-003	5/4/2010		5/6/2010	5/6/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	<0.50
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	<0.50	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	<0.50
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	<1.0			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	100	63-150 %
Toluene-d8:	94	52-130 %
4-Bromofluorobenzene:	90	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6382
Project Name: 20th & Factor
Project #: 130.036.02

Volatile Organics by GC/MS (EPA 8260B)

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Date Extracted	Date Analyzed	Matrix
Method Blank	MBTT0506101			5/6/2010	5/6/2010	Water

ANALYTE	CAS #	µg/L	ANALYTE	CAS #	µg/L
Acetone	67-64-1	<5.0	cis-1,3-Dichloropropene	10061-01-5	<0.50
Benzene	71-43-2	<0.50	trans-1,3-Dichloropropene	10061-02-6	<0.50
Bromobenzene	108-86-1	<0.50	Ethylbenzene	100-41-4	<0.50
Bromochloromethane	74-97-5	<0.50	Hexachlorobutadiene	87-68-3	<0.50
Bromodichloromethane	75-27-4	<1.0	Isopropylbenzene	98-82-8	<0.50
Bromoform	75-25-2	<0.50	4-Isopropyltoluene	99-87-6	<0.50
Bromomethane	74-83-9	<5.0	Methyl t-butyl ether (MTBE)	1634-04-4	<1.0
2-Butanone (MEK)	78-93-3	<20	Naphthalene	91-20-3	<0.50
n-Butylbenzene	104-51-8	<0.50	n-Propylbenzene	103-65-1	<0.50
sec-Butylbenzene	135-98-8	<0.50	Styrene	100-42-5	<0.50
tert-Butylbenzene	98-06-6	<0.50	1,1,1,2-Tetrachloroethane	630-20-6	<0.50
Carbon Disulfide	75-15-0	<0.50	1,1,2,2-Tetrachloroethane	79-34-5	<0.50
Carbon tetrachloride	56-23-5	<0.50	Tetrachloroethene	127-18-4	<0.50
Chlorobenzene	108-90-7	<0.50	Toluene	108-88-3	<0.50
Chloroethane	75-00-3	<5.0	1,2,3-Trichlorobenzene	87-61-6	<0.50
Chloroform	67-66-3	<0.50	1,2,4-Trichlorobenzene	120-82-1	<0.50
Chloromethane	74-87-3	<5.0	1,1,1-Trichloroethane	71-55-6	<0.50
2-Chlorotoluene	95-49-8	<0.50	1,1,2-Trichloroethane	79-00-5	<0.50
4-Chlorotoluene	106-43-4	<0.50	Trichloroethene	79-01-6	<0.50
Dibromochloromethane	124-48-1	<0.50	Trichlorofluoromethane	75-69-4	<2.0
1,2-Dibromo-3-chloropropane	96-12-8	<2.0	1,2,3-Trichloropropane	96-18-4	<0.50
1,2-Dibromoethane	106-93-4	<0.50	1,2,4-Trimethylbenzene	95-63-6	<0.50
Dibromomethane	74-95-3	<0.50	1,3,5-Trimethylbenzene	108-67-8	<0.50
1,2-Dichlorobenzene	95-50-1	<0.50	Vinyl Chloride	75-01-4	<0.50
1,3-Dichlorobenzene	541-73-1	<0.50	Total Xylenes	1330-20-7	<2.0
1,4-Dichlorobenzene	106-46-7	<0.50			
1,1-Dichloroethane	75-34-3	<0.50			
1,2-Dichloroethane	107-06-2	<0.50			
1,1-Dichloroethene	75-35-4	<1.0			
cis-1,2-Dichloroethene	156-59-2	<1.0			
trans-1,2-Dichloroethene	156-60-5	<0.50			
Dichlorodifluoromethane	75-71-8	<2.0			
1,2-Dichloropropane	78-87-5	<1.0			
1,3-Dichloropropane	142-28-9	<0.50			
2,2-Dichloropropane	594-20-7	<0.50			
1,1-Dichloropropene	563-58-6	<0.50			

Surrogate:	% RC	Acceptable % RC
Dibromofluoromethane:	99	63-150 %
Toluene-d8:	97	52-130 %
4-Bromofluorobenzene:	94	53-130 %

Dilution Factor: 1

Data Qualifiers: None

Ms. Jasenka Zbozinek
GeoTrans, Inc.
4801 E. Washington St Ste 260
Phoenix, AZ, 85034

Lab Reference # GTI AZ6382
Project Name: 20th & Factor
Project #: 130.036.02

Inorganics

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Matrix
St Francis - 043010	AZ6382-001	5/4/2010	4/30/2010	Water

ANALYTE	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Total	SM4500-CN E	5/4/2010	5/4/2010	<0.02	mg/L	--

Client Sample ID	Lab Sample Number	Date Received	Date Sampled	Matrix
Alice - 043010	AZ6382-002	5/4/2010	4/30/2010	Water

ANALYTE	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Total	SM4500-CN E	5/4/2010	5/4/2010	<0.02	mg/L	--

Method Blank				Water

ANALYTE	MB ID	EPA Method	Date Extracted	Date Analyzed	Result	Units	Qual
Cyanide, Total	MBIR0504101	SM4500-CN E	5/4/2010	5/4/2010	<0.02	mg/L	--

QA/QC Report
for
Volatile Organic Compounds (EPA 8260B)
Reporting units: ppb

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Date of Extraction: 5/6/2010
Date of Analysis: 5/6/2010
Dup Date of Analysis: 5/6/2010
Laboratory Sample #: AZ6377-020
MS/MSD Qualifiers: None
Reference #: GTI AZ6382

Analyte	*R1*	*SP CONC*	*MS*	*MSD*	*%MS*	*%MSD*	*RPD*	*ACP %MS*	*ACP RPD*	*Qual*
1,1-Dichloroethene	0.0	25	18	23	72	92	24	47-155	38	☐
Benzene	0.0	25	26	25	104	100	4	55-134	15	☐
Trichloroethene	0.0	25	26	24	104	96	8	42-151	15	☐
Toluene	0.0	25	27	25	108	100	8	52-145	19	☐
Chlorobenzene	0.0	25	27	27	108	108	0	56-143	18	☐

Surrogate Recoveries for Spike Samples

Surrogate (%RC)	*MS*	*MSD*	*Qual*	*LCS*	*Qual*	*ACP % RC*
Dibromofluoromethane	96	97	☐	94	☐	63-150 %
Toluene-d8	94	95	☐	94	☐	52-130 %
4-Bromofluorobenzene	93	93	☐	94	☐	53-130 %

Laboratory Control Sample

Date of Extraction: 5/6/2010
Date of Analysis: 5/6/2010
Laboratory Sample #: TT0506101
LCS Qualifiers: None

Analyte	*SP CONC*	*Results*	*% Recovery*	*Acceptable %*	*Qual*
1,1-Dichloroethene	25	22	88	34-169	☐
Benzene	25	27	108	53-137	☐
Trichloroethene	25	27	108	49-147	☐
Toluene	25	28	112	54-144	☐
Chlorobenzene	25	29	116	53-146	☐

QA/QC Report
for Inorganics
Reporting units: ppm

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Reference #: GTI AZ6382

Analyte	*Date Extracted*	*Date Analyzed*	*QC Sample*	*R1*	*SP CONC*	*MS*	*MSD*	*%MS*	*%MSD*	*RPD*	*ACP %MS*	*ACP RPD*	*Qual*
Cyanide, Total	5/4/2010	5/4/2010	AZ6377-019	0.19	0.15	0.289	0.277	66	58	4	56-136	14	--

Laboratory Control Sample

Analyte	*Date Extracted*	*Date Analyzed*	*QC Sample*	*SP CONC*	*Results*	*% LCS*	*ACP %*	*Qual*
Cyanide, Total	5/4/2010	5/4/2010	IR0504101	0.15	0.148	99	90-110	--

Definition of terms:

R1	Results Of Laboratory Sample Number
SP CONC	Spike Concentration Added to Sample
MS	Matrix Spike Results
MSD	Matrix Spike Duplicate Results
%MS	Percent Recovery Of MS: {(MS-R1) / SP} x100
%MSD	Percent Recovery Of MSD: {(MSD-R1) / SP} x 100
RPD	Relative Percent Difference: {(MS-MSD) / (MS+MSD)} x 100 x 2
LCS	Laboratory Control Sample Results
LCSD	Laboratory Control Sample Duplicate Results
%LCS	Percent Recovery Of LCS: {(LCS-R1) / SP} x100
%LCSD	Percent Recovery Of LCSD: {(LCSD-R1) / SP} x 100
RPD (for LCS/LCSD)	Relative Percent Difference: {(LCS-LCSD) / (LCS+LCSD)} x 100 x 2
ACP %MS(MSD)	Acceptable Range of Percent
ACP RPD	Acceptable Relative Percent Difference
D	Detectable, result must be greater than zero
Qual	A checked box indicates a data qualifier was required for this analyte; see attached explanation.
ND	Analyte Not Detected

Analysis Request and Chain of Custody Record

Lab Job No: [illegible]
Page 1 of

ORANGE COAST ANALYTICAL, INC. www.ocalab.com

3002 Dow, Suite 532
Tustin, CA 92780
(714) 832-0064 Fax (714) 832-0067

4620 E. Elwood, Suite 4
Phoenix, AZ 85040
(480) 736-0960 Fax (480) 736-0970

CUSTOMER INFORMATION		PROJECT INFORMATION	
COMPANY:	[illegible]	PROJECT NAME:	[illegible]
SEND REPORT TO:	[illegible]	NUMBER:	[illegible]
ADDRESS:	[illegible]	ADDRESS:	[illegible]
EMAIL:	[illegible]	P.O. #:	
PHONE:	FAX: [illegible]	SAMPLED BY:	[illegible]

REQUIRED TAT: [illegible]

SAMPLE ID	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	[illegible]	[illegible]								REMARKS / PRECAUTIONS
[illegible]	3	[illegible]	[illegible]	[illegible]	✓	✓								
[illegible]	3	[illegible]	[illegible]	[illegible]	✓	✓								
[illegible]	1				✓									

Total No. of Samples: [illegible] Method of Shipment:

Preservative: 1 = Ice 2 = HCl 3 = HNO_3 4 = H_2SO_4 5 = NaOH 6 = Other

Relinquished By:	Date/Time:	Received By:	Date/Time:	Sample Matrix: DW - Drinking Water; GW - Groundwater; WW - Wastewater; SS - Soil/Solid; OT- Other
[illegible]	[illegible]	[illegible]		
Relinquished By:	Date/Time:	Received By:	Date/Time:	
Relinquished By:	Date/Time:	Received For Lab By:	Date/Time:	Sample Integrity: Intact _____ On Ice _____ °C

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client fails to pickup samples.

APPENDIX H

Groundwater Sampling Field Data Sheets

GeoTrans, Inc.

Project No: 1303.036.02

Task No:

Site Name: 20th & Factor

Technicians

Date: 4/26/10

Well ID	Time	Depth to Water (Feet) Previous	Depth to Water (Feet) Current	Depth to Bottom of Casing (Feet)	Measuring Point	Comments
MW-25A	0959		80.63	94.91	NTOC	
MW-25B	1013		80.99	167.14	NTOC	
MW-15A	1031		80.72		NTOC	
MW-16A	1054		78.01		NTOC	
MW-13A	1103		80.29		NTOC	
MW-23B	1120		76.52		NTOC	
MW-17C	~~1131~~ 1120	78.31	~~78.57~~		NTOC	
MW-17A	1131		78.52		NTOC	
MW-9A	1147		76.11		NTOC	
MW-101A	1152		75.20		NTOC	
MW-24B	1145		80.76		NTOC	
MW-8C	1153		75.72		NTOC	
MW-21A	1203		81.27		NTOC	
MW-21B	1203		81.27		NTOC	
MW-21C	1207		81.10		NTOC	
MW-12A	1218		74.68		NTOC	
MW-18A	1227		79.77		NTOC	
MW-8B	1213		75.62		NTOC	
MW-8A	1235		75.19		NTOC	
MW-103C	1223		76.90		NTOC	
MW-102B1	1225		76.70		NTOC	
DMW-11	1305		71.00		NTOC	

GeoTrans, Inc.

GROUNDWATER SAMPLING FORM

Job Name:	20th & Factor	Well ID:	MW-25A
Job #:	1303.036.02	Date:	4/26/10
Location:	Yuma, Arizona	Sample ID:	MW-25A-042610
Recorded by:	T. Gilock	Time:	1808
Sampled by:	B. Bedery	Well Type:	Monitoring
		Well Material:	PVC

WELL PURGING

PURGE VOLUME

Casing Diameter (Inches):	4
Total depth of casing (TD in ft bgs):	95.0
Water level depth (WL in ft bgs):	80.63
Number of well volumes to be purged:	3

PURGE METHOD

PUMP INTAKE SETTING	
Purge Method:	Pump 2"
Screen interval:	65 - 95
Pump depth:	

PURGE VOLUME CALCULATION: (note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft)

(95 - 80.63) X 16 X 3 X 0.0408 = 28.1 Gallons

(TD - WL) D^2 # of Well Volumes

Purge time		Purge Rate		Totalizer	
1737	Start	Initial gpm	5.2 gpm	Initial	185327.3
1758	Stop	Final gpm	4.3 gpm	Final	185336.5
	Elapsed	Average gpm			

ACTUAL PURGE VOLUME

FIELD PARAMETER MEASUREMENT

Time (clock or elapsed)	T (°C or °F)	DO (% or mg/L)	Conductivity (ms/cm)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)	Notes
1740	32.11	4.81	5.41	6.97	3.42	202	179	
1743	32.16	3.48	5.45	7.05	3.44	145	80.5	
1749	32.18	3.36	5.41	7.06	3.41	144	41.4	
1747	32.25	6.02	5.49	7.10	3.45	202	166	Turbidity is jumping
1753	32.30	4.60	5.51	7.16	3.47	194	109	up but water is
1755	32.32	5.41	5.56	7.14	3.50	195	146	clear. Will recalibrate.

Observations (Odor, color, etc.):

IDW Storage Type: Baker Tank

WELL SAMPLING

SAMPLING METHOD

Bailer Type: Disposable Bailer 3"

SAMPLING DISTRIBUTION

# Cont./Type	Analysis	Preservatives	Lab	Comments
2/40 mL VOA's	VOC's-8260B	HCl	Orange Coast	
1/1 L Amber	Cyanides-SM4500	NaOH	Orange Coast	

QC SAMPLES

Duplicates		
Original Sample #	Duplicate Sample #	"Blind" time

Blanks		
Type	Sample ID	Time

GeoTrans, Inc.

GROUNDWATER SAMPLING FORM

Job Name:	20th & Factor	Well ID: MW-25B	Sample ID: MW-25B - 0427 10
Job #:	1303.036.02	Date: 4/27/10	Time: 0856
Location:	Yuma, Arizona		
Recorded by:	T. Glock	Well Type: Monitoring	
Sampled by:	T. Glock	Well Material: PVC	

WELL PURGING

PURGE VOLUME

Casing Diameter (Inches):	4
Total depth of casing (TD in ft bgs):	167.14
Water level depth (WL in ft bgs):	80.94
Number of well volumes to be purged:	3

PURGE METHOD

PUMP INTAKE SETTING	
Purge Method:	Pump 2"
Screen Interval:	140-170
Pump depth:	90'

PURGE VOLUME CALCULATION: (note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft)

(-) X 16 X 3 X 0.0408 = 168.8 Gallons

(TD - WL) D^2 # of Well Volumes

Purge time		Purge Rate		Totalizer		ACTUAL PURGE VOLUME
0738	Start	Initial gpm	5.0	Initial	1853364.6	323
0840	Stop	Final gpm		Final	1853687.1	
	Elapsed	Average gpm			1853533.4	

FIELD PARAMETER MEASUREMENT

Time (clock or elapsed)	T (°C or °F)	DO (% or mg/L)	Conductivity (ms/cm)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)	Notes
0743	32.59	0.94	5.57	5.79	3.51	203	0.0	
0748	32.97	0.81	5.22	5.92	3.29	184	0.0	Draining in buckets
0753	33.10	0.68	5.15	5.99	3.24	167	>800	of high
0800	33.19	0.00	5.21	5.93	3.28	201	187	turbidity water
0810	33.18	8.53*	5.20	5.04	3.28	225	105	intermittently
0820	33.23	8.73	5.20	4.22	3.28	264	52.4	*disconnected hose
0830	33.26	8.06	5.17	3.93	3.26	276	47.8	
0840	33.27	6.86	5.14	3.78	3.24	280	10.8	clear.

Observations (Odor, color, etc.):

IDW Storage Type: Baker Tank

WELL SAMPLING

SAMPLING METHOD

Bailer Type: Disposable Bailer 3"

SAMPLING DISTRIBUTION

# Cont./Type	Analysis	Preservatives	Lab	Comments
2/40 mL VOA's	VOC's-8260B	HCl	Orange Coast	
1/1 L Amber	Cyanides-SM4500	NaOH	Orange Coast	

QC SAMPLES

Duplicates		
Original Sample #	Duplicate Sample #	"Blind" time

Blanks		
Type	Sample ID	Time

GeoTrans, Inc.

GROUNDWATER SAMPLING FORM

Job Name:	20th & Factor	Well ID: MW-15A	Sample ID: MW-15A-042910
Job #:	1303.036.02	Date: 4/29/10	Time: 0837
Location:	Yuma, Arizona		
Recorded by:	TG / BB	Well Type: Monitoring	
Sampled by:	TG / BB	Well Material: PVC	

WELL PURGING

PURGE VOLUME

Casing Diameter (Inches):	4
Total depth of casing (TD in ft bgs):	90.7 Tagged bottom
Water level depth (WL in ft bgs):	80.72
Number of well volumes to be purged:	3

PURGE METHOD

PUMP INTAKE SETTING	
Purge Method:	Pump 2"
Screen Interval:	66 - 96
Pump depth:	83

PURGE VOLUME CALCULATION: (note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft)

(-) X 16 X 3 X 0.0408 = 19.5 Gallons

(TD - WL) D^2 # of Well Volumes

Purge time		Purge Rate		Totalizer		
0822	Start	Initial gpm	4	Initial		
0830	Stop	Final gpm		Final	1855992.5	start
	Elapsed	Average gpm			1856023.9	

ACTUAL PURGE VOLUME

24.4

FIELD PARAMETER MEASUREMENT

Time (clock or elapsed)	T (°C or °F)	DO (% or mg/L)	Conductivity (ms/cm)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)	Notes
0824	27.53	5.58	2.93	8.38	1.84	40	>800	
0825	28.22	5.27	2.87	8.40	1.84	45	>800	
0826	28.80	6.65	3.05	8.28	1.95	45	475	
0827	28.90	4.25	3.06	8.30	1.96	44	265	
0828	29.08	4.09	3.06	8.31	1.96	45	162	

Observations (Odor, color, etc.):

IDW Storage Type: Baker Tank

WELL SAMPLING

SAMPLING METHOD

Bailer Type: Disposable Bailer 3"

SAMPLING DISTRIBUTION

# Cont./Type	Analysis	Preservatives	Lab	Comments
2/40 mL VOA's	VOC's-8260B	HCl	Orange Coast	
1/1 L Amber	Cyanides-SM4500	NaOH	Orange Coast	

QC SAMPLES

Duplicates		
Original Sample #	Duplicate Sample #	"Blind" time

Blanks		
Type	Sample ID	Time

GeoTrans, Inc.

GROUNDWATER SAMPLING FORM

Job Name:	20th & Factor	Well ID: MW-16A	Sample ID: MW-16A-042710
Job #:	1303.036.02	Date: 4/27/10	Time: 1021
Location:	Yuma, Arizona		
Recorded by:		Well Type: Monitoring	
Sampled by:		Well Material: PVC	

WELL PURGING

PURGE VOLUME

Casing Diameter (Inches): 4

Total depth of casing (TD in ft bgs): 95

Water level depth (WL in ft bgs): 78.61

Number of well volumes to be purged: 3

PURGE METHOD

PUMP INTAKE SETTING	
Purge Method:	Pump 2"
Screen Interval:	64.5 - 104.5
Pump depth:	

PURGE VOLUME CALCULATION: (note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft)

(-) X 16 X 3 X 0.0408 = 32 Gallons

(TD - WL) D^2 # of Well Volumes

Purge time		Purge Rate		Totalizer		ACTUAL PURGE VOLUME
1007	Start	Initial gpm	5.5	Initial	1853687.3	45
1010	Stop	Final gpm		Final	1853732.1	
	Elapsed	Average gpm				

FIELD PARAMETER MEASUREMENT

Time (clock or elapsed)	T (°C or °F)	DO (% or mg/L)	Conductivity (ms/cm)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)	Notes
1004	28.35	9.26	3.17	8.92	2.02	136	185	
1005	28.15	8.09	3.07	8.73	1.95	152	141	
1006	28.09	7.11	3.02	8.67	1.93	157	97.0	
1007	28.07	6.44	2.99	8.57	1.92	162	71.0	
1008	28.05	5.97	2.96	8.49	1.90	167	45.1	
1010	28.05	5.79	2.94	8.45	1.88	171	42.2	

Observations (Odor, color, etc.):

IDW Storage Type: Baker Tank

WELL SAMPLING

SAMPLING METHOD

Bailer Type: Disposable Bailer 3"

SAMPLING DISTRIBUTION

# Cont./Type	Analysis	Preservatives	Lab	Comments
2/40 mL VOA's	VOC's-8260B	HCl	Orange Coast	
1/1 L Amber	Cyanides-SM4500	NaOH	Orange Coast	

QC SAMPLES

Duplicates		
Original Sample #	Duplicate Sample #	"Blind" time

Blanks		
Type	Sample ID	Time

GeoTrans, Inc.

GROUNDWATER SAMPLING FORM

Job Name:	20th & Factor	Well ID: MW-13A	Sample ID: MW-13A-04270
Job #:	1303.036.02	Date: 4/27/10	Time: 1125
Location:	Yuma, Arizona		
Recorded by:	T-G	Well Type:	Monitoring
Sampled by:	T-G	Well Material:	PVC

WELL PURGING

PURGE VOLUME

Casing Diameter (inches):	4
Total depth of casing (TD in ft bgs):	105
Water level depth (WL in ft bgs):	80.28
Number of well volumes to be purged:	3

PURGE METHOD

PUMP INTAKE SETTING	
Purge Method:	Pump 2"
Screen interval:	62 - 102
Pump depth:	90

PURGE VOLUME CALCULATION: (note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft)

(-) X 16 X 3 X 0.0408 = 48.4 Gallons

(TD - WL) D^2 # of Well Volumes

Purge time		Purge Rate		Totalizer		ACTUAL PURGE VOLUME
1103	Start	Initial gpm	5.4	Initial	1853733.3	
1117	Stop	Final gpm		Final		
	Elapsed	Average gpm				

FIELD PARAMETER MEASUREMENT

Time (clock or elapsed)	T (°C or °F)	DO (% or mg/L)	Conductivity (ms/cm)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)	Notes
1105	30.16	7.81	2.37	8.30	1.51	171	127	
1107	30.15	6.92	2.37	8.33	1.52	174	57.4	
1109	30.17	6.44	2.42	8.35	1.55	174	83.5	
1111	30.18	6.16	2.45	8.39	1.57	174	64.5	
1113	30.25	5.92	2.46	8.44	1.58	175	27.5	
1115	30.21	5.82	2.47	8.49	1.58	175	15.7	

Observations (Odor, color, etc.):

IDW Storage Type: Baker Tank

WELL SAMPLING

SAMPLING METHOD

Bailer Type: Disposable Bailer 3"

SAMPLING DISTRIBUTION

# Cont./Type	Analysis	Preservatives	Lab	Comments
2/40 mL VOA's	VOC's-8260B	HCl	Orange Coast	
1/1 L Amber	Cyanides-SM4500	NaOH	Orange Coast	

QC SAMPLES

Duplicates		
Original Sample #	Duplicate Sample #	"Blind" time

Blanks		
Type	Sample ID	Time

GeoTrans, Inc.

GROUNDWATER SAMPLING FORM

Job Name:	20th & Factor	Well ID: MW-23B	Sample ID: MW-23B-042710
Job #:	1303.036.02	Date: 4/27/10	Time: 1240
Location:	Yuma, Arizona		
Recorded by:	T. G	Well Type:	Monitoring
Sampled by:	BB	Well Material:	PVC

WELL PURGING

PURGE VOLUME

Casing Diameter (Inches):	4
Total depth of casing (TD in ft bgs):	185
Water level depth (WL in ft bgs):	76.52
Number of well volumes to be purged:	3

PURGE METHOD

PUMP INTAKE SETTING	
Purge Method:	Pump 2"
Screen Interval:	120.5 - 160.5
Pump depth:	

PURGE VOLUME CALCULATION: (note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft)

(-) X 16 X 3 X 0.0408 = 212 Gallons

(TD - WL) D^2 # of Well Volumes

Purge time		Purge Rate		Totalizer	
1142	Start	Initial gpm	5.2	Initial	1853808.0
1231	Stop	Final gpm		Final	1854071.7
	Elapsed	Average gpm			

ACTUAL PURGE VOLUME 263.7

FIELD PARAMETER MEASUREMENT

Time (clock or elapsed)	T (°C or °F)	DO (% or mg/L)	Conductivity (ms/cm)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)	Notes
1151	29.10	4.21	2.44	5.52	1.56	356	0.0	
1200	29.13	3.24	2.53	8.46	1.62	184	0.0	
1208	29.13	3.18	2.54	7.22	1.62	268	0.0	
1215	29.13	4.51	2.56	6.59	1.64	295	0.0	
1224	29.11	3.13	2.56	7.39	1.64	252	0.0	
1231	29.11	3.06	2.56	7.25	1.64	259	0.0	

Observations (Odor, color, etc.):

IDW Storage Type: Baker Tank

WELL SAMPLING

SAMPLING METHOD

Bailer Type: Disposable Bailer 3"

SAMPLING DISTRIBUTION

# Cont./Type	Analysis	Preservatives	Lab	Comments
2/40 mL VOA's	VOC's-8260B	HCl	Orange Coast	
1/1 L Amber	Cyanides-SM4500	NaOH	Orange Coast	

QC SAMPLES

Duplicates		
Original Sample #	Duplicate Sample #	"Blind" time

Blanks		
Type	Sample ID	Time

GeoTrans, Inc.

GROUNDWATER SAMPLING FORM

Job Name:	20th & Factor	Well ID: MW-17C	Sample ID: MW-17C-042
Job #:	1303.036.02	Date: 4/27/10	Time: 1420
Location:	Yuma, Arizona		
Recorded by:		Well Type: Monitoring	
Sampled by:		Well Material: PVC	

WELL PURGING

PURGE VOLUME

Casing Diameter (Inches):	4
Total depth of casing (TD in ft bgs):	267
Water level depth (WL in ft bgs):	78.37
Number of well volumes to be purged:	3

PURGE METHOD

PUMP INTAKE SETTIN	
Purge Method:	Pump 2"
Screen Interval:	167-207
Pump depth:	

PURGE VOLUME CALCULATION: (note: 2" = 0.153 gal/ft 4" = 0.652 gal/ft)

(-) X 16 X 3 X 0.0408 = 252 Gallons

(TD - WL) D^2 # of Well Volumes

Purge time		Purge Rate		Totalizer		ACTUAL PURGE VOLUM
1318	Start	Initial gpm	5.1	Initial	1854072.0	252
1408	Stop	Final gpm	5.1	Final	1854324.0	
	Elapsed	Average gpm			324	

FIELD PARAMETER MEASUREMENT

Time (clock or elapsed)	T (°C or °F)	DO (% or mg/L)	Conductivity (ms/cm)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)	Notes
1322	31.45	2.98	3.05	7.57	1.95	192	0.0	
1332	33.06	0.60	3.06	7.15	1.96	83	0.0	
1342	33.34	0.39	3.06	6.92	1.96	46	10.8	
1352	33.33	0.35	3.07	7.31	1.96	10	3.9	
1402	33.34	0.25	3.06	7.17	1.96	13	0.0	

Observations (Odor, color, etc.):

IDW Storage Type: Baker Tank

WELL SAMPLING

SAMPLING METHOD

Bailer Type: Disposable Bailer 3"

SAMPLING DISTRIBUTION

# Cont./Type	Analysis	Preservatives	Lab	Comments
2/40 mL VOA's	VOC's-8260B	HCl	Orange Coast	
1/1 L Amber	Cyanides-SM4500	NaOH	Orange Coast	

QC SAMPLES

Duplicates		
Original Sample #	Duplicate Sample #	"Blind" time

Blanks		
Type	Sample ID	Time

GeoTrans, Inc.

GROUNDWATER SAMPLING FORM

Job Name:	20th & Factor	Well ID: MW-17A	Sample ID: MW-17A- 042710
Job #:	1303.036.02	Date: 4/27/10	Time: 1450
Location:	Yuma, Arizona		
Recorded by:		Well Type: Monitoring	
Sampled by:		Well Material: PVC	

WELL PURGING

PURGE VOLUME

Casing Diameter (Inches):	4
Total depth of casing (TD in ft bgs):	98
Water level depth (WL in ft bgs):	78.52
Number of well volumes to be purged:	3

PURGE METHOD

PUMP INTAKE SETTING	
Purge Method:	Pump 2"
Screen interval:	66 - 96
Pump depth:	

PURGE VOLUME CALCULATION: (note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft)

(-) X 16 X 3 X 0.0408 = 38.1 Gallons

(TD - WL) D^2 # of Well Volumes

Purge time		Purge Rate		Totalizer		ACTUAL PURGE VOLUME
1430	Start	Initial gpm	5.1	Initial	1854316.4	53.1
1439	Stop	Final gpm		Final	1854369.5	
	Elapsed	Average gpm				

FIELD PARAMETER MEASUREMENT

Time (clock or elapsed)	T (°C or °F)	DO (% or mg/L)	Conductivity (ms/cm)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)	Notes
1432	30.73	9.12	2.91	8.40	1.86	192	36.1	
1434	30.45	7.06	2.91	8.39	1.86	194	89.8	
1436	30.44	6.11	2.88	8.42	1.84	195	43.3	
1438	30.46	5.62	2.87	8.44	1.84	196	13.4	

Observations (Odor, color, etc.):

IDW Storage Type: Baker Tank

WELL SAMPLING

SAMPLING METHOD

Bailer Type: Disposable Bailer 3"

SAMPLING DISTRIBUTION

# Cont./Type	Analysis	Preservatives	Lab	Comments
2/40 mL VOA's	VOC's-8260B	HCl	Orange Coast	
1/1 L Amber	Cyanides-SM4500	NaOH	Orange Coast	

QC SAMPLES

Duplicates		
Original Sample #	Duplicate Sample #	"Blind" time

Blanks		
Type	Sample ID	Time

GeoTrans, Inc.

GROUNDWATER SAMPLING FORM

Job Name:	20th & Factor	Well ID: MW-9A	Sample ID: MW-9A-0927/10
Job #:	1303.036.02	Date: 9/27/10	Time: 1540
Location:	Yuma, Arizona		
Recorded by:	TG/BB	Well Type:	Monitoring
Sampled by:	TG/BB	Well Material:	PVC

WELL PURGING

PURGE VOLUME

Casing Diameter (Inches):	4
Total depth of casing (TD in ft bgs):	101.4
Water level depth (WL in ft bgs):	76.11
Number of well volumes to be purged:	3

PURGE METHOD

PUMP INTAKE SETTING	
Purge Method:	Pump 2"
Screen interval:	61.4 - 101.4
Pump depth:	

PURGE VOLUME CALCULATION: (note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft)

(-) X 16 X 3 X 0.0408 = 94.5 Gallons

(TD - WL) D^2 # of Well Volumes

Purge time		Purge Rate		Totalizer	
1516	Start	Initial gpm	5.5	Initial	1854360.5
1530	Stop	Final gpm	5.6	Final	1854436.7
	Elapsed	Average gpm			

ACTUAL PURGE VOLUME

FIELD PARAMETER MEASUREMENT

Time (clock or elapsed)	T (°C or °F)	DO (% or mg/L)	Conductivity (ms/cm)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)	Notes
1520	29.88	5.83	3.99	7.87	2.55	217	>800	
1522	29.95	5.10	4.00	7.75	2.56	224	663	
1524	29.97	4.68	4.02	7.67	2.57	228	464	
1526	29.97	4.40	4.02	8.22	2.58	194	558	
1528	29.97	4.07	4.03	7.80	2.58	219	385	
1530	29.92	3.83	4.04	7.72	2.58	224	310	

Observations (Odor, color, etc.):

IDW Storage Type: Baker Tank

WELL SAMPLING

SAMPLING METHOD

Bailer Type: Disposable Bailer 3"

SAMPLING DISTRIBUTION

# Cont./Type	Analysis	Preservatives	Lab	Comments
2/40 mL VOA's	VOC's-8260B	HCl	Orange Coast	
1/1 L Amber	Cyanides-SM4500	NaOH	Orange Coast	

QC SAMPLES

Duplicates		
Original Sample #	Duplicate Sample #	"Blind" time

Blanks		
Type	Sample ID	Time

GeoTrans, Inc.

GROUNDWATER SAMPLING FORM

Job Name:	20th & Factor	Well ID: MW-101A	Sample ID: MW-101A-042710
Job #:	1303.036.02	Date: 4/27/10	Time: 1610
Location:	Yuma, Arizona		
Recorded by:	TG/BB	Well Type: Monitoring	
Sampled by:	TG/BB	Well Material: PVC	

WELL PURGING

PURGE VOLUME

Casing Diameter (Inches):	4
Total depth of casing (TD in ft bgs):	90
Water level depth (WL in ft bgs):	75.20
Number of well volumes to be purged:	3

PURGE METHOD

PUMP INTAKE SETTING	
Purge Method:	Pump 2"
Screen interval:	50 - 90
Pump depth:	

PURGE VOLUME CALCULATION: (note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft)

(-) X 16 X 3 X 0.0408 = 29 Gallons

(TD - WL) D^2 # of Well Volumes

Purge time		Purge Rate		Totalizer		ACTUAL PURGE VOLUME
1558	Start	Initial gpm	5.5	Initial	1854436.5	32.1
1603	Stop	Final gpm		Final	1854468.6	
5	Elapsed	Average gpm				

FIELD PARAMETER MEASUREMENT

Time (clock or elapsed)	T (°C or °F)	DO (% or mg/L)	Conductivity (ms/cm)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)	Notes
1559	31.52	8.79	5.41	8.11	3.42	205	28.1	
1600	30.09	7.59	5.40	7.45	3.48	249	14.4	
1601	29.85	6.62	5.41	7.03	3.40	271	6.6	
1602	29.77	6.16	5.41	6.64	3.41	294	1.8	
1603	29.76	5.93	5.40	6.36	3.40	308	0.9	

Observations (Odor, color, etc.):

IDW Storage Type: Baker Tank

WELL SAMPLING

SAMPLING METHOD

Bailer Type: Disposable Bailer 3"

SAMPLING DISTRIBUTION

# Cont./Type	Analysis	Preservatives	Lab	Comments
2/40 mL VOA's	VOC's-8260B	HCl	Orange Coast	
1/1 L Amber	Cyanides-SM4500	NaOH	Orange Coast	

QC SAMPLES

Duplicates		
Original Sample #	Duplicate Sample #	"Blind" time

Blanks		
Type	Sample ID	Time

GeoTrans, Inc.

GROUNDWATER SAMPLING FORM

Job Name:	20st & Factor	Well ID: MW-24B	Sample ID: MW-24B-042810
Job #:	1303.036.02	Date: 4/28/10	Time: 1015
Location:	Yuma, Arizona		
Recorded by:	TG/BB	Well Type:	Monitoring
Sampled by:	TG/BB	Well Material:	PVC

WELL PURGING

PURGE VOLUME

Casing Diameter (Inches):	4
Total depth of casing (TD in ft bgs):	160.5
Water level depth (WL in ft bgs):	80.76
Number of well volumes to be purged:	3

PURGE METHOD

PUMP INTAKE SETTING	
Purge Method:	Pump 2"
Screen interval:	110.5-160.5
Pump depth:	

PURGE VOLUME CALCULATION: (note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft)

(-) X 16 X 3 X 0.0408 = 156.2 Gallons

(TD - WL) D^2 # of Well Volumes

Purge time		Purge Rate		Totalizer	
0930	Start	Initial gpm	5.4	Initial	1854783.8
1000	Stop	Final gpm	5.4	Final	1854945.7
	Elapsed	Average gpm			939.0

ACTUAL PURGE VOLUME: 161.9

FIELD PARAMETER MEASUREMENT

Time (clock or elapsed)	T (°C or °F)	DO (% or mg/L)	Conductivity (ms/cm)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)	Notes
0935	31.00	2.62	3.85	8.39	2.47	206	0.0	
0941	31.23	1.05	3.89	8.40	2.49	202	0.0	
0947	31.35	0.86	4.01	8.41	2.57	185	0.0	
0953	31.32	0.81	4.03	8.44	2.58	183	0.0	
0959	31.26	0.77	4.03	8.47	2.58	182	0.0	

Observations (Odor, color, etc.):

IDW Storage Type: Baker Tank

WELL SAMPLING

SAMPLING METHOD

Bailer Type: Disposable Bailer 3"

SAMPLING DISTRIBUTION

# Cont./Type	Analysis	Preservatives	Lab	Comments
2/40 mL VOA's	VOC's-8260B	HCl	Orange Coast	
1/1 L Amber	Cyanides-SM4500	NaOH	Orange Coast	

QC SAMPLES

Duplicates		
Original Sample #	Duplicate Sample #	"Blind" time

Blanks		
Type	Sample ID	Time

GeoTrans, Inc.

GROUNDWATER SAMPLING FORM

Job Name:	20th & Factor	Well ID: MW-8C	Sample ID: MW-8C-042810
Job #:	1303.036.02	Date: 4/28/10	Time: 0902
Location:	Yuma, Arizona		
Recorded by:	TG/RB	Well Type: Monitoring	
Sampled by:	TG/RB	Well Material: PVC	

WELL PURGING

PURGE VOLUME

Casing Diameter (Inches):	4
Total depth of casing (TD in ft bgs):	225
Water level depth (WL in ft bgs):	75.72
Number of well volumes to be purged:	3

PURGE METHOD

PUMP INTAKE SETTING	
Purge Method:	Pump 2"
Screen interval:	170 - 210
Pump depth:	

PURGE VOLUME CALCULATION: (note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft)

(-) X 16 X 3 X 0.0408 = 292 Gallons

(TD - WL) D^2 # of Well Volumes

Purge time		Purge Rate		Totalizer		ACTUAL PURGE VOLUME
0756	Start	Initial gpm	5.3	Initial	1854478.4	304.2
0853	Stop	Final gpm		Final	1854782.6	
	Elapsed	Average gpm			5704	

FIELD PARAMETER MEASUREMENT

Time (clock or elapsed)	T (°C or °F)	DO (% or mg/L)	Conductivity (ms/cm)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)	Notes
0806	31.75	3.49	3.48	7.90	2.22	146	0.0	
0816	32.63	1.08	3.48	8.06	2.23	-1	0.0	
0826	32.68	0.41	3.55	8.13	2.27	-26	0.4	
0836	32.71	0.76	3.59	8.16	2.29	-35	0.0	
0846	32.81	0.30	3.60	8.18	2.31	-44	0.0	
0853	32.84	0.28	3.62	8.19	2.31	-48	0.0	

Observations (Odor, color, etc.):

IDW Storage Type: Baker Tank

WELL SAMPLING

SAMPLING METHOD

Bailer Type: Disposable Bailer 3"

SAMPLING DISTRIBUTION

# Cont./Type	Analysis	Preservatives	Lab	Comments
2/40 mL VOA's	VOC's-8260B	HCl	Orange Coast	
1/1 L Amber	Cyanides-SM4500	NaOH	Orange Coast	

QC SAMPLES

Duplicates		
Original Sample #	Duplicate Sample #	"Blind" time

Blanks		
Type	Sample ID	Time

GeoTrans, Inc.

GROUNDWATER SAMPLING FORM

Job Name:	20th & Factor	Well ID: MW-21A	Sample ID: MW-21A-042810
Job #:	1303.036.02	Date: 4/28/10	Time: 1059
Location:	Yuma, Arizona		
Recorded by:	TG/BB	Well Type:	Monitoring
Sampled by:	TG/BB	Well Material:	PVC

WELL PURGING

PURGE VOLUME

Casing Diameter (Inches):	4
Total depth of casing (TD in ft bgs):	99
Water level depth (WL in ft bgs):	81.27
Number of well volumes to be purged:	3

PURGE METHOD

PUMP INTAKE SETTING	
Purge Method:	Pump 2"
Screen interval:	69 - 99
Pump depth:	

PURGE VOLUME CALCULATION: (note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft)

(99 - 81.27) X 16 X 3 X 0.0408 = 34 Gallons

(TD - WL) D^2 # of Well Volumes

Purge time		Purge Rate		Totalizer		ACTUAL PURGE VOLUME
1048	Start	Initial gpm	5.1	Initial	185445.7	36.2
1051	Stop	Final gpm		Final	185481.9	
	Elapsed	Average gpm				

FIELD PARAMETER MEASUREMENT

Time (clock or elapsed)	T (°C or °F)	DO (% or mg/L)	Conductivity (ms/cm)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)	Notes
1046	28.66	9.41	2.99	8.04	1.90	2.97	46.6	
1047	29.14	7.16	2.92	7.83	1.86	194	12.2	
1048	29.45	6.78	2.85	7.78	1.82	200	8.2	
1049	29.55	5.70	2.85	7.71	1.82	204	4.6	
1050	29.62	5.48	2.85	7.68	1.82	207	0.0	
1051	29.64	5.41	2.83	7.66	1.81	210	0.0	

Observations (Odor, color, etc.):

IDW Storage Type: Baker Tank

WELL SAMPLING

SAMPLING METHOD

Bailer Type: Disposable Bailer 3"

SAMPLING DISTRIBUTION

# Cont./Type	Analysis	Preservatives	Lab	Comments
2/40 mL VOA's	VOC's-8260B	HCl	Orange Coast	
1/1 L Amber	Cyanides-SM4500	NaOH	Orange Coast	

QC SAMPLES

Duplicates		
Original Sample #	Duplicate Sample #	"Blind" time

Blanks		
Type	Sample ID	Time

GeoTrans, Inc.

GROUNDWATER SAMPLING FORM

Job Name:	20th & Factor	Well ID: MW-21B	Sample ID: MW-21B-042810
Job #:	1303.036.02	Date: 4/28/10	Time: 1200
Location:	Yuma, Arizona		
Recorded by:	TG/BB	Well Type: Monitoring	
Sampled by:	TG/BB	Well Material: PVC	

WELL PURGING

PURGE VOLUME

Casing Diameter (Inches):	4
Total depth of casing (TD in ft bgs):	205
Water level depth (WL in ft bgs):	81.27
Number of well volumes to be purged:	3

PURGE METHOD

PUMP INTAKE SETTING	
Purge Method:	Pump 2"
Screen interval:	161 - 201
Pump depth:	

PURGE VOLUME CALCULATION: (note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft)

(205 - 81.27) X 16 X 3 X 0.0408 = 242 Gallons

(TD - WL) D^2 # of Well Volumes

Purge time		Purge Rate		Totalizer	
1108	Start	Initial gpm	5.3	Initial	1854991.9
1154	Stop	Final gpm	5.3	Final	1855224.8
	Elapsed	Average gpm			1855223.9

ACTUAL PURGE VOLUME

243

FIELD PARAMETER MEASUREMENT

Time (clock or elapsed)	T (°C or °F)	DO (% or mg/L)	Conductivity (ms/cm)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)	Notes
1010	29.22	4.52	4.17	8.06	269	202	0.0	
1120	30.77	1.07	4.31	7.79	2.76	197	0.0	
1130	30.99	0.75	4.32	7.55	2.76	182	0.0	
1140	30.94	0.72	4.38	7.28	2.80	163	0.0	
1150	30.96	0.69	4.33	7.19	2.77	151	0.0	

Observations (Odor, color, etc.):

IDW Storage Type: Baker Tank

WELL SAMPLING

SAMPLING METHOD

Bailer Type: Disposable Bailer 3"

SAMPLING DISTRIBUTION

# Cont./Type	Analysis	Preservatives	Lab	Comments
2/40 mL VOA's	VOC's-8260B	HCl	Orange Coast	
1/1 L Amber	Cyanides-SM4500	NaOH	Orange Coast	

QC SAMPLES

Duplicates		
Original Sample #	Duplicate Sample #	"Blind" time

Blanks		
Type	Sample ID	Time

GeoTrans, Inc.

GROUNDWATER SAMPLING FORM

Job Name:	20th & Factor	Well ID: MW-21C	Sample ID: MW-21C- 042810
Job #:	1303.036.02	Date: 4/28/10	Time: 1417
Location:	Yuma, Arizona		
Recorded by:	TG / BB	Well Type: Monitoring	
Sampled by:	TG / BB	Well Material: PVC	

WELL PURGING

PURGE VOLUME

Casing Diameter (Inches):	4
Total depth of casing (TD in ft bgs):	325
Water level depth (WL in ft bgs):	81.10
Number of well volumes to be purged:	3

PURGE METHOD

PUMP INTAKE SETTING	
Purge Method:	Pump 2"
Screen interval:	275 - 315
Pump depth:	95'

PURGE VOLUME CALCULATION: (note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft)

(325 - 81.10) X 16 X 3 X 0.0408 = 477 Gallons

(TD - WL) D^2 # of Well Volumes

Purge time		Purge Rate		Totalizer		ACTUAL PURGE VOLUME
1232	Start	Initial gpm	5.3	Initial	1855224.7	531
1407	Stop	Final gpm		Final	1855755.1	
	Elapsed	Average gpm				

FIELD PARAMETER MEASUREMENT

Time (clock or elapsed)	T (°C or °F)	DO (% or mg/L)	Conductivity (ms/cm)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)	Notes
1235	30.19	0.70	3.84	6.31	2.46	-61	0.0	
1249	32.19	0.36	3.78	6.02	2.42	-152	0.0	
1308	33.22	0.48	3.95	6.11	2.51	-172	0.0	
1327	33.34	0.20	3.80	6.31	2.43	-205	0.0	
1346	33.35	0.33	3.74	6.18	2.39	-202	0.0	
1356	33.35	0.14	3.66	6.70	2.34	-226	0.0	

Observations (Odor, color, etc.):

IDW Storage Type: Baker Tank

WELL SAMPLING

SAMPLING METHOD

Bailer Type: Disposable Bailer 3"

SAMPLING DISTRIBUTION

# Cont./Type	Analysis	Preservatives	Lab	Comments
2/40 mL VOA's	VOC's-8260B	HCl	Orange Coast	
1/1 L Amber	Cyanides-SM4500	NaOH	Orange Coast	

QC SAMPLES

Duplicates		
Original Sample #	Duplicate Sample #	"Blind" time

Blanks		
Type	Sample ID	Time

GeoTrans, Inc.

GROUNDWATER SAMPLING FORM

Job Name:	20th & Factor	Well ID: MW-12A	Sample ID: MW-12A-042810
Job #:	1303.036.02	Date: 4/28/10	Time: 15:15
Location:	Yuma, Arizona		
Recorded by:	TG/BB	Well Type: Monitoring	
Sampled by:	TG/BB	Well Material: PVC	

WELL PURGING

PURGE VOLUME

Casing Diameter (Inches):	4
Total depth of casing (TD in ft bgs):	~~105~~ 106
Water level depth (WL in ft bgs):	74.68
Number of well volumes to be purged:	3

PURGE METHOD

PUMP INTAKE SETTING	
Purge Method:	Pump 2"
Screen interval:	64.75 - 104.75
Pump depth:	

PURGE VOLUME CALCULATION: (note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft)

(-) X 16 X 3 X 0.0408 = 61 Gallons

(TD - WL) D^2 # of Well Volumes

Purge time		Purge Rate		Totalizer		ACTUAL PURGE VOLUME
1454	Start	Initial gpm	4.5	Initial	1855753.1	62
1507	Stop	Final gpm	4.0	Final	1855815.2	
	Elapsed	Average gpm			814	

FIELD PARAMETER MEASUREMENT

Time (clock or elapsed)	T (°C or °F)	DO (% or mg/L)	Conductivity (ms/cm)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)	Notes
1456	30.56	3.24	3.24	8.95	2.00	-38	161	
1458	30.04	2.97	2.33	8.80	1.48	-104	122	
1500	30.05	3.10	2.30	8.68	1.48	-163	88.8	
1502	30.05	3.63	2.30	8.49	1.47	-144	56.4	
1504	30.05	2.99	2.30	8.35	1.47	-202	26.5	
1507	30.03	2.93	2.30	8.39	1.47	-193	10.6	

Observations (Odor, color, etc.):

IDW Storage Type: Baker Tank

WELL SAMPLING

SAMPLING METHOD

Bailer Type: Disposable Bailer 3"

SAMPLING DISTRIBUTION

# Cont./Type	Analysis	Preservatives	Lab	Comments
2/40 mL VOA's	VOC's-8260B	HCl	Orange Coast	
1/1 L Amber	Cyanides-SM4500	NaOH	Orange Coast	

QC SAMPLES

Duplicates		
Original Sample #	Duplicate Sample #	"Blind" time

Blanks		
Type	Sample ID	Time

GeoTrans, Inc.

GROUNDWATER SAMPLING FORM

Job Name:	20th & Factor	Well ID:	MW-18A
Job #:	1303.036.02	Date:	04/28/10
Location:	Yuma, Arizona	Sample ID:	MW-18A-042810
Recorded by:	BB/TG	Time:	1552
Sampled by:	BB/TG	Well Type:	Monitoring
		Well Material:	PVC

WELL PURGING

PURGE VOLUME

Casing Diameter (Inches):	4
Total depth of casing (TD in ft bgs):	107
Water level depth (WL in ft bgs):	79.77
Number of well volumes to be purged:	3

PURGE METHOD

PUMP INTAKE SETTING	
Purge Method:	Pump 2"
Screen interval:	65.5 - 105.5
Pump depth:	

PURGE VOLUME CALCULATION: (note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft)

(-) X 16 X 3 X 0.0408 = 53.3 Gallons

(TD - WL) D^2 # of Well Volumes

Purge time		Purge Rate		Totalizer		ACTUAL PURGE VOLUME
1535	Start	Initial gpm	5.6	Initial	18558815.0	64.5
1546	Stop	Final gpm		Final	18558879.5	
	Elapsed	Average gpm				

FIELD PARAMETER MEASUREMENT

Time (clock or elapsed)	T (°C or °F)	DO (% or mg/L)	Conductivity (ms/cm)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)	Notes
1537	30.86	9.73	2.51	8.64	1.62	-3	114	
1539	30.57	7.45	2.66	8.57	1.71	22	41.2	
1541	30.62	6.50	2.69	8.55	1.72	35	21.8	
1543	30.65	5.91	2.71	8.54	1.73	44	140	
1545	30.63	5.61	2.72	8.53	1.74	50	130	

Observations (Odor, color, etc.):

IDW Storage Type: Baker Tank

WELL SAMPLING

SAMPLING METHOD

Bailer Type: Disposable Bailer 3"

SAMPLING DISTRIBUTION

# Cont./Type	Analysis	Preservatives	Lab	Comments
2/40 mL VOA's	VOC's-8260B	HCl	Orange Coast	
1/1 L Amber	Cyanides-SM4500	NaOH	Orange Coast	

QC SAMPLES

Duplicates		
Original Sample #	Duplicate Sample #	"Blind" time

Blanks		
Type	Sample ID	Time

GeoTrans, Inc.

GROUNDWATER SAMPLING FORM

Job Name:	20th & Factor	Well ID: MW-8B	Sample ID: MW-8B-04/28/10
Job #:	1303.036.02	Date: 4/28/10	Time: 1636
Location:	Yuma, Arizona		
Recorded by:	TG / BB	Well Type: Monitoring	
Sampled by:	TG / BB	Well Material: PVC	

WELL PURGING

PURGE VOLUME

Casing Diameter (Inches):	4
Total depth of casing (TD in ft bgs):	117
Water level depth (WL in ft bgs):	75.62
Number of well volumes to be purged:	3

PURGE METHOD

PUMP INTAKE SETTING	
Purge Method:	Pump 2"
Screen interval:	107 - 117
Pump depth:	

PURGE VOLUME CALCULATION: (note: 2" = 0.163 gal/ft; 4" = 0.652 gal/ft)

(-) X 16 X 3 X 0.0408 = 81 Gallons

(TD - WL) D^2 # of Well Volumes

Purge time		Purge Rate		Totalizer		ACTUAL PURGE VOLUME
1611	Start	Initial gpm	5.5	Initial	1855869.7	
1636	Stop	Final gpm		Final		
	Elapsed	Average gpm				

FIELD PARAMETER MEASUREMENT

Time (clock or elapsed)	T (°C or °F)	DO (% or mg/L)	Conductivity (ms/cm)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)	Notes
1614	30.88	7.73	3.28	8.38	2.11	69	0.0	
1617	30.97	5.76	3.32	8.36	2.13	98	0.0	
1620	30.97	5.08	3.33	8.32	2.13	125	0.0	
1623	31.00	4.85	3.33	8.30	2.13	133	0.0	
1625	30.89	4.72	3.33	8.28	2.13	138	0.0	

Observations (Odor, color, etc.):

IDW Storage Type: 55-gallon Drums

WELL SAMPLING

SAMPLING METHOD

Bailer Type: Disposable Bailer 3"

SAMPLING DISTRIBUTION

# Cont./Type	Analysis	Preservatives	Lab	Comments
2/40 mL VOA's	VOC's-8260B	HCl	Orange Coast	
1/1 L Amber	Cyanides-SM4500	NaOH	Orange Coast	

QC SAMPLES

Duplicates		
Original Sample #	Duplicate Sample #	"Blind" time

Blanks		
Type	Sample ID	Time

GeoTrans, Inc.

GROUNDWATER SAMPLING FORM

Job Name:	20th & Factor	Well ID: MW-8A	Sample ID: MW-8A- 042810
Job #:	1303.036.02	Date: 04/28/10	Time: 1710
Location:	Yuma, Arizona		
Recorded by:	TG/BB	Well Type: Monitoring	
Sampled by:	TG/BB	Well Material: PVC	

WELL PURGING

PURGE VOLUME

Casing Diameter (Inches):	4
Total depth of casing (TD in ft bgs):	105.4
Water level depth (WL in ft bgs):	75.19
Number of well volumes to be purged:	3

PURGE METHOD

PUMP INTAKE SETTING	
Purge Method:	Pump 2"
Screen interval:	65.4 - 105.4
Pump depth:	

PURGE VOLUME CALCULATION: (note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft)

(-) X 16 X 3 X 0.0408 = 59 Gallons

(TD - WL) D^2 # of Well Volumes

Purge time		Purge Rate		Totalizer		ACTUAL PURGE VOLUME
1645	Start	Initial gpm	5.4	Initial	1855951.0	
1700	Stop	Final gpm	2.0	Final	1855999.5	
	Elapsed	Average gpm				

FIELD PARAMETER MEASUREMENT

Time (clock or elapsed)	T (°C or °F)	DO (% or mg/L)	Conductivity (ms/cm)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)	Notes
1647	30.64	8.23	2.61	8.38	1.67	88	60.8	
1649	30.65	9.57	2.54	8.37	1.63	95	391	
1651	30.83	7.83	2.56	8.37	1.64	109	344	
1653	31.27	7.08	2.55	8.44	1.63	114	120	
1655	31.30	6.96	2.55	8.62	1.63	112	102	

Observations (Odor, color, etc.): WELL RUNNING DRY

IDW Storage Type: Baker Tank

WELL SAMPLING

SAMPLING METHOD

Bailer Type: Disposable Bailer 3"

SAMPLING DISTRIBUTION

# Cont./Type	Analysis	Preservatives	Lab	Comments
2/40 mL VOA's	VOC's-8260B	HCl	Orange Coast	
1/1 L Amber	Cyanides-SM4500	NaOH	Orange Coast	

QC SAMPLES

Duplicates		
Original Sample #	Duplicate Sample #	"Blind" time

Blanks		
Type	Sample ID	Time

GeoTrans, Inc.

GROUNDWATER SAMPLING FORM

Job Name:	20th & Factor	Well ID: MW-103C	Sample ID: MW-103C-042910
Job #:	1303.036.02	Date: 4/29/10	Time: 0926
Location:	Yuma, Arizona		
Recorded by:	TG/[illegible]	Well Type: Monitoring	
Sampled by:	TG/[illegible]	Well Material: PVC	

WELL PURGING

PURGE VOLUME

Casing Diameter (inches):	2
Total depth of casing (TD in ft bgs):	240
Water level depth (WL in ft bgs):	76.90
Number of well volumes to be purged:	3

PURGE METHOD

PUMP INTAKE SETTING	
Purge Method:	Pump 2"
Screen Interval:	220 - 240
Pump depth:	

PURGE VOLUME CALCULATION: (note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft)

(-) X 4 X 3 X 0.0408 = 79.8 Gallons

(TD - WL) D^2 # of Well Volumes

Purge time		Purge Rate		Totalizer	
0902	Start	Initial gpm	6.0	Initial	1856024.6
0916	Stop	Final gpm		Final	1856105.7
	Elapsed	Average gpm			104.4

ACTUAL PURGE VOLUME

FIELD PARAMETER MEASUREMENT

Time (clock or elapsed)	T (°C or °F)	DO (% or mg/L)	Conductivity (ms/cm)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)	Notes
0905	29.29	1.24	2.92	7.98	1.87	-203	2.4	
0907	30.35	0.76	2.93	8.18	1.88	-201	4.4	
0909	30.83	0.57	2.94	8.18	1.88	-193	43.8	
0911	30.94	0.45	2.94	8.17	1.88	-187	40.5	
0913	30.97	0.39	2.94	8.12	1.88	-182	13.3	
0915	30.99	0.35	2.95	8.11	1.89	-181	17.6	

Observations (Odor, color, etc.):

IDW Storage Type: Baker Tank

WELL SAMPLING

SAMPLING METHOD

Bailer Type: Disposable Bailer 3"

SAMPLING DISTRIBUTION

# Cont./Type	Analysis	Preservatives	Lab	Comments
2/40 mL VOA's	VOC's-8260B	HCl	Orange Coast	
1/1 L Amber	Cyanides-SM4500	NaOH	Orange Coast	

QC SAMPLES

Duplicates		
Original Sample #	Duplicate Sample #	"Blind" time

Blanks		
Type	Sample ID	Time

GeoTrans, Inc.

GROUNDWATER SAMPLING FORM

Job Name:	20th & Factor	Well ID: MW-102B1	Sample ID: MW-102B1-042910
Job #:	1303.036.02	Date: 4/29/10	Time: 0951
Location:	Yuma, Arizona		
Recorded by:	TG/BB	Well Type: Monitoring	
Sampled by:	TG/BB	Well Material: PVC	

WELL PURGING

PURGE VOLUME

Casing Diameter (Inches):	2
Total depth of casing (TD in ft bgs):	120
Water level depth (WL in ft bgs):	76.70
Number of well volumes to be purged:	3

PURGE METHOD

PUMP INTAKE SETTING	
Purge Method:	Pump 2"
Screen Interval:	110 - 120
Pump depth:	

PURGE VOLUME CALCULATION: (note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft)

(-) X 4 X 3 X 0.0408 = 21.1 Gallons

(TD - WL) D^2 # of Well Volumes

Purge time		Purge Rate		Totalizer		ACTUAL PURGE VOLUME
0935	Start	Initial gpm	4	Initial	1856108.5	
0941	Stop	Final gpm		Final	1856131.9	
	Elapsed	Average gpm				

FIELD PARAMETER MEASUREMENT

Time (clock or elapsed)	T (°C or °F)	DO (% or mg/L)	Conductivity (ms/cm)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)	Notes
0936	27.39	3.44	3.68	8.68	2.53	14	155	
0937	28.58	2.33	4.81	8.57	3.11	22	10.7	
0938	28.95	1.96	5.27	8.50	3.33	29	4.8	
0939	29.12	1.81	5.48	8.45	3.45	33	2.3	
0940	29.18	1.74	5.56	8.41	3.51	36	1.1	

Observations (Odor, color, etc.):

IDW Storage Type: Baker Tank

WELL SAMPLING

SAMPLING METHOD

Bailer Type: Disposable Bailer 3"

SAMPLING DISTRIBUTION

# Cont./Type	Analysis	Preservatives	Lab	Comments
2/40 mL VOA's	VOC's-8260B	HCl	Orange Coast	
1/1 L Amber	Cyanides-SM4500	NaOH	Orange Coast	

QC SAMPLES

Duplicates		
Original Sample #	Duplicate Sample #	"Blind" time

Blanks		
Type	Sample ID	Time

GeoTrans, Inc.

GROUNDWATER SAMPLING FORM

Job Name:	20th & Factor	Well ID: DMW-11	Sample ID: DMW-11- 042610
Job #:	1303.036.02	Date: 4/26/10	Time: 1515
Location:	Yuma, Arizona		
Recorded by:		Well Type: Monitoring	
Sampled by:		Well Material: PVC	

WELL PURGING

PURGE VOLUME

Casing Diameter (Inches):	4
Total depth of casing (TD in ft bgs):	
Water level depth (WL in ft bgs):	
Number of well volumes to be purged:	3

PURGE METHOD

PUMP INTAKE SETTING	
Purge Method:	Grab Sample
Screen Interval:	60 - 90
Pump depth:	

PURGE VOLUME CALCULATION: (note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft)

(-) X 16 X 3 X 0.0408 = _____ Gallons

(TD - WL) D^2 # of Well Volumes

Purge time		Purge Rate		Totalizer		ACTUAL PURGE VOLUME
	Start	Initial gpm		Initial		
	Stop	Final gpm		Final		
	Elapsed	Average gpm				

FIELD PARAMETER MEASUREMENT

Time (clock or elapsed)	T (°C or °F)	DO (% or mg/L)	Conductivity (ms/cm)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)	Notes
		Grab			Sample			

Observations (Odor, color, etc.):

IDW Storage Type: Baker Tank

WELL SAMPLING

SAMPLING METHOD

Bailer Type: Disposable Bailer 1"

SAMPLING DISTRIBUTION

# Cont./Type	Analysis	Preservatives	Lab	Comments
2/40 mL VOA's	VOC's-8260B	HCl	Orange Coast	
1/1 L Amber	Cyanides-SM4500	NaOH	Orange Coast	

QC SAMPLES

Duplicates		
Original Sample #	Duplicate Sample #	"Blind" time

Blanks		
Type	Sample ID	Time

GeoTrans, Inc.

GROUNDWATER SAMPLING FORM

Job Name:	20th & Factor	Well ID: Alice Byrne	Sample ID: Alice - 043010
Job #:	1303.036.02	Date: 4/30/10	Time: 1450
Location:	Yuma, Arizona		
Recorded by:	BB	Well Type: Production	
Sampled by:		Well Material:	

WELL PURGING

PURGE VOLUME

Casing Diameter (Inches):

Total depth of casing (TD in ft bgs):

Water level depth (WL in ft bgs):

Number of well volumes to be purged: 3

PURGE METHOD

PUMP INTAKE SETTING	
Purge Method:	Grab Sample
Screen Interval:	
Pump depth:	

PURGE VOLUME CALCULATION: (note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft)

(-) X X 3 X 0.0408 = _____ Gallons

(TD - WL) D^2 # of Well Volumes

Purge time		Purge Rate		Totalizer		ACTUAL PURGE VOLUME
	Start	Initial gpm		Initial		
	Stop	Final gpm		Final		
	Elapsed	Average gpm				

FIELD PARAMETER MEASUREMENT

Time (clock or elapsed)	T (°C or °F)	DO (% or mg/L)	Conductivity (ms/cm)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)	Notes

Observations (Odor, color, etc.):

IDW Storage Type: Not Applicable

WELL SAMPLING

SAMPLING METHOD

Bailer Type:

SAMPLING DISTRIBUTION

# Cont./Type	Analysis	Preservatives	Lab	Comments
2/40 mL VOA's	VOC's-8260B	HCl	Orange Coast	
1/1 L Amber	Cyanides-SM4500	NaOH	Orange Coast	

QC SAMPLES

Duplicates		
Original Sample #	Duplicate Sample #	"Blind" time

Blanks		
Type	Sample ID	Time

GeoTrans, Inc.

GROUNDWATER SAMPLING FORM

Job Name:	20th & Factor	Well ID: St. Francis	Sample ID: St. Francis - 043010
Job #:	1303.036.02	Date: 4/30/10	Time: 0930
Location:	Yuma, Arizona		
Recorded by:		Well Type: Production	
Sampled by:	BB	Well Material:	

WELL PURGING

PURGE VOLUME

Casing Diameter (Inches):

Total depth of casing (TD in ft bgs):

Water level depth (WL in ft bgs):

Number of well volumes to be purged: 3

PURGE METHOD

PUMP INTAKE SETTING	
Purge Method:	Grab Sample
Screen interval:	
Pump depth:	

PURGE VOLUME CALCULATION: (note: 2" = 0.163 gal/ft 4" = 0.652 gal/ft)

(-) X X 3 X 0.0408 =

(TD - WL) D^2 # of Well Volumes Gallons

Purge time		Purge Rate		Totalizer	
	Start	Initial gpm		Initial	
	Stop	Final gpm		Final	
	Elapsed	Average gpm			

ACTUAL PURGE VOLUME

FIELD PARAMETER MEASUREMENT

Time (clock or elapsed)	T (°C or °F)	DO (% or mg/L)	Conductivity (ms/cm)	pH	TDS (mg/L)	ORP (mV)	Turbidity (NTU)	Notes

Observations (Odor, color, etc.):

IDW Storage Type: Not Applicable

WELL SAMPLING

SAMPLING METHOD

Bailer Type:

SAMPLING DISTRIBUTION

# Cont./Type	Analysis	Preservatives	Lab	Comments
2/40 mL VOA's	VOC's-8260B	HCl	Orange Coast	
1/1 L Amber	Cyanides-SM4500	NaOH	Orange Coast	

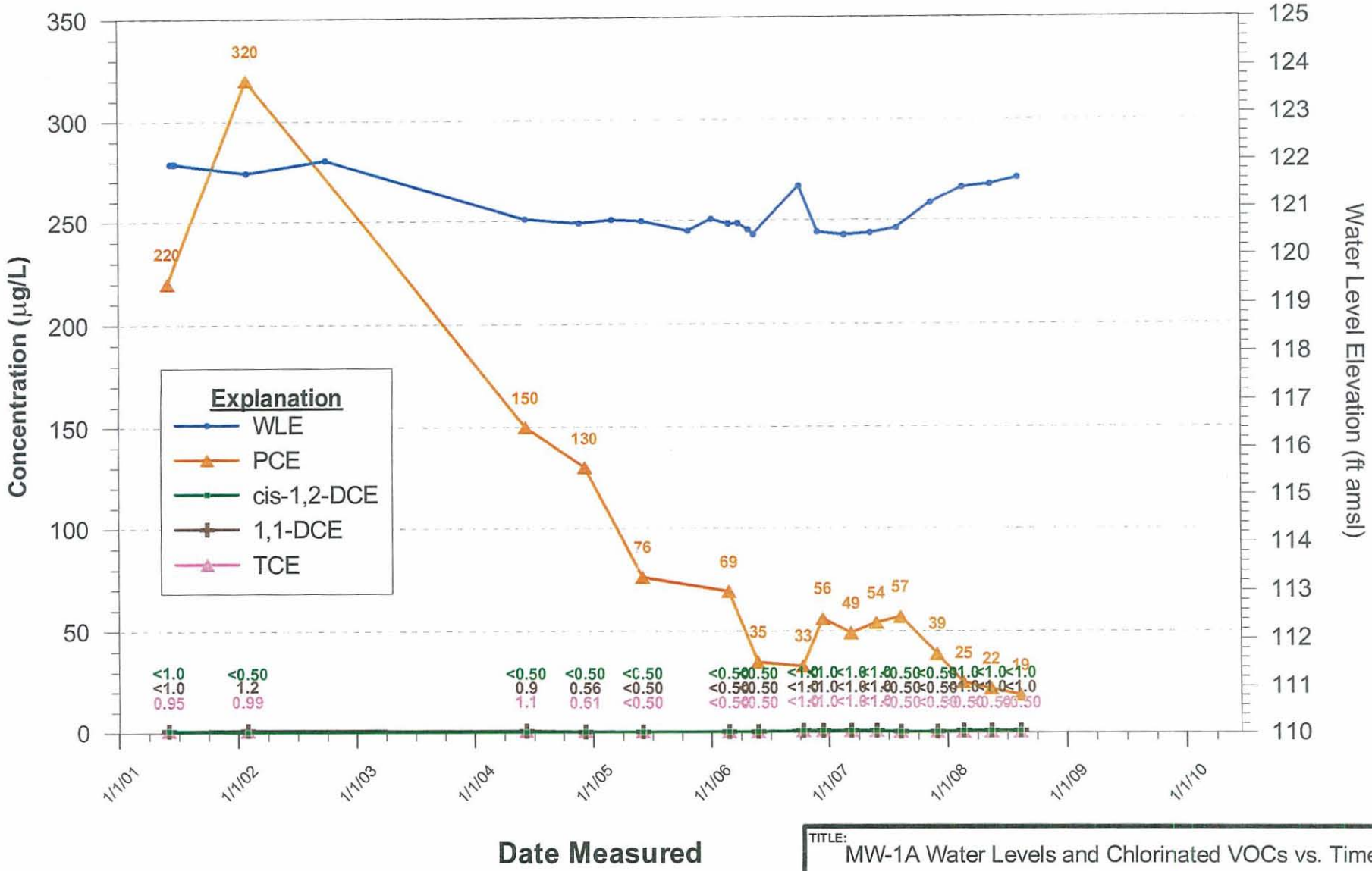
QC SAMPLES

Duplicates		
Original Sample #	Duplicate Sample #	"Blind" time

Blanks		
Type	Sample ID	Time

APPENDIX I

Groundwater Hydrographs



TITLE: MW-1A Water Levels and Chlorinated VOCs vs. Time

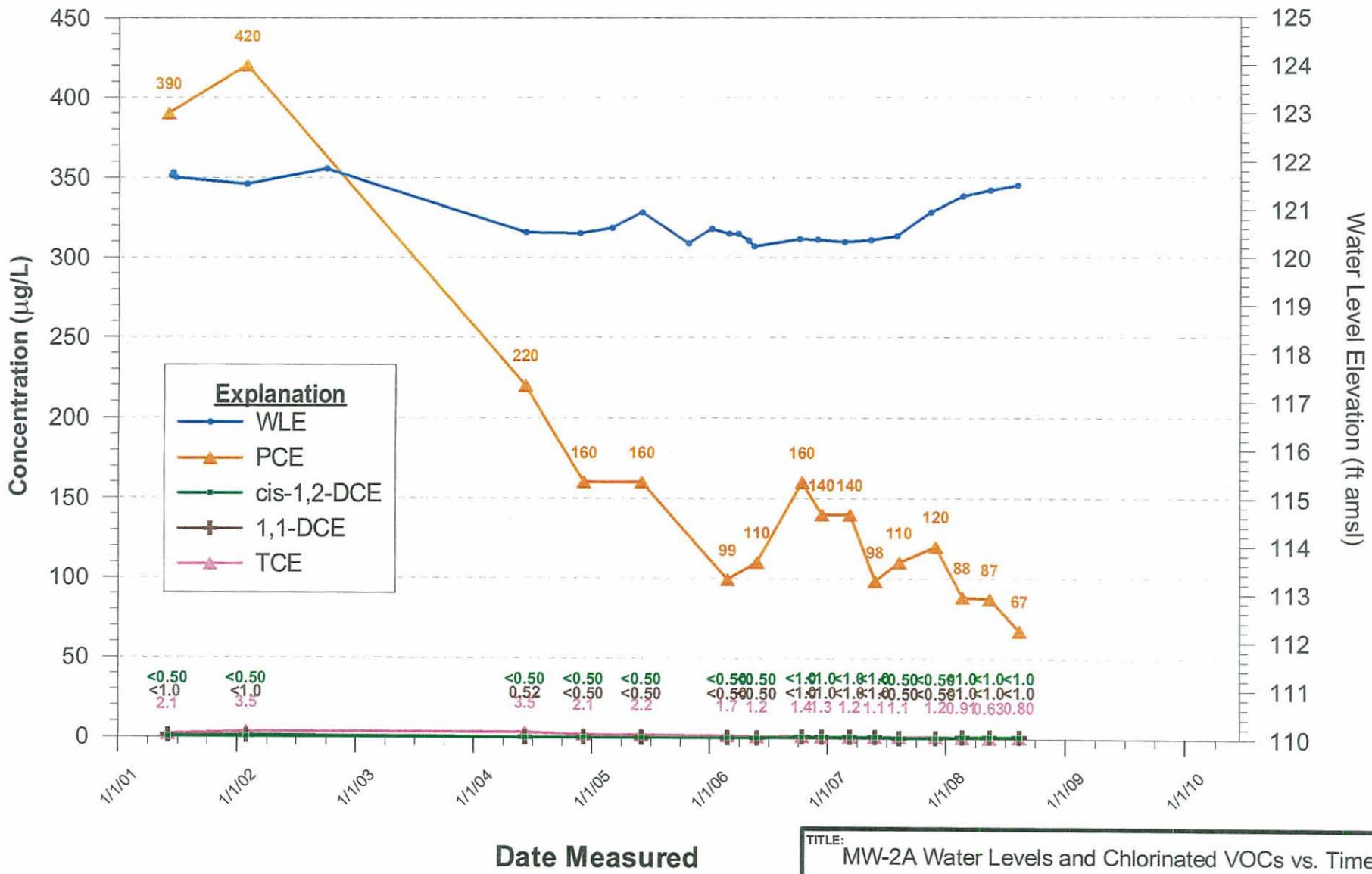
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/15/10

FIGURE: I-1

TFDEQP000531



TITLE: MW-2A Water Levels and Chlorinated VOCs vs. Time

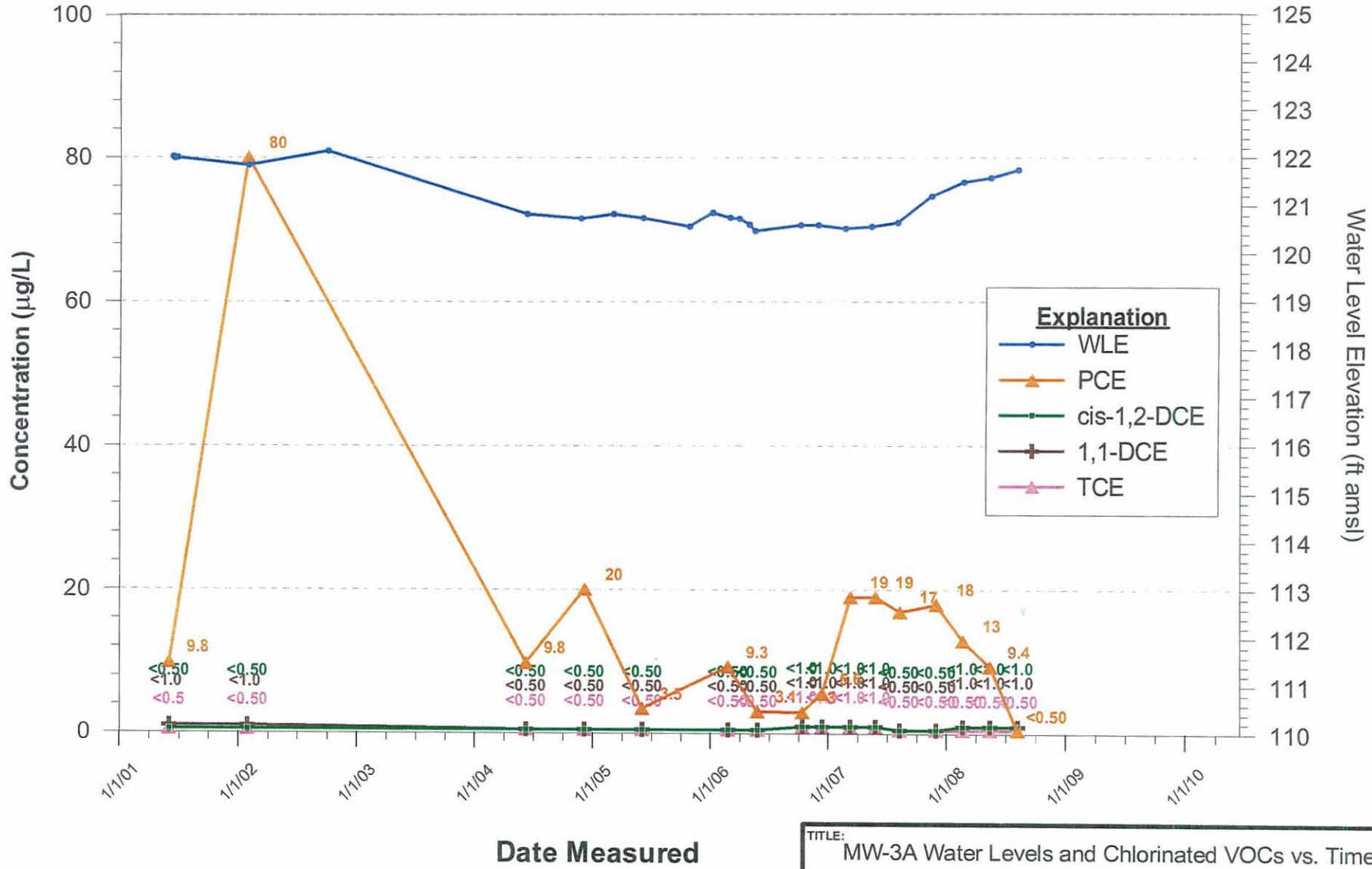
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/15/10

FIGURE: I-2

TFDEQP000532



TITLE: MW-3A Water Levels and Chlorinated VOCs vs. Time

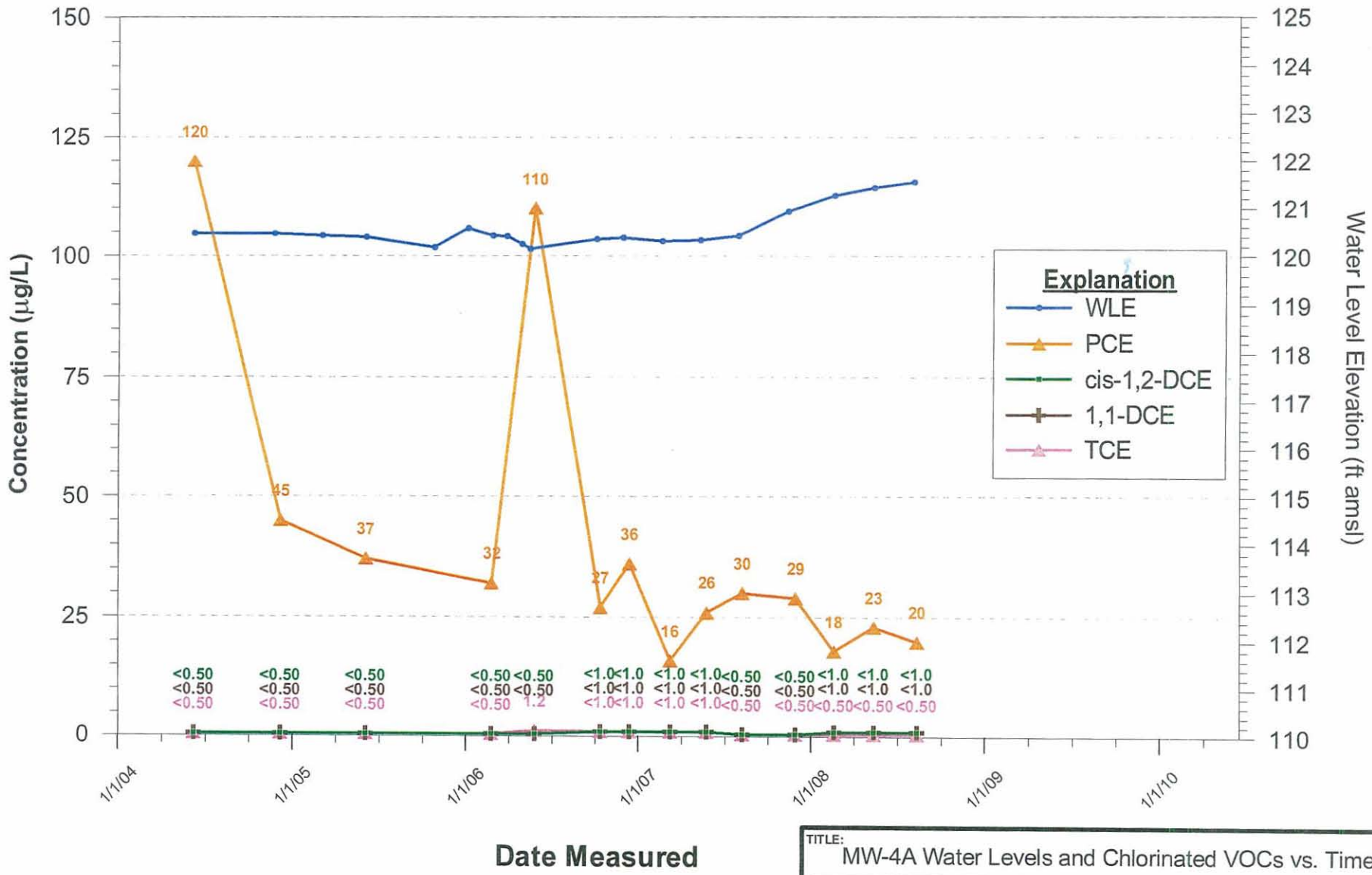
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/15/10

FIGURE: I-3

TFDEQP000533



TITLE: MW-4A Water Levels and Chlorinated VOCs vs. Time

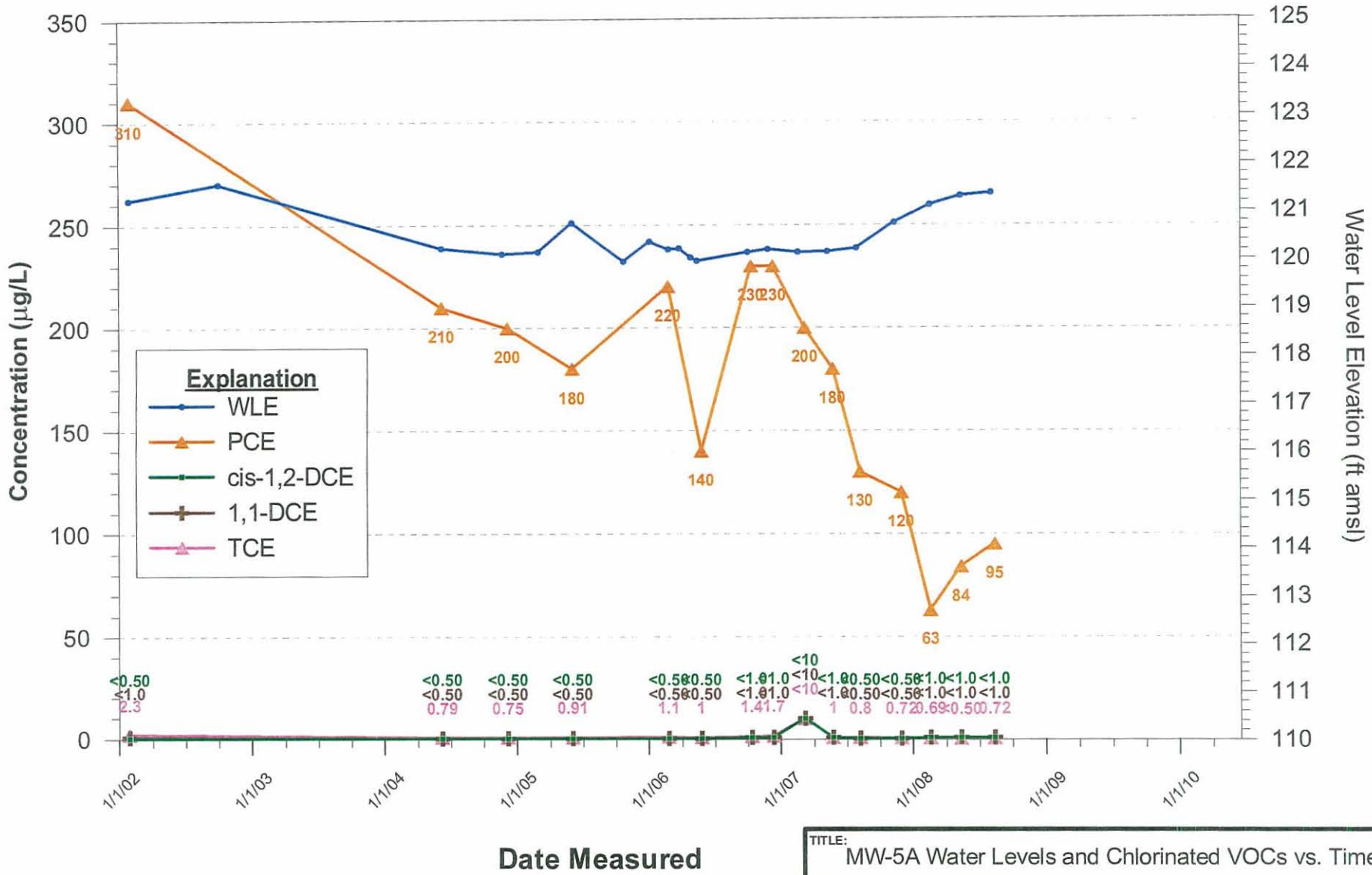
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/15/10

FIGURE: I-4

TFDEQP000534



TITLE: MW-5A Water Levels and Chlorinated VOCs vs. Time

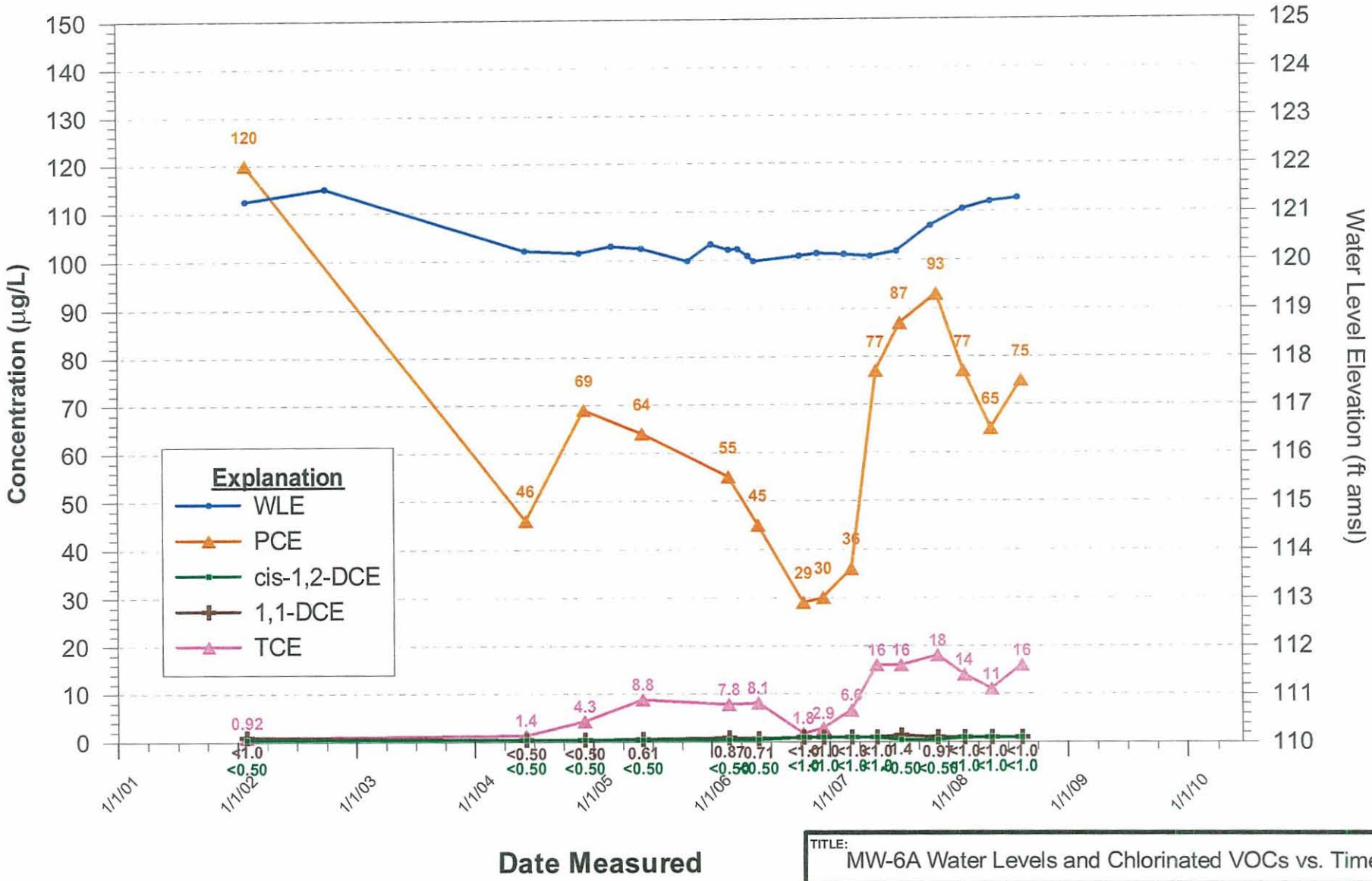
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/15/10

FIGURE: I-5

TFDEQP000535



TITLE: MW-6A Water Levels and Chlorinated VOCs vs. Time

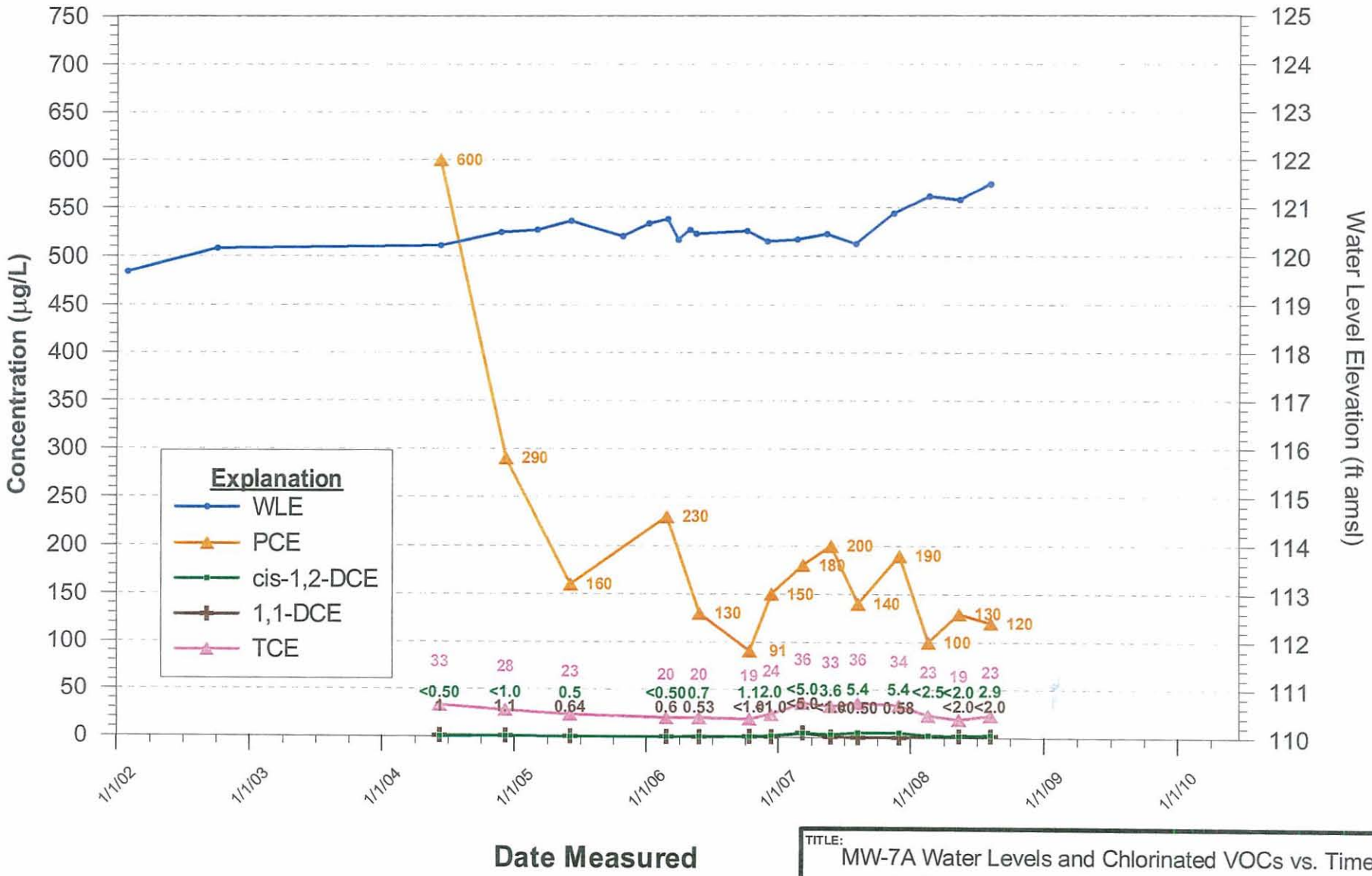
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/15/10

FIGURE: I-6

TFDEQP000536



TITLE: MW-7A Water Levels and Chlorinated VOCs vs. Time

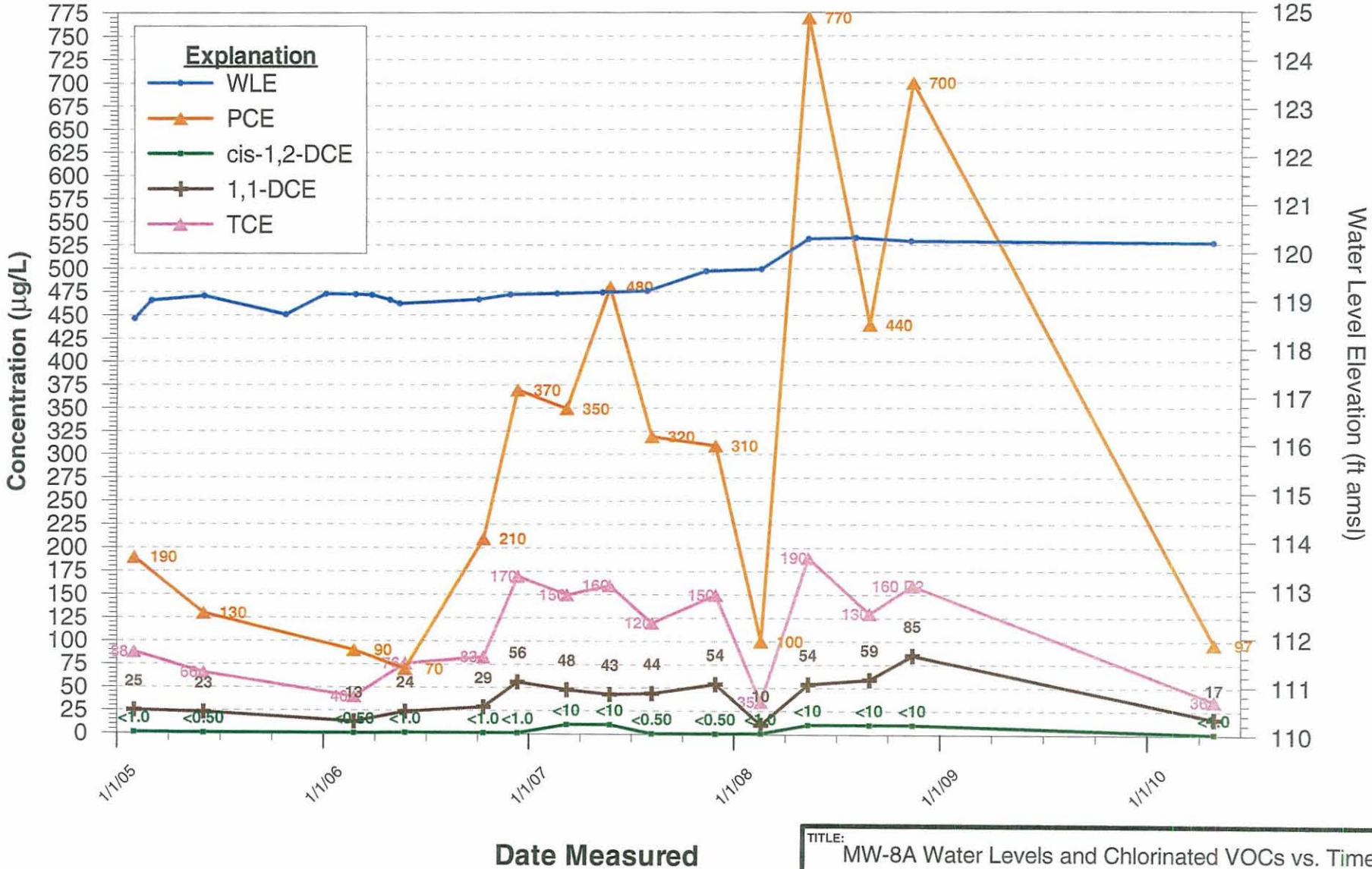
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/15/10

FIGURE: I-7

TFDEQP000537



TITLE: MW-8A Water Levels and Chlorinated VOCs vs. Time

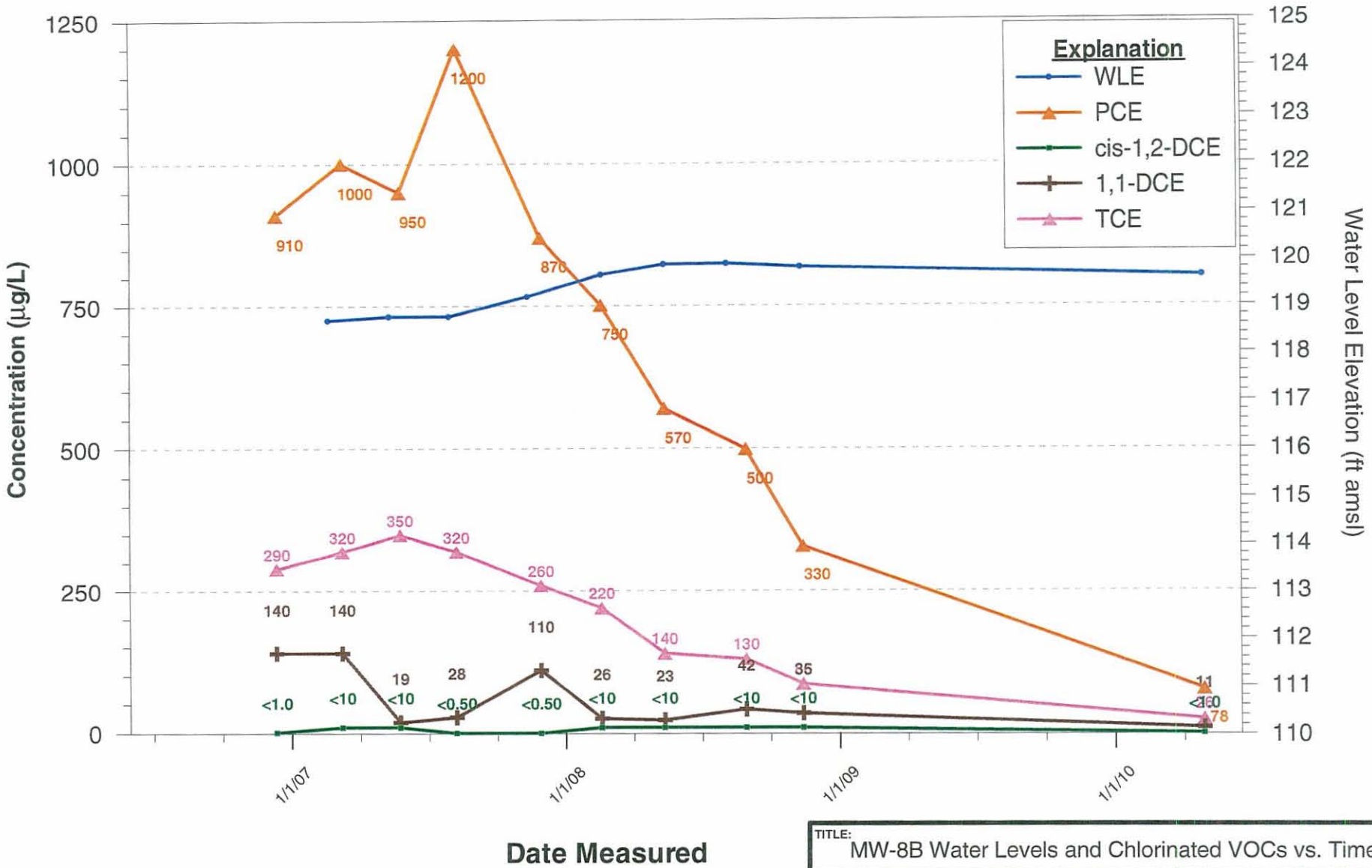
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/15/10

FIGURE: I-8

TFDEQP000538



TITLE: MW-8B Water Levels and Chlorinated VOCs vs. Time

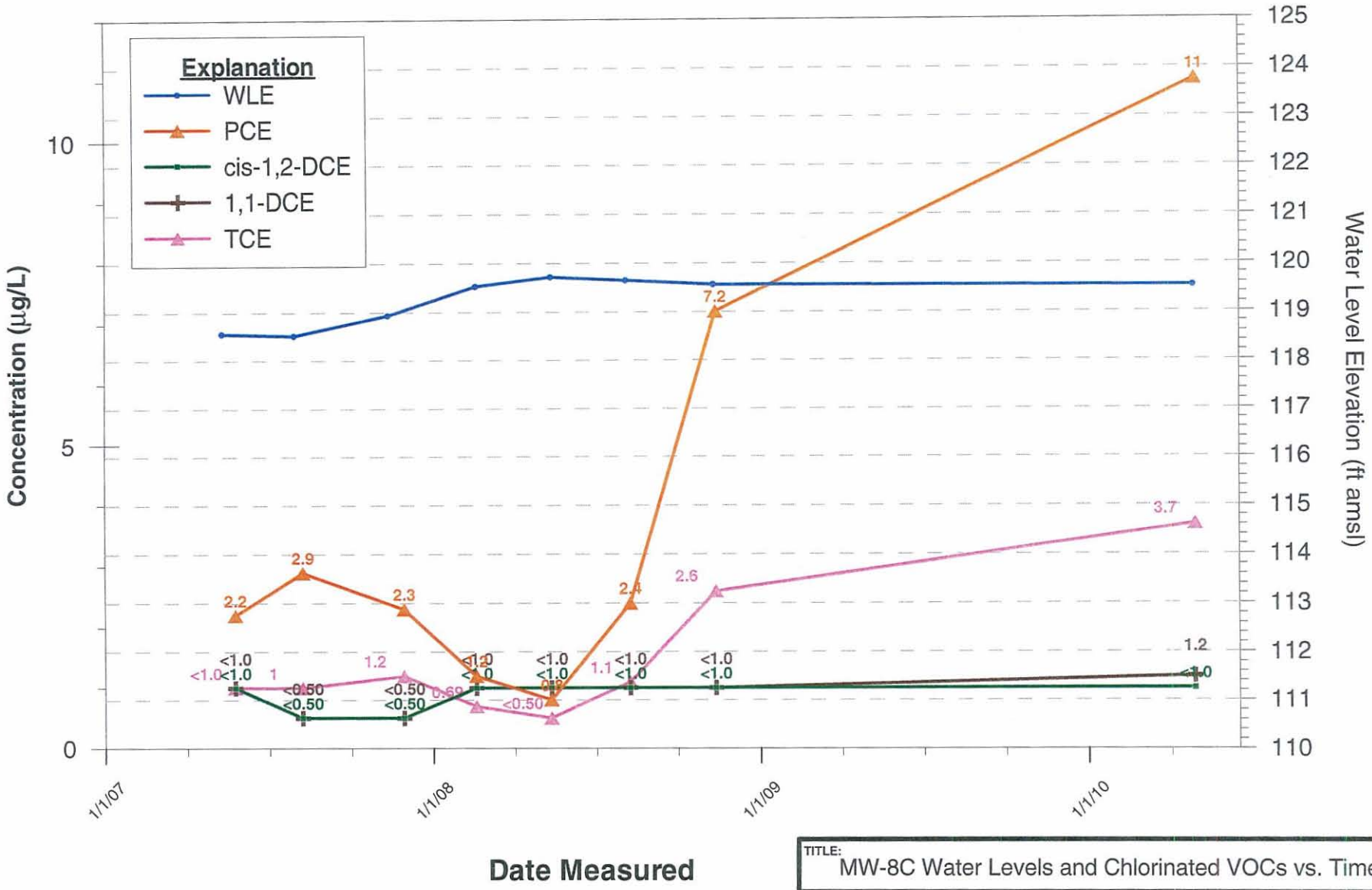
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/15/10

FIGURE: I-9

TFDEQP000539



TITLE: MW-8C Water Levels and Chlorinated VOCs vs. Time

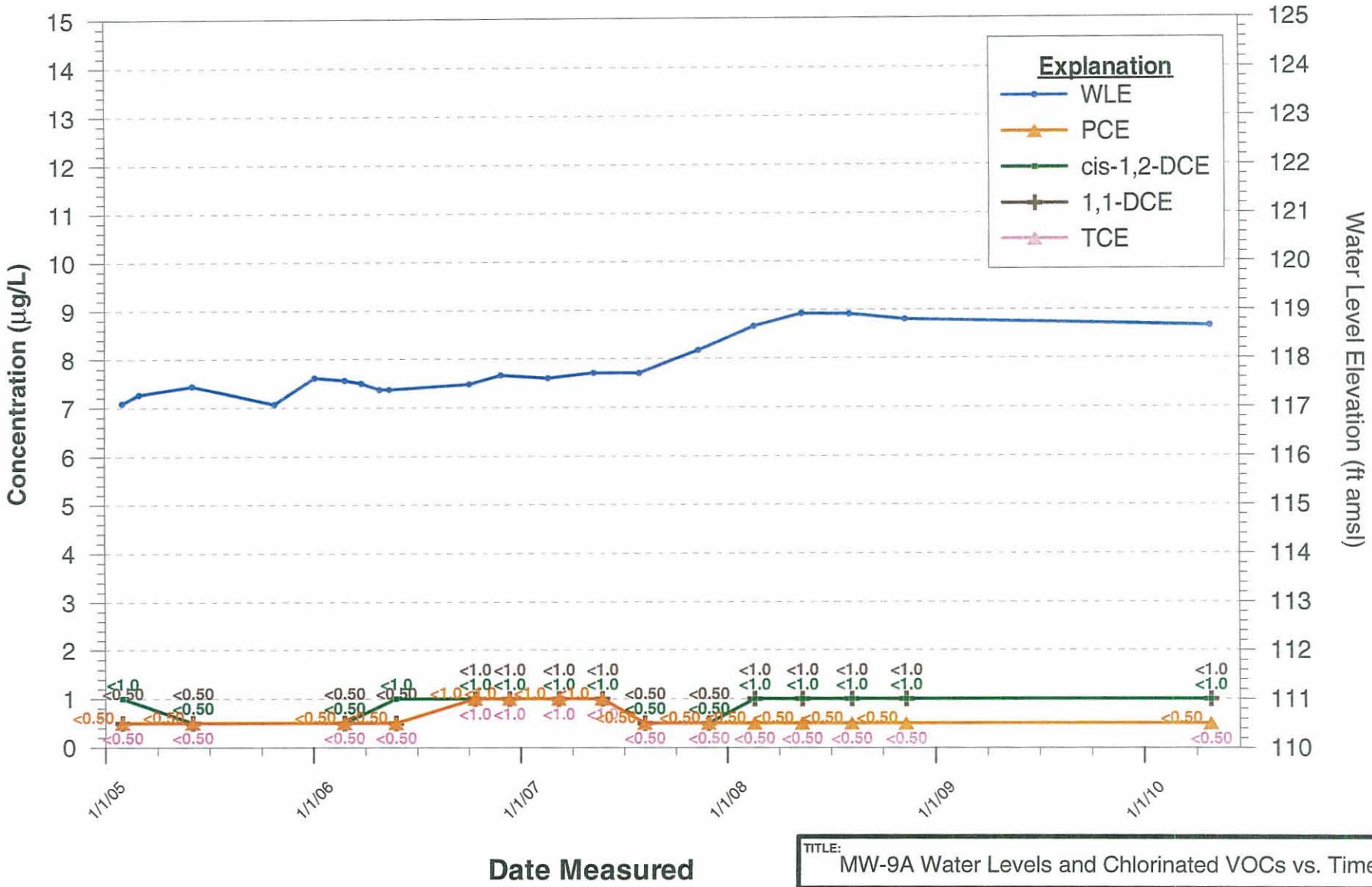
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/15/10

FIGURE: I-10

TFDEQP000540



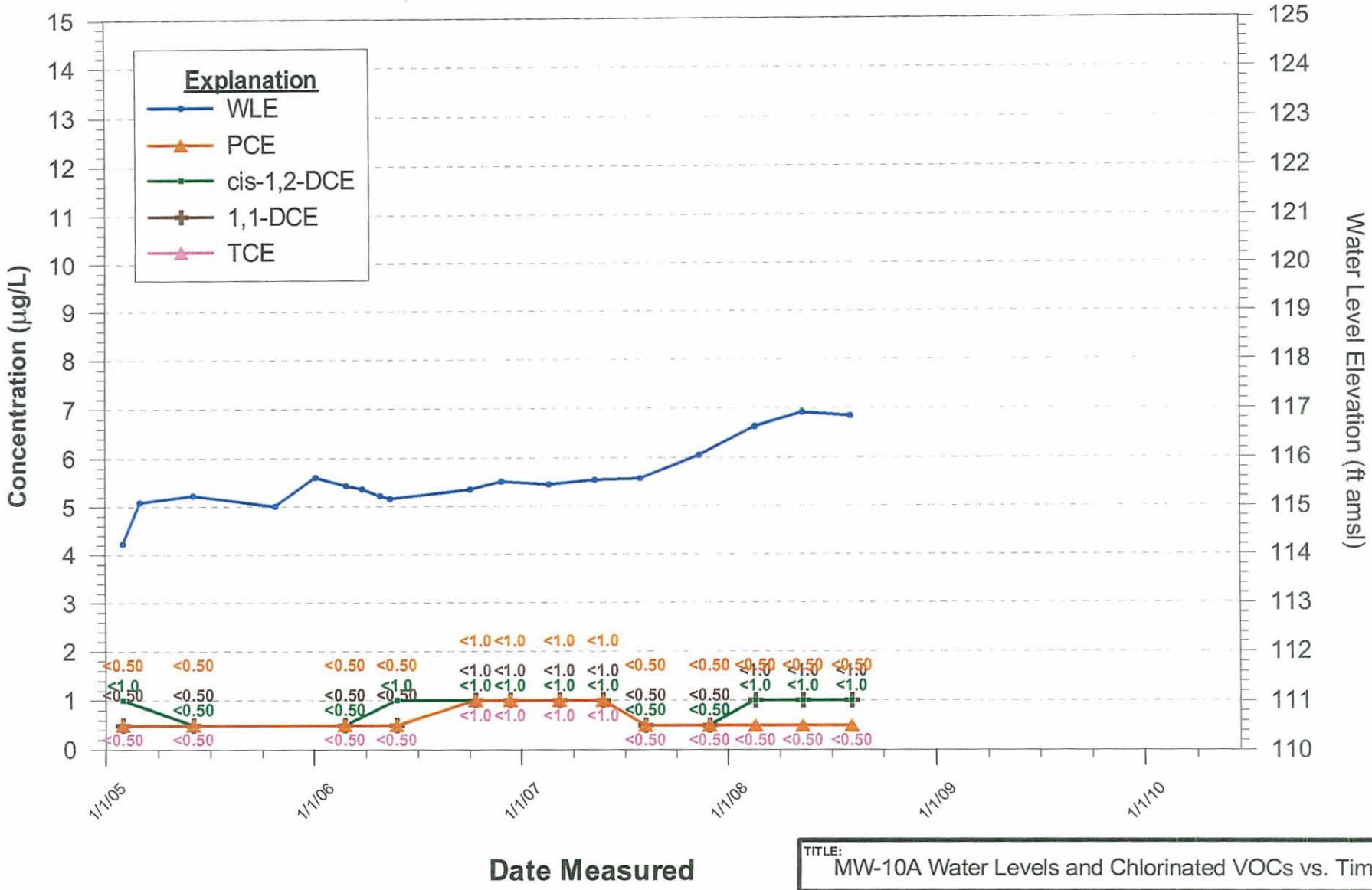
TITLE: MW-9A Water Levels and Chlorinated VOCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-11



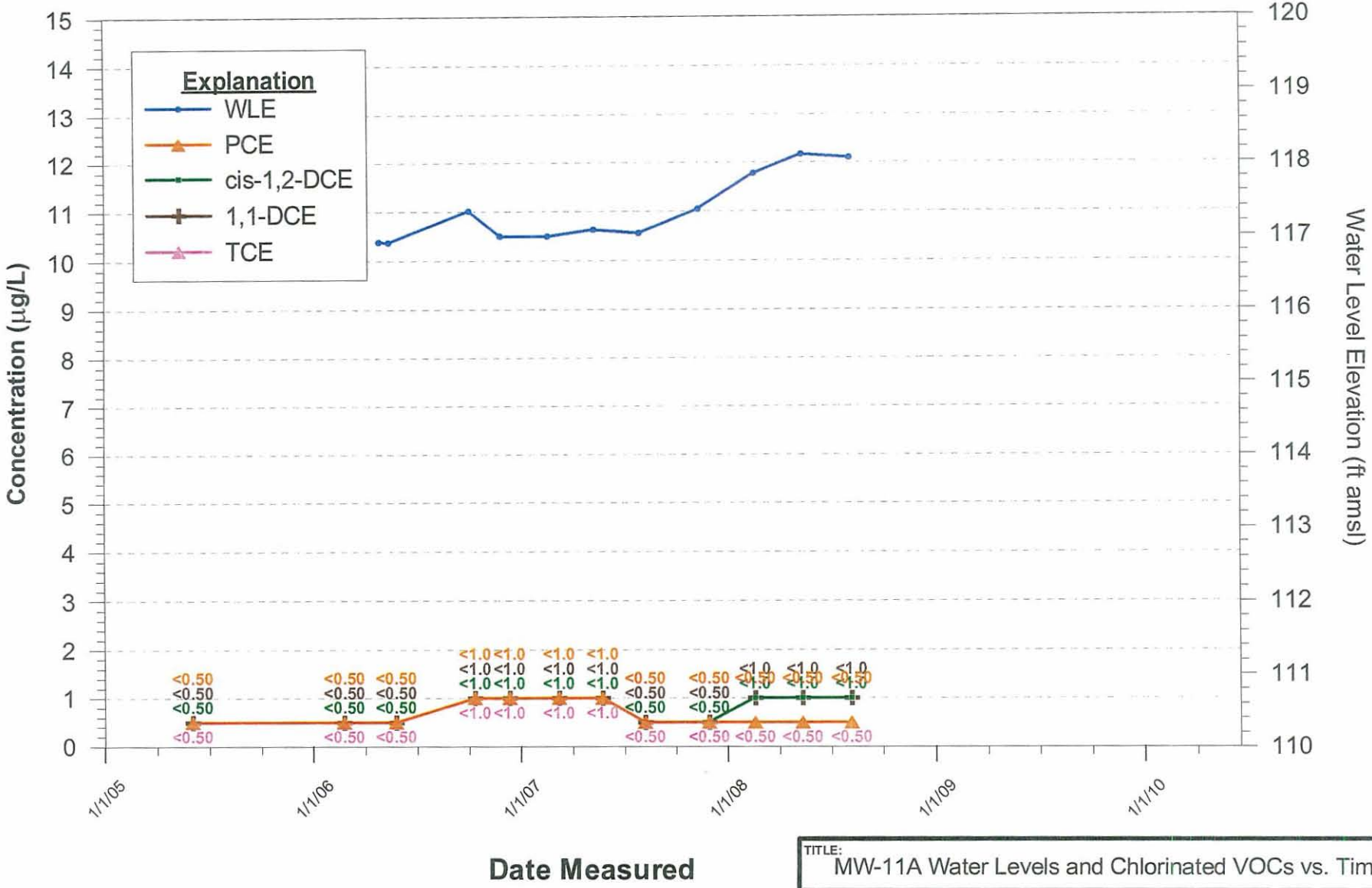
TITLE: MW-10A Water Levels and Chlorinated VOCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-12



TITLE: MW-11A Water Levels and Chlorinated VOCs vs. Time

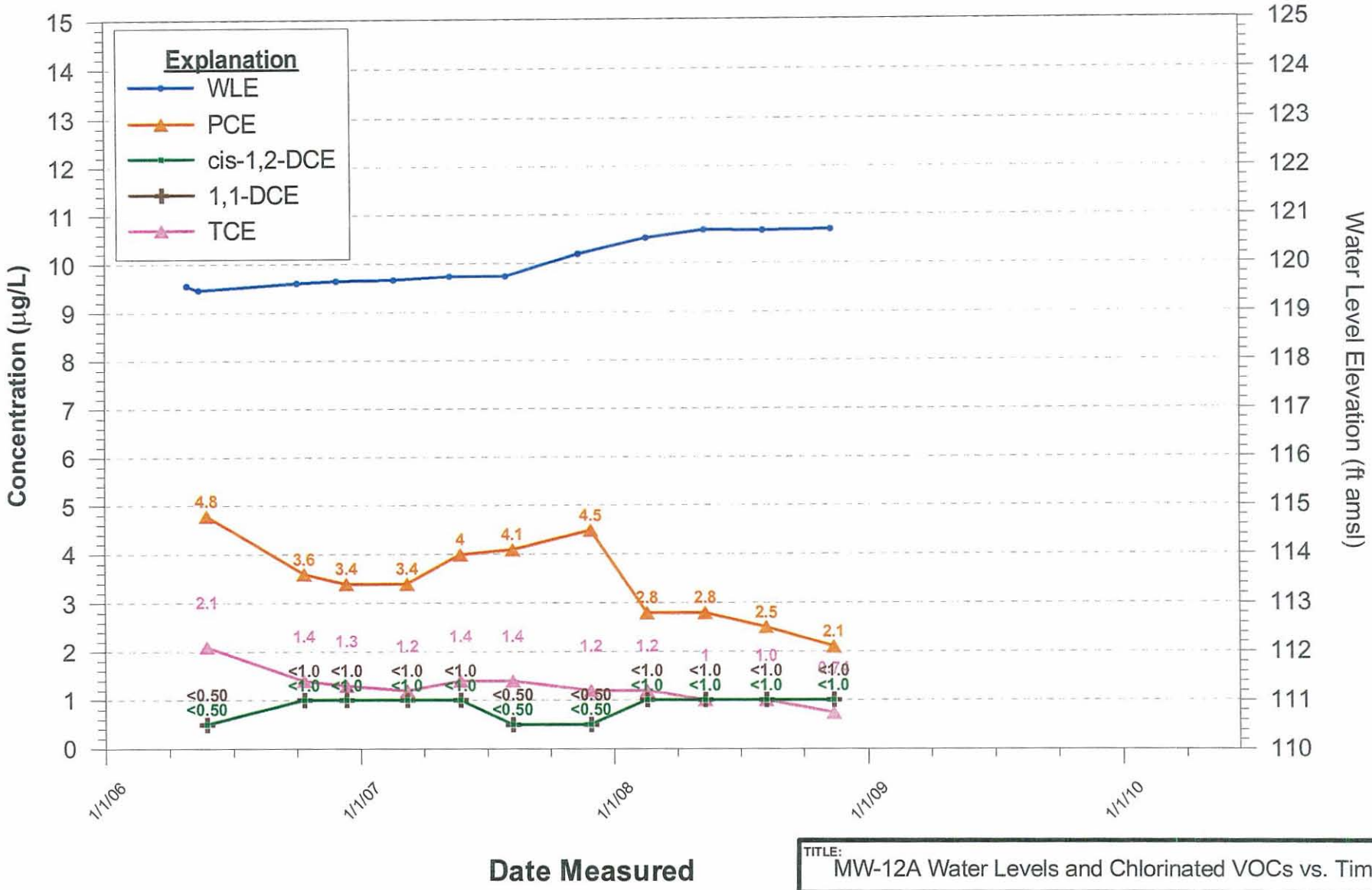
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-13

TFDEQP000543



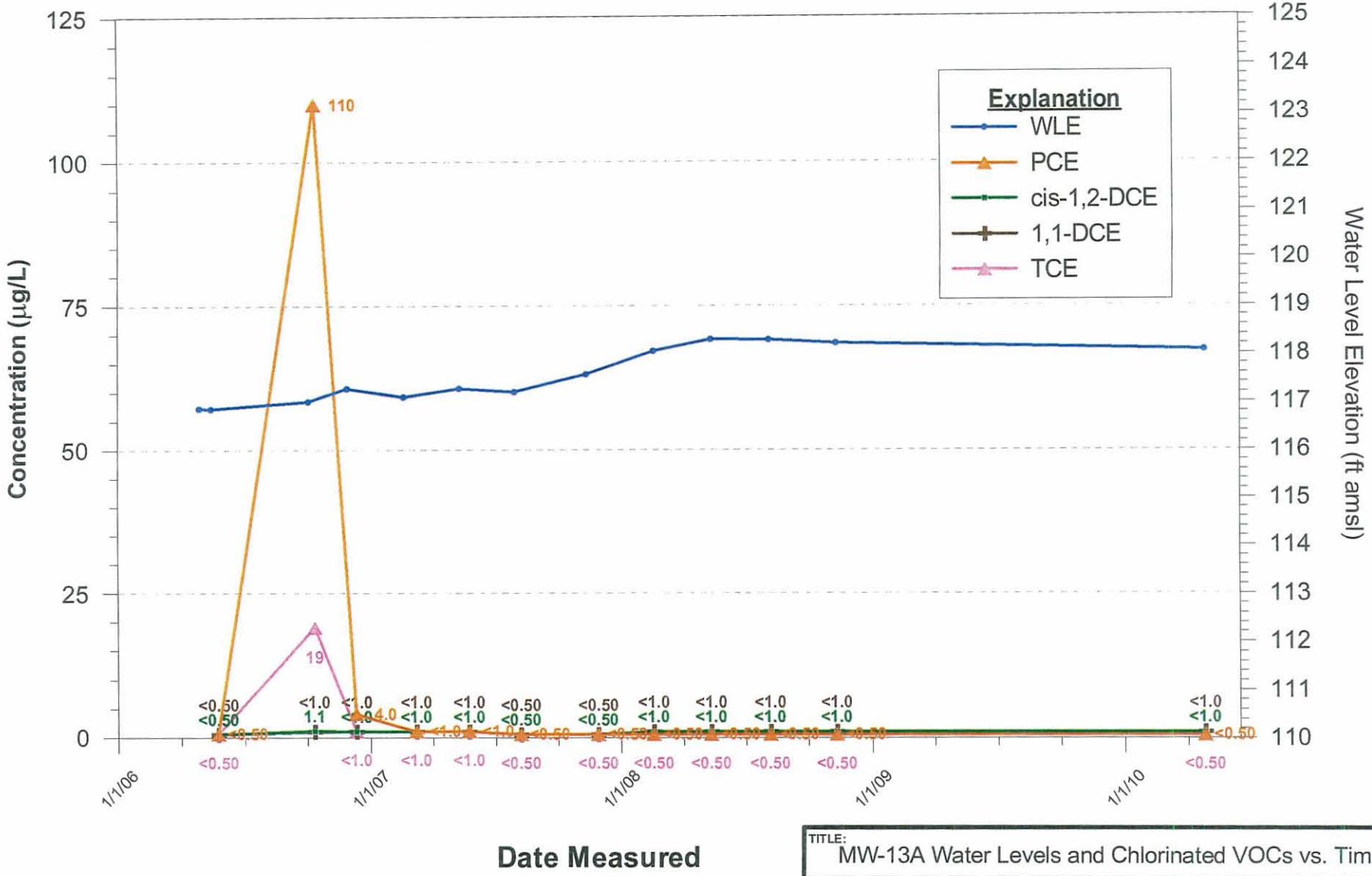
TITLE: MW-12A Water Levels and Chlorinated VOCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-14



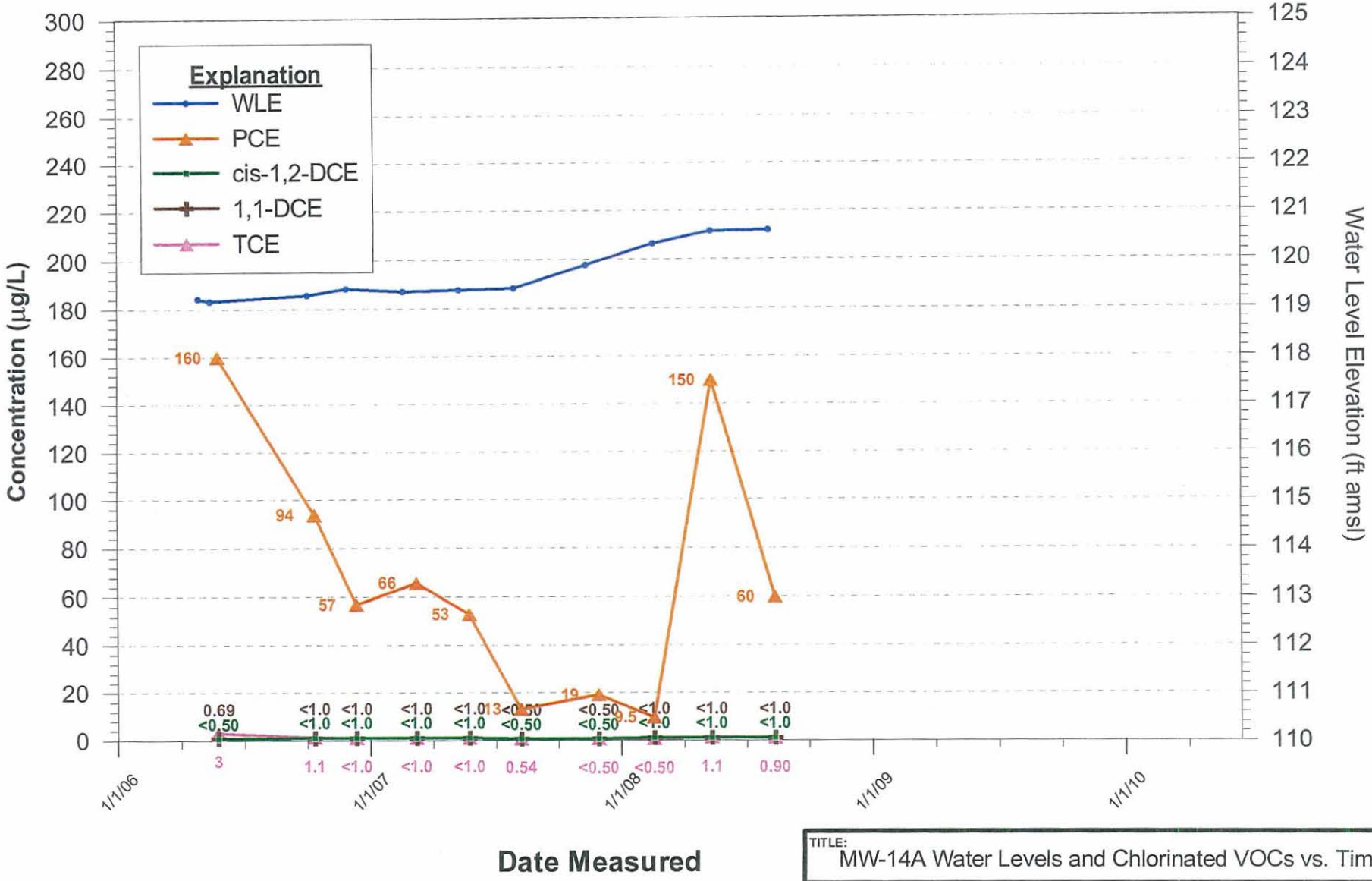
TITLE: MW-13A Water Levels and Chlorinated VOCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-15



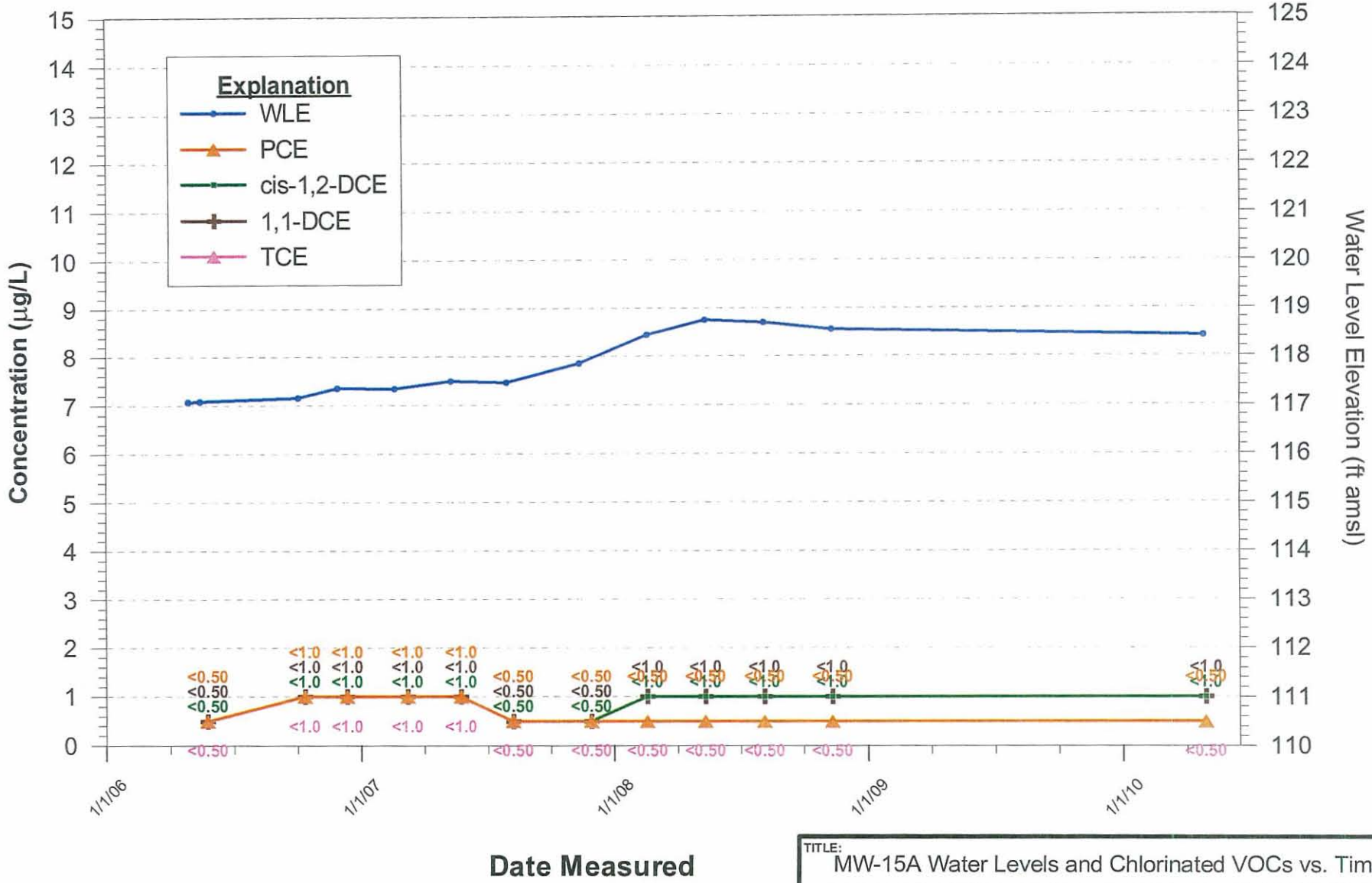
TITLE: MW-14A Water Levels and Chlorinated VOCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-16



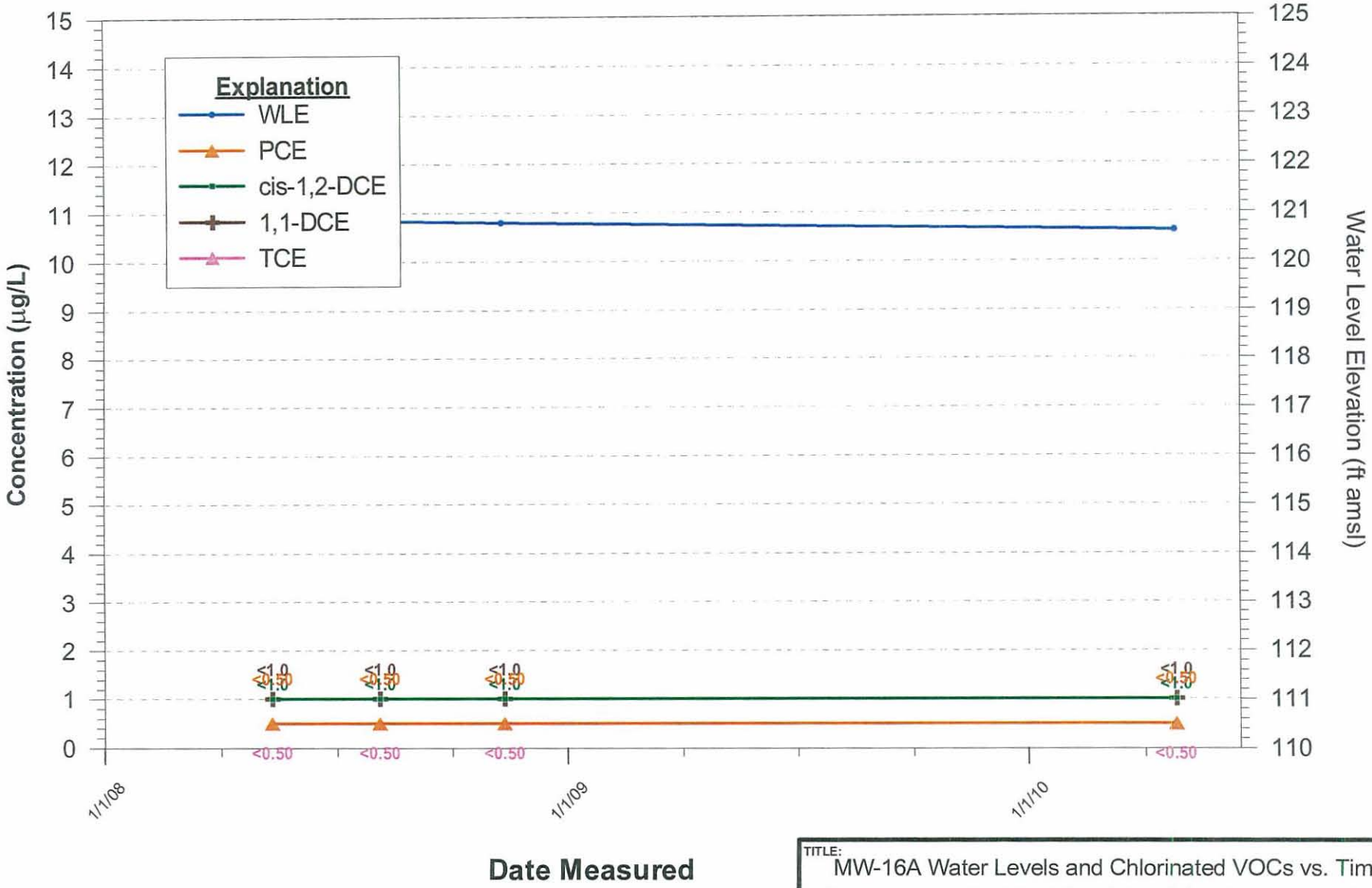
TITLE: MW-15A Water Levels and Chlorinated VOCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-17



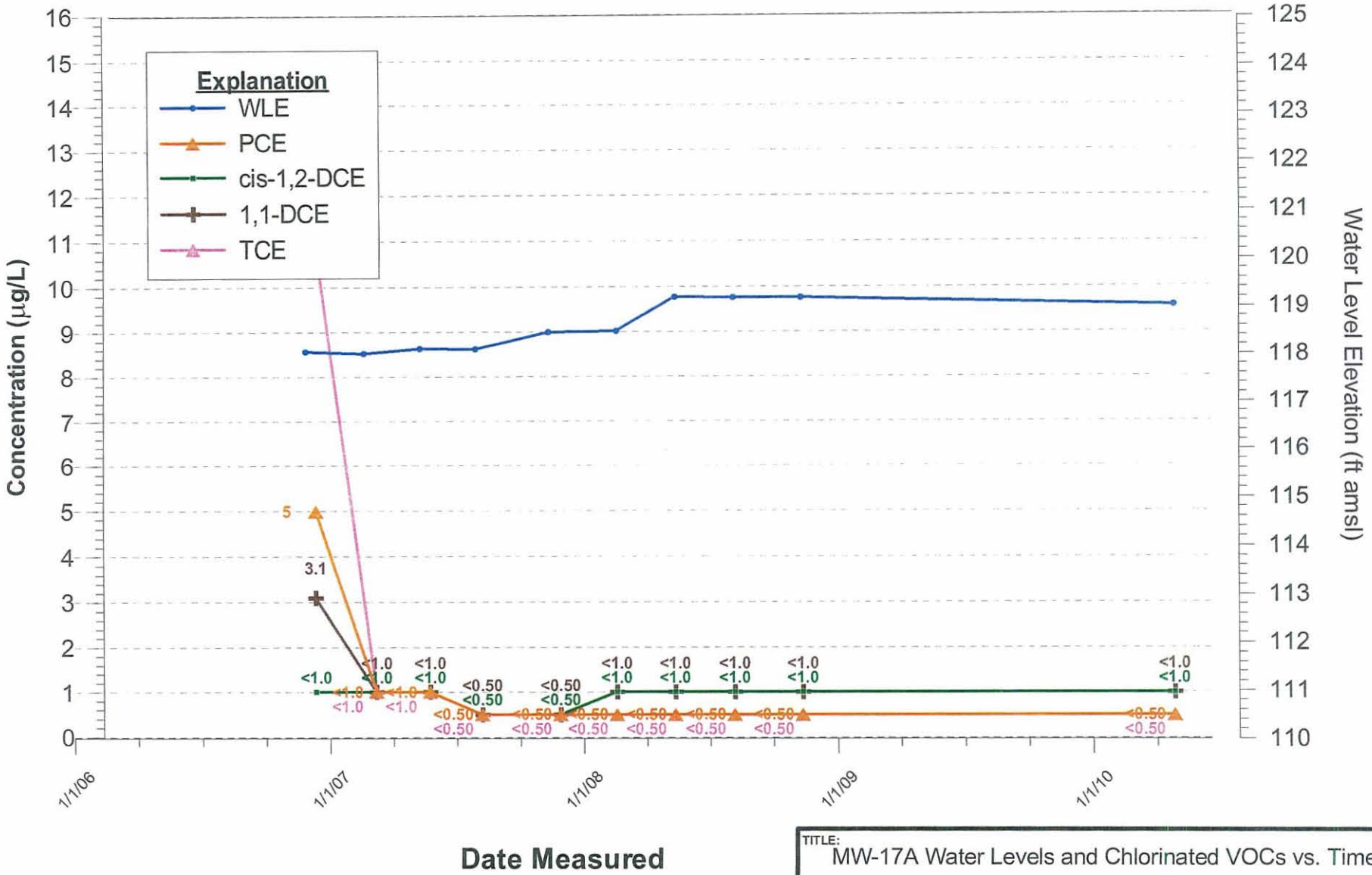
TITLE: MW-16A Water Levels and Chlorinated VOCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-18



TITLE: MW-17A Water Levels and Chlorinated VOCs vs. Time

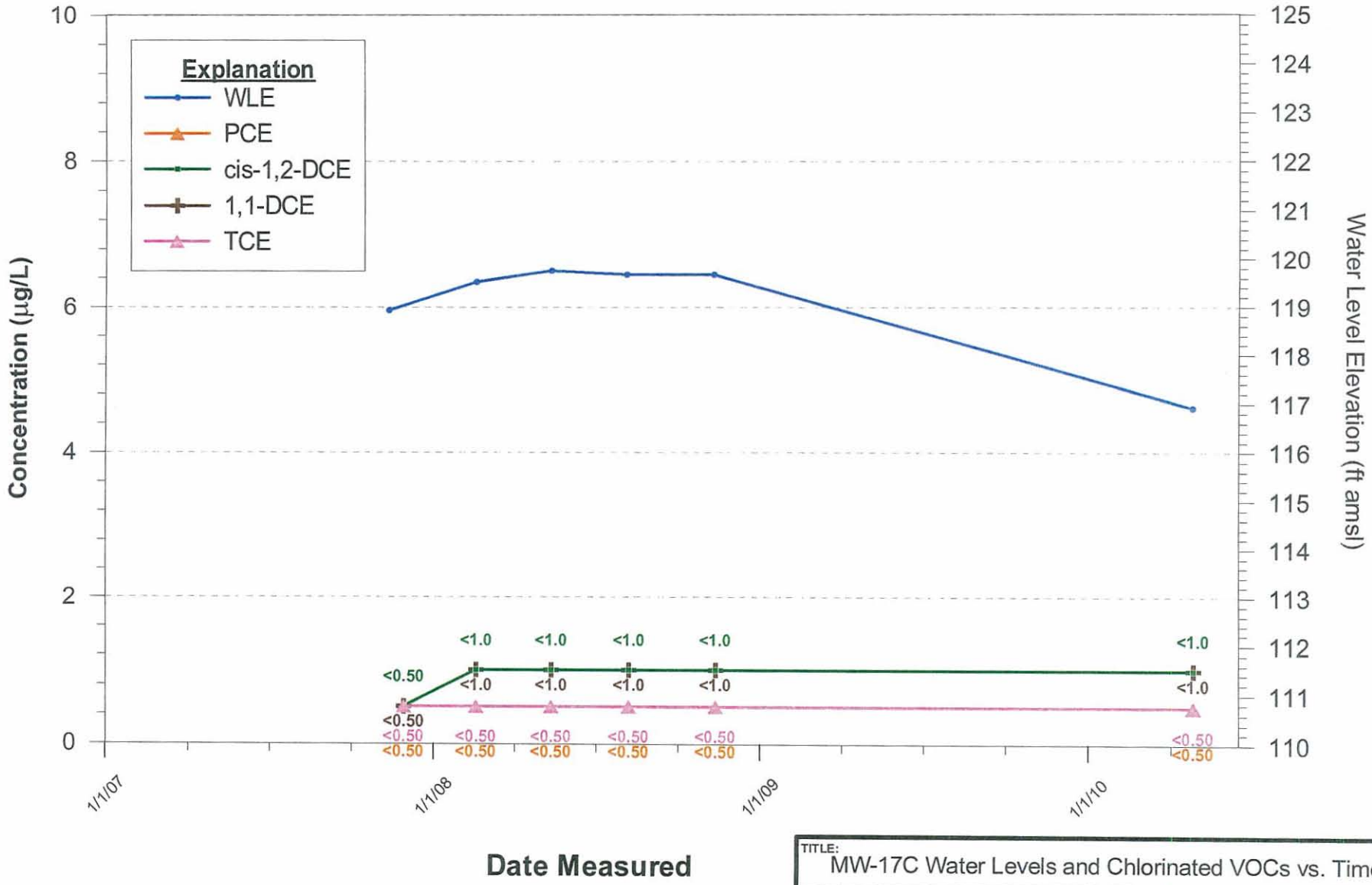
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-19

TFDEQP000549



TITLE: MW-17C Water Levels and Chlorinated VOCs vs. Time

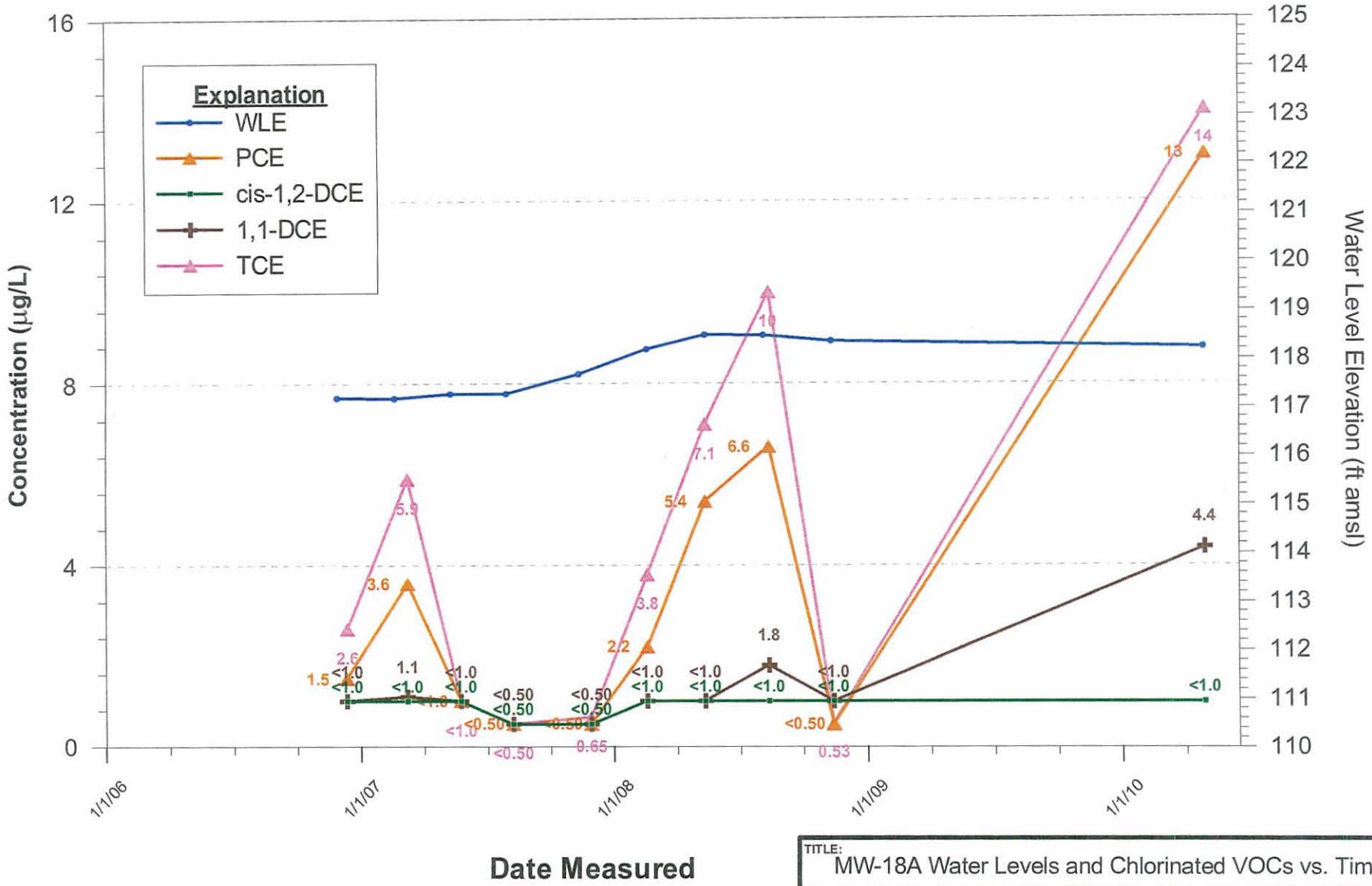
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-20

TFDEQP000550



TITLE: MW-18A Water Levels and Chlorinated VOCs vs. Time

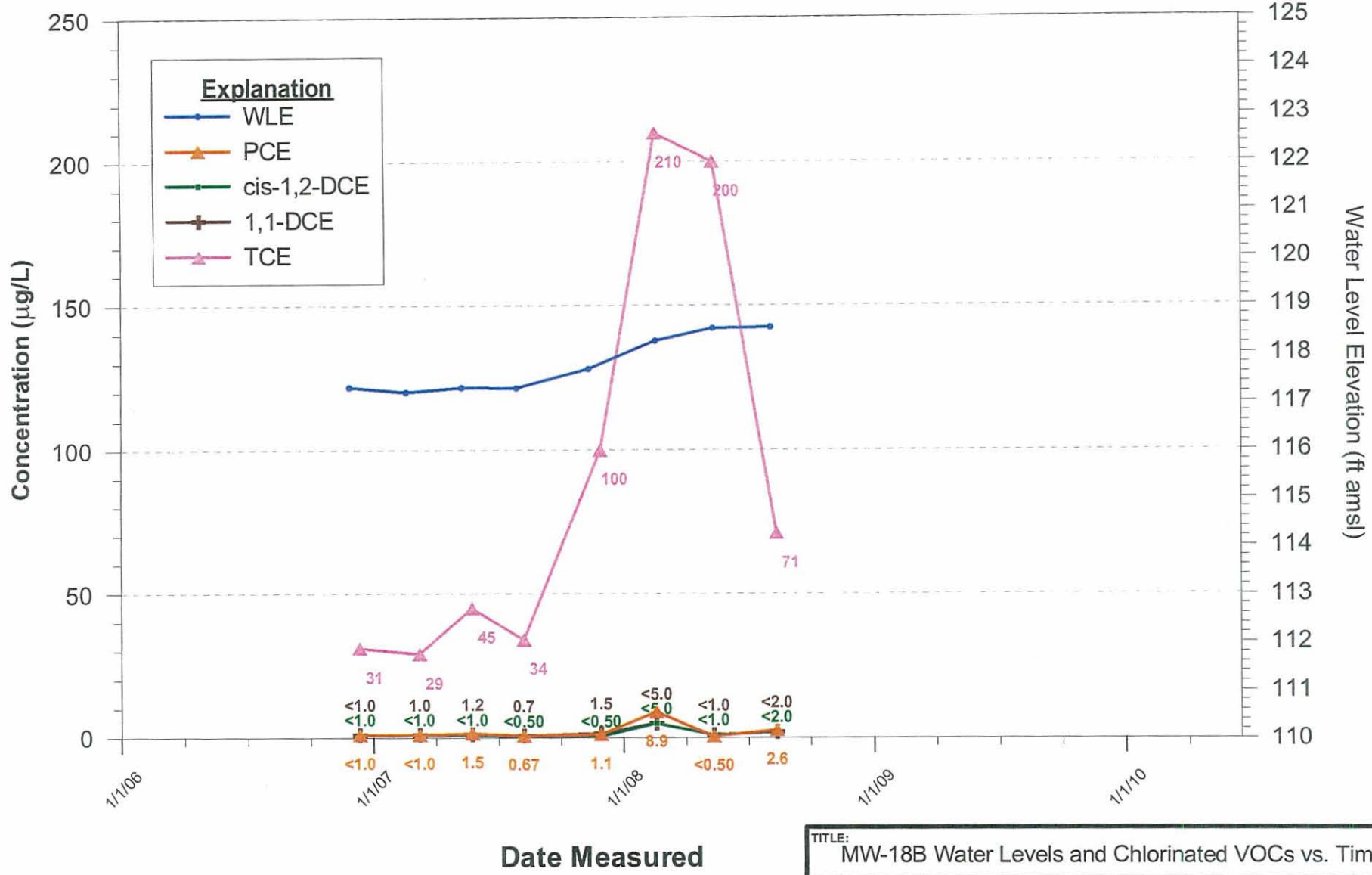
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-21

TFDEQP000551



TITLE: MW-18B Water Levels and Chlorinated VOCs vs. Time

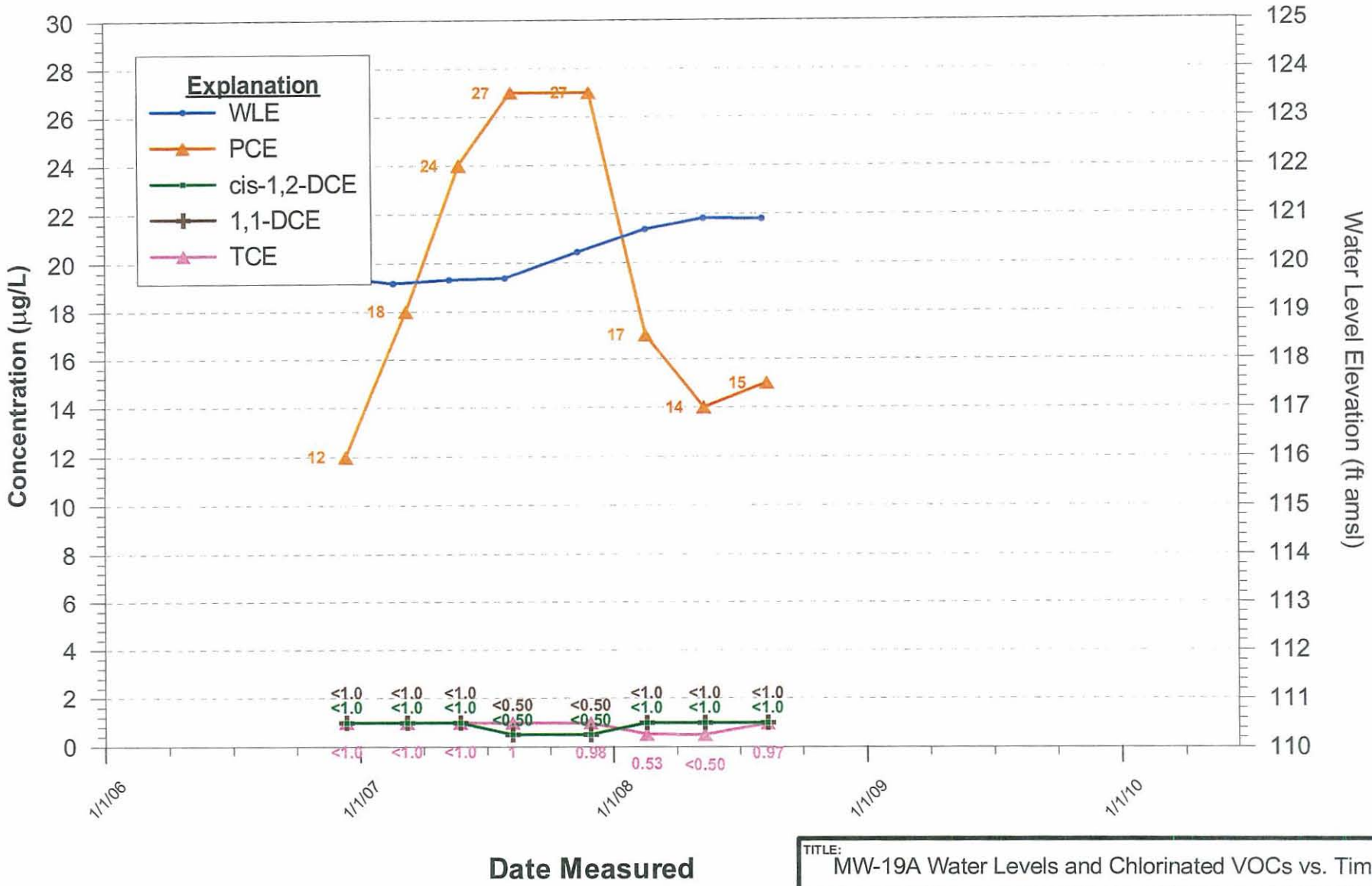
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-22

TFDEQP000552



TITLE: MW-19A Water Levels and Chlorinated VOCs vs. Time

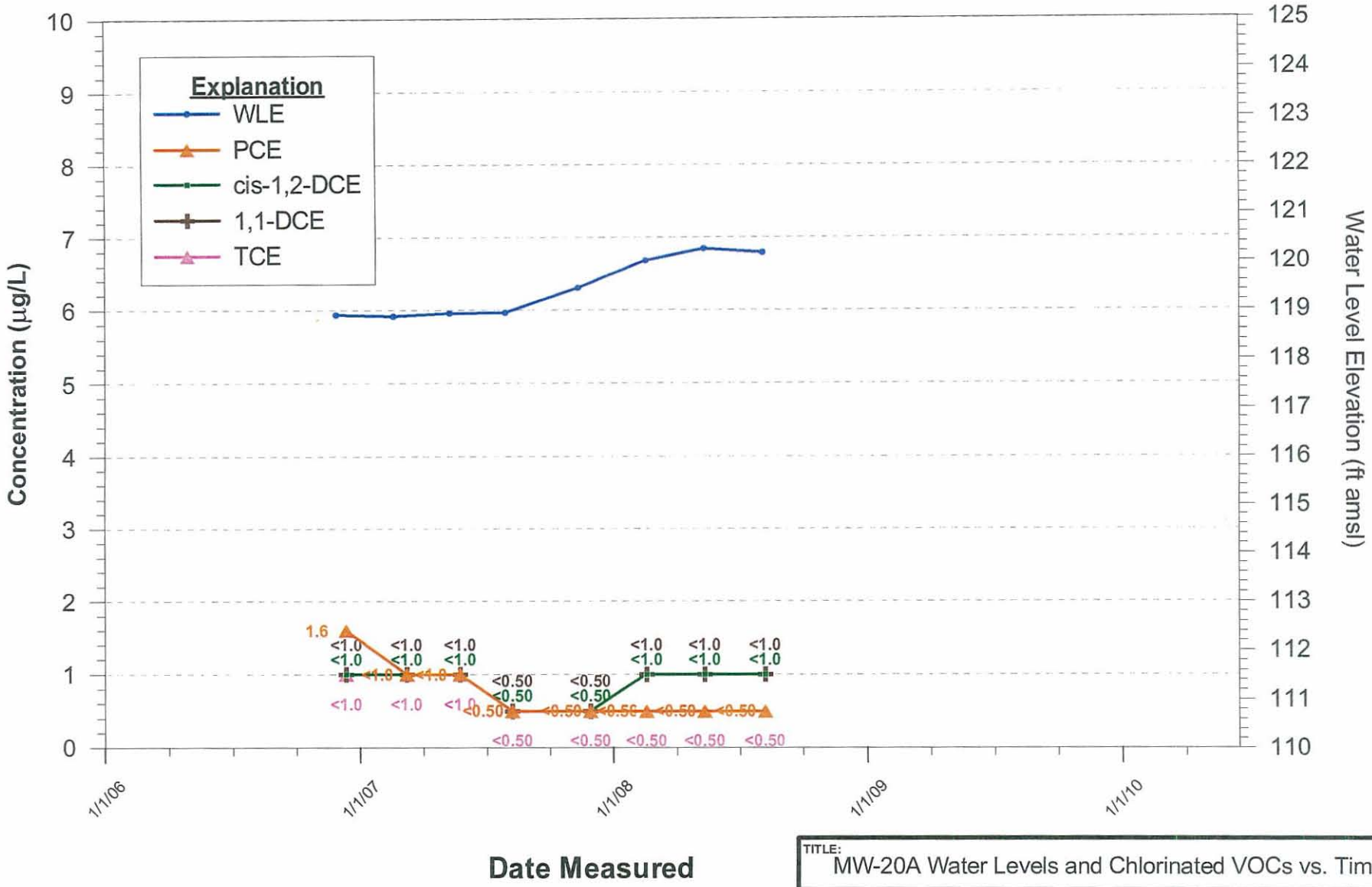
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-23

TFDEQP000553



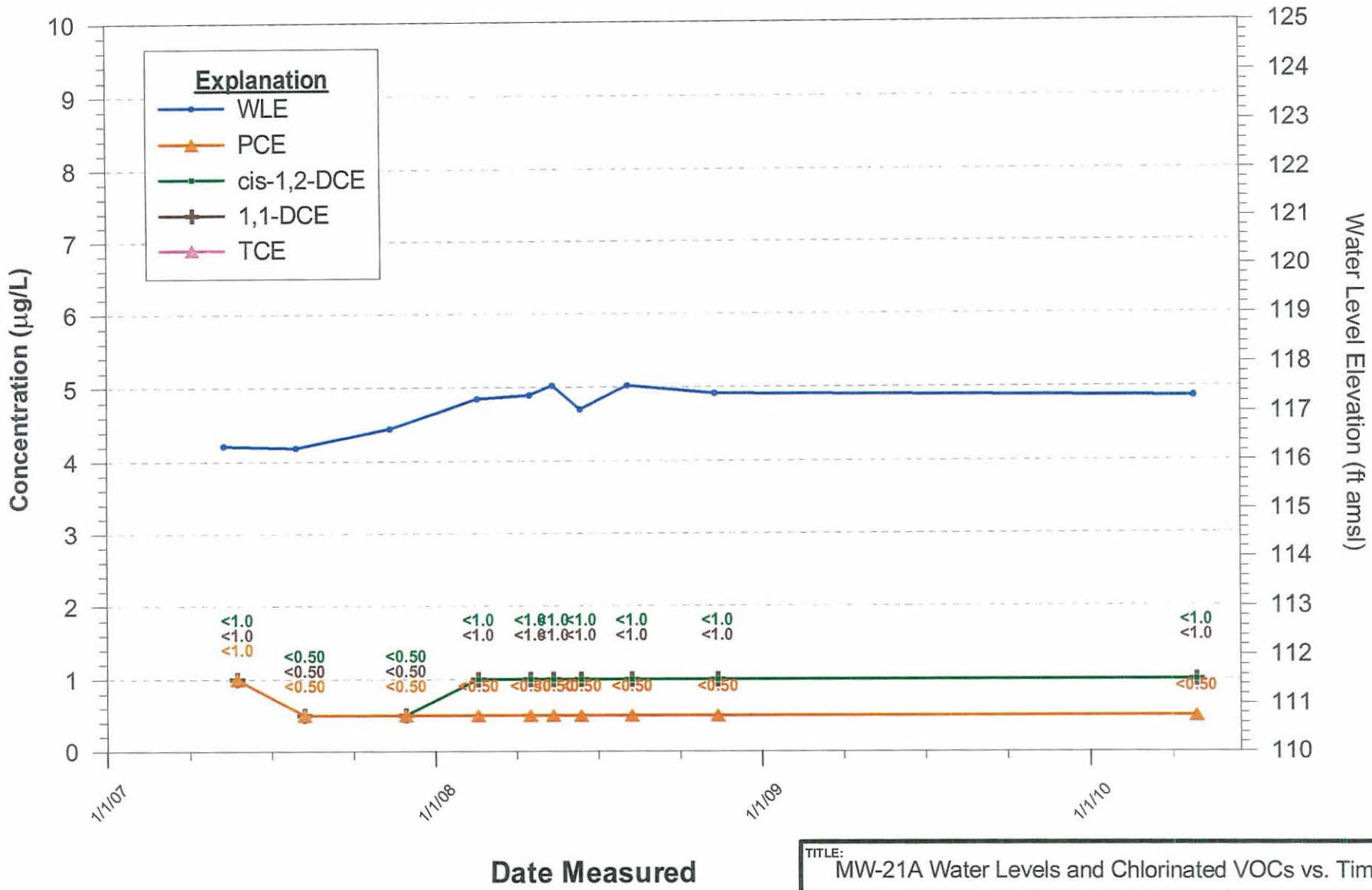
TITLE: MW-20A Water Levels and Chlorinated VOCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-24



TITLE: MW-21A Water Levels and Chlorinated VOCs vs. Time

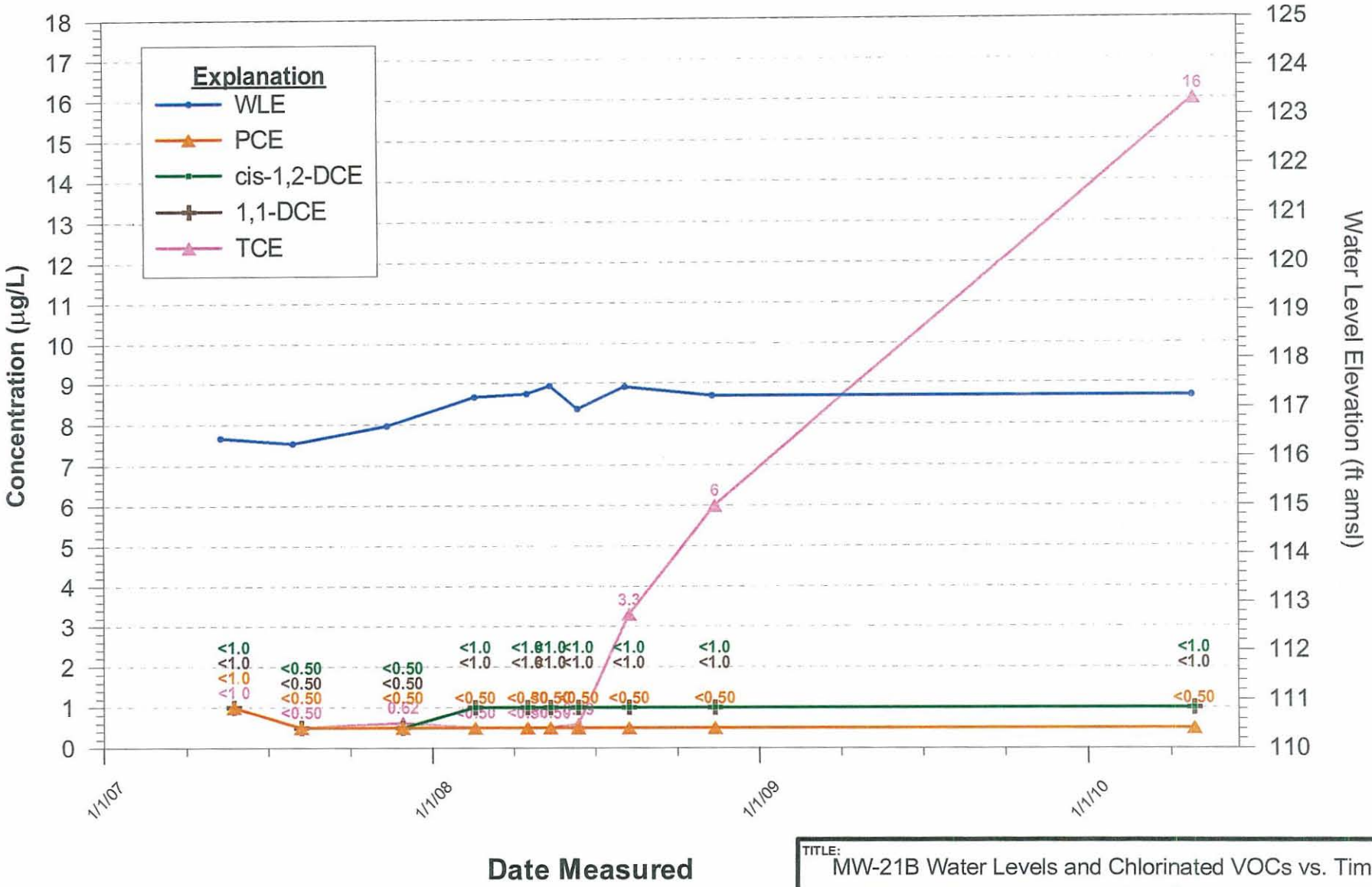
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-25

TFDEQP000555



TITLE: MW-21B Water Levels and Chlorinated VOCs vs. Time

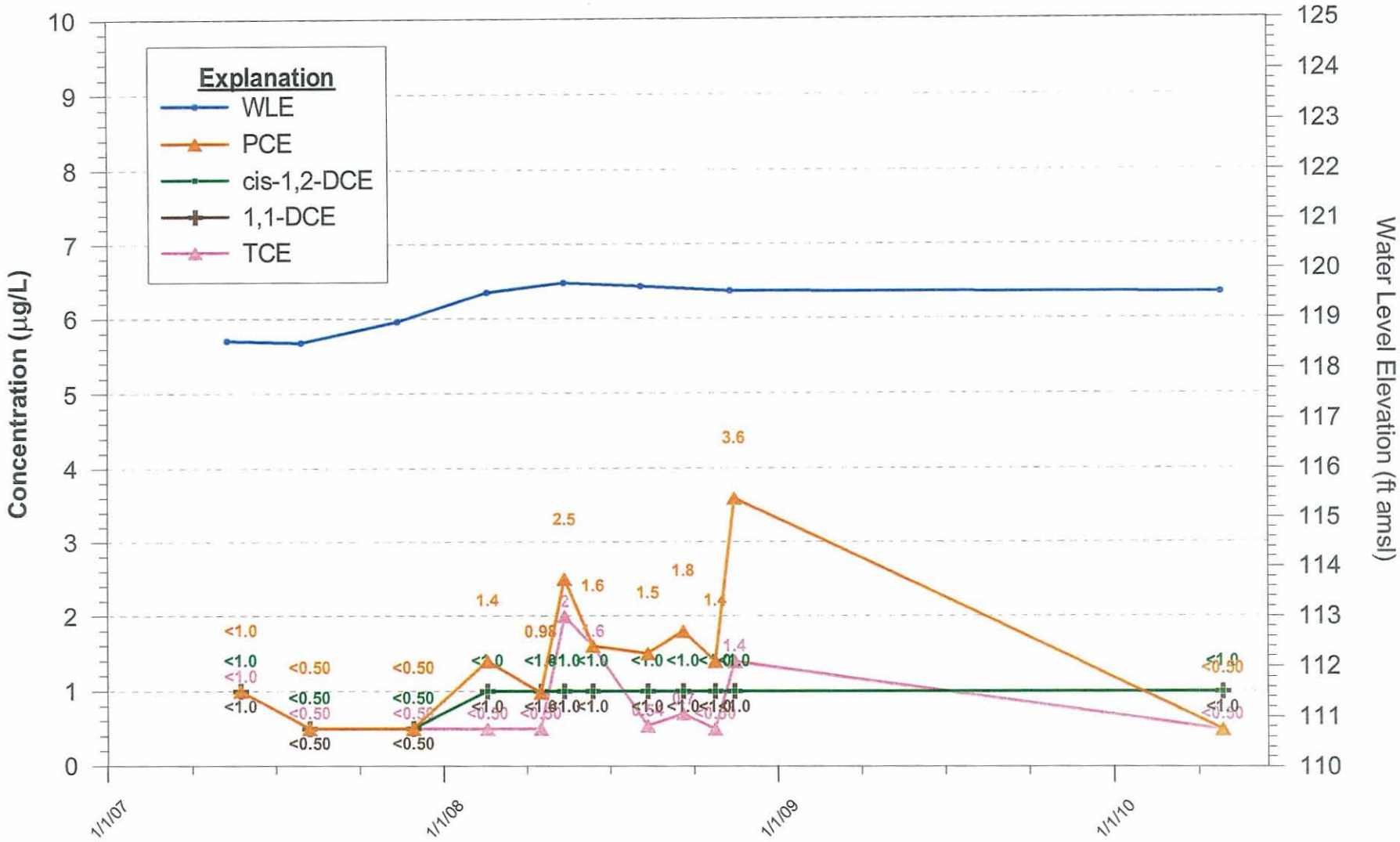
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-26

TFDEQP000556



Note: Most recent VOC concentrations presented are from an additional sample collected on March 19, 2008. PCE and TCE were detected in the original sample collected on Feburary 27, 2008, as part of the February 2008 groundwater sampling event at concentrations of 20 µg/L and 5.2 µg/L, respectively.

TITLE: MW-21C Water Levels and Chlorinated VOCs vs. Time

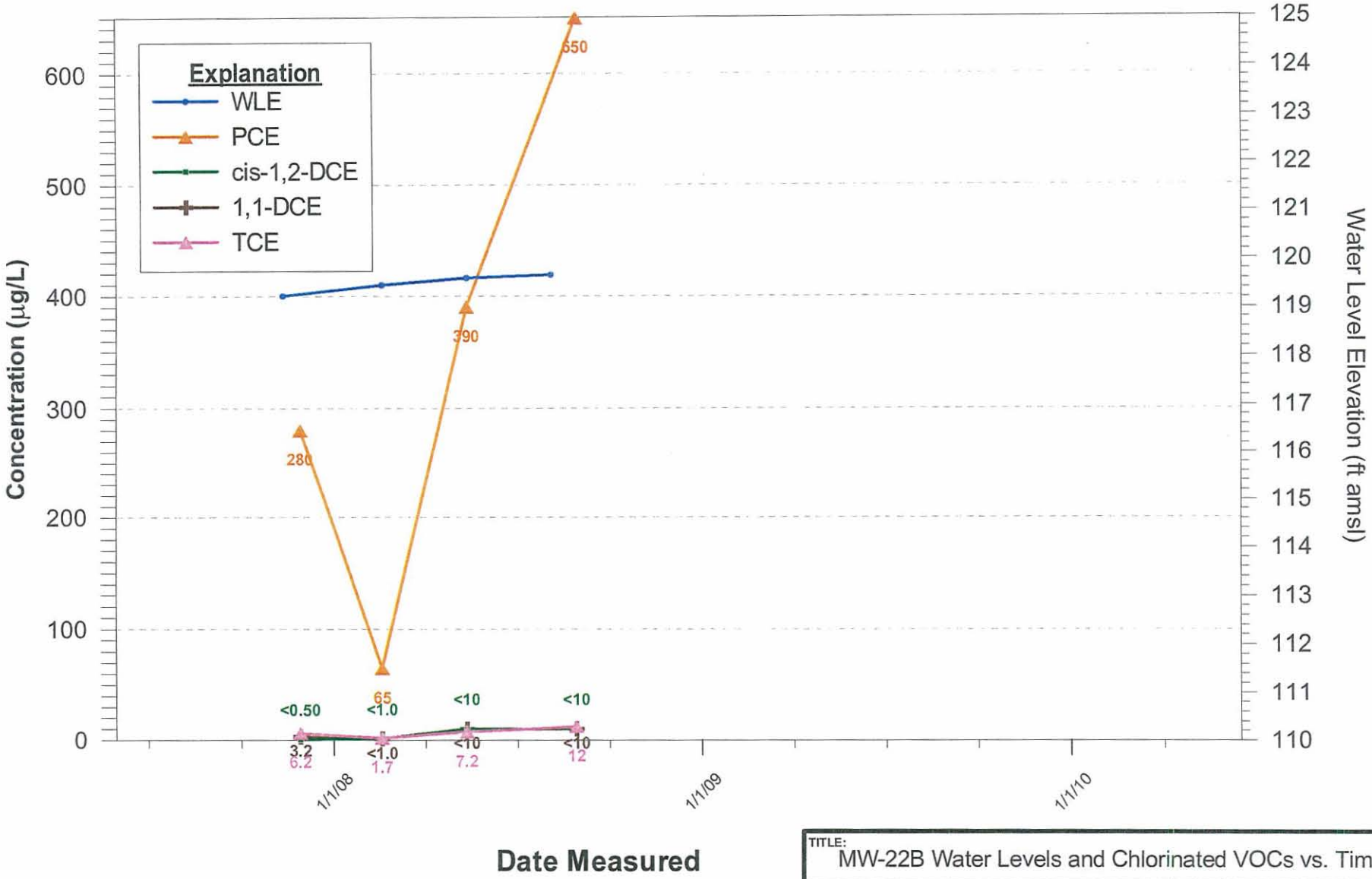
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-27

TFDEQP000557



TITLE: MW-22B Water Levels and Chlorinated VOCs vs. Time

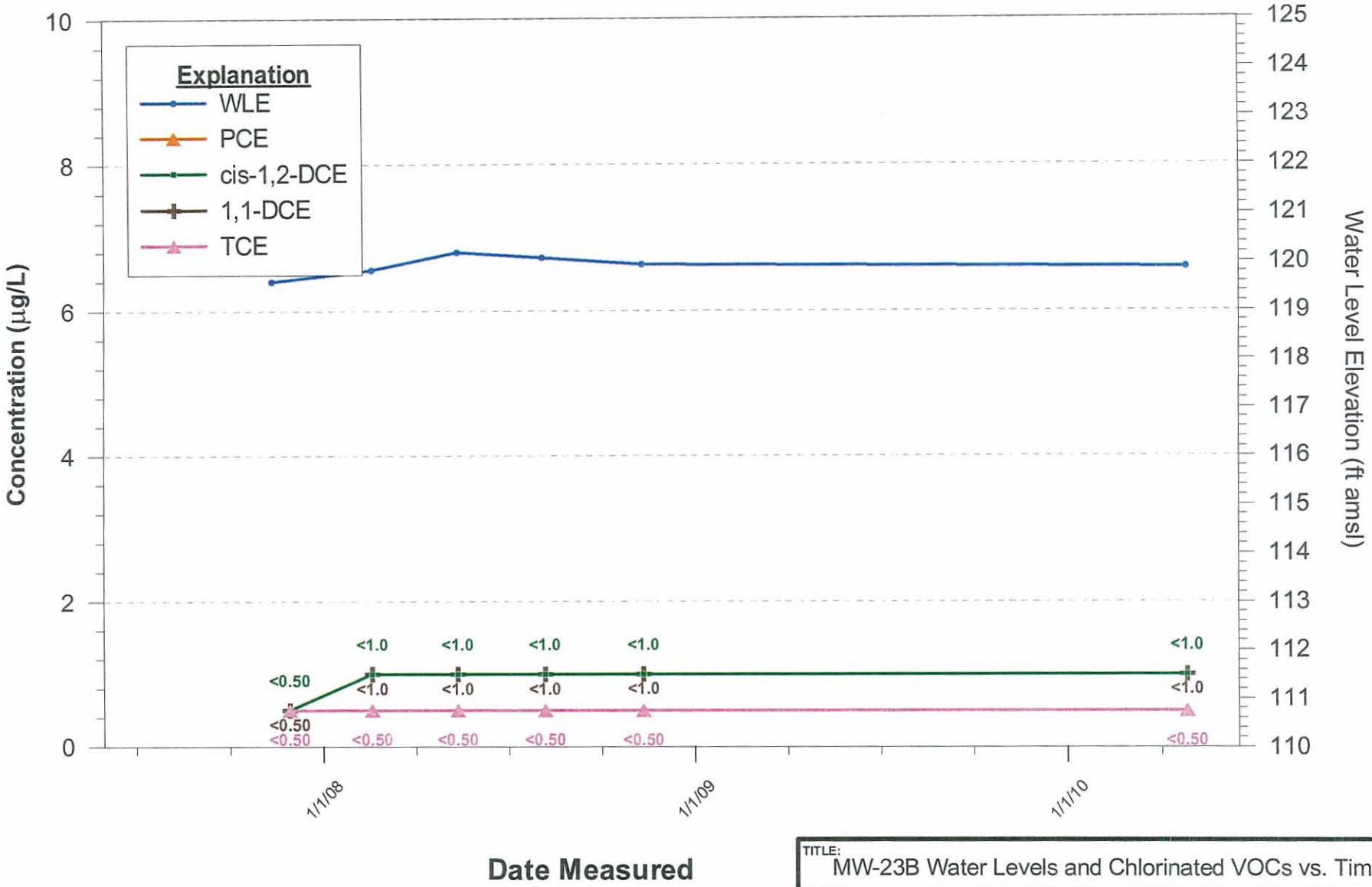
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-28

TFDEQP000558



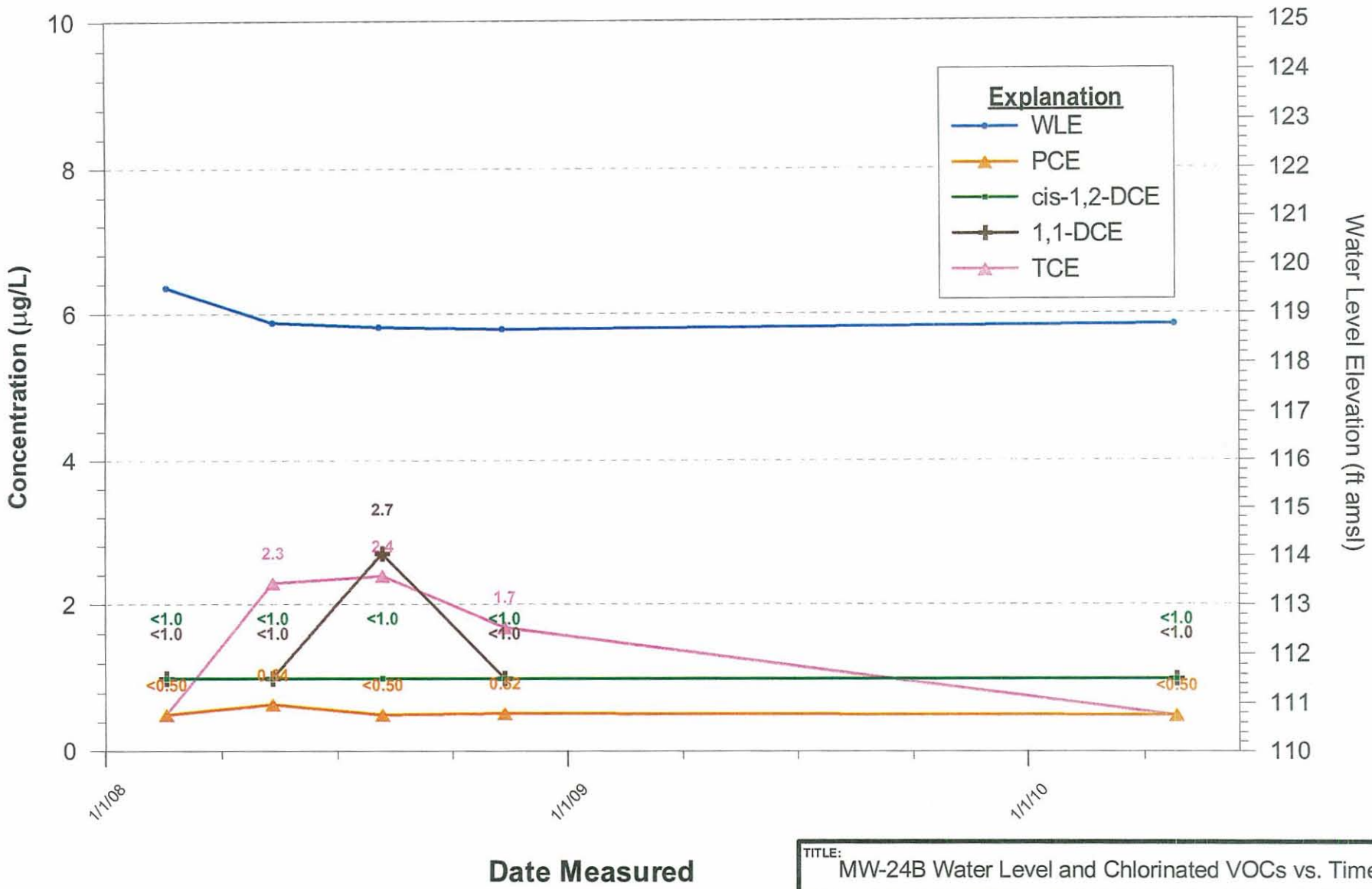
TITLE: MW-23B Water Levels and Chlorinated VOCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-29



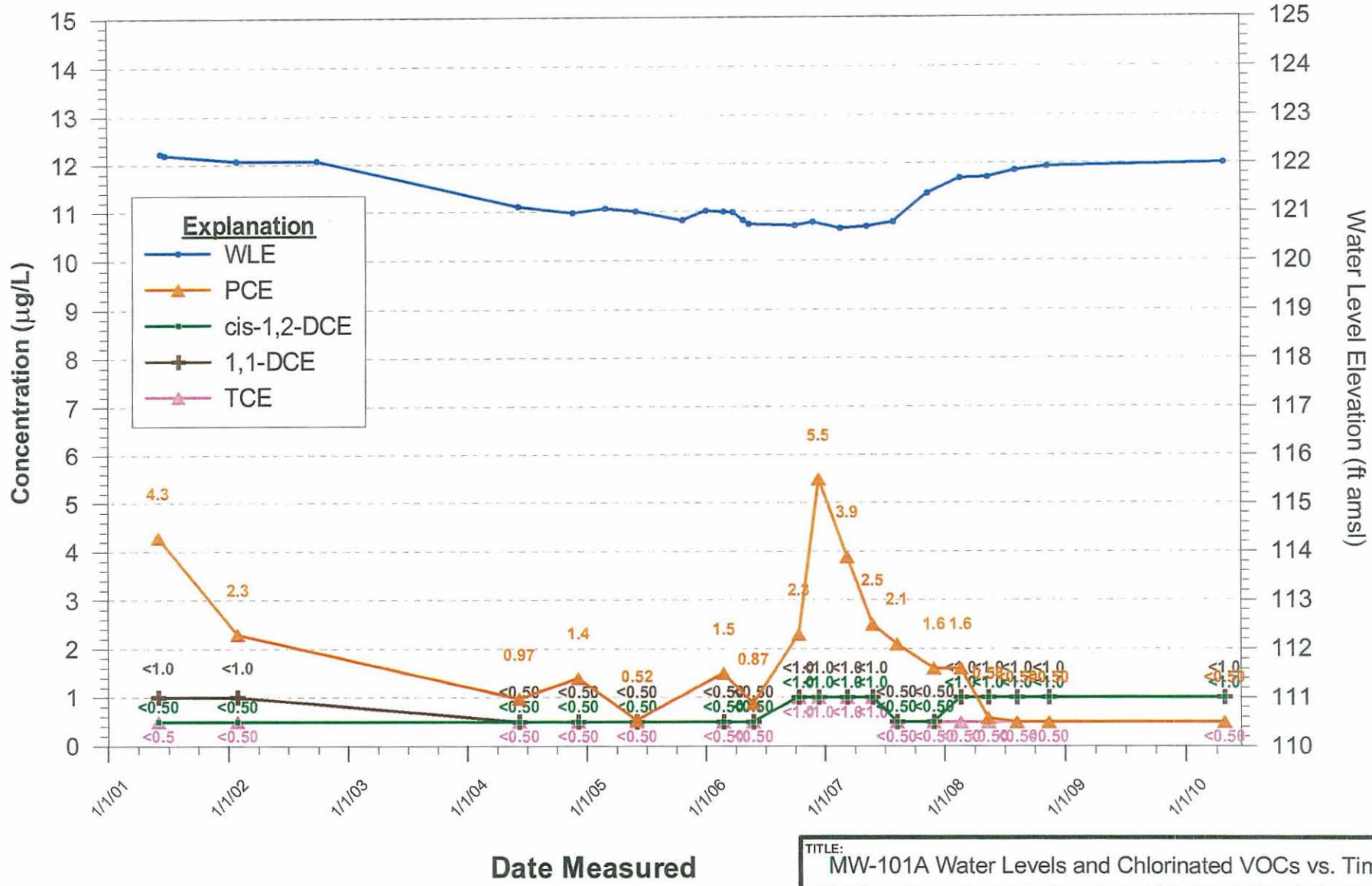
TITLE: MW-24B Water Level and Chlorinated VOCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-30



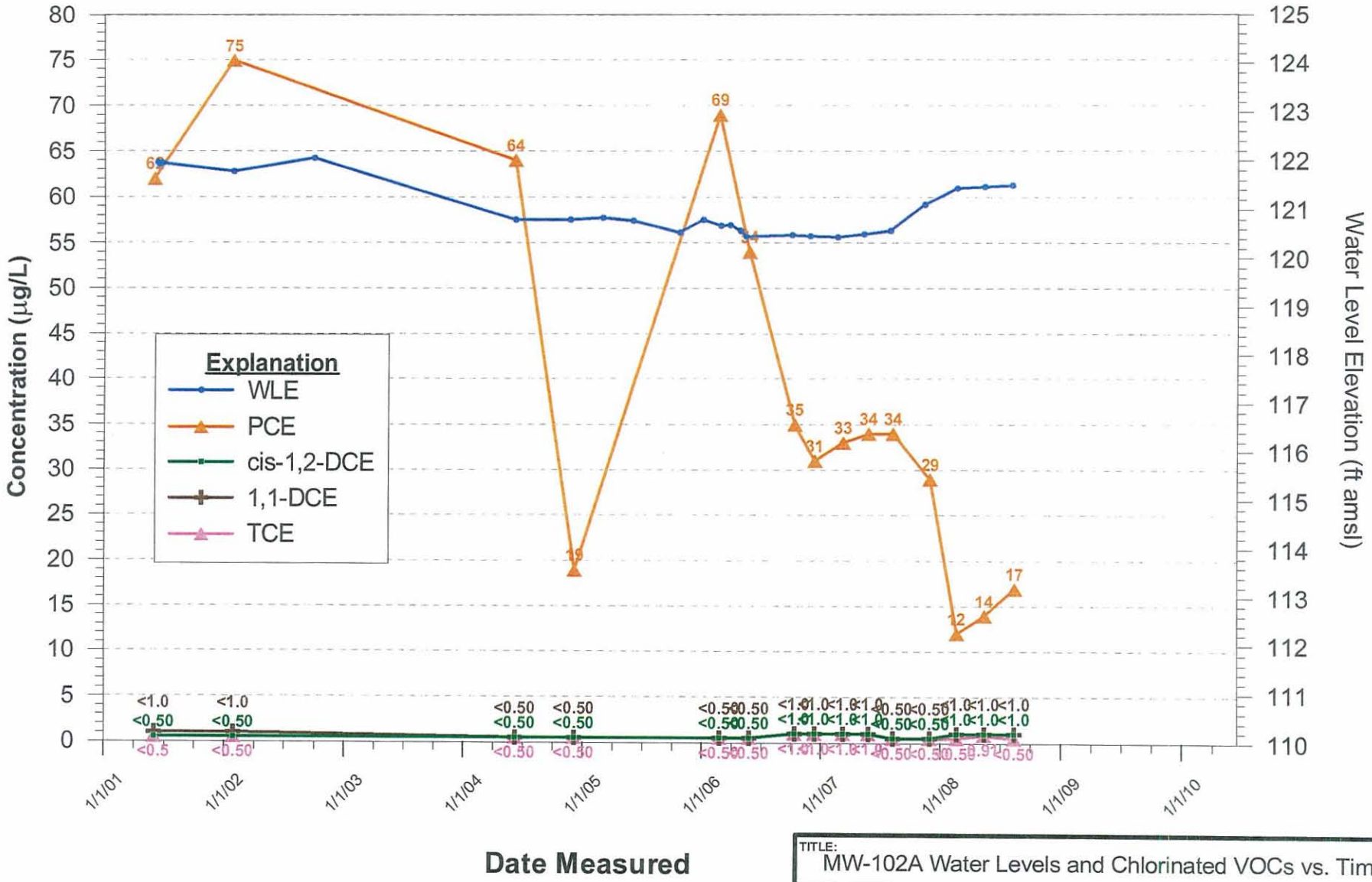
TITLE: MW-101A Water Levels and Chlorinated VOCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-31



TITLE: MW-102A Water Levels and Chlorinated VOCs vs. Time

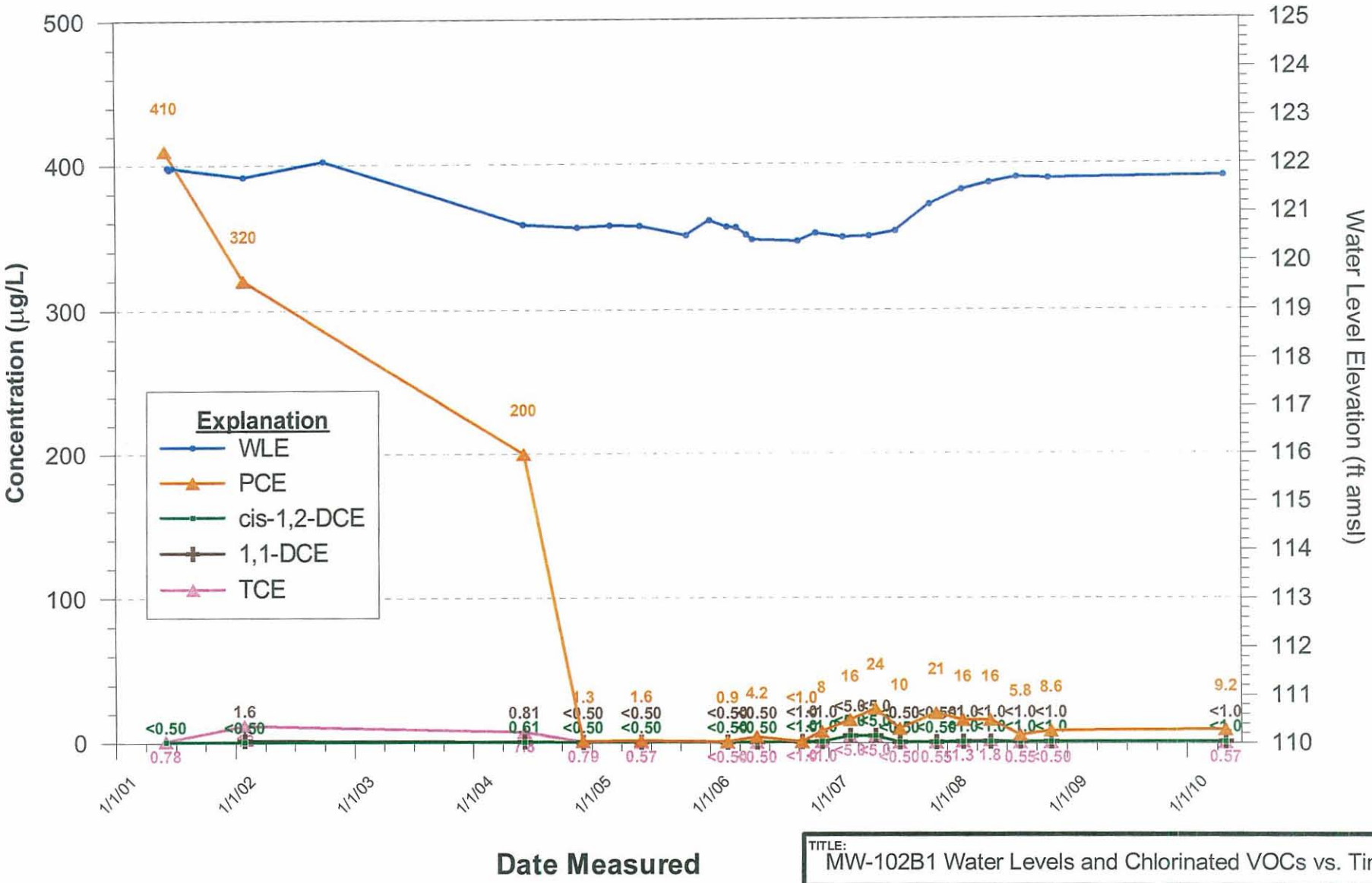
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-32

TFDEQP000562



TITLE: MW-102B1 Water Levels and Chlorinated VOCs vs. Time

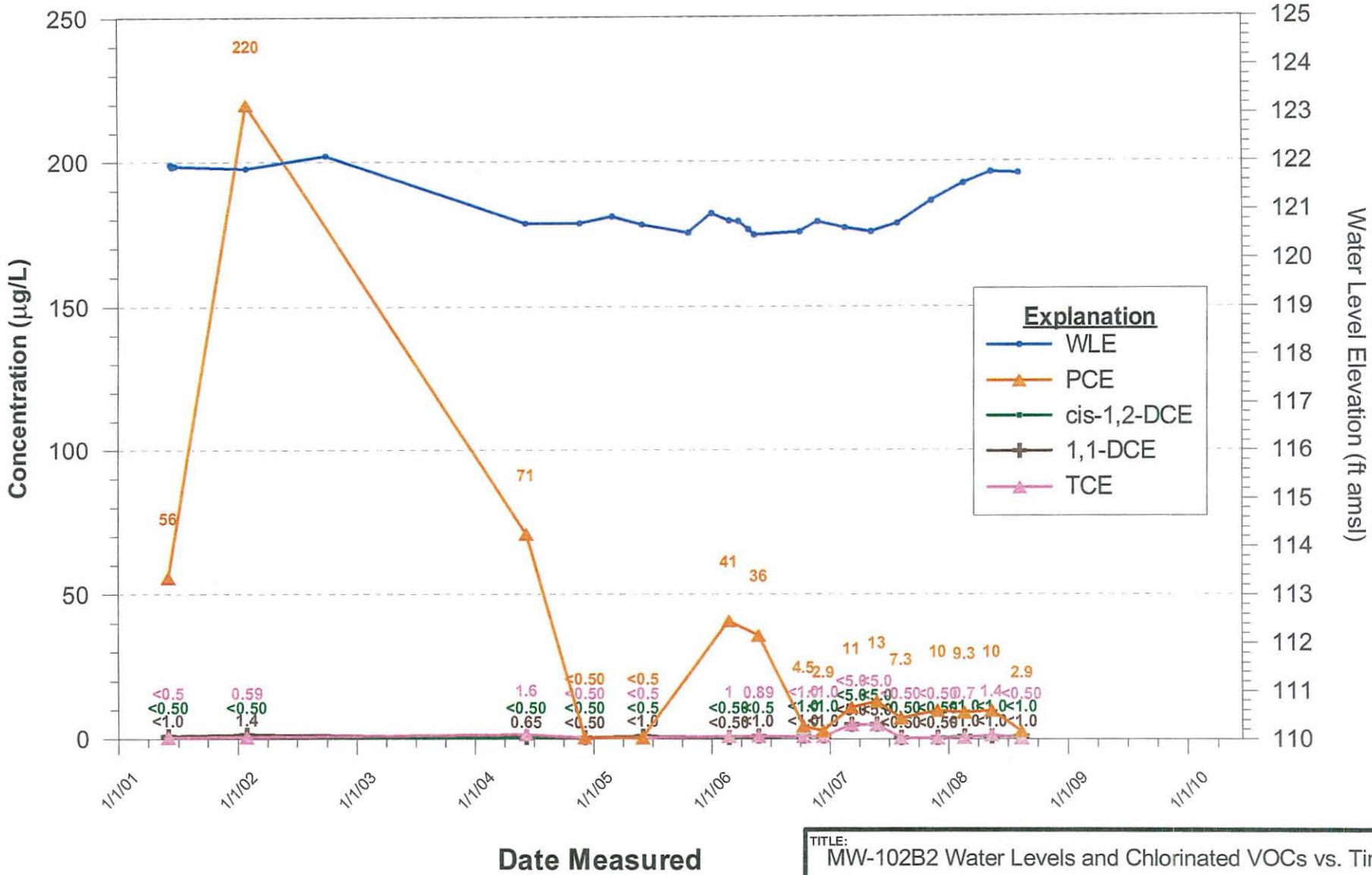
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-33

TFDEQP000563



TITLE: MW-102B2 Water Levels and Chlorinated VOCs vs. Time

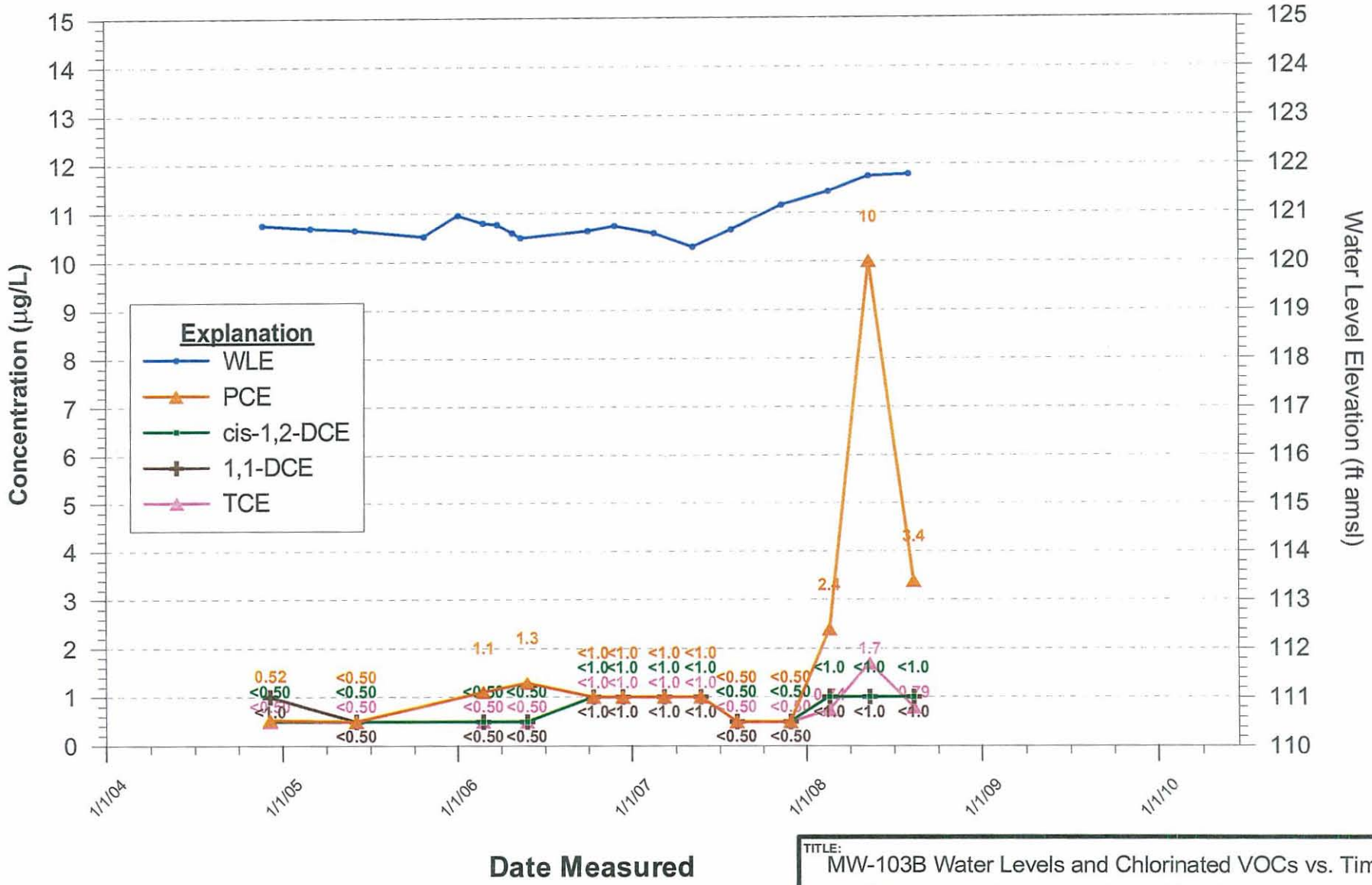
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-34

TFDEQP000564



TITLE: MW-103B Water Levels and Chlorinated VOCs vs. Time

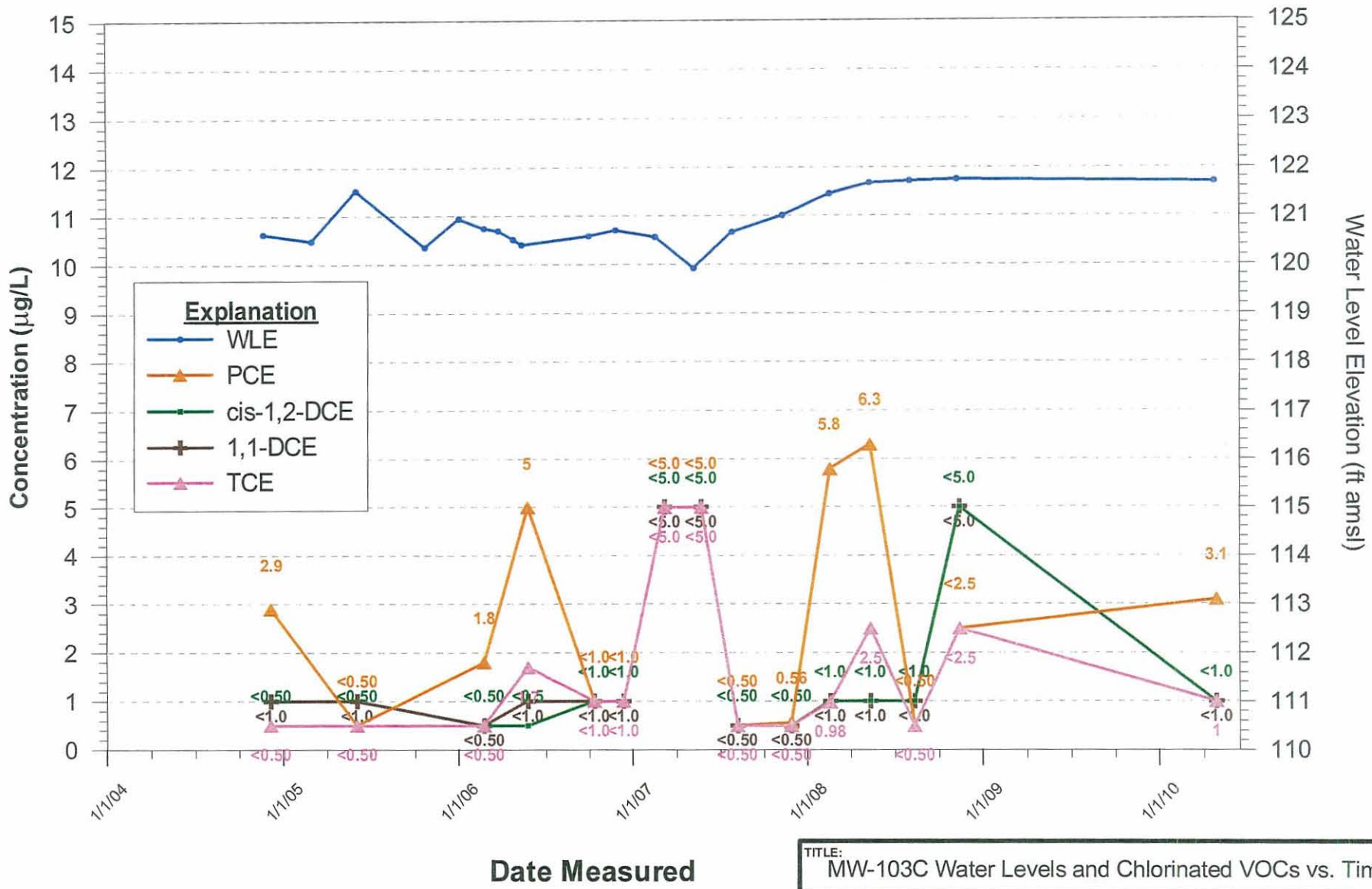
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-35

TFDEQP000565



TITLE: MW-103C Water Levels and Chlorinated VOCs vs. Time

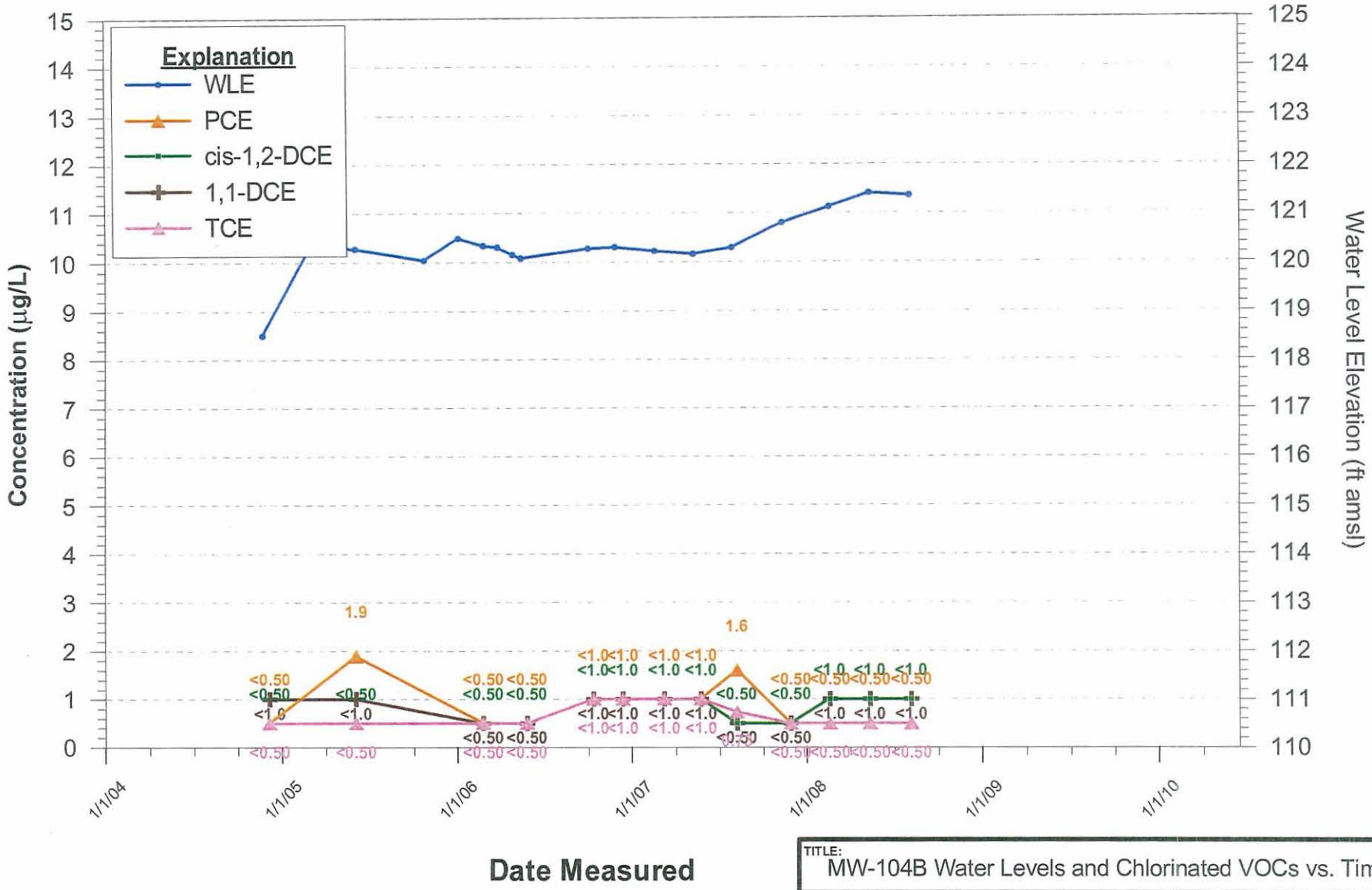
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-36

TFDEQP000566



TITLE: MW-104B Water Levels and Chlorinated VOCs vs. Time

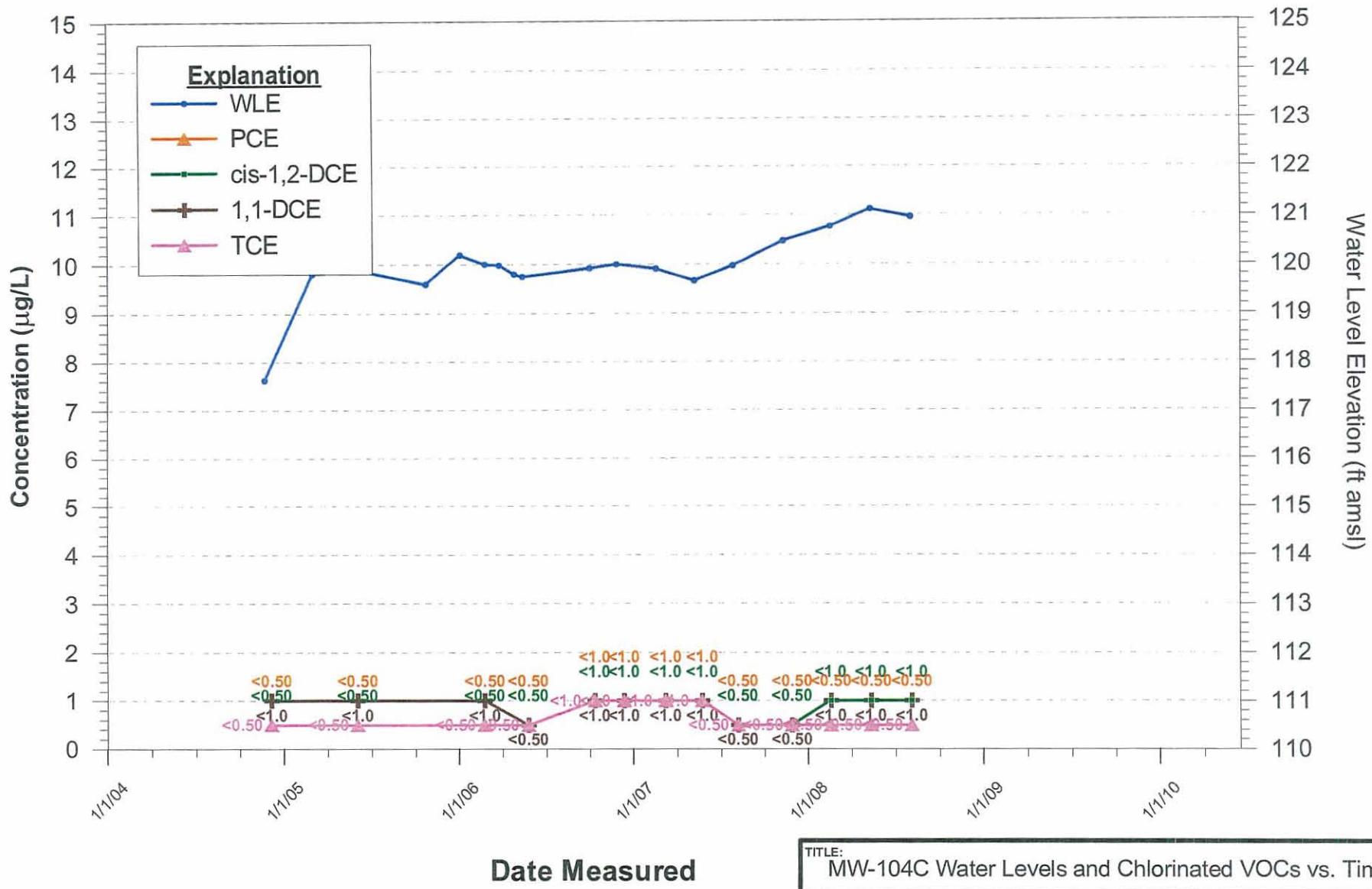
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-37

TFDEQP000567



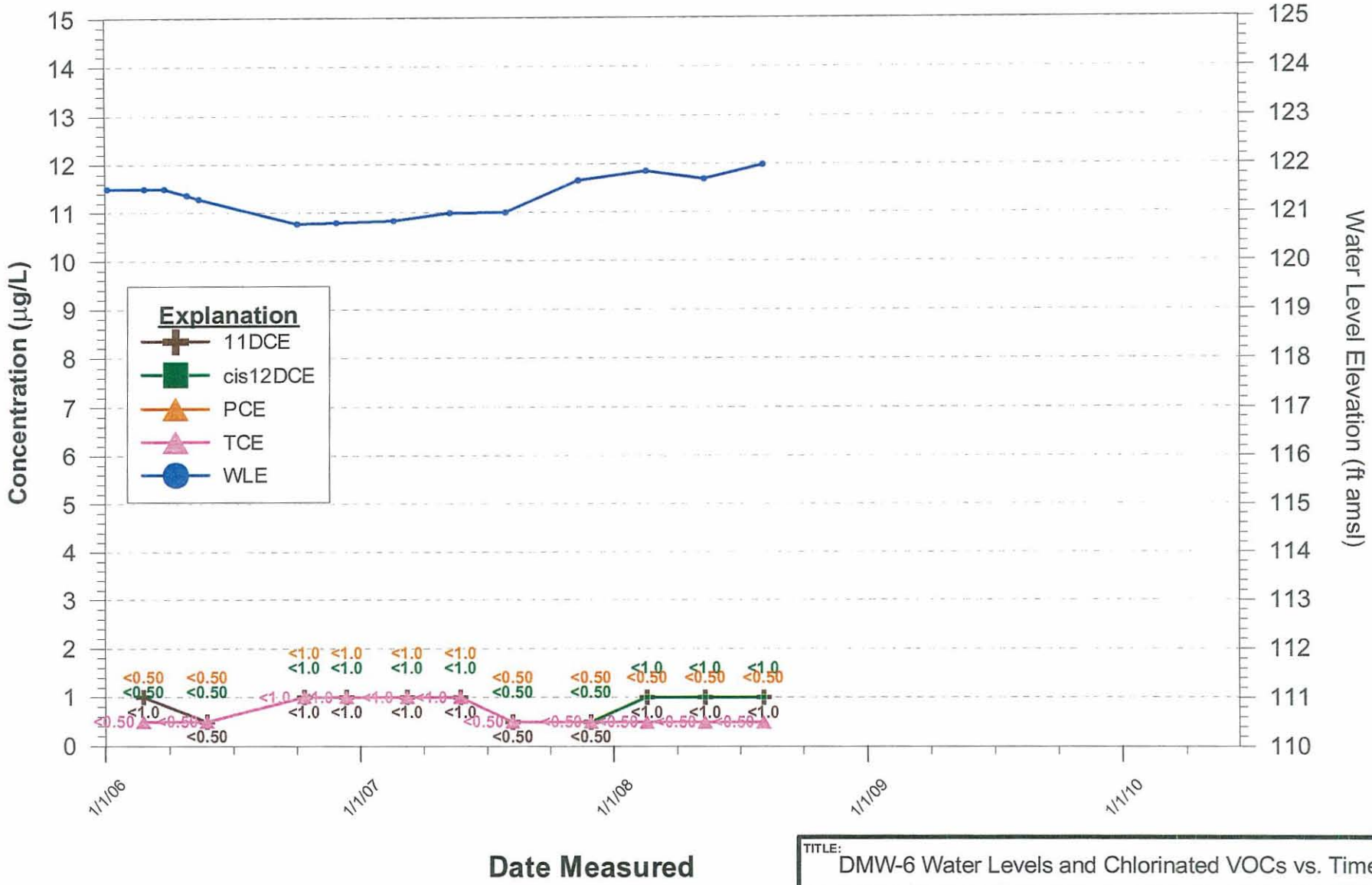
TITLE: MW-104C Water Levels and Chlorinated VOCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-38



Note: VOCs have not been detected in monitoring well DMW-6A since February 2006.

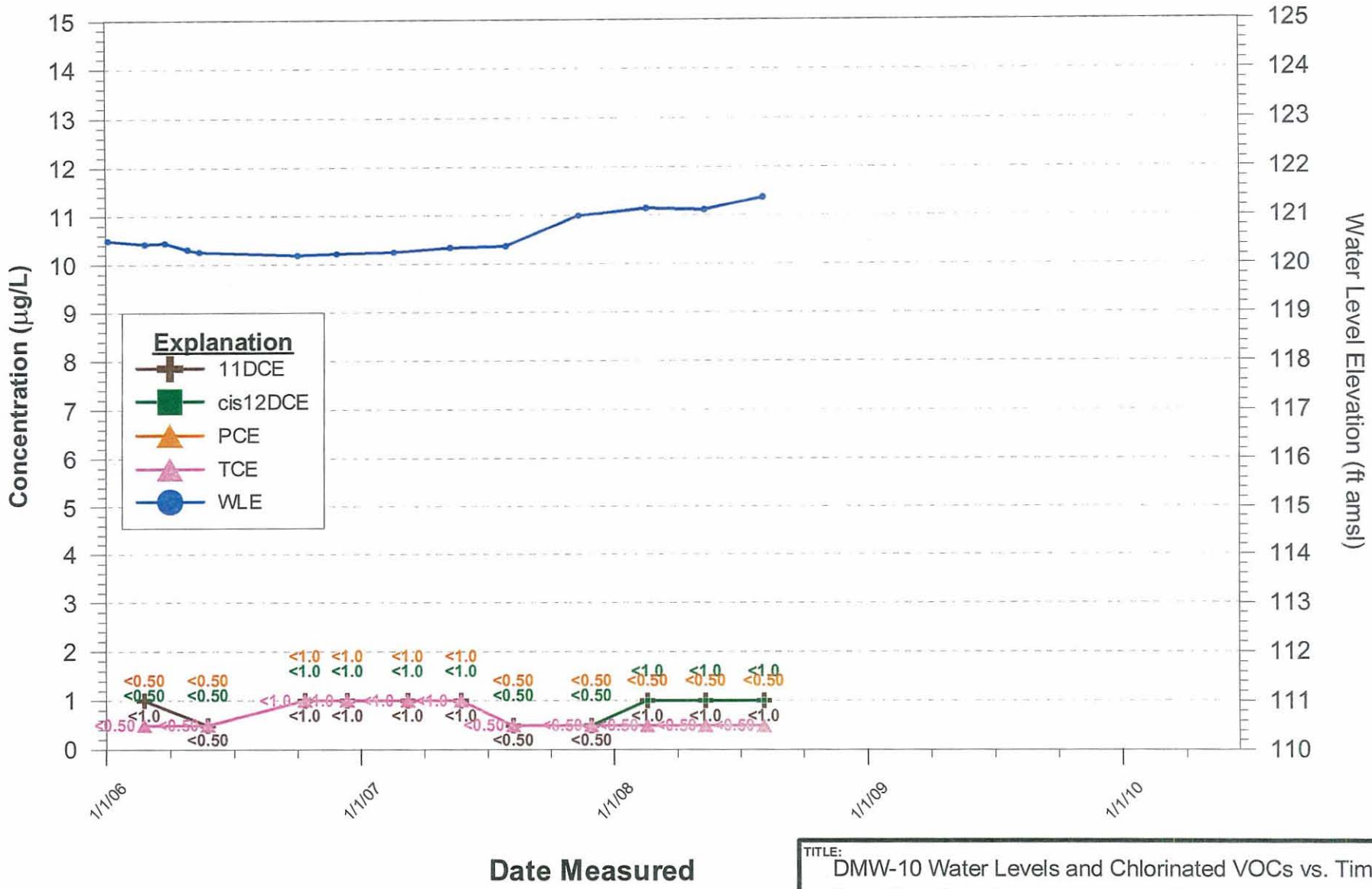
TITLE: DMW-6 Water Levels and Chlorinated VOCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-39



Note: VOCs have not been detected in monitoring well DMW-10A since February 2006.

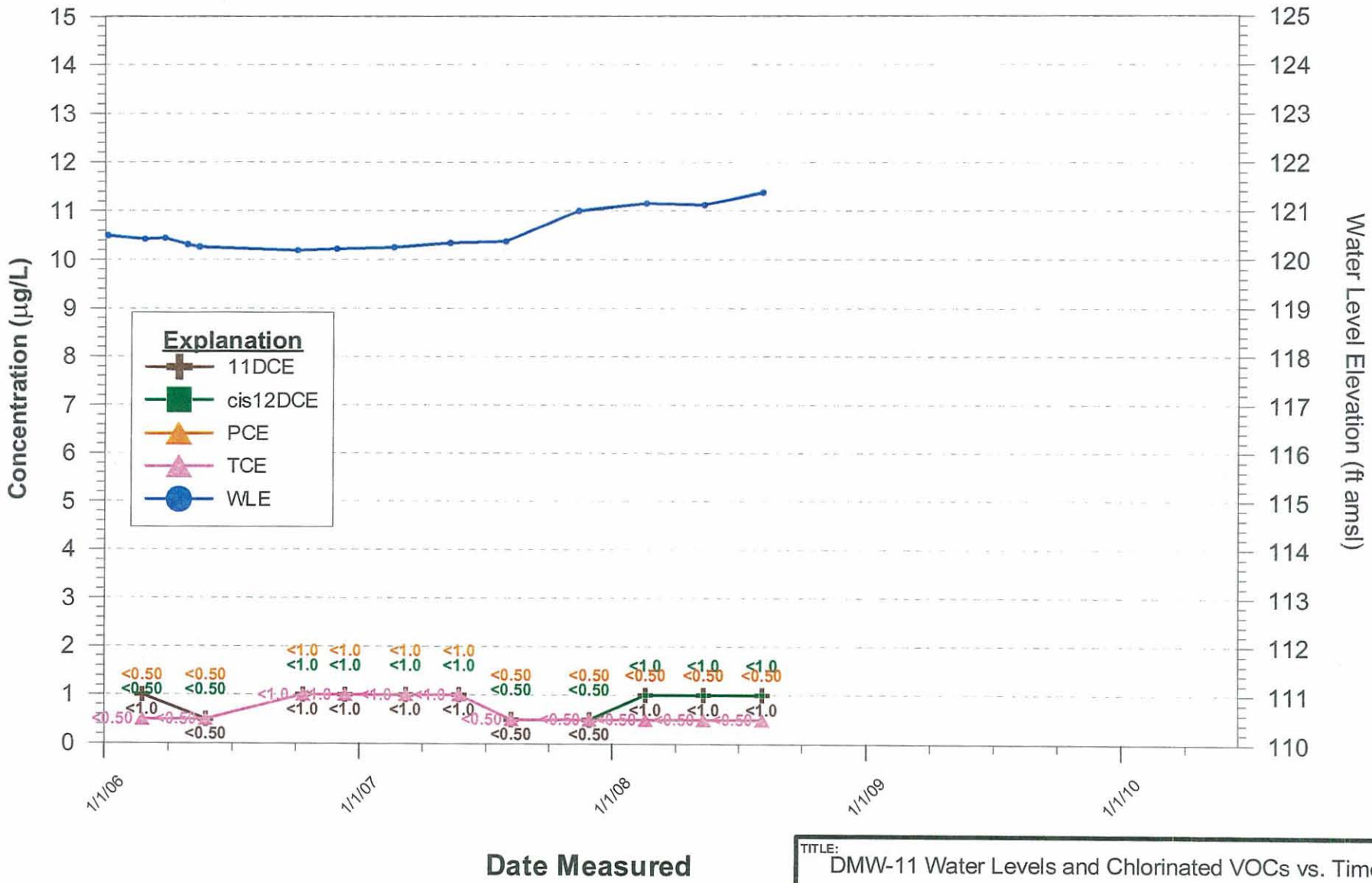
TITLE: DMW-10 Water Levels and Chlorinated VOCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-40



Note: VOCs have not been detected in monitoring well DMW-11A since February 2006.

TITLE: DMW-11 Water Levels and Chlorinated VOCs vs. Time

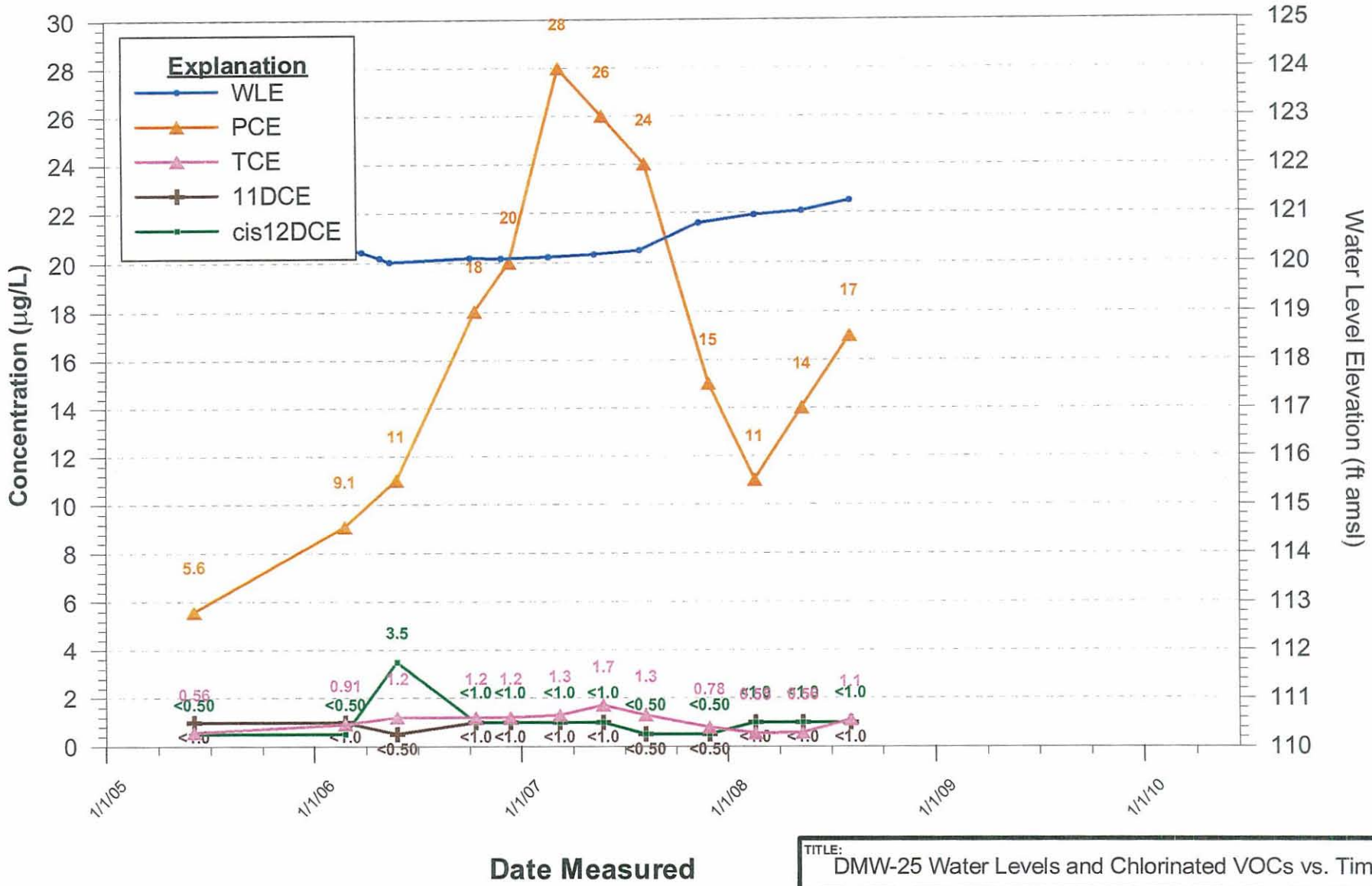
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	MO/JZ
DRAFTED	AG
PROJECT	1303.030
DATE	06/16/10

FIGURE: I-41

TFDEQP000571



TITLE: DMW-25 Water Levels and Chlorinated VOCs vs. Time

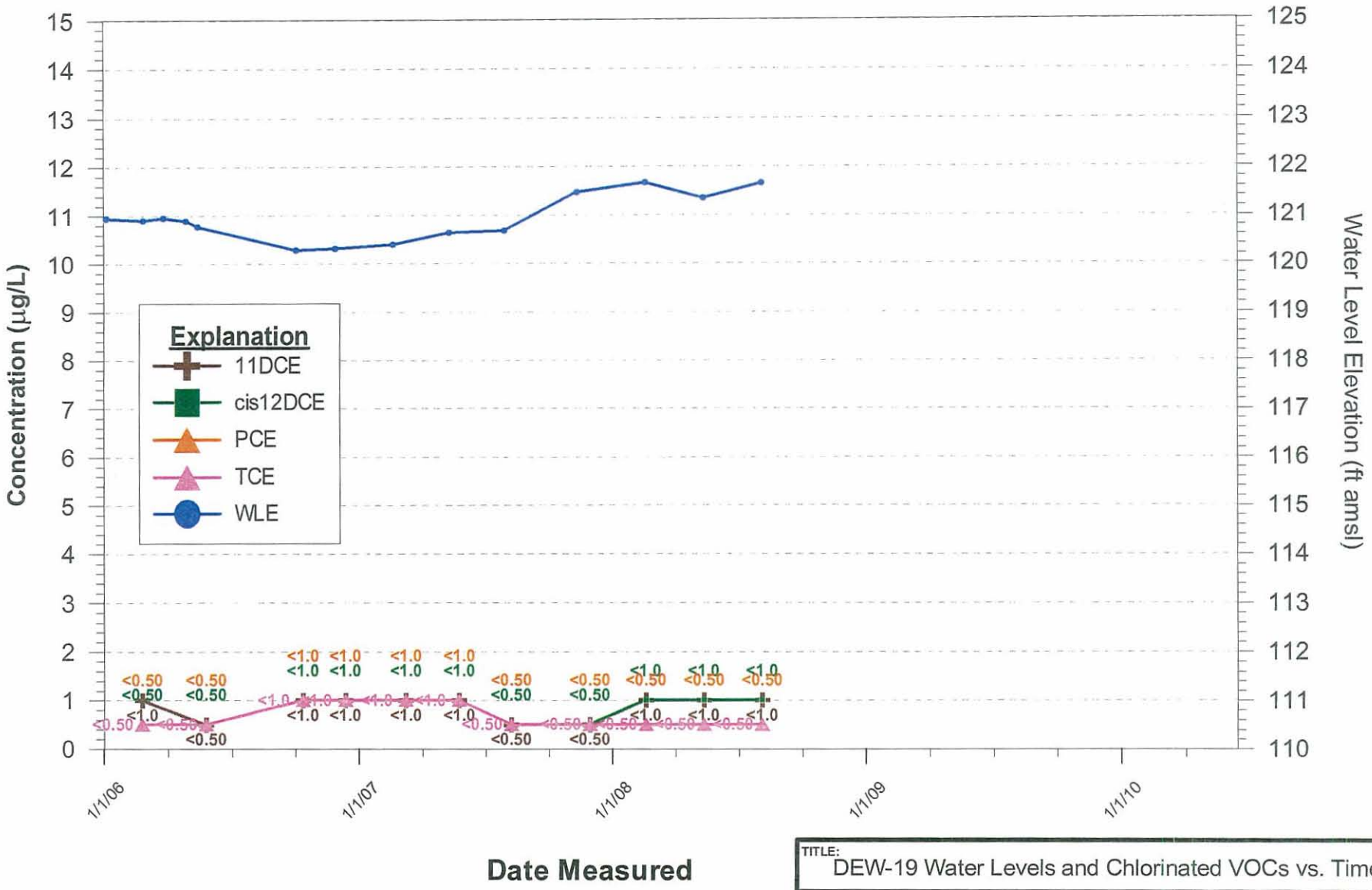
CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/16/10

FIGURE: I-42

TFDEQP000572



Note: VOCs have not been detected in monitoring well DEW-19A since February 2006.

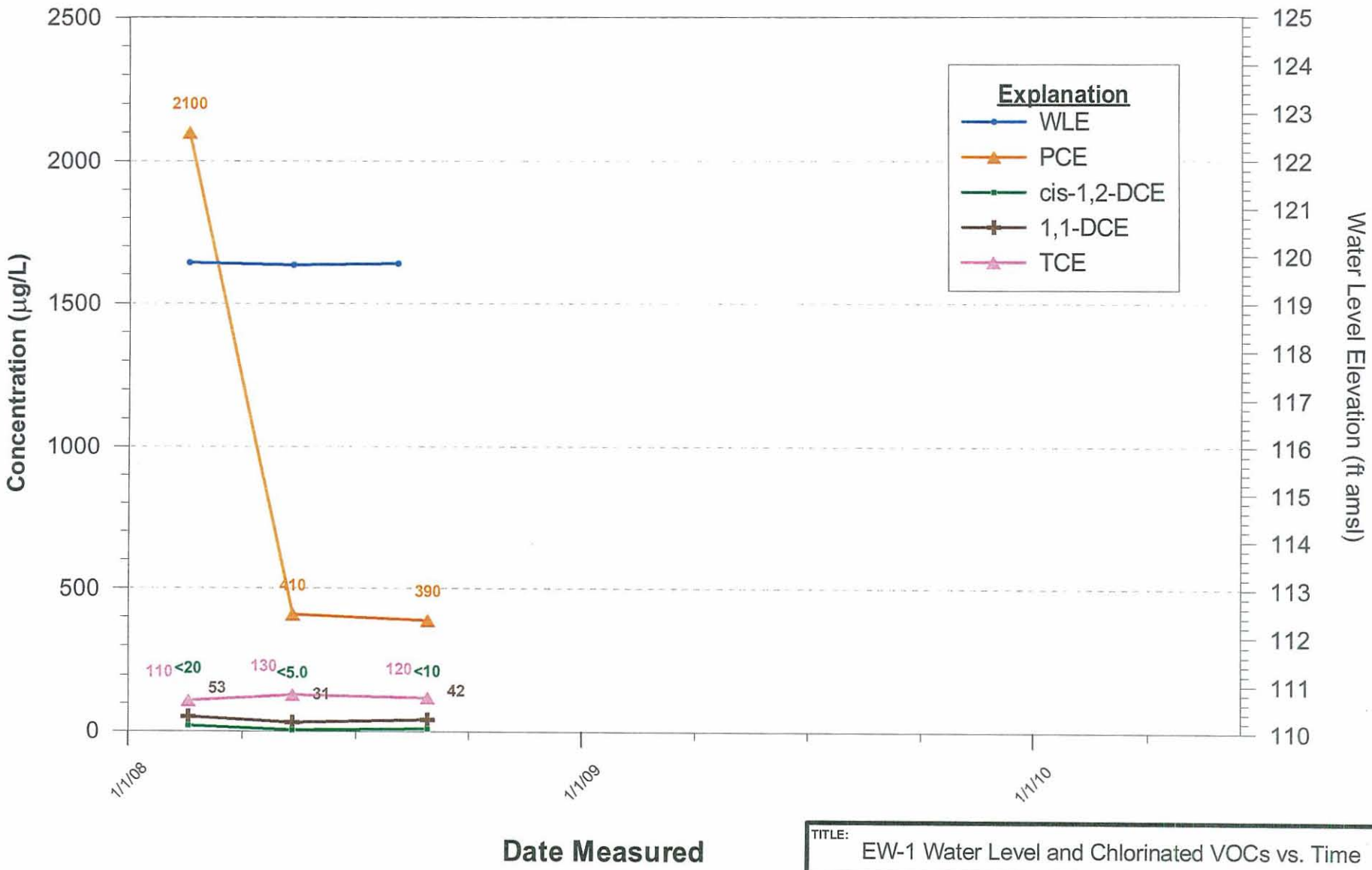
TITLE: DEW-19 Water Levels and Chlorinated VOCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/15/10

FIGURE: I-43



TITLE: EW-1 Water Level and Chlorinated VOCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

GeoTrans, Inc.

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.036
DATE	06/15/10

FIGURE: I-44

TFDEQP000574

DISTRIBUTION

Soil Vapor Investigation and Well Installation and Sampling
September 2008 through April 2010
20th and Factor WQARF Site
Yuma, Arizona

Copy _____

Copies 1-2: Ms. Tina LePage, ADEQ
Copies 3-4: File

Quality Control Reviewer:

Jasenka Zbozinek, Ph.D.
Operations Manager, Principal Engineer

GeoTrans, Inc.
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
(602) 682-3320
(602) 682-3318 (fax)

GeoTrans, Inc.

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

W-10100 3.1

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
INTEROFFICE MEMORANDUM

RIHU02,119 File Index#:W-10100 3.1

DATE: April 8, 2002

TO: 20th and Factor WQARF Site File

THRU: Philip McNeely, Manager
Superfund Programs Section

FROM: Scott Goodwin, Hydrologist IV
Superfund Programs Section

SUBJECT: Rationale for an Early Response Action at the 20th Street and Factor WQARF Site

---

An early response action (ERA) under the Water Quality Assurance Revolving Fund (WQARF) Program is a remedial action initiated under Arizona Administrative Code (AAC) R18-16-405 prior to selection of a remedy at a site under AAC R18-16-410 and is necessary to:

1. Address current risk to public health, welfare and the environment;
2. Protect or provide a supply of water;
3. Address sources of contamination; or
4. Control or contain contamination where such actions are expected to reduce the scope or cost of the remedy needed at the site.

The purpose of this memorandum is to provide a written rationale to explain how the ERA will address the current risk to the public health, welfare and environment at the site; identify the information used to select the ERA; how that information was considered; and explain how the selected actions were chosen.

Site Background

From 1966 to 1995, Houston Photo Products (HPP) and Houston International, Limited (HIL) were engaged in two operations at the site. HPP/HIL operated a motion picture laboratory under contract with the Yuma Proving Ground as well as a manufacturing facility for the manufacture of photographic film and paper processing equipment for the photo industry. The chemicals that have been used at the facility include standard photographic chemicals, tetrachloroethylene (PCE), and small amounts of various other chemicals. PCE was used for in a heated vapor degreaser for parts cleaning until 1991. HIL moved its motion picture laboratory operation offsite in 1995. The facility is currently occupied by Houston Fearless International (a manufacturer of film processing equipment), a dance studio, a furniture warehouse and personal storage by Mr. Houston. Currently, these operations do not generate wastewater.

The HPP/HIL motion picture laboratory utilized varying amounts of photographic chemicals and water. The wastewater from this process was treated to recover silver. The treated wastewater was disposed in the following three ways: 1) Some of the wastewater was discharged to a 1,000-gallon, concrete, underground sump. When this sump was full, it was discharged to the ground east of the building. Wastewater then flowed onto the adjacent property to the east of the site. 2) Wastewater was used to water plants in landscaped areas in front of the building. 3) Wastewater was discharged to the ground on the southwest portion of the property by a sprinkler system and later to a septic tank in the same area.

In 1978, an employee drained the approximately 15-20 gallons of the "bottom" of the 50 gallon heated vapor degreaser into the wastewater sump. HPP reported a leaking tank to the Arizona Department of Environmental Quality (ADEQ) Underground Storage Tanks (UST) Section in 1990. The ADEQ UST Section referred the facility to the ADEQ Water Pollution Compliance Unit. HIL conducted soil and groundwater investigations under the oversight of the Water Pollution Compliance Unit. In 1993, the ADEQ Hazardous Waste Section (HWS) inspected the facility, and, in 1994, ADEQ HWS issued a compliance order to HIL. PCE was detected in the soil and groundwater during these investigations. PCE was detected in the groundwater over the aquifer water quality standard (AWQS) of 5 micrograms per liter (ug/l). PCE was detected in soils but at concentrations below Arizona Soil Remediation Levels (SRLs). In 1998, the ADEQ Hazardous Waste Section referred the facility to the ADEQ Superfund Programs Section, Site Assessment Unit (SAU).

This site was evaluated for listing on the WQARF Registry by ADEQ staff using the eligibility & evaluation (E&E) form. The site was placed on the WQARF Registry in March 2000 with a score of 31 out of a possible 120.

The 20th Street and Factor Avenue WQARF site is located approximately ½ mile south of 16th Street (U. S. Highway 95) and approximately ¾ mile east of 4th Avenue (Interstate 8 Business Loop) in Yuma, Arizona. The site boundary is a northwest-trending oval extending approximately 1,000 feet from the Houston International facility at 655 E. 20th Street on the southeast to 19th Street and Rail Avenue on the northwest.

The Superfund Program Section (SPS) began site characterization sampling in June 2001. Sampling of the wastewater disposal system and groundwater monitoring wells at the site indicate that in addition to PCE, cyanide is also a contaminant of concern. Potassium ferricyanide and sodium thiocyanate were used in the film development process and discharged on the property. Analyses of wastewater in the sump and septic systems indicate cyanide concentrations as high as 20 milligrams per liter (mg/l) are present in the wastewater disposal system and appear to be continuing sources of groundwater contamination. Cyanide is present above the AWQS of 0.2 mg/l in monitor wells at the site. The concentrations of cyanide and PCE in the wastewater disposal systems are included as Table 1.

Only the wastewater sump could be easily accessed to evaluate the presence of hydrogen cyanide gas. Hydrogen cyanide was present at a concentration of 0.03 milligrams per cubic meter (mg/m^3).

TABLE 1
Waste Characterization 20th and Factor WQARF site

Wastewater Disposal System	Est. Size (gallons)	PCE Concentration Sludge (mg/kg)	PCE Concentration Water (ug/l)	Total Cyanide Concentrations Sludge (mg/kg)	Total Cyanide Concentrations Water (mg/l)
WDS #1 (Sump)	1,000 gal	50	None present	2,600	None present
WDS #2 (Septic)	500 gal	Not sampled	15	Not sampled	0.12
WDS #3 (Septic)	unknown	Not sampled	<2.5	Not sampled	<0.05
WDS #4 (Septic)	2,500 gal	0.26	6.4	<2.5	20
WDS #5 (Septic)	2,500	<0.043	<0.5	490	<0.05

Sampling to characterize the extent of cyanide contamination in the soils was completed in October 2001. The highest concentration, 2,000 milligrams per kilogram (mg/kg), of total cyanide was detected in the disposal pond located on the east side of the property. Cyanide contamination is also the deepest in this area, extending to a depth of seven feet below ground surface. Due to overflow from this pond, cyanide contamination extends approximately 175 feet east of the property. Cyanide contamination extends to depth of five feet in this area east of the property. In the southwest portion of the property, cyanide contamination extends to a depth of approximately 2 to 3 feet. Highest total cyanide concentrations in the surface samples collected from the wastewater discharge areas range from 400 to 800 mg/kg.

Analytical methods for cyanides are capable of detecting two types of cyanide compounds. Total cyanide analysis is a measurement of all cyanides including iron cyanide complexes. Free cyanide is a measurement of the simpler cyanides such as sodium cyanide, potassium cyanide and hydrogen cyanide. Analyses of surface samples collected from the areas where cyanide compounds were discharged to the surface also contain one to 76 mg/kg free cyanide. This indicates the potassium ferricyanide and sodium thiocyanate discharged to the surface are degrading to simpler cyanide compounds, probably including hydrogen cyanide. Soil samples collected at depth from the site do not show this analytical evidence of degrading.

In February 2002, to determine if the cyanide compounds were degrading to hydrogen cyanide in the subsurface, four subsurface gas samples were collected from a depth of two to three feet in the areas where cyanide compounds were discharged to the ground surface. No hydrogen cyanide was detected in these samples.

Because there are no established SRLs for potassium ferricyanide and sodium thiocyanate, ADEQ requested a recommendation from the Arizona Department of Health Services (ADHS) for the appropriate SRL for the site. The recommendation from ADHS indicated that the established SRL for sodium cyanide of 2,600 mg/kg residential and 27,000 mg/kg non-residential would be protective of human health if the cyanide group remains bound within the thiocyanate and ferricyanide molecules.

The recommendation goes on to say the problem with applying the sodium cyanide standard to ferricyanide and thiocyanate is that these complexes can form hydrogen cyanide and other cyanide compounds when in solution, even in an environment with a near neutral pH. In addition, ferricyanide and thiocyanate can convert to hydrogen cyanide when exposed to sunlight or ultraviolet radiation.

The recommendation concludes that the SRL for hydrogen cyanide of 11 mg/kg residential or 35 mg/kg non-residential is the most appropriate standard for application at the site if there are no institutional or engineering controls to ensure the residual cyanide stays bound in the thiocyanate and ferricyanide molecules.

Early Response Action Goal

Information published by The Agency for Toxic Substances and Disease Registry (ATSDR) indicates that exposure to cyanide may occur by breathing air, drinking water, touching soil or eating foods containing cyanide. ATSDR also indicates that in air, cyanide is mainly found as gaseous hydrogen cyanide but a small amount is present as fine dust particles.

ATSDR indicated that skin contact with cyanide can produce irritation and sores. Exposure to lower levels of cyanide for a long time may result in breathing difficulties, heart pains, vomiting, blood changes, headaches and enlargement of the thyroid gland. Exposure to high levels of cyanide in the air for a short time harms the brain and heart and may cause coma and death.

The SPS erected temporary fencing around the areas with cyanide contaminated soils in October, 2001. Prior to this time, workers at the furniture warehouse were storing roll-off containers for trash directly on the cyanide contaminated soils. Property owners adjacent to the site were ready to develop their properties and workers at these locations would be exposed directly to the cyanide contaminated soils. Dust blowing from areas of cyanide contaminated soils may expose occupants at the site or properties adjacent to the site to cyanide contaminated soils.

ADEQ determined that a public health hazard may exist when direct contact occurs with the soils at the site. ADEQ determined that action should be taken to prevent exposure to the surface soils at the site. ADEQ also determined that PCE and cyanide contamination in the sumps and septic systems were continuing sources of groundwater contamination and should be removed.

Selection of the Early Response Action

Paving over the surficial soils at the site would not provide an engineering control to ensure the residual cyanide stays bound in the thiocyanate and ferricyanide molecules. Analytical evidence indicates the surficial soils are already degrading to simpler cyanide compounds.

No technology is available to quickly reduce the concentration of the cyanide contaminated soils, wastewater and sludge in place. The SPS evaluated the cost to removal all of the cyanide contaminated soils as well as the PCE and cyanide contaminated wastewater and sludge. These costs were found to be prohibitive for an ERA.

The SPS concluded that removal of the PCE and cyanide wastewater and sludge as well as the cyanide contaminated surface soils would not increase the scope or cost of possible remedies for the site.

Disposal options for the cyanide contaminated waste include disposal in an approved landfill or waste incineration. Due to the estimated volume of soil to be removed, disposal in an approved landfill was the preferred alternative. The wastewater and sludge contains free liquids and cannot be sent to a landfill. The liquid wastes, determined to be hazardous, will be incinerated.

Based on the above information, ADEQ determined the most cost effective approach for an ERA at the site would be:

1) Excavate and disposal of one foot of surface contaminated soils where these cyanide compounds were discharged and show evidence of degrading to simpler cyanide compounds, probably including hydrogen cyanide. A one foot cap of aggregate base coarse material will be placed over remaining cyanide contaminated soils in these areas.

The removal of the surface contaminated soils at the site will address a current risk to the public health by preventing direct exposure to these soils. The installation of one foot of aggregate base coarse material will provide a stable cap to prevent direct exposure to the contaminated soils remaining at the site.

The non-residential SRL, for hydrogen cyanide, 35 mg/kg, will be used as the clean-up level for soils on the site. The SPS selected the residential SRL for hydrogen cyanide, 11 mg/kg, for the properties adjacent to the site to try to prevent environmental use restrictions for property owners not responsible for the contamination.

2) The removal of unused sump and unused septic system and the cleaning of two other septic systems still in use at the property.

The removal of the PCE and cyanide contaminated wastewater and sludge from the wastewater disposal systems will address sources of contamination by removing the remaining source material and reduce continuing sources of groundwater contamination at the site. In addition, hydrogen cyanide has been measured in the one wastewater disposal system that can be easily accessed. It is possible hydrogen cyanide vapors could migrate into the surrounding air or back into the occupied building via wastewater piping from this and other wastewater disposal systems at the site. The removal of the cyanide contaminated wastewater and sludge from the wastewater disposal systems will also address a current risk to the public health by eliminating this potential exposure to hydrogen cyanide.

The planned actions are consistent with A.R.S. 49-282.06(A) which states a remedial action shall:
1) assure the protection of public health and welfare and the environment;
2) to the extent practicable, provide for the control, management or cleanup of the hazardous substances in order to allow the maximum beneficial use of the waters of the state; and
3) be reasonable, necessary, cost-effective and technically feasible.

W-10100 3.1

20th & Factor
Rationale for Early Response Actions
To Meet Requirements of Draft Remedy Rule, A.A.C. R18-16-405(C)

An early response action (ERA) is proposed for the 20th and Factor Water Quality Revolving Fund (WQARF) Registry Site (Site) which is located in Yuma, Arizona. Tetrachloroethene (PCE) was detected in onsite groundwater monitoring wells at levels as high as 20,000 µg/L by the Hazardous Waste Section in 1992. Due to the high detections of PCE, it is probable that PCE is migrating vertically through the extremely permeable aquifer. If left unchecked in its downward migration, the cost of remedial action will increase with time. The focus of the ERA will be to characterize and mitigate the contaminant source evidenced by the previous groundwater sample results. This approach is consistent with the proposed requirements in Arizona Administrative Code (A.A.C.) R18-16-405(A)(1).

To the extent practicable, the ERA will attempt to provide for the management, control, and/or removal of the hazardous substances identified as contaminant sources in soil and/or groundwater at the Site. A reasonable, necessary, cost-effective and technically feasible approach will be selected for the Site. As a result, this action will promote the protection of public health, welfare and the environment by limiting a contaminant source from continuing to contaminate a groundwater resource. This is consistent with Arizona Revised Statute (A.R.S.) 49-282.06 (A) requirements. If the contaminant source is successfully removed, it is likely that PCE levels in groundwater immediately downgradient from the source will decrease, which will presumably reduce the scope and cost of the final remedy for the site.

Limited information currently exists to determine the lateral and vertical extent of the source in either soil or groundwater. Thus, the most appropriate and technically feasible technology necessary to implement the response action cannot be determined without further, limited investigation. Therefore, to satisfy the A.A.C. R18-16-405(B) requirements, a focused investigation must be conducted to adequately characterize the contaminant source. The focused investigation, which will be conducted as part of the ERA, will be limited to the areas of soil and groundwater located within the facility property boundaries that are associated with known contamination and/or suspected contaminant release locations. The goal of the limited investigation will be to adequately characterize the contaminant source, and to provide design data necessary for implementation of the ERA remedy.

Although a Potential Responsible Party (PRP) search has not yet been conducted, there is no current information to suggest that a viable party is available to conduct this work. The party operating at the suspected source area has been recently approved for a Qualified Business Settlement (QBS). Thus, it appears a WQARF-lead ERA is required.

PRELIMINARY ASSESSMENT QUESTIONNAIRE
COMPANY NAME: HOUSTON INTERNATIONAL LTD
APRIL 6, 1994

* ***If the spaces provided for answering the questions is not adequate, you may attach additional sheets as needed. If a question does not pertain to your facility, please indicate this with "N/A".***

1. Company Name HOUSTON INTERNATIONAL, LTD.
   Company Representative/contact H. W. Houston, Jr.
   Street Address 655 E. 20th Street
   City, Zip code Yuma, AZ 85365-2414
   Phone Number (602) 782-3677
   Property Parcel Number 109-64-033 4
   Facility Size (in acres) 3.6 Acres
   Standard Industrial Code 3861 No. of Employees 29

2. *Business* Ownership History:

   a) Give name of current owner and date acquired.

      HOUSTON INTERNATIONAL, LTD.
      Acquired 1965.

   b) Give names of previous owners and dates of acquisition.

   c) Provide a copy of your annual report/corporation commission report.

3. *Property* Ownership History:

   a) Give name of current owner, owner's address and phone number, and date of acquisition.

      HOUSTON INTERNATIONAL, LTD.
      655 E. 20th Street, Yuma, AZ 85365-2414
      (602) 782-3677 Acquired 1965

   b) Give names of previous owners and dates of acquisition.

      INDUSTRIAL PROPERTIES, INC.
      Phoenix, AZ

      Acquired 1965.

4. How long have you been in operation at your current location?

   January 1966.

TFDEQP000584

5. Has your company been located at any other addresses within Arizona? If yes, please list.

6. Describe the nature and purpose of your business.

Manufacturing.
Photo Lab

7. Describe processes using chemicals at your facility, including amounts used and resulting waste products.

a) Manufacturing process(es):

Developing Film - Photo Chemicals - Average 750 Gallons per Month.
Cleaning Stainless Steel-Amway Industroclean (100-150 Gal per Year)

b) Cleaning process(es):

Dipping Amway Industroclean
M.E.K. - Wiping down Stainless Parts

c) Maintenance or repair process(es):

N/A

8. If you have used different chemicals in the past, other than those described in Question #7, list the chemical name, quantity, and the time period in which they were used.

PCE - 1975-1990 50-100 Gallons per year in Evaporative Degreaser

9. Describe how chemicals are/were stored on-site. (Type of containers, locations, containment features, inside or outside, on soil or pavement etc.)

Drums - Outside on Pavement
Inside - Concrete

10. Provide an itemized list of the names and quantities of chemicals stored at your facility and indicate whether you have a Material Safety Data Sheet (MSDS) available. ***(please use attached sheet)***

MSDS Sheets on File with ADEQ, Phoenix.
Steve Camp
Hazardous Waste Compliance Officer

TFDEQP000585

11. a) What methods are currently being used to dispose of wastes? Include name of waste, amount, and method.
Some of the Photo Chemicals are recycled. Those not recycled are mixed with waste water and pumped onto bare ground or used to water plants around building.
b) If waste production and disposal has changed, list all previous wastes, amounts and methods of disposal.

12. Has your business ever: generated [X], transported [ ], stored [ ], or disposed [X] of hazardous materials, mixtures containing hazardous materials, or hazardous wastes? (Please check all that apply.

13. Has your facility arranged to have hazardous materials transported off site for disposal, recycling, or sale? Yes [X] No [ ], If yes, what year did you start 1980
Transporter Powers & Hunt Destination San Diego, CA
Currently - Commodity Resource & Environmental, Inc., Mojave, CA

14. Has the company ever had a chemical, solvent and/or hazardous substance spill, leak or release at this location?
Yes [X] No [ ], If yes, please provide the following:

a) Chemical name of substance spilled PCE
b) Quantity spilled 15-20 Gallons
c) Date of spill 1978
d) Type of cleanup, if applicable None
e) Regulatory agency involved None

15. Please indicate if your business has any of the following.
[X] Industrial Wastewater Discharge Permit # Applied For
[ ] Underground Storage Tank Notification to ADEQ
[X] U.S. Environmental Protection Agency Generator Identification # AZD983480963 **
[ ] Air Pollution Control Permit # _____
[ ] Groundwater Quality Protection Permit # _____

** Conditionally exempt Small Quantity Generator

16. Do you now or have you ever used any of the following? If you answer yes to using any of the following chemicals, list which years they were used.

_____ a) Trichloroethylene (TCE)
_____ b) Tetrachloroethylene (PCE)
_____ c) 1,1-dichloroethene (1,1-DCE)
_____ d) 1,1,1-trichloroethane (1,1,1-TCA)
_____ e) 1,1-dichloroethane (1,1-DCA)
1975-1990 f) Perchloroethylene

17. Has your facility been on the sewer system (including domestic waste) since the beginning of occupancy?
Yes [ ] No [X] If no, when was your facility connected to the sewer system, and how was wastewater and waste disposed of prior to connection?

No Sewer available in this Area.
Waste Water used to water plants/shrubs. Excess run on vacant ground to evaporate.

18. If your facility is currently on the sewer system, are there any pretreatment requirements? Yes [ ] No [ ] If yes, please specify.

N/A

19. If you are currently regulated by any environmental agency, (city, county, state, federal) list the name of the agency(s).

ADEQ

20. Which of the following are or were located within the boundaries of your property? (Please check all that apply.)

* Please estimate the amount and type of material disposed of to each of the checked structures; attach any design or construction data you have for the structures indicated. Also please attach copies of analyses of any solid or liquid samples from these structures on your property. In addition, any information you may have regarding structures such as these that may be located on property adjacent to your property would be appreciated.

[ ] Wells _____
If yes, provide State Well ID or registration #
[ ] Drywells (Storm Drains) _____
[ ] Surface Impoundments (Evaporation Ponds) _____
[ ] Pits _____
[X] Septic tanks 2 - 500 Gallon (Building Rest Rooms)
[X] Leach fields 2 - For Septic Tanks
[X] Sumps 1
[ ] Underground Storage Tanks (UST's) _____
[ ] Above ground storage tanks (including drums) _____
[ ] Drainage ditches running off the property _____
[ ] Landfills _____

21. Have you ever had an environmental assessment, environmental audit, or a due diligence search performed on this property?

a) If yes, list who performed the audit and when, and attach copies.

Foree & Vann

b) To your knowledge, was there any physical testing performed on the property (i.e. soil gas sampling, soil sampling, groundwater sampling)?

Soil Gas, Soil, Ground Water

22. Do you have any knowledge of any environmental audit or due diligence search that was performed on the property prior to your occupancy?

NO

a) If yes, who performed the audit, and when?

b) To your knowledge, was there any physical testing performed on the property?

NO

23. To your knowledge, does data exist from physical testing performed at this location? Please include sample reports/results.

24. Attach a diagram of your property. Include property boundaries and size, the location of building structures, and any facilities discussed in Question # 20. Also include the location of chemical storage areas.

See Foree & Vann Report

Signature _____

Date 5/17/94

DOCKET 595 PAGE 792

STATE OF ARIZONA } ss. I hereby certify that the within instrument was filed and recorded
COUNTY OF YUMA }

in DOCKET 595, p. 792 and indexed in DEEDS

1970 JAN 19 PM 4 29

at the request of Citizens Title

Witness my hand and official seal.

CARA N. BETTS County Recorder.

By Deputy Recorder

Fee No. 820

Compared

Photostated

Fee:

When recorded, mail to:
Houston Photo Products Inc
655 E 2nd St.
Yuma, Arizona

Warranty Deed

For the consideration of Ten Dollars, and other valuable considerations, I or we,

INDUSTRIAL PROPERTIES, INC.,
an Arizona corporation

do hereby convey to

HOUSTON PHOTO PRODUCTS, INC.,
an Arizona corporation

the following real property situated in Yuma County, Arizona:

Part of Section Thirty-four (34), Township Eight (8) South, Range Twenty-three (23) West, described as follows:

Commencing at the Northwest corner of the Southwest quarter of said Section 34, thence South 89°52'35" East, a distance of 1,458 feet; thence South 0°07'25" West, a distance of 30 feet to the true point of beginning; thence South 89°52'35" East, a distance of 25 feet; thence South 0°07'25" West a distance of 300 feet; thence North 89°52'35" West, a distance of 25 feet; thence North 0°07'25" East, a distance of 300 feet to the true point of beginning.

SUBJECT TO: All Taxes, Assessments, Reservations in Patents and all Easements, Right of Way, Encumbrances, Covenants, Conditions and Restrictions as may appear of record.

And I or we do warrant the title against all persons whomsoever, subject to the matters above set forth.

Dated this 6th day of February 19 69

INDUSTRIAL PROPERTIES, INC.,
an Arizona corporation

BY:

STATE OF)

This instrument was acknowledged before me

19 by

STATE OF ARIZONA }
} ss.
COUNTY OF YUMA }

On this the day of 1969, before me the undersigned, a Notary Public in and for the County of ~~Yuma~~ State of Arizona, personally appeared James W. Goudriaan who acknowledged himself to be the Vice President of INDUSTRIAL PROPERTIES, INC., an Arizona corporation, and that he as such officer being authorized so to do, executed the foregoing instrument for the purposes therein contained by his signing the name of the corporation by himself as President.

Notary Public

My commission expires:

Notary Public

EXHIBIT

TABBIES

Title Trust of Yuma

will expire

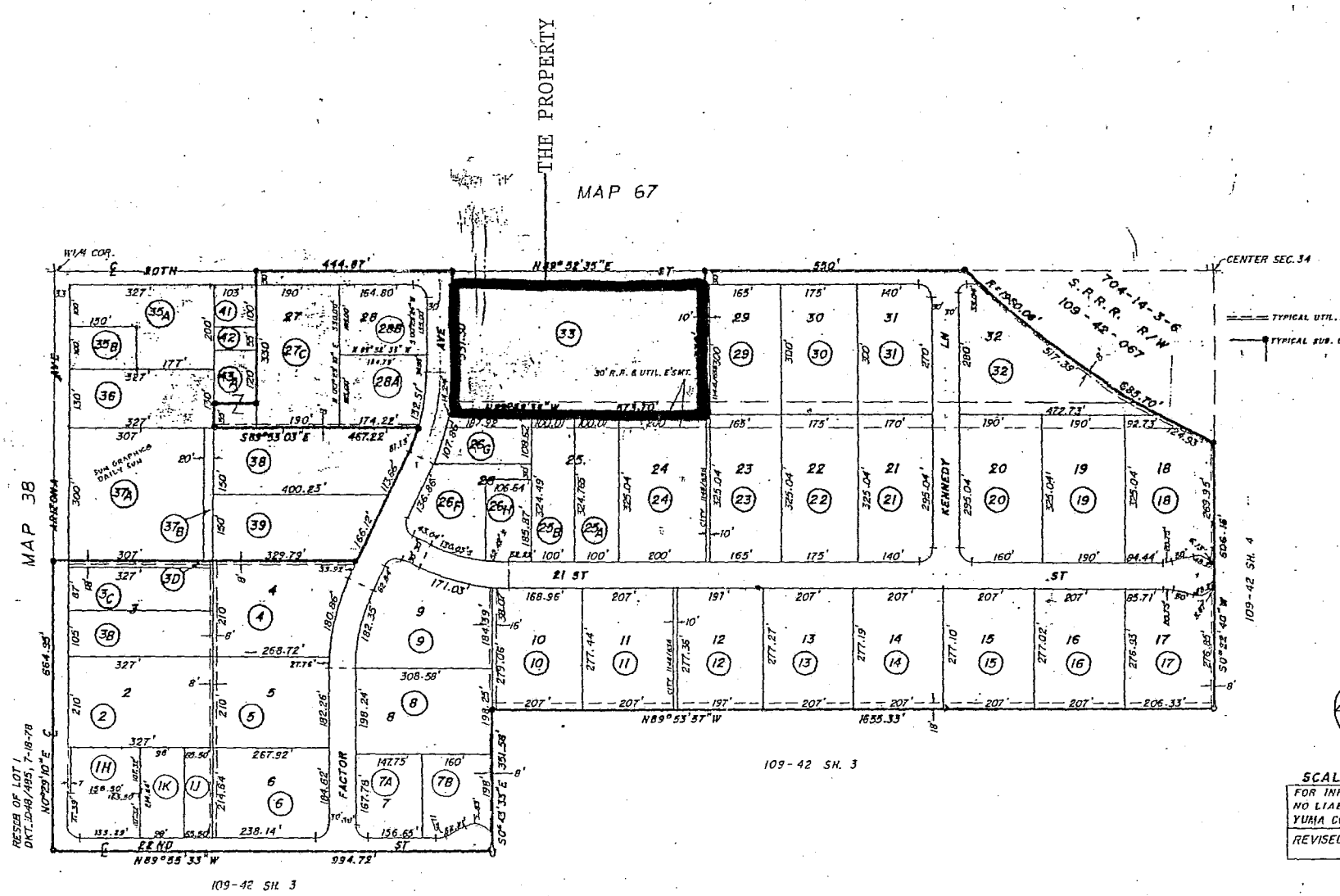
TFDEQP000589

TOWNSHIP 8S RANGE 23W
SECTION 34, PT. N1/2 SW1/2

BOOK 109
MAP 64

SOUTH PARK INDUSTRIAL DISTRICT NO. 2

RECORDED: BOOK OF PLATS 7, PAGE 30, DATE: 5-19-75, RESTRICTIONS: DOCKET 859/520



TFDEQP000590

W-10100 1.6.1

ENVIRONMENTAL PROPERTY EVALUATION
HOUSTON INTERNATIONAL LTD.
YUMA, ARIZONA

WT JOB NO. 7110K083

4/12/90

WESTERN TECHNOLOGIES INC.
The Quality People

ENVIRONMENTAL PROPERTY EVALUATION
HOUSTON INTERNATIONAL LTD.
YUMA, ARIZONA

WT JOB NO. 7110K083

4/12/90

WESTERN TECHNOLOGIES INC.
The Quality People

ARIZONA

Phoenix
3737 East Broadway Road
P.O. Box 21387
Phoenix, Arizona 85036
(602) 437-3737

Mesa
952 East Baseline Road, No. 104
Mesa, Arizona 85204
(602) 926-2113

Sun City
17200 North Dysart Road, No. 13
P.O. Box 2431
Sun City, Arizona 85372
(602) 975-2154

Flagstaff
2400 East Huntington Drive
Flagstaff, Arizona 86004
(602) 774-8708

Lakeside
Route 1, Box 1030
Lakeside, Arizona 85929
(602) 368-5568

Tucson
3480 South Dodge Boulevard
Tucson, Arizona 85713
(602) 748-2262

Sierra Vista
1827 South Paseo San Luis
Sierra Vista, Arizona 85635
(602) 458-0364

Laughlin / Bullhead City
1610 Riverview Drive, No. 5
Bullhead City, Arizona 86442
(602) 758-8378

CALIFORNIA

Newport Beach
4400 MacArthur Boulevard
Newport Beach, California 92660
(714) 955-4977

COLORADO

Denver
303 East 17th Avenue, No. 910
Denver, Colorado 80203
(303) 894-8327

NEVADA

Las Vegas
3611 West Tompkins Avenue
Las Vegas, Nevada 89103
(702) 798-8050

NEW MEXICO

Albuquerque
8305 Washington Place, N.E.
Albuquerque, New Mexico 87113
(505) 823-4488

Farmington
400 South Lorena Avenue
Farmington, New Mexico 87401
(505) 327-4966

WESTERN TECHNOLOGIES INC.

P.O. Box 21387 85036
3737 East Broadway Road
Phoenix, Arizona 85040
(602) 437-3737

April 12, 1990

Mr. Herb Houston
Houston International Ltd.
655 East 20th Street
Yuma, Arizona 85366

RE: ENVIRONMENTAL PROPERTY EVALUATION OF THE HOUSTON INTERNATIONAL LTD. PROPERTY LOCATED AT 655 EAST 20TH STREET, YUMA, ARIZONA. WT JOB NO. 7110K083.

Dear Mr. Houston:

Western Technologies Inc. (WT) is pleased to provide this report on the environmental property evaluation conducted for Houston International Ltd. The property is located at 655 East 20th Street, Yuma, Arizona. WT was retained by Mr. Herb Houston of Houston International Ltd. to perform the evaluation.

An on-site property evaluation was conducted on March 21, 1990. The property was visually surveyed to identify and inspect accessible and visible parts of existing structures, solid waste disposal and suspect contaminated areas. Details of the visual survey and a photographic log documenting conditions existing at the time of the survey are presented in this report. It should be noted that, with the exception of asbestos, indoor and outdoor air contaminants were not a part of the survey.

Quantities of chemicals were observed in various locations throughout the property (i.e., drums, bags, boxes, glass, and metal containers). One underground storage tank (UST), used to collect waste from a photograph developing process, is present on the east side of the subject property. Three areas of significant surface staining were observed on the south side of the subject property. This staining appears to be the result of stored chemical spillage and UST waste material being sprayed onto the surface of an unpaved area (see Section 4.1).

Additionally, samples of ceiling texture material from both office buildings were found to contain 2 - 10% Chrysotile asbestos. This asbestos was friable but in good condition.

Houston International Ltd.
Job No. 7110K083

Based on our evaluation of survey information and analytical results, WT recommends that several actions be taken in relation to the subject property. See Section 7.0 of this report for recommendations.

This report concludes WT's services on this project. If you have any questions, or if WT may be of further assistance, please contact us at your earliest convenience at (602) 437-3737.

Sincerely,
WESTERN TECHNOLOGIES INC.

Bruce Campbell
Project Manager
Environmental Engineering Services

Registered Professional Engineer (Mechanical)
CERTIFICATE NO. 12197
WESLEY A. SHONERD
SIGNED
Arizona U. S. A.

Wesley A. Shonerd, P.E.
Technical Manager
Environmental Engineering Services

/mb

Attachments

Copies to: Addressee (3)

TABLE OF CONTENTS

		Page No.
1.0	INTRODUCTION	1
2.0	SITE INFORMATION	1
3.0	RECORDS REVIEW	6
4.0	POTENTIAL SOURCES OF CONTAMINATION	10
5.0	ASBESTOS SURVEY	11
6.0	FINDINGS AND CONCLUSIONS	12
7.0	RECOMMENDATIONS	13
8.0	EPE LIMITATIONS	14

FIGURES

Figure 1 — Vicinity Map
Figure 2 — Site Plan Drawing

APPENDICES

Appendix A — Photographic Log
Appendix B — Asbestos Analytical Results

ENVIRONMENTAL PROPERTY EVALUATION
HOUSTON INTERNATIONAL LTD.
YUMA, ARIZONA

WT JOB NO. 7110K083

1.0 INTRODUCTION

1.1 GENERAL

This report presents the results of an environmental property evaluation conducted for Houston International Ltd. The property is located at 655 East 20th Street, Yuma, Arizona. WT was retained by Mr. Herb Houston of Houston International Ltd. to perform the evaluation and was authorized to proceed on March 21, 1990. This report completes the work under the terms of our agreement as defined in WT's Proposal No. 7110A083.

1.2 PROJECT OBJECTIVE AND SCOPE OF WORK

The objective of this environmental property evaluation was to survey the potential for hazardous or toxic substance contamination from past or present uses of the site or properties within one-quarter mile. Conclusions and recommendations for further actions in this report are subject to modification if subsequent information is developed by WT or others.

The scope of services for the project included the following activities:

- On-site survey
- Asbestos survey
- Off-site touring of properties within a one-quarter mile radius of the site
- Regulatory agency and historical records review
- Written report with conclusions and recommendations.

2.0 SITE INFORMATION

The following site information is based on our on-site observations and records review.

2.1 LOCATION

The subject property is located within Section 34, of Township 8 South, Range 23 West of the Gila and Salt River Baseline and Meridian, Yuma County. The property is located at 655 East 20th Street, Yuma, Arizona (see Figure 1).

The following streets and/or adjacent properties form the boundaries of the subject property:

- North: 20th Street, a recycling firm, and a tile distributor
- South: An automotive body shop and vacant land
- East: Vacant land
- West: Factor Avenue and Arizona Periodicals warehouse.

2.2 SITE CONDITIONS

The subject property is a four building commercial-tract owned and operated since 1966 by Houston International Ltd. as a photographic film developing and photographic machine manufacturing facility. Structures on-site consist of the following:

MAIN OFFICE BUILDING: This building is located on the northeast side of the property and houses the administrative offices, photographic developing process, and photographic machine manufacturing area.

Photographic developing chemicals are stored and mixed in two rooms upstairs (see Photograph Nos. 13 - 15). These chemicals are subsequently piped to the developing machines located on the ground floor (see Photograph No. 16). Chemical waste from these machines is piped into a concrete UST located in the parking lot east of the main office building (see Photograph No. 28). The contents of this UST, when full, are pumped out and sprayed onto the surface of an unpaved area located on the south side of the property (see Photograph No. 29). This activity may have resulted in the improper handling and/or disposal of hazardous wastes.

WEST OFFICE BUILDING: This building is located on the northwest side of the property. The east half of the building is used by the owner as a storage warehouse and touch-up and repair area for small printed circuit boards associated with the photographic machine manufacturing operation (see Photograph No. 31). The west half of the building is leased to Dreamland Bedding and is used as a mattress manufacturing facility.

With the exception of a small amount of adhesive, used by Dreamland Bedding to assemble mattresses, no chemical use was observed in the west office building.

TFDEQP000597

CARPENTER SHOP:

This building, located immediately south of the main office building, is used for manufacturing wood and plastic exterior panels and frames for the photographic machines.

A small amount of adhesive is used in this operation (see Photograph No. 21). Brushes used for spreading the adhesive are cleaned in methyl ethyl ketone (MEK) which is contained in small (1-quart) flameproof cans. According to Mr. Houston, the waste MEK from these cans evaporates.

A hydraulic parts testing and cleaning operation is located inside the east end of this building. The hydraulic testing operation uses ethylene glycol to leak-test parts. One open-top stainless steel tank and one 55-gallon drum of ethylene glycol were observed in this area (see Photograph No. 19). The ethylene glycol is reportedly reused and the only depletion of the supply is the result of a small amount of spillage encountered in the testing process. A small room containing a perchloroethylene (PCE) wash tank, a nitric acid wash tank, and a water rinse tank is also located in this area (see Photograph No. 20). These tanks are drained annually and the wastes from all tanks is spread onto the same soil area as the photographic chemical waste generated in the main office building. This practice could result in the improper handling and/or disposal of hazardous wastes. Drums of unused nitric acid and PCE are stored outside the northeast corner of this building (see Photograph No. 18).

PAINT SHOP:

This building is located immediately west of the carpenters shop and is used for painting photographic machine assemblies and components. Several shelves of paints and thinners were observed inside this building (see Photograph Nos. 22 and 23). Five 55-gallon drums, stored in a wooden drum cradle, were located adjacent to the paint shop (see Photograph No. 24). One drum was marked Chloroethene VG, three drums were marked MEK. The fifth drum contained lacquer thinner. A stain on the asphalt was observed beneath the drum cradle, suggesting leakage from the drums (see Photograph No. 25).

An area of soil staining was observed on the west side of the paint shop and extends to the south side of the paint and carpenter shops. It is not known if this stain is an extension of the stain beneath the drum cradle or the result of runoff from the area where the UST contents are sprayed.

Material Safety Data Sheets (MSDSs) were available for the chemicals used in the photographic developing process. However, no MSDS sheets were available for the chemicals used in the machine manufacturing and painting processes.

During the on-site survey eight pole-mounted Arizona Public Service transformers were observed (see Photograph Nos. 9 and 10). No leakage was observed on or around these transformers.

2.3 TOPOGRAPHY AND DRAINAGE

The subject property is at an elevation of approximately 200 feet above mean sea level and gradually slopes to the east. Stormwater runoff and drainage appears to follow natural area contours to the east. No surface migration from the stained areas mentioned in Section 2.2 was observed. This suggests that the waste application rate to the stained areas was low enough to allow percolation into the soil before surface runoff could occur.

2.4 GEOLOGY AND GROUNDWATER

Geology and hydrogeology of a site can be of use in assessing the likelihood that material from a leak or spill could migrate, and in which direction migration may occur.

2.4.1 Geology

The area surrounding the subject property lies along the southwest edge of the Sonoran Desert region and east of the Salton Trough region of the Basin and Range province.

The Sonoran Desert region east of Yuma is characterized by a number of subparallel mountain ranges trending north-northwest, and separated by broad desert plains underlain by extensive unconsolidated fill deposits. These mountains and basins are thought to have achieved their present day configuration by middle Tertiary time. Subsequent deformation has involved broad scale warping, with minor normal faulting, probably associated with regional subsidence along the southwest margin of the Sonoran Desert region.

By contrast, the Salton Trough region has been tectonically active to present time, especially in the region west of the Yuma area. This activity is associated with the "San Andreas" fault system. Extensive and wide spread subsidence of the Salton Trough region during Cenozoic time has accumulated as much as 20,000 feet of unconsolidated fill (Biehler and others, 1964). Much of this fill to the South of Yuma consists of alluvial and deltaic deposits of the Colorado River.

2.4.2 Groundwater

The groundwater reservoir in the Yuma area is believed to have been formed by a wide variety of dense crystalline rocks of pre-Tertiary age. These rocks comprise the bordering mountain ranges and contain only small quantities of water in open fractures within a few feet of the land surface and possibly to much greater depths in faults and shear zones. This water occurs as isolated perched bodies near the mountains far above the regional groundwater aquifer.

TFDEQP000599

Overlying these crystalline basement rocks are extensive basin fill deposits of Cenozoic age. Overall thickness of these fill deposits probably exceeds 16,000 feet, but only the upper 2,500 feet is composed of fresh-water bearing alluvial deposits. For this reason, the primary groundwater aquifer has been split into three distinct stratigraphic units: 1) the older alluvium; 2) the younger alluvium; and 3) the windblown sand. The areas of most intensive present and most probable future use - the upper part of the reservoir - have been subdivided into three zones, two of which cross stratigraphic boundaries:

- Upper, fine grain zone - consisting of windblown sands and younger alluvium
- Coarse, gravel zone - consisting of basal gravel and older alluvium
- Wedge zone - consisting of coarse gravels

The upper, fine-grain zone is comprised of the younger alluvium, the upper portions of the older alluvium and the relatively minor deposits of windblown sand. Although only minor amounts of groundwater is produced from these fine-grain deposits, this zone is hydrologically significant because most of the groundwater recharge within the Yuma area takes place through it. This zone generally ranges in thickness from about 70 - 240 feet, averaging about 100 feet beneath the valley and 170 - 180 feet beneath the Yuma Mesa. Sand and silt are the most abundant materials, although deposits of silty sand, clay, and sandy gravel are extensive in places. The groundwater in the area of the subject property lies approximately 80 feet below the existing land surface.

The coarse-gravel zone is comprised of the upper portion of the older alluvium and locally encompasses the basal portions of the younger alluvium. This zone is considered the most permeable of the three zones, and is recognized as the principal groundwater aquifer in the Yuma area. The coarse-gravel zone averages about 100 feet in thickness beneath the valley and dips gently to the southwest. A complex group of interrelated gravel bodies of varying ages comprises this intermediate zone.

The wedge or basal zone constitutes the major portion of the water-bearing deposits of Pliocene to Holocene age beneath the river valley and Yuma Mesa. This zone extends to a depth of 2,500 feet to the south of Yuma and "wedged" out beneath the coarse-gravel deposit to the northeast and southwest. The upper portions of the wedge zone are comprised of coarse gravel deposits with interbedded lens of sandy silts and/or sandy clays.

TFDEQP000600

3.0 RECORDS REVIEW

During the literature search, records were reviewed at or obtained from the following agencies and companies.

- Arizona Department of Environmental Quality
- Arizona Department of Water Resources
- U. S. Environmental Protection Agency, Region 9
- Arizona Public Service
- Landis Aerial Survey/U.S. Geological Survey

The purpose of the review was to identify regulatory violations involving hazardous or toxic materials at the site or surrounding properties, and to assess the potential for hazardous materials from previous on-site and nearby activities. The results of the review are discussed in the following sections.

3.1 ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY (ADEQ)

ADEQ's Hazardous Waste Compliance Unit has listed facilities that have undergone a Resource Conservation and Recovery Act (RCRA) inspection or compliance action for potential violations of the Arizona State Hazardous Waste Management Act.

There are no past or current hazardous waste compliance actions located on or within a one-quarter mile radius of the subject property.

The ADEQ 1988-1989 Annual Water Quality Assurance Revolving Fund (WQARF) Project Priority list was reviewed to determine if the subject property lies within the boundaries of an existing or proposed WQARF project. The WQARF program is the State of Arizona equivalent to the federal Superfund program (CERCLA).

A review of the project priority list revealed that the subject property does not currently lie within the boundaries of an existing or proposed WQARF study area.

The 1987 Annual Report on Arizona Groundwater Quality Sampling Results & Enforcement Actions, prepared by ADEQ, dated January 1, 1988, was reviewed to determine the groundwater quality beneath the subject property and the study area.

The 1988 Annual Report on Arizona Groundwater Quality Sampling Results & Enforcement Actions, prepared by ADEQ, dated June 30, 1989, was also reviewed to determine the groundwater quality beneath the subject property and within the study area.

These reports did not contain sufficient data to adequately define the groundwater quality beneath or within a one-quarter mile radius of the subject property.

The Arizona Hazardous Waste Treatment Storage and Disposal Facilities list, which is maintained by the ADEQ Hazardous Waste Permits Unit, identifies: those facilities that have obtained either a final or an interim status permit for the treatment, storage, or disposal (TSD) of hazardous wastes and those facilities operating without a permit.

This list did not reveal the presence of any TSD facilities located on or within a one-quarter mile radius of the subject property.

The Arizona CERCLA Information and Data System (ACIDS) is a list maintained by the ADEQ Office of Waste Programs which contain locations subject to environmental contamination investigation by ADEQ. The inclusion of a particular facility on this list does not necessarily mean that the location is contaminated, is causing contamination, or is in violation of state or federal statutes and regulations. This list implies that due to the nature of activities conducted at these locations, the potential for the previously mentioned conditions exist.

Our review of this list did not reveal any facilities located within a one-quarter mile radius of the subject property.

3.2 ARIZONA PUBLIC SERVICE (APS)

Electric power is supplied to the property by Arizona Public Service (APS). During the survey, eight APS pole-mounted transformers were observed on-site (see Photograph Nos. 9 and 10). The transformers appeared to be in good condition and no visible signs of leakage were evident.

In a telephone conversation, Mr. Tom Thompson of APS stated that a survey of company owned transformers was conducted by APS. During the survey, 20,000 APS owned transformers were sampled and analyzed for PCB content. The analytical results indicated less than 1/2 of 1% of the transformers exceeded 500 parts per million (ppm) PCBs.

APS does not utilize an exterior numbering system to identify PCB-contaminated transformers. PCB content of the transformers could not be determined. Therefore, the transformers are assumed to be PCB-contaminated (50 - 500 ppm PCBs).

APS accepts all responsibility for its transformers including maintenance and contaminant remediation of any leaking transformers.

TFDEQP000602

3.3 U.S. ENVIRONMENTAL PROTECTION AGENCY

The RCRA database, maintained by EPA, lists facilities in Arizona that have notified EPA of hazardous waste activity. The notifiers may engage in the generation, transportation, treatment, storage, and/or disposal of hazardous wastes.

Our review of this database found one notifier located within a one-quarter mile radius of the subject property. This notifier is FMC Agrichemical located at 2075 Factor Avenue.

The $1.6 billion federal Superfund was authorized to finance the cleanup of abandoned dump sites throughout the United States. A computer database of abandoned or inactive facilities -- the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) -- has been developed to support CERCLA activities. After a potential site is discovered by the EPA, it is entered into the database and a preliminary site assessment is done. If warranted, a site investigation is performed after which a site can be proposed for remediation and placed on the National Priorities List (NPL).

No abandoned or inactive hazardous dump sites listed in the CERCLIS database are located on or adjacent to the subject property.

3.4 LANDIS AERIAL SURVEY/U.S. GEOLOGICAL SURVEY (USGS)

Aerial photographs from Landis Aerial Survey and topographical maps from the U.S. Geological Survey (USGS) were reviewed to identify past uses and characteristics of the subject property.

The Yuma East Quadrangle topographical map from the USGS, dated 1965 and photorevised in 1979, was reviewed. The 1965 topographic map depicts three buildings on the subject property. The 1979 revision did not depict any significant changes when compared to the 1965 topographical map.

Aerial photographs from Landis Aerial Survey were reviewed. A brief description of each photograph and its corresponding date follows:

1966 - This photograph shows:

- The main office building and paint room are the only structures present at property
- 20th Street unpaved
- Factor Avenue not present
- Surrounding area as native desert.

TFDEQP000603

1970 - This photograph shows:

- West office building under construction on property
- 20th Street paved and Factor Avenue graded
- Carpenter shop present on property
- Dark stained area immediately east of property. This stain appears to originate from the subject property.

1973 - This photograph shows:

- All four buildings complete on subject property
- Dark stained area east of property remains present.

1980 - This photograph shows:

- Structures present to the south of property
- Factor Avenue paved
- Dark stained area to east of property remains present
- No significant change to subject property.

1984 - This photograph shows:

- Stained area to the east of property is significantly smaller than previously noted in the 1970, 1973, and 1980 photographs
- No other significant changes to subject property or surrounding area.

1988 - This photograph shows:

- The stained area shown in prior photographs is not shown in this photograph
- The subject property and surrounding area essentially as it appears today.

Note: The aerial photographs viewed for this report were high-level prints and therefore site-specific detail other than the presence or absence of structures was difficult. The surface staining to the east was quite clear. This suggests that this stain was very large. However, the on-site surface staining mentioned in Section 2.2 of this report was not apparent in the aerial photographs.

TFDEQP000604

4.0 POTENTIAL SOURCES OF CONTAMINATION

4.1 AREAS WITH VISIBLE SURFACE STAINING

During the on-site review the subject property was surveyed for visible signs of surface staining from the intentional or accidental release or disposal of hazardous or toxic materials.

Three areas of surface staining were observed on the subject property. These areas were: a large soil stain on the south side of the subject property where the contents of the on-site UST are sprayed; a section of asphalt under the drum cradle adjacent to the paint shop; and the areas of soil immediately west and south of the paint shop extending east to the south side of the carpenter shop.

4.2 ADEQ UNDERGROUND STORAGE TANK (UST)

The ADEQ Underground Storage Tank (UST) list was reviewed to identify the location and number of any registered USTs within a one-quarter mile radius of the site.

This list identified one registered UST within a one-quarter mile radius of the subject property. This UST is registered to Mesa Beverage Company located at 598 East 20th Street. One UST, located on the subject property, was not found to be registered.

4.2.1 Leaking Underground Storage Tank (LUST)

The ADEQ Leaking Underground Storage Tank (LUST) Incident file was reviewed to determine if any of the registered USTs listed in Section 4.2 were found to be leaking.

A review of this document revealed no leaking USTs within a one-quarter mile radius of the subject property.

4.3 DRYWELLS

The ADEQ Drywell Registration list was reviewed to identify any registered drywells located on the subject property.

This list did not identify any registered drywells located on the subject property. Additionally, during the survey, no drywells were observed on-site.

TFDEQP000605

5.0 ASBESTOS SURVEY

During the on-site tour, a preliminary asbestos survey of the buildings located on the property was performed by a certified asbestos inspector (CAI). The purpose of this preliminary survey was to identify readily visible, suspect asbestos-containing building materials (ACBMs). Prior to the late 1970's, asbestos was a common constituent of a wide variety of materials and products used in building construction. Often asbestos, usually Chrysotile, was specified in the design of commercial and public buildings. Typical interior building materials that often contain asbestos include wallboard, thermal system insulation, acoustical ceilings, and non-ceramic floor coverings.

5.1 OBSERVATIONS

Materials used for the construction of the two office buildings consisted of metal outer walls, fiberglass insulation, and plaster drywall interior walls. The flooring material in the office areas of the facility consisted of carpet and vinyl tile. The ceilings in the offices, were covered with a texture surfacing material. The carpenter and paint shops were constructed of block and were not insulated, and the ceilings were not textured.

The on-site survey and bulk material sampling was completed by WT during the property evaluation. Samples of each type of suspected ACBM were transported to WT's EPA-certified laboratory for analysis of asbestos content and type.

5.2 SUSPECT ACBMs

Six areas of suspect ACBMs were sampled from the office buildings. The samples were secured in plastic containers and marked for identification. The sampling locations were logged and noted on WT chain-of-custody forms. Analytical results are presented below.

Sample ID	Type and Location	Results	Friable/ Non-Friable
HH-1	Ceiling texture material-Main Office	2-5% Chrysotile	Friable
HH-2	Floor tile-Main Office Mastic-Main Office	30% Chrysotile 15% Chrysotile	Non-Friable Non-Friable
HH-3	Ceiling texture material-West Office	10% Chrysotile	Friable
HH-4	Floor tile-West Office	15% Chrysotile	Non-Friable
HH-5	Wall accoutical tile-Main Office	Negative	N/A
HH-6	Floor tile-Second Floor/Main Office	Negative	N/A

TFDEQP000606

The definition of friable asbestos in 40 CFR 61, Subpart M is: "any material containing more than 1 percent asbestos by weight, that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure".

The asbestos found in the ceiling texture material in both office buildings was found to be friable, but in good condition. Damage and/or deterioration of the ACBMs may result in the release of asbestos fibers.

The asbestos found in the floor tile and mastic samples was non-friable. As a non-friable ACBM, the potential for disturbance is low. However, if the material was damaged or disturbed it could result in a release of asbestos fibers.

Regulations presently in effect require notification to the local County Air Pollution Control District when identified ACBM is removed or damaged during renovation or demolition.

6.0 FINDINGS AND CONCLUSIONS

The following conclusions are based on our records review and on-site and off-site evaluations.

- The subject property is a developed commercial property comprised of four buildings.
- The topography of the property is essentially level with surface runoff draining to the northeast.
- Depth to groundwater in the area is approximately 80 feet below land surface.
- During the survey, evidence of one on-site UST was observed.
- Asbestos was found in the ceiling texture material in the office buildings. This asbestos was friable but in good condition. Additionally, non-friable asbestos was found in the vinyl floor tile and mastic sampled in the office buildings. As a non-friable ACBM, the potential for disturbance is low. However, if the material was damaged or disturbed it could result in release of asbestos fibers.
- Insufficient data exists to adequately characterize groundwater quality beneath the subject property.
- The subject property is not located within any existing or proposed WQARF study/project areas.
- APS accepts all responsibility for the remediation and repair of its transformers.
- Evidence of potential improper storage and disposal of hazardous waste was observed on the subject property.

- Three areas of surface staining were observed on the subject property. These were: A large soil area on the south side of the subject property where the contents of the on-site UST are sprayed; a section of asphalt under the drum cradle adjacent to the paint shop; and the areas of soil immediately west and south of the paint shop extending east to the south side of the carpenter shop.

7.0 RECOMMENDATIONS

Based on the results of our studies and evaluations, WT recommends the following:

- Perform an assessment and audit of chemical storage, use, and disposal procedures and applicable environmental regulations.
- The areas of soil staining should be sampled and analyzed to identify the nature and extent of contamination.
- Subsurface investigation of the soil surrounding the concrete UST should be performed to determine the nature and extent of contamination, if any.
- Sample and analyze the UST to determine if the contents meet the criteria of a hazardous waste.
- Register the on-site UST with ADEQ in accordance with applicable regulations.
- Sample and analyze the three wash tanks in the carpenter shop to determine if the contents meet the criteria of a hazardous waste.

Friable ACBM is contained in ceiling surfacing material observed in the two office buildings. Although the ACBMs observed were in good condition, future damage and/or deterioration may result in the release of asbestos fibers and may pose an exposure risk to building occupants. WT recommends the following for managing the asbestos in the two office buildings:

- Perform a survey of the feasibility of removing friable asbestos material.
- If any future need for removal or renovation of the asbestos-containing materials involved more than 160 square feet, then the National Emission Standards for Hazardous Air Pollutants (NESHAPS) Asbestos Regulations, and Occupational Health and Safety Administration (OSHA) Regulations for asbestos abatement projects may apply.
- Notify contractors prior to renovation or demolition affecting friable asbestos, review applicability of EPA regulations and follow as needed (Required by EPA).
- Instruct employees to use OSHA work practices for small scale, short duration asbestos renovation, and maintenance activities as given in 29 CFR 1926.58.
- Sample and analyze airborne asbestos fiber concentration in the building to confirm that levels are similar to the outside air.

8.0 EPE LIMITATIONS

The scope of evaluation is limited to: observations made during the on-site review; interviews with knowledgeable persons; public agency and public utility company personnel; and reviews of readily available published and unpublished reports, literature, and aerial photographs. As a result, these conclusions are based on information supplied by others, professional expertise, and interpretations by qualified personnel.

The focus of the site evaluation was to assess the likelihood of hazardous or toxic substance contamination resulting from past and current uses of the site and adjacent properties. As a result, this evaluation does not highlight the presence of the following conditions unless they were the express concerns of contacted personnel, report and literature authors, or the work scope.

- Naturally occurring toxic and hazardous substances in the subsurface soils, rock and water.
- Toxicity of substances common in current habitable environments, such as stored household product, building materials, and consumables.
- Contaminants or contaminant concentrations that are not a concern now but may be under future regulatory standards.

We are unable to predict events that may occur after our site visit, such as illegal disposal or accidental spillage.

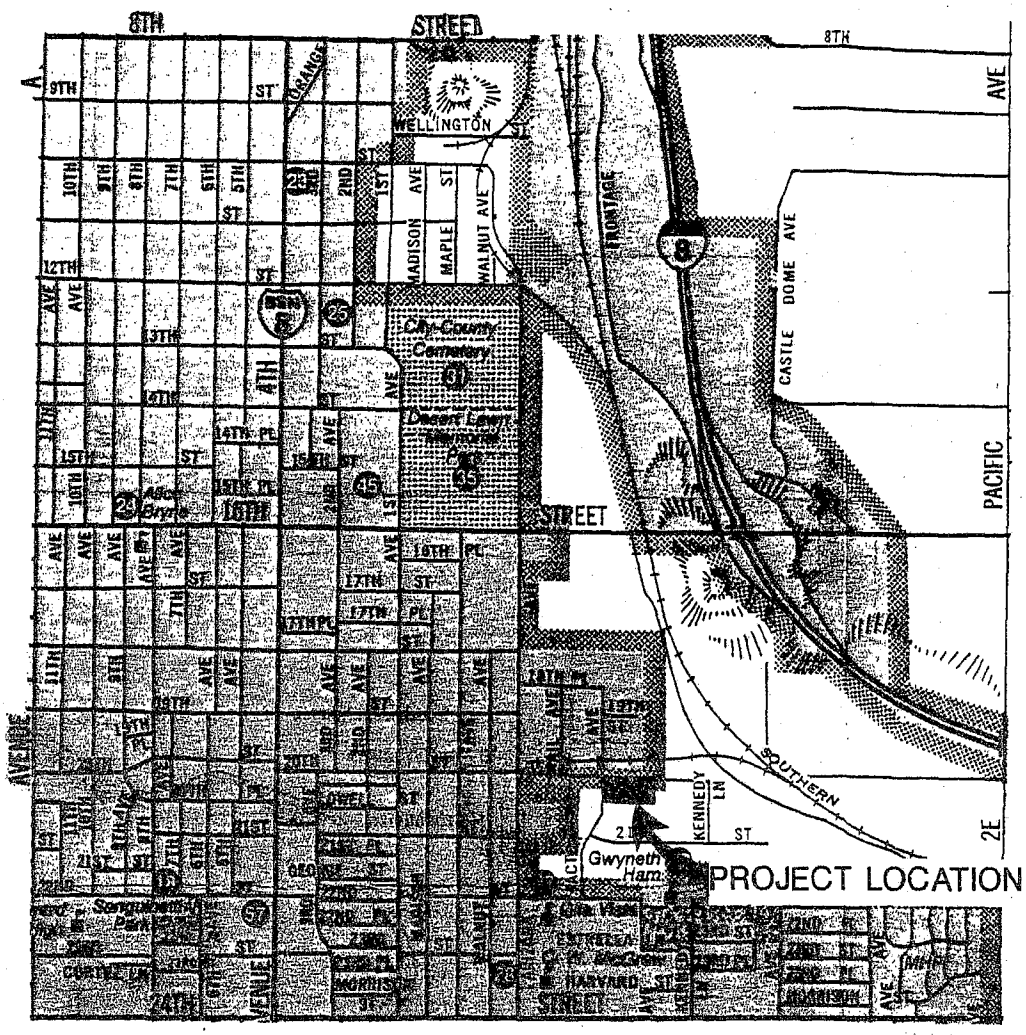
There is no evaluation which is thorough enough to absolutely exclude the presence of hazardous substances at any site. Therefore, if none are identified as part of a limited scope of work, such a conclusion should not be construed as a guaranteed absence of such materials; it is merely the result of the evaluation.

We have performed our services for this project in accordance with our agreement and understanding with Houston International Ltd. This document and the information contained herein have been prepared solely for the use of Houston International Ltd and their assigned parties.

This environmental property evaluation was performed by WT under a limited scope of services per our agreement. It is possible despite the use of reasonable care and interpretation, WT may have failed to identify regulatory violations or the presence of hazardous substances or underground tanks. WT assumes no responsibility for conditions that we did not specifically evaluate or conditions that were not generally recognized as environmentally unacceptable at the time this report was prepared.

Environmental Property Evaluation

Houston International Limited
655 East 20th Street
Yuma, Arizona
Vicinity Map
Figure 1



N

NOT TO SCALE

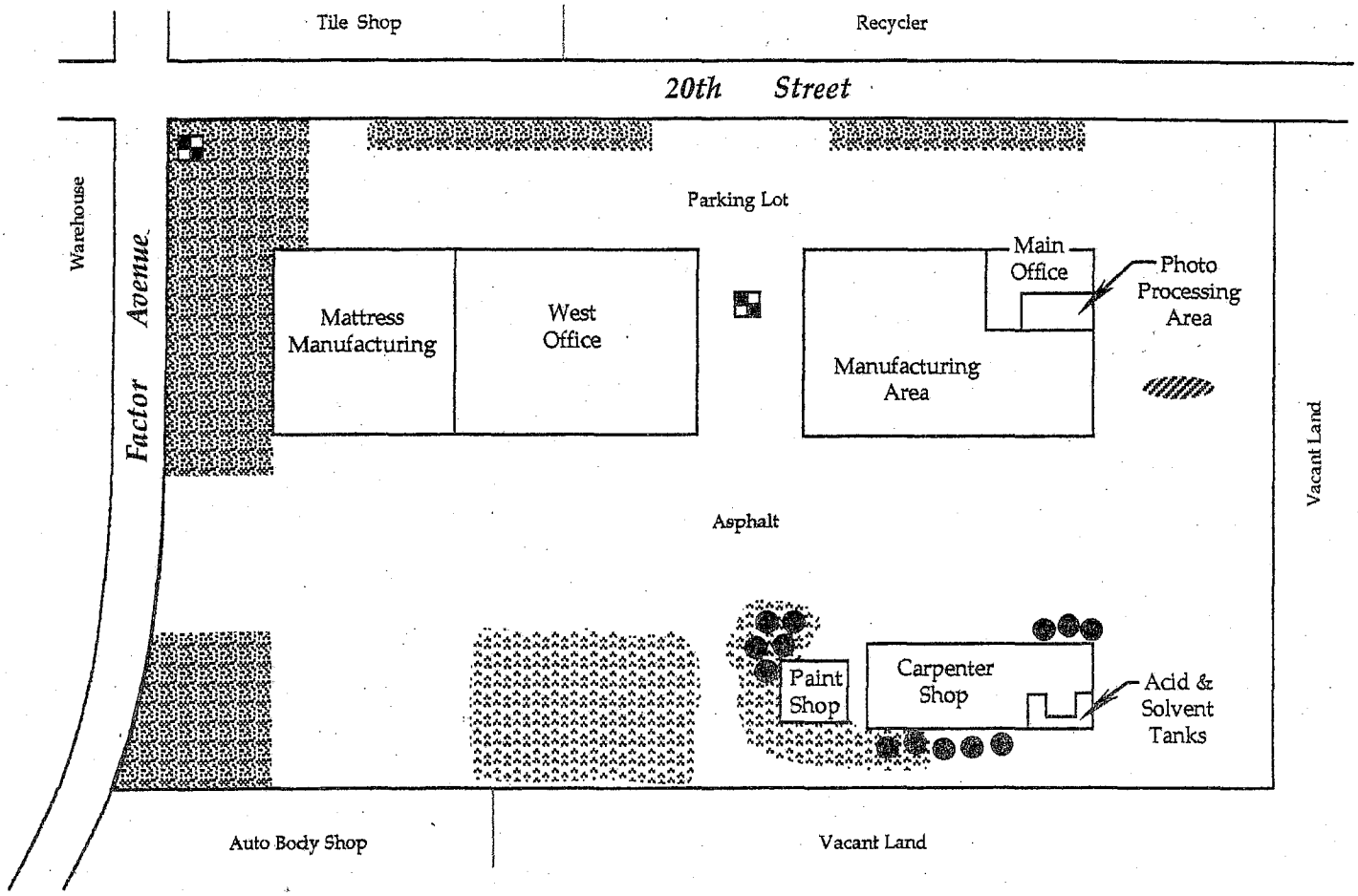
JOB NO. 7110K083

REVIEWED	W. Shonerd P.E.
PREPARED	T. Chapman

WESTERN TECHNOLOGIES INC.
The Quality People

Environmental Property Evaluation

Houston International Limited
655 East 20th Street
Yuma, Arizona
Site Plan
Figure 2



Legend

- Transformers
- Drums
- Landscaped Area
- 1,000 Gal. UST
- Surface Stain

N

NOT TO SCALE

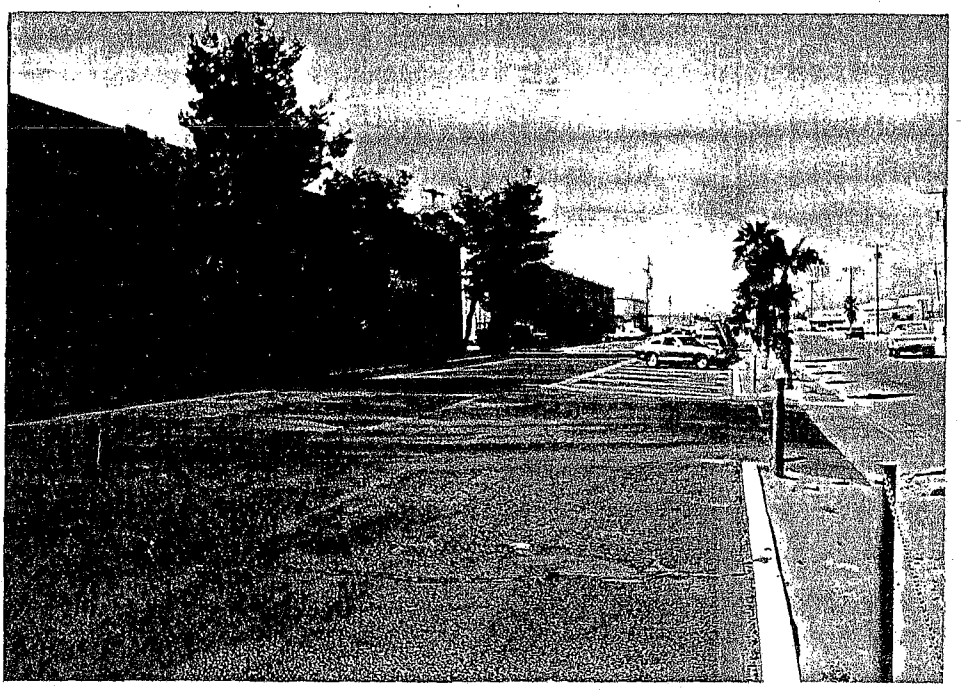
JOB NO. 7110K083

REVIEWED	W. Shonerd P.E.
PREPARED	T. Chapman

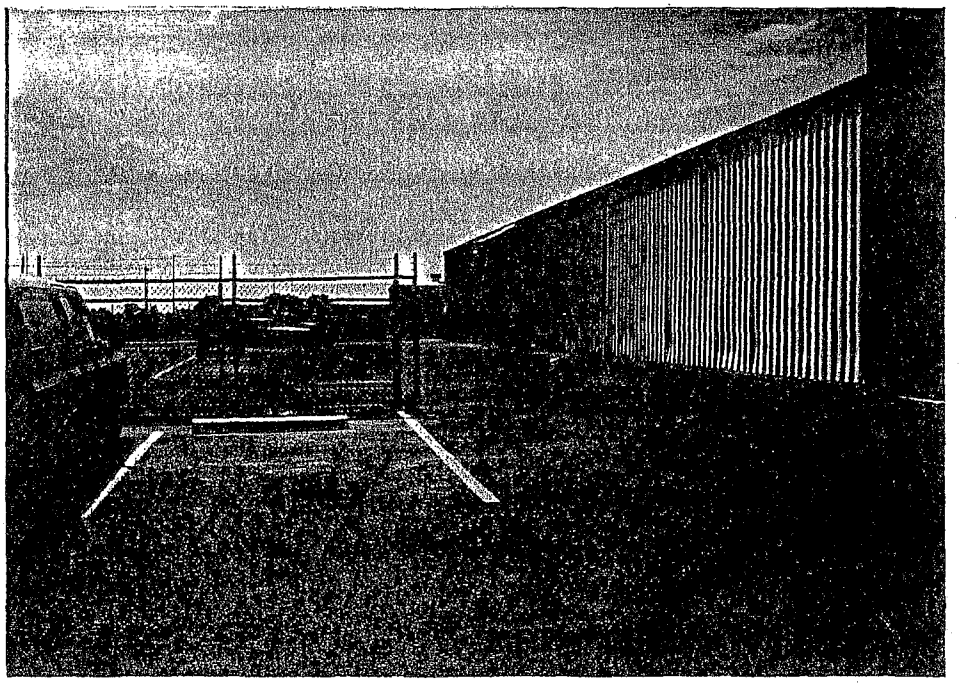
WESTERN TECHNOLOGIES INC.
The Quality People

APPENDIX A

Houston International Ltd.
Job No. 7110K083

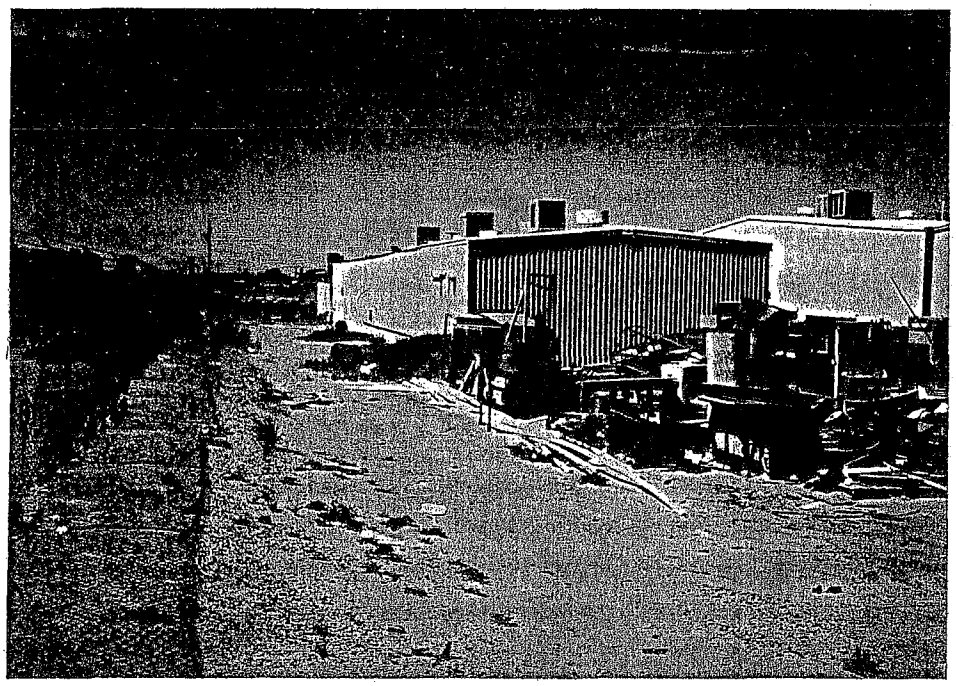


Photograph No. 1
Northeast Corner of Subject Property Viewing West.

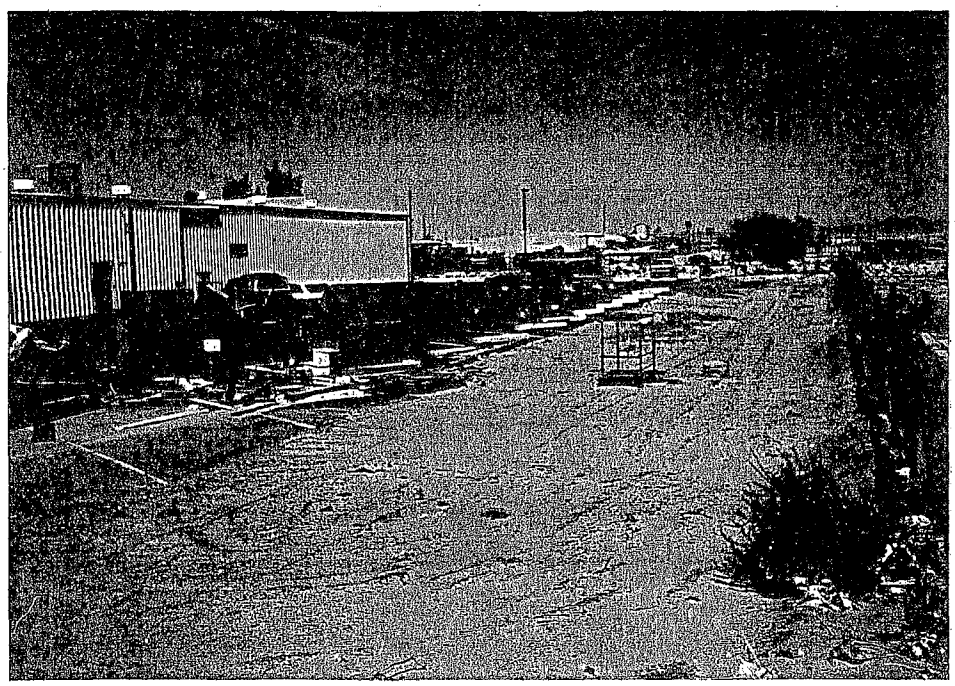


Photograph No. 2
Northeast Corner of Subject Property Viewing South.

Houston International Ltd.
Job No. 7110K083

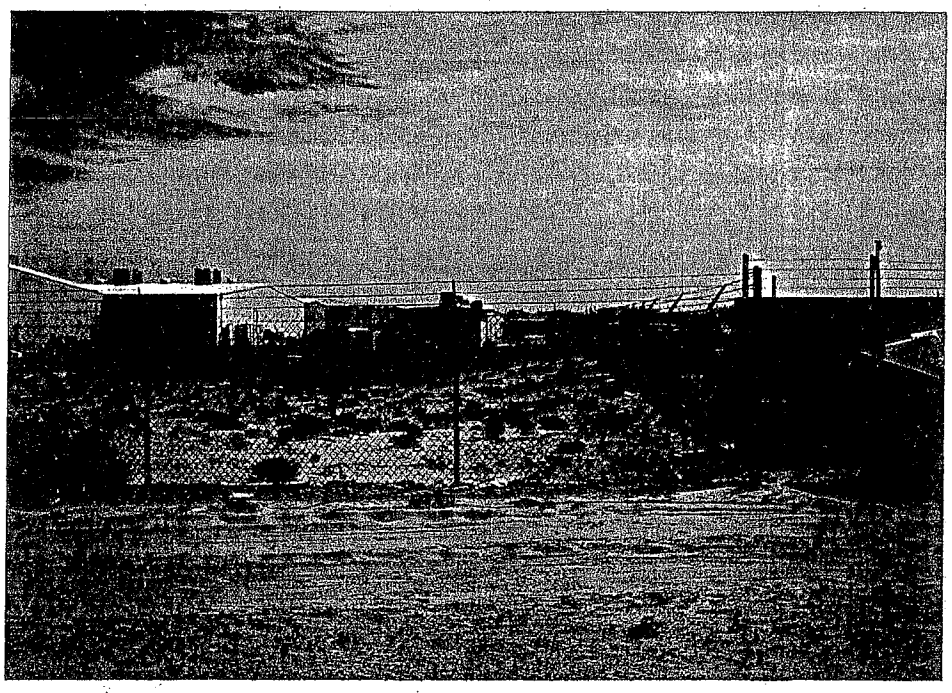


Photograph No. 3
Southeast Corner of Subject Property Viewing West.

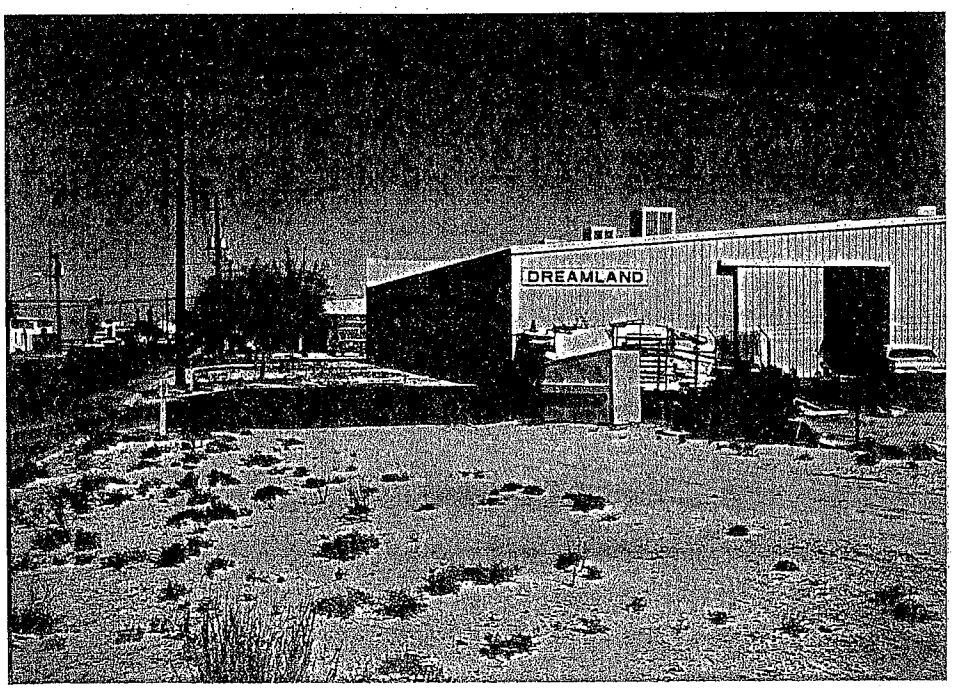


Photograph No. 4
Southeast Corner of Subject Property Viewing North.

Houston International Ltd.
Job No. 7110K083

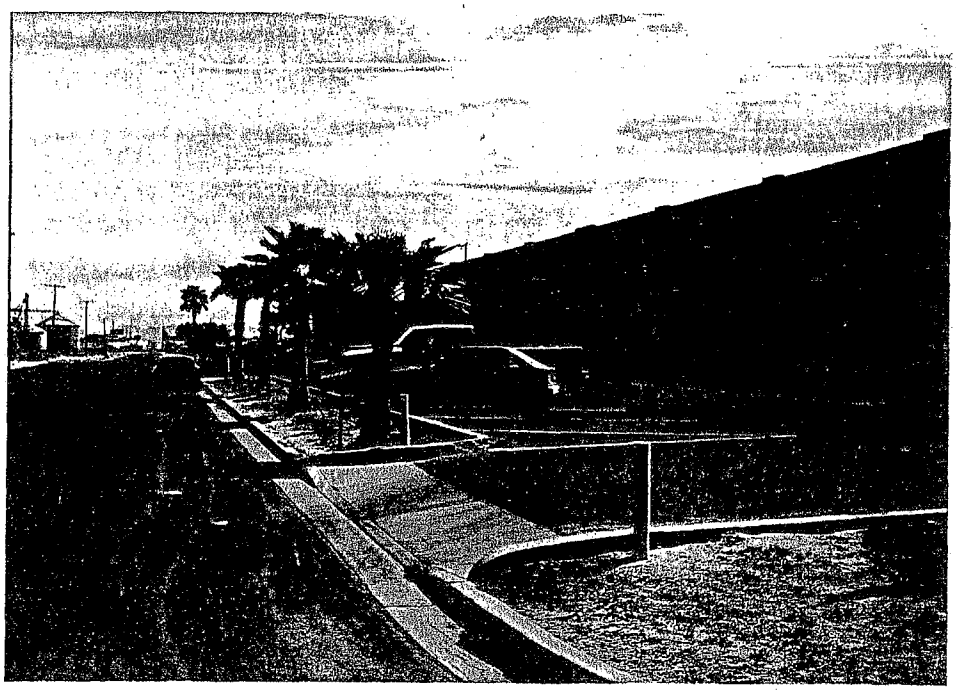


Photograph No. 5
Southwest Corner of Subject Property Viewing East.

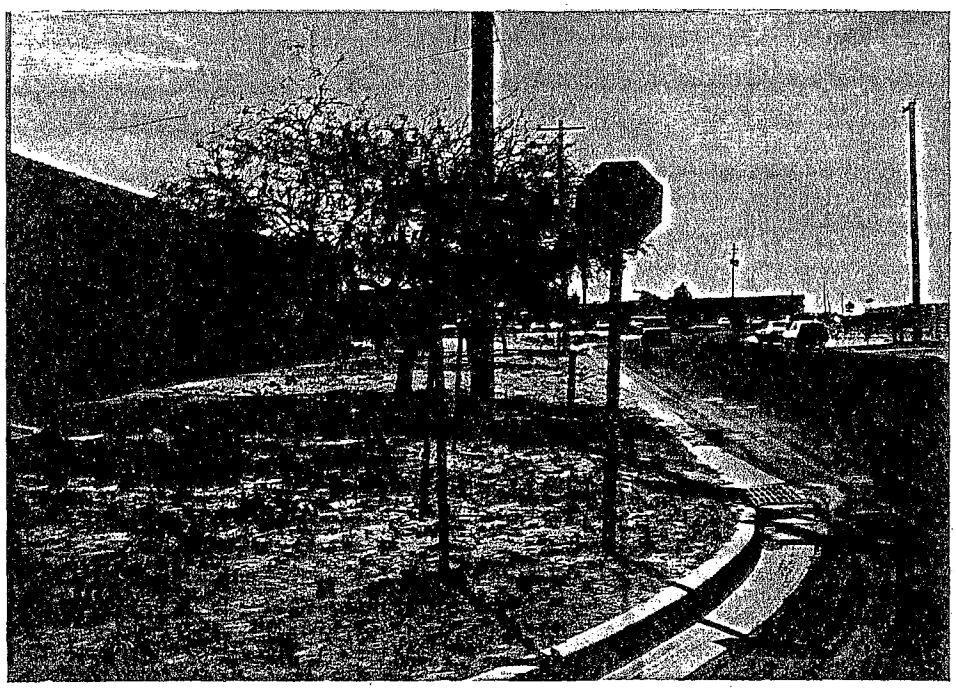


Photograph No. 6
Southwest Corner of Subject Property Viewing North.

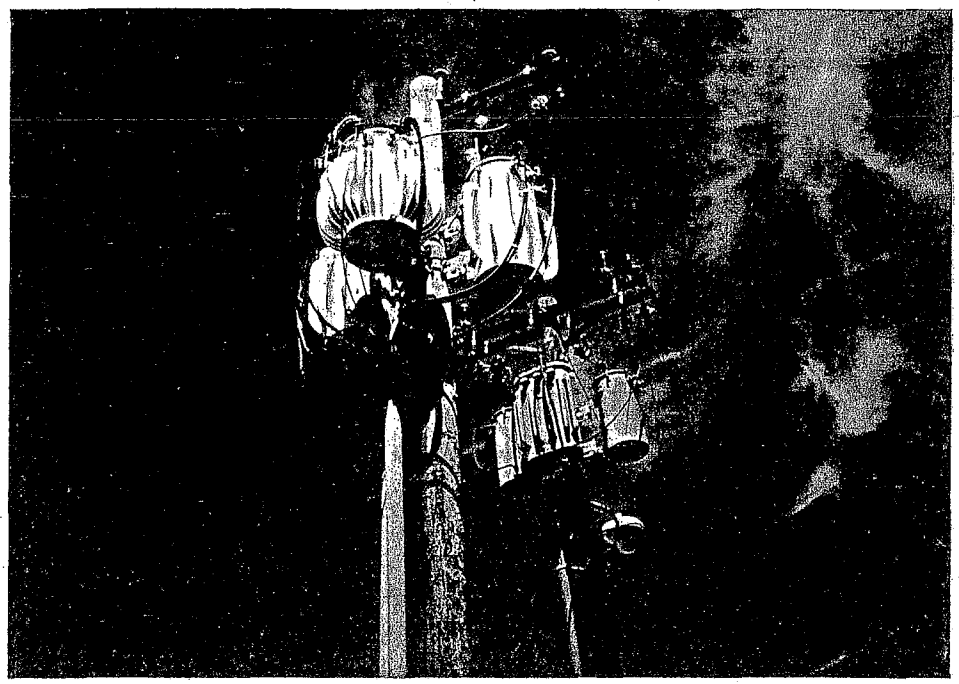
Houston International Ltd.
Job No. 7110K083



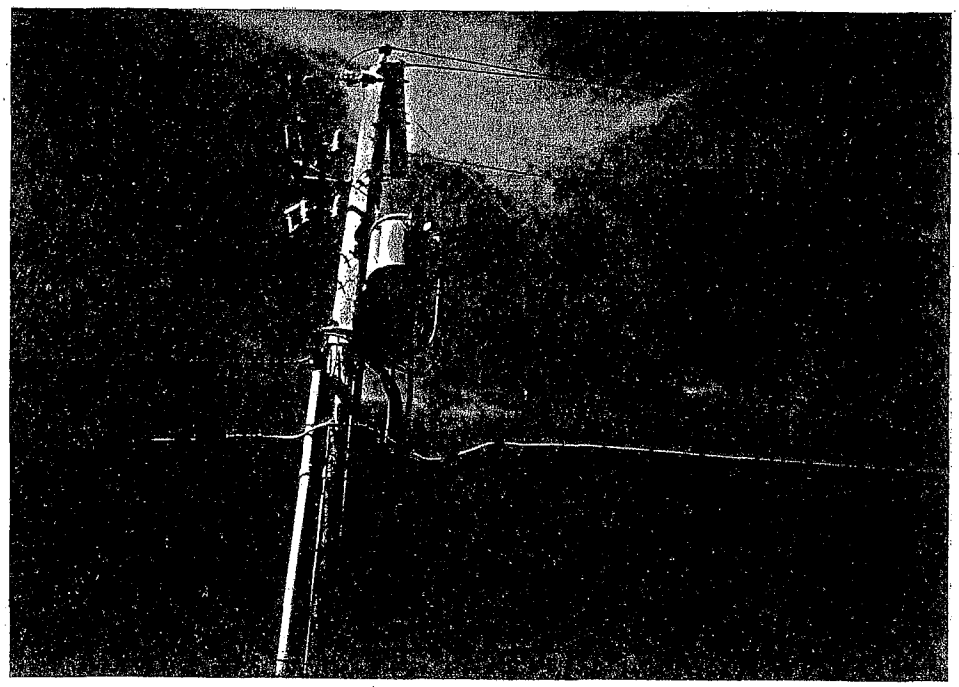
Photograph No. 7
Northwest Corner of Subject Property Viewing East.



Photograph No. 8
Northwest Corner of Subject Property Viewing South.



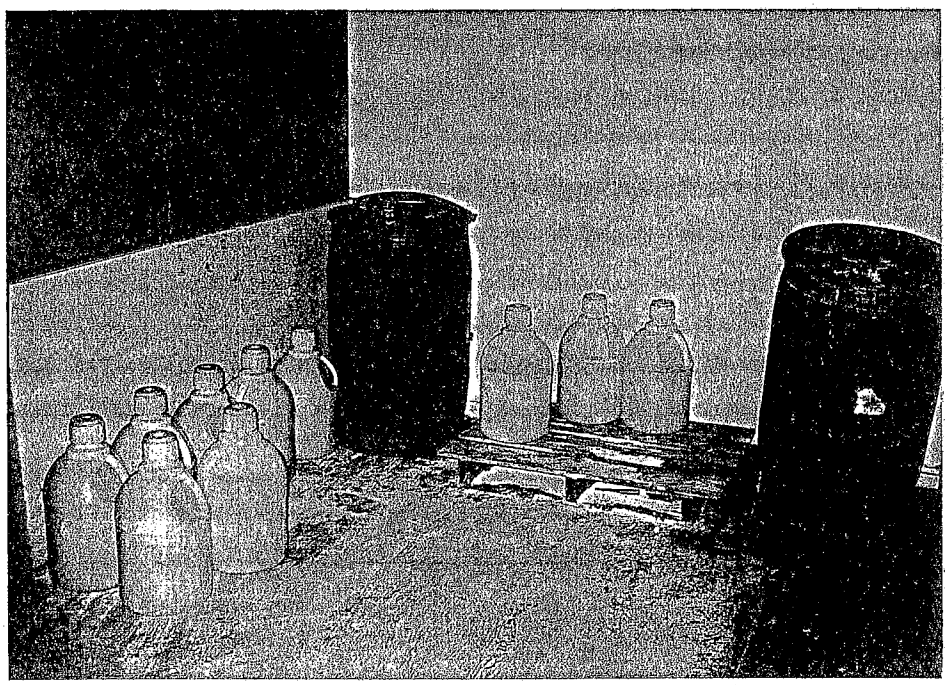
Photograph No. 9
Pole-mounted APS Transformers Between Warehouse Buildings.



Photograph No. 10
Pole-mounted APS Transformers on Northwest Corner of Property.

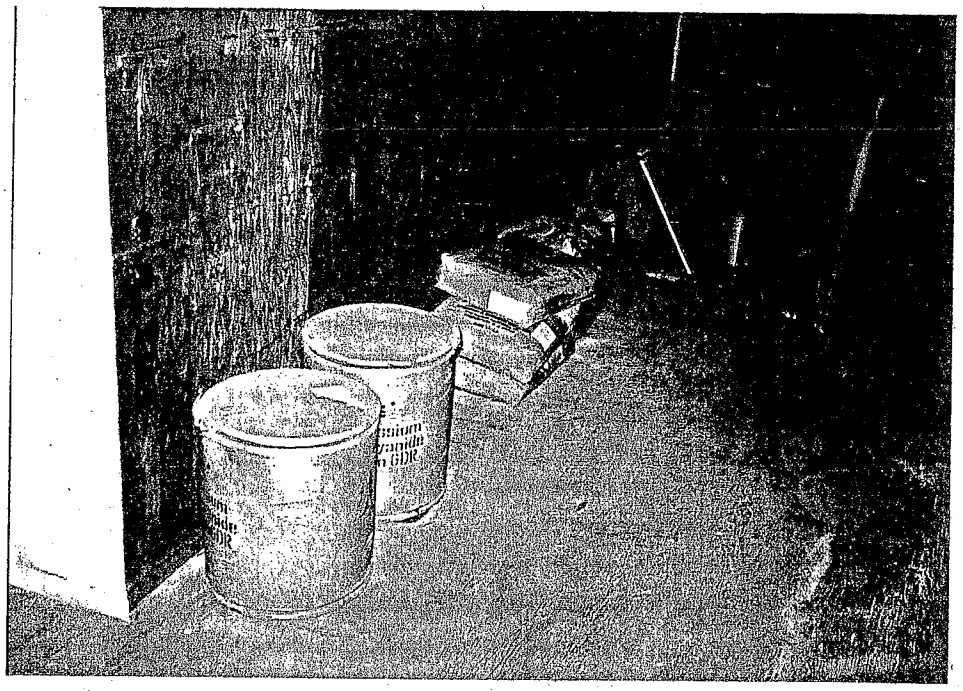
Houston International Ltd.
Job No. 7110K083

Photograph No. 11
Drums of Acid in First Floor Storage Room of Main Warehouse.

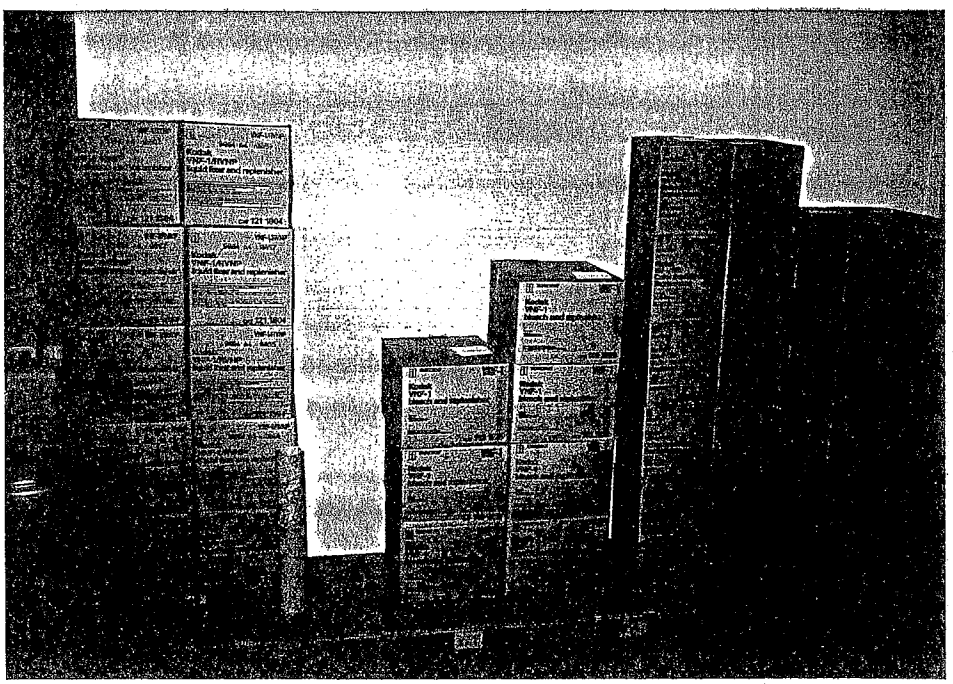


Photograph No. 12
Drums and Containers of Acid in Second Floor Storage Room of Main Warehouse.

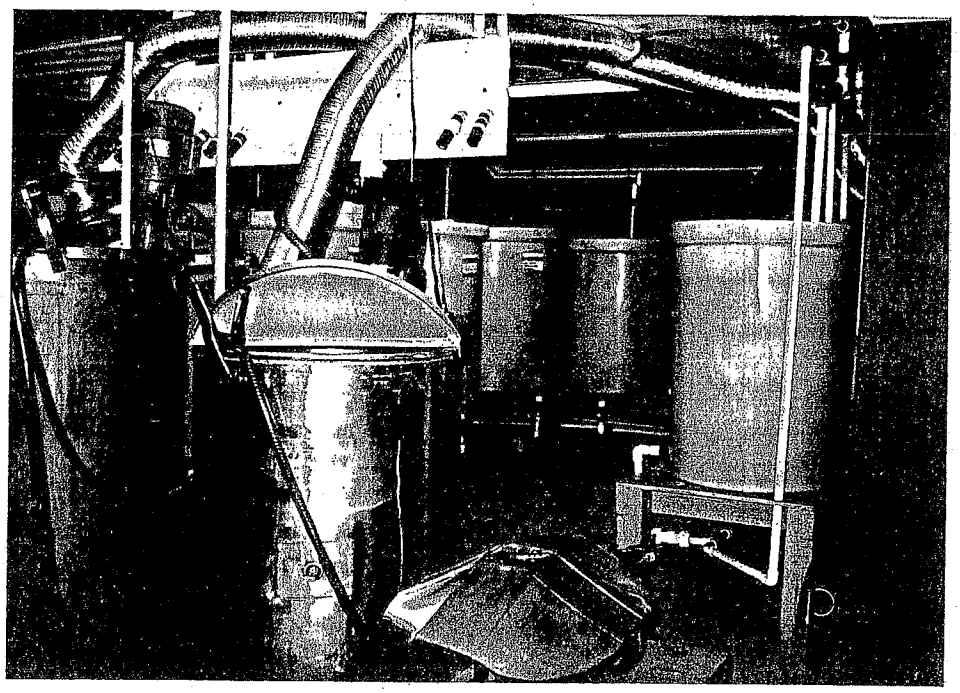
Houston International Ltd.
Job No. 7110K083



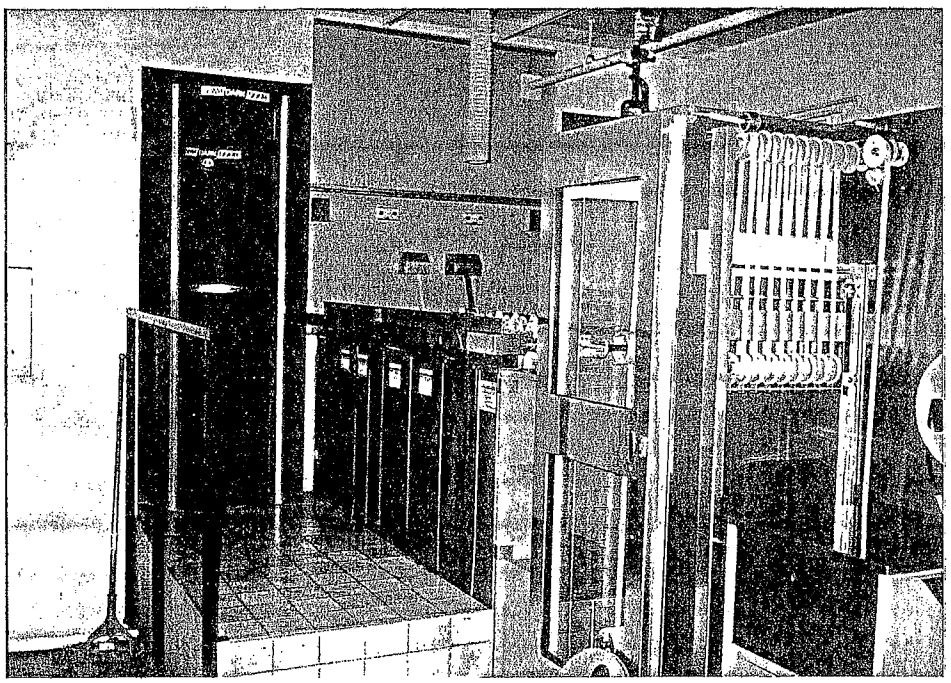
Photograph No. 13
Dry Photodeveloping Chemicals in Second Floor Storage Room of Main Warehouse.



Photograph No. 14
Boxes of Liquid Developing Chemicals in Second Floor Storage Room of Main Warehouse.

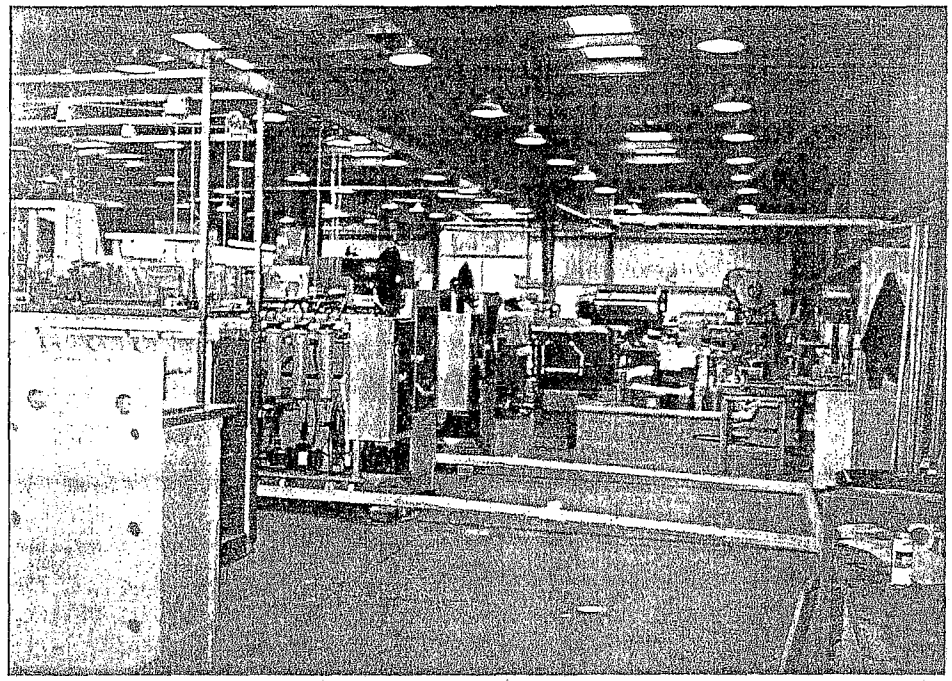


Photograph No. 15
Second Floor Photographic Chemical Mixing Area.



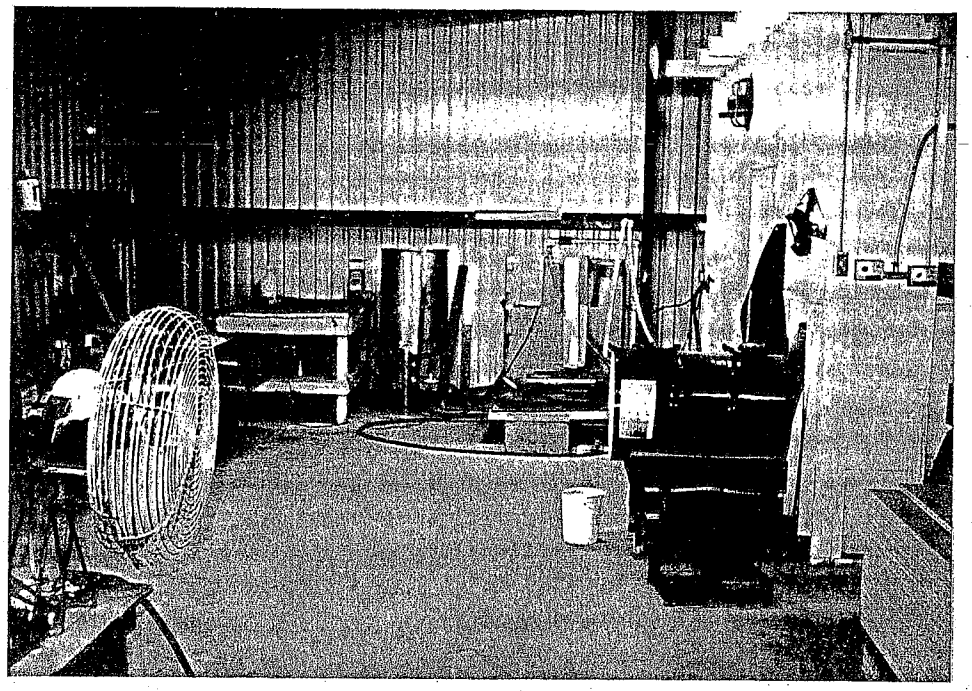
Photograph No. 16
First Floor Photographic Developing Machine.

Houston International Ltd.
Job No. 7110K083

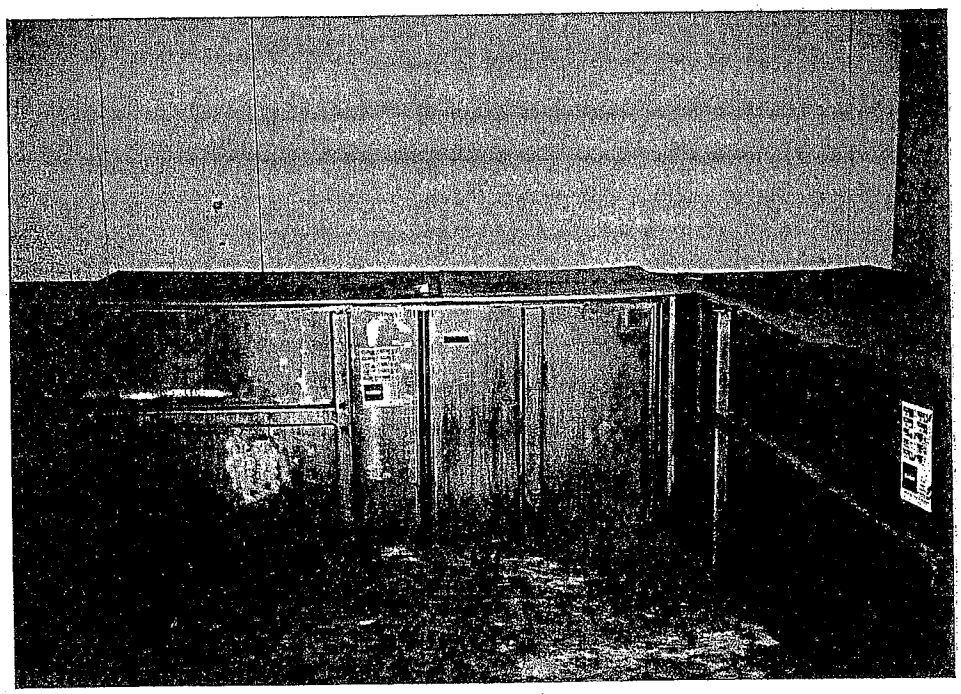


Photograph No. 17
Developing Machine Manufacturing Area - Main Warehouse.

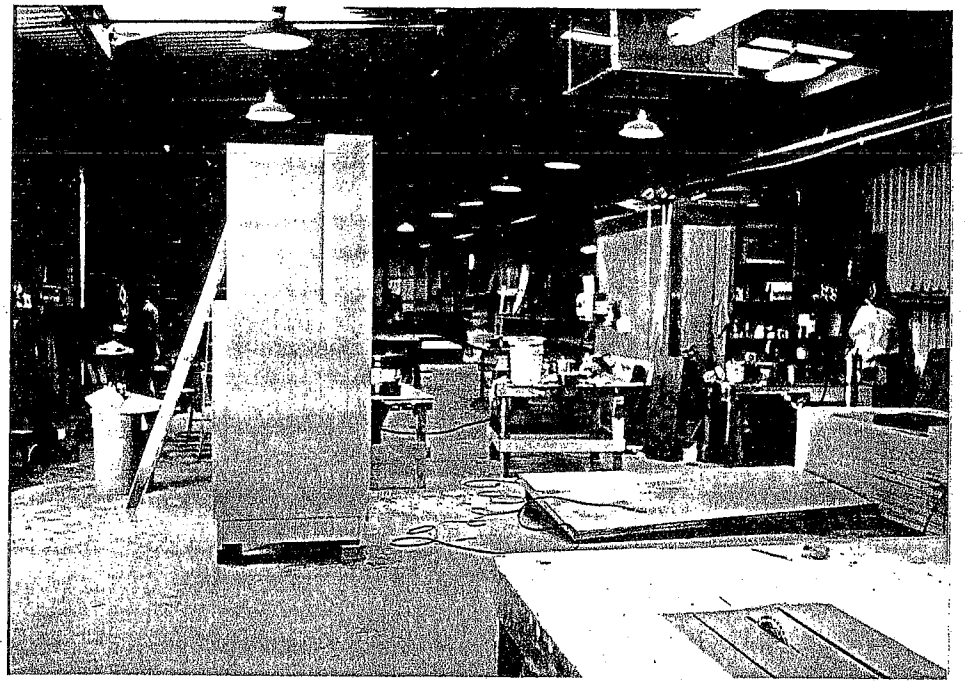
Photograph No. 18
Drums of Solvent and Acid Adjacent to Carpenters Shop.



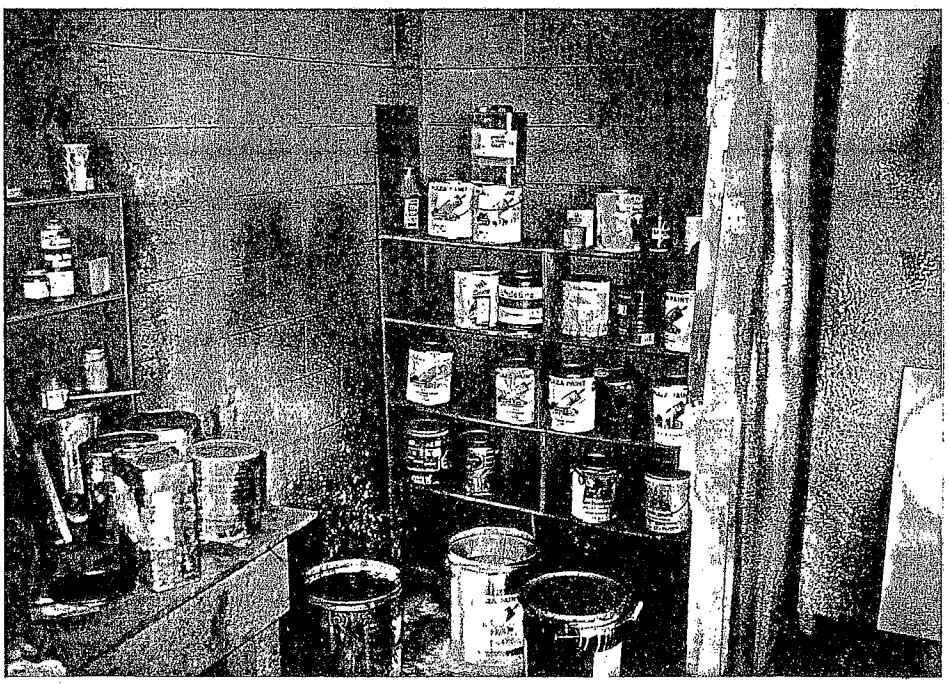
Photograph No. 19
Ethylene Glycol Drum and Tank in Carpenters Shop.



Photograph No. 20
Cleaning Tanks Inside Carpenter Shop.



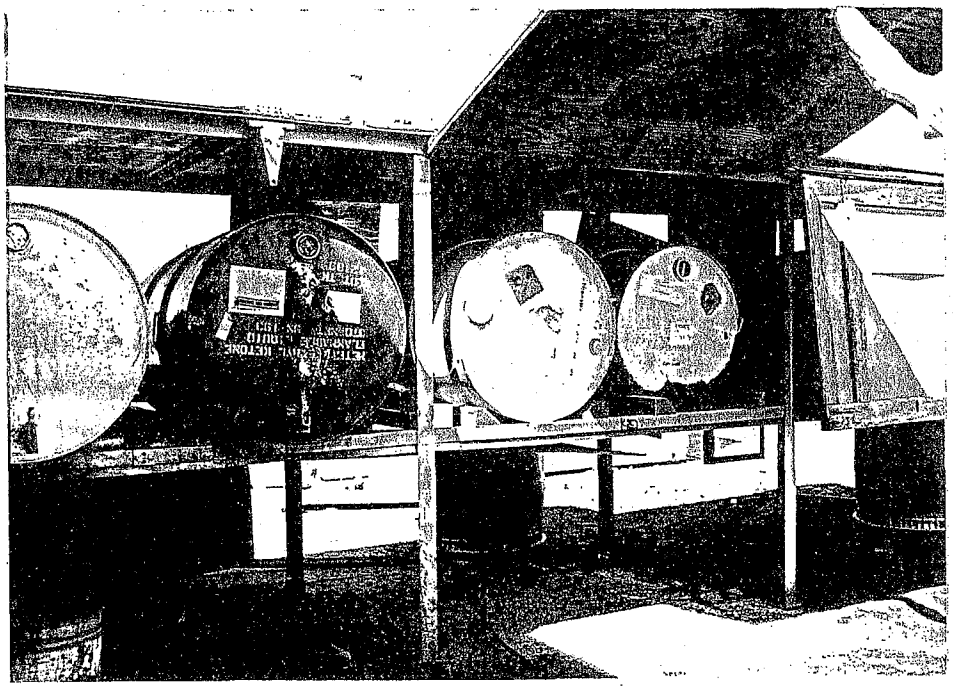
Photograph No. 21
Carpenter Shop.



Photograph No. 22
Paints and Thinners Inside East Side of Paint Room.

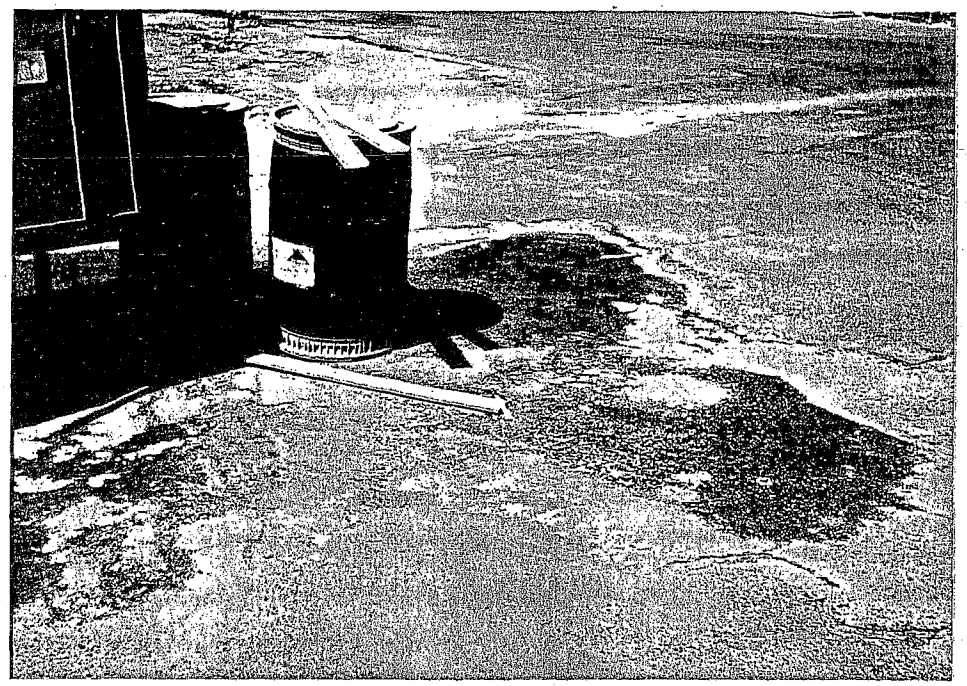
Houston International Ltd.
Job No. 7110K083

Photograph No. 23
Paints and Thinners Inside West Side of Paint Room.

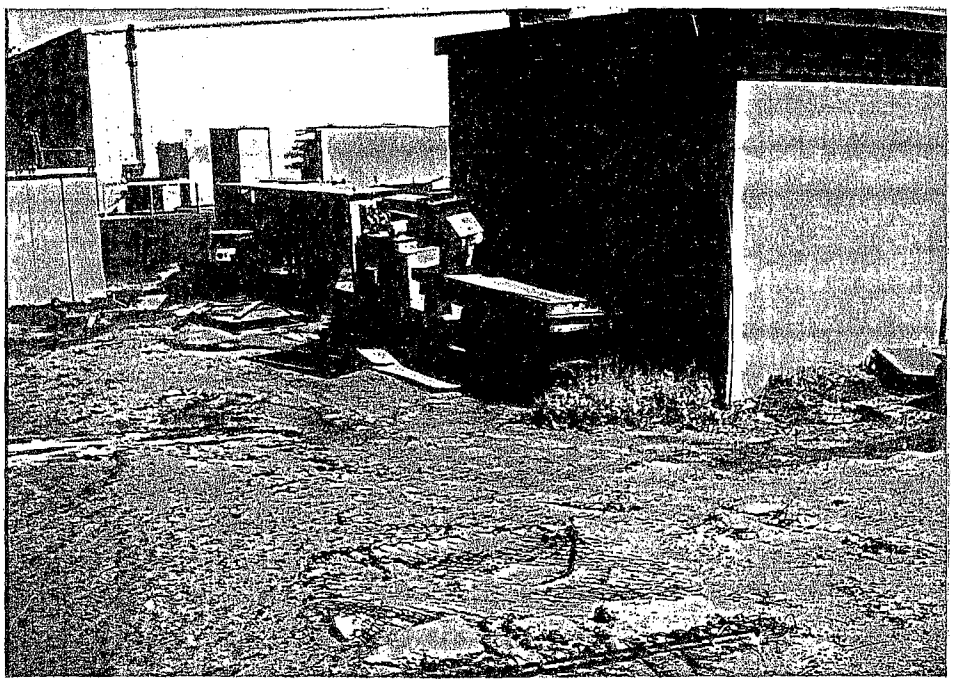


Photograph No. 24
Solvent Drums Adjacent to Paint Room.

Houston International Ltd.
Job No. 7110K083

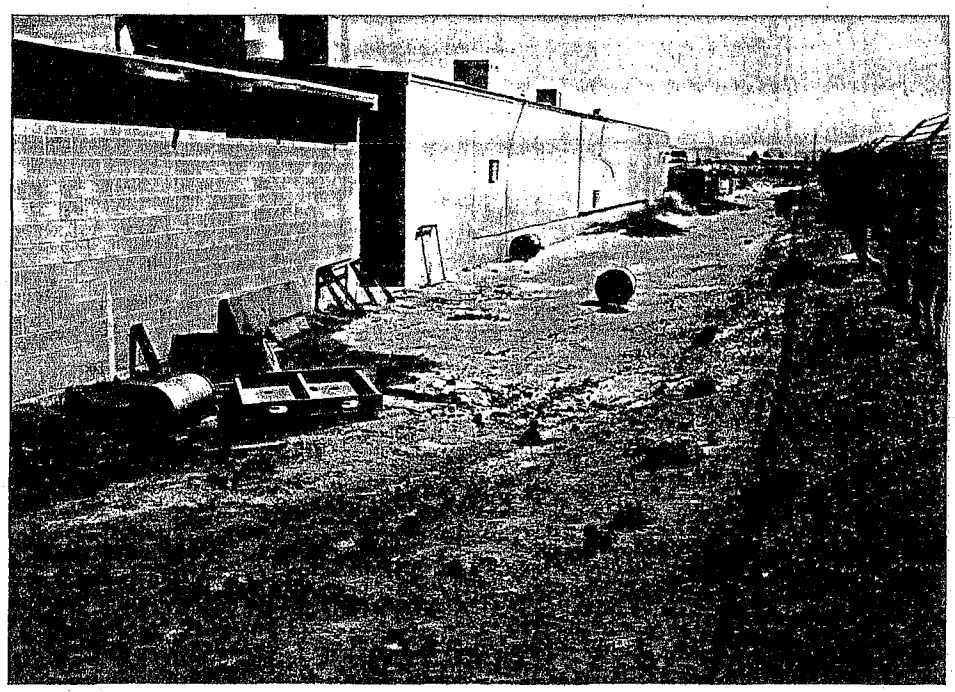


Photograph No. 25
Surface Stain on Asphalt Around Drums.

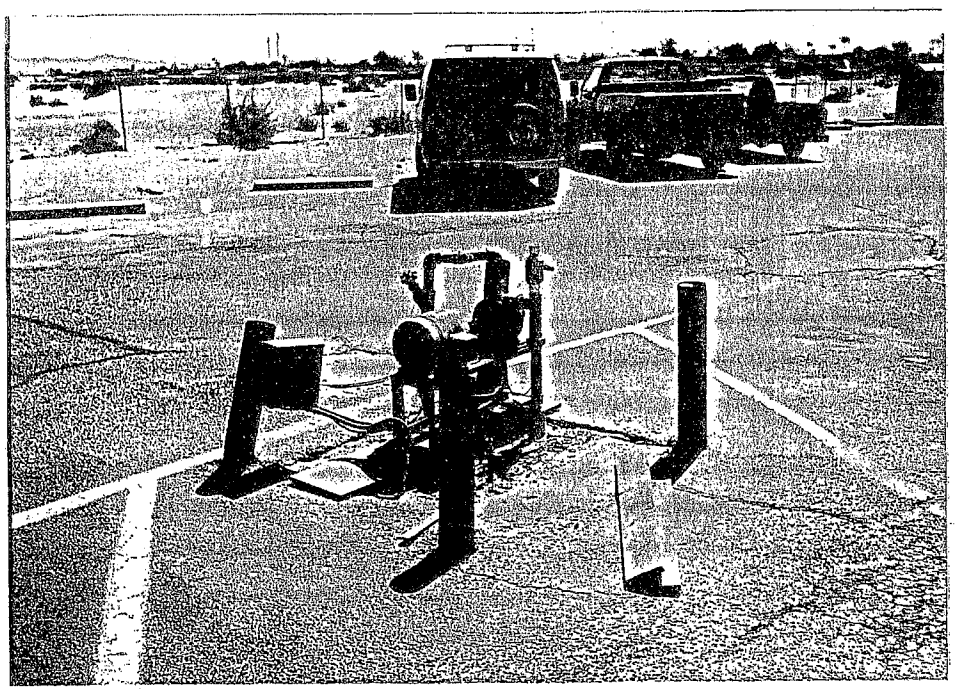


Photograph No. 26
Surface Staining on West Side of Paint Shop.

Houston International Ltd.
Job No. 7110K083

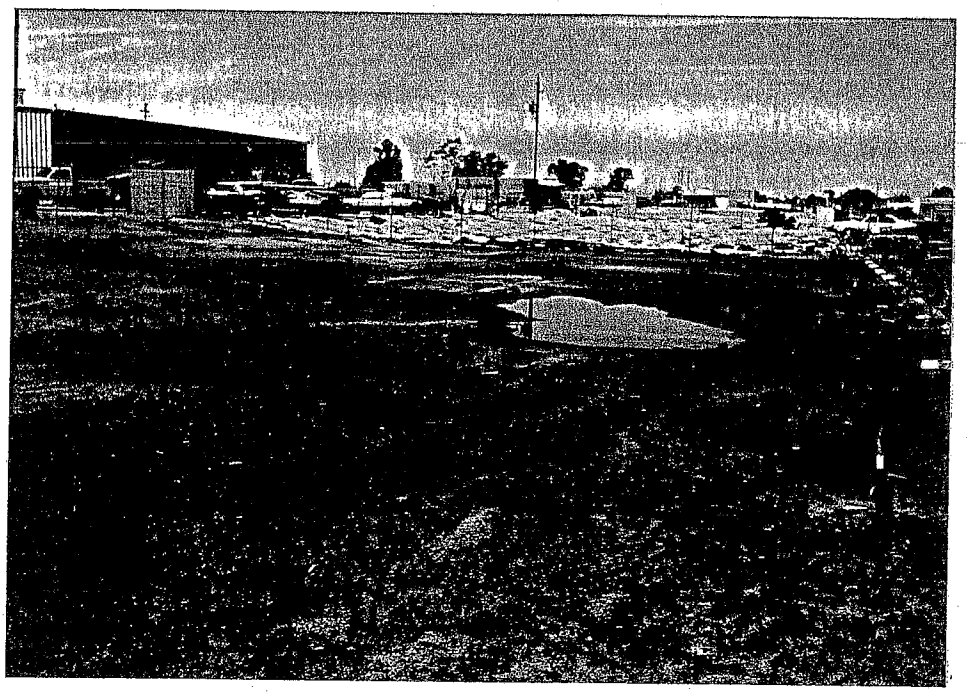


Photograph No. 27
Further Surface Staining on South Side of Paint Shop.

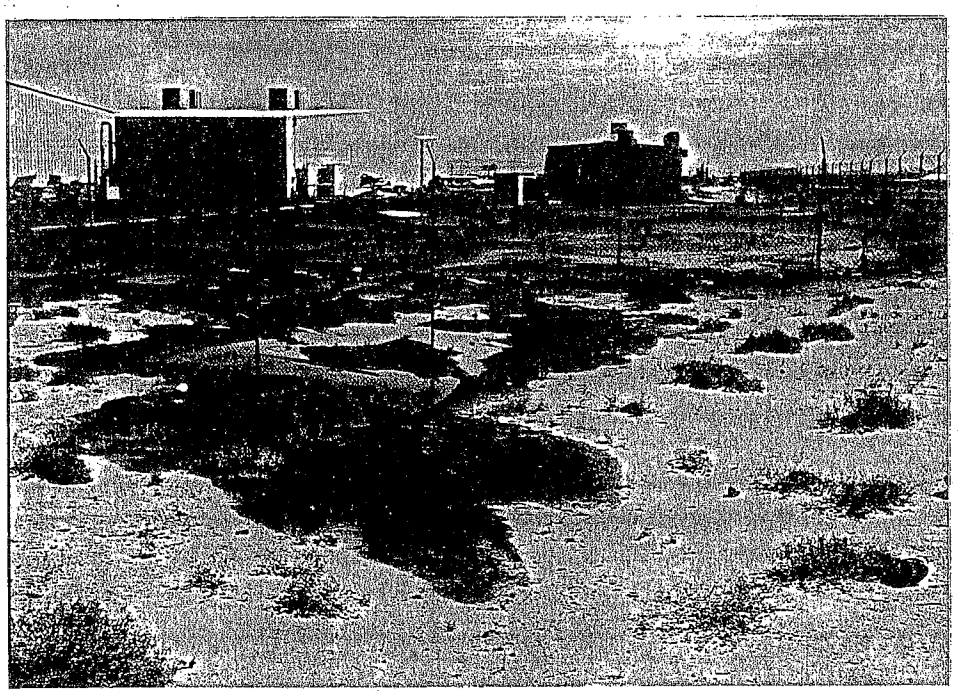


Photograph No. 28
Pump Above Concrete UST in East Parking Area.

Houston International Ltd.
Job No. 7110K083

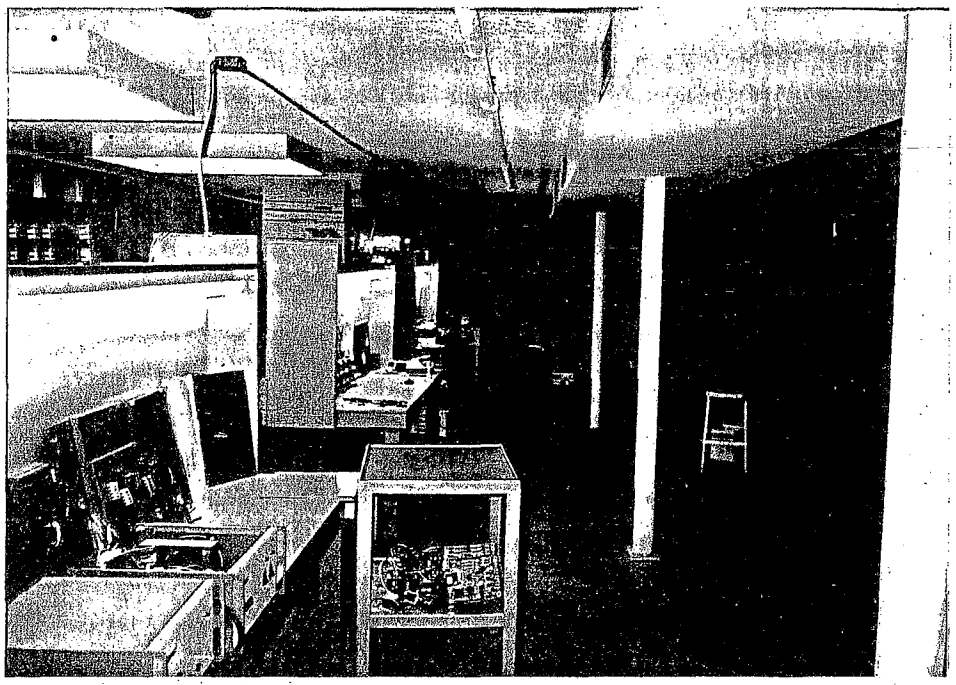


Photograph No. 29
Soil Stained Area Where Contents of UST are Sprayed. Viewing West.

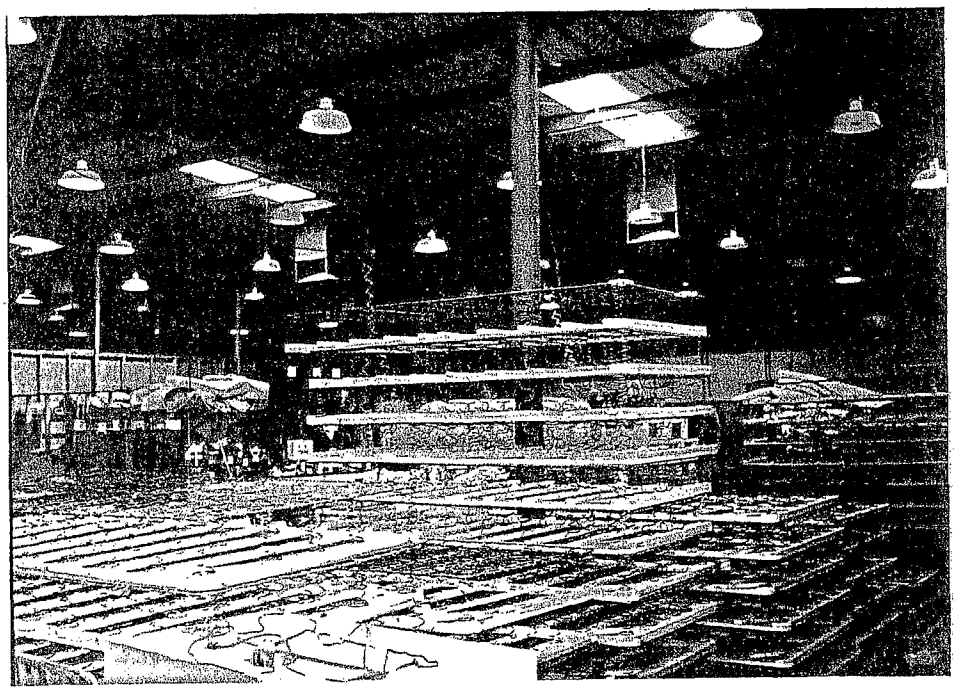


Photograph No. 30
Soil Stained Area Where Contents of UST are Sprayed. Viewed East.

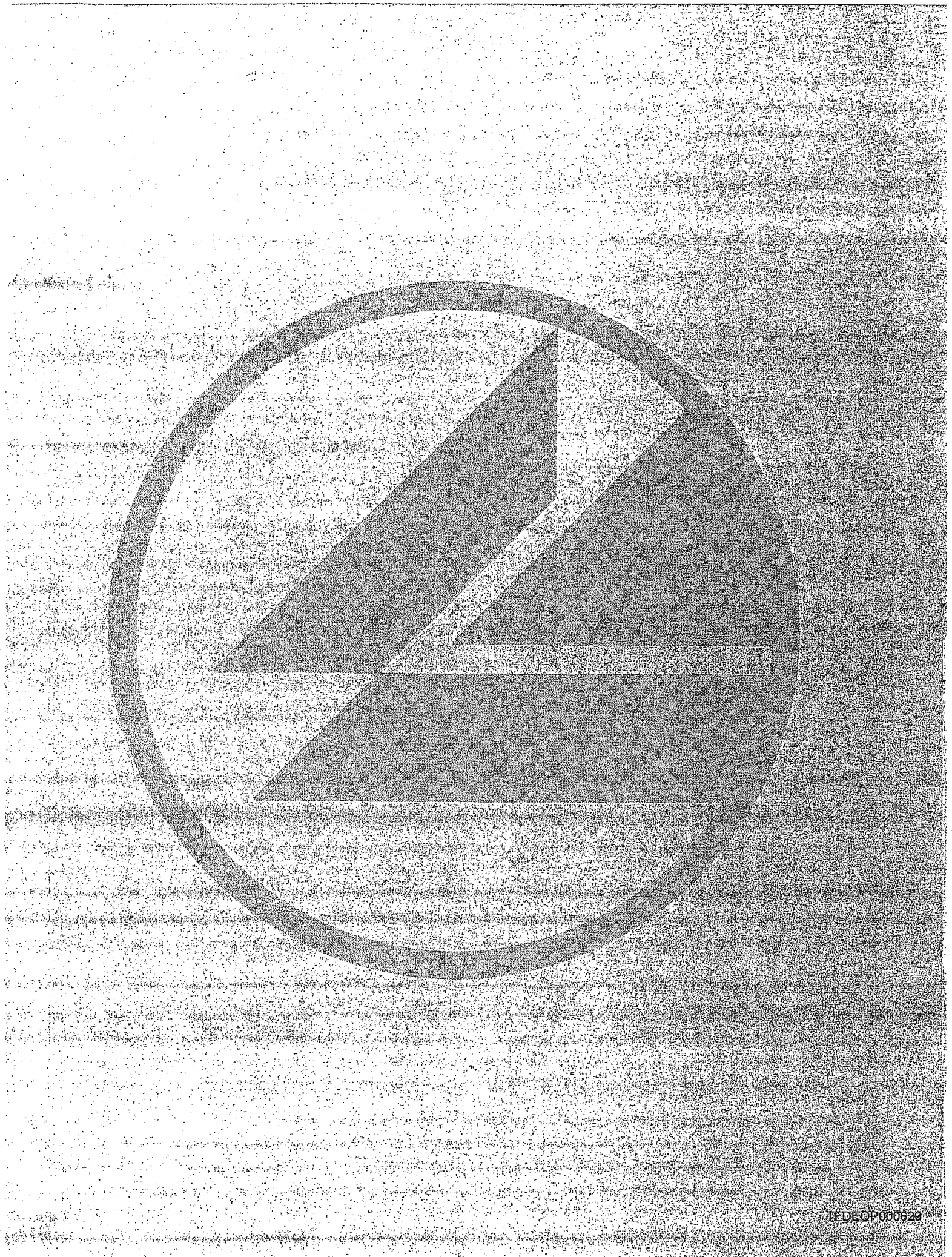
Houston International Ltd.
Job No. 7110K083



Photograph No. 31
Electronics Repair Area in West Warehouse.



Photograph No. 32
Mattress Manufacturer in West Warehouse.



WESTEC TECHNOLOGIES INC.
3737 East Broadway Road
P.O. Box 21387
Phoenix, Arizona 85036
(602) 437-3737

CLIENT: Houston International LTD.
644 E. 20th Street
P. O. Box 5269
Yuma, AZ 85364

SAMPLE NO. : 2900633
INVOICE NO.: 7110W083
DATE : 3-27-90
REVIEWED BY: A. Assaf
PAGE : 1 of 6

CLIENT SAMPLE ID: HH-1
SAMPLE TYPE : Ceiling texture material
SAMPLE SOURCE : Main office building
SUBMITTED BY : B. Campbell
SAMPLED BY : B. Campbell

AUTHORIZED BY: B. Campbell
CLIENT P.O. : None
ANALYSIS DATE: 3-27-90
SAMPLE DATE : 3-21-90
SUBMITTED ON : 3-22-90

BULK ASBESTOS REPORT

Sample Description: White, friable spray-on surfacing material.

Fiber Identification

Optical Properties	Fiber 1	Fiber 2	Fiber 3
Color	White		
Morphology	Wavey		
Birefringence	Low		
Sign of elongation	+		
Extinction	Parallel		
D.S. test, RI of matching liquid	1.55		
Approx. quantity	2-5%		
Identification	Chrysotile		

Total Composition: 2-5% Chrysotile, 60% vermiculite, 35-37% calcite.

Notes:

Percent Asbestos Overall - 2-5% Chrysotile.

Analyst: Anna Logvinenko Anna Logvinenko

Analysis Method: Polarized Light Microscopy - EPA-600/M4-82-020

1180L

WESTERN TECHNOLOGIES INC.
3737 East Broadway Road
P.O. Box 21387
Phoenix, Arizona 85036
(602) 437-3737

CLIENT: Houston International LTD.
644 E. 20th Street
P. O. Box 5269
Yuma, AZ 85364

SAMPLE NO. : 2900634
INVOICE NO.: 7110W083
DATE : 3-27-90
REVIEWED BY: A. Assaf
PAGE : 2 of 6

CLIENT SAMPLE ID: HH-2
SAMPLE TYPE : Floor tile and mastic
SAMPLE SOURCE : Main office building
SUBMITTED BY : B. Campbell
SAMPLED BY : B. Campbell

AUTHORIZED BY: B. Campbell
CLIENT P.O. : None
ANALYSIS DATE: 3-27-90
SAMPLE DATE : 3-21-90
SUBMITTED ON : 3-22-90

BULK ASBESTOS REPORT

Sample Description: Dark red floor tile and black mastic, both materials are non-friable.

Fiber Identification

Optical Properties	Fiber 1	Fiber 2
Color	White	
Morphology	Wavey	
Birefringence	Low	
Sign of elongation	+	
Extinction	Parallel	
D.S. test, RI of matching liquid	1.55	
Approx. quantity	30% (tile), 15% (mastic)	
Identification	Chrysotile	

Total Composition: Tile= 30% Chrysotile, 5% filler (quartz sand), 65% matrix (vinyl):
Mastic= 15% Chrysotile, 85% tar.

Notes:

Percent Asbestos Overall - Tile= 30% Chrysotile: Mastic= 15% Chrysotile.

Analyst: Anna Logvinenko Anna Logvinenko
Analysis Method: Polarized Light Microscopy - EPA-600/M4-82-020
1180L

WESTEC TECHNOLOGIES INC.
3737 East Broadway Road
P.O. Box 21387
Phoenix, Arizona 85036
(602) 437-3737

CLIENT: Houston International LTD.
644 E. 20th Street
P. O. Box 5269
Yuma, AZ 85364

SAMPLE NO. : 2900635
INVOICE NO.: 7110W083
DATE : 3-27-90
REVIEWED BY: A. Assaf
PAGE : 3 of 6

CLIENT SAMPLE ID: HH-3
SAMPLE TYPE : Ceiling texture material
SAMPLE SOURCE : West office building
SUBMITTED BY : B. Campbell
SAMPLED BY : B. Campbell

AUTHORIZED BY: B. Campbell
CLIENT P.O. : None
ANALYSIS DATE: 3-27-90
SAMPLE DATE : 3-21-90
SUBMITTED ON : 3-22-90

BULK ASBESTOS REPORT

Sample Description: White, friable spray-on surfacing material.

Fiber Identification

Optical Properties	Fiber 1	Fiber 2	Fiber 3
Color	White		
Morphology	Wavey		
Birefringence	Low		
Sign of elongation	+		
Extinction	Parallel		
D.S. test, RI of matching liquid	1.55		
Approx. quantity	10%		
Identification	Chrysotile		

Total Composition: 10% Chrysotile, 45% styrofoam, 45% calcite.

Notes:

Percent Asbestos Overall - 10% Chrysotile.

Analyst: Anna Logvinenko Anna Logvinenko
Analysis Method: Polarized Light Microscopy - EPA-600/M4-82-020
1180L

WESTEC TECHNOLOGIES INC.
3737 East Broadway Road
P.O. Box 21387
Phoenix, Arizona 85036
(602) 437-3737

CLIENT: Houston International LTD.
644 E. 20th Street
P. O. Box 5269
Yuma, AZ 85364

SAMPLE NO. : 2900636
INVOICE NO.: 7110W083
DATE : 3-27-90
REVIEWED BY: A. Assaf AA
PAGE : 4 of 6

CLIENT SAMPLE ID: HH-4
SAMPLE TYPE : Floor tile
SAMPLE SOURCE : West office building
SUBMITTED BY : B. Campbell
SAMPLED BY : B. Campbell

AUTHORIZED BY: B. Campbell
CLIENT P.O. : None
ANALYSIS DATE: 3-27-90
SAMPLE DATE : 3-21-90
SUBMITTED ON : 3-22-90

BULK ASBESTOS REPORT

Sample Description: Grey, non-friable floor tile.

Fiber Identification

Optical Properties	Fiber 1	Fiber 2	Fiber 3
Color	White		
Morphology	Wavey		
Birefringence	Low		
Sign of elongation	+		
Extinction	Parallel		
D.S. test, RI of matching liquid	1.55		
Approx. quantity	15%		
Identification	Chrysotile		

Total Composition: 15% Chrysotile, 5% filler (quartz sand), 80% vinyl.

Notes: Asbestos was localized in the bottom part of the tile.

Percent Asbestos Overall - 15% Chrysotile.

Analyst: Anna Logvinenko Anna Logvinenko
Analysis Method: Polarized Light Microscopy - EPA-600/M4-82-020
1180L

WESTEC TECHNOLOGIES INC.
3737 East Broadway Road
P.O. Box 21387
Phoenix, Arizona 85036
(602) 437-3737

CLIENT: Houston International LTD.
644 E. 20th Street
P. O. Box 5269
Yuma, AZ 85364

SAMPLE NO. : 2900637
INVOICE NO.: 7110W083
DATE : 3-27-90
REVIEWED BY: A. Assaf AA
PAGE : 5 of 6

CLIENT SAMPLE ID: HH-5
SAMPLE TYPE : Wall acoustical tile
SAMPLE SOURCE : Main office building
SUBMITTED BY : B. Campbell
SAMPLED BY : B. Campbell

AUTHORIZED BY: B. Campbell
CLIENT P.O. : None
ANALYSIS DATE: 3-27-90
SAMPLE DATE : 3-21-90
SUBMITTED ON : 3-22-90

BULK ASBESTOS REPORT

Sample Description: Yellow, fibrous acoustical tile painted white.

Fiber Identification

Optical Properties	Fiber 1	Fiber 2	Fiber 3
Color	White & yellow		
Morphology	Thick		
Birefringence	Low		
Sign of elongation	+		
Extinction	Undulose		
D.S. test, RI of matching liquid	1.55		
Approx. quantity	100%		
Identification	Cellulose		

Total Composition: 100% cellulose.

Notes:

Percent Asbestos Overall - None detected.

Analyst: Anna Logvinenko Anna Logvinenko
Analysis Method: Polarized Light Microscopy - EPA-600/M4-82-020
1180L

WESTEC TECHNOLOGIES INC.
3737 East Broadway Road
P.O. Box 21387
Phoenix, Arizona 85036
(602) 437-3737

CLIENT: Houston International LTD.
644 E. 20th Street
P. O. Box 5269
Yuma, AZ 85364

SAMPLE NO. : 2900638
INVOICE NO.: 7110W083
DATE : 3-27-90
REVIEWED BY: A. Assaf AA
PAGE : 6 of 6

CLIENT SAMPLE ID: HH-6
SAMPLE TYPE : 2nd floor tile
SAMPLE SOURCE : Main office building
SUBMITTED BY : B. Campbell
SAMPLED BY : B. Campbell

AUTHORIZED BY: B. Campbell
CLIENT P.O. : None
ANALYSIS DATE: 3-27-90
SAMPLE DATE : 3-21-90
SUBMITTED ON : 3-22-90

BULK ASBESTOS REPORT

Sample Description: Brown, non-friable floor tile.

Fiber Identification

Optical Properties	Fiber 1	Fiber 2	Fiber 3
Color			
Morphology			
Birefringence			
Sign of elongation			
Extinction			
D.S. test, RI of matching liquid			
Approx. quantity			
Identification			

Total Composition: 100% mixture of vinyl and calcite.

Notes:

Percent Asbestos Overall - None detected.

Analyst: Anna Logvinenko Anna Logvinenko
Analysis Method: Polarized Light Microscopy - EPA-600/M4-82-020
1180L

№ 3454

CHAIN OF CUSTODY RECORD

JOB NO. 7110K083

PROJECT NAME Houston Int.

SAMPLER (SIGNATURE) Bruce [illegible]

SAMPLE IDENTIFICATION	DATE	TIME	COMP.	GRAB	SAMPLE LOCATION	NUMBER OF CONTAINERS	VACSAM	SOIL SCOOP	SOIL AUGER	SPLIT-SPOON	BAILER	REMARKS (PHYSICAL APPEARANCE, etc.)	LABORATORY IDENTIFICATION
HH-1	3/21			X	Cieling Texture matt. main office building	1							2900633
HH-2	3/21			X	Floor tile main office building	1							2900634
HH-3	3/21			X	Cieling texture material west office building	1							2900635
HH-4	3/21			X	Floor tile west office building	1							2900636
HH-5	3/21			X	Wall acoustical tile main office building	1							2900637
HH-6	3/21			X	2nd floor tile main office bldg.	1							2900638

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)
Bruce [illegible]	3/22	8:44					
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LABORATORY BY (SIGNATURE)	DATE	TIME	REMARKS	
			Penny Hanson	3/22/90	8:45		

SHIPPING TEMP. (°F): MIN. | MAX.

WESTERN TECHNOLOGIES INC.

TFDEQP000636

DRAFT INDUSTRIAL SURVEY
20th STREET AND FACTOR AVENUE
WQARF REGISTRY SITE
YUMA, ARIZONA

Prepared for

Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, AZ 85007

Prepared by

HydroGeoLogic, Inc.
340 East Palm Lane
Suite 240
Phoenix, Arizona 85004

ADEQ Contract No. 07-0046
ADEQ Task Assignment No. 07-0146

June 29, 2007

The findings, opinions, and conclusions contained in this report are solely those of HydroGeoLogic, Inc. These findings, opinions, and conclusions do not necessarily reflect the position of the state of Arizona, or any of its departments or agencies.

HGL
HydroGeoLogic, Inc

DRAFT INDUSTRIAL SURVEY
20th STREET AND FACTOR AVENUE
WQARF REGISTRY SITE
YUMA, ARIZONA

Prepared for

Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, AZ 85007

Prepared by

HydroGeoLogic, Inc.
340 East Palm Lane
Suite 240
Phoenix, Arizona 85004

ADEQ Contract No. 07-0046
ADEQ Task Assignment No. 07-0146

June 29, 2007

The findings, opinions, and conclusions contained in this report are solely those of HydroGeoLogic, Inc. These findings, opinions, and conclusions do not necessarily reflect the position of the state of Arizona, or any of its departments or agencies.

TABLE OF CONTENTS

Section			Page
1.0	INTRODUCTION		1-1
2.0	INDUSTRIAL SURVEY		2-1
	2.1	IDENTIFICATION OF SITE BOUNDARY	2-1
	2.2	METHODOLOGY	2-1
		2.2.1 City of Yuma Directory Research	2-1
		2.2.2 Resource Conservation and Recovery Act Notification Files and Manifests	2-2
		2.2.3 RCRA Case Files, Compliance Log, and Archived Files	2-2
		2.2.4 Comprehensive Environmental Response, Compensation, and Liability Act	2-2
		2.2.5 Preliminary Assessment/Site Investigation	2-3
		2.2.6 Underground Storage Tank and Leaking Underground Storage Tank Research	2-3
		2.2.7 ADEQ Water Quality Database	2-3
		2.2.8 Registered Drywells	2-3
		2.2.9 WQARF Files	2-3
		2.2.10 Hazardous Waste Box Storage, Hazardous Materials Incident Logbook, and Hazardous Waste Inspections Databases	2-3
3.0	INDUSTRIAL SURVEY RESULTS		3-1
	3.1	CITY OF YUMA DIRECTORY RESULTS	3-1
	3.2	RCRA NOTIFICATION FILES AND MANIFEST RESULTS	3-28
	3.3	RCRA CASE FILES, COMPLIANCE LOG, AND ARCHIVED FILE RESULTS	3-28
	3.4	CERCLA RESULTS	3-28
	3.5	PA/SI RESULTS	3-29
	3.6	UST/LUST RESULTS	3-29
	3.7	ADEQ WATER QUALITY RESULTS	3-29
	3.8	REGISTERED DRYWELL RESULTS	3-29
	3.9	WQARF FILE RESULTS	3-29
	3.10	HAZARDOUS WASTE BOX STORAGE, HAZARDOUS MATERIALS INCIDENT LOGBOOK, AND HAZARDOUS WASTE INSPECTIONS DATABASE RESULTS	3-30

APPENDIX A INFORMATION SOURCES

TFHGLC000003

LIST OF FIGURES

Figure **Page**

Figure 1.1 Industrial Survey Location Map 1-22
Figure 1.2 Facilities Location Map 1-2

LIST OF TABLES

Table **Page**

Table 2.1 Industrial Survey Street Ranges 2-1
Table 3.1 501 -798 18th Place East 3-2
Table 3.2 751-898 19th Street East 3-5
Table 3.3 501-1098 20th Street East 3-6
Table 3.4 701-1098 21st Street East 3-9
Table 3.5 501-809 22nd Street East 3-11
Table 3.6 1800-2199 Arizona Avenue South 3-12
Table 3.7 1800-2199 Factor Avenue South 3-18
Table 3.8 2000-2100 Kennedy Lane South 3-26
Table 3.9 1800-2000 Rail Avenue South 3-27

LIST OF ACRONYMS/ABBREVIATIONS

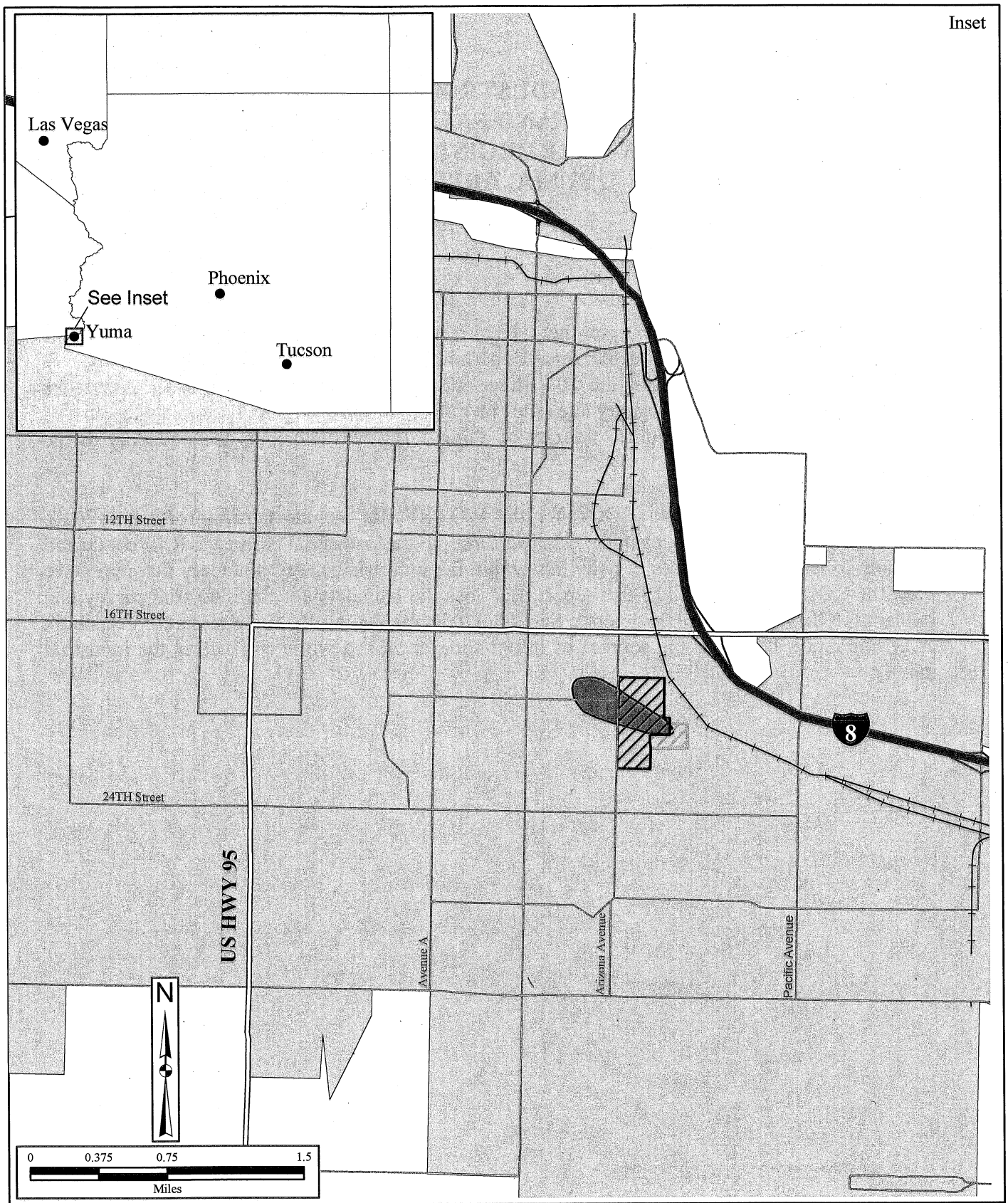
ADEQ	Arizona Department of Environmental Quality
ASU	Arizona State University
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CESQG	Conditionally Exempt Small Quantity Generator
COCs	contaminants of concern
HGL	HydroGeoLogic, Inc.
Houston	Houston International
HRS	hazardous ranking system
ID	identification
lbs	pounds
LUST	leaking underground storage tank
PA/SI	preliminary assessment/site investigation
PCE	tetrachloroethene
RCRA	Resource Conservation and Recovery Act
site	20th Street and Factor Avenue WQARF Registry Site
TCE	trichloroethene
U.S. EPA	United States Environmental Protection Agency
UST	underground storage tank
WQARF	Water Quality Assurance Revolving Fund

DRAFT INDUSTRIAL SURVEY
20th STREET AND FACTOR AVENUE
WQARF REGISTRY SITE
YUMA, ARIZONA

1.0 INTRODUCTION

On March 22, 2007, HydroGeoLogic, Inc. (HGL) received Task Assignment No. 07-0146 under Contract No. 07-0046 from the Arizona Department of Environmental Quality (ADEQ) to conduct an industrial survey for the 20th Street and Factor Avenue Water Quality Assurance Revolving Fund (WQARF) Registry site (site) in Yuma, Arizona. Figure 1.1 depicts the area of the industrial survey in relation to the city of Yuma. Figure 1.2 depicts the boundary of the industrial survey.

The contaminants of concern (COCs) for the WQARF site include tetrachloroethene (PCE), trichloroethene (TCE), and cyanide. In performing the industrial survey, HGL conducted research to identify businesses or activities within the industrial survey boundary that may have used the COCs. Section 2.0 of this report describes the boundary for the industrial survey and explains HGL's research methodology. Section 3.0 details the results of the research. Appendix A of this report describes the sources of information consulted while conducting the industrial survey.



Filename: X:/Phoenix/Graphics/ARI005/TA3/ Fig-1-1a_20_Factor_IS.mxd
Project: ARI005-003
Created: BWoltz 06/13/2007
Revised: BWoltz 06/28/2007
Map Source: ADOT; ADEQ, 2006; www.azdeq.gov

HGL HydroGeoLogic, Inc

Legend

- Industrial Survey Boundary
- Additonal Area Researched
- Estimated Plume Boundary
- Yuma City Boundary

Figure 1.1
Industrial Survey Location Map
20th Street and Factor Avenue
WQARF Registry Site

Filename: X:/Phoenix/Graphics/ARI005/TA3/Fig-1-1_20_Factor_IS.mxd
Project: ARI005-003
Created: BWoltz 06/28/2007
Revised: BWoltz 06/29/2007
Map Source: ADOT; ADEQ, 2006; www.azdeq.gov

HGL HydroGeoLogic, Inc

Legend

- Industrial Survey Boundary
- Additonal Area Researched
- Houston International Freedom Newspapers of Southwestern Arizona, Inc.

Figure 1.2
Facilities Location Map
20th Street and Factor Avenue
WQARF Registry Site
TFHGLC000008

2.0 INDUSTRIAL SURVEY

2.1 IDENTIFICATION OF SITE BOUNDARY

HGL conducted an industrial survey to assist the ADEQ in its investigation of the 20th Street and Factor Avenue WQARF Registry site in Yuma, Arizona. The ADEQ identified the boundary of the industrial survey as 18th Street to the north, the railroad parcels to the east, 22nd Street to the south, and Arizona Avenue to the west. HGL used the Yuma County online geographic information systems mapping program to determine the street ranges within the industrial survey boundary.

In addition to the boundary established by the ADEQ, HGL conducted research on an additional area because of its proximity to the WQARF site and the nature of the businesses in the area. Figure 1.2 above depicts the boundary of the industrial survey, including the additional research area. The street addresses within the industrial survey boundary are identified in Table 2.1 below.

Table 2.1
Industrial Survey Street Ranges

From	To	Street Name
501	798	East 18th Place
501	698	East 18th Street
751	898	East 19th Street
501	1098	East 20th Street
701	1098	East 21st Street
501	809	East 22nd Street
1800	2199	South Arizona Avenue
1800	2199	South Factor Avenue
2000	2100	South Kennedy Lane
1800	1999	South Rail Avenue

2.2 METHODOLOGY

HGL reviewed a variety of resources to identify businesses that operated within the industrial survey boundary. When possible, HGL attempted to ascertain the nature of these businesses. In addition, HGL conducted an extensive search of ADEQ finding aids to locate any files pertaining to businesses within the industrial survey boundary. To locate relevant regulatory files, HGL used the zip codes 85365 and 85364 and the street names identified in Table 2.1. The subsections below describe HGL's research methodology.

2.2.1 City of Yuma Directory Research

HGL reviewed Yuma city directories published by Arizona Directory Company, Yuma Directory Company, Mountain Bell, Johnson Publishing Company, Capitalist Company, Hill-Donnelly, and R.L. Polk Directory. HGL began its review with the 1947 directory and continued searching until identifying the first commercial entity within the industrial survey boundary in 1953. All

available directories from 1953 to 2006 were then similarly reviewed. The city directories are divided into two parts, a street directory guide and a business directory guide, both of which were used to conduct the industrial survey.

The city directory research was conducted at the City of Phoenix Burton Barr Library, Arizona State Capitol Archives, Arizona State University Hayden Library (ASU), and the Yuma Main Library. If there were minor variations in a party's name over time (e.g., Yuma Winelectric Co. in 1998 and Winelectric Supply Co., Inc. in 1999), HGL assumed that the same business was operating at the address and used the more descriptive name for all the years the business operated.

In order to identify the business types of the parties located within the industrial survey boundary, HGL reviewed business directory guides for the city of Yuma. By reviewing the business directory guides, HGL captured companies that fell within both the address range for the site and a business category that is likely to have used the COCs.

HGL conducted a final search utilizing the Google search engine on the Internet as a final resource to identify unknown business activities.

HGL was unable to locate city, business, or manufacturing directories for 1981 and 1992.

2.2.2 Resource Conservation and Recovery Act Notification Files and Manifests

HGL reviewed the ADEQ Resource Conservation and Recovery Act (RCRA) notification file finding aid to identify permitted facilities within the industrial survey boundary. HGL searched the finding aid by city and street address. HGL identified eight facilities within the industrial survey boundary with RCRA notification files. HGL reviewed the notification files and manifests for these facilities. HGL also searched the United States Environmental Protection Agency's (U.S. EPA) Envirofacts Multi-System Queries database via the Internet to identify RCRA facilities. The database listed four facilities with RCRA identification (ID) numbers within the industrial survey boundary.

2.2.3 RCRA Case Files, Compliance Log, and Archived Files

HGL reviewed the ADEQ RCRA open and closed case files, RCRA compliance log, and RCRA archived file finding aids to locate files on facilities within the industrial survey boundary. The finding aids were searched by street name and zip code and listed one facility within the industrial survey boundary.

2.2.4 Comprehensive Environmental Response, Compensation, and Liability Act

HGL searched the U.S. EPA Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database via the Internet to locate Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites within the industrial survey boundary. HGL queried the database by zip code and did not find any sites within the industrial survey boundary.

2.2.5 Preliminary Assessment/Site Investigation

HGL reviewed the ADEQ preliminary assessment/site investigation (PA/SI) finding aid to locate files on facilities within the industrial survey boundary. The PA/SI finding aid was searched by street name and zip code. HGL identified two facilities within the industrial survey boundary with PA/SI files and reviewed the records at the ADEQ.

2.2.6 Underground Storage Tank and Leaking Underground Storage Tank Research

HGL searched the ADEQ underground storage tank (UST) and leaking underground storage tank (LUST) online databases by zip code to identify facilities within the industrial survey boundary where the COCs may have been stored and/or released into the environment. HGL reviewed the databases to determine if any facilities maintained tanks containing waste oil, used oil, solvents, or an unknown product. HGL identified seven facilities with USTs within the industrial survey boundary, one of which also had a LUST. HGL reviewed the UST and LUST files at the ADEQ.

2.2.7 ADEQ Water Quality Database

HGL searched the ADEQ water quality database for information on applications and permits for facilities within the industrial survey boundary. The database was queried with all of the business names that were identified during the city directory review. HGL identified seven facilities with wastewater files and reviewed the records at the ADEQ.

2.2.8 Registered Drywells

HGL searched the ADEQ drywell database to identify any registered drywells within the industrial survey boundary. HGL queried the database on the zip codes of the industrial survey boundary and found no registered drywells.

2.2.9 WQARF Files

HGL searched the ADEQ Hummingbird database by street name and zip code to identify any WQARF files for facilities within the industrial survey boundary. HGL identified one facility with two WQARF files and reviewed the records at the ADEQ.

2.2.10 Hazardous Waste Box Storage, Hazardous Materials Incident Logbook, and Hazardous Waste Inspections Databases

HGL searched the ADEQ Hazardous Waste Box Storage, Hazardous Materials Incident Logbook, and Hazardous Waste Inspections databases by street name and zip code to identify any files for facilities within the industrial survey boundary. HGL identified one facility with a Hazardous Waste Box Storage file and reviewed the records at the ADEQ.

3.0 INDUSTRIAL SURVEY RESULTS

3.1 CITY OF YUMA DIRECTORY RESULTS

In conducting the Yuma city directory research, HGL identified 368 businesses within the industrial survey boundary. In past research conducted for the ADEQ, HGL has identified general business categories that may be significant users or generators of the COCs at the WQARF site.[1] For the businesses identified in the city directories, HGL assigned them into general business categories, when applicable. In total, 145 businesses where able to be assigned into the following business categories:

- Chemical Dealers: 4 businesses
- Carpet Cleaners: 3 business
- Furniture & Store Fixture Builders/Finishers: 10 businesses
- Manufacturing Operations: 11 businesses
- Metal Fabrication/Welding Shops: 4 businesses
- Pest Control Services: 1 businesses
- Printers: 19 businesses
- Produce Growers/Shippers/Dealers: 32 businesses
- Vehicle Repair/Service: 56 businesses
- Photography Studio: 4
- Aircraft Repair: 1

Another 196 businesses were retailers, wholesalers, or service-oriented companies not known to typically use the COCs in their business activities. The business activities of the remaining 27 companies were not readily discernable.

Tables 3.1 through 3.9 present the results of the Yuma city directory research by street address. The tables list business name, years of operation, and business type, if known. The business names and years of operation are provided as listed in the Yuma street directories. If a business category was identified in the city directories, it was included in the business type field without an asterisk. If a business type was determined based on a business's name, then it was noted with an asterisk. If a business type could not be determined, the business type was left blank.

[1] This determination of significant users or generators is based on HGL's prior investigation of business types that commonly used the same COCs. This work was conducted on behalf of the ADEQ for other industrial surveys in Arizona under Contract No. 01-0069.

Table 3.1
City Directory Results – 501-798 18th Place East

Address	Business	Years	Business Type	Comments
501-798 18th Place East				
575				
	O'Mally Glass	1968-1985	Glass: Auto Plate & Window	
	Communications Management	1986	Communications	
	C Q Communications Inc.	1986-1987	Communications	
	A-1 Floor Coverings Co.	1994, 1997	Flooring Retailer	
	Chemical Dry of Yuma	1993-2005	Carpet Cleaners	
	Yuma Carpets	1990-2006	Flooring Retailer	
616				
	N O Nelson Co.	1979-1984		
	Yuma Winelectric	1985-1999	Electrical Equipment Retailer	
	Duct Works	2001-2006	Air Duct Installation*	
630				
	Wellard Construction Co.	1979	Construction	
	Hall Specialty Plaster & Drywall	1979-1982	Plaster & Drywall Supplies	
	Hall-Patterson International	1979-1984		
	Hall Specialty Building Supply	1979-1983	Building Supply Retailer	
	Southwest Gas Corporation	1992		There is no information on when Southwest Gas Corp. initially opened at this address. The only information available was that a LUST was removed in 1992.
	Allstar Installations	2006	Carpet Installation*	
631				
	Mesa Electronics	1978	Electronic Supply Retailer	

Table 3.1 (continued)
City Directory Results – 501-798 18th Place East

Address	Company	Years	Business Type	Comments
501-798 18th Place East				
631 (continued)				
	Marj's Ceramics	1980-1983	Ceramic Studio	
	Arizona Coral Co/PMD Analytical Laboratories	2005	Coral Reef Retailer	
643				
	Dorco Building Supplies	1979-1980	Building Supply Retailer	
	MOTECH	1983-1984		
	A & M Garage	1985	Automobile Repairing	
	Fenderville Resale Cars & Trucks	1986	Automotive Dealership	
	Southwest Restaurant Services	1986-1987	Restaurant Supply	
	Desert Excavating	1987	Excavation Service	
	Bobrick Tool	1986-1987	Tool Supply Retailer	
	American Sprinkler	1986-1987	Sprinkler Services and Installation	
	Specialty Electric/ Specialty Lighting	1988-1995	Electrical and Lighting	
	National Sanitary Supply	1997-2001	Chemical Products	
	Roadrunner Fire & Safety	2003-2004	Fire Safety Supply Retailer	
649				
	Consolidated Electrical Distribution	1979-2006	Electrical Apparatus Supply Retailer	
655				
	Sant's Cabinet Shop	1978-1983	Cabinet Shop	
660				
	Sun Power Plumbing & Solar	1979-1986, 2000	Plumbing and Solar Supply Retailer	

Table 3.1 (continued)
City Directory Results – 501-798 18th Place East

Address	Company	Years	Business Type	Comments
501-798 18th Place East				
660 (continued)				
	Sun Power Realty and Development	1986	Realty and Development	
	Rural Metropolitan Fire Department Ambulance Service	1985-2006	Fire Department Ambulance Service	
	Rural & Metropolitan Corp.	1986-2004	Fire Protection	
	Coronado Home Health Care	1987-1988	Health Care Services*	
	American Homepatient	1997-1998	Retail	
	Coronado Health Services	1993-1995	Health Care Services	
690				
	Sun Power Plumbing	1987-2006	Plumbing	

Table 3.2
City Directory Results – 751-898 19th Street East

Address	Company	Years	Business Type	Comments
751-898 19th Street East				
840				
	Coca Cola Bottling Company of Yuma	1991-2006	Bottling and Distribution	

Table 3.3
City Directory Results – 501-1098 20th Street East

Address	Company	Years	Business Type	Comments
501-1098 20th Street East				
536				
	Sun Valley Beverage Corp.	1963-2002	Bottling and Distribution	
547				
	Arizona Recreational Vehicle & Mobile Home Supplies & Service	1978	Automotive Repair*	
	Tool-Tech Industries	1979-1980	Tool Supply Retailer	
	Gregco Fabrication	1994	Automotive Fabrication	
	Prevention & Intervention	1995	Safety Awareness	
	Sun Laser	1996-2006	Laser Cartridge Recharging	
555				
	Carpets to Go of Yuma	1986-1987	Carpet Retailer	
	Johnny's Carpet Warehouse	1987-1995	Carpet Retailer	
566				
	United Van Lines	1979-1983	Trucking	
	Horizon Moving & Storage	1979-1983	Moving and Storage	
	United Intermode Inc.	1982		
570				
	Allied Van Line Agency	1979	Moving Company	
	All American Distributing Co	1979	Distribution	
	Durashield Automotive Grooming Center	1984	Automotive Washing	
	Crystal Bottle Water	1993	Bottling and Distribution	
578				
	United Liquor Wholesales Co.	1972-1979	Liquor Wholesale	

Table 3.3 (continued)
City Directory Results – 501-1098 20th Street East

Address	Company	Years	Business Type	Comments
501-1098 20th Street East				
578 (concluded)				
	All American Distributing Co.	1980-1982	Distributing	
	Yuma Chemical Inc.	1984	Chemical Products	
	Pilkington Construction	1990-1998	Construction	
598				
	Gray's Beverage Company	1971-1985	Beverage Distribution	
	Mesa Beverage Company	1986-1988	Beverage Distribution	
	Marcel J Enterprises	1994-2000	Clothing Retailer	
	Sun Valley Beverage Corp	2001-2006	Beverage Distribution*	
610				
	Denny's Tile Company	1977-2006	Tile - Ceramic (Contractors & Dealers)	
	Wade Distributing Inc.	1984	Distributing*	
	C H Enterprises	1988-1989, 1993-2006	Business Loans	
620				
	A A Yuma Recycling	1985-2006	Scrap/ Waste Materials	
625				
	RR Tracks Barkley Seed & Grain Co.	1967-1971	Seed Retailer*	
	Houston Photo Products	1967-1971	Photograph Development & Equipment Supply	
635				
	Dreamland Bedding & Factory Showroom	1991-1993	Bedding Sales & Production	
653				
	The Dancer's Workshop; Houston International LTD	1996-2004	Dance and Photograph Development & Equipment Supply	
	B Motion Industries	1996-1998	Industrial Supply	

Table 3.3 (continued)
City Directory Results – 501-1098 20th Street East

Address	Company	Years	Business Type	Comments
501-1098 20th Street East				
655				
	Houston Photo Products	1968-1985	Photograph Development & Equipment Supply	
	Houston Fearless/ Houston International	1985-2006	Photograph Development & Equipment Supply	
985				
	Desert Best Distributing	2004-2006	Food Industry Supply*	Food Services, Bar Equipment Fixtures & Supplies, Cleaning Systems & Equipment, Janitors Equipment & Supplies Manufacturers
	Pro Tech Automotive & Performance	2004-2006	Automotive Performance Equipment*	
1043				
	Rob's Backhoe Service	2004-2006	Construction*	

Table 3.4
City Directory Results – 701-1098 21st Street East

Address	Company	Years	Business Type	Comments
701-1098 21st Street East				
822				
	21 East Street	1991	Restaurant*	
	Platinum Cabaret	1999-2006	Restaurant*	
841				
	Winnelson Company	1985-1991	Plumbing Supply Retailer*	
	Ram Pipe & Supply	1994-2004	Plumbing Supply Retailer*	
	Geotechnical Testing Services	1999-2000	Technical Testing*	Soils Testing, Concrete Testing, Asphalt Testing, Masonry, Soils Investigations
	Cac Corp Southwest	2005	Metal Works*	Metal Finishers Metal Stamping
928				
	Ram Pipe & Supply	2002-2006	Plumbing Supply Retailer*	
929				
	Yuma Winlectric Company.	2000-2006	Electrical Equipment Retailer*	
	Cac Corp Southwest	2006	Metal Work*	Metal Finishers Metal Stamping
987				
	E L W Repair Services Inc.	1999-2006	Air Condition Repair*	Air conditioning & Refrigeration Service Station Parts & Service Commercial & Residential Sales & Service
	Advanced Carpet & Floor Covering	2000-2006	Floor Covering Retailer*	
	Geotechnical Testing Services	2001	Technical Testing*	Soils Testing, Concrete Testing, Asphalt Testing, Masonry, Soils Investigations
1044				
	Geotechnical Testing Services	2002-2005	Technical Testing*	Soils Testing, Concrete Testing, Asphalt Testing, Masonry, Soils Investigations
	Arciso Engineering Inc.	2004-2005	Engineering Services*	

Table 3.4 (continued)
City Directory Results – 701-1098 21st Street East

Address	Company	Years	Business Type	Comments
701-1098 21st Street East				
1045				
	Limon Construction	1999-2005	Construction*	
	Yuma Pest & Termite System	2000-2003	Pest Control*	
	Glasspro	2000-2005	Glass: Auto Plate & Window*	
	Arizona Speed Worxs	2005	Automotive*	

Table 3.5
City Directory Results – 501-809 22nd Street

Address	Company	Years	Business Type	Comments
501-809 22nd Street				
507				
	Heredia Construction Company	1979-1982	Construction*	
	Rollertyme Family Skating Center	1984-1985	Skating Rink	
	The Hobby House	1989	Model Aircraft Retailer*	
508				
	John's Auto Service	1997-2006	Automotive Repair	
511				
	Jerry & Gayle Trucking	1984	Trucking*	
	Lynco Precision Mach Shop	1993	Machine Shop*	
512				
	Nabob Manufacturing	1993-1997	Recreational Vehicle Dealer*	
	Lynco Precision Machine Shop	1994-2006	Machine Shop*	
	Paintgun Inc.	1995	Paintball Gun Retailer*	
519				
	Yuma Development Company	1952		
520				
	Mousies Sports & Screen Printing	2006	Screen Printing*	
740				
	Dorco Building Supplies	1993-2006	Building Supply Retail*	

Table 3.6
City Directory Results – 1800-2199 Arizona Avenue South

Address	Company	Years	Business Type	Comments
1800-2199 Arizona Avenue South				
1821				
	Co-Op Lumber Building Materials	1965-2000	Lumber Retailer	
	United Producers Consumers Cooperation Lumber Building Materials	1971-1999	Lumber Retailer	
	Big Bob's Carpet Outlet	2002-2006	Floor Coverings Retailer*	
	Flooring America	2002-2006	Floor Covering Retailer*	
1845				
	Franklin Uniroyal Auto Home Supply	1967-1999	Retail Automobile Parts	
	Uniroyal Tires Agent	1974-1975	Retail Automobile Parts*	
	Big O Tire Agent	1985-1996	Retail Automobile Parts	
	Franklins Big O Tire Auto Home Supply	1997-1999	Retail Automobile Parts	
	Franklin Tire & Suspension Auto Home Supply	1999-2006	Retail Automobile Parts	
1875				
	Hovatters Auto Doc	1967-1971	Automotive Repair	
	Erwins's Auto Doc	1973-2006	Automotive Repair	
1876				
	A-1 Appliance Service	1959	Appliance Repair*	
	Delf's Electric Motors	1963-1991	Automotive Repair	
	Gordies Speed Center	1971-1972	Retail Automobile Parts*	
1978				
	Gordies Speed Center	1973-2006	Retail Automobile Parts	
	Delf's Electric Motor	1983-1995	Automotive Repair	

Table 3.6 (continued)
City Directory Results – 1800-2199 Arizona Avenue South

Address	Company	Years	Business Type	Comments
1800-2199 Arizona Avenue South				
1903				
	McKelvey's Towing	1987-1991	Towing	
1910				
	Engineering Testing Labs	1971	Laboratory	
1920				
	Engineering Testing Labs	1974-1977	Laboratory	
	Witch Craft	1980-1984	Retail	
	Durashield Automotive Grooming Center	1980-2006	Automobile Washing	
	Yuma River Tours	1989-2006	River Tours	
1929				
	Arizona Window Tinting	2003	Automotive Window Tinting*	
	New Broom Carpet Cleaning Company	2003-2005	Carpet Cleaning*	
	Armstrong McCall Beauty Supply	2003-2005	Beauty Supply Retailer*	
	Bozrah Builders Inc.	2003-2006	Building Contractor*	
	House of Vacuums	2006	Retail/Vacuums*	
	New Blind Ultrasonic Cleaning	2006	Window Covering & Cleaning*	
	TNT Window Tinting Inc.	2006	Automotive Window Tinting	
1931				
	Aqua 2000 Purified Water	1997-2006	Bottling and Distribution	
1963				
	Chaparral Veterinary Clinic	1973-2006	Veterinary	
1977				
	Camco Development Company	1977	Development	
1990				
	Performance Plus Motorcycles	1974-1975	Motorcycle Dealer*	

Table 3.6 (concluded)
City Directory Results – 1800-2199 Arizona Avenue South

Address	Company	Years	Business Type	Comments
1800-2199 Arizona Avenue South				
1990				
	Performance Plus Motorcycles	1974-1975	Motorcycle Dealer*	
1999				
	Lee's Cycle	1971-1977	Motorcycle Dealer	
	Southwestern Honda	1978-1984	Motorcycle Dealer	
	Sunshine Yamaha Liberty Honda	1985-1995	Motorcycle Dealer	
	Liberty Motor Sports	1985-2006	Motorcycle Dealer	
2000				
	Yuma Honda Cars	1979-1980	Automotive Dealer	
2011				
	Sun Rental & Sales	1979-2006	Heavy Equipment Rental and Sales	
2029				
	Yuma Honda Cars	1982	Automotive Dealer	
	Honda Authorized Sales & Service	1983	Automotive Dealer	
	Karl Moedl Pontiac-Buick Inc.	1984	Automotive Dealer	
	Durashield Automotive Grooming Center	1985-1986	Automobile Washing	
	American Sprinkler	1988-1989	Sprinkler Retailer	
	Bobick Tool	1988-1989	Tool Sales	
	Southwest Restaurant Systems	1988-1989, 1997	Office and Restaurant Equipment	
	Trucks N Things	1988-1989	Automotive Dealer	
	Desert Excavating	1988	Excavating Equipment	
	Kawasaki-Suzuki/Suzuki-Kawasaki	1993-1994	Motorcycle Dealer	

Table 3.6
City Directory Results – 1800-2199 Arizona Avenue South

Address	Company	Years	Business Type	Comments
1800-2199 Arizona Avenue South				
2029 (continued)				
	BMK Development	1995-2001	Engineering	
	Kawasaki & Suzuki of Yuma	1995-2001	Motor Sports Sales and Repair	
	Fire Department	2006	Emergency Services	
	Rural Metro Corp.	2006	Emergency Services	
	Ambulance Service Rural Metro	2006	Emergency Services	
2030				
	News Enterprise/Yuma Farmer	1963	Newspaper	
2032				
	Dean's Plumbing	1956-1957	Plumbing Services*	
2035				
	Yuma Directory Company	1963-1971	Publishing	
	Southwest Printers	1963-1976	Publishing	
	News Enterprise/Yuma Farmer	1964-1965	Newspaper	
	University of Arizona Continuing Education Campus	1976-1982	School	
	Sun Graphics Printing Company	1977-1988	Publishing	
2055				
	Sun Printing Company.	1969-1996	Publishing	
	Sun Television	1969-2006	Television	
	Yuma Daily Sun	1969-2006	Newspaper	
	Associated Press	1993-2006	Newspaper	
	Bajo El Sol	1993-2006	Newspaper	
	Yuma's Newspaper	1993-2006	Newspaper	
	Freedom Newspaper	1993-2006	Newspaper	
	Climate Watchers	1999	Newspaper	
	Home Show Magazine	2001-2005	Publishing*	

Table 3.6 (continued)
City Directory Results – 1800-2199 Arizona Avenue South

Address	Company	Years	Business Type	Comments
1800-2199 Arizona Avenue South				
2100				
	Roper's Pet Services	1963-1989	Pet Services	
	Valley Photography	1993-2005	Photography	
2115				
	Curtis G Thomas Landscaping & Irrigation Systems	1978-1979	Landscaping	
	Plantasia Florist & Nursery	1978-1983	Nursery	
	Great Western Farm Commodities	1984-1985		
	Sorcerer's Apprentice Stained Glass Works	1984-1990	Stained Glass*	
	The Enchanted Florist	1984-1988	Florist*	
	Total Concept Beauty Center	1986-1990	Beauty Supply Wholesaler*	
	New Dimensions Industries	1986-1987		
	Colorado River Sod Company	1986-1988	Landscaping*	
	Be Sam Kramer Railroad Accident Investigation & Consultant Service Inc.	1986-1987		
	Nail Technician	1987-1988	Nail Salon*	
	L P L Technical Services Inc.	1987-1988		
	Astro Science Inc.	1987-1988		
	Metric Construction Company Inc.	1994	Construction*	
	Yuma's Newspaper	1995	Newspaper	
	Rainbow Carpet Cleaning	1996-1998	Carpet Cleaning*	
	Gragost Cooling	1997	Heating & Plumbing*	
	CC Interlock	2005	Automotive Parts Retailer*	
	Aerotech News	2006	Newspaper*	

Table 3.6 (continued)
City Directory Results – 1800-2199 Arizona Avenue South

Address	Company	Years	Business Type	Comments
1800-2199 Arizona Avenue South				
2125				
	Sun Graphics Printing Company	1990-2006	Printing*	
	Western Newspaper	2005	Newspaper*	
	Prescott Newspaper	2005	Newspaper*	
2155				
	Reddy Rents Most Everything	1980-2006	Heavy Equipment Rental and Sales*	

Table 3.7
City Directory Results – 1800-2199 Factor Avenue South

Address	Company	Years	Business Type	Comments
1800-2199 Factor Avenue South				
1900				
	Shapiro Company/Shapiro Construction	1973-1986	Construction	
	Yuma Industrial Buildings	1973-1976	Manufacturing*	
	Yuma Desert Manufacturing Corporation	1976	Manufacturing*	
	Lee Bob Plumbing & Heating Inc.	1976	Heating & Plumbing	
	Gray's Trailer Supply	1976	Trailer Supply	
	Genie Company	1976		
	1700 First Office Building	1976-1979		
	Byrd Refrigeration	1976-1978	Plumbing/Heating/AC	
	American Building Maintenance	1976-1984	Building Maintenance	
	Wesam Screen Company	1977-1978	Screen Products	
	Servisoft Soft Water	1977-1983	Water heaters/softeners	
	FMC Corporation-Citrus Machinery Division	1979-1998	Conveyor and Conveyor Equipment Manufacturing	
	Warehouse Stereo Electronic Consultants	1980	Electronic Retailer	
	Chas F Ludwig Electric Inc	1980	Electrical Work	
	Yuma Mortgage Company	1980	Mortgage Company	
	CJ's RV Repair	1982-1983	Repair Shop	
	Desert Vacuum Rebuilding	1983	Vacuum Repair	
	K & R Development/ K & R Plumbing	1983-1984	Plumbing	
	Inman and Morrow Electric	1984	Electrical Service	
	Orbex Resources, Inc.	1984-1985	Chemical and Fertilizer	

Table 3.7 (continued)
City Directory Results – 1800-2199 Factor Avenue South

Address	Company	Years	Business Type	Comments
1800-2199 Factor Avenue South				
1900 (continued)				
	Armored Transport Southwest	1984-1986	Armored Transport Company	
	Southwest Janitorial Service, Inc.	1984-1998	Janitorial Services	
	Colorado River Screens & Awnings	1986-1998	Screen & Awning Retail	
	LEPSCO	1993-1994		
	Valley Health Center	1994-1997	Health Care	
	Total Eclipse Window Tinting	1994-1999	Automotive Window Tinting	
	Bjornstad Refrigeration	1994-2006	Plumbing/Heating/AC	
	Sun Laser	1995-1997	Computer Maintenance	
	Tony Vargas - Paint & Body Repair	1997	Automotive Paint & Body Repair	
	Mesa Custom Furniture & Upholstery	1998-2000	Furniture Retailer	
	Dura Kool Screen & Door Inc.	2002	Screen Door Retailer*	
	A V Polishing	2003-2006	Polishing*	
	Novus Auto Glass Repair	2003-2006	Glass: Auto Plate & Window*	
	Ray's Shop	2005	Wood Working Shop*	
1920				
	Yuma Industrial Buildings	1974-1976	Manufacturing*	
	Yuma Desert Manufacturing Corporation	1976	Manufacturing	
	Arizona Auto Body	1977-1978	Automotive Body & Repair	
	Kaman Bearing & Supply Corp	1978	Parts and Bearings Retailer	
	John's Custom Upholstery	1978	Upholstery	
	C Q Communications, Inc.	1979-1990	Communications	
	Culver Refrigeration, Inc.	1980	Plumbing/Heating/ AC	

Table 3.7 (continued)
City Directory Results – 1800-2199 Factor Avenue South

Address	Company	Years	Business Type	Comments
1800-2199 Factor Avenue South				
1920 (concluded)				
	Bowling Service of America/Bowling Refrigeration Service	1980-2006	Plumbing/Heating/ AC	
	B & B Motorcycle Service and Accessories	1982	Motorcycle Repair	
	Chas F Ludwig Electric Inc	1982-1983	Electrical Work	
	Communications Management Company	1982-1985; 1991	Communications	
	T G K McCarthy	1984	Construction	
	Black Mountain Communications	1989-1990	Communications	
	Pactel Paging	1993-1995	Communications	
	Air Pro	1993-1995		
	Fischer Communications	1994-1997	Communications	
	Air Touch Paging	1995; 1998-2000	Communications	
	Cactus Flooring Supply	1995-1998	Flooring & Home Furnishing Retailer	
	Allan Fire Protection Systems	1997	Fire Protection Supplies	
	Autophone Communications	1997-1999	Communications	
	Pepilio's Audio & Motorsports	1998	Motorsports Service*	
	Fisher Wireless Services	1998-2001	Communications	
	Yuma Industrial Supplies	1999-2006	Industrial Supply Retailer	
	Verizon Wireless	2001-2006	Communications	
	Gila Electronics Of Yuma Inc	2001-2005	Electronics Retailer*	
	Chemgold Inc.	2002	Metallurgy	
1921				
	Yuma Popcorn Products	1984	Popcorn Products	

Table 3.7 (continued)
City Directory Results – 1800-2199 Factor Avenue South

Address	Company	Years	Business Type	Comments
1800-2199 Factor Avenue South				
1925				
	Sitera's Panasonic	1982-1984		
	Sitera's Discount Center / Sitera's Distributing Company	1982-1985	Retail /Distribution	
	Warner Distributing	1984	Distribution	
	Yuma Paper Products & Concessions Supply	1986	Paper products	
	Yuma Popcorn Products	1986-1987	Popcorn Products	
	Janitorial Industrial Maintenance Supply	1990-1991	Janitorial Supplies	
	TNT Bestway Transportation	1991	Trucking	
	Sunbelt Technologies	1991		
	Sen Tech Corp	1994		
	USF Bestway	1997-1998	Trucking	
	Roadway Express	1999	Trucking	
1938				
	Byrd Refrigeration	1979-2006	Plumbing/Heating/ AC	
1940				
	Congrove Construction	1979-1993	Construction	
	Auto After Market	1985	Automotive Supply Retailer	
	Pin Stripe Masters	1986	Automotive Detail Center	
	NoCON Concrete Construction (NoCon, Inc)	1986-1998	Concrete Work	
	Yuma East IGA	1997-1999	Grocery Store	
	Underhill Transfer Company Inc	1995-2006	Warehouse Storage	

Table 3.7 (continued)
City Directory Results – 1800-2199 Factor Avenue South

Address	Company	Years	Business Type	Comments
1800-2199 Factor Avenue South				
1965				
	Underhill Transfer Corporation aka Lyon Van Lines-Underhill Transfer Co	1966-1999	Warehouse Storage	
	Aero Mayflower Agency	1966-1967	Trucking*	
	Imperial Truck Lines	1967-1975	Trucking	
	Sitera Distributing Co.	1971	Distributing*	
	Yuma Van & Storage	1973	Transportation and Storage	
	Shippers Imperial Inc.	1976	Shipping/ Distributing	
	North American Van Lines Agency	1977-1998	Moving Company	
	TNT Bestway (Bestway) Transportation	1978-1998	Trucking	
	System 99	1979		
	A A Carpet Mechanics	1979-1982	Carpet Care	
	Yuma Popcorn Products	1984-1989	Popcorn Products	
	Clover Club Foods	1985	Food Distributing Warehouse	
	Werner Distributing	1985-1997	Distributing Company	
	Bekins Moving & Storage Company	1989-1990	Moving Company	
	Econo Care	1990	Automotive Shop	
	Olfactory Corporation (Old Factory Corporation)	1993-2005	Fragrance Manufacturing Industry	
	Roadway Express	1995; 1998-2002	Trucking	

S.S. Sycol - Current
A

TFHGLC000033

Table 3.7 (continued)
City Directory Results – 1800-2199 Factor Avenue South

Address	Company	Years	Business Type	Comments
1800-2199 Factor Avenue South				
1970				
	System 99	1982-1984		
	Underhill Transfer	1994	Warehouse Storage	
2020				
	Arizona Periodicals	1991-1997	Periodicals	
	Anderson News Corporation	1997-1999	Newspaper	
	Heating & Cooling Supply	2000-2006	Heating/AC	
2040				
	NOCON Construction Inc	1994	Construction	
	Tom Lemmon Drywall	1994-2006	Drywall Installation	
	Big A Building Materials	1994-2006	Plaster and Drywall Installation	
2075				
	FMC Corporation - Agricultural Chemical Group	1980-1985	Chemical Production	
	Yuma Disposal	1987; 1997-1998	Disposal Facility	
	Arizona Highway Safety Specialists, Inc.	1987; 1997-1998	Roadside Safety Specialist	
	City Auto Body	1990	Automotive Paint & Body Repair	
	P & B Auto Body	1991-1994	Automotive Paint & Body Repair	
	Arizona Wholesale Industrial Supplies	1991-2006	Industrial Supply Retailer	
	Yuma Lumber Company	1996-1997	Lumber Retailer	
	Donald's Air Conditioning & Heating	1999-2006	Heating/AC	

Table 3.7 (continued)
City Directory Results – 1800-2199 Factor Avenue South

Address	Company	Years	Business Type	Comments
1800-2199 Factor Avenue South				
2149				
	Trim Line	1986-1987		
	Giffen Service Company	1986-1987		
	Soils Productivity Service	1986-1987		
	Expo Inc.	1986-1987		
	Bio Treatment	1987-1988		
	AAA Taxi Inc.	1989	Taxi Company*	
	A & W Plumbing	1989	Plumbing*	
	Tints N Trim	1989-1994	Automotive Window Tinting*	
	Kinetic Concepts Inc.	1991-1997	Medical Technologies*	
	Custom Ceramic Tile Contractors	1991-2003	Tile - Ceramic (Contractors & Dealers)*	
	Shade Fabrics USA	1991-2003	Manufacturing of Shade Devices*	
	Armandos Upholstery	1993-1995; 2003-2006	Upholstery Retailer*	
	Eagle Snacks Inc.	1995	Snack Delivery*	
	Arizona Carpet Care	1997	Carpet Cleaning*	
	Katz Window Tint	1997-1998	Automotive Glass Tinting*	
	Riddle Elmer	1998-2006	Carpentry*	
	V & M Refrigeration	2003-2005	Refrigeration Repair*	
	Southwest Custom Carpets	2005	Carpet Installation*	
	Allan's Custom Cabinets	2005	Cabinetry*	
	Novis Auto Glass	2006	Glass: Auto Plate & Window*	
	Mad Pro Audio & Window Tinting	2006	Automotive Audio and Tinting*	
	C L Taylor Plumbing	2005-2006	Plumbing*	

Table 3.7 (concluded)
City Directory Results – 1800-2199 Factor Avenue South

Address	Company	Years	Business Type	Comments
1800-2199 Factor Avenue South				
2159				
	H & H Auction	1989-1990	Auction House*	
	Ram Pipe & Supply	1990-1991	Plumbing*	
	The Filter Factory	1992-1993	Filter Manufacturing & Retailer*	
	Custom Ceramic Tile Contractors	1994-2001	Tile - Ceramic (Contractors & Dealers)*	
	Pro Tech Automotive & Performance	2002-2003	Automotive Repair*	
2161				
	Quality Tile Distributors	1989-1993	Tile - Ceramic (Contractors & Dealers)*	
	The Filter Factory	1994-1999	Filter Manufacturing & Retailer*	
	Western Wireless	2003-2004	Communications*	
2165				
	P & F Manufacturing Corp	1987-1988		
	The Filter Factory	1989	Filter Manufacturing & Retailer*	
2166				
	Mohawk Wholesale & Equipment Company Inc.	1982-1989; 1993-1995		
	One Source Distributors	1998-2006	Electrical Equipment Retailer*	

Table 3.8
City Directory Results – 2000-2100 Kennedy Lane South

Address	Company	Years	Business Type	Comments
2000-2100 Kennedy Lane South				
2006				
	Specialty Electric	2002-2006	Electrical Equipment*	
2026				
	Air Central Air Conditioning	2002-2006	Air Conditioning Repair*	
2083				
	Frank & Son Windshields	2005-2006	Glass: Auto Plate & Window*	

Table 3.9
City Directory Results – 1800-2000 Rail Avenue South

Address	Company	Years	Business Type	Comments
1800-2000 Rail Avenue South				
1891				
	Chemical Gold (Henry Ellis)/ Chemgold Inc.	1984-2001	Metallurgy	
	Ed Nance Drywall	2002-2006	Drywall Installation*	
1921				
	Air Pro	1996	Heating /AC*	
	Heating & Cooling Supplies	1997-1999	Heating /AC*	
	JCJ Electric Corp	2000		
1931				
	Westridge Management Company	1996-2006	Real Estate*	
	Hyatt Refrigeration	1996-2006	Heating/Plumbing/ AC*	
1940				
	Bonus Electric	1969	Electrical Repair*	
	C-Thru Awning of Yuma	1978-1981	Awning Retail*	
	Art's Aircraft	1982-1983	Aircraft Services*	
	Trimline of Yuma Company	1985-1987		
	Al's Electric	1988	Electrical Repair	
	A & R Electric	1989	Electrical Repair	
	R T S Electric	1990	Electrical Repair	
	Yuma City Cab/ AAA Taxi Company	1991-1993	Taxi Cab Company	
	Royal Limousine	1991-1993	Transportation	
	Three M's Electric Corp	1996-1999	Electrical Repair	
	Fassett & McLaughlin Auto Repair	1997	Automotive Repair*	
	MS Electric Corp	1997	Electrical Repair*	
	OCR Electric Corp	1999	Electrical Repair*	
	Big Joes Welding	2002-2006	Welding*	
	Kiko Carrascos Shop	2005	Automotive Repair*	

3.2 RCRA NOTIFICATION FILES AND MANIFEST RESULTS

The U.S. EPA Envirofacts Multi-System Queries database listed the following four facilities within the industrial survey boundary has having RCRA ID numbers:

- Sun Printing Company (AZD982472714) located at 2055 Arizona Avenue is listed as an active Conditionally Exempt Small Quantity Generator (CESQG);
- AA Sydcol LLC DBA Sydcol (AZR000501510) located at 1925 S. Factor Avenue is listed as an active Small Quantity Generator;
- Hughes Supply Inc. (AZR000503151) located at 928 E. 21st Street is listed as an active CESQG; and
- Houston International (Houston) (AZD983480963) located at 655 E. Factor Avenue is listed as an active CESQG.

The ADEQ RCRA notification file finding aid listed eight facilities within the industrial survey boundary as having notification files. HGL reviewed the notification files and manifests for the eight facilities. Of the eight, three had manifests that listed the COCs at the WQARF site.

- Yuma Daily Sun located at 2055 Arizona Avenue shipped 400 pounds (lbs) of petroleum distillates and PCE to Safety-Kleen Systems, Inc. in Denton, Texas Avenue on July 24, 2003. No U.S. EPA RCRA ID number is listed on the manifest because the generator is a CESQG. It should be noted that the companies listed at 2055 Arizona Avenue are part of the Freedom Newspapers of Southwestern Arizona, Inc. There are a number of auxiliary publication companies operating at this address.

- Freedom Newspapers located at 2055 Arizona Avenue shipped 385 lbs of petroleum distillates and PCE to Safety-Kleen Systems Inc. in Denton, Texas on June 16, 2005. No U.S. EPA RCRA ID number is listed on the manifest because the generator is a CESQG.

- On behalf of the ADEQ, 2,400 lbs of cyanide contaminated soil was shipped from 655 E. 20th Street, the location of Houston, to 21st Century EMI in Fernley, Nevada on March 2, 2005. No U.S. EPA RCRA ID number is listed on the manifest because the generator is a CESQG.

3.3 RCRA CASE FILES, COMPLIANCE LOG, AND ARCHIVED FILE RESULTS

Houston was the only company within the industrial survey boundary that was listed as having a file within the ADEQ RCRA open and closed case files, RCRA compliance log, and RCRA archived file finding aids. Houston has a RCRA closed case file that contains correspondence, sampling plans, and inspection reports.

3.4 CERCLA RESULTS

The U.S. EPA CERCLIS database did not list any CERCLA sites within or near the industrial survey boundary.

3.5 PA/SI RESULTS

The ADEQ PA/SI finding aids listed two facilities within the industrial survey boundary as having PA/SI files, Houston and Yuma Recycling. For each of the two facilities, the ADEQ PA/SI file contained preliminary assessments reports, preliminary assessment questionnaires, and ADEQ data summary and evaluation forms. A confidential PA/SI folder was also reviewed for each facility. The confidential folders contained preliminary assessment review forms and associated score sheets and hazardous ranking system (HRS) rationale.

Of the two facilities, only Houston, located at 655 E. 20th Street, used the COCs in its operations. The majority of documents located in the PA/SI file were initially located in the WQARF files. Refer to Section 3.9 below for a summary of the WQARF documents reviewed for Houston.

3.6 UST/LUST RESULTS

The ADEQ UST/LUST online databases listed seven UST facilities within the industrial survey boundary. None of the UST facilities stored the COCs, but one facility had two waste oil USTs. Erwin's Auto Doc Auto Repair (0-001954) located at 1875 S. Arizona Avenue is listed as having two 500-gallon waste oil USTs. The USTs were removed and the site received closure on September 1, 1986.

3.7 ADEQ WATER QUALITY RESULTS

The ADEQ water quality database did not list any water quality applications or permits for businesses within the industrial survey boundary.

3.8 REGISTERED DRYWELL RESULTS

The ADEQ drywell database did not list any drywells within the industrial survey boundary.

3.9 WQARF FILE RESULTS

The ADEQ's Hummingbird database listed Houston as the only company within the industrial survey boundary with WQARF files. Houston began operating at 655 E. Factor Avenue in 1965. Prior to that time, the land was vacant. Houston operated as a motion picture laboratory as well as a manufacturing facility for the manufacture of photographic film and paper processing equipment.

Houston's motion picture laboratory used varying amounts of photographic chemicals and water in the development of film. The wastewater from the film development contained cyanide compounds and silver. The wastewater was treated to recover silver and then disposed of in a number ways. Some of the wastewater was discharged into a 1,000-gallon underground concrete sump. When the sump was full, wastewater was discharged onto the ground to the east of the site. Wastewater was also used to water the plants in the landscaped areas in front of the building. On the southwest portion of the property, wastewater was discharged to the ground by a sprinkler system and then later to a septic tank.

From approximately 1975 to 1991, Houston used PCE in a 50-gallon vapor degreaser to clean parts. In 1978, an employee drained approximately 15-20 gallons of PCE from the degreaser into the 1,000-gallon concrete sump.

3.10 HAZARDOUS WASTE BOX STORAGE, HAZARDOUS MATERIALS INCIDENT LOGBOOK, AND HAZARDOUS WASTE INSPECTIONS DATABASE RESULTS

Houston was the only company within the industrial survey boundary that was listed in the ADEQ Hazardous Waste Box Storage, Hazardous Materials Incident Logbook, and Hazardous Waste Inspection databases. Houston had two files within the ADEQ Hazardous Waste Box Storage files. The files contained records related to inspections conducted on October 9, 1990, June 24, 1993, March 31, 1994 and November 9, 2004.

APPENDIX A
INFORMATION SOURCES

DRAFT INDUSTRIAL SURVEY
20th STREET AND FACTOR AVENUE
WQARF REGISTRY SITE
YUMA, ARIZONA

TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1
2.0 INFORMATION SOURCES 1
- 2.1 U.S. GOVERNMENT 1
- 2.2 STATE OF ARIZONA 1
- 2.3 YUMA COUNTY 2
- 2.4 CITY OF PHOENIX 2
- 2.5 CITY OF YUMA 3
- 2.6 OTHER PUBLIC SOURCES 3

TFHGLC000043

APPENDIX A
INFORMATION SOURCES

DRAFT INDUSTRIAL SURVEY
20th STREET AND FACTOR AVENUE
WQARF REGISTRY SITE
YUMA, ARIZONA

1.0 INTRODUCTION

This appendix lists the sources contacted by HGL for information during the course of conducting the industrial survey for the 20th and Factor Avenue WQARF Registry site. Sources include various federal and state government entities as well as other public entities.

2.0 INFORMATION SOURCES

2.1 U.S. GOVERNMENT

U.S. Environmental Protection Agency
http://www.epa.gov
http://www.epa.gov/enviro/html/multisystem_query_java.html

HGL queried the Envirofacts Multi-System Queries database encompassing RCRA, Comprehensive Environmental Response, Compensation, and Liability Information System, and Toxic Release Inventory System for information on facilities within the industrial survey boundary.

2.2 STATE OF ARIZONA

Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, Arizona 85007
Records Management Center
(602) 771-4335
http://azdeq.gov/databases

HGL reviewed the drywell, hazardous waste inspections, and underground storage tank and leaking underground storage tank online databases to identify information on facilities within the industrial survey boundary. Electronic and paper copies of hazardous waste box storage, preliminary assessment/site investigation, RCRA compliance log, RCRA open and closed case files, RCRA archived, and RCRA notification files and the water quality database provided by the ADEQ were also reviewed.

Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, Arizona 85007

Ms. Lara provided HGL access to the ADEQ Hummingbird and Records Search Utility databases to determine what, if any, files were available for facilities located within the boundary of the industrial survey.

Arizona State Capitol Library
1700 West Washington Street
Phoenix, AZ 85007
(602) 542-4159

HGL visited the Arizona State Capitol Library and reviewed Arizona business and industrial directories in order to identify the business categories of companies located within the industrial survey boundary.

2.3 YUMA COUNTY

Yuma County Department of Development Services
2351 W. 26th Street
Yuma, Arizona 85364
(928) 817-5000
http://www.co.yuma.az.us/dds/contactus.htm

HGL conducted a search of the Yuma County Geographic Information Systems website to obtain ownership and parcel information.

Yuma County Environmental Programs Office
2351 W. 26th Street
Yuma, Arizona 85364
(928) 817-5139

HGL contacted the Yuma County Environmental Programs Office in regards to hazardous waste spills and investigations. It was suggested that the City of Yuma Fire Department be contacted for this information.

2.4 CITY OF PHOENIX

Phoenix Burton Barr Public Library
1221 North Central Avenue
Phoenix, Arizona 85012
(602) 262-4636

HGL visited the Phoenix Public Library and reviewed Arizona business and industrial directories in order to identify the business categories of companies located within the industrial survey boundary.

TFHGLC000045

2.5 CITY OF YUMA

Yuma Public Library
350 S Third Ave
Yuma, AZ 85364

HGL visited the Yuma Public Library and reviewed Arizona business and industrial directories to identify the business categories of companies located within the industrial survey boundary.

Yuma Fire Department
One City Plaza
Yuma, AZ 85364

HGL visited the Yuma Fire Department located at City Hall and reviewed property reports for businesses located within the industrial survey boundary.

2.6 OTHER PUBLIC SOURCES

Arizona State University
Hayden Library
P.O. Box 871006
Tempe, Arizona 85287
(480) 965-4932

HGL visited the Hayden Library and reviewed its collection of city of Yuma directories. ASU staff photocopied pertinent pages from the city directories.

Rural/Metro Corporation
660 E. 18th Place
Yuma, Arizona 85365
(928) 782-4757

HGL contacted the Rural/Metro Corporation in regards to incident files for properties outside of the Yuma city limits.

Internet
www.google.com

HGL performed various searches on www.google.com in order to identify the business types of companies located in the industrial survey boundary.

TFHGLC000046

COMMODITY RESOURCE & ENVIRONMENTAL, INC.

Submit

Commodity Resource & Environmental (CRE) is celebrating their 30th anniversary as one of the world's leading silver recovery companies.
In just three decades, CRE has become the biggest "above-ground miners" in the Western U.S., harvesting silver from photographic and other by-products — over 15,000,000 pounds worth every year!
Environmentally responsible at every stage of our business, CRE has earned a reputation for reliability, unsurpassed quality and fair pricing.

CRE… "Your Business Resource in Environmentally Safe Silver Recovery".

C – Creative systems to manage your photo waste streams for maximum efficiency at minimum costs.
R – Recovery and refining of silver to help your business off-set the cost of photo waste management.
E – Environmentally sound and licensed hauling and treatment of your photo-waste residues & solutions.

CRE was founded in 1980 as a full service silver recovery/silver refining company serving the Southern California imaging community. Our primary customers include hospitals, medical centers, and doctors offices as well as other clinics performing radiology services (X-Rays). CRE offers refining services to these facilities for the extraction of silver from their scrap file X-Rays. Following recovery, the client is paid for the resultant net silver content, after refining charges. CRE refines over 15,000,000 pounds of scrap X-Rays for silver recovery, annually. CRE's principle location is in Burbank CA, which serves as the Company headquarters and local service arm for Southern, CA. CRE also maintains sales/service offices in Phoenix, AZ and San Jose, CA. Our silver refinery occupies 5 acres in Mojave, CA.

Future Expansion:
The Health Insurance Portability and Accountability Act(HIPAA) requires that CRE provide document security and destruction for the X-Rays themselves as well as the associated protective file envelopes and reports. These requirements have led to CRE entering the paper shredding and baling system. In the spring of 2010 CRE will be expanding our services into the records document destruction arena (beginning with medical records since we currently service the medical field in our silver recovery capacity).

Read how CRE is committed to keeping our environment clean and green!

Share / Save

AAA CERTIFIED Click to Verify

- Contact Us
- Scrap Film & Aluminum Buyers
- Document Destruction
- FAQ
- Silver Refining
- Silver Flake & Cartridge Exchange
- Dental Silver Mine
- Monetary Settlements
- Silver Recovery & Recycling
- Environmental Field Services
- Photo Solution Waste Disposal
- Ink & Solvent Waste Disposal
- Silver Recovery Equipment
- Single Use Camera Recycling

London Fix Feb 13, 2012

	AM	PM
Gold	1727.00	1720.00
Silver	33.8400	
Platinum	1663.00	NA
Palladium	703.00	NA

www.kitco.com

TFINET000001

COMMODITY RESOURCE & ENVIRONMENTAL, INC.

Submit

Your Business Resource in Environmentally Safe Silver Recovery

Commodity Resource and Environmental, Inc.

Headquarters – Southern California:
Commodity Resource & Environmental, Inc.
116 E. Prospect Avenue
Burbank, CA 91502-9946

Toll Free # (800) 943-2811
Phone # (818)843-2811
Fax # (818) 843-2862
E-mail: info@creweb.com

Northern California:
Commodity Resource & Environmental, Inc.
493 Reynolds Circle
San Jose, CA 95112

Toll Free # (800) 949-2811
Phone # (408) 501-0691
Fax # (408) 436-5578

Arizona / Nevada:
Commodity Resource & Environmental, Inc.
301 North 37th Drive #104
Phoenix, Arizona 85009

Phone # (602) 352-1911
Fax # (602) 352-0354

* Email Address:
* First Name:
Last Name:
Title:
Company Name:
* Address:
Phone:
Fax:
What is your Primary Business?: – Please choose an option –
How Many People Do You Employ?: – Please choose an option –

* Please send me FREE information about the following CRE services:

- Silver Refining Services
- Scrap Film Purchasing
- Document Destruction
- Silver Recovery Equipment (General)
- TMS-60im Silver Recovery System
- "Terminator" Silver Recovery Cartridges
- All Inclusive Silver Flake Spot Purchase Program
- Silver Recovery Cartridge Mail-in Refining Program

- Contact Us
- Scrap Film & Aluminum Buyers
- Document Destruction
- FAQ
- Silver Refining
- Silver Flake & Cartridge Exchange
- Dental Silver Mine
- Monetary Settlements
- Silver Recovery & Recycling
- Environmental Field Services
- Photo Solution Waste Disposal
- Ink & Solvent Waste Disposal
- Silver Recovery Equipment
- Single Use Camera Recycling

London Fix Feb 13, 2012

	AM	PM
Gold	1727.00	1720.00
Silver	33.8400	
Platinum	1663.00	NA
Palladium	703.00	NA

www.kitco.com

COMMODITY RESOURCE & ENVIRONMENTAL, INC.

Submit

Commodity Resource & Environmental, Inc. (CRE) is a full service precious metals refiner specializing exclusively in the recovery and recycling of silver by-products generated from photographic imaging facilities throughout the world.

CRE can supply your imaging department (Photo Lab, X-Ray Lab, and Graphic Arts/Printing Facility) with a complete variety of services to assure the most economical, efficient, and environmentally compliant method of on-site silver recovery and off-site refining.

Commodity Resource & Environmental, Inc. offers programs to maximize your monetary returns regardless of the size or film volumes of your facility, including:

- A complete line of Silver Recovery Equipment.
- Purchasing of your scrap Black & White Film (X-Ray/Graphic Arts) or your C-41 or motion picture raw-stock (unprocessed).
- Spot purchase or refining of your Electrolytic Silver Flake.
- All-inclusive metallic replacement recovery Cartridge Exchange Program. One fee includes the cartridge, shipping containers and all refining and treatment charges.
- CRE is also a licensed hauler of Photographic Bulk Chemical Waste and Graphic Arts Ink and Solvent Waste.
- We also buy Aluminum Printing Plates for recycling.

- Conservation of a Natural Resource
- Economic Return
- Environmental Compliance

Share / Save

- Contact Us
- Scrap Film & Aluminum Buyers
- Document Destruction
- FAQ
- Silver Refining
- Silver Flake & Cartridge Exchange
- Dental Silver Mine
- Monetary Settlements
- Silver Recovery & Recycling
- Environmental Field Services
- Photo Solution Waste Disposal
- Ink & Solvent Waste Disposal
- Silver Recovery Equipment
- Single Use Camera Recycling

London Fix Feb 13, 2012

	AM	PM
Gold	1727.00	1720.00
Silver	33.8400	
Platinum	1663.00	NA
Palladium	703.00	NA

www.kitco.com

TFINET000003

© 2009 Commodity Resource & Environmental, Inc.

COMMODITY RESOURCE & ENVIRONMENTAL, INC.

Submit

Photo Chemical Waste Pickup/Disposal

Commodity Resource & Environmental, Inc. (CRE) supplies "Silver Recovery Equipment" to satisfy the on-site "Silver Recovery" needs of every photographic imaging facility (Medical X-Ray, Graphic Arts, or Photo Lab) large or small.

However, many municipalities have severe limits for the allowable discharge of silver effluents even in minute amounts. In California and the Western United States, CRE offers hauling of photo chemicals. Some of our customers recover the silver on-site and then have us haul the low value effluents. Others simply have us haul their photo effluents with no pre-treatment.

CRE is a licensed transporter of hazardous waste and maintains an authorized facility for the off-site treatment and disposal of photochemical waste.

CRE also supplies transportation and field services to the graphic arts industry for "Ink & Solvent Waste Disposal".

Share / Save

AAA CERTIFIED Click to Verify

- Contact Us
- Scrap Film & Aluminum Buyers
- Document Destruction
- FAQ
- Silver Refining
- Silver Flake & Cartridge Exchange
- Dental Silver Mine
- Monetary Settlements
- Silver Recovery & Recycling
- Environmental Field Services
- Photo Solution Waste Disposal
- Ink & Solvent Waste Disposal
- Silver Recovery Equipment
- Single Use Camera Recycling

London Fix Feb 13, 2012

	AM	PM
Gold	1727.00	1720.00
Silver	33.8400	
Platinum	1663.00	NA
Palladium	703.00	NA

www.kitco.com

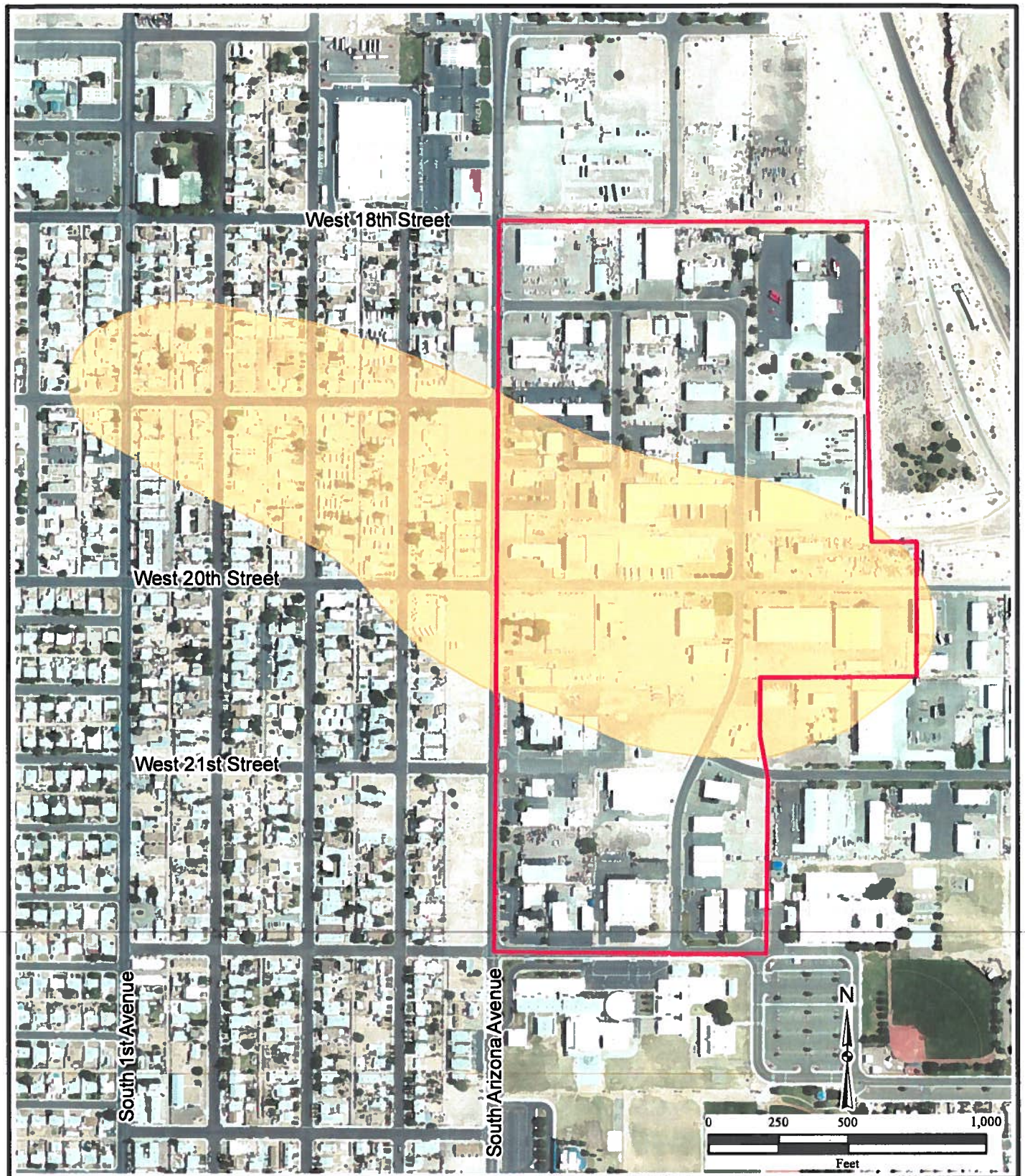
Enclosure 1
Source Documents Index
Draft Final Letter Report - Remedial Investigation
20th Street and Factor Avenue WQARF Registry Site

DOCUMENT BATES RANGE	DATE	PAGES	TITLE	AUTHOR/AUTHORORG	RECIPIENT/RECIPIENTORG
TFDEQP000001 TFDEQP000004	06/24/1993	4	Houston Photo Lab Hazardous Waste Inspection Report	Arizona Department of Environmental Quality (ADEQ)	Houston Photo Lab
TFDEQP000005 TFDEQP000023	08/25/1994	19	Preliminary Assessment/Yuma Recycling Center	Hessler, Mary E./ADEQ	20th and Factor WQARF Site File
TFDEQP000024 TFDEQP000038	10/02/1996	15	Draft Revised Eligibility and Evaluation Form	ADEQ	20th and Factor WQARF Site File
TFDEQP000039 TFDEQP000136	06/08/1999	98	Abbreviated Preliminary Assessment Report - Houston International	Hessler, Mary E. and Goodwin, Scott D./ADEQ	20th and Factor WQARF Site File
TFDEQP000137 TFDEQP000145	01/01/2011	9	20th Street and Factor Avenue - Water Quality Assurance Revolving Fund (WQARF) Registry Site (site)	ADEQ	
TFDEQP000146 TFDEQP000167	06/27/2003	22	Groundwater Monitoring Well Installation and Sampling Summary Report for 2002 - 20th and Factor WQARF Site, Yuma, Arizona	Geotrans, Inc.	ADEQ
TFDEQP000168 TFDEQP000576	07/20/2010	409	Soil Vapor Investigation and Well Installation and Sampling September 2008 through April 2010	Geotrans, Inc.	ADEQ
TFDEQP000577 TFDEQP000583	04/08/2002	7	ADEQ Interoffice Memorandum-Rationale for an Early Response Action at the 20th Street and Factor WQARF Site	Goodwin Scott D./ADEQ	20th and Factor WQARF Site File
TFDEQP000584 TFDEQP000588	04/06/1994	5	Preliminary Assessment Questionnaire	Houston International Ltd.	ADEQ
TFDEQP000589 TFDEQP000590	02/06/1969	2	Warranty Deed	Industrial Properties, Inc.	Houston Photo Products, Inc.
TFDEQP000591 TFDEQP000636	04/12/1990	46	Environmental Property Evaluation-Houston International Ltd.	Western Technologies, Inc.	Houston International Ltd.
TFHGLC000001 TFHGLC000046	06/29/2007	46	Draft Industrial Survey 20th Street and Factor Avenue WQARF Registry Site, Yuma, Arizona	HydroGeoLogic, Inc.	ADEQ
TFINET000001 TFINET000005	02/13/2012	5	Commodity Resource & Environmental, Inc. (CRE) Company Information	CRE	

ENCLOSURE 2

FIGURE 1
SITE LOCATION

This page was intentionally left blank.



\\Gst-srv-01\hglgis\20th_Street_Factor_Multiple_Sites_Installation_Wide\RI\(01)Site_Location_Map.mxd
2/21/2012 TJ
Source: ADEQ, 2011; ESRI Online Bing Maps

HGL HydroGeoLogic, Inc

Legend

Industrial Survey Boundary

Estimated Plume Boundary as of July 2011

Figure 1
20th Street and Factor Avenue WQARF Registry Site

APPENDIX B

SOIL GAS SURVEY, APRIL 1994

FOREE & VANN, INC.
9013 NORTH 24TH AVENUE, SUITE 7, PHOENIX, ARIZONA 85021-2851
TELEPHONE (602) 943-6997 FACSIMILE (602) 943-7179

May 9, 1994

Foree & Vann Project 4255

Mr. Herb Houston, Jr.
Houston International Photo Products
655 East 20th Street
Yuma, AZ 85365

Transmitted herewith is a copy of the Soil Gas Survey performed on the referenced site by Tracer Research Corporation under the supervision of Foree & Vann, Inc. The services performed provide a lateral estimation of the extent of TCA, TCE, and PCE in groundwater at the referenced site.

SOIL GAS SURVEY
HOUSTON INTERNATIONAL PHOTO PRODUCTS
AND DREAMLAND FACILITIES
655 AND 635 EAST 20TH STREET
YUMA, ARIZONA

Questions regarding any of the comments expressed herein should be referred to this office as soon as possible.

Respectfully submitted,

FOREE & VANN, INC.

Prepared by: William L. Stefanov
William L. Stefanov, M.S., G.I.T.
Staff Geologist-In-Training (AZ #05336)

Reviewed by: _____
Jeffry D. Vann, P.E. 5/9/94
Principal Engineer

/db
cc: Addressee (2); Mr. Steve Camp, Arizona Department of Environmental Quality (1)

W 10100 116.2

5/9/94

SOIL GAS SURVEY
HOUSTON INTERNATIONAL PHOTO PRODUCTS
AND DREAMLAND FACILITIES
655 AND 635 EAST 20TH STREET
YUMA, ARIZONA

• GEOTECHNICAL ENGINEERING

• ENVIRONMENTAL ENGINEERING

• CONSTRUCTION INSPECTION

• MATERIALS TESTING

TABLE OF CONTENTS

Section I 1

Scope of Work 2

Introduction 2

Previous Work 2

Site Investigation 3

Discussion and Recommendations 4

References 6

Section II 8

Section III 9

5/9/94

Scope of Work

Foree & Vann, Inc., was retained by Mr. Herb Houston, Jr. in order to provide supervision of a soil gas survey performed on the Houston International Photo Products and Dreamland facility properties by Tracer Research Corporation (hereafter referred to as TRC). Both of these properties are owned by Mr. Houston. The soil gas survey was performed in order to determine the lateral extent of groundwater contamination with TCA (1,1,1-trichloroethane), TCE (trichloroethene), and PCE (tetrachloroethene). The data collected by TRC at the above facilities was then interpreted by the author to identify possible source areas and to recommend further investigative actions.

Introduction

The Houston International facility is engaged in photographic development and film manufacturing processes and has been in operation for approximately 25 years (Foree & Vann, 1992a). The Dreamland facility was most recently occupied by a mattress manufacturer, and is currently unoccupied. The following information regarding PCE use at the Houston facility is derived from information on file at the Arizona Department of Environmental Quality and interviews with Mr. Herb Houston, Jr. (President of Houston International). There are no environmental concerns currently identified with regard to the Dreamland facility.

The Houston International facility began using PCE to clean machine parts in 1975, and discontinued the use of PCE in 1990. A release of PCE to the site soils, and subsequently to site groundwater, occurred in 1978 when approximately 15-20 gallons of PCE was introduced into a sump tank located on the facility. The sump tank was used to store wastewater from facility processes prior to pumping onto bare soil retention areas located along the eastern and southern borders of the Houston International property. Wastewater was also pumped onto a bare soil retention area located along the southern border of the Dreamland property. These retention areas currently exhibit greenish-blue staining caused by dyes contained in the wastewater.

PCE in the sump tank was subsequently pumped out onto the retention area along the eastern border of the Houston International facility. Overflow of wastewater onto the adjacent property to the east occurred from 1970 to 1980 (Foree & Vann, 1992a), and blue-green staining of surface soil is presently observed on this adjacent property.

Previous Work

Foree & Vann, Inc. has performed several soil and groundwater investigations on the Houston International and Dreamland facilities, and has installed three groundwater monitoring wells on the Houston International property. The results of these efforts indicate that soil contamination with PCE is localized near the wastewater sump tank

and within the water retention area along the eastern border of the site (Foree & Vann 1993a, 1992b, 1990). Contamination with PCE at levels exceeding the Environmental Protection Agency Maximum Contaminant Level (MCL) of 5 µg/l (micrograms per liter) was detected in all three of the monitor wells located on the Houston International facility (see Figure 4) during the latest round of groundwater sampling and testing. The most recent hydrologic data for the Houston International facility indicates that groundwater flow direction is to the west-northwest, with an average depth to groundwater of 72 feet below site grade (Foree & Vann 1993b).

The present soil gas survey was performed in order to obtain a rapid and reasonably robust assessment of the lateral extent of PCE in groundwater at the Houston International and Dreamland facilities. Soil gas surveying is based on the presence of mobile gasses (originating from the volatilization of liquid-phase contaminants present in soil and/or groundwater) within overlying soils. Samples of soil gas can be obtained at shallow depths and analyzed on-site using a gas chromotograph, which provides immediately-useful data. This method was chosen for use at the Houston International and Dreamland facilities due to the favorable hydrogeologic conditions (depth to groundwater, highly permeable sandy soil with no impermeable layers), high mobility of PCE gas, and extent of the study area.

Site Investigation

TRC collected a total of 34 soil gas samples from depths of 4.5 to 6.5 feet below ground surface (bgs) at locations specified by the author on 4/11/94 and 4/12/94. Soil gas samples were analyzed on-site using a gas chromotagraph for the presence of PCE. TCA and TCE were included as analytes as both of these compounds have historically been utilized with PCE in the manufacture of industrial degreasers and solvents, and therefore frequently occur together as soil and groundwater contaminants.

The following table lists the results of the soil gas survey. Refer to the TRC *Vapor Trace® Shallow Soil Gas Investigation, Houston International Photo Products, Yuma, Arizona* report dated April 15, 1994 (included in Section III of this report) for a complete discussion of field procedures, analytical procedures, field and laboratory QA/QC, and complete data listings. Sampling locations are designated by the prefix "SB" and are keyed to Figures 1, 2, and 3 (included in Section II of this report).

Sample	Depth (ft)	TCA (µg/l)	TCE (µg/l)	PCE (µg/l)
SB-1	6.5	0.04	0.06	100
SB-2	6.5	0.04	0.07	270
SB-3	6.5	0.3	0.1	570
SB-4	6.5	1	0.2	660
SB-5	6.5	0.7	0.6	200
SB-6	6.5	0.1	0.06	1100
SB-7	5.5	0.4	0.3	12000

Sample	Depth (ft)	TCA (µg/l)	TCE (µg/l)	PCE (µg/l)
SB-8	6.5	1	0.6	52000
SB-9	5.5	0.5	0.5	41000
SB-10	4.5	0.05	0.1	150
SB-11	6.5	0.1	0.5	180
SB-12	6.0	<0.05	<0.1	30
SB-13	6.5	0.006	0.02	5
SB-14	6.5	0.003	0.009	0.9
SB-15	6.5	0.007	0.08	6
SB-16	6	0..008	0.09	4
SB-17	6.5	0.006	0.1	2
SB-18	6.5	0.001	0.01	0.4
SB-19	6.5	0.04	0.02	1
SB-20	6.5	0.03	0.04	2
SB-21	6.5	0.03	0.05	6
SB-22	6.5	0.06	0.1	24
SB-23	5	0.1	0.2	76
SB-24	6.5	0.1	0.3	230
SB-25	6.5	0.3	0.8	1000
SB-26	6.5	0.2	0.6	2600
SB-27	6.5	1	2	4200
SB-28	6.5	0.8	0.8	3400
SB-29	6.5	<0.05	<0.1	76
SB-30	6.5	0.2	0.5	1900
SB-31	6.5	0.01	0.05	1
SB-32	6.5	0.01	0.01	0.3
SB-33	6.5	0.08	0.02	0.5
SB-34	6.5	0.2	0.06	2

Note: µg/l is micrograms per liter

Sample prefix "SB" is equivalent to sample prefix "SG" in the enclosed TRC report

The soil gas data has been contoured to obtain projected concentrations of TCA, TCE, and PCE on the Houston International and Dreamland facility properties (Figures 1, 2, and 3, respectively). The contour maps are presented in Section II of this report.

Discussion and Recommendations

Inspection of Figures 1, 2, and 3 indicate that the highest concentrations of TCA, TCE, and PCE on the Houston International and Dreamland facility properties are located along the eastern portion of the Houston International property. This is consistent with a source area centered along the water retention area on the eastern border of the Houston International facility. Soil sampling performed by this firm (Foree & Vann 1993a, 1992b, 1990) suggests that PCE in the study area soils is confined to the eastern water retention area, therefore, the soil gas sampled outside of this area is most likely the result of gas evolution from the groundwater surface. As

such, the contour maps are considered to generally reflect the underlying groundwater conditions.

Figure 1 presents the projected concentrations of TCA in soil gas within the study area. The contoured data suggests that TCA contamination is localized within an elongate northeast-southwest trending area which is approximately 280 feet long by 98 feet wide. The highest observed concentration of TCA in soil gas was 1.0 µg/l, which is consistent with an origin for TCA as a secondary constituent in solvents or degreasers. The contour map for TCE (Figure 2) indicates a fairly specific zone of contamination approximately 98 feet long by 65 feet wide located on the south-central portion of the Houston International facility. The available information does not suggest that a present or past point source for TCE has existed on the Houston International facility. The highest concentration of TCE observed in soil gas within the study area is 2.0 µg/l, which suggests an origin as a secondary constituent similar to TCA.

PCE contamination appears to be centered on the northeastern portion of the Houston International facility (Figure 3), and occupies an area which is approximately 156 feet wide by 300 feet long. This location is consistent with a source located within the water retention area on the eastern border of the Houston International facility. A single soil gas sample collected from the adjacent property to the east of the Houston International facility (at the direction of Mr. Herb Houston, Jr.) indicates that PCE contamination of soil and/or groundwater is present on this property. Aerial photographs dating from 1970 to 1980 indicate that overflow from the eastern Houston International water retention area migrated to this adjacent property (Foree & Vann, 1992a). It is probable, therefore, that PCE contamination in soil and/or groundwater on this adjacent property originates from the Houston International facility. The PCE concentration contours also suggest that groundwater to the north of the Houston International facility has been contaminated.

The high concentrations of PCE observed in samples SB-8 and SB-9 may be the result of the accumulation of soil gas under an asphalt parking area located along the northern edge of the Houston International facility. The asphalt would prevent the ready migration of soil gas to the atmosphere by acting as an impermeable cap. These points should therefore be taken as order of magnitude indicators rather than absolute values. The same holds true for other sample points located under asphalt on the Houston International and Dreamland facilities (SB-10 through SB-17, SB-25 through SB-30, and SB-33).

All three of the contamination zones described above exhibit a westerly displacement from the assumed source within the eastern water retention area. This is consistent with the west-northwest groundwater flow direction in the study area. The data also suggest that northeasterly-southwesterly migration of TCA, TCE, and PCE has taken place. This may be the result of several factors including variations in groundwater

flow direction and velocity over time, local irregularities in the local groundwater surface, pumping from nearby wells, mechanical or chemical dispersion along the contaminant zone borders, and diffusion along the contaminant-groundwater interface (Domenico and Schwartz, 1990).

Better definition of the groundwater flow direction and velocity on the Houston International facility is necessary to accurately assess the present and future transport patterns of PCE (the dominant contaminant species in terms of concentration). This firm recommends that a total of four additional monitor wells be installed on the Houston International and Dreamland facility properties. Three of the wells would be placed on the Houston International facility so as to track the movement of PCE in groundwater to the north, west, and south. The fourth well would be placed in the southwestern corner of the Dreamland facility to provide a source of background data. The proposed monitor well locations are illustrated on Figure 4 (located in Section II of this report). Seven wells (if the four additional wells are installed) located on the Houston International and Dreamland facility properties would enable accurate determination of the existing flow direction and gradient over the area, and would provide flow velocity data necessary for contaminant transport modeling and subsequent remediation system design.

References

Domenico, P.A. and Schwartz, F.W. (1990) Physical and Chemical Hydrogeology. John Wiley & Sons: New York, NY. 824 p.

Foree & Vann (1993c) Quarterly Groundwater Monitoring Report #2, Houston International Ltd., 655 East 20th Street, Yuma, AZ. Foree & Vann, Inc.: Phoenix, AZ, 39 p.

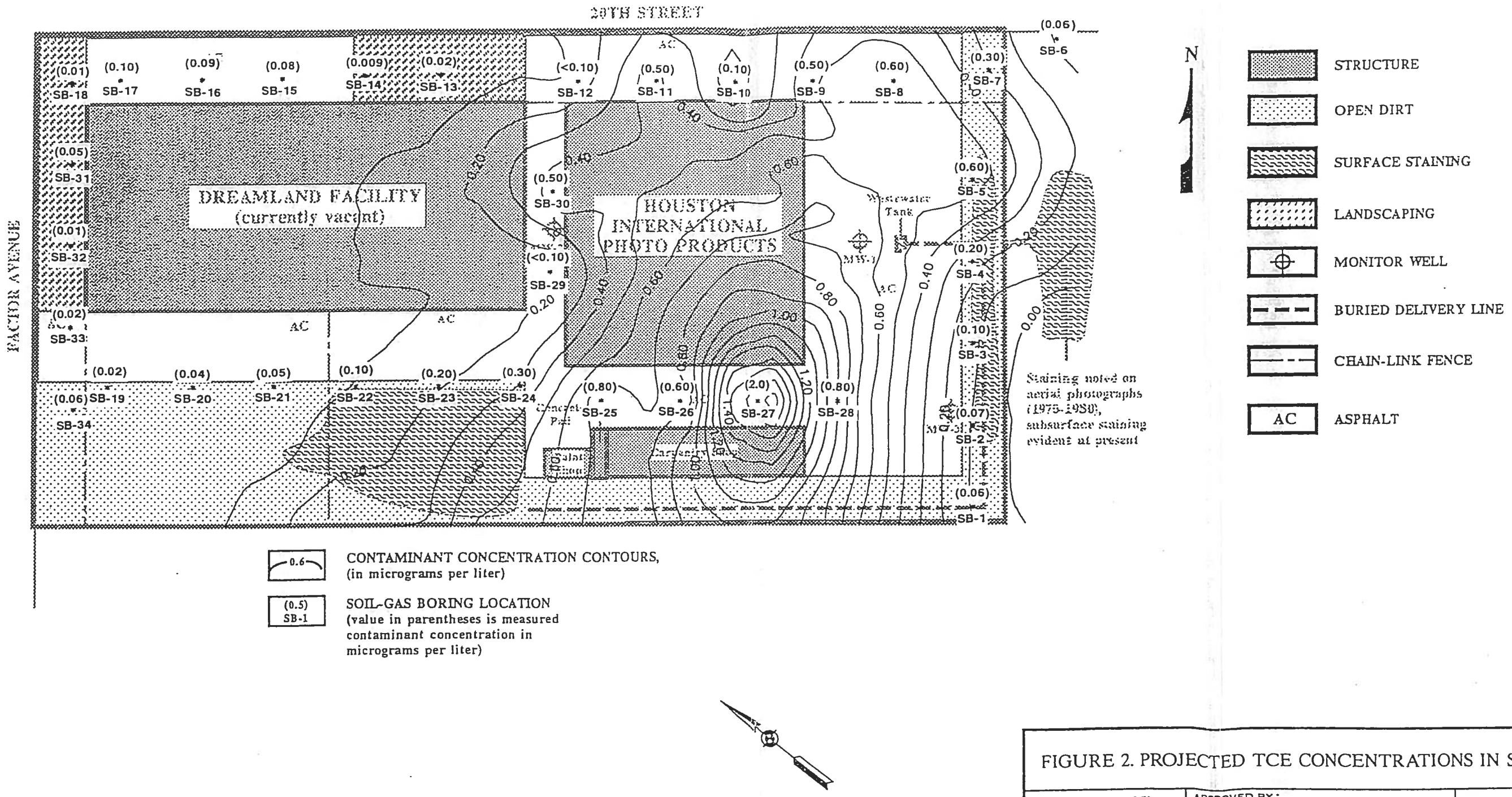
_____(1993b) Technical Report, Installation of MW-3 and Quarterly Monitoring Report 1, Houston International Ltd., Yuma, AZ. Foree & Vann, Inc.: Phoenix, AZ, 34 p.

_____(1993a) Phase II Environmental Site Assessment, Soil & Groundwater Sampling, Houston International Ltd., Yuma, AZ. Foree & Vann, Inc.: Phoenix, AZ, 26 p.

_____(1992b) Technical Report, Installation of MW-1 and Response to ADEQ, Houston International Ltd., Yuma, AZ. Foree & Vann, Inc.: Phoenix, AZ, 25 p.

_____(1992a) Site Assessment & Remedial Action Plan, Houston International Ltd. Photo Products Division, 655 East 20th Street, Yuma, AZ. Foree & Vann, Inc.: Phoenix, AZ, 27 p.

_____(1990) Phase II Environmental Site Assessment, Houston International Ltd., 655 E. 20th Street, Yuma, AZ. Foree & Vann, Inc.: Phoenix, AZ, 48 p.



Contour Interval is 0.1 micrograms per liter

Groundwater Flow Direction

FIGURE 2. PROJECTED TCE CONCENTRATIONS IN SOIL GAS

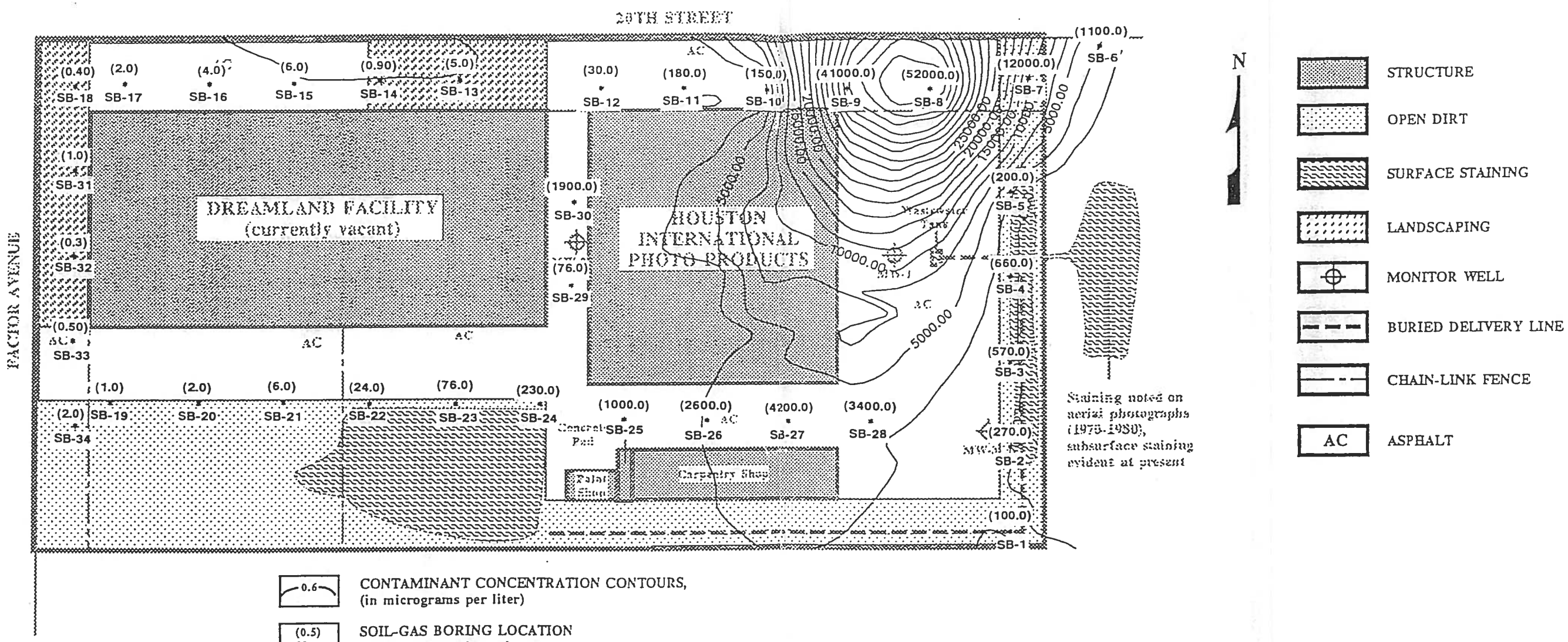
SCALE: 1" = 65'	APPROVED BY: FOREE & VANN, INC.	DRAWN BY WLS
DATE: 5/5/94		REVISED

HOUSTON INTERNATIONAL PHOTO PRODUCTS
655 EAST 20TH STREET
YUMA, ARIZONA

PROJECT 4255

DRAWING NUMBER

11 X 17 PRINTED ON NO. 1000H CLEARPRINT



Contour Interval is 2500 micrograms per liter

Groundwater Flow Direction

FIGURE 3. PROJECTED PCE CONCENTRATIONS IN SOIL GAS

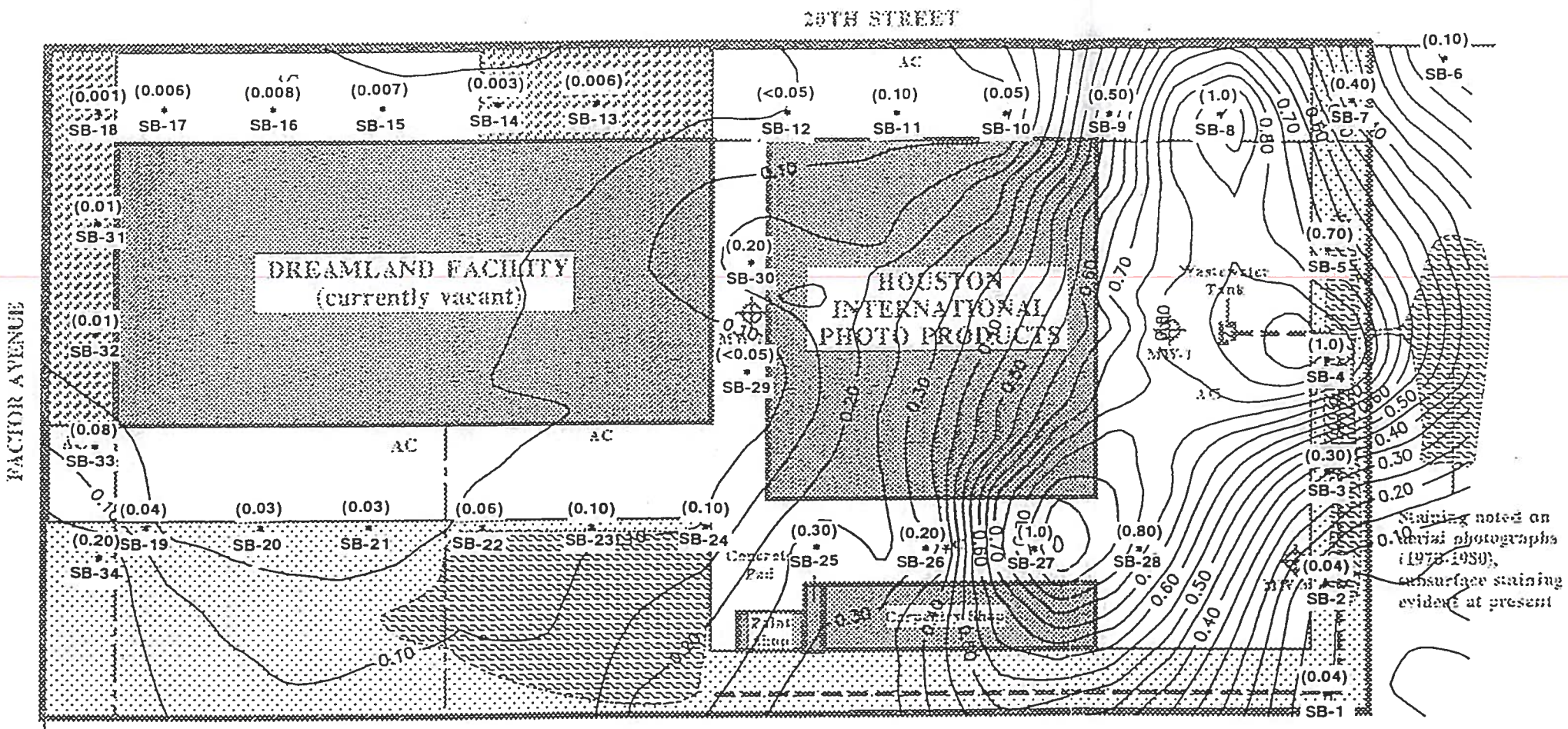
SCALE: 1" = 65'	APPROVED BY: FOREE & VANN, INC.	DRAWN BY WLS
DATE: 5/5/94		REVISED

HOUSTON INTERNATIONAL PHOTO PRODUCTS
655 EAST 20TH STREET
YUMA, ARIZONA

PROJECT 4255

DRAWING NUMBER

11 X 17 PRINTED ON NO. 1000H CLEARPRINT



N

STRUCTURE

OPEN DIRT

SURFACE STAINING

LANDSCAPING

MONITOR WELL

BURIED DELIVERY LINE

CHAIN-LINK FENCE

AC ASPHALT

0.6 CONTAMINANT CONCENTRATION CONTOURS, (in micrograms per liter)

(0.5) SB-1 SOIL-GAS BORING LOCATION (value in parentheses is measured contaminant concentration in micrograms per liter)

Contour Interval is 0.05 micrograms per liter

Groundwater Flow Direction

FIGURE 1. PROJECTED TCA CONCENTRATIONS IN SOIL GAS

SCALE: 1" = 65'	APPROVED BY: FOREE & VANN, INC.	DRAWN BY WLS
DATE: 5/5/94		REVISED

HOUSTON INTERNATIONAL PHOTO PRODUCTS
655 EAST 20TH STREET
YUMA, ARIZONA

PROJECT 4255

DRAWING NUMBER

11 X 17 PRINTED ON NO. 1000H CLEARPRINT

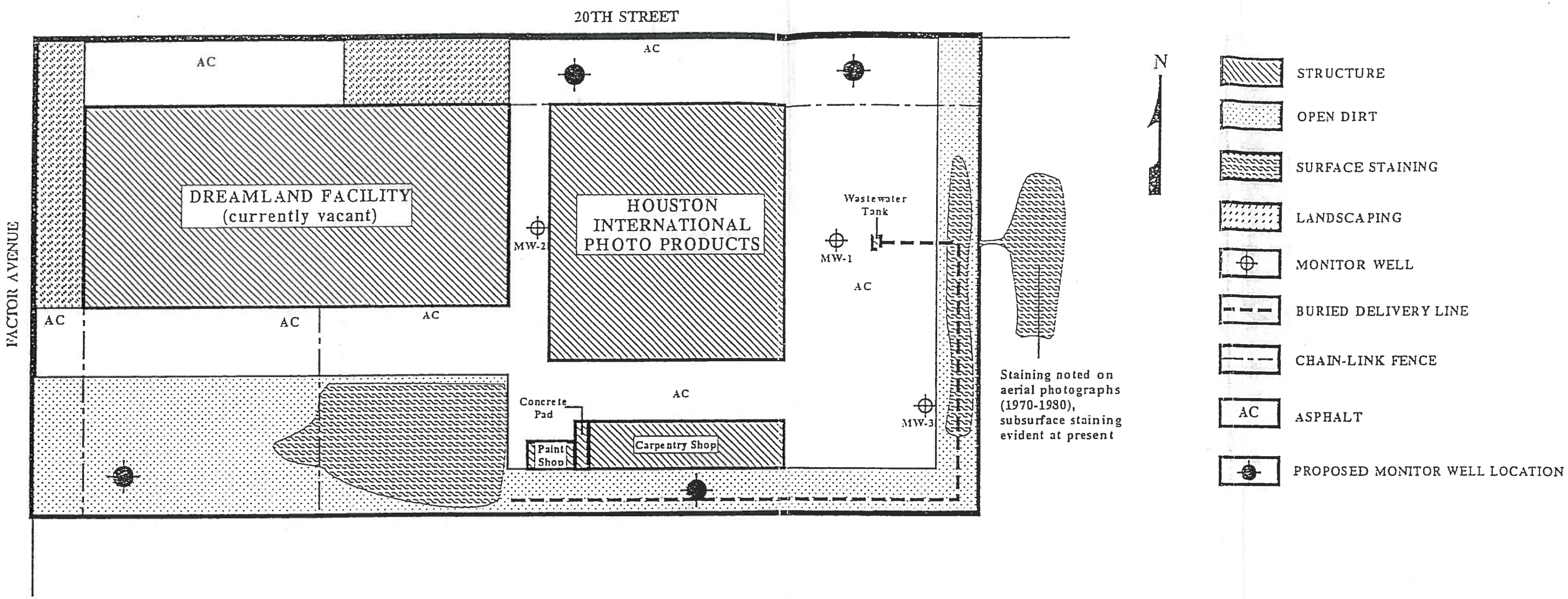


FIGURE 4. SITE PLAN AND PROPOSED MONITOR WELL LOCATIONS

SCALE: 1" = 65'	APPROVED BY: FOREE & VANN, INC.	DRAWN BY WLS
DATE: 5/6/94		REVISED

HOUSTON INTERNATIONAL PHOTO PRODUCTS
655 EAST 20TH STREET
YUMA, ARIZONA

PROJECT 4255	DRAWING NUMBER

11 X 17 PRINTED ON NO. 1000H CLEARPRINT

Tracer Research Corporation

Vapor Trace® Shallow Soil Gas Investigation

HOUSTON INTERNATIONAL PHOTO PRODUCTS
Yuma, Arizona

April 11 and 12,1994

Tracer Research Corporation

Vapor Trace® Shallow Soil Gas Investigation

HOUSTON INTERNATIONAL PHOTO PRODUCTS
Yuma, Arizona

April 11 and 12,1994

Prepared for:

HOUSTON INTERNATIONAL PHOTO PRODUCTS
655 E. 20th Street
Yuma, Arizona 85365

Telephone: (602) 943-6997

Copy sent to:

FOREE & VANN
9013 N. 24th Avenue, Suite 7
Phoenix, Arizona 85021-2851

Telephone: (602) 943-6997
FAX: (602) 943-7179

Prepared by:

TRACER RESEARCH CORPORATION
3755 North Business Center Drive
Tucson, Arizona 85705-2944

Telephone: (602) 888-9400
FAX: (602) 293-1306

Submitted by:

Marjorie D. Shivers

114-0031-S

TABLE OF CONTENTS

1.0 HOUSTON INTERNATIONAL PHOTO PRODUCTS INVESTIGATION...1
1.1 Objective...1
1.2 Overview of Results...1

2.0 SITE DESCRIPTION...2

3.0 SOIL GAS SAMPLING PARAMETERS...2

4.0 ANALYTICAL PARAMETERS...2
4.1 Chromatographic System...3
4.2 Analyses...4

5.0 QUALITY ASSURANCE AND QUALITY CONTROL...4

6.0 RESULTS...7

APPENDIX A Condensed Data...A-1

TABLES

Table 1. Soil Gas Sample Summary...1

Table 2. Detection Limits for Target Compounds...4

Table 3. Quality Assurance Samples...6

1.0 HOUSTON INTERNATIONAL PHOTO PRODUCTS INVESTIGATION

Tracer Research Corporation (Tracer Research) performed a *Vapor Trace®* shallow soil gas investigation at the Houston International Photo Products site located at 655 E. 20th Street in Yuma, Arizona. The investigation was conducted April 11 and 12, 1994 for Houston International Photo Products under the supervision of Foree & Vann of Phoenix, Arizona.

1.1 Objective

The purpose of the investigation was to determine the extent of possible soil and/or groundwater contamination by screening the shallow soil gas for the presence of volatile organic compounds (VOCs). The soil gas samples were collected and analyzed for the following analyte class and compounds:

Analyte Class: Halocarbon

1,1,1 trichloroethane (TCA)
trichloroethene (TCE)
tetrachloroethene (PCE)

1.2 Overview of Results

For this investigation, thirty-four samples were collected from thirty-four sampling locations. Samples were collected at depths of 4.5 to 6.5 feet below ground surface (bgs). A summary of the results of the investigation is presented in Table 1.

Table 1. Soil Gas Sample Summary

Compound	# of samples in which compound was detected	Low conc. µg/L	High conc. µg/L	Sample(s) with high conc.
TCA	32	0.001	1	SG4, 8, 27-6.5'
TCE	32	0.009	2	SG27-6.5'
PCE	34	0.3	52,000	SG8-6.5'

2.0 SITE DESCRIPTION

The soil gas samples were collected in an area of an old evaporative pond and in the vicinity of the buildings at the Houston International Facility. Samples were collected through sandy soil, grass and asphalt cover. The Foree & Vann field representative reported that the subsurface of the site consists of fill materials and desert soils. The depth to groundwater was reported to be 85 feet bgs and flows to the west.

3.0 SOIL GAS SAMPLING PARAMETERS

Soil gas sampling probes consisted of 7-foot lengths of 3/4-inch diameter hollow steel pipe. The probes were fitted with detachable drive tips and hydraulically pushed and/or pounded to depths of 4.5 to 6.5 feet bgs. An electric rotary hammer was used to drill through the asphalt.

The aboveground end of each probe was fitted with an aluminum reducer (manifold) and a length of polyethylene tubing leading to a vacuum pump. Soil gas was pulled by the vacuum pump into the probe. Samples were collected in a syringe by inserting a syringe needle through a silicone rubber segment in the evacuation line and down into the steel probe. The vacuum was monitored by a vacuum gauge to ensure an adequate gas flow from the vadose zone was maintained.

The volume of air within the probe was purged by evacuating 2 to 5 probe volumes of gas. The evacuation time in minutes versus the vacuum in inches of mercury (Hg) was used to calculate the necessary evacuation time. The vacuum in inches Hg was recorded at each sampling location.

Sample probe vacuums were approximately 3 inches Hg. The vacuum capacity of the pump was approximately 22 inches Hg.

4.0 ANALYTICAL PARAMETERS

During this investigation, up to 10 milliliters (mL) of soil gas were collected for each sample and immediately analyzed in the Tracer Research analytical van. Subsamples (replicates) from these samples were injected into the gas chromatograph (GC) in volumes of 1 to 1000 microliters (µL). Several samples were diluted to an effective injection volume of 0.001 µL due to high VOC concentrations in the sample.

Analytical instruments were calibrated daily using fresh working standards made from National Institute of Sciences and Technology (NIST) traceable standards and reagent blanked solvents.

4.1 Chromatographic System

A Hewlett Packard 5890 Series II gas chromatograph, equipped with an electron capture detector (ECD) and one computing integrator, was used for the soil gas analyses. The compounds were separated in the GC on a 6-foot by 1/8 inch outer diameter (OD) packed analytical column (10% OV101 stationary phase bonded to 80/100 mesh Chromosorb W support) in a temperature controlled oven. Nitrogen was used as the carrier gas.

The instrument calibrations were checked periodically throughout the day to monitor the response factors and retention times. The following paragraphs explain the GC and ECD processes.

GC Process

The soil gas is injected into the GC where it is swept through the analytical column by the carrier gas. The detector senses the presence of a component different from the carrier gas and converts that information to an electrical signal. The components of the sample pass through the column at different rates, according to their individual properties, and are detected by the detector. Compounds are identified by the time it takes them to pass through the column (retention time).

ECD Process

The ECD captures low energy thermal electrons that have been ionized by beta particles. The flow of these captured electrons into an electrode produces a small current, which is collected and measured. When the halogen atoms (halocarbons) are introduced into the detector, electrons that would otherwise be collected at the electrode are captured by the sample, resulting in decreased current. The current causes the computing integrator to record a peak on a chromatogram. The area of the peak is compared to the peak generated by a known standard to determine the concentration of the analyte.

4.2 Analyses

The detection limits for target compounds depend on the sensitivity of the detector to the individual compound as well as the volume of the sample injection. The detection limits of the target compounds were calculated from the response factor, the sample injection size, and the calculated minimum peak size (area) observed under the conditions of the analyses. If any compound was not detected in an analysis, the detection limit is given as a "less than" value, e.g., <0.01 µg/L. The approximate detection limits for the target compounds are presented in Table 2.

Table 2. Detection Limits for Target Compounds

Compound	Detection Limits (µg/L)
TCA	0.001
TCE	0.001
PCE	0.001

5.0 QUALITY ASSURANCE AND QUALITY CONTROL

Tracer Research's Quality Assurance (QA) and Quality Control (QC) program was followed to maintain data that was reproducible through the investigation. An overview presenting the significant aspects of this program is presented below.

Soil Gas Sampling Quality Assurance

To ensure consistent collection of samples, the following procedures are performed:

- Sampling Manifolds

Tracer Research's custom designed sampling manifold connects the sample probe to the vacuum line and pump. The manifold is designed to eliminate sample exposure to the polymeric (plastic) materials that connect the probe to the vacuum pump.

The sampling manifold is attached to the end of the probe, forming an air tight union between the probe and the silicone tubing septum. The septum connects the manifold to the pump vacuum line and permits syringe sampling.

This sampling system allows the sample to be taken upstream of the sampling pump, manifold, and septum. Since cross contamination of sampling equipment can be a major problem, Tracer Research replaces the materials (probe and syringe), between sampling points, that contact the soil gas before or during sampling.

-Sampling Probes

Steel probes are used only once each day. To eliminate the possibility of cross contamination, they are washed with high pressure soap and hot water spray, or steam-cleaned. Enough sampling probes are carried on each van to avoid the need to re-use any during the day.

-Glass Syringes

Glass syringes are used for only one sample a day and are washed and baked out at night. If they must be used twice, they are purged with carrier gas (nitrogen) and baked out between probe samplings.

-Sampling Efficiency

Soil gas pumping is monitored by a vacuum gauge to ensure that an adequate flow of gas from the soil is maintained. A reliable gas sample can be obtained if the sample vacuum gauge reading is at least 2 inches Hg less than the maximum measured vacuum of the vacuum pump.

Analytical Quality Assurance Samples

Quality assurance samples are performed at the minimum frequencies listed in Table 3. The actual frequency depends on the number of samples analyzed each day and the length of time of the survey.

Table 3. Quality Assurance Samples

Sample type	Frequency
Ambient Air Samples	3 per day or 1 per site
Analytical Method Blanks	5% (1 per 20 samples or 1 a day)
Continuing Calibration Check	20% (1 every 5 samples)
Field System Blank	1 per day
Reagent Blank	1 per set of working standards
Replicate Samples	10 to 100% of all samples

The ambient air samples are obtained on site by sampling the air immediately outside the mobile analytical van and directly injecting it into the GC. Analytical method blanks are taken to demonstrate that the analytical instrumentation is not contaminated. These are performed by injecting carrier gas (nitrogen) into the GC with the sampling syringe. Subsampling syringes are also checked in this fashion.

Continuing calibration checks are analyzed to verify the detector response for the target VOCs. If the response changes by more than 25 percent, the gas chromatograph is recalibrated and new response factors are calculated.

Field system blanks are analyzed to check for contamination of the sampling apparatus, e.g., probe and sampling syringe. A sample is collected using standard soil gas sampling procedures, but without putting the probe into the ground. The results are compared to those obtained from a concurrently analyzed ambient air sample.

If the field system blanks detect compounds of interest at concentrations that indicate equipment contamination or concentrations that exceed normal background levels (ambient air analysis), corrective actions are performed. If the problem cannot be corrected, an out-of-control event is documented and reported. Field system blanks are not performed every day if clean probes are still available. Field system blanks are performed after any probe decontamination process.

A reagent blank is performed to ensure the solvent used to dilute the stock standards is not contaminated. Analytical instruments are calibrated daily using

fresh working standards made from National Institute of Sciences and Technology traceable standards and reagent blanked solvents.

Quantitative precision is assured by replicating analysis of 10 to 100 percent of the samples. The percentage is based on the sample analysis time. Replicate analyses are performed by subsampling vapors from the same sampling syringe.

The injector port septa through which soil gas samples are injected into the GC are replaced daily to prevent possible gas leaks from the chromatographic column. All sampling and subsampling syringes are decontaminated after use and are not used again until they have been decontaminated by washing in anionic detergent and baking at 90°C.

6.0 RESULTS

The analytical results from this soil gas investigation are condensed in Appendix A. The data are presented by location and by analyte concentration. When the compound was not detected, the detection limit is presented as a "less than" value, e.g., <0.01 µg/L.

Soil gas samples are identified by sample location and sampling depth. For example, SG1-6.5' represents a soil gas sample collected at location 1 at a depth of 6.5 feet bgs.

APPENDIX A Condensed Data

TRACER RESEARCH CORPORATION - ANALYTICAL RESULTS
FOREE & VANN/ HOUSTON INTERNATIONAL PHOTO PRODUCTS/ YUMA, ARIZONA/ 114-0031-S
04/11/94

SAMPLE	TCA µg/L	TCE µg/L	PCE µg/L
AIR	0.0005	<0.0001	0.01
SG1-6.5'	0.04	0.06	100
SG2-6.5'	0.04	0.07	270
SG3-6.5'	0.3	0.1	570
SG4-6.5'	1	0.2	660
SG5-6.5'	0.7	0.6	200
AIR	0.0005	<0.0001	0.0009
SG6-6.5'	0.1	0.06	1100
SG7-5.5'	0.4	0.3	12000
SG8-6.5'	1	0.6	52000
SG9-5.5	0.5	0.5	41000
SG10-4.5'	0.05	0.1	150
SG11-6.5'	0.1	0.5	180
SG12-6.0'	<0.05	<0.1	30
AIR	0.0004	<0.0001	0.001

Analyzed by: J. Oliver
Proofed by: M. Shivers

Tracer Research Corporation

TRACER RESEARCH CORPORATION - ANALYTICAL RESULTS
FOREE & VANN/ HOUSTON INTERNATIONAL PHOTO PRODUCTS/ YUMA, ARIZONA/ 114-0031-S
04/12/94

SAMPLE	TCA µg/L	TCE µg/L	PCE µg/L
AIR	0.009	<0.0001	0.001
SG13-6.5'	0.006	0.02	5
SG14-6.5'	0.003	0.009	0.9
SG15.6.5'	0.007	0.08	6
SG16-6.5'	0.008	0.09	4
SG17-6'	0.006	0.1	2
AIR	0.0002	<0.0001	<0.0001
SG18-6.5'	0.001	0.01	0.4
SG19-6.5'	0.04	0.02	1
SG20-6.5'	0.03	0.04	2
SG21-6.5'	0.03	0.05	6
SG22-6.5'	0.06	0.1	24
SG23-6.5'	0.1	0.2	76
SG24-5'	0.1	0.3	230
SG25-6.5'	0.3	0.8	1000
SG26-6.5'	0.2	0.6	2600
SG27-6.5'	1	2	4200
SG28-6.5'	0.8	0.8	3400
SG29-6.5'	<0.05	<0.1	76
SG30-6.5'	0.2	0.5	1900
SG31-6.5'	0.01	0.05	1
SG32-6.5'	0.01	0.01	0.3

Analyzed by: J. Oliver
Proofed by: M. Shields

Tracer Research Corporation

TRACER RESEARCH CORPORATION - ANALYTICAL RESULTS
FOREE & VANN/ HOUSTON INTERNATIONAL PHOTO PRODUCTS/ YUMA, ARIZONA/ 114-0031-S
04/12/94

SAMPLE	TCA µg/L	TCE µg/L	PCE µg/L
SG33-6.5'	0.08	0.02	0.5
SG34-6.5'	0.2	0.06	2
AIR	0.0006	<0.0001	0.0006

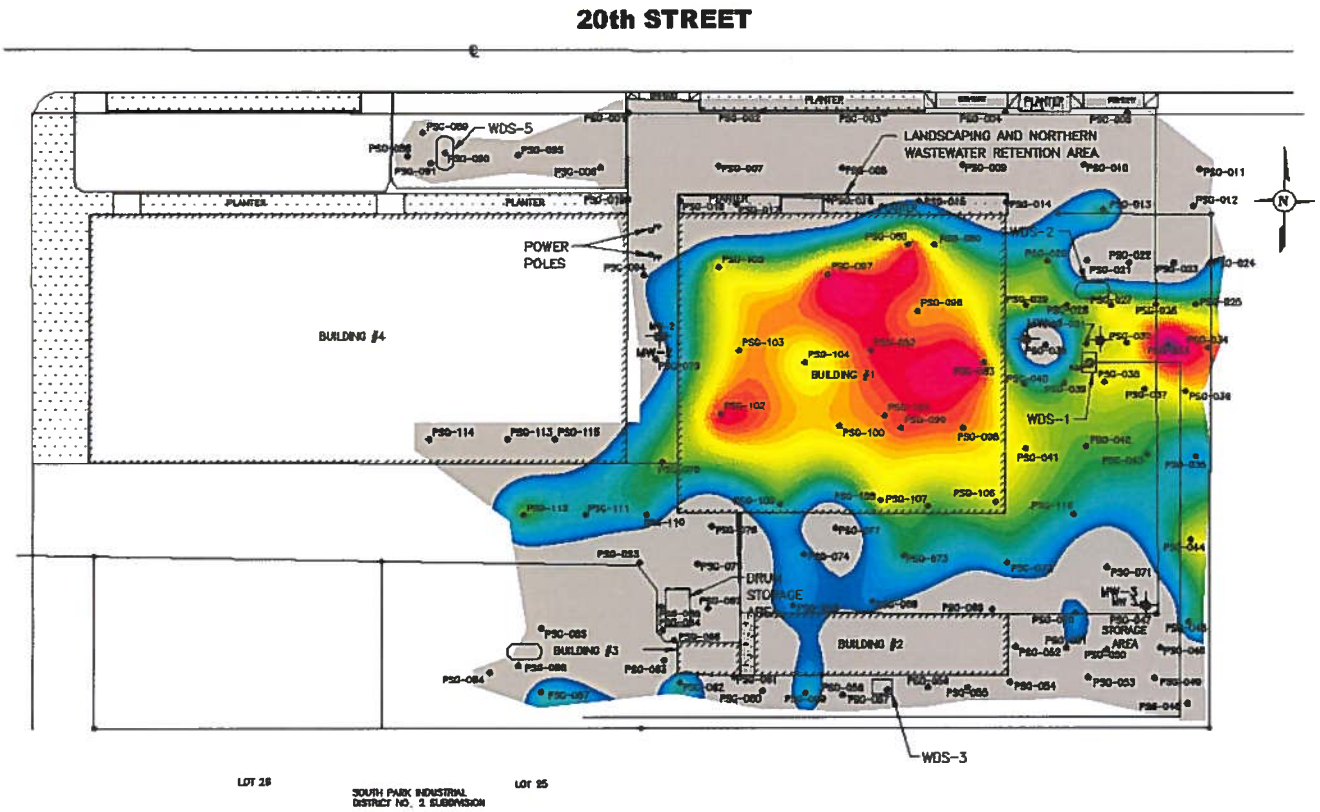
Analyzed by: J. Oliver
Proofed by: M. Stivers

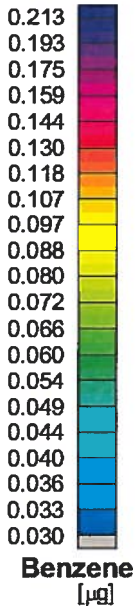
Tracer Research Corporation

Tracer Research Corporation appreciates the opportunity of being of service to your organization. Because we are constantly striving to improve our service to you, we welcome any comments or suggestions you may have about how we can be more responsive to the needs of your organization. If you have any questions about the field work, analytical results, or this report, please give Tom Wichman a call at (602) 888-9400.

APPENDIX C

PASSIVE SOIL VAPOR SURVEY, JUNE 2001





LEGEND

- MONITOR WELL
- BURIED WASTEWATER DELIVERY LINE
- HOUSTON INTERNATIONAL PROPERTY BOUNDARY
- GORE-SORBER Module Location
- BARE SOIL
- ASPHALT
- LANDSCAPING

Scale 1:960

50 0 50 100 150

feet

IFF.
REGISTERED SERVICE MARK OF W.L. GORE & ASSOCIATES
ERED TRADEMARK OF W.L. GORE & ASSOCIATES

EEN PRODUCED FOR THE SOLE USE OF THE RECIPIENT AND MUST NOT
ERCOPIED IN ANY MANNER WITHOUT THE PROPER WRITTEN APPROVAL OF
Y CONTAIN CONFIDENTIAL AND PROPRIETARY INFORMATION OF
D USE OF THIS DRAWING IS STRICTLY PROHIBITED.

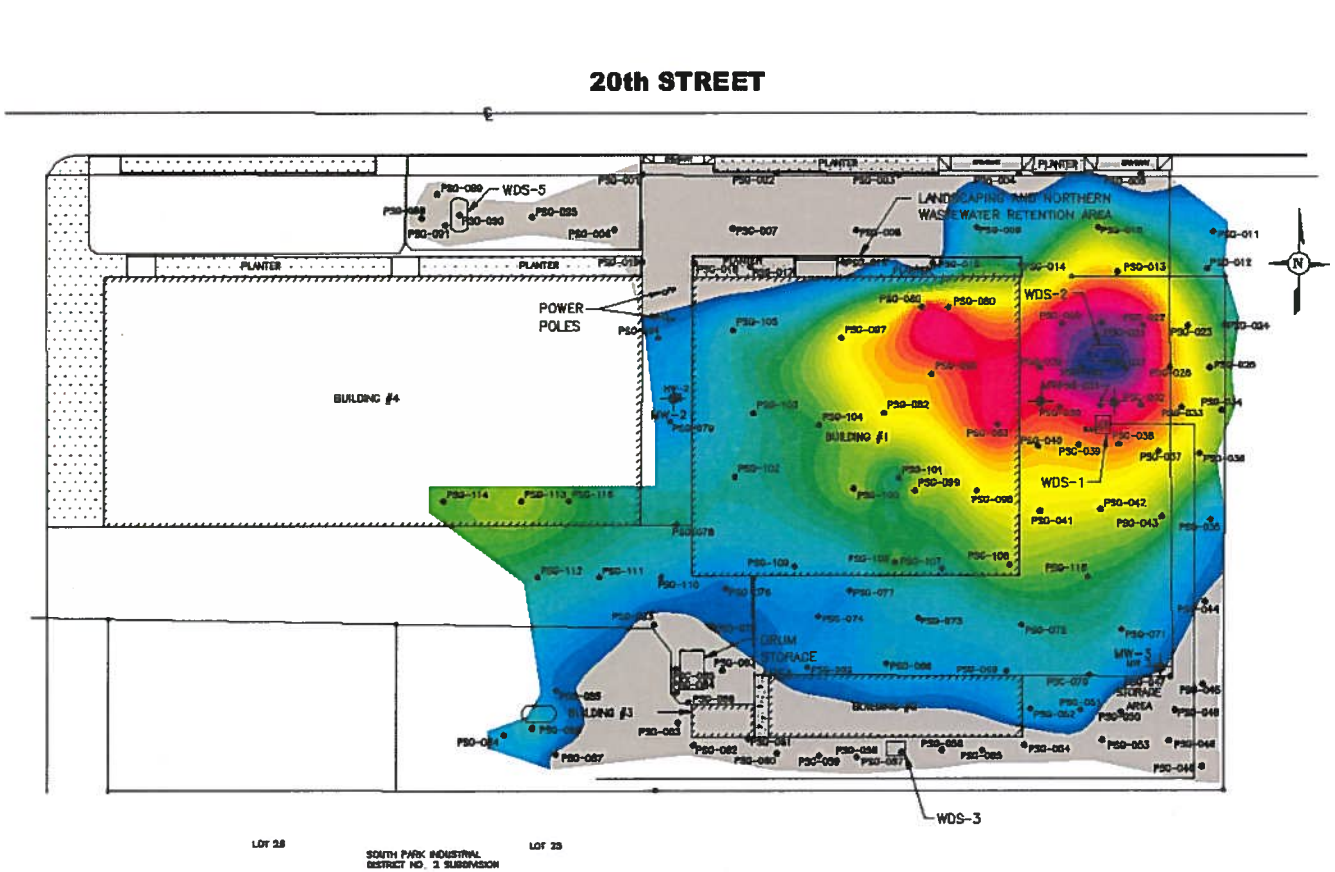
GORE-SORBER® Screening Su

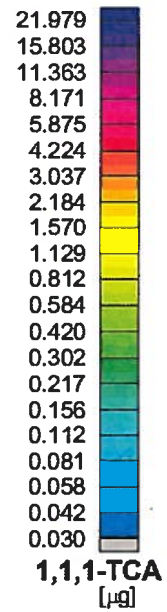
W.L. GORE & ASSOCIATES,
100 CHESAPEAKE BOULEVARD
ELKTON, MD, USA 21921
USA
(410) 392-7600

Creative Technologies Worldwide

Geotrans, Inc., Tempe, AZ
Houston International, Inc., Yum
Benzene

DATE DRAWN: 4 Sept 2001	DRAWN BY: JH	ORIG. CAD: Gore Sorber....dw
REV. DATE:	REV. #:	PROJECT NUMBER: 10712133





LEGEND

- MW-3 MONITOR WELL
- BURIED WASTEWATER DELIVERY LINE
- HOUSTON INTERNATIONAL PROPERTY BOUNDARY
- PSO-084 GORE-SORBER Module Location
- BARE SOIL
- ASPHALT
- LANDSCAPING

Scale 1:960

50 0 50 100 150

feet

IFF.
REGISTERED SERVICE MARK OF W.L. GORE & ASSOCIATES
ERED TRADEMARK OF W.L. GORE & ASSOCIATES

EEN PRODUCED FOR THE SOLE USE OF THE RECIPIENT AND MUST NOT
DUCED IN ANY MANNER WITHOUT THE PROPER WRITTEN APPROVAL OF
CONTAIN CONFIDENTIAL AND PROPRIETARY INFORMATION OF
D USE OF THIS DRAWING IS STRICTLY PROHIBITED.

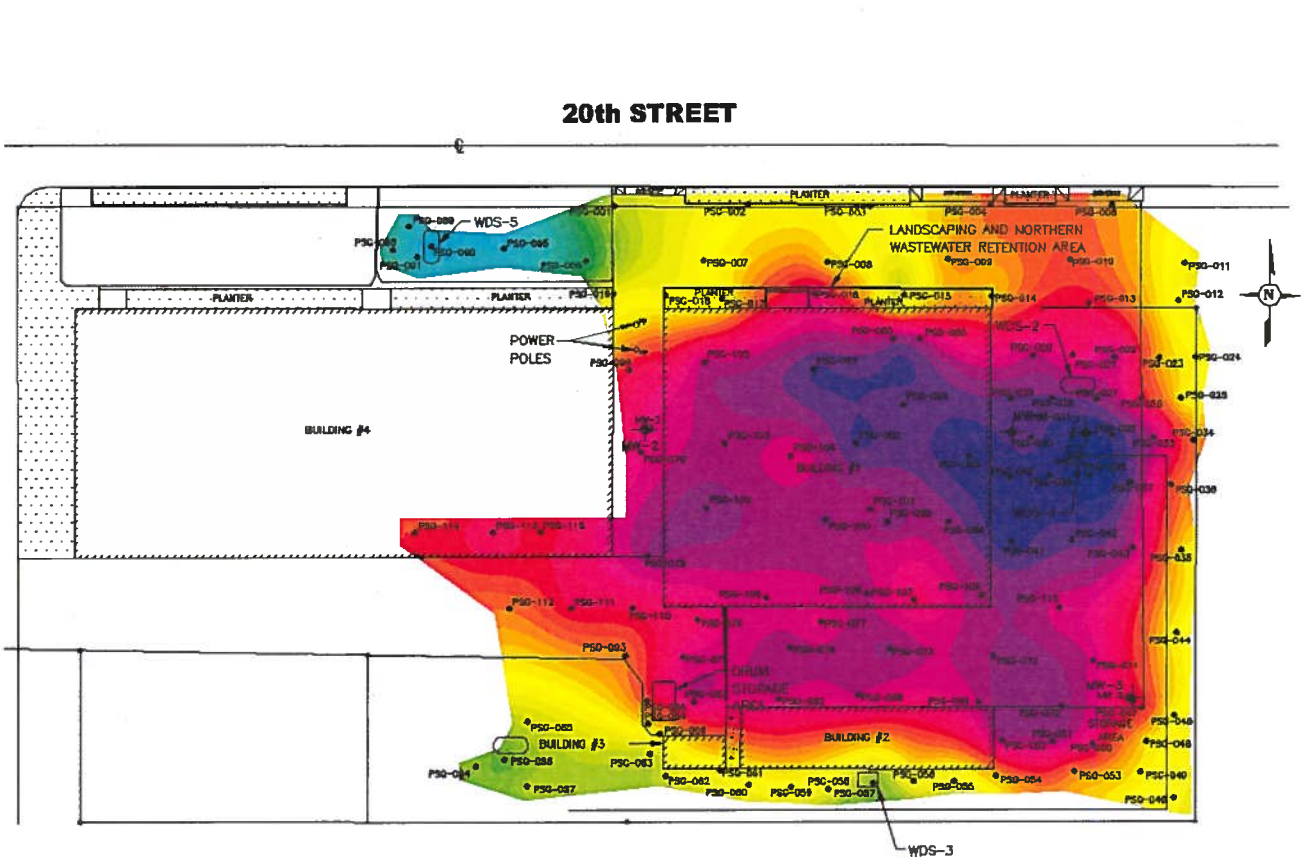
GORE-SORBER® Screening Su

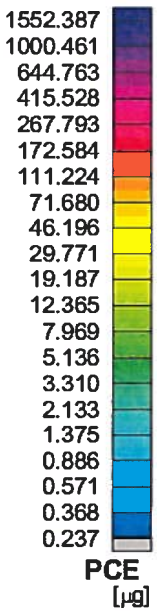
GORE
Creative Technologies Worldwide

W.L. GORE & ASSOCIATES,
100 CHESAPEAKE BOULEVARD
ELKTON, MD, USA 21921
USA
(410) 392-7600

Geotrans, Inc., Tempe, AZ
Houston International, Inc., Yum
1,1,1-Trichloroethane

DATE DRAWN: 4 Sept 2001	DRAWN BY: JH	ORIG. CAD: Gore Sorber....dw
REV. DATE:	REV. #:	PROJECT NUMBER: 10712133





EGEND

- MONITOR WELL
- BURIED WASTEWATER DELIVERY LINE
- HOUSTON INTERNATIONAL PROPERTY BOUNDARY
- GORE-SORBER Module Location
- BARE SOIL
- ASPHALT
- LANDSCAPING

Scale 1:960

50 0 50 100 150

feet

IFF.
REGISTERED SERVICE MARK OF W.L. GORE & ASSOCIATES
IRED TRADEMARK OF W.L. GORE & ASSOCIATES

BEEN PRODUCED FOR THE SOLE USE OF THE RECIPIENT AND MUST NOT
OR COPIED IN ANY MANNER WITHOUT THE PROPER WRITTEN APPROVAL OF
YCONTAIN CONFIDENTIAL AND PROPRIETARY INFORMATION OF
D USE OF THIS DRAWING IS STRICTLY PROHIBITED.

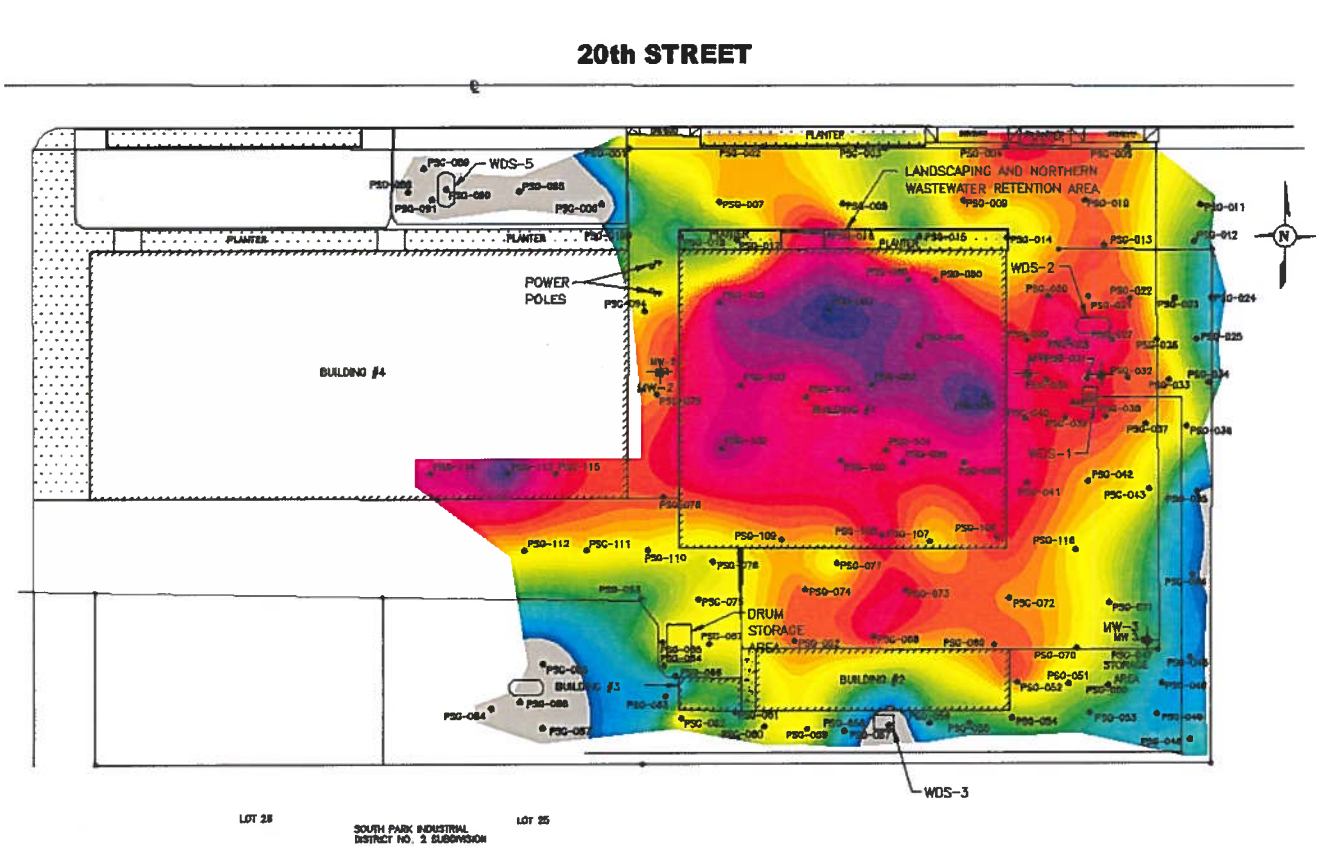
GORE-SORBER® Screening Su

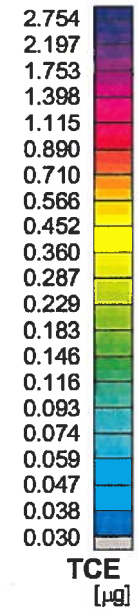
GORE
Creative Technologies Worldwide

W.L. GORE & ASSOCIATES,
100 CHESAPEAKE BOULEVARD
ELKTON, MD, USA 21921
USA
(410) 392-7600

Geotrans, Inc., Tempe, AZ
Houston International, Inc., Yum
Tetrachloroethene

DATE DRAWN: 4 Sept 2001	DRAWN BY: JH	ORIG. CAD: Gore Sorber....dw
REV. DATE: 23 OCT 2001 JW	REV. #: 1	PROJECT NUMBER: 10712133





LEGEND

MW-4	MONITOR WELL		BARE SOIL
	BURIED WASTEWATER DELIVERY LINE		ASPHALT
	HOUSTON INTERNATIONAL PROPERTY BOUNDARY		LANDSCAPING
PSG-084	GORE-SORBER Module Location		

Scale 1:960

50 0 50 100 150

feet

FF.
REGISTERED SERVICE MARK OF W.L. GORE & ASSOCIATES
ERED TRADEMARK OF W.L. GORE & ASSOCIATES

BEEN PRODUCED FOR THE SOLE USE OF THE RECIPIENT AND MUST NOT
OR COPIED IN ANY MANNER WITHOUT THE PROPER WRITTEN APPROVAL OF
TO CONTAIN CONFIDENTIAL AND PROPRIETARY INFORMATION OF
D USE OF THIS DRAWING IS STRICTLY PROHIBITED.

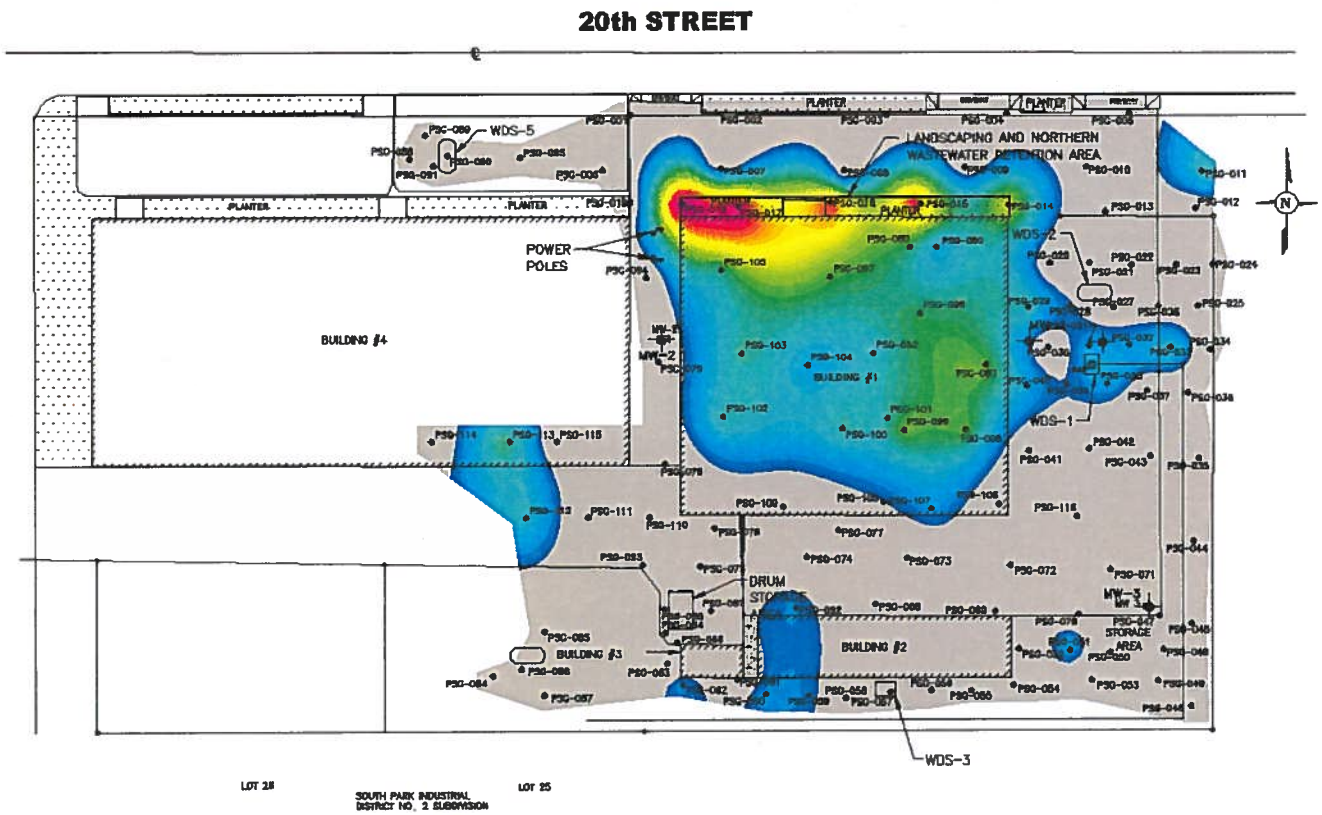
GORE-SORBER® Screening Su

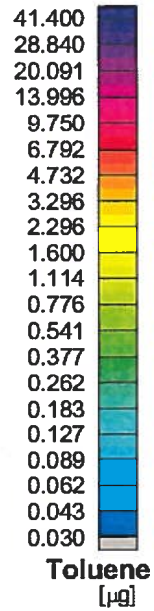
GORE
Creative Technologies Worldwide

W.L. GORE & ASSOCIATES,
100 CHESAPEAKE BOULEVARD
ELKTON, MD, USA 21921
USA
(410) 392-7600

Geotrans, Inc., Tempe, AZ
Houston International, Inc., Yum
Trichloroethene

DATE DRAWN: 4 Sept 2001	DRAWN BY: JH	ORIG. CAD: Gore Sorber....dw
REV. DATE:	REV. #:	PROJECT NUMBER: 10712133





LEGEND

MW-4	MONITOR WELL		BARE SOIL
	BURIED WASTEWATER DELIVERY LINE		ASPHALT
	HOUSTON INTERNATIONAL PROPERTY BOUNDARY		LANDSCAPING
PSO-084	GORE-SORBER Module Location		

Scale 1:960

50 0 50 100 150

feet

IFF.
REGISTERED SERVICE MARK OF W.L. GORE & ASSOCIATES
ERED TRADEMARK OF W.L. GORE & ASSOCIATES

BEEN PRODUCED FOR THE SOLE USE OF THE RECIPIENT AND MUST NOT
OR COPIED IN ANY MANNER WITHOUT THE PROPER WRITTEN APPROVAL OF
YCONTAIN CONFIDENTIAL AND PROPRIETARY INFORMATION OF
D USE OF THIS DRAWING IS STRICTLY PROHIBITED.

GORE-SORBER® Screening Su

GORE
Creative Technologies Worldwide

W.L. GORE & ASSOCIATES,
100 CHESAPEAKE BOULEVARD
ELKTON, MD, USA 21921
USA
(410) 392-7600

Geotrans, Inc., Tempe, AZ
Houston International, Inc., Yum
Toluene

DATE DRAWN: 4 Sept 2001	DRAWN BY: JH	ORIG. CAD: Gore Sorber....dw
REV. DATE:	REV. #:	PROJECT NUMBER: 10712133

APPENDIX D

SPLP RESULTS

TRANSWEST GEOCHEM

RECEIVED
MAY 03 2004
GEOTRANS

April 29, 2004

Jasenka Zbozinek
Geotrans, Inc.
4801 E. Washington St.
Suite 260
Phoenix, AZ 85034

RE: 20th and Factor WQARF/1303.011.03
Work Order No.: 0404090

Dear Jasenka,
Transwest Geochem, Inc. received 20 samples on 4/6/2004 11:30:00 AM for the analyses presented in the following report.

The Case Narrative of this report addresses any Quality Control and/or Quality Assurance issues associated with this Work Order.

If you have any questions regarding these test results, please feel free to call us at (602) 437-0330.

Sincerely,

Vic Nielsen
Project Manager

ADHS License No. AZM133/AZ0133

TRANSWEST GEOCHEM

Client:	Geotrans, Inc.	**Date Printed:** 29-Apr-04
Work Order:	0404090	
Project Name:	20th and Factor WQARF	
Project Number:	1303.011.03	

Case Narrative

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADEQ Arizona Data Qualifiers, Revision 1.0 05/13/2002.

Data qualifiers ("flags") contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

Analytical Comments for Method SW1312/9010B/9014, Matrix Spike 0404090-01, Batch 7367: The Matrix Spike was outside acceptance limits. The MSD, the LCS and LCSD recoveries were acceptable for this batch.

3725 E. Atlanta Ave. • Suite 2 • Phoenix, Arizona 85040 • (602) 437-0330 • 1-800-927-5183 • Fax (602) 437-0600

TRANSWEST GEOCHEM

Date Printed 28-Apr-04

License No. AZM133/AZ0133

CLIENT:	Geotrans, Inc.
Project Name:	20th and Factor WQARF
Project Number:	1303.011.03
Work Order:	0404090
Date Received:	06-Apr-04

Case Narrative
Data Qualifiers

One or more of the following data qualifiers may be associated with your analytical and/or quality control data.

D2	Sample required dilution due to high concentration of target analyte.
M1	Matrix spike recovery was high, the method control sample recovery was acceptable.

TRANSWEST GEOCHEM

Date Printed 28-Apr-04
License No. AZM133/AZ0133

CLIENT: Geotrans, Inc.
Project Name: 20th and Factor WQARF
Project Number: 1303.011.03
Work Order: 0404090
Date Received: 06-Apr-04

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date
H1-SS-01-04/02/04	0404090-01A	N/A	4/2/2004 11:40:00 AM
		SW1312/9010B/9014	4/2/2004 11:40:00 AM
		SW9010B/9014	4/2/2004 11:40:00 AM
H1-SS-02-04/02/04	0404090-02A	N/A	4/2/2004 11:50:00 AM
		SW1312/9010B/9014	4/2/2004 11:50:00 AM
		SW9010B/9014	4/2/2004 11:50:00 AM
H1-SS-03-04/02/04	0404090-03A	N/A	4/2/2004 11:53:00 AM
		SW1312/9010B/9014	4/2/2004 11:53:00 AM
		SW9010B/9014	4/2/2004 11:53:00 AM
H1-SS-04-04/02/04	0404090-04A	N/A	4/2/2004 11:58:00 AM
		SW1312/9010B/9014	4/2/2004 11:58:00 AM
		SW9010B/9014	4/2/2004 11:58:00 AM
H1-SS-05-04/02/04	0404090-05A	N/A	4/2/2004 12:02:00 PM
		SW1312/9010B/9014	4/2/2004 12:02:00 PM
		SW9010B/9014	4/2/2004 12:02:00 PM
H1-SS-06-04/02/04	0404090-06A	N/A	4/2/2004 12:07:00 PM
		SW1312/9010B/9014	4/2/2004 12:07:00 PM
		SW9010B/9014	4/2/2004 12:07:00 PM
H1-SS-07-04/02/04	0404090-07A	N/A	4/2/2004 12:13:00 PM
		SW1312/9010B/9014	4/2/2004 12:13:00 PM
		SW9010B/9014	4/2/2004 12:13:00 PM
H1-SS-08-04/02/04	0404090-08A	N/A	4/2/2004 12:17:00 PM
		SW1312/9010B/9014	4/2/2004 12:17:00 PM
		SW9010B/9014	4/2/2004 12:17:00 PM
H1-SS-09-04/02/04	0404090-09A	N/A	4/2/2004 12:21:00 PM
		SW1312/9010B/9014	4/2/2004 12:21:00 PM
		SW9010B/9014	4/2/2004 12:21:00 PM
H1-SS-10-04/02/04	0404090-10A	N/A	4/2/2004 1:13:00 PM
		SW1312/9010B/9014	4/2/2004 1:13:00 PM
		SW9010B/9014	4/2/2004 1:13:00 PM
H1-SS-11-04/02/04	0404090-11A	N/A	4/2/2004 1:32:00 PM
		SW1312/9010B/9014	4/2/2004 1:32:00 PM
		SW9010B/9014	4/2/2004 1:32:00 PM
H1-SS-12-04/02/04	0404090-12A	N/A	4/2/2004 1:35:00 PM

CLIENT: Geotrans, Inc.
Project Name: 20th and Factor WQARF
Project Number: 1303.011.03
Work Order: 0404090
Date Received: 06-Apr-04

Work Order Sample Summary

Client Sample ID	Lab Sample ID	Test Code	Collection Date
H1-SS-12-04/02/04	0404090-12A	SW1312/9010B/9014	4/2/2004 1:35:00 PM
		SW9010B/9014	4/2/2004 1:35:00 PM
H1-SS-13-04/02/04	0404090-13A	N/A	4/2/2004 1:39:00 PM
		SW1312/9010B/9014	4/2/2004 1:39:00 PM
		SW9010B/9014	4/2/2004 1:39:00 PM
H1-SS-14-04/02/04	0404090-14A	N/A	4/2/2004 1:45:00 PM
		SW1312/9010B/9014	4/2/2004 1:45:00 PM
		SW9010B/9014	4/2/2004 1:45:00 PM
H1-SS-15-04/02/04	0404090-15A	N/A	4/2/2004 1:47:00 PM
		SW1312/9010B/9014	4/2/2004 1:47:00 PM
		SW9010B/9014	4/2/2004 1:47:00 PM
H1-SS-16-04/02/04	0404090-16A	N/A	4/2/2004 1:51:00 PM
		SW1312/9010B/9014	4/2/2004 1:51:00 PM
		SW9010B/9014	4/2/2004 1:51:00 PM
H1-SS-17-04/02/04	0404090-17A	N/A	4/2/2004 1:55:00 PM
		SW1312/9010B/9014	4/2/2004 1:55:00 PM
		SW9010B/9014	4/2/2004 1:55:00 PM
H1-SS-18-04/02/04	0404090-18A	N/A	4/2/2004 2:03:00 PM
		SW1312/9010B/9014	4/2/2004 2:03:00 PM
		SW9010B/9014	4/2/2004 2:03:00 PM
H1-SS-19-04/02/04	0404090-19A	N/A	4/2/2004 2:01:00 PM
		SW1312/9010B/9014	4/2/2004 2:01:00 PM
		SW9010B/9014	4/2/2004 2:01:00 PM
H1-SS-20-04/02/04	0404090-20A	N/A	4/2/2004 2:35:00 PM
		SW1312/9010B/9014	4/2/2004 2:35:00 PM
		SW9010B/9014	4/2/2004 2:35:00 PM

TRANSWEST GEOCHEM

Date Printed 28-Apr-04

License No. AZM133/AZ0133

CLIENT: Geotrans, Inc.
Project Name: 20th and Factor WQARF
Project Number: 1303.011.03
Work Order: 0404090
Date Received: 06-Apr-04

Definitions

Analytical Spike (AS)	The AS is a known amount of a target analyte added to a sample after it has been distilled, digested, or extracted and is ready for analysis. The AS is generally performed if the MS has failed. It is used to indicate interference that arises from sample distillation, digestion, or extraction as opposed to interference that is innate to the matrix.
Continuing Curve Verification (CCV)	The CCV is also referred to as a curve check. This is a standard analyzed at specified intervals during an analysis. The CCV verifies the stability and accuracy of the calibration curve. There are specific CCV recovery acceptance criteria for each method.
Dilution Factor (DF)	The DF is an indication of how much a sample had to be diluted in order to quantitate it on a standard curve. The DF is indicated in the reported sample result. The sample PQL increases as the dilution increases.
Internal Standard (IS)	The IS is a compound that is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. The same concentration of IS is added to every sample for some organic methods.
Laboratory Control Sample (LCS)	The LCS is also referred to as a blank spike. The LCS is an addition of a known amount of a target analyte (from the same source as calibration standards or spikes) to an aliquot of deionized water or other appropriate clean matrix. The LCS is processed through the entire method procedure in the same manner as samples.
Matrix Spike (MS)	The MS is a known amount of a target analyte added to a sample. The MS is processed through the entire method procedure in the same manner as samples.
Method Blank (MB)	The MB is an aliquot of deionized water or other appropriate clean matrix that is thought to be free of the analyte in question. The MB is processed through the entire extraction or analysis procedure and is used to indicate contamination in the lab.
Method Detection Limit (MDL)	The MDL is the lowest level of detection of which a method is capable.
Practical Quantitation Limit (PQL)	The PQL is the lowest value at which Transwest Geochem can detect an analyte in matrix with a high degree of confidence. The PQL will increase as the DF increases. The PQL is greater than or equal to the MDL.
Relative Percent Difference (RPD)	The RPD is a measure of precision (the ability to obtain the same result on re-analysis of the same sample). It is calculated using the result of a sample, MS, LCS, or LCSV and its associated duplicate result.
Secondary Source QC Sample (LCSV)	The LCSV is also referred to as a second source laboratory control sample. It is the same type of standard as a calibration or spiking standard but is obtained from a different source. The LCSV is an indication of the primary standard quality, method performance, and instrument performance.
Surrogate	A surrogate compound is similar to the organic compound of interest in terms of chemical composition but is unique in that it is rare in the environment. When surrogates are used, they are added to every sample, blank and standard. Surrogate recovery is used as an indication of extraction and/or analytical success.
Trip Blank (TB)	The TB is a portion of deionized water preserved in the same manner as the samples. The TB travels from the lab, to the field, and then back to the lab with the samples from the field. The TB serves as an indication of contamination introduced during sample transportation.

TRANSWEST GEOCHEM

Date Printed 28-Apr-04
License No. AZM133/AZ0133

CLIENT:	Geotrans, Inc.
Project Name:	20th and Factor WQARF
Project Number:	1303.011.03
Work Order:	0404090
Date Received:	06-Apr-04

References

Transwest Geochem, Inc. uses the methods outlined in the following references:

Code of Federal Regulations, 40CFR, Part 136, Appendix A, 1998.

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, Revised August 1993.

Methods for the Determination of Metals in Environmental Samples, Supplement 1: EPA/600/R-94/111, Revised May 1994.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revised July, 1991; EPA-600/4-90/020, Supplement I, July 1990; EPA-600/R-92/129; Supplement II, August 1992; EPA-600/R-95/131, Supplement III, August 1995.

Hach, Water Analysis Handbook, 3rd Edition, 1997.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, 1986 including Update I, July 1992; Update IIA, August 1993; Update II; September 1994; Update IIB, January 1995; Update III, December 1996

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 418.1AZ: TPH in Soil, September 1994.

Bureau of Laboratory Services, State of Arizona Department of Health Services Method 8015AZ.R1, September 1998. (Comment: C6-C10 GRO reported by this method is not to be used in compliance situations)

ASTM MethodD4982, Annual Book of ASTM Standards, Volumes 11.01 and 11.02, 1995

The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils, EPA-600 4-81-045, September 1982.

TRANSWEST GEOCHEM

Date Printed 29-Apr-04

License No. AZM133/AZ0133

CLIENT: Geotrans, Inc.
Work Order: 0404090
Lab ID: 0404090-01
Project Name: 20th and Factor WQARF
Project Number: 1303.011.03

Client Sample ID: H1-SS-01-04/02/04
Collection Date: 4/2/2004 11:40:00 AM
Matrix: SOIL

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Cyanide	**1.3**	0.20	D2	mg/L	10	W1312/9010B/901	4/8/04	4/19/04	KMB	7367
Cyanide, Amenable to Chlorination	<0.020	0.020		mg/L	1.0	W1312/9010B/901	4/8/04	4/20/04	KMB	7367
Cyanide, Amenable to Chlorination	<2.0	2.0		mg/Kg	2.0	SW9010B/9014	4/14/04	4/14/04	KMB	CNA_SOIL-4/14/2004
Cyanide, Total	**35**	10	D2	mg/Kg	10	SW9010B/9014	4/12/04	4/12/04	KMB	CN_SOIL-4/12/2004

Confidential and Privileged

TRANSWEST GEOCHEM

Date Printed 29-Apr-04

License No. AZM133/AZ0133

CLIENT: Geotrans, Inc.
Work Order: 0404090
Lab ID: 0404090-02
Project Name: 20th and Factor WQARF
Project Number: 1303.011.03

Client Sample ID: H1-SS-02-04/02/04
Collection Date: 4/2/2004 11:50:00 AM
Matrix: SOIL

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Cyanide	**0.095**	0.020		mg/L	1.0	W1312/9010B/901	4/8/04	4/19/04	KMB	7367
Cyanide, Amenable to Chlorination	<0.020	0.020		mg/L	1.0	W1312/9010B/901	4/8/04	4/20/04	KMB	7367
Cyanide, Amenable to Chlorination	<2.0	2.0		mg/Kg	2.0	SW9010B/9014	4/14/04	4/14/04	KMB	CNA_SOIL-4/14/2004
Cyanide, Total	**7.3**	4.0	D2	mg/Kg	4.0	SW9010B/9014	4/12/04	4/12/04	KMB	CN_SOIL-4/12/2004

Confidential and Privileged

TRANSWEST GEOCHEM

Date Printed 29-Apr-04

License No. AZM133/AZ0133

CLIENT: Geotrans, Inc.
Work Order: 0404090
Lab ID: 0404090-03
Project Name: 20th and Factor WQARF
Project Number: 1303.011.03

Client Sample ID: H1-SS-03-04/02/04
Collection Date: 4/2/2004 11:53:00 AM
Matrix: SOIL

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Cyanide	**0.060**	0.020		mg/L	1.0	W1312/9010B/901	4/8/04	4/19/04	KMB	7367
Cyanide, Amenable to Chlorination	<0.020	0.020		mg/L	1.0	W1312/9010B/901	4/8/04	4/20/04	KMB	7367
Cyanide, Amenable to Chlorin	**1.5**	1.0		mg/Kg	2.0	SW9010B/9014	4/14/04	4/14/04	KMB	CNA_SOIL-4/14/2004
Cyanide, Total	**4.3**	4.0	D2	mg/Kg	4.0	SW9010B/9014	4/12/04	4/12/04	KMB	CN_SOIL-4/12/2004

Confidential and Privileged

TRANSWEST GEOCHEM

Date Printed 29-Apr-04

License No. AZM133/AZ0133

CLIENT: Geotrans, Inc.
Work Order: 0404090
Lab ID: 0404090-04
Project Name: 20th and Factor WQARF
Project Number: 1303.011.03

Client Sample ID: H1-SS-04-04/02/04
Collection Date: 4/2/2004 11:58:00 AM
Matrix: SOIL

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Cyanide	0.14	0.020		mg/L	1.0	W1312/9010B/901	4/8/04	4/19/04	KMB	7367
Cyanide, Amenable to Chlorin	0.14	0.020		mg/L	1.0	W1312/9010B/901	4/8/04	4/20/04	KMB	7367
Cyanide, Amenable to Chlorin	5.3	5.0	D2	mg/Kg	10	SW9010B/9014	4/14/04	4/14/04	KMB	CNA_SOIL-4/14/2004
Cyanide, Total	22	10	D2	mg/Kg	10	SW9010B/9014	4/12/04	4/12/04	KMB	CN_SOIL-4/12/2004

Confidential and Privileged

TRANSWEST GEOCHEM

Date Printed 29-Apr-04

License No. AZM133/AZ0133

CLIENT: Geotrans, Inc.
Work Order: 0404090
Lab ID: 0404090-05
Project Name: 20th and Factor WQARF
Project Number: 1303.011.03

Client Sample ID: H1-SS-05-04/02/04
Collection Date: 4/2/2004 12:02:00 PM
Matrix: SOIL

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Cyanide	0.87	0.10	D2	mg/L	5.0	W1312/9010B/901	4/8/04	4/19/04	KMB	7367
Cyanide, Amenable to Chlorin	0.87	0.10	D2	mg/L	5.0	W1312/9010B/901	4/8/04	4/20/04	KMB	7367
Cyanide, Amenable to Chlorin	2.6	2.0	D2	mg/Kg	4.0	SW9010B/9014	4/14/04	4/14/04	KMB	CNA_SOIL-4/14/2004
Cyanide, Total	28	4.0	D2	mg/Kg	4.0	SW9010B/9014	4/12/04	4/12/04	KMB	CN_SOIL-4/12/2004

Confidential and Privileged

TRANSWEST GEOCHEM

Date Printed 29-Apr-04

License No. AZM133/AZ0133

CLIENT: Geotrans, Inc.
Work Order: 0404090
Lab ID: 0404090-06
Project Name: 20th and Factor WQARF
Project Number: 1303.011.03

Client Sample ID: H1-SS-06-04/02/04
Collection Date: 4/2/2004 12:07:00 PM
Matrix: SOIL

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Cyanide	<0.020	0.020		mg/L	1.0	W1312/9010B/901	4/8/04	4/19/04	KMB	7367
Cyanide, Total	<2.0	2.0		mg/Kg	2.0	SW9010B/9014	4/12/04	4/12/04	KMB	CN_SOIL-4/12/2004

Confidential and Privileged

TRANSWEST GEOCHEM

Date Printed 29-Apr-04

License No. AZM133/AZ0133

CLIENT: Geotrans, Inc.
Work Order: 0404090
Lab ID: 0404090-07
Project Name: 20th and Factor WQARF
Project Number: 1303.011.03

Client Sample ID: H1-SS-07-04/02/04
Collection Date: 4/2/2004 12:13:00 PM
Matrix: SOIL

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Cyanide	**0.032**	0.020		mg/L	1.0	W1312/9010B/901	4/8/04	4/19/04	KMB	7367
Cyanide, Amenable to Chlorination	<0.020	0.020		mg/L	1.0	W1312/9010B/901	4/8/04	4/20/04	KMB	7367
Cyanide, Amenable to Chlorin	**3.7**	2.0		mg/Kg	2.0	SW9010B/9014	4/14/04	4/14/04	KMB	CNA_SOIL-4/14/2004
Cyanide, Total	**8.4**	4.0	D2	mg/Kg	4.0	SW9010B/9014	4/12/04	4/12/04	KMB	CN_SOIL-4/12/2004

Confidential and Privileged

TRANSWEST GEOCHEM

Date Printed 29-Apr-04

License No. AZM133/AZ0133

CLIENT: Geotrans, Inc.
Work Order: 0404090
Lab ID: 0404090-08
Project Name: 20th and Factor WQARF
Project Number: 1303.011.03

Client Sample ID: H1-SS-08-04/02/04
Collection Date: 4/2/2004 12:17:00 PM
Matrix: SOIL

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Cyanide	**0.031**	0.020		mg/L	1.0	W1312/9010B/901	4/8/04	4/19/04	KMB	7367
Cyanide, Amenable to Chlorin	**0.031**	0.020		mg/L	1.0	W1312/9010B/901	4/8/04	4/20/04	KMB	7367
Cyanide, Amenable to Chlorination	<2.0	2.0		mg/Kg	2.0	SW9010B/9014	4/14/04	4/14/04	KMB	CNA_SOIL-4/14/2004
Cyanide, Total	**2.8**	2.0		mg/Kg	2.0	SW9010B/9014	4/12/04	4/12/04	KMB	CN_SOIL-4/12/2004

Confidential and Privileged

TRANSWEST GEOCHEM

Date Printed 29-Apr-04

License No. AZM133/AZ0133

CLIENT: Geotrans, Inc.
Work Order: 0404090
Lab ID: 0404090-09
Project Name: 20th and Factor WQARF
Project Number: 1303.011.03

Client Sample ID: H1-SS-09-04/02/04
Collection Date: 4/2/2004 12:21:00 PM
Matrix: SOIL

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Cyanide	**0.028**	0.020		mg/L	1.0	W1312/9010B/901	4/8/04	4/19/04	KMB	7367
Cyanide, Amenable to Chlorination	<0.020	0.020		mg/L	1.0	W1312/9010B/901	4/8/04	4/20/04	KMB	7367
Cyanide, Total	<2.0	2.0		mg/Kg	2.0	SW9010B/9014	4/12/04	4/12/04	KMB	CN_SOIL-4/12/2004

Confidential and Privileged

TRANSWEST GEOCHEM

Date Printed 29-Apr-04

License No. AZM133/AZ0133

CLIENT: Geotrans, Inc.
Work Order: 0404090
Lab ID: 0404090-10
Project Name: 20th and Factor WQARF
Project Number: 1303.011.03

Client Sample ID: H1-SS-10-04/02/04
Collection Date: 4/2/2004 1:13:00 PM
Matrix: SOIL

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Cyanide	**0.072**	0.020		mg/L	1.0	W1312/9010B/901	4/8/04	4/19/04	KMB	7367
Cyanide, Amenable to Chlorination	<0.020	0.020		mg/L	1.0	W1312/9010B/901	4/8/04	4/20/04	KMB	7367
Cyanide, Amenable to Chlorination	<2.0	2.0		mg/Kg	2.0	SW9010B/9014	4/14/04	4/14/04	KMB	CNA_SOIL-4/14/2004
Cyanide, Total	**5.5**	2.0		mg/Kg	2.0	SW9010B/9014	4/12/04	4/12/04	KMB	CN_SOIL-4/12/2004

Confidential and Privileged

TRANSWEST GEOCHEM

Date Printed 29-Apr-04

License No. AZM133/AZ0133

CLIENT: Geotrans, Inc.
Work Order: 0404090
Lab ID: 0404090-11
Project Name: 20th and Factor WQARF
Project Number: 1303.011.03

Client Sample ID: H1-SS-11-04/02/04
Collection Date: 4/2/2004 1:32:00 PM
Matrix: SOIL

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Cyanide	**0.051**	0.020		mg/L	1.0	W1312/9010B/901	4/8/04	4/19/04	KMB	7367
Cyanide, Amenable to Chlorin	**0.022**	0.020		mg/L	1.0	W1312/9010B/901	4/8/04	4/23/04	KMB	7367
Cyanide, Amenable to Chlorination	<2.0	2.0		mg/Kg	2.0	SW9010B/9014	4/14/04	4/14/04	KMB	CNA_SOIL-4/14/2004
Cyanide, Total	**3.4**	2.0		mg/Kg	2.0	SW9010B/9014	4/12/04	4/12/04	KMB	CN_SOIL-4/12/2004

Confidential and Privileged

TRANSWEST GEOCHEM

Date Printed 29-Apr-04

License No. AZM133/AZ0133

CLIENT: Geotrans, Inc.
Work Order: 0404090
Lab ID: 0404090-12
Project Name: 20th and Factor WQARF
Project Number: 1303.011.03

Client Sample ID: H1-SS-12-04/02/04
Collection Date: 4/2/2004 1:35:00 PM
Matrix: SOIL

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Cyanide	2.6	0.40	D2	mg/L	20	W1312/9010B/901	4/8/04	4/19/04	KMB	7367
Cyanide, Amenable to Chlorin	0.37	0.20	D2	mg/L	10	W1312/9010B/901	4/8/04	4/23/04	KMB	7367
Cyanide, Amenable to Chlorin	1700	400	D2	mg/Kg	400	SW9010B/9014	4/14/04	4/14/04	KMB	CNA_SOIL-4/14/2004
Cyanide, Total	2300	200	D2	mg/Kg	200	SW9010B/9014	4/12/04	4/12/04	KMB	CN_SOIL-4/12/2004

Confidential and Privileged

TRANSWEST GEOCHEM

Date Printed 29-Apr-04

License No. AZM133/AZ0133

CLIENT: Geotrans, Inc.
Work Order: 0404090
Lab ID: 0404090-13
Project Name: 20th and Factor WQARF
Project Number: 1303.011.03

Client Sample ID: H1-SS-13-04/02/04
Collection Date: 4/2/2004 1:39:00 PM
Matrix: SOIL

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Cyanide	**0.67**	0.10	D2	mg/L	5.0	W1312/9010B/901	4/8/04	4/19/04	KMB	7367
Cyanide, Amenable to Chlorin	**0.11**	0.10		mg/L	5.0	W1312/9010B/901	4/8/04	4/23/04	KMB	7367
Cyanide, Amenable to Chlorination	<2.0	2.0		mg/Kg	2.0	SW9010B/9014	4/14/04	4/14/04	KMB	CNA_SOIL-4/14/2004
Cyanide, Total	**26**	10	D2	mg/Kg	10	SW9010B/9014	4/12/04	4/12/04	KMB	CN_SOIL-4/12/2004

Confidential and Privileged

TRANSWEST GEOCHEM

Date Printed 29-Apr-04

License No. AZM133/AZ0133

CLIENT: Geotrans, Inc.
Work Order: 0404090
Lab ID: 0404090-14
Project Name: 20th and Factor WQARF
Project Number: 1303.011.03

Client Sample ID: H1-SS-14-04/02/04
Collection Date: 4/2/2004 1:45:00 PM
Matrix: SOIL

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Cyanide	0.89	0.020	D2	mg/L	10	W1312/9010B/901	4/8/04	4/20/04	KMB	7367
Cyanide, Amenable to Chlorin	0.060	0.050		mg/L	5.0	W1312/9010B/901	4/8/04	4/23/04	KMB	7367
Cyanide, Amenable to Chlorin	3000	400	D2	mg/Kg	400	SW9010B/9014	4/14/04	4/14/04	KMB	CNA_SOIL-4/14/2004
Cyanide, Total	3600	400	D2	mg/Kg	400	SW9010B/9014	4/12/04	4/12/04	KMB	CN_SOIL-4/12/2004

Confidential and Privileged

TRANSWEST GEOCHEM

Date Printed 29-Apr-04

License No. AZM133/AZ0133

CLIENT: Geotrans, Inc.
Work Order: 0404090
Lab ID: 0404090-15
Project Name: 20th and Factor WQARF
Project Number: 1303.011.03

Client Sample ID: H1-SS-15-04/02/04
Collection Date: 4/2/2004 1:47:00 PM
Matrix: SOIL

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Cyanide	1.2	0.020	D2	mg/L	10	W1312/9010B/901	4/8/04	4/20/04	KMB	7367
Cyanide, Amenable to Chlorin	0.03	0.025		mg/L	5.0	W1312/9010B/901	4/8/04	4/23/04	KMB	7367
Cyanide, Amenable to Chlorin	600	200	D2	mg/Kg	200	SW9010B/9014	4/14/04	4/14/04	KMB	CNA_SOIL-4/14/2004
Cyanide, Total	1300	200	D2	mg/Kg	200	SW9010B/9014	4/13/04	4/13/04	KMB	CN_SOIL-4/13/2004

Confidential and Privileged

TRANSWEST GEOCHEM

Date Printed 29-Apr-04

License No. AZM133/AZ0133

CLIENT: Geotrans, Inc.
Work Order: 0404090
Lab ID: 0404090-16
Project Name: 20th and Factor WQARF
Project Number: 1303.011.03

Client Sample ID: H1-SS-16-04/02/04
Collection Date: 4/2/2004 1:51:00 PM
Matrix: SOIL

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Cyanide	**0.58**	0.020	D2	mg/L	10	W1312/9010B/901	4/8/04	4/20/04	KMB	7367
Cyanide, Amenable to Chlorin	**0.25**	0.10		mg/L	5.0	W1312/9010B/901	4/8/04	4/23/04	KMB	7367
Cyanide, Amenable to Chlorination	<2.0	2.0		mg/Kg	2.0	SW9010B/9014	4/15/04	4/15/04	KMB	CNSA4/15/2004
Cyanide, Total	**5800**	1000	D2	mg/Kg	1000	SW9010B/9014	4/13/04	4/13/04	KMB	CN_SOIL-4/13/2004

Confidential and Privileged

TRANSWEST GEOCHEM

Date Printed 29-Apr-04

License No. AZM133/AZ0133

CLIENT: Geotrans, Inc.
Work Order: 0404090
Lab ID: 0404090-17
Project Name: 20th and Factor WQARF
Project Number: 1303.011.03

Client Sample ID: H1-SS-17-04/02/04
Collection Date: 4/2/2004 1:55:00 PM
Matrix: SOIL

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Cyanide	**0.51**	0.020	D2	mg/L	10	W1312/9010B/901	4/8/04	4/20/04	KMB	7367
Cyanide, Amenable to Chlorination	<0.020	0.020		mg/L	1.0	W1312/9010B/901	4/8/04	4/23/04	KMB	7367
Cyanide, Amenable to Chlorination	<2.0	2.0		mg/Kg	2.0	SW9010B/9014	4/15/04	4/15/04	KMB	CNSA4/15/2004
Cyanide, Total	**180**	20	D2	mg/Kg	20	SW9010B/9014	4/13/04	4/13/04	KMB	CN_SOIL-4/13/2004

Confidential and Privileged

TRANSWEST GEOCHEM

Date Printed 29-Apr-04

License No. AZM133/AZ0133

CLIENT: Geotrans, Inc.
Work Order: 0404090
Lab ID: 0404090-18
Project Name: 20th and Factor WQARF
Project Number: 1303.011.03

Client Sample ID: H1-SS-18-04/02/04
Collection Date: 4/2/2004 2:03:00 PM
Matrix: SOIL

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Cyanide	**0.71**	0.020	D2	mg/L	10	W1312/9010B/901	4/8/04	4/20/04	KMB	7367
Cyanide, Amenable to Chlorination	<0.020	0.020		mg/L	1.0	W1312/9010B/901	4/8/04	4/23/04	KMB	7367
Cyanide, Amenable to Chlorination	<2.0	2.0		mg/Kg	2.0	SW9010B/9014	4/15/04	4/15/04	KMB	CNSA4/15/2004
Cyanide, Total	**360**	50	D2	mg/Kg	50	SW9010B/9014	4/13/04	4/13/04	KMB	CN_SOIL-4/13/2004

Confidential and Privileged

TRANSWEST GEOCHEM

Date Printed 29-Apr-04

License No. AZM133/AZ0133

CLIENT: Geotrans, Inc.
Work Order: 0404090
Lab ID: 0404090-19
Project Name: 20th and Factor WQARF
Project Number: 1303.011.03

Client Sample ID: H1-SS-19-04/02/04
Collection Date: 4/2/2004 2:01:00 PM
Matrix: SOIL

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Cyanide	**0.45**	0.020	D2	mg/L	10	W1312/9010B/901	4/8/04	4/20/04	KMB	7367
Cyanide, Amenable to Chlorination	<0.020	0.020		mg/L	1.0	W1312/9010B/901	4/8/04	4/23/04	KMB	7367
Cyanide, Amenable to Chlorination	<2.0	2.0		mg/Kg	2.0	SW9010B/9014	4/15/04	4/15/04	KMB	CNSA4/15/2004
Cyanide, Total	**170**	20	D2	mg/Kg	20	SW9010B/9014	4/13/04	4/13/04	KMB	CN_SOIL-4/13/2004

Confidential and Privileged

TRANSWEST GEOCHEM

Date Printed 29-Apr-04

License No. AZM133/AZ0133

CLIENT: Geotrans, Inc.
Work Order: 0404090
Lab ID: 0404090-20
Project Name: 20th and Factor WQARF
Project Number: 1303.011.03

Client Sample ID: H1-SS-20-04/02/04
Collection Date: 4/2/2004 2:35:00 PM
Matrix: SOIL

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Cyanide	1.9	0.020	D2	mg/L	10	W1312/9010B/901	4/8/04	4/20/04	KMB	7367
Cyanide, Amenable to Chlorin	1.1	0.20	D2	mg/L	10	W1312/9010B/901	4/8/04	4/23/04	KMB	7367
Cyanide, Amenable to Chlorin	470	200	D2	mg/Kg	200	SW9010B/9014	4/15/04	4/15/04	KMB	CNSA4/15/2004
Cyanide, Total	2000	200	D2	mg/Kg	200	SW9010B/9014	4/13/04	4/13/04	KMB	CN_SOIL-4/13/2004

Confidential and Privileged

TRANSWEST GEOCHEM

Date: 28-Apr-04

License No. AZM133/AZ0133

CLIENT: Geotrans, Inc.
Work Order: 0404090
Project: 20th and Factor WQARF/1303.011.03

QC SUMMARY REPORT

Method Blank

Analyte	Result	PQL	Qual	Units	DF	Test Code	Date Prepared	Date Analyzed	Analyst	Batch ID
Cyanide	<0.020	0.020		mg/L		W1312/9010B/90	4/8/04	4/19/04	KMB	7367
Cyanide, Amenable to Chlorination	<0.020	0.020		mg/L		W1312/9010B/90	4/8/04	4/20/04	KMB	7367
Cyanide, Amenable to Chlorination	<0.020	0.020		mg/L		W1312/9010B/90	4/8/04	4/23/04	KMB	7367
Cyanide, Total	<1.0	1.0		mg/Kg	1	SW9010B/9014	4/12/04	4/12/04	KMB	CN_SOIL-4/12/2004
Cyanide, Total	<1.0	1.0		mg/Kg	1	SW9010B/9014	4/13/04	4/13/04	KMB	CN_SOIL-4/13/2004
Cyanide, Amenable to Chlorination	<1.0	1.0		mg/Kg	1	SW9010B/9014	4/14/04	4/14/04	KMB	CNA_SOIL-4/14/2004
Cyanide, Amenable to Chlorination	<1.0	1.0		mg/Kg	1	SW9010B/9014	4/15/04	4/15/04	KMB	CNSA4/15/2004

TRANSWEST GEOCHEM

Date: 28-Apr-04

License No. AZM133/AZ0133

CLIENT: Geotrans, Inc.
Work Order: 0404090
Project: 20th and Factor WQARF/1303.011.03

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: 0404090-01ASD	Batch ID: 7367			Test Code: SW1312/9010B/9014				Date Analyzed: 04/19/04 00:00			
Client ID: H1-SS-01-04/02/04				Units: mg/L				Date Prepared: 4/8/04			
Cyanide	1.707	0.20	0.3125	1.336	119%	80	120	1.752	3%	20	
Sample ID: 0404090-01AS	Batch ID: 7367			Test Code: SW1312/9010B/9014				Date Analyzed: 04/19/04 00:00			
Client ID: H1-SS-01-04/02/04				Units: mg/L				Date Prepared: 4/8/04			
Cyanide	1.752	0.20	0.3125	1.336	133%	80	120				M1
Sample ID: 0404090-01ASD	Batch ID: CN_SOIL-4/12/2004			Test Code: SW9010B/9014				Date Analyzed: 04/12/04 00:00			
Client ID: H1-SS-01-04/02/04				Units: mg/Kg				Date Prepared: 4/12/04			
Cyanide, Total	48.28	10	12.50	34.68	109%	80	120	48.29	0%	20	
Sample ID: 0404090-01AS	Batch ID: CN_SOIL-4/12/2004			Test Code: SW9010B/9014				Date Analyzed: 04/12/04 00:00			
Client ID: H1-SS-01-04/02/04				Units: mg/Kg				Date Prepared: 4/12/04			
Cyanide, Total	48.29	10	12.50	34.68	109%	80	120				
Sample ID: 0404091-01ASD	Batch ID: CN_SOIL-4/13/2004			Test Code: SW9010B/9014				Date Analyzed: 04/13/04 00:00			
Client ID:				Units: mg/Kg				Date Prepared: 4/13/04			
Cyanide, Total	16.85	2.0	12.50	4.530	99%	80	120	17.74	5%	20	
Sample ID: 0404091-01AS	Batch ID: CN_SOIL-4/13/2004			Test Code: SW9010B/9014				Date Analyzed: 04/13/04 00:00			
Client ID:				Units: mg/Kg				Date Prepared: 4/13/04			
Cyanide, Total	17.74	2.0	12.50	4.530	106%	80	120				
Sample ID: 0404090-08ASD	Batch ID: CNA_SOIL-4/14/2004			Test Code: SW9010B/9014				Date Analyzed: 04/14/04 00:00			
Client ID: H1-SS-08-04/02/04				Units: mg/Kg				Date Prepared: 4/14/04			
Cyanide, Amenable to Chlorination	15.87	2.0	12.50	2.695	105%	80	120	15.67	1%	20	
Sample ID: 0404090-08AS	Batch ID: CNA_SOIL-4/14/2004			Test Code: SW9010B/9014				Date Analyzed: 04/14/04 00:00			
Client ID: H1-SS-08-04/02/04				Units: mg/Kg				Date Prepared: 4/14/04			
Cyanide, Amenable to Chlorination	15.67	2.0	12.50	2.695	104%	80	120				

TRANSWEST GEOCHEM

Date: 28-Apr-04

License No. AZM133/AZ0133

CLIENT: Geotrans, Inc.
Work Order: 0404090
Project: 20th and Factor WQARF/1303.011.03

QC SUMMARY REPORT

Blank Spike Duplicate

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: LCSD-7367	Batch ID: 7367			Test Code: SW1312/9010B/9014				Date Analyzed: 04/19/04 00:00			
				Units: mg/L				Date Prepared: 4/8/04			
Cyanide	0.3052	0.040	0.3125	<0.040	98%	85	115	0.3226	6%	20	
Sample ID: LCS-7367	Batch ID: 7367			Test Code: SW1312/9010B/9014				Date Analyzed: 04/19/04 00:00			
				Units: mg/L				Date Prepared: 4/8/04			
Cyanide	0.3226	0.040	0.3125	<0.040	103%	85	115				
Sample ID: LCS-7367	Batch ID: 7367			Test Code: SW1312/9010B/9014				Date Analyzed: 04/20/04 00:00			
				Units: mg/L				Date Prepared: 4/8/04			
Cyanide, Amenable to Chlorination	0.2840	0.040	0.3125	<0.040	91%	85	115				
Sample ID: LCSD-7367	Batch ID: 7367			Test Code: SW1312/9010B/9014				Date Analyzed: 04/23/04 00:00			
				Units: mg/L				Date Prepared: 4/8/04			
Cyanide, Amenable to Chlorination	0.2912	0.040	0.3125	<0.040	93%	85	115	0.2915	0%	20	
Sample ID: LCS-7367	Batch ID: 7367			Test Code: SW1312/9010B/9014				Date Analyzed: 04/23/04 00:00			
				Units: mg/L				Date Prepared: 4/8/04			
Cyanide, Amenable to Chlorination	0.2915	0.040	0.3125	<0.040	93%	85	115				
Sample ID: LCS	Batch ID: CN_SOIL-4/12/2004			Test Code: SW9010B/9014				Date Analyzed: 04/12/04 00:00			
				Units: mg/Kg				Date Prepared: 4/12/04			
Cyanide, Total	6.471	1.0	6.250	<1.0	104%	80	120				
Sample ID: LCS	Batch ID: CN_SOIL-4/13/2004			Test Code: SW9010B/9014				Date Analyzed: 04/13/04 00:00			
				Units: mg/Kg				Date Prepared: 4/13/04			
Cyanide, Total	6.750	1.0	6.250	<1.0	108%	80	120				
Sample ID: LCSD	Batch ID: CNA_SOIL-4/14/2004			Test Code: SW9010B/9014				Date Analyzed: 04/14/04 00:00			
				Units: mg/Kg				Date Prepared: 4/14/04			
Cyanide, Amenable to Chlorination	6.016	1.0	6.250	<1.0	96%	80	120	5.955	1%	20	
Sample ID: LCS	Batch ID: CNA_SOIL-4/14/2004			Test Code: SW9010B/9014				Date Analyzed: 04/14/04 00:00			
				Units: mg/Kg				Date Prepared: 4/14/04			
Cyanide, Amenable to Chlorination	5.955	1.0	6.250	<1.0	95%	80	120				

TRANSWEST GEOCHEM

Date: 28-Apr-04

License No. AZM133/AZ0133

CLIENT: Geotrans, Inc.
Work Order: 0404090
Project: 20th and Factor WQARF/1303.011.03

QC SUMMARY REPORT

Blank Spike Duplicate

Analyte	Result	PQL	SPK value	SPK Ref Val	% Rec	Low Limit	High Limit	RPD Ref Val	% RPD	RPD Limit	Qual
Sample ID: LCSD	Batch ID: CNSA4/15/2004			Test Code: SW9010B/9014				Date Analyzed: 04/15/04 00:00			
				Units: mg/Kg				Date Prepared: 4/15/04			
Cyanide, Amenable to Chlorination	6.023	1.0	6.250	<1.0	96%	80	120	5.764	4%	20	
Sample ID: LCS	Batch ID: CNSA4/15/2004			Test Code: SW9010B/9014				Date Analyzed: 04/15/04 00:00			
				Units: mg/Kg				Date Prepared: 4/15/04			
Cyanide, Amenable to Chlorination	5.764	1.0	6.250	<1.0	92%	80	120				

Chain of Custody

TRANSWEST GEOCHEM

3725 East Atlanta Avenue, Suite 2
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

TGI Work Order No: 0404090

Date 04/02/04 Page 1 of 2

Project Manager:	JASENKA ZBOZINEK
Client Name:	GEOTRANS
Address:	4665 SOUTH ASH AVE, SUITE G-1
City, State ZIP:	TEMPE AZ 85282
Phone:	480-839-2800 Fax:

Bill to:	
Company:	
Address:	
City, State ZIP:	
Phone:	Fax:

P.O. No.:	
Project Name:	20TH AND FACTOR WQAAF
Project Number:	1303.011.03

SAMPLE RECEIPT

Temperature: 5.4	Ambient / Cold	Ice:
Received Intact: Y		Absent / Present
Custody Seals: Y		Wet / Blue
Total No. of Containers:		

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, (418.1 /418.1AZ)	TPH, 8015AZR.1	BTEX (8021B)	Volatile Organics GCMS (624/8260AZ)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA 8310	8 RCRA Metals	13 Priority Pollutant Metals	TOTAL / FREE CYANIDE	SPLP CYANIDE							Comments
III-SS-01-04/02/04	SOIL	04/02/04	1140	1	1												X	X							
III-SS-02-04/02/04			1150	2	1												X	X							
III-SS-03-04/02/04			1153	3	1												X	X							
III-SS-04-04/02/04			1158	4	1												X	X							
III-SS-05-04/02/04			1202	5	1												X	X							
III-SS-06-04/02/04			1207	6	1												X	X							
III-SS-07-04/02/04			1213	7	1												X	X							
III-SS-08-04/02/04			1217	8	1												X	X							
III-SS-09-04/02/04			1221	9	1												X	X							
III-SS-10-04/02/04			1313	10	1												X	X							

Relinquished by: (Signature)	(Print Name)	Date/Time	Received by: (Signature)	(Print Name)	Date/Time
1 [signature]	CHRISTOPHER GUTHMANN	4/2/04 11:30	[signature]	Corey Cole	4/2/04 11:30
2					
3					

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised: 6/29/00

TRANSWEST GEOCHEM

3725 East Atlanta Avenue, Suite 2
Phoenix, Arizona 85040
Phone: (602) 437-0330
Fax: (602) 437-0660

Chain of Custody

TGI Work Order No: C4040190

Date 4/02/04 Page 2 of 2

Project Manager:	JASENKA ZBOZINEK
Client Name:	GEO TRANS
Address:	4665 SOUTH ASH AVE., SUITE G-1
City, State ZIP:	TEMPE, AZ 85282
Phone:	480-839-2800 Fax:

Bill to:	
Company:	
Address:	
City, State ZIP:	
Phone:	Fax:

P.O. No.:	
Project Name:	20TH AND FALTON WHARF
Project Number:	1303.01/.03

SAMPLE RECEIPT

Temperature:	Ambient / Cold	Ice:	
Received Intact:	Y	Absent / Present	
Custody Seals:	N	Wet / Blue	
Total No. of Containers:			

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	TPH, (418.1 /418.1AZ)	TPH, 8015AZR.1	BTEX (8021B)	Volatile Organics GCMS (624/8260AZ)	SDWA Volatiles, (524.2)	Semi-Volatile Organics GCMS (625/8270)	Organochlorine Pesticides (608/8081)	PCB's, (8082)	PAH, EPA 8310	8 RCRA Metals	13 Priority Pollutant Metals	TOTAL / FREE CYANIDES	SPLP CYANIDE							Comments
111-SS-11-04/02/04	SOIL	04/02/04	1332	11													X	X							
111-SS-12-04/02/04			1335	12													X	X							
111-SS-13-04/02/04			1339	13													X	X							
111-SS-14-04/02/04			1345	14													X	X							
111-SS-15-04/02/04			1347	15													X	X							
111-SS-16-04/02/04			1351	16													X	X							
111-SS-17-04/02/04			1355	17													X	X							
111-SS-18-04/02/04			1403	18													X	X							
111-SS-19-04/02/04			1401	19													X	X							
111-SS-20-04/02/04			1435	20													X	X							

	Relinquished by: (Signature)	(Print Name)	Date/Time	Received by: (Signature)	(Print Name)	Date/Time
1	[signature]	CHRISTOPHER BRYNAN	4/1/04 11:20	Corey R. Cole	Corey Cole	4/1/04 11:30
2						
3						

White copy to TGI, Yellow copy for final report, Pink copy to sampler

Revised: 6/29/00

DISTRIBUTION

Technical Memorandum
ERA Site Investigation - Cyanides
Houston International Facility
653-655 East 20th Street
20th and Factor WQARF Site
Yuma, Arizona

Copy No.:

Copies 1 - 5: Mr. Scott Goodwin, ADEQ

Copies 6 - 7: GeoTrans, Inc.

Quality Control Reviewer

_____

APPENDIX E

SOIL BORING LOGS
(on CD)

Project: 4255 Date: 12/9/92 Elevation: Hole No.: 11 Stopped Drilling at 9.0 Feet.

Blow Count	Sample Type	USCS	Symbol	DESCRIPTION	In Situ Moisture	% Dist. Boulders	Cobbles	Gravel	Sand	Silt/Clay	Grad. Well	Medium	Poor	Grain Shape Subang.	Angular	Submd.	Rounded	Relative Density/ Consistency	Estimated P.I.	Degree of Cementation
		SP		POORLY GRADED SAND f-c sa, pred. fine sand with trace silt 0-9" - dk. green 9-48" - sl. green below 4' - lt. brn.	Damp - Moist				100	T			X	X				Very Loose	N.P.	None
					Damp													Loose		
10	N			PID = 0.5 ppm														Med. Dense		
					Slightly Damp													Med. Dense		
20	N			PID = 0 ppm																
				Stopped drilling and sampling at 9.0 feet.																

B=Block C=Bull Nose D=Dutch Cone G=Grab L=Bulk Disturbed N=SPT P=Push R=Ring

Foree & Vann, Inc. provides this boring data as an addendum to the design recommendations expressed in this report. The boring log represents this firm's interpretation of the subsurface conditions at this location, at the indicated depths, during the time period of the field investigation. Conclusions redarding materials workability and construction techniques are the responsibility of bidding parties and contractors.

Project: 4255 Date: 12/9/92 Elevation: Hole No.: 12 Stopped Drilling at 9.0 Feet.

Blow Count	Sample Type	USCS	Symbol	DESCRIPTION	In Situ Moisture	% Dist. Boulders	% Dist. Cobbles	% Dist. Gravel	% Dist. Sand	% Dist. Silt/Clay	Grad. Well	Grad. Medium	Grad. Poor	Grain Shape Subang.	Grain Shape Angular	Grain Shape Submd.	Grain Shape Rounded	Relative Density/ Consistency	Estimated P.I.	Degree of Cementation
		SP		POORLY GRADED SAND f-c sa, pred. fine sand with trace silt 0-9" - dk. green 9-36" - sl. green below 3' - lt. brn.	Moist				100	T			X	X				Very Loose	N.P.	None
					Damp													Loose		
10	N			PID = 0 ppm	Slightly Damp													Med. Dense		
18	N			PID = 0 ppm																
				Stopped drilling and sampling at 9.0 feet.																

B=Block C=Bull Nose D=Dutch Cone G=Grab L=Bulk Disturbed N=SPT P=Push R=Ring

Foree & Vann, Inc. provides this boring data as an addendum to the design recommendations expressed in this report. The boring log represents this firm's interpretation of the subsurface conditions at this location, at the indicated depths, during the time period of the field investigation. Conclusions redarding materials workability and construction techniques are the responsibility of bidding parties and contractors.

Project: 4255 Date: 12/9/92 Elevation: Hole No.: 13 Stopped Drilling at 9.0 Feet.

Blow Count	Sample	Type	USCS	Symbol	DESCRIPTION	In Situ Moisture	% Dist. Boulders	Cobbles	Gravel	Sand	Silt/Clay	Grad. Well	Medium	Poor	Grain Shape Subang.	Angular	Submd.	Rounded	Relative Density/ Consistency	Estimated P.I.	Degree of Cementation
			SP		POORLY GRADED SAND f-c sa, pred. fine sand with trace silt 0-6" - dk. green 6-24" - sl. green below 23' - lt. brn.	Moist				100	T			X	X				Very Loose	N.P.	None
						Damp													Loose		
9		N			PID = 0.5 ppm	Slightly Damp															
																			Med. Dense		
14		N			PID = 0 ppm																
					Stopped drilling and sampling at 9.0 feet.																

B=Block C=Bull Nose D=Dutch Cone G=Grab L=Bulk Disturbed N=SPT P=Push R=Ring

Foree & Vann, Inc. provides this boring data as an addendum to the design recommendations expressed in this report. The boring log represents this firm's interpretation of the subsurface conditions at this location, at the indicated depths, during the time period of the field investigation. Conclusions redarding materials workability and construction techniques are the responsibility of bidding parties and contractors.

Project: 4255 Date: 12/9/92 Elevation: Hole No.: 14 Stopped Drilling at 9.0 Feet.

Blow Count	Sample Type	USCS	Symbol	DESCRIPTION	In Situ Moisture	% Dist. Boulders	% Dist. Cobbles	% Dist. Gravel	% Dist. Sand	% Dist. Silt/Clay	Grad. Well	Grad. Medium	Grad. Poor	Grain Shape Subang.	Grain Shape Angular	Grain Shape Submd.	Grain Shape Rounded	Relative Density/ Consistency	Estimated P.I.	Degree of Cementation
		SP		POORLY GRADED SAND f-c sa, pred. fine sand with trace silt 0-9" - dk. green 9-54" - sl. green below 54" - lt. brn.	Moist				100	T			X	X				Very Loose	N.P.	None
					Damp													Loose		
10	N			PID = 0 ppm	Slightly Damp													Med. Dense		
13	N			PID = 0 ppm																
				Stopped drilling and sampling at 9.0 feet.																

B=Block C=Bull Nose D=Dutch Cone G=Grab L=Bulk Disturbed N=SPT P=Push R=Ring

Foree & Vann, Inc. provides this boring data as an addendum to the design recommendations expressed in this report. The boring log represents this firm's interpretation of the subsurface conditions at this location, at the indicated depths, during the time period of the field investigation. Conclusions redarding materials workability and construction techniques are the responsibility of bidding parties and contractors.

Project: Date: 8/13/90 Elevation: 200.0 Hole No.: 1 Stopped Drilling at 21.5 Feet.

Blow Count	Sample Type	USCS	Symbol	DESCRIPTION	In Situ Moisture	% Dist. Boulders	Cobbles	Gravel	Sand	Silt/Clay	Grad. Well	Medium	Poor	Grain Shape Subang.	Angular	Subrnd.	Rounded	Relative Density/ Consistency	Estimated P.I.	Degree of Cementation
				ASPHALT 0-4 inches																
				Fill - GRAVELLY SAND gray brown	damp			40	55	5		X		X				M. Dense	N.P	None
		SP		SAND, lt. brown predominately fine (sugar sand) trace clay balls and sandstone gravel 1-5 feet	Damp				100				X	X				Loose	N.P	None
3		N			Moist				100				X	X				Loose	N.P	None
26		N			Moist				100				X	X				M. Dense	N.P	None
35		N																		
25		N		Slight septic odor																
				Stopped drilling and sampling at 21.5 feet																

B=Block C=Bull Nose D=Dutch Cone G=Grab L=Bulk Disturbed N=SPT P=Push R=Ring

Foree & Vann, Inc. provides this boring data as an addendum to the design recommendations expressed in this report. The boring log represents this firm's interpretation of the subsurface conditions at this location, at the indicated depths, during the time period of the field investigation. Conclusions regarding materials workability and construction techniques are the responsibility of bidding parties and contractors.

Project: Date: 8/13/90 Elevation: 200.0 Hole No.: 2 Stopped Drilling at 21.5 Feet.

Blow Count	Sample Type	USCS	Symbol	DESCRIPTION	In Situ Moisture	% Dist. Boulders	Cobbles	Gravel	Sand	Silt/Clay	Grad. Well	Medium	Poor	Grain Shape Subang.	Angular	Subrnd.	Rounded	Relative Density/ Consistency	Estimated P.I.	Degree of Cementation
				ASPHALT 0-4 inches																
				Fill - GRAVELLY SAND grey brown	Damp			40	55	5		X		X				N. Dense	N.P	None
		SP		SAND lt. brn., predominately fine (sugar sand) Trace sandstone gravel 1-5 feet	Damp				100				X	X				Loose	N.P	None
15		N			Moist				100				X	X				Loose	N.P	None
26		N			Moist				100				X	X				Dense	N.P	None
33		N																		
31		N		Slight septic odor	Moist				95	5			X	X				Dense	N.P	None
				Stopped drilling and sampling at 21.5 feet																

B=Block C=Bull Nose D=Dutch Cone G=Grab L=Bulk Disturbed N=SPT P=Push R=Ring

Foree & Vann, Inc. provides this boring data as an addendum to the design recommendations expressed in this report. The boring log represents this firm's interpretation of the subsurface conditions at this location, at the indicated depths, during the time period of the field investigation. Conclusions regarding materials workability and construction techniques are the responsibility of bidding parties and contractors.

Project: Date: 8/13/90 Elevation: 200.0 Hole No.: 3 Stopped Drilling at 6.5 feet.

Depth	Blow Count	Sample Type	USCS	Symbol	DESCRIPTION	In Situ Moisture	% Dist. Boulders	Cobbles	Gravel	Sand	Silt/Clay	Grad. Well	Medium	Poor	Grain Shape Subang.	Angular	Subrnd.	Rounded	Relative Density/ Consistency	Estimated P.I.	Degree of Cementation
0			SP		SAND lt. brn, predominately fine dark blue-green staining 0-3.5 feet.	Moist				100				X	X				Loose	N.P	None
1																					
2	12		N																		
3																					
4					Light green staining																
5	23		N		No staining or odors detected	Moist				100				X	X				M. Dense	N.P	None
6																					
					Stopped drilling and sampling at 6.5 feet.																

B=Block C=Bull Nose D=Dutch Cone G=Grab L=Bulk Disturbed N=SPT P=Push R=Ring

Foree & Vann, Inc. provides this boring data as an addendum to the design recommendations expressed in this report. The boring log represents this firm's interpretation of the subsurface conditions at this location, at the indicated depths, during the time period of the field investigation. Conclusions regarding materials workability and construction techniques are the responsibility of bidding parties and contractors.

Project: Date: 8/13/90 Elevation: 200.0 Hole No.:- 4 Stopped Drilling at 6.5 Feet.

Blow Count	Sample Type	USCS Symbol	DESCRIPTION	In Situ Moisture	% Dist. Boulders	Cobbles	Gravel	Sand	Silt/Clay	Grad. Well	Medium	Poor	Grain Shape Subang.	Angular	Subrnd.	Rounded	Relative Density/ Consistency	Estimated P.I.	Degree of Cementation
		SP	SAND lt. brn., predominately fine	Moist				100				X	X				Loose	N.P	None
			blue-green staining top 1-2 inches																
14	N		with sulfurous odor.	Moist				100				X	X				M. Dense	N.P	None
21	N																		
			Stopped drilling and sampling at 6.5 feet.																

B=Block C=Bull Nose D=Dutch Cone G=Grab L=Bulk Disturbed N=SPT P=Push R=Ring

Foree & Vann, Inc. provides this boring data as an addendum to the design recommendations expressed in this report. The boring log represents this firm's interpretation of the subsurface conditions at this location, at the indicated depths, during the time period of the field investigation. Conclusions regarding materials workability and construction techniques are the responsibility of bidding parties and contractors.

Project: Date: 8/13/90 Elevation: 200.0 Hole No.: 5 Stopped Drilling at 6.5 Feet.

Blow Count	Sample Type	USCS Symbol	DESCRIPTION	In Situ Moisture	% Dist. Boulders	Cobbles	Gravel	Sand	Silt/Clay	Grad. Well	Medium	Poor	Grain Shape Subang.	Angular	Subrnd.	Rounded	Relative Density/ Consistency	Estimated P.I.	Degree of Cementation
		SP	SAND lt. brn., predominately fine	Moist				100				X	X				Loose	N.P	None
			blue-green staining top 2-3 inches																
19	N		with sulfurous odor.	Moist				100				X	X				M. Dense	N.P	None
24	N																		
			Stopped drilling and sampling at 6.5 feet.																

B=Block C=Bull Nose D=Dutch Cone G=Grab L=Bulk Disturbed N=SPT P=Push R=Ring

Foree & Vann, Inc. provides this boring data as an addendum to the design recommendations expressed in this report. The boring log represents this firm's interpretation of the subsurface conditions at this location, at the indicated depths, during the time period of the field investigation. Conclusions regarding materials workability and construction techniques are the responsibility of bidding parties and contractors.

Project: Date: 8/13/90 Elevation: 200.0 Hole No.: 6 Stopped Drilling at 6.5 Feet.

Blow Count	Sample Type	USCS Symbol	DESCRIPTION	In Situ Moisture	% Dist. Boulders	Cobbles	Gravel	Sand	Silt/Clay	Grad. Well	Medium	Poor	Grain Shape Subang.	Angular	Subrnd.	Rounded	Relative Density/ Consistency	Estimated P.I.	Degree of Cementation
0		SP	SAND lt. brn, predominately fine blue-green staining top 1-2 inches with sulfurous odor.	Moist				100				X	X				Loose	N.P	None
1																			
2																			
3																			
4																			
5	22	N		Moist				100				X	X				M. Dense	N.P	None
6																			
			Stopped drilling and sampling at 6.5 feet.																

B=Block C=Bull Nose D=Dutch Cone G=Grab L=Bulk Disturbed N=SPT P=Push R=Ring

Foree & Vann, Inc. provides this boring data as an addendum to the design recommendations expressed in this report. The boring log represents this firm's interpretation of the subsurface conditions at this location, at the indicated depths, during the time period of the field investigation. Conclusions regarding materials workability and construction techniques are the responsibility of bidding parties and contractors.

Boring Log No. 1

PROJECT: Houston International, Ltd.
DRILL RIG: Hollow Stem Auger
INITIAL GW DEPTH: ft.

DATE: 12/07/94
HOLE DIA: 7.75 in.
FINAL GW: ft.

GEOLOGIST: W.L. Stefanov
SAMPLER:
HOLE ELEV:

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	PENETRATION RATE	REMARKS
ASPHALTIC CONCRETE	AC		0			
AGGREGATE BASE COURSE	ABC		1			
SAND, light brown to light tan, damp, 100% sand, well graded angular clasts, loose, nonplastic, no cementation observed.	SW		2, 3, 4, 5, 6		8/9/10	
			7, 8, 9, 10			
sand becomes medium dense			11		9/13/15	
sand becomes damp to moist			12, 13, 14, 15, 16, 17, 18, 19, 20			
sand becomes moist			21		7/11/13	
			22, 23, 24, 25, 26, 27, 28, 29, 30			
sand becomes medium dense to dense			31		10/13/14	
			32, 33, 34, 35, 36, 37, 38, 39, 40			
			41		10/14/22	
			42, 43, 44, 45			

Foree & Vann, Inc.

Geotechnical and Environmental Consulting
Phoenix, Arizona

Notes:

Project No.
4255

Boring Log No. 1

PROJECT: Houston International, Ltd.
DRILL RIG: Hollow Stem Auger
INITIAL GW DEPTH: ft.

DATE: 12/07/94
HOLE DIA: 7.75 in.
FINAL GW: ft.

GEOLOGIST: W.L. Stefanov
SAMPLER:
HOLE ELEV:

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	PENETRATION RATE	REMARKS
	SW		45			
			46			
			47			
			48			
			49			
			50			
			51		12/12/20	
brown clay, trace silt lense, very stiff and interbedded with sand, approximately two inches in thickness			52			
			53			
			54			
			55			
			56			
			57			
			58			
			59			
			60		50/6"	
sand becomes very dense			61			
			62			
			63			
			64			
			65			
			66			
			67			
			68			
			69			
			70		27/48/	
sand is laminated			71		50/5"	
sand becomes wet						
Ceased advancement of borehole at 71.42 feet.			72			
			73			
			74			
			75			
			76			
			77			
			78			
			79			
			80			
			81			
			82			
			83			
			84			
			85			
			86			
			87			
			88			
			89			
			90			

Foree & Vann, Inc.

Geotechnical and Environmental Consulting
Phoenix, Arizona

Notes:

Project No.
4255

Boring Log No. 2

PROJECT: Houston International, Ltd.
DRILL RIG: Hollow Stem Auger
INITIAL GW DEPTH: ft.

DATE: 12/07/94
HOLE DIA: 7.75 in.
FINAL GW: ft.

GEOLOGIST: W.L. Stefanov
SAMPLER:
HOLE ELEV:

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	PENETRATION RATE	REMARKS
ASPHALTIC CONCRETE	AC		0			
AGGREGATE BASE COURSE	ABC		1			
SAND, tan, damp, 100% sand, well graded angular clasts, loose, nonplastic, no cementation observed.	SW		2, 3, 4			
sand becomes medium dense			5, 6		9/14/16	
			7, 8, 9			
			10, 11		9/12/16	
brown clay lense, very stiff and interbedded with sand, less than 0.5 inches in thickness			12, 13, 14, 15, 16, 17, 18, 19			
			20, 21		8/12/17	
			22, 23, 24, 25, 26, 27, 28, 29			
sand becomes dense			30, 31		9/14/15	
			32, 33, 34, 35			

Foree & Vann, Inc.

Geotechnical and Environmental Consulting
Phoenix, Arizona

Notes:

Project No.
4255

Boring Log No. 2

PROJECT: Houston International, Ltd.
DRILL RIG: Hollow Stem Auger
INITIAL GW DEPTH: ft.

DATE: 12/07/94
HOLE DIA: 7.75 in.
FINAL GW: ft.

GEOLOGIST: W.L. Stefanov
SAMPLER:
HOLE ELEV:

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	PENETRATION RATE	REMARKS
	SW		35			
			36			
			37			
			38			
			39			
sand becomes damp to moist			40			
			41		10/15/20	
			42			
sand becomes brown in color			43			
			44			
			45			
			46			
			47			
			48			
			49			
sand becomes moist			50			
			51		9/20/30	
			52			
			53			
			54			
			55			
			56			
			57			
			58			
			59			
			60			
brown clay lense, very stiff and interbedded with yellow-brown sand, less than 0.5 inches in thickness					50/6"	
			61			
Ceased advancement of borehole at 60.5 feet.			62			
			63			
			64			
			65			
			66			
			67			
			68			
			69			
			70			

Foree & Vann, Inc.

Geotechnical and Environmental Consulting
Phoenix, Arizona

Notes:

Project No.
4255

Boring Log No. 3

PROJECT: Houston International, Ltd.
DRILL RIG: Hollow Stem Auger
INITIAL GW DEPTH: ft.

DATE: 1/18/95
HOLE DIA: 7.75 in.
FINAL GW: ft.

GEOLOGIST: W.L. Stefanov
SAMPLER:
HOLE ELEV:

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	PENETRATION RATE	REMARKS
ASPHALTIC CONCRETE	AC		0			
AGGREGATE BASE COURSE	ABC		1			
SAND, TRACE SILT, brown, damp, 95% sand, 5% silt, medium graded subangular to angular clasts, very loose, nonplastic, no cementation observed.	SW		2, 3, 4, 5, 6, 7, 8, 9	5–6	1/2/2	
sand becomes loose			10, 11, 12, 13, 14	10–11	4/5/7	
sand becomes loose to medium dense			15, 16, 17, 18, 19	15–16	7/10/11	
			20, 21, 22, 23, 24	20–21	7/10/11	
Thin (<0.5" thickness) discontinuous clay lenses between 25 and 30 feet.			25, 26, 27, 28, 29			
sand becomes medium dense			30, 31, 32, 33, 34, 35	30–31	8/12/14	

Foree & Vann, Inc.
Geotechnical and Environmental Consulting
Phoenix, Arizona

Notes:

Project No. 4255

Boring Log No. 3

PROJECT: Houston International, Ltd.
DRILL RIG: Hollow Stem Auger
INITIAL GW DEPTH: ft.

DATE: 1/18/95
HOLE DIA: 7.75 in.
FINAL GW: ft.

GEOLOGIST: W.L. Stefanov
SAMPLER:
HOLE ELEV:

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	PENETRATION RATE	REMARKS
	SW		35			
			36			
			37			
			38			
			39			
sand becomes medium dense to dense			40			
			41		11/20/22	
			42			
			43			
			44			
			45			
			46			
			47			
			48			
			49			
			50			
			51		11/20/25	
			52			
			53			
			54			
			55			
			56			
			57			
			58			
			59			
sand becomes very dense			60		45/50/3"	
Ceased advancement of borehole at 60.9 feet.			61			
			62			
			63			
			64			
			65			
			66			
			67			
			68			
			69			
			70			

Foree & Vann, Inc.
Geotechnical and Environmental Consulting
Phoenix, Arizona

Notes:

Project No.
4255

Boring Log No. 4

PROJECT: Houston International, Ltd.
DRILL RIG: Hollow Stem Auger
INITIAL GW DEPTH: ft.

DATE: 1/18/95
HOLE DIA: 7.75 in.
FINAL GW: ft.

GEOLOGIST: W.L. Stefanov
SAMPLER:
HOLE ELEV:

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	PENETRATION RATE	REMARKS
SAND, TRACE SILT, light brown, damp, 95% sand, 5% silt, medium graded subangular to angular clasts, very loose, nonplastic, no cementation observed.	SW		0			
soil is greenish-blue (dye discoloration) below 1', with an organic decay odor.			1			
			2			
			3		1/3/4	
			4			
SAND, WITH GRAVEL, blue-green, damp to moist, 80% sand, 15% gravel, 5% silt, well graded subangular to angular clasts, medium dense to dense, nonplastic, no cementation observed.	SW		5			Leach field
			6			
			7			
			8		10/6/8	
			9			
Ceased advancement of borehole at 9.5 feet.			10			

Foree & Vann, Inc.
Geotechnical and Environmental Consulting
Phoenix, Arizona

Notes:

Project No. 4255

Boring Log No. 5

PROJECT: Houston International, Ltd.
DRILL RIG: Hollow Stem Auger
INITIAL GW DEPTH: ft.

DATE: 1/18/95
HOLE DIA: 7.75 in.
FINAL GW: ft.

GEOLOGIST: W.L. Stefanov
SAMPLER:
HOLE ELEV:

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	PENETRATION RATE	REMARKS
SAND, TRACE SILT, gray-brown, moist, 95% sand, 5% silt, medium graded subangular to angular clasts, very loose, nonplastic, no cementation observed.	SW		0			Faint organic odor
			1			
			2			
SAND, TRACE SILT, light brown, moist, 95% sand, 5% silt, medium graded subangular to angular clasts, very loose, nonplastic, no cementation observed.	SW		3		1/1/4	
			4			
			5			
			6			
			7			
soil becomes loose to medium dense below 8 feet.			8		5/7/10	
			9			
Ceased advancement of borehole at 9.5 feet.			10			

Foree & Vann, Inc.
Geotechnical and Environmental Consulting
Phoenix, Arizona

Notes:

Project No. 4255

Boring Log No. 6

PROJECT: Houston International, Ltd.
DRILL RIG: Hollow Stem Auger
INITIAL GW DEPTH: ft.

DATE: 1/18/95
HOLE DIA: 7.75 in.
FINAL GW: ft.

GEOLOGIST: W.L. Stefanov
SAMPLER:
HOLE ELEV:

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	PENETRATION RATE	REMARKS
SAND, TRACE SILT, light brown, moist, 95% sand, 5% silt, medium graded subangular to angular clasts, loose, nonplastic, no cementation observed.	SW		0			
			1			
			2			
			3		2/3/5	
			4			
			5			
			6			
			7			
soil becomes loose to medium dense below 8 feet.			8		5/10/18	
			9			
Ceased advancement of borehole at 9.5 feet.			10			

Foree & Vann, Inc.
Geotechnical and Environmental Consulting
Phoenix, Arizona

Notes:

Project No.
4255

Boring Log No. 7

PROJECT: Houston International, Ltd.
DRILL RIG: Hollow Stem Auger
INITIAL GW DEPTH: ft.

DATE: 1/18/95
HOLE DIA: 7.75 in.
FINAL GW: ft.

GEOLOGIST: W.L. Stefanov
SAMPLER:
HOLE ELEV:

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	PENETRATION RATE	REMARKS
SAND, TRACE SILT, light brown, moist, 95% sand, 5% silt, medium graded subangular to angular clasts, loose, nonplastic, no cementation observed.	SW		0			
			1			
			2			
soil becomes medium dense below 3 feet.			3		7/7/10	
			4			
			5			
			6			
			7			
			8		5/7/11	
			9			
Ceased advancement of borehole at 9.5 feet.			10			

Foree & Vann, Inc.
Geotechnical and Environmental Consulting
Phoenix, Arizona

Notes:

Project No.
4255

Boring Log No. HP-1

PROJECT: Houston International, Ltd.
DRILL RIG: Hollow Stem Auger
INITIAL GW DEPTH: ft.

DATE: 5/22/95-5/23/95
HOLE DIA: 7.75 in.
FINAL GW: 74.36 ft.

GEOLOGIST: W.L. Stefanov
SAMPLER: HydroPunch
HOLE ELEV:

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	PENETRATION RATE	REMARKS
ASPHALTIC CONCRETE	AC		0			
AGGREGATE BASE COURSE	ABC		1			
SAND, brown, damp to moist, 100% sand, well- to medium-graded angular clasts, very loose to loose, nonplastic, no cementation observed.	SW		2			
sand becomes moist and loose			3			
			4			
			5			
			6			
			7			
			8			
			9			
SAND, SOME SILT, brown, moist, 90% sand 10% silt, well- to medium- graded angular clasts, loose, nonplastic, no cementation observed. Thin (less than 1 foot thick) sandy clay lenses encountered between 25 and 30 feet depths.	SW		10			
			11			
			12			
			13			
			14			
			15			
			16			
			17			
			18			
			19			
			20			
			21			
			22			
			23			
			24			
			25			
			26			
			27			
			28			
			29			
			30			
			31			
			32			
			33			
			34			
			35			
			36			
			37			
			38			
			39			
			40			

Foree & Vann, Inc.

Geotechnical and Environmental Consulting
Phoenix, Arizona

Notes:

Project No.
4255

Boring Log No. HP-1

PROJECT: Houston International, Ltd.
DRILL RIG: Hollow Stem Auger
INITIAL GW DEPTH: ft.

DATE: 5/22/95-5/23/95
HOLE DIA: 7.75 in.
FINAL GW: 74.36 ft.

GEOLOGIST: W.L. Stefanov
SAMPLER: HydroPunch
HOLE ELEV:

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	PENETRATION RATE	REMARKS
Sand changes color to red brown, with thin sandy clay lenses encountered from 40 to 55 feet depths	SW		40–80			
Sand changes color to brown						
Gravel lense encountered between depths of 62 and 64 feet						
Sand changes color to red brown, sand concretions present						
Phreatic surface encountered, sand is saturated and dense			74–75	▥		↓ PCE concentration=620 ppb

Foree & Vann, Inc.
Geotechnical and Environmental Consulting
Phoenix, Arizona

Notes:

Project No. 4255

Boring Log No. HP-1

PROJECT: Houston International, Ltd.
DRILL RIG: Hollow Stem Auger
INITIAL GW DEPTH: ft.

DATE: 5/22/95-5/23/95
HOLE DIA: 7.75 in.
FINAL GW: 74.36 ft.

GEOLOGIST: W.L. Stefanov
SAMPLER: HydroPunch
HOLE ELEV:

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	PENETRATION RATE	REMARKS
	SW		80			
			81			
			82			PCE concentration=580 ppb
			83			
			84			
			85			PCE concentration=2400 ppb
			86			
			87			
			88			
			89			
			90			
			91			
			92			
			93			
			94			
			95			
			96			PCE concentration=1100 ppb
			97			
			98			
			99			
			100			
Sand changes color to grey			101			
			102			PCE concentration=1200 ppb
			103			
			104			
			105			
Ceased advancement of borehole at 105 feet.			106			
			107			
			108			
			109			
			110			
			111			
			112			
			113			
			114			
			115			
			116			
			117			
			118			
			119			
			120			

Foree & Vann, Inc.
Geotechnical and Environmental Consulting
Phoenix, Arizona

Notes:

Project No.
4255

Site Map	**Project No:** 1303.015.03 **Client:** ADEQ **Site:** 20th and Factor WQARF	**Borehole No: MW-1A** **ADWR ID: 55-537043** **Start Date/Time:** 10/22/92 **End Date/Time:** **Logged By:** Foree and Vann
	Drilling Method: Hollow Stem Auger **Borehole Diameter:** MW-1	**Angle from Vertical:**
	Surface Material: Asphalt and AB Fill	**Sampling Method:**

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
0					Ground Surface
1–50					**Poorly Graded Sand** Light brown, fine to coarse sand, predominately fine sand with silt in thin lenses Color change to red-brown

Drilling Contractor:

Checked By:

Date Checked:

Sheet: 1 of 2

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

Site Map	**Project No:** 1303.015.03 **Client:** ADEQ **Site:** 20th and Factor WQARF	**Borehole No: MW-1A** **Start Date/Time:** 10/22/92 **End Date/Time:** **Logged By:** Foree and Vann
	Drilling Method: Hollow Stem Auger **Borehole Diameter:** MW-1	**Angle from Vertical:**
	Surface Material: Asphalt and AB Fill	**Sampling Method:**

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
51					
52					
53					
54					
55					Color change to brown at 54' bgs.
56					
57					
58					
59					Color change to off-white at 58' bgs.
60					
61					
62					
63					
64					
65					
66					
67					Color change to light brown at 65' bgs.
68					
69					
70					
71					
72					
73					
74					
75					
76					
77					
78					
79					
80					
81					Some fine to coarse gravel below 50' bgs.
82					
83					
84					
85					
86					
87					
88					
89					
90					
91					
92					
93					
94					
95					
96					
97					
98					
99					
100					

Drilling Contractor:

Checked By:

Date Checked:

Sheet: 2 of 2

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

Depth	Blow Count	Sample Type	USCS Symbol	DESCRIPTION	In Situ Moisture	Boulders	Cobbles	Gravel	Sand	Silt/Clay	Well	Medium	Poor	Subang.	Angular	Subrnd.	Rounded	Relative Density/ Consistency	Estimated P.I.	Degree of Cementation
0				4" AC OVER 14" ABC																
1																				
2			SP	POORLY GRADED SAND lt. brn, f-c sand, pred. fine sand with silt in thin lenses	Slightly Damp				00				X	X				Loose	N.P.	None
3																				
4																				
5																				
6																				
7					Damp				00	T			X	X				Med. Dense	N.P.	None
8																				
9																				
10	20		N	PID = 1.5 ppm																
11																				
12																				
13																				
14																				
15																				
16																				
17																				
18																				
19																				
20	22		N	PID = 30 ppm																
21																				
22																				

B=Block C=Bull Nose D=Dutch Cone G=Grab L=Bulk Disturbed N=SPT P=Push R=Ring

Foree & Vann, Inc. provides this boring data as an addendum to the design recommendations expressed in this report. The boring log represents this firm's interpretation of the subsurface conditions at this location, at the indicated depths, during the time period of the field investigation. Conclusions regarding materials workability and construction techniques are the responsibility of bidding parties and contractors.

	Blow Count	Sample Type	USCS Symbol	DESCRIPTION	In Situ Moisture	% Dist. Boulders	Cobbles	Gravel	Sand	Silt/Clay	Grad. Well	Medium	Poor	Grain Shape Subang.	Angular	Subrnd.	Rounded	Relative Density/ Consistency	Estimated P.I.	Degree of Cementation
27																				
28																				
29																				
30																				
31																				
32																				
33																				
34																				
35																				
36	25		N	PID = 20 ppm																
37																				
38																				
39																				
40																				
41																				
42																				
43																				
44																				
45					Moist				00				X	X			Med. Dense	N.P.	None
46																				
47																				
48																				
49																				
50	8		N	PID = 30 ppm	Moist				00				X	X			Lse-M. Dns	N.P.	None
51																				
52																				
53																				
54																				

B=Block C=Bull Nose D=Dutch Cone G=Grab L=Bulk Disturbed N=SPT P=Push R=Ring

Foree & Vann, Inc. provides this boring data as an addendum to the design recommendations expressed in this report. The boring log represents this firm's interpretation of the subsurface conditions at this location, at the indicated depths, during the time period of the field investigation. Conclusions regarding materials workability and construction techniques are the responsibility of bidding parties and contractors.

Depth	Blow Count	Sample Type	USCS Symbol	DESCRIPTION	In Situ Moisture	Boulders	Cobbles	Gravel	Sand	Silt/Clay	Well	Medium	Poor	Shape Subang.	Shape Angular	Shape Subrnd.	Shape Rounded	Relative Density/ Consistenc	Estimated P.I.	Degree of Cementatio
45																				
46				color change to rd. brn	Moist				OO	T			X	X				Med. Dense	N.P.	None
47																				
48																				
49																				
50	23		N	PID = 4 ppm																
51																				
52																				
53					Moist				OO				X	X				Dense	N.P.	None
54				color change to brn																
55																				
56																				
57																				
58				color change to off-white	Moist				OO				X	X				Very Dense	N.P.	Weak-Medium
59																				
60	63		N	PID = 4 ppm																
61	50/3"																			
62																				
63																				
64																				
65				color change to lt. brn																None
66																				

B=Block C=Bull Nose D=Dutch Cone G=Grab L=Bulk Disturbed N=SPT P=Push R=Ring

Foree & Vann, Inc. provides this boring data as an addendum to the design recommendations expressed in this report. The boring log represents this firm's interpretation of the subsurface conditions at this location, at the indicated depths, during the time period of the field investigation. Conclusions regarding materials workability and construction techniques are the responsibility of bidding parties and contractors.

Depth	Blow Count	Sample Type	USCS	Symbol	DESCRIPTION	In Situ Moisture	% Dist. Boulders	Cobbles	Gravel	Sand	Silt/Clay	Grad. Well	Medium	Poor	Shape Subang.	Angular	Subrnd.	Rounded	Relative Density/ Consistency	Estimated P.I.	Degree of Cementation
66																					
67																					
68																					
69																					
70	86		N		PID = 5 ppm																
71																					
72																					
73																					
74					first water encountered at 74'	Saturated				00	T			X	X				M.Dns-Dnse	N.P.	None
75																					
76																					
77																					
78																					
79																					
80					some f-c gravel bel. 80'	Saturated				5	95	T			X	X			M.Dns-Dnse	N.P.	None
81																					
82																					
83																					
84																					
85																					
86																					
87																					
88																					

B=Block C=Bull Nose D=Dutch Cone G=Grab L=Bulk Disturbed N=SPT P=Push R=Ring

Foree & Vann, Inc. provides this boring data as an addendum to the design recommendations expressed in this report. The boring log represents this firm's interpretation of the subsurface conditions at this location, at the indicated depths, during the time period of the field investigation. Conclusions regarding materials workability and construction techniques are the responsibility of bidding parties and contractors.

Blow Count	Sample Type	USCS Symbol	DESCRIPTION	In Situ Moisture	Boulders	Cobbles	Gravel	Sand	Silt/Clay	Well	Medium	Poor	Subang.	Angular	Subrnd.	Rounded	Relative Density/ Consistency	Estimated P.I.	Degree of Cementation
			Stopped drilling at 95 feet.																

B=Block C=Bull Nose D=Dutch Cone G=Grab L=Bulk Disturbed N=SPT P=Push R=Ring

Foree & Vann, Inc. provides this boring data as an addendum to the design recommendations expressed in this report. The boring log represents this firm's interpretation of the subsurface conditions at this location, at the indicated depths, during the time period of the field investigation. Conclusions regarding materials workability and construction techniques are the responsibility of bidding parties and contractors.

GeoTrans, Inc.

Site Map

Project No: 1303.015.03

Client: ADEQ

Site: 20th and Factor WQARF

Borehole No: MW-2A
ADWR ID: 55-537614

Start Date/Time: 12/29/92

End Date/Time:

Logged By: Foree and Vann

Drilling Method: Hollow Stem Auger

Angle from Vertical: 0

Borehole Diameter: MW-2

Surface Material: Asphalt

Sampling Method:

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lthology	Description and Comments
					Ground Surface
0–25					**Poorly Graded Sand** Light brown, fine to coarse sand, predominately fine sand with thin lenses of silt, clay and gravel
25–26					**Clay** Six inch clay lense
26–37					**Poorly Graded Sand** As Above
37–38					**Clay** Six inch clay lense
38–50					**Poorly Graded Sand** As Above

Drilling Contractor:

Checked By:

Date Checked:

Sheet: 1 of 2

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.

Site Map

Project No: 1303.015.03

Client: ADEQ

Site: 20th and Factor WQARF

Borehole No: MW-2A

Start Date/Time: 12/29/92

End Date/Time:

Logged By: Foree and Vann

Drilling Method: Hollow Stem Auger

Angle from Vertical: 0

Borehole Diameter: MW-2

Surface Material: Asphalt

Sampling Method:

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
51					**Clay**
52					Six inch clay lense
53					
54					
55					**Poorly Graded Sand**
56					As Above
57					55'-59' bgs. orange-brown color
58					
59					
60					
61					
62					
63					
64					
65					
66					
67					
68					
69					
70					
71					
72					
73					
74					
75					
76					
77					
78					
79					
80					
81					
82					
83					
84					
85					
86					
87					
88					
89					
90					
91					
92					
93					
94					
95					
96					
97					
98					
99					
100					

Drilling Contractor:

Checked By:

Date Checked:

Sheet: 2 of 2

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

Ject: 4255 Date: 12/29/92 Elevation: Hole No.: MW-2 Stopped Drilling at 95.0 Feet.

Sample Type	USCS	Symbol	DESCRIPTION	In Situ Moisture	% Dist. Boulders	Cobbles	Gravel	Sand	Silt/Clay	Grad. Well	Medium	Poor	Grain Shape Subang.	Angular	Submd.	Rounded	Relative Density/ Consistency	Estimated P.I.	Degree of Cementation
	SP		4" Asphaltic Concrete POORLY GRADED SAND lt brn, f-c sand, pred. fine sand with thin lenses of silt, clay, and gravel	Slightly Damp			T	100	T			X	X				Loose	N.P.	None
				Damp															
				Damp			T	100	T			X	X				Med. Dense	N.P.	None

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

B=Block C=Bull Nose D=Dutch Cone G=Grab L=Bulk Disturbed N=SPT P=Push R=Ring

Foree & Vann, Inc. provides this boring data as an addendum to the design recommendations expressed in this report. The boring log represents this firm's interpretation of the subsurface conditions at this location, at the indicated depths, during the time period of the field investigation. Conclusions redarding materials workability and construction techniques are the responsibility of bidding parties and contractors.

ect: 4255 Date: 12/29/92 Elevation: Hole No.: MW-2 Stopped Drilling at 95.0 Feet.

Sample Type	USCS	Symbol	DESCRIPTION	In Situ Moisture	% Dist. Boulders	Cobbles	Gravel	Sand	Silt/Clay	Grad. Well	Medium	Poor	Grain Shape Subang.	Angular	Submd.	Rounded	Relative Density/ Consistency	Estimated P.I.	Degree of Cementation	
																				20
																				21
			cemented nodules 22'- 25'	Damp			T	100	T			X	X				Dense	N.P.	Weak	22
																				23
																				24
			6" clay lens	Damp			T	100	T			X	X				Med. Dense	N.P.	None	25
																				26
																				27
																				28
																				29
																				30
																				31
																				32
																				33
																				34
																				35
																				36
																				37
			6" clay lens	Damp				15	85				X	X			Med. Dense	N.P.	None	38
																				39
																				40

B=Block C=Bull Nose D=Dutch Cone G=Grab L=Bulk Disturbed N=SPT P=Push R=Ring

Foree & Vann, Inc. provides this boring data as an addendum to the design recommendations expressed in this report. The boring log represents this firm's interpretation of the subsurface conditions at this location, at the indicated depths, during the time period of the field investigation. Conclusions redarding materials workability and construction techniques are the responsibility of bidding parties and contractors.

oject: 4255 Date: 12/29/92 Elevation: Hole No.: MW-2 Stopped Drilling at 95.0 Feet.

Sample Type	USCS	Symbol	DESCRIPTION	In Situ Moisture	% Dist. Boulders	Cobbles	Gravel	Sand	Silt/Clay	Grad. Well	Medium	Poor	Grain Shape Subang.	Angular	Submd.	Rounded	Relative Density/ Consistency	Estimated P.I.	Degree of Cementation	
				Damp			T	100				X	X				Med. Dense	N.P.	None	40
																				41
																				42
																				43
																				44
																				45
																				46
																				47
																				48
																				49
																				50
			6" clay lens																	51
				Damp			10	90				X	X				Dns-V Dnse	N.P.	None	52
																				53
				Damp			T	100				X	X				Med. Dense	N.P.	None	54
			55'- 59' shows orangish brn color change																	55
																				56
																				57
																				58
																				59
																				60

B=Block C=Bull Nose D=Dutch Cone G=Grab L=Bulk Disturbed N=SPT P=Push R=Ring

Forse & Vann, Inc. provides this boring data as an addendum to the design recommendations expressed in this report. The boring log represents this firm's interpretation of the subsurface conditions at this location, at the indicated depths, during the time period of the field investigation. Conclusions redarding materials workability and construction techniques are the responsibility of bidding parties and contractors.

oject: 4255 Date: 12/29/92 Elevation: Hole No.: MW-2 Stopped Drilling at 95.0 Feet.

Sample Type	USCS Symbol	DESCRIPTION	In Situ Moisture	% Dist. Boulders	Cobbles	Gravel	Sand	Silt/Clay	Grad. Well	Medium	Poor	Grain Shape Subang.	Angular	Submd.	Rounded	Relative Density/ Consistency	Estimated P.I.	Degree of Cementation	
																			60
																			61
																			62
																			63
																			64
			Damp			10	90				X					Dns-V Dnse	N.P.	None	65
																			66
																			67
																			68
																			69
			Moist			T	100	T			X					Dense	N.P.	None	70
																			71
																			72
		first water encountered at 73.0'	Saturated			T	100	T			X	X				Med. Dense	N.P.	None	73
																			74
																			75
																			76
																			77
																			78
																			79
																			80

B=Block C=Bull Nose D=Dutch Cone G=Grab L=Bulk Disturbed N=SPT P=Push R=Ring

Fores & Vann, Inc. provides this boring data as an addendum to the design recommendations expressed in this report. The boring log represents this firm's interpretation of the subsurface conditions at this location, at the indicated depths, during the time period of the field investigation. Conclusions redarding materials workability and construction techniques are the responsibility of bidding parties and contractors.

ject: 4255 Date: 12/29/92 Elevation: Hole No.: MW-2 Stopped Drilling at 95.0 Feet.

Sample Type	USCS	Symbol	DESCRIPTION	In Situ Moisture	% Dist. Boulders	Cobbles	Gravel	Sand	Silt/Clay	Grad. Well	Medium	Poor	Grain Shape Subang.	Angular	Subrnd.	Rounded	Relative Density/ Consistency	Estimated P.I.	Degree of Cementation	
				Saturated			5	95	T			X	X				Med. Dense	N.P.	None	80
																				81
																				82
																				83
																				84
																				85
																				86
																				87
																				88
																				89
																				90
																				91
																				92
																				93
																				94
			Stopped drilling at 95.0 feet.																	95

=Block C=Bull Nose D=Dutch Cone G=Grab L=Bulk Disturbed N=SPT P=Push R=Ring

Fores & Vann, Inc. provides this boring data as an addendum to the design recommendations expressed in this report. The boring log represents this firm's interpretation of the subsurface conditions at this location, at the indicated depths, during the time period of the field investigation. Conclusions redarding materials workability and construction techniques are the responsibility of bidding parties and contractors.

GeoTrans, Inc.

Site Map

Project No: 1303.015.03

Client: ADEQ

Site: 20th and Factor WQARF

Borehole No: MW-3A
ADWR ID: 55-537615

Start Date/Time: 3/19/93

End Date/Time:

Logged By: Foree and Vann

Drilling Method: Hollow Stem Auger

Angle from Vertical:

Borehole Diameter: MW-3

Surface Material: Asphalt over AB Fill

Sampling Method:

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lthology	Description and Comments
0					Ground Surface
1–40					**Poorly Graded Sand** Light brown, some fine gravel, trace silt
41–50					**Poorly Graded Sand** Light brown, some fine gravel, trace silt, flaserbedded with silty clay

Drilling Contractor:

Checked By:

Date Checked:

Sheet: 1 of 2

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.

Site Map

Project No: 1303.015.03

Client: ADEQ

Site: 20th and Factor WQARF

Borehole No: MW-3A

Start Date/Time: 3/19/93

End Date/Time:

Logged By: Foree and Vann

Drilling Method: Hollow Stem Auger

Borehole Diameter: MW-3

Angle from Vertical:

Surface Material: Asphalt over AB Fill

Sampling Method:

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
51–54					
55–59					
60–64					Yellow-brown color below 59' bgs.
65–69					
70–74					
75–79					
80–84					**Poorly Graded Sand** Light brown, some fine gravel, trace silt, increasing moisture below 80' bgs.
85–87					
88–90					
91–94					
95–99					
100					

Drilling Contractor:

Checked By:

Date Checked:

Sheet: 2 of 2

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

Blow Count	Sample Type	USCS Symbol	DESCRIPTION	In Situ Moisture	% Dist. Boulders	% Dist. Cobbles	% Dist. Gravel	% Dist. Sand	% Dist. Silt/Clay	Grad. Well	Grad. Medium	Grad. Poor	Grain Shape Subang.	Grain Shape Angular	Grain Shape Subrnd.	Grain Shape Rounded	Relative Density/ Consistency	Estimated P.I.	Degree of Cementation
			3 1/2" AC over 5" ABC																
		SP	SAND poorly graded, lt brn some fine gravel, trace silt	Slightly Damp			10	90	T			X	X			X	Loose	N.P.	None
			less coarse sand and fine gravel below 20'					5	95	T									
			flaselbedded with SILTY CLAY below 25 feet														Med. Dense		
				Moist															

B=Block C=Bull Nose D=Dutch Cone G=Grab L=Bulk Disturbed N=SPT P=Push R=Ring

Foree & Vann, Inc. provides this boring data as an addendum to the design recommendations expressed in this report. The boring log represents this firm's interpretation of the subsurface conditions at this location, at the indicated depths, during the time period of the field investigation. Conclusions redarding materials workability and construction techniques are the responsibility of bidding parties and contractors.

Project: Date: Elevation: Hole No.: MW-3 Stopped Drilling at 87.0 Feet.

Blow Count	Sample Type	USCS	Symbol	DESCRIPTION	In Situ Moisture	% Dist. Boulders	% Dist. Cobbles	% Dist. Gravel	% Dist. Sand	% Dist. Silt/Clay	Grad. Well	Grad. Medium	Grad. Poor	Grain Shape Subang.	Grain Shape Angular	Grain Shape Subrnd.	Grain Shape Rounded	Relative Density/ Consistency	Estimated P.I.	Degree of Cementation
				SAND poorly graded, lt brn some fine gravel, trace silt flaserbedded with SILTY CLAY	Moist			5	95	T			X	X		X		Mod. Dense	N.P.	None
				yellowish brn below 59'																
				Increasing moisture below 70'	Wet															
				groundwater encountered at 72 feet	Saturated															

B=Block C=Bull Nose D=Dutch Cone G=Grab L=Bulk Disturbed N=SPT P=Push R=Ring

Foree & Vann, Inc. provides this boring data as an addendum to the design recommendations expressed in this report. The boring log represents this firm's interpretation of the subsurface conditions at this location, at the indicated depths, during the time period of the field investigation. Conclusions redarding materials workability and construction techniques are the responsibility of bidding parties and contractors.

	Blow Count	Sample Type	USCS	Symbol	DESCRIPTION	In Situ Moisture	% Dist. Boulders	Cobbles	Gravel	Sand	Silt/Clay	Grad. Well	Medium	Poor	Grain Shape Subang.	Angular	Submd.	Rounded	Relative Density/ Consistency	Estimated P.I.	Degree of Cementation	
80					SAND, poorly graded some fine gravel, trace silt increasing moisture below 80'	Saturated			5	95	T			X	X		X		Med. Dense	N.P.	None	B
																						B
																						B
83																						C
																						E
																						E
																						E
86																						E
7					Broke auger string at 87.0 feet. Terminated boring. Fished out auger and installed well casing to 84.0 feet.																	

B=Block C=Bull Nose D=Dutch Cone G=Grab L=Bulk Disturbed N=SPT P=Push R=Ring

Foree & Vann, Inc. provides this boring data as an addendum to the design recommendations expressed in this report. The boring log represents this firm's interpretation of the subsurface conditions at this location, at the indicated depths, during the time period of the field investigation. Conclusions redarding materials workability and construction techniques are the responsibility of bidding parties and contractors.

GeoTrans, Inc.

Site Map

Project No: 1303.011

Client: ADEQ

Site: 20th and Factor

Borehole No: MW-4A
ADWR ID: 55-201459

Start Date/Time: 04-05-04 (11:40)

End Date/Time: 04-06-04 (8:00)

Logged By: Jason Buhlman

Drilling Method: Hollow Stem Auger

Angle from Vertical: 0

Borehole Diameter: 10

Surface Material: Sandy Desert

Sampling Method: Split Spoon and Cuttings

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
0					Ground Surface
1–5	5	11:40			**GRAVEL FILL THEN SAND** No stained soil visible.
6–10	10	11:45	<0.1		**SAND** Yellowish brown, medium sand, loose, slightly moist
11–15	15	11:55	0.1		
16–20	20	12:08	<0.1		**SAND WITH CLAY LENS** Yellowish brown, medium sand, loose, slightly moist; red clay lens
21–25	25	12:13	<0.1		**SAND** Yellowish brown, medium sand, loose, slightly moist
26–30	30	12:37	<0.1		**SAND** Brown, fine to medium sand, slightly moist, loose
31–35	35				
36–40	40		<0.1		
41–45	45				
46–50	50		0.6		

Drilling Contractor: Yellow Jacket

Checked By: Jasenka Zbozinek

Date Checked: 05-11-04

Sheet: 1 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.

Site Map

Project No: 1303.011

Client: ADEQ

Site: 20th and Factor

Borehole No: MW-4A

Start Date/Time: 04-05-04 (11:40)

End Date/Time: 04-06-04 (8:00)

Logged By: Jason Buhlman

Drilling Method: Hollow Stem Auger

Angle from Vertical: 0

Borehole Diameter: 10

Surface Material: Sandy Desert

Sampling Method: Split Spoon and Cuttings

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
51–54	55				
55–59	60		0.6		
60–64	65				**GRAVEL** Rounded, 2 inch diameter
65–69	70		0.6		**SAND WITH CLAY** Brown, fine to medium sand; layer of brown, firm clay at 70 feet, thickness unknown, damp
70–74	75				
75–79	80				**SAND WITH CLAY LENS** Brown fine to medium sand, wet, loose; clay was found in the augers but the location is unknown.
80–84	85				
85–89	90				
90–94	95				
95–99	100				
100					

Drilling Contractor: Yellow Jacket

Checked By: Jasenka Zbozinek

Date Checked: 05-11-04

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.

Site Map

Project No: 1303.011

Client: ADEQ

Site: 20th and Factor

Borehole No: MW-4A

Start Date/Time: 04-05-04 (11:40)

End Date/Time: 04-06-04 (8:00)

Logged By: Jason Buhlman

Drilling Method: Hollow Stem Auger

Angle from Vertical: 0

Borehole Diameter: 10

Surface Material: Sandy Desert

Sampling Method: Split Spoon and Cuttings

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
101	105				
102					
103					
104					
105					
106					
107					
108					
109					
110					
111					
12					
13					
114					
115					
116					
117					
118					
119					
120					
121					
122					
123					
124					
125					
126					
127					
128					
129					
130					
131					
132					
133					
134					
135					
136					
137					
138					
139					
140					
141					
142					
143					
144					
145					
146					
147					
148					
149					
150					

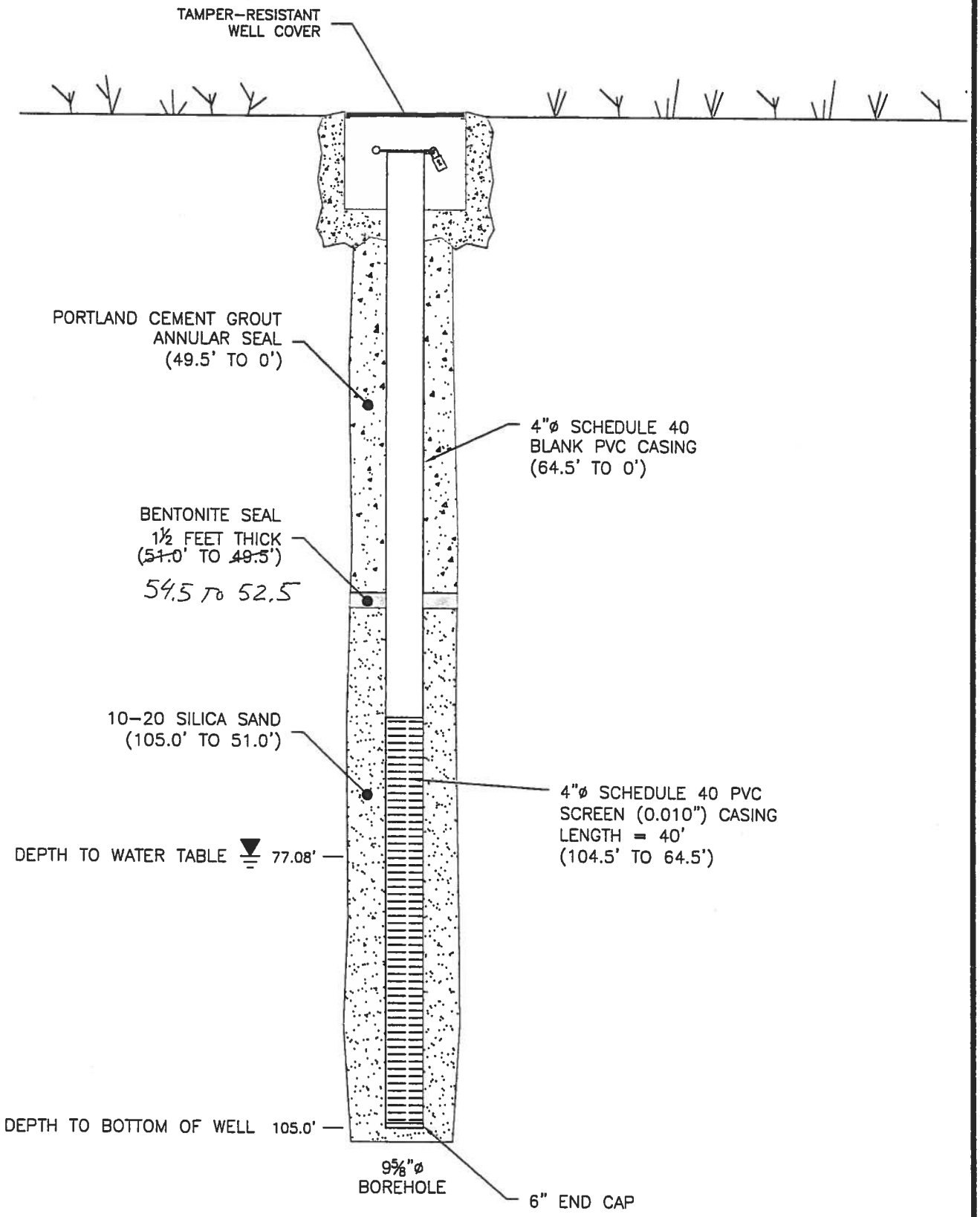
Drilling Contractor: Yellow Jacket

Checked By: Jasenka Zbozinek

Date Checked: 05-11-04

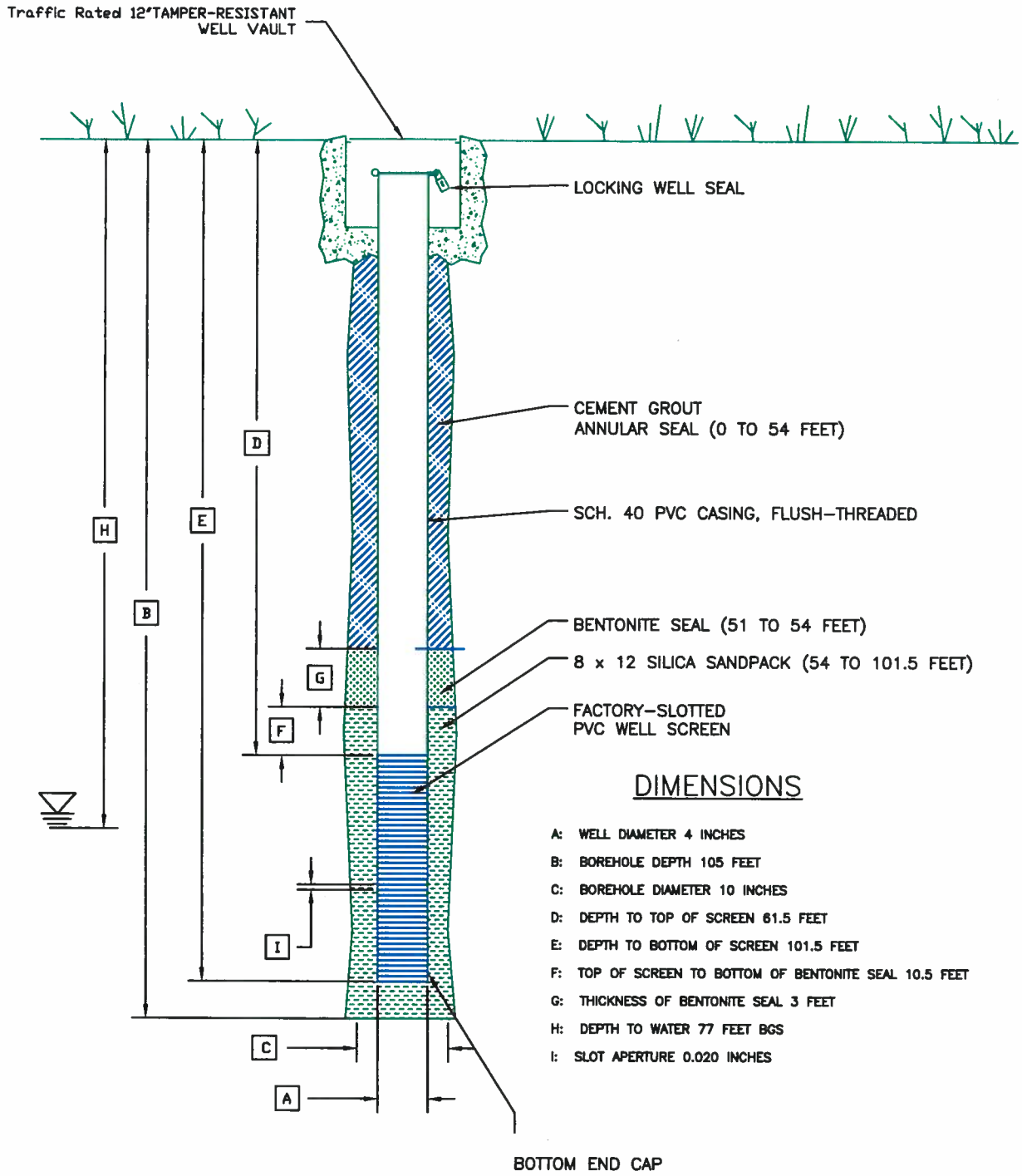
Sheet: 3 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318



VERTICAL SCALE: 1"=15'
HORIZONTAL SCALE: 1"=15"

TITLE: WELL CONSTRUCTION DIAGRAM MONITOR WELL MW-4			
LOCATION: YUMA - 20TH & FACTOR			
GeoTrans, Inc. A TETRA TECH COMPANY	CHECKED	GB	FIGURE
	DRAFTED	GB	1
	PROJECT		
	DATE	1/26/04	



DIMENSIONS

A: WELL DIAMETER 4 INCHES
B: BOREHOLE DEPTH 105 FEET
C: BOREHOLE DIAMETER 10 INCHES
D: DEPTH TO TOP OF SCREEN 61.5 FEET
E: DEPTH TO BOTTOM OF SCREEN 101.5 FEET
F: TOP OF SCREEN TO BOTTOM OF BENTONITE SEAL 10.5 FEET
G: THICKNESS OF BENTONITE SEAL 3 FEET
H: DEPTH TO WATER 77 FEET BGS
I: SLOT APERTURE 0.020 INCHES

* NOT TO SCALE

TITLE: MW-4 WELL DIAGRAM
20TH AND FACTOR WQARF SITE

LOCATION: YUMA, ARIZONA

GeoTrans, Inc. A TETRA TECH COMPANY

CHECKED	JZ
DRAFTED	JLB
PROJECT	1303.011
DATE	06/01/04

FIGURE 2

GeoTrans, Inc.	Project No:1303.011	Borehole No: MW-5A ADWR ID: 55-588281
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: End Date/Time: Logged By:
	Drilling Method: Hollow Stem Auger Borehole Diameter: MW-5	Angle from Vertical: 0
	Surface Material:	Sampling Method: None

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lthology	Description and Comments
0					Ground Surface
1–45					**Poorly Graded Sand** Very pale brown (10YR 8/3), fine grained, dry
46–50					**Silty Sand with Gravel** Pale brown (10 YR 8/3), fine grained with caliche fragments and silt, moist

Drilling Contractor:

Checked By:

Date Checked:

Sheet: 1 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.011	Borehole No: MW-5A
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: End Date/Time: Logged By:
	Drilling Method: Hollow Stem Auger Borehole Diameter: MW-5	Angle from Vertical: 0
	Surface Material:	Sampling Method: None

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
51–55					**Well Graded Sand with Silt** Very pale brown (10 YR 7/3), fine grained sand with silt and angular gravel-caliche, moist, clay clumps
56–60					**Silty Sand with Gravel** Very pale brown (10 YR 7/3) fine sand, silt and caliche gravel, moist
61–90					**Silty Sand** Very pale brown (10 YR 7/3) fine grained sand, silt, 1% caliche gravel, increased moisture from 60 feet
91–100					**Silty Sand with Gravel** Pale brown (10 YR 6/3), fine sand, silt, 15% small angular frags and caliche, moist, clayey clumps

Drilling Contractor:

Checked By:

Date Checked:

Sheet: 2 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.011	Borehole No: MW-5A
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: End Date/Time: Logged By:
	Drilling Method: Hollow Stem Auger Borehole Diameter: MW-5	Angle from Vertical: 0
	Surface Material:	Sampling Method: None

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
101					**Clayey Sand** Pale brown (10 YR 6/3), fine grained sand, 40% sticky, soft, clay (cuttings only), wet
102					
103					
104					
105					
106					
107					
108					
109					
110					
111					
112					
113					
114					
115					
116					
117					
118					
119					
120					
121					
122					
123					
124					
125					
126					
127					
128					
129					
130					
131					
132					
133					
134					
135					
136					
137					
138					
139					
140					
141					
142					
143					
144					
145					
146					
147					
148					
149					
150					

Drilling Contractor:

Checked By:

Date Checked:

Sheet: 3 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.

MONITOR WELL CONSTRUCTION SUMMARY

Well No. MW-5

Boring No. X-Ref:

Elevation Ground Level:

Top of Casing:

Survey Coords:

Job Number: F184-E034-C30

Drilling Summary:	
Total Depth	
Borehole Diameter	9 5/8" (GUY MEASURED IT)
Casing Stick-Up	
Driller	GEOMECHANICS SOUTHWEST, INC.
Rig	CME 75
Bit(s)	~10"
Drilling Fluid	NONE
Protective Casing	NONE

Comments: NO SAMPLES COLLECTED; ONLY CUTTINGS FOR LOGGING & SCREENING PURPOSES

G.W. DEPTH @ 0918 → 77.08'

T.W.D. = 105'

Construction Time Log:	Start		Finish	
Task	Date	Time	Date	Time
Drilling	1·17·02		1·17·02	
Geophys. Logging				
Casing:	1·17·02		1·17·02	
Casing:				
Sand Pack:	1·17·02	1620	1·17·02	
Filter Placement:				
Cementing:				
Development:	1-18-02	0923	1-18-02	0939

Well Development: REMOVED 16 bails (10' bailer) at ~4 gallons per bail for approx. total of 64 gallons.

Well Design & Specifications

Basis: Geologic Log ✓ Geophysical Log _____

Casing String(s): C = Casing S = Screen

Depth (ft)	String (C1, S1, etc.)	Elevation (ft)
82.5' to 62.5'	20' (2x10') OF (S1) SCH. 40 screen	
62.5' to 0'	BLANK CASING (C1)	
83.5' to 82.5' 94.5' to 93.5'	2-1' COUPLERS #	
93.5' to 83.5' 104.5' to 94.5'	2-10' SECTIONS OF PRE PACK	
105' to 104.5'	6" END CAP	

Casing:	C1	4" DIA. (62.5' to 0')
	C2	
PRE PACK		5" DIA. (104.5' to 83.5')
Screen:	S1	4" DIA.-0.010 FOR BOTH PrePACK
	S2	& SCH. 40 screen (104.5' to 62.5')
Filter Pack:		COLORADO SILICA 10-20
		(32 bags) → 105' to 51'
Grout ~~Seal:~~		49.5' to 0' (TANNER Companies)
Bentonite		51' to 49.5'

Sheen? → NONE

COLOR? → LT. BRN.

SOLIDS? → H_2O NOT CLEAR, A GREAT DEAL OF SEDIMENT.

1ST BAIL	Time	pH	Sp. Cond.	Temp. °C
INITIAL	0923	7.12	3.12	18.3

Stabilization Test Data:

Time	pH	Spec. Cond. µs/m	Temp (C)
0931	7.19	4.64	~~18.~~ 19.7
0933	7.14	4.46	20.6
0935	7.08	4.66	24.2
0937	7.08	4.17	24.3
0939	7.14	4.04	24.5

Site Name: 20TH & FACTOR - YUMA WQARF

Location: 653 20TH ST., YUMA, AZ Behind Bldg. 4, near SW corner in sand lot

Supervised by: KRISTIE M. DANIELS

Date: 1-16-02 KD 17

GeoTrans, Inc.

MONITOR WELL CONSTRUCTION SUMMARY

Well No. MW-5

Boring No. X-Ref:

Elevation Ground Level:

Top of Casing:

Survey Coords:

Job Number: E034-C30

Drilling Summary:	
Total Depth	105'
Borehole Diameter	9 5/8" (GUY MEASURED IT)
Casing Stick-Up	NONE
Driller	GEOMECHANICS SOUTHWEST, INC.
Rig	CME 75
Bit(s)	~10"
Drilling Fluid	NONE
Protective Casing	NONE

Comments: NO SAMPLES COLLECTED; ONLY CUTTINGS FOR LOGGING & SCREENING PURPOSES

G.W. DEPTH @ 0918 → 77.08'

T.W.D. = 105'

Construction Time Log:	Start		Finish	
Task	Date	Time	Date	Time
Drilling	1-17-02		1-17-02	
Geophys. Logging				
Casing:	1-17-02		1-17-02	
Casing:				
Sand Pack:	1-17-02	1620	1-17-02	
Filter Placement:				
Cementing:				
Development:	1-18-02	0923	1-18-02	0939

Well Development: REMOVED 16 bails (10' bailer) at ~4 gallons per bail for approx. total of 64 gallons.

Well Design & Specifications

Basis: Geologic Log ✓ Geophysical Log _____

Casing String(s): C = Casing S = Screen

Depth (ft)	String (C1, S1, etc.)	Elevation (ft)
82.5' to 62.5'	20' (2x10') OF (S1) SCH. 40 ~~CP~~ screen	
62.5' to 0'	BLANK CASING (C1)	
83.5' to 82.5' 94.5' to 93.5'	2-1' COUPLERS *	
93.5' to 83.5' 104.5' to 94.5'	2-10' SECTIONS OF PRE PACK	
105' to 104.5'	6" END CAP	

Casing: C1	4" DIA. (62.5' to 0')
C2	
PRE PACK	5" DIA. (104.5' to 83.5')
Screen: S1	4" DIA. -0.010 FOR BOTH PrePACK
S2	& SCH. 40 screen (104.5' to 62.5')
Filter Pack:	COLORADO SILICA 10-20 (32 bags) → 105' to 51'
Grout ~~Seal:~~	49.5' to 0' (TANNER Companies)
Bentonite	51' to 49.5'

Sheen? → NONE

Color? → LT. BRN.

Solids? → H_2O NOT CLEAR, A GREAT DEAL OF SEDIMENT.

1ST BAIL	Time	pH	Sp. Cond.	Temp. °C
INITIAL	0923	7.12	3.12	18.3

Stabilization Test Data: * DETAILS

Time	pH	Spec. Cond. µs/m	Temp (C)
0931	7.19	4.64	~~18.~~ 19.7
0933	7.14	4.46	20.6
0935	7.08	4.66	24.2
0937	7.08	4.17	24.3
0939	7.14	4.04	24.5

Site Name: 20TH & FACTOR - YUMA WQARF

Location: 653 20TH ST., YUMA, AZ Behind Bldg. 4, near SW corner in sand lot

Supervised By: KRISTIE M. DANIELS

Date: 1-16-02

17

GeoTrans, Inc.

MONITOR WELL CONSTRUCTION SUMMARY

Well No. MW-5

Boring No. X-Ref:

Elevation Ground Level:

Top of Casing:

Survey Coords:

Job Number: E034-C30

Drilling Summary:	
Total Depth	105'
Borehole Diameter	9 5/8" (GUY MEASURED IT)
Casing Stick-Up	NONE
Driller	GEOMECHANICS SOUTHWEST, INC.
Rig	CME 75
Bit(s)	~10"
Drilling Fluid	NONE
Protective Casing	NONE

Comments: NO SAMPLES COLLECTED; ONLY CUTTINGS FOR LOGGING & SCREENING PURPOSES

G.W. DEPTH @ 0918 → 77.08'

T.W.D. = 105'

Construction Time Log: Start			Finish	
Task	Date	Time	Date	Time
Drilling	1-17-02	1032	1-17-02	1620
~~Geophys. Logging~~				
Casing:	1-17-02	1318	1-17-02	1555
~~Casing:~~				
Sand Pack:	1-17-02	1620	1-17-02	1645
Filter Placement:	~~1-17-02~~		~~1-17-02~~	
Cementing:	1-18-02	0900 ~~0845~~	1-18-02	0915
Development:	1-18-02	0923	1-18-02	0939

Well Development: REMOVED 16 bails (10' bailer) at ~4 gallons per bail for approx. total of 64 gallons.

Well Design & Specifications

Basis: Geologic Log ✓ Geophysical Log

Casing String(s): C = Casing S = Screen

Depth (ft)	String (C1, S1, etc.)	Elevation (ft)
82.5' to 62.5'	20' (2x10') OF (S1) SCH. 40 ~~of~~ screen	
62.5' to 0'	BLANK ~~CASING~~ (C1)	
83.5' to 82.5' 94.5' to 93.5'	2-1' COUPLERS *	
93.5' to 83.5' 104.5' to 94.5'	2-10' SECTIONS OF PRE PACK	
105' to 104.5'	6" END CAP	
Casing: C1	4" DIA. (62.5' to 0')	
C2		
PRE PACK	5" DIA. (104.5' to 83.5')	
Screen: S1	4" DIA.-0.010 FOR BOTH PrePACK	
S2	& SCH. 40 screen (104.5' to 62.5')	
Filter Pack:	COLORADO SILICA 10-20 (32 bags) → 105' to 51'	
Grout ~~Seal~~:	49.5' to 0' (TANNER Companies)	
Bentonite	51' to 49.5'	

Sheen? → NONE

Color? → LT. BRN.

Solids? → H_2O NOT CLEAR, A GREAT DEAL OF SEDIMENT.

	Time	pH	Sp. Cond.	Temp. °C
1ST BAIL INITIAL	0923	7.12	3.12	18.3

Stabilization Test Data: * DETAILS

Time	pH	Spec. Cond. µs/m	Temp (C)
0931	7.19	4.64	~~18.~~ 19.7
0933	7.14	4.46	20.6
0935	7.08	4.66	24.2
0937	7.08	4.17	24.3
0939	7.14	4.04	24.5

Site Name: 20TH & FACTOR - YUMA WQARF

Location: 653 20TH ST., YUMA, AZ Behind Bldg. 4, near SW Corner in Sand lot

Supervised By: KRISTIE M. DANIELS

Date: 1-16-02 KMD 17

SOIL BOREHOLE LOG

GeoTrans, Inc.

SITE NAME AND LOCATION: 20TH & FACTOR – YUMA WQARF BEHIND BLDG #4 NEAR SW CORNER

DRILLING METHOD: HOLLOW STEM AUGER

SAMPLING METHOD: NOT SAMPLING, BUT COLLECTING CUTTINGS FOR LOGGING PURPOSES

BORING No.: MW-5

SHEET: 1 OF 2

DRILLING START TIME: 1032 DATE: 1-17-02

DRILLING FINISH TIME: 1620 DATE: 1-17-02

WATER LEVEL / TIME / DATE

DATUM: APPROXIMATE ELEVATION: CASING DEPTH:

DRILLING RIG: CME 75 SURFACE CONDITIONS: ASPHALT

ANGLE: 0° HAMMER WEIGHT: NOTE: CUTTINGS ONLY

SAMPLE HAMMER TORQUE:

DRILLING CONTRACTOR: G.S.I.

JOB NUMBER: E034-C30

DEPTH (FEET)	TIME	F.I.D. (ppm)	Group Symbol	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL
0'				
5'	1034	<1	SP	5' 99% FINE ~~TO MED.~~ GRAINED SAND; 1% CALICHE FRAGS (<0.5" DIA.); ~~LT.~~ BROWN 10 YR 8/3 V. PALE; poorly graded; DRY. No Petroleum odor detected.
10'	1036	<1	SP	10' 100% POORLY GRADED, FINE SAND, V. PALE ~~LT.~~ BRN - 10 YR 8/3 DRY. No Petroleum odor.
15'	1038	<1	SP	15' S.A.A. V. PALE BROWN - 10 YR 8/3 DRY. No Petroleum odor.
20'	1041	<1	SP	20' S.AA. w/ sm. amt. caliche frags <0.25" dia. V. PALE BRN - 10 YR 8/3 DRY. No Petroleum odor.
25'	1044	<1	SP	25' 95% fine sand; 5% caliche frags <(0.5" dia.) V. Pale ~~LT.~~ BRN. - 10 YR 8/3; poorly graded; DRY. No Petroleum odor.
30'	1047	<1	SP	30' 98% FINE SAND; 2% caliche frags <0.25" dia. V. Pale ~~LT.~~ BROWN - 10 YR 8/3 DRY. No Petroleum odor.; poorly graded
35'	1049	<1 (0.7)	SP	35' 95% FINE sand; 5% caliche + gravel <0.5" dia. V. Pale ~~LT.~~ BRN - 10 YR 8/3 DRY. No Petroleum odor. ANGULAR; poorly graded
40'	1052	<1	SP	40' G.S.I. SAYS SM. AMT. OF GRAVEL @ 40'. 99% FINE SAND; 1% CALICHE (<0.5" dia.) 10 YR 8/3 No Petroleum Odor. V. Pale ~~LT.~~ Brn. DRY DRY
45'	1055	<1	SP	45' 99% FINE SAND; 1% CALICHE <0.5" dia. V. Pale ~~LT.~~ BRN - 10 YR 7/3 MOIST. No Petroleum odor.
50'	1058	<1	SW-SM w/ gravel	50' 75% FINE sand; 15% GRAVEL + CALICHE <1" dia) 10% SILT - ~~LT.~~ BRN. ANGULAR MOIST. No Petroleum odor. V. Pale 10 YR 6/3
55'	1101	<1	SW-SM	55' 80% FINE sand; 15% SILT; 5% ANGULAR GRAVEL + CALICHE <0.75" dia. V. ~~LT.~~ Pale BRN - 10 YR 8/3 MOIST. No Petroleum odor. CLAY CLUMPS
60'	1105	<1	SM	60' 70% FINE Sand; 20% SILT; 10% GRAVEL + CALICHE <0.75" dia. V. ~~LT.~~ Pale BRN. - 10 YR - 7/3 MOIST. No Petroleum odor.
65'	1108	<1	SM	65' 75% Fine Sand; 24% SILT; 1% CALICHE + GRAVEL <0.5" dia. V. ~~LT.~~ Pale Brn. - 10 YR 7/3 Increased moisture. No Petroleum odor.
70'	1111	<1	SM	70' S.A.A. V. PALE BROWN - 10 YR 7/3 MOIST. No Petroleum odor.

LOGGED BY: K. DANIELS

CHECKED BY:

DATE: 1-17-02

SOIL BOREHOLE LOG

GeoTrans, Inc.

SITE NAME AND LOCATION: 20TH & FACTOR - YUMA WQARF BEHIND BLDG. 4 IN NW CORNER OF ZONE.

DRILLING METHOD: HOLLOW STEM AUGER

SAMPLING METHOD: NO SAMPLING; ONLY COLLECTING CUTTINGS FOR LOGGING PURPOSES

WATER LEVEL

TIME

DATE

CASING DEPTH

BORING No. MW-5

SHEET 2 OF 2

DRILLING

START	FINISH
TIME 1032	TIME 1620
DATE 1-17-02	DATE 1-17-02

DATUM: APPROXIMATE ELEVATION

DRILLING RIG: CME 75

SURFACE CONDITIONS: ASPHALT

ANGLE: 0°

HAMMER WEIGHT

SAMPLE HAMMER TORQUE

DRILLING CONTRACTOR: G.S.I.

JOB NUMBER: E034-C30

DEPTH IN FEET	Soil Graph	Sample Driven / Recovered	Sample No. / Depth	F.ID. (ppm)	GROUP SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL
75'	1113			<1	SM	75' .75% FINE SAND; 24% CA SILT; 1% CALICHE & SUB ANGULAR GRAVEL; LT. BRN. 10YR 7/3 V. PALE MOIST. No Petroleum odor detected. Clay clumps
80'	1136			<1	SM w/gravel	80' 70% FINE SAND; 20% SILT; 10% CALICHE (rounded) & SUB ROUNDED ANGULAR GRAVEL <0.5" dia. 10YR 7/3 V. LT. BRN. No Petroleum odor. PALE MOIST
85'	1153			<1	SM	85' 65% FINE SAND; 30% SILT; 5% CALICHE & GRAVEL <0.5" dia. CLUMPING OBSERVED LT. BRN. No Petroleum odor. MOIST
90'	1200			<1	SM	90' 70% FINE SAND; 25% SILT; 5% ANGULAR GRAVEL + CALICHE; BROWN (PALE) 10YR 6/3 No Petroleum odor. MOIST
95'	1207			<1	SM w/gravel	95' 60% Fine Sand; 25% SILT; 15% Sm. ROCK FRAGS-ANGULAR (<0.25") + CALICHE CLUMPS 10YR 6/3 - Pale Brn. No Petroleum odor. MOIST
100'	1217			<1	SM	100' SILTY SAND S.A.A. Less same clumping of silt 10YR 6/3 No Petroleum odor. Pale Brn. MOIST
105'	1620			<1	SC	105-110' CLAYEY SAND - STICKY, POORLY GRADED SAND; WET; 100% 10YR 6/3 - MED. BRN PALE BROWN

BORING TERMINATED @ 105 FEET

Note: Multiwarn (Dräger), PID, + FID used to monitor ambient air in work zone. O_2 would fluctuate in windy conditions, but all other parameters remained <1 ppm.

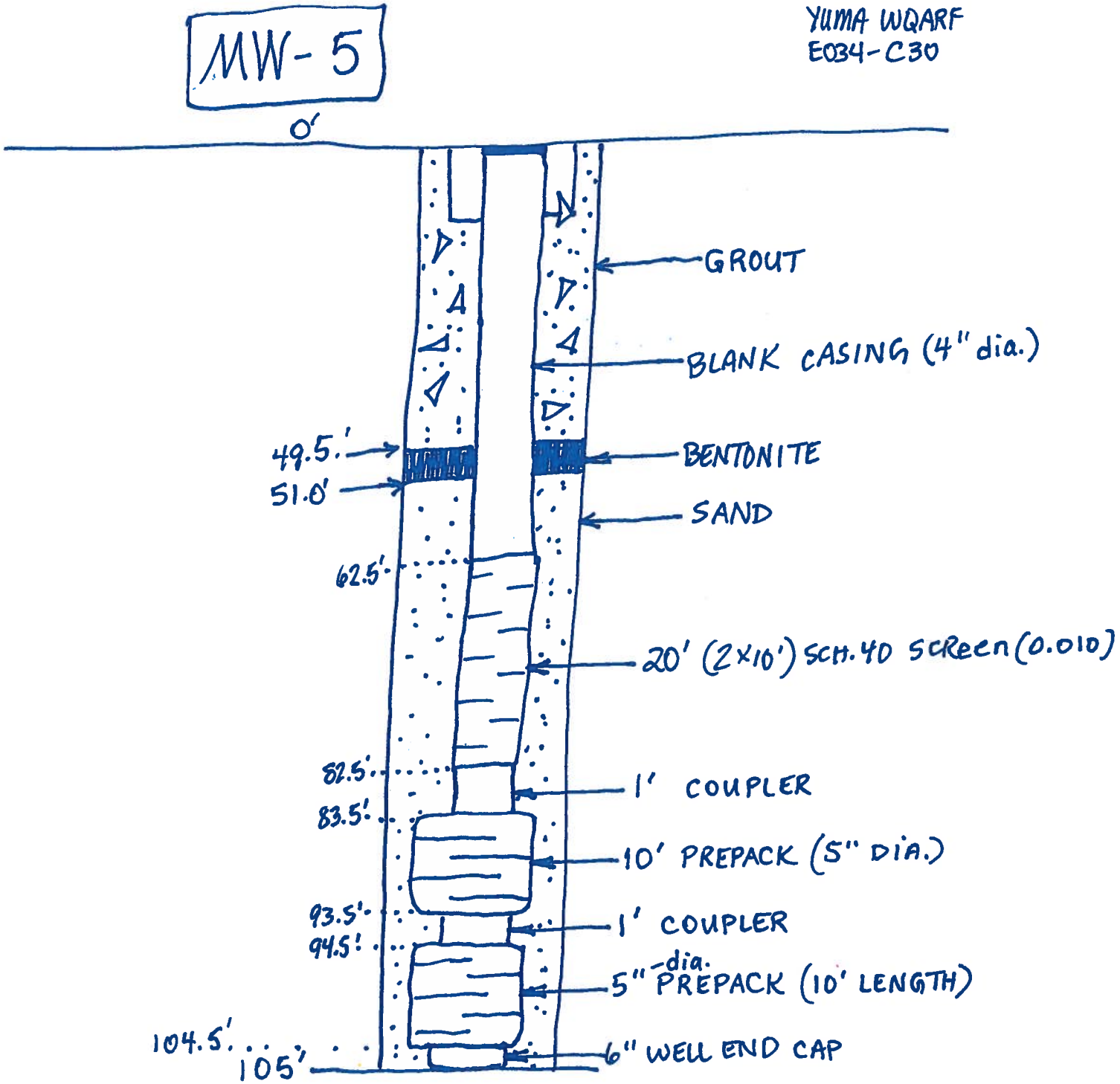
LOGGED BY: K. DANIELS

DATE: 1-17-02

CHECKED BY

WELL CONSTRUCTION DIAGRAM

1-17-02



SOIL BOREHOLE LOG

GeoTrans, Inc.

SITE NAME AND LOCATION: 20TH & FACTOR – YUMA WQARF
BEHIND BLDG #4 NEAR SW CORNER

DRILLING METHOD: HOLLOW STEM AUGER

SAMPLING METHOD: NOT SAMPLING, BUT COLLECTING CUTTINGS FOR LOGGING PURPOSES

WATER LEVEL
TIME
DATE

CASING DEPTH

BORING No.: MW-5

SHEET: 1 OF 2

DRILLING START TIME: 1032 DATE: 1-17-02
DRILLING FINISH TIME: 1620 DATE: 1-17-02

DATUM: APPROXIMATE ELEVATION:

DRILLING RIG: CME 75

SURFACE CONDITIONS: ASPHALT

ANGLE: 0° HAMMER WEIGHT:

NOTE: CUTTINGS ONLY

SAMPLE HAMMER TORQUE:

DEPTH	TIME		F.I.D. (ppm)	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL
0'				
			<1	5' 99% FINE-TO-MED. GRAINED SAND; 1% CALICHE FRAGS (< 0.5" DIA.); LT. BROWN DRY NO Petroleum odor detected.
5'	1034			
			<1	10' 100% POORLY GRADED, FINE SAND, LT. BRN DRY No Petroleum odor.
10'	1036			
			<1	15' S.A.A. DRY No Petroleum odor.
15'	1038			
			<1	20' S.AA. w/ sm. amt. caliche frags <0.25" dia. DRY No Petroleum odor.
20'	1041			
			<1	25' 95% fine sand; 5% caliche frags <(0.5" dia.) LT. BRN. DRY No Petroleum odor.
25'	1044			
			<1	30' 98% FINE SAND; 2% caliche frags <0.25" dia. LT. BROWN DRY No Petroleum odor.
30'	1047			
			<1 (0.7)	35' 95% FINE sand; 5% caliche + gravel < 0.5" dia. LT. BRN DRY No Petroleum odor. ANGULAR
35'	1049			
			<1	40' G.S.I. SAYS SM. AMT. OF GRAVEL @ 40'. 99% FINE sand; 1% CALICHE (< 0.5" dia.) No Petroleum Odor. Lt. Brn. DRY DRY
40'	1052			
			<1	45' 99% FINE SAND; 1% CALICHE <0.5" dia. LT. BRN MOIST No Petroleum odor.
45'	1055			
			<1	50' 75% FINE sand; 15% GRAVEL + CALICHE < 1" dia) 10% SILT – LT. BRN. ANGULAR MOIST No Petroleum odor.
50'	1058			
			<1	55' 80% FINE sand; 15% SILT; 5% ANGULAR GRAVEL + CALICHE < 0.75" dia. LT. BRN MOIST No Petroleum odor. CLAY CLUMPS
55'	1101			
			<1	60' 70% FINE sand; 20% SILT; 10% GRAVEL + CALICHE < 0.75" dia. LT. BRN. MOIST No Petroleum odor.
60'	1105			
			<1	65' 75% Fine Sand; 24% SILT; 1% CALICHE + GRAVEL < 0.5" dia. Lt. Brn. Increased moisture No Petroleum odor.
65'	1108			
			<1	70' S.A.A. No Petroleum odor. MOIST
70'	1111			

DRILLING CONTRACTOR: G.S.I.
BOREHOLE NUMBER: E034-C30
LOGGED BY: K. DANIELS
DATE: 1-17-02
CHECKED BY:

SOIL BOREHOLE LOG

GeoTrans, Inc.

SITE NAME AND LOCATION: 20TH & FACTOR - YUMA WQARF BEHIND BLDG. 4 IN NW CORNER OF ZONE.

DRILLING METHOD: HOLLOW STEM AUGER

SAMPLING METHOD: NO SAMPLING; ONLY COLLECTING CUTTINGS FOR LOGGING PURPOSES

BORING No.: MW-5

SHEET: 2 OF 2

DRILLING	START TIME	FINISH TIME
	1032	1620
	DATE	DATE
	1-17-02	1-17-02

WATER LEVEL
TIME
DATE
CASING DEPTH

DATUM: APPROXIMATE ELEVATION:

DRILLING RIG: CME 75

SURFACE CONDITIONS: ASPHALT

ANGLE: 0°

HAMMER WEIGHT:

SAMPLE HAMMER TORQUE:

DRILLING CONTRACTOR: G.S.I.

BOREHOLE NUMBER: E034-C30

DEPTH	TIME	SAMPLE NUMBER	SAMPLE TYPE	F.ID. (ppm)	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL
75'	1113			<1	75' .75% FINE SAND; 24% SILT; 1% CALICHE & SUBANGULAR GRAVEL; LT. BRN. MOIST. No Petroleum odor detected.
80'	1136			<1	80' 70% FINE SAND; 20% SILT; 10% CALICHE (rounded) & SUB ~~ROUNDED~~ angular gravel <0.5" dia; LT. BRN. MOIST. No Petroleum odor.
85'	1153			<1	85' 65% FINE Sand; 30% SILT; 5% CALICHE & GRAVEL <0.5" dia. CLUMPING observed LT. BRN. MOIST. No Petroleum odor.
90'	1200			<1	90' 70% FINE SAND; 25% SILT; 5% ANGULAR GRAVEL + CALICHE; BROWN MOIST. No Petroleum odor.
95'	1207			<1	95' 60% Fine Sand; 25% SILT; 15% Sm. ROCK FRAGS-ANGULAR (<0.25") + CALICHE CLUMPS MOIST. No Petroleum odor.
100'	1217			<1	100' SILTY SAND S.A.A. Less MOIST. Some clumping of silt. No Petroleum odor.
105'	1620			<1	105-110' CLAYEY SAND - STICKY, POORLY GRADED SAND; WET; 100% MED. BRN.

* BORING TERMINATED @ 105 FEET *

Note: Multiwarn (Dräger), PID, + FID used to monitor ambient air in work zone. O_2 WOULD FLUCTUATE IN WINDY CONDITIONS, but ALL OTHER PARAMETERS Remained <1 ppm

LOGGED BY: K. DANIELS

DATE: 1-17-02

CHECKED BY:

Site Map	**Project No:** E034-C30 **Client:** ADEQ **Site:** Yuma WQARF-20th & Factor	**Borehole No: MW-5** **Start Date/Time:** 01-17-02 (10:32) **End Date/Time:** 01-17-02 (16:20) **Logged By:** K. Daniels
	Drilling Method: Hollow-Stem Auger **Borehole Diameter:** 9-5/8 Inches	**Angle from Vertical:** 0
	Surface Material: Asphalt	**Sampling Method:** NONE - CUTTINGS ONLY

Depth	Sample Characteristics: DEPTH (FEET)	TIME	FID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
					Asphalt Surface
0	5	10:34	<1		**POORLY GRADED SAND (SP)** Very pale brown (10YR 8/3); 98% fine grained sand; 1% silt; 1% caliche frags (<0.5"dia.); dry; no odor
5	10	10:36	<1		**POORLY GRADED SAND (SP)** Very pale brown (10 YR 8/3); 99% fine grained sand; 1% silt; dry; no odor
10	15	10:38	<1		**POORLY GRADED SAND (SP)** Very pale brown (10 YR 8/3); 99% fine grained sand; 1% silt; dry; no odor
15	20	10:41	<1		**POORLY GRADED SAND (SP)** Very pale brown (10 YR 8/3); 98% fine grained sand; 1% silt; 1% caliche frags (<0.25"dia.); dry; no odor
20	25	10:44	<1		**POORLY GRADED SAND (SP)** Very pale brown (10 YR 8/3); 95% fine grained sand; 1% silt; 4% caliche frags (<0.5"dia.); dry; no odor
25	30	10:47	<1		**POORLY GRADED SAND (SP)** Very pale brown (10 YR 8/3); 98% fine grained sand; 1% silt; 1% caliche frags (<0.25"dia.); dry; no odor
30	35	10:49	<1		**POORLY GRADED SAND (SP)** Very pale brown (10 YR 8/3); 95% fine grained sand; 4% caliche frags (<0.5"dia.); 1% silt; dry; no odor
35	40	10:52	<1		**POORLY GRADED SAND (SP)** Very pale brown (10YR 8/3); 98% fine grained sand; 1% silt; 1% caliche frags (<0.5"dia.); dry; no odor. Note: G.S.I.(driller) says he encountered gravel at 40'
40	45	10:55	<1		**POORLY GRADED SAND (SP)** Very pale brown (10Y 7/3); 98% fine grained sand; 1% silt; 1% caliche (<0.5"dia.); moist; no odor
45	50	10:58	<1		**SILTY SAND WITH GRAVEL (SM)** Pale brown (10YR 6/3); 75% fine grained sand; 15% caliche frags (<1.0"dia.); 10% silt; moist; no odor
50					

Drilling Contractor: GeoMechanics Southwest, Inc
Checked By: J.Z. and D.B.
Date Checked: 02-06-02

GeoTrans, Inc.
4665 South Ash Avenue, Suite G-1
Tempe, Arizona 85282
Voice: 480-839-2800 Fax: 480-839-2828

Site Map	**Project No:** E034-C30 **Client:** ADEQ **Site:** Yuma WQARF-20th & Factor	**Borehole No: MW-5** **Start Date/Time:** 01-17-02 (10:32) **End Date/Time:** 01-17-02 (16:20) **Logged By:** K. Daniels
	Drilling Method: Hollow-Stem Auger **Borehole Diameter:** 9-5/8 Inches	**Angle from Vertical:** 0
	Surface Material: Asphalt	**Sampling Method:** NONE - CUTTINGS ONLY

Depth	Sample Characteristics: DEPTH (FEET)	TIME	FID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
	55	11:01	<1		**WELL GRADED SAND WITH SILT (SW-SM)** Very pale brown (10YR 7/3); 80% fine grained sand; 15% silt; 5% angular gravel-caliche (<0.75" dia.); moist; no odor; clay clumps
55	60	11:05	<1		**SILTY SAND WITH GRAVEL (SM)** Very pale brown (10YR 7/3); 70% fine sand; 20% silt; 10% caliche-gravel (<0.75" dia.); moist; no odor
60	65	11:08	<1		**SILTY SAND (SM)** Very pale brown (10YR 7/3); 75% fine grained sand; 24% silt; 1% caliche and gravel (<0.5"dia.); increased moisture from 60'; no odor
65	70	11:11	<1		**SILTY SAND (SM)** Very pale brown (10YR 7/3); 75% fine grained sand; 24% silt; 1% caliche and gravel (<0.5"dia.); increased moisture from 60'; no odor
70	75	11:13	<1		**SILTY SAND (SM)** HIT WATER 75-80': Very pale brown (10YR 7/3); 75% fine grained sand; 24% silt; 1% caliche and sub-angular gravel; wet; no odor
75	80	11:36	<1		**SILTY SAND (SM)** Very pale brown (10YR 7/3); 70% fine grained sand; 20% silt; 10% caliche (rounded) and sub-angular gravel (<0.5"dia.); moist; no odor
80	85	11:53	<1		**SILTY SAND (SM)** Very pale brown (10YR 7/3); 65% fine sand; 30% silt; 5% rounded caliche gravel (<0.5"dia.); moist; no odor; clumping observed
85	90	12:00	<1		**SILTY SAND (SM)** Pale brown (10YR 6/3); 70% fine sand; 25% silt; 5% angular gravel and caliche; moist; no odor
90	95	12:07	<1		**SILTY SAND WITH GRAVEL (SM)** Pale brown (10YR 6/3); 60% fine sand; 25% silt; 15% sm. angular frags and caliche (<0.25"dia.); moist; no odor; clayey clumps
95	100	12:17	<1		
100					

Drilling Contractor: GeoMechanics Southwest, Inc
Checked By: J.Z. and D.B.
Date Checked: 02-06-02

GeoTrans, Inc.
4665 South Ash Avenue, Suite G-1
Tempe, Arizona 85282
Voice: 480-839-2800 Fax: 480-839-2828

Site Map	**Project No:** E034-C30 **Client:** ADEQ **Site:** Yuma WQARF-20th & Factor	**Borehole No: MW-5** **Start Date/Time:** 01-17-02 (10:32) **End Date/Time:** 01-17-02 (16:20) **Logged By:** K. Daniels
	Drilling Method: Hollow-Stem Auger **Borehole Diameter:** 9-5/8 Inches	**Angle from Vertical:** 0
	Surface Material: Asphalt	**Sampling Method:** NONE - CUTTINGS ONLY

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	FID (ppm)	Lithology	Description and Comments
	105	16:20	<1		**CLAYEY SAND (SC)** 105-110': Pale brown (10YR 6/3); 60% fine grained sand; 40% sticky, soft, clay (again, cuttings only); wet; no odor
105					*****BORING TERMINATED AT 105 FEET*****
110					
115					
120					
125					
130					
135					
140					
145					
150					

Drilling Contractor: GeoMechanics Southwest, Inc
Checked By: J.Z. and D.B.
Date Checked: 02-06-02

GeoTrans, Inc.
4665 South Ash Avenue, Suite G-1
Tempe, Arizona 85282
Voice: 480-839-2800 Fax: 480-839-2828

E034-C30 + 80

MW-5

WELL DEVELOPMENT * MW-5

1-18-02

2-minute Int

Bailing Time: START 0923 AM
FINISH 0939 AM

Removed 16 bails @ ~4 GAL. ea. = 64 gallons.

Visual: Sheen? NO
Color? Lt. Brown
Solids? Thick

G.W. @ 77.08 FEET @ 09:18 AM
T.W.D. = 105'

	Time	pH	Spec. Cond.	Temp (°C)
Initial Reading				
BAILER #1	0923	7.12	3.12	18.3
	0931	7.19	4.64	19.7
	0933	7.14	4.46	20.6
	0935	7.08	4.66	24.2
	0937	7.08	4.17	24.3
	0939	7.14	4.04	23.5

~64 GALLONS REMOVED DURING DEVELOPMENT

Bailer #	Time	Bailer #	Time	Bailer #	Time
2nd	0924	7	0930	12	0935
3	0925	8	0931	13	0937
4	0926	9	0932	14	0938
5	0927	10	0933	15	0939
6	0929	11	0934	16	@ Complete

GeoTrans, Inc.

MONITOR WELL CONSTRUCTION SUMMARY

Well No. MW-5

Boring No. X-Ref: GP-444

Survey Coords: Northing - 9750.526; Easting - 10946.841

Elevation Ground Level: 198.92'

Job Number: E034-C30

Top of Casing: 198.25'

Drilling Summary:	
Total Depth	105'
Borehole Diameter	9-5/8"
Casing Stick-Up	None
Driller	GeoMechanics Southwest, Inc.
Rig	CME 75
Bit(s)	~10"
Drilling Fluid	None
Protective Casing	None

Comments: No samples collected; only cuttings for logging and screening purposes.

G.W. Depth at 09:18 = 77.08'

Construction Time Log:	Start		Finish	
Task	Date	Time	Date	Time
Drilling	1-17-02	10:32	1-17-02	16:20
Geophys. Logging				
Casing:	1-17-02	13:18	1-17-02	15:55
Casing:				
Sand Pack:	1-17-02	16:20	1-17-02	16:45
Filter Placement:				
Cementing:	1-18-02	09:00	1-18-02	09:15
Development:	1-18-02	09:23	1-18-02	09:39

Well Design & Specifications

Basis: Geologic Log __X__ Geophysical Log _____

Casing String(s): C = Casing S = Screen

Depth (ft)	String (C1, S1, etc.)	Elevation (ft)
82.5' to 62.5'	S1: 20' (2x10') of Sch.40 screen	116.42' to 136.42'
62.5' to 0'	C1: Blank Casing	136.42' to 198.25'
83.5' to 82.5' 94.5' to 93.5'	2-1' Couplers	115.42' to 116.42' 104.42' to 105.42'
93.5' to 83.5' 104.5' to 94.5'	2-10' Sections of PrePack	105.42' to 115.42' 94.42' to 104.42'
105' to 104.5'	6" End Cap	93.92' to 94.42'

Casing: C1	4" dia. (62.5' to 0')
PrePack:	5" dia. (104.5' to 83.5')
Screen: S1	4" dia. - 0.010 for both PrePack and Sch.40 screen
	(104.5' to 62.5')
Filter Pack:	Colorado Silica 10-20 (32 bags) - 105' to 51'
Grout Seal:	49.5' to 0' by Tanner Companies
Seal:	51' to 49.5' (Bentonite)

Well Development: Removed 16 bails. Used 10' bailer at approximately 4 gallons per bail for an approximate total of 64 gallons.

Sheen: None

Color: Light brown

Solids: H20 not clear. A great deal of sediment present.

Stabilization Test Data:

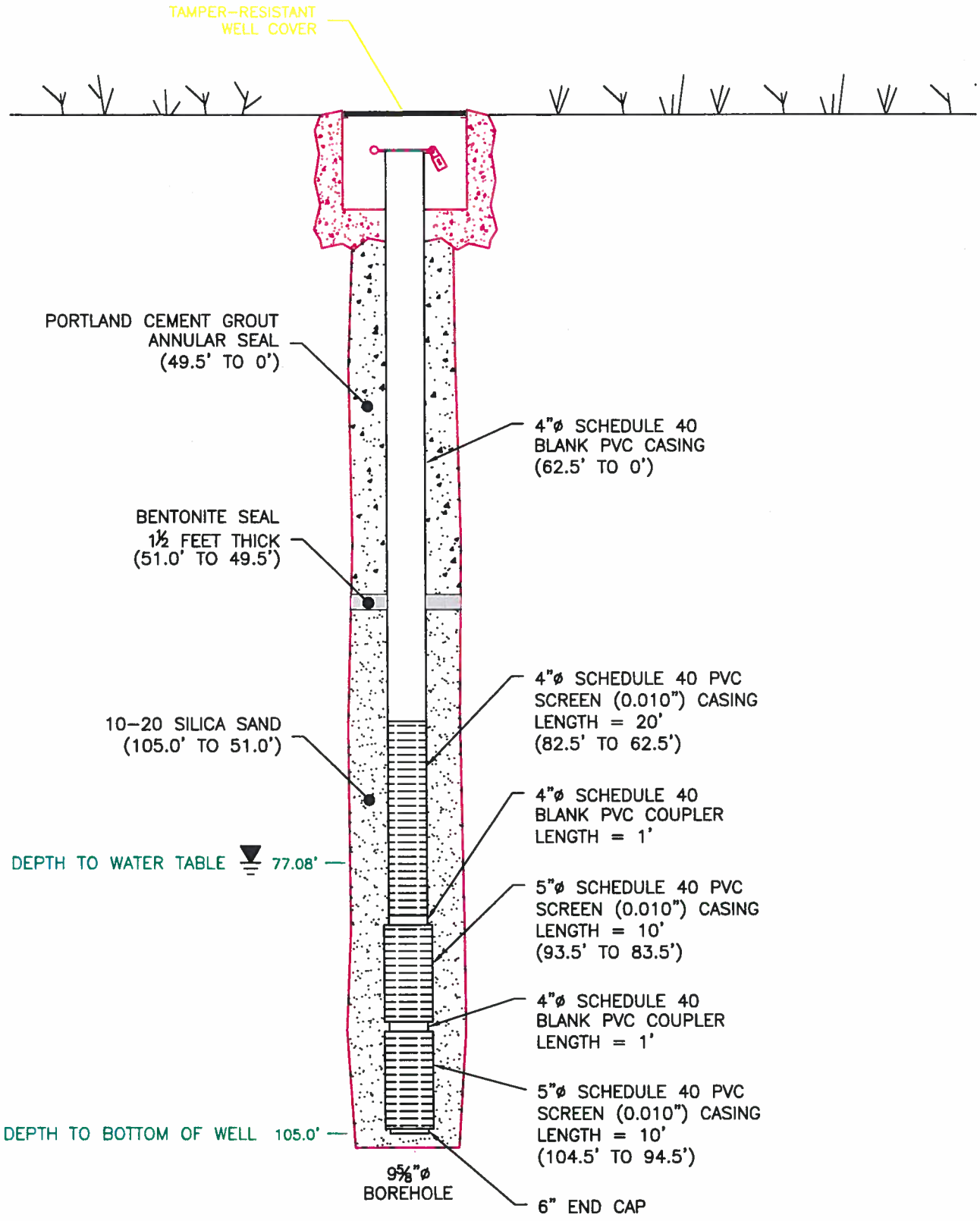
Time	pH	Spec. Cond. µs/m	Temp (C)
09:23	7.12	3.12	18.3
09:31	7.19	4.64	19.7
09:33	7.14	4.46	20.6
09:35	7.08	4.66	24.2
09:37	7.08	4.17	24.3
09:39	7.14	4.04	24.5

Site Name: 20th & Factor - YUMA WQARF

Location: 653 E. 20TH St., Yuma, AZ (Zone 5, near SW corner of Bldg.4)

Supervised By: Kristie M. Daniels

Date: 1-18-02



VERTICAL SCALE: 1"=15'
HORIZONTAL SCALE: 1"=15"

TITLE:	WELL CONSTRUCTION DIAGRAM MONITOR WELL MW-5		
LOCATION:	YUMA - 20TH & FACTOR		
GeoTrans, Inc. A TETRA TECH COMPANY	CHECKED	KD	FIGURE
	DRAFTED	DBS	1
	PROJECT	E034-C30	
	DATE	2/13/01	

GeoTrans, Inc.	Project No: E034-C30	Borehole No: MW-6A ADWR ID: 55-588282
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: 1/16/02 End Date/Time: 1/16/02 Logged By: KD
	Drilling Method: Hollow Stem Auger Borehole Diameter: 9 5/8 inches	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: None

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lthology	Description and Comments
0					Ground Surface
1–5					**Silty Sand** Very pale brown (10 YR 8/3), fine grained sand, silt, 1% angular gravel, dry to moist, unknown odor
6–9					**Poorly Graded Sand** Light yellow brown (10 YR 6/4), fine grained sand, 1% silt, 1% sub-rounded gravel, slighlty moist
10–14					**Poorly Graded Sand with Silt** Very pale bown (10 YR 7/3), fine grained sand, 10% sub-rounded gravel, silt, moist, clayey clumps
15–20					**Poorly Graded Sand** Very pale brown (10 YR 7/3), fine grained sand, 2% silt, moist
21–25					**Poorly Graded Sand** Very pale brown (10 YR 7/3/), fine grained sand, 2% silt, 1% sub-rounded gravel, moist
26–29					**Poorly Graded Sand** Very pale brown (10 YR 7/3/), fine grained sand, 1% silt, moist
30–35					**Poorly Graded Sand** Very pale brown (10 YR 7/3), fine grained sand 1% silt, moist
36–40					**Poorly Graded Sand** Very pale brown (10 YR 7/3), fine grained sand, moist
41–45					**Poorly Graded Sand** Very pale brown (10 YR 7/3), fine grained sand, 1% silt, increased moisture from 40', driller says small amounts of gravel at 45', clay clumps
46–50					**Poorly Graded Sand** Very pale brown (10 YR 7/3), fine grained sand, 1% silt, moist, clayey clumps

Drilling Contractor: GSI

Checked By: JZ

Date Checked: 2/5/02

Sheet: 1 of 2

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: E034-C30	Borehole No: MW-6A
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: 1/16/02 End Date/Time: 1/16/02 Logged By: KD
	Drilling Method: Hollow Stem Auger Borehole Diameter: 9 5/8 inches	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: None

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
51 52 53 54 55					**Poorly Graded Sand** Very pale brown (10 YR 7/3), fine grained sand, moist, clayey clumps
56 57 58 59 60					**Poorly Graded Sand** Very pale brown (10 YR 7/3), fine grained sand, 5% silt, moist
61 62 63 64 65					**Poorly Graded Sand with Silt** Very pale brown (10 YR 7/3), fine grained sand, 15% silt, moist
66 67 68 69 70					**Silty Sand** Very pale brown (10 YR 7/3), fine grained sand, 24% silt, 1% angular gravel, moist
71 72 73 74 75					**Poorly Graded Sand** Very pale brown (10YR 7/3), fine grained sand, 5% silt, 1% sub-rounded gravel, wet GROUNDWATER 75-80' bgs.
76 77 78 79 80					**Poorly Graded Sand** Very pale brown (10 YR 7/3), fine grained sand, 3% silt, wet, clayey clumps
81 82 83 84 85					**Poorly Graded Sand** Very pale brown (10 YR 7/3), fine grained sand, 2% silt, 1% coarse grained sand, wet
86 87 88 89 90					**Poorly Graded Sand** Very pale brown (10 YR 6/4), fine grained sand, 2% silt, 2% coarse grained sand, wet
91 92 93 94 95					**Poorly Graded Sand** Light yellow brown (10 YR 6/4), fine grained sand, 3% silt, 3% coarse grained sand, wet
96 97 98 99 100					**Poorly Graded Sand** Light yellow brown (10 YR 6/4), fine grained sand, 3% silt, 1% coarse grained sand, moist to wet

Drilling Contractor: GSI
Checked By: JZ
Date Checked: 2/5/02

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.

MONITOR WELL CONSTRUCTION SUMMARY

Well No. MW-6

Boring No. X-Ref: -

Survey Coords: Northing - 9964.942: Easting - 10957.911

Elevation Ground Level: 197.95'

Job Number: E034-C30

Top of Casing: 197.63'

Drilling Summary:	
Total Depth	103.5'
Borehole Diameter	9-5/8"
Casing Stick-Up	None
Driller	GeoMechanics Southwest, Inc.
Rig	CME 75
Bit(s)	~10"
Drilling Fluid	None
Protective Casing	None

Comments: No samples collected; only cuttings for logging and screening (i.e., FID) purposes.

G.W. Depth at 15:23 = 76.37'

Construction Time Log:	Start		Finish	
Task	Date	Time	Date	Time
Drilling	1-16-02	10:30	1-16-02	12:50
Geophys. Logging				
Casing:	1-16-02	13:45	1-16-02	15:00
Casing:				
Sand Pack:	1-16-02	15:00	1-16-02	15:35
Filter Placement:				
Cementing:	1-17-02	11:20	1-17-02	11:40
Development:	1-16-02	15:40	1-16-02	16:03

Well Design & Specifications

Basis: Geologic Log X Geophysical Log _____

Casing String(s): C = Casing S = Screen

Well Development: Removed 15 bails. Used 10' bailer at approximately 4 gallons per bail for an approximate total of 60 gallons.

Site Name: 20th & Factor - YUMA WQARF

Location: 653 E. 20TH St., Yuma, AZ (Corner of 20th & Factor)

Depth (ft)	String (C1, S1, etc.)	Elevation (ft)
61.0' to 0'	C1: Blank Casing	136.95' to 197.63'
81.0' to 61.0'	S1: 20' (2x10') of Sch.40 screen	116.95' to 136.95'
82.0' to 81.0' 93.0' to 92.0'	2-1' Couplers	115.95' to 116.95' 104.95' to 105.95'
92.0' to 82.0' 103.0' to 93.0'	2-10' Sections of PrePack	105.95' to 115>95' 94.95' to 104.95'
103.5' to 103.0'	6" End Cap	94.45' to 94.95'

Sheen: None

Color: Light brown

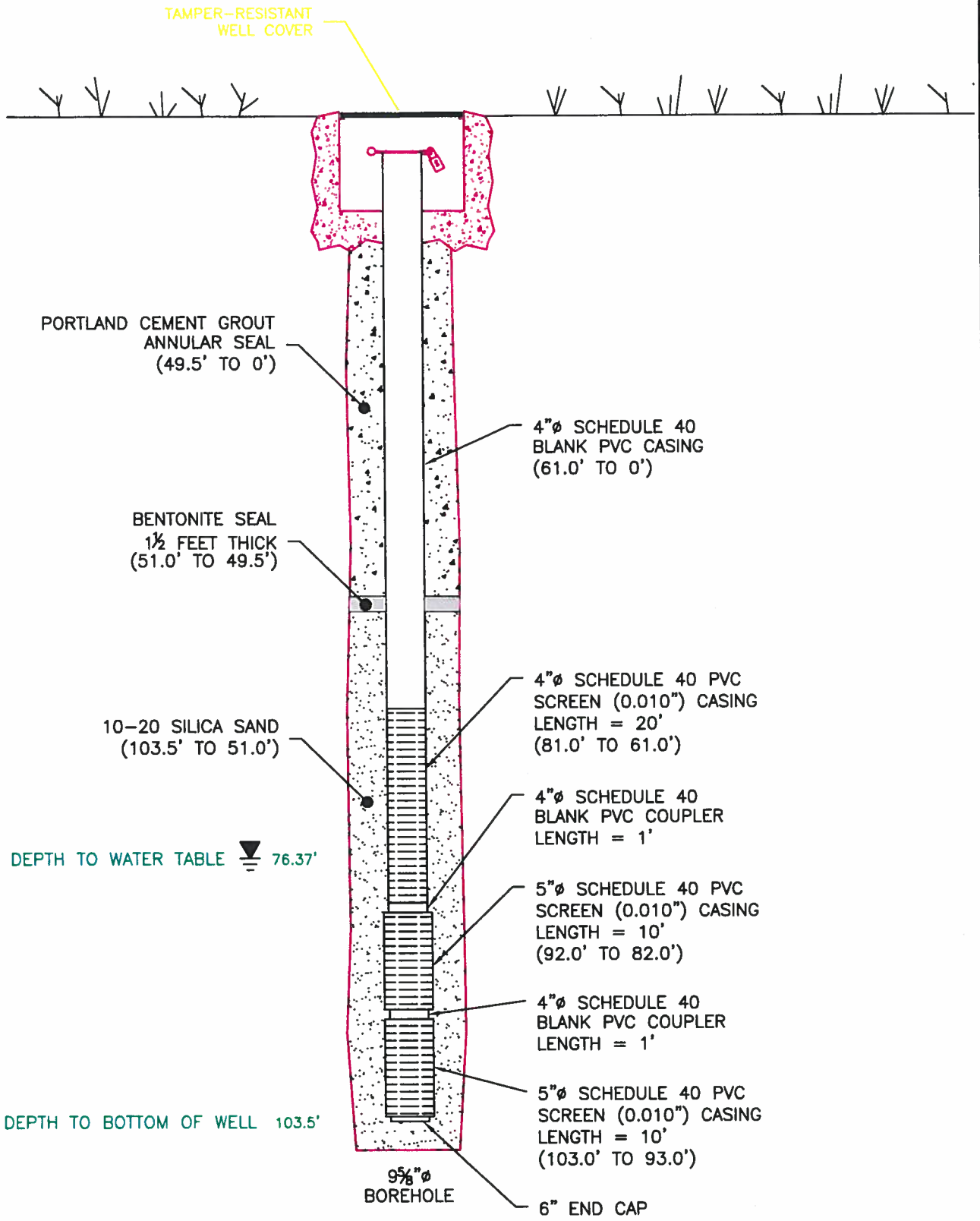
Casing: C1	4" dia. (61.0' to 0')
PrePack:	5" dia. (103.0' to 82.0')
Screen: S1	4" dia. - 0.010 for both PrePack and Sch.40 screen
	(103.0' to 61.0')
Filter Pack:	Colorado Silica 10-20 (30 bags) - 103.5' to 51.0'
Grout Seal:	49.5' to 0' by Tanner Companies
Seal:	51' to 49.5' (Bentonite)

Stabilization Test Data:

Time	pH	Spec. Cond. µs/m	Temp (C)
15:40	6.73	3.43	24.8
15:55	6.98	3.42	23.9
15:57	7.05	3.33	23.8
15:59	7.05	3.21	24.9
16:01	7.04	3.17	24.9
16:03	7.12	3.29	24.5

Supervised By: Kristie M. Daniels

Date: 1-16-02



VERTICAL SCALE: 1"=15'
HORIZONTAL SCALE: 1"=15"

TITLE:	WELL CONSTRUCTION DIAGRAM MONITOR WELL MW-6
LOCATION:	YUMA - 20TH & FACTOR

GeoTrans, Inc. A TETRA TECH COMPANY

CHECKED	KD	FIGURE
DRAFTED	DBS	2
PROJECT	E034-C30	
DATE	2/21/02	

Site Map	**Project No:** E034-C30 **Client:** ADEQ **Site:** Yuma WQARF-20th & Factor	**Borehole No: MW-6** **Start Date/Time:** 01-16-02 (10:30) **End Date/Time:** 01-16-02 (12:50) **Logged By:** K. Daniels
	Drilling Method: Hollow-Stem Auger **Borehole Diameter:** 9-5/8 Inches	**Angle from Vertical:** 0
	Surface Material: Asphalt	**Sampling Method:** NONE - CUTTINGS ONLY

Depth	Sample Characteristics: DEPTH (FEET)	TIME	FID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
					Asphalt Surface
0	5	10:35	<1		**SILTY SAND (SM)** Very pale brown (10YR 8/3); 75% fine grained sand; 24% silt; 1% angular gravel (<0.5"dia.); dry-to-moist; unknown odor
5	10	10:40	<1		**POORLY GRADED SAND (SP)** Lt yel. brn.(10 YR 6/4); 98% fine sand; 1% silt; 1% sub-rounded gravel (<0.75"dia.); slightly moist; no odor
10	15	10:43	<1		**POORLY GRADED SAND WITH SILT (SP-SM)** Very pale brown (10 YR 7/3); 85% fine grained sand; 10% sub-rounded gravel (<0.75"dia.); 5% silt; moist; no odor; clayey clumps
15	20	10:47	<1		**POORLY GRADED SAND (SP)** Very pale brown (10 YR 7/3); 98% fine grained sand; 2% silt; moist; no odor
20	25	10:50	<1		**POORLY GRADED SAND (SP)** Very pale brown (10 YR 7/3); 98% fine grained sand; 1% silt; 1% sub-rounded gravel (<0.5"dia.); moist; no odor
25	30	10:54	<1		**POORLY GRADED SAND (SP)** Very pale brown (10 YR 7/3); 97% fine grained sand; 2% silt; 1% sub-rounded gravel (<0.5"dia.); moist; unknown odor
30	35	10:56	<1		**POORLY GRADED SAND (SP)** Very pale brown (10 YR 7/3); 99% fine grained sand; 1% silt; moist; no odor
35	40	11:00	<1		**POORLY GRADED SAND (SP)** Very pale brown (10YR 7/3); 100% fine grained sand; moist; no odor
40	45	11:02	<1		**POORLY GRADED SAND (SP)** Very pale brown (10YR 7/3); 99% fine grained sand; 1% silt; increased moisture from 40'; no odor; G.S.I.(driller), says small amount of gravel at 45'; clay clumps
45	50	11:06	<1		**POORLY GRADED SAND (SP)** Very pale brown (10Y 7/3); 99% fine grained sand; 1% silt; moist; no odor; clayey clumps
50					

Drilling Contractor: GeoMechanics Southwest, Inc
Checked By: J.Z. and D.B.
Date Checked: 02-05-02

GeoTrans, Inc.
4665 South Ash Avenue, Suite G-1
Tempe, Arizona 85282
Voice: 480-839-2800 Fax: 480-839-2828

Site Map	**Project No:** E034-C30 **Client:** ADEQ **Site:** Yuma WQARF-20th & Factor	**Borehole No: MW-6** **Start Date/Time:** 01-16-02 (10:30) **End Date/Time:** 01-16-02 (12:50) **Logged By:** K. Daniels
	Drilling Method: Hollow-Stem Auger **Borehole Diameter:** 9-5/8 Inches	**Angle from Vertical:** 0
	Surface Material: Asphalt	**Sampling Method:** NONE - CUTTINGS ONLY

Depth	Sample Characteristics: DEPTH (FEET)	TIME	FID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
	55	11:09	<1		**POORLY GRADED SAND (SP)** Very pale brown (10Y 7/3); 100% fine grained sand; moist; no odor; clayey clumps
55	60	11:13	<1		**POORLY GRADED SAND (SP)** Very pale brown (10YR 7/3); 95% fine sand; 5% silt; moist; no odor
60	65	11:16	<1		**POORLY GRADED SAND WITH SILT (SP-SM)** Very pale brown (10YR 7/3); 85% fine grained sand; 15% silt; moist; no odor
65	70	11:20	<1		**SILTY SAND (SM)** Very pale brown (10YR 7/3); 75% fine grained sand; 24% silt; 1% angular gravel; moist; no odor
70	75	11:27	<1		**POORLY GRADED SAND (SP)** HIT WATER between 75-80' bgs. Very pale brown (10YR 7/3); 94% fine grained sand; 5% silt; 1% sub-rounded gravel (<0.75" dia.); wet; no odor
75	80	11:32	<1		**POORLY GRADED SAND (SP)** Very pale brown (10YR 7/3); 97% fine grained sand; 3% silt; wet; no odor; clay clumps
80	85	12:37	<1		**POORLY GRADED SAND (SP)** Very pale brown (10YR 7/3); 97% fine grained sand; 2% silt; 1% coarse grained sand; wet; no odor
85	90	12:40	<1		**POORLY GRADED SAND (SP)** Very pale brown (10YR 7/3); 96% fine grained sand; 2% silt; 2% coarse grained sand; wet; no odor
90	95	12:45	<1		**POORLY GRADED SAND (SP)** Light yellow brown (10YR 6/4); 94% fine grained sand; 3% silt; 3% coarse grained sand; wet; no odor
95	100	12:50	<1		**POORLY GRADED SAND (SP)** Light yellow brown (10YR 6/4); 96% fine grained sand; 3% silt; 1% coarse *****BORING TERMINATED AT 103.5 FEET*****
100					

Drilling Contractor: GeoMechanics Southwest, Inc
Checked By: J.Z. and D.B.
Date Checked: 02-05-02

GeoTrans, Inc.
4665 South Ash Avenue, Suite G-1
Tempe, Arizona 85282
Voice: 480-839-2800 Fax: 480-839-2828

SOIL BOREHOLE LOG

GeoTrans, Inc.

SITE NAME AND LOCATION: 20TH & FACTOR - YUMA WQARF

DRILLING METHOD: HOLLOW STEM AUGER

BORING No.: MW-6

SHEET: 1 OF 2

SAMPLING METHOD: No SAMPLES Collected; only cuttings

DRILLING START TIME: 1030 DATE: 1-16-02

DRILLING FINISH TIME: 1250 DATE: 1-16-02

WATER LEVEL

TIME

DATE

CASING DEPTH

DATUM:

APPROXIMATE ELEVATION

DRILLING RIG: CME 75

SURFACE CONDITIONS: ASPHALT

ANGLE: 0°

HAMMER WEIGHT

SAMPLE HAMMER TORQUE

DEPTH (FEET)	Soil Sample	Number Driven / Recovered	Number of Blows / Depth	FID (ppm)	GROUP SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL
0'						
				<1	SM	5' 75 % Fine sand; 24 % SILT; 1% ANGULAR gravel (<0.5" dia); poorly graded; dry-to-moist 10YR 8/3; SOME ODOR DETECTED, NOT SURE WHAT THOUGH.
5'	1035			<1	SP	10' 98 % fine sand; 1 % silt; 1 % subrounded gravel (<0.75" dia); poorly graded, slightly moist 10YR 6/4; NO PETROLEUM ODOR
10'	1040			<1	SP	15' 85 % fine sand; 5 % silt; 10 % subrounded gravel. 10YR 7/3; (<0.75" dia.) NO Petroleum odor; clayey clumps; moist
15	1043			0.6 w/grave		
				<1	SP	20' 98 % fine sand; 2 % silt; poorly graded; NO gravel. 10YR 7/3; NO Petroleum odor; moist
20	1047			<1	SP	25' 98 % fine sand; 1 % silt; 1 % subrounded gravel (<0.5" dia.); NO Petroleum odor 10YR 7/3; moist
25	1050			<1	SP	30' 97 % fine sand; 2 % silt; <1 % subrounded gravel (<0.5" dia.) poorly graded 10YR 7/3; SOME KIND OF ODOR DETECTED - UNSURE
30	1054			<1	SP	35' 100 % fine sand; little to NO silt; no gravel; moist - 10YR 7/3; NO Petroleum odor; poorly grd; ~~to dry~~
35	1056			<1	SP	40' 100 % fine sand; NO % silt; NO GRAVEL. moist; NO Petroleum odor; poorly graded; 10 YR 7/3
40	1100			0.7	SP	45' G.S.I. SAYS SM. AMT OF GRAVEL @ 45' WE DIDN'T SEE GRAVEL 99 % fine sand; 1 % silt; increased moisture; NO Petroleum odor; clay clumps; 10 YR 7/3 → poorly graded
45	1102			<1	SP	50' 99 % Fine Sand; 1 % Silt; NO GRAVEL; moist; poorly graded; 10 YR 7/3; NO Petroleum odor; clayey clumps
50	1106			<1	SP	55' 100 % Fine Sand; NO % Silt; NO gravel; moist; 10 YR 7/3; NO Petroleum odor; clayey clumps
55	1109			0.6		
				<1	SP	60' 95 % Fine Sand; 5 % Silt; NO gravel; moist; poorly graded; NO petroleum odor; 10 YR 7/3
60	1113			0.8		
				<1	SP-SM	65' 85 % fine sand; 15 % silt; NO GRAVEL. moist; NO Petroleum odor; poorly graded; 10 YR 7/3
65	1116			0.8		
				<1	SM	70' 75 % fine sand; 24 % silt; 1 % angular gravel; moist; NO Petroleum odor; ~~poorly~~ med graded; 10 YR 7/3
70'	1120					

DRILLING CONTRACTOR: GEOMECHANICS SOUTHWEST, INC

JOB NUMBER: E034-C30

LOGGED BY: KRISTIE M. DANIELS

CHECKED BY:

DATE: 1-16-02

SOIL BOREHOLE LOG

GeoTrans, Inc.

SITE NAME AND LOCATION: 20th & FACTOR - YUMA WQARF

DRILLING METHOD: HOLLOW STEM AUGER

BORING No.: MW-6

SHEET: 2 OF 2

SAMPLING METHOD: No Samples Collected; only cuttings

DRILLING START TIME: 1030 DATE: 1-16-02

DRILLING FINISH TIME: 1250 DATE: 1-16-02

WATER LEVEL / TIME / DATE

CASING DEPTH

DATUM: APPROXIMATE ELEVATION:

DRILLING RIG: CME 75

SURFACE CONDITIONS: ASPHALT

ANGLE: 0°

HAMMER WEIGHT:

AUGERS ARE 9 5/8" O.D. / 6 1/4" I.D.

SAMPLE HAMMER TORQUE:

DEPTH IN FEET	Soil Graph.	Sample Driven	Sample Recovered	Sample No. Date	FID (ppm)	GROUP SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL
					<1	SP	75' 94% Fine sand; 5% silt; 10 YR 7/3; 1% subrounded gravel (<0.75" dia.); poorly graded; WET No petroleum odor - Hit water 75-80'!
75'	1127				<1	SP	80' 97% Fine sand; 3% silt; No gravel; wet 10 YR 7/3; No Petroleum odor; clay clumps; poorly graded
80'	1132				<1	SP	85' 97% FINE SAND; 2% SILT; 1% coarse sand; wet 10 YR 7/3; No Petroleum odor; poorly graded
85'	1237				<1	SP	90' 96% Fine Sand; 2% silt; 2% coarse sand; wet 10 YR 7/3; NO Petroleum odor; poorly graded
90'	1240				<1	SP	95' 94% fine sand; 3% silt; 3% coarse sand; wet 10 YR 6/4; NO PETROLEUM ODOR; poorly graded;
95'	1245				<1	SP	100' 96% fine sand; 3% SILT; 1% coarse sand; moist-to-wet 10 YR 6/4 No petroleum odor; poorly graded;
100'	1250						~~105'~~ KO
~~105'~~ 103.5'							*BORING TERMINATED @ 103.5'*

NOTE: Ambient Air - Multiwarn, FID + PID all <1 ppm entire length of well

DRILLING CONTRACTOR: GEOMECHANICS SOUTHWEST, INC.

JOB NUMBER: E034-C30

LOGGED BY: KRISTIE M. DANIELS

CHECKED BY:

DATE: 1-16-02

GeoTrans, Inc.

MONITOR WELL CONSTRUCTION SUMMARY

Well No. MW-6

Boring No. X-Ref:

Elevation Ground Level:

Top of Casing:

Survey Coords:

Job Number: E034-C30

Drilling Summary:	
Total Depth	103.5'
Borehole Diameter	10" (GUY MEASURED IT)
Casing Stick-Up	NONE
Driller	GEOMECHANICS SOUTHWEST, INC.
Rig	CME 75
Bit(s)	10"
Drilling Fluid	NONE
Protective Casing	NONE

Comments: NO SAMPLES COLLECTED; ONLY CUTTINGS FOR LOGGING & SCREENING (F.I.D.)

G.W. DEPTH @ 1523 → 76.37'

T.W.D. = 103.5'

Construction Time Log:	Start		Finish	
Task	Date	Time	Date	Time
Drilling	1-16-02	1030	1-16-02	1250
Geophys. Logging				
Casing:	1-16-02		1-16-02	1500
Casing:				
Sand Pack:	1-16-02	1500	1-16-02	1535
Filter Placement:				
Cementing:	1-17-02	AM		
Development:	1-16-02	1540	1-16-02	1603

Well Development: REMOVED 15 BAILS (10' BAILER) APPROX'LY 4 GALS. PER BAIL = 60 GALS. TOTAL BAILED

Well Design & Specifications

Basis: Geologic Log ✓ Geophysical Log _____

Casing String(s): C = Casing S = Screen

Depth (ft)	String (C1, S1, etc.)	Elevation (ft)
61.0' to 0'	C1	
81.0' to 61.0'	20' (2x10') SCH. 40 S1 OF screen	
82.0' to 81.0' 93.0' to 92.0'	2-1' COUPLERS *	
92.0' to 82.0' 103.0' to 93.0'	PRE PACK	
103.5' to 103.0'	6" END CAP	

Casing: C1	4" DIA.	
C2		
PRE PACK	5" DIA.	
Screen: S1	4" DIA. - 0.010 FOR BOTH PREPACK	
S2	& SCH. 40 SCREEN	
Filter Pack:	COLORADO SILICA 10-20 (30 BAGS)	
	(52.5' THICK) 103.5' to 51'	
Grout Seal:	49.5' - 0'	
Seal:	51.0' - 49.5'	

	Time	pH	Cond.	Temp. °C
INITIAL	1540	6.73	3.43	24.8

Stabilization Test Data: * DETAILS

Time	pH	Spec. Cond. µs/m	Temp (C)
1555	6.98	3.42	23.9
1557	7.05	3.33	23.8
1559	7.05	3.21	24.9
1601	7.04	3.17	24.9
1603	7.12	3.29	24.5

Site Name: 20TH & FACTOR - YUMA WQARF

Location: 453 20TH ST., YUMA, AZ NEAR NW CORNER OF BLDG. 4

Supervised By: KRISTIE M. DANIELS

Date: 1-16-02

* 1' COUPLERS ABOVE BOTH PREPACKS

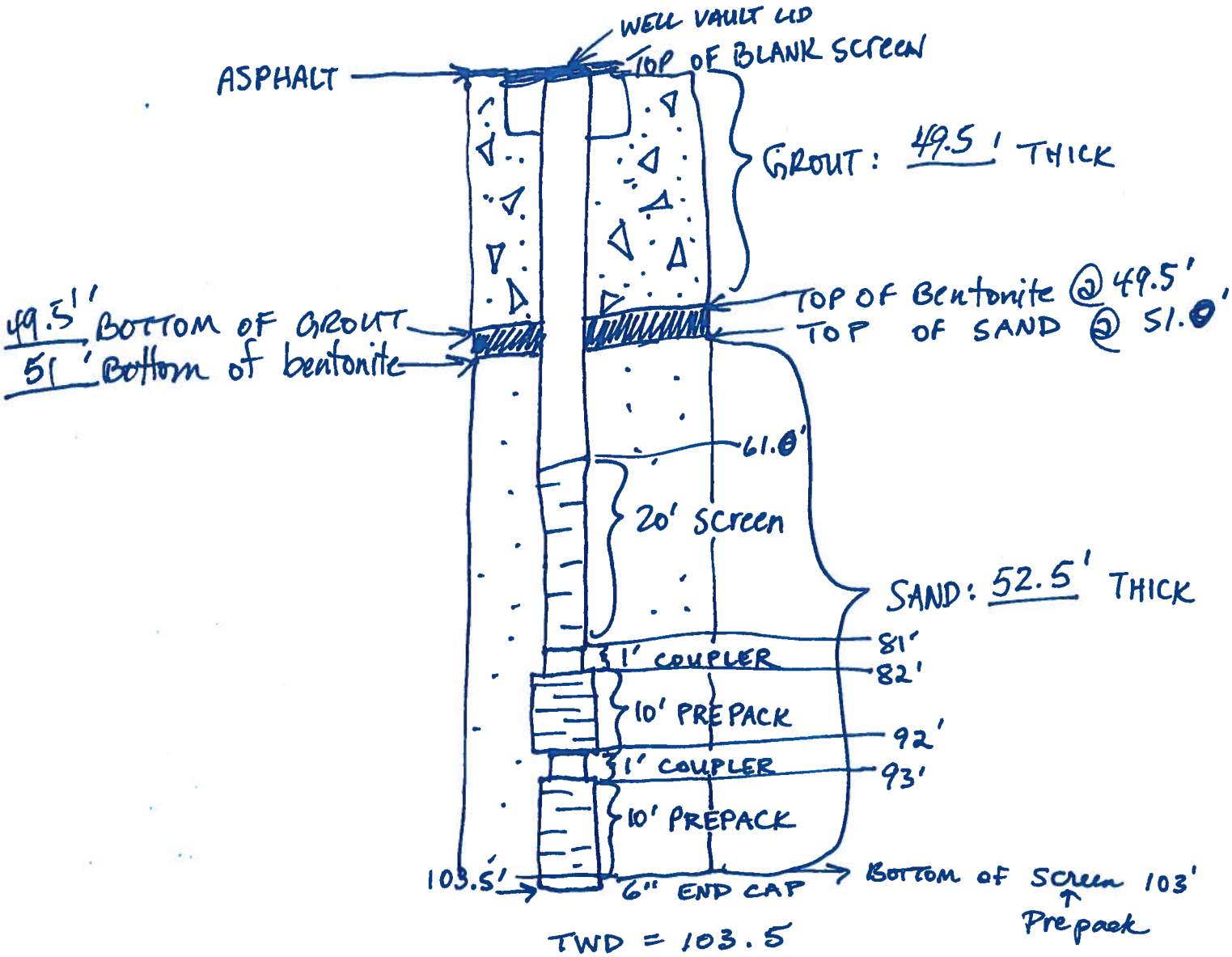
YUMA WQARF
E034-C30

MW-6

WELL CONSTRUCTION DIAGRAM

MW-6

1-16-02



YUMA WQARF
E034-C30

MW-6

* MW-6

MW-6

WELL DEVELOPMENT

1-16-02

Record Bailing Time: Start → 1540 PM / Finish → 1603 PM

Visual: (sheen: NO, color: yes light brn, solids: NO?)

Initial Readings:

Time	pH	Cond.	Temp
1540	6.73	3.43 mS 1999 µS	24.8°C

2-minute Intervals:

Time	pH	Specific Conductivity µS/m	Temp. (C)	
1555	6.98	3.42 mS 1999 µS	23.9	11TH Bailer full
1557	7.05	3.33 mS 1999 µS	23.8	12TH "
1559	7.05	3.21 1999	24.9	13TH "
1601	7.04	3.17 1999	24.9	14TH "
1603	7.12	3.29 1999	24.5	15TH

* Removed ~60 gals. total. *

G.W. @ 76.37' at 1523.

Using 10' bailer (JUST FITS IN A 4" dia. well):
1542 - 2nd Bail
1544 - 3rd Bail
1545 - 4TH Bail
1547 - 5TH "
1548 - 6TH "
1549 - 7TH "
1550 - 8TH "
1551 - 9TH "
1553 - 10TH
~4 gals./bailer

GeoTrans, Inc.	Project No:1303.011	Borehole No: MW-7A ADWR ID: 55-588279
Site Map	Client: ADEQ Site: 20th and Factor WQARF Site	Start Date/Time: End Date/Time: Logged By:
	Drilling Method: Hollow Stem Auger Borehole Diameter: 9 5/8 inches	Angle from Vertical: 0
	Surface Material: Grass	Sampling Method: Split Spoon

1/14/02

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lthology	Description and Comments (1/15/02, KD)
0					Ground Surface
1–5					**Poorly Graded Sand** Light yellow brown (10YR 6/4) fine grained sand, 2% silt, dry to moist
6–9					**Poorly Graded Sand** Light yellow brown (10 YR 6/4) fine grained sand, 2% silt, moist
10–14					**Silty Sand** Pale brown (10 YR 6/3) fine grained sand, 25% silt, dry to moist
15–19					**Poorly Graded Sand** Very pale brown (10 YR 7/3), fine grained sand, 3% silt, slightly moist
20–24					**Poorly Graded Sand** Very pale brown (10 YR 8/3), fine grained sand, 1% silt, slightly moist
25–29					**Poorly Graded Sand** Very pale brown (10 YR 7/3), fine grained sand, 1% silt, slightly moist
30–34					**Poorly Graded Sand** Very pale brown (10 YR 6/3), fine grained sand, 1% silt, slightly moist
35–39					**Poorly Graded Sand** Very pale brown (10 YR 7/3), fine grained sand, 1% silt, slightly moist
40–44					**Poorly Graded Sand** Very pale brown (10 YR 7/3), fine grained sand, 2% silt, dry to moist
45–50					**Poorly Graded Sand with Silt** Light yellow brown (2.5 YR 6/3), fine grained sand, 12% silt, dry to moist, at 50' bgs. gravel (caliche) with some clay observed

Drilling Contractor: GSI
Checked By: JZ
Date Checked: 2/5/02

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No:1303.011	Borehole No: MW-7A
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: End Date/Time: Logged By:
	Drilling Method: Hollow Stem Auger Borehole Diameter: 9 5/8 inches	Angle from Vertical:
	Surface Material: Grass	Sampling Method:

1/14/02

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments (KD, 0)
51-54					**Poorly Graded Sand-Silty Sand** Pale yellow (5 YR 7/3) fine grained sand, 10% silt, dry to moist Split Spoon
55-59					**Well Graded Sand with Silt** Pale yellow (5 YR 8/2) fien grained sand, 13% silt, 2% sub-rounded gravel-caliche, moist to dry
60-64					**Well Graded Sand with Silt** Very pale brown (10 YR 7/3) fine sand, 10% silt, 2 % caliche-gravel, moist to dry
65-69					**Poorly Graded Sand with Silt** Bown yellow (10 YR 6/6/) fine grained sand, 8 % silt, moist to dry
70-74					**No Recovery**
75-79					**Well Graded Sand with Silt** Brown (10 YR 5/3), fine to medium sand, 11% silt, 5% sub-rounded gravel, wet, strong diesel odor GROUNDWATER
80-84					**Poorly Graded Sand with Silt** Brown (10 YR 5/3), fine grained sand, 14% silt, wet, petroleum odor
85-89					**Poorly Graded Sand with Silt** Brown (10 YR 5/3), fine grained sand, 25% silt, wet, petroleum odor
90-94					**Poorly Graded Sand with Silt** Brown (10 YR 5/3), fine grained sand, 10% silt, wet, petroleum odor
95-99					**Poorly Graded Sand with Silt** Brown (10 YR 5/3), fine grained sand, 15% silt, wet, petroleum odor
100					

Drilling Contractor: GSI
Checked By: JZ
Date Checked: 2/5/02
Sheet: 2 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.011	Borehole No: MW-7A
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: End Date/Time: Logged By:
	Drilling Method: Hollow Stem Auger Borehole Diameter: 9 5/8 inches	Angle from Vertical:
	Surface Material: Grass	Sampling Method:

1/14/02

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments (1/15/02, KD, 0)
101					**Poorly Graded Sand with Silt** Brown (10 YR 5/3), fine grained sand, 10% silt, less wet than 100' bgs, petroleum odor Split Spoon
102					
103					
104					
105					**Poorly Graded Sand with Silt** Brown (10 YR 5/3), fine grained sand, 25% silt, wet, slight petroleum odor
106					
107					
108					
109					
110					
111					
112					
113					
114					
115					
116					
117					
118					
119					
120					
121					
122					
123					
124					
125					
126					
127					
128					
129					
130					
131					
132					
133					
134					
135					
136					
137					
138					
139					
140					
141					
142					
143					
144					
145					
146					
147					
148					
149					
150					

Drilling Contractor: GSI

Checked By: JZ

Date Checked: 2/5/02

Sheet: 3 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.

MONITOR WELL CONSTRUCTION SUMMARY

Well No. MW-7

Boring No. X-Ref: -

Survey Coords: Northing - 9964.079; Easting - 11189.090

Elevation Ground Level: 197.86'

Job Number: E034-C30

Top of Casing: 197.42'

Drilling Summary:	
Total Depth	110'
Borehole Diameter	9-5/8"
Casing Stick-Up	None
Driller	GeoMechanics Southwest, Inc.
Rig	CME 75
Bit(s)	~10"
Drilling Fluid	None
Protective Casing	None

Comments: During drilling, soil samples were collected at 5', 10', and at 80' (split spoon).

Depth-to-product = 75.44'

G.W. Depth at 10:53 = 77.69'

Product Thickness = 2.25'

Construction Time Log:	Start		Finish	
Task	Date	Time	Date	Time
Drilling	1-14-02	15:10	1-14-02	16:45
	1-15-02	07:40	1-15-02	09:08
Geophys. Logging				
Casing:	1-15-02	14:00	1-15-02	16:30
Casing:				
Sand Pack:	1-15-02	16:31	1-15-02	16:50
Filter Placement:				
Cementing:	1-17-02	08:05	1-17-02	08:20
Development:	-		-	

Well Development: Did not perform, due to the presence of liquid phase hydrocarbons.

Well Design & Specifications

Basis: Geologic Log __X__ Geophysical Log _____

Casing String(s): C = Casing S = Screen

Depth (ft)	String (C1, S1, etc.)	Elevation (ft)
62.5' to 0'	C1: Blank Casing	135.36' to 197.42'
82.5' to 62.5'	S1: 20' (2x10') of Sch.40 screen	115.36' to 135.36'
93.5' to 92.5'	1-1' Couplers	104.36' to 105.36'
103.5' to 93.5' 92.5' to 82.5'	2-10' Sections of PrePack	94.36' to 104.36' 105.36' to 115.36'
104.0' to 103.5'	6" End Cap	93.86' to 94.36'

Casing: C1	4" dia. (62.5' to 0')
PrePack:	5" dia. (103.5' to 82.5')
Screen: S1	4" dia. - 0.010 for both PrePack and Sch.40 screen
	(82.5' to 62.5')
Filter Pack:	Colorado Silica 10-20 (30 bags) - 104.0' to 59.0'
Grout Seal:	57.5' to 0' by Tanner Companies
Seal:	59.0' to 57.5' (Bentonite)

Sheen: Yes, with 2.25' of product (likely diesel)

Color: Dark brown

Stabilization Test Data:

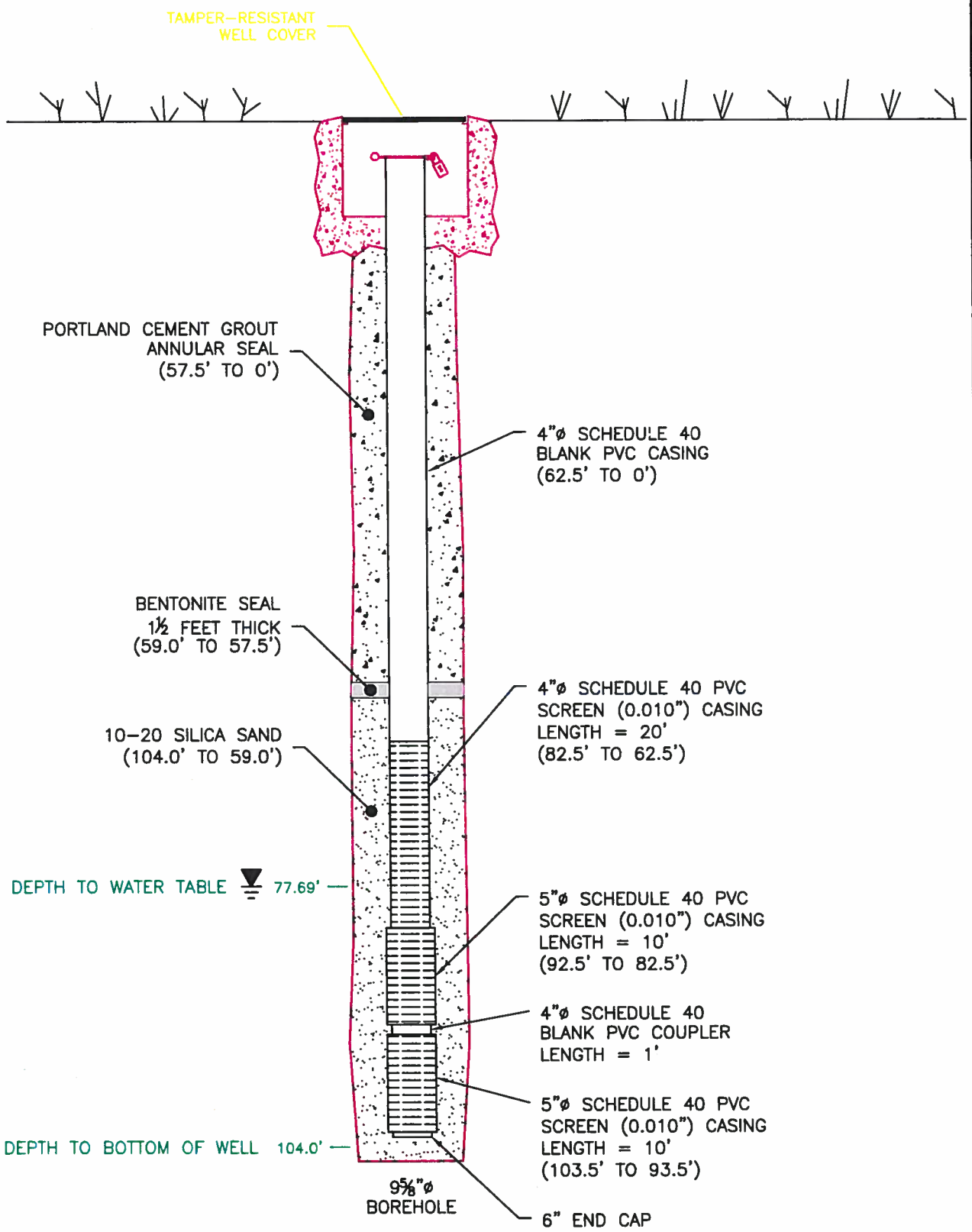
Time	pH	Spec. Cond. µs/m	Temp (C)

Site Name: 20th & Factor - YUMA WQARF

Location: 653 E. 20TH St., Yuma, AZ (In grass, near NE corner of Zone 7)

Supervised By: Kristie M. Daniels

Date: 1-15-02



VERTICAL SCALE: 1"=15'
HORIZONTAL SCALE: 1"=15"

TITLE:	WELL CONSTRUCTION DIAGRAM MONITOR WELL MW-7		
LOCATION:	YUMA - 20TH & FACTOR		
GeoTrans, Inc. A TETRA TECH COMPANY	CHECKED	KD	FIGURE
	DRAFTED	DBS	3
	PROJECT	E034-C30	
	DATE	2/21/02	

GeoTrans, Inc.	Project No: 1303.15.03	Borehole No: MW-8A ADWR ID: 55-203693
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: 1/26/05 End Date/Time: 1/27/05 Logged By: JLB
	Drilling Method: Hollow Stem Auger Borehole Diameter: 6.75 inches	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: None

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lthology	Description and Comments
					Ground Surface
0–5					**Poorly Graded Sand** Brown, fine to medium sand, slighlty moist, trace fine gravel
5–10					**Poorly Graded Sand** As above
10–15					**Poorly Graded Sand** As above with trace of light brown dry clay nodules
15–20					**Poorly Graded Sand** Yellow brown, fine to medium sand, poorly sorted, dry
20–25					**Poorly Graded Sand** As above
25–30					**Poorly Graded Sand** As above
30–35					**Poorly Graded Sand** As above
35–40					**Poorly Graded Sand** As above with trace of soft clay - likey thin clay lense
40–45					**Poorly Graded Sand** As above with weakly cemented sand nodules, no clay and trace of fine gravels
45–50					**Poorly Graded Sand** As above, moist with trace clay - likely thin clay lense

Drilling Contractor: Yellow Jacket Drilling

Checked By:

Date Checked:

Sheet: 1 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.15.03	Borehole No: MW-8A
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: 1/26/05 End Date/Time: 1/27/05 Logged By: JLB
	Drilling Method: Hollow Stem Auger Borehole Diameter: 6.75 inches	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: None

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
51 52 53 54 55					**Poorly Graded Sand** Yellow brown, fine to medium sand, slightly moist
56 57 58 59 60					**Poorly Graded Sand** As above
61 62 63 64 65					**Poorly Graded Sand** As above
66 67 68 69 70					**Poorly Graded Sand** As above
71 72 73 74 75					**Poorly Graded Sand** As above, slightly moist with trace fine gravels.
76 77 78 79 80					**Poorly Graded Sand** As above with trace fine gravels.
81 82 83 84 85					**Poorly Graded Sand** As above - moist
86 87 88 89 90					**Poorly Graded Sand** Brown, very moist, trace fine gravels
91 92 93 94 95					**Poorly Graded Sand** As above
96 97 98 99 100					**Sandy Clay** As above with trace clay.

Drilling Contractor: Yellow Jacket Drilling

Checked By:

Date Checked:

Sheet: 2 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.15.03	Borehole No: MW-8A
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: 1/26/05 End Date/Time: 1/27/05 Logged By: JLB
	Drilling Method: Hollow Stem Auger Borehole Diameter: 6.75 inches	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: None

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
101					Gray-brown, very soft clay with sand and trace fine gravels
102					
103					
104					
105					
106					
107					
108					
109					
110					
111					
112					
113					
114					
115					
116					
117					
118					
119					
120					
121					
122					
123					
124					
125					
126					
127					
128					
129					
130					
131					
132					
133					
134					
135					
136					
137					
138					
139					
140					
141					
142					
143					
144					
145					
146					
147					
148					
149					
150					

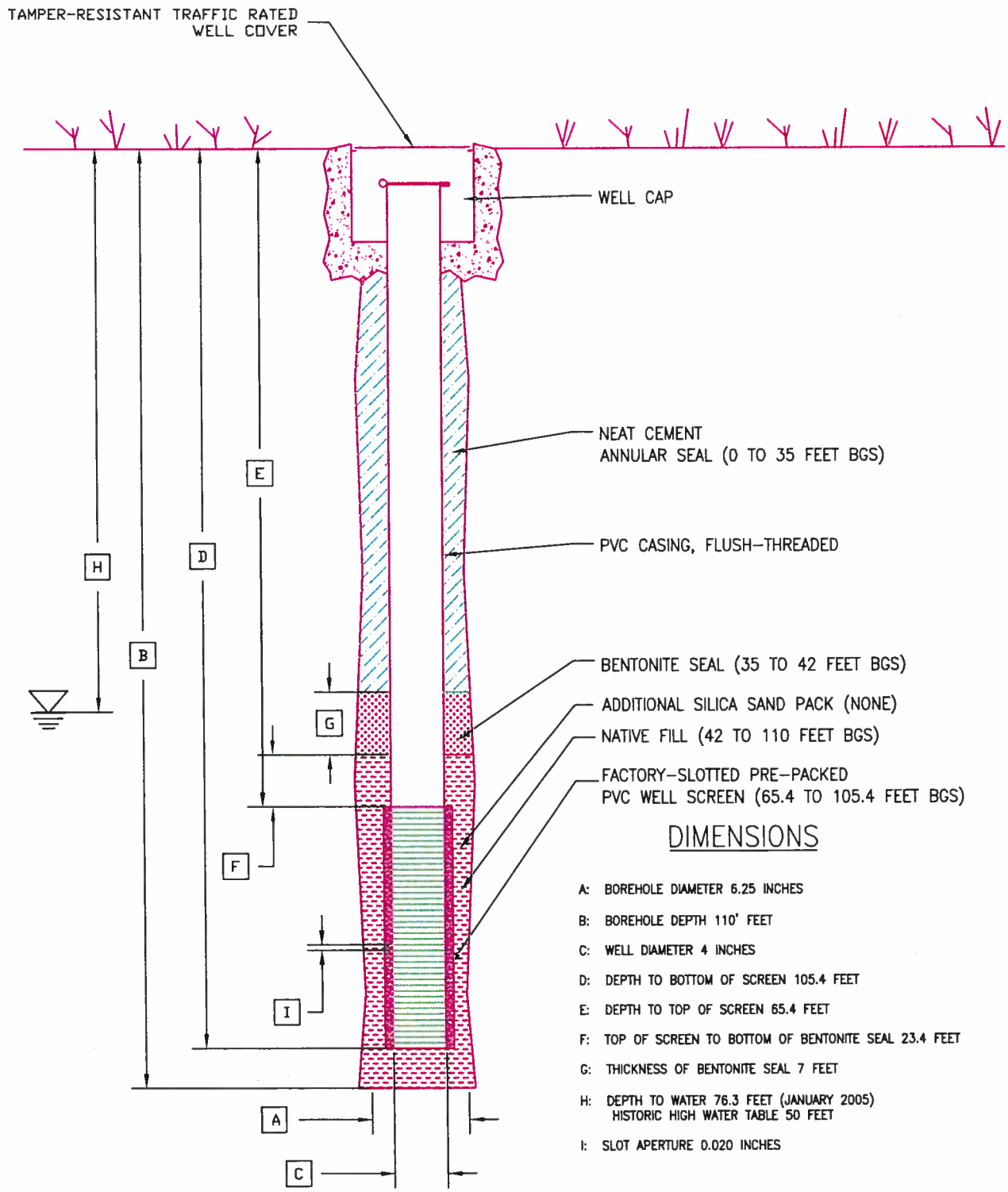
Drilling Contractor: Yellow Jacket Drilling

Checked By:

Date Checked:

Sheet: 3 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318



DIMENSIONS

A: BOREHOLE DIAMETER 6.25 INCHES

B: BOREHOLE DEPTH 110' FEET

C: WELL DIAMETER 4 INCHES

D: DEPTH TO BOTTOM OF SCREEN 105.4 FEET

E: DEPTH TO TOP OF SCREEN 65.4 FEET

F: TOP OF SCREEN TO BOTTOM OF BENTONITE SEAL 23.4 FEET

G: THICKNESS OF BENTONITE SEAL 7 FEET

H: DEPTH TO WATER 76.3 FEET (JANUARY 2005)
HISTORIC HIGH WATER TABLE 50 FEET

I: SLOT APERTURE 0.020 INCHES

TITLE: MONITOR WELL COMPLETION DIAGRAM MW-8			
LOCATION: 20th AND FACTOR, YUMA			
GeoTrans, Inc. A TETRA TECH COMPANY	CHECKED		FIGURE
	DRAFTED	JLB	1
	PROJECT	1303.015.03	
	DATE	2/14/05	

GeoTrans, Inc.	Project No: 1303.015.03	Borehole No: MW-9A ADWR ID: 55-203692
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: 1/24/05 End Date/Time: 1/25/05 Logged By: JLB
	Drilling Method: Hollow Stem Auger Borehole Diameter: MW-9	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: None

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lthology	Description and Comments
0					Ground Surface
1 2 3 4 5					**Poorly Graded Sand** Brown, fine to medium, medium dense, moist
6 7 8 9 10					**Poorly Graded Sand** Brown, fine to medium sand, loose, dry
11 12 13 14 15					**Poorly Graded Sand** Brown, fine to medium sand, loose, dry
16 17 18 19 20					**Poorly Graded Sand** Brown, fine to medium sand, slighlty moist with ~1% fine, sub-rounded gravel
21 22 23 24 25					**Poorly Graded Sand** Brown, fine to medium sand, slightly moist with 1% fine, sub-rounded gravel
26 27 28 29 30					**Poorly Graded Sand** Brown, fine to medium sand, slightly moist with 1% fine, sub-rounded gravel
31 32 33 34 35					**Poorly Graded Sand** Brown, fine to medium sand, slightly moist with 1% fine, sub-rounded gravel
36 37 38 39 40					**Poorly Graded Sand wih Gravels** Brown, fine to medium coarse sand, 20% fine sub-rounded gravels, moist
41 42 43 44 45					**Sandy Clay** Light brown clay, very soft with brown, fine to medium sand and trace fine gravel
46 47 48 49 50					**Clay** Light brown, soft, trace sand and fine gravel

Drilling Contractor: Yellow Jacket Drilling

Checked By:

Date Checked:

Sheet: 1 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.015.03	Borehole No: MW-9A
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: 1/24/05 End Date/Time: 1/25/05 Logged By: JLB
	Drilling Method: Hollow Stem Auger Borehole Diameter: MW-9	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: None

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
51–55					**Sand, Clay and Gravels** Brown, 40% sub-angular fine gravels, 35% fine to medium sand, 25% soft clay
56–60					**Poorly Graded Sand** Brown, fine to medium sand, moist, with trace fine gravel and clay
61–65					**Clayey Sand** Brown, 78% fine to medium sand, moist, 20% soft, brown clay, 2% fine, sub-rounded gravel
66–70					**Sand with Clay** Brown, 94% fine sand, moist, 5% soft clay, 1% fine gravel
71–75					**Poorly Graded Sand** Brown, fine to medium sand, moist, no clay
76–80					**Poorly Graded Sand** Brown, medium sand, very moist
81–85					**Poorly Graded Sand** Brown, medium to coarse sand, very moist
86–90					**Poorly Graded Sand** Brown, medium to coarse sand, very moist
91–95					**Poorly Graded Sand** Brown, medium to coarse sand, very moist
96–100					**Poorly Graded Sand** Brown, medium to coarse sand, very moist

Drilling Contractor: Yellow Jacket Drilling

Checked By:

Date Checked:

Sheet: 2 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.015.03	Borehole No: MW-9A
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: 1/24/05 End Date/Time: 1/25/05 Logged By: JLB
	Drilling Method: Hollow Stem Auger Borehole Diameter: MW-9	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: None

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
101					**Sandy Clay** Gray-brown, medium stiff clay with medium sand and trace fine gravel
102					
103					
104					
105					
106					
107					
108					
109					
110					
111					
112					
113					
114					
115					
116					
117					
118					
119					
120					
121					
122					
123					
124					
125					
126					
127					
128					
129					
130					
131					
132					
133					
134					
135					
136					
137					
138					
139					
140					
141					
142					
143					
144					
145					
146					
147					
148					
149					
150					

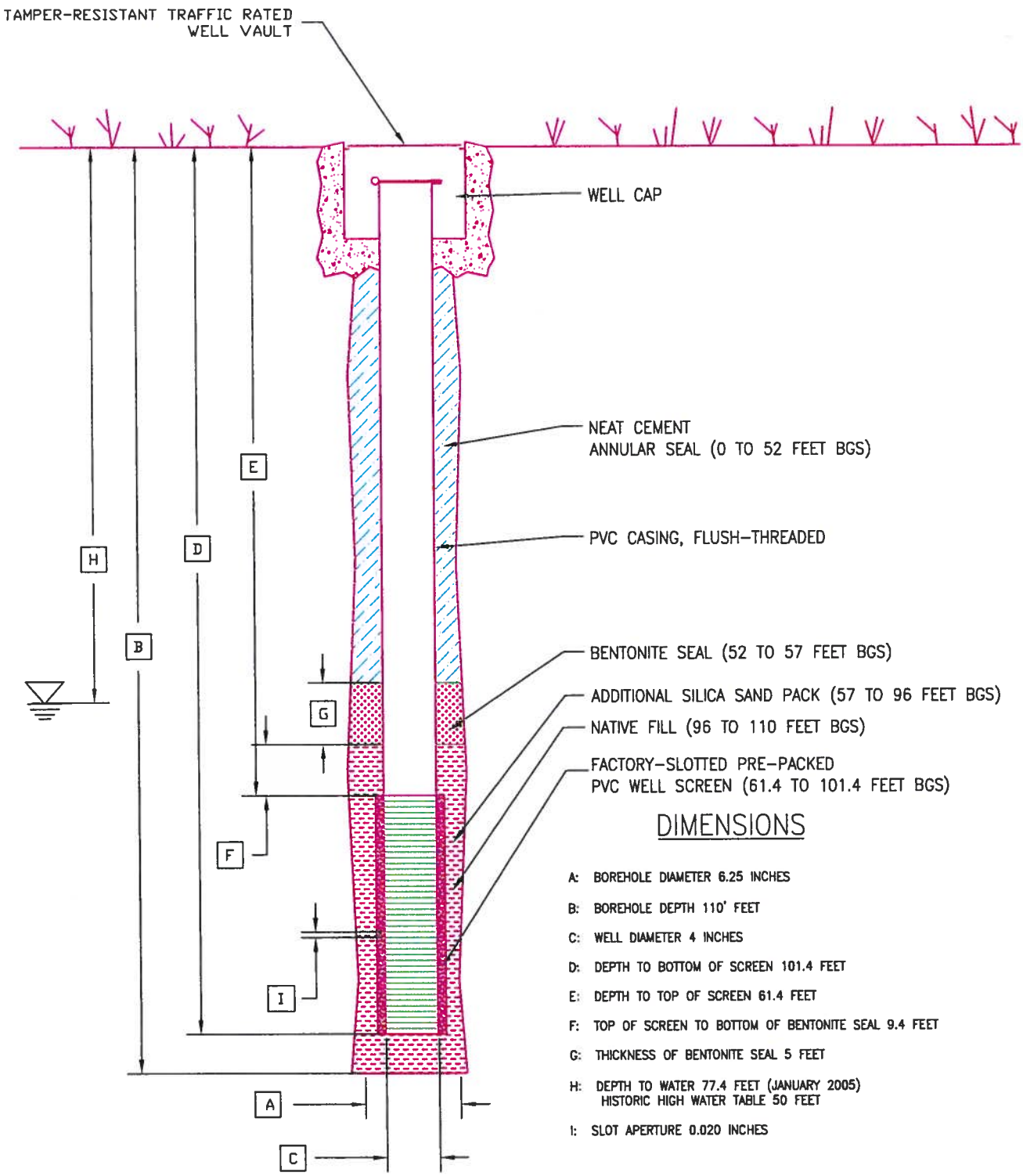
Drilling Contractor: Yellow Jacket Drilling

Checked By:

Date Checked:

Sheet: 3 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318



DIMENSIONS

A: BOREHOLE DIAMETER 6.25 INCHES

B: BOREHOLE DEPTH 110' FEET

C: WELL DIAMETER 4 INCHES

D: DEPTH TO BOTTOM OF SCREEN 101.4 FEET

E: DEPTH TO TOP OF SCREEN 61.4 FEET

F: TOP OF SCREEN TO BOTTOM OF BENTONITE SEAL 9.4 FEET

G: THICKNESS OF BENTONITE SEAL 5 FEET

H: DEPTH TO WATER 77.4 FEET (JANUARY 2005)
HISTORIC HIGH WATER TABLE 50 FEET

I: SLOT APERTURE 0.020 INCHES

TITLE: MONITOR WELL COMPLETION DIAGRAM MW-9

LOCATION: 20th AND FACTOR, YUMA

GeoTrans, Inc. A TETRA TECH COMPANY

CHECKED		FIGURE
DRAFTED	JLB	1
PROJECT	1303.015.03	
DATE	2/14/05	

GeoTrans, Inc.	Project No: 1303.015.03 Client: ADEQ Site: 20th and Factor WQARF	Borehole No: MW-10A ADWR ID: 55-203691 Start Date/Time: 1/27/05 End Date/Time: 1/28/05 Logged By: JLB
Site Map	Drilling Method: Hollow Stem Auger Borehole Diameter: 0	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: None

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lthology	Description and Comments
					Ground Surface
0–5					**Poorly Graded Sand** Light brown, fine to medium sand, moist with trace gravel
5–10					**Poorly Graded Sand** Light brown, fine to medium sand, moist
10–15					**Poorly Graded Sand** Light brown, fine to medium sand, moist
15–20					**Poorly Graded Sand** Light brown, fine to medium sand, moist
20–25					**Poorly Graded Sand** Light brown, fine to medium sand, moist, with trace clay
25–30					**Poorly Graded Sand** Light brown, fine to medium sand, moist with trace ~ 1% red-brown, medium stiff clay
30–35					**Poorly Graded Sand with Clay** Light brown, fine to medium sand, moist with 2% medium stiff clay
35–40					**Poorly Graded Sand with Clay** Light brown, fine to medium sand, moist with trace soft clay
40–45					**Poorly Graded Sand** Light brown, fine to medium sand, moist with trace soft clay
45–50					**Poorly Graded Sand** Light brown, fine to medium sand, moist with increasing soft clay

Drilling Contractor: Yellow Jacket Drilling

Checked By:

Date Checked:

Sheet: 1 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

Site Map	**Project No:** 1303.015.03 **Client:** ADEQ **Site:** 20th and Factor WQARF	**Borehole No:** MW-10A **Start Date/Time:** 1/27/05 **End Date/Time:** 1/28/05 **Logged By:** JLB
	Drilling Method: Hollow Stem Auger **Borehole Diameter:** 0	**Angle from Vertical:** 0
	Surface Material: Asphalt	**Sampling Method:** None

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
51–54					**Poorly Graded Sand with Clay** Light brown, fine to medium sand, moist with 5% clay
55–59					**Clayey Sand** Light brown, fine to medium sand, moist with 20% light gray brown, stiff clay
60–64					**Sand and Clay** Light brown, cohesive sand and clay mix
65–69					**Sandy Clay** Light brown mix of sand and stiff clay
70–74					**Sandy Clay** Light brown, 70% soft, moist clay, 30% medium sand, moist
75–79					**Sandy Clay** Light brown, 70% medium stiff, moist clay, 30% medium sand, moist
80–84					**Sandy Clay** Light brown, 80% very soft clay, 20% sand with trace of fine gravel
85–89					**Sandy Silty Clay** Light brown, 80% very soft clay, 19% sand with 1% fine gravel
90–94					**Sandy Silty Clay** Light brown, 70% silty-clay, 30% sand, with trace gravel, very soft, saturated
95–99					**Sandy Silty Clay** Light brown, 70% silty-clay, 30% sand, with trace gravel, very soft, saturated
100					

Drilling Contractor: Yellow Jacket Drilling

Checked By:

Date Checked:

Sheet: 2 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

Site Map	**Project No:** 1303.015.03 **Client:** ADEQ **Site:** 20th and Factor WQARF	**Borehole No:** MW-10A **Start Date/Time:** 1/27/05 **End Date/Time:** 1/28/05 **Logged By:** JLB
	Drilling Method: Hollow Stem Auger **Borehole Diameter:** 0	**Angle from Vertical:** 0
	Surface Material: Asphalt	**Sampling Method:** None

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
101					**Sandy Silty Clay** Light brown, 70% silty-clay, 30% sand, with trace gravel, very soft, saturated
102					
103					
104					
105					
106					
107					
108					
109					
110					
111					
112					
113					
114					
115					
116					
117					
118					
119					
120					
121					
122					
123					
124					
125					
126					
127					
128					
129					
130					
131					
132					
133					
134					
135					
136					
137					
138					
139					
140					
141					
142					
143					
144					
145					
146					
147					
148					
149					
150					

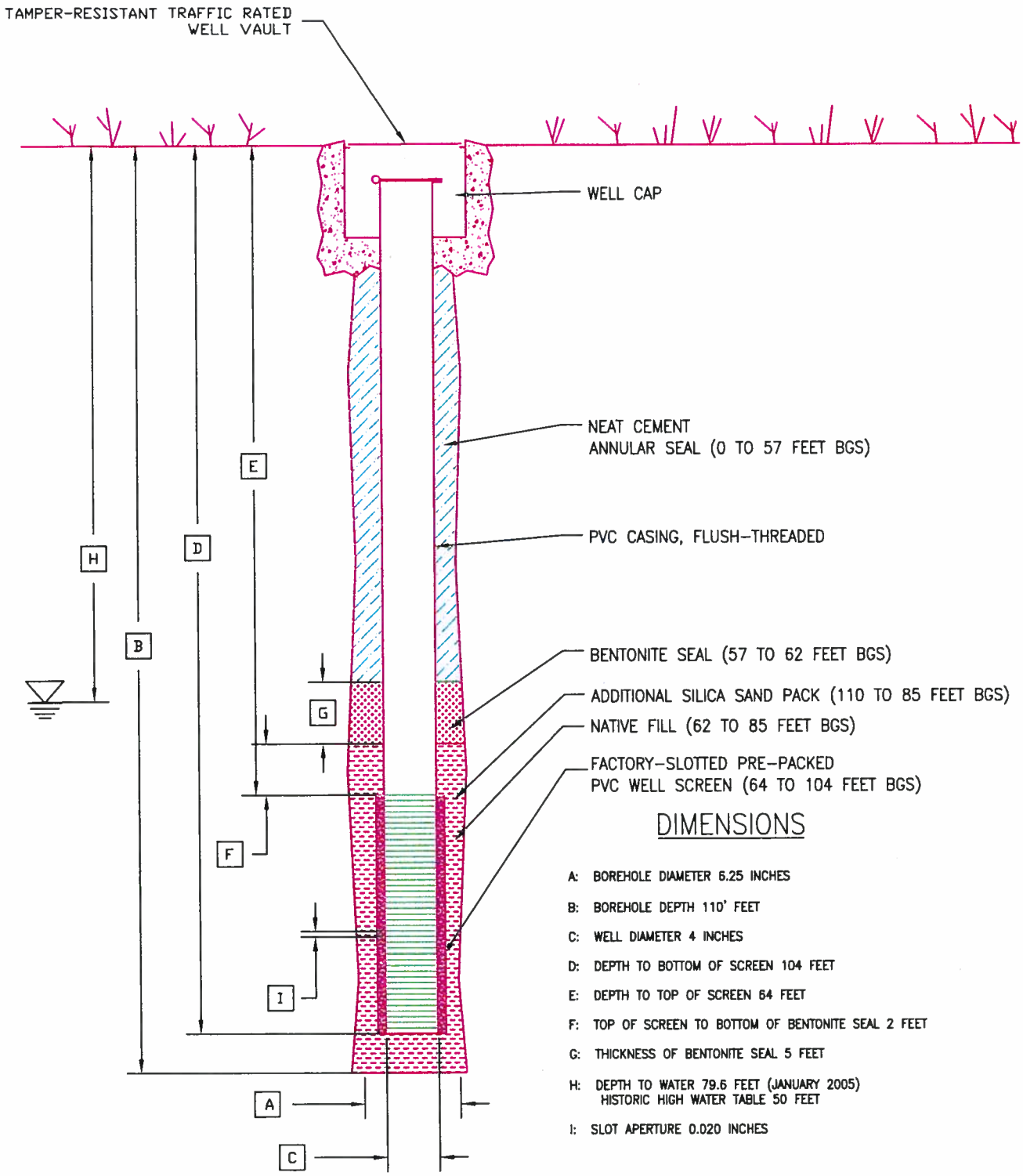
Drilling Contractor: Yellow Jacket Drilling

Checked By:

Date Checked:

Sheet: 3 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318



DIMENSIONS

A: BOREHOLE DIAMETER 6.25 INCHES

B: BOREHOLE DEPTH 110' FEET

C: WELL DIAMETER 4 INCHES

D: DEPTH TO BOTTOM OF SCREEN 104 FEET

E: DEPTH TO TOP OF SCREEN 64 FEET

F: TOP OF SCREEN TO BOTTOM OF BENTONITE SEAL 2 FEET

G: THICKNESS OF BENTONITE SEAL 5 FEET

H: DEPTH TO WATER 79.6 FEET (JANUARY 2005)
HISTORIC HIGH WATER TABLE 50 FEET

I: SLOT APERTURE 0.020 INCHES

TITLE: MONITOR WELL COMPLETION DIAGRAM MW-10			
LOCATION: 20th AND FACTOR, YUMA			
GeoTrans, Inc. A TETRA TECH COMPANY	CHECKED		FIGURE
	DRAFTED	JLB	1
	PROJECT	1303.015.03	
	DATE	2/14/05	

	Project No: 1303.020.03.03	**Borehole No: MW-11A** **ADWR ID:** 55-902168
Site Map	**Client:** ADEQ **Site:** & 20th and Factor WQARF	**Start Date/Time:** 5/25/2005 **End Date/Time:** 5/26/2005 **Logged By:** Jennifer Barr
	Drilling Method: Hollow-stem Auger **Borehole Diameter:** 8"	**Angle from Vertical:** 0
	Surface Material: Asphalt	**Sampling Method:** Drill Cuttings

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lthology	Description and Comments
					Ground Surface
0–40					**SAND (SW)** Light brown, fine- to medium-grained sand, 70-80% sand, 20-30% clay, slightly moist, trace small to large rounded gravels.

Drilling Contractor: Yellow Jacket Drilling

Checked By: Mike Hilstrom

Date Checked: 1/5/2006

Sheet: 1 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

Site Map	**Project No:** 1303.020.03.03 **Client:** ADEQ **Site:** 20th and Factor WQARF	**Borehole No: MW-11A** **Start Date/Time:** 5/25/2005 **End Date/Time:** 5/26/2005 **Logged By:** Jennifer Barr
	Drilling Method: Hollow-stem Auger **Borehole Diameter:** 8"	**Angle from Vertical:** 0
	Surface Material: Asphalt	**Sampling Method:** Drill Cuttings

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
41					**SAND (SW)** Same as above.
42					
43					
44					
45					No gravels in cuttings. Drill bit at 45'.
46					
47					
48					
49					
50					Trace large gravels in cuttings. Drill bit at 50'.
51					
52					
53					
54					
55					
56					
57					
58					
59					
60					
61					
62					
63					
64					
65					Trace clay and no gravels in cuttings. Drill bit at 65'.
66					
67					
68					
69					
70					**CLAYEY SAND (SC) at 70'** Light brown, fine- to medium-grained sand, 70-80% sand, 20-30% clay, moist to very wet.
71					
72					
73					
74					
75					
76					
77					
78					**Groundwater encountered at 78'**
79					
80					

Drilling Contractor: Yellow Jacket Drilling

Checked By: Mike Hilstrom

Date Checked: 1/5/2006

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.020.03.03	Borehole No: MW-11A
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: 5/25/2005 End Date/Time: 5/26/2005 Logged By: Jennifer Barr
	Drilling Method: Hollow-stem Auger Borehole Diameter: 8"	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: Drill Cuttings

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
81					**CLAYEY SAND (SC)** Same as above.
82					
83					
84					
85					
86					
87					
88					
89					
90					
91					Damp, cuttings not saturated. Drill bit at 90'.
92					
93					
94					
95					
96					
97					
98					
99					
100					**SANDY CLAY s(CL) at 100'** Light brown to gray brown, medium- to coarse-grained sand, damp, stiff.
101					
102					
103					
104					
105					**Total Depth 105'**
106					
107					
108					
109					
110					
111					
112					
113					
114					
115					
116					
117					
118					
119					
120					

Drilling Contractor: Yellow Jacket Drilling

Checked By: Mike Hilstrom

Date Checked: 1/5/2006

Sheet: 3 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.020.03	Borehole No: MW-12A ADWR ID: 55-904512
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: 03/28/06 End Date/Time: 03/29/06 Logged By: Mike Hilstrom
	Drilling Method: Hollow-stem Auger Borehole Diameter: 10.25"	Angle from Vertical: 0
	Surface Material: Gravel Landscape	Sampling Method: 18" Split Spoon

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
0					Ground Surface
1–5	5' bgs	0935	0.0		**@ 5' SILTY SAND (SM)** Light brown 7.5 YR 6/4, 60% Sand (90% fine sand, 10% medium sand) 40% -200 fines, non-plastic, dry, no odor,soft, no plasticy, no cementation. No blow count- hand dug to 5' bgs.
6–9	10' bgs	1030	0.0		**@ 10' SILTY SAND (SM)** As above. Collected Soil vapor sample @10'bgs. No blow count, Driller forgot.
10–14	15' bgs	1508	50.2		**@ 15' SILTY SAND (SM)** As above. Still dry, Slight odor, unfamiliar. Blows 10,20,35 Medium Dense.
15–19	20' bgs	1515	20.3		**@ 20' SILTY SAND (SM)** As Above. Slightly Moist. Blows 15,22,32 Medium Dense.
20–24	25' bgs	1520	4.5		**@ 25' SILTY SAND (SM)** As Above. Blows 13,17,31 Medium Dense.
25–29	30' bgs	1526	0.0		**@25.25' LEAN CLAY (CL)** Lean clay in shoe/cup. Brown 7.5 YR 5/4, medium plasticity, slightly moist, soft-slightly firm.
30–34	35' bgs	1532	0.0		**@30.00' SILTY SAND (SM)** As above, similar to 20'-25'. Still slightly moist, estimated ~8-12% moisture. Blows 8,11,15 Loose sand.
35–39	40' bgs	1540	0.0		**@35.00' WELL GRADED SAND WITH SILT (SW-SM)** Reddish yellow 7.5 YR 6/6, 80% Sand (35% fine sand, 35% medium sand, 20%coarse sand) 20% fines, mostly silt. trace of fine gravel sub-round as is coarse sand. Slightly moist but increased moisture ~15%. No odor. Blows 16,23,30 medium density.
40–44	45' bgs	1546	0.0		**@40.00' WELL GRADED SAND WITH SILT (SW-SM)** As Above except now ~ 5%fine gravel and moist. Blows 21, 50/5". Very dense sand. No odor
45–50	50' bgs	1628	0.0		**@45.00' SILTY SAND - SANDY SILT (SM-ML)** Pinkish grey 7.5 YR 6/2, ~ 50% fine sand and 50% fines mostly non-plastic silt. Trace cementation. Moist, no odor, medium-high cementation. Blows 25, 50/6", very dense sand/hard clay.

Drilling Contractor: Yellow Jacket Drilling

Checked By: Chris Gutmann

Date Checked: 6/28/06

Sheet: 1 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.020.03	Borehole No: MW-12A
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: 03/28/06 End Date/Time: 03/29/06 Logged By: Mike Hilstrom
	Drilling Method: Hollow-stem Auger Borehole Diameter: 10.25"	Angle from Vertical: 0
	Surface Material: Gravel Landscape	Sampling Method: 18" Split Spoon

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
51 52 53 54	55' bgs	1636	0.0		**@50.00' SILTY SAND (SM)** ~ 70% Sand and 30% Fines. Moist, no odor. Blows 20, 50/6", Very dense.
55					**@55.00' LEAN CLAY (CL)** ~ 6"-8" layer Lean Clay. Brown 7.5 YR 5/3. Moist, med-high plasticity. No odor. Blows 19, 50/"6, hard, dense.
56 57 58 59 60	60' bgs	1645	0.0		**@60.00' SILTY SAND (SM)** Pale Brown 7.5 YR 6/3, ~75% Sand (fine to medium sand) ~ 25% Fines, mostly non-plastic, trace ~ 5% clay. Moist-very moist, no odor. Blows 50/6" Very Dense.
61 62 63 64	65' bgs	1650	0.0		**@65.00' SILTY SAND (SM)** Two colors: Reddish yellow 7.5 YR 6/6 and Pinkish Grey 7.5 YR 6/2. Very moist, no odor. Blows 50/5", Very dense.
65 66 67 68 69	70' bgs	1700	0.0		**@70.00' SILTY SAND (SM)** As Above. Pinkish Grey 7.5 YR 6/2. Very moist.
70 71 72 73 74	75' bgs	0820	0.0		**@75.00' SILTY SAND (SM)** Light Brown 7.5 YR 6/3, ~ 80% Sand (fine to medium sand) ~ 20% Silt. Very moist, no odor, clast of cemented soil ~ 1/2 ". Blows 22, 50/6" Very dense.
75 76 77 78 79	80' bgs	0855	0.0		**@80.00' SILTY SAND (SM)** As Above. Slightly wet. Blows 32, 50/6". Water table 81'
80 81 82 83 84	85' bgs	0907	0.0		**@85.00' SILTY SAND (SM)** As Above. Wet-saturated. Blows 32, 50/6".
85 86 87 88 89	90' bgs	0917	0.0		**@90.00' SILTY SAND (SM)** As Above. Blows 37, 50/6".
90 91 92 93 94	95' bgs	0935	0.0		**@95.00' SILTY SAND (SM)** As Above. Trace fine gravel, sub round. Trace Clay. Blows 16,17,25.
95 96 97 98 99 100	100' bgs	0935	0.0		**@100.00' WELL GRADED SAND WITH SILT (SW- SM)** As Above. More coarse sand. Blows 5,6,50/6".

Drilling Contractor: Yellow Jacket Drilling
Checked By: Chris Gutmann
Date Checked: 6/28/06

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.

Site Map

Project No: 1303.020.03

Client: ADEQ

Site: 20th and Factor WQARF

Borehole No: MW-12A

Start Date/Time: 03/28/06

End Date/Time: 03/29/06

Logged By: Mike Hilstrom

Drilling Method: Hollow-stem Auger

Angle from Vertical: 0

Borehole Diameter: 10.25"

Surface Material: Gravel Landscape

Sampling Method: 18" Split Spoon

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
101	105' bgs	0945	0.0		**@105.00' WELL GRADED SAND WITH SILT (SW-SM)** As Above. No Gravel. Blows 9,12,32.
106					**@108.00' WELL GRADED SAND WITH SILT (SW-SM)** As Above. Blows 9,11,15. End of Bore Hole.
108					**@108' TOTAL DEPTH OF BOREHOLE**
109					
110					
111					
112					
113					
114					
115					
116					
117					
118					
119					
120					
121					
122					
123					
124					
125					
126					
127					
128					
129					
130					
131					
132					
133					
134					
135					
136					
137					
138					
139					
140					
141					
142					
143					
144					
145					
146					
147					
148					
149					
150					

Drilling Contractor: Yellow Jacket Drilling

Checked By: Chris Gutmann

Date Checked: 6/28/06

Sheet: 3 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

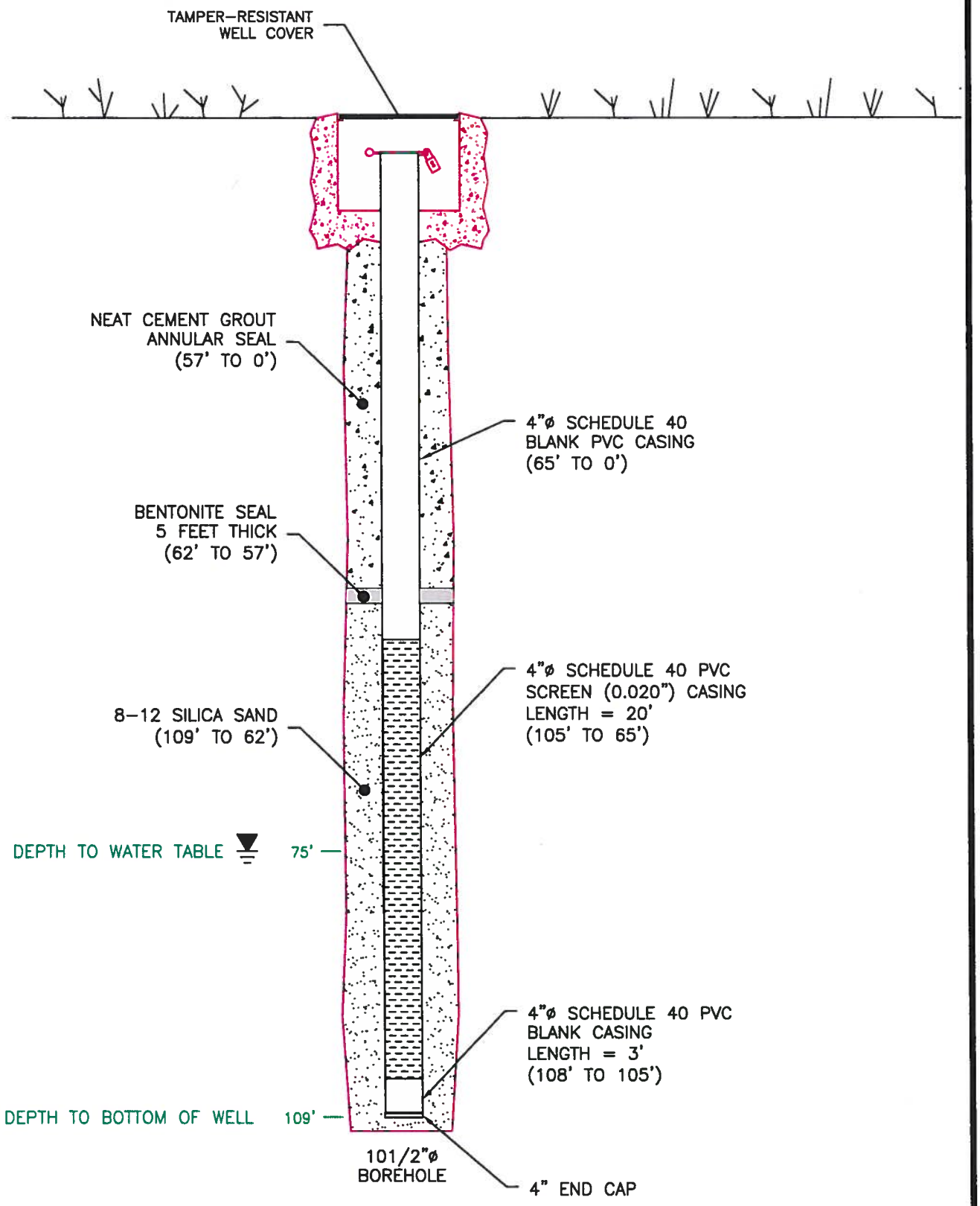


DIAGRAM NOT TO SCALE

TITLE:	WELL CONSTRUCTION DIAGRAM MONITOR WELL MW-12
LOCATION:	YUMA - 20TH & FACTOR

GeoTrans, Inc. A TETRA TECH COMPANY

CHECKED	JZ	FIGURE
DRAFTED	PRP	C1
PROJECT	1303.020.03.02	
DATE	June 28, 2006	

GeoTrans, Inc.

MONITOR WELL CONSTRUCTION SUMMARY

Well No. MW-12

ADWR Well 55# Boring No. X-Ref: 55-904512

Survey Coords:

Elevation Ground Level:

Job Number: 1303.020.03.01

Top of Casing: ~0.5' bgs

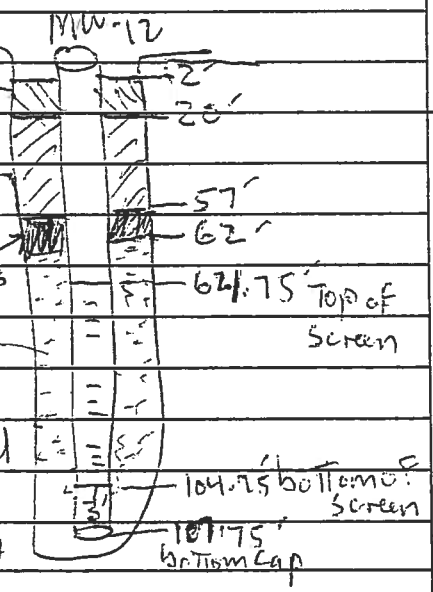
Drilling Summary:		Construction Time Log: Start	Finish			
Total Depth	109'	Task	Date	Time	Date	Time
Borehole Diameter	~10.25"	Drilling 0-70	3-28-6			
Casing Stick-Up	~(-10.5' Neg 0.5'	70-109	3-29-6			
Driller	Yellow Jacket Drilling					
Rig	BK-81HD					
Bit(s)	HSA 6.25" x 10.25"	Geophys. Logging				
Drilling Fluid 250 gals TAP water when below		Casing:				
Protective Casing	N/A	Casing:				
Comments: Used 108' of 4" PVC Total						
cut off 0.75' after install; After		Sand Pack:				
TOC is 0.5' bgs w/T.D. of 107.75' bgs		Filter Placement:				
4" Sch40 PVC 0.5 - 64.75' bgs		Cementing:				
0.020 slot 64.75' - 104.75		Development:				

Well Design & Specifications 3' Sump 104.75 - 107.75

Basis: Geologic Log X Geophysical Log _____

Casing String(s): C = Casing S = Screen

~~Well Development:~~



Depth (ft)	String (C1, S1, etc.)	Elevation (ft)
-0.5 to 64.75	PVC (C1) 4" blank	
64.75 to 104.75	Sch40 (S1) 4" 0.020"	
104.75 - 107.75	Sump C2 4" blank	

Casing: C1	10' each Sch40 PVC 4"
64.75	x 6
	and 1x5' Sch40 4"
Screen: 40' S1	4 x 4" x ~~0.020 mil~~
	x 10' x 0.020" slots
	~~bottom~~ s.
Filter Pack:	
50lbs	8-12 Sand 36 bags
Grout Seal:	
Seal:	

Stabilization Test Data:

Time	pH	Spec. Cond. µs/m	Temp (C)

Site Name: 20th & Factory Yuma AZ

Location: 1921 S. Rail Ave City of Yuma R.O.W.

Supervised By: Mike Hilstrom

Date: 3-28-06 & 3-29-06

GeoTrans, Inc.	Project No: 1303.020.03	Borehole No: MW-13A ADWR ID: 55-904513
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: 03/30/06 End Date/Time: 03/31/06 Logged By: Mike Hilstrom
	Drilling Method: Hollow-stem Auger Borehole Diameter: 10.25"	Angle from Vertical: 0
	Surface Material: Gravel Landscape	Sampling Method: 18" Split Spoon

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
0					Ground Surface
1–5	5' bgs	1310	0.0		**@5' POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM)** Angular gravel. Light brown 10 YR 5/3. No odor, dry, nonplastic, firm.
6–9	10' bgs	1442	0.0		**@10' SILTY SAND (SM)** Light brown 7.5 YR 6/4. Moderate cementation, nonplastic, no odor, very dense. Blows 25,50/6.
10–14	15' bgs	1448	2.1		**@15' SANDY SILT (ML)** Orange yellow, 10 YR 5/6. No odor, no plasticity, no dilatancy, medium density. Blows 10,15,18.
15–20	20' bgs	1454	0.0		**@20' SILTY SAND (SM)** Light brown 10 YR 5/4. No odor, no plasticity, very dense. Blows 14,50/6.
21–24	25' bgs	1459	0.0		**@25' SANDY SILT (ML)** Light brown 10 YR 5/3. No odor, no plasticity. Blows 18,20,29.
25–29	30' bgs	1504	2.7		**@30' SILT (ML)** Light brown 7.5 YR 4/4. No odor, medium plasticity, high dilatancy. Blows 11,19,21.
30–34	35' bgs	1509	0.4		**@35' SILTY SAND (SM)** Trace gravel. Light brown 10 YR 5/3. Low dilatancy, no odor, no plasticity. Blows 19,50/6.
35–39	40' bgs	1515	0.0		**@40' SILTY SAND (SM)** Light brown 10 YR 5/3. Med-high cementation, very stiff, nonplastic, no odor. Blows 21,50/6/
40–44	45' bgs	1600	0.0		**@45' SILTY SAND (SM)** Light grey brown 10 YR 5/3. Slightly moist, no odor, low dilatancy. Blows 50/6.
45–50	50' bgs	1610	0.0		**@50' SILTY SAND (SM)** As above. Blows 50/6.

Drilling Contractor: Yellow Jacket Drilling
Checked By: Chris Gutmann
Date Checked: 6/28/06

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

Site Map	**Project No:** 1303.020.03 **Client:** ADEQ **Site:** 20th and Factor WQARF	**Borehole No:** MW-13A **Start Date/Time:** 03/30/06 **End Date/Time:** 03/31/06 **Logged By:** Mike Hilstrom
	Drilling Method: Hollow-stem Auger **Borehole Diameter:** 10.25"	**Angle from Vertical:** 0
	Surface Material: Gravel Landscape	**Sampling Method:** 18" Split Spoon

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
51-54	55' bgs	1617			**@55' SILTY SAND (SM)** As above. Blows 50/5.
55-59	60' bgs	1624			**@60' SILTY SAND (SM)** As above with trace of gravel. Blows 50/6.
60-64	65' bgs	1630			**@65' SILTY SAND (SM)** As above. Blows 50/6.
65-69	70' bgs	1637			**@70' SILTY SAND (SM)** As above. High cementation. Blows 50/6.
70-74	75' bgs	0823			**@75' WELL GRADED SAND WITH GRAVEL** Very light grey. 75% Sand and 25% Fines. Very high cementation, slightly moist. Blows 11,50/6.
75-79	80' bgs	0925			**@80' SILTY SAND (SM** Light brown/grey. 80% Sand and 20% Fines. Slightly wet, slightly plastic, no odor. Blows 50/6.
80-84	85' bgs	0934	0.0		Water table 82' **@85' SILTY SAND (SM)** As above. No plasticity, no odor. Wet-saturated.
85-89	90' bgs	0942			**@90' SILTY SAND (SM)** As above. 75% Sand and 25% Fines. No odor. Blows 21,50/6.
90-94	95' bgs	0950			**@95' SILTY SAND (SM)** As above. Blows 15,16,25.
95-99	100' bgs	0957			**@100' SILTY SAND (SM)** As above. Blows 14,19,20.
100					

Drilling Contractor: Yellow Jacket Drilling
Checked By: Chris Gutmann
Date Checked: 6/28/06

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.020.03	Borehole No: MW-13A
Site Map	Client: ADEQ Site: 20th and FActor WQARF	Start Date/Time: 03/30/06 End Date/Time: 03/31/06 Logged By: Mike Hilstrom
	Drilling Method: Hollow-stem Auger Borehole Diameter: 10.25"	Angle from Vertical: 0
	Surface Material: Gravel Landscape	Sampling Method: 18" Split Spoon

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
101–104	105' bgs	1008			**@105' SILTY SAND (SM)** As above. Thin clay layer ~102'. Blows 12,12,15.
105					**@105' TOTAL DEPTH OF BOREHOLE**
106–150					

Drilling Contractor: Yellow Jacket Drilling

Checked By: Chris Gutmann

Date Checked: 6/28/06

Sheet: 3 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

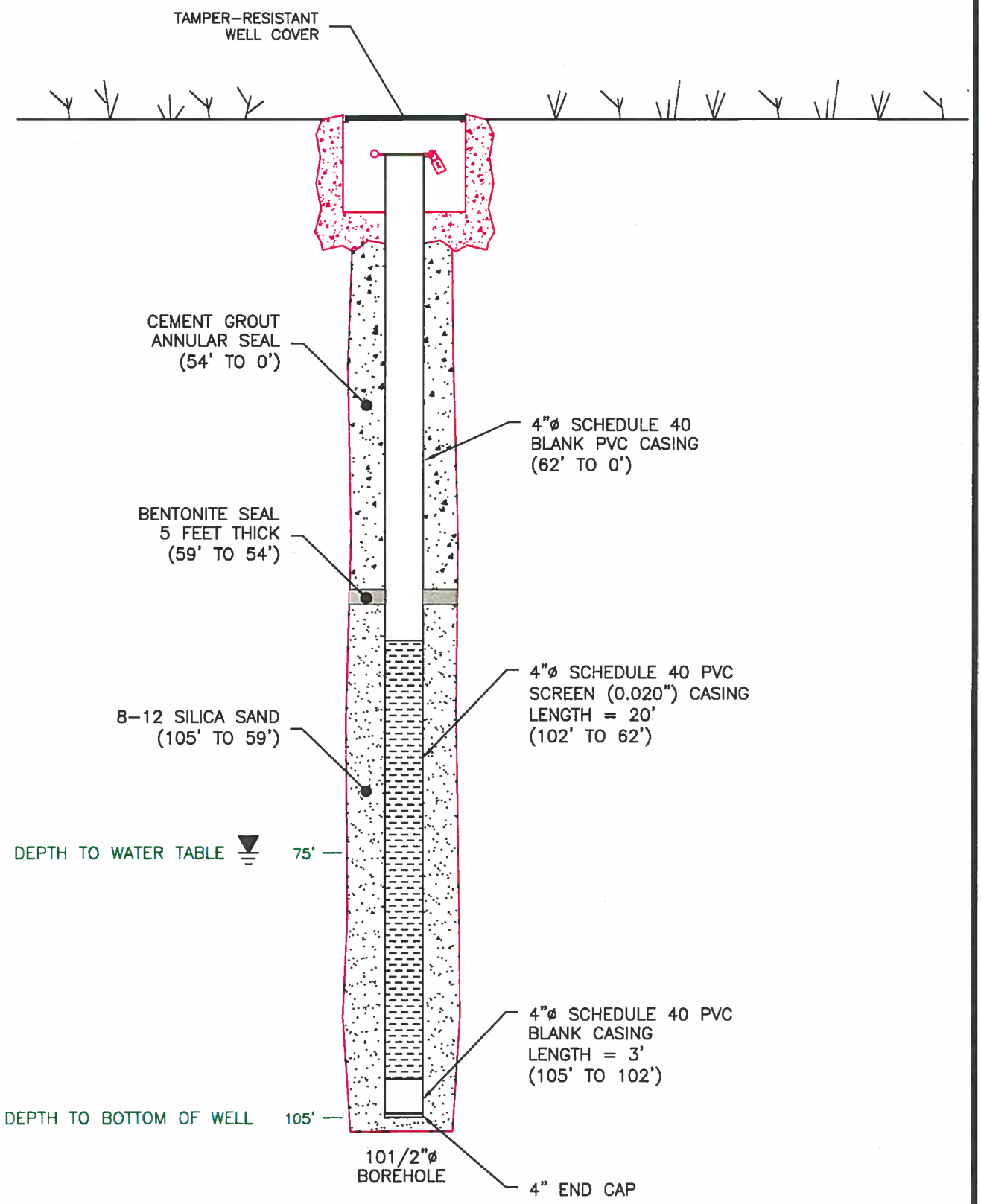


DIAGRAM NOT TO SCALE

TITLE:	WELL CONSTRUCTION DIAGRAM MONITOR WELL MW-13
LOCATION:	YUMA - 20TH & FACTOR

GeoTrans, Inc. A TETRA TECH COMPANY

CHECKED	JZ
DRAFTED	PRP
PROJECT	1303.020.03.02
DATE	June 28, 2006

FIGURE C2

GeoTrans, Inc.

MONITOR WELL CONSTRUCTION SUMMARY

Well No. MW-13

APWF 55 # Boring No. X-Ref: 55-904513

Survey Coords:

Elevation Ground Level:

Job Number: 1303.020.03.01

Top of Casing: 0.5' bgs

Drilling Summary:	
Total Depth	105'
Borehole Diameter	10.25"
Casing Stick-Up	-NEG 0.5'
Driller	Yellow Jacket Drill
Rig	BK 81-HD
Bit(s)	HSA 6.25" X 10.25"
Drilling Fluid	Tap water when below Gw. ~80'
Protective Casing	
Comments:	3' blank Sump below Screen From 102'-105' bgs

Construction Time Log: Start / Finish				
Task	Date	Time	Date	Time
Drilling 0-70	3-30-6			
70-105	3-31-6			
Geophys. Logging				
Casing:				
Casing:				
Sand Pack:				
Filter Placement:				
Cementing:				
Development:				

Well Development: MW-13

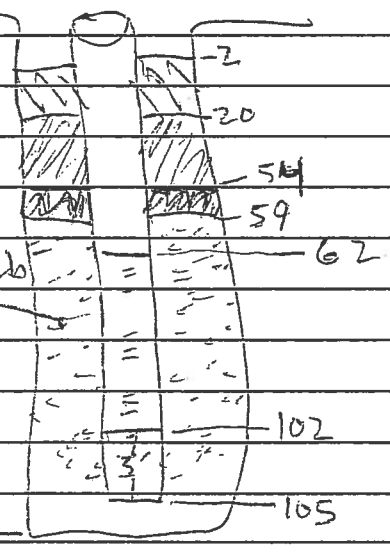
Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____

Casing String(s): C = Casing S = Screen

Depth (ft)	String (C1, S1, etc.)	Elevation (ft)
0.5 to 62	4" PVC C1 Sch40	
62 to 102	0.020" S1 Slot	
102 - 105	4" PVC C2 Sch40	

Casing: 62' C1	0.5' - 62' 4" blank
C2 3'	102' - 105' 4" blank
	Sch 40 PVC
Screen: 40' S1	62' - 102' 0.020"
S2	4" Sch40 PVC SLOTTS
Filter Pack:	59 - 105
	4 1/x 50lb 8-12 Sand.
Grout Seal:	1 x 5gal 1/4" pellets & 2x 50lb med chips bentonite seal 54-59'
Seal:	Bentonite Grout 20'-54'
	Neat Cement 2'-20'



Stabilization Test Data:

Time	pH	Spec. Cond. µs/m	Temp (C)

Site Name: 20th Center

Location: 1830 S. 1st Ave Yuma AZ

Supervised By: Mike Hilstrom

Date: 3-

GeoTrans, Inc.		
Site Map	**Project No:** 1303.020.03 **Client:** ADEQ **Site:** 20th and Factor WQARF	**Borehole No:** MW-14A **ADWR ID:** 55-904514 **Start Date/Time:** 4/5/06 **End Date/Time:** 4/6/06 **Logged By:** Mike Hilstrom
	Drilling Method: Hollow-stem Auger **Borehole Diameter:** 10.25"	**Angle from Vertical:** 0
	Surface Material: Gravel Landscape	**Sampling Method:** 18" Split Spoon

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lthology	Description and Comments
0					Ground Surface
1–5	5' bgs	1520			**@5' WELL GRADED SAND (SW)** Light brown, 10YR 5/4. 100% Sand (90% medium, 5% coarse, 5% fine). Very loose, low plasticity, very soft. No odor.
6–10	10' bgs	1655			**@ 10' WELL GRADED SAND (SW)** Light brown 7.5 YR 6/4. 90% Fine Sand and 10% Non-plastic fines. Dry, no odor. Blows 15,50/6.
11–15	15' bgs	Not sampled			
16–20	20' bgs	1700			**@ 20' LEAN CLAY (CL)** Brown 7.5 YR 4/3. 90% Clay, 10% Non-plastic fines, Trace fine sand. Medium-high plasticity, firm-hard consistency. Blows 15,17,22.
21–25	25' bgs	1705			**@ 25' SILTY SAND- SILT WITH SAND** Light brown 7.5 YR 6/3. 50% Fine sand and 50% Non-plastic fines. Very slightly moist, no odor. Blows 14,19,20.
26–30	30' bgs	1710			**@ 30' SILTY SAND WITH INTERBEDDED CLAY (SM-CL)** Silty sand: Light brown 7.5 YR 6/3. 85% Sand (90% fine sand, 10% medium sand) and 15% Non-plastic fines. 2 thin beds of clay ~1.5" thick. Clay: Brown 7.5 YR 5/3. Blows 22,50/6.
31–35	35' bgs	1714			**@ 35' LEAN CLAY (CL)** Brown 7.5 YR 4/3. 90% Clay and 10% Fine sand. Moist, soft-firm consistency, no odor. Blows 12,18,19.
36–40	40' bgs	1720	0.0		**@ 40' LEAN CLAY WITH SILT (CL)** Light brown 7.5 YR 6/4. 70% clay and 30% silt. Low-medium plasticity, firm consistency, no odor. Blows 13,17,19.
41–45	45' bgs	1740	0.0		**@45' LEAN CLAY (CL)** Brown 7.5 YR 5/4. 100% -Fines. Medium-high plasticity, soft-firm consistency, no odor, moist. Blows 12,20,25.
46–50	50' bgs	0750	0.0		**@ 50' SILT (ML)** Light grey 7.5 YR 7/1. 95% Fines. Very low plasticity, high cementation, hard consistancy. Blows 20,50/6.

Drilling Contractor: Yellow Jacket Drilling
Checked By: Chris Gutmann
Date Checked: 6/28/06

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.020.03	Borehole No: MW-14A
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: 4/5/06 End Date/Time: 4/6/06 Logged By: Mike Hilstrom
	Drilling Method: Hollow-stem Auger Borehole Diameter: 10.25"	Angle from Vertical: 0
	Surface Material: Gravel Landscape	Sampling Method: 18" Split Spoon

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
51-55	55' bgs	0757	0.0		**@55' SILTY SAND (SM)** Light brown 7.5 YR 6/3. 85% Sand (85% fine sand, 15% medium sand), 15% Fines (silt). Moist-very moist, loose, no cementation, no plasticity. Blows 18,17,30.
56-60	60' bgs	0812			**@ 60' WELL GRADED SANDS WITH FINE SUB-ROUNDED GRAVEL (SW)** Grey 7.5 YR 6/1. 80% Sand (40% fine sand, 30% medium sand, 30% coarse sand), 10% Fines (silt), and 10% Gravel (small sub-round 1/4" - 1/2"). Blows 15, 50/6.
61-65	65' bgs	0822	0.0		**@65' SILTY SAND (SM)** Pinkish grey 7.5 YR 6/2. 85% Sand (85% fine sand, 15% medium sand), 15% Fines (silt). Moist-very moist, no plasticity, no cementation. Blows 50/6. 5" of recovery.
66-70	70' bgs	0837			**@70' SANDY SILTS- SILTY SANDS (ML-SM)** Light brown 7.5 YR 6/3. 50% Silt and 50% Very fine sand. Moist-very moit. blows 20, 27, 30.
71-75	75' bgs	0845			**@75' SILTS (ML)** Light brown 7.5 YR 6/3. 75% Fines (silt) and 25% Very fine sand. Very moist. Blows 25,50/6. Recovered ~5". Water table 79'
76-80	80' bgs	0908			**@80' SILTY SAND (SM)** Light brown 7.5 YR 6/3. 80% Sand(mostly fine sand) and 20% Fines (mostly silt with some clay). Very slightly plastic, dense,wet. Blows 12,50/6. Recovered ~14".
81-85	85' bgs	0924			**@85' SILTY SAND (SM)** As above. Thin clay layer between 85' and 90'. Blows 50/5.
86-90	90' bgs	0933			**@90' SILTY SANDS (SM)** As above. Blows 20,50/6.
91-95	95' bgs	0940			**@95" SILTY SAND (SM)** As Above. No plasticity. Blows 50/6.
96-100	100' bgs	0948			**@100' SILTY SAND (SM)** As Above. Blows 10,12,8.

Drilling Contractor: Yellow Jacket Drilling
Checked By: Chris Gutmann
Date Checked: 6/28/06

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.

Site Map

Project No: 1303.020.03

Client: ADEQ

Site: 20th and Factor WQARF

Borehole No: MW-14A

Start Date/Time: 4/5/06

End Date/Time: 4/6/06

Logged By: Mike Hilstrom

Drilling Method: Hollow-stem Auger

Angle from Vertical: 0

Borehole Diameter: 10.25"

Surface Material: Gravel Landscape

Sampling Method: 18" Split Spoon

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
101–105	105' bgs	0958			**@ 105' SILTY SAND (SM)** As Above. Blows 50/6.
106–108	107.5	1004			**@107.5' SILTY SAND (SM)** As Above. Blows 21, 50/6.
109–110					**@108' TOTAL DEPTH OF BOREHOLE**
111–150					

Drilling Contractor: Yellow Jacket Drilling

Checked By: Chris Gutmann

Date Checked: 6/28/06

Sheet: 3 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.

MONITOR WELL CONSTRUCTION SUMMARY

Well No. MW-14

ADWR 55# Boring No. X-Ref: 55-904514

Survey Coords:

Elevation Ground Level:

Job Number: 1303.020.03.01

Top of Casing:

Drilling Summary:		Construction Time Log: Start / Finish				
Total Depth bore hole	108.5' bgs	Task	Date	Time	Date	Time
Borehole Diameter	10.25"	Drilling 0-80	4-6-6			
Casing Stick-Up	-Neg 0.5' bgs	80-108	4-7-6			
Driller	Yellow Jacket Drill	up & 0-108				
Rig	BK-81 HD	w/wood Plug				
Bit(s)	HSA 6.25" x 10.25" x 5'	Geophys. Logging				
Drilling Fluid	TAP water when below ~78'	Casing:				
Protective Casing		Casing:				
Comments: Could not set well 1st Time down sampling 1st Time down - had to pull up & out all Auger & Pipe - Put wood Plug on bottom of Bit, Ream & Set well @ 108'						
		Sand Pack:				
		Filter Placement:				
		Cementing:				
		Development:				

Site Name: 20th & Factor Yuma, AZ

Location: 20th St S. side, W ~170' from Av Ave In Grand Landscape in front of Sun Equip Rentals.

Supervised By: Mike Hilstrom

Date: 4-6-6 & 4-7-06

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____

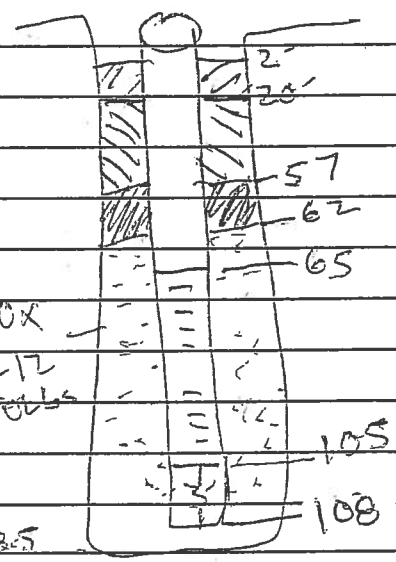
Casing String(s): C = Casing S = Screen

Depth (ft) bgs	String (C1, S1, etc.)	Elevation (ft)
0.5 to 65'	4" PVC C1 Sch40	
65 to 105	4" SLOTS1 0.020"	
105 - 108	4" PVC C2 Sch40	

Casing: C1	6x10' 4" blank &
	1x5' 4" blank
C2	1x3' 4" blank
Screen: S1	4x10' 4" slotted
	0.020"
Filter Pack:	50lbs x 40 sacks of 8-12 Sand
Grout Seal:	1x5gal Pellets & 2x50lb med bentonite chips 57-62'
Seal:	Bentonite Grout well DF 20-57'

Neat cement 2'-20'

Well Development: MW-14



Stabilization Test Data:

Time	pH	Spec. Cond. µs/m	Temp (C)

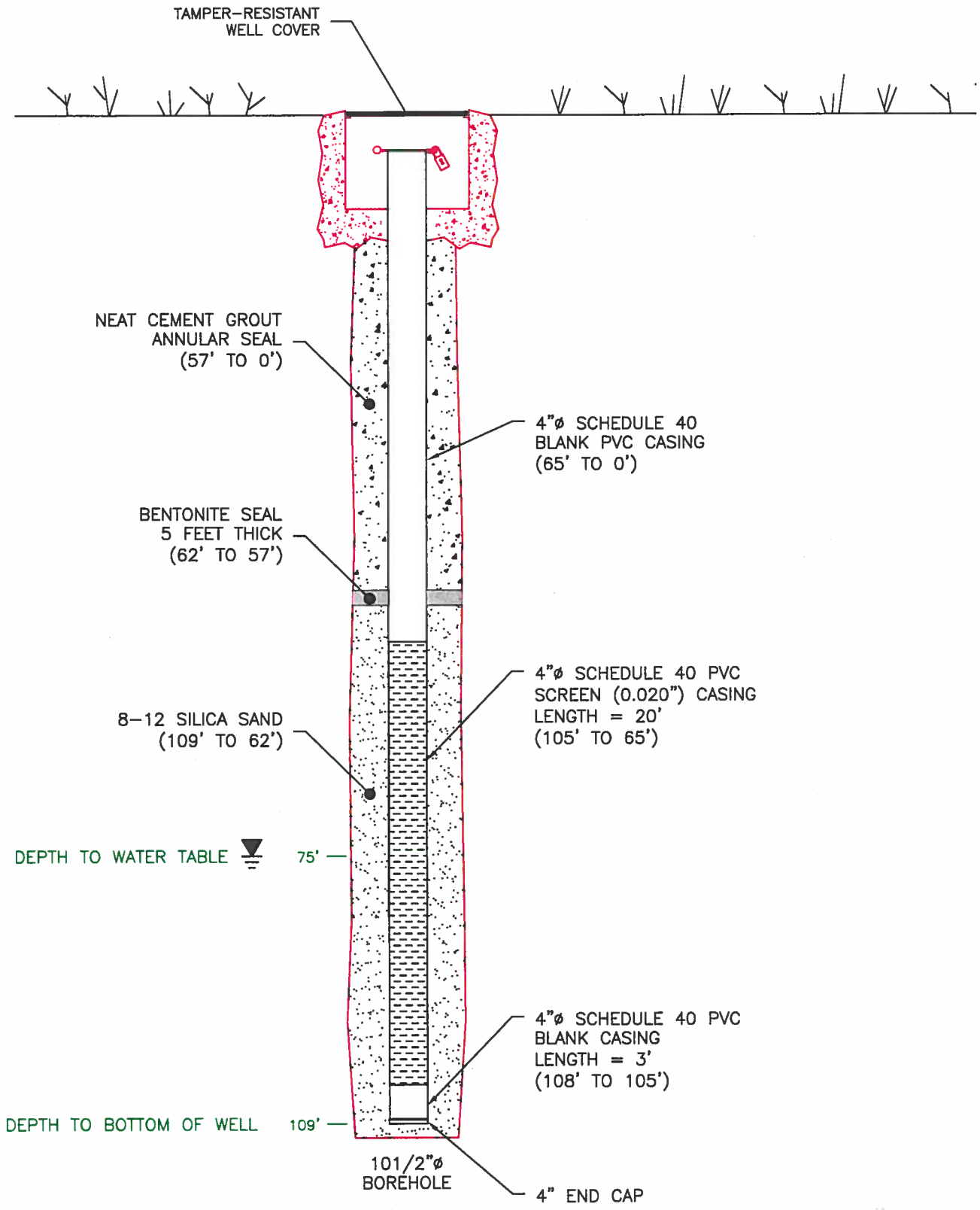


DIAGRAM NOT TO SCALE

TITLE:	WELL CONSTRUCTION DIAGRAM MONITOR WELL MW-14
LOCATION:	YUMA - 20TH & FACTOR

GeoTrans, Inc. A TETRA TECH COMPANY

CHECKED	JZ	FIGURE
DRAFTED	PRP	C3
PROJECT	1303.020.03.02	
DATE	June 28, 2006	

GeoTrans, Inc.	Project No: 1303.020.03	Borehole No: MW-15A ADWR ID: 55-904515
Site Map	Client: ADEQ Site: 120th and Factor WQARF	Start Date/Time: 4/4/06 End Date/Time: 4/5/06 Logged By: Mike Hilstrom
	Drilling Method: Hollow-Stem Auger Borehole Diameter: 10.25"	Angle from Vertical:
	Surface Material: Gravel Landcape	Sampling Method: 18" Split Spoon

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lthology	Description and Comments
0					Ground Surface
1–5	5' bgs	0830	0.0		**@5' SILT WITH SAND (ML)** Reddish Yellow 7.5 YR 6/8. 70% silt and 30% sand (fine). Dry, no odor, firm, no cementation.
6–9	10' bgs	1007	0.0		**@10' SILTY SAND (SM)** Light brown 7.5 YR 6/3. 80% sand and 20% fines. Dry, no odor, loose, no cementation.
10–14	15' bgs	1014	0.0		**@15' SILTY SAND (SM)** As above. Medium density. Blows 15,16,22.
15–20	20' bgs	1021	0.0		**@20' SILTY SAND (SM)** As above. Very dense. Blows 18,50/6.
21–24	25' bgs	1028	0.0		**@25' FAT CLAY (CH)** Brown 7.5 YR 4/4. 100% fine clay dominated. Moist-slightly moist, no odor, hard, very high plasticity, dense. Blows 14,21,25.
25–29	30' bgs	1037	0.0		**@30' CLAYEY SAND (SC)** Strong brown 7.5 YR 5/1. 60% sand and 40% fines. No odor medium plasticity, slightly moist. Blows 2/0,50/6.
30–33	35' bgs	1044	0.0		**@30.5' WELL SORTED SAND (SW)** Grey 7.5 YR 5/1. 90% sand and 10% fines. No odor.
34–35					**@35' LEAN CLAY (CL)** Brown 7.5 YR 5/3. 85% fines and 15% fine sand. Moist, soft, no odor, medium plasticity, stiff to very stiff. Blows 12,12,22.
36–38	40' bgs	1101	0.0		**@40' SILTY SAND (SM)** Trace fine gravels, sub-rounded. 85% sand and 15% fines. Loose, non-plastic, moist, no odor, medium density. Blows 14,20,21.
39–44	45' bgs	1111	0.0		**@45' SILTY SAND (SM)** As above with color bands Yellowish red 5YR 5/8. No odor, very dense. Blows 29,50/6.
45–50	50' bgs	1250			**@50' SILTY SAND (SM)** Very dense. Blows 50/6.

Drilling Contractor: Yellow Jacket Drilling
Checked By: Chris Gutmann
Date Checked: 6/29/06

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.020.03	Borehole No: MW-15A
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: 4/4/06 End Date/Time: 4/5/06 Logged By: Mike Hilstrom
	Drilling Method: Hollow-Stem Auger Borehole Diameter: 10.25"	Angle from Vertical:
	Surface Material: Gravel Landcape	Sampling Method: 18" Split Spoon

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
51 52 53 54	55' bgs	1258	0.0		**@55' SILTY SAND TO SANDY SILT (SM-ML)** 50% fine sand and 50% non-plastic fines. Very dense. Blows 50/5.
55 56 57 58 59	60' bgs	1310	0.0		**@60' SILTY SAND TO SANDY SILT (SM-ML)** As above. Very high cementation, very dense, dry to slightly moist, no odor. Blows 75/3.
60 61 62 63 64	65' bgs	1402			**@65' SILTY SAND TO SANDY SILT (SM-ML)** As above. No odor. Blows 50/6.
65 66 67 68 69	70' bgs	1413			**@70' SILTY SAND TO SANDY SILT (SM-ML)** As above. Moist to very moist, no odor, very high cementation, no plasticity. Blows 50/6.
70 71 72 73 74	75' bgs	1432			**@75' SILTY SAND (SM)** Trace of fine sub-angular to sub-round gravels. Very moist, very high cementation, no odor. Blows 50/6.
75 76 77 78 79	80' bgs	1441			**@80' SILTY SAND (SM)** As above. Very moist. Blows 50/6.
80 81 82 83 84	85' bgs	0816			**@85' SILTY SAND (SM)** Water table 82'. 80% sand and 20% fines. No plasticity, no odor, loose. Wet. Blows 50/6.
85 86 87 88 89	90' bgs	0821			**@90' SILTY SAND (SM)** As above. Blows 60/6.
90 91 92 93 94	95'bgs	0828			**@95' SILTY SAND (SM)** As above. Blows 50/6.
95 96 97 98					**@96' CLAY**
99 100					**@98' TOTAL DEPTH OF BOREHOLE**

Drilling Contractor: Yellow Jacket Drilling
Checked By: Chris Gutmann
Date Checked: 6/29/06

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.

MONITOR WELL CONSTRUCTION SUMMARY

Well No. MW-15

ADWR 55# Boring No. X-Ref: 55-904515

Survey Coords:

Elevation Ground Level:

Job Number: 1303.020.03.01

Top of Casing:

Drilling Summary:		Construction Time Log: Start		Finish		
Total Depth		Task	Date	Time	Date	Time
Borehole Diameter	10.25"	Drilling 0-80'	4-4-6			
Casing Stick-Up	0.5 bgs	80-98	4-5-6			
Driller	Yellow Jacket Drilling					
Rig	BK-81 HD					
Bit(s)	HSA 6.25" x 10.25" x 5" each	Geophys. Logging				
Drilling Fluid	TAP water when below GW ~80 bgs	Casing:				
Protective Casing		Casing:				
Comments: Sch 40 4" PVC						
		Sand Pack:				
		Filter Placement:				
		Cementing:				
		Development:				

Site Name: 20th & Factor

Location: 1965 S. 1st Ave Yuma AZ

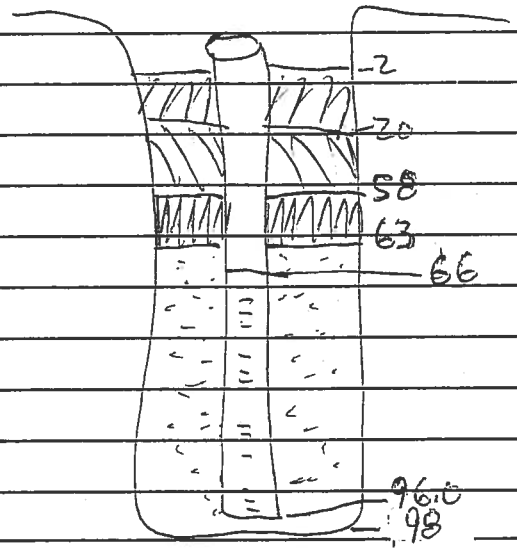
Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____

Casing String(s): C = Casing S = Screen

Depth (ft)	String (C1, S1, etc.)	Elevation (ft)
0.5 to 66	Sch 40 C1 4" PVC	
66 to 96	0.020" S1 Slots	

Well Development:



Casing:	C1	0.5' - 66'
		Sch 40 PVC 4" Ø
Screen:	S1	0.020" Slotted PVC
30'		Sch 40 PVC 4" Ø
Filter Pack:		
50Lb		8-12 Sand 20 bags
Grout Seal:		Grout well DF
Seal:		Neat Cement

Stabilization Test Data:

Time	pH	Spec. Cond. µs/m	Temp (C)

Supervised By: Mike Hilstrom

Date:

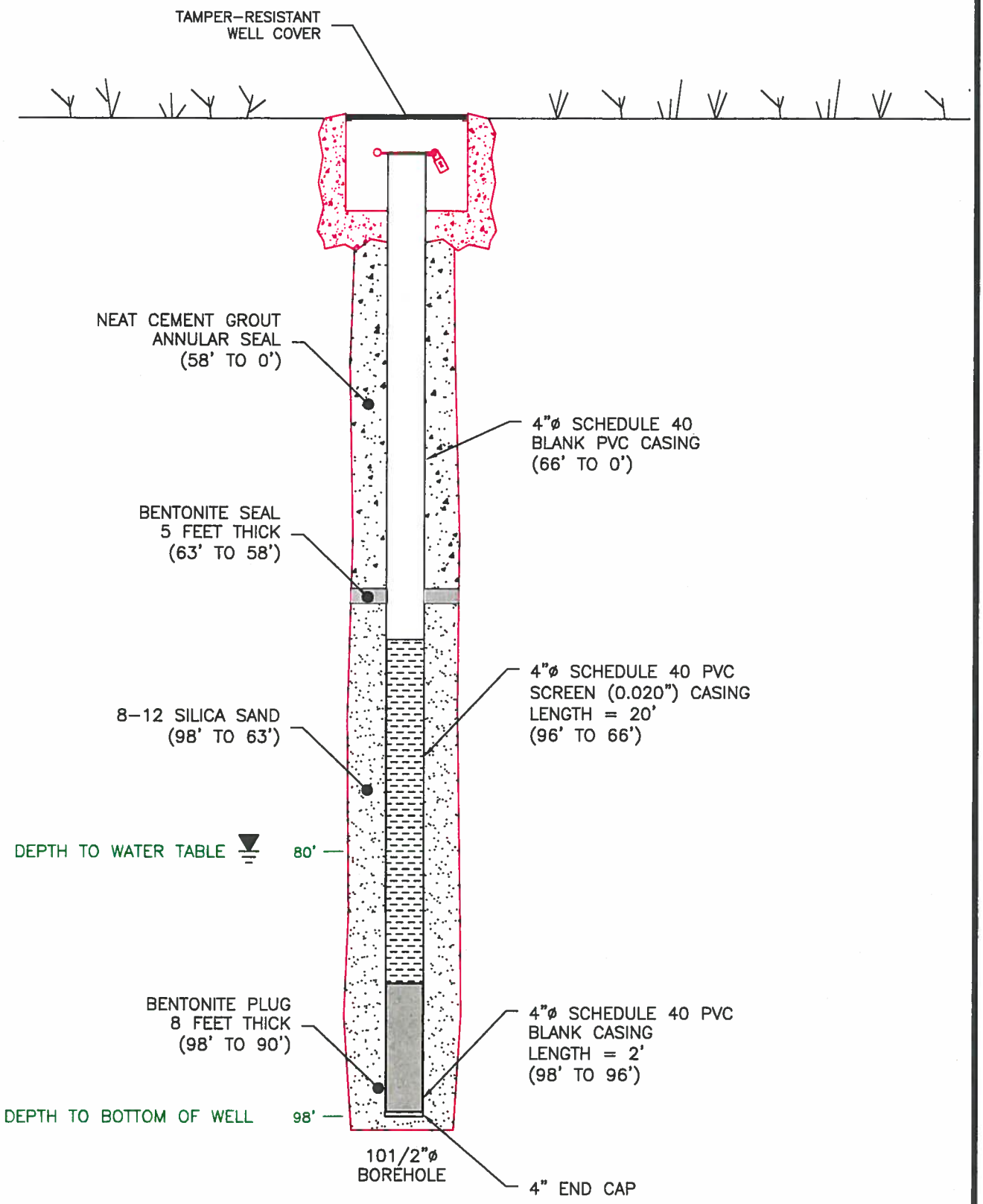


DIAGRAM NOT TO SCALE

TITLE: **WELL CONSTRUCTION DIAGRAM MONITOR WELL MW-15**

LOCATION: **YUMA - 20TH & FACTOR**

GeoTrans, Inc. A TETRA TECH COMPANY

CHECKED	JZ
DRAFTED	PRP
PROJECT	1303.020.03.02
DATE	June 28, 2006

FIGURE **C4**

MW-15

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD PARAMETER DATA SHEET

Project Name: YUMA WQARF SITE Recorded By: N. SEAVER

Project No.: 1303.020 Sampled By: N. SEAVER

Measuring Point Description: FROM TOP OF WELL CASING, NORTH SIDE

Measuring Point Elevation:

Purge Rate:

Date: 4/6/06 Instrument: QUANTA-G ; LEMOTTE 2020e

Time	pH	Conductivity (~~µS~~) mS	Temperature (° C)	DO (mg/l)	ORP (mv)	Turbidity (NTU)
0810	10.30	3.59	24.03	5.35	324	MUDDY BROWN
0920	10.45	3.70	25.71	9.83	321	LIGHT BROWN
0955	(8.48)	3.97	26.75	6.72	229	82.3
1000	(8.23)	3.92	28.40	6.85	213	71.5
1009	(7.61)	4.11	27.22	7.51	197	50.2
1021	(7.53)	4.06	28.53	6.93	215	31.5
1026	(7.75)	4.04	28.68	6.55	211	21.7
1033	(7.68)	4.03	28.72	6.56	231	20.4

Site Map	**Project No:** 1303.026.09.01 **Client:** ADEQ **Site:** 20th and Factor WQARF	**Borehole No: MW-16A** **ADWR ID:** 55-908808 **Start Date/Time:** 4/15/08 **End Date/Time:** 4/18/08 **Logged By:** LG/BB
	Drilling Method: Sonic **Borehole Diameter:** 10"	**Angle from Vertical:** NA
	Surface Material: Asphalt	**Sampling Method:** NA

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lthology	Description and Comments
0					Ground Surface
1–20					**Sand (SW)** Very pale brown, 10YR 7/4, dry, fine to medium grained
21–25					**Sand (SW)** Light yellowish brown, 10YR 6/4, dry, fine to medium grained, w/ clay nodules
26–35					**Sand (SW)** Very pale brown, 10YR 7/4, dry, fine to medium grained
36–40					**Sand (SP)** Very pale brown, 10YR 7/4, dry, very fine grained
41–45					**Sand (SP)** Very pale brown, 10YR 7/4, dry, very fine grained
46–50					**Sand (SW)** Light yellowish brown, 10YR 6/4, dry, fine to medium grained, w/ clay nodules

Drilling Contractor: Boart Longyear
Checked By: M. Oakley
Date Checked: 6/10/08

Sheet: 1 of 4

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

Site Map	**Project No:** 1303.026.09.01 **Client:** ADEQ **Site:** 20th and Factor WQARF	**Borehole No: MW-16A** **Start Date/Time:** 4/15/08 **End Date/Time:** 4/18/08 **Logged By:** LG/BB
	Drilling Method: Sonic **Borehole Diameter:** 10"	**Angle from Vertical:** NA
	Surface Material: Asphalt	**Sampling Method:** NA

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
51 52 53 54					**Silty Sand w/ Gravel (SM)** Reddish yellow 7.5YR 6/6 to pinkish gray 7.5YR 6/2, moist, 50% fine grained sand, 30% silt, 20% gravel, lightly cemented, dry
55 56 57 58 59					**Silty Sand (SM)** Dark yellowish brown, 10YR 4/4, very moist, 80% very fine grained sand, 25% silt
60 61 62 63 64					**Silt (ML)** Brown, 7.5 YR 4/4, moist, stiff, some cementation
65 66 67 68 69					**Silty Clay (CL)** Brown, 7.5 YR 5/4, moist, 60% clay, 40% silt, medium plasticity
70 71 72 73 74					**Clay (CL)** Reddish brown, 5YR 4/4, moist, hard, low plasticity
75 76 77 78 79					**Clayey Sand (SC)** Yellowish brown, 10YR 5/4, moist, 75% fine grained sand, 25% clay
80 81 82 83 84					**Silty Sand (SM)** Light yellowish brown, 10YR 6/4, moist, 60% fine to medium grained sand, 40% silt
85 86 87 88 89					**Gravelly Sand (SW)** Light yellowish brown, 10YR 6/4, saturated, 75% fine to coarse grained sand, 25% fine, subrounded gravel
90 91 92 93 94					**Gravelly Sand (SW)** Dark yellowish brown, 10YR 4/4, saturated, 75% fine to coarse grained sand, 25% fine, subrounded gravel
95 96 97 98 99 100					**Gravelly Sand (SW)** Dark yellowish brown, 10YR 4/4, saturated, 75% fine to coarse grained sand, 25% fine to coarse, subrounded gravel, w/ trace silt

Drilling Contractor: Boart Longyear
Checked By: M. Oakley
Date Checked: 6/10/08

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

Site Map	**Project No:** 1303.026.09.01 **Client:** ADEQ **Site:** 20th and Factor WQARF	**Borehole No: MW-16A** **Start Date/Time:** 4/15/08 **End Date/Time:** 4/18/08 **Logged By:** LG/BB
	Drilling Method: Sonic **Borehole Diameter:** 10"	**Angle from Vertical:** NA
	Surface Material: Asphalt	**Sampling Method:** NA

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
101-104					**Sandy Gravel (GW)** Dark yellowish brown, 10YR 5/4, moist, 75% fine to coarse, subrounded gravel, 25% fine to medium grained sand
105-125					**Sand (SW)** Dark yellowish brown, 10YR 5/4, saturated, fine to medium grained
126-129					**Sand (SW)** Dark yellowish brown, 10YR 5/4, saturated, fine to coarse grained sand, w/ some subangular gravel
130-134					**Sand (SW)** Dark yellowish brown, 10YR 5/4, saturated, fine to medium grained sand, w/ trace subangular gravel
135-139					**Clayey Sand (SC)** Yellowish brown, 10YR 6/6, moist, 60% fine to medium grained sand, 40% clay, moderate plasticity
140-144					**Sand (SW)** Dark yellowish brown, 10YR 5/4, saturated, fine to coarse grained
145-150					**Silty Sand (SM)** Dark yellowish brown, 10YR 5/4, saturated, 80% fine grained sand, 20% silt

Drilling Contractor: Boart Longyear
Checked By: M. Oakley
Date Checked: 6/10/08

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

Site Map	**Project No:** 1303.026.09.01 **Client:** ADEQ **Site:** 20th and Factor WQARF	**Borehole No: MW-16A** **Start Date/Time:** 4/15/08 **End Date/Time:** 4/18/08 **Logged By:** LG/BB
	Drilling Method: Sonic **Borehole Diameter:** 10"	**Angle from Vertical:** NA
	Surface Material: Asphalt	**Sampling Method:** NA

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
151–155					**Sand (SW)** Dark yellowish brown, 10YR 5/4, moist, fine to coarse grained, w/ clay nodules
156–160					**Sand (SW)** Dark yellowish brown, 10YR 5/4, moist, fine to coarse grained
161–162					**Clayey Sand (SC)** Dark yellowish brown, 10YR 5/4, moist, 80% fine to medium grained sand, 20% clay
163–200					**End drilling at 162' bgs**

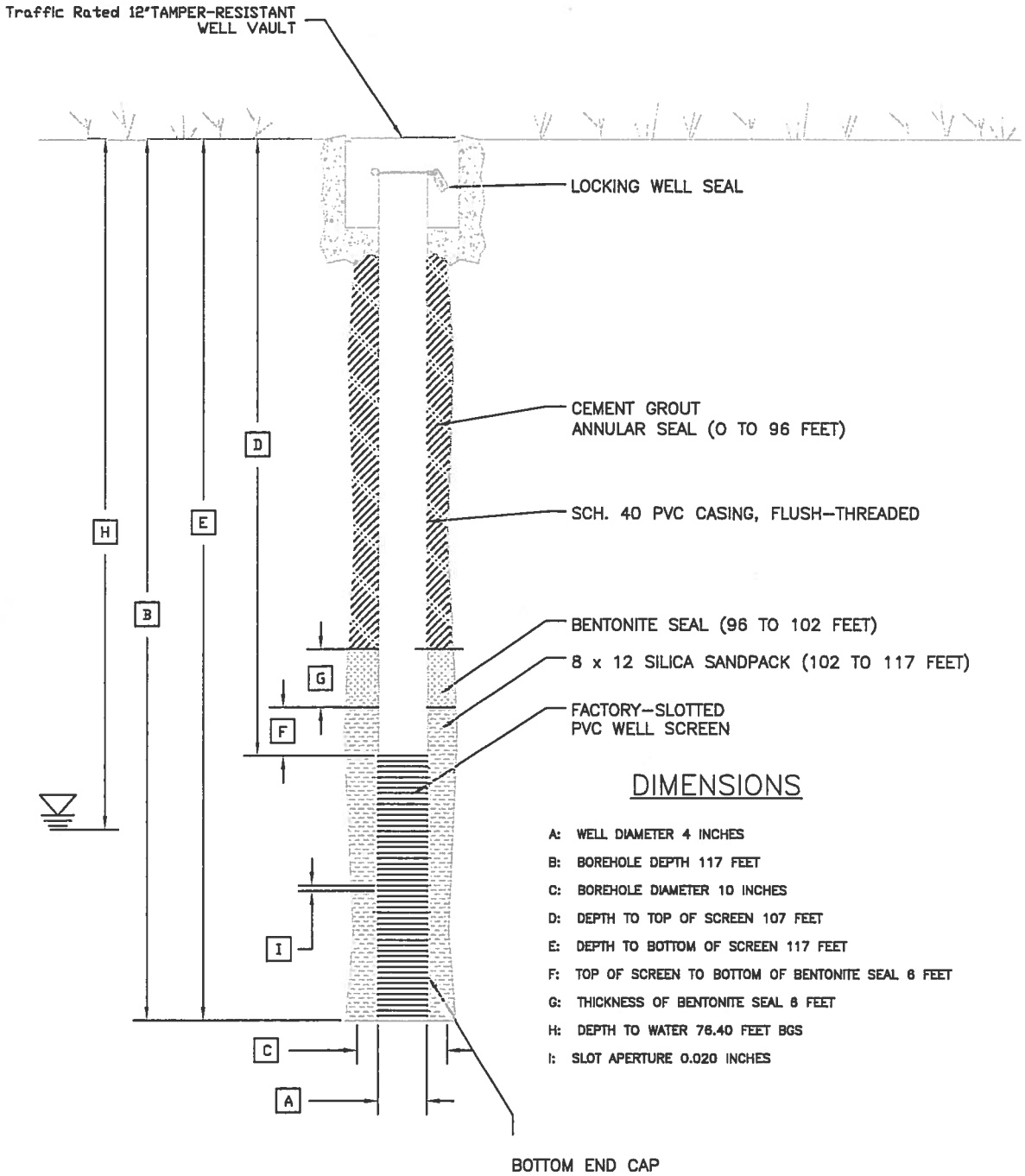
Drilling Contractor: Boart Longyear

Checked By: M. Oakley

Date Checked: 6/10/08

Sheet: 4 of 4

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318



DIMENSIONS

A: WELL DIAMETER 4 INCHES
B: BOREHOLE DEPTH 117 FEET
C: BOREHOLE DIAMETER 10 INCHES
D: DEPTH TO TOP OF SCREEN 107 FEET
E: DEPTH TO BOTTOM OF SCREEN 117 FEET
F: TOP OF SCREEN TO BOTTOM OF BENTONITE SEAL 6 FEET
G: THICKNESS OF BENTONITE SEAL 6 FEET
H: DEPTH TO WATER 76.40 FEET BGS
I: SLOT APERTURE 0.020 INCHES

* NOT TO SCALE

TITLE: MW-16 WELL DIAGRAM 20TH AND FACTOR WQARF SITE			
LOCATION: YUMA, ARIZONA			
GeoTrans, Inc. A TETRA TECH COMPANY	CHECKED	LG	FIGURE
	DRAFTED	MB	B1
	PROJECT	1303.020	
	DATE	12/19/06	

Site Map	**Project No:** 1303.020 **Client:** ADEQ **Site:** 20th & Factor WQARF	**Borehole No:** MW-17A **ADWR ID:** 55-905870 **Start Date/Time:** 11/13/06 **End Date/Time:** 11/15/06 **Logged By:** A. Gray
	Drilling Method: Sonic **Borehole Diameter:** 10	**Angle from Vertical:** 0
	Surface Material: Asphalt	**Sampling Method:** N/A

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lthology	Description and Comments
0					Ground Surface
1–5	5				**Well-graded Sand (SW)** Very pale brown, dry, fine grained sand, trace fines
6–10	10				**Well-graded Sand (SW)** As above
11–15	15				**Well-graded Sand (SW)** As above
16–20	20				**Silty Sand - Sandy Silt (SM-ML)** Light yellow brown, fine grained sand with silt
21–25	25				**Poorly-graded Sand (SP)** Very pale brown, fine grained sand, some fines
26–30	30				**Poorly-graded Sand (SP)** As above
31–35	35				**Well-graded Sand (SW)** Light gray, dry, fine grained sand with weakly cemented sand nodules
36–40	40				**Poorly-graded Sand (SP)** Light gray, dry, fine to medium grained
41–45	45				**Poorly-graded Sand (SP)** As above
46–50	50				**Poorly-graded Sand (SP)** As above

Drilling Contractor: PROSONIC Corporation
Checked By: M. Oakley
Date Checked: 12/18/06

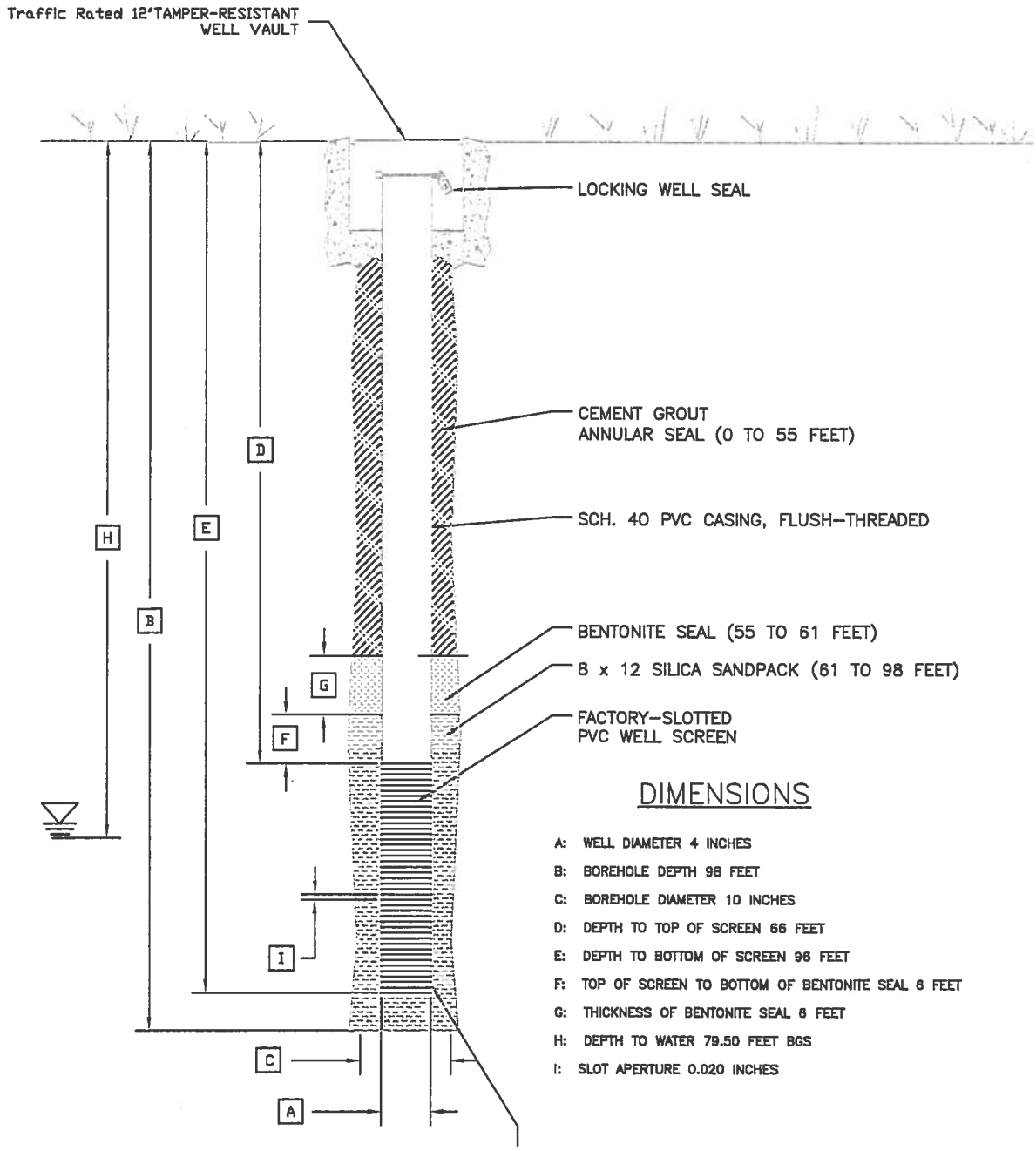
GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.020	Borehole No: MW-17A
Site Map	Client: ADEQ Site: 20th & Factor WQARF	Start Date/Time: 11/13/06 End Date/Time: 11/15/06 Logged By: A. Gray
	Drilling Method: Sonic Borehole Diameter: 10	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: N/A

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
51-54	55				**Well-graded sand (SW)** Very pale brown, dry, fine grained
55-59	60				**Clayey Sand - Sandy Clay (SC-CL)** Pale brown, slightly moist
60-64	65				**Fat Clay (CH)** Pale brown, moist, sandy clay
65-69	70				**Poorly-graded Sand (SP)** Light gray, fine grained sand with silt
70-74	75				**Well-graded Sand (SW)** Pale brown, damp, fine grained
75-79	80				**Silty Sand - Sandy Silt (SM-ML)** Light gray, saturated
80-84	85				**Poorly-graded Sand (SP)** Very pale brown, saturated fine to medium grained
85-89	90				**Poorly-graded Sand (SP)** As above
90-94	95				**Clay (CL)** Brown, saturated, clay
95-98					
99-100					**Bottom of boring at 98 feet bgs**

Drilling Contractor: PROSONIC Corporation
Checked By: M. Oakley
Date Checked: 12/18/06

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318



DIMENSIONS

A: WELL DIAMETER 4 INCHES
B: BOREHOLE DEPTH 98 FEET
C: BOREHOLE DIAMETER 10 INCHES
D: DEPTH TO TOP OF SCREEN 66 FEET
E: DEPTH TO BOTTOM OF SCREEN 96 FEET
F: TOP OF SCREEN TO BOTTOM OF BENTONITE SEAL 6 FEET
G: THICKNESS OF BENTONITE SEAL 6 FEET
H: DEPTH TO WATER 79.50 FEET BGS
I: SLOT APERTURE 0.020 INCHES

* NOT TO SCALE

TITLE: MW-17 WELL DIAGRAM 20TH AND FACTOR WQARF SITE			
LOCATION: YUMA, ARIZONA			
GeoTrans, Inc. A TETRA TECH COMPANY	CHECKED	LG	FIGURE
	DRAFTED	MB	B2
	PROJECT	1303.020	
	DATE	12/19/06	

GeoTrans, Inc.	Project No: 1303.020	Borehole No: MW-18A ADWR ID: 55-905871
Site Map	Client: ADEQ Site: 20th & Factor WQARF	Start Date/Time: 11/10/06 End Date/Time: 11/13/06 Logged By: A. Gray
	Drilling Method: Sonic Borehole Diameter: 10	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: N/A

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lthology	Description and Comments
0					Ground Surface
1–5	5				**Poorly-graded Sand (SP)** Pale brown, dry, fine to medium grained
6–9	10				**Poorly-graded Sand (SP)** Becomes coarse grained with some gravel
10–14	15				**Poorly-graded Sand (SP)** Pale brown, dry, fine to medium grained
15–19	20				**Sandy Clay - Clayey Sand (CL-SC)** Light brown, dry, sandy clay
20–24	25				**Sandy Clay - Clayey Sand (CL-SC)** As above
25–29	30				**Poorly-graded Sand (SP)** Pale brown, dry, fine to medium grained
30–34	35				**Well-graded Sand (SW)** Light gray, dry, fine grained
35–39	40				**Poorly-graded Sand (SP)** Light gray, dry, fine to medium grained
40–44	45				**Poorly-graded Sand (SP)** As above
45–49	50				**Poorly-graded Sand (SP)** As above
50					

Drilling Contractor: PROSONIC Corporation

Checked By: L. Gardiner

Date Checked: 12/15/06

Sheet: 1 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

Site Map	**Project No:** 1303.020 **Client:** ADEQ **Site:** 20th & Factor WQARF	**Borehole No:** MW-18A **Start Date/Time:** 11/10/06 **End Date/Time:** 11/13/06 **Logged By:** A. Gray
	Drilling Method: Sonic **Borehole Diameter:** 10	**Angle from Vertical:** 0
	Surface Material: Asphalt	**Sampling Method:** N/A

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
51-54	55				**Poorly-graded Sand (SP)** As above
55-60	60				**Poorly-graded Sand (SP)** Light brown, slightly moist, fine grained sand with
61-64	65				**Poorly-graded Sand (SP)** Light gray, slightly moist, fine to medium grained
65-69	70				**Poorly-graded Sand (SP)** As above
70-74	75				**Poorly-graded Sand (SP)** Light gray, slightly moist, fine to medium grained
75-79	80				**Sandy Clay - Clayey Sand (CL-SC)** Light gray, damp, sandy clay
80-84	85				**Silty Sand - Sandy Silt (SM-ML)** Light gray, saturated, sandy silt
85-89	90				**Silty Sand - Sandy Silt (SM-ML)** As above
90-94	95				**Silty Sand - Sandy Silt (SM-ML)** As above
95-99	100				**Silty Sand - Sandy Silt (SM-ML)** Pale brown, saturated
100					

Drilling Contractor: PROSONIC Corporation
Checked By: L. Gardiner
Date Checked: 12/15/06

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.

Site Map

Project No: 1303.020

Client: ADEQ

Site: 20th & Factor WQARF

Borehole No: MW-18A

Start Date/Time: 11/10/06

End Date/Time: 11/13/06

Logged By: A. Gray

Drilling Method: Sonic

Angle from Vertical: 0

Borehole Diameter: 10

Surface Material: Asphalt

Sampling Method: N/A

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
101–104	105				**Silty Sand - Sandy Silt (SM-ML)** As above
105–106					
107					**Bottom of boring at 107 feet bgs**
108–110					
111–114					
115–119					
120–124					
125–129					
130–134					
135–139					
140–144					
145–149					
150					

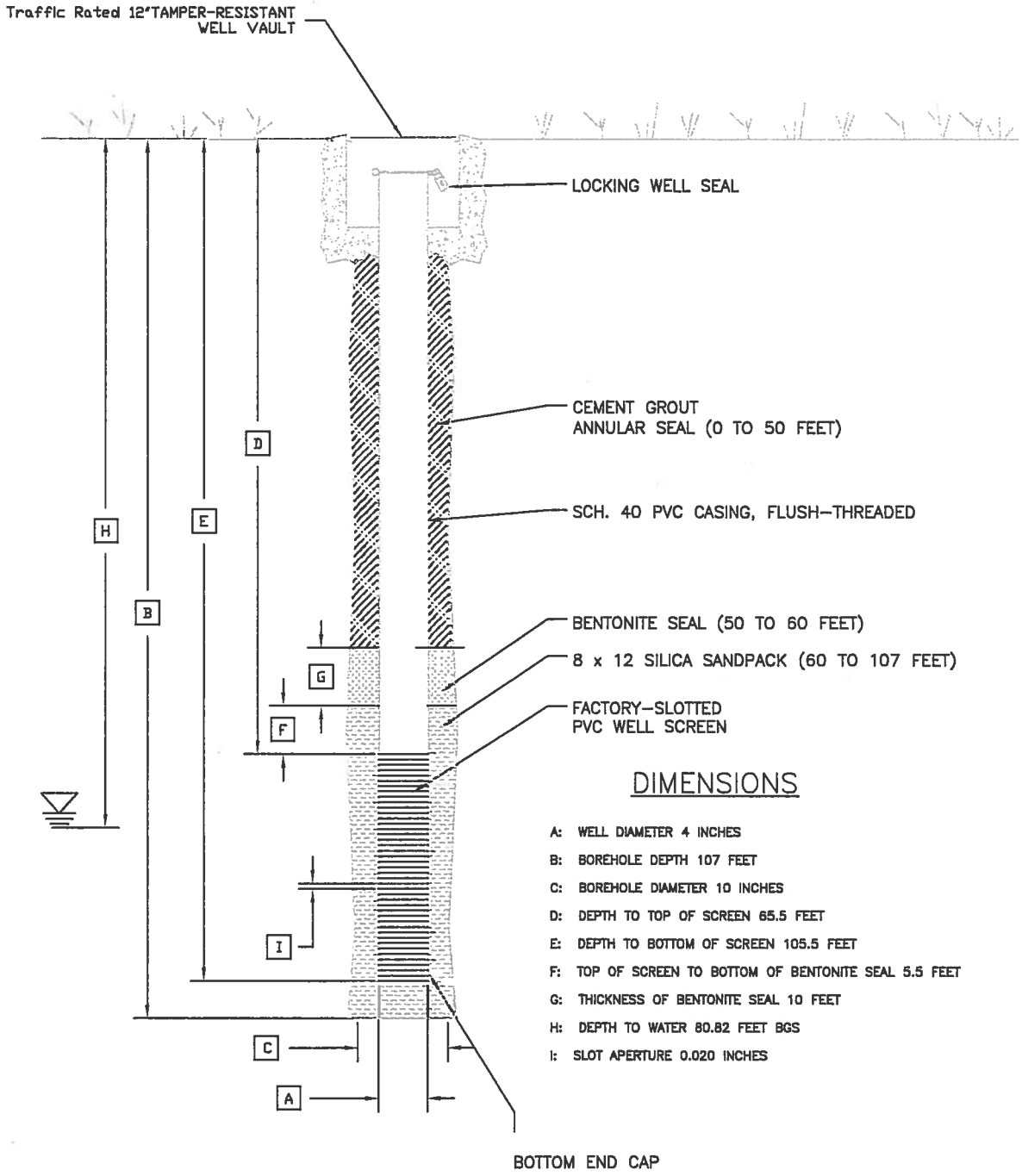
Drilling Contractor: PROSONIC Corporation

Checked By: L. Gardiner

Date Checked: 12/15/06

Sheet: 3 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318



DIMENSIONS

A: WELL DIAMETER 4 INCHES
B: BOREHOLE DEPTH 107 FEET
C: BOREHOLE DIAMETER 10 INCHES
D: DEPTH TO TOP OF SCREEN 65.5 FEET
E: DEPTH TO BOTTOM OF SCREEN 105.5 FEET
F: TOP OF SCREEN TO BOTTOM OF BENTONITE SEAL 5.5 FEET
G: THICKNESS OF BENTONITE SEAL 10 FEET
H: DEPTH TO WATER 80.82 FEET BGS
I: SLOT APERTURE 0.020 INCHES

* NOT TO SCALE

TITLE:	MW-18A WELL DIAGRAM 20TH AND FACTOR WQARF SITE		
LOCATION:	YUMA, ARIZONA		
GeoTrans, Inc. A TETRA TECH COMPANY	CHECKED	LG	FIGURE
	DRAFTED	MB	B3
	PROJECT	1303.020	
	DATE	12/19/06	

GeoTrans, Inc.	Project No: 1303.020	Borehole No: MW-19A ADWR ID: 55-905873
Site Map	Client: ADEQ Site: 20th & Factor WQARF	Start Date/Time: 11/19/06 End Date/Time: 11/21/06 Logged By: M. Brennen
	Drilling Method: Sonic Borehole Diameter: 10	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: N/A

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lthology	Description and Comments
0					Ground Surface
1 2 3 4 5	5				**Poorly-graded Sand (SP)** Very pale brown, dry, fine to medium grained sand
6 7 8 9 10	10				**Poorly-graded Sand (SP)** As above
11 12 13 14 15	15				**Poorly-graded Sand (SP)** Becomes pale brown and fine grained
16 17 18 19 20	20				**Poorly-graded Sand (SP)** Brown, dry, fine to medium grained with trace nodules of clay
21 22 23 24 25	25				**Poorly-graded Sand (SP)** Becomes yellow brown
26 27 28 29 30	30				**Poorly-graded Sand (SP)** Light brown, dry, fine grained sand
31 32 33 34 35	35				**Poorly-graded Sand (SP)** As above
36 37 38 39 40	40				**Poorly-graded Sand (SP)** As above
41 42 43 44 45	45				**Poorly-graded Sand (SP)** Brown, dry, fine to medium grained sand with weakly cemented sand nodules
46 47 48 49 50	50				**Clay (CL)** Brown, slightly moist, moderate plasticity

Drilling Contractor: PROSONIC Corporation

Checked By: M. Oakley

Date Checked: 12/01/06

Sheet: 1 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.020	Borehole No: MW-19A
Site Map	Client: ADEQ Site: 20th & Factor WQARF	Start Date/Time: 11/19/06 End Date/Time: 11/21/06 Logged By: M. Brennen
	Drilling Method: Sonic Borehole Diameter: 10	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: N/A

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
51 52 53 54	55				**Clay (CL)** As above
55 56 57 58 59 60	60				**Clayey Sand - Sandy Clay (CL-SC)** Light yellowish brown, slightly moist, clayey sand
61 62 63 64 65	65				**Poorly-graded Sand (SP)** Yellowish brown, dry, fine grained sand with trace silt
66 67 68 69 70	70				**Poorly-graded Sand (SP)** Pale brown, damp, fine to medium grained sand
71 72 73 74 75	75				**Poorly-graded Sand (SP)** Becomes yellowish brown
76 77 78 79 80	80				**Poorly-graded Sand (SP)** Brown, saturated, fine grained sand with trace weakly cemented sand nodules
81 82 83 84 85	85				**Poorly-graded Sand (SP)** Yellow brown, saturated, fine to medium grained sand
86 87 88 89 90	90				**Well-graded Sand (SW)** Brown, saturated, medium to coarse grained sand with trace fines
91 92 93 94 95	95				**Well-graded Sand (SW)** As above
96 97 98 99 100	100				**Poorly-graded Sand (SP)** Brown, saturated, fine to medium grained

Drilling Contractor: PROSONIC Corporation
Checked By: M. Oakley
Date Checked: 12/01/06

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.020	Borehole No: MW-19A
Site Map	Client: ADEQ Site: 20th & Factor WQARF	Start Date/Time: 11/19/06 End Date/Time: 11/21/06 Logged By: M. Brennen
	Drilling Method: Sonic Borehole Diameter: 10	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: N/A

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
101	105				Poorly-graded Sand (SP) As above
105					Bottom of the boring at 105 feet bgs

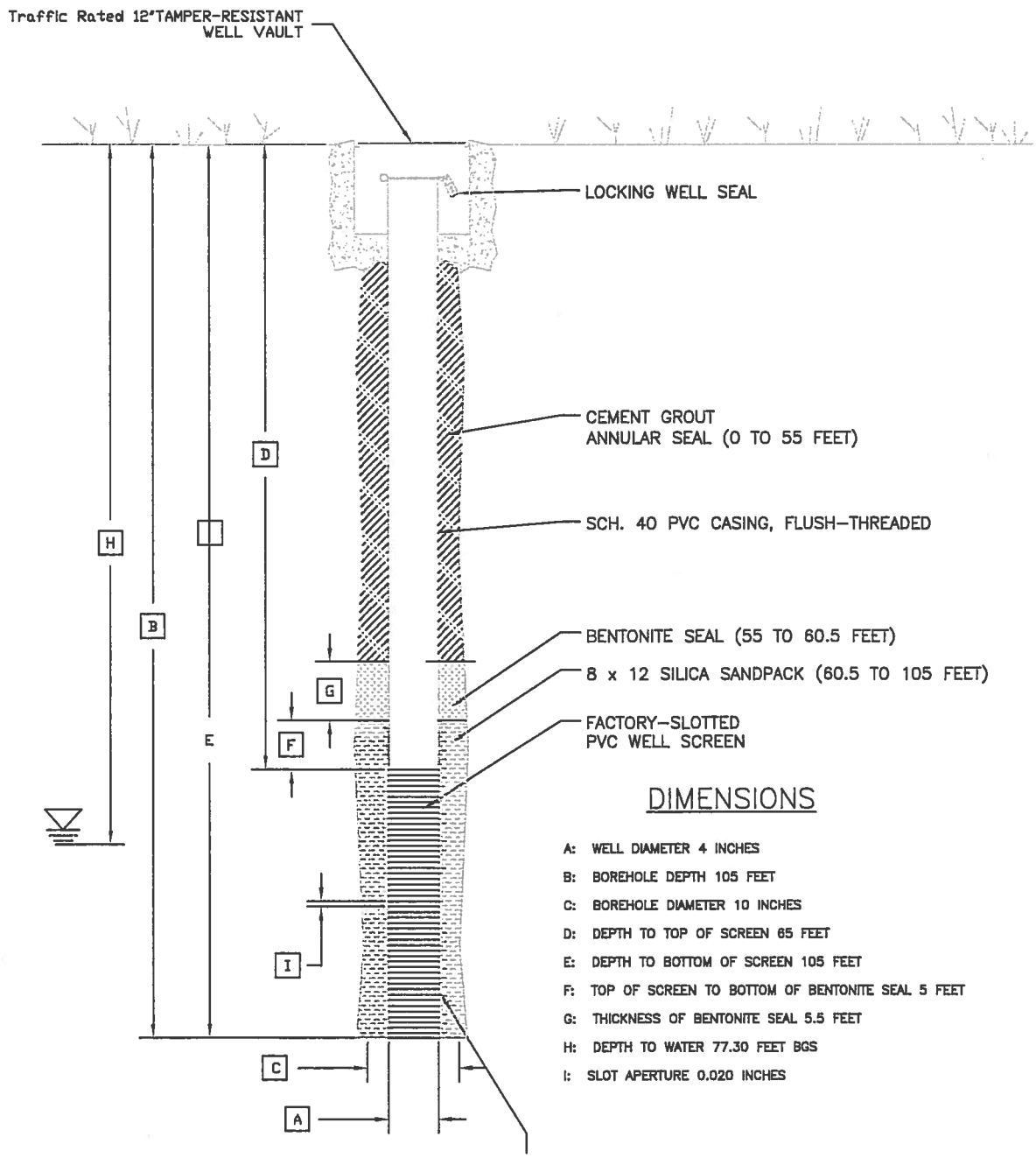
Drilling Contractor: PROSONIC Corporation

Checked By: M. Oakley

Date Checked: 12/01/06

Sheet: 3 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318



DIMENSIONS

A: WELL DIAMETER 4 INCHES
B: BOREHOLE DEPTH 105 FEET
C: BOREHOLE DIAMETER 10 INCHES
D: DEPTH TO TOP OF SCREEN 65 FEET
E: DEPTH TO BOTTOM OF SCREEN 105 FEET
F: TOP OF SCREEN TO BOTTOM OF BENTONITE SEAL 5 FEET
G: THICKNESS OF BENTONITE SEAL 5.5 FEET
H: DEPTH TO WATER 77.30 FEET BGS
I: SLOT APERTURE 0.020 INCHES

* NOT TO SCALE

TITLE:	MW-19 WELL DIAGRAM 20TH AND FACTOR WQARF SITE		
LOCATION:	YUMA, ARIZONA		
GeoTrans, Inc. A TETRA TECH COMPANY	CHECKED	LG	FIGURE
	DRAFTED	MB	B5
	PROJECT	1303.020	
	DATE	12/19/06	

Site Map	**Project No:** 1303.020.03.01 **Client:** ADEQ **Site:** 20th and Factor WQARF	**Borehole No:** MW-20A **ADWR ID:** 55-905865 **Start Date/Time:** 11/17/06 **End Date/Time:** 11/19/06 **Logged By:** M. Brennan
	Drilling Method: Sonic **Borehole Diameter:** 9.75 inches	**Angle from Vertical:** 0
	Surface Material: Asphalt	**Sampling Method:** None

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lthology	Description and Comments
0					Ground Surface
1–5	5				**Poorly Graded Sand** Light yellowish brown, dry, fine to medium grained sand, no odor
6–10	10				**Poorly Graded Sand** Very pale brown, dry, fine to medium grained sand, no odor
11–15	15				**Poorly Graded Sand** becomes light yellowish brown
16–20	20				**Poorly Graded Sand** As above
21–25	25				**Poorly Graded Sand** becomes very pale brown
26–30	30				**Poorly Graded Sand** becomes light yellowish brown
31–35	35				**Clay** Pale borwn, slighty moist, clay, no cementation, high plasticity, no odor **Clayey Sand** Light yellowish brown, dry, clayey sand, no odor
36–40	40				**Silty Sand** Light yellowish brown, dry, silty fine grained sand, no odor
41–45	45				**Poorly Graded Sand** Light yellowish brown, dry, fine grained sand, no odor **Poorly Graded Sand** As above
46–50	50				**Poorly Graded Sand** Pale brown, dry, fine grained sand with some weakly cemented sand nodules

Drilling Contractor: PROSONIC Corporation
Checked By: M. Oakley
Date Checked: 12/01/06

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

Site Map	**Project No:** 1303.020.03.01 **Client:** ADEQ **Site:** 20th and Factor WQARF	**Borehole No:** MW-20A **Start Date/Time:** 11/17/06 **End Date/Time:** 11/19/06 **Logged By:** M. Brennan
	Drilling Method: Sonic **Borehole Diameter:** 9.75 inches	**Angle from Vertical:** 0
	Surface Material: Asphalt	**Sampling Method:** None

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
51 52 53 54 55	55				**Clay** Brown, moist, clay, no cementation, high plasticity, no odor
56 57 58 59 60	60				**Clayey Sand** Brown, slighty moist, clayey sand, no cementation, no plasticity, no odor
61 62 63 64 65	65				**Poorly Graded Sand** Light yellowish brown, dry, fine to medium grained sand, no odor
66 67 68 69 70	70				**Poorly Graded Sand** Brown, wet, fine to medium grained sand with some coarse grains, trace weakly cemented sand nodules, no odor
71 72 73 74 75	75				**Well Graded Sand** Yellowish brown, wet, fine to coarse grained sand, no odor
76 77 78 79 80	80				**Poorly Graded Sand** Brown, wet, fine to medium grained sand, wet, no odor
81 82 83 84 85	85				**Poorly Graded Sand** As above
86 87 88 89 90	90				**Well Graded Sand** Pale brown, wet, fine to coarse grained sand with trace fine, no odor
91 92 93 94 95	95				**Poorly Graded Sand** Brown, wet, fine to medium grained sand, no odor
96 97 98 99 100	100				**Poorly Graded Sand** As above

Drilling Contractor: PROSONIC Corporation
Checked By: M. Oakley
Date Checked: 12/01/06

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

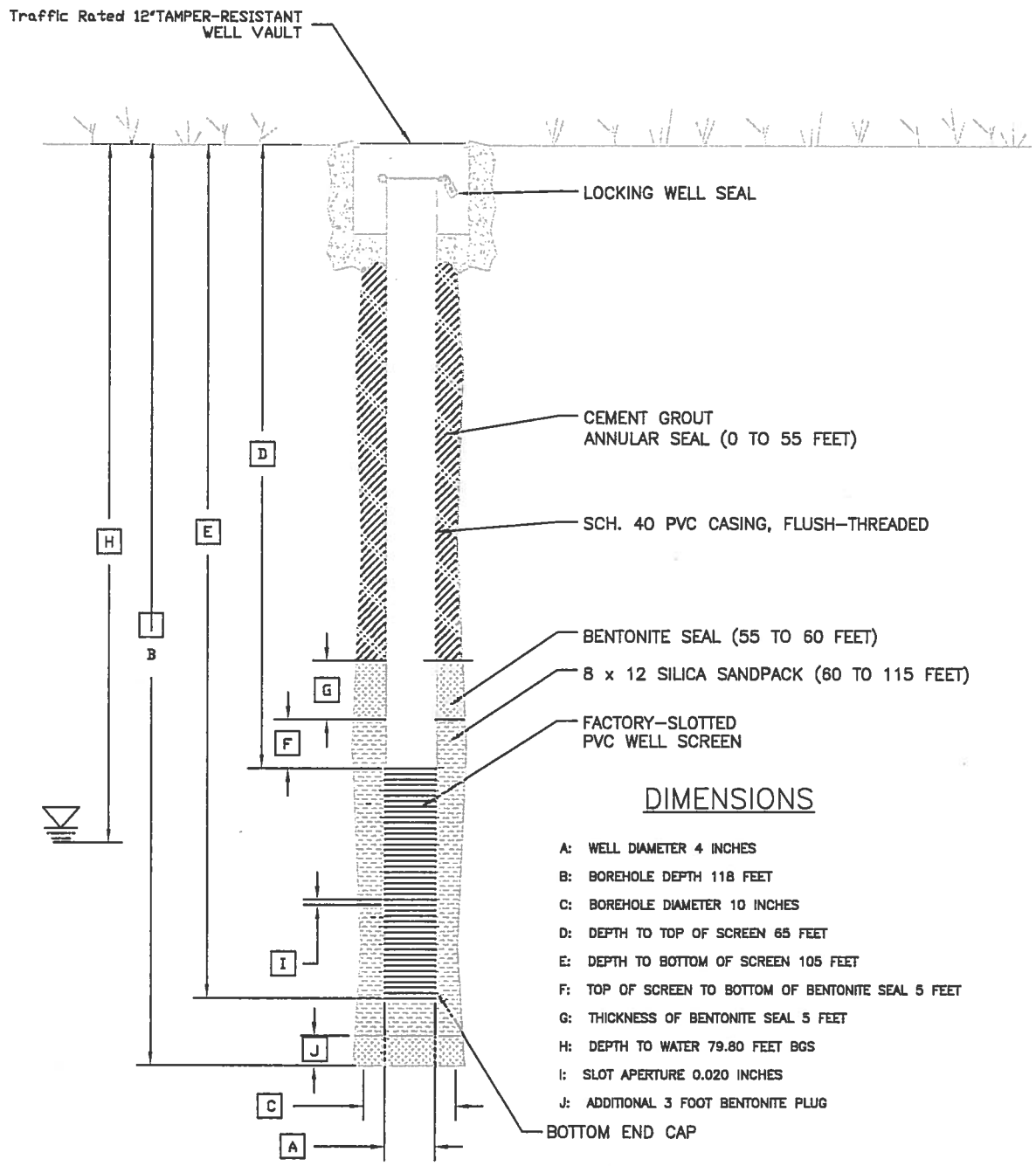
GeoTrans, Inc.	Project No: 1303.020.03.01	Borehole No: MW-20A
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: 11/17/06 End Date/Time: 11/19/06 Logged By: M. Brennan
	Drilling Method: Sonic Borehole Diameter: 9.75 inches	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: None

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
101–104	105				**Poorly Graded Sand** trace coarse grains
105–109					**Poorly Graded Sand** Brown, wet, fine to medium grained sand, trace clay, no odor
110–114					**Poorly Graded Sand** As above with trace gravel.
115–119					**Clay** Yellowish brown; wet; clay, no cementation, high plasticity, no odor
120–124					
125–129					
130–134					
135–139					
140–144					
145–149					
150					

Drilling Contractor: PROSONIC Corporation
Checked By: M. Oakley
Date Checked: 12/01/06

Sheet: 3 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318



DIMENSIONS

A: WELL DIAMETER 4 INCHES
B: BOREHOLE DEPTH 118 FEET
C: BOREHOLE DIAMETER 10 INCHES
D: DEPTH TO TOP OF SCREEN 65 FEET
E: DEPTH TO BOTTOM OF SCREEN 105 FEET
F: TOP OF SCREEN TO BOTTOM OF BENTONITE SEAL 5 FEET
G: THICKNESS OF BENTONITE SEAL 5 FEET
H: DEPTH TO WATER 79.80 FEET BGS
I: SLOT APERTURE 0.020 INCHES
J: ADDITIONAL 3 FOOT BENTONITE PLUG

* NOT TO SCALE

TITLE:	MW-20 WELL DIAGRAM 20TH AND FACTOR WQARF SITE
LOCATION:	YUMA, ARIZONA

GeoTrans, Inc. A TETRA TECH COMPANY

CHECKED	LG	FIGURE
DRAFTED	MB	B6
PROJECT	1303.020	
DATE	12/19/06	

Site Map	**Project No:** 1303.020.03.01 **Client:** ADEQ **Site:** Yuma 20th & Factor WQARF	**Borehole No:** MW-21A **ADWR ID:** 55-906700 **Start Date/Time:** 5/1/07 **End Date/Time:** 5/3/07 **Logged By:** A. Gray
	Drilling Method: Sonic **Borehole Diameter:** 8"	**Angle from Vertical:** 0
	Surface Material: Concrete	**Sampling Method:** Continuous Core

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lthology	Description and Comments
0					Ground Surface
1 2 3 4 5	5	5/1/07 @ 0720	0.0		**Poorly Graded Sand (SP) and Asphalt** Pink (7.5 YR 7/3), medium grained, dry, weak cementation
6 7 8 9 10	10		0.0		**Clayey Sand (SC)** Light yellowish brown (10YR 6/4), dry, medium dense, moderatly cemented
11 12 13 14 15	15	5/1/07 @ 0745	0.1		**Poorly Graded Sand (SP)** 20% coarse, 60% medium, 20% fine grained sand, light yellowish brown (10 YR 6/4), dry, no cementaion
16 17 18 19 20	20		0.3		**Poorly Graded Sand (SP)** Medium grained, light gray (10YR 7/2), dry, no cementaion
21 22 23 24 25	25	5/1/07 @ 0835	0.9		**Poorly Graded Sand (SP)** Medium grained, light yellowish brown (10 YR 6/4), dry, no cementation
26 27 28 29 30	30		0.7		**Silty Sand (SM)** 50% sand, 50% silt, pale brown (10YR 7/3), dry losse, no cementation
31 32 33 34 35	35	5/1/07 @ 1020	0.4		**Clay (CL)** Brown (7.5 YR 5/4), moist, stiff
36 37 38 39 40	40	5/1/07 @ 1100	0.4		**Poorly Graded Sand (SP)** Fine grained, very pale brown (10 YR 7/3), dry, no cementation
41 42 43 44 45	45	5/1/07 @ 1130	0.6		
46 47 48 49 50	50		0.7		

Drilling Contractor: WDC
Checked By: L. Gardiner
Date Checked: 05/15/07

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

Site Map	**Project No:** 1303.020.03.01 **Client:** ADEQ **Site:** Yuma 20th & Factor WQARF Site	**Borehole No: MW-21A** **Start Date/Time:** 5/1/07 **End Date/Time:** 5/3/07 **Logged By:** A. Gray
	Drilling Method: Sonic **Borehole Diameter:** 8"	**Angle from Vertical:** 0
	Surface Material: Concrete	**Sampling Method:** Continuous Core

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
51 52 53 54 55	55	5/1/07 @ 1330	1.0		**Poorly Graded Sand (SP)** Fine grained, very pale brown (10 YR 7/3), dry, no cementation
56 57 58 59 60	60		0.4		**Poorly Graded Sand (SP)** Medium grained sand, very pale brown (10YR 7/3), dry, no cementation
61 62 63 64 65	65	5/1/07 @ 1400	0.5		**Poorly Graded Sand (SP)** Fine grained sand, very pale brown (10YR 7/3), dry, weak cementation
66 67 68 69 70	70	5/1/07 @ 1635	0.9		**Poorly Graded Sand (SP)** Medium grained, grayish brown (10YR 5/2), moist, no cementation
71 72 73 74 75	75	5/2/07 @ 0825	0.8		**Clayey Sand (SC)** 75% sand, 25% clay, grayish brown (10 YR 5/2), moist, medium dense, no cementation
76 77 78 79 80	80	5/2/07 @ 1000	0.7		
81 82 83 84 85	85		0.5		**Poorly Graded Sand (SP)** Medium grained sand, grayish brown (10 YR 5/2), moist, no cementaion.
86 87 88 89 90	90	5/2/07 @ 1230	0.9		**Clayey Sand (SC)** 70% medium sand, 30% clay, grayish brown (10 YR 5/30), moist, no cementation
91 92 93 94 95	95		0.4		**Clayey Sand (SC)** 75% fine sand, 25% clay, brown (10YR 5/3), moist, no cementation
96 97 98 99 100	100	5/2/07 @ 1335	0.2		**Clay (CL)** Brown (10YR 5/3), moist, stiff

Drilling Contractor: WDC
Checked By: L. Gardiner
Date Checked: 05/15/07

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

Site Map	**Project No:** 1303.020.03.01 **Client:** ADEQ **Site:** Yuma 20th & Factor WQARF Site	**Borehole No:** MW-21A **Start Date/Time:** 5/1/07 **End Date/Time:** 5/3/07 **Logged By:** A. Gray
	Drilling Method: Sonic **Borehole Diameter:** 8"	**Angle from Vertical:** 0
	Surface Material: Concrete	**Sampling Method:** Continuous Core

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
101					Bottom of boring at 99 feet bgs
102					
103					
104					
105					
106					
107					
108					
109					
110					
111					
112					
113					
114					
115					
116					
117					
118					
119					
120					
121					
122					
123					
124					
125					
126					
127					
128					
129					
130					
131					
132					
133					
134					
135					
136					
137					
138					
139					
140					
141					
142					
143					
144					
145					
146					
147					
148					
149					
150					

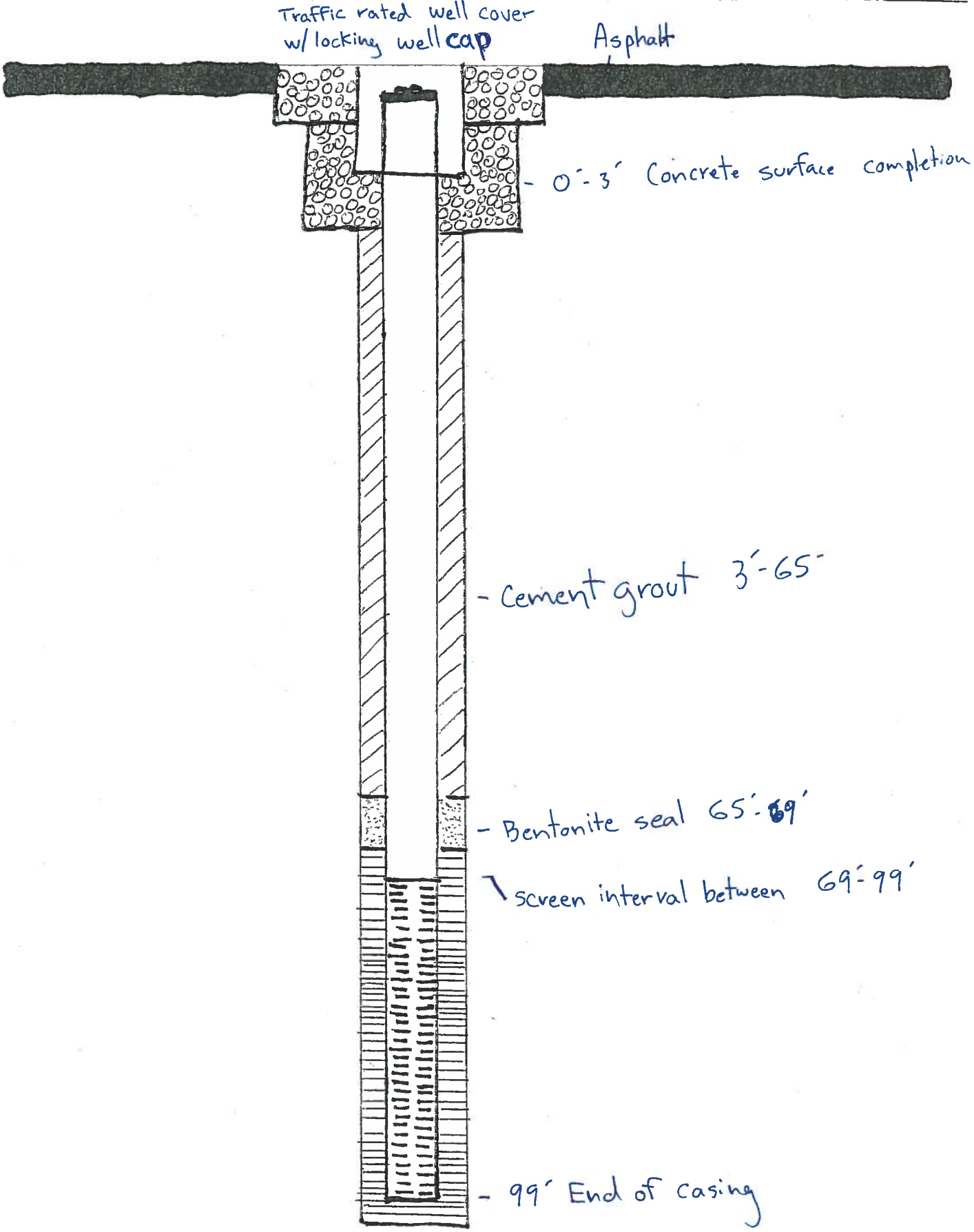
Drilling Contractor: WDC
Checked By: L. Gardiner
Date Checked: 05/15/07

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

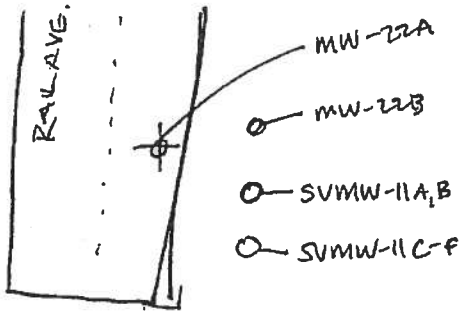
CLIENT ADEQ
PROJECT 20th + Factory WQARF Site
DETAIL MW-21A

JOB NO. 1303.020.03.03
DATE CHECKED
CHECKED BY

PAGE
DATE
COMPUTED BY



MAP OF BORING LOCATION:



GeoTrans, Inc. — FIELD DRILLING LOG

A TETRA TECH COMPANY

PROJECT NAME: 20th & Factor	BORING NAME: MW-22A
PROJECT NUMBER: 1303.038.3.1.1	PROJECT LOCATION: YUMA, AZ
DRILLING METHOD: HSA	SHEET 1 OF
SAMPLING METHOD: NA	DRILLING START TIME: 0830 / FINISH TIME: 0900
	DATE: 2/23/11 / DATE: 2/24/11
SURFACE COVER CONDITIONS:	asphalt, concrete, dirt, gravel, etc.

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						0	
						1	SAND, FINE to MED GRAINED. DRY, UNCONSOLIDATED
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	
						10	
						11	
						12	
						13	
						14	
						15	
						16	
						17	
						18	
						19	

TRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME:	BORING NAME: MW-22A
PROJECT NUMBER:	PROJECT LOCATION:
DRILLING METHOD:	SHEET OF
	DRILLING START / FINISH
SAMPLING METHOD:	TIME / TIME
	DATE / DATE
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						20	
						21	
						22	
						23	
						24	
						25	
						26	
						27	
						28	
						29	
						30	
						31	
						32	
						33	
						34	
						35	
						36	SAND W/ GRAVEL, FINE TO MED. GRAINED DRY. UNCONSOLIDATED
						37	
						38	
						39	

TRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME:	BORING NAME: MW-22A
PROJECT NUMBER:	PROJECT LOCATION:
DRILLING METHOD:	SHEET OF
	DRILLING
	START / FINISH
SAMPLING METHOD:	TIME / TIME
	DATE / DATE

SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						40	SAND FINE to MED. GRAINED, DRY UNCONSOLIDATED
						41	
						42	
						43	
						44	
						45	
						46	
						47	
						48	
						49	
						50	
						51	
						52	
						53	
						54	
						55	
						56	
						57	
						58	
						59	

TRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME:	BORING NAME: MW-22A
PROJECT NUMBER:	PROJECT LOCATION:
DRILLING METHOD:	SHEET OF
	DRILLING
	START / FINISH
SAMPLING METHOD:	TIME / TIME
	DATE / DATE

SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						60	
						61	
						62	
						63	
						64	
						65	
						66	
						67	
						68	
						69	
						70	
						71	
						72	
						73	
						74	
						75	
						76	
						77	
						78	SAND FINE to MED GRAINED, MOIST, UNCONSOLIDATED
						79	

TRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME:	BORING NAME: MW-22A
PROJECT NUMBER:	PROJECT LOCATION:
DRILLING METHOD:	SHEET OF
	DRILLING
	START / FINISH
SAMPLING METHOD:	TIME / TIME
	DATE / DATE

SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.

TRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						80	
						81	
						82	
						83	
						84	
						85	
						86	
						87	
						88	
						89	
						90	
						91	
						92	
						93	
						94	
						95	
						96	TD HOLE
						97	
						98	
						99	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

WELL SAMPLING / DEVELOPMENT RECORD

GeoTrans, Inc. A TETRA TECH COMPANY

Project Name/Client 20th & FACTOR

Well Number MW-22A

Date 2/25/11

Project Number 1303.038

Sampler(s) BYRON BADEN

Elevation of Measuring Point (MP) — ft. (a)

Elevation of Ground Surface — ft. (b)

Well Depth (below ground surface) 95 ft. (c)

Casing Inside Diameter 4 in. (d)

CALCULATION OF CASING VOLUME

Depth of Water Below MP 75.79 ft. (e)

Water Level Elevation (a-e) — ft. (f)

Step 1: Height of Water in Well, H= f - (b-c)= — ft.

Step 2: Cross-sectional Area of Casing, A=Π x d^2/576= — ft^2

Step 3: Volume of Water in Casing, V=A x H x 7.48= — gal

(95 - 75.79) x 16 x 3 x 0.0408 = 37.6 G

Sampling/Development System (check one) Dedicated ☐ Non-dedicated ☐

Purging Apparatus: Type: 2" SUBMERSIBLE PUMP

Sampling Apparatus: Type: DISPOSABLE BAILER

Cleaning Methods SURGING & BAILING (BAILED 220gal)

FIELD OBSERVATIONS

Weather Conditions CLEAR, SUNNY ~65° F

Well Head Conditions GOOD

Comments SEE GROUNDWATER SAMPLING SHEET FOR MW-22A ON 2/25/2011 FOR PURGING FIELD MEASUREMENTS & SAMPLE INFO.

Project Name/Client 20th & FACTOR Well Number MW-22A Date 2/25/11

FIELD MEASUREMENTS						
Time	Pump Rate (gpm)	Cumulative Vol. Removed (gal)	Temp (°C)	pH	Spec. Cond. (umhos/cm at 25° C)	Particulates/Odor/Clarity/Color

SEE G.W. SAMPLING SHEET FOR MW-22A ON 2/25/2011

Total Vol. Purged _____ (gal) Casing Vol. Purged _____

Final Water LevelAfterPurging_____ft.BelowMP;Time_____

Fate

SAMPLE INVENTORY

Label	Time	Number of Bottles	Analysis	F	P	Remarks

F = Filtered (Y,N) P = Preservative (Type)

Sampler(s) _____ Signatures(s) _____

Arizona Department of Water Resources
Information Management Unit
P.O. Box 33589 • Phoenix, Arizona 85067-3589
(602) 771-8627 • (800) 352-8488
www.water.az.gov

Well Driller Report and Well Log

THIS REPORT MUST BE FILED WITHIN **30 DAYS** OF COMPLETING THE WELL

PLEASE PRINT CLEARLY USING BLACK OR BLUE INK

COPY

FILE NUMBER
C(8-23)33 AAD
WELL REGISTRATION NUMBER
55 - 911859
PERMIT NUMBER (IF ISSUED)

SECTION 1. DRILLING AUTHORIZATION

Drilling Firm

Mail To:

NAME: YELLOW JACKET DRILLING SERVICES L L C	DWR LICENSE NUMBER: 78
ADDRESS: P.O. BOX 801	TELEPHONE NUMBER: 602-453-3252
CITY / STATE / ZIP: GILBERT, AZ, 85299-0801	FAX: 602453 3258

SECTION 1. REGISTRY INFORMATION

Well Owner

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: Arizona Department of Environmental Quality

MAILING ADDRESS: 400 West Congress, Suite 433

CITY / STATE / ZIP: Tucson, AZ, 85701

CONTACT PERSON NAME AND TITLE: Tina LePage Project Manager

TELEPHONE NUMBER: 520 628-6733

FAX:

WELL NAME (e.g., MW-1, PZ-3, lot 25 Well, Smith Well, etc.): MW-25A

Location of Well

WELL LOCATION ADDRESS (IF ANY): Yuma Row

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
8S	23W	33	NE 1/4	NE 1/4	SE 1/4

LATITUDE			LONGITUDE		
32 °	41 '	49.3 "N	114 °	37 '	05.4 "W

METHOD OF LATITUDE/LONGITUDE (CHECK ONE): USGS Quad Map; Conventional Survey; ✓ *GPS: Hand-Held; *GPS: Survey-Grade

LAND SURFACE ELEVATION AT WELL: 183' Feet Above Sea Level

METHOD OF ELEVATION (CHECK ONE): USGS Quad Map; Conventional Survey; ✓ *GPS: Hand-Held; *GPS: Survey-Grade

*IF GPS WAS USED, GEOGRAPHIC COORDINATE DATUM (CHECK ONE): ✓ NAD-83; Other (please specify)

COUNTY: Yuma

ASSESSOR'S PARCEL ID NUMBER (MOST RECENT): BOOK; MAP; PARCEL

SECTION 3. WELL CONSTRUCTION DETAILS

Drilling Method

CHECK ONE
- Air Rotary
- ✓ Bored or Augered
- Cable Tool
- Dual Rotary
- Mud Rotary
- Reverse Circulation
- Driven
- Jetted
- Air Percussion / Odex Tubing
- Other (please specify)

Method of Well Development

CHECK ONE
- Airlift
- ✓ Bail
- ✓ Surge Block
- Surge Pump
- ✓ Other (please specify) Pump

Method of Sealing at Reduction Points

CHECK ONE
- None
- Packed
- Swedged
- Welded
- Other (please specify) No reduction points

Condition of Well

CHECK ONE
- ✓ Capped
- Pump Installed

Construction Dates

DATE WELL CONSTRUCTION STARTED: 3-2-10

DATE WELL CONSTRUCTION COMPLETED: 3-4-10

I state that this notice is filed in compliance with A.R.S. § 45-596 and is complete and correct to the best of my knowledge and belief.

SIGNATURE OF QUALIFYING PARTY: R. LeDuc

DATE: 4.5.10

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 911859

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILD) (attach additional page if needed)

Depth

DEPTH OF BORING: 100 Feet Below Land Surface

DEPTH OF COMPLETED WELL: 95 Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL: 78 Feet Below Land Surface

DATE MEASURED: 3-3-10

TIME MEASURED:

IF FLOWING WELL, METHOD OF FLOW REGULATION: Valve Other:

Borehole

DEPTH FROM SURFACE FROM (feet)	TO (feet)	BOREHOLE DIAMETER (inches)
0	100	10

Installed Casing

DEPTH FROM SURFACE FROM (feet)	TO (feet)	OUTER (inches)	MATERIAL TYPE (T): STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	PERFORATION TYPE (T): BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE (inches)
0	65	4.5		✓			✓						
65	95	4.5		✓							✓		0.010

Installed Annular Material

DEPTH FROM SURFACE FROM (feet)	TO (feet)	ANNULAR MATERIAL TYPE (T): NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	BENTONITE: GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	FILTER PACK: SAND	GRAVEL	SIZE
0	58				✓							
58	63						✓					
63	98									✓		8-12

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 911859

SECTION 5: GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	Description Describe material, grain size, color, etc.	Check (T) every interval where water was encountered (if known)
0	100	Sand w/ clay stringers	
		TD 100'	
		▽ 78'	

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 911859

SECTION 6. WELL SITE PLAN

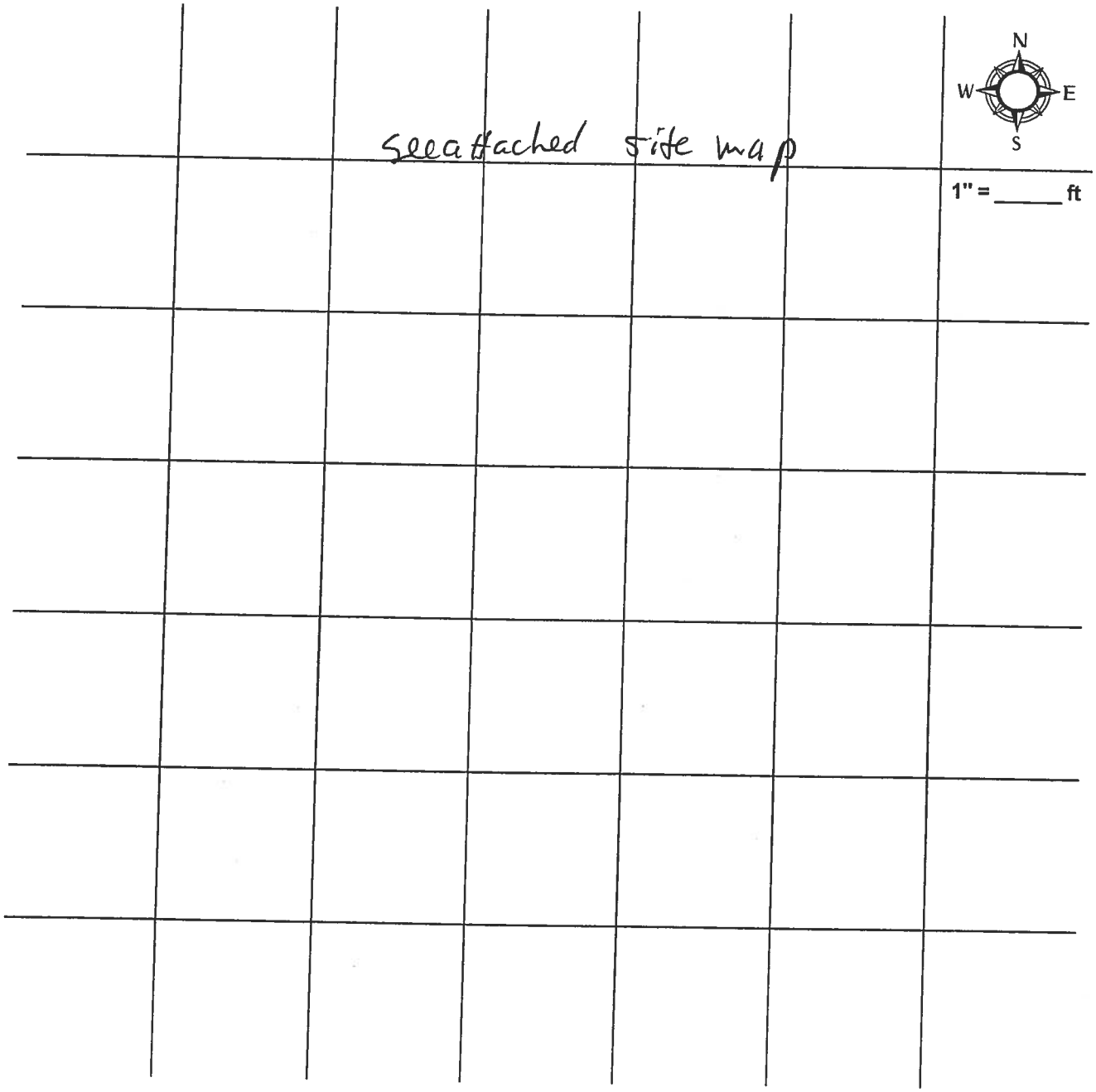
NAME OF WELL OWNER

Arizona Department of Environmental Quality

COUNTY ASSESSOR'S PARCEL ID NUMBER (MOST RECENT)

BOOK	MAP	PARCEL

- Please draw the following: (1) the boundaries of property on which the well was located; (2) the well location; (3) the locations of all septic tank systems and sewer systems on the property or within 100 feet of the well location, even if on neighboring properties; and (4) any permanent structures on the property that may aid in locating the well.
- Please indicate the distance between the well location and any septic tank system or sewer system.



WELL SAMPLING / DEVELOPMENT RECORD

GeoTrans, Inc. A TETRA TECH COMPANY

Project Name/Client _____

Well Number MW-25A

Date 3/12/10

Project Number _____ Sampler(s) _____

Elevation of Measuring Point (MP) _____ ft. (a)

Elevation of Ground Surface _____ ft. (b)

Well Depth (below ground surface) 96.5 TOC ft. (c)

Casing Inside Diameter 4" in. (d)

CALCULATION OF CASING VOLUME

Depth of Water Below MP 83.5 ft. (e)

Water Level Elevation (a-e) _____ ft. (f)

Step 1: Height of Water in Well, H= f - (b-c)= 13 ft.

Step 2: Cross-sectional Area of Casing, A=Π x d^2/576= 0.0872 ft^2

Step 3: Volume of Water in Casing, V=A x H x 7.48= 8.48 gal

Sampling/Development System (check one) Dedicated ☐ Non-dedicated ☒

Purging Apparatus: Type: Surge/bail and pump

Sampling Apparatus: Type: _____

Cleaning Methods _____

FIELD OBSERVATIONS

Weather Conditions Sunn 60's

Well Head Conditions Good New

Comments _____

Project Name/Client _____ Well Number MW-25A Date 3/12/10

Bailing well

FIELD MEASUREMENTS

Time	Pump Rate (gpm)	Cumulative Vol. Removed (gal)	Temp (°C)	pH	Spec. Cond. (umhos/cm at 25° C)	NTU / Particulates/Odor/Clarity/Color	TDS g/L	ORP
1214	—	~50	29.67	6.23	5.57	532	3.51	285
1307	5gpm	165	31.47	7.14	6.47	298	4.04	261
1313	5gpm	195	31.99	7.25	6.48	712	4.08	262
1320	5gpm	230	32.36	7.21	6.57	276	4.14	266
1329	5gpm	275	32.64	7.22	6.35	145	4.00	265
1339	5gpm	325	32.25	7.22	6.61	186	4.16	269
1348	5gpm	370	32.52	7.22	6.70	264	4.22	280
1358	5gpm	420	32.80	7.20	6.60	14.2	4.16	278
1407	5gpm	455	32.77	7.26	6.79	13.5	4.28	277

Total Vol. Purged 460 (gal) Casing Vol. Purged 54.25

Final Water Level After Purging 81.5 ft. Below MP; Time 1429

Fate of Purged Water Bunker tank

105 gal bailed pump rate 5gpm start time 1257

SAMPLE INVENTORY

Label	Time	Number of Bottles	Analysis	F	P	Remarks

F = Filtered (Y,N) P = Preservative (Type)

Sampler(s) _____ Signatures(s) _____

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & FACTOR	BORING NAME: MW-26A
PROJECT NUMBER: 1303.038	PROJECT LOCATION: YUMA, AZ
DRILLING METHOD: 8" HSA	SHEET 1 OF 6
SAMPLING METHOD: N/A	DRILLING START TIME 1330 DATE 10/25/10; FINISH TIME 0950 DATE 10/26/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

G. ANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						0	
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	SAND (MED. GRAINED)
						10	
						11	
						12	
						13	
						14	
						15	
						16	
						17	
						18	
						19	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & FACTOR	BORING NAME: MW-26A
PROJECT NUMBER: 1303.038	PROJECT LOCATION: YUMA, AZ
DRILLING METHOD: 6" HSA	SHEET 2 OF 6
SAMPLING METHOD: N/A	DRILLING START TIME 1330 DATE 10/25/10; FINISH TIME 0950 DATE 10/26/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						20	SAND, MED. GRAINED
						21	BECOMES SLIGHTLY MOIST
						22	
						23	
						24	
						25	
						26	
						27	
						28	
						29	
						30	
						31	
						32	
						33	
						34	
						35	
						36	
						37	
						38	
						39	

GE ANS REPRESENTATIVE:

DRILLING CONTRACTOR:

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & FAcTor	BORING NAME: MW-26A
PROJECT NUMBER: 1303.038	PROJECT LOCATION: YUMA, AZ
DRILLING METHOD: 6" HSA	SHEET 3 OF 5
SAMPLING METHOD: N/A	DRILLING START TIME 1330 DATE 10/25/10; FINISH TIME 0950 DATE 10/26
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						40	SAND, MED. GRAINED,
						41	SLIGHTLY MOIST
						42	
						43	
						44	
						45	
						46	
						47	CLAY, SANDY, SLIGHTLY MOIST
						48	
						49	SAND, MED. GRAINED, SLIGHTLY MOIST
						50	
						51	
						52	
						53	
						54	
						55	
						56	
						57	
						58	
						59	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.
SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & Factor	BORING NAME: MW-26A
PROJECT NUMBER: 1303.038	PROJECT LOCATION: YUMA, AZ
DRILLING METHOD: 6" HSA	SHEET 4 OF 8
SAMPLING METHOD: N/A	DRILLING START TIME 1330 DATE 10/25; FINISH TIME 0950 DATE 10/26
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						50	SAND, MED GRAINED, MOIST
						51	
						52	
						53	
						54	
						55	
						56	
						57	
						58	
						59	
						60	
						61	
						62	
						63	
						64	
						65	
						66	
						67	
						68	
						69	

GE ANS REPRESENTATIVE:

DRILLING CONTRACTOR:

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & FACTOR	BORING NAME: MW-26A
PROJECT NUMBER: 1303.038	PROJECT LOCATION: YUMA, AZ
DRILLING METHOD: 6" HSA	SHEET 5 OF 6
SAMPLING METHOD: N/A	DRILLING START TIME 0850 DATE 10/25; FINISH TIME 0950 DATE 10/26
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						70	
						71	SAND, MED. GRAINED, MOIST
						72	
						73	
						74	
						75	
						76	▽ WATER @ 75.75' bgs
						77	SAND, MED. GRAINED, SATURATED
						78	
						79	
						80	
						81	
						82	
						83	
						84	
						85	
						86	
						87	
						88	
						89	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.
SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & FACTOR	BORING NAME: MW-26A
PROJECT NUMBER: 1303.038	PROJECT LOCATION: YUMA, AZ
DRILLING METHOD: 6" HSA	SHEET 6 OF 6
SAMPLING METHOD: N/A	DRILLING START TIME 1330 DATE 10/25; FINISH TIME 0950 DATE 10/26
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						90	SAND, MED GRAINED, SATURATED
						91	
						92	
						93	
						94	
						95	TD BOREHOLE 95' bgs
						6	
						7	
						8	
						9	
						0	
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	

GE NS REPRESENTATIVE:

RILLING CONTRACTOR:

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

WELL SAMPLING / DEVELOPMENT RECORD

GeoTrans, Inc. A TETRA TECH COMPANY

Project Name/Client 20th & Factor ADEQ

Well Number MW-26A

Date 11/15/10

Project Number 1303.038

Sampler(s) BYRON BADEN

Elevation of Measuring Point (MP) — ft. (a)

Elevation of Ground Surface — ft. (b)

Well Depth (below ground surface) 95 ft. (c)

Casing Inside Diameter 4 in. (d)

CALCULATION OF CASING VOLUME

Depth of Water Below MP 75.43 ft. (e)

Water Level Elevation (a-e) — ft. (f)

Step 1: Height of Water in Well, H= f - (b-c)= — ft.

Step 2: Cross-sectional Area of Casing, A=Π x d^2/576= — ft^2

Step 3: Volume of Water in Casing, V=A x H x 7.48= — gal

(95 - 75.43) x 16 x 3 x 0.0408 = 38.32 G

Sampling/Development System (check one) Dedicated ☐ Non-dedicated ☒

Purging Apparatus: Type: ~~SURGE~~ & SUBMERSIBLE PUMP (3")

Sampling Apparatus: Type: N/A

Cleaning Methods SURGE & BAIL

FIELD OBSERVATIONS

Weather Conditions SUNNY, CLEAR, ~75° F

Well Head Conditions GOOD

Comments

Project Name/Client 20th & FACTOR ADEQ Well Number MW-26A Date 11/15/10

FIELD MEASUREMENTS						
Time	Pump Rate (gpm)	Cumulative Vol. Removed (gal)	Temp (°C)	pH	Spec. Cond. (umhos/cm at 25° C)	(NTUS) Particulates/Odor/Clarity/Color
1455	12	36	29.13	6.73	5.26	654
1457	8	58	29.05	7.33	5.19	165
1459	7	72	29.10	7.36	5.20	56.1
1501	7	86	29.17	7.42	5.21	20.6
1503	7	100	29.25	7.43	5.19	7.8
1505	7	114	29.24	7.44	5.21	40.2
1507	7	128	29.27	7.45	5.19	12.0

Total Vol. Purged ~135 (gal) Casing Vol. Purged _____

Final Water Level After Purging 75.43 ft. Below MP; Time 1530

Fate of Purged Water BAKER TANK

SAMPLE INVENTORY

Label	Time	Number of Bottles	Analysis	F	P	Remarks

NONE TAKEN

F = Filtered (Y,N) P = Preservative (Type)

Sampler(s) _____ Signatures(s) _____

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th St Factor	BORING NAME: MW-27A
PROJECT NUMBER: 1303.038	PROJECT LOCATION: YUMA, AZ
DRILLING METHOD: 6" HSA	SHEET 1 OF 5
SAMPLING METHOD: N/A	DRILLING START TIME 1245 DATE 10/27/10 — FINISH TIME 1400 DATE 10/28
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						0	
						1	SAND, MED GRAINED
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	
			SVMW27A-10.0-101710			10	SOIL VAPOR SAMPLE
						11	
						12	
						13	
						14	
						15	
						16	
						17	
						18	
						19	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.
SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: Zorn & Factor	BORING NAME: MW-27A
PROJECT NUMBER: 1303 038	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: 6" HSA	SHEET 2 OF 5
SAMPLING METHOD: N/A	DRILLING START TIME 1245 / FINISH TIME 1400
	DRILLING START DATE 10/27 / FINISH DATE 10/28
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						20	SAND MED. GRAINED
						21	
						22	
						23	
						24	
						25	
						26	
						27	
						28	
						29	
						30	
						31	
						32	
						33	
						34	
						35	
						36	
						37	
						38	
						39	

GE NS REPRESENTATIVE:

DRILLING CONTRACTOR:

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & FACTOR	BORING NAME: MW-27A
PROJECT NUMBER: 1303.038	PROJECT LOCATION: YUMA - AZ
DRILLING METHOD: 6" HSA	SHEET 3 OF 5
SAMPLING METHOD: N/A	DRILLING START TIME 1245 / FINISH TIME 1400
	DATE 10/27/10 / DATE 10/28
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						40	
							SAND MED. GRAINED
						41	
						42	
						43	
						44	
						45	
						46	
						47	
						48	
						49	
						50	
						51	
						52	
						53	
						54	
						55	SAND MED. GRAINED, MOIST
						56	
						57	
						58	
						59	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & FACTOR	BORING NAME: MW-27A
PROJECT NUMBER: 1303.038	PROJECT LOCATION: YUMA AZ
DRILLING METHOD: 6" HSA	SHEET 4 OF 5
SAMPLING METHOD: N/A	DRILLING START TIME 1245 / FINISH TIME 1400
	DATE 10/27 / DATE 10/28

SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						60	SAND MED. GRAINED, MOIST
						61	
						62	
						63	
						64	
						65	
						66	
						67	
						68	
						69	
						70	
						71	
						72	
						73	
						74	
						75	
						76	
						77	
						78	
						79	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & Factor	BORING NAME: MW-27A
PROJECT NUMBER: 1303.038	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: 6" HSA	SHEET 5 OF 5
SAMPLING METHOD: N/A	DRILLING START TIME 1245 / FINISH TIME 1400
	DATE 10/27 / DATE 10/28

SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						80	SAND, MED GRAINED, SATURATED
						81	
						82	
						83	
						84	
						85	
						86	
						87	
						88	
						89	
						90	
						91	
						92	
						93	
						94	
						95	
						96	
						97	
						98	
						99	TD @ 100' bgs

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

WELL SAMPLING / DEVELOPMENT RECORD

GeoTrans, Inc. A TETRA TECH COMPANY

Project Name/Client 20th & FACTOR ADEQ

Well Number MW-27A

Date 11/16/10

Project Number 1303.038

Sampler(s) BYRON BADEN

Elevation of Measuring Point (MP) — ft. (a)

Elevation of Ground Surface — ft. (b)

Well Depth (below ground surface) — ft. (c)

Casing Inside Diameter 4 in. (d)

CALCULATION OF CASING VOLUME

Depth of Water Below MP 72.43 ft. (e)

Water Level Elevation (a-e) — ft. (f)

Step 1: Height of Water in Well, H= f - (b-c)= — ft.

Step 2: Cross-sectional Area of Casing, A=Π x d^2/576= — ft^2

Step 3: Volume of Water in Casing, V=A x H x 7.48= — gal

(95 − 72.43) × 16 × 3 × 0.0408 = 44 G

Sampling/Development System (check one) Dedicated ☐ Non-dedicated ☒

Purging Apparatus: Type: 3" SUBMERSIBLE PUMP

Sampling Apparatus: Type: N/A

Cleaning Methods SURGE & BAIL

FIELD OBSERVATIONS

Weather Conditions SUNNY, CLEAR, ~70° F

Well Head Conditions GOOD

Comments

Project Name/Client 20th & Factor ADEQ Well Number MW-27A Date 11/16/10

FIELD MEASUREMENTS						
Time	Pump Rate (gpm)	Cumulative Vol. Removed (gal)	Temp (°C)	pH	Spec. Cond. (umhos/cm at 25° C)	Particulates/Odor/Clarity/Color
1335	14	70	28.58	7.50	5.42	369
1538	14	112	28.85	7.42	5.50	278
1541	14	154	28.75	7.42	5.56	138
1544	14	196	28.85	7.39	5.60	55.8
1547	14	238	28.86	7.38	5.63	44.4
1550	14	270	28.88	7.37	5.65	30.0

Total Vol. Purged 300 (gal) Casing Vol. Purged

Final Water Level After Purging 72.45 ft. Below MP; Time 1615

Fate of Purged Water BAKER TANK

SAMPLE INVENTORY

Label	Time	Number of Bottles	Analysis	F	P	Remarks

Not SAMPLED

F = Filtered (Y,N) P = Preservative (Type)

Sampler(s) Signatures(s)

GeoTrans, Inc.

Site Map

Project No: 1303.015.03

Client: ADEQ

Site: 20th and Factor WQARF

Borehole No: MW-101
ADWR ID:

MW-101A
MW-101
not in 3 ring bind

Drilling Method: Hollow Stem Auger

Angle from

Borehole Diameter: 0

Surface Material:

Sampling Method:

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lthology	Description and Comments
					Ground Surface
0–50					**Silty Sand** Light brown, loose to medium dense, non-plastic, predominately fine grained sand, trace to some silt, trace coarse sand in upper 35 feet, slightly damp to damp Sand becomes reddish brown

Drilling Contractor: Lalyne Christensen

Checked By:

Date Checked:

Sheet: 1 of 2

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.015.03	Borehole No: MW-101
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: 3/13/96 End Date/Time: 3/13/96 Logged By: GEC
	Drilling Method: Hollow Stem Auger Borehole Diameter: 0	Angle from Vertical: 0
	Surface Material:	Sampling Method:

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
51					Cuttings become slightly moist to moist
52					
53					
54					
55					
56					
57					
58					
59					
60					
61					
62					
63					
64					
65					
66					
67					
68					
69					
70					
71					
72					
73					
74					
75					
76					
77					
78					
79					
80					
81					
82					
83					
84					
85					
86					
87					
88					
89					
90					
91					
92					
93					
94					
95					
96					
97					
98					
99					
100					

Drilling Contractor: Lalyne Christensen

Checked By:

Date Checked:

Sheet: 2 of 2

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

Well Construction Log

INDUSTRIAL COMPLIANCE

Well Location	Southern Pacific Transportation Co. Yuma Yard			**Well Name**	HP11/MW6
Drilling Company	Layne Environmental			**Project Name**	SPTCo Yuma
Drilling Method	Hollow Stem Auger	**Rig Type**	B-61	**Project Number**	03102163-03
Hole Diameter	10.25 in.	**Driller** Don K.	**Date** 1-21-94	**Logged By**	C. M. Charmley
Ground Elevation	NM	**Depth to Water**	57.5 feet bgs	**Total Depth**	72.5 feet bgs

Well Construction Specifics

Screen Placement	from 50.5 ft. to 70.5 ft.	Slot Size 0.010 inches	Diameter 4 inches	Completion Type:	
Blank Casing	from Surface to 50.5 ft.	Schedule 40	Diameter 4 inches	Aboveground ___	
Filter Pack	from 46.5 ft. to 72.5 ft.	Size 10-20	Type Colorado	At Grade X	
Bentonite Pellets	from 43.5 ft. to 46.5 ft.	Type Enviroplug chips	Size 1/4 inches	Hydrated X yes ___ no	
Cement/Bentonite	from Surface to 43.5 ft.	Size N/A	Percent Bentonite	minimum 3-5% by weight	

Sample Number	Recov.	Blows/ 6-inches	Depth Feet	Well Detail	Lithology	USCS Log	Sample Description	FID/PID (ppm)
N/R	N/A	N/A						
			1	Cement/ bentonite grout				
			2					
			3					
			4	Blank casing				
			5			SP	**SAND**: Light brown, fine grained, well-sorted. Silt <5%.	0.0
			6					
			7					
			8					
			9					
			10					0.0
			11					
			12					
			13					
			14					
			15				(Same as above)	0.0
			16					

Well Construction Log

INDUSTRIAL COMPLIANCE

Well Number	MW6	Project Number	03102163-03	Project Name	SPTCo Yuma

Sample Number	Recov.	Blows/ 6-inches	Depth Feet	Well Detail	Lithology	USCS Log	Sample Description	FID/PID (ppm)
N/R	N/A	N/A						
			18					
			19					
			20			SP	**SAND**: Light brown, fine grained, well-sorted. Silt <5%.	0.0
			21					
			22	Cement/ bentonite grout				
			23					
			24					
			25	Blank casing				0.0
			26					
			27					
			28					
			29					
			30				(Same as above)	0.0
			31					
			32					
			33					
			34					
			35					0.0
			36					
			37					
			38					
			39					

Well Construction Log

INDUSTRIAL COMPLIANCE

Well Number	MW6	Project Number	03102163-03	Project Name	SPTCo Yuma

Sample Number	Recov.	Blows/ 6-inches	Depth Feet	Well Detail	Lithology	USCS Log	Sample Description	FID/PID (ppm)
	NA	NA						
			40			SP	SAND: Light brown, fine grained, well-sorted.	0.0
			41	Blank casing				
			42					
			43					
			44					
			45	Bentonite seal				0.0
			46					
			47					
			48					
			49	Filter pack 10-20				
			50				(Same as above) Moderately moist.	0.0
			51	Slotted casing .010 inch				
			52					
			53					
			54					
			55					0.0
			56					
			57					
HP11							* Drove hydropunch from 57 to 59.5 feet bgs.	
			58			SW	GRAVELLY SAND: Medium brown, fine to medium grained. Gravels, subangular, 3-4 cm. Silt <5%. Very moist.	
			59					
			60					N/R
			61					

Well Construction Log

INDUSTRIAL COMPLIANCE

Well Number	MW6	Project Number	03102163-03	Project Name	SPTCo Yuma

Sample Number	Recov.	Blows/ 6-inches	Depth Feet	Well Detail	Lithology	USCS Log	Sample Description	FID/PID (ppm)
N/A	N/A	N/A						
			62					
			63					
			64					
			65			SW	**GRAVELLY SAND**: Medium brown, fine to medium grained. Gravels, subangular, 3-4 cm. Silt<5%. Very moist.	N/R
			66					
			67					
			68					
			69					
			70				(Same as above)	N/R
			71	Threaded end cap				
			72					
			73				Total Depth @ 72.5 feet bgs.	

Notes:

N/A - Not applicable

NM - Not measured

N/R - None recovered

bgs - Below ground surface

ERM-West, Inc.
9111 North Scottsdale Road
Suite 100
Scottsdale, Arizona 85250
(602) 990-9360
ERM

BOREHOLE LOG

Monitoring Well Number
MW-10

Project Number: 8010.11

Project Name: Union Pacific RR

Location: Yuma Yard

Contractor: Layne

Drilling Method: Hollow Stem Auger

Logged By: M. Freebury

Date(s): 04/09/98

Northing: 616875.8973

Easting: 434896.3961

Borehole Dia.: 11.00in

Ground Elevation: 191.51'

Top of Casing Elevation: 191.26'

Total Depth: 92.00'

Completed Depth: 90.50'

Well Construction

Blank Casing:
type: Steel dia: 4.00" fm: 0.0' to: 20.00'
type: PVC dia: 4.00" fm: 20.00' to: 60.00'

Screens:
type: Slotted size: 0.010" dia: 4.00" fm: 60.00' to: 90.00'

Depth (ft)	Graphic Log	USCS Code	Well Construction	Sample Recovery	Blow Counts	PID (ppm)	Description/Soil Classification
			BLANK CASING				
5		SP			6 6 8	0.0	SAND (SP): very pale brown (10YR 7/3), 70% fine, 30% silt, dry, medium dense, no odor, non-cohesive.
10							
15		SP			4 8 12	0.0	SAND (SP): same as above, no odor.
20							
25		SP			13 20 20	0.0	SAND (SP): same as above, slightly finer with 35% silt fraction, dense, no odor.
30							
35		SM			14 22 33	0.0	SAND (SM): pale brown (10YR 6/3), 50% fine, 40% silt, 10% medium, dry, dense, no odor, non-cohesive.

ERM-West, Inc.
9111 North Scottsdale Road
Suite 108
Scottsdale, Arizona 85250
(602) 990-9360

BOREHOLE LOG

Monitoring Well Number
MW-10

Project Number: 8010.11

Project Name: Union Pacific RR

Location: Yuma Yard

Contractor: Layne

Drilling Method: Hollow Stem Auger

Logged By: M. Freebury

Date(s): 04/09/98

Northing: 616875.8973

Easting: 434896.3961

Borehole Dia.: 11.00in

Ground Elevation: 191.51'

Top of Casing Elevation: 191.26'

Total Depth: 92.00'

Completed Depth: 90.50'

Well Construction

Blank Casing:
type: Steel dia: 4.00" fm: 0.0' to: 20.00'
type: PVC dia: 4.00" fm: 20.00' to: 60.00'

Screens:
type: Slotted size: 0.010" dia: 4.00" fm: 60.00' to: 90.00'

Depth (ft)	Graphic Log	USCS Code	Well Construction	Sample Recovery	Blow Counts	PID (ppm)	Description/Soil Classification
45		ML		X	19 23 27		CLAYEY FINE SILT/SAND (ML): pale yellow (2.5Y 7/3), 60% fine, 10% medium, 20% silt, 10% clay, damp, moderately cohesive, very dense, no odor.
50							
55		SM		X	42 45 50	93	SILTY SAND (SM): very pale brown (10YR 7/3), 10% medium, 50% fine, 40% silt, damp to dry, non-cohesive, very dense, no odor.
60			SCREEN				
65		SP		X	44 55 50	1.0	SAND (SP): yellowish brown (10YR 5/8), significant lithological change from previous intervals, trace silt and fine sand, 50% medium, 50% coarse, trace gravel to 0.25", mineralization causing yellow/reddish pigmentation of sediment, damp near water level, but not saturated. Water level at 67 feet.
		SP					Sampling stopped at 65'. No sampling below water level at 67'. Small amount of gravel came off auger flights as drilling proceeded to 92', but cuttings remained predominately sand, very similiar to all previous intervals.
70							
75							

ERM-West, Inc.
8111 North Scottsdale Road
Suite 108
Scottsdale, Arizona 85253
(602) 990-6300

BOREHOLE LOG

Monitoring Well Number
MW-10

Project Number: 8010.11

Project Name: Union Pacific RR

Location: Yuma Yard

Contractor: Layne

Drilling Method: Hollow Stem Auger

Logged By: M. Freebury

Date(s): 04/09/98

Northing: 616875.8973

Easting: 434896.3961

Borehole Dia.: 11.00in

Ground Elevation: 191.51'

Top of Casing Elevation: 191.26'

Total Depth: 92.00'

Completed Depth: 90.50'

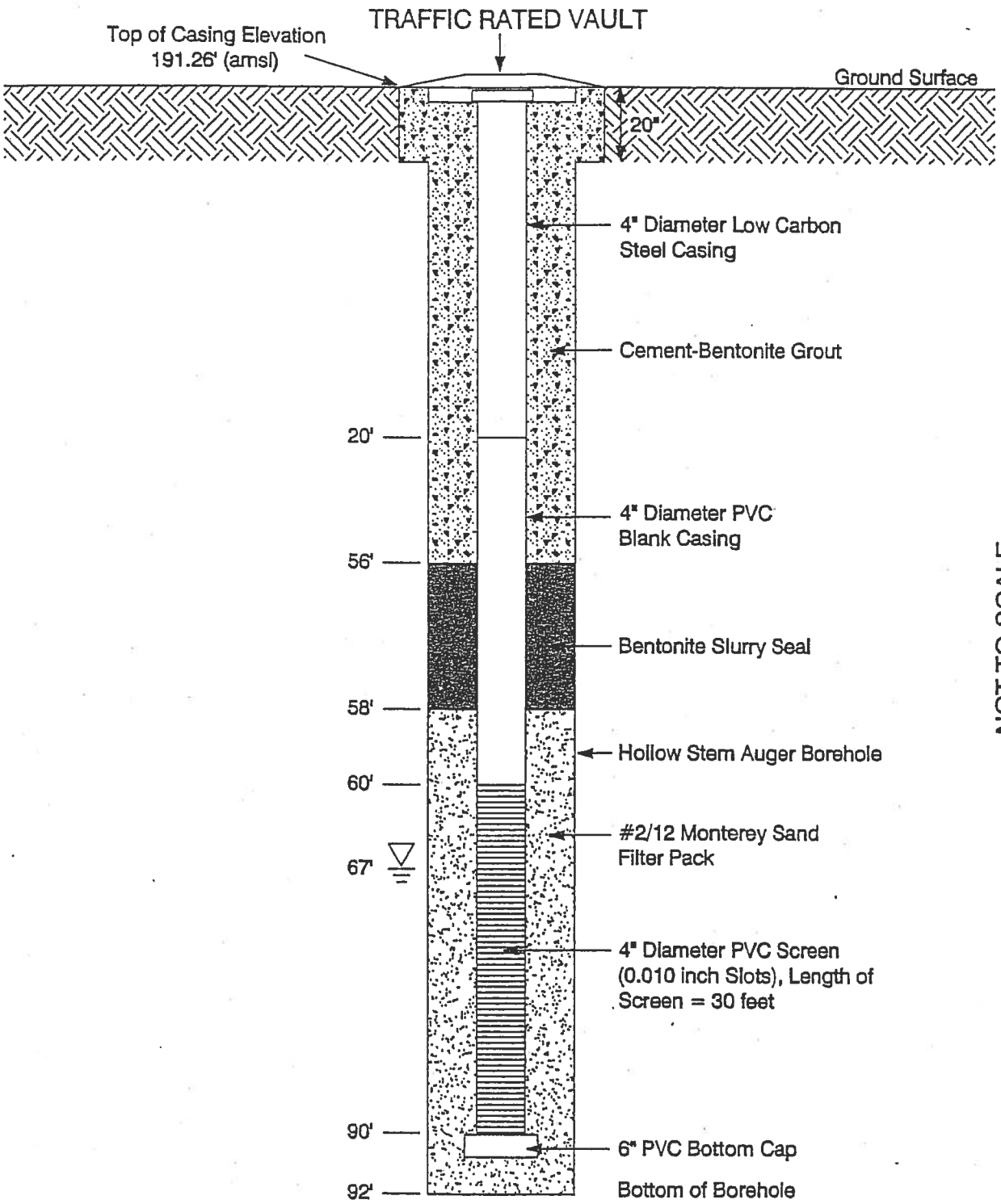
Well Construction

Blank Casing:
type: Steel dia: 4.00" fm: 0.0' to: 20.00'
type: PVC dia: 4.00" fm: 20.00' to: 60.00'

Screens:
type: Slotted size: 0.010" dia: 4.00" fm: 60.00' to: 90.00'

Depth (ft)	Graphic Log	USCS Code	Well Construction	Sample Recovery	Blow Counts	PID (ppm)	Description/Soil Classification
85							
90			6" PVC PIPE →				Total Depth of borehole at 92 feet.
95							
100							
105							
110							
115							

Project No. 8010.11
Date: 05/06/98
Drawn By: R. Olson
CAD File: G:\cad\dwg\8010\11\80101101



Monitoring Well MW-10 Design
Union Pacific Railroad,
Former UST System
Yuma, Arizona

ERM 05/98

ERM-West, Inc.
8111 North Scottsdale Road
Suite 108
Scottsdale, Arizona 85250
(602) 990-8350

BOREHOLE LOG

Monitoring Well Number
MW-11

Project Number: 8010.11

Project Name: Union Pacific RR

Location: Yuma Yard

Contractor: Layne

Drilling Method: Hollow Stem Auger

Logged By: M. Freebury

Date(s): 04/10/98

Northing: 616636.5202

Easting: 434895.2957

Borehole Dia.: 11.00in

Ground Elevation: 193.56'

Top of Casing Elevation: 192.77'

Total Depth: 92.00'

Completed Depth: 90.50'

Well Construction

Blank Casing:
type: Steel dia: 4.00" fm: 0.0' to: 20.00'
type: PVC dia: 4.00" fm: 20.00' to: 60.00'

Screens:
type:Slotted size: 0.010" dia: 4.00" fm: 60.00' to: 90.00'

Depth (ft)	Graphic Log	USCS Code	Well Construction	Sample Recovery	Blow Counts	PID (ppm)	Description/Soil Classification
			BLANK CASING				
5		SP			5 6 9	1.0	SAND (SP): very pale brown (10YR 7/3), 50% fine, 50% medium, trace silt (<5%), dry, non-cohesive, medium dense, no odor.
10							
15		SP			6 9 13	0.0	SAND (SP): same as above.
20							
25		SM			11 19 22		SILTY SAND (SM): very pale brown (10YR 7/3), same as above, but with 10% silt, 60% fine, 30% medium, no odor, dry, non-cohesive, dense.
30							
35		SM			11 14 16	0.0	SILTY SAND (SM): same as above.

ERM-West, Inc.
5111 North Scottsdale Road
Suite 108
Scottsdale, Arizona 85250
(602) 990-8350

BOREHOLE LOG

Monitoring Well Number
MW-11

Project Number: 8010.11

Project Name: Union Pacific RR

Location: Yuma Yard

Contractor: Layne

Drilling Method: Hollow Stem Auger

Logged By: M. Freebury

Date(s): 04/10/98

Northing: 616636.5202

Easting: 434895.2957

Borehole Dia.: 11.00in

Ground Elevation: 193.56'

Top of Casing Elevation: 192.77'

Total Depth: 92.00'

Completed Depth: 90.50'

Well Construction

Blank Casing:
type: Steel dia: 4.00" fm: 0.0' to: 20.00'
type: PVC dia: 4.00" fm: 20.00' to: 60.00'

Screens:
type: Slotted size: 0.010" dia: 4.00" fm: 60.00' to: 90.00'

Depth (ft)	Graphic Log	USCS Code	Well Construction	Sample Recovery	Blow Counts	PID (ppm)	Description/Soil Classification
45		SM			22 43 45		SILTY SAND (SM): pale yellow (2.5Y 8/3), 10-15% silt, 50% fine, 40% medium, dry, non-cohesive, split spoon went through small (2") zone of calcified sediment, very dense.
50							
55		SM			32 35 50	0.0	SILTY SAND (SM): very pale brown (10YR 7/3), 20-30% silt, 60% fine, trace medium, non-cohesive, dry, no odor.
60			SCREEN				
65		SP			19 38 50		SAND (SP): very pale brown (10YR 7/3), <10% silt, 40% fine, 50% medium, very dense, non-cohesive, damp, no odor.
							Initial Water Level at 68 feet.
70		SP					Sampling stopped at 65', no sampling below water level at 68'.
75							

ERM-West, Inc.
6111 North Scottsdale Road
Suite 105
Scottsdale, Arizona 85250
(602) 990-9350

ERM

BOREHOLE LOG

Monitoring Well Number
MW-11

Project Number: 8010.11

Project Name: Union Pacific RR

Location: Yuma Yard

Contractor: Layne

Drilling Method: Hollow Stem Auger

Logged By: M. Freebury

Date(s): 04/10/98

Northing: 616636.5202

Easting: 434895.2957

Borehole Dia.: 11.00in

Ground Elevation: 193.56'

Top of Casing Elevation: 192.77'

Total Depth: 92.00'

Completed Depth: 90.50'

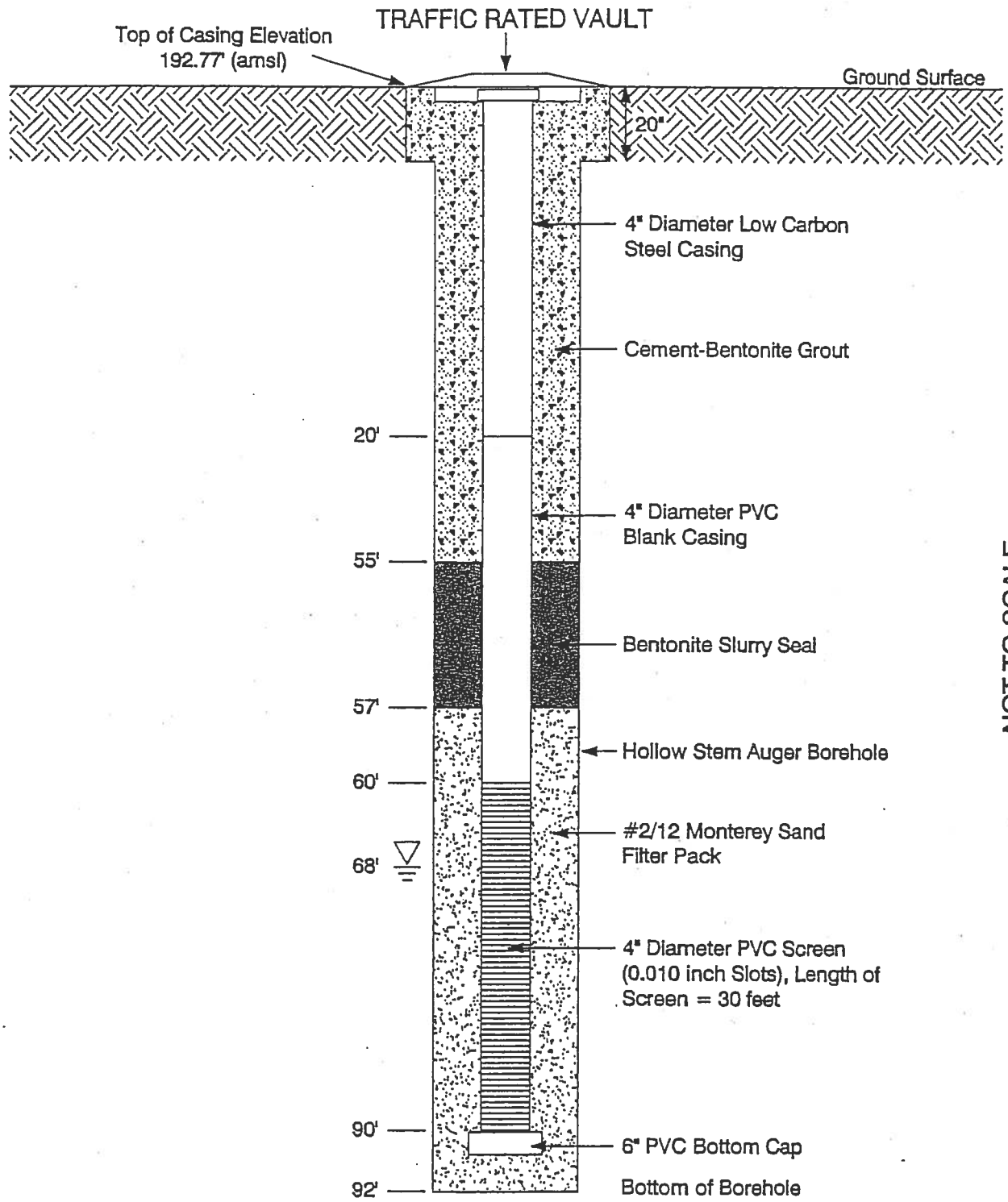
Well Construction

Blank Casing:
type: Steel dia: 4.00" fm: 0.0' to: 20.00'
type: PVC dia: 4.00" fm: 20.00' to: 60.00'

Screens:
type:Slotted size: 0.010" dia: 4.00" fm: 60.00' to: 90.00'

Depth (ft)	Graphic Log	USCS Code	Well Construction	Sample Recovery	Blow Counts	PID (ppm)	Description/Soil Classification
85							
90			6" PVC PIPE →				Total depth of borehole at 92 feet bgs.
95							
100							
105							
110							
115							

Project No. 8010.11
Date: 05/06/98
Drawn By: R. Olson
CAD File: G:\cad\dwg\8010\11\80101102



NOT TO SCALE

Monitoring Well MW-11 Design
Union Pacific Railroad,
Former UST System
Yuma, Arizona

ERM 05/98

GeoTrans, Inc.	Project No: 1303.020.03.01	Borehole No: MW-8B ADWR ID: 55-905867
Site Map	Client: ADEQ Site: 20th & Factor WQARF	Start Date/Time: 11/01/06 End Date/Time: 11/07/06 Logged By: A. Gray
	Drilling Method: Sonic Borehole Diameter: 10	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: N/A

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lthology	Description and Comments
0					Ground Surface
1 2 3 4 5	5				**Poorly-graded Sand (SP)** Brown, dry, fine to medium grained sand with trace gravel
6 7 8 9 10	10				**Poorly-graded Sand (SP)** As above
11 12 13 14 15	15				**Poorly-graded Sand (SP)** Light gray, dry, fine grained sand with trace gravel
16 17 18 19 20	20				**Poorly-graded Sand (SP)** As above
21 22 23 24 25	25				**Poorly-graded Sand (SP)** becomes pink
26 27 28 29 30	30				**Poorly-graded Sand (SP)** Pinkish gray, dry, fine grained sand in weakly cemented sand nodules
31 32 33 34 35	35				**Poorly-graded Sand (SP)** Pinkish gray, dry, fine grained sand with some weakly cemented sand nodules
36 37 38 39 40	40				**Poorly-graded Sand (SP)** As above
41 42 43 44 45	45				**Poorly-graded Sand (SP)** Very pale brown, dry, fine grained sand
46 47 48 49 50	50				**Poorly-graded Sand (SP)** Pinkish gray, dry, fine grained sand

Drilling Contractor: PROSONIC Corporation

Checked By: M. Oakley

Date Checked: 12/04/06

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

Site Map	**Project No:** 1303.020.03.01 **Client:** ADEQ **Site:** 20th & Factor WQARF	**Borehole No:** MW-8B **Start Date/Time:** 11/01/06 **End Date/Time:** 11/07/06 **Logged By:** A. Gray
	Drilling Method: Sonic **Borehole Diameter:** 10	**Angle from Vertical:** 0
	Surface Material: Asphalt	**Sampling Method:** N/A

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
51 52 53 54 55	55				**Poorly-graded Sand (SP)** Pinkish gray, dry, fine grained sand with weakly cemented sand nodules, trace gravel
56 57 58 59 60	60				**Poorly-graded Sand (SP)** As above
61 62 63 64 65	65				**Poorly-graded Sand (SP)** As above
66 67 68 69 70	70				**Poorly-graded Sand (SP)** As above
71 72 73 74 75	75				**Poorly-graded Sand (SP)** As above
76 77 78 79 80	80				**Poorly-graded Sand (SP)** Pinkish gray, fine to medium grained sand with weakly cemented sand nodules and trace gravel
81 82 83 84 85	85				**Poorly-graded Sand (SP)** Yellow brown, slighty moist, fine to medium grained sand
86 87 88 89 90	90				**Poorly-graded Sand (SP)** Pinkish gray, fine grained sand with weakly cemented sand nodules, trace clay lenses
91 92 93 94 95	95				**Clay (CL)** Light gray, slightly damp, silty clay with trace stringers of yellow clay, low plasticity
96 97 98 99 100	100				**Clayey Sand - Sandy Clay (SC-CL)** Light gray to pale brown, damp, sandy clay with trace lines of yellow clay, low plasticity

Drilling Contractor: PROSONIC Corporation
Checked By: M. Oakley
Date Checked: 12/04/06

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

Site Map	**Project No:** 1303.020.03.01 **Client:** ADEQ **Site:** 20th & Factor WQARF	**Borehole No: MW-8B** **Start Date/Time:** 11/01/06 **End Date/Time:** 11/07/06 **Logged By:** A. Gray
	Drilling Method: Sonic **Borehole Diameter:** 10	**Angle from Vertical:** 0
	Surface Material: Asphalt	**Sampling Method:** N/A

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
101-105	105				**Clayey Sand - Sandy Clay (SC-CL)** Pale brown, saturated, clayey sand with trace clay stringers
106-110	110				**Poorly-graded Sand (SP)** Yellowish brown, saturated, fine to medium grained sand, trace clay
111-117	115				**Poorly-graded Sand (SP)** becomes pale brown and fine grained
118-150					**Bottom of the boring at 117 feet bgs**

Drilling Contractor: PROSONIC Corporation
Checked By: M. Oakley
Date Checked: 12/04/06

Sheet: 3 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

Site Map	**Project No:** 1303.020 **Client:** ADEQ **Site:** 20th & Factor WQARF	**Borehole No:** MW-18B **ADWR ID:** 55-905869 **Start Date/Time:** 11/08/06 **End Date/Time:** 11/11/06 **Logged By:** A. Gray
	Drilling Method: Sonic **Borehole Diameter:** 10	**Angle from Vertical:** 0
	Surface Material: Asphalt	**Sampling Method:** N/A

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lthology	Description and Comments
0					Ground Surface
1 2 3 4 5	5				**Poorly-graded Sand (SP)** Pale brown, dry, fine to medium grained
6 7 8 9 10	10				**Poorly-graded Sand (SP)** As above
11 12 13 14 15	15				**Sandy Clay - Clayey Sand (CL-SC)** Light brown, dry, sandy clay
16 17 18 19 20	20				**Sandy Clay - Clayey Sand (CL-SC)** As above
21 22 23 24 25	25				**Poorly-graded Sand (SP)** Light yellowish brown, dry, fine grained
26 27 28 29 30	30				**Poorly-graded Sand (SP)** Pale brown, dry, fine to medium grained sand
31 32 33 34 35	35				**Sandy Clay - Clayey Sand (CL-SC)** Light brown, dry, sandy clay
36 37 38 39 40	40				**Sandy Clay - Clayey Sand (CL-SC)** Becomes light gray
41 42 43 44 45	45				**Poorly-graded Sand (SP)** Pale brown, dry, fine grained
46 47 48 49 50	50				**Poorly-graded Sand (SP)** As above

Drilling Contractor: PROSONIC Corporation
Checked By: L. Gardiner
Date Checked: 12/15/06

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.020	Borehole No: MW-18B
Site Map	Client: ADEQ Site: 20th & Factor WQARF	Start Date/Time: 11/08/06 End Date/Time: 11/11/06 Logged By: A. Gray
	Drilling Method: Sonic Borehole Diameter: 10	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: N/A

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
51-54	55				**Poorly-graded Sand (SP)** Light gray, dry, fine to medium grained
55-59	60				**Poorly-graded Sand (SP)** As Above
60-64	65				**Poorly-graded Sand (SP)** As Above
65-69	70				**Poorly-graded Sand (SP)** Becomes moist
70-74	75				**Poorly-graded Sand (SP)** Becomes damp
75-79	80				**Poorly-graded Sand (SP)** Becomes saturated
80-84	85				**Poorly-graded Sand (SP)** As above
85-89	90				**Sandy Clay - Clayey Sand (CL-SC)** Brown, saturated, sandy clay
90-94	95				**Sandy Clay - Clayey Sand (CL-SC)** As above
95-99	100				**Sandy Clay - Clayey Sand (CL-SC)** As above
100					

Drilling Contractor: PROSONIC Corporation
Checked By: L. Gardiner
Date Checked: 12/15/06

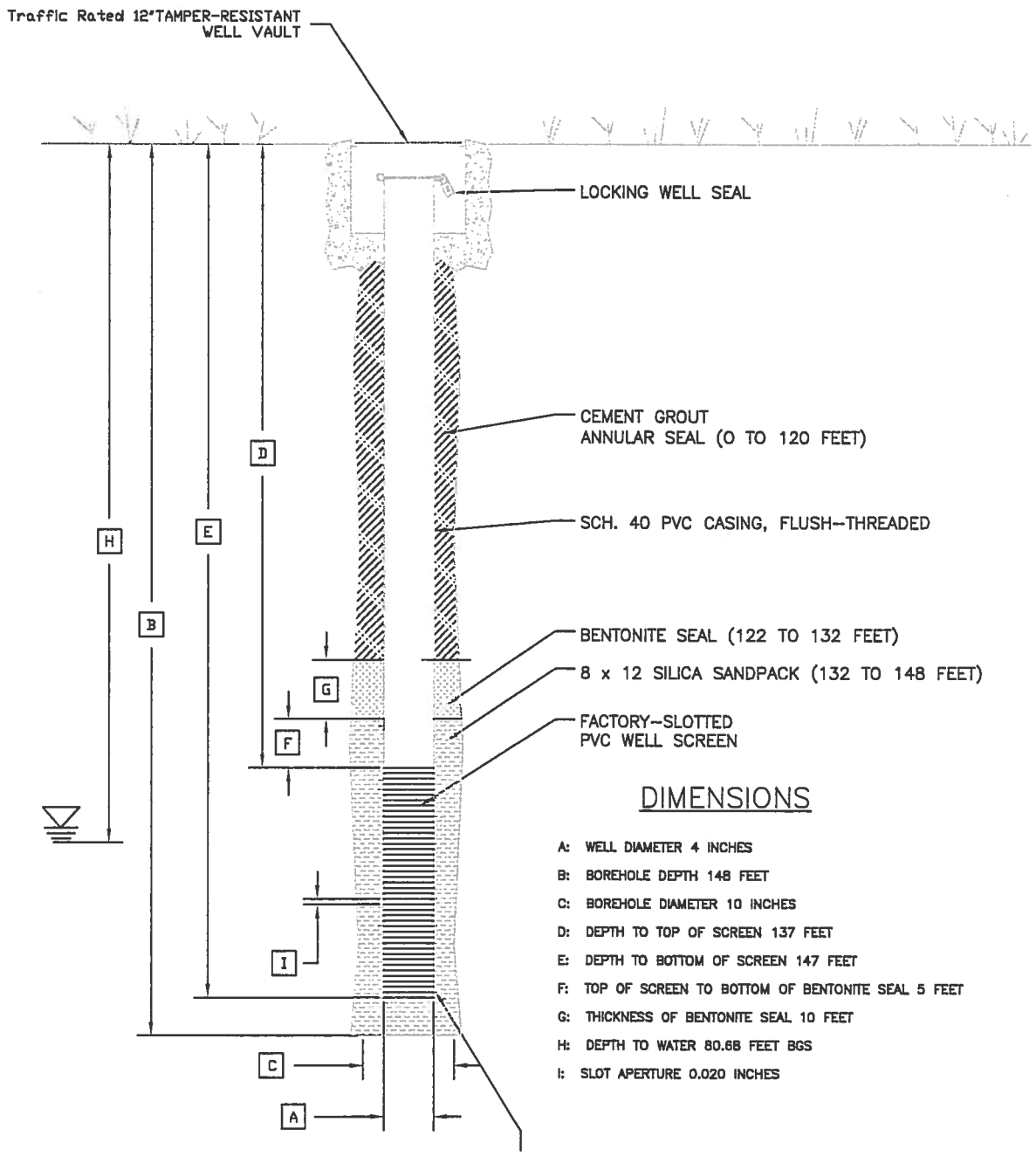
GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.020	Borehole No: MW-18B
Site Map	Client: ADEQ Site: 20th & Factor WQARF	Start Date/Time: 11/08/06 End Date/Time: 11/11/06 Logged By: A. Gray
	Drilling Method: Sonic Borehole Diameter: 10	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: N/A

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
101–105	105				**Silty Sand (SM)** Pale brown, saturated, sandy silt
106–110	110				**Poorly-graded Sand (SP)** Light gray, saturated, fine to medium grained
111–115	115				**Poorly-graded Sand (SP)** As above
116–120	120				**Poorly-graded Sand (SP)** As above
121–125	125				**Poorly-graded Sand (SP)** As above
126–130	130				**Poorly-graded Sand (SP)** As above
131–135	135				**Silty Sand (SM)** Light gray, saturated, silty sand with weakly cemented sand nodules
136–140	140				**Silty Sand (SM)** Light gray, saturated
141–145	145				**Poorly-graded Sand (SP)** Light gray, saturated fine to coarse grained
146–148					
149–150					**Bottom of the boring at 148 feet bgs**

Drilling Contractor: PROSONIC Corporation
Checked By: L. Gardiner
Date Checked: 12/15/06
Sheet: 3 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318



DIMENSIONS

A: WELL DIAMETER 4 INCHES
B: BOREHOLE DEPTH 148 FEET
C: BOREHOLE DIAMETER 10 INCHES
D: DEPTH TO TOP OF SCREEN 137 FEET
E: DEPTH TO BOTTOM OF SCREEN 147 FEET
F: TOP OF SCREEN TO BOTTOM OF BENTONITE SEAL 5 FEET
G: THICKNESS OF BENTONITE SEAL 10 FEET
H: DEPTH TO WATER 80.68 FEET BGS
I: SLOT APERTURE 0.020 INCHES

* NOT TO SCALE

TITLE: MW-18B WELL DIAGRAM 20TH AND FACTOR WQARF SITE			
LOCATION: YUMA, ARIZONA			
GeoTrans, Inc. A TETRA TECH COMPANY	CHECKED	LG	FIGURE
	DRAFTED	MB	B4
	PROJECT	1303.020	
	DATE	12/19/06	

Site Map	**Project No:** 1303.020.03.01 **Client:** ADEQ **Site:** Yuma 20th & Factor WQARF Site	**Borehole No:** MW-21B **ADWR ID:** 55-906704 **Start Date/Time:** 4/26/07 **End Date/Time:** 4/30/07 **Logged By:** A. Gray
	Drilling Method: Sonic **Borehole Diameter:** 8"	**Angle from Vertical:** 0
	Surface Material: Concrete	**Sampling Method:** Continous Core

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lthology	Description and Comments
0					Ground Surface
1–5			0.3		**Poorly Graded Sand (SP)** 75% medium, 25% fine grained sand, pink (7.5YR 7/3), dry, no cementation
6–9	10		0.2		
10–14		4/27/07 @ 0820	0.1		
15–19	20		0.2		
20–24		4/27/07 @ 0835	0.6		
25–29	30		1.3		**Clayey Sand (SC)** 50% sand 50% silt, light gray (10YR 7/2), dry, no cementation
30–34		4/27/07 @ 1005	0.7		**Clay (CL)** Brown (10YR 5/3), slightly moist, very stiff
35–39	40	4/27/07 @ 1030	0.6		**Poorly Graded Sand (SP)** Fine grained, very pale brown (10YR 6/4), dry, moderate cementation
40–44		4/27/07 @ 1055	0.4		
45–49	50	4/27/07 @ 1130	0.7		
50					

Drilling Contractor: WDC
Checked By: L. Gardiner
Date Checked: 5/15/07

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

Site Map	Project No: 1303.020.03.01 Client: ADEQ Site: Yuma 20th & Factor WQARF Site	Borehole No: MW-21B Start Date/Time: 4/26/07 End Date/Time: 4/30/07 Logged By: A. Gray
	Drilling Method: Sonic Borehole Diameter: 8"	Angle from Vertical: 0
	Surface Material: Concrete	Sampling Method: Continous Core

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
51–54		4/27/07 @ 1205	0.9		**Poorly Graded Sand (SP)** As Above
55–59	60		0.3		
60–64		4/27/07 @ 1340	0.2		**Poorly Graded Sand (SP)** 50% fine, 25% medium sand, 25% silt, light gray (10YR 7/2), moist, weak cementation
65–69	70		1.1		**Poorly Graded Sand, Gravel, Silt Mix (SM)** Pale brown (10YR 6/3), moist, moderate cementation
70–74		4/27/07 @ 1510	1.2		**Poorly Graded Sand (SP)** Fine grained sand, brown (10YR 5/3), moist, weak cementation
75–79	80		0.6		**Poorly Graded Sand (SP)** 50% fine, 50% medium grained sand, brown (10YR 5/3), moist, no cementation
80–84			0.6		**Poorly Graded Sand (SP)** 50% fine, 50% medium grained sand, brown (10YR 5/3), moist, weak cementation
85–89	90		1.3		
90–94			1.2		
95–99	100	4/27/07 @ 1625	0.5		**Sandy Clay (SC)** 80% clay, 20% sand, light yellowish brown (10YR 6/4), moist, stiff
100					

Drilling Contractor: WDC
Checked By: L. Gardiner
Date Checked: 5/15/07

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

	Project No: 1303.020.03.01	**Borehole No: MW-21B**
Site Map	**Client:** ADEQ **Site:** Yuma 20th & Factor WQARF Site	**Start Date/Time:** 4/26/07 **End Date/Time:** 4/30/07 **Logged By:** A. Gray
	Drilling Method: Sonic **Borehole Diameter:** 8"	**Angle from Vertical:** 0
	Surface Material: Concrete	**Sampling Method:** Continous Core

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
101–103		4/28/07 @ 0910	0.0		**Poorly Graded Sand (SP)** Fine sand, brown (10YR 5/3), moist, no cementation
104–108	110	4/28/07 @ 1125	0.3		
109–113		4/28/07 @ 1225	0.1		
114–118	120		0.9		
119–123		4/28/07 @ 1445	0.2		
124–128	130		0.0		
129–133		4/28/07 @ 1545	0.1		**Poorly Graded Sand (SP)** Medium grained sand, brown (10YR 5/3), moist, no cementation
134–138	140		0.0		**Poorly Graded Sand (SP)** 50% fine, 35% medium grained sand, 15% silt, brown (10YR 5/3), moist, no cementation
139–143		4/28/07 @ 1650	0.0		**Silty Sand (SM)** Fine grained, brown (10YR 5/3), moist, no cementation
144–148	150		0.0		**Clayey Sand (SC)** 85% fine grained sand, 15% clay, brown (10YR 5/3), moist, no cementation
149–150					

Drilling Contractor: WDC
Checked By: L. Gardiner
Date Checked: 5/15/07

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.020.03.01	Borehole No: MW-21B
Site Map	Client: ADEQ Site: Yuma 20th & Factor WQARF Site	Start Date/Time: 4/26/07 End Date/Time: 4/30/07 Logged By: A. Gray
	Drilling Method: Sonic Borehole Diameter: 8"	Angle from Vertical: 0
	Surface Material: Concrete	Sampling Method: Continous Core

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
151-154		4/28/07 @ 1805	0.2		**Poorly Graded Sand (SP)** Medium grained sand, brown (10YR 5/3), moist, no cementation
155-159	160		0.2		
160-164		4/29/07 @ 0855	0.1		**Poorly Graded Sand (SP)** Fine grained sand, brown (10YR 5/3), moist, no cementation
165-169	170		0.1		
170-174		4/29/07 @ 1025	0.4		
175-179	180		0.1		**Poorly Graded Sand (SP)** Medium grained sand, brown (10YR 5/3), moist, no cementation
180-184		4/29/07 @ 1145	0.0		**Well Graded Gravel, Sand, Clay Mix (GC)** Mostly brown (10YR 5/4), moist, no cementation
185-189	190		0.0		**Clayey Sand (SC)** Dark yellowish brown (10YR 4/4), moist, no cementation
190-194		4/29/07 @ 1340	0.2		**Clayey Sand (SC)** 70% sand, 30% clay, olive yellow (2.5 Y 6/6), moist, no cementation
195-199	200		0.0		
200					

Drilling Contractor: WDC
Checked By: L. Gardiner
Date Checked: 5/15/07

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

Site Map	**Project No:** 1303.020.03.01 **Client:** ADEQ **Site:** Yuma 20th & Factor WQARF Site	**Borehole No: MW-21B** **Start Date/Time:** 4/26/07 **End Date/Time:** 4/30/07 **Logged By:** A. Gray
	Drilling Method: Sonic **Borehole Diameter:** 8"	**Angle from Vertical:** 0
	Surface Material: Concrete	**Sampling Method:** Continous Core

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
201 202 203 204 205	205	4/29/07 @ 1455	0.1		**Poorly Graded Sand (SP)** Medium grained sand, brown (10YR 5/3), moist, no cementation
206 207 208 209 210	210				Bottom of boring at 205 feet bgs
211 212 213 214 215					
216 217 218 219 220					
221 222 223 224 225					
226 227 228 229 230					
231 232 233 234 235					
236 237 238 239 240					
241 242 243 244 245					
246 247 248 249 250					

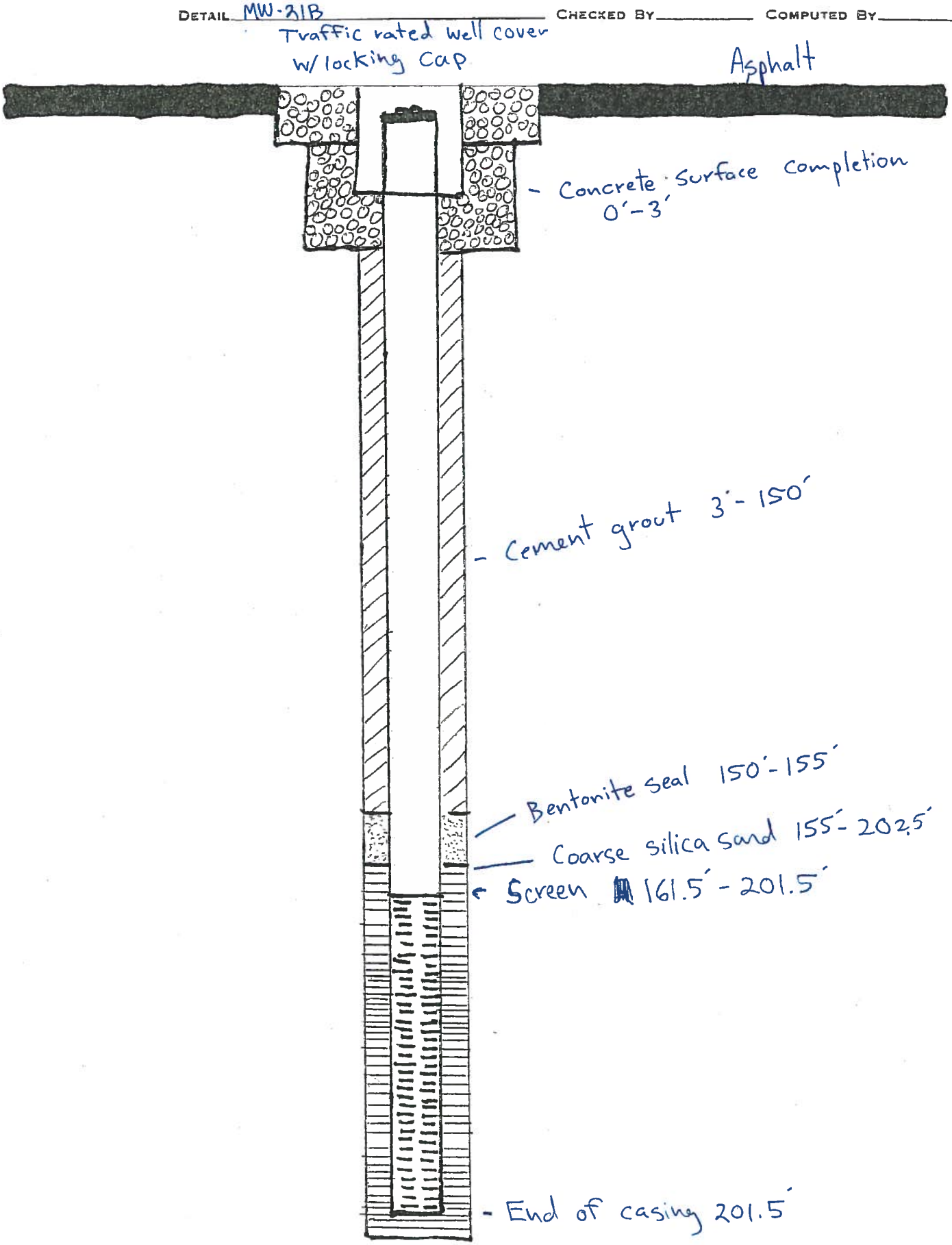
Drilling Contractor: WDC
Checked By: L. Gardiner
Date Checked: 5/15/07

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

CLIENT ADEQ JOB NO. 1303.020.03 03 PAGE

PROJECT 20th + Fairfax WQARF Site DATE CHECKED DATE

DETAIL MW-21B CHECKED BY COMPUTED BY



GeoTrans, Inc.

Site Map

Project No: 1303.026.09.01

Client: ADEQ

Site: 20th & Factor WQARF

Borehole No: MW-22B
ADWR ID: 55-908037

Start Date/Time: 11/05/07

End Date/Time: 11/13/07

Logged By: AG

Drilling Method: Sonic

Angle from Vertical: 0

Borehole Diameter: 9"

Surface Material: Gravel

Sampling Method: Sonic Core

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lthology	Description and Comments
0					Ground Surface
1–10					**Poorly Graded Sand (SP)** Light brown 7.5 YR 6/4, 50% fine, 50% medium grained sand, loose, no cementation, dry
11–35					**Silty Sand (SM)** Light brown 7.5 YR 6/4, 50% silt, 50% fine grained sand, dry, loose, no cementation
35–36					**Well Graded Gravelly Sand (SW)** Reddish yellow 7.5 YR 6/6, 70% sand, 30% gravel, dry, loose
36–40					**Silty Sand (SM)** Light brown 7.5 YR 6/6, 80% fine sand, 20% silt, loose, dry, no cementation
40–50					**Well Graded Gravelly Sand (SW)** Light brown 7.5 YR 6/4, 80% sand, 20% gravel, loose, dry, no cementation

Drilling Contractor: Boart Longyear

Checked By: LG

Date Checked: 12/17/07

Sheet: 1 of 4

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.026.09.01	Borehole No: MW-22B
Site Map	Client: ADEQ Site: 20th & Factor WQARF	Start Date/Time: 11/05/07 End Date/Time: 11/13/07 Logged By: AG
	Drilling Method: Sonic Borehole Diameter: 9"	Angle from Vertical: 0
	Surface Material: Gravel	Sampling Method: Sonic Core

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
51 52 53 54					**Poorly Graded Sand (SP)** Light brown 7.5 YR 6/4, 50% fine, 50% medium grained sand, dry, loose, no cementation
55 56 57 58 59					**Silty Sand (SM)** Light brown 7.5 YR 6/4, 75% medium grained sand, 25% silt, loose, dry, slight cementation
60 61 62 63 64					**Silty sand (SM)** Pinkish gray 7.5 YR 6/2, 70% fine grained sand, 30% silt, loose, dry, no cementation
65 66 67 68 69					**Poorly Graded Sand (SP)** Pinkish gray 7.5 YR 6/3, 90% fine grained sand, 10% silt, loose, moist
70 71 72 73 74					
75 76 77 78 79					**Poorly Graded Sand with Silt (SP)** Light brown 7.5 YR 6/2, 90% fine grained sand, 10% silt, loose, moist
80 81 82 83 84					**Poorly Graded Sand (SP)** Light brown 7.5 YR 6/3, medium grained sub-angular sand, loose, wet
85 86 87 88 89					
90 91 92 93 94					
95 96 97 98 99					
100					

Drilling Contractor: Boart Longyear
Checked By: LG
Date Checked: 12/17/07

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.026.09.01	Borehole No: MW-22B
Site Map	Client: ADEQ Site: 20th & Factor WQARF	Start Date/Time: 11/05/07 End Date/Time: 11/13/07 Logged By: AG
	Drilling Method: Sonic Borehole Diameter: 9"	Angle from Vertical: 0
	Surface Material: Gravel	Sampling Method: Sonic Core

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
101–109					
110–142					**Poorly Graded Sand (SP)** Light brown 7.5 YR 6/3 80% fine to medium grained sand, 20% fines, loose, wet
142–144					**Clay (CL)** Brown 7.5 YR 5/3, clay, stiff, moist
144–150					**Poorly Graded Sand (SP)** Light Brown 7.5 YR 6/3, 85% medium to fine sand, 15% fines, looset, wet

Drilling Contractor: Boart Longyear

Checked By: LG

Date Checked: 12/17/07

Sheet: 3 of 4

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.026.09.01	Borehole No: MW-22B
Site Map	Client: ADEQ Site: 20th & Factor WQARF	Start Date/Time: 11/05/07 End Date/Time: 11/13/07 Logged By: AG
	Drilling Method: Sonic Borehole Diameter: 9"	Angle from Vertical: 0
	Surface Material: Gravel	Sampling Method: Sonic Core

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
151–154					**Silty Clay (CL)** Light brown 7.5 YR 6/3, 60% clay, 40% silt, loose, wet
155					**Silty Clay (CL)** Light brown 7.5 YR 6/3, 80% clay, 20% silt, stiff, moist
156–160					**Silty Sand (SM)** Light brown 7.5 YR 6/3, 75% fine to medium grained sand, 25% silt
161–164					**Clay with Silt (CL)** Light brown 7.5 YR 6/3, clay with 10% silt, stiff, moist
165					**Poorly Graded Sand (SP)** Light brown 7.5 YR 6/3 poorly graded fine sand with 10% silt, loose, wet, no cementation
166–170					**Silty Sand (SM)** Light brown 7.5 YR 6/3, 50% fine sand, 50% silt and clay, wet, loose, no cemetation
171–175					**Clay (CL)** Red brown 5 YR 4/4, clay with white nodules and gray ribbons
176–180					**Silty Sand (SM)** Light brown 7.5 YR 6/3, 70% fine sand with 30% silt, well cemented in places, wet
181–200					

Drilling Contractor: Boart Longyear

Checked By: LG

Date Checked: 12/17/07

Sheet: 4 of 4

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.026.09.01	Borehole No: HI-MW23B ADWR ID: 55-908038
Site Map	Client: ADEQ Site: 20th & Factor WQARF	Start Date/Time: 11/14/07 End Date/Time: 11/28/07 Logged By: AG
	Drilling Method: Sonic Borehole Diameter: 9'	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: Sonic Core

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lthology	Description and Comments
0					Ground Surface
1–9					**Poorly Graded Sand (SP)** Light Brown 7.5 YR 6/3, dry, subangular
10–14					**Sand with Silt (SM)** Light Brown 7.5 YR 6/3, dry, subangular, <10% Silt
15–19					**Well Graded Silty Sand (SM)** Yellowish brown 10 YR 5/3, slightly moist, subangular, 70% sand, 30% silt. Silty clay lens from 16' to 16.5'
20–32					**Silty Sand (SM)** Light yellowish brown 2.5 YR 6/3, dry, subangular, 70% sand, 30% silt
33–35					**Clay (CL)** Strong brown, 7.5 YR 4/6, hard, with interbedded fine sand lenses
36–43					**Silty Clay(CL)** Brown 7.5 YR 4/3, 60% clay, 40% silt, low plasticity
44–45					**Clayey Silt (ML)** Light brown 10 YR 5/4, 80% silt, 20% clay
46–50					**Clayey Silt (ML)** Yellowish brown 10 YR 5/4, 50% clay, 50% silt

Drilling Contractor: Boart Longyear

Checked By: LG

Date Checked: 12/17/07

Sheet: 1 of 4

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.026.09.01	Borehole No: HI-MW23B
Site Map	Client: ADEQ Site: 20th & Factor WQARF	Start Date/Time: 11/14/07 End Date/Time: 11/28/07 Logged By: AG
	Drilling Method: Sonic Borehole Diameter: 9'	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: Sonic Core

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
51–54					**Clay (CL)** Yellowish 10 YR 5/4, moist, very stiff, medium plasticity
55–59					**Silty Sand (SM)** Pale brown 10 YR 6/3, moist, medium dense, some caliche, 60% sand, 40% silt
60–64					**Silty Sand (SM)** Pale brown 10 YR 6/3, dry, loose, subrounded, some gravel at 61 feet, 70% sand, 30% silt
65–69					**Poorly Graded Sand (SP)** Light gray 2.5 YR 7/2, dry, loose, subangular, some gravel <10%
70–74					**Poorly Graded Sand (SP)** Light gray 2.5 YR 7/2, dry, fine grained sand, loose, silt <10%
75–79					**Silty Sand (SM)** Light yellowish brown 2.5 YR 6/3, very moist, dense, fine grained sand, 60% sand, 40% silt
80–94					**Poorly Graded Sand (SP)** Light yellowish brown 2.5 YR 6/3, wet, fine grained sand, loose
95–100					**Poorly Graded Sand (SP)** Fine to mediumsand, light yellowish brown, 2.5 Y 6/3, wet, loose

Drilling Contractor: Boart Longyear
Checked By: LG
Date Checked: 12/17/07

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.026.09.01	Borehole No: HI-MW23B
Site Map	Client: ADEQ Site: 20th & Factor WQARF	Start Date/Time: 11/14/07 End Date/Time: 11/28/07 Logged By: AG
	Drilling Method: Sonic Borehole Diameter: 9'	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: Sonic Core

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
101					
102					
103					
104					
105					**Poorly Graded Silty Sand (SM)** Light yellowish brown 2.5 YR 6/4, wet, loose, fine to medium grained sand, 20% silt, becomes siltier towards bottom of interval
106					
107					
108					
109					
110					**Poorly Graded Sitly Sand (SM)** Fine sand with silt, pale brown 10 Y 6/3, wet, loose, 15% silt, 85% sand
111					
112					
113					
114					
115					**Silty Sand (SM)** Pale brown 10 YR 6/3, wet, loose, 20% silt, 80% sand
116					
117					
118					
119					
120					**Silty Sand (SM)** Light yellowish brown 10 YR 6/3, wet, loose, 40% silt, 60% sand
121					
122					
123					**Poorly Graded Sand (SP)** Pale brown 10 YR 6/3, fine grained sand, wet, loose
124					
125					**Sandy Silt with Trace Clay (MH)** Brown 7.5 YR 5/3, wet to saturated, medium dense, 75% silt, 25% sand, trace clay
126					
127					
128					
129					
130					
131					
132					**Poorly Graded Sand with Trace Silt and Gravel (SP)** Light yellowish brown, 10 YR 6/4, wet, poorly graded, subrounded, trace silt and gravel
133					
134					
135					
136					**Clay (CL)** Pale brown, 10 YR 6/3, moist, with <10% silt, low plasticity
137					
138					
139					**Sandy Clay (CL)** Pale brown 10 YR 6/3, dry, very stiff 60% clay, 40% sand
140					
141					**Poorly Graded Sand (SP)** Light yellowish brown, 10 YR 6/4, wet, loose
142					
143					
144					
145					**Silty Sand (SM)** Pale brown, 10 YR 6/3, 70% sand, 30% silt, wet
146					
147					
148					
149					
150					

Drilling Contractor: Boart Longyear

Checked By: LG

Date Checked: 12/17/07

Sheet: 3 of 4

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.026.09.01	Borehole No: HI-MW23B
Site Map	Client: ADEQ Site: 20th & Factor WQARF	Start Date/Time: 11/14/07 End Date/Time: 11/28/07 Logged By: AG
	Drilling Method: Sonic Borehole Diameter: 9'	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: Sonic Core

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
151–159					**Poorly Graded Sand (SP)** Yellowish brown, 10 YR 5/4, wet, subangular, with trace silt
160–161					**Clay (CL)** Brown 10 YR 5/3, dry, hard, med plasticity
162–164					**Poorly Graded Sand (SP)** Brown, 10 YR 5/3, fine grained sand, trace silt, wet, loose
165–169					**Clay (CL)** Brown 7.5 YR 5/4, moist, stiff
170–185					**Silty Sand (SM)** Grayish brown, 10 YR 5/2, 80% fine sand, 20% silt moist, loose, no cementation
186–200					

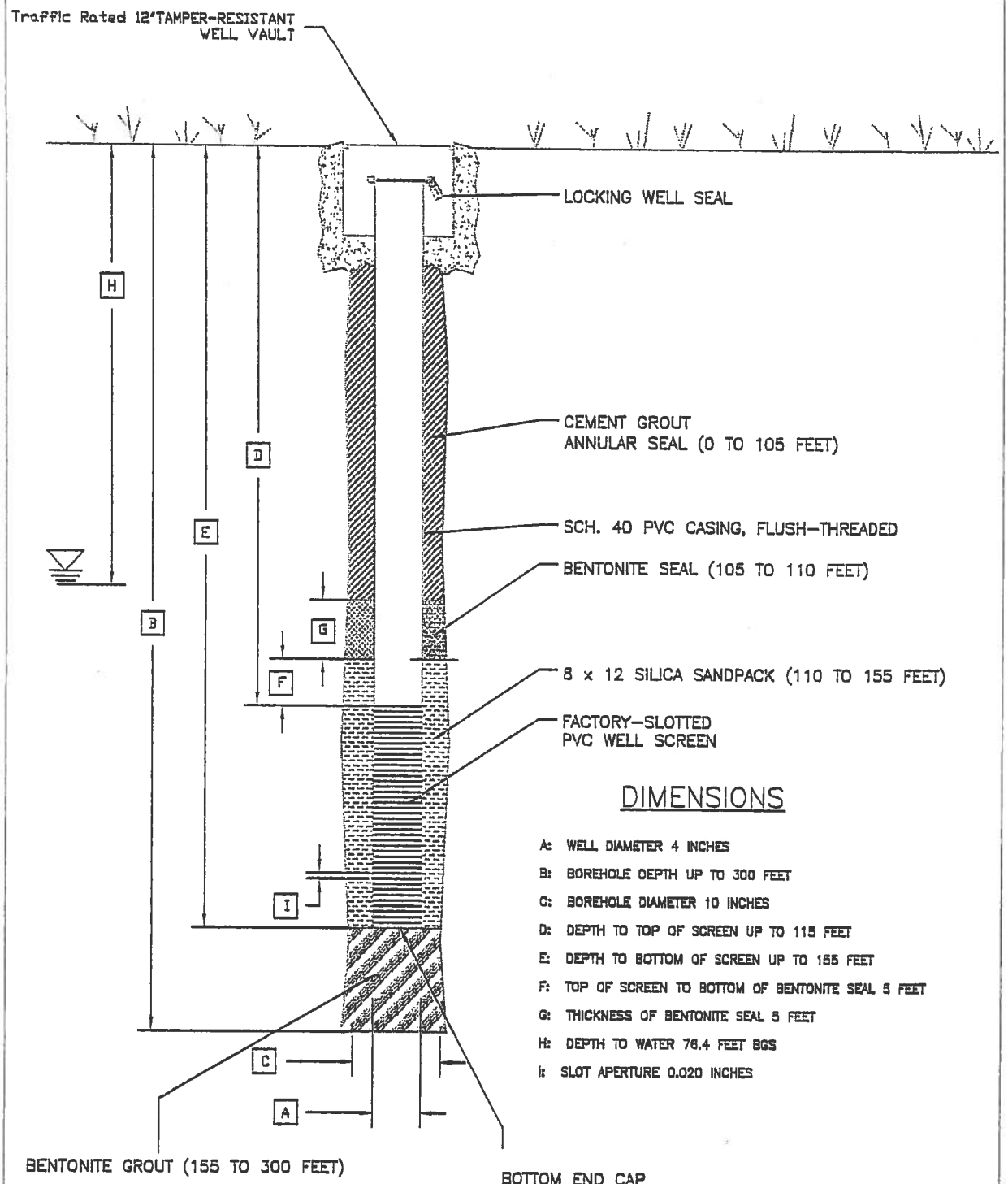
Drilling Contractor: Boart Longyear

Checked By: LG

Date Checked: 12/17/07

Sheet: 4 of 4

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318



DIMENSIONS

A: WELL DIAMETER 4 INCHES
B: BOREHOLE DEPTH UP TO 300 FEET
C: BOREHOLE DIAMETER 10 INCHES
D: DEPTH TO TOP OF SCREEN UP TO 115 FEET
E: DEPTH TO BOTTOM OF SCREEN UP TO 155 FEET
F: TOP OF SCREEN TO BOTTOM OF BENTONITE SEAL 5 FEET
G: THICKNESS OF BENTONITE SEAL 5 FEET
H: DEPTH TO WATER 76.4 FEET BGS
I: SLOT APERTURE 0.020 INCHES

* NOT TO SCALE

TITLE: MW-23B WELL DIAGRAM (GENERIC)
20TH AND FACTOR WQARF SITE

LOCATION: YUMA, ARIZONA

GeoTrans, Inc. A TETRA TECH COMPANY

CHECKED	JR
DRAFTED	TG
PROJECT	1303.028
DATE	09/14/07

FIGURE 1

GeoTrans, Inc.	Project No: 1303.026.09.01	Borehole No: MW-24B ADWR ID:
Site Map	Client: ADEQ Site: 20th & Factor WQARF Site	Start Date/Time: 01/07/08 @ 0930 End Date/Time: 01/14/08 @ 1445 Logged By: A. Gray
	Drilling Method: Sonic Borehole Diameter: 9" 0-120' 8" 120-170	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method:

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lthology	Description and Comments
0					Ground Surface
1–5					**Poorly Graded Sand (SP)** Light brown 7.5 YR 6/4, fine sand, well sorted, no cementation, dry
6–9					**Poorly Graded Sand (SP)** Light brown 7.5 YR 6/4, 50% medium, 50% fine grained sand, well sorted, no cementation, dry
10–15					**Silty Sand (SM)** Light brown 7.5 YR 6/4, 75% fine sand, 25% silt, no cementation, dry
16–19					
20–24					**Clay (CL)** Reddish brown 5 YR 5/4, clay, stiff, slightly moist
25–30					**Sandy Silt (ML)** Light brown 7.5 YR 6/4, 75% silt 25% fine sand, loose, dry
31–34					
35–40					**Sandy Silt (ML)** Light brown 7.5 YR 6/4, 75% silt 25% fine sand, loose, dry, some cementation
41–45					
46–49					
50					

Drilling Contractor: Boart Longyear
Checked By: L. Gardiner
Date Checked: 1/29/2008

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.026.09.01	Borehole No: MW-24B
Site Map	Client: ADEQ Site: 20th & Factor WQARF Site	Start Date/Time: 01/07/08 @ 0930 End Date/Time: 01/14/08 @ 1445 Logged By: A. Gray
	Drilling Method: Sonic Borehole Diameter: 9" 0-120' 8" 120-170	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method:

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
51–59					**Poorly Graded Sand (SP)** Light brown 7.5 YR 6/4, fine sand, loose, dry, some cementation
60–62					**Clay (CL)** Yellowish Brown 10 YR 5/8, clay, stiff, slightly moist
63–69					**Sandy Silt (SM)** Light brown 7.5 YR 6/4, 75% silt, 25% fine sand, loose, dry, some cementation
70–74					**Sandy Silt (ML)** Light brown 7.5 YR 6/4, 50% silt, 50% fine sand, loose, slightly moist, some cementation
75–79					**Sandy Silt (ML)** Light brown 7.5 YR 6/3, 70% silt, 30% fine sand, moist
80–89					**Sandy Silt (ML)** Light brown 7.5 YR 6/3, 80% silt, 20% fine sand, wet
90–94					**Clay (CL)** Brown 7.5 YR 5/4 clay, stiff, interbedded with silty sand as above, wet
95–100					**Sandy Silt (ML)** Light brown 7.5 YR 6/3, 80% silt, 20% fine sand, wet, no cementation

Drilling Contractor: Boart Longyear
Checked By: L. Gardiner
Date Checked: 1/29/2008

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.026.09.01	Borehole No: MW-24B
Site Map	Client: ADEQ Site: 20th & Factor WQARF Site	Start Date/Time: 01/07/08 @ 0930 End Date/Time: 01/14/08 @ 1445 Logged By: A. Gray
	Drilling Method: Sonic Borehole Diameter: 9" 0-120' 8" 120-170	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method:

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
101 102 103 104					**Sandy Silt (ML)** Light brown 7.5 YR 6/3, 70% silt, 30% fine sand, wet, no cementation
105 106 107 108 109					**Sandy Silt (ML)** Light brown 7.5 YR 6/3, 50% silt, 50% fine sand, wet, no cementation
110 111 112 113 114					**Poorly Graded Sand (SP)** Light brown 7.5 YR 6/3, 60% fine grained sand, 40% medium, wet, no cementation
115 116 117 118 119					**Poorly Graded Sand (SP)** Light brown 7.5 YR 6/3, 60% medium grained sand, 40% fine, wet, no cementation
120 121 122 123 124					**Sandy Silt (ML)** Pale brown 10 YR 6/3, 70% silt, 30% fine sand, wet no cementation
125 126 127 128 129					**Sandy Silt (ML)** Pale brown 10 YR 6/3, 80% silt, 20% fine sand, wet, no cementation
130 131 132 133 134					**Sandy Silt (ML)** Pale brown 10 YR 6/3, 70% silt, 30% medium to fine sand, wet, no cementation
135 136 137 138 139					**Sandy Silt (ML)** Pale brown 10 YR 6/3, 70% silt, 30% medium to fine sand, wet, some cementation
140 141 142 143 144					**Clay (CL)** Reddish brown 5 YR 5/4, stiff, moist, white nodules present
145 146 147 148 149 150					**Sandy Silt (ML)** Pale brown 10 YR 6/3, 70% silt, 30% fine sand, wet, no cementation

Drilling Contractor: Boart Longyear

Checked By: L. Gardiner

Date Checked: 1/29/2008

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

Site Map	Project No: 1303.026.09.01 Client: ADEQ Site: 20th & Factor WQARF Site	Borehole No: MW-24B Start Date/Time: 01/07/08 @ 0930 End Date/Time: 01/14/08 @ 1445 Logged By: A. Gray
	Drilling Method: Sonic Borehole Diameter: 9" 0-120' 8" 120-170	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method:

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
151					
152					
153					
154					
155					
156					
157					
158					
159					
160					**Silty Clay (CL)** Pale brown 10 YR 6/3, moist, white nodules present
161					
162					**Clay (CL)** Light yellowish brown 10 YR 6/4, stiff
163					
164					
165					
166					
167					**Sandy Silt (ML)** Pale brown (10 YR 6/3), 70% silt, 30% fine sand, wet, no cementation
168					
169					
170					
171					
172					
173					
174					
175					
176					
177					
178					
179					
180					
181					
182					
183					
184					
185					
186					
187					
188					
189					
190					
191					
192					
193					
194					
195					
196					
197					
198					
199					
200					

Drilling Contractor: Boart Longyear
Checked By: L. Gardiner
Date Checked: 1/29/2008

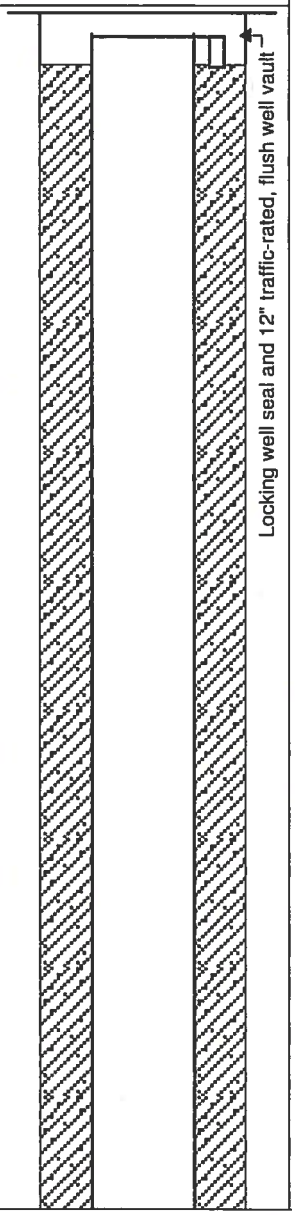
GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.
A TETRA TECH COMPANY

4801 E Washington St
Suite 260
Phoenix, AZ 85034
(602) 682-3320

Project Name: WQARF 20th & Factor Ave.
Project Number: 117-1303.036.02
Client: ADEQ
Location: Yuma, AZ
Drill Date: 3/8-12/2010
Reviewed By: Jasenka Zbozinek

Well ID: MW-25B
Drill Method: Mud Rotary
Angle From Vertical: NA
Sample Method: 18" Split Spoon
Logged By: Tyson Glock
Driller: Yellow Jacket

Depth (ft.)	USCS Symbol	Lithology	Description and Comments	Well Construction
			Straight drill to 60' bgs (no samples taken)	
1.0				
2.0				
3.0				
4.0				
5.0				
6.0				
7.0				
8.0				
9.0				
10.0				
11.0				
12.0				
13.0				
14.0				
15.0				
16.0				
17.0				
18.0				
19.0				
20.0				

Date Compiled: 6/2/2010

GeoTrans, Inc.
A TETRA TECH COMPANY

4801 E Washington St
Suite 260
Phoenix, AZ 85034
(602) 682-3320

Project Name: WQARF 20th & Factor Ave.
Project Number: 117-1303.036.02
Client: ADEQ
Location: Yuma, AZ
Drill Date: 3/8-12/2010
Reviewed By: Jasenka Zbozinek

Well ID: MW-25B
Drill Method: Mud Rotary
Angle From Vertical: NA
Sample Method: 18" Split Spoon
Logged By: Tyson Glock
Driller: Yellow Jacket

Depth (ft.)	USCS Symbol	Lithology	Description and Comments	Well Construction
			Straight drill to 60' bgs (no samples taken)	
21.0				
22.0				Bentonite cement grout annular seal
23.0				
24.0				
25.0				
26.0				
27.0				
28.0				
29.0				
30.0				
31.0				
32.0				Schedule 40 PVC casing
33.0				
34.0				
35.0				
36.0				
37.0				
38.0				
39.0				
40.0				

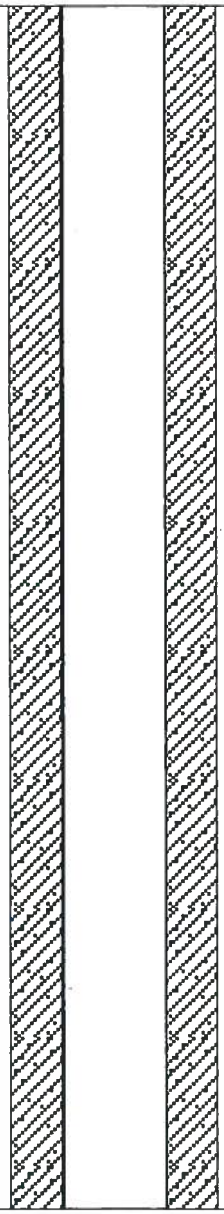
GeoTrans, Inc.
A TETRA TECH COMPANY

4801 E Washington St
Suite 260
Phoenix, AZ 85034
(602) 682-3320

Project Name: WQARF 20th & Factor Ave.
Project Number: 117-1303.036.02
Client: ADEQ
Location: Yuma, AZ
Drill Date: 3/8-12/2010
Reviewed By: Jasenka Zbozinek

Well ID: MW-25B
Drill Method: Mud Rotary
Angle From Vertical: NA
Sample Method: 18" Split Spoon
Logged By: Tyson Glock
Driller: Yellow Jacket

Depth (ft.)	USCS Symbol	Lithology	Description and Comments	Well Construction
			Straight drill to 60' bgs (no samples taken)	
41.0				
42.0				
43.0				
44.0				
45.0				
46.0				
47.0				
48.0				
49.0				
50.0				
51.0				
52.0				
53.0				
54.0				
55.0				
56.0				
57.0				
58.0				
59.0				
60.0				



GeoTrans, Inc.
A TETRA TECH COMPANY

4801 E Washington St
Suite 260
Phoenix, AZ 85034
(602) 682-3320

Project Name: WQARF 20th & Factor Ave.
Project Number: 117-1303.036.02
Client: ADEQ
Location: Yuma, AZ
Drill Date: 3/8-12/2010
Reviewed By: Jasenka Zbozinek

Well ID: MW-25B
Drill Method: Mud Rotary
Angle From Vertical: NA
Sample Method: 18" Split Spoon
Logged By: Tyson Glock
Driller: Yellow Jacket

Depth (ft.)	USCS Symbol	Lithology	Description and Comments	Well Construction
	SW		**Well Graded Sand** fine to medium grained sand, weak cementation	
61.0				
62.0				
63.0			**Recovery complications; straight drill to 80' bgs.**	
64.0				
65.0				
66.0				
67.0				
68.0				
69.0				
70.0				
71.0				
72.0				
73.0				
74.0				
75.0				
76.0				
77.0				
78.0				
79.0				
80.0				

GeoTrans, Inc.
A TETRA TECH COMPANY

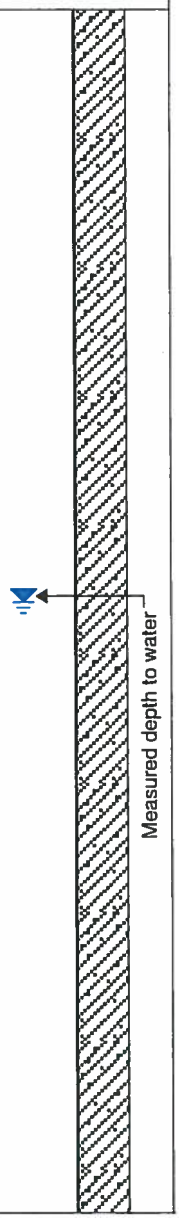
4801 E Washington St
Suite 260
Phoenix, AZ 85034
(602) 682-3320

Project Name: WQARF 20th & Factor Ave.
Project Number: 117-1303.036.02
Client: ADEQ
Location: Yuma, AZ
Drill Date: 3/8-12/2010
Reviewed By: Jasenka Zbozinek

Well ID: MW-25B
Drill Method: Mud Rotary
Angle From Vertical: NA
Sample Method: 18" Split Spoon
Logged By: Tyson Glock
Driller: Yellow Jacket

Depth (ft.)	USCS Symbol	Lithology	Description and Comments
81.0 – 85.0	SP		**Poorly Graded Sand** 100% medium grained sand, 7.5YR 7/4 pink, moist, weak cementation
85.0 – 90.0	SP		**Poorly Graded Sand** 100% fine grained sand, 7.5YR 6/3 light brown, moist, weak cementation
90.0 – 100.0	SW		**Well Graded Sand** 50% medium grained sand, 30% fine grained sand, 20% coarse grained sand, 7.5YR 6/4 light brown, moist, weak cementation

Well Construction



GeoTrans, Inc.
A TETRA TECH COMPANY

4801 E Washington St
Suite 260
Phoenix, AZ 85034
(602) 682-3320

Project Name: WQARF 20th & Factor Ave.
Project Number: 117-1303.036.02
Client: ADEQ
Location: Yuma, AZ
Drill Date: 3/8-12/2010
Reviewed By: Jasenka Zbozinek

Well ID: MW-25B
Drill Method: Mud Rotary
Angle From Vertical: NA
Sample Method: 18" Split Spoon
Logged By: Tyson Glock
Driller: Yellow Jacket

Depth (ft.)	USCS Symbol	Lithology	Description and Comments	Well Construction
101.0 102.0 103.0 104.0 105.0	SW		**Well Graded Sand** 70% medium grained sand, 30% fine grained sand, 7.5YR 7/4 pink, moist, weak cementation	
106.0 107.0 108.0 109.0 110.0	SW		**Well Graded Sand** 70% medium grained sand, 30% fine grained sand, 7.5YR 6/2 pinkish grey, moist, weak cementation	
111.0 112.0 113.0 114.0 115.0	SW		**Well Graded Sand** 70% fine grained sand, 30% medium grained sand, 7.5YR 6/2 pinkish grey, moist, weak cementation	
116.0 117.0 118.0 119.0 120.0	SW		**Well Graded Sand** 90% medium grained sand, 10% fine grained sand, 7.5YR 6/3 light brown, moist, weak cementation	

Date Compiled: 6/2/2010

GeoTrans, Inc.
A TETRA TECH COMPANY

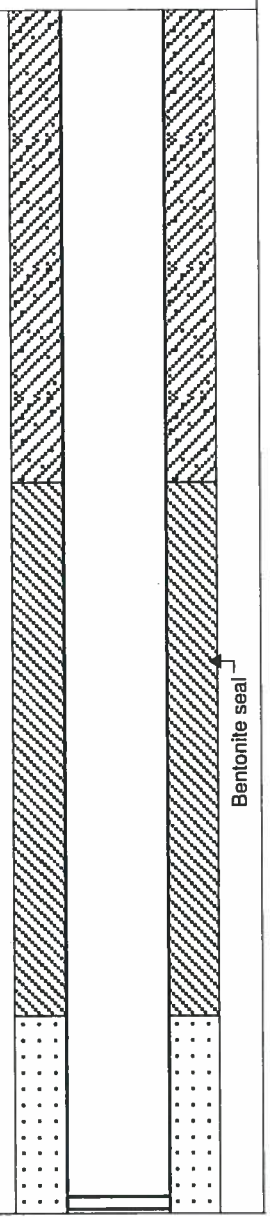
4801 E Washington St
Suite 260
Phoenix, AZ 85034
(602) 682-3320

Project Name: WQARF 20th & Factor Ave.
Project Number: 117-1303.036.02
Client: ADEQ
Location: Yuma, AZ
Drill Date: 3/8-12/2010
Reviewed By: Jasenka Zbozinek

Well ID: MW-25B
Drill Method: Mud Rotary
Angle From Vertical: NA
Sample Method: 18" Split Spoon
Logged By: Tyson Glock
Driller: Yellow Jacket

Depth (ft.)	USCS Symbol	Lithology	Description and Comments
121.0			
122.0			
123.0			
124.0			
125.0			
126.0			
127.0			
128.0			
129.0			
130.0	CL		**Clay with Trace Sand** 95% clay, 5% fine grained sand, 7.5YR 7/3 pink, moist, moderate cementation
131.0	CL		**Gravelly Clay with Trace Sand** 65% clay, 30% gravel, 5% fine grained sand, 7.5YR 7/3 pink, moist, weak cementation
132.0			
133.0	CL		**Clay** 100% clay, 7.5YR 6/3 light brown, moist, moderate cementation
134.0	GC		**Clayey Gravel with Trace Sand** 60% gravel, 35% clay, 5% fine grained sand, 7.5YR 6/3 light brown, moist, weak cementation
135.0	CL		**Sandy Clay** 80% clay, 20% fine grained sand, 7.5YR 6/3 light brown, moist, weak cementation
136.0	SW		**Well Graded Sand** 50% fine grained sand, 50% medium grained sand, 7.5 YR 7/3 pink, moist, weak cementation
137.0			
138.0			
139.0			
140.0			

Well Construction



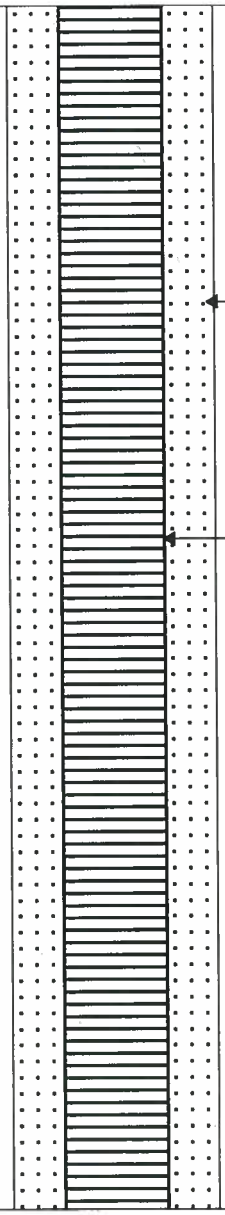
Date Compiled: 6/2/2010

GeoTrans, Inc.
A TETRA TECH COMPANY

4801 E Washington St
Suite 260
Phoenix, AZ 85034
(602) 682-3320

Project Name: WQARF 20th & Factor Ave.
Project Number: 117-1303.036.02
Client: ADEQ
Location: Yuma, AZ
Drill Date: 3/8-12/2010
Reviewed By: Jasenka Zbozinek
Well ID: MW-25B
Drill Method: Mud Rotary
Angle From Vertical: NA
Sample Method: 18" Split Spoon
Logged By: Tyson Glock
Driller: Yellow Jacket

Depth (ft.)	USCS Symbol	Lithology	Description and Comments	Well Construction
141.0	SW		**Well Graded Sand with Gravel** 40% fine grained sand, 20% medium grained sand, 20% coarse grained sand, 15% gravel, 7.5YR 6/2 pinkish grey, moist, weak cementation	
142.0				
143.0			**Recovery complications; straight drill to 163' bgs.**	
144.0				
145.0				Silica sandpack
146.0				
147.0				
148.0				
149.0				Factory-slotted PVC well screen (slot aperture 0.020 inches)
150.0				
151.0				
152.0				
153.0				
154.0				
155.0				
156.0				
157.0				
158.0				
159.0				
160.0				



Date Compiled: 6/2/2010

GeoTrans, Inc.
A TETRA TECH COMPANY

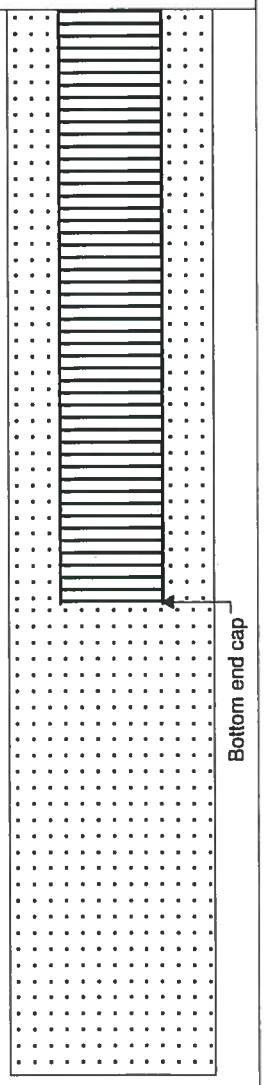
4801 E Washington St
Suite 260
Phoenix, AZ 85034
(602) 682-3320

Project Name: WQARF 20th & Factor Ave.
Project Number: 117-1303.036.02
Client: ADEQ
Location: Yuma, AZ
Drill Date: 3/8-12/2010
Reviewed By: Jasenka Zbozinek

Well ID: MW-25B
Drill Method: Mud Rotary
Angle From Vertical: NA
Sample Method: 18" Split Spoon
Logged By: Tyson Glock
Driller: Yellow Jacket

Depth (ft.)	USCS Symbol	Lithology	Description and Comments
161.0			
162.0			
163.0			**Recovery complications; suspected gravelly clay at 163' bgs.**
164.0			
165.0	SP		**Poorly Graded Sand** 100% fine sand, 7.5YR 6/4 light brown, moist, weak cementation
166.0			
167.0			**Recovery complications; straight drill to 178' bgs.**
168.0			
169.0			
170.0			
171.0			
172.0			
173.0			
174.0			
175.0			
176.0			
177.0			
178.0			**Total borehole depth: 178' bgs**
179.0			
180.0			

Well Construction



Date Compiled: 6/2/2010

WELL SAMPLING / DEVELOPMENT RECORD

GeoTrans, Inc. A TETRA TECH COMPANY

Project Name/Client _____

Well Number MW-25B

Date 3/12/10

Project Number _____ Sampler(s) _____

Elevation of Measuring Point (MP) _____ ft. (a)

Elevation of Ground Surface _____ ft. (b)

Well Depth (below ground surface) 169' 10" ft. (c)

Casing Inside Diameter 4 in. (d)

CALCULATION OF CASING VOLUME

Depth of Water Below MP _____ ft. (e)

Water Level Elevation (a-e) _____ ft. (f)

Step 1: Height of Water in Well, H= f - (b-c)= _____ ft.

Step 2: Cross-sectional Area of Casing, $A=\Pi \times d^2/576=$ 0.0872 ft^2

Step 3: Volume of Water in Casing, V=A x H x 7.48= _____ gal 56

Sampling/Development System (check one) Dedicated ☐ Non-dedicated ☐

Purging Apparatus: Type: _____

Sampling Apparatus: Type: _____

Cleaning Methods _____

FIELD OBSERVATIONS

Weather Conditions Sunny 60's

Well Head Conditions New

Comments _____

Project Name/Client _____ Well Number MW-25B Date 3/12/10

FIELD MEASUREMENTS								
Time	Pump Rate (gpm)	Cumulative Vol. Removed (gal)	Temp (°C)	pH	Spec. Cond. (umhos/cm at 25° C)	NTU Particulates/Odor/Clarity/Color	TDS g/L	ORP
1718	10gpm	305	32.2	7.12	4.87	794	3.12	118
1724	10gpm	365	31.63	7.38	4.82	400	3.08	176
1730	10gpm	425	31.53	7.40	4.88	302	3.12	168
1737	10gpm	495	31.38	7.39	4.88	230	3.12	180
1831	10gpm	660	30.62	7.19	4.86	199	3.11	165
1840	10gpm	750	30.91	7.16	4.86	180	3.11	139
1850	10gpm	850	30.88	7.19	4.89	149	3.13	150
1900	10gpm	950	30.39	7.29	4.86	149	3.11	171
2007	10gpm	1150	30.30	7.14	4.84	130	3.09	157

Total Vol. Purged _____ (gal) Casing Vol. Purged _____

Final Water Level After Purging _____ ft. Below MP; Time _____

FateofPurgedWater

Bailed 185 gal flow rate 10 Start time 1705
continue time 1815
Break @ 1740
Break @ 1917 continue @ 1943

SAMPLE INVENTORY

Label	Time	Number of Bottles	Analysis	F	P	Remarks

F = Filtered (Y,N) P = Preservative (Type)

Sampler(s) _____ Signatures(s) _____

Project Name/Client _____ Well Number MW-25B Date 3/12/10

FIELD MEASUREMENTS								
Time	Pump Rate (gpm)	Cumulative Vol. Removed (gal)	Temp (°C)	pH	Spec. Cond. (umhos/cm at 25° C)	NTU	TDS g/L	ORS
						Particulates/Odor/Clarity/Color		
2025	10gpm	1,330	30.26	7.13	4.87	112	3.09	151
2037	10gpm	1,450	29.95	7.28	4.87	103	3.12	187

Total Vol. Purged 1450 (gal) Casing Vol. Purged _____

Final Water Level After Purging 81.5 ft. Below MP; Time _____

Fate of Purged Water _____

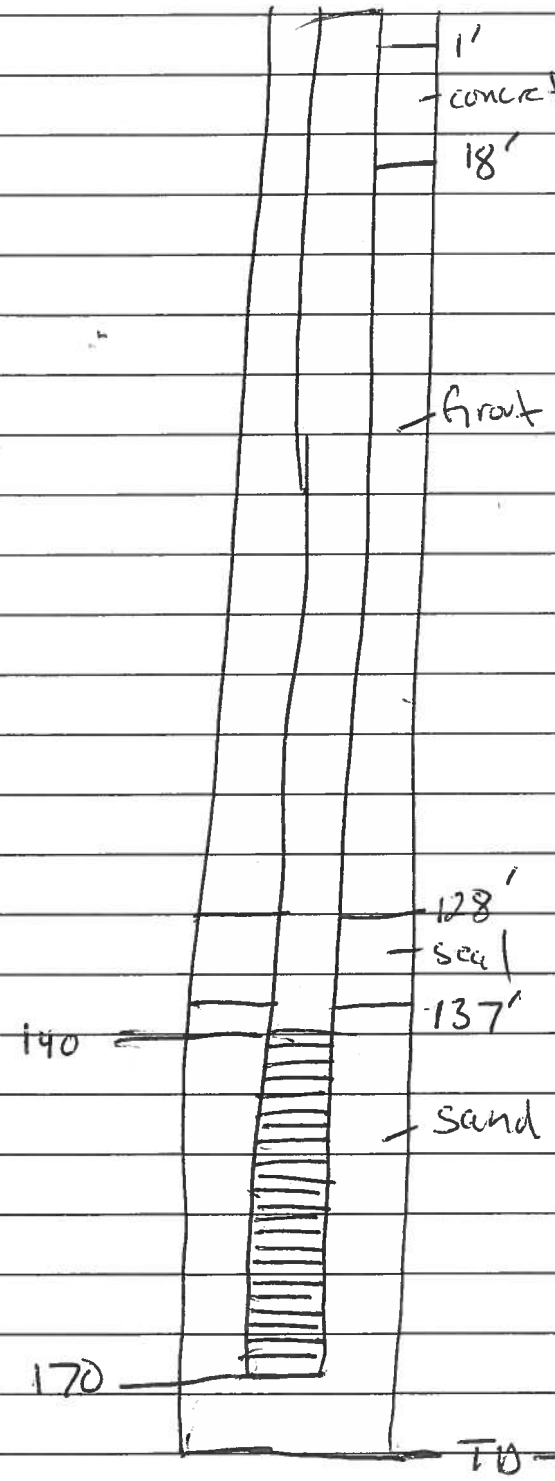
SAMPLE INVENTORY

Label	Time	Number of Bottles	Analysis	F	P	Remarks

F = Filtered (Y,N) P = Preservative (Type)

Sampler(s) _____ Signatures(s) _____

spacers ||||



Sand
~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~
~~||||~~

Bentonite pelets (5 gal)
||||

Grout
1 ½ = 1 batch
~~1½ batch~~
Batches ~~||||~~ |

GeoTrans, Inc.
A TETRA TECH COMPANY

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & Foster WARF	BORING NAME: MW-25B
PROJECT NUMBER:	PROJECT LOCATION:
DRILLING METHOD: 0-47 Air rotary casing drilling; 47- Mud rotary drilling	SHEET OF
SAMPLING METHOD:	DRILLING START TIME: 3/8/10 1545 — FINISH TIME: — START DATE: — FINISH DATE:
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
SS	2 2	6 6			SW	60	Well Graded Sand, (fine to medium), weakly cementation
	10					1	
	11						
	11					2	During drilling from 60 to 80 feet drillers observed mostly sand with some clay.
						3	
						4	
						5	
						6	
						7	
						8	
						9	
						70	
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						79	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME:	BORING NAME:
PROJECT NUMBER:	PROJECT LOCATION:
DRILLING METHOD:	SHEET OF
	DRILLING START / FINISH
SAMPLING METHOD:	TIME / TIME
	DATE / DATE
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
SS	15	6/6			PG	8 0	Poorly Graded Sand, 7.5YR Pink 7/4,
SS	50	2/0					100% medium sand, Moist, weakly cemented
						1	
						2	
							Some clay seen in cuttings by
						3	drillers. In cuttings there is
							a Clayey sand w/ some gravel not sure
						4	of depth
SS	50+	6/6			PG	8 5	Poorly Graded Sand, 7.5YR light Brown 6/3
						6	100% fine sand, Moist, weakly cemented
						7	
						8	
						9	
							with trace gravel
	50+	6/4			WG	9 0	Well graded sand, 7.5YR light brown 6/4
							30% fine, 50% medium, 20% large, Moist,
						1	weakly cemented
							Note: Chunck of 100% clay in sample
						2	1" of gravelly clay mixed with
	10	6/6			WG		drill mud @ bottom of sample
	17	6/4				3	
	45	6					Well Graded sand, 7.5YR light brown 6/4
						4	30% fine, 50% medium, 20% large, moist,
							weakly cemented
	10	6/6			WG	9 5	Well graded sand, 7.5YR light brown 6/4,
	50	3/0				6	30% fine, 50% medium, 20% large, moist, weakly
							cemented
						7	
						8	
						9 9	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME:	BORING NAME:
PROJECT NUMBER:	PROJECT LOCATION:
DRILLING METHOD:	SHEET OF
	DRILLING START TIME / FINISH TIME
SAMPLING METHOD:	
	DATE / DATE
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
	17 50	6/6 2/1			WG	10 0	Well graded sand, 7.5YR pink 7/4, 30% fine, 70% medium, moist, weakly cemented
						1	
						2	
						3	
						4	
	17 50	6 3			WG	10 5	Well graded sand, 7.5YR pinkish Grey 6/ 30% fine, 70% medium, moist, weakly cemen
						6	
						7	
						8	
						9	
	15 50	6 4			WG	11 0	Well graded sand, 7.5YR pinkish Grey 6/2 70% fine, 30% medium, moist, weakly cemented
						1	
						2	
						3	
						4	
	12 50	6 1	5		WG	11 5	Well Graded sand, 7.5YR light brown 6/3, 10% fine, 90% medium, moist, weakly cemented
						6	
						7	
						8	
						9	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME:	BORING NAME:
PROJECT NUMBER:	PROJECT LOCATION:
DRILLING METHOD:	SHEET OF
	DRILLING START / FINISH
SAMPLING METHOD:	TIME / TIME
	DATE / DATE

SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.

7.5YR Pink 7/

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
	17	6/6			CL	13 0	Clay w/ trace sand, 96% clay 4% sa
	50	4/3					moist, moderatly cemented,
5 blows	8	6/4				1	Gravelly, Clay w/ trace sand, 7.5 YR Pink 7/
	25	6/0					30% Gravel, 66% clay, 4% sand, moist, weakly cemented
5 blows	50	1/0				2	" "
	5	6/6			CL		Clay, 100% clay, 7.5YR light brown 6/3, moist
	25	6/6				3	moderatly cemented with some sand
5 blows for 6 1/2	50	1/1			GC		Clayey Gravel, 7.5YR light brown 6/3, Gravel
	15	6/6				4	60%, 35% clay, 5% sand, moist, weakly cemented
	50	6/6			CL		Clay with sand, 7.5 YR light brown 6/3, 80% clay 20% sand
	6	6/6			WG	135	moist, weakly cemented
	6	6/1					Well graded sand, 7.5YR pink 7/3, 50% fine, 50% med
	15	6/0				6	moist, weakly cemented
	15	6/4					
	50	3/0				7	" "
						8	
						9	
	25	6/6				14 0	Sand with some gravel, 7.5YR pinkish gray 6/
	50	3/3					85% sand, 15% gravel, moist, weakly cemented
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME:	BORING NAME:
PROJECT NUMBER:	PROJECT LOCATION:
DRILLING METHOD:	SHEET OF
	DRILLING START / FINISH
SAMPLING METHOD:	TIME / TIME
	DATE / DATE
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

GEOTRANS REPRESENTATIVE:

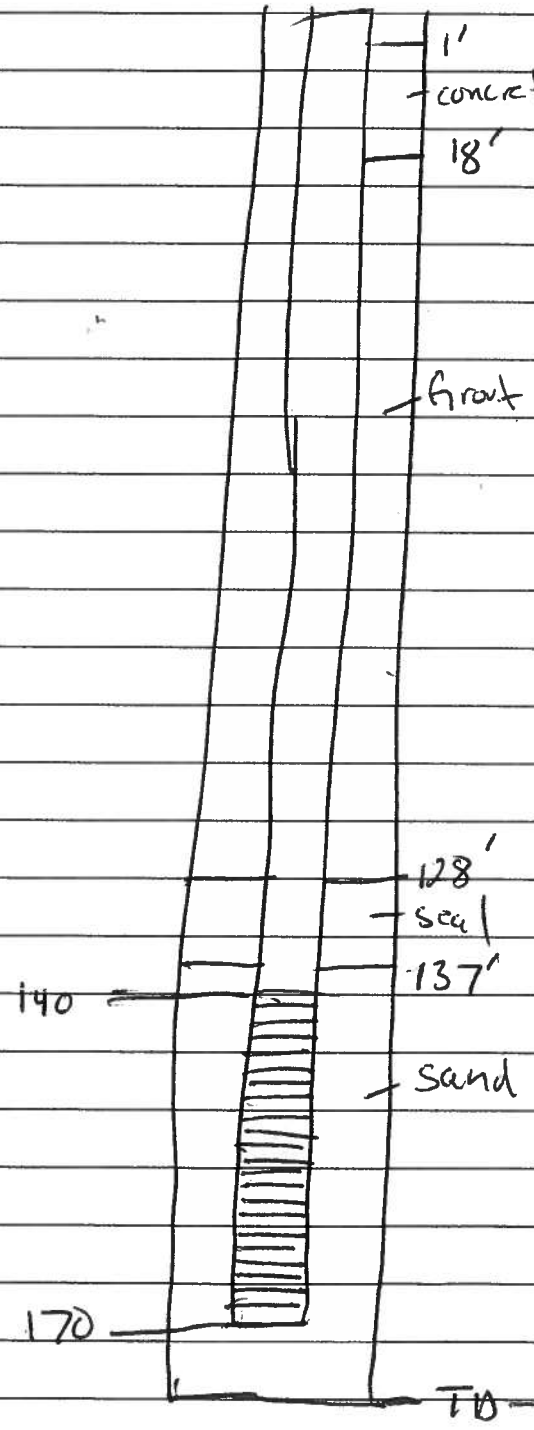
DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						0	
						1	
						2	
						3	Ran into some gravelly clay. It was less than 1' thick.
						4	
		6 6			SG	1 6 5	Poorly graded sand, 7.5YR light brown 6/4, 100% fine sand, moist, weakly cemented
		6 1					
	50	2 0				6	
						7	
						8	
						9	
						0	
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

~~IIII~~,
spacers III



Sand
~~IIII~~ ~~IIII~~ ~~IIII~~ ~~IIII~~
~~IIII~~

Bentonite pelets (5gal)
IIII

Grout
1 ½ = 1 batch
~~1½ batch~~
Batches ~~IIII~~ I

GeoTrans, Inc.
A TETRA TECH COMPANY

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & FACTOR	BORING NAME: MW-26B
PROJECT NUMBER: 1303.038	PROJECT LOCATION: YUMA, AZ
DRILLING METHOD: MUD ROTARY	SHEET 1 OF 9
SAMPLING METHOD: N/A	DRILLING START TIME 1400 DATE 11/18/10; FINISH TIME 0915 DATE 11/19/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						0	SAND, MEDIUM GRAINED, DRY
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	
						10	
						11	
						12	
						13	
						14	
						15	
						16	
						17	
						18	
						19	

GE ...NS REPRESENTATIVE:

DRILLING CONTRACTOR:

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & Factor	BORING NAME: MW-26B
PROJECT NUMBER: 1303.038	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: MUD ROTARY	SHEET 2 OF 9
SAMPLING METHOD: N/A	DRILLING START TIME 1400 DATE 11/18/10; FINISH TIME 0915 DATE 11/19/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						20	SAND, MEDIUM GRAINED
						21	
						22	
						23	
						24	
						25	
						26	
						27	
						28	
						29	
						30	
						31	
						32	
						33	
						34	
						35	
						36	
						37	
						38	
						39	

GE ...NS REPRESENTATIVE:

DRILLING CONTRACTOR:

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & FACADE	BORING NAME: MW-26B
PROJECT NUMBER: 1303.038	PROJECT LOCATION: YUMA, AZ
DRILLING METHOD: MUD ROTARY	SHEET 3 OF 9
SAMPLING METHOD: N/A	DRILLING START TIME 1400 DATE 11/18/10; FINISH TIME 0915 DATE 11/19/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						40	SAND, MEDIUM GRAINED
						41	
						42	
						43	
						44	
						45	
						46	
						47	
						48	
						49	
						50	
						51	
						52	
						53	
						54	
						55	
						56	
						57	
						58	
						59	

GE ANS REPRESENTATIVE:

DRILLING CONTRACTOR:

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. — A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & FACTOR	BORING NAME: MW-26B
PROJECT NUMBER: 1303.038	PROJECT LOCATION: YUMA, AZ
DRILLING METHOD: MUD ROTARY	SHEET 4 OF 9
SAMPLING METHOD: N/A	DRILLING — START TIME 1400, DATE 11/18/10; FINISH TIME 0915, DATE 11/19/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

GE INS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						60	SAND, MEDIUM GRAINED
						61	
						62	
						63	
						64	
						65	
						66	
						67	
						68	
						69	
						70	
						71	
						72	
						73	
						74	
						75	
						76	
						77	
						78	
						79	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & Factor	BORING NAME: MW-26B
PROJECT NUMBER: 1303.038	PROJECT LOCATION: YUMA, AZ
DRILLING METHOD: MUD ROTARY	SHEET 5 OF 9
SAMPLING METHOD: N/A	DRILLING START TIME 1400 DATE 11/18/10; FINISH TIME 0915 DATE 11/19/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						80	SAND, MEDIUM GRAINED
						81	
						82	
						83	
						84	
						85	
						86	
						87	
						88	
						89	
						90	
						91	
						92	
						93	
						94	
						95	
						96	
						97	
						98	
						99	

GE ANS REPRESENTATIVE:

DRILLING CONTRACTOR:

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & Factor	BORING NAME: MW-26B
PROJECT NUMBER: 1303.038	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: MUD Rotary	SHEET 6 OF 9
SAMPLING METHOD: N/A	DRILLING START TIME 1400 DATE 11/18/10; FINISH TIME 0915 DATE 11/19/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						100	SAND, MEDIUM GRAINED
						101	
						102	
						103	
						104	
						105	
						106	
						107	
						108	
						109	
						110	
						111	
						112	
						113	
						114	
						115	
						116	
						117	
						118	
						119	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & FACTOR	BORING NAME: MW-26B
PROJECT NUMBER: 1303.038	PROJECT LOCATION: YUMA, AZ
DRILLING METHOD: MUD ROTARY	SHEET 7 OF 9
SAMPLING METHOD: N/A	DRILLING START TIME 1400 DATE 11/18/10; FINISH TIME 0915 DATE 11/19/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						120	SAND, MEDIUM GRAINED
						121	
						122	
						123	
						124	
						125	
						126	
						127	
						128	
						129	
						130	DRILLING SLOWS & BEGINS to CHATTER. POSSIBLE INDICATION OF CLAY LAYER.
						131	
						132	
						133	
						134	
						135	
						136	CHATTER STOPS. DRILLING RESUMES NORMAL SPEED.
						137	SAND
						138	
						139	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & FACTOR	BORING NAME: MW-26B
PROJECT NUMBER: 1303.058	PROJECT LOCATION: YUMA, AZ
DRILLING METHOD: MUD ROTARY	SHEET 8 OF 9
SAMPLING METHOD: N/A	DRILLING START TIME 1400 DATE 11/18/10; FINISH TIME 0915 DATE 11/19/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						140	SAND
						141	
						142	
						143	
						144	
						145	
						146	
						147	
						148	
						149	
						150	
						151	
						152	
						153	
						154	
						155	
						156	
						157	
						158	
						159	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & FACTOR	BORING NAME: MW-26B
PROJECT NUMBER: 1303.038	PROJECT LOCATION: YUMA, AZ
DRILLING METHOD: MUD ROTARY	SHEET 9 OF 9
SAMPLING METHOD: N/A	DRILLING START TIME 1400 DATE 11/10/10; FINISH TIME 0915 DATE 11/9/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						160	SAND
						161	
						162	
						163	TD HOLE @ 163' bgs.
						164	
						165	
						166	
						167	
						168	
						169	
						170	
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

WELL SAMPLING / DEVELOPMENT RECORD

GeoTrans, Inc. A TETRA TECH COMPANY

Project Name/Client 20th & FACTOR ADEQ

Well Number MW-26B

Date 11/15/10 11/16/10

Project Number 1303.038

Sampler(s) BYRON BADEN

Elevation of Measuring Point (MP) — ft. (a)

Elevation of Ground Surface — ft. (b)

Well Depth (below ground surface) 160 ft. (c)

Casing Inside Diameter 4 in. (d)

CALCULATION OF CASING VOLUME

Depth of Water Below MP 76.73 ft. (e)

Water Level Elevation (a-e) — ft. (f)

Step 1: Height of Water in Well, H= f - (b-c)= — ft.

Step 2: Cross-sectional Area of Casing, A=Π x d^2/576= — ft^2

Step 3: Volume of Water in Casing, V=A x H x 7.48= — gal

(160-76.73) x 16 x 3 x 0.0408 = 163 G

Sampling/Development System (check one) Dedicated ☐ Non-dedicated ☒

Purging Apparatus: Type: 3" SUBMERSIBLE PUMP

Sampling Apparatus: Type: N/A

Cleaning Methods SURGING & BAILING

FIELD OBSERVATIONS

Weather Conditions CLEAR, SUNNY, ~75°F

Well Head Conditions GOOD

Comments SURGED & BAILED ON 11/15/10. COMPLETED WELL DEVELOPMENT ON 11/16/10

Project Name/Client 20th & Factor ADEQ Well Number MW-26B Date 11/15/10 11/16/10

FIELD MEASUREMENTS						
Time	Pump Rate (gpm)	Cumulative Vol. Removed (gal)	Temp (°C)	pH	Spec. Cond. (umhos/cm at 25° C)	(NTU) Particulates/Odor/Clarity/Color
0806	13	200	24.93	7.34	5.09	800+
0813	13	320	25.74	7.34	5.06	800+
0818	13	375	25.45	7.31	5.08	800+
0822	13	450	26.41	7.30	5.08	655
0828	13	500	26.28	7.30	5.09	328

Total Vol. Purged 500 (gal) Casing Vol. Purged _____

Final Water Level After Purging 75.39 ft. Below MP; Time 0900

Fate of Purged Water BAKER TANK

SAMPLE INVENTORY

Label	Time	Number of Bottles	Analysis	F	P	Remarks

NONE TAKEN

F = Filtered (Y,N) P = Preservative (Type)

Sampler(s) _____ Signatures(s) _____

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & Factor	BORING NAME: MW-27B
PROJECT NUMBER: 1303.038	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: MUD ROTARY	SHEET 1 OF 9
SAMPLING METHOD: N/A	DRILLING START TIME 1000 DATE 11/4/10; FINISH TIME 1500 DATE 11/4/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						0	SAND, MEDIUM GRAINED, DRY
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	
						10	
						11	
						12	
						13	
						14	
						15	
						16	
						17	
						18	
						19	

GE ...NS REPRESENTATIVE:

DRILLING CONTRACTOR:

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & Pacific	BORING NAME: MW-27B
PROJECT NUMBER: 1303.038	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: Mud Rotary	SHEET 2 OF 9
SAMPLING METHOD: N/A	DRILLING START TIME 1600 DATE 11/4/10; FINISH TIME 1500 DATE 11/4/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						20	SAND, MEDIUM GRAINED
						21	
						22	
						23	
						24	
						25	
						26	
						27	
						28	
						29	
						30	
						31	
						32	
						33	
						34	
						35	
						36	
						37	
						38	
						39	

GE NS REPRESENTATIVE:

RILLING CONTRACTOR:

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & FACTOR	BORING NAME: MW-27B
PROJECT NUMBER: 1303.038	PROJECT LOCATION: YUMA, AZ
DRILLING METHOD: MUD ROTARY	SHEET 3 OF 3
SAMPLING METHOD: N/A	DRILLING START TIME 1000 DATE 11/4/10; FINISH TIME 1500 DATE 11/4/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						40	SAND, MEDIUM GRAINED
						41	
						42	
						43	
						44	
						45	
						46	
						47	
						48	
						49	
						50	
						51	
						52	
						53	
						54	
						55	
						56	
						57	
						58	
						59	

GE ANS REPRESENTATIVE:

DRILLING CONTRACTOR:

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & FACTOR	BORING NAME: MW-27B
PROJECT NUMBER: 1303.038	PROJECT LOCATION: YUMA, AZ
DRILLING METHOD: MUD ROTARY	SHEET 4 OF 9
SAMPLING METHOD: N/A	DRILLING START TIME 1000 DATE 11/4/10; FINISH TIME 1500 DATE 11/4/10

SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						60	SAND, MEDIUM GRAINED
						61	
						62	
						63	
						64	
						65	
						66	
						67	
						68	
						69	
						70	
						71	
						72	
						73	
						74	
						75	
						76	
						77	
						78	
						79	

GE ...NS REPRESENTATIVE:

DRILLING CONTRACTOR:

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & Factor	BORING NAME: MW-27B
PROJECT NUMBER: 1303.038	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: MUD ROTARY	SHEET 5 OF 9
SAMPLING METHOD: N/A	DRILLING START TIME 1000 / FINISH TIME 1500
	DRILLING START DATE 11/4/10 / FINISH DATE 11/4/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						80	SAND, MEDIUM GRAINED
						81	
						82	
						83	
						84	
						85	
						86	
						87	
						88	
						89	
						90	
						91	
						92	
						93	
						94	
						95	
						96	
						97	
						98	
						99	

GE ANS REPRESENTATIVE:

DRILLING CONTRACTOR:

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & FACTOR	BORING NAME: MW-27B
PROJECT NUMBER: 1303.038	PROJECT LOCATION: YUMA, AZ
DRILLING METHOD: MUD ROTARY	SHEET 6 OF 9
SAMPLING METHOD: N/A	DRILLING START TIME 1000 DATE 11/4/10; FINISH TIME 1500 DATE 11/4/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						100	SAND, MEDIUM GRAINED
						101	
						102	
						103	
						104	
						105	
						106	
						107	
						108	
						109	
						110	
						111	
						112	
						113	
						114	
						115	
						116	
						117	
						118	
						119	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & Factor	BORING NAME: MW-27B
PROJECT NUMBER: 1303.038	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: MUD ROTARY	SHEET 7 OF 9
SAMPLING METHOD: N/A	DRILLING START TIME 1000 DATE 11/4/10; FINISH TIME 1500 DATE 11/4/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						120	SAND, MEDIUM GRAINED
						121	
						122	
						123	
						124	
						125	
						126	
						127	
						128	
						129	
						130	
						131	DRILL BEGINS to CHATTER. MAY INDICATE CLAY LAYER.
						132	
						133	
						134	DRILL STOPS CHATTERING SAND
						135	
						136	
						137	
						138	
						139	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & Factor	BORING NAME: MW-27B
PROJECT NUMBER: 1303.038	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: MUD ROTARY	SHEET 8 OF 9
SAMPLING METHOD: N/A	DRILLING START TIME 1000 / FINISH TIME 1500
	DATE 11/4/10 / DATE 11/4/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						140	SAND, MEDIUM GRAINED
						141	
						142	
						143	
						144	
						145	
						146	
						147	
						148	
						149	
						150	
						151	
						152	
						153	
						154	
						155	
						156	
						157	
						158	
						159	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & FACTOR	BORING NAME: MW-27B
PROJECT NUMBER: 1303.038	PROJECT LOCATION: YUMA, AZ
DRILLING METHOD: MUD ROTARY	SHEET 9 OF 9
SAMPLING METHOD: N/A	DRILLING START TIME 1000 DATE 11/4/10; FINISH TIME 1500 DATE 11/4/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						160	SAND, MEDIUM GRAINED
						161	
						162	
						163	
						164	
						165	TD HOLE @ 165 bgs.
						166	
						167	
						168	
						169	
						170	
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	

GEOLOGIST/ENGINEER REPRESENTATIVE:

DRILLING CONTRACTOR:

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

WELL SAMPLING / DEVELOPMENT RECORD

GeoTrans, Inc. A TETRA TECH COMPANY

Project Name/Client 20th & FACTOR ADEQ

Well Number MW-27B

Date 11/16/10

Project Number 1303.038

Sampler(s) BYRON BADEN

Elevation of Measuring Point (MP) — ft. (a)

Elevation of Ground Surface — ft. (b)

Well Depth (below ground surface) — ft. (c)

Casing Inside Diameter 4 in. (d)

CALCULATION OF CASING VOLUME

Depth of Water Below MP 73.79 ft. (e)

Water Level Elevation (a-e) — ft. (f)

Step 1: Height of Water in Well, H= f - (b-c)= — ft.

Step 2: Cross-sectional Area of Casing, $A=\Pi \times d^2/576=$ — ft^2

Step 3: Volume of Water in Casing, V=A x H x 7.48= — gal

(160 − 73.79) × 16 × 3 × 0.0408 = 168.8 G

Sampling/Development System (check one) Dedicated ☐ Non-dedicated ☐

Purging Apparatus: Type: 3" SUBMERSIBLE PUMP

Sampling Apparatus: Type: N/A

Cleaning Methods SURGE & BAIL

FIELD OBSERVATIONS

Weather Conditions SUNNY, CLEAR, ~70° F

Well Head Conditions GOOD

Comments

Project Name/Client 20th & Factor ADEQ Well Number MW-27B Date 11/16/10

FIELD MEASUREMENTS						
Time	Pump Rate (gpm)	Cumulative Vol. Removed (gal)	Temp (°C)	pH	Spec. Cond. (umhos/cm at 25° C)	(NTU) Particulates/Odor/Clarity/Color
1202	14	100	28.02	7.44	4.04	800+
1206	14	156	28.84	7.36	4.06	800+
1209	14	188	28.72	7.28	4.11	509
1212	14	220	29.10	7.28	4.18	540
1215	14	262	29.10	7.28	4.19	409
1218	14	304	28.98	7.29	4.22	359

Total Vol. Purged 340 (gal) Casing Vol. Purged _____

Final Water Level After Purging ~~[illegible]~~ 76.82 ft. Below MP; Time 1230

Fate of Purged Water BAKER TANK

SAMPLE INVENTORY

Label	Time	Number of Bottles	Analysis	F	P	Remarks

NOT SAMPLED

F = Filtered (Y,N) P = Preservative (Type)

Sampler(s) _____ Signatures(s) _____

GeoTrans, Inc.	Project No: 1303.015.03	Borehole No: MW-102 ADWR ID: MW-102B(1+2)
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: 11/4/96 End Date/Time: 11/5/96 Logged By: GEC
	Drilling Method: Hollow Stem Auger Borehole Diameter: MW-102	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method:

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lthology	Description and Comments
					Ground Surface
0–45					**Sand** Light brown, loose to medium dense, non-plastic, predominantly fine grained sand, slightly damp
45–50					**Clayey Sand** Light brown, loose to medium dense, some medium to high plasticity clay, sand portion predominately fine grained, poorly graded, slightly damp to damp

Drilling Contractor: Layne Christensen

Checked By:

Date Checked:

Sheet: 1 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.015.03	Borehole No: MW-102B(1&2)
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: 11/4/96 End Date/Time: 11/5/96 Logged By: GEC
	Drilling Method: Hollow Stem Auger Borehole Diameter: MW-102	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method:

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
51–65					
66–80					**Sand** Light brown, loose to medium dense, non-plastic, predominately fine grained sand, slightly damp to damp GROUNDWATER At 72' bgs.
81–100					**Sand** Light brown, loose to medium dense, non-plastic, predominately fine grained sand, wet. Trace coarse sand, trace brown high plasticity clay

Drilling Contractor: Layne Christensen

Checked By:

Date Checked:

Sheet: 2 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.

Site Map

Project No: 1303.015.03

Client: ADEQ

Site: 20th and Factor WQARF

Borehole No: MW-102B(1&2)

Start Date/Time: 11/4/96

End Date/Time: 11/5/96

Logged By: GEC

Drilling Method: Hollow Stem Auger

Angle from Vertical: 0

Borehole Diameter: MW-102

Surface Material: Asphalt

Sampling Method:

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
101					
102					
103					
104					
105					
106					
107					
108					
109					
110					
111					
112					
113					
114					
115					
116					
117					
118					
119					
120					
121					
122					
123					
124					
125					
126					
127					
128					
129					
130					
131					
132					
133					
134					
135					
136					
137					
138					
139					
140					
141					
142					
143					
144					
145					
146					
147					
148					
149					
150					

Drilling Contractor: Layne Christensen

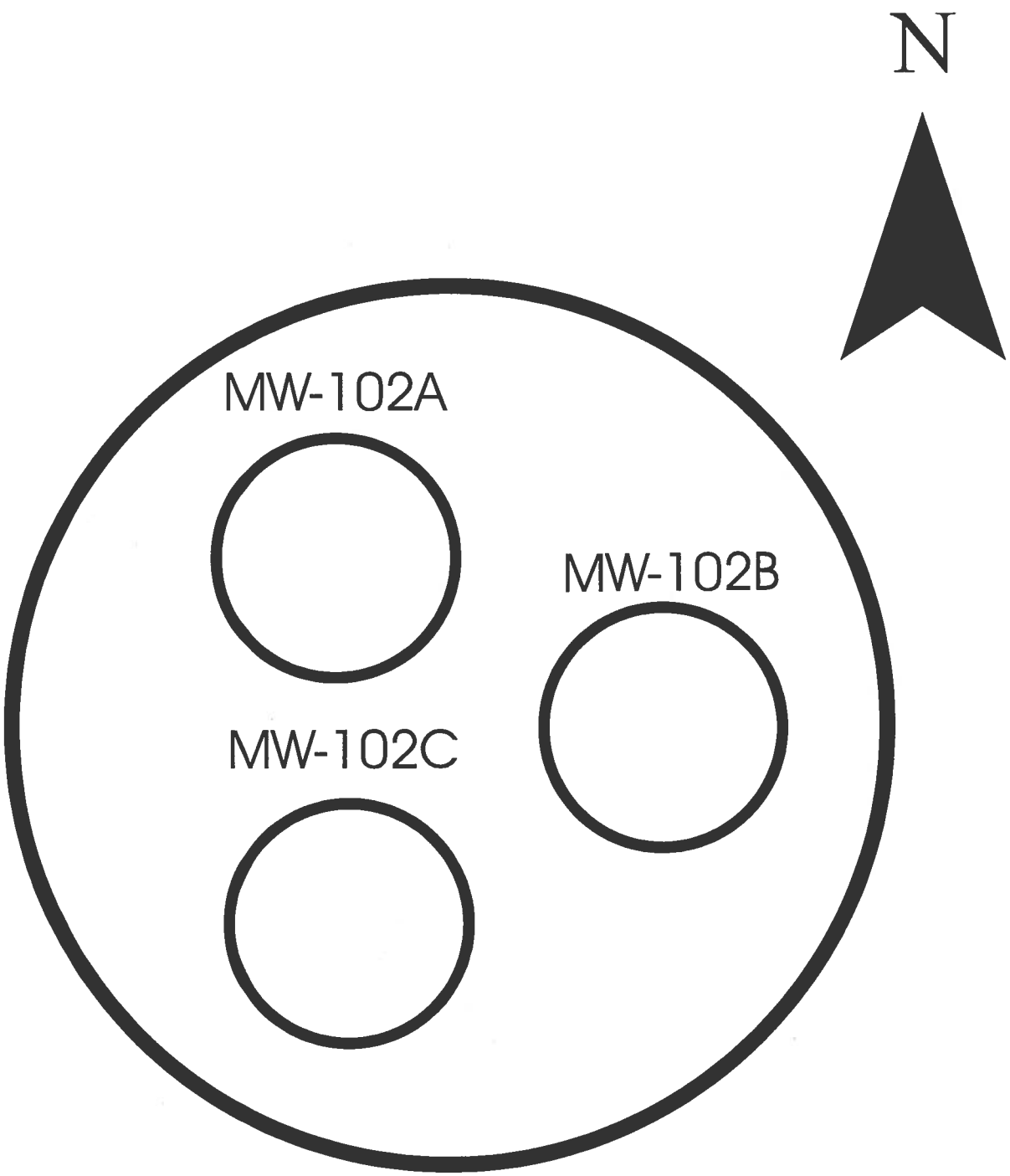
Checked By:

Date Checked:

Sheet: 3 of 3

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

FILENAME



TITLE	Top View of Nested Wells MW-102A, MW-102B, MW-103C		
LOCATION	Yuma, 20th and Factor		
GeoTrans, Inc. A JETRA TECH COMPANY	CHECKED		FIGURE
	DRAFTED	BNM	1
	PROJECT	1303.011	
	DATE	6/18/2004	

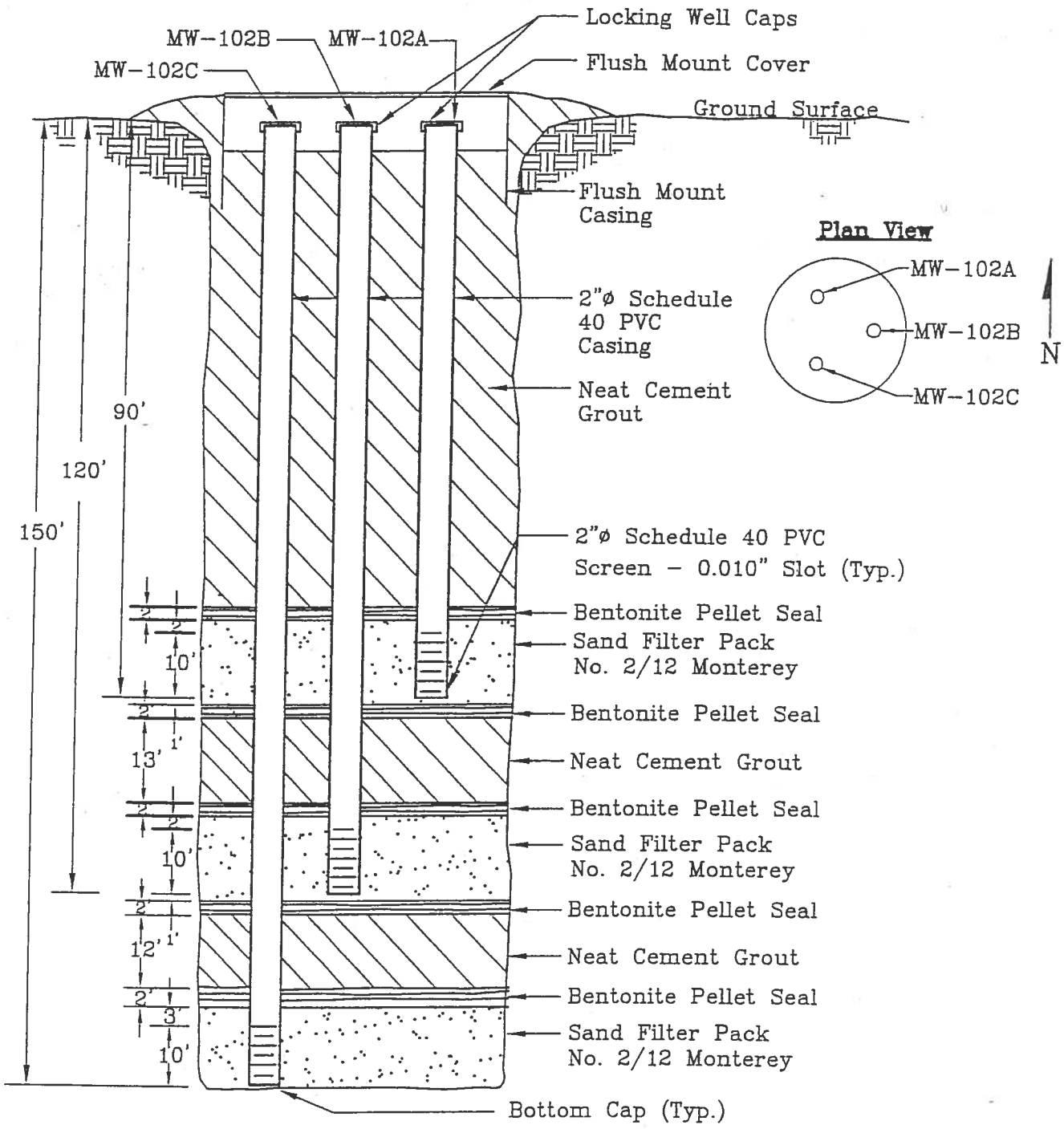


FIGURE 2. NESTED WELL CONSTRUCTION DIAGRAM
Houston International Ltd. Site
655 East 20th Street
Yuma, Arizona

Project No. 96-0016

Geotechnical and Environmental Consultants, Inc.

GeoTrans, Inc.

Site Map

Project No: 1303.011

Client: ADEQ

Site: 20th and Factor

Borehole No: MW-103B
ADWR ID: 55-201457

Start Date/Time: 01-27-04

End Date/Time: 02-04-04

Logged By: Chris Gutmann

Drilling Method: Mud Rotary

Angle from Vertical: 0

Borehole Diameter: 9 in.

Surface Material: Asphalt

Sampling Method: None; cuttings

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lthology	Description and Comments
0					Ground Surface
1 2 3 4	5				**SAND** Fine, loose, yellowish brown, poorly graded
5 6 7 8 9	10				
10 11 12 13 14	15				
15 16 17 18 19	20				
20 21 22 23 24	25				
25 26 27 28 29	30				
30 31 32 33 34	35				
35 36 37 38 39	40				
40 41 42 43 44	45				
45 46 47 48 49	50				
50					

Drilling Contractor: Yellow Jacket

Checked By: Jasenka Zbozinek

Date Checked: 05-11-04

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.011	Borehole No: MW-103B
Site Map	Client: ADEQ Site: 20th and Factor	Start Date/Time: 01-27-04 End Date/Time: 02-04-04 Logged By: Chris Gutmann
	Drilling Method: Mud Rotary Borehole Diameter: 9 in.	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: None; cuttings

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
51–54	55				
55–58	60				
59–62	65				
63–66	70				
67–70	75				**SAND** Fine to coarse, light olive brown, well graded
71–74	80				**SAND WITH GRAVEL** Fine to coarse, well graded (95%) with up to 5% fine gravel in cuttings stream (<0.5 cm dia.)
75–78	85				
79–82	90				
83–86	95				
87–90	100				**SAND** Fine to coarse, brown, no visible gravel
91–100					

Drilling Contractor: Yellow Jacket

Checked By: Jasenka Zbozinek

Date Checked: 05-11-04

Sheet: 2 of 7

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.011	Borehole No: MW-103B
Site Map	Client: ADEQ Site: 20th and Factor	Start Date/Time: 01-27-04 End Date/Time: 02-04-04 Logged By: Chris Gutmann
	Drilling Method: Mud Rotary Borehole Diameter: 9 in.	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: None; cuttings

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
101-104	105				
105-109	110				
110-114	115				
115-119	120				
120-124	125				
125-129	130				
130-134	135				
135-139	140				**GRAVELLY SAND** Well graded, fine to coarse sand with 10-15% fine gravel
140-144	145				**CLAYEY SAND WITH GRAVEL** Well graded, fine to coarse sand (60%); clay (20-30%); fine gravel (5-10%)
145-149	150				
150					

Drilling Contractor: Yellow Jacket
Checked By: Jasenka Zbozinek
Date Checked: 05-11-04

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.011	Borehole No: MW-103B
Site Map	Client: ADEQ Site: 20th and Factor	Start Date/Time: 01-27-04 End Date/Time: 02-04-04 Logged By: Chris Gutmann
	Drilling Method: Mud Rotary Borehole Diameter: 9 in.	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: None; cuttings

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
151-155	155				**GRAVELLY SAND** Fine to coarse, well graded sand (70%); fine gravel(30%)
156-160	160				**SAND** Fine to medium sand
161-165	165				**GRAVELLY SAND** Fine gravel in sand, drill chattered.
166-170	170				**CLAY AND SAND** sand fine to medium (50%); clay (50%)
171-175	175				**SAND** Fine to coarse, well graded
176-180	180				**GRAVELLY SAND** Fine gravel in mud-stream, drill chattered
181-185	185				**SAND** Fine to coarse, well graded **GRAVELLY SAND** Sand is fine to coarse (50%); gravel (50%) 0.5 to 1.5 inches
186-190	190				**SAND** Fine to medium, well graded
191-195	195				
196-200	200				**SAND** Fine to coarse

Drilling Contractor: Yellow Jacket
Checked By: Jasenka Zbozinek
Date Checked: 05-11-04

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

Site Map	**Project No:** 1303.011 **Client:** ADEQ **Site:** 20th and Factor	**Borehole No:** MW-103B **Start Date/Time:** 01-27-04 **End Date/Time:** 02-04-04 **Logged By:** Chris Gutmann
	Drilling Method: Mud Rotary **Borehole Diameter:** 9 in.	**Angle from Vertical:** 0
	Surface Material: Asphalt	**Sampling Method:** None; cuttings

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
201-204	205				
205-209	210				
210-214	215				
215-220	220				**CLAYEY SAND** Fine to medium, well graded sand, driller reports clay in mud stream
221-224	225				**SAND** Fine to medium, well graded, loose
225-229	230				
230-234	235				
235-239	240				**SILTY SAND** Sand is fine to coarse (90%); silt (10%)
240-244	245				**SAND** Fine to medium
245-249	250				**SAND** Medium, uniform
250					

Drilling Contractor: Yellow Jacket
Checked By: Jasenka Zbozinek
Date Checked: 05-11-04

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.011	Borehole No: MW-103B
Site Map	Client: ADEQ Site: 20th and Factor	Start Date/Time: 01-27-04 End Date/Time: 02-04-04 Logged By: Chris Gutmann
	Drilling Method: Mud Rotary Borehole Diameter: 9 in.	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: None; cuttings

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
251–254	255				
255–259	260				**SAND** Medium, uniform, olive brown
260–264	265				**SAND** Fine to medium, grayish brown
265–269	270				
270–274	275				
275–279	280				**SAND** Medium to coarse, wet (maybe ground gravel?)
280–284	285				
285–289	290				
290–294	295				**SAND** Fine to medium
295–299	300				
300					

Drilling Contractor: Yellow Jacket

Checked By: Jasenka Zbozinek

Date Checked: 05-11-04

Sheet: 6 of 7

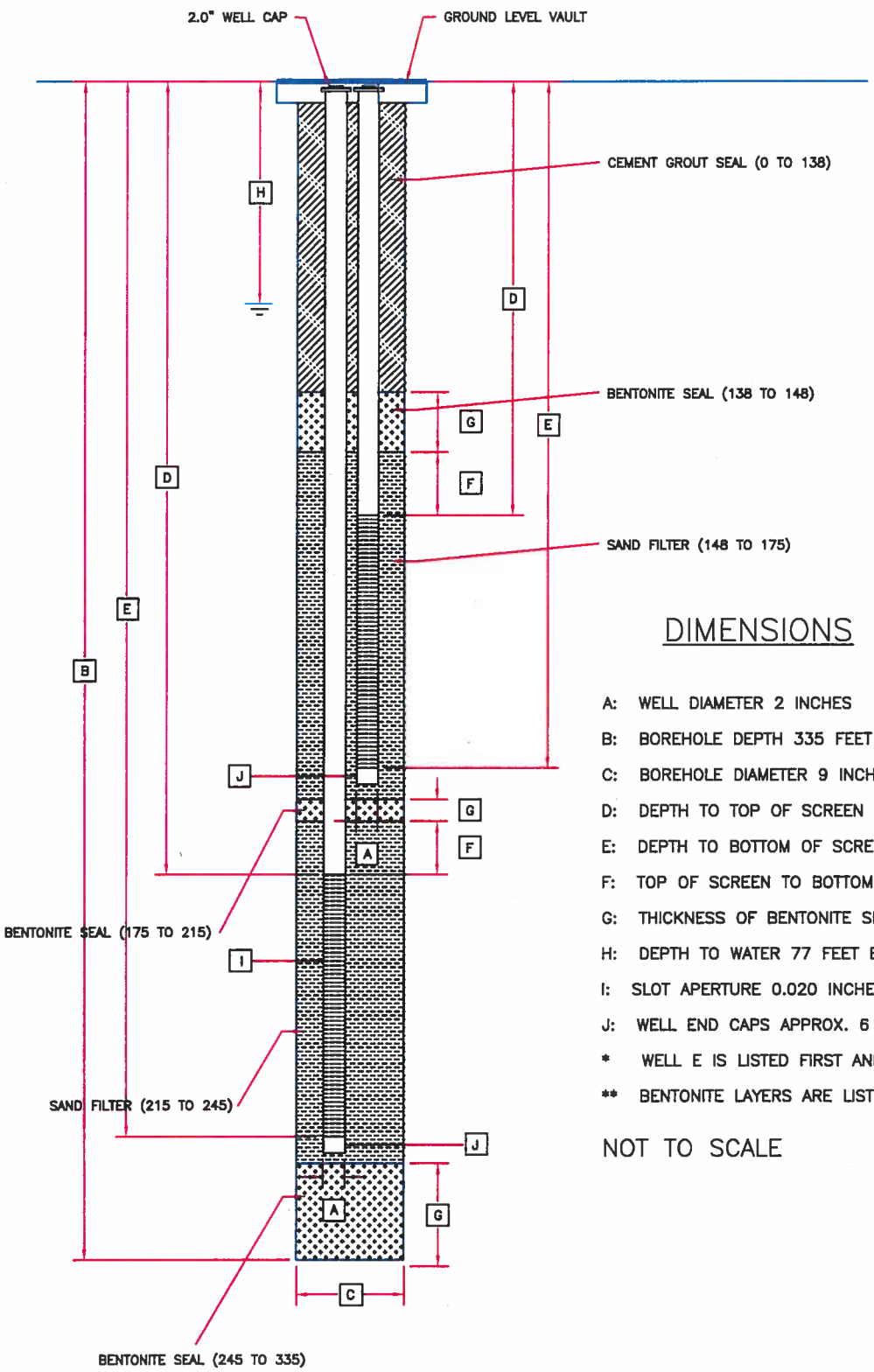
GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.011	Borehole No: MW-103B
Site Map	Client: ADEQ Site: 20th and Factor	Start Date/Time: 01-27-04 End Date/Time: 02-04-04 Logged By: Chris Gutmann
	Drilling Method: Mud Rotary Borehole Diameter: 9 in.	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: None; cuttings

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
301–305	305				**SAND WITH SILT** Fine to medium
306–310	310				**SAND** Fine to medium, brownish gray
311–315	315				
316–320	320				**GRAVELLY SAND** Fine to coarse sand (60%); fine gravel (40%)
321–325	325				**SAND** Fine to medium, driller reports clay layer (1-2 ft thick)
326–330	330				**SAND** Fine, grayish brown
331–334					
335–339					
340–344					
345–349					
350					

Drilling Contractor: Yellow Jacket
Checked By: Jasenka Zbozinek
Date Checked: 05-11-04

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318



DIMENSIONS

A: WELL DIAMETER 2 INCHES

B: BOREHOLE DEPTH 335 FEET

C: BOREHOLE DIAMETER 9 INCHES

D: DEPTH TO TOP OF SCREEN 220 AND 150 FEET*

E: DEPTH TO BOTTOM OF SCREEN 240 AND 170 FEET*

F: TOP OF SCREEN TO BOTTOM OF BENTONITE SEAL 5 AND 12 FEET*

G: THICKNESS OF BENTONITE SEAL 90, 40 AND 10 FEET**

H: DEPTH TO WATER 77 FEET BGS

I: SLOT APERTURE 0.020 INCHES

J: WELL END CAPS APPROX. 6 INCHES

* WELL E IS LISTED FIRST AND WELL D IS LISTED SECOND

** BENTONITE LAYERS ARE LISTED FROM DEEPEST TO SHALLOWEST

NOT TO SCALE

TITLE:	MW-103D,E WELL DIAGRAM 20TH AND FACTOR WQARF SITE		
LOCATION:	YUMA, ARIZONA		
GeoTrans, Inc. A TETRA TECH COMPANY	CHECKED	JZ	FIGURE
	DRAFTED	JLB	1
	PROJECT	1303.011	
	DATE	06/01/04	

GeoTrans, Inc.

Site Map

Project No: 1303.015.03

Client: ADEQ

Site: 20th and Factor WQARF

Borehole No: MW-104B
ADWR ID: 55-205754

Start Date/Time: 11/28/04

End Date/Time: 12/3/04

Logged By: JLB

Drilling Method: Speedstar CH-50K Mud Rotary Rig **Angle from Vertical:** 0

Borehole Diameter: 14.75 inches

Surface Material: Native Material **Sampling Method:** NA

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lthology	Description and Comments
0					Ground Surface
1–50					**Poorly Graded Sand** Yellow-brown, fine to medium sand, with trace coarse sand and clay

Drilling Contractor: Yellow Jacket Drilling

Checked By:

Date Checked:

Sheet: 1 of 6

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.

Site Map

Project No: 1303.015.03

Client: ADEQ

Site: 20th and Factor WQARF

Borehole No: MW-104B

Start Date/Time: 11/28/04

End Date/Time: 12/3/04

Logged By: JLB

Drilling Method: Speedstar CH-50K Mud Rotary Rig **Angle from Vertical:** 0

Borehole Diameter: 14.75 inches

Surface Material: Native Material **Sampling Method:** NA

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
51					
52					
53					
54					
55					
56					
57					
58					
59					
60					
61					
62					
63					
64					
65					
66					
67					
68					
69					
70					
71					
72					
73					
74					
75					
76					
77					
78					
79					
80					
81					
82					
83					
84					
85					
86					
87					
88					
89					
90					
91					
92					
93					
94					
95					
96					
97					
98					
99					
100					

Drilling Contractor: Yellow Jacket Drilling

Checked By:

Date Checked:

Sheet: 2 of 6

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.015.03	Borehole No: MW-104B
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: 11/28/04 End Date/Time: 12/3/04 Logged By: JLB
	Drilling Method: Speedstar CH-50K Mud Rotary Rig Borehole Diameter: 14.75 inches	Angle from Vertical: 0
	Surface Material: Native Material	Sampling Method: NA

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
101					
102					
103					
104					
105					
106					
107					
108					
109					
110					
111					
112					
113					
114					
115					
116					
117					
118					
119					
120					
121					
122					
123					
124					
125					
126					
127					
128					
129					
130					
131					
132					
133					
134					
135					
136					
137					
138					
139					
140					
141					
142					
143					
144					
145					
146					
147					
148					
149					
150					

Drilling Contractor: Yellow Jacket Drilling

Checked By:

Date Checked:

Sheet: 3 of 6

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.015.03	Borehole No: MW-104B
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: 11/28/04 End Date/Time: 12/3/04 Logged By: JLB
	Drilling Method: Speedstar CH-50K Mud Rotary Rig Borehole Diameter: 14.75 inches	Angle from Vertical: 0
	Surface Material: Native Material	Sampling Method: NA

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
151					
152					
153					
154					
155					
156					
157					
158					
159					
160					
161					
162					
163					
164					
165					
166					
167					
168					
169					
170					
171					
172					
173					
174					
175					
176					
177					
178					
179					
180					
181					
182					
183					
184					
185					
186					
187					
188					
189					
190					
191					
192					
193					
194					
195					
196					
197					
198					
199					
200					

Drilling Contractor: Yellow Jacket Drilling

Checked By:

Date Checked:

Sheet: 4 of 6

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.

Site Map

Project No: 1303.015.03

Client: ADEQ

Site: 20th and Factor WQARF

Borehole No: MW-104B

Start Date/Time: 11/28/04

End Date/Time: 12/3/04

Logged By: JLB

Drilling Method: Speedstar CH-50K Mud Rotary Rig **Angle from Vertical:** 0

Borehole Diameter: 14.75 inches

Surface Material: Native Material **Sampling Method:** NA

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
201					
202					
203					
204					
205					
206					
207					
208					
209					
210					
211					
212					
213					
214					
215					
216					
217					
218					
219					
220					
221					
222					
223					
224					
225					
226					
227					
228					
229					
230					
231					
232					
233					
234					
235					
236					
237					
238					
239					
240					
241					
242					
243					
244					
245					
246					
247					
248					
249					
250					

Drilling Contractor: Yellow Jacket Drilling

Checked By:

Date Checked:

Sheet: 5 of 6

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.015.03	Borehole No: MW-104B
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: 11/28/04 End Date/Time: 12/3/04 Logged By: JLB
	Drilling Method: Speedstar CH-50K Mud Rotary Rig Borehole Diameter: 14.75 inches	Angle from Vertical: 0
	Surface Material: Native Material	Sampling Method: NA

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
251					
252					
253					
254					
255					
256					
257					
258					
259					
260					
261					
262					
263					
264					
265					
266					
267					
268					
269					
270					
271					
272					
273					
274					
275					
276					
277					
278					
279					
280					
281					
282					
283					
284					
285					
286					
287					
288					
289					
290					
291					
292					
293					
294					
295					
296					
297					
298					
299					
300					

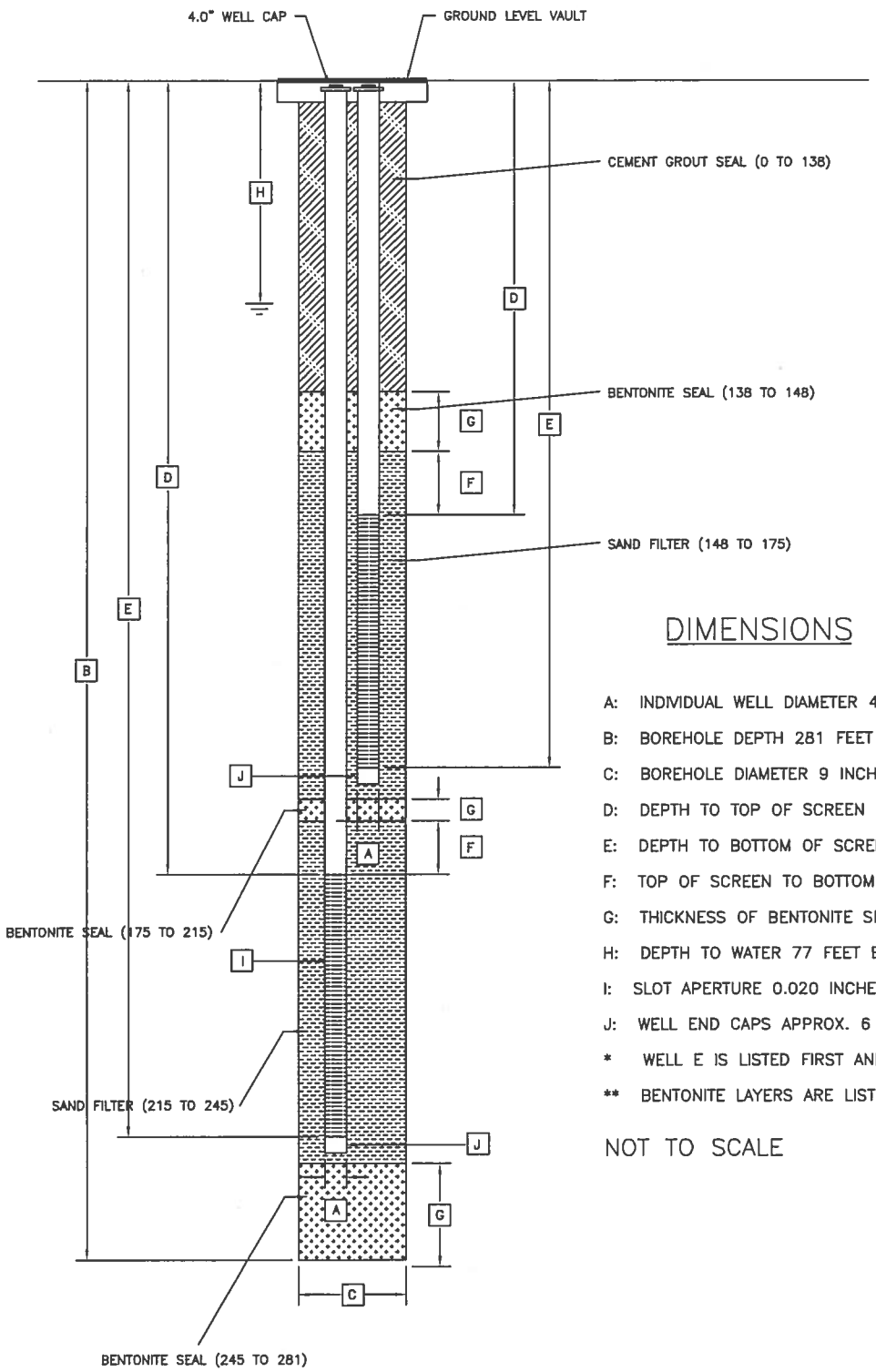
Drilling Contractor: Yellow Jacket Drilling

Checked By:

Date Checked:

Sheet: 6 of 6

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318



DIMENSIONS

A: INDIVIDUAL WELL DIAMETER 4 INCHES

B: BOREHOLE DEPTH 281 FEET

C: BOREHOLE DIAMETER 9 INCHES

D: DEPTH TO TOP OF SCREEN 220 AND 150 FEET*

E: DEPTH TO BOTTOM OF SCREEN 240 AND 170 FEET*

F: TOP OF SCREEN TO BOTTOM OF BENTONITE SEAL 5 AND 12 FEET*

G: THICKNESS OF BENTONITE SEAL 36, 40 AND 10 FEET**

H: DEPTH TO WATER 77 FEET BGS

I: SLOT APERTURE 0.020 INCHES

J: WELL END CAPS APPROX. 6 INCHES

* WELL E IS LISTED FIRST AND WELL D IS LISTED SECOND

** BENTONITE LAYERS ARE LISTED FROM DEEPEST TO SHALLOWEST

NOT TO SCALE

TITLE: MW-104D, E WELL DIAGRAM 20TH AND FACTOR WQARF SITE			
LOCATION: YUMA, ARIZONA			
GeoTrans, Inc. A TETRA TECH COMPANY	CHECKED	JZ	FIGURE
	DRAFTED	JLB	1
	PROJECT	13D3.011	
	DATE	06/01/04	

GeoTrans, Inc.	Project No: 1303.026.09.04	Borehole No: EW-1 ADWR ID:
Site Map	Client: ADEQ Site: Yuma, AZ	Start Date/Time: 1/8/08 - 0830 End Date/Time: 1/8/08 - 1530 Logged By: TG/LG
	Drilling Method: Mud Rotary Borehole Diameter: EW-1	Angle from Vertical:
	Surface Material: Asphalt	Sampling Method:

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lthology	Description and Comments
					Ground Surface
0–9					**Well Graded Sand (SW)** Yellowish Brown 10 YR 5/6
10–14					**Poorly Graded Sand (SP)** Yellowish brown 10 YR 5/4, fine to medium sand
15–19					**Poorly Graded Sand w/ Silt (SP)** Light yellowish brown10 YR 6/4
20–24					**Silt w/ Sand (ML)** Light yellowish brown 10 YR 6/4
25–29					**Poorly Graded Sand w/ Silt (SP)** Light yellowish brown 10 YR 6/4
30–34					**Poorly Graded Sand (SP)** Pale brown 10 YR, 6/3
35–39					**Well Graded Sand (SW)** Light yellowish brown 10 YR 6/4
40–50					**Well Graded Sand (SW)** Light yellowish brown 10 YR 6/4, fine to coarse sand

Drilling Contractor: Yellow Jacket

Checked By: L.G.

Date Checked: 2/20/08

Sheet: 1 of 4

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.026.09.04	Borehole No: EW-1
Site Map	Client: ADEQ Site: Yuma, AZ	Start Date/Time: 1/8/08 - 0830 End Date/Time: 1/8/08 - 1530 Logged By: TG/LG
	Drilling Method: Mud Rotary Borehole Diameter: EW-1	Angle from Vertical:
	Surface Material: Asphalt	Sampling Method:

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
51–54					
55–69					**Well Graded Sand w/ Silt (SW)** Pale brown 10 YR 6/3, fine to coarse sand
70–74					**Poorly Sorted Sand w/ Silt (SP)** Pale brown 10 YR 6/3, fine to medium sand
75–79					**Poorly Sorted Sand w/ Silt (SP)** Pale brown 10 YR 6/3, fine sand
80–100					**Poorly Graded Sand (SP)** Pale brown 10 YR 6/3, fine to medium sand

Drilling Contractor: Yellow Jacket

Checked By: L.G.

Date Checked: 2/20/08

Sheet: 2 of 4

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.026.09.04	Borehole No: EW-1
Site Map	Client: ADEQ Site: Yuma, AZ	Start Date/Time: 1/8/08 - 0830 End Date/Time: 1/8/08 - 1530 Logged By: TG/LG
	Drilling Method: Mud Rotary Borehole Diameter: EW-1	Angle from Vertical:
	Surface Material: Asphalt	Sampling Method:

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
101					**Silty Sand (SM)** Pale brown 10 YR 6/3
102					
103					
104					
105					**Silty Sand (SM)** Light yellowish brown10 YR 6/4
106					
107					
108					
109					
110					**Silty Sand (SM)** Pale brown 10 YR 6/3
111					
112					
113					
114					
115					
116					
117					
118					
119					
120					**Silty Sand (SM)** Light yellowish brown10 YR 6/4
121					
122					
123					
124					
125					**Sandy Silt (ML)** Yellowish brown 10 YR 5/4
126					
127					
128					
129					
130					**Sandy Silt (ML)** Pale brown 10 YR 6/3
131					
132					
133					
134					
135					
136					
137					
138					
139					
140					**Well Graded Sand (SW)** Pale brown 10 YR 6/3, coarse sand, some silt
141					
142					
143					
144					
145					
146					
147					
148					
149					
150					

Drilling Contractor: Yellow Jacket
Checked By: L.G.
Date Checked: 2/20/08

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.026.09.04	Borehole No: EW-1
Site Map	Client: ADEQ Site: Yuma, AZ	Start Date/Time: 1/8/08 - 0830 End Date/Time: 1/8/08 - 1530 Logged By: TG/LG
	Drilling Method: Mud Rotary Borehole Diameter: EW-1	Angle from Vertical:
	Surface Material: Asphalt	Sampling Method:

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
151–154					**Clayey Sand (SC)** Yellowish brown 10 YR 5/4, 70% fine to coarse sand, 30% clay
155–159					**Clayey Sand (SC)** Pale brown 10 YR 6/3, 80% fine to coarse sand, 20% clay
160–164					**Well Graded Sand (SW)** Pale brown 10 YR 6/3, fine to medium sand w/ trace silt
165–169					**Poorly Graded Sand (SP)** Pale brown 10 YR 6/3, fine to medium sand
170					**Bottom of boring at 170 bgs**
171–174					
175–179					
180–184					
185–189					
190–194					
195–199					
200					

Drilling Contractor: Yellow Jacket
Checked By: L.G.
Date Checked: 2/20/08

Sheet: 4 of 4

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.020.03.01	Borehole No: MW-8C ADWR ID: 55-906702
Site Map	Client: ADEQ Site: 20th & Factor WQARF	Start Date/Time: 03/27/07 End Date/Time: 04/11/07 Logged By: A. Gray
	Drilling Method: Sonic Borehole Diameter: 8"	Angle from Vertical: 0
	Surface Material: Concrete	Sampling Method: Continuous Core

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lthology	Description and Comments
0					Ground Surface
1 2 3 4 5	5				**Poorly Graded Sand (SP)** Yellowish brown (10 YR 5/6), moist, weakly cemented
6 7 8 9 10	10		2.9		**Poorly Graded Sand (SP)** Light yellowish brown (10 YR 6/4), medium grained sand, dry, weakly cemented
11 12 13 14 15	15	3/27/07 @ 0945	0.6		**Poorly Graded Sand (SP)** Very pale brown (10 YR 7/3), fine grained sand, dry, weakly cemented
16 17 18 19 20	20				
21 22 23 24 25	25		0.6		
26 27 28 29 30	30	3/27/07 @ 1120	0.6		**Poorly Graded Sand (SP)** Very pale brown (10 YR 8/2), fine grained sand, moderate cementation
31 32 33 34 35	35		0.6		
36 37 38 39 40	40		0.5		**Poorly Graded Sand (SP)** Pale brown (10 YR 6/3), well graded (50% fines, 45% medium, 5% coarse) sand, dry, weakly cemented
41 42 43 44 45	45	3/27/07 @ 1450	0.5		**Poorly Graded Sand (SP)** Very pale brown (10 YR 8/2), fine grained, dry, weakly cemented
46 47 48 49 50	50	3/28/07 @ 0825	0.3		

Drilling Contractor: WDC
Checked By: L. Gardiner
Date Checked: 05/15/07

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.020.03.01	Borehole No: MW-8C
Site Map	Client: ADEQ Site: 20th & Factor WQARF	Start Date/Time: 03/27/07 End Date/Time: 04/11/07 Logged By: A. Gray
	Drilling Method: Sonic Borehole Diameter: 8"	Angle from Vertical: 0
	Surface Material: Concrete	Sampling Method: Continuous Core

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
51 52 53 54	55		0.3		**Poorly Graded Sand (SP)** As above
55 56 57 58 59	60		0.3		
60 61 62 63 64	65		1.1		
65 66 67 68 69	70		1.3		
70 71 72 73 74	75		1.2		**Poorly Graded Sand (SP)** Brown (10 YR 5/4), fine grained sand, moist, weakly cemented
75 76 77 78 79	80		1.9		**Sandy Clay (CL)** Brown (10 YR 5/3), 75% clay, 25% sand, moist
80 81 82 83 84	85		1.9		**Clayey Sand (SC)** Brownish yellow (10 YR 6/6), 50% clay, 50% sand, moist, weakly cemented
85 86 87 88 89	90	3/28/07 @ 1115	11.1		**Silty Sand (SM)** Pale brown (10 YR 6/3), 50% sand (10% med, 40% fine), 50% silt, moist, weak cementation
90 91 92 93 94	95		2.6		**Clay (CL)** Yellowish brown (10 YR 5/4), very stiff, moist
95 96 97 98 99	100		0.7		**Silty Sand (SM)** Light brown (7.5 YR 6/3), 50% fine, 50% silt, moist, weak cementation
100					

Drilling Contractor: WDC
Checked By: L. Gardiner
Date Checked: 05/15/07

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.

Site Map

Project No: 1303.020.03.01

Client: ADEQ

Site: 20th & Factor WQARF

Borehole No: MW-8C

Start Date/Time: 03/27/07

End Date/Time: 04/11/07

Logged By: A. Gray

Drilling Method: Sonic

Angle from Vertical: 0

Borehole Diameter: 8"

Surface Material: Concrete

Sampling Method: Continuous Core

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
101–104	105	3/28/07 @ 1700	9.6		**Poorly Graded Sand (SP)** Dark yellowish brown (10 YR 4/4), 50% fine, 50% medium grained sand, wet, weak cementation
105–109	110		12.4		
110–114	115	3/28/07 @ 0830	21.1		
115–119	120		0.5		**Poorly Graded Sand (SP)** Yellowish brown (10 YR 5/4), moist, no cementation
120–124	125	4/3/07 @ 0735	1.6		
125–129	130				**Clay (CL)** Light yellowish brown (10YR 6/4), moist, mod-strong cementation, very stiff
130–134	135	4/3/07 @ 1245			**Sandy Clay (SC-CL)** Yellowish brown (10YR 5/4), wet, soft, weak cementation
135					**Poorly Graded Sand (SP)** Light yellow brown (2.5 YR 6/4), fine grained sand, moist, weak cementation
136–139	140				**Well Graded Sand (SW)** Brown (10 YR 5/3), 5% gravel, 95% sand (15% coarse, 40% med 40% fine grained sand), wet, weak cementation
140–144	145	4/3/07 @ 1430			
145–149	150				**Clay (CL)** Pale brown (10 YR 6/3), very stiff, moist
150					

Drilling Contractor: WDC

Checked By: L. Gardiner

Date Checked: 05/15/07

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.020.03.01	Borehole No: MW-8C
Site Map	Client: ADEQ Site: 20th & Factor WQARF	Start Date/Time: 03/27/07 End Date/Time: 04/11/07 Logged By: A. Gray
	Drilling Method: Sonic Borehole Diameter: 8"	Angle from Vertical: 0
	Surface Material: Concrete	Sampling Method: Continuous Core

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
151-152					
153-154	155	4/3/07 @ 1655			**Poorly Graded Sand (SP)** Light yellow brown (2.5 YR 6/4), fine sand, moist, weak cementation
155-157	160		1.9		**Clay (CL)** Light yellowish brown (10YR 6/4), moist, very stiff
158-160	165	4/4/07 @ 0845	0.8		
161-165	170		1.4		**Clayey Silt (ML)** Pale brown (10 YR 6/3), medium stiff, moist
166-170	175	4/4/07 @ 1215	0.9		
171-175	180		0.3		**Silty Sand (SM)** Brown (10 YR 5/3), 50%fine sand, 50% silt, loose, moist, weak cementation, interbedded thin clay layers
176-180	185	4/4/07 @ 1510	0.5		
181-185	190		1.5		**Silty Sand (SM)** Light yellowish brown (10 YR 6/4), 60%fine sand, 40% silt, loose, moist, weak cementation
186-190	195	4/5/07 @ 0845	1.9		**Sandy Silt (ML)** Yellowish brown (10 YR 5/4), 50% silt, 45% sand, 5% gravel, loose, wet, weak cementation
191-195	200		0.7		**Clayey Sand (SC)** Yellowish brown (10 YR 5/4), 50% fine sand, 50% clay, very stiff, moist
196-200					

Drilling Contractor: WDC
Checked By: L. Gardiner
Date Checked: 05/15/07

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.020.03.01	Borehole No: MW-8C
Site Map	Client: ADEQ Site: 20th & Factor WQARF Site	Start Date/Time: 03/27/07 End Date/Time: 04/11/07 Logged By: A. Gray
	Drilling Method: Sonic Borehole Diameter: 8"	Angle from Vertical: 0
	Surface Material: Concrete	Sampling Method: Continuous Core

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
201–204	205	4/5/07 @ 1115	0.6		**Silty Sand (SM)** Yellowish brown (10 YR 5/4), 50% fine sand, 50% silt, wet, weak cementation
205–209	210		0.5		**Poorly Graded Sand (SP)** Light brownish gray (10 YR 6/2), fine grained sand, wet, weak cementation
210–214	215	4/5/07 @ 1455	1.0		**Poorly Graded Sand (SP)** Light brownish gray (10 YR 5/2), medium grained sand, wet, weak cementation
215–219	220		0.6		**Poorly Graded Sand (SP)** Grayish brown (10 YR 5/2), fine grained sand, wet, weak cementation
220–224	225		1.1		**Poorly Graded Sand (SP)** Dark grayish brown (10 YR 4/2), medium grained sand, wet, weak cementation
225–250					**Bottom of boring at 225 feet bgs**

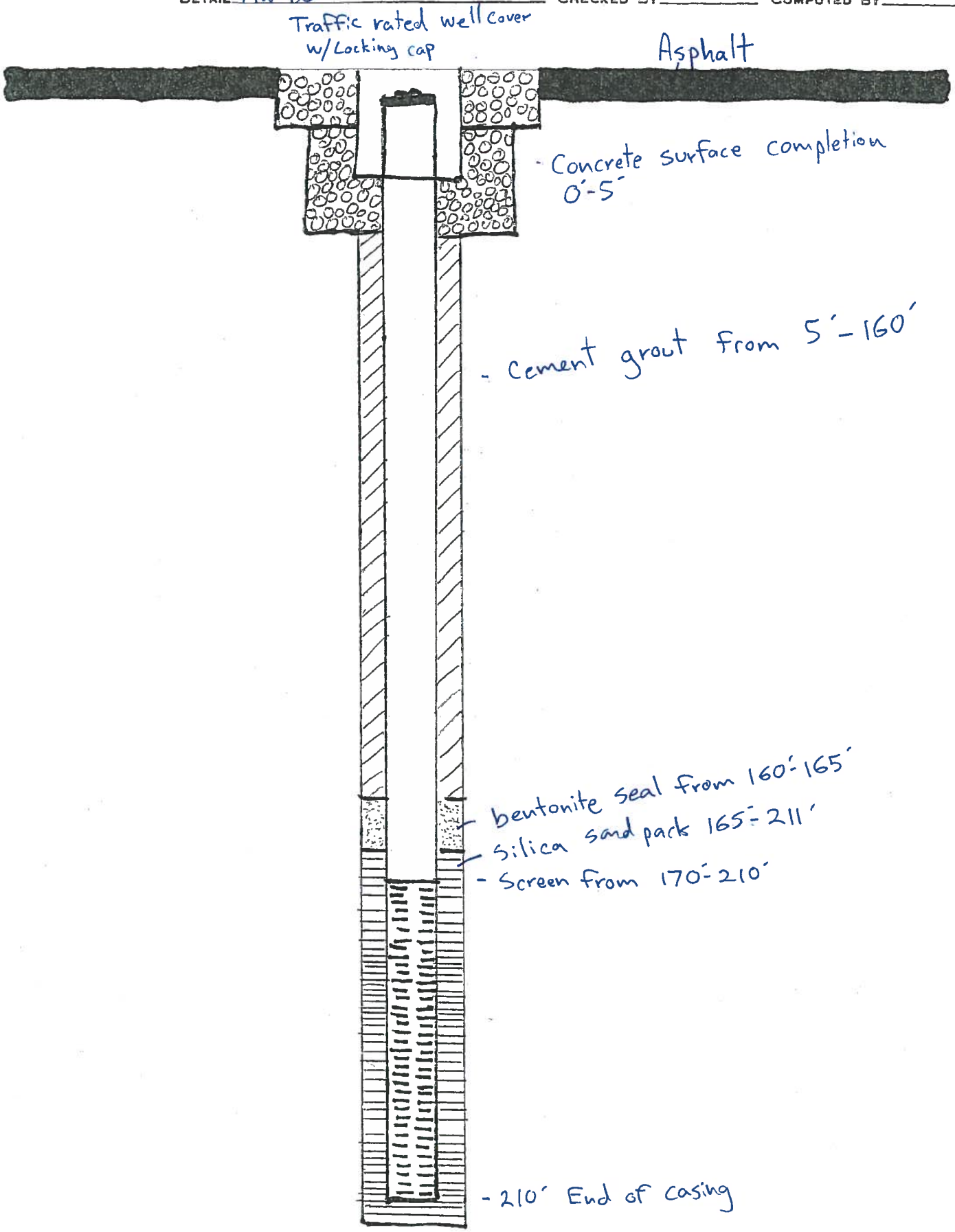
Drilling Contractor: WDC
Checked By: L. Gardiner
Date Checked: 05/15/07

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

CLIENT ADEQ
PROJECT 20th + Harbor WQARF Site
DETAIL MW-8C

JOB NO. 1303.070.03 03
DATE CHECKED
CHECKED BY

PAGE
DATE
COMPUTED BY



GeoTrans, Inc.	Project No: 1303.026.09.01	Borehole No: MW-17C ADWR ID: 55-907658
Site Map	Client: ADEQ Site: 20th & Farctor WQARF	Start Date/Time: 08/28/07 1200 End Date/Time: 09/06/07 1500 Logged By: AG
	Drilling Method: Sonic Borehole Diameter: 9"	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: Sonic Coring

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
0					Ground Surface
1 2 3 4	5'				**Poorly graded sand (SP)** Very pale brown (10YR 8/4), fine grained, dry, no cementation
5 6 7 8 9	10'	08/28/07 1200			
10 11 12 13 14	15'				
15 16 17 18 19	20'				
20 21 22 23 24	25'	08/28/07 1330			
25 26 27 28 29	30'				**Poorly Graded Sand (SP)** Very pale brown (10YR 7/4), 80% fine grained, 20% medium grained sand, dry, no cementation
30 31 32 33 34	35'				**Sandy Clay (CL)** Very pale brown (10YR 7/4), sandy clay ,75% clay, 25% fine sand, dry, no cementation
35 36 37 38 39	40'				**Poorly Graded Sand (SP)** Light gray (10YR 7/2), fine grained, dry, no cementation
40 41 42 43 44	45'				
45 46 47 48 49	50'	08/28/07 1600			
50					

Drilling Contractor: Boart Longyear
Checked By: Larry Gardiner
Date Checked: 09/10/07

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

Site Map	**Project No:** 1303.026.09.01 **Client:** ADEQ **Site:** 20th & Farctor WQARF	**Borehole No:** MW-17C **Start Date/Time:** 08/28/07 1200 **End Date/Time:** 09/06/07 1500 **Logged By:** AG
	Drilling Method: Sonic **Borehole Diameter:** 9"	**Angle from Vertical:** 0
	Surface Material: Asphalt	**Sampling Method:** Sonic Coring

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
51–54	55'				
55–58	60'	08/28/07 1700			
59–62	65'				
63–66	70'	08/29/07 0800			
67–70	75'				
71–74	80'				**Sand with Clay (SP)** Brownish yellow (10YR 6/6), 90% fine sand, 10% clay, some cementation
75–78	85'				**Silty Sand (SM)** Light gray (10YR 7/2), 25% silt, 75% fine sand, wet, no cementation
79–82	90'				**Clayey Sand (SC)** Light gray (10YR 6/2), 35% clay, 65% fine sand, wet, no cementation
83–86	95'	08/29/07 1200			
87–90	100'				
91–100					

Drilling Contractor: Boart Longyear
Checked By: Larry Gardiner
Date Checked: 09/10/07

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

Site Map	**Project No:** 1303.026.09.01 **Client:** ADEQ **Site:** 20th & Farctor WQARF	**Borehole No:** MW-17C **Start Date/Time:** 08/28/07 1200 **End Date/Time:** 09/06/07 1500 **Logged By:** AG
	Drilling Method: Sonic **Borehole Diameter:** 9"	**Angle from Vertical:** 0
	Surface Material: Asphalt	**Sampling Method:** Sonic Coring

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
101–104	105'	08/29/07 1610			**Poorly Graded Sand (SP)** Pinkish gray (7.5YR 6/2), fine grained, wet, no cementation
105–109	110'				
110–114	115'	08/30/07 1020			**Clayey Sand (SC)** Pinkish gray (7.5YR 6/2), 30% clay, 70% fine sand, wet, no cementation
115–119	120'				**Poorly Graded Sand (SP)** Pinkish gray (7.5YR 6/2), fine grained (SP), wet, no cementation
120–124	125'	08/30/07 1240			**Sandy Clay (CL)** Brown (7.5 5/2), 65% clay,35% fine sand, wet, no cementation
125–129	130'				**Silty Sand (SM)** Light brownish gray (10YR 6/2), silty sand (SM), 15% silt, 85% fine sand, wet, no cementation
130–134	135'	08/30/07 1400			
135–139	140'				**Poorly Graded Sand (SP)** Light brownish gray (10YR 6/2), fine grained, wet, no cementation
140–144	145'	08/30/07 1650			**Sandy Clay (CL)** Light brownish gray (10YR 6/2), 60% clay, 40% fine sand, wet, no cementation
145–150	150'				**Poorly Graded Sand (SP)** Light brownish gray (10YR 6/2), fine grained sand, wet, no cementation

Drilling Contractor: Boart Longyear
Checked By: Larry Gardiner
Date Checked: 09/10/07

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.026.09.01	Borehole No: MW-17C
Site Map	Client: ADEQ Site: 20th & Farctor WQARF	Start Date/Time: 08/28/07 1200 End Date/Time: 09/06/07 1500 Logged By: AG
	Drilling Method: Sonic Borehole Diameter: 9"	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: Sonic Coring

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
151 152 153 154 155	155'	08/31/07 1030			
156 157 158 159 160	160'				**Clay (CL)** Brown (10YR 5/2), stiff, moist
161 162 163 164	165'	08/31/07 1130			
165 166 167 168 169 170	170'				**Clayey Sand (SC)** Brownish yellow (10YR 6/6), 20% clay, 80% sand, wet, no cementation
171 172 173 174	175'	08/31/07 1305			
175 176 177 178 179	180'				**Poorly Graded Sand (SP)** Brownish yellow (10YR 6/6), fine grained sand, wet, no cementation
180 181 182 183 184	185'	09/04/07 0900			**Poorly Graded Sand (SP)** Light brownish gray (10YR 6/2), fine grained sand , wet, no cementation, white nodules
185 186 187 188 189 190	190'				**Clayey Sand (SC)** Light brownish gray (10YR 6/2), 30% clay, 70% fine sand, wet, no cementation
191 192 193 194	195'	09/04/07 1230			
195 196 197 198 199 200	200'				**Silty Clay (CL)** Brown (10YR 5/2), 50% silt, 50% clay, no cementation, wet

Drilling Contractor: Boart Longyear
Checked By: Larry Gardiner
Date Checked: 09/10/07

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.026.09.01	Borehole No: MW-17C
Site Map	Client: ADEQ Site: 20th & Farctor WQARF	Start Date/Time: 08/28/07 1200 End Date/Time: 09/06/07 1500 Logged By: AG
	Drilling Method: Sonic Borehole Diameter: 9"	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: Sonic Coring

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
201	205'	09/04/07 1600			
202					
203					
204					
205					
206					
207	210'				End of boring at 207 feet bgs
208					
209					
210					
211					
212					
213					
214					
215					
216					
217					
218					
219					
220					
221					
222					
223					
224					
225					
226					
227					
228					
229					
230					
231					
232					
233					
234					
235					
236					
237					
238					
239					
240					
241					
242					
243					
244					
245					
246					
247					
248					
249					
250					

Drilling Contractor: Boart Longyear
Checked By: Larry Gardiner
Date Checked: 09/10/07

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.

Site Map

Project No: 1303.020.03.01

Client: ADEQ

Site: Yuma 20th & Factor WQARF

Borehole No: MW-21C
ADWR ID: 55-906703

Start Date/Time: 4/12

End Date/Time: 4/26

Logged By: A. Gray & M. Brennan

Drilling Method: Sonic

Angle from Vertical: 0

Borehole Diameter: 8"

Surface Material: Concrete

Sampling Method: Continuous Core

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
0					Ground Surface
1–4	5		0.0		**Poorly Graded Sand (SP)** Medium grained, pink (7.5YR 7/3), dry, weak cementation
5–9	10	4/12/07 @ 0940	0.0		
10–14	15	4/12/07 @ 1050	0.0		
15–19	20		0.4		**Poorly Graded Sand (SP)** Medium grained, pink (7.5YR 7/4), moist, weak cementation
20–24	25	4/12/07 @ 1105	1.0		**Poorly Graded Sand (SP)** Fine grained, pinkish white (7.5YR 7/2), dry, weak cementation
25–29	30		0.6		**Poorly Graded Sand (SP)** Fine grained, pinkish white (7.5 8/2), dry, weak cementation
30–34	35	4/12/07 @ 1135	0.0		**Clay (CL)** Brown (7.5YR 5/4), moist, stiff
35–39	40	4/12/07 @ 1440	0.4		**Poorly Graded Sand (SP)** Fine grained, brown (7.5YR 5/2), moist, moderate cementation
40–44	45	4/12/07 @ 1500	0.7		**Poorly Graded Sand (SP)** Fine grained, pinkish white (7.5YR 7/2), dry, weak cementation
45–49	50		0.6		
50					

Drilling Contractor: WDC

Checked By: L. Gardiner

Date Checked: 05/15/07

Sheet: 1 of 7

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.020.03.01	Borehole No: MW-21C
Site Map	Client: ADEQ Site: Yuma 20th & Factor WQARF	Start Date/Time: 4/12 End Date/Time: 4/26 Logged By: A. Gray & M. Brennan
	Drilling Method: Sonic Borehole Diameter: 8"	Angle from Vertical: 0
	Surface Material: Concrete	Sampling Method: Continuous Core

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
51 52 53 54 55	55	4/12/07 @ 1520	1.1		**Poorly Graded Sand (SP)** As Above
56 57 58 59 60	60	4/12/07 @ 1540	0.4		
61 62 63 64 65	65		0.5		**Poorly Graded Sand (SP)** Fine grained,brown (10YR 5/3), moist, weak cementation
66 67 68 69 70	70	4/12/07 @ 1625	0.7		**Silty Sand (SM)** 70% fine sand, 30% silt, light gray (10YR 7/2), dry, weak cementation
71 72 73 74 75	75		0.9		
76 77 78 79 80	80	4/12/07 @ 1700	1.2		**Poorly Graded Sand (SP)** Fine grained, very pale brown (10YR 7/3), moist, weak cementation
81 82 83 84 85	85		0.9		
86 87 88 89 90	90	4/12/07 @ 1740	0.8		
91 92 93 94 95	95	4/13/07 @ 1640	0.0		**Poorly Graded Sand (SP)** Pale brown (10YR 6/3), moist, no cementation
96 97 98 99 100	100		0.0		**Poorly Graded Sand (SP)** Brown (10YR 5/3), wet, no cementation

Drilling Contractor: WDC
Checked By: L. Gardiner
Date Checked: 05/15/07

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.020.03.01	Borehole No: MW-21C
Site Map	Client: ADEQ Site: Yuma 20th & Factor WQARF	Start Date/Time: 4/12 End Date/Time: 4/26 Logged By: A. Gray & M. Brennan
	Drilling Method: Sonic Borehole Diameter: 8"	Angle from Vertical: 0
	Surface Material: Concrete	Sampling Method: Continuous Core

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
101 102 103 104 105	105	4/14/07 @ 0930	0.3		**Silty Sand (SM)** Brown (10YR 6/3), damp, no cementation
106 107 108 109 110	110		0.1		**Clay (CL)** Brown (10YR 5/3), moist, very stiff, with very pale brown (10YR 8/2), nodules
111 112 113 114 115	115	4/14/07 @ 1133	0.0		**Poorly Graded Sand (SP)** Brown (10YR4/3), wet, no cementation
116 117 118 119 120	120		0.7		**Poorly Graded Sand (SP)** Brown (10YR 5/3), moist, no cementation
121 122 123 124 125	125	4/14/07 @ 1430	0.5		
126 127 128 129 130	130		0.0		
131 132 133 134 135	135	4/15/07 @ 0900	0.0		
136 137 138 139 140	140		0.0		**Well Graded Sand with Gravel and Clay (SW)** Brown (10YR 4/3), moist, no cementation, very pale brown (10YR 8/3) clay
141 142 143 144 145	145	4/15/07 @ 1100	0.0		**Poorly Graded Sand (SP)** Brown (10YR 4/3), wet, no cementation
146 147 148 149 150	150		0.1		**Poorly Graded Sand (SP) with Clay Nodules** Brown (10YR 5/3), moist, no cementation

Drilling Contractor: WDC
Checked By: L. Gardiner
Date Checked: 05/15/07

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.020.03.01	Borehole No: MW-21C
Site Map	Client: ADEQ Site: Yuma 20th & Factor WQARF	Start Date/Time: 4/12 End Date/Time: 4/26 Logged By: A. Gray & M. Brennan
	Drilling Method: Sonic Borehole Diameter: 8"	Angle from Vertical: 0
	Surface Material: Concrete	Sampling Method: Continuous Core

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
151-155	155	4/15/07 @ 1350	0.2		**Well Graded Sand with Gravel and Clay Nodules (SW)** Brown (10 YR 5/3), moist, moderate cementation
155-160	160		0.1		
160-165	165	4/15/07 @ 1615	0.0		**Poorly Graded Sand with Clay Nodules (SP)** Yellowish brown (10YR 5/4), moist, no cementation,
165-170	170		0.0		**Silty Sand (SM)** Brown (7.5YR 5/3), moist, no cementation
170-175	175	4/16/07 @ 1030	0.0		**Clayey Sand (SC)** Brown (10YR 5/3), moist, no cementation, with very pale brown (10YR 8/3)
175-180	180		0.0		**Clay (CL)** Light yellowish brown (10YR 6/4), moist, very stiff
180-185	185	4/16/07 @ 1325	0.0		
185-190	190		0.2		**Sandy Clay (CL)** 60% clay, 40% fine sand, light olive brown (2.5Y 5/4), moist, no cementation
190-195	195	4/16/07 @ 1640	0.1		**Silty Sand (SM)** 60% fine sand, 40% silt (2.5YR 5/4), light olive brown, moist, no cementation
195-200	200		0.0		**Poorly Graded Sand (SP)** 75% fine, 25% medium grained sand, pale brown (10 YR 6/3), wet, no cementation

Drilling Contractor: WDC
Checked By: L. Gardiner
Date Checked: 05/15/07

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.020.03.01	Borehole No: MW-21C
Site Map	Client: ADEQ Site: Yuma 20th & Factor WQARF	Start Date/Time: 4/12 End Date/Time: 4/26 Logged By: A. Gray & M. Brennan
	Drilling Method: Sonic Borehole Diameter: 8"	Angle from Vertical: 0
	Surface Material: Concrete	Sampling Method: Continuous Core

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
201 202 203 204 205	205	4/17/07 @ 1255	0.2		**Poorly Graded Sand (SP)** As Above
206 207 208 209 210 211	210		0.5		**Clayey Sand (SC)** Fine grained sand, dark grayish brown (10YR 5/2) moist, no cementation
212 213 214 215	215	4/17/07 @ 1457	2.7		**Poorly Graded Sand (SP)** Fine grained, grayish brown (2.5 YR 5/2) moist, no cementation
216 217 218 219 220	220		0.0		
221 222 223 224 225	225	4/17/07 @ 1725	0.0		
226 227 228 229 230	230		1.2		**Sandy Clay (CL)** 75% clay 25% fine sand, grayish brown (10YR 5/2), moist, weak cementation
231 232 233 234 235	235	4/18/07 @ 0855	0.5		**Poorly Graded Sand (SP)** Fine grained, grayish brown (10YR 4/2), moist, moderate cementation
236 237 238 239 240	240		0.4		
241 242 243 244 245	245	4/18/07 @ 1140	0.2		
246 247 248 249 250	250		0.3		

Drilling Contractor: WDC
Checked By: L. Gardiner
Date Checked: 05/15/07

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.020.03.01	Borehole No: MW-21C
Site Map	Client: ADEQ Site: Yuma 20th & Factor WQARF	Start Date/Time: 4/12 End Date/Time: 4/26 Logged By: A. Gray & M. Brennan
	Drilling Method: Sonic Borehole Diameter: 8"	Angle from Vertical: 0
	Surface Material: Concrete	Sampling Method: Continuous Core

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
251 252 253 254 255	255	4/18/07 @ 1815	0.2		**Poorly Graded Sand (SP)** As Above
256 257 258 259 260	260		0.1		
261 262 263 264 265	265	4/19/07 @ 1015	0.1		
266 267 268 269 270	270		0.0		**Poorly Graded Sand (SP)** Medium grained, dark grayish brown (10YR 4/2), moist, moderate cementation
271 272 273 274 275	275	4/19/07 @ 1200	0.2		**Poorly Graded Sand (SP)** 50% fine, 50% medium grained sand, dark grayish brown (10YR 4/2), moist, moderate cementation
276 277 278 279 280	280		0.2		
281 282 283 284 285	285	4/24/07 @ 1415	0.3		
286 287 288 289 290	290		0.1		
291 292 293 294 295	295	4/24/07 @ 1720	0.0		
296 297 298 299 300	300		0.3		

Drilling Contractor: WDC
Checked By: L. Gardiner
Date Checked: 05/15/07

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.020.03.01	Borehole No: MW-21C
Site Map	Client: ADEQ Site: Yuma 20th & Factor WQARF	Start Date/Time: 4/12 End Date/Time: 4/26 Logged By: A. Gray & M. Brennan
	Drilling Method: Sonic Borehole Diameter: 8"	Angle from Vertical: 0
	Surface Material: Concrete	Sampling Method: Continuous Core

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
301-304	305	4/25/07 @ 0715	0.1		**Poorly Graded Sand (SP)** Fine grained, dark grayish brown, (10YR 4/2), moist, moderate cementation
305-309	310		0.0		
310-314	315	4/25/07 @ 0800	0.0		**Poorly Graded Sand (SP)** Fine grained, dark grayish brown, (10 YR 4/2), moist, no cementation
315-319	320		0.2		
320-324	325	4/25/07 @ 0950	0.0		
325-329	330				Bottom of boring at 325 feet bgs
330-334	335				
335-339	340				
340-344	345				
345-349	350				
350					

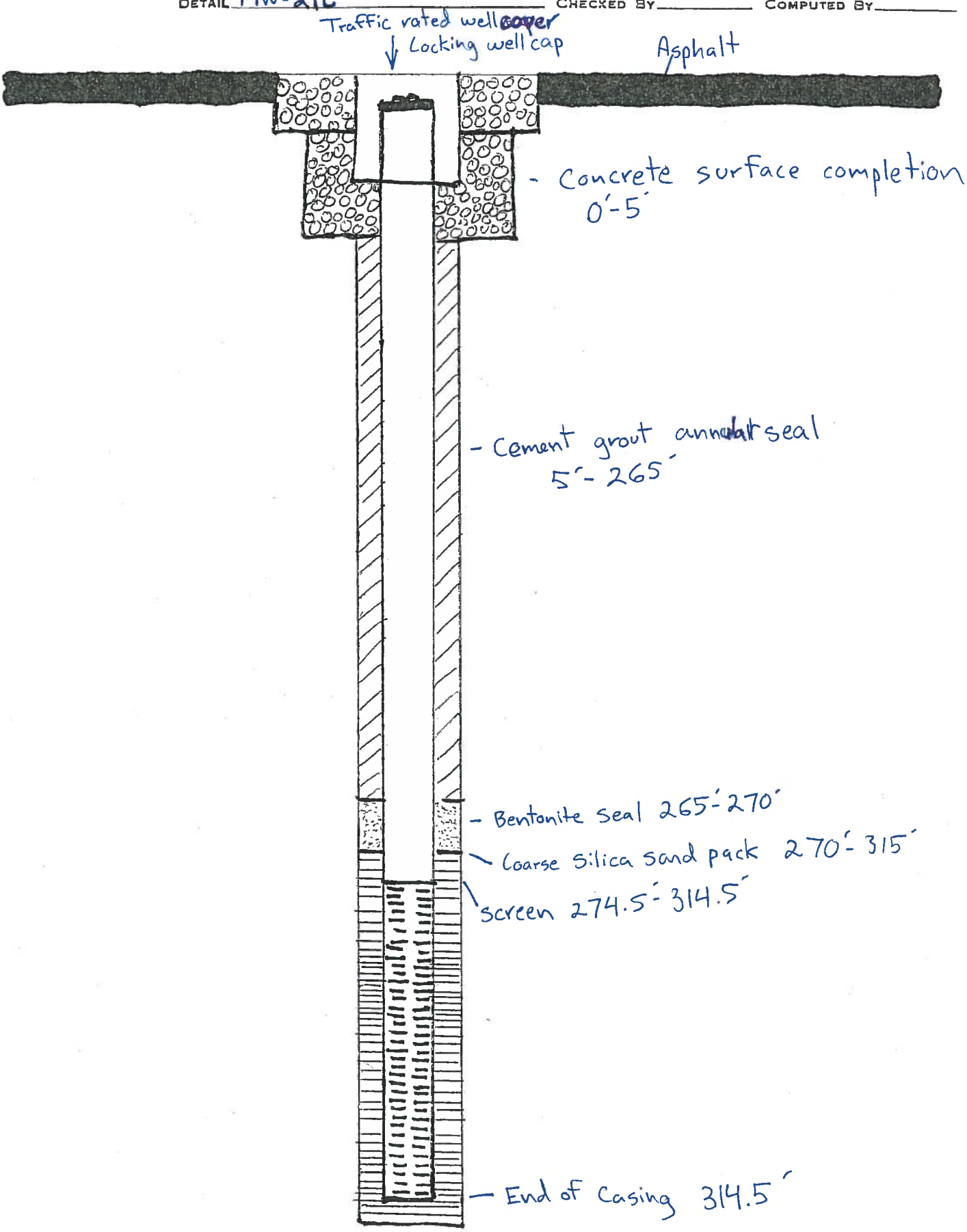
Drilling Contractor: WDC
Checked By: L. Gardiner
Date Checked: 05/15/07

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

CLIENT ADEQ
PROJECT 20th + Harrison WQARF Site
DETAIL MW-21C

JOB NO. 1303.020.03.03
DATE CHECKED
CHECKED BY

PAGE
DATE
COMPUTED BY



GeoTrans, Inc.	Project No: 1303.011	Borehole No: MW-103C ADWR ID: 55-201457
Site Map	Client: ADEQ Site: 20th and Factor	Start Date/Time: 01-27-04 End Date/Time: 02-04-04 Logged By: Chris Gutmann
	Drilling Method: Mud Rotary Borehole Diameter: 9 in.	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: None; cuttings

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lthology	Description and Comments
0					Ground Surface
1 2 3 4 5	5				**SAND** Fine, loose, yellowish brown, poorly graded
6 7 8 9 10	10				
11 12 13 14 15	15				
16 17 18 19 20	20				
21 22 23 24 25	25				
26 27 28 29 30	30				
31 32 33 34 35	35				
36 37 38 39 40	40				
41 42 43 44 45	45				
46 47 48 49 50	50				

Drilling Contractor: Yellow Jacket

Checked By: Jasenka Zbozinek

Date Checked: 05-11-04

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.011	Borehole No: MW-103C
Site Map	Client: ADEQ Site: 20th and Factor	Start Date/Time: 01-27-04 End Date/Time: 02-04-04 Logged By: Chris Gutmann
	Drilling Method: Mud Rotary Borehole Diameter: 9 in.	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: None; cuttings

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
51-54	55				
55-59	60				
60-64	65				
65-69	70				
70-74	75				**SAND** Fine to coarse, light olive brown, well graded
75-79	80				**SAND WITH GRAVEL** Fine to coarse, well graded (95%) with up to 5% fine gravel in cuttings stream (<0.5 cm dia.)
80-84	85				
85-89	90				
90-94	95				
95-99	100				**SAND** Fine to coarse, brown, no visible gravel
100					

Drilling Contractor: Yellow Jacket
Checked By: Jasenka Zbozinek
Date Checked: 05-11-04

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.011	Borehole No: MW-103C
Site Map	Client: ADEQ Site: 20th and Factor	Start Date/Time: 01-27-04 End Date/Time: 02-04-04 Logged By: Chris Gutmann
	Drilling Method: Mud Rotary Borehole Diameter: 9 in.	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: None; cuttings

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
101–104	105				
105–109	110				
110–114	115				
115–119	120				
120–124	125				
125–129	130				
130–134	135				
135–139	140				**GRAVELLY SAND** Well graded, fine to coarse sand with 10-15% fine gravel
140–144	145				**CLAYEY SAND WITH GRAVEL** Well graded, fine to coarse sand (60%); clay (20-30%); fine gravel (5-10%)
145–149	150				
150					

Drilling Contractor: Yellow Jacket

Checked By: Jasenka Zbozinek

Date Checked: 05-11-04

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.011	Borehole No: MW-103C
Site Map	Client: ADEQ Site: 20th and Factor	Start Date/Time: 01-27-04 End Date/Time: 02-04-04 Logged By: Chris Gutmann
	Drilling Method: Mud Rotary Borehole Diameter: 9 in.	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: None; cuttings

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
151-155	155				**GRAVELLY SAND** Fine to coarse, well graded sand (70%); fine gravel(30%)
156-160	160				**SAND** Fine to medium sand
161-165	165				**GRAVELLY SAND** Fine gravel in sand, drill chattered.
166-170	170				**CLAY AND SAND** sand fine to medium (50%); clay (50%)
171-175	175				**SAND** Fine to coarse, well graded
176-180	180				**GRAVELLY SAND** Fine gravel in mud-stream, drill chattered
181-185	185				**SAND** Fine to coarse, well graded **GRAVELLY SAND** Sand is fine to coarse (50%); gravel (50%) 0.5 to 1.5 inches
186-190	190				**SAND** Fine to medium, well graded
191-195	195				
196-200	200				**SAND** Fine to coarse

Drilling Contractor: Yellow Jacket
Checked By: Jasenka Zbozinek
Date Checked: 05-11-04

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

Site Map	**Project No:** 1303.011 **Client:** ADEQ **Site:** 20th and Factor	**Borehole No:** MW-103C **Start Date/Time:** 01-27-04 **End Date/Time:** 02-04-04 **Logged By:** Chris Gutmann
	Drilling Method: Mud Rotary **Borehole Diameter:** 9 in.	**Angle from Vertical:** 0
	Surface Material: Asphalt	**Sampling Method:** None; cuttings

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
201 202 203 204 205 206 207 208 209 210 211 212 213 214	205				
	210				
	215				
215 216 217 218 219	220				**CLAYEY SAND** Fine to medium, well graded sand, driller reports clay in mud stream
220 221 222 223 224	225				**SAND** Fine to medium, well graded, loose
225 226 227 228 229	230				
230 231 232 233 234	235				
235 236 237 238 239	240				**SILTY SAND** Sand is fine to coarse (90%); silt (10%)
240 241 242 243 244	245				**SAND** Fine to medium
245 246 247 248 249 250	250				**SAND** Medium, uniform

Drilling Contractor: Yellow Jacket
Checked By: Jasenka Zbozinek
Date Checked: 05-11-04

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.011	Borehole No: MW-103C
Site Map	Client: ADEQ Site: 20th and Factor	Start Date/Time: 01-27-04 End Date/Time: 02-04-04 Logged By: Chris Gutmann
	Drilling Method: Mud Rotary Borehole Diameter: 9 in.	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: None; cuttings

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
251 252 253 254	255				
255 256 257 258 259	260				**SAND** Medium, uniform, olive brown
260 261 262 263 264	265				**SAND** Fine to medium, grayish brown
265 266 267 268 269	270				
270 271 272 273 274	275				
275 276 277 278 279	280				**SAND** Medium to coarse, wet (maybe ground gravel?)
280 281 282 283 284	285				
285 286 287 288 289	290				
290 291 292 293 294	295				**SAND** Fine to medium
295 296 297 298 299	300				
300					

Drilling Contractor: Yellow Jacket
Checked By: Jasenka Zbozinek
Date Checked: 05-11-04

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.011	Borehole No: MW-103C
Site Map	Client: ADEQ Site: 20th and Factor	Start Date/Time: 01-27-04 End Date/Time: 02-04-04 Logged By: Chris Gutmann
	Drilling Method: Mud Rotary Borehole Diameter: 9 in.	Angle from Vertical: 0
	Surface Material: Asphalt	Sampling Method: None; cuttings

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
301–305	305				**SAND WITH SILT** Fine to medium
305–315	310				**SAND** Fine to medium, brownish gray
	315				
315–320	320				**GRAVELLY SAND** Fine to coarse sand (60%); fine gravel (40%)
320–325	325				**SAND** Fine to medium, driller reports clay layer (1-2 ft thick)
325–330	330				**SAND** Fine, grayish brown
330–350					

Drilling Contractor: Yellow Jacket
Checked By: Jasenka Zbozinek
Date Checked: 05-11-04

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.015.03	Borehole No: MW-104C ADWR ID: 55-205754
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: 11/28/04 End Date/Time: 12/3/04 Logged By: JLB
	Drilling Method: Speedstar CH-50K Mud Rotary Rig Borehole Diameter: 14.75 inches	Angle from Vertical: 0
	Surface Material: Native Material	Sampling Method: NA

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lthology	Description and Comments
0					Ground Surface
1–50					**Poorly Graded Sand** Yellow-brown, fine to medium sand, with trace coarse sand and clay

Drilling Contractor: Yellow Jacket Drilling

Checked By:

Date Checked:

Sheet: 1 of 6

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.015.03	Borehole No: MW-104C
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: 11/28/04 End Date/Time: 12/3/04 Logged By: JLB
	Drilling Method: Speedstar CH-50K Mud Rotary Rig Borehole Diameter: 14.75 inches	Angle from Vertical: 0
	Surface Material: Native Material	Sampling Method: NA

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
51					
52					
53					
54					
55					
56					
57					
58					
59					
60					
61					
62					
63					
64					
65					
66					
67					
68					
69					
70					
71					
72					
73					
74					
75					
76					
77					
78					
79					
80					
81					
82					
83					
84					
85					
86					
87					
88					
89					
90					
91					
92					
93					
94					
95					
96					
97					
98					
99					
100					

Drilling Contractor: Yellow Jacket Drilling

Checked By:

Date Checked:

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.

Site Map

Project No: 1303.015.03

Client: ADEQ

Site: 20th and Factor WQARF

Borehole No: MW-104C

Start Date/Time: 11/28/04

End Date/Time: 12/3/04

Logged By: JLB

Drilling Method: Speedstar CH-50K Mud Rotary Rig **Angle from Vertical:** 0

Borehole Diameter: 14.75 inches

Surface Material: Native Material **Sampling Method:** NA

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
101					
102					
103					
104					
105					
106					
107					
108					
109					
110					
111					
112					
113					
114					
115					
116					
117					
118					
119					
120					
121					
122					
123					
124					
125					
126					
127					
128					
129					
130					
131					
132					
133					
134					
135					
136					
137					
138					
139					
140					
141					
142					
143					
144					
145					
146					
147					
148					
149					
150					

Drilling Contractor: Yellow Jacket Drilling

Checked By:

Date Checked:

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.015.03	Borehole No: MW-104C
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: 11/28/04 End Date/Time: 12/3/04 Logged By: JLB
	Drilling Method: Speedstar CH-50K Mud Rotary Rig Borehole Diameter: 14.75 inches	Angle from Vertical: 0
	Surface Material: Native Material	Sampling Method: NA

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
151					
152					
153					
154					
155					
156					
157					
158					
159					
160					
161					
162					
163					
164					
165					
166					
167					
168					
169					
170					
171					
172					
173					
174					
175					
176					
177					
178					
179					
180					
181					
182					
183					
184					
185					
186					
187					
188					
189					
190					
191					
192					
193					
194					
195					
196					
197					
198					
199					
200					

Drilling Contractor: Yellow Jacket Drilling

Checked By:

Date Checked:

Sheet: 4 of 6

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.

Site Map

Project No: 1303.015.03

Client: ADEQ

Site: 20th and Factor WQARF

Borehole No: MW-104C

Start Date/Time: 11/28/04

End Date/Time: 12/3/04

Logged By: JLB

Drilling Method: Speedstar CH-50K Mud Rotary Rig **Angle from Vertical:** 0

Borehole Diameter: 14.75 inches

Surface Material: Native Material **Sampling Method:** NA

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
201					
202					
203					
204					
205					
206					
207					
208					
209					
210					
211					
212					
213					
214					
215					
216					
217					
218					
219					
220					
221					
222					
223					
224					
225					
226					
227					
228					
229					
230					
231					
232					
233					
234					
235					
236					
237					
238					
239					
240					
241					
242					
243					
244					
245					
246					
247					
248					
249					
250					

Drilling Contractor: Yellow Jacket Drilling

Checked By:

Date Checked:

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.015.03	Borehole No: MW-104C
Site Map	Client: ADEQ Site: 20th and Factor WQARF	Start Date/Time: 11/28/04 End Date/Time: 12/3/04 Logged By: JLB
	Drilling Method: Speedstar CH-50K Mud Rotary Rig Borehole Diameter: 14.75 inches	Angle from Vertical: 0
	Surface Material: Native Material	Sampling Method: NA

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
251					
252					
253					
254					
255					
256					
257					
258					
259					
260					
261					
262					
263					
264					
265					
266					
267					
268					
269					
270					
271					
272					
273					
274					
275					
276					
277					
278					
279					
280					
281					
282					
283					
284					
285					
286					
287					
288					
289					
290					
291					
292					
293					
294					
295					
296					
297					
298					
299					
300					

Drilling Contractor: Yellow Jacket Drilling

Checked By:

Date Checked:

Sheet: 6 of 6

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.

Site Map

Project No: 1303.026.09.04

Client: ADEQ

Site: 20th & Factor WQARF Site

Borehole No: PZ-1 A, B, C
ADWR ID: 55-908373

Start Date/Time: 01/29/08 - 1500

End Date/Time: 02/04/08 - 1730

Logged By: A.G.

Drilling Method: Sonic

Angle from Vertical: NA

Borehole Diameter: PZ-1

Surface Material: Asphalt

Sampling Method: NA

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lthology	Description and Comments
					Ground Surface
0–27					**Poorly Sorted Sand (SP)** Pale brown 10YR 6/3, fine grained, loose, dry
28–29					**Clay (CL)** Pale brown 10YR 6/3, hard
30–45					**Sandy Silt (ML)** Pale brown 10YR 6/3, 70% silt, 30% fine sand, some cementation
46–50					**Sandy Silt (ML)** Pale brown 10YR 6/3, 50% silt, 50% fine sand, no cementation

Drilling Contractor: Boart Longyear

Checked By: L.G.

Date Checked: 2/20/08

Sheet: 1 of 5

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.

Site Map

Project No: 1303.026.09.04

Client: ADEQ

Site: 20th & Factor WQARF Site

Borehole No: PZ-1 A, B, C

Start Date/Time: 01/29/08 - 1500

End Date/Time: 02/04/08 - 1730

Logged By: A.G.

Drilling Method: Sonic

Angle from Vertical: NA

Borehole Diameter: PZ-1

Surface Material: Asphalt

Sampling Method: NA

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
51–54					**Sandy Silt (ML)** Pale brown 10YR 6/3, 70% silt, 30% fine sand, no cementation
55–69					**Sandy Silt (ML)** Pale brown 10YR 6/3, 50% silt, 50% fine sand, no cementation
70–79					**Sandy Silt (ML)** Pale brown 10YR 6/3, 50% silt, 50% fine sand
80–89					**Silty Sand (SM)** Brown 7.5YR 5/3, 85% fine sand, 15% silt, wet, no cementation
90–94					**Poorly Sorted Sand (SP)** Brown 7.5YR 5/3, 50% fine sand, 50% medium sand, wet, no cementation
95–97					**Poorly Sorted Sand (SP)** Brown 7.5YR 5/3, fine sand, wet, no cementation
98–100					**Clay (CL)** Reddish brown, 5YR 4/3, stiff, non-plastic, moist

Drilling Contractor: Boart Longyear

Checked By: L.G.

Date Checked: 2/20/08

Sheet: 2 of 5

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.026.09.04	Borehole No: PZ-1 A, B, C
Site Map	Client: ADEQ Site: 20th & Factor WQARF Site	Start Date/Time: 01/29/08 - 1500 End Date/Time: 02/04/08 - 1730 Logged By: A.G.
	Drilling Method: Sonic Borehole Diameter: PZ-1	Angle from Vertical: NA
	Surface Material: Asphalt	Sampling Method: NA

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
101–104					**Silt (ML)** Pale brown, 10 YR 6/3, slight cementation, slightly moist
105–124					**Poorly Sorted Sand (SP)** Brown, 7.5 YR 5/3, fine sand, wet, no cementation
123–125					**Clayey Silt (ML)** Brown 7.5YR 5/3, 70% silt, 30% clay
125–129					**Clayey Silt (ML)** Brown 7.5YR 5/3, 50% silt, 50% clay
129–130					**Poorly Sorted Sand (SP)** Brown 7.5YR 5/3, fine sand
130–144					**Poorly Sorted Sand (SP)** Brown 7.5YR 5/3, 70% fine sand, 30% medium sand
144–146					**Clayey Sand (SC)** Brown 7.5YR 5/3, 80% fine sand, 20% clay
146–150					**Silty Clay (CL)** Brown 7.5YR 5/2, 70% clay, 30% silt, non-plastic, hard, slightly moist

Drilling Contractor: Boart Longyear

Checked By: L.G.

Date Checked: 2/20/08

Sheet: 3 of 5

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.026.09.04	Borehole No: PZ-1 A, B, C
Site Map	Client: ADEQ Site: 20th & Factor WQARF Site	Start Date/Time: 01/29/08 - 1500 End Date/Time: 02/04/08 - 1730 Logged By: A.G.
	Drilling Method: Sonic Borehole Diameter: PZ-1	Angle from Vertical: NA
	Surface Material: Asphalt	Sampling Method: NA

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
151-154					**Sandy Silt (ML)** Brown 7.5YR 5/3, 70% silt, 30% fine sand, wet, no cementation
155-159					
160-164					**Silty Clay (CL)** Reddish brown, 5YR 4/4
165-168					
169-170					**Silt (ML)** Brown 7.5YR 5/3
171-174					**Sandy Silt (ML)** Brown 7.5YR 5/3, 50% silt, 50% fine sand
175-179					**Clayey Silt (ML)** Brown 7.5YR 5/3, 50% silt, 50% clay
180-184					**Sandy Silt (ML)** Brown 7.5YR 5/3, 70% silt, 30% fine sand, white clay nodules
185-189					**Silty Sand (SM)** Brown 7.5YR 5/3, 30% silt, 70% fine sand
190-194					**Silty Sand (SM)** Brown 7.5YR 5/3, 30% silt, 70% fine sand, some strong cementation
195-200					**Silty Sand (SM)** Brown 7.5YR 5/3, 30% silt, 70% fine sand, no cementation

Drilling Contractor: Boart Longyear
Checked By: L.G.
Date Checked: 2/20/08

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.

Site Map

Project No: 1303.026.09.04

Client: ADEQ

Site: 20th & Factor WQARF Site

Borehole No: PZ-1 A, B, C

Start Date/Time: 01/29/08 - 1500

End Date/Time: 02/04/08 - 1730

Logged By: A.G.

Drilling Method: Sonic

Angle from Vertical: NA

Borehole Diameter: PZ-1

Surface Material: Asphalt

Sampling Method: NA

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
201					Silty Sand (SM) Brown 7.5YR 5/3, 85% fine sand, 15% silt
202					
203					
204					
205					Bottom of boring at 200 bgs
206					
207					
208					
209					
210					
211					
212					
213					
214					
215					
216					
217					
218					
219					
220					
221					
222					
223					
224					
225					
226					
227					
228					
229					
230					
231					
232					
233					
234					
235					
236					
237					
238					
239					
240					
241					
242					
243					
244					
245					
246					
247					
248					
249					
250					

Drilling Contractor: Boart Longyear

Checked By: L.G.

Date Checked: 2/20/08

Sheet: 5 of 5

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.026.09.04	Borehole No: PZ-2 A, B, C ADWR ID: 55-908375
Site Map	Client: ADEQ Site: Yuma, AZ	Start Date/Time: 01/21/08 - 1000 End Date/Time: 01/25/08 - 1520 Logged By: AG
	Drilling Method: Sonic Borehole Diameter: PZ-2 A, B, C	Angle from Vertical: NA
	Surface Material: Asphalt	Sampling Method: NA

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lthology	Description and Comments
					Ground Surface
0–50					**Poorly Graded Sand (SP)** Pale brown 10 YR 6/3, fine grained poorly sorted sand, loose, dry
30–40					**Silty Sand (SM)** Pale brown 10 YR 6/3 fine grained poorly sorted sand, 85% fine sand, 15% silt, loose, dry, no cementation
40–45					**Silt (ML)** Light Gray 7.5 YR 7/1, loose, dry, no cementation
45–50					**Poorly Graded Sand (SP)** Very pale brown 10 YR 7/3, fine grained sand w/ trace silt, loose, dry, no cementation

Drilling Contractor: Boart Longyear

Checked By: L.G.

Date Checked: 2/20/08

Sheet: 1 of 5

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.	Project No: 1303.026.09.04	Borehole No: PZ-2 A, B, C
Site Map	Client: ADEQ Site: Yuma, AZ	Start Date/Time: 01/21/08 - 1000 End Date/Time: 01/25/08 - 1520 Logged By: AG
	Drilling Method: Sonic Borehole Diameter: PZ-2 A, B, C	Angle from Vertical: NA
	Surface Material: Asphalt	Sampling Method: NA

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
51–59					
60–61					**Poorly Graded Sand (SP)** Pale brown 7.5 YR 6/3, 75% fine grained, 25% medium grained
62–64					**Sandy Silt (ML)** Pale brown 7.5 YR 6/3, 75% silt, 25% fine sand, weakly cemented, dry
65–69					**Sandy Clay (CL)** hard, yellowish brown 10 YR 5/8, 75% clay, 25% fine sand
70–79					**Silty Sand (SM)** Pale brown 7.5 YR 6/3, 85% fine sand, 15% silt, loose, dry, some weak cementation
80–84					**Clayey Sand (SC)** Light yellowish brown 10 YR 6/4, 70% fine sand, 30% clay, loose, wet, no cementation
85–89					**Poorly Graded Sand (SP)** Brown 7.5 YR 5/4, fine sand, wet, no cementation
90–92					**Sandy Silt (ML)** Brown 7.5 YR 5/4, 50% silt, 50% fine sand, wet, no cementation
93–97					**Clay (CL)** Brownish yellow 10 YR 6/6, stiff, moist
98–100					**Silt (ML)** Brown 7.5 YR 5/3, wet, no cementation

Drilling Contractor: Boart Longyear

Checked By: L.G.

Date Checked: 2/20/08

Sheet: 2 of 5

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.

Site Map

Project No: 1303.026.09.04

Client: ADEQ

Site: Yuma, AZ

Borehole No: PZ-2 A, B, C

Start Date/Time: 01/21/08 - 1000

End Date/Time: 01/25/08 - 1520

Logged By: AG

Drilling Method: Sonic

Angle from Vertical: NA

Borehole Diameter: PZ-2 A, B, C

Surface Material: Asphalt

Sampling Method: NA

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
101–139					**Poorly Graded Sand (SP)** Brown 7.5 YR 5/3, wet, no cementation
140–144					**Poorly Graded Sand (SP)** Brown 7.5 YR 5/3, 70% fine sand, 30% medium sand, wet, no cementation
145–150					**Silty Sand (SM)** Brown 7.5 YR 5/3, 70% fine sand, 30% silt, wet, no cementation

Drilling Contractor: Boart Longyear

Checked By: L.G.

Date Checked: 2/20/08

Sheet: 3 of 5

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.

Site Map

Project No: 1303.026.09.04

Client: ADEQ

Site: Yuma, AZ

Borehole No: PZ-2 A, B, C

Start Date/Time: 01/21/08 - 1000

End Date/Time: 01/25/08 - 1520

Logged By: AG

Drilling Method: Sonic

Angle from Vertical: NA

Borehole Diameter: PZ-2 A, B, C

Surface Material: Asphalt

Sampling Method: NA

Depth	Sample Characteristics: DEPTH (FEET)	TIME	PID (ppm)	Lithologic Characteristics: Lithology	Description and Comments
151–154					**Sandy Silt (ML)** Brown 7.5 YR 5/3, 70% silt, 30% fine sand, wet, no cementation
155–159					**Sandy Silt (ML)** Brown 7.5 YR 5/3, 50% silt, 50% fine sand, wet, no cementation
160–163					**Clay w/ Silt (CL)** Brown 7.5 YR 5/3, low plasticity, stiff, slightly moist
164–169					**Sandy Silt (ML)** Brown 7.5 YR 5/3, 50% silt, 50% fine sand, wet, no cementation
170					**Poorly Graded Sand (SP)** Brown 7.5 YR 5/3, 90% fine sand, 10% silt, wet, no cementation
171–179					**Clay w/ Silt (CL)** Brown 7.5 YR 5/3, low plasticity, stiff, slightly moist, contains white nodules
180–194					**Sandy Silt (ML)** Brown 7.5 YR 5/3, 70% silt, 30% fine sand, wet, no cementation
195–200					**Sandy Silt (ML)** Brown 7.5 YR 5/3, 70% silt, 30% fine sand, wet, no cementation, contains clay nodules

Drilling Contractor: Boart Longyear

Checked By: L.G.

Date Checked: 2/20/08

Sheet: 4 of 5

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

GeoTrans, Inc.

Site Map

Project No: 1303.026.09.04

Client: ADEQ

Site: Yuma, AZ

Borehole No: PZ-2 A, B, C

Start Date/Time: 01/21/08 - 1000

End Date/Time: 01/25/08 - 1520

Logged By: AG

Drilling Method: Sonic

Angle from Vertical: NA

Borehole Diameter: PZ-2 A, B, C

Surface Material: Asphalt

Sampling Method: NA

Depth	Sample Characteristics			Lithologic Characteristics	
	DEPTH (FEET)	TIME	PID (ppm)	Lithology	Description and Comments
201					Bottom of boring at 201 bgs
202					
203					
204					
205					
206					
207					
208					
209					
210					
211					
214					
215					
216					
217					
218					
219					
220					
221					
222					
223					
224					
225					
226					
227					
228					
229					
230					
231					
232					
233					
234					
235					
236					
237					
238					
239					
240					
241					
242					
243					
244					
245					
246					
247					
248					
249					
250					

Drilling Contractor: Boart Longyear

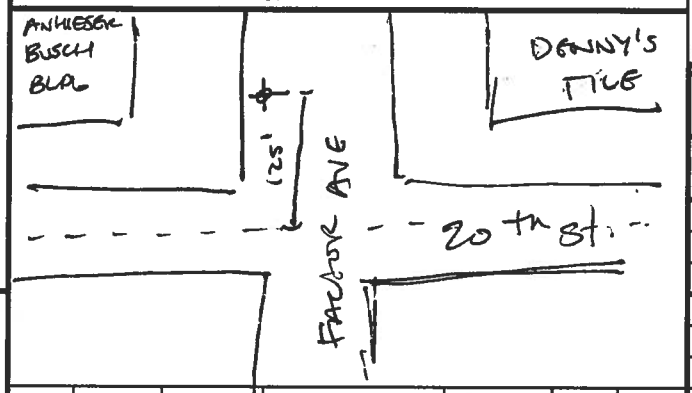
Checked By: L.G.

Date Checked: 2/20/08

Sheet: 5 of 5

GeoTrans, Inc
4801 East Washington Street, Suite 260
Phoenix, Arizona 85034
Voice: 602-682-3320 Fax: 602-682-3318

MAP OF BORING LOCATION:



GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

SVWM18 A-F

PROJECT NAME: 20th & FACTOR	BORING NAME: SVWM-18A-F ~~MW-22~~
PROJECT NUMBER: 1303.038.2.1	PROJECT LOCATION: YUMA, AZ
DRILLING METHOD: HSA	SHEET 1 OF
SAMPLING METHOD: N/A	DRILLING START TIME 1545 DATE 2/21/11; FINISH TIME 0900 DATE 2/22/11

SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						0	
							CLAY, moist, plastic w/ some sand
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	
						10	
						11	
						12	
						13	
						14	
						15	
						16	
						17	
						18	
						19	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & Factor	BORING NAME: SVMW-18A-F
PROJECT NUMBER: 1303.038.2.1	PROJECT LOCATION: YUMA, AZ
DRILLING METHOD: HSA	SHEET 2 OF
SAMPLING METHOD: N/A	DRILLING START TIME / FINISH TIME / DATE / DATE
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						20	
							SAND, MEDIUM to COARSE GRAINED
						21	MOIST, NO ODOR, NO CEMENTATION
						22	
						23	
							SAND, MEDIUM to COARSE GRAINED
						24	DRY, NO ODOR, NO CEMENTATION
						25	
						26	
						27	
						28	
						29	
						30	
						31	
						32	
						33	
						34	
						35	
						36	
						37	
						38	
						39	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & FACTOR	BORING NAME: SVMW-18A-F
PROJECT NUMBER: 1303.038.2.1	PROJECT LOCATION: YUMA, AZ
DRILLING METHOD: HSA	SHEET 3 OF
	DRILLING START TIME / FINISH TIME
SAMPLING METHOD: N/A	DATE / DATE
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						40	
						41	
						42	
						43	
						44	
						45	SAND W/ GRAVEL, MOIST, NO CEMENTATION FINE TO MED. GRAINED
						46	
						47	
						48	
						49	
						50	SAND, FINE TO MED. GRAINED, MOIST
						51	
						52	
						53	
						54	
						55	
						56	
						57	
						58	
						59	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & FACTOR	BORING NAME: SVMW-18A-F
PROJECT NUMBER: 1303.038.2.1	PROJECT LOCATION: YUMA, AZ
DRILLING METHOD: HSA	SHEET OF
	DRILLING START TIME 1545 / FINISH TIME 0900
SAMPLING METHOD: N/A	DATE 2/21/11 / DATE 2/22/11
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

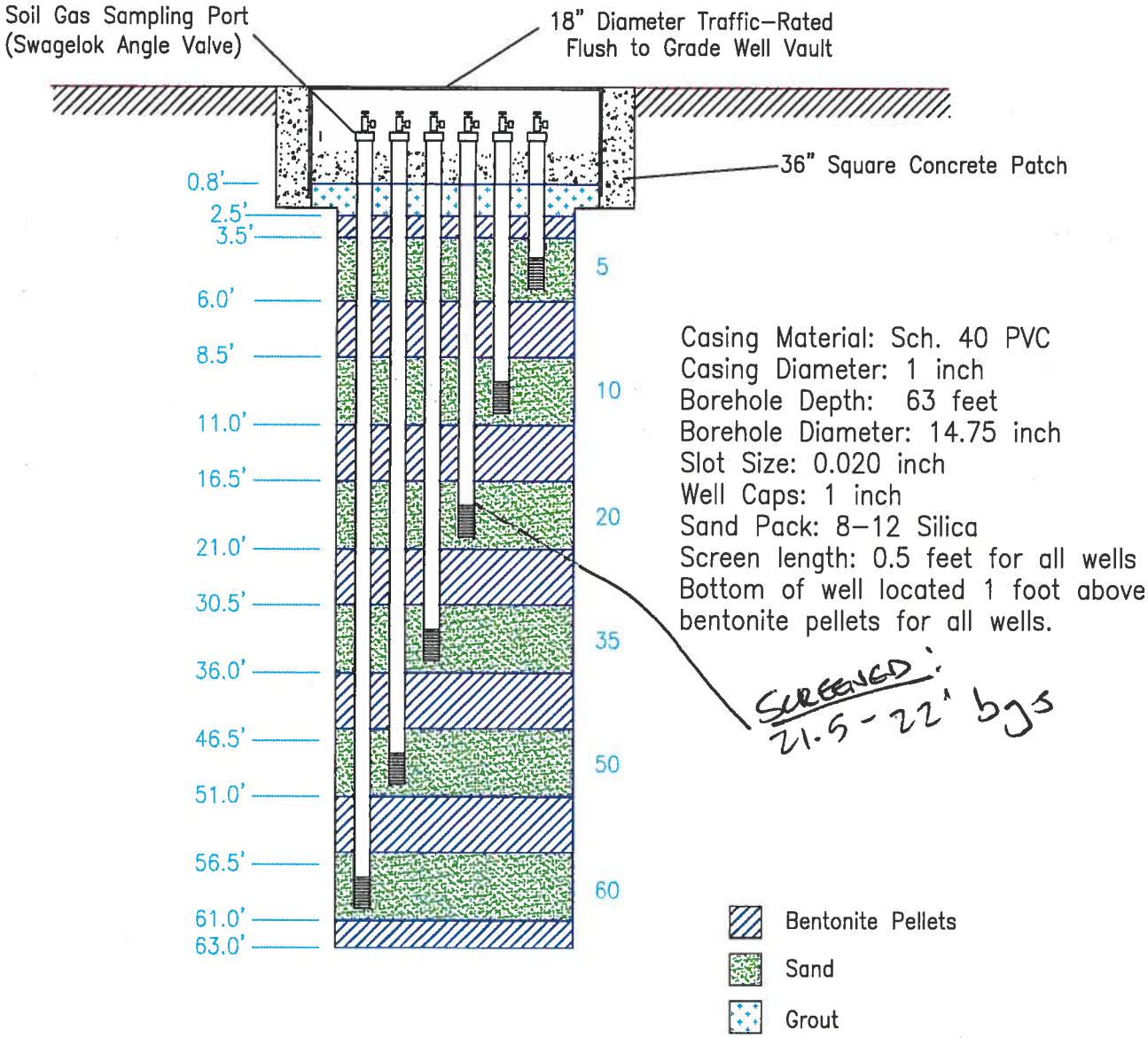
GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						60	
						61	
						62	TD HOLE @ 63.0' bgs
						63	
						64	
						65	
						66	
						67	
						68	
						69	
						70	
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)



NOT TO SCALE

TITLE:	WELL CONSTRUCTION DIAGRAM FOR SIX–NESTED SVMWS
LOCATION:	20TH AND FACTOR WQARF SITE, YUMA, ARIZONA

GeoTrans, Inc. A TETRA TECH COMPANY

CHECKED	JZ/MO
DRAFTED	TLG
PROJECT	1303.038
DATE	7/19/10

FIGURE 2

YUMA, AZ 2/22/11

0730 BB & YJ ONSITE. STAGE DRILL MATERIALS

1030 RESUME DRILLING.

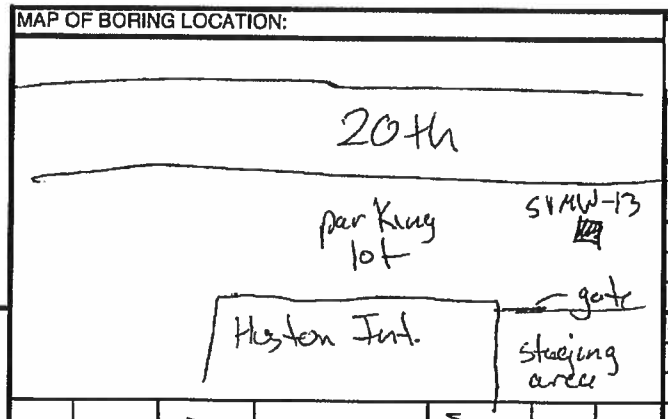
900 TD SVMW-18A-F @ 63' bgs.

915 BEGIN INSTALLING WELL

BAGS OF: BENTONITE: 1
SAND:

* TALKING W/ DENNY OF DENNY'S TIRE: HE MENTIONED THE REASON THE ROAD IS SWOLLEN @ 20th & FACTOR IS DUE to HYDRATED CLAYS. IN 1st 20' bgs. HYDRATED VIA RECHARGE FROM RETENTION POND BETWEEN ANHEUSER-BUSCH(A-B) PARKING LOT & FACTOR AVE. DENNY ALSO MENTIONED A-B BLDG. HAS BEEN REBUILT 3 TIMES DUE to CLAY SWELLING.

MAP OF BORING LOCATION:



GeoTrans, Inc. — FIELD DRILLING LOG

A TETRA TECH COMPANY

PROJECT NAME: 20th & Factor	BORING NAME: SVMW-13A,B
PROJECT NUMBER: 1303.038	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: HSA 10"	SHEET 1 OF 1
SAMPLING METHOD: N/A	DRILLING START TIME: 11:15 DATE: 11/1/10; FINISH TIME: 11:34 DATE: 11/1/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

GEOTRANS REPRESENTATIVE:

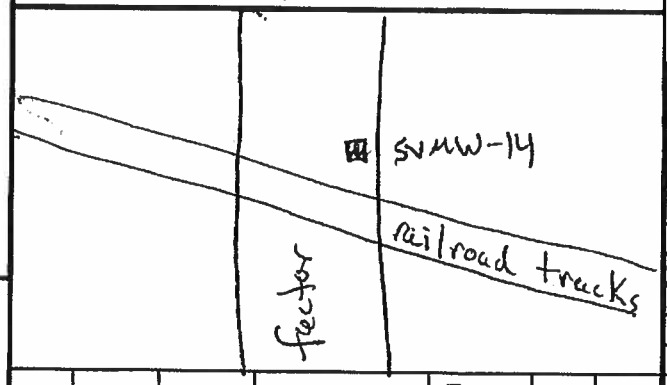
DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						0	Well Graded Sand, Medium grained
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	
						10	
						11	
						12	
						13	TD ~ 13'
						4	
						5	
						6	
						7	
						8	
						9	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:



GeoTrans, Inc. — FIELD DRILLING LOG

A TETRA TECH COMPANY

PROJECT NAME: 28th & factor	BORING NAME: SVMW-14 A,B,C,D,E,F
PROJECT NUMBER: 1303.038	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: HSA 10"	SHEET 1 OF 4
SAMPLING METHOD: N/A	DRILLING START TIME 1418 DATE 11/1/10; FINISH TIME 1508 DATE 11/1/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						0	Well Graded Sand, Medium ~~coarse~~ gravel
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	
						10	
						11	
						12	
						13	
						14	
						15	
						16	
						17	
						18	
						19	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & Foster	BORING NAME: SMMW-14
PROJECT NUMBER: 1303.030	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: HSA 10"	SHEET 2 OF 4
SAMPLING METHOD: N/A	DRILLING START TIME 1418 / FINISH TIME 1508
	DRILLING START DATE 11/1/10 / FINISH DATE 11/1/10

SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						20	Well graded sand, medium ~~[illegible]~~ grained
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	
						30	
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						39	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & Fracter	BORING NAME: SVMW-14
PROJECT NUMBER: 1303038	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: 10" HSA	SHEET 3 OF 4
SAMPLING METHOD: NA	DRILLING START TIME 1410 DATE 11/1/10; FINISH TIME 1508 DATE 11/1/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

GEOTRANS REPRESENTATIVE:

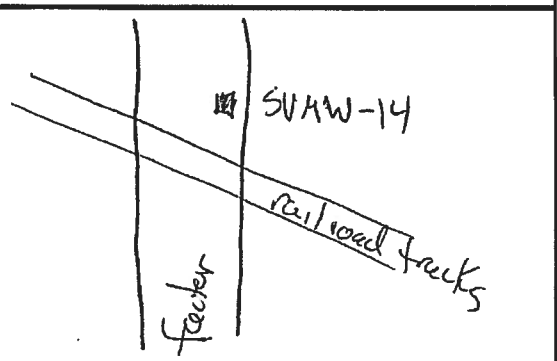
DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						40	Well graded sand, medium grained
						1	
						2	Run into cobbles
						3	
						4	
						5	
						6	Cemented sand layered w/ regular sand
						7	
						8	
						9	
						50	
						1	
						2	
						3	
						4	
						5	Continue to have sand with layers that ~~[illegible]~~ feel like cemented sand when drilled through
						6	
						7	
						8	
						59	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:



GeoTrans, Inc. — FIELD DRILLING LOG

PROJECT NAME: 20th & factor	BORING NAME: SVMW-14
PROJECT NUMBER: 1303038	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: 10" HSA	SHEET 4 OF 4
SAMPLING METHOD: NA	DRILLING START TIME 1410 DATE 11/1/10; FINISH TIME 1500 DATE 11/1/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

GEOTRANS REPRESENTATIVE:

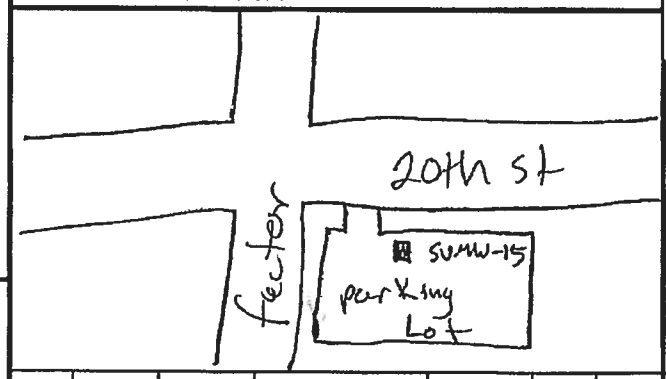
DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						60	Regular sand with possible layers of gravel along depth, moist
						1	
						2	
						3	
						4	
						65	Cemented sand, moist
						6	
						7	
						8	
						9	TD ~70'
						700	
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:



GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & factor	BORING NAME: SUMW-15 ABCDEF
PROJECT NUMBER: 1303.038	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: HSA 10"	SHEET 1 OF 1
SAMPLING METHOD: N/A	DRILLING START TIME 1112/10 DATE 1510 / FINISH TIME 11/2/10 DATE 1600
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						0	Well graded Sand, fine-~~medium~~ grained
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	
						10	Well graded Sand, fine grained, moist
						11	
						12	
						13	
						14	
						15	
						16	
						17	
						18	Driller felt auger that he guessed was clay. No noticeably change in cuttings
						19	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & Factor	BORING NAME: SVMW-15
PROJECT NUMBER: 1303.038	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: ~~AD~~ HSA 10"	SHEET 2 OF 4
SAMPLING METHOD: NA	DRILLING START TIME 1510 / FINISH TIME 1600
	DRILLING START DATE 11/2/10 / FINISH DATE 11/2/10

SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						20	
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	
						30	
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & factor	BORING NAME: SVMW-15
PROJECT NUMBER: 1303.038	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: HSA 10"	SHEET 3 OF 4
SAMPLING METHOD: NA	DRILLING START TIME 1510 DATE 11/12/10; FINISH TIME 1600 DATE 11/12/10

SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.

GEOTRANS REPRESENTATIVE:

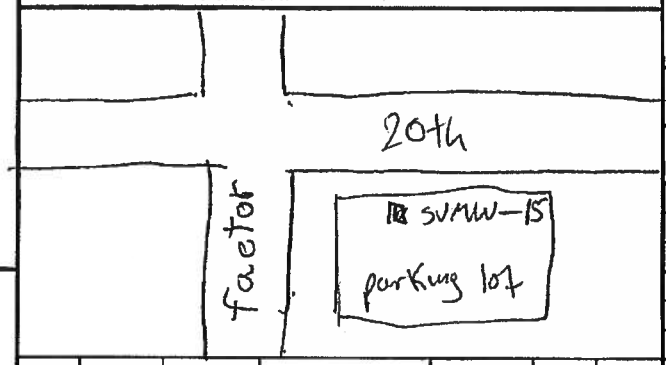
DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						40	Well Graded Sand
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	
						50	
						1	
						2	Gravel layer
						3	Sand
						4	Gravel layer
						5	Sand
						6	Gravel
						7	
						8	G. Cobbles
						9	Gravel

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:



GeoTrans, Inc. — FIELD DRILLING LOG

PROJECT NAME: 20th & factor	BORING NAME: SVMW-15
PROJECT NUMBER: 1303.038	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: HSA 10"	SHEET 4 OF 4
SAMPLING METHOD:	DRILLING START TIME: 1510 DATE: 11/2/10 — FINISH TIME: 1600 DATE: 11/2/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

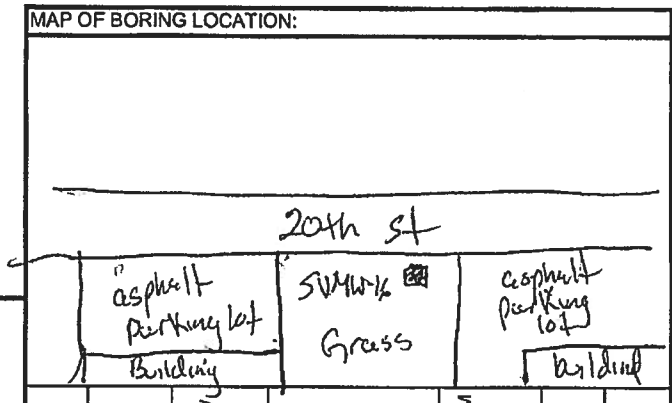
SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						60	Sand w/ gravel layers
						1	
						2	
						3	
						4	
						5	Well graded sand, fine
						6	[redacted]
						7	
						8	[redacted]
						9	[redacted]
						70	
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

928-373-5000
#2057

MAP OF BORING LOCATION:



GeoTrans, Inc. — FIELD DRILLING LOG

PROJECT NAME: 20th & factor	BORING NAME: SVMW-16 A,B,C,D,E,F
PROJECT NUMBER: 1303.038	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: 10" HSA	SHEET 1 OF 4
SAMPLING METHOD: NA	DRILLING — START TIME: 1310 DATE: 11/3/10; FINISH TIME: 1415 DATE: 11/3/10

SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						0	Well graded sandy fine grained moist
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	
						10	
						11	
						12	
						13	
						14	
						15	
						16	
						17	
						18	
						19	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. — A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & Factor	BORING NAME: SVMW-16
PROJECT NUMBER: 1303.039	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: 10" HSA	SHEET 3 OF 4
SAMPLING METHOD: N/A	DRILLING START TIME: 1310 DATE: 11/3/10 — FINISH TIME: 1415 DATE: 11/3/10

SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						20	Well graded sand, fine grained, moist
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	
						30	
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						39	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & Fredfer	BORING NAME: SVMW-16ABCDEF
PROJECT NUMBER: 1303.038	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: 10" HSA	SHEET 3 OF 4
	DRILLING
	START / FINISH
SAMPLING METHOD: N/A	TIME: 1310 / TIME: 1415
	DATE: 11/3/10 / DATE: 11/3/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						40	Well graded sand, fine grained, moist
						1	
						2	Driller felt cemented sand.
						3	Well greeded sand, fine greind, most
						4	
						5	
						6	~~Driller felt~~ Gravel layer
						7	Well Graded sand, fine greined, moist
						8	
						9	
						50	
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & Factor	BORING NAME: SVMW-16
PROJECT NUMBER: 1303.0301	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: 10" HSA	SHEET 4 OF 4
	DRILLING START TIME: 1310 DATE: 11/3/10
SAMPLING METHOD: N/A	DRILLING FINISH TIME: 1415 DATE: 11/3/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

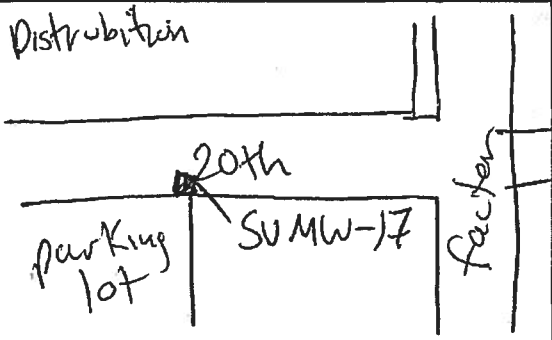
SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						60	Well graded, sand, fine grained
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	
						70	
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

s. Olden

MAP OF BORING LOCATION:



GeoTrans, Inc. — FIELD DRILLING LOG

PROJECT NAME: 20th & factor	BORING NAME: SVMW-17ABCDEF
PROJECT NUMBER: 1303.038	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: 10" HSA	SHEET 1 OF 3
SAMPLING METHOD: NA	DRILLING START TIME 0812 DATE 11/4/10; FINISH TIME 0940 DATE 11/4/10

SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						0	Well Graded Sand, fine grained
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	
						10	Well graded sand, fine grained
						11	
						12	
						13	
						14	
						15	
						16	
						17	
						18	
						19	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & Factor	BORING NAME: SVMW-17
PROJECT NUMBER: 1303.038	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: 10" HSA	SHEET 2 OF 3
	DRILLING
	START / FINISH
SAMPLING METHOD: NA	TIME START: 0812 / TIME FINISH: 0848
	DATE START: 11/4/10 / DATE FINISH: 11/4/10
SURFACE COVER CONDITIONS:	asphalt, concrete, dirt, gravel, etc.

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						20	ize.4 graded sand, fine grained
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	
						30	
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						39	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. — A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & Fourter	BORING NAME: SVMW-17
PROJECT NUMBER: 1303.038	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: 10" HSA	SHEET 3 OF 3
SAMPLING METHOD: NA	DRILLING — START: TIME 0812, DATE 11/4/10 — FINISH: TIME 0848, DATE 11/4/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						40	
						1	
						2	Driller felt layer harder than regular sand. Not sure what it was
						3	
						4	
						5	~~Sandy Gravel~~ Gravelly Sand
						6	
						7	~~Driller felt a layer harder than sand. Not sure what layer was~~
						8	
						9	
						50	~~Sand Gravel~~
						1	
						2	
						3	
						4	
						5	Sand with Gravel
						6	
						7	
						8	
						59	

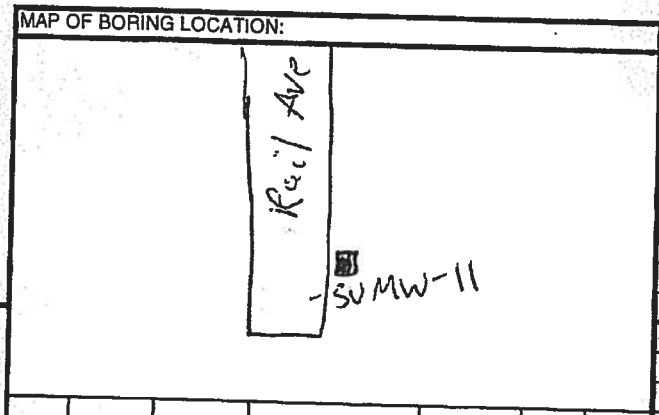
ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

60' – 70' 60'-65 Sand w/some gravel

65 – 70 Well graded sand, fine gravel

MAP OF BORING LOCATION:



GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & factor	BORING NAME: SVMW-11 SDEF
PROJECT NUMBER: 1303.038	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: HSA	SHEET 1 OF 4
SAMPLING METHOD: N/A	DRILLING START TIME 0800 DATE 11/5/10; FINISH TIME 0846 DATE 11/5/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						0	Well graded sand, fine grained
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	
						10	
						11	
						12	
						13	
						14	
						15	
						16	
						17	
						18	
						19	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & factor	BORING NAME: SVMW-11
PROJECT NUMBER: 1303.032	PROJECT LOCATION: Yuma AZ
DRILLING METHOD: 10" HSA	SHEET 2 OF 4
	DRILLING 7
SAMPLING METHOD: N/A	START TIME 0800 / FINISH TIME 0846
	START DATE 11/5/10 / FINISH DATE 11/5/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						20	Well graded sand/fine gravel
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	
						30	
						1	
						2	
						3	
						4	
						5	
						6	Gravel/Cobbles
						7	
						8	
						39	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & Factor	BORING NAME: SVMW-11
PROJECT NUMBER: 1303.038	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: HSA	SHEET 3 OF 4
SAMPLING METHOD: NA	DRILLING START TIME: 0800 DATE: 4/5/10 / FINISH TIME: 0846 DATE: 4/5/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						40	Well graded sand, fine grained
						1	
						2	
						3	
						4	
						5	Gravel layers ~~[illegible]~~ mixed in w/ sand layers
						6	
						7	
						8	
						9	
						50	Well graded sand, fine grained
						1	
						2	
						3	
						4	
						5	Intermittent gravel layers
						6	
						7	
						8	
						59	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

MAP OF BORING LOCATION:

GeoTrans, Inc. A TETRA TECH COMPANY

FIELD DRILLING LOG

PROJECT NAME: 20th & Factor	BORING NAME: SVMW-11
PROJECT NUMBER: 1303.030	PROJECT LOCATION: Yuma, AZ
DRILLING METHOD: HSA	SHEET 4 OF 4
SAMPLING METHOD: NA	DRILLING START TIME: 0800 DATE: 11/5/10 FINISH TIME: 0846 DATE: 11/5/10
SURFACE COVER CONDITIONS: asphalt, concrete, dirt, gravel, etc.	

GEOTRANS REPRESENTATIVE:

DRILLING CONTRACTOR:

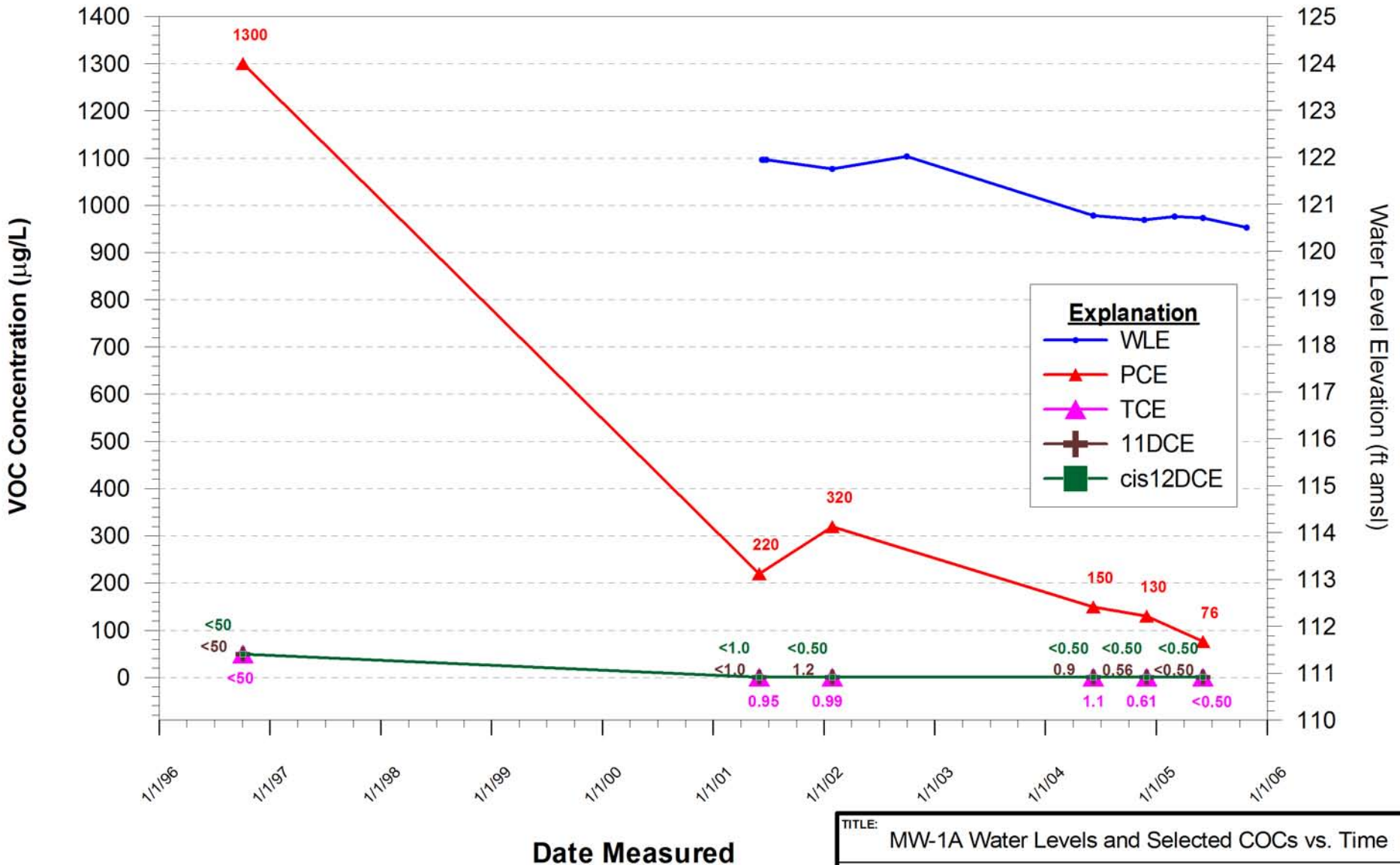
SAMPLE TYPE	BLOW COUNTS/ 0.5 FT	INCHES RECOVERED/ INCHES DRIVEN	SAMPLE ID	PID/FID/OVM READING (ppmV)	USCS SYMBOL	DEPTH IN FEET (BGS)	SOIL/ROCK SAMPLE DESCRIPTIONS
						60	Well graded sand, fine grained
						1	
						2	
						3	
						64	Gravel layer in sand
						5	Well Graded sand, fine grained
						6	
						7	Cemented sand
						8	
						9	
						70	
							TD.
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	

ASTM DESC: group name (grain type & size, grading, plasticity), consistency, cementation, angularity, color (staining), moisture cont., odor, etc.

SAMPLE TYPES: split spoon (SS), continuous core (CC), grab (G), solid barrel (SB)

APPENDIX F

HYDROGRAPHS OF CONTAMINATED ZONES



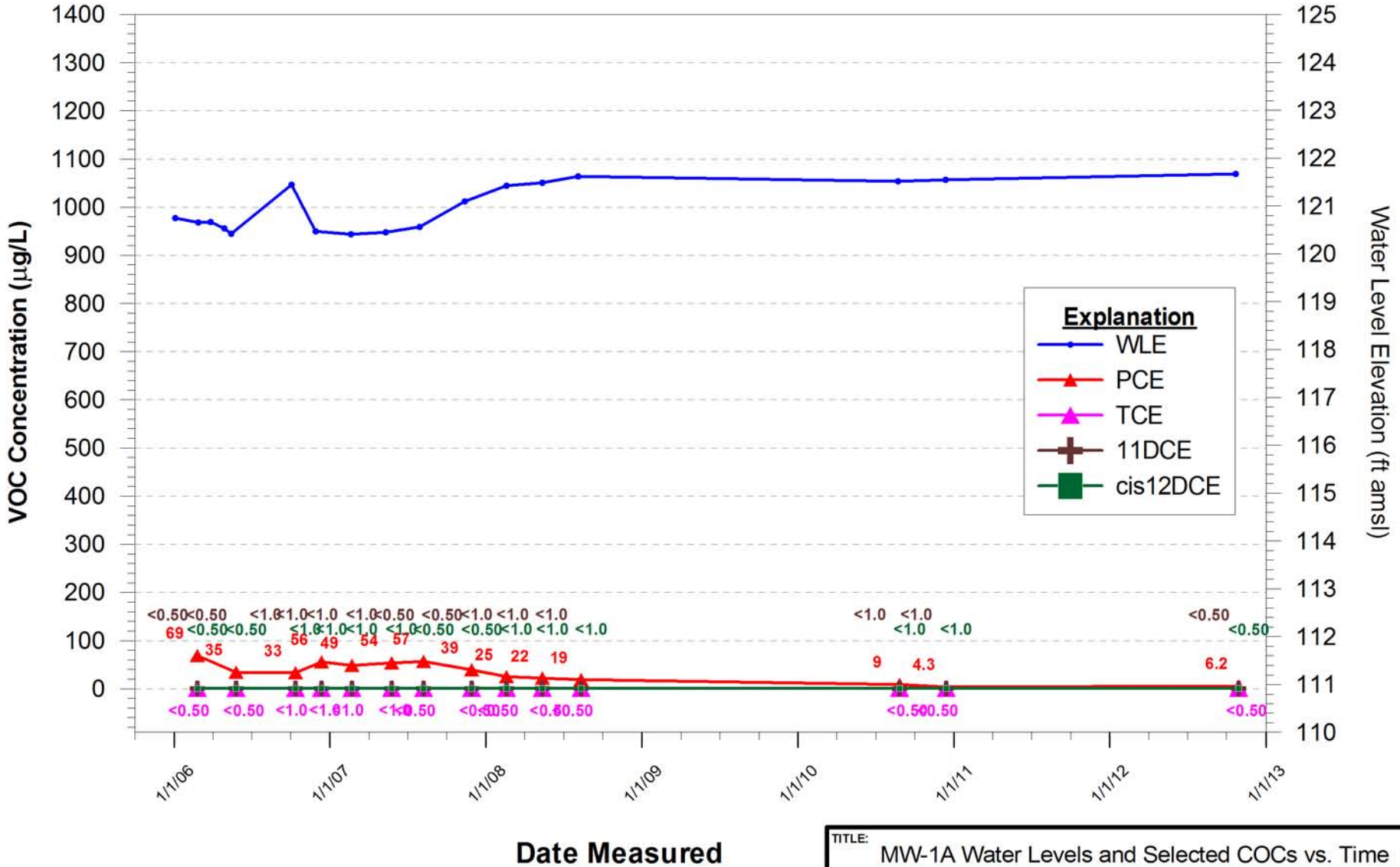
TITLE: MW-1A Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	12/27/12

FIGURE: C-1a



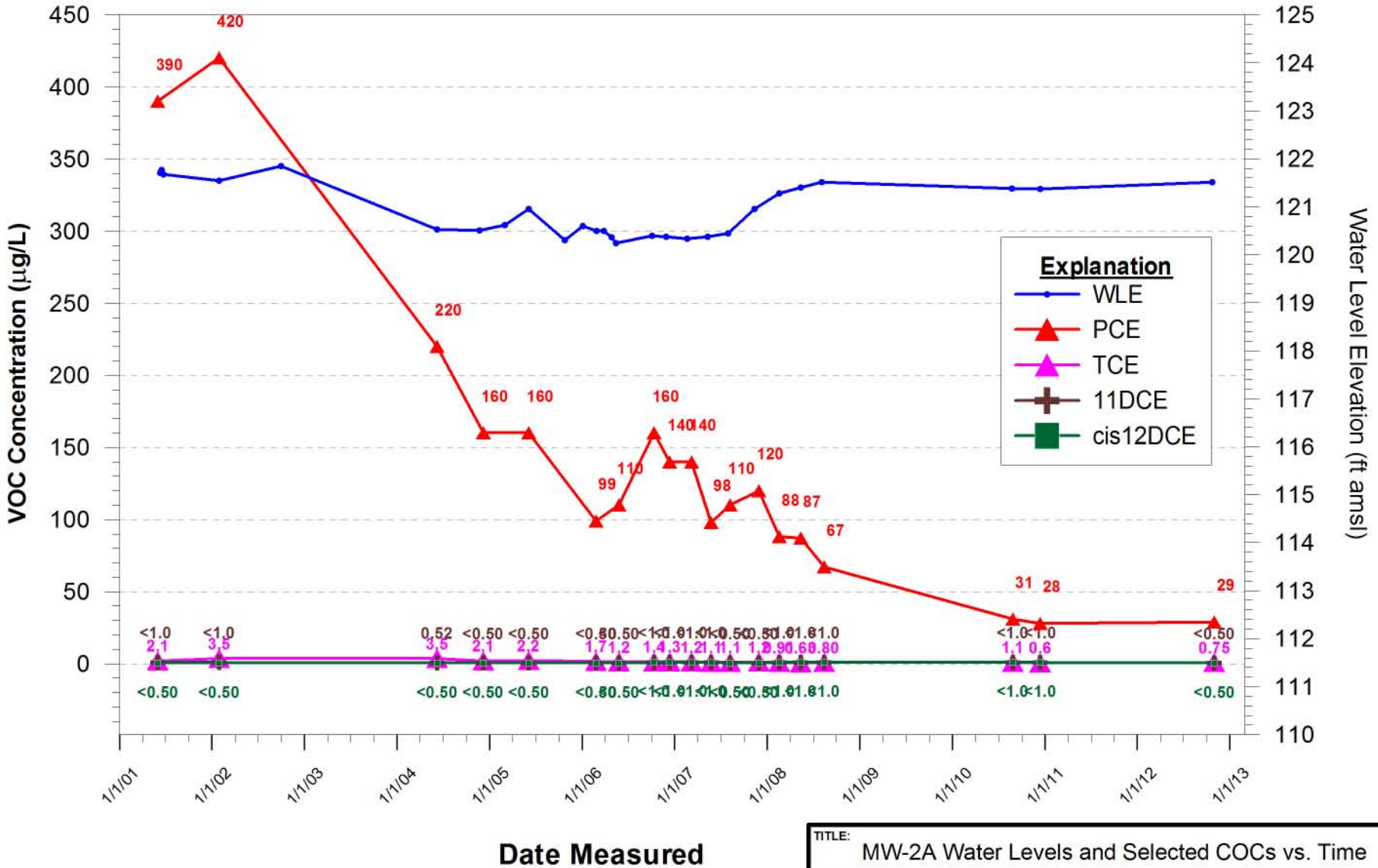
TITLE: MW-1A Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	12/27/12

FIGURE: C-1b



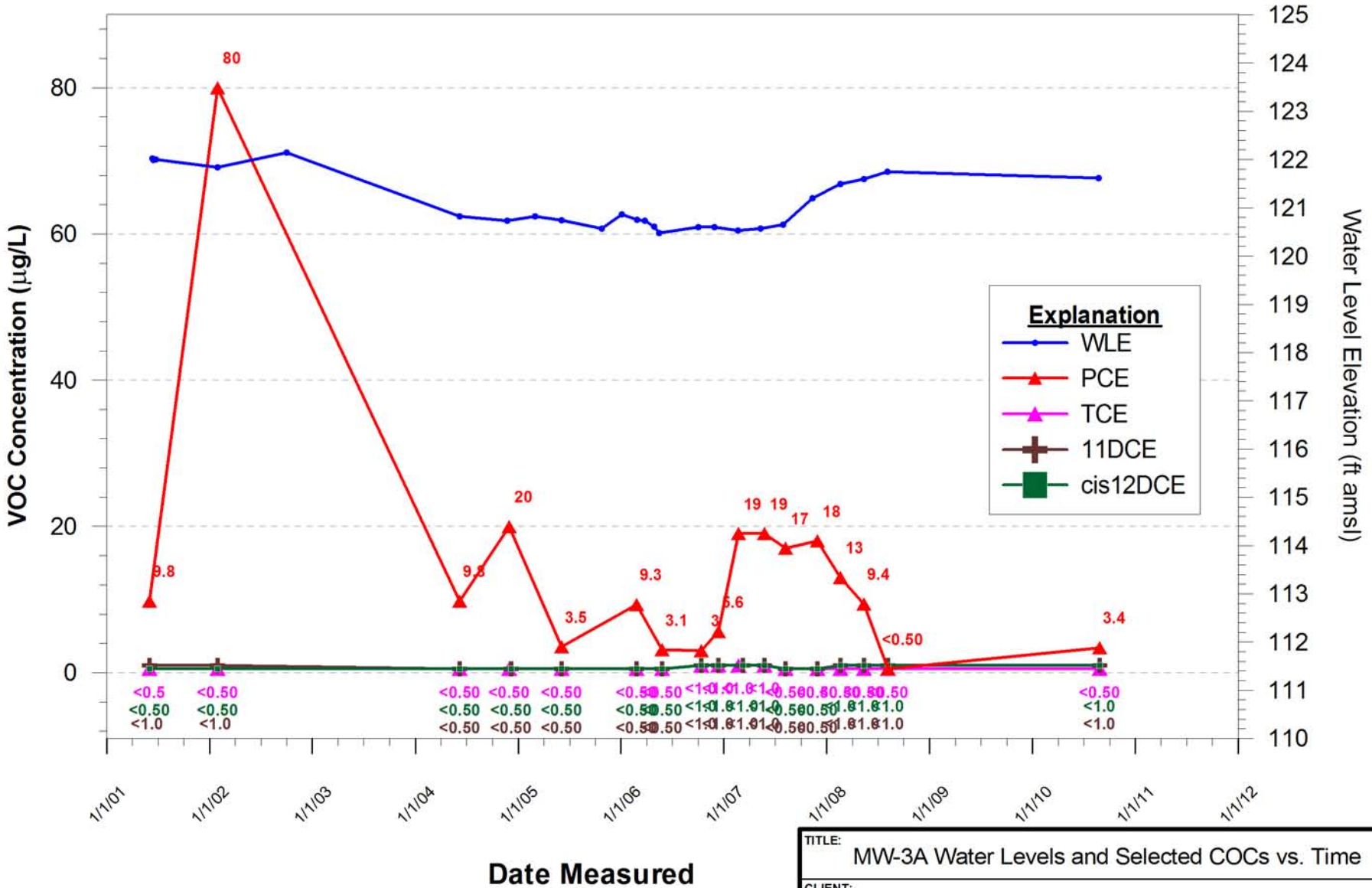
TITLE: MW-2A Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	12/27/12

FIGURE: C-2



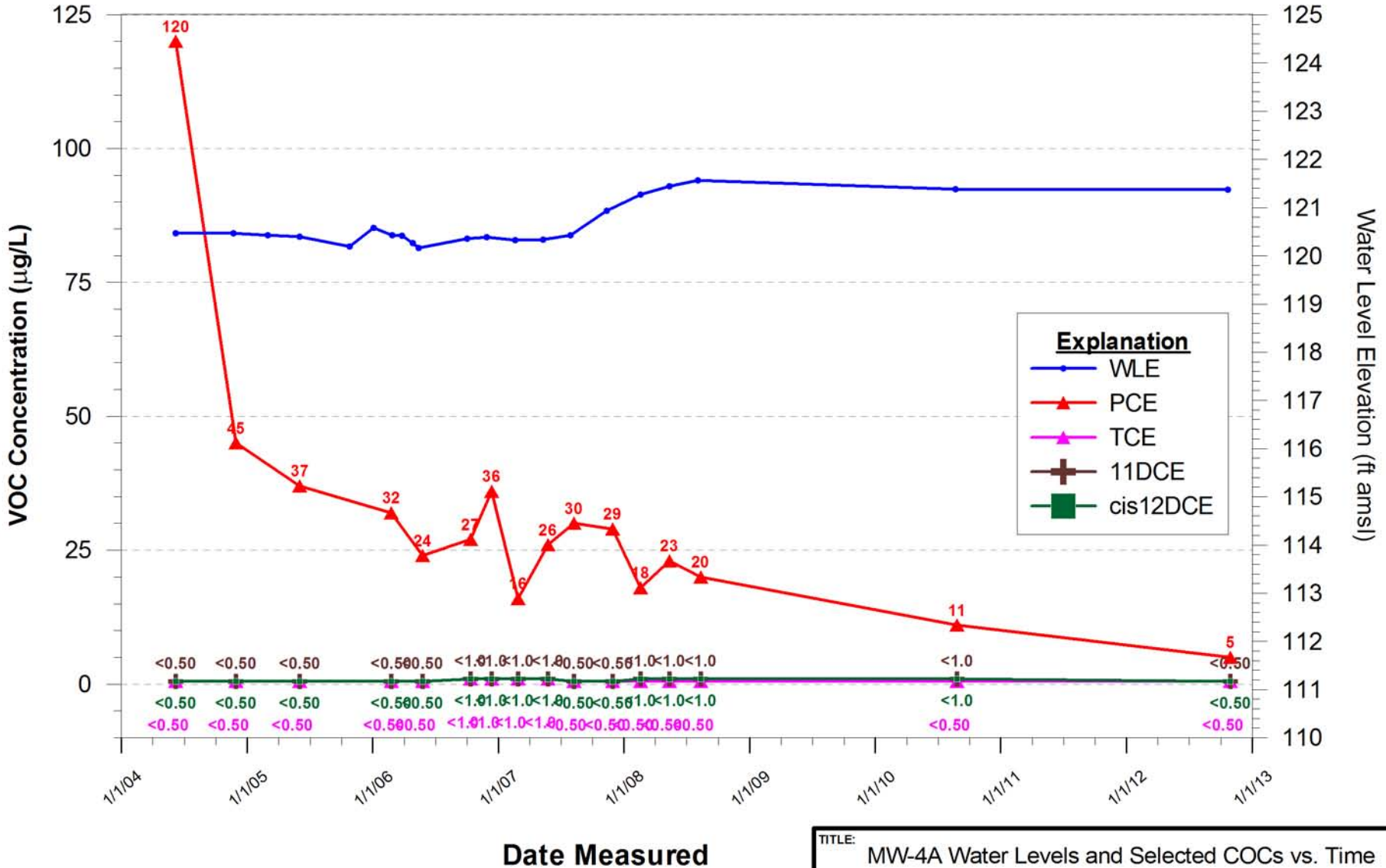
TITLE: MW-3A Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	12/28/12

FIGURE: C-3



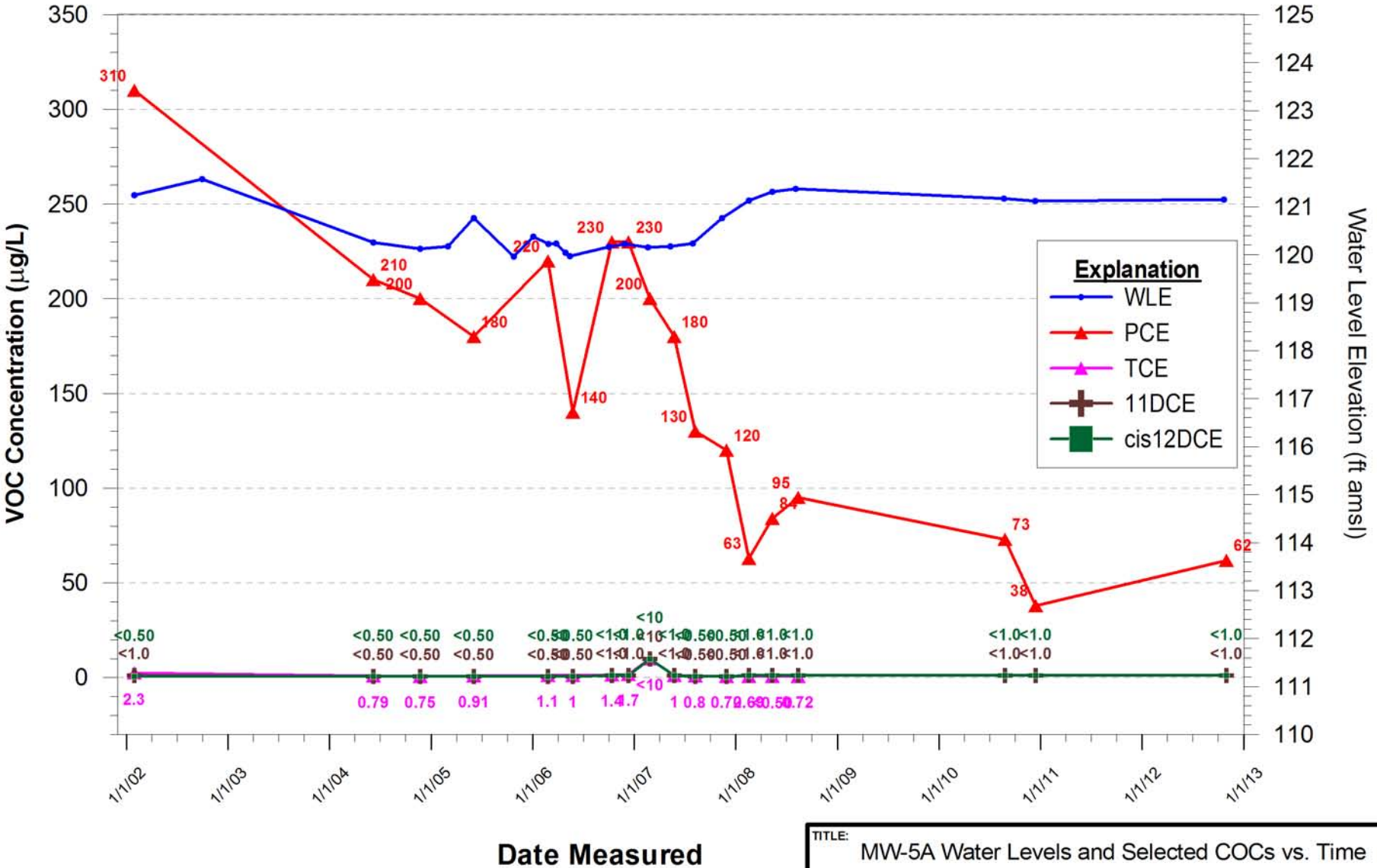
TITLE: MW-4A Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	12/28/12

FIGURE: C-4



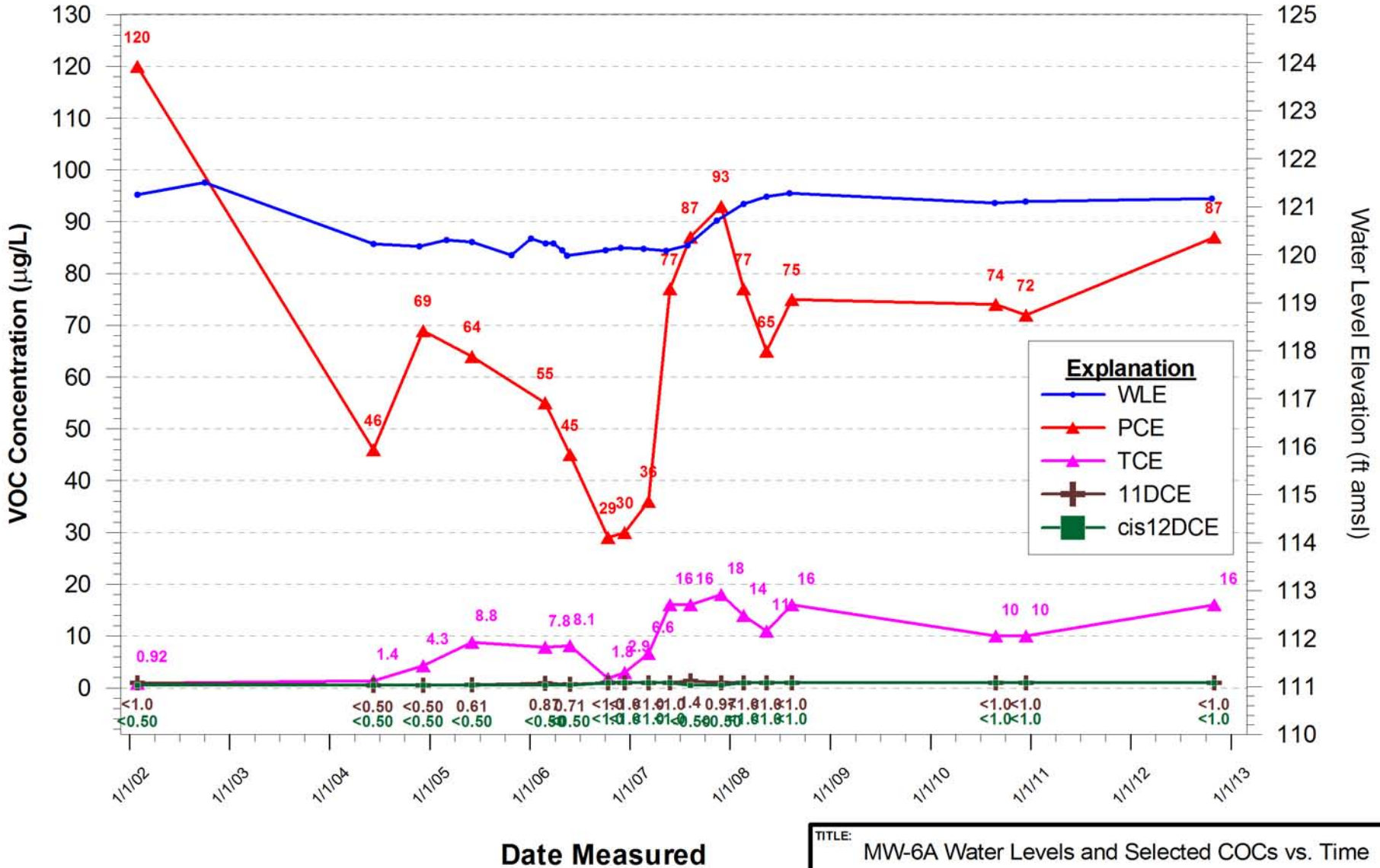
TITLE: MW-5A Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	12/28/12

FIGURE: C-5



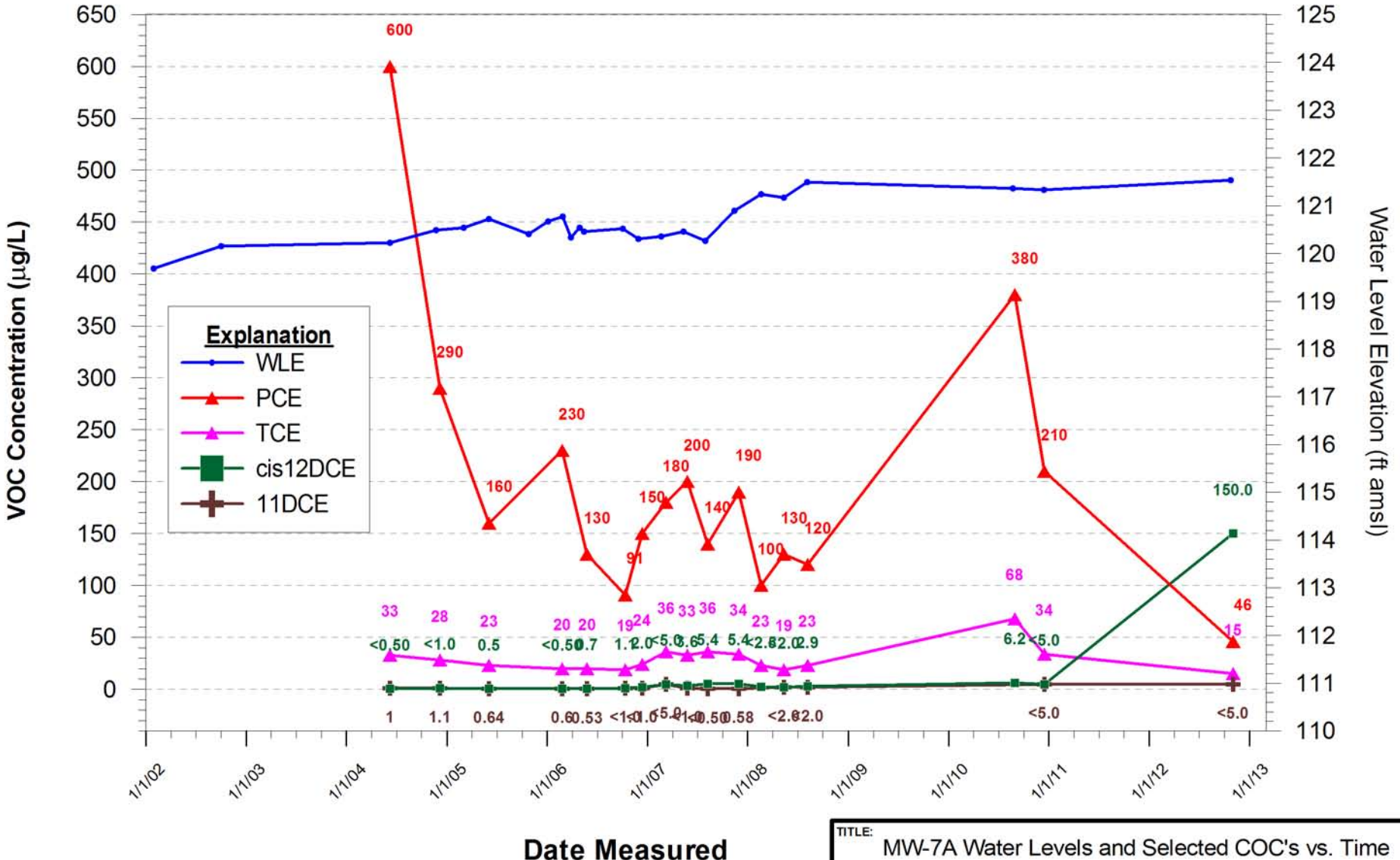
TITLE: MW-6A Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	12/28/12

FIGURE: C-6



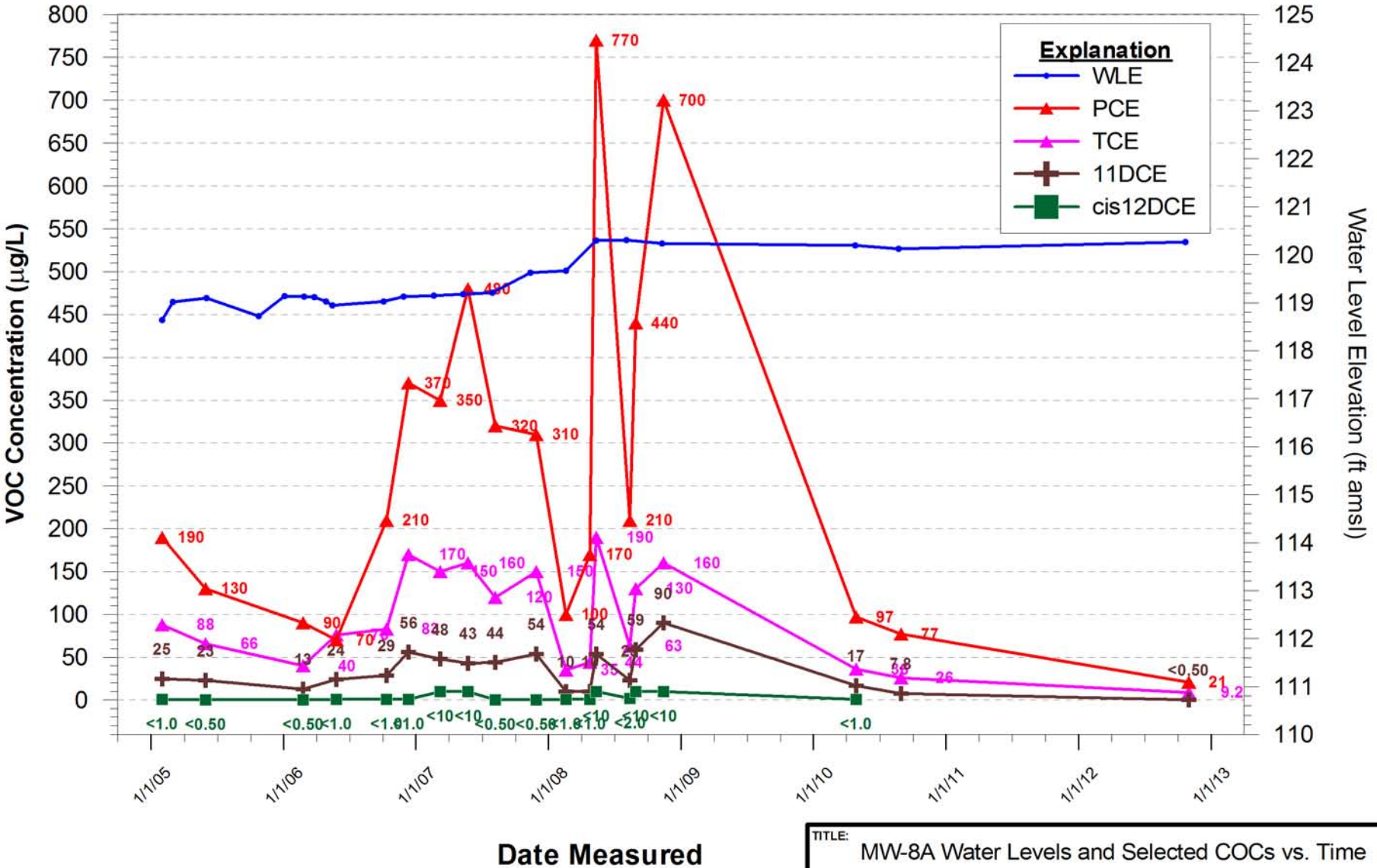
TITLE: MW-7A Water Levels and Selected COC's vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	12/28/12

FIGURE: C-7



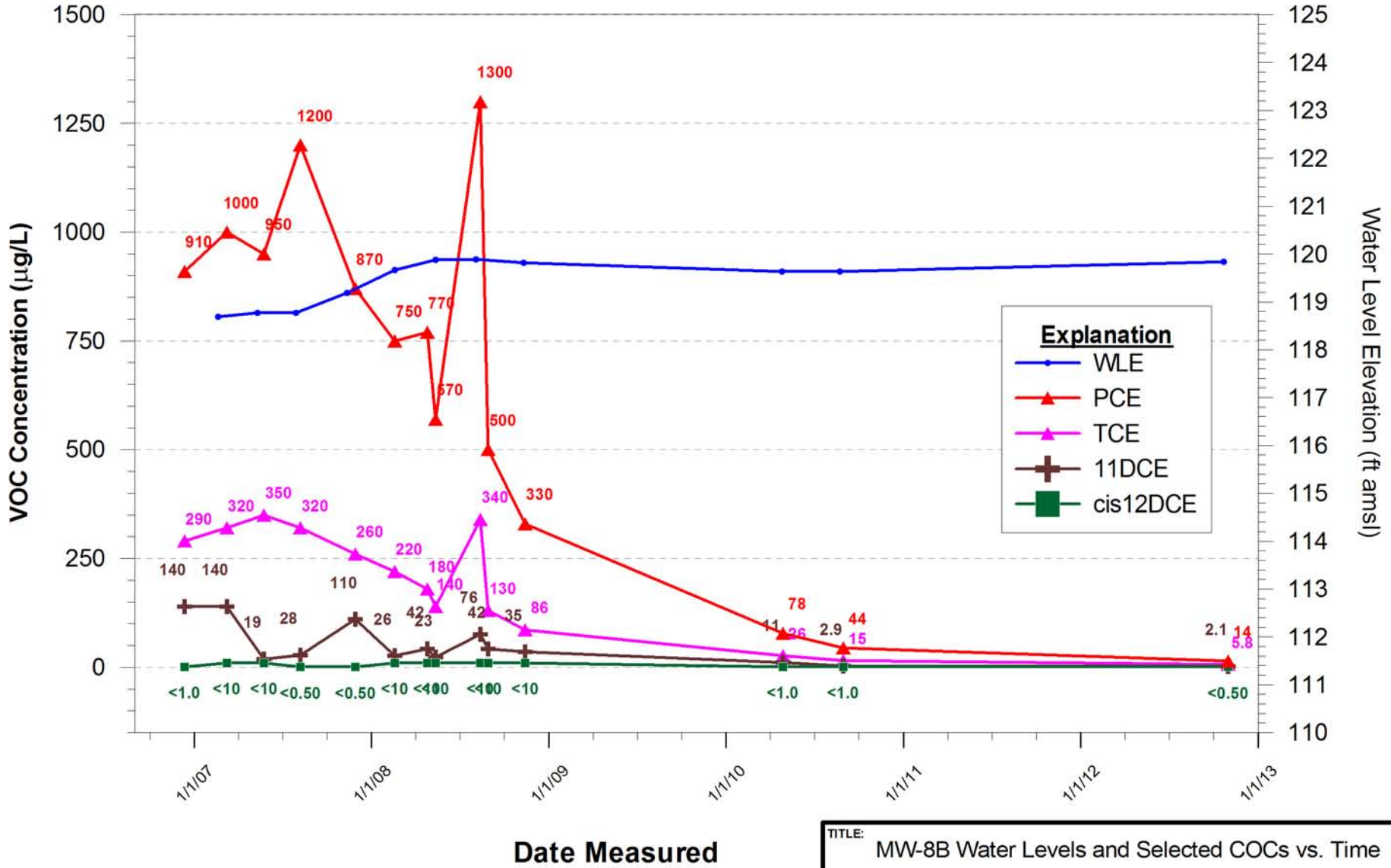
TITLE: MW-8A Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	12/28/12

FIGURE: C-8



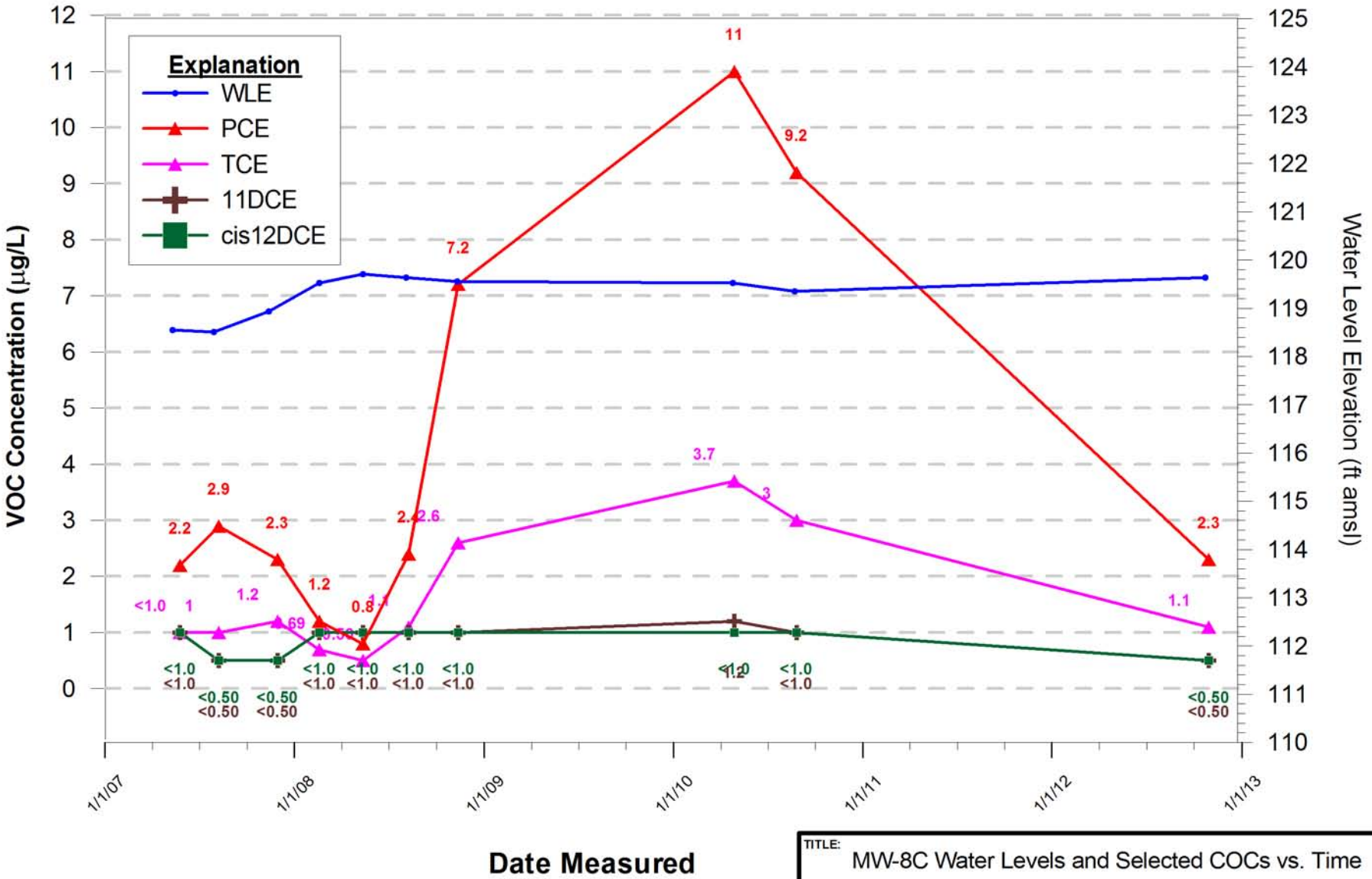
TITLE: MW-8B Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	12/28/12

FIGURE: C-9



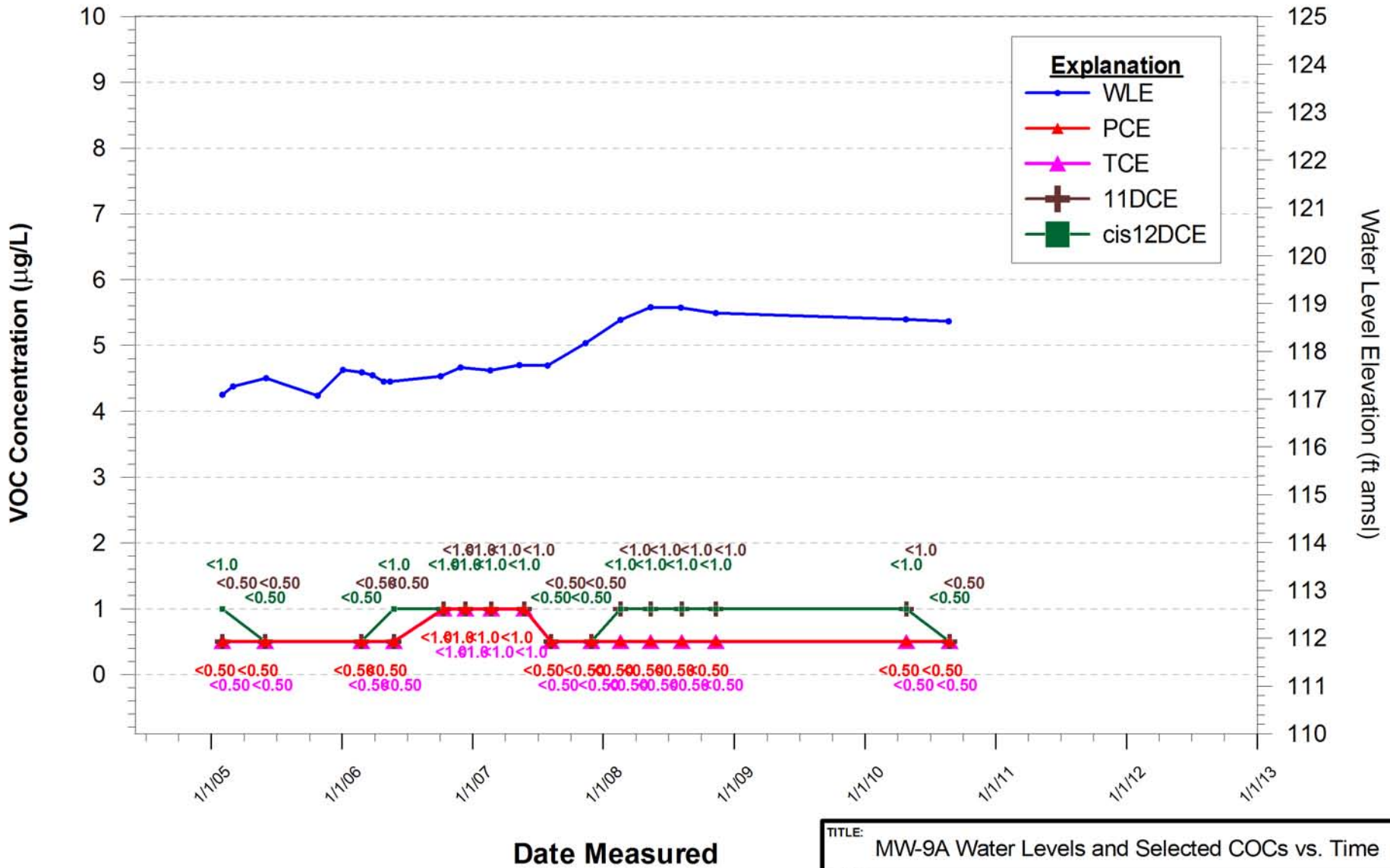
TITLE: MW-8C Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	12/28/12

FIGURE: C-10



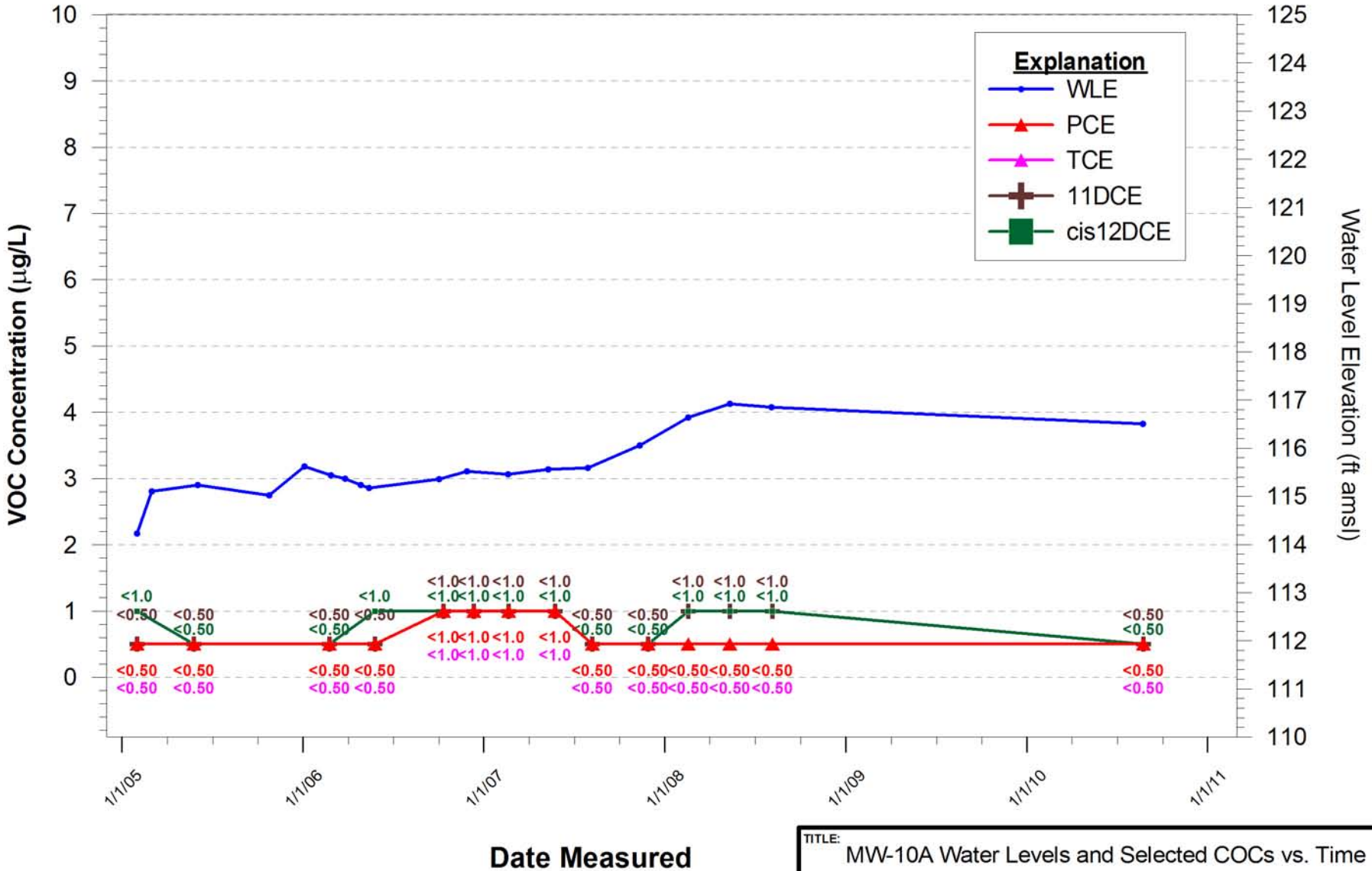
TITLE: MW-9A Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	01/07/13

FIGURE: C-11



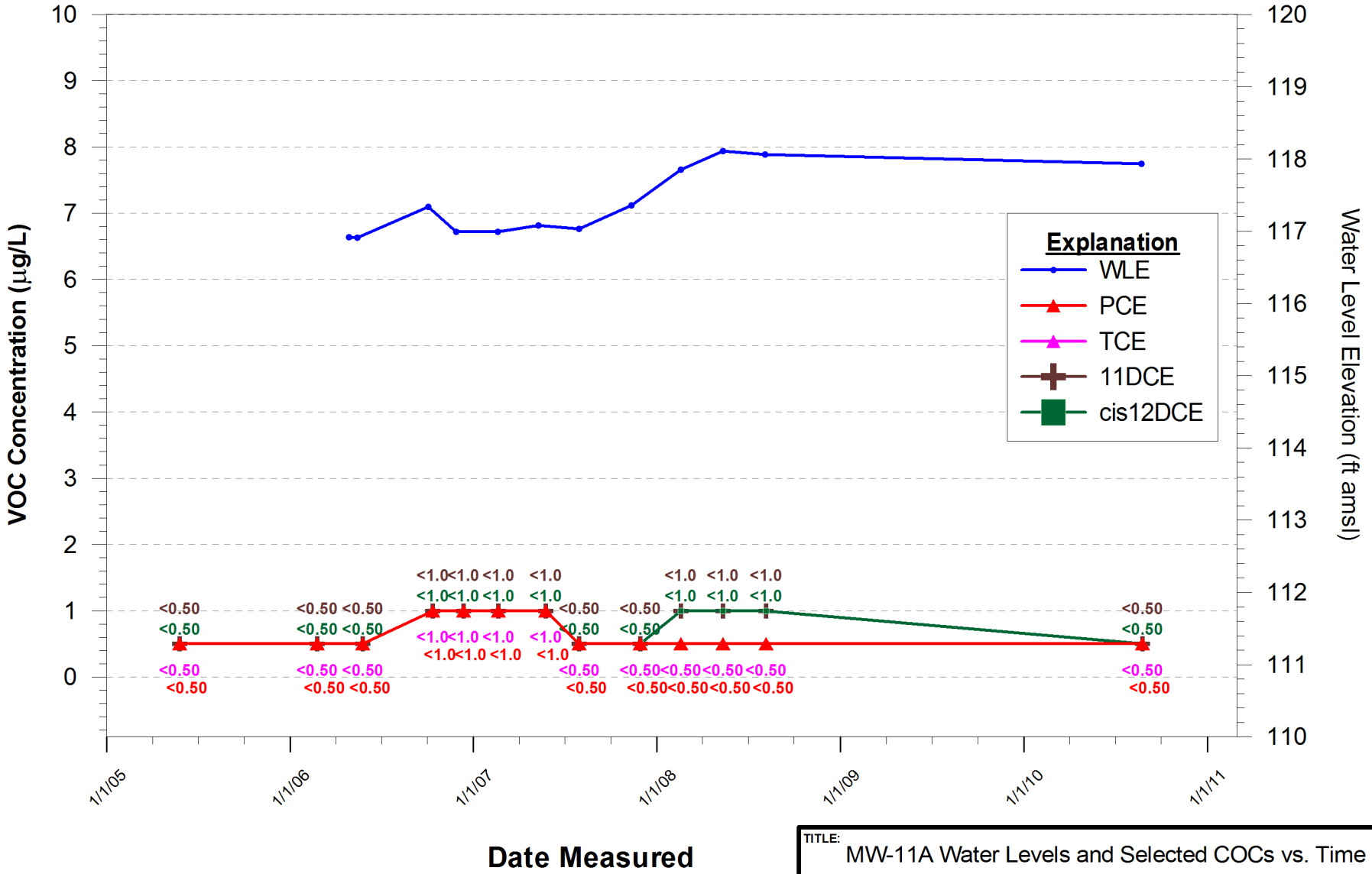
TITLE: MW-10A Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	12/28/12

FIGURE: C-12



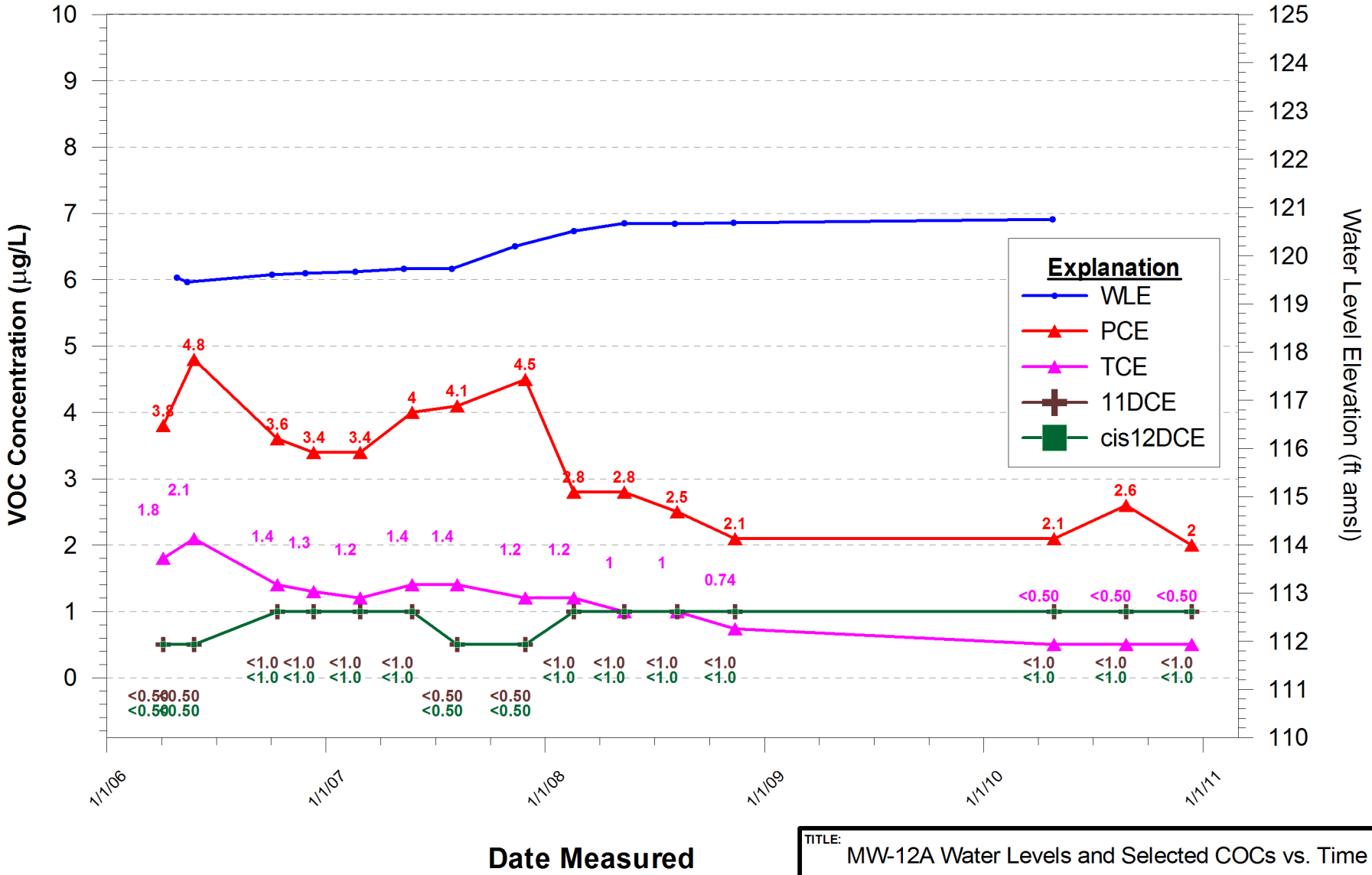
TITLE: MW-11A Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	01/09/13

FIGURE: C-13



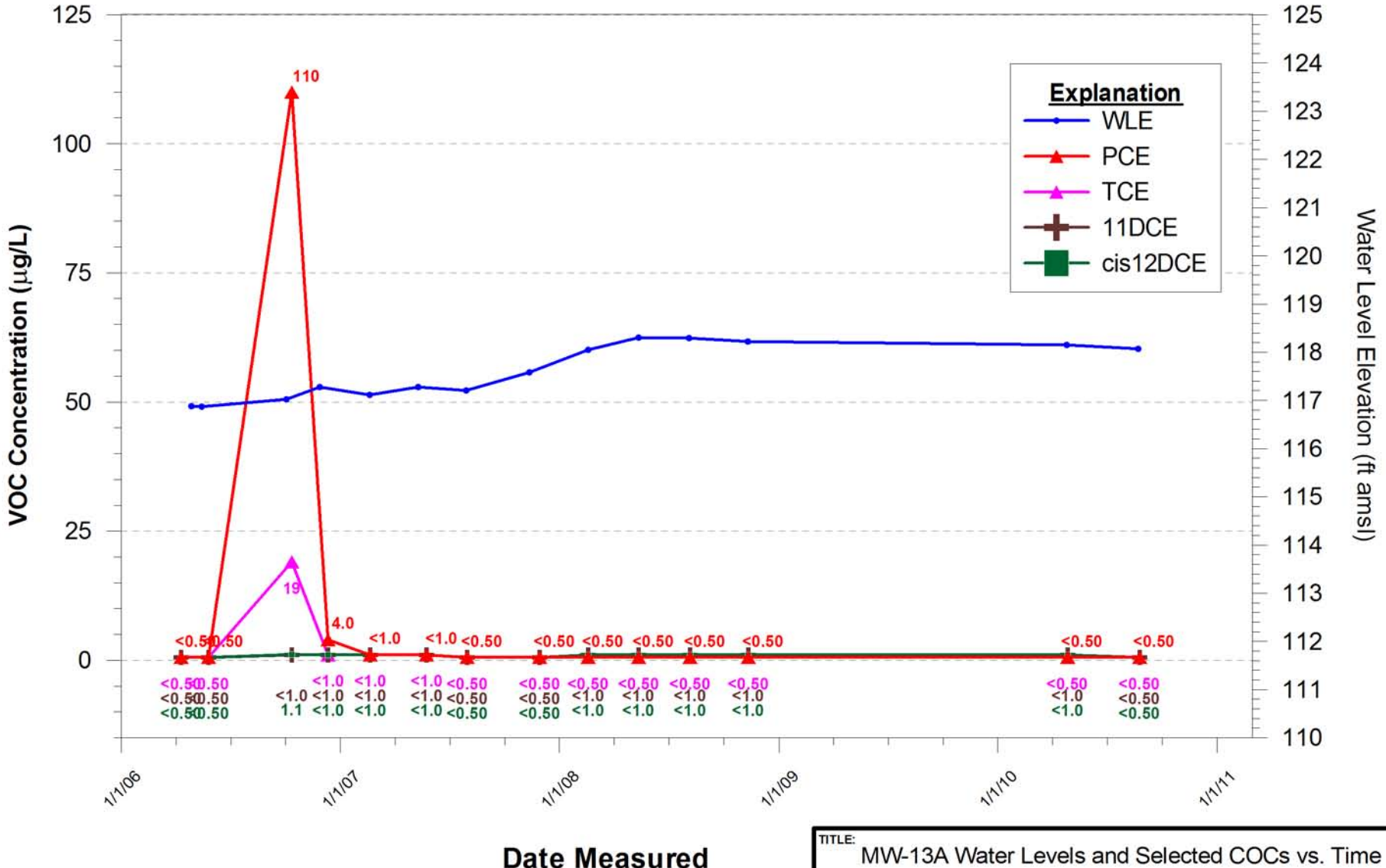
TITLE: MW-12A Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	01/09/13

FIGURE: C-14



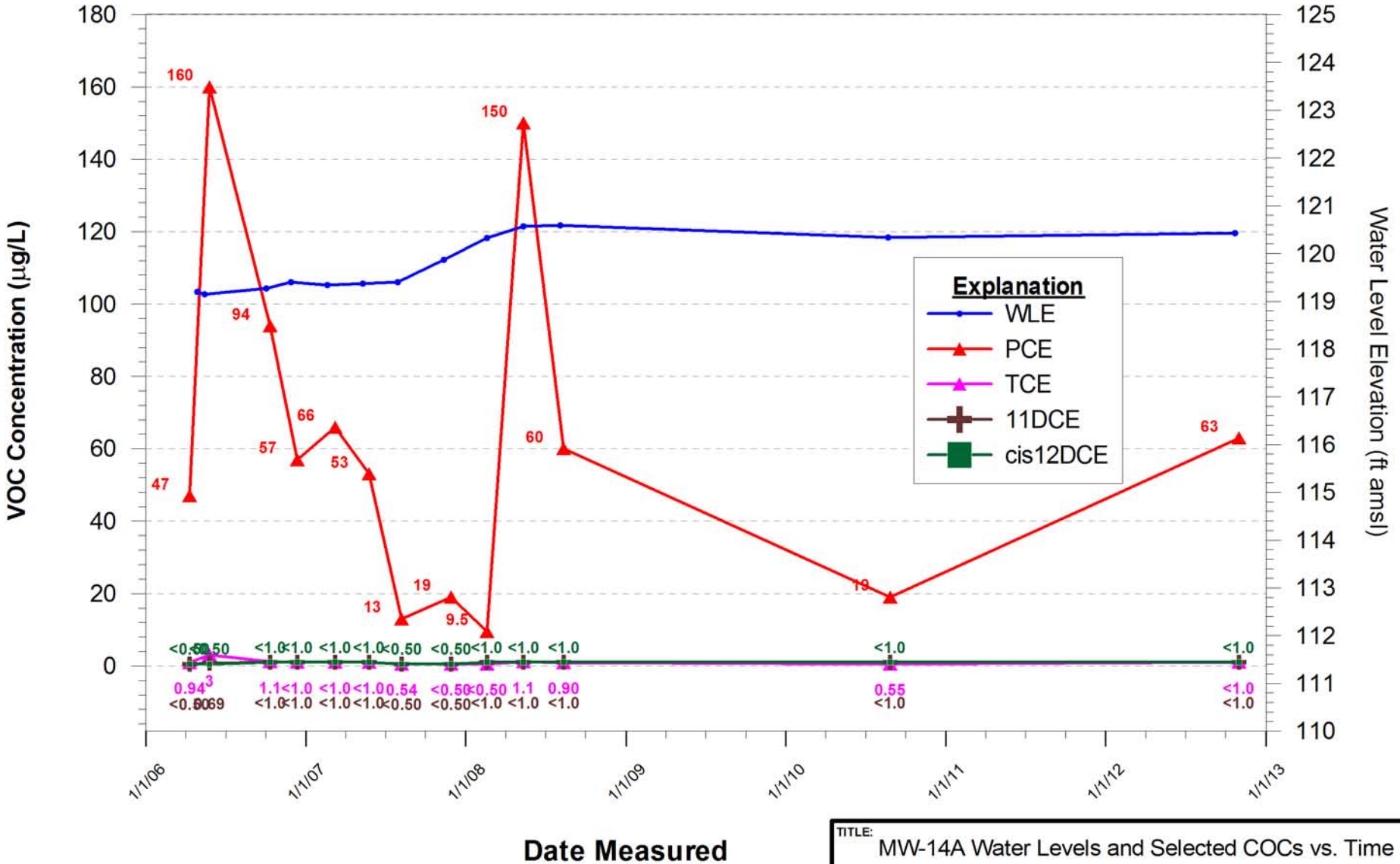
TITLE: MW-13A Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	12/28/12

FIGURE: C-15



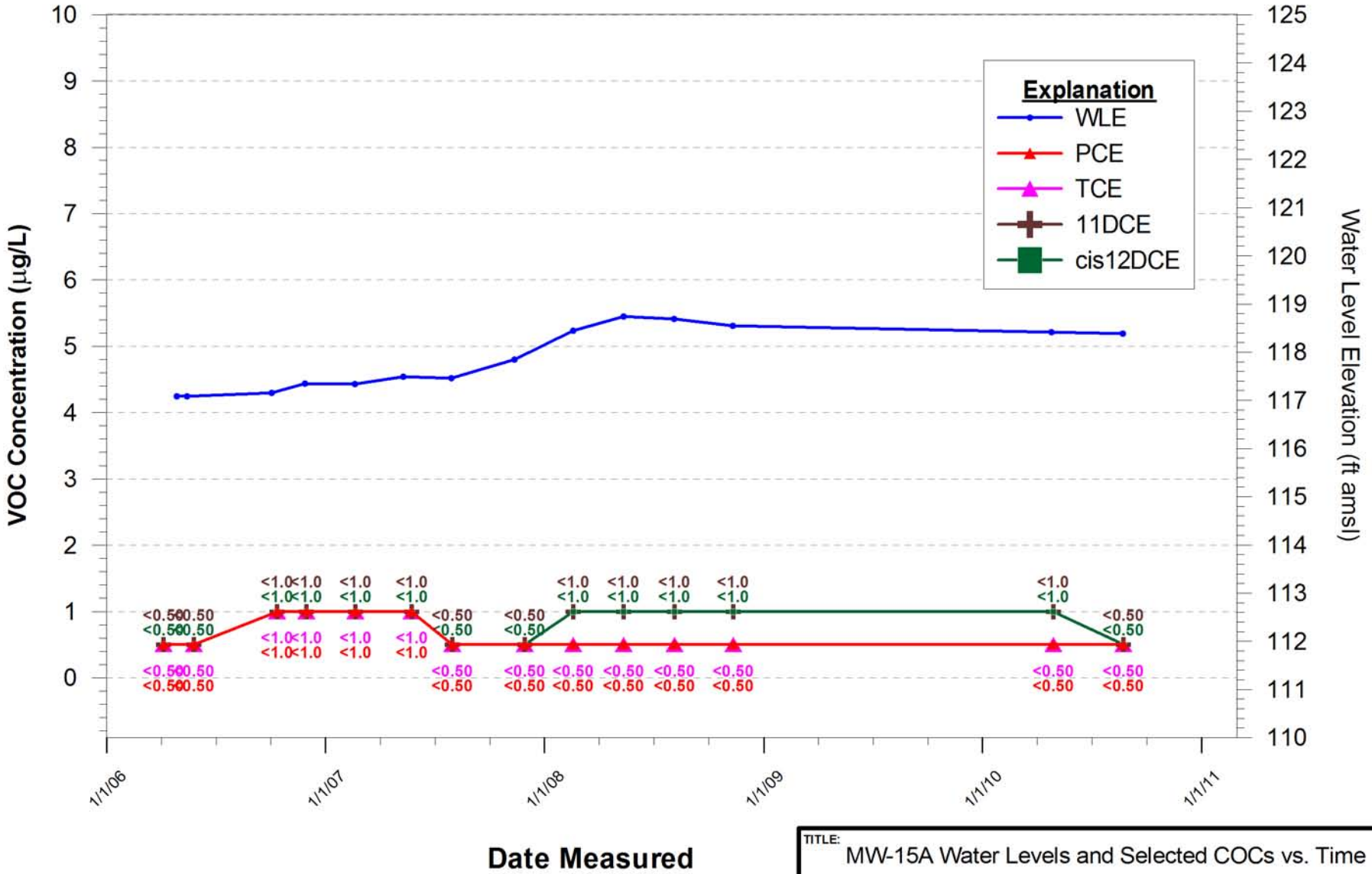
TITLE: MW-14A Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	01/07/13

FIGURE: C-16



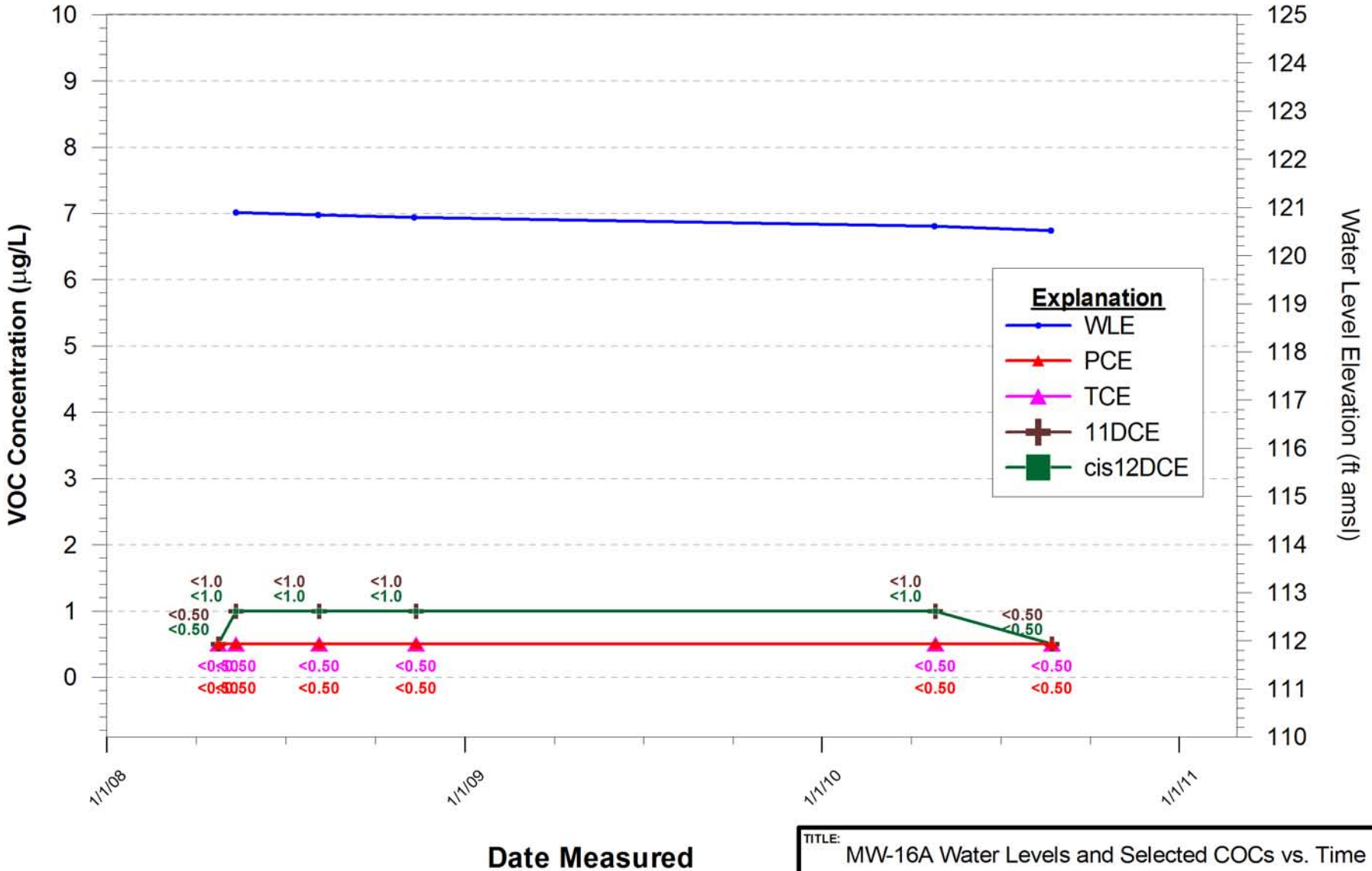
TITLE: MW-15A Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	12/28/12

FIGURE: C-17



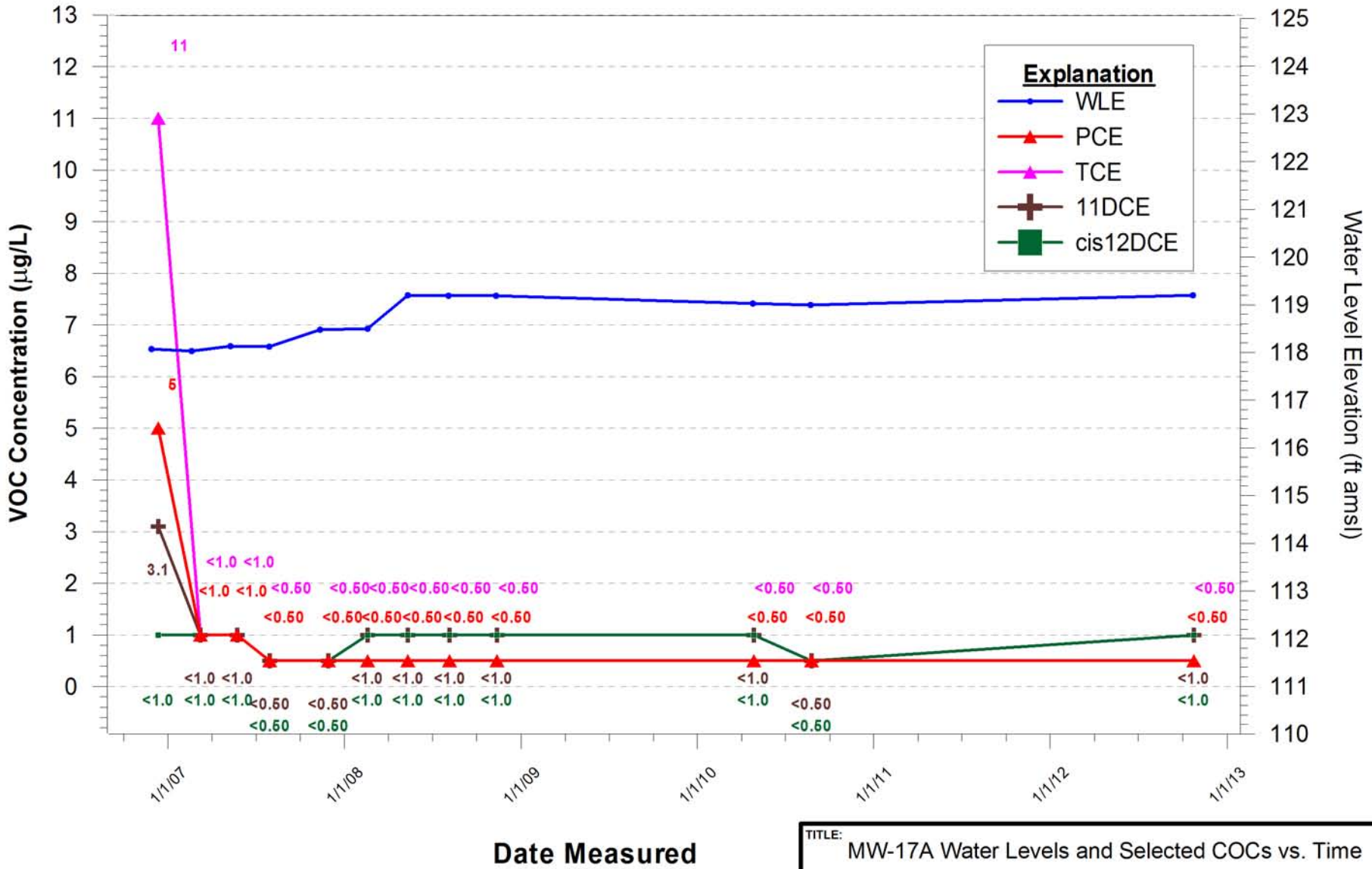
TITLE: MW-16A Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	01/07/13

FIGURE: C-18



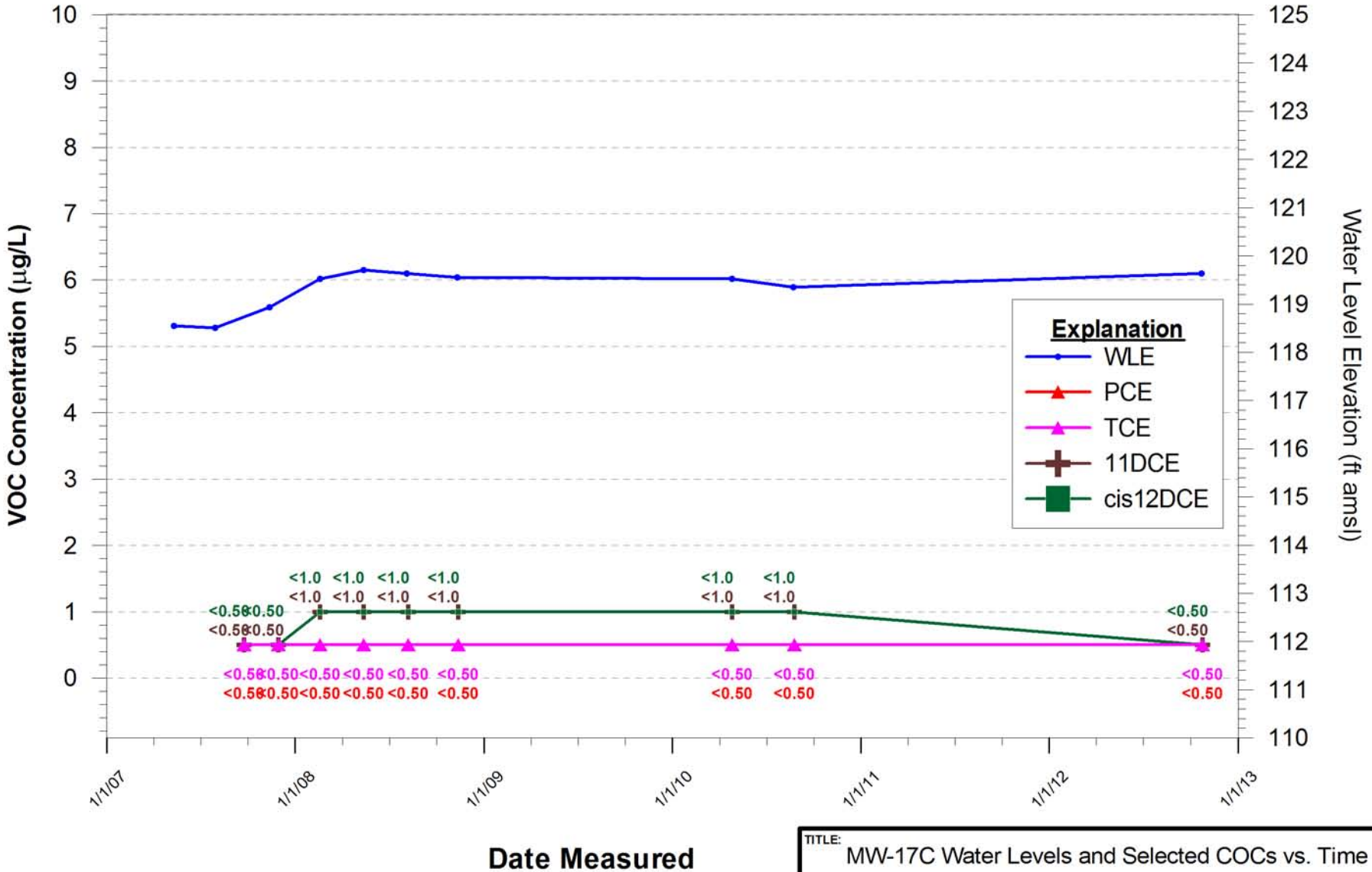
TITLE: MW-17A Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.036
DATE	01/07/13

FIGURE: C-19



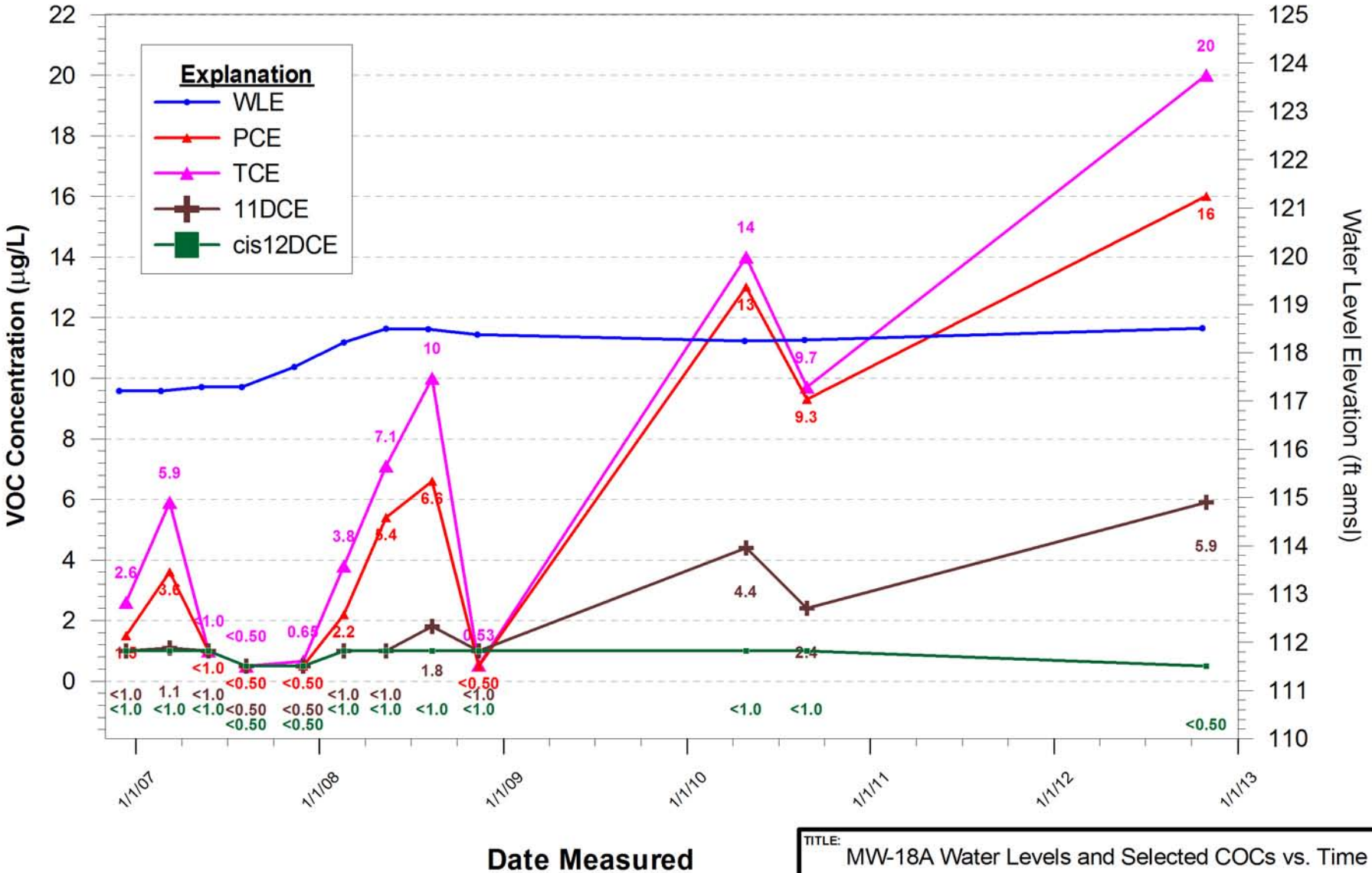
TITLE: MW-17C Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	01/07/13

FIGURE: C-20



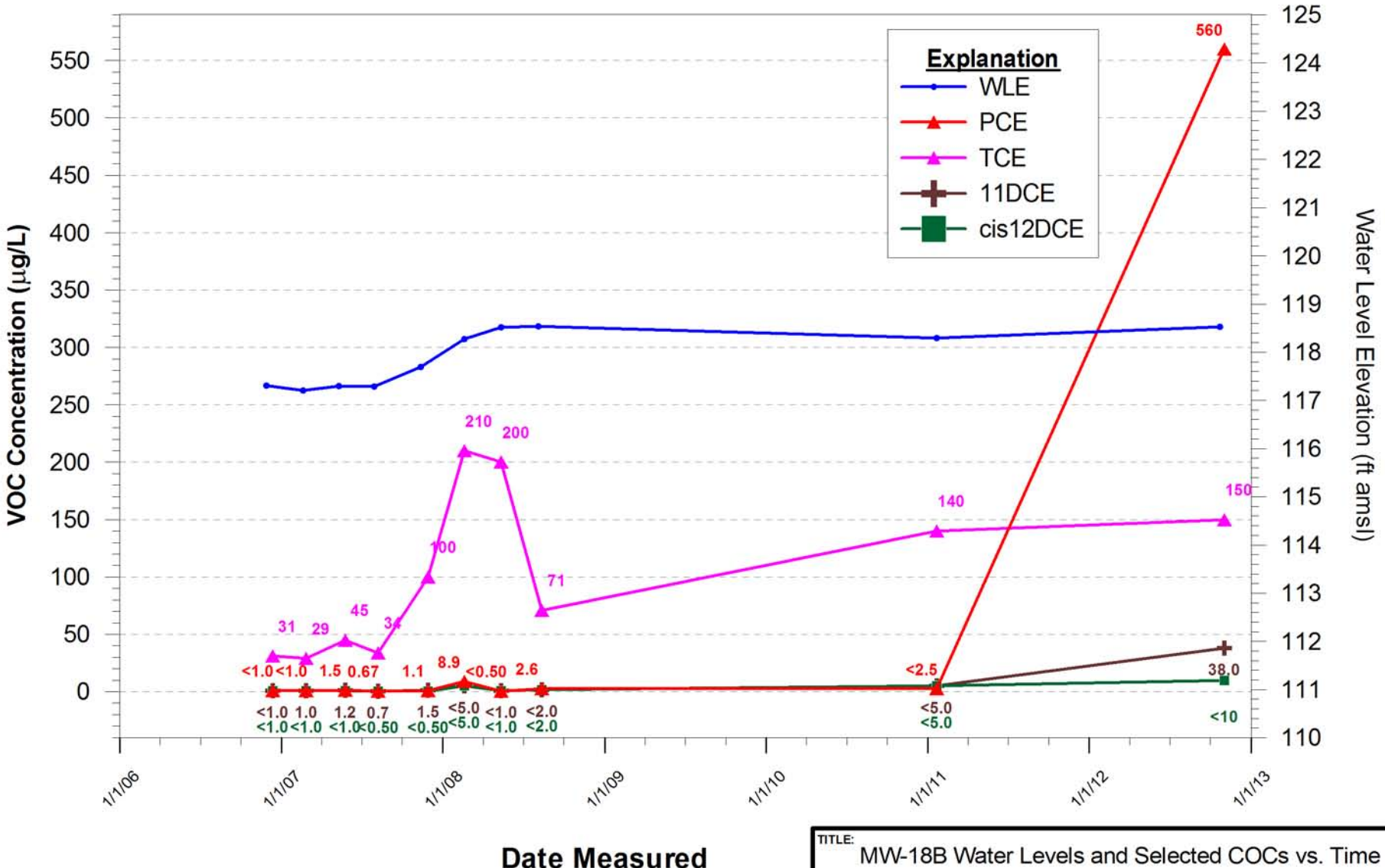
TITLE: MW-18A Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	01/07/13

FIGURE: C-21



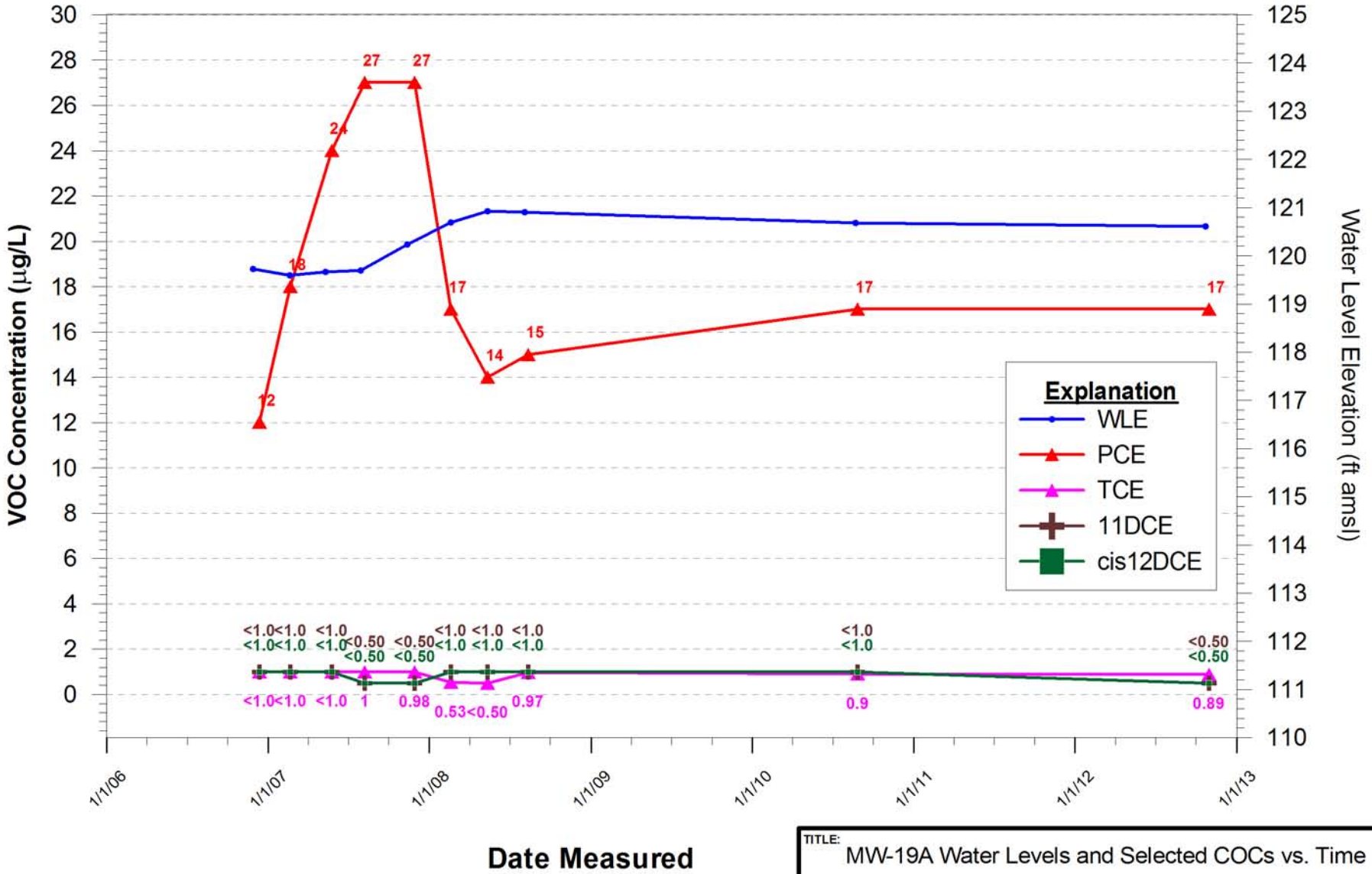
TITLE: MW-18B Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	01/07/13

FIGURE: C-22



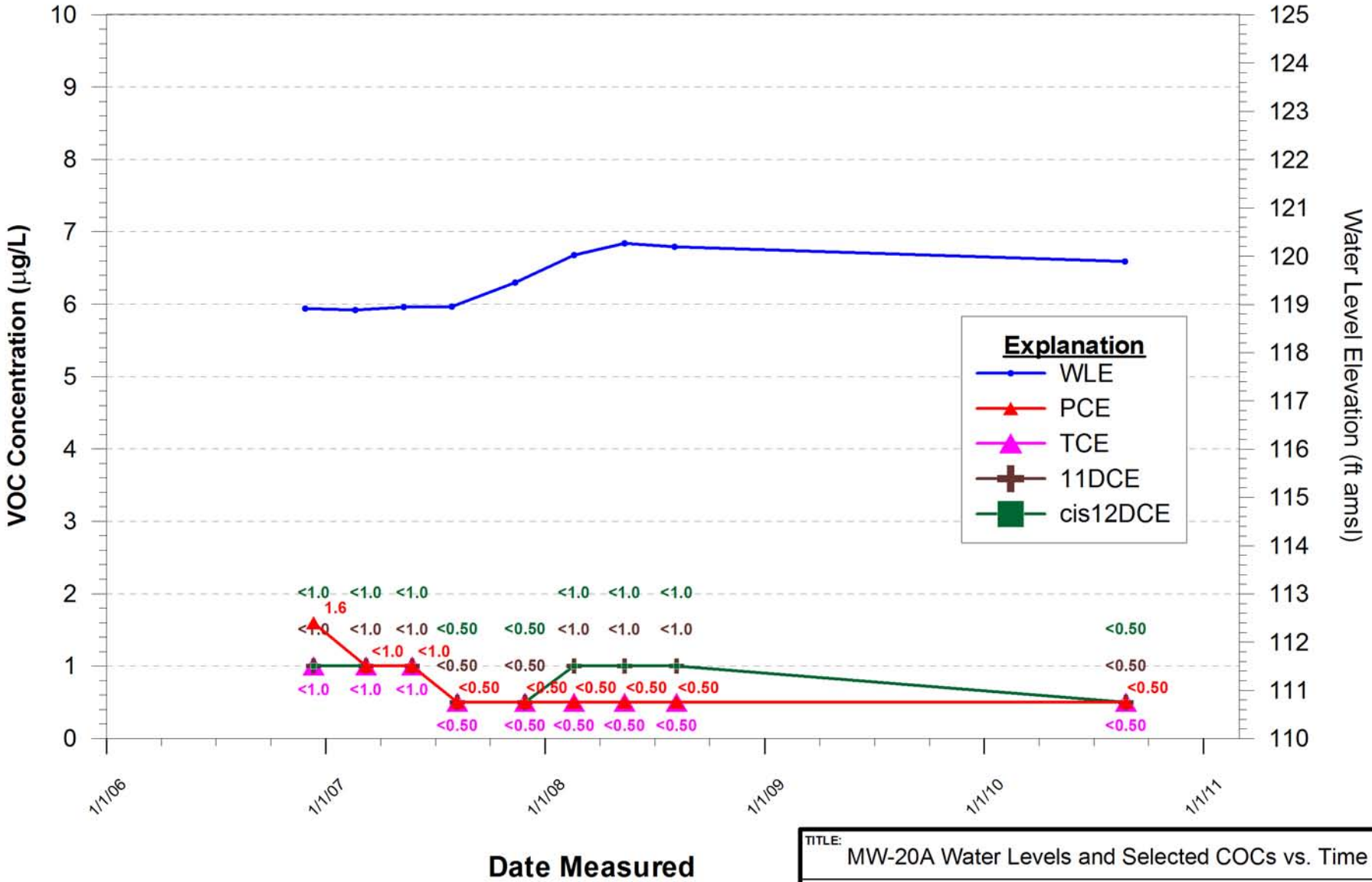
TITLE: MW-19A Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	12/28/12

FIGURE: C-23



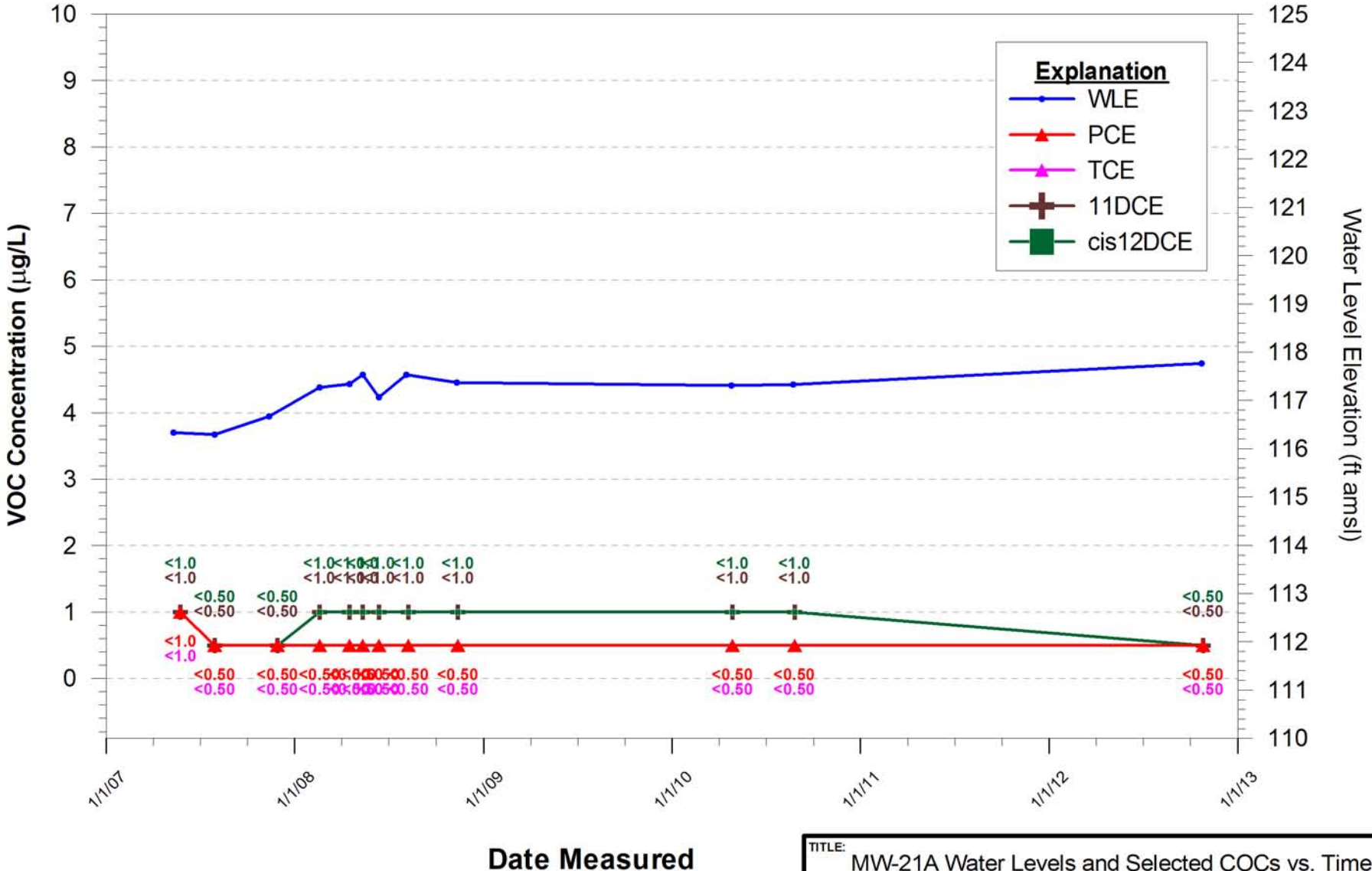
TITLE: MW-20A Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	01/07/13

FIGURE: C-24



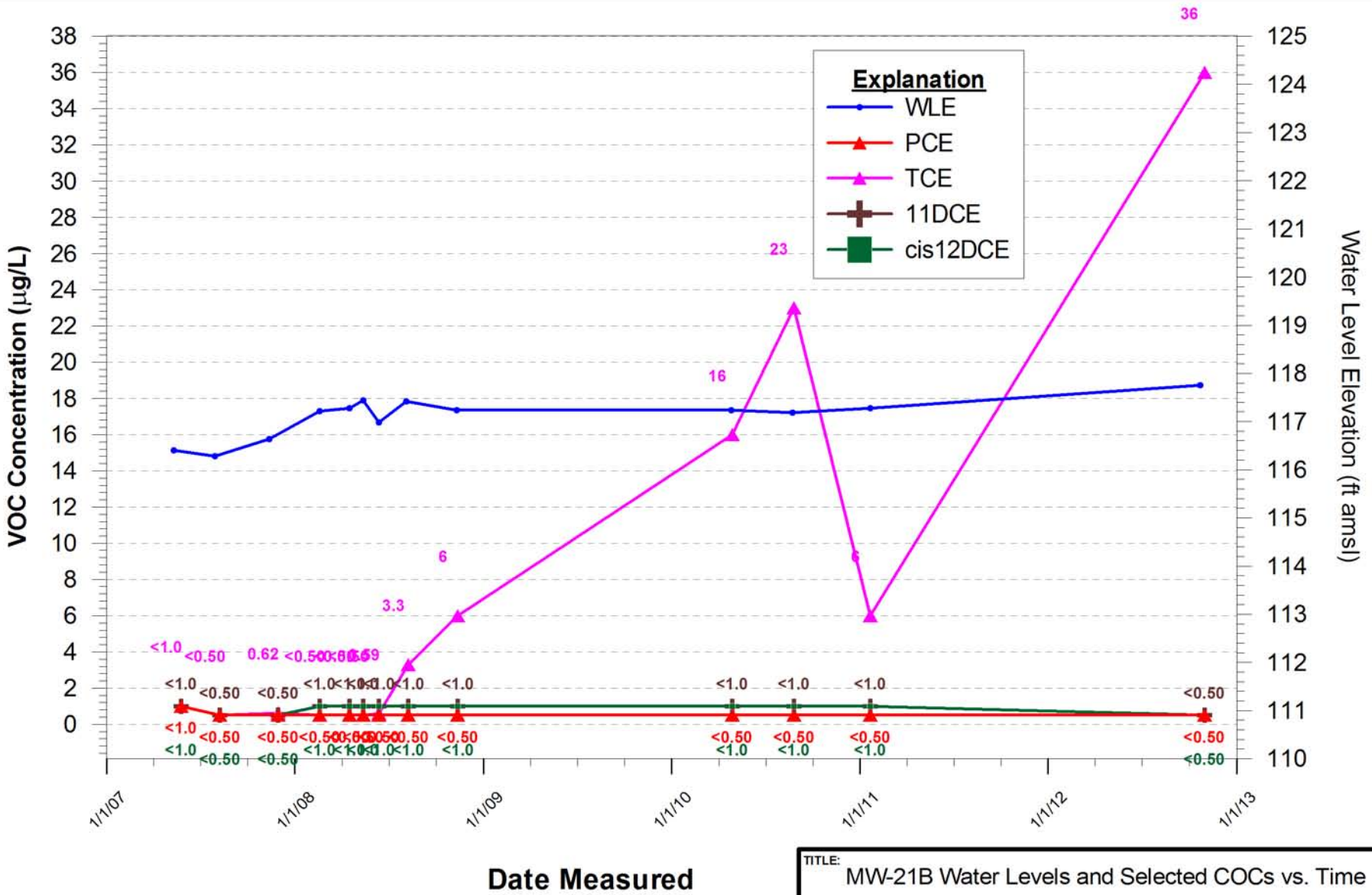
TITLE: MW-21A Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	12/28/12

FIGURE: C-25



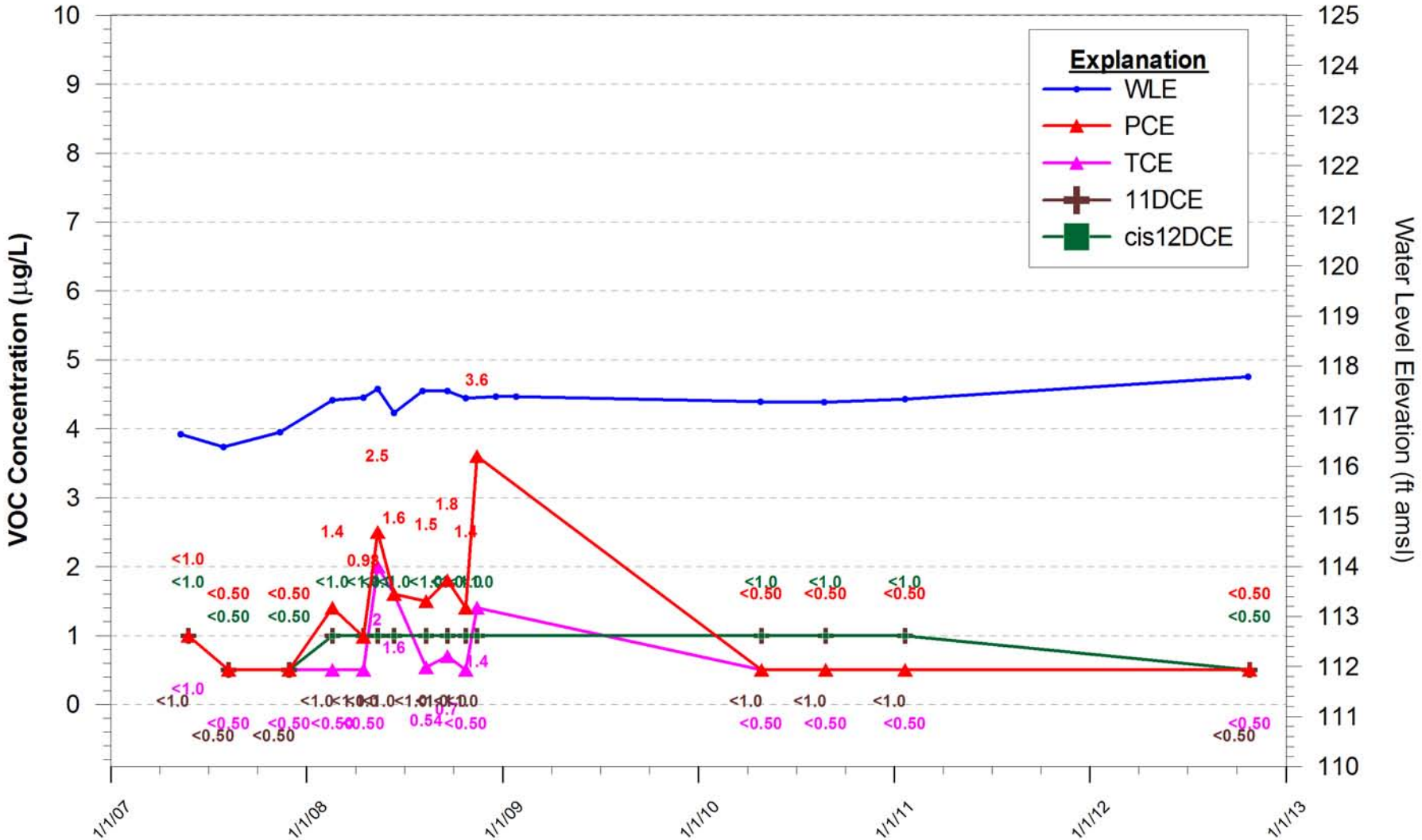
TITLE: MW-21B Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	12/28/12

FIGURE: C-26

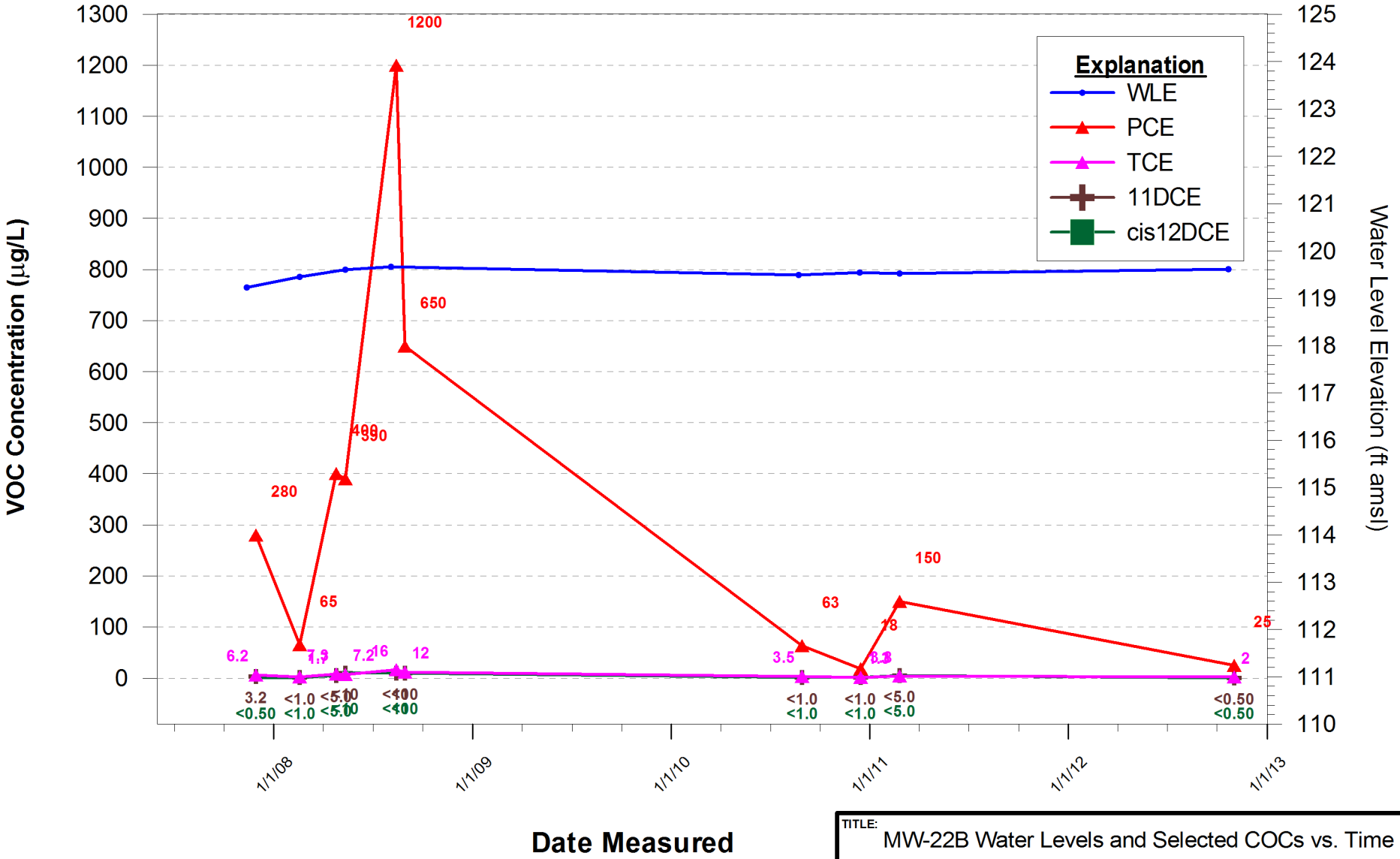


Note: VOC concentrations from First Quarter 2008 are from an additional sample collected on March 19, 2008. PCE and TCE were detected in the original sample collected on Feburary 27, 2008, as part of the February 2008 groundwater sampling event at concentrations of 20 µg/L and 5.2 µg/L, respectively.

TITLE:	MW-21C Water Levels and Selected COCs vs. Time
CLIENT:	YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO	FIGURE:
DRAFTED	CL	C-27
PROJECT	1303.046	
DATE	12/28/12	



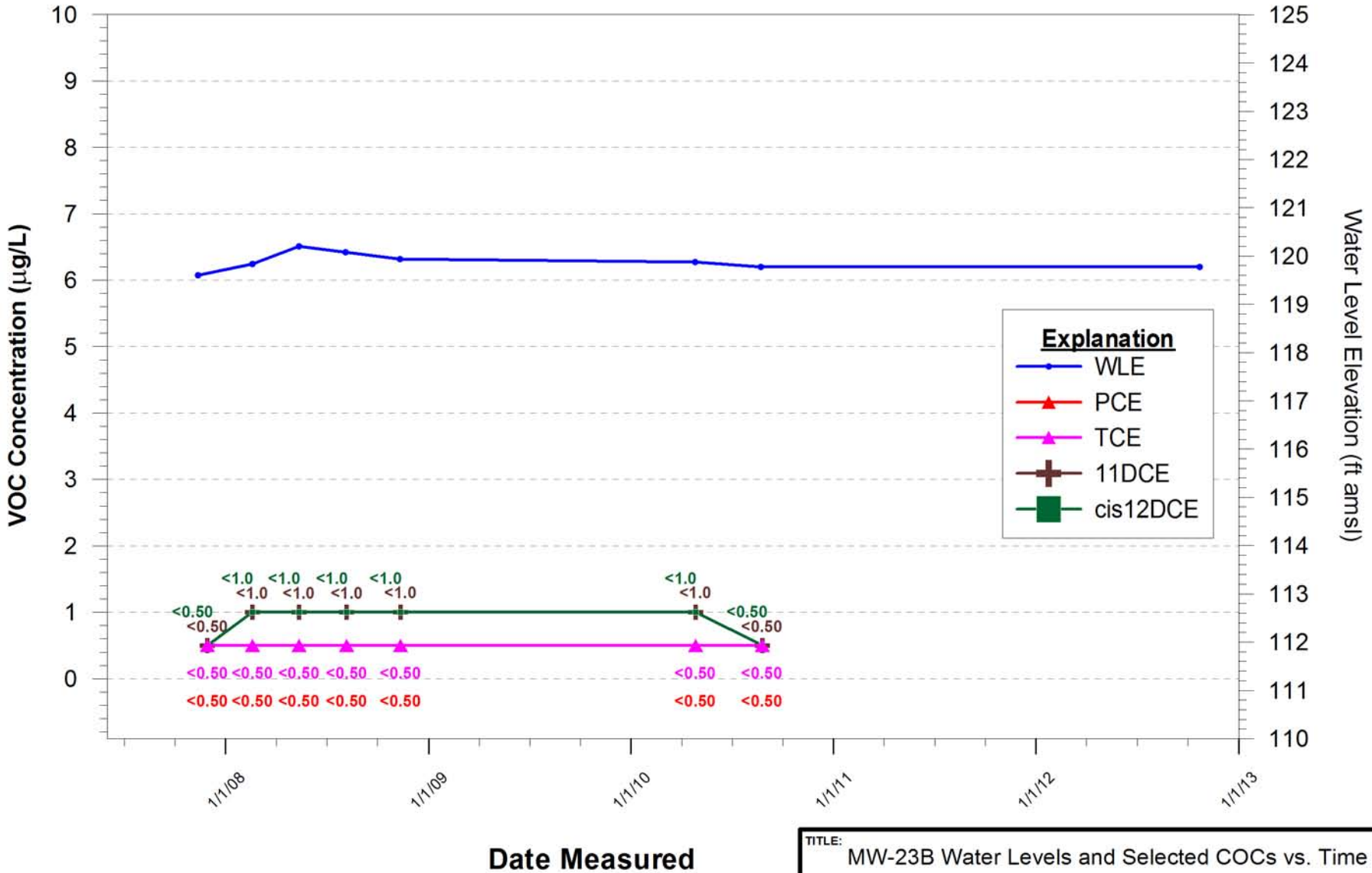
TITLE: MW-22B Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	01/09/13

FIGURE: C-28



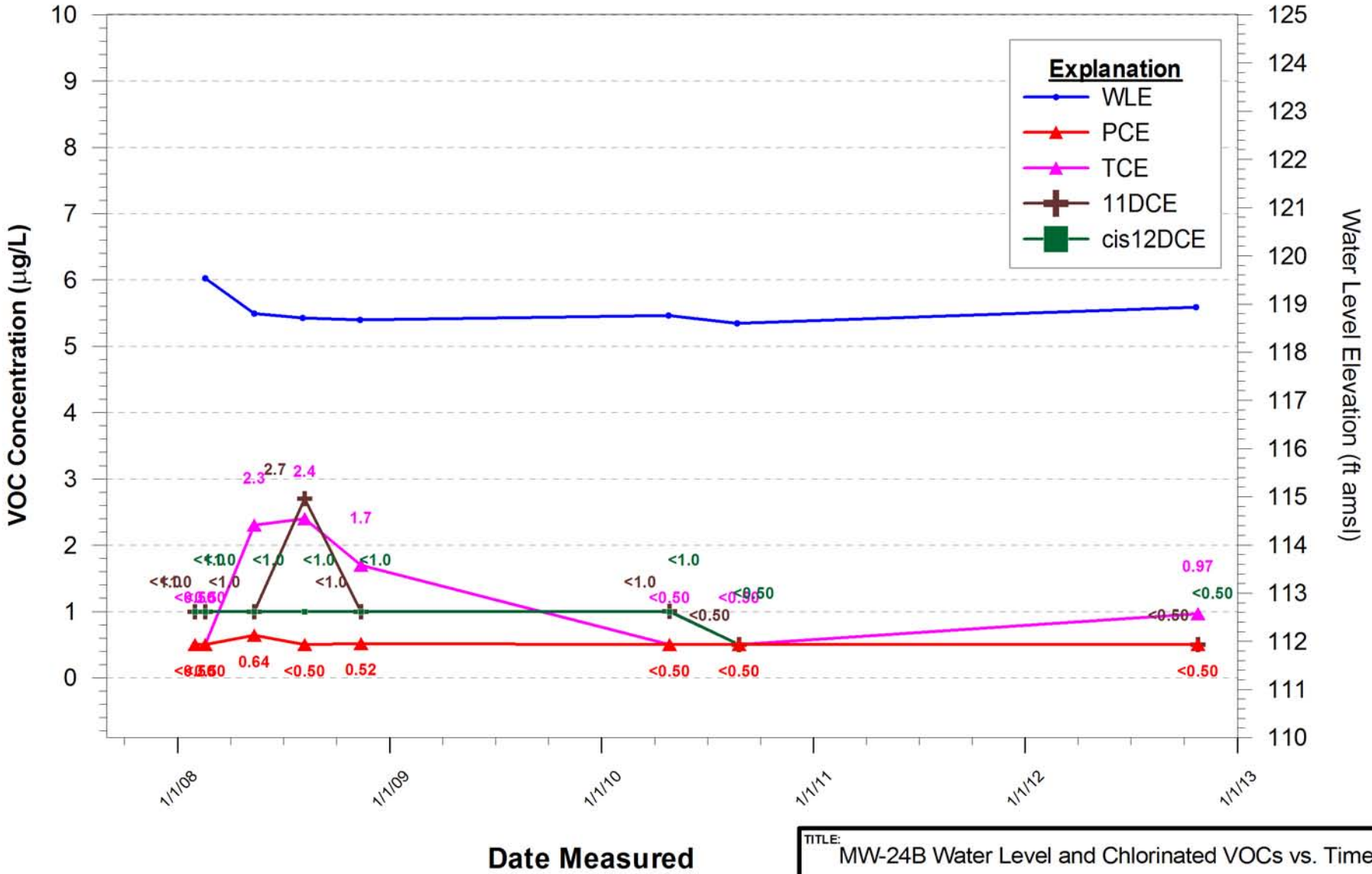
TITLE: MW-23B Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	01/07/13

FIGURE: C-29



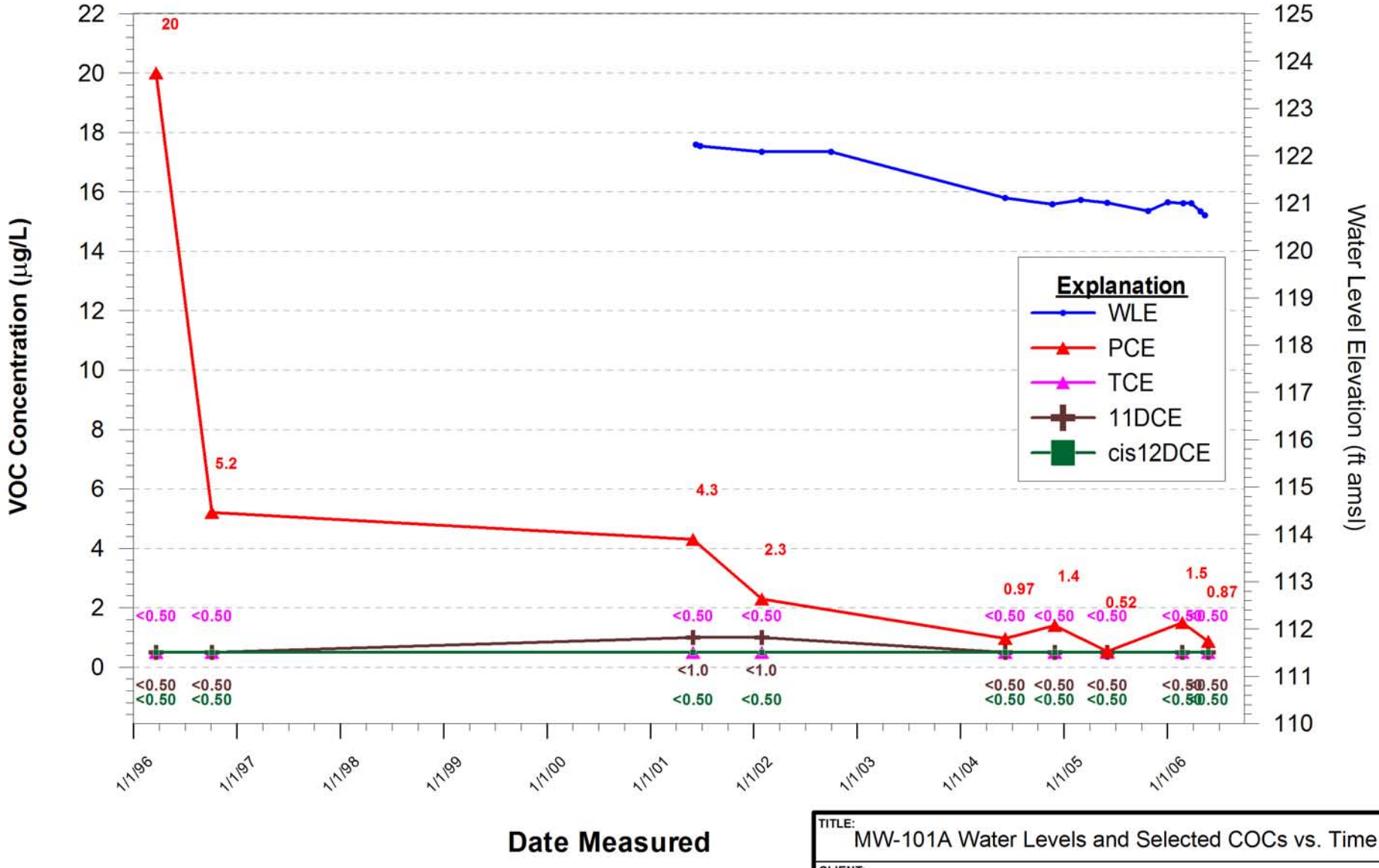
TITLE: MW-24B Water Level and Chlorinated VOCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	12/28/12

FIGURE: C-30



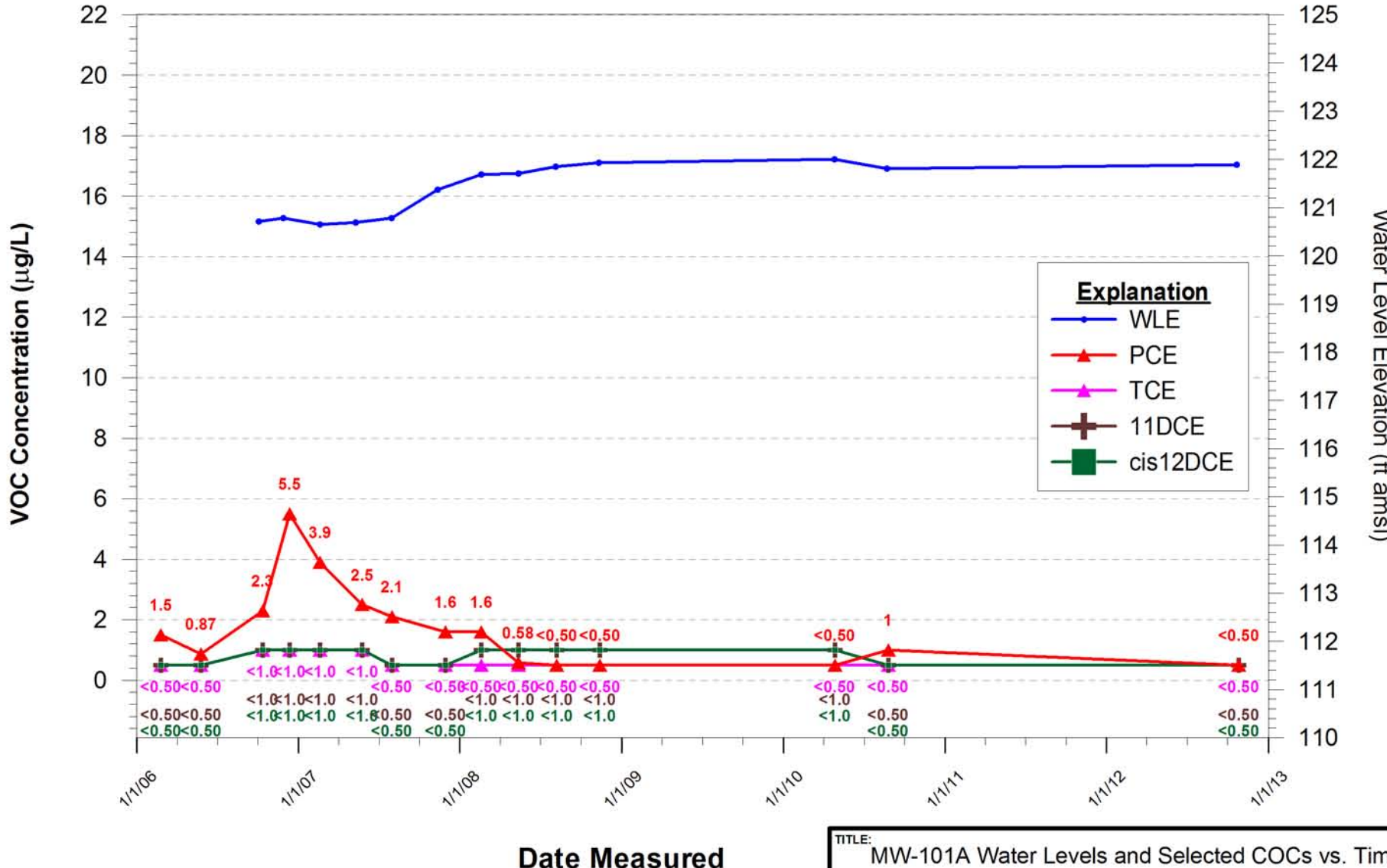
TITLE: MW-101A Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	01/09/13

FIGURE: C-31a



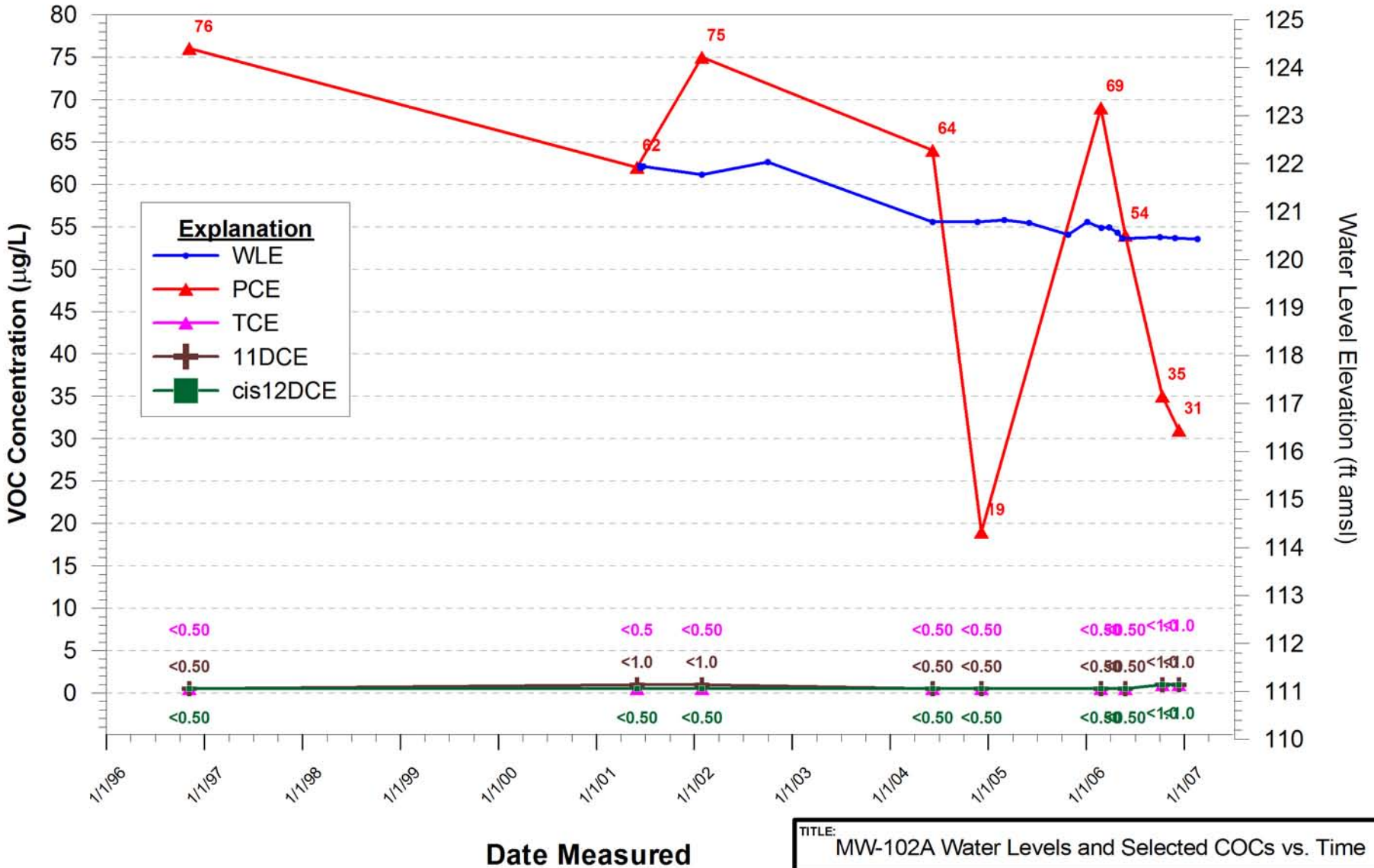
TITLE: MW-101A Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	01/07/13

FIGURE: C-31b



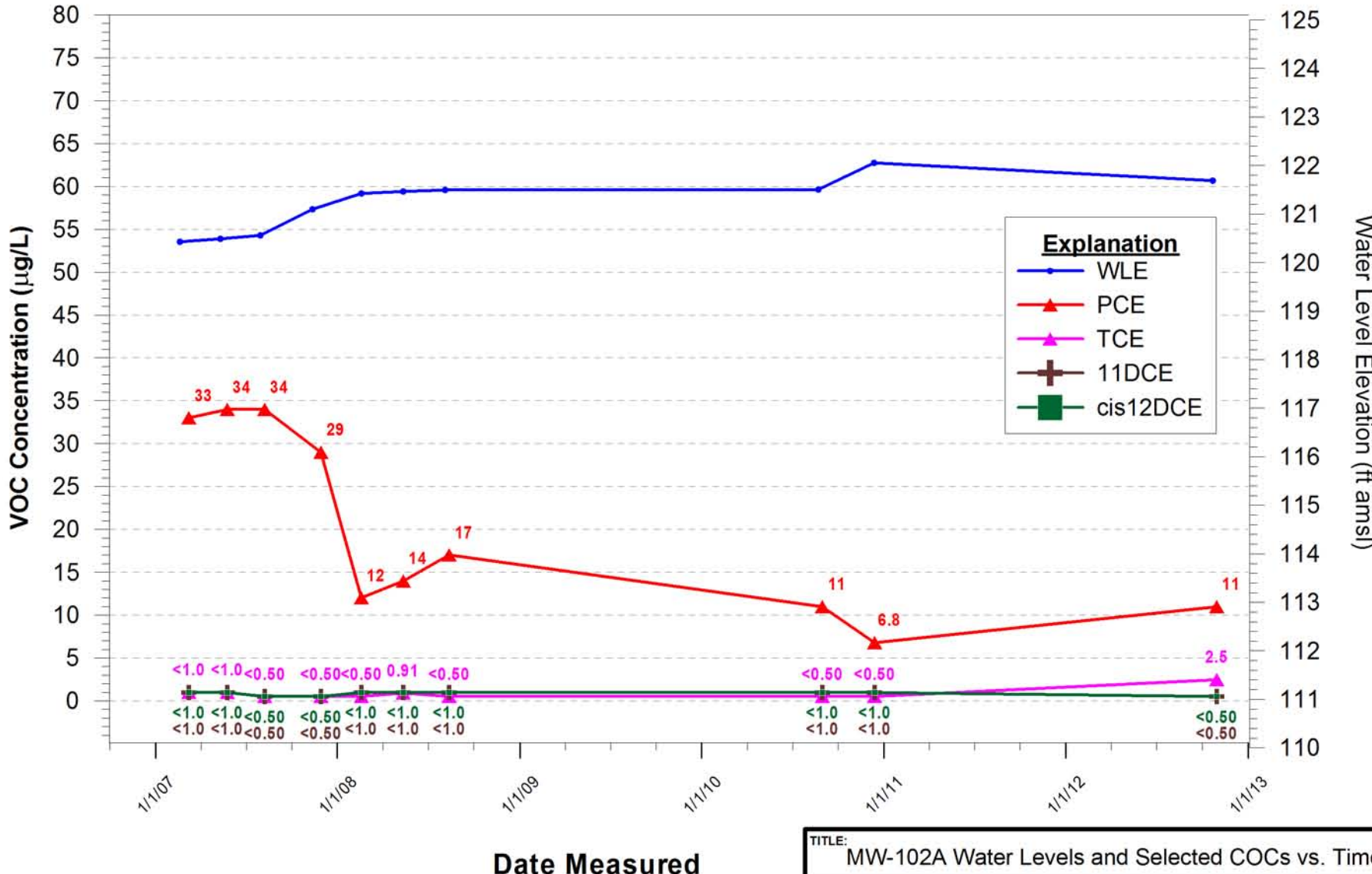
TITLE: MW-102A Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	01/09/13

FIGURE: C-32a



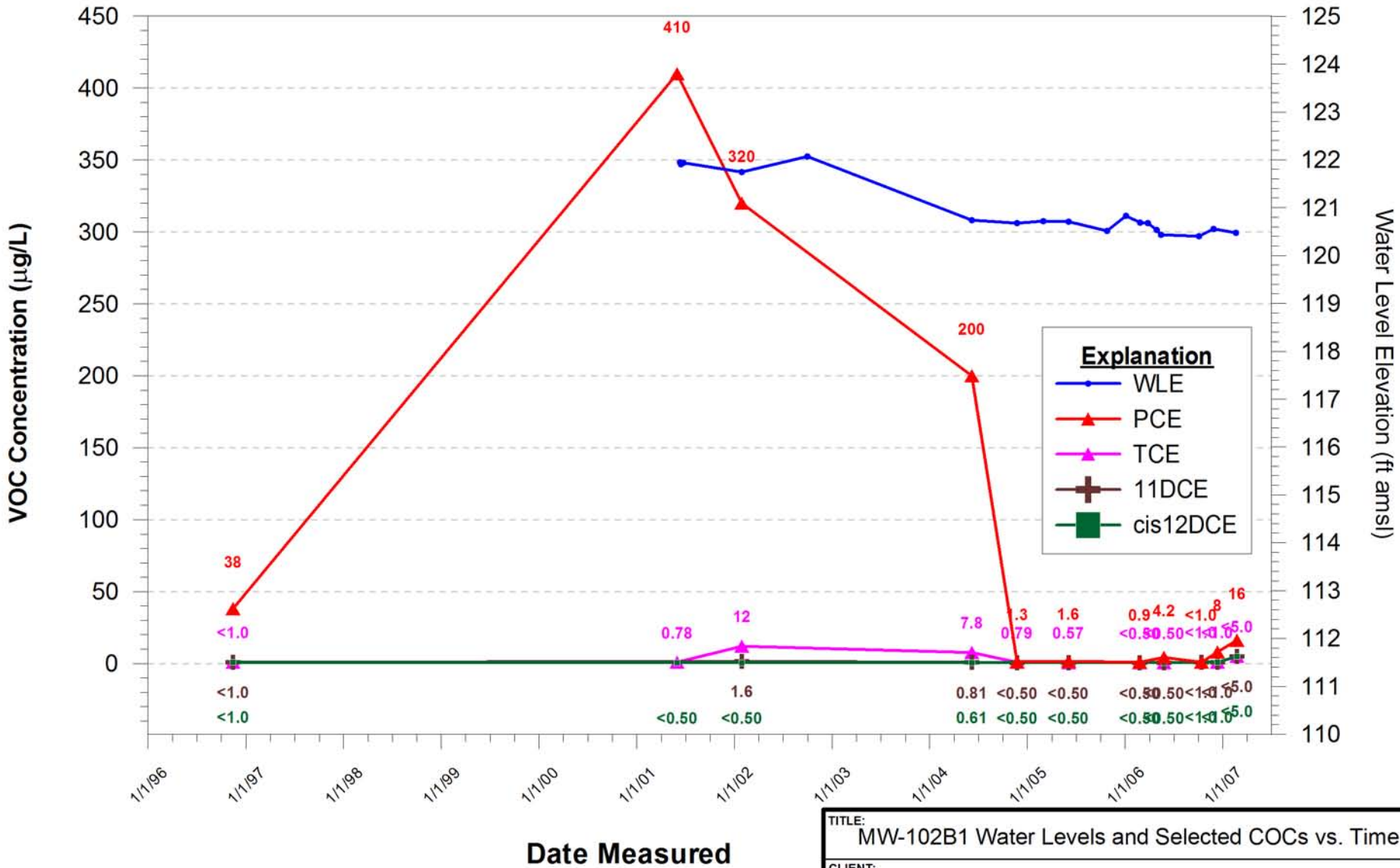
TITLE: MW-102A Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	01/09/13

FIGURE: C-32b



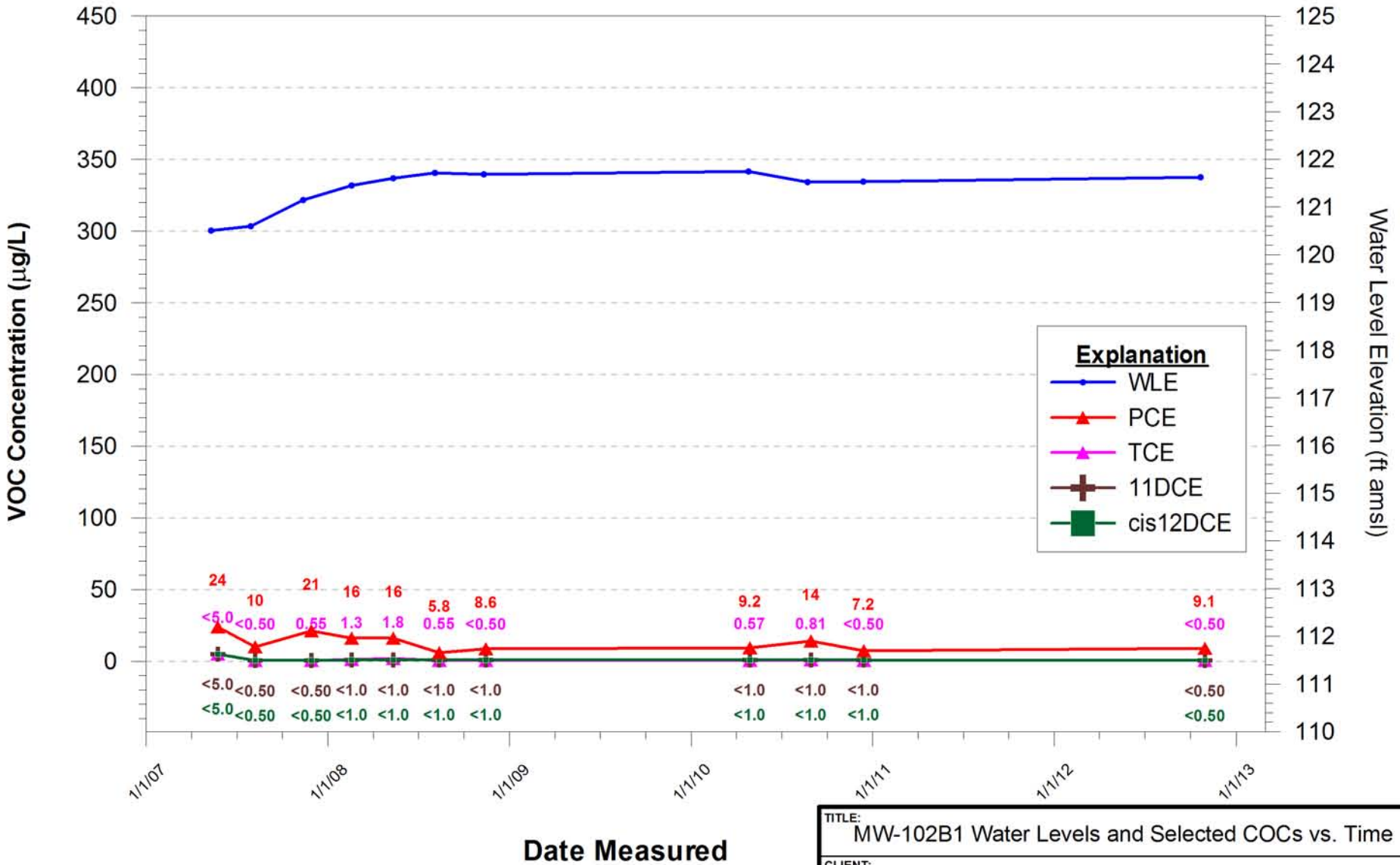
TITLE: MW-102B1 Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	01/07/13

FIGURE: C-33a



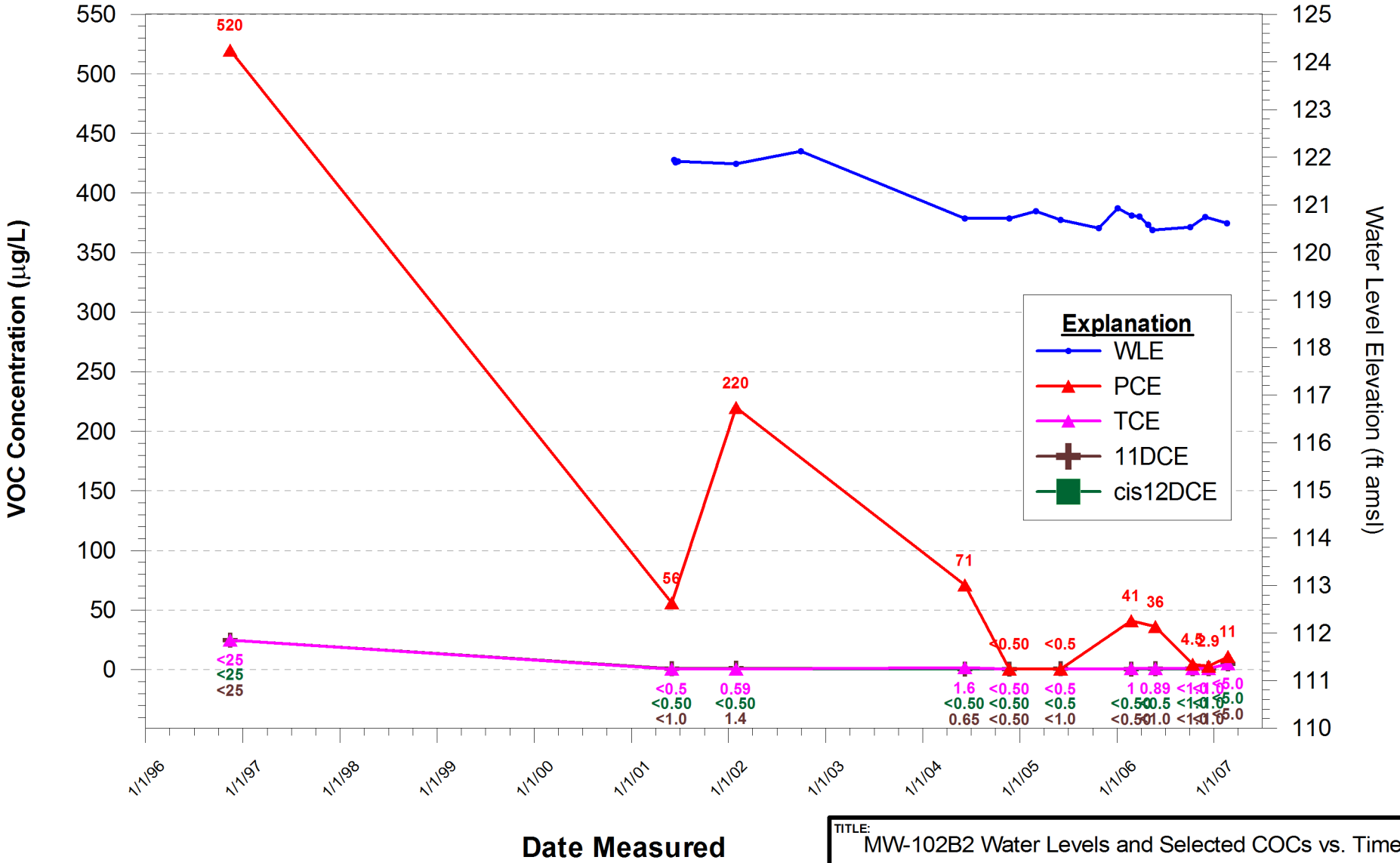
TITLE: MW-102B1 Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	01/07/13

FIGURE: C-33b



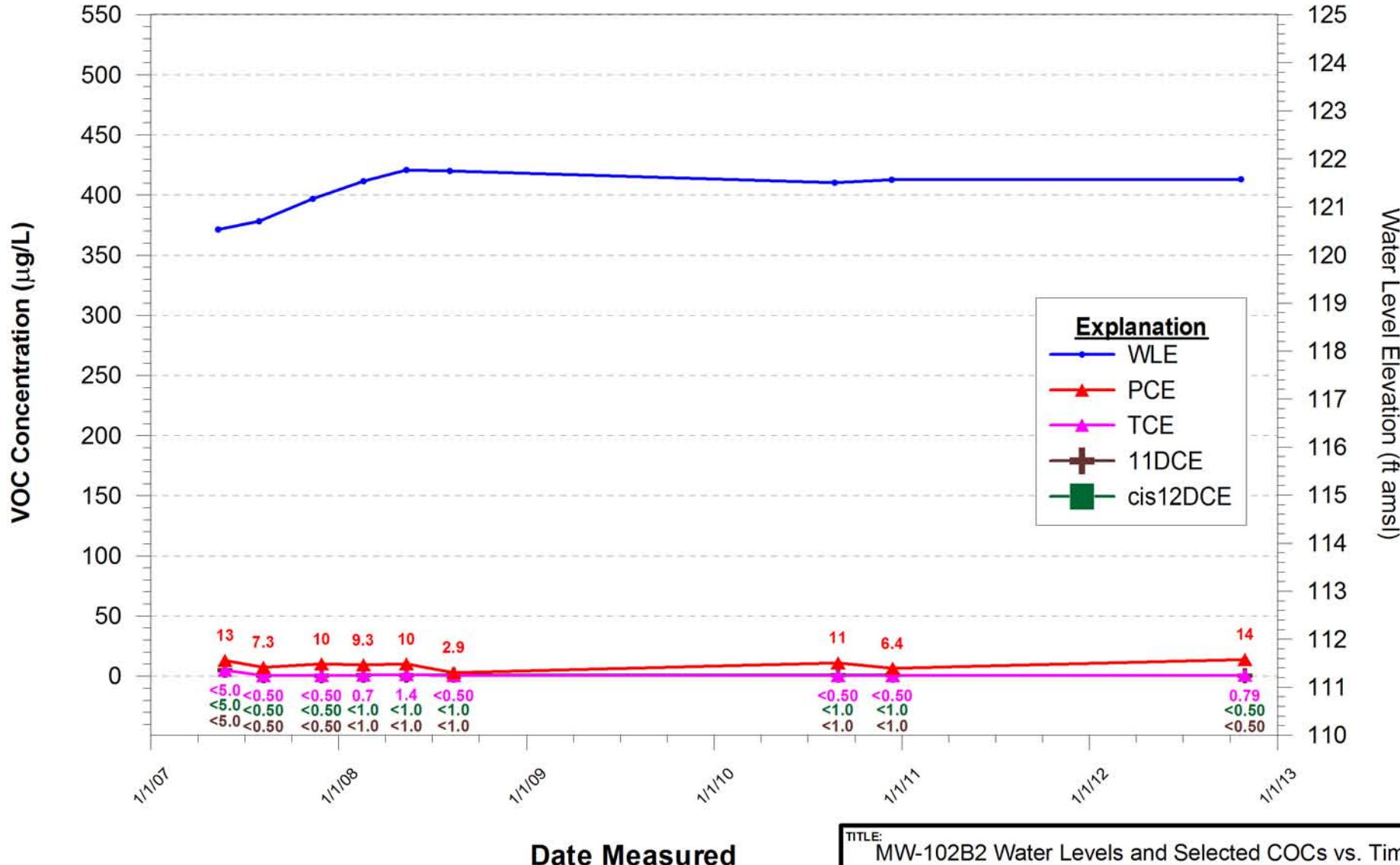
TITLE: MW-102B2 Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	01/08/13

FIGURE: C-34a



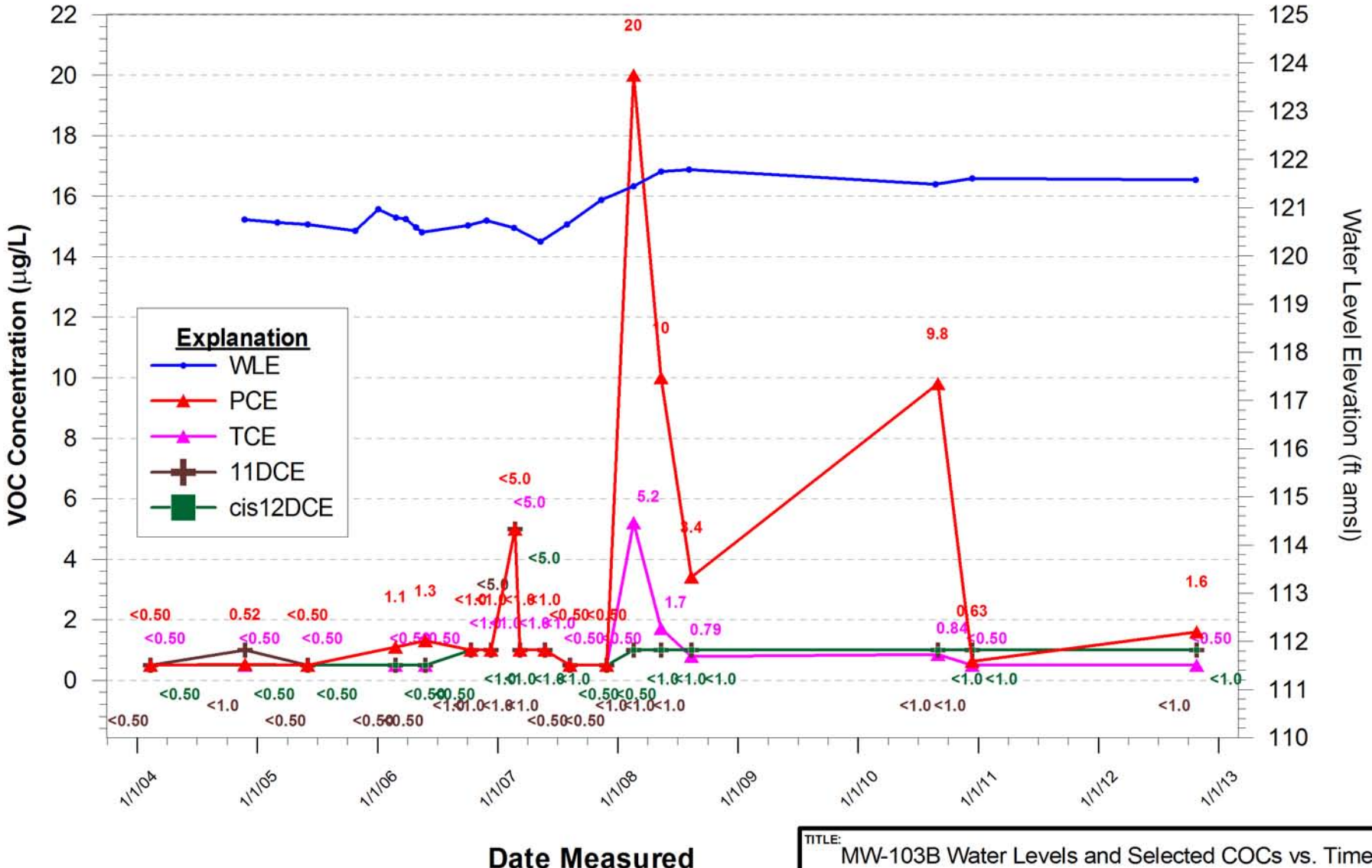
TITLE: MW-102B2 Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	01/09/13

FIGURE: C-34b



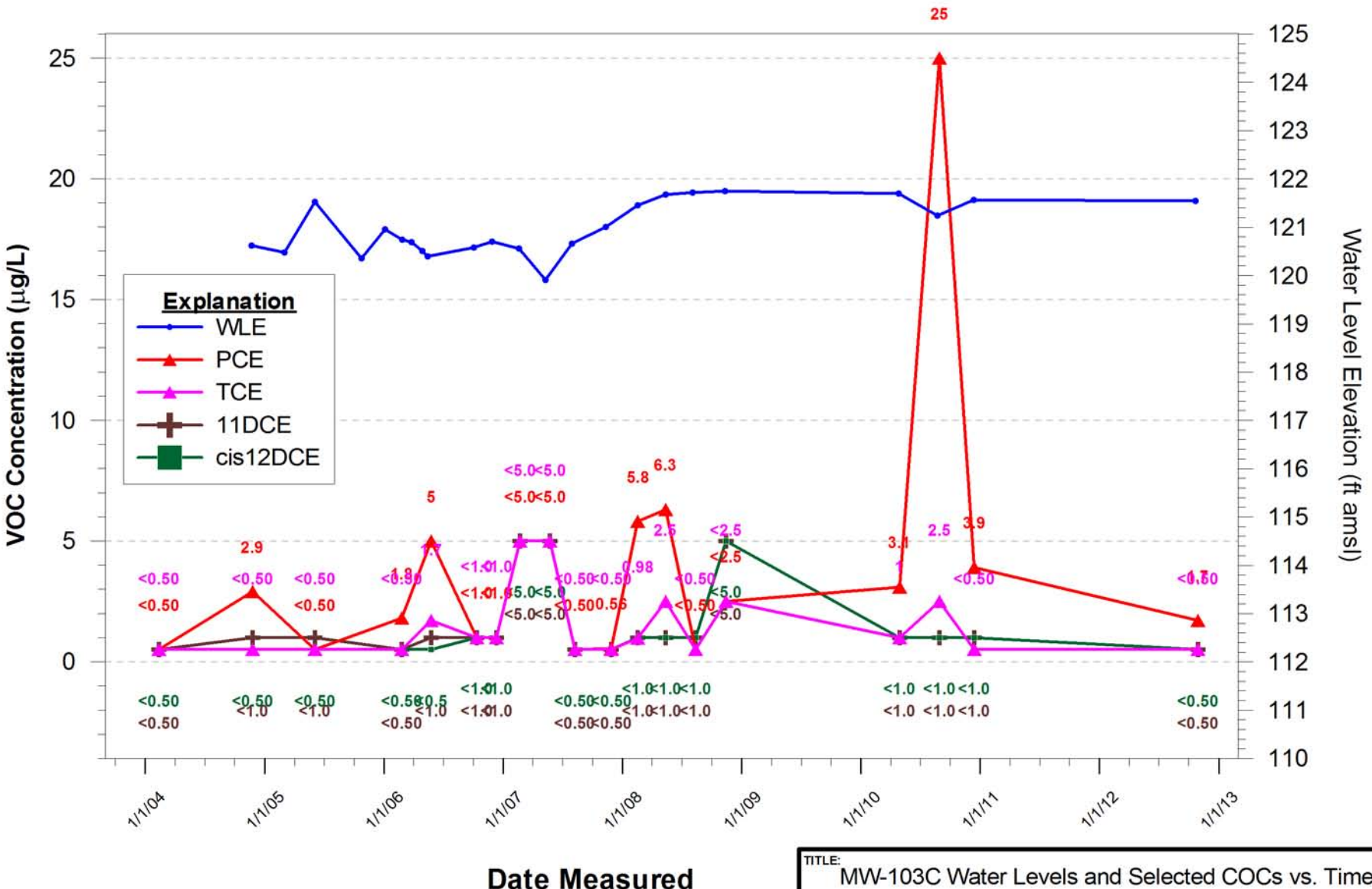
TITLE: MW-103B Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	01/08/13

FIGURE: C-35



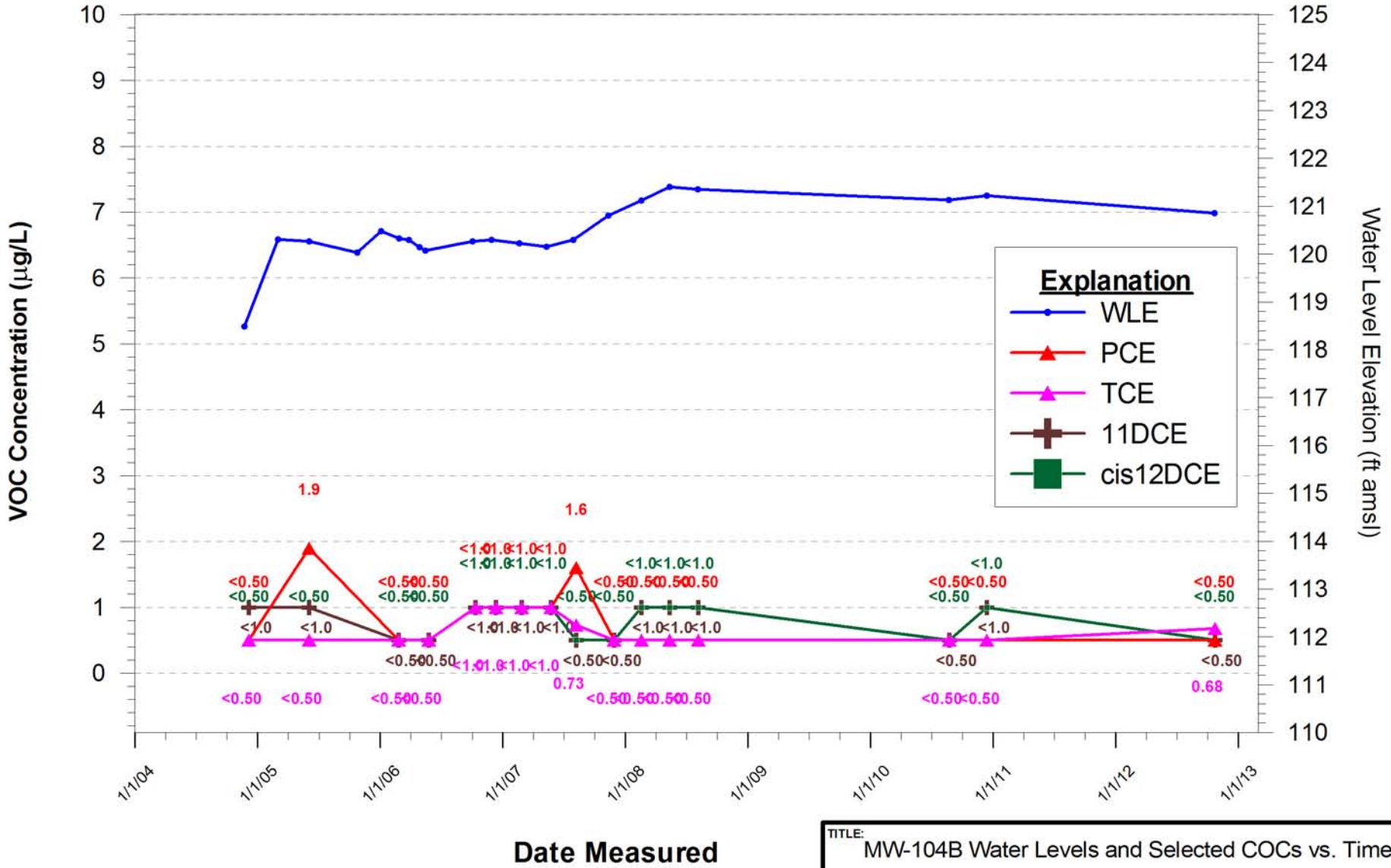
TITLE: MW-103C Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	01/08/13

FIGURE: C-36



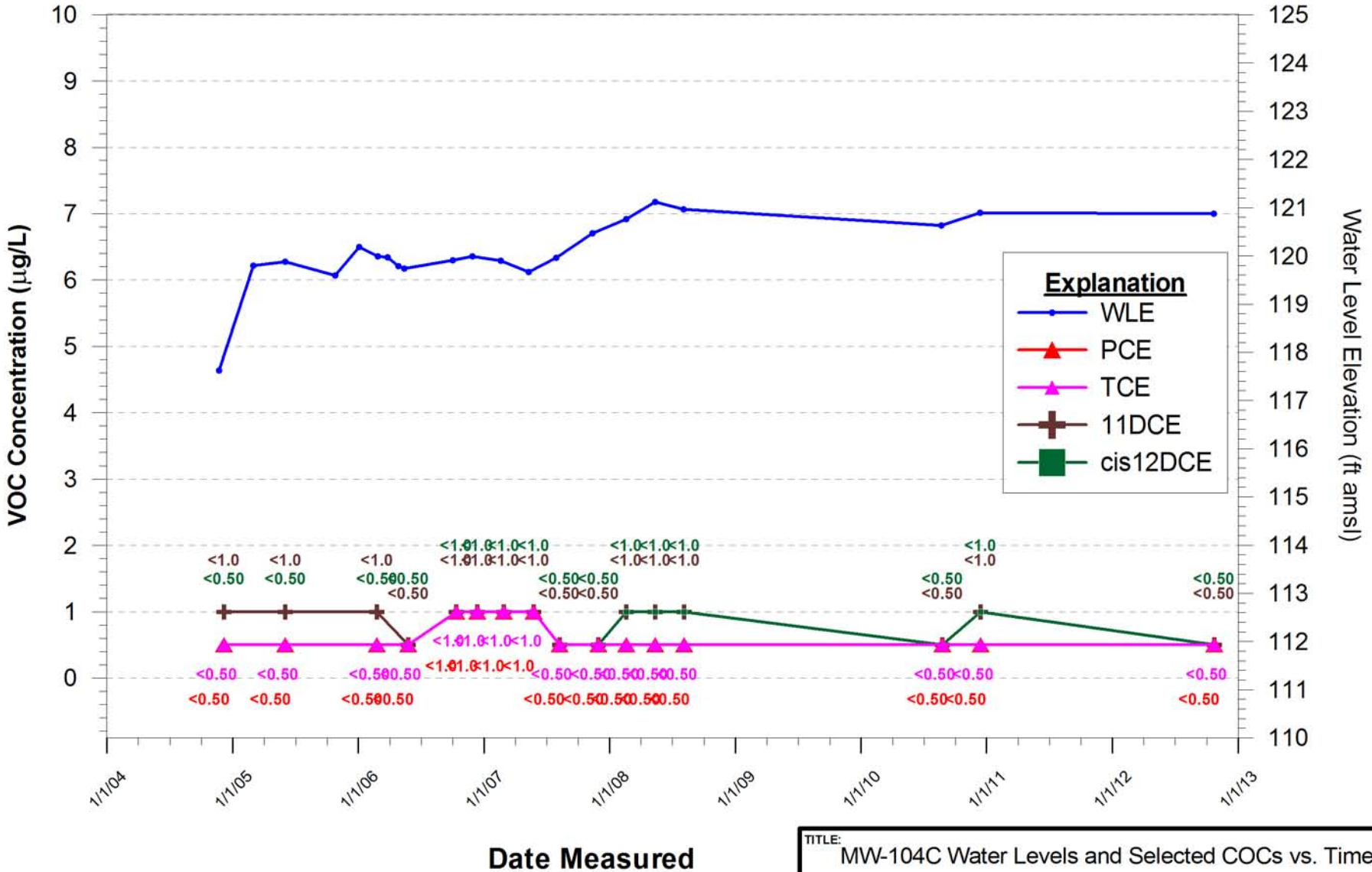
TITLE: MW-104B Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	01/08/13

FIGURE: C-37



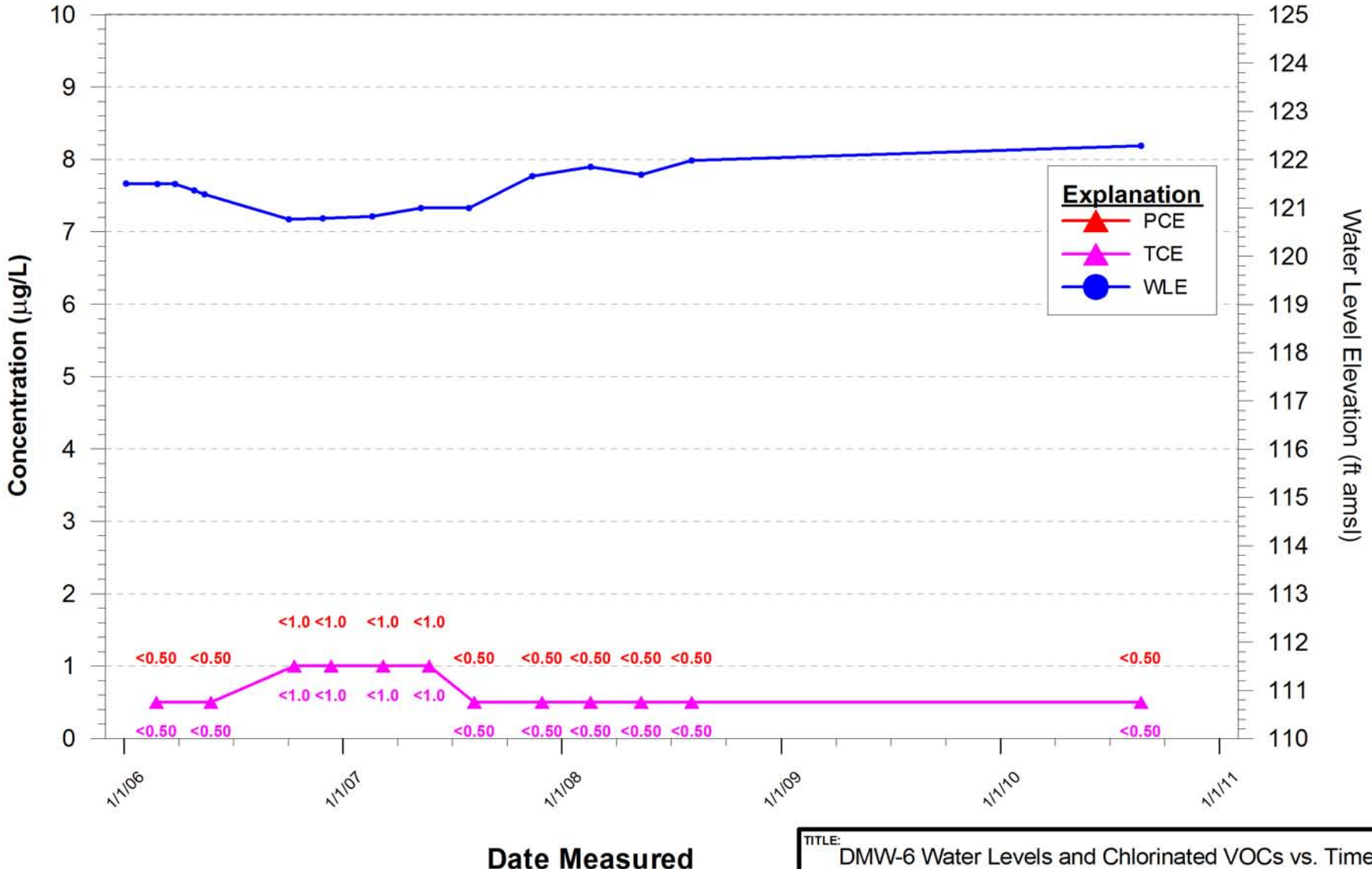
TITLE: MW-104C Water Levels and Selected COCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO
DRAFTED	CL
PROJECT	1303.046
DATE	01/08/13

FIGURE: C-38

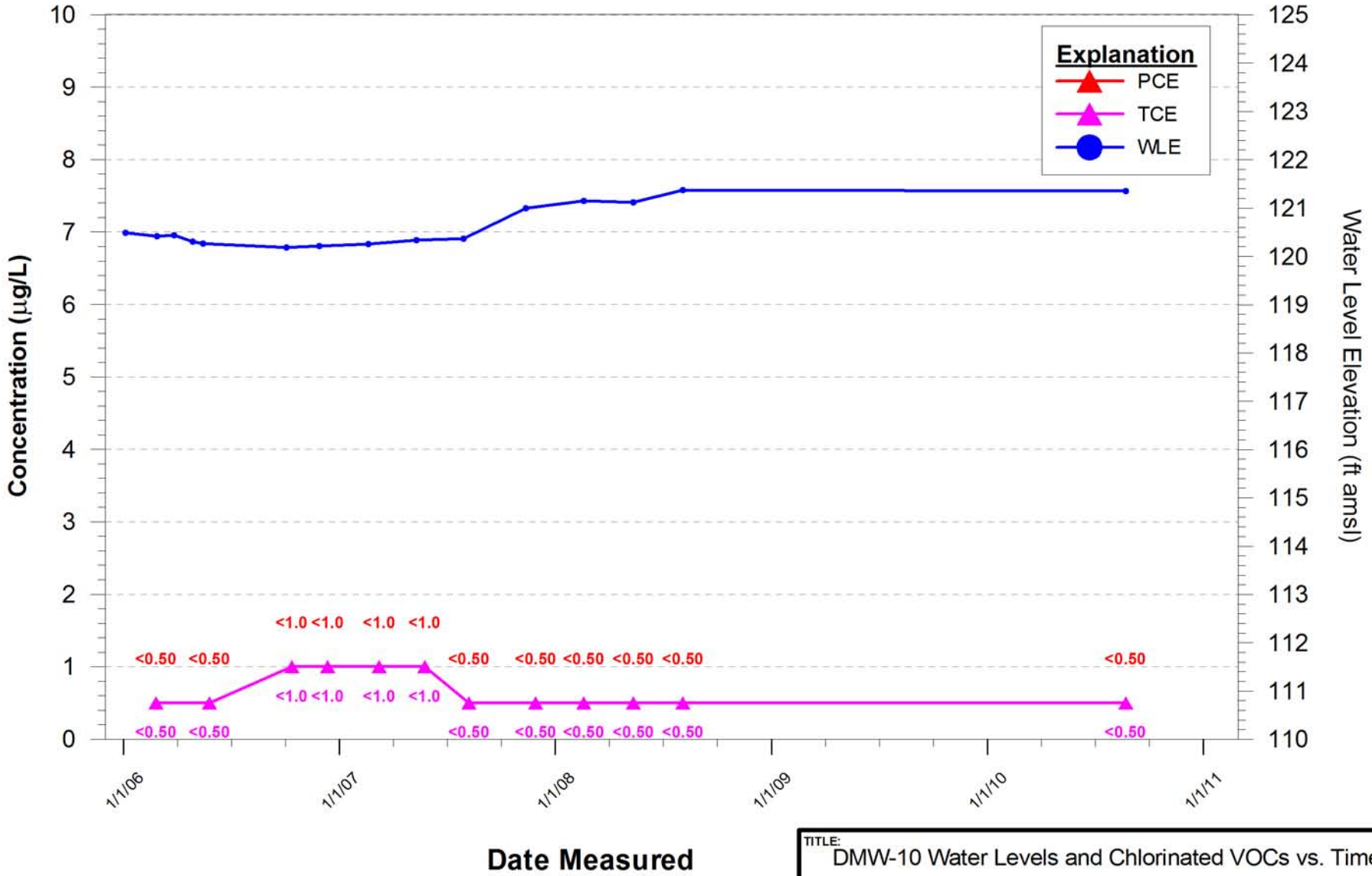


Note: VOCs have not been detected in monitoring well DMW-6A since February 2006.

TITLE:	DMW-6 Water Levels and Chlorinated VOCs vs. Time
CLIENT:	YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	JZ	FIGURE:
DRAFTED	MO	C-39
PROJECT	1303.038	
DATE	01/08/13	



Note: VOCs have not been detected in monitoring well DMW-10A since February 2006.

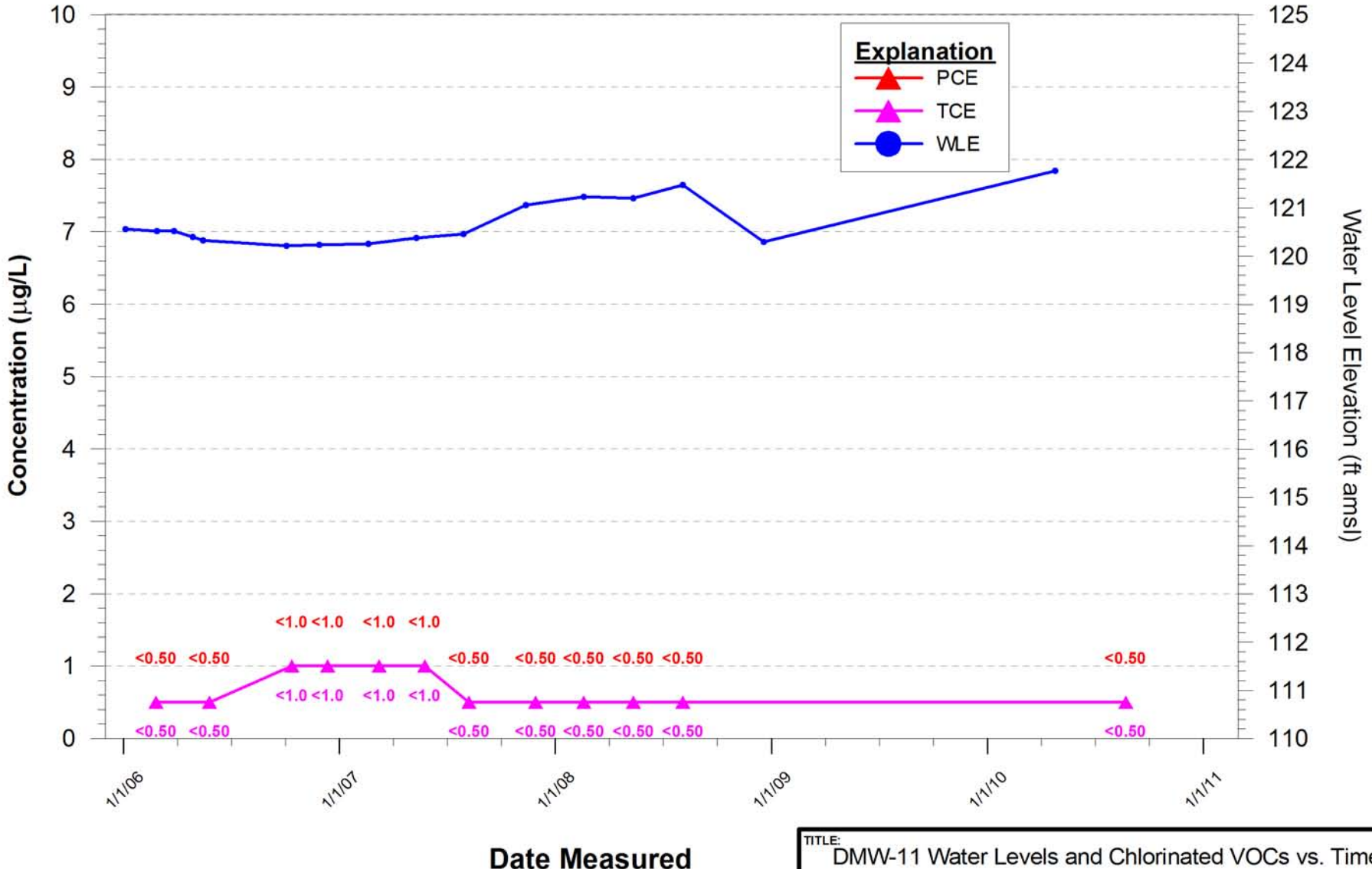
TITLE: DMW-10 Water Levels and Chlorinated VOCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.038
DATE	01/08/13

FIGURE: C-40

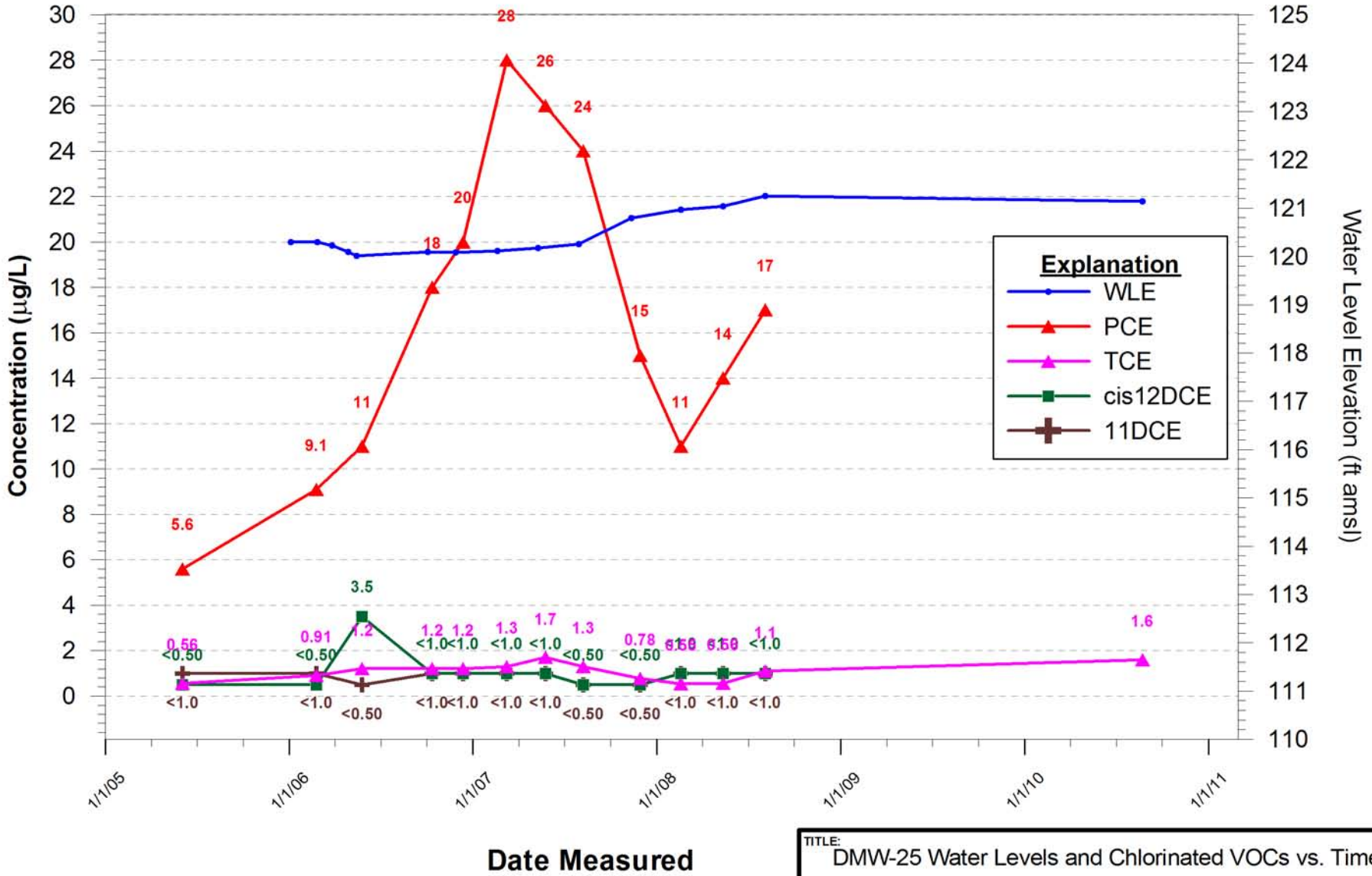


Note: VOCs have not been detected in monitoring well DMW-11A since February 2006.

TITLE:	DMW-11 Water Levels and Chlorinated VOCs vs. Time
CLIENT:	YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	MO/JZ	FIGURE:
DRAFTED	AG	C-41
PROJECT	1303.038	
DATE	01/08/13	



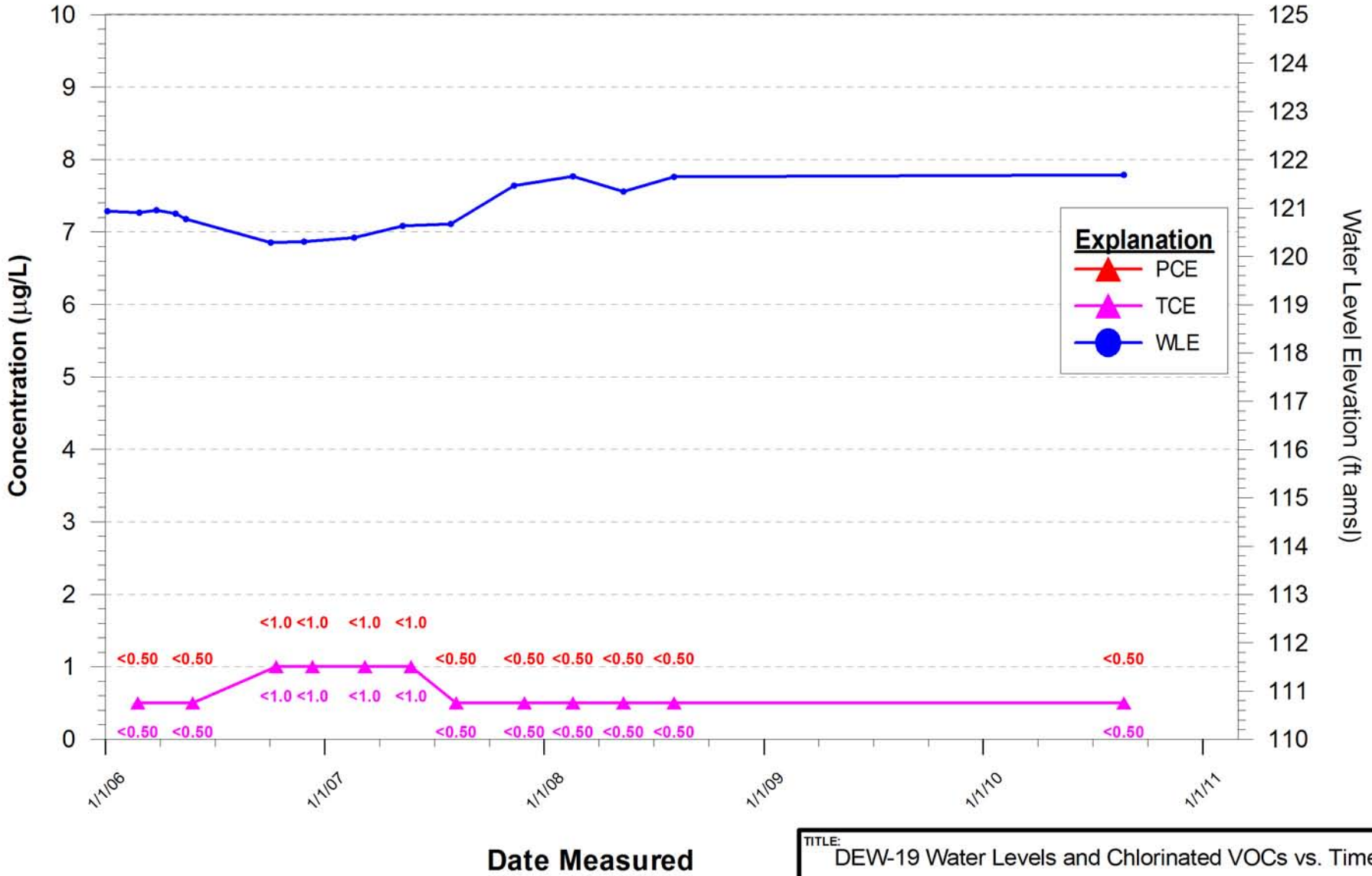
TITLE: DMW-25 Water Levels and Chlorinated VOCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.038
DATE	01/08/13

FIGURE: C-42

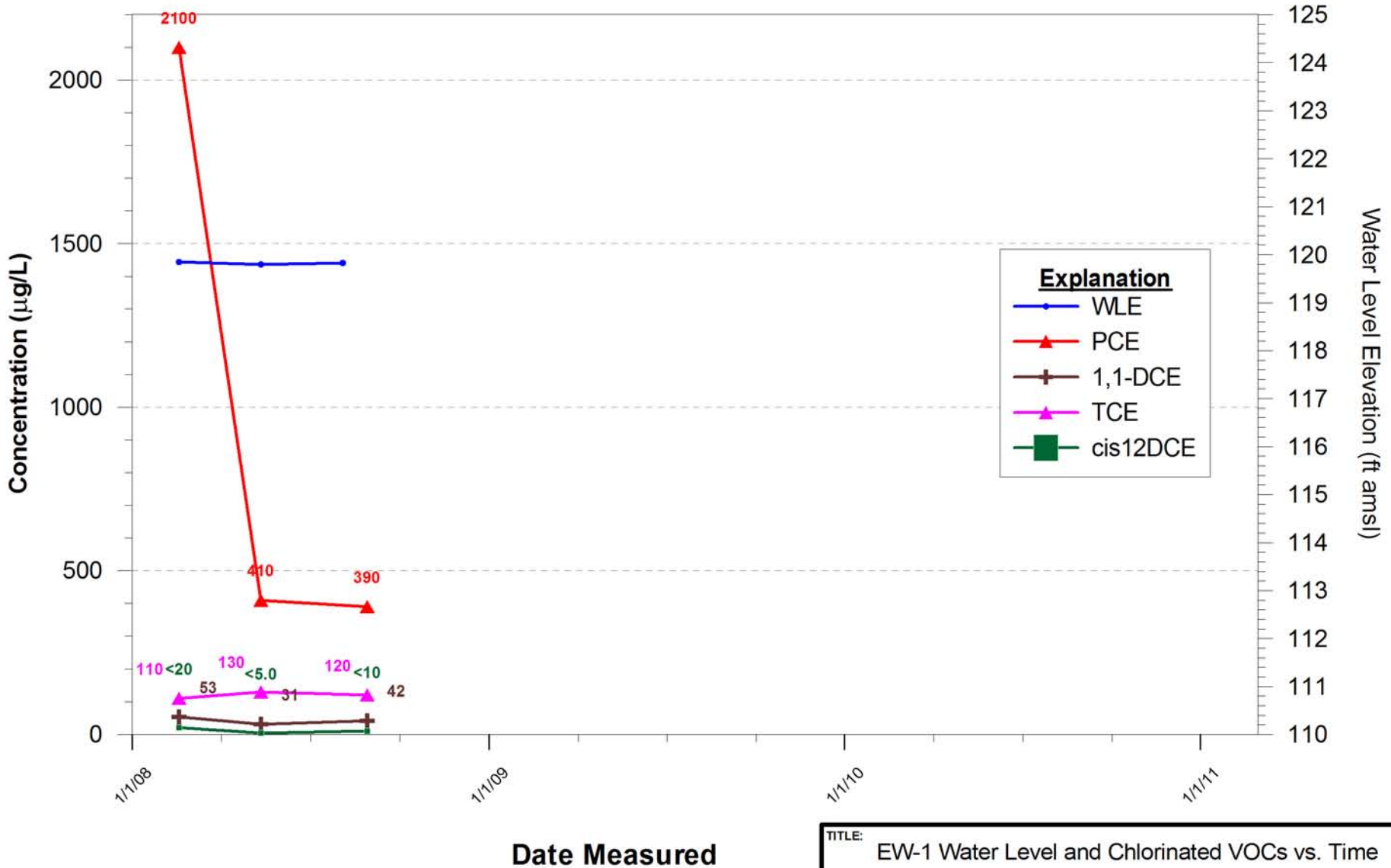


Note: VOCs have not been detected in monitoring well DEW-19A since February 2006.

TITLE:	DEW-19 Water Levels and Chlorinated VOCs vs. Time
CLIENT:	YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	JZ	FIGURE:
DRAFTED	MO	C-43
PROJECT	1303.038	
DATE	01/08/13	



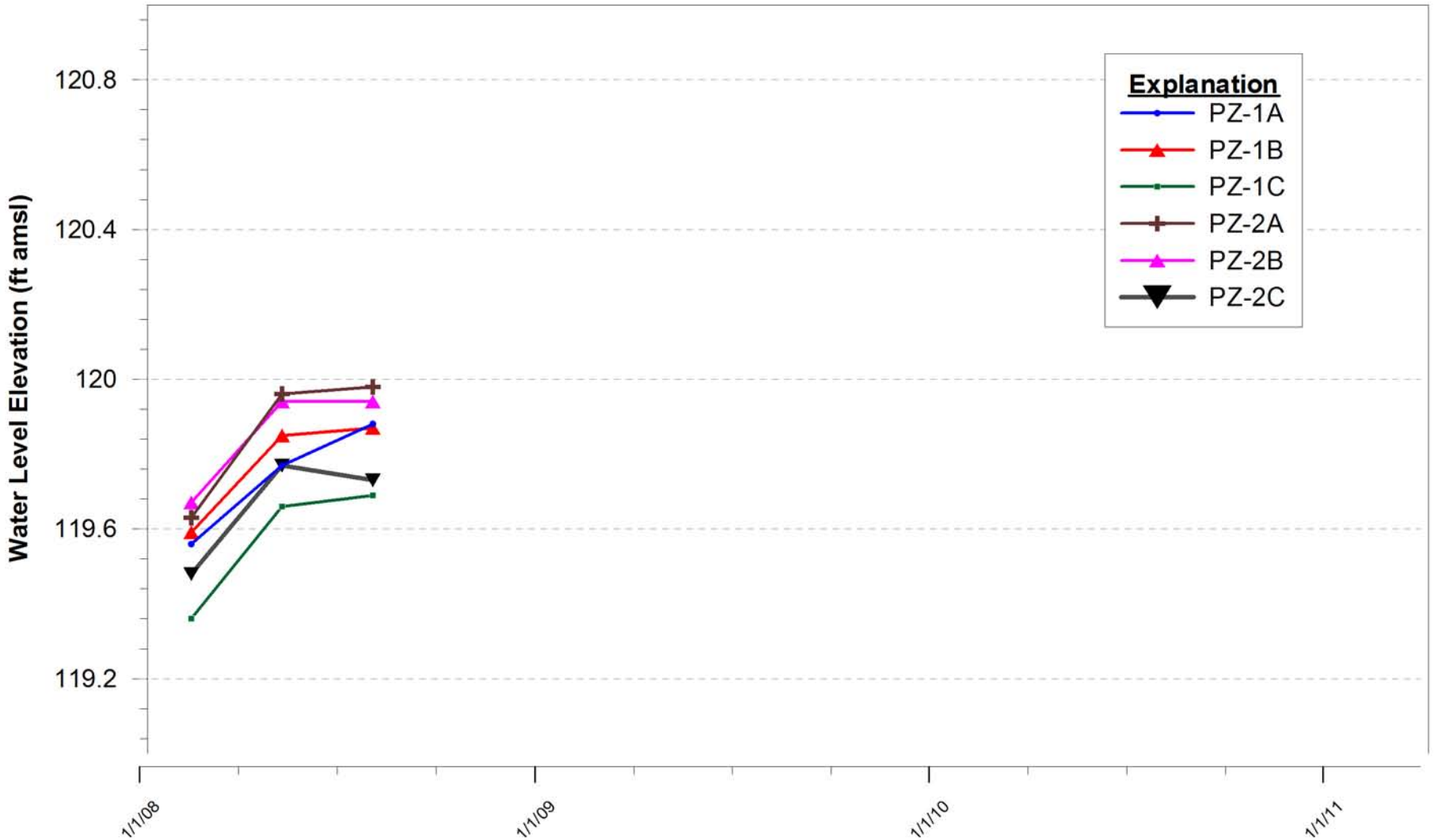
TITLE: EW-1 Water Level and Chlorinated VOCs vs. Time

CLIENT: YUMA 20TH & FACTOR WQARF SITE

TETRA TECH

CHECKED	JZ
DRAFTED	MO
PROJECT	1303.038
DATE	3/28/11

FIGURE: C-44



TITLE:	Peizometer Well Water Levels vs. Time
CLIENT:	YUMA 20TH & FACTOR WQARF SITE

TETRA TECH GEO

CHECKED	JZ	FIGURE:
DRAFTED	MO	C-45
PROJECT	1303.036	
DATE	3/28/11	

APPENDIX G

1,4-DIOXANE MEMO REFERENCE

Memorandum

Date: July 23, 2007

To: Tina LePage
WQARF Project Manager

From: Tiffany Downey, Ph.D.; Larry Gardiner, R.G.
GeoTrans, Inc.

Subject: 20th and Factor Water Quality Assurance Revolving Fund (WQARF) Site Analysis of 1,1,1-TCA Release Using 1,4-Dioxane as a Tracer Compound

The following memorandum documents the results of 1,4-Dioxane analyses performed as an addendum to the technical memorandum entitled *Analysis of Potential Sources of 1,1-DCE in Groundwater in MW-8A, MW-8B, and MW-8C*. The aforementioned memorandum proposed that the 1,1-dichloroethene (1,1-DCE) detected in MW-8A, MW-8B, and MW-8C was a result of a secondary release of 1,1,1-trichloroethane (1,1,1-TCA) located within the tetrachloroethene (PCE) plume emanating from the Houston International, Ltd. facility (the Property) located in the 20th Street and Factor Water Quality Assurance Revolving Fund (WQARF) Site (the Site) in Yuma, Arizona. In order to confirm that a secondary release of 1,1,1-TCA has occurred, additional analyses for 1,4-Dioxane was performed as described in the following memorandum.

1,1,1-TCA Environmental Fate and Transport

1,1,1-TCA was used extensively as an industrial solvent until it was banned by the Montreal Protocol in 1995. 1,1,1-TCA is insoluble in water, volatilizes easily, does not adhere to soil particles, and is more dense than water (D = 1.32 $g \cdot cm^{-3}$). As described previously, the abiotic degradation of 1,1,1-TCA to 1,1-DCE in groundwater occurs rapidly in situ with a half-life on the order of hours to months. The Arizona Aquifer Water Quality Standard (AWQS) for 1,1,1-TCA is 200 µg/L.

1,4-Dioxane Environmental Fate and Transport

1,4-Dioxane was typically added to 1,1,1-TCA as a stabilizer at approximately 2% by mass. 1,4-Dioxane does not adhere to soils, but, unlike 1,1,1-TCA, is extremely soluble in water, does not volatilize, and is approximately the same density as water (D = 1.034 $g \cdot cm^{-3}$). 1,4-Dioxane is extremely stable in groundwater over long time frames and does not undergo any known degradation reactions, rendering it recalcitrant to remediation efforts. Arizona has not yet established an AWQS for 1,4-Dioxane; however other states have established various standards ranging from 3 µg/L to 7 µg/L.[1]

[1] (http://www.envsolutions.fmc.com/ResourceCenter/PeroxygenTalk/tabid/652/Default.aspx)

Calculated and Measured Concentrations of 1,1,1-TCA and 1,4-Dioxane

Grab samples of groundwater from groundwater monitoring wells MW-7 and MW-8A, B, and C were collected on June 29, 2007, and analyzed for 1,4-Dioxane by Aerotech Environmental Laboratories using EPA Method 8270C. The results of the 1,4-Dioxane analyses are attached in Appendix A. The measured concentrations of 1,4-Dioxane were compared to the theoretical concentrations calculated using the analytical data from the same groundwater monitoring wells that were purged and sampled between May 15 – 30, 2007. It should be noted that the differences in concentrations attributable to purged vs. non-purged samples have not been taken into account. Collection of purged 1,4-Dioxane samples during the quarterly monitoring event would be necessary to confirm any preliminary observations recorded in this memorandum.

The highest concentration of 1,1-DCE was 43 µg/L in MW-8A, which would result from a 1,1,1-TCA concentration of approximately 59 µg/L (assuming that all of the 1,1-DCE originated from 1,1,1-TCA and that the degradation reaction did not proceed to vinyl chloride (VC)). Consequently, the predicted 1,4-Dioxane concentration should be 2% of the 1,1,1-TCA concentration, or 1.2 µg/L. However the measured concentration of 1,4-Dioxane was 56 ug/L, almost 50-times higher than predicted. Similar behavior was detected in MW-8B. Wells MW-7 and MW-8C had no detectable concentrations of 1,1-DCE. As expected, 1,4-Dioxane was not detected in MW-7 and MW-8C. A summary of the analytical data for MW-7 and MW-8A, B, and C is attached in Table 1.

1,1,1-TCA Sink

The analytical data reveals the presence of a much higher concentration of 1,4-Dioxane than would be predicted from the 1,1-DCE concentration. The reason for this discrepancy lies in the differences in volatility of 1,1,1-TCA versus 1,4-Dioxane. Because 1,1,1-TCA is highly volatile, a large portion of the original release volatilized into the soil gases and/or atmosphere prior to reaching groundwater. Conversely, 1,4-Dioxane is only marginally volatile and the bulk of the original concentration would reach groundwater without losses due to volatilization or degradation. Therefore, the resulting concentration ratio of 1,4-Dioxane to 1,1,1-TCA or 1,1-DCE in groundwater would be much higher than predicted from the concentration ratio in the original 1,1,1-TCA release.

Recommended Future Work

Based upon the preliminary 1,4-Dioxane analysis, GeoTrans recommends incorporating 1,4-Dioxane analysis into the quarterly sampling program in an expanded set of monitoring wells. The specific monitoring wells to be included will be decided at a later date. The expanded 1,4-Dioxane sampling plan will be used to determine the vertical and lateral extent of the 1,4-Dioxane plume and to aid in the identification of any additional Principle Responsible Parties (PRPs). In addition, the characterization of the 1,4-Dioxane plume will be integrated into any additional remedial actions deemed necessary to address the 1,4-Dioxane contamination.

Table 1 – Measured and Theoretical Analytical Summary
Appendix A – 1,4-Dioxane Analytical Results

Table 1
Measured and Theoretical 1,4-Dioxane Analytical Summary
20th and Factor WQARF Site
Yuma, Arizona

	05/15/07-05/30/07				Theoretical		6/29/2007
Well	**PCE**	**TCE**	**1,1,1-TCA**	**1,1-DCE**	**1,1,1-TCA**	**1,4-Dioxane**	**1,4-Dioxane**
MW-7	**200**	**33**	<1.0	<1.0	0	0	<1.1
MW-8A	**480**	**160**	<10	**43**	59	1.2	11
MW-8B	**950**	**350**	<10	**19**	26	0.5	56
MW-8C	2.2	<1.0	<1.0	<1.0	0	0	<1.1
AWQS	5	5	200	7	200	NE	NE

All measurements are in µg/L
Bold are above AWQS

GeoTrans, Inc.

Aerotech Environmental Laboratories

a division of Aerotech Laboratories, Inc.

Monday, July 16, 2007

Jasenka Zbozinek
Geo Trans Inc.
4801 East Washington St., Suite 260
Phoenix, AZ 85034

TEL: (602) 682-3320
FAX (602) 682-3318

RE: 20th & Factor WQARF/1303.020.03.03

Order No.: 07060960

Dear Jasenka Zbozinek:

Aerotech Environmental Laboratories received 4 sample(s) on 6/30/2007 for the analyses presented in the following report.

This report includes the following information:
- Case Narrative.
- Analytical Report: includes test results, report limit (Limit), any applicable data qualifier (Qual), units, dilution factor (DF), and date analyzed.
- QC Summary Report.

This communication is intended only for the individual or entity to whom it is directed. It may contain information that is privileged, confidential, or otherwise exempt from disclosure under applicable law. Dissemination, distribution, or copying of this communication by anyone other than the intended recipient, or a duly designated employee or agent of such recipient, is prohibited. If you have received this communication in error, please notify us immediately and destroy this message and all attachments thereto. If you have any questions regarding these test results, please do not hesitate to call.

Sincerely,

Laurie McBride
Project Manager

RECEIVED
JUL 17 2007
GEOTRANS

Aerotech Environmental Laboratories

Date: *11-Jul-07*

CLIENT: Geo Trans Inc.
Project: 20th & Factor WQARF/1303.020.03.03
Lab Order: 07060960

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
07060960-01A	H1-MW8B-062907		6/29/2007 2:25:00 PM	6/30/2007
07060960-02A	H1-MW8A-062907		6/29/2007 2:44:00 PM	6/30/2007
07060960-03A	H1-MW8C-062907		6/29/2007 2:59:00 PM	6/30/2007
07060960-04A	H1-MW7-062907		6/29/2007 3:40:00 PM	6/30/2007

Aerotech Environmental Laboratories

Date: *11-Jul-07*

CLIENT: Geo Trans Inc.
Project: 20th & Factor WQARF/1303.020.03.03
Lab Order: 07060960

CASE NARRATIVE

Analyses included in this report were performed by Aerotech Environmental Laboratories (AEL), 4645 E. Cotton Center Boulevard, Building 3, Suite 189, Phoenix, AZ.

AEL is licensed through the State of Arizona (License No. AZ0610), and holds NELAC accreditation (OR100001) through the State of Oregon for the analytical techniques noted on the scope of accreditation.

AEL is also accredited by the American Industrial Hygiene Association (AIHA) in the industrial hygiene program for the analytical techniques noted on the scope of accreditation.

Samples were analyzed using methods outlined in references such as:
-Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998.
-40 CFR, Part 136, July 2006. Appendix A to Part 136 - Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater.
-Methods for the Chemical Analysis of Water and Wastes, EPA/600/4-79-020, Revised March 1983.
-Methods for the Determination of Organic Compounds in Drinking Water: Supplement III, August 1995, EPA/600/R-95/131.
-Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA, 3rd Edition 1986, and Updates.
-Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, EPA, Second Edition, 1999.
-NIOSH Manual of Analytical Methods, Fourth Edition, 1994. NIOSH Method 7300 analyses are performed using a modified digestion procedure to eliminate the use of perchloric acid.

Analytical Comments:
All method blanks and laboratory control spikes met method and/or laboratory quality control objectives for the analyses included in this report.

Data Qualifiers:
Listed below are the data qualifiers used in your analytical report to explain any analytical or quality control issues. You will find them noted in your report under the column header "QUAL". Any quality control deficiencies that cannot be adequately described by these qualifiers will be addressed in the analytical comments section of this case narrative.

S11 Surrogate recovery was high. Data reported per ADEQ policy 0154.000.

Aerotech Environmental Laboratories

Analytical Report

Date: *11-Jul-07*

CLIENT:	Geo Trans Inc.	**Client Sample ID:**	H1-MW8B-062907
Lab Order:	07060960	**Tag Number:**	
Project:	20th & Factor WQARF/1303.020.03.03	**Collection Date:**	6/29/2007 2:25:00 PM
Lab ID:	07060960-01A	**Matrix:**	WASTE WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,4-DIOXANE		**SW8270C**				Analyst: CL
1,4-Dioxane	56	1.0		µg/L	1	7/9/2007 5:48:00 PM
Surr: 1,4-Dioxane-D8	49.0	38.6-88.3		%REC	1	7/9/2007 2:45:00 PM
Surr: Nitrobenzene-d5	73.0	48.3-96.5		%REC	1	7/9/2007 2:45:00 PM

Footnotes: All analysis performed at AEL Phoenix laboratory unless indicated by footnotes.

(1) The holding time for pH analysis is immediate. For the most accurate result, the pH should be taken in the field within 15 minutes of sampling.

Aerotech Environmental Laboratories

Analytical Report

Date: *11-Jul-07*

CLIENT:	Geo Trans Inc.	**Client Sample ID:**	H1-MW8A-062907
Lab Order:	07060960	**Tag Number:**	
Project:	20th & Factor WQARF/1303.020.03.03	**Collection Date:**	6/29/2007 2:44:00 PM
Lab ID:	07060960-02A	**Matrix:**	WASTE WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,4-DIOXANE		**SW8270C**				Analyst: **CL**
1,4-Dioxane	11	1.1		µg/L	1	7/9/2007 4:01:00 PM
Surr: 1,4-Dioxane-D8	60.4	38.6-88.3		%REC	1	7/9/2007 4:01:00 PM
Surr: Nitrobenzene-d5	87.1	48.3-96.5		%REC	1	7/9/2007 4:01:00 PM

Footnotes: All analysis performed at AEL Phoenix laboratory unless indicated by footnotes.

(1) The holding time for pH analysis is immediate. For the most accurate result, the pH should be taken in the field within 15 minutes of sampling.

Aerotech Environmental Laboratories

Analytical Report

Date: *11-Jul-07*

CLIENT:	Geo Trans Inc.	**Client Sample ID:**	H1-MW8C-062907
Lab Order:	07060960	**Tag Number:**	
Project:	20th & Factor WQARF/1303.020.03.03	**Collection Date:**	6/29/2007 2:59:00 PM
Lab ID:	07060960-03A	**Matrix:**	WASTE WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,4-DIOXANE		**SW8270C**				Analyst: **CL**
1,4-Dioxane	< 1.1	1.1		µg/L	1	7/9/2007 4:27:00 PM
Surr: 1,4-Dioxane-D8	51.4	38.6-88.3		%REC	1	7/9/2007 4:27:00 PM
Surr: Nitrobenzene-d5	89.5	48.3-96.5		%REC	1	7/9/2007 4:27:00 PM

Footnotes: All analysis performed at AEL Phoenix laboratory unless indicated by footnotes.

(1) The holding time for pH analysis is immediate. For the most accurate result, the pH should be taken in the field within 15 minutes of sampling.

Aerotech Environmental Laboratories

Analytical Report

Date: *11-Jul-07*

CLIENT:	Geo Trans Inc.	**Client Sample ID:**	H1-MW7-062907
Lab Order:	07060960	**Tag Number:**	
Project:	20th & Factor WQARF/1303.020.03.03	**Collection Date:**	6/29/2007 3:40:00 PM
Lab ID:	07060960-04A	**Matrix:**	WASTE WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,4-DIOXANE		**SW8270C**				Analyst: CL
1,4-Dioxane	< 1.1	1.1		µg/L	1	7/9/2007 4:52:00 PM
Surr: 1,4-Dioxane-D8	62.0	38.6-88.3		%REC	1	7/9/2007 4:52:00 PM
Surr: Nitrobenzene-d5	171	48.3-96.5	S11	%REC	1	7/9/2007 4:52:00 PM

Footnotes: All analysis performed at AEL Phoenix laboratory unless indicated by footnotes.

(1) The holding time for pH analysis is immediate. For the most accurate result, the pH should be taken in the field within 15 minutes of sampling.

Aerotech Environmental Laboratories

a division of Aerotech Laboratories, Inc.

Date: *11-Jul-07*

CLIENT: Geo Trans Inc.
Work Order: 07060960
Project: 20th & Factor WQARF/1303.020.03.03

ANALYTICAL QC SUMMARY REPORT

TestCode: DIOXANE

Sample ID: MB-29813 | SampType: MBLK | TestCode: DIOXANE | Units: µg/L | Prep Date: 7/5/2007 | RunNo: 88819
Client ID: | Batch ID: 29813 | TestNo: SW8270C | Analysis Date: 7/9/2007 | SeqNo: 1050333

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,4-Dioxane	<1.0	1.0									
Surr: 1,4-Dioxane-D8	10.54	1.0	20	0	52.7	38.5	87.4				
Surr: Nitrobenzene-d5	17.40	1.0	20	0	87.0	45.1	98.6				

Sample ID: LCS-29813 | SampType: LCS | TestCode: DIOXANE | Units: µg/L | Prep Date: 7/5/2007 | RunNo: 88819
Client ID: | Batch ID: 29813 | TestNo: SW8270C | Analysis Date: 7/9/2007 | SeqNo: 1050334

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,4-Dioxane	19.84	1.0	20	0	99.2	80	120				
Surr: 1,4-Dioxane-D8	12.75	1.0	20	0	63.8	32.6	87.7				
Surr: Nitrobenzene-d5	17.24	1.0	20	0	86.2	38.5	125				

Sample ID: LCSD-29813 | SampType: LCSD | TestCode: DIOXANE | Units: µg/L | Prep Date: 7/5/2007 | RunNo: 88819
Client ID: | Batch ID: 29813 | TestNo: SW8270C | Analysis Date: 7/9/2007 | SeqNo: 1050335

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,4-Dioxane	21.26	1.0	20	0	106	80	120	19.84	6.91	25	
Surr: 1,4-Dioxane-D8	11.14	1.0	20	0	55.7	32.6	87.7	12.75	0	0	
Surr: Nitrobenzene-d5	16.65	1.0	20	0	83.3	38.5	125	17.24	0	0	

Sample ID: 07060960-01A MS | SampType: MS | TestCode: DIOXANE | Units: µg/L | Prep Date: 7/5/2007 | RunNo: 88819
Client ID: H1-MW8B-062907 | Batch ID: 29813 | TestNo: SW8270C | Analysis Date: 7/9/2007 | SeqNo: 1050669

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,4-Dioxane	84.96	1.1	22.47	55.74	130	70	130				

Qualifiers: * Value exceeds Maximum Contaminant Level ND Not Detected at the Reporting Limit

Aerotech Environmental Laboratories

a division of Aerotech Laboratories, Inc.

Date: *11-Jul-07*

CLIENT: Geo Trans Inc.
Work Order: 07060960
Project: 20th & Factor WQARF/1303.020.03.03

ANALYTICAL QC SUMMARY REPORT

TestCode: DIOXANE

Sample ID: 07060960-01A MS | SampType: MS | TestCode: DIOXANE | Units: µg/L | Prep Date: 7/5/2007 | RunNo: 88819
Client ID: H1-MW8B-062907 | Batch ID: 29813 | TestNo: SW8270C | Analysis Date: 7/9/2007 | SeqNo: 1050669

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 1,4-Dioxane-D8	12.63	1.1	22.47	0	56.2	36	81.8				
Surr: Nitrobenzene-d5	18.66	1.1	22.47	0	83.0	59.9	120				

Sample ID: 07060960-01A MSD | SampType: MSD | TestCode: DIOXANE | Units: µg/L | Prep Date: 7/5/2007 | RunNo: 88819
Client ID: H1-MW8B-062907 | Batch ID: 29813 | TestNo: SW8270C | Analysis Date: 7/9/2007 | SeqNo: 1050670

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,4-Dioxane	81.49	1.1	22.22	55.74	116	70	130	84.96	4.16	25	
Surr: 1,4-Dioxane-D8	12.52	1.1	22.22	0	56.4	36	81.8	12.63	0	0	
Surr: Nitrobenzene-d5	17.71	1.1	22.22	0	79.7	59.9	120	18.66	0	0	

Qualifiers: * Value exceeds Maximum Contaminant Level ND Not Detected at the Reporting Limit

Aerotech Environmental Laboratories Sample Receipt Checklist

Project Checked By: _____

Laboratory Number: 07-06-0960	Completed By/On: Jovan Espinoza 6/30
Client Name: Geo Trans Inc.	Date/Time Rec'd: 6/30/07 0919 By: JE
Matrix: Air Soil Aqueous Oil Sludge Solid (WW) DW	Carrier Name: Client

Temperature	Cooler #1 6.6 °C	Cooler #2 0.0 °C	Cooler #3 °C	Cooler #4 °C
Temp. Read With	(Thermometer) IR	(Thermometer) IR	Thermometer IR	Thermometer IR

Client or PM made aware of temp. out of range? Yes No Circle one: Blue Ice (Wet Ice) Not Present

	Yes	No*	Not Present
Shipping container/cooler in good condition?	✓		
Custody seals intact on shipping container/cooler?			✓
Custody seals intact on sample containers?			✓
Chain of Custody present and relinquished/received properly?	✓		
Chain of Custody agrees with sample labels?	✓		
Samples in proper containers/bottles?	✓		
Sample containers intact?	✓		
All samples received within holding time?	✓		**See Comments about Chlorine and pH
Is there sufficient sample volume to perform the tests?	✓		
40mL vials for volatiles & SOCs received with zero headspace?			✓

Soil Containers:
Brass Sleeve____
Glass Jar____
Methanol____
Plastic Bag____
Encore Samplers____
Sterile Plastic____

Total number of bottles received: 16	IH sample media:
If applicable, how many sample bottles were shipped from AEL-Tucson?	N/A ✓

Number of containers received by preservative and by sample number: (If more than 10 samples are rec'd, please continue on separate sheet(s)).

Preservative	Simple***	1	2	3	4	5	6	7	8	9	10
A-General		4	4	4	4						
B-HNO3											
C-H2SO4											
D-HCl											
E-Na2S2O3											
F-NaOH											
G-Sulfide											
H-Na Sulfite											
I-MCAA											
J-Methanol											
K-HAA											
L-Other											

*Any No response must be detailed in the comments section. Contact the PM immediately to determine how to proceed. Refer to SOP 11-001 and continue on back if additional space is needed.

**The holding time for pH and Total Residual Chlorine analysis is immediate. For the most accurate results, the pH and Total Residual Chlorine should be taken in the field within 15 minutes of sampling.

***The Simple box is only to be used when there is one bottle per preservative in equal sample sets.

Water-pH acceptable upon receipt? Yes No N/A ✓

Preservative & pH		pH of samples upon receipt	If pH requires adjustment, list sample number and reagent I.D. number.
Metals	<2		
H_2SO_4	<2		
1664	<2		
Cyanide	>12		
Sulfide	>9		

Comments:

Aerotech Environmental Laboratories

a division of Aerotech Laboratories, Inc.

[ ] Main Lab - 4645 E. Cotton Center Blvd., Building 3, Suite 189, Phoenix, AZ 85040 602.437.3340 - FAX 623.445.6192
[ ] North Phoenix - 1501 W. Knudsen, Phoenix, AZ 85027 623.780.4800 - FAX 623.445.6216
[ ] Tucson - 4455 S. Park Ave, Suite 110, Tucson, AZ 85714 520.807.3801 - FAX 520.807.3803
www.aeroenvirolabs.com or call toll-free 866.772.5227

Lab Number: 07-06-0960

Customer Number:	**Page** 1 of 1
Customer: GeoTrans Inc	**Sampler:** M. Brannan
Address: 4801 E. Washington #260	**Project Name:** 20th Tractor Wash
City, State, Zip: Phoenix AZ 85034	**Project Number:** 1303.020.03.03
Contact: Tomasito Ebeinek	**P.O. Number:**
Phone: 602.683.3320 **Fax:** 3318	**Fax Results:** Y (N)
E-Mail Address: tebeinek@geotrans.com	**E-Mail Results:** (Y) N

Sample Type Codes

DW - Drinking Water A - Air
WW - Waste Water S - Soil
HW - Hazardous Waste
Other_____

Sample Receipt

Temperature 0.6 + 0.0 °C WET THERM
Custody Seals: Yes____ No X
Custody Seals Intact: Yes____ No X
Total # of Containers: 16

Turn Around Request

____ 24 Hours ____ 48 Hours
____ 72 Hours
____ 5 Working Days
____ Standard 10 Working Days
Subject to scheduling & availability (surcharges apply).

Analyses Requested

Sample Information

Lab #	Sample Identification	Date	Time	Type	1,4 Dioxane	# of sample Containers
1	H1 MW8B-062907	6.29.07	1425	WW	X	4
2	H1 MW8A 062907	6.29.07	1444	WW	X	4
3	H1 MW8C-062907	6.29.07	1459	WW	X	4
4	H1 MW7-062907	6.29.07	1540	WW	X	4

Instructions / Special Requirements:

Date:	Time:	Samples Relinquished By:	Received By:
6.30.07	0911	[signature]	[signature]

APPENDIX H

L & W USE QUESTIONNAIRES AND GROUNDWATER WELL RECORDS
(on CD)

LAND AND WATER USE STUDY QUESTIONNAIRE
FOR COUNTIES/MUNICIPALITIES WITHIN THE
20TH STREET AND FACTOR AVENUE WQARF REGISTRY SITE

Please answer all questions. Mark "NA" for questions that are not applicable. Mark "UNK" if the answer is unknown to you at the time of completion. Please attach any additional pages as needed.

Municipality/County name: CITY OF YUMA (UTILITIES DEPT.)

Date Questionnaire was completed: 2/5/13

Name of person completing Questionnaire: JAY SIMONTON

Contact Name: JAY SIMONTON

Title: Director of UTILITIES

Division: UTILITIES DEPT.

Address: 155 W. 14TH ST.
YUMA, AZ 85364

Phone Number: 928-373-4500

1. What is the current use of your municipality/county properties within the area of the 20th Street and Factor Avenue WQARF site? (The 20th Street and Factor Avenue WQARF site boundaries are: 17th Street to the north, 21st Street to the south, Kennedy Lane to the east and 4th Avenue to the west).

STREET Right-of-WAY'S

2. Please list the municipality's/county's properties of concern boundaries (neighborhood planning committees, zoning, canals, wells, etc.) within the WQARF site boundary.

N/A

3. What are the foreseeable plans for the municipality's/county's property within the WQARF site boundary as far into the future as they are known and up to 100 years, if possible?

N/A

4. Does the municipality/county have a published general plan for the property within the WQARF site boundary?

N/A

5. Are parcel, zoning, or land maps available through the municipality/county? Where are they located?

N/A

6. Please list any specific concerns the municipality/county is aware of within the WQARF site boundaries? Please list future concerns also.(e.g. - freeway expansion, water use, water availability, etc.)

N/A

7. Please list any future zoning plans or area plans for the municipality/county within the WQARF site boundary.

N/A

8. Please list any "special projects" projected or anticipated within the WQARF site boundary.

N/A

9. If any property is leased (the municipality/county is the lessor), how long is the lease term?

N/A

10. If the property is leased, are there plans to renew the lease and is so, for how long?

N/A

11. Please list any environmental spill of material or waste products that has occurred within the municipality/county within the WQARF site boundary in the past 5 years?

N/A - unk

12 Is the municipality/county currently sampling groundwater wells in the WQARF site? If so, how often is the sampling conducted? Are analytical results being submitted to ADEQ for the groundwater database?

No

13. Does your municipality/county have an environmental manager or do you outsource environmental management to an environmental consulting firm? If so, please provide the following information:

Name: Manny Hernandez
Title: Environmental Program Coordinator
Address: One City Plaza, P.O. Box 13012, Yuma, AZ 85364
Phone Number: 928-373-5125

14. Please indicate anticipated (up to 100 years) groundwater development by the municipality/county within the WQARF site boundary.

Nothing planned or anticipated at this time

15. Are there any groundwater wells owned by the municipality/county that have been affected by the WQARF site? If so, please list the well identification numbers. What is the current status of these wells (e.g. – shut down, still pumping)?

NO

16. What is the future use (up to 100 years) for any wells that have been impacted by the WQARF site?

N/A

Thank you for your time. The Project Manager, Scott Goodwin, or a representative from ADEQ's consultant, Tetra Tech Geo, may follow-up on answers provided.

Land and Water Use Study Questionnaire for the 20th Street & Factor Avenue WQARF Registry Site:

DEC 2012
RECEIVED
Projects Unit

Municipality/County Name: Yuma County
Date questionnaire was completed: December 11, 2012
Name of per completing Questionnaire: Chad Bahr, Planner II; Rick Stacks, R.S.
Contact name: Rick Stacks, R.S.
Title: Environmental Programs Manager
Division: Environmental Programs
Address: 2351 W. 26th Street
Yuma, AZ 85364
Phone number: 928-817-5084

1. **What is the current use or your county properties within the area of the 20th Street and factor Avenue WQARF site? (The 20th Street and factor Avenue WQARF site boundaries are: 17th Street to the north, 21st Street to the south, Kennedy Lane to the east and 4th Avenue to the west).**

   There is only one county-owned property within this specified area. Its APN is 665-46-003 and it is owned by the Yuma County Flood Control District. There are no future plans for this property other than to continue to us it as a retention basin and discharge to the East Mesa Outfall to the Colorado River.

2. **Please list the county's properties of concern boundaries (neighborhood planning committees, zoning, canals, wells, etc) within the WQARF site boundary.**

   This is not a prevalent area for canals in Yuma County, but some may exist. We would urge you to contract the Yuma Mesa Irrigation and Drainage District for more information regarding that subject. Within the County's 2020 Comprehensive Plan, the unincorporated areas within this study area are located within the Yuma Mesa Planning Area. The area within the City of Yuma surely has planning areas designated, as well.

3. **What are the foreseeable plans for the county's property within the WQARF site boundary as far in to the future as they are known and up to 100 years, if possible?**

   This is a difficult question to answer given the lengthy future time scale given. We see this question as, is the county likely to purchase any property in the study for the next 100 years? We think it is unlikely that county would purchase ground within the study area, but nearly anything is possible over a 100-year time period.

   See Question Number 1 above. The one County–owned parcel is intended for future drainage purposes of the area under consideration/study.

4. **Does the county have a published comprehensive plan for the property within the WQARF site boundary?**

   Yes, Yuma County has the 2020 Yuma County Comprehensive Plan in effect for the area(s) that are **not** incorporated by the City of Yuma. Said Plan was adopted and became effective earlier this year (2012). It is effective for at least the next ten (10) years.

5. **Are parcel, zoning, or land maps available through the county? Where are they located?**

   Yes, maps are available. I have created one map that shows the area in general. The light orange color is territory located within the City of Yuma. The area with a gold color located in the SE corner of the map is the 65 dB high noise zone resulting from the Marine Corps Air Station – Yuma (MCAS) air noise studies.

   Also, the bright orange color is land that is designated by the County's 2020 Comprehensive Plan for local commercial future land uses. The medium-toned gray color is land that is designated by said Plan for industrial land uses.

   I have included a zoning map for the county portion, as well. (Please see key on that map for the two types of county zoning currently present within the area, HI and LI.)

   Other maps of the area can be obtained upon request to the County's GIS Department at 928-817-5000.

6. **Please list any specific concerns the county is aware of within the WQARF site boundaries? Please list future concerns also (e.g.- freeway expansion, water use, water availability, etc.)**

   It appears most of the potable water comes from the City of Yuma for the most of the area identified. Any freeway expansion seems unlikely given that most of the area is identified into as an urban-type profile and not a rural one. Since some of the areas are used and identified as either industrial use or to be used industrially in the future, there is always the concern of a chemical or hazardous substance spill incident.

7. **Please list any future zoning plans or area plans for the county within the WQARF site boundary.**

   Future zoning to a degree is dictated by the County's 2020 Comprehensive Plan. Said Plan is updated every ten (10) years as required by the Arizona Revised Statutes, therefore, land use patterns including zoning changes could take place in the future.

8. **Please list any "special projects" projected or anticipated within the WQARF site boundary.**

   None known of.

9. **In any property is leased (where the county is the lessor), how long in the lease term?**

   No properties leased by the County to others.

10. **If the property is leased, are there any plans to renew the lease and if so, for how long?**

    NA, see Question Number 9 above.

11. **Please list any environmental spill of material or waste products that has occurred within the county within the WQARF site boundary in the last 5 years?**
    There is no history of any environmental response to this area.

12. **Is the county currently sampling groundwater wells in the WQARF site? If so, how often in the sampling conducted? Are analytical results being submitted to ADEQ for the groundwater data base?**
    No

13. **Does Yuma County have an environmental manager or do you outsource environmental management to an environmental consulting firm? If so, please provide that information:**
    Rick Stacks, R.S.
    Yuma County Department of Development Services
    2351 W. 26th Street
    Yuma, AZ 85364
    Office Phone: (928)-817-5084
    Cell: (928)-941-2373

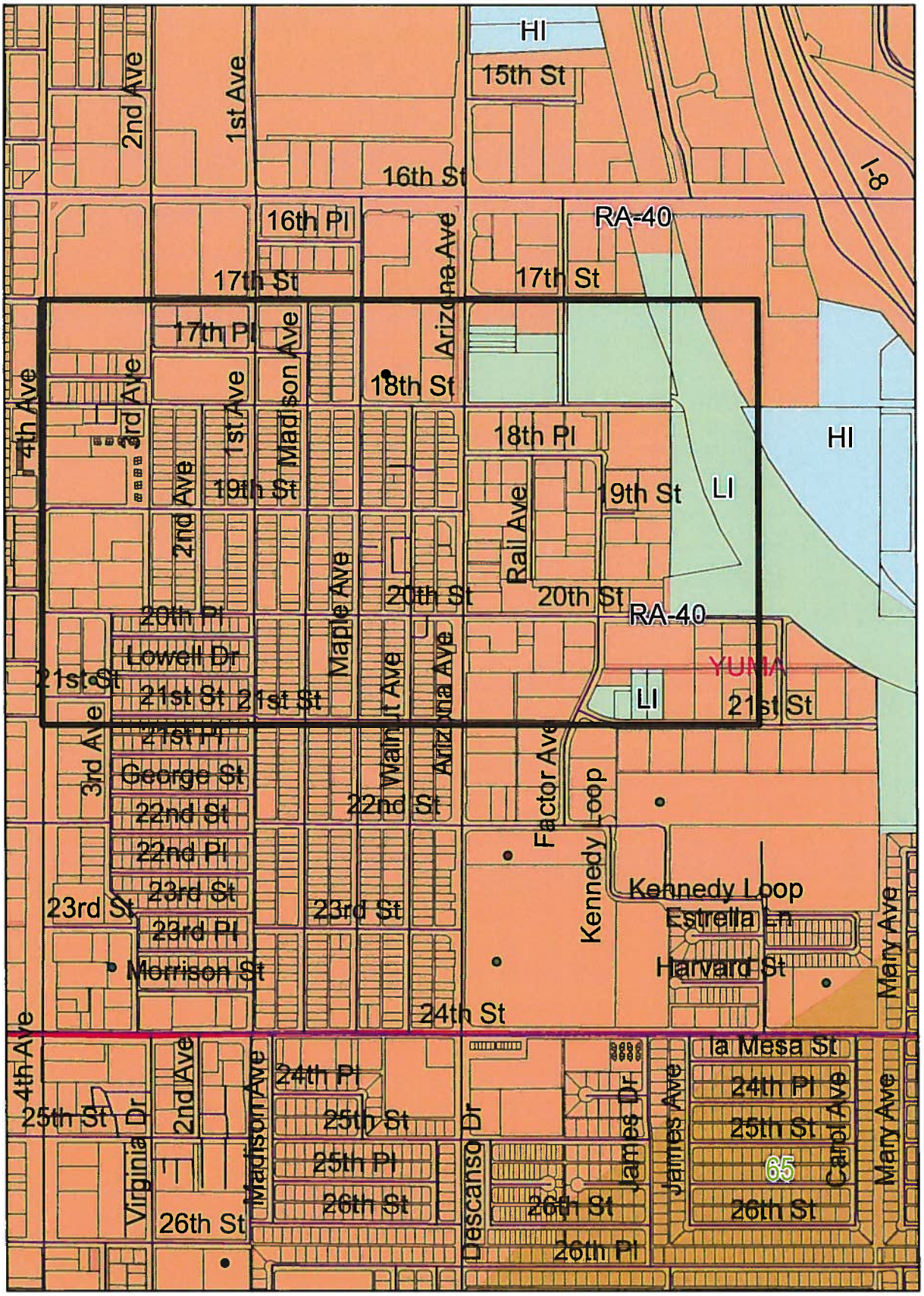
14. **Please indicate anticipated (up to 100 years) groundwater development by the county within the WQARF site boundary.**
    Unknown

15. **Are there any groundwater wells owned by the county that have been affected by the WQARF site? If so, please list the well identification numbers. What is the current status of these wells (e.g. – shut down, still pumping)?**
    No

16. **What is the future use (up to 100 years) for any wells that have been impacted by the WQARF site?**
    Unknown

Area outlined in black is study area.

HI = Heavy Industrial zoning
LI = Light Industrial zoning



Map for 20th St & Factor Ave area, Yuma, AZ & Yuma County for Land & Water Use Study Questionnaire for the WQARF Registry Site for ADEQ: Prepared 11-30-12 through December, 2012.

LAND AND WATER USE STUDY QUESTIONNAIRE
FOR WELL OWNERS WITHIN OR NEAR THE
20TH STREET AND FACTOR AVENUE WQARF REGISTRY SITE

Please answer all questions. Mark "NA" for questions that are not applicable. Mark "UNK" if the answer is unknown to you at the time of completion. Please attach any additional pages as needed.

Owner(s) of the property
Name: Larry J & Martha Covarrubias
Mailing Address: 1144 Appaloosa Lane
YUMA, AZ 85364
Phone Number: 928-783-9032

Date Questionnaire was completed: 11-27-2012

Name of person completing Questionnaire: MARTHA COVARRUBIAS

Property Address: 1611 E. 20th ST
or Parcel No. YUMA, AZ 85365

A. Property Information

1. What is the current use of your property within or near the area of the 20th Street and Factor Avenue WQARF site? (The 20th Street and Factor Avenue WQARF site boundaries are: 17th Street to the north, 21st Street to the south, Kennedy Lane to the east and 4th Avenue to the west).

Warehouse

2. What are the foreseeable plans for the property (extension of buildings, addition construction, etc.) as far into the future as they are known and up to 100 years, if possible?

none

3. Is the property owned or leased?

owned

4. If the property is leased, how long is the lease term?

5. If the property is leased, are there plans to renew the lease and for how long?

6. If the property is owned, do you plan on relocating to or from the property, and if so, in what timeframe?

NO

B. Environmental information

1. Are there any groundwater wells on the property? If so, what is the current use of water from those wells? (e.g. – drinking water, water supply, monitoring, irrigation, remediation)

   yes, for toliet use

2. Do you know who much water you pump during an average year from the wells in item #1?

   unk

3. Do you know the construction details of your wells in item # 1?(e.g. – depth of well, depth of casing, screened interval of casing, etc.)

   unk

4. Are there any proposed changes to the current use of water, from the wells in item #1, anticipated for the next 100 years?

   NO

5. Do you anticipate that any groundwater wells will be drilled in the next 100 years at this property? If yes, what will the water be used for?

NO

6. Do you have any environmental concerns about the property?

NO

Thank you for your time. The Project Manager, Scott Goodwin, or a representative from ADEQ's consultant, Tetra Tech Geo, may follow-up on answers provided.

ARIZONA DEPARTMENT OF WATER RESOURCES
Operations Division, 15 South 15th Avenue
Phoenix, Arizona 85007 (602) 542-1581
NOTICE OF INTENTION TO DRILL, DEEPEN, REPLACE OR MODIFY A WELL

RECEIVED JUL - 7 1995 GROUNDWATER MGT

Section § 45-596, A.R.S., provides: a person may not drill, deepen, or modify any well without first filing a Notice of Intention to Drill with the Department

IF PARCEL IS 20 ACRES OR LESS, THE APPLICABLE COUNTY OR LOCAL HEALTH AUTHORITY MUST ENDORSE ALL ITEMS IN THE BOX BELOW, BEFORE SUBMITTING TO THE DEPARTMENT OF WATER RESOURCES.

Larry Covarrubias. 1144 Appaloosa Lane, Yuma AZ 85364
Land Owner's Name / Address / City / State / Zip

Telephone 520-783-9032

County: Yuma

COUNTY ASSESSOR'S PARCEL ID INFORMATION:
109 42 025F 1 Acre.
BOOK MAP PARCEL No. of Acres of Parcel

OFFICIAL SEAL

Well/Land Location:
NW 1/4 NW 1/4 SE 1/4 of Section 34 Township 8 N(S) Range 23 E(W)
10AC 40ac 160ac

COUNTY OR LOCAL AUTHORITY ENDORSEMENT

Check one:
Recommend Approval ✓ ; Insufficient information to make determination ____ ; Variance required ____ (Explanation attached).

DATE 7-6-95 AUTHORIZED SIGNATURE [signature]

GENERAL INSTRUCTIONS FOR FILING NOTICE WITH

1. Section § 45-596(D) provides that the Director shall determine that all information required on this form has been submitted. If not, the person filing will be notified, and the drilling, deepening or modification of the well may not proceed.
2. Section § 45-596(D), provides that the Department has 15 days after the receipt of a complete and correct notice of intention to record the notice and mail the duplicate to the owner.
3. Fill out this form and site plan in DUPLICATE and send WITH $10.00 FEE to 15 South 15th Ave., Phoenix, AZ 85007. USE BLACK OR BLUE INK
4. For specific instructions, limitations and conditions, see the reverse side of this form.
5. If the well is a replacement, deepening or modification of an existing well, provide the registration number of the existing well in item 2.
6. Construction standards for wells, including abandonment, shall be in accordance with Department Rules.

1. **Owner of well:**
Larry Covarrubias
Name
1144 Appaloosa Lane
Mailing Address
Yuma AZ 85364
City State Zip
Telephone: 520-783-9032

2. **Action requested:** Drill New Well ✓ ; Deepen ____ Modify ____ Replace ____
For a replacement well provide: Maximum capacity of the original well ____ gallons per minute; distance from the original well ____ feet.
Well Registration No. 55- ____

3. **Construction will start about:**
Month 7 Year 1995

4. **DESCRIPTION OF PROPOSED WELL:**
Diameter 5 inches
Depth 80 feet
Type of Casing P.V.C.

5. **Design Pump Capacity:**
16 gallons per minute

6. **Lessee of Land of wellsite:**
Same as 1
Name
Mailing Address
City State Zip
Telephone:

7. **Principal use of water:**(be specific)
Water Supply For Business

8. **Other uses of water:**(be specific)

9. If use includes irrigation, state to nearest tenth, the number of acres to be irrigated: ____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
File No. C(8-23)34 dbb By SV
Filed 7-7-95 By SV
Input ____ By ____
DUPLICATE MAILED
Date ____ By SV
Registration 55- 550765
AMA/INA ____
W/S 02 S/B ____
ENTERED JUL 25 1995

10. **PLACE OF USE** (Legal Description of Land):
Township 8 N(S) Range 23 E(W)
Section 34 1/4 ____ 1/4 ____ 1/4 ____

11. **Type of well:** Exempt ✓ Non-Exempt ____
Residential ____ Commercial ✓

12. Is the proposed wellsite within 100 feet of a septic tank system, sewage disposal area, landfill, hazardous waste facility, storage area of hazardous materials or petroleum storage areas and tanks? YES ____ NO ✓

13. **DRILLING FIRM:**
Yuma Pump & Drilling
Firm Name
P.O. Box 10728.
Mailing Address
Yuma AZ. 85366
City State
151 A-4
DWR License
A-04 079983
ROC License Classification

Larry Covarrubias.
Typed or Printed Name of Owner or Lessee

[signature]
Signature [✓] Land Owner [ ] Lessee of Wellsite

6/29/95
DATE

Original

SPECIFIC INSTRUCTIONS, LIMITATIONS AND CONDITIONS

1. If any water from a proposed well on a parcel of land of twenty or fewer acres will be used for domestic purposes, as defined in § 45-454, the applicant shall submit a site plan to scale of the property with the county assessor's parcel identification number. The site plan:

   a. Will be on a 8½"x11" piece of plain paper with representation of the locations of all structures, septic tank or sewer systems and proximity of adjacent lot lines to scale.
   b. Must show the proposed well location and the location of any septic or sewer system that is either located on the property or within one hundred feet of the proposed well site.
   c. Shall demonstrate to the director's satisfaction that the well will not be drilled within one hundred feet of any septic or sewer system.
   d. Must be approved by the county health authority, or by a local health authority in areas where the county health authority has delegated authority to approve septic or sewer systems. Before approval, the health authority shall review the plan and determine whether the proposed well location complies with applicable state and local laws regarding the placement of wells. If so, the health authority shall endorse the site plan and the proposed well placement.

2. Endorsement by the county/local authority is based solely on the best available judgement that this well, as shown on the site plan submitted, is 100 feet or more from all known and visually identifiable sewage treatment systems. It is not a representation that a well placed at this site will be guaranteed as to quantity or quality. Information brought to light at a future date may render this determination invalid.

3. If a well which was originally drilled as an exploration well, a monitor well, a piezometer well or for any use other than domestic use and is later proposed to be converted to use for domestic purposes, as defined in § 45-454, the well owner shall file a notice of intention to drill and comply with the requirements prescribed pursuant to this section before the well is converted and any water from that well used for domestic purposes.

4. Only a well driller licensed in the State of Arizona is authorized to drill, deepen or modify a well. A well driller may commence drilling a well only if the well drilling contractor or licensee has possession of a drilling card at the well site, issued by the Director in the name of the well drilling contractor or licensee, authorizing the drilling of the specific well in the specific location.

5. An exempt well means a well having a pump with a maximum capacity of not more than thirty-five (35) gallons per minute and may include the application of water to less than two (2) acres of land in an Irrigation Non-Expansion Area or Active Management Area to produce plants or parts of plants for sale, human consumption or for use as feed for livestock, range livestock or poultry.

6. The drilling, deepening, or modification of this well shall be completed within one (1) year of the date of the notice (§ 45-596.E.).

7. Within thirty (30) days after the installation of pumping equipment on this well, the registered well owner shall file the prescribed Completion Report. A form for this purpose will be furnished to the registered owner with the return of an annotated copy of this notice.

8. The person to whom a well is registered shall notify the Department of a change in ownership or a change in data relating to this well. The prescribed form for these purposes will be furnished to the registered owner with the return of an annotated copy of this Notice.

9. If an individual other than the land owner or lessee signs this Notice, an original letter of authorization from the land owner/lessee, stating that the individual has permission to sign this specific Notice on their behalf, shall accompany the Notice.

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

MAIL TO: P. O. BOX 458 - PHOENIX ARIZONA 850[illegible]
Phone (602) 417-2470

RECEIVED
JUL 28 1998
RECORDS MGT

COMPLETION REPORT
(Pump Installation Report)

1. Per A.R.S. § 45-6000, the Completion Report is to be filed with the Department within 30 days after installation of pump equipment by the registered well owner.
2. Drawdown of the water level for a non-flowing well should be measured in feet after not less than 4 hours of continuous operations. For a flowing well the shut-in pressure should be measured in feet above the land surface or in pounds per square inch at the land surface.
3. The static groundwater level should be measured in feet from the land surface immediately prior to the capacity test.
4. The tested pumping capacity of the well in gallons per minute for a non-flowing well should be determined by measuring the discharge of the pump after continuous operation for at least 4 hours and for a flowing well be measuring the natural flow at the land surface.

REGISTRATION NO: 55- 0765 **FILE NO:** C(8-23)34 DBB

LOCATION OF THE WELL:

N/S	E/W		¼	¼	¼
Township	Range	Section	10-acre	40-acre	160-acre

EQUIPMENT INSTALLED:

Kind of pump: Sub Mersible (Turbine, Submersible, Centrifugal, etc.) Kind of power: Electric (Electric, natural gas, gasoline, etc.)

H.P. Rating of Motor: ½ HP. Pumping Capacity: _____ Date Pump Installed: _____

WELL TEST:

Test pumping capacity: _____ (Gallons per minute) Date Well Tested: _____

Method of Discharge Measurement: _____ (Weir, orifice, current meter, etc.)

Static Groundwater Level: _____ ft. Drawdown: _____ ft.

Total Pumping Lift: _____ ft. Drawdown: _____ lbs (Flowing Well)

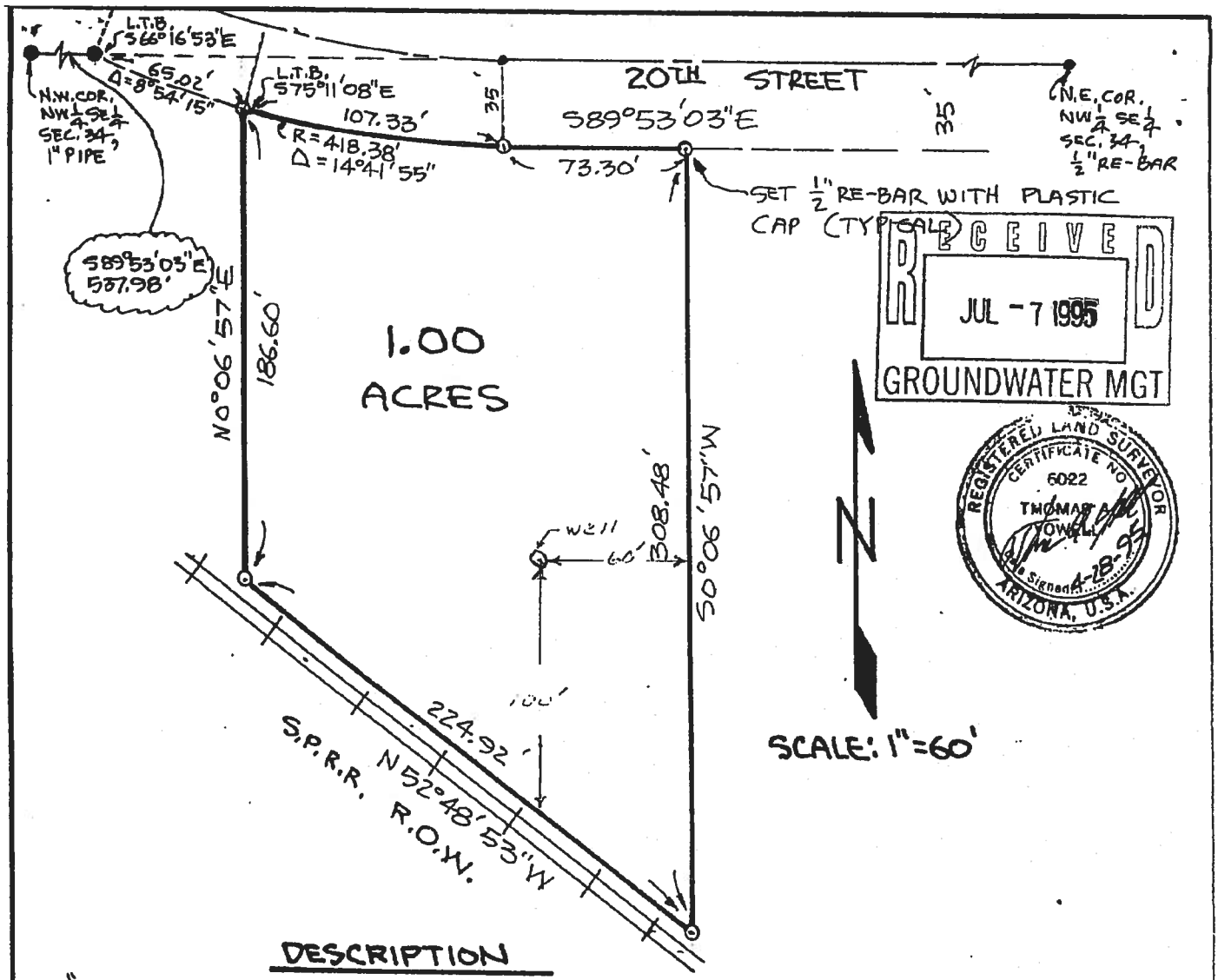
I HEREBY CERTIFY that the above statements are true to the best of my knowledge and belief.

Print Well Owner's Name	Address	City	State	Zip
LARRY NAVARRUBIAS	1144 APPALOOSA LN.	YUMA	AZ	85364

Signature of Well Owner	Phone Number	Date
Larry J. Navarrubias	520-783-9032	7-25-98

DWR 55-56 (Rev 6/98)

ANSWERED JUL 29 1998



DESCRIPTION

"COMMENCING AT THE N.W. COR. OF THE NW¼SE¼ OF SECTION 34, T.8S., R.23W., G.&S.R.M., YUMA COUNTY, ARIZ.; THENCE S89°53'03"E ALONG THE NORTH LINE OF SAID NW¼SE¼ OF SEC. 34, A DIST. OF 537.98 FEET TO A POINT ON A 418.38 FOOT RADIUS CURVE, SAID POINT BEING ON THE SOUTHERLY RIGHT OF WAY LINE OF 20TH STREET; THENCE ALONG SAID 418.38 FOOT RADIUS CURVE TO THE LEFT OF A LOCAL TANGENT BEARING OF S66°16'53"E, THROUGH A CENTRAL ANGLE OF 8°54'15", A DIST. OF 65.02 FEET TO THE TRUE POINT OF BEGINNING; THENCE FROM A LOCAL TANGENT BEARING OF S75°11'08"E ALONG SAID 418.38 FOOT CURVE THROUGH A CENTRAL ANGLE OF 14°41'55", A DIST. OF 107.33 FEET TO THE END OF SAID RIGHT OF WAY CURVE; THENCE S89°53'03"E, A DIST. OF 73.30 FEET; THENCE S0°06'57"W, A DIST. OF 308.48 FEET TO A POINT ON THE SOUTHERN PACIFIC R.R. NORTH RIGHT OF WAY LINE; THENCE N52°48'53"W ALONG SAID LINE, A DIST. OF 224.92 FEET; THENCE N0°06'57"E, A DIST. OF 186.60 FEET TO THE TRUE POINT OF BEGINNING."

CONTAINING: 1.00 ACRES

1 acre
Parcel ID 109-42-025B

T. YOWELL, L.S.
APR. 1995

ARIZONA DEPARTMENT OF WATER RESOURCES

500 North 3rd Street, Phoenix, Arizona 85004
Telephone (602) 417-2470
Fax (602) 417-2401

July 20, 1995

FIFE SYMINGTON
Governor

RITA P. PEARSON
Director

LARRY COVARRUBIAS
1144 APPALOOSA LN
YUMA, AZ 85364

Registration No. 550765
File No. C(8-23)34 DBB

Dear Applicant:

Enclosed is a copy of the Notice of Intention (NOI) to drill a well. This NOI, which was recently filed with this Department, is being returned to you as evidence of your compliance with ARS §45-596. The enclosed Completion Report is to be submitted when pump equipment is installed. The Drilling Card and Well Drilling Report form have been sent to your driller. He may not begin drilling until he has received the Drilling Card and it must be displayed on the rig during drilling. If you change drillers, you must supply this Department with the new driller's identity. Please ensure that the driller you select is licensed to drill the type of well you require. All well drillers must pass an examination proving they understand the drilling methods for that particular license, and are familiar with the laws and regulations which govern well construction in Arizona.

If it is necessary to change the location of the proposed well, immediately contact the Department of Water Resources to obtain written permission before proceeding with the drilling. A properly signed, amended Drilling Card must be in the possession of the driller before drilling commences at a different location than originally authorized. **In no case may the replacement well be more than 660 feet from the well it is replacing.**

ARS §45-600 requires the registered well owner to submit a completion report within thirty (30) days after the installation of pumping equipment. It also requires the driller to furnish this Department a complete and accurate log of the well within thirty (30) days after completion of drilling. You should insist, and ensure, that both of these are done.

If in the course of drilling a new well, it is determined that the new well cannot be successfully completed as initially intended (dry hole, cave in, lost tools, etc.), the new well must be properly abandoned and a Well Abandonment Completion Report submitted per R12-15-816.F.

Per ARS §45-593, the person to whom a well is registered shall notify this Department of a change in ownership of the well and/or information pertaining to the physical characteristics of the well in order to keep this well registration file current and accurate. We have enclosed a Change of Well Information Form should it be needed in the future.

If the information you provided indicates your well is near the Colorado River; if in the future, it is determined that water from your well is supplied from the river and you do not have a perfected water right to Colorado River water established prior to 1929, the U.S. Bureau of Reclamation may require you to cease pumping or enter into a contract for use of Colorado River water.

Sincerely,

Sylvia Valdez
Resources Technician
Groundwater Section

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

500 North Third Street
Phoenix, Arizona 85004-3903

THIS AUTHORIZATION SHALL BE IN POSSESSION OF THE DRILLER DURING ALL DRILL OPERATIONS

WELL REGISTRATION NO: 55-550765

AUTHORIZED DRILLER: YUMA PUMP & DRILLING LICENSE NO: 151

NOTICE OF INTENTION TO DRILL AN EXEMPT WELL HAS BEEN FILED WITH THE DEPARTMENT BY:

WELL OWNER: LARRY COVARRUBIAS

The well(s) is/are to be located in the:

NW 1/4 of the NW 1/4 of the SE 1/4 Section 34 Township 8 SOUTH Range 23 WEST

THIS AUTHORIZATION EXPIRES AT MIDNIGHT ON THE 6TH DAY OF JULY, 1996.

CHIEF, GROUNDWATER MANAGEMENT SUPPORT

THE DRILLER MUST FILE A LOG OF THE WELL WITHIN 30 DAYS OF COMPLETION OF DRILLING

GREAT SEAL OF THE STATE OF ARIZONA
DITAT DEUS
1912

RECEIPT № 21510

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
500 NORTH 3RD STREET
PHOENIX, ARIZONA 85004
(602) 417-2470

yuma pump & drlg
P.O. Box 10728
2910 E 14th St
Yuma, AZ 85364

ENTRY CODE 55

FILE NO. THRU

ITEM DESCRIPTION	RATE	AMOUNT
NOI Fee		10.00
55-550765		

CHECK NO. 24822 FEE ACCOUNT NO. _____ TOTAL $ 10.00

CHIT NO. _____ RECEIVED BY sv DATE 7-20-95

IPS 1821 – Rev. 4/91

DEC 2012
RECEIVED
Remedial Projects Unit

LAND AND WATER USE STUDY QUESTIONNAIRE
FOR WELL OWNERS WITHIN OR NEAR THE
20TH STREET AND FACTOR AVENUE WQARF REGISTRY SITE

Please answer all questions. Mark "NA" for questions that are not applicable. Mark "UNK" if the answer is unknown to you at the time of completion. Please attach any additional pages as needed.

~~Owner(s) of the property~~

Name: St. Francis of Assisi Roman Catholic Church

Mailing Address: 1815 S. 8th Ave
Yuma, AZ 85364

Phone Number: (928) 783-1875

Date Questionnaire was completed: 29 Nov 2012

Name of person completing Questionnaire: Larry Maude, Facility Mgr.

Property Address: 1815 S. 8th Ave
Yuma, AZ 85364

or Parcel No. 665-42-087

A. Property Information

1. What is the current use of your property within or near the area of the 20th Street and Factor Avenue WQARF site? (The 20th Street and Factor Avenue WQARF site boundaries are: 17th Street to the north, 21st Street to the south, Kennedy Lane to the east and 4th Avenue to the west). Our property "does not" fall with in these stated boundaries!
The well on our property is used for "irrigation only" of Church and School property.
Land use: Catholic Church and School!

2. What are the foreseeable plans for the property (extension of buildings, addition construction, etc.) as far into the future as they are known and up to 100 years, if possible?

UNK

3. Is the property owned or leased?

Owned!

4. If the property is leased, how long is the lease term?

N/A

5. If the property is leased, are there plans to renew the lease and for how long?

N/A

6. If the property is owned, do you plan on relocating to or from the property, and if so, in what timeframe?

No!

B. Environmental information

1. Are there any groundwater wells on the property? If so, what is the current use of water from those wells? (e.g. – drinking water, water supply, monitoring, irrigation, remediation)

   "Irrigation only"!

2. Do you know who much water you pump during an average year from the wells in item #1?

   UNK

3. Do you know the construction details of your wells in item # 1?(e.g. – depth of well, depth of casing, screened interval of casing, etc.)

   UNK

4. Are there any proposed changes to the current use of water, from the wells in item #1, anticipated for the next 100 years?

   No!

5. Do you anticipate that any groundwater wells will be drilled in the next 100 years at this property? If yes, what will the water be used for?

No!

6. Do you have any environmental concerns about the property?

No!

Thank you for your time. The Project Manager, Scott Goodwin, or a representative from ADEQ's consultant, Tetra Tech Geo, may follow-up on answers provided.

S E

d 7

DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

RECEIVED JUL 30 1982 DEPT. OF WATER RESOURCES

MAY 1982 DEPARTMENT OF WATER RESOURCES

REGISTRATION OF EXISTING WELL

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING
PRINT OR TYPE — FILE IN DUPLICATE

02

FOR OFFICE USE ONLY	
REGISTRATION NO. 55-	626423
FILE NO.	C(8-23)33bdb
FILED (DATE)	MAY 28 1982
AT (TIME)	9 am
INA	
AMA	

REGISTRATION FEE (CHECK ONE)	
EXEMPT WELL (NO CHARGE)	☐
NON-EXEMPT WELL — $10.00	☒

1. Name of Registrant:
   Saint Francis Of Assissi Church
   1815 South 8th Avenue (Address) Yuma, (City) Arizona (State) 85364 (Zip)

2. File and/or Control Number under previous groundwater law:
   _____ (File Number) 35- _____ (Control Number)

3. a. The well is located within the NW ¼ SE ¼ NW ¼, Section 33, of Township 8 N/S, Range 23 W ~~E/W~~, G & SRB & M, in the County of Yuma.
   b. If in a subdivision: Name of subdivision _____, Lot No. _____, Address _____.

4. The principal use(s) of water (Examples: irrigation - stockwater - domestic - municipal - industrial)
   Irrigation for lawns only and for the school.

5. If for irrigation use, number of acres irrigated from well 3.

6. Owner of land on which well is located. If same as Item 1, check this box ☒
   Saint Francis of Assissi Church
   1815 South 8th Avenue (Address) Yuma, (City) Arizona (State) 85364 (Zip)

7. Well data (If data not available, write N/A)
   a. Depth of Well 318 feet
   b. Diameter of casing 10 inches
   c. Depth of casing 318 feet
   d. Type of casing .312 Wall Pipe.
   e. Maximum pump capacity 150 gallons per minute.
   f. Depth to water 46 feet below land surface.
   g. Date well completed [illegible] (Month) [illegible] (Day) 1961 (Year).

8. The place(s) of use of water. If same as Item 3, check this box ☒.
   ____ ¼ ____ ¼ ____ ¼, Section ____ Township ____ Range ____
   ____ ¼ ____ ¼ ____ ¼, Section ____ Township ____ Range ____
   Attach additional sheet if necessary.

9. DATE 5/24/82 SIGNATURE OF REGISTRANT Carrill J. Allen

INSTRUCTIONS FOR COMPLETING REGISTRATION FORM

General Instructions

1. A person who owns an "Existing Well" shall register the well, pursuant to A.R.S. 45-593, by filing this form in duplicate with the Department of Water Resources not later than midnight June 14, 1982. The form must be completed and signed. Failure to do so will constitute a violation of A.R.S. 45-593, and may subject the well owner to injunction and/or civil penalties, pursuant to A.R.S. Title 45, Article 12.

2. An "Existing Well" means, (1) a well which was drilled on or before June 12, 1980 and which is not abandoned or sealed, or (2) a well which was not completed on or before June 12, 1980, but for which a Notice of Intention to Drill was on file with the Arizona Water Commission on or before June 12, 1980.

3. No registration fee is required for Exempt Wells. A $10.00 registration fee must accompany registration forms for all Non-Exempt Wells.

4. An "Exempt Well" means a well having a pump with a maximum capacity of not more than 35 gallons per minute which is used to withdraw groundwater. An Exempt Well may include the non-commercial irrigation of not more than 1 acre of land.

5. A "Non-Exempt Well" means a well that is not an "Exempt Well".

INSTRUCTIONS FOR REGISTRATION QUESTIONS

1. The Registrant must be the owner of the well and may be an individual, public or private corporation, company, partnership, firm, association, society, estate, trust, any other private organization or enterprise, the United States, any state, territory or country or a governmental entity, political subdivision or municipal corporation organized under or subject to the constitution and laws of this State.

2. If you own an existing irrigation well drilled at any time, or any other type of well drilled on or after June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2. If you do not know the number, please explain the reason on the form or on an attached sheet.

3. a. Fill in the Section, Township and Range in all cases if it is available.
   b. If the well is in a subdivision and you have this information, give the subdivision name, Lot Number, and Address.

4. Show all purposes for which the water is used.

5. If the well is used for irrigation, give the number of acres irrigated in 1980 from the well.

6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., fill in the appropriate title.

7. Complete the section on Well Data with the most accurate information available to you. If the data is not available, write N/A in the blanks.

8. Give the legal description of the place of use of the water. If place of use is in a subdivision and legal description is not available, give the subdivision name, Lot Number and/or address on the blank line.

9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished with the returned duplicate copy of the registration form.

C ALLEC CO., INC.
RT 1 BOX 7-M
SOMERTON AZ 85350

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
WATER RIGHTS ADMINISTRATION
99 EAST VIRGINIA
PHOENIX, ARIZONA 85004

RECEIPT

KIND ENTRY	FILE REFERENCE NO.
55	626423
55	THRU 626426

FOR: SAINT FRANCIS OF ASSISSI CHURCH
ALSO: VERDE GROVES

(4) (

FUND SOURCE	ACCOUNT NO. AGENCY	CHAPTER	DIV.	INT. ACCT.	ITEM DESCRIPTION	RATE	$ AMOUNT
					Filing Fee for Registration of	10.00	40.00
					Existing Wells		
						WAITER	PAYMENT
						GUESTS	4
					File No. St. Francis of Assissi	CHK NO	1151
					C(8-23)33 bdb	55-I	40.00
					Verde Groves	TAX	0.00
					C(9-24)19	TOTL	40.00
					C(9-24)19	GEN.CHEK	40.00
					C(9-24)19		
						# 4379 0	15:49

11/12/82 jc Check # 1151 TOTAL $ 40.00

DEC 2012

LAND AND WATER USE STUDY QUESTIONNAIRE
FOR WELL OWNERS WITHIN OR NEAR THE
20TH STREET AND FACTOR AVENUE WQARF REGISTRY SITE

Please answer all questions. Mark "NA" for questions that are not applicable. Mark "UNK" if the answer is unknown to you at the time of completion. Please attach any additional pages as needed.

Owner(s) of the property
Name: Ronald A Martin Trust

Mailing Address: PO Box 1985
Yuma, Az 85366

Phone Number: 928-726-3307

Date Questionnaire was completed: 12-15-12

Name of person completing Questionnaire: Ron Martin

Property Address: 928 E 21st Str

or Parcel No. Lots 22, 23 + 24
South Park Industrial

A. Property Information

1. What is the current use of your property within or near the area of the 20th Street and Factor Avenue WQARF site? (The 20th Street and Factor Avenue WQARF site boundaries are: 17th Street to the north, 21st Street to the south, Kennedy Lane to the east and 4th Avenue to the west).

2. What are the foreseeable plans for the property (extension of buildings, addition construction, etc.) as far into the future as they are known and up to 100 years, if possible?

UNK.

3. Is the property owned or leased?

Owned

4. If the property is leased, how long is the lease term?

EMPTY RIGHT NOW

5. If the property is leased, are there plans to renew the lease and for how long?

LOOKING TO LEASE

6. If the property is owned, do you plan on relocating to or from the property, and if so, in what timeframe?

N/A

B. Environmental information

1. Are there any groundwater wells on the property? If so, what is the current use of water from those wells? (e.g. – drinking water, water supply, monitoring, irrigation, remediation)

1- Well Lot 22
IRRIGATION only!

2. Do you know who much water you pump during an average year from the wells in item #1?

Well HAS BEEN Turned OFF. "Disconnected For 1½ years"

3. Do you know the construction details of your wells in item # 1?(e.g. – depth of well, depth of casing, screened interval of casing, etc.)

180'

4. Are there any proposed changes to the current use of water, from the wells in item #1, anticipated for the next 100 years?

Could possibly use For Irrigation Again!

5. Do you anticipate that any groundwater wells will be drilled in the next 100 years at this property? If yes, what will the water be used for?

NO

6. Do you have any environmental concerns about the property? NO

Thank you for your time. The Project Manager, Scott Goodwin, or a representative from ADEQ's consultant, Tetra Tech Geo, may follow-up on answers provided.

DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

RECEIVED MAY 21 1982 DEP. WATER RESOURCES

REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING
PRINT OR TYPE — FILE IN DUPLICATE

02

FOR OFFICE USE ONLY
REGISTRATION NO. 55- 613927
FILE NO. C(8-23)33 bbb
FILED 5-21-82 (DATE) AT 9 am (TIME)
INA —
AMA —

REGISTRATION FEE (CHECK ONE)
EXEMPT WELL (NO CHARGE) ☐
NON-EXEMPT WELL – $10.00 ☒

1. Name of Registrant:
Yuma School District No. One (Alice Byrne)
625 7th Ave. (Address) Yuma (City) Arizona (State) 85364 (Zip)

2. File and/or Control Number under previous groundwater law:
N/A (File Number) 35- N/A (Control Number)

3. a. The well is located within the NE ¼ NW ¼ NW ¼, Section 33, of Township 8 N/S Range 23 E/W G & SRB & M, in the County of Yuma.
b. If in a subdivision: Name of subdivision N/A, Lot No. N/A, Address 16th St. & 8th Ave.

4. The principal use(s) of water (Examples: irrigation - stockwater - domestic - municipal - industrial)
Irrigation.

5. If for irrigation use, number of acres irrigated from well 3.

6. Owner of land on which well is located. If same as Item 1, check this box ☒
(Address) (City) (State) (Zip)

7. Well data (If data not available, write N/A)
a. Depth of Well 203 feet
b. Diameter of casing 12 inches
c. Depth of casing 203 feet
d. Type of casing Steel.
e. Maximum pump capacity 1,000 gallons per minute.
f. Depth to water 85 feet below land surface.
g. Date well completed N/A (Month) (Day) (Year).

8. The place(s) of use of water. If same as Item 3, check this box ☒.
____¼ ____¼ ____¼, Section ____ Township ____ Range ____
____¼ ____¼ ____¼, Section ____ Township ____ Range ____
Attach additional sheet if necessary.

9. DATE 5-13-82 SIGNATURE OF REGISTRANT Donald Rogers
Asst. Supt.

INSTRUCTIONS FOR COMPLETING REGISTRATION FORM

General Instructions

1. A person who owns an "Existing Well" shall register the well, pursuant to A.R.S. 45-593, by filing this form in duplicate with the Department of Water Resources not later than midnight June 14, 1982. The form must be completed and signed. Failure to do so will constitute a violation of A.R.S. 45-593, and may subject the well owner to injunction and/or civil penalties, pursuant to A.R.S. Title 45, Article 12.

2. An "Existing Well" means, (1) a well which was drilled on or before June 12, 1980 and which is not abandoned or sealed, or (2) a well which was not completed on or before June 12, 1980, but for which a Notice of Intention to Drill was on file with the Arizona Water Commission on or before June 12, 1980.

3. No registration fee is required for Exempt Wells. A $10.00 registration fee must accompany registration forms for all Non-Exempt Wells.

4. An "Exempt Well" means a well having a pump with a maximum capacity of not more than 35 gallons per minute which is used to withdraw groundwater. An Exempt Well may include the non-commercial irrigation of not more than 1 acre of land.

5. A "Non-Exempt Well" means a well that is not an "Exempt Well".

INSTRUCTIONS FOR REGISTRATION QUESTIONS

1. The Registrant must be the owner of the well and may be an individual, public or private corporation, company, partnership, firm, association, society, estate, trust, any other private organization or enterprise, the United States, any state, territory or country or a governmental entity, political subdivision or municipal corporation organized under or subject to the constitution and laws of this State.

2. If you own an existing irrigation well drilled at any time, or any other type of well drilled on or after June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2. If you do not know the number, please explain the reason on the form or on an attached sheet.

3. a. Fill in the Section, Township and Range in all cases if it is available.
   b. If the well is in a subdivision and you have this information, give the subdivision name, Lot Number, and Address.

4. Show all purposes for which the water is used.

5. If the well is used for irrigation, give the number of acres irrigated in 1980 from the well.

6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., fill in the appropriate title.

7. Complete the section on Well Data with the most accurate information available to you. If the data is not available, write N/A in the blanks.

8. Give the legal description of the place of use of the water. If place of use is in a subdivision and legal description is not available, give the subdivision name, Lot Number and/or address on the blank line.

9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished with the returned duplicate copy of the registration form.

YUMA SCHOOL DIST #1
450 W 6TH ST
YUMA AZ 85364

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
WATER RIGHTS ADMINISTRATION
99 EAST VIRGINIA
PHOENIX, ARIZONA 85004

RECEIPT

KIND ENTRY	FILE REFERENCE NO.
55	613923
	THRU
55	613927

(5)

ACCOUNT NO. FUND SOURCE	AGENCY	CHAPTER	DIV.	INT. ACCT.	ITEM DESCRIPTION	RATE	$ AMOUNT
					Filing Fee for Registration of	10.00	50.00
					Existing Wells		
					File No. C(8-23)21 caa		
					C(8-23)33 cca C(9-23)4 cbd		
					C(8-23)29 daa C(8-23)33 bba		

WRITER PAYMENT
GUESTS 5
CHK NO 6604
55-I 50.00
TAX 0.00
TOTL 50.00
GEN.CHEK 50.00

868 A 11:45-

Check # 836604

TOTAL $ 50.00

8/3/82

DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

RECEIVED MAY 21 1982 DEPT. WATER RESOURCES

REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING
PRINT OR TYPE — FILE IN DUPLICATE

02

FOR OFFICE USE ONLY
REGISTRATION NO. 55- 613924
FILE NO. C(8-23)33 CCC
FILED 5-21-82 (DATE) AT 9 am (TIME)
INA —
AMA —

REGISTRATION FEE (CHECK ONE)
EXEMPT WELL (NO CHARGE) ☐
NON-EXEMPT WELL — $10.00 ☑

1. Name of Registrant:
Yuma School District No. One (Woodard)
625 7th Ave. (Address) Yuma (City) Arizona (State) 85364 (Zip)

2. File and/or Control Number under previous groundwater law:
N/A (File Number) 35- N/A (Control Number)

3. a. The well is located within the NE ¼ SW ¼ SW ¼, Section 33, of Township 8 N/S Range 23 E/W G & SRB & M, in the County of Yuma.
b. If in a subdivision: Name of subdivision N/A, Lot No. N/A, Address 2250 8th Ave.

4. The principal use(s) of water (Examples: irrigation - stockwater - domestic - municipal - industrial)
Irrigation.

5. If for irrigation use, number of acres irrigated from well 6.

6. Owner of land on which well is located. If same as Item 1, check this box ☒
(Address) (City) (State) (Zip)

7. Well data (If data not available, write N/A)
a. Depth of Well 300 feet
b. Diameter of casing 12 inches
c. Depth of casing 300 feet
d. Type of casing Steel.
e. Maximum pump capacity 1,250 gallons per minute.
f. Depth to water 85 feet below land surface.
g. Date well completed 5 (Month) 24 (Day) 1967 (Year).

8. The place(s) of use of water. If same as Item 3, check this box ☒.
____¼ ____¼ ____¼, Section ____ Township ____ Range ____
____¼ ____¼ ____¼, Section ____ Township ____ Range ____
Attach additional sheet if necessary.

9. DATE 5-13-82 SIGNATURE OF REGISTRANT Donald L. Graham
Asst. Supt.

YUMA SCHOOL DIST #1
450 W 6TH ST
YUMA AZ 85364

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
WATER RIGHTS ADMINISTRATION
99 EAST VIRGINIA
PHOENIX, ARIZONA 85004

RECEIPT

KIND ENTRY	FILE REFERENCE NO.
55	613923
	THRU
55	613927

(5)

ACCOUNT NO. FUND SOURCE	AGENCY	CHAPTER	DIV.	INT. ACCT.	ITEM DESCRIPTION	RATE	$ AMOUNT
					Filing Fee for Registration of	10.00	50.00
					Existing Wells	WRITEF	PAYMENT
						GUESTS	5
						CHK NO	6604
						55-I	50.00
					File No. C(8-23)21 caa	TAX	0.00
					C(8-23)33 cca	TOTL	50.00
					C(9-23)4 cbd	GEN.CHEK	50.00
					C(8-23)29 daa		
					C(8-23)33 bba	# 868 A	11:45-

Check # 836604

TOTAL $ 50.00

8/3/82

RECEIVED
MAR - 8 2000
GROUNDWATER MGT

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION
MAIL TO: P. O. BOX 458, PHOENIX, ARIZONA 85001-0458
FOR MORE INFORMATION CALL: MONICA ORTIZ (602)417-2470
NOTICE OF INTENTION TO DRILL, DEEPEN, REPLACE OR MODIFY A WELL

PLEASE COMPLETE ALL ITEMS IN THE BOX BELOW DOWN TO COUNTY OR LOCAL AUTHORITY ENDORSEMENT. IF ANY WATER FROM THE PROPOSED WELL (LISTED BELOW) WILL BE USED FOR DOMESTIC PURPOSES ON A PARCEL OF LAND 20 OR FEWER ACRES, THE APPLICABLE COUNTY OR LOCAL HEALTH AUTHORITY MUST ENDORSE ALL ITEMS IN THE BOX BEFORE SUBMISSION TO THE DEPARTMENT OF WATER RESOURCES. ITEMS C, D, E, AND F MAY BE AVAILABLE FROM YOUR COUNTY ASSESSOR'S OFFICE.

A. MARKAL INV. 1195 S. 5th. AVE. YUMA AZ. 85364
LANDOWNER'S NAME CURRENT MAILING ADDRESS CITY STATE ZIP

B. TELEPHONE NO. 783-3086 COUNTY ASSESSOR'S PARCEL ID INFORMATION:

C. WELL LOCATED IN YUMA COUNTY D. 109 — 64 — 031A E. 0.5
BOOK MAP PARCEL # OF ACRES

OFFICIAL SEAL OR STAMP

WELL/LAND LOCATION (MUST BE COMPLETED AS REQUESTED):

F. NE ¼ NE ¼ SW ¼ OF SECTION 34 TOWNSHIP 8 N/S RANGE 23 E/W
10AC 40AC 160AC COUNTY OR LOCAL AUTHORITY ENDORSEMENT

CHECK ONE:
G. RECOMMEND APPROVAL ✓; INSUFFICIENT INFORMATION TO MAKE DETERMINATION _____; VARIANCE REQUIRED _____ (EXPLANATION ATTACHED)

H. DATE 3-10-00 AUTHORIZED SIGNATURE Phillip Lee James R.S. TITLE Dist. Sanitarian

1. OWNER OF WELL:
MARKAL INVESTMENTS
NAME
1195 S. 5th AVE
CURRENT MAILING ADDRESS
YUMA, AZ. 85364
CITY STATE ZIP

TELEPHONE NUMBER 520-783-3086

2. ACTION REQUESTED:
DRILL NEW WELL ✓ DEEPEN _____
MODIFY _____ REPLACE _____

WELL REGISTRATION NO 55-_____

FOR A REPLACEMENT WELL PROVIDE:
MAX. CAPACITY OF THE ORIGINAL WELL
_____ GALLONS PER MINUTE;

DISTANCE FROM THE ORIGINAL WELL:
_____ FEET

3. CONSTRUCTION WILL START ABOUT:
MONTH MAR YEAR 2000

4. TYPE OF CASING FOR PROPOSED WELL:
SURFACE CASING: STEEL
DIAMETER: 6 " DEPTH: 20 '

DOWNHOLE CASING: PVC,
DIAMETER: 5 " DEPTH: 200 '

5. DESIGN PUMP CAPACITY:
25 GALLONS PER MINUTE

6. LESSEE OF LAND OF WELLSITE:
NAME
CURRENT MAILING ADDRESS
CITY STATE ZIP

TELEPHONE: _____

7. PRINCIPLE USE OF WATER: (BE SPECIFIC)
COMMERCIAL

8. OTHER USES OF WATER: (BE SPECIFIC).
NONE

9. IF USE INCLUDES IRRIGATION, STATE TO NEAREST TENTH, THE NUMBER OF ACRES TO BE IRRIGATED: _____

FOR DEPARTMENT USE ONLY
REGISTRATION NO. 55-580030
DATE FILED 3-8-00
FILE NO. (98-213)34 caa
AMA/INA —
W/S 02 S/B —
PROCESSED BY M.O.
DATE MAILED 3-14-00

10. PLACE OF USE (LEGAL DESCRIPTION OF LAND):
NE ¼ NE ¼ SW ¼ SECTION 34
10AC 40AC 160AC
TWNSHP 8 N/S RNG 23 E/W

11. TYPE OF WELL (CHECK ONE):
EXEMPT ✓ NON-EXEMPT _____

12. CHECK ONE:
RESIDENTIAL _____ COMMERCIAL ✓

13. IS THE PROPOSED WELLSITE WITHIN 100 FEET OF A SEPTIC TANK SYSTEM, SEWER DISPOSAL AREA, LANDFILL, HAZARDOUS MATERIALS OR PETROLEUM STORAGE AREAS AND TANKS?
YES _____ NO ✓

14. DRILLING FIRM:
J. A. DEERE & SON WELL DRILLING
NAME
P.O. BOX 777
SOMERTON, Z 85350
MAILING ADDRESS
CITY STATE ZIP
(520) 726-0148
TELEPHONE NO.
295
DWR LICENSE NUMBER
A-4
ROC LICENSE CATEGORY

I STATE THAT THIS NOTICE IS FILED IN COMPLIANCE WITH A.R.S. § 45-596, IS COMPLETE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND THAT I UNDERSTAND THE LIMITATIONS AND CONDITIONS SET FORTH ON THE REVERSE SIDE OF THIS FORM.

ALBERT RAMOS — Albert Ramos — 2-18-00
15. TYPE OR PRINT NAME AND TITLE 16. SIGNATURE OF LANDOWNER/LESSEE OF WELLSITE 17. DATE

DWR 55-40 (REV 1/99)

APPLICATION GUIDELINES

In accordance with Arizona Revise Statutes ("A.R.S.") §§ 41-1008 and 1079, the Department of Water Resources (Department) provides the following information regarding the application review process for authority to drill.

NECESSARY STEPS & INSTRUCTIONS TO OBTAIN DRILLING AUTHORITY

1. Pursuant to A.R.S. § 45-596, a person may not drill, cause to be drilled, deepen or modify any well for which a permit is not required without first filing a Notice of Intent to Drill with the Department. Only a well drilling contractor licensed in the State of Arizona or a single well licensee (a person licensed to drill or modify one exempt well on his or her own property) is authorized to drill, deepen or modify a well. Drilling may not begin until the well drilling contractor or licensee has possession of a drilling card at the well site, issued by the Director in the name of the well drilling contractor or licensee, and which authorizes the drilling of the specific well in a specific location. To assist you in understanding the requirements for this application, copies of A.R.S. § 45-596 and Arizona Administrative Code ("A.A.C.") R12-15-810 are available at the Department bookstore (602-417-2450 x7127).
2. If replacing, deepening or modifying an existing well, provide the registration number of the existing well in item 2. A replacement well is one located no more than 660 feet from the original well and that is not expected to annually withdraw more groundwater than historically withdrawn from the original well.
3. Information to complete items 3, 4, 5 and 14 may be available from your driller.
4. Information to complete items 10 and 13 may be available from your County Assessor's Office.
5. An exempt well, referred to in Item 11, means a well with a pump with a maximum capacity of not more than thirty-five gallons per minute used primarily for domestic purposes, including the noncommercial irrigation of less than two acres of land.
6. If any water from a proposed well on a parcel of twenty or fewer acres will be used for domestic purposes, as defined in § 45-454, the applicant must submit a well site plan of the property. The plan must be on an 8½" x 11" piece of plain paper with representation of the locations of all structures and proximity of adjacent lot lines, to scale. It must include the county assessor's parcel identification number. The plan must show the proposed well location and the location of any septic tank or sewer system that is either located on the property or within one hundred feet of the proposed well site, as well as indicating the measured shortest distance between the proposed well and existing septic tank system. **The plan must demonstrate that the well will not be drilled within one hundred feet of any septic or sewer system.**
7. The site plan must be approved by the county health authority, or by a local health authority in areas where the county health authority has delegated authority to approve septic or sewer systems. Endorsement by the county/local authority is based solely on the best available judgement that the proposed well, as shown on the site plan submitted, is 100 feet or more from all known and visually identifiable sewage treatment systems. It is not a representation that a well placed at this site will be guaranteed as to quantity or quality. In areas where there is no local or county authority that controls installation of septic tanks or sewer systems, or if the health authority is unable to determine whether the proposed well location complies with state and local requirements, the applicant must apply for approval directly to the Department of Water Resources.
8. If an individual other than the land owner or lessee signs this notice, an original letter of authorization from the land owner/lessee, stating that the individual has permission to sign this specific notice on his or her behalf, must accompany the notice.
9. Please mail **two original Notices** with **original signatures** and **two site plans** and, in accordance with A.R.S. § 45-113, a **check or money order (no cash) in the amount of $10.00** to P. O. Box 458, Phoenix Arizona, 85001-0458, or hand deliver to 500 North Third Street, Phoenix, Arizona.
10. Arizona Revised Statute § 45-596(D) provides that the Director of the Department is to determine whether or not all information required on this form has been submitted. If not, the person filing the Notice will be notified, and the drilling or modification of the well may **not** proceed.
11. This form is not applicable for non-exempt wells (those yielding more than thirty-five gallons per minute) within an Active Management Area. Contact Groundwater Management for further information regarding the appropriate notice to file with the Department.

TIME FRAME FOR REVIEW OF YOUR APPLICATION

Within 15 days after receipt of your Notice of Intention, the Arizona Department of Water Resources ("Department") will determine whether your application should be granted or denied, unless this time is extended for lack of a complete application. If your application is incomplete, the Department will notify you in writing and will specify what information is necessary to make the application complete. Until the missing information is received, the time frame for review of your application will be suspended. Your application will not be complete until all of the requested information is received. If you do not supply the missing information within sixty (60) days, the Department may deem your application withdrawn and close the file.

At the end of its review, the Department will send you written notice either granting or denying your application for drilling authority. If your application is approved, the Drill Card will be mailed directly to the drilling company. If denied, the Department's notice will state justification for the denial and an explanation of your right to appeal.

CONSTRUCTION AND FOLLOW UP REQUIREMENTS

1. Construction and abandonment standards for wells, including abandonment, must be in accordance with Department Regulations. A.R.S. § 45-594 and Arizona Administrative Code R12-15-811 require the well to be constructed with a twenty foot steel surface seal casing, including a one foot steel stickup and one and one-half inches of grout seal, unless a variance is granted (**see A.R.S. § 45-596 (G) for procedure to follow in requesting a variance**).
2. Pursuant to § 45-596(E), the drilling, deepening or modification of the well must be completed within one year of the date of the Notice of Intent. If the well is not completed within one year, a new Notice of Intent must be filed before proceeding with further construction.
3. If a well which was originally drilled as an exploration well, a monitor well, a piezometer well or for any use other than domestic use is later proposed to be converted to use for domestic purposes as defined in § 45-454, the well owner must file a Notice of Intention to Drill and comply with the requirements of § 45-596 before the well is converted and any water from that well is used for domestic purposes.
4. Within thirty days after installation of pumping equipment, the registered well owner must file a Completion Report with the Department. The person to whom a well is registered also must notify the Department of a change in ownership or a change in data relating to this well.

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North 3rd Street
Phoenix, Arizona 85004

RECEIVED
MAY 1 1 2000
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. J. A. DEERE & SON WELL DRILLING
P.O. BOX 777
SOMERTON, AZ 85350-0777

2. Owner Name: MARKAL INVESTMENT INC.
Address: 1195 S. 5TH AVE YUMA AZ 85364
City State Zip

3. Location: 8 N/S 23 E/W 34 ¼ NE ¼ NE ¼ SW
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55-580030 (Required)

5. Permit No. _____ (If Issued)

DESCRIPTION OF WELL

6. Total depth of hole 240' ft.
7. Type of casing PVC
8. Diameter and length of casing 5 in. from 20' to 240', _____ in from _____ to _____
9. Method of sealing at reduction points _____
10. Perforated from 200' to 240', from _____ to _____ from _____ to _____
11. Size of cuts .035 Number of cuts per foot 20
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction DRILLED
(drilled, dug, driven, bored, jetted, etc)
14. Date started 4/25/00
Month Day Year
15. Date completed 5/10/00
Month Day Year
16. Depth to water 70' ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea_level elevation if availabl
_____
18. If flowing well, state method of flow regulation: _____
19. Remarks: _____

ANSWERED MAY 1 2 2000

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55- 580030
File No. C(8-23) 34 CAA
Received _____ By _____
Entered _____ By _____

DWR-55-55-7/95 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	20	Sand, Clay, Gravel
20	40	Sand, Clay, Gravel
40	60	Sand, Clay, Gravel
60	80	Clay, Gravel
80	100	Clay, Gravel
100	120	Clay
120	140	Clay
140	160	Clay, Gravel
160	180	Clay, Gravel
180	200	Clay, Gravel
200	220	Clay, Gravel
220'	240'	Clay, Gravel

I hereby certify that this well was drilled by me (or under by supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

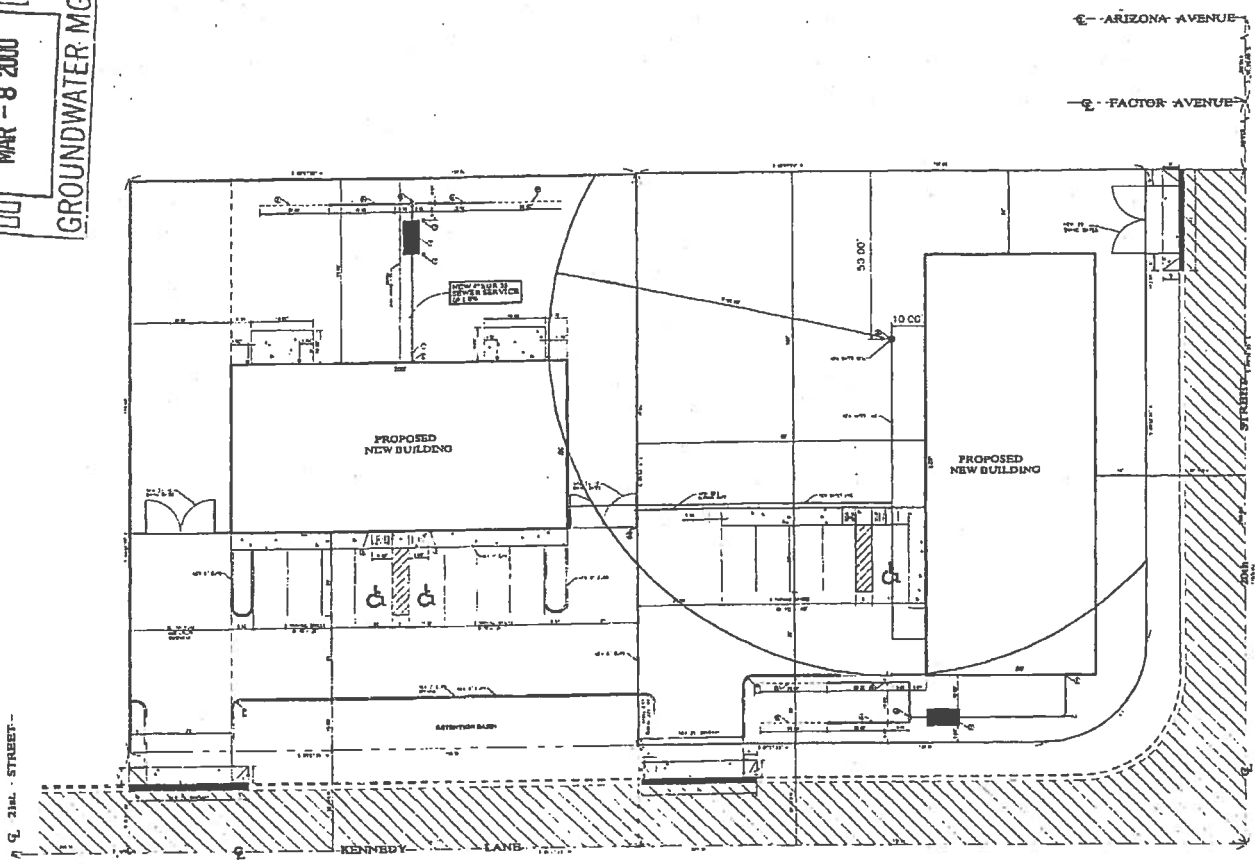
Driller Name: J. A. DEERE & SON WELL DRILLING

P.O. BOX 777
Street

SOMERTON, AZ 85350-0777 520-726-0148
City State Zip Phone No.

Signature of Driller 5/10/00
Date

RECEIVED
MAR - 8 2000
GROUNDWATER MGT



KEY NOTES

CURVE DATA

ARIZONA DEPARTMENT OF WATER RESOURCES

GROUNDWATER MANAGEMENT SUPPORT SECTION

500 North Third Street
Phoenix, Arizona 85004

THIS AUTHORIZATION SHALL BE IN POSSESSION OF THE DRILLER DURING ALL DRILL OPERATIONS

WELL REGISTRATION NO: 55-580030

AUTHORIZED DRILLER: J. A. DEERE & SON WELL DRILLING LICENSE NO: 295

NOTICE OF INTENTION TO DRILL A EXEMPT WELL(S) HAS BEEN FILED WITH THE DEPARTMENT BY:

WELL OWNER: MARKAL INVESTMENTS 1195 S 5TH AVE YUMA, AZ 85364

The well(s) is/are to be located in the:

NE ¼ of the NE ¼ of the SW ¼ Section 34 Township 8 SOUTH Range 23 WEST

No. of wells in this project: 1

THIS AUTHORIZATION EXPIRES AT MIDNIGHT ON THE 7TH DAY OF MARCH, 2001

ARD

GROUNDWATER MANAGEMENT SUPPORT

THE DRILLER MUST FILE A LOG OF THE WELL
WITHIN 30 DAYS OF COMPLETION OF DRILLING

GREAT SEAL OF THE STATE OF ARIZONA
DITAT DEUS
1912

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North 3rd Street, Phoenix, Arizona 85004
Telephone (602) 417-2470
Fax (602) 417-2422

March 14, 2000

JANE DEE HULL
Govenor

RITA P. PEARSON
Director

MARKAL INVESTMENTS
1195 S 5TH AVE
YUMA, AZ 85364

Registration No. 55-580030
File No. C(8-23) 34 CAA

Dear Well Owner:

Enclosed is a copy of the Notice of Intention (NOI) to Drill a well. This NOI, which was recently filed with this Department, is being returned to you as evidence of your compliance with ARS §45-596. The enclosed Completion Report is to be submitted when pump equipment is installed. The Drilling Card and Well Drilling Report form have been sent to your driller. He may not begin drilling until he has received the Drilling Card and it must be displayed on the rig during drilling. If you change drillers, you must supply this Department with the new driller's identity. Please ensure that the driller you select is licensed to drill the type of well you require. All well drillers must pass an examination proving they understand the drilling methods for that particular license, and are familiar with the laws and regulations which govern well construction in Arizona.

If it is necessary to change the location of the proposed well, immediately contact the Department of Water Resources to obtain written permission before proceeding with the drilling. A properly signed, amended Drilling Card must be in the possession of the driller before drilling commences at a different location than originally authorized.

ARS §45-600 requires the registered well owner to submit a completion report within thirty (30) days after the installation of pumping equipment. It also requires the driller to furnish this Department a complete and accurate log of the well within thirty (30) days after completion of drilling. You should insist, and ensure, that both of these are done.

If in the course of drilling a new well, it is determined that the new well cannot be successfully completed as initially intended (dry hole, cave in, lost tools, etc.), the new well must be properly abandoned and a Well Abandonment Completion Report submitted per R12-15-816.F.

Per ARS §45-593 (C), the person to whom a well is registered shall notify this Department of a change in ownership of the well and/or information pertaining to the physical characteristics of the well in order to keep this well registration file current and accurate. We have enclosed a Change of Well Information Form should it be needed in the future.

Sincerely,

Monica Ortiz

Monica Ortiz
Water Resource Technician
Groundwater Management Support Section

Enclosures

APPENDIX I

REMEDIAL OBJECTIVES

REMEDIAL OBJECTIVES REPORT
20th STREET AND FACTOR AVENUE
WQARF REGISTRY SITE
YUMA, ARIZONA

August, 2014

Arizona Department of Environmental Quality
Remedial Projects Unit
1110 West Washington
Phoenix, Arizona 85007

TABLE OF CONTENTS

LIST OF ABBREVIATIONS & ACRONYMS ii

SECTION 1 INTRODUCTION 1

SECTION 2 REMEDIAL OBJECTIVES FOR LAND USE 3
- 2.1 Summary of Current and Reasonably Foreseeable Land Use 3
- 2.2 Soil Remedial Objective 4

SECTION 3 REMEDIAL OBJECTIVES FOR GROUNDWATER USE 5
- 3.1 Summary of Current and Reasonably Foreseeable Groundwater Use 5
- 3.2 Groundwater Remedial Objective 6

SECTION 4 REMEDIAL OBJECTIVES FOR SURFACE WATER USE 7

FIGURES
- 1. Water Well Uses in the Site Vicinity

LIST OF ABBREVIATIONS & ACRONYMS

A,A,C,	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
ADWR	Arizona Department of Water Resources
AMA	Active Management Area
A,R,S,	Arizona Revised Statutes
AWQS	Aquifer Water Quality Standard
COC	Chemicals of Concern
cis-1,2-DCE	cis-1,2-dichloroethene
1,1-DCE	1,1-dichloroethene
DEHP	Di(2-ethylhexyl)phthalate
DEUR	Declaration of Environmental Use
ERA	Early Response Action
FS	Feasibility Study
INA	Irrigation Non-Expansion Areas
PCE	Tetrachloroethene
RO	Remedial Objective
RI	Remedial Investigation
rSRLs	Residential Soil Remediation Levels
TCE	Trichloroethene
VOC	Volatile Organic Compound
WPA	Water Planning Area
WQARF	Water Quality Assurance Revolving Fund

1.0 INTRODUCTION

The Arizona Department of Environmental Quality (ADEQ) has prepared this Proposed Remedial Objectives (ROs) report for the 20th Street and Factor Avenue Water Quality Assurance Revolving Fund (WQARF) Registry Site (the site) to meet requirements established under Arizona Administrative Code (A.A.C.) R18-16-406. This RO report relies upon the land and water use study questionnaires collected in 2013 and the solicitation of proposed Remedial Objectives during the comment period on the Draft Remedial Investigation report (RI) in 2014. The land and water use questionnaires are included in Appendix H of the 20th Street and Factor Avenue RI Report prepared by Tetra Tech for ADEQ.

ROs are established for the current and reasonably foreseeable uses of land and waters of the state that have been or are threatened to be affected by a release of a hazardous substance. Pursuant to A.A.C. R18-16-406(D), it is specified that reasonably foreseeable uses of land are those likely to occur at the site and the reasonably foreseeable uses of water are those likely to occur within one hundred years unless site-specific information suggests a longer time period is more appropriate.

Reasonably foreseeable uses are those likely to occur, based on information provided by water providers, well owners, land owners, government agencies, and others. Not every use identified in the RI report will have a corresponding RO. Uses identified in the RI report may or may not be addressed based on information gathered during the public involvement process, limitations of WQARF, and whether the use is reasonably foreseeable.

The ROs must be stated in the following terms: (1) protecting against the loss or impairment of each use; (2) restoring, replacing, or otherwise providing for each use; (3) when action is needed to protect or provide for the use; and (4) how long action is needed to protect or provide for the use.

The ROs chosen for the site will be evaluated in the feasibility study (FS) phase of the WQARF process. The FS will evaluate specific remedial measures and strategies required to meet ROs. A remedial strategy is one or a combination of six general strategies identified in Paragraph B.4 of Arizona Revised Statutes (A.R.S.) § 49-282-06 (plume remediation, physical containment, controlled migration, source control, monitoring, and no action.) A.R.S. § 49-282-06(B)(4)(a) indicates that for remediation of soil, the selected remedial action shall be consistent with the soil remediation standards adopted pursuant to A.R.S. § 49-152. A remedial measure is a specific action taken in conjunction with remedial strategies to achieve one or more ROs (for example, well replacement, well modification, water treatment, water supply replacement, and engineering controls.)

The FS will propose at least three remedies (a reference remedy and generally two alternative remedies) capable of meeting ROs. A reference remedy is a combination of remedial strategies and measures capable of achieving ROs, and is compared with alternative remedies for purposes of selecting a proposed remedy. An alternative remedy is a combination of remedial strategies and measures different from the reference remedy; alternative remedies are compared with the reference remedy for purposes of selecting a proposed remedy. Proposed remedies will also be generally compatible with future land use specified by land owners.

Written comments on this proposed RO report will be accepted for a period of 30 days following the release. If significant public interest exists or if significant issues or information are brought to the attention of ADEQ, the comment period may be extended. The final report will include a responsiveness summary to written comments received from the public during the comment period. The final RO Report will be an appendix to the final RI Report.

2.0 REMEDIAL OBJECTIVES FOR LAND USE

The Site is located in the City of Yuma and is approximately bounded to the north by 17th Street, to the south by 21st Street, to the east by Kennedy Lane and to the west by Fourth Avenue. Through the RI process the following Contaminants of Concern (COCs) have been identified in soil, soil vapor, and groundwater at the site: tetrachloroethene (PCE), trichloroethene (TCE), 1,1-dichloroethene (1,1-DCE), cis-1,2-dichloroethene (cis-1,2-DCE), Di(2-ethylhexyl)phthalate (DEHP), and cyanide. The main COCs at the site are PCE, TCE and cyanide. PCE was determined to be the primary volatile organic compound (VOC) contaminant with TCE, 1-1 DCE and cis-1,2-DCE believed to be present as breakdown byproducts of PCE. After several years of investigations, The Houston International, Ltd. facility, located at 653/655 East 20th Street has been identified as a the source area of the COCs. ADEQ has not identified any other sources in the area.

Early Response Actions (ERAs) performed at the site include the removal of two unused sumps and the cleaning of three active septic systems at the facility. Approximately 15,000 gallons of PCE and cyanide-contaminated wastewater and sludge were removed from the disposal system during cleaning operations. The removal of this source material addressed a continuing source of groundwater contamination. Also during the ERA, one foot of cyanide contaminated soil was removed and a permanent asphalt concrete cap was installed to limit exposure to the cyanide contaminated soils remaining at a depth of one foot. In addition, the cap is designed to limit infiltration and decrease the potential for continued leaching of contaminants to groundwater. A Declaration of Environmental Use (DEUR) is in place on the property limiting the use of the property to non-residential use due to the cyanide contaminated soils remaining below a depth of one foot.

Land and water use study questionnaires City of Yuma, Yuma County, Yuma Mesa irrigation district and private well owners within the Community Involvement Area for the site. Based on future and use plans provided by the City of Yuma and Yuma County, there are no immediate plans to change the land use or zoning for the areas within and adjacent to the site.

2.1 Summary of Current and Reasonably Foreseeable Land Use

The site is located in a mixed urban, commercial and residential area. Based on the current zoning maps provided by the Yuma County, the site is zoned as low density residential, commercial and light industrial. Based on future and use plans provided by the City of Yuma and Yuma County, there are no immediate plans to change the land use or zoning for the areas within and adjacent to the site.

2.2 Soil Remedial Objective

Houston International Ltd. leases the buildings at the facility to tenants that use it as office space, welding and machine repair shop, a mechanic shop, and a dance studio. Since 2012, the outdoor parking area has been used for storage of commercial trucks. The Facility currently has a DEUR in place limiting the use of the facility to non-residential uses due to cyanide contamination above residential Soil Remediation Levels (rSRLs) remaining at a depth greater than one foot.

The site is currently, and will for the foreseeable future, be zoned for residential, commercial and light industrial uses. Therefore, the ROs for land use at the site are:

> **To restore soil conditions to the remediation standards for non-residential or residential use specified in A.A.C. R18-7-203 (specifically background remediation standards prescribed in R18-7-204, predetermined remediation standards prescribed in R18-7-205, or site specific remediation standards prescribed in R18-7-206) that are applicable to the hazardous substances identified. This action is needed for the present time and for as long as the level of contamination in the soil threatens its use as a residential or non-residential property.**

3.0 REMEDIAL OBJECTIVES FOR GROUNDWATER USE

The land and water use portion of the RI report is an inclusive summary of information gathered from the Arizona Department of Water Resources (ADWR), water providers, municipalities, and land owners. Drinking water in the area is provided by the City of Yuma and there are no municipal wells in the area of the site. There are over 300 wells within one mile of the Houston International Ltd. facility with most of the wells used for groundwater monitoring. Of the wells, six private wells, with a use other than monitoring, were identified in the vicinity of the site.

3.1 Summary of Current and Reasonably Foreseeable Groundwater Use

The site lies within the ADWR Lower Colorado River Water Planning Area (WPA), which is composed of eleven groundwater basins in southwestern Arizona. Within the WPA, and outside of the Active Management Areas (AMAs), there are effectively no restrictions on groundwater withdrawal, provided the water is put to reasonable and beneficial use. The only exception to groundwater withdrawal occurs within areas designated as Irrigation Non-Expansion Areas (INAs), where irrigation of new agricultural land is restricted to prevent decline in groundwater levels. The site is not located within an INA.

The groundwater in the Yuma Basin is primarily used for agriculture use. According to the ADWR, Lower Colorado River Cultural Water Demand Report, annual use is 935,700 acre-feet (acre-ft) of groundwater for agriculture; while the annual municipal usage accounts for 17,400 acre-ft, and annual industrial usage accounts for 12,140 acre-ft.

Questionnaires were mailed to the City of Yuma, Yuma County, Yuma Mesa Irrigation Drainage District and private well owners, within the Community Involvement Area, of the site to obtain information regarding current and future uses of groundwater. Private well owners identified in the area of the site were the immediately upgradient wells owned by Markel Investments and Ron Martin. Both of these wells are listed as irrigation use in the ADWR database but only the use of the Martin well was confirmed with a returned land and water use questionnaire.

Downgradient wells identified during the land and water use survey include the St. Francis of Assisi School well located approximately 1,600 feet downgradient of the site and the well at Alice Byrne Elementary School located approximately 2,200 feet downgradient of the site. Both of these wells are listed as irrigation use in the ADWR database but only the use of the St. Francis of Assisi well was confirmed with a returned land and water use questionnaire.

Two crossgradient wells were also identified during the survey. These are the Jose Pacheco well located approximately 1,600 feet southwest of the site. This well is listed as a domestic use well in the ADWR database but the use or existence of this well could not be confirmed with the well owner as land and water use surveys sent to the address on record were returned as undeliverable.

Although just outside the Community Involvement Area, the well at Woodward Junior High School was also included in the survey. This well is located approximately 3,700 feet southwest of the site.

The ADWR database lists the use of this well as irrigation but this use could not be confirmed with a returned land and water use questionnaire (Figure 1).

The City of Yuma's Annual Water Quality Report for 2013 indicates the main source of Yuma's drinking water is surface water from the Colorado River, delivered to the treatment facilities via the canal systems. None of the treatment facilities are located in the vicinity of the site.

The Main Street Treatment facility is a conventional surface water treatment plant located approximately two miles north of the site. The Agua Viva Water Treatment facility presently treats surface water and groundwater. The city has three wells producing groundwater located near the Agua Viva Water Treatment Plant. Each well is capable of producing approximately 3 million gallons, or nine acre-ft of water per day. The wells are typically used only April through October. The wells are located at Avenue 9E and 28th Street, on the east side of Yuma, and approximately two miles east of the site.

The city provides approximately 30,000 acre ft of water per year and groundwater use makes up approximately three to 25 percent of that use. The city indicated it has no plans to develop groundwater resources within the area of the site.

3.2 Groundwater Remedial Objective

Current groundwater use in the area of the site is for irrigation and potentially domestic use. However, A.R.S. § 49-224(B) classifies all aquifers in the state for drinking water protected use. Therefore, based on input from the community, the current and future use of the aquifer should be protected. The RO for groundwater at the site is:

> **To restore and protect for the use of the groundwater supply by private well owners in the vicinity of the site from contamination at the site. This action is currently needed and will be needed for as long as private well owners use water for domestic use. This action is currently needed and will be needed as long as private well owners use water for irrigation. This action will be needed should the City of Yuma develop groundwater resources in the area of the site for municipal drinking water uses. This action will be needed for as long as the level of contamination in the groundwater threatens the use of the regional groundwater for municipal drinking water uses.**

4.0 REMEDIAL OBJECTIVES FOR SURFACE WATER USE

According to the ADWR, Lower Colorado River Cultural Water Demand Report, annual surface water used for agriculture in the Yuma Basin, is 1,899,400 acre-feet, The municipal usage is 33,000 acre-feet, and industrial usage is 1,420 acre-feet.

The City of Yuma's Annual Water Quality Report for 2013 indicates the main source of Yuma's drinking water is surface water from the Colorado River, delivered to the treatment facilities via the canal systems. None of the treatment facilities or canals are located in the vicinity of the site.

The land and water use evaluation section of the RI report identified no other uses of surface water in the area of the site. Therefore there are no remedial objectives required for surface water.

APPENDIX J

RESPONSIVENESS SUMMARY

REMEDIAL INVESTIGATION AND REMEDIAL OBJECTIVES RESPONSIVENESS SUMMARY

20TH STREET AND FACTOR AVENUE
WQARF REGISTRY SITE
YUMA, ARIZONA

October 2014

Arizona Department of Environmental Quality
Remedial Projects Unit
1110 West Washington
Phoenix, Arizona 85007

LIST OF ABBREVIATIONS & ACRONYMS

A.A.C	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
A.R.S.	Arizona Revised Statutes
CAB	Community Advisory Board
ROs	Remedial Objectives
WQARF	Water Quality Assurance Revolving Fund

REMEDIAL INVESTIGATION AND REMEDIAL OBJECTIVES RESPONSIVENESS SUMMARY

20TH STREET AND FACTOR AVENUE
WQARF REGISTRY SITE
YUMA, ARIZONA

INTRODUCTION

Pursuant to the requirements of the Arizona Administrative Code (A.A.C) R-18-16-406(H) the Arizona Department of Environmental Quality (ADEQ) has prepared this comprehensive responsiveness summary for comments received on the 20th Street and Factor Avenue Water Quality Assurance Revolving Fund (WQARF) Registry Site (the Site) Remedial Investigation Report and Proposed Remedial Objectives. The comment period for the Draft Remedial Investigation Report and the solicitation of Remedial Objectives (ROs) was opened on February 7, 2014 for 60 days. The comment period for the Proposed Remedial Objectives was opened on July 26, 2014 for 30 days. ADEQ received two comments.

***Comment by the Community Advisory Board (CAB) at March 26, 2014 Meeting*:**
The CAB requested the ROs for the site be based on the Arizona Aquifer Water Quality Standards.

ADEQ Response:
ADEQ wrote the remedial objectives for the site with this comment in mind. Specifically the ROs for groundwater were based on A.R.S. § 49-224(B) which classifies all aquifers in the state for drinking water protected use.

Ms. April Gonzales of Vista Alternative High School commented.
Quite concern with contaminants please advise after final report. Thank you.

ADEQ Response:
ADEQ checked the mailing list and found that Vista Alternative High School is on the mailing list and the school will continue to receive information on the site. No change required to the Remedial Objectives.

Comments

Scott D. Goodwin

From: April Gonzales <agonzales@yumaunion.org>
Sent: Thursday, August 14, 2014 7:54 AM
To: Scott D. Goodwin; Scott D. Goodwin
Subject: 20th Factor/YUMA

Quite concern with contaminants please advise after final report. Thank you

April Gonzales / Registrar
agonzales@yumaunion.org

Vista Alternative High School
2350 S Virginia Dr.
Yuma, AZ 85364

(928) 502-6805 FAX (928) 502-6825