

November 18, 2011

World Resources Company  
8113 West Sherman Street  
Tolleson, Arizona 85353-4025  
Attention: Mr. Bryan Roberts

**RE: Semiannual Groundwater Monitoring Report, October 2011**  
World Resources Company, Tolleson, Arizona  
ATC Project No. 34.41558.0001

Dear Mr. Roberts:

ATC Associates Inc. (ATC) is pleased to present the following semiannual groundwater monitoring report to World Resources Company (WRC) for their facility located at 8113 West Sherman Street, Tolleson, Arizona (Site). ATC was contracted by WRC to conduct groundwater monitoring and reporting at the Site. This report is based on the Groundwater Detection Monitoring Program (DMP) as required by the Arizona Department of Environmental Quality (ADEQ). This report includes groundwater monitoring data and laboratory analyses.

ATC relied on the written DMP, ©1997-2005, by WORLD RESOURCES COMPANY (all rights reserved). Historical groundwater analytical results for the Site are presented in the *Semi-Annual Groundwater Monitoring Report, December 2005, Tolleson, Arizona*, dated February 7, 2006, prepared by ARCADIS and the *Semi-Annual Groundwater Monitoring Report, December 2010, World Resources Company, Tolleson, Arizona*, dated December 13, 2010, prepared by Valley Land Partners, LLC.

The DMP is required by the Code of Federal Regulations, Title 40, Part 264.91(a)(4) [40 CFR 264.91(a)(4)] and is described in the Resource Conservation and Recovery Act (RCRA) Facility Hazardous Permit Application Part B, dated May 1, 1997 (AZ HWMA RCRA PERMIT, EPA ID No. AZD980735500). As described in the DMP, subsequent to an initial 2-year phase of detection monitoring, an ongoing DMP will be implemented, in accordance with 40 CFR 264.98(h). The ongoing DMP involves those monitor wells most appropriately located at and downgradient of the Point of Compliance (POC).

An ATC representative conducted groundwater monitoring at the Site on October 18, 2011. During this investigation, three monitor wells (MW-9, MW-10 and MW-11) contained sufficient groundwater for reliable samples. Laboratory analyses were performed on groundwater samples collected from MW-9, MW-10 and MW-11 as specified in the DMP. Groundwater sampling results are discussed below in Section 3.0.

## 1.0 Introduction

This report presents groundwater monitoring data collected on October 18, 2011 at the Site. The groundwater investigation was conducted based on the DMP. The Site is located in the SW  $\frac{1}{4}$ , SW  $\frac{1}{4}$ , Section 11, Township 1 North, Range 1 East, Gila and Salt River Meridian and Base Line in Maricopa County, Arizona. The approximate elevation of the Site is 1,010 feet above mean sea level. The Site is located approximately 1.5 miles south of Interstate 10 and

0.2 miles east of 83<sup>rd</sup> Avenue in Tolleson, Arizona. The Site is bound to the north by Sherman Street, as depicted on Figure 1, Site Vicinity Map.

A total of 11 monitor wells have been installed at the Site. Six monitor wells (MW-1, MW-2, MW-3, MW-4, MW-5 and MW-8) have been abandoned. The remaining five monitor wells are depicted on Figure 2, Site Location and Potentiometric Surface Map.

## 2.0 Field Activities

Semiannual groundwater monitoring was conducted at the Site on October 18, 2011. Monitoring activities included measuring groundwater elevations in five groundwater monitor wells. Depth to groundwater was gauged in monitor wells MW-6, MW-7, MW-9, MW-10 and MW-11. Groundwater elevations decreased an average of 5.14 feet since the May 2011 monitoring event. The water level indicator was decontaminated between well measurements utilizing a solution of biodegradable, phosphate-free Alconox<sup>®</sup>, rinse water and distilled water.

Water was encountered in monitor well MW-6 at a depth of 84.83 feet. The bottom of casing in well MW-6 is approximately 85 feet below ground surface (bgs). Therefore, MW-6 contained approximately 0.17 feet of water. Water was encountered in monitor well MW-7 at a depth of 88.76 feet. The bottom of casing in well MW-7 is approximately 90 feet bgs. Therefore, MW-7 contained approximately 1.24 feet of water.

Depth to groundwater measurements and groundwater elevations are depicted in Table 1. Groundwater elevations and potentiometric surface map are depicted on Figure 2. As depicted on Figure 2, groundwater elevations in wells MW-6 and MW-7 were not used to determine groundwater flow direction. The groundwater flow direction observed during this monitoring event is generally toward the north. Historically, groundwater flow direction at the Site has been toward the north-northwest.

On October 18, 2011, subsequent to measuring static groundwater levels, ATC utilized a low-flow, adjustable, submersible, GRUNDFOS<sup>®</sup> 2-inch diameter pump to purge groundwater in wells MW-9, MW-10 and MW-11. Monitor wells MW-6 and MW-7 were not sampled due to an insufficient volume of groundwater inside the well casing.

Groundwater was pumped from wells MW-9, MW-10 and MW-11 at an approximate rate of 400 milliliters per minute (mL/min). ATC measured the water quality parameters dissolved oxygen (D.O.), pH, color, odor, specific conductance, total dissolved solids, salinity and temperature during each purging event. Field Data Sheets are included in Appendix A. Subsequent to purging each well, groundwater samples were collected directly from the discharge tube. Groundwater samples were stored in laboratory supplied containers and placed in a cooler with ice.

One quality assurance/quality control (QA/QC) equipment blank and one blind field duplicate groundwater sample were collected during the monitoring event. The equipment blank sample was collected by pumping distilled water through the sampling pump. The blind duplicate groundwater sample was collected from one of the three wells sampled and assigned a random number. QA/QC samples were stored in laboratory supplied containers and placed in a cooler with ice. Groundwater samples and QA/QC samples were submitted chilled, under chain-of-custody procedures, to TestAmerica Laboratories Inc. (TestAmerica) in Phoenix, Arizona for analyses. Based on the DMP, groundwater samples were analyzed for dissolved metals, total cyanide and other selected inorganic groundwater constituents. The laboratory filtered the samples for dissolved metals analyses.

The submersible pump was decontaminated between well sampling events utilizing a solution of biodegradable, phosphate-free Alconox<sup>®</sup>, rinse water and distilled water. ATC set up three five-

gallon buckets to perform decontamination. The pump was first set in a five-gallon bucket with Alconox® solution and ran for approximately five minutes. The pump was then set in a five-gallon bucket with rinse water and ran for approximately five minutes. And last, the pump was set in a five-gallon bucket with distilled water and ran for approximately five minutes.

Monitor well purge water and decontamination water was placed in 55-gallon drums supplied by WRC. ATC understands that WRC treated the purge water and decontamination water on site in their wastewater treatment unit.

### 3.0 Groundwater Sampling Results

Laboratory analytical results of groundwater samples collected during this investigation indicate that no dissolved metals exceeded their respective AWQS. Nitrate (as N) constituents exceeded its AWQS. Other general chemistry analytes and total cyanide did not exceed their respective AWQS. Nitrate (as N) was reported at concentrations of 17 milligrams per Liter (mg/L), 14 mg/L and 13 mg/L in monitor wells MW-9, MW-10 and MW-11, respectively. The AWQS for Nitrate (as N) is 10.0 mg/L. Elevated concentrations of Nitrate (as N) have been reported in previous investigations and were attributed to agricultural land in the general vicinity of the Site.

Analytical results for the MW-9, MW-10 and MW-11 groundwater samples plus the QA/QC samples are depicted in Table 2. A copy of the laboratory analytical report and chain-of-custody document is included in Appendix B.

### 4.0 Quality Assurance/Quality Control

On October 18, 2011 TestAmerica received five sets of groundwater samples collected at the Site. The five sets of groundwater samples included one equipment blank (ID EQUIP BLANK), one blind field duplicate (ID DUP) (collected from well MW-11), one sample from well MW-9 (ID MW-9), one sample from well MW-10 (ID MW-10) and one sample from well MW-11 (ID MW-11). TestAmerica reported their analyses on October 31, 2011 (Analytical Report PUJ1092). A copy of the TestAmerica report is included in Appendix B.

ATC reviewed the report for the following Quality Assurance/Quality Control parameters:

- Holding times and errors
- Blank results and contamination
- Laboratory control sample (LCS) analysis
- Field duplicates and other quality control (QC)
- Duplicate sample, matrix spike/matrix spike duplicate (MS/MSD) analysis

Holding times were met for each analyte. No analytes were reported above their respective Practical Quantitation Limit (PQL) for the Equipment Blank. No critical data qualifiers were reported by the laboratory.

The laboratory sample duplicate results were below 20 percent RPD (Relative Percent Difference as defined in the laboratory report). The blind field duplicate (ID DUP; collected from well MW-11) laboratory sample results were below 20 percent RPD, as depicted in Table 2.

### 5.0 Findings and Recommendations

Laboratory analytical results of groundwater samples collected during this investigation indicate analytes did not exceed AWQS, with the exception of Nitrate (as N). Elevated concentrations of Nitrate (as N) have been reported in previous investigations and were attributed to fertilizers used on agricultural land in the general vicinity of the Site. On behalf of WRC, ATC

recommends to continue semiannual groundwater monitoring at the Site.

### 6.0 Summary

ATC has prepared this semiannual groundwater monitoring report for WRC and their facility located at 8113 West Sherman Street, Tolleson, Arizona. Our findings are based on field observations, points of investigation and results of laboratory tests performed by TestAmerica.

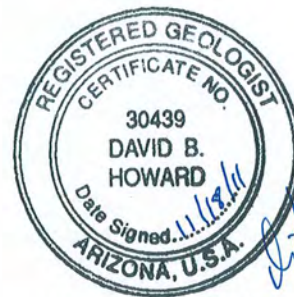
If additional information is required or if you have any questions regarding the information in this report, please feel free to contact David Howard at (480) 355-4659.

Respectfully submitted,  
**ATC Associates Inc.**



Whitney Hayes  
Project Manager

Attachments, as stated.



Expires 9/30/2014

David B. Howard, P.E., R.G.  
Senior Project Manager

## TABLES

**Table 1**  
**Groundwater Monitoring Data**  
**World Resources Company**  
**Tolleson, Arizona**

<b>Monitoring Well I.D.</b>	<b>Wellhead Elevation MSL (ft)</b>	<b>Monitoring Date</b>	<b>Depth to Water (ft)</b>	<b>Groundwater Elevation MSL (ft)</b>
MW-6	1,013.75	05/10/11	81.10	932.65
		10/18/11	84.83	928.92
MW-7	1,016.44	05/10/11	84.21	932.23
		10/18/11	88.76	927.68
MW-9	1,016.94	05/10/11	85.26	931.68
		10/18/11	90.37	926.57
MW-10	1,013.24	05/10/11	81.40	931.84
		10/18/11	86.49	926.75
MW-11	1,010.74	05/10/11	77.89	932.85
		10/18/11	83.12	927.62

*Monitor well top of casing elevations surveyed by Malcolm Pirnie  
MSL = Mean Sea Level*

**Table 2**  
**Analytical Results for Inorganics in Groundwater (units are mg/l, except as noted)**  
**World Resources Company**  
**Tolleson, Arizona**

Analyte	Date	MW-9	MW-10	MW-11	Duplicate (MW-11)	Equipment Blank	AWQS	Field Duplicate RPD
<i>General Chemistry</i>								
Chloride	10/18/2011	490	500	420	420	<2.0	NP	0.0%
Fluoride	10/18/2011	1.3	1.1	1.5	1.5	<0.40	4.0	0.0%
Sulfate	10/18/2011	220	250	190	190	<2.0	NP	0.0%
Nitrate (as N)	10/18/2011	<b>17</b>	<b>14</b>	<b>13</b>	<b>13</b>	<0.20	10.0	0.0%
Nitrite (as N)	10/18/2011	<0.20	<0.20	<0.20	<0.20	<0.20	1.0	-
Phosphorus, Total (as P)	10/18/2011	<0.10	<0.10	<0.10	<0.10	<0.10	NP	-
Total Dissolved Solids (TDS)	10/18/2011	1500	1600	1400	1400	<20	NP	0.0%
Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )	10/18/2011	390	400	410	410	<6.0	NP	0.0%
Alkalinity, Carbonate (as CaCO <sub>3</sub> )	10/18/2011	<6.0	<6.0	<6.0	<6.0	<6.0	NP	-
Alkalinity, Hydroxide (as CaCO <sub>3</sub> )	10/18/2011	<6.0	<6.0	<6.0	<6.0	<6.0	NP	-
Alkalinity, Total (as CaCO <sub>3</sub> )	10/18/2011	390	400	410	410	<6.0	NP	0.0%
Turbidity (units: NTU)	10/18/2011	0.38	0.67	0.27	0.28	<0.20	5.0	3.6%
<i>Total Cyanide</i>								
Cyanide, Total	10/18/2011	<0.050	<0.050	<0.050	<0.050	<0.050	0.200	-
<i>Dissolved Metals</i>								
Barium	10/18/2011	0.036	0.044	0.038	0.036	<0.010	2.0	5.4%
Beryllium	10/18/2011	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.004	-
Cadmium	10/18/2011	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.005	-
Calcium	10/18/2011	55	65	55	54	<2.0	NP	1.8%
Chromium	10/18/2011	0.010	<0.010	<0.010	0.011	<0.010	0.100	-
Copper	10/18/2011	<0.010	<0.010	<0.010	<0.010	<0.010	NP	-
Iron	10/18/2011	<0.050	<0.050	<0.050	<0.050	<0.050	NP	-
Magnesium	10/18/2011	35	37	32	32	<2.0	NP	0.0%
Manganese	10/18/2011	<0.010	<0.010	<0.010	<0.010	<0.010	NP	-
Nickel	10/18/2011	<0.010	0.012	<0.010	<0.010	<0.010	0.100	-
Potassium	10/18/2011	3.3	3.7	3.5	3.4	<2.0	NP	2.9%
Silver	10/18/2011	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	NP	-
Sodium	10/18/2011	420	430	390	400	<2.0	NP	2.5%
Tin	10/18/2011	<0.10	<0.10	<0.10	<0.10	<0.10	NP	-
Zinc	10/18/2011	<0.050	<0.050	<0.050	<0.050	<0.050	NP	-
Antimony	10/18/2011	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.006	-
Arsenic	10/18/2011	0.0059	0.0051	0.0074	0.0072	<0.0010	0.050	2.7%
Lead	10/18/2011	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.050	-
Mercury	10/18/2011	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.002	-
Selenium	10/18/2011	0.0043	0.0039	0.0027	0.0023	<0.0020	0.050	16.0%
Thallium	10/18/2011	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.002	-

AWQS = Aquifer Water Quality Standard

RPD = Relative Percent Difference

NP=None Published

<0.020 = Less Than The Practical Quantitation Limit

**Bold = Exceeds AWQS**

**Table 2**  
**Analytical Results for Inorganics in Groundwater (units are mg/l, except as noted)**  
**World Resources Company**  
**Tolleson, Arizona**

Analyte	Date	MW-9	MW-10	MW-11	Duplicate (MW-9)	Equipment Blank	AWQS	Field Duplicate RPD
<i>General Chemistry</i>								
Chloride	5/10/2011	425	446	501	425	<1.00	NP	0.0%
Fluoride	5/10/2011	1.37	1.22	1.56	1.34	<0.500	4.0	2.2%
Sulfate	5/10/2011	172	180	200	180	<1.00	NP	4.5%
Nitrate (as N)	5/10/2011	<b>13.5</b>	<b>14.4</b>	<b>15.7</b>	<b>13.7</b>	<0.100	10.0	1.5%
Nitrite (as N)	5/10/2011	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	1.0	-
Phosphorus, Total (as P)	5/10/2011	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	NP	-
Total Dissolved Solids (TDS)	5/10/2011	1400	1540	1600	1460	<10.0	NP	4.2%
Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )	5/10/2011	420	420	430	414	<20.0	NP	1.4%
Alkalinity, Carbonate (as CaCO <sub>3</sub> )	5/10/2011	<20.0	<20.0	<20.0	<20.0	<20.0	NP	-
Alkalinity, Hydroxide (as CaCO <sub>3</sub> )	5/10/2011	<20.0	<20.0	<20.0	<20.0	<20.0	NP	-
Alkalinity, Total (as CaCO <sub>3</sub> )	5/10/2011	420	420	430	414	<20.0	NP	1.4%
Turbidity (units: NTU)	5/10/2011	0.420	0.202	1.08	0.410	0.145	5.0	2.4%
<i>Total Cyanide</i>								
Cyanide, Total	5/10/2011	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	0.200	-
<i>Dissolved Metals</i>								
Barium	5/10/2011	0.0431	0.0446	0.0421	0.0421	<0.0100	2.0	2.3%
Beryllium	5/10/2011	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	0.004	-
Cadmium	5/10/2011	<0.00300	<0.00300	<0.00300	<0.00300	<0.00300	0.005	-
Calcium	5/10/2011	59.7	63.1	73.2	58.1	<1.00	NP	2.7%
Chromium	5/10/2011	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	0.100	-
Copper	5/10/2011	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	NP	-
Iron	5/10/2011	<0.100	<0.100	<0.100	<0.100	<0.100	NP	-
Magnesium	5/10/2011	33.9	33.7	43.2	33.2	<1.00	NP	2.1%
Manganese	5/10/2011	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	NP	-
Nickel	5/10/2011	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	0.100	-
Potassium	5/10/2011	8.00	9.48	7.91	7.30	<2.00	NP	9.2%
Silver	5/10/2011	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	NP	-
Sodium	5/10/2011	398	394	405	406	<2.00	NP	2.0%
Tin	5/10/2011	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	NP	-
Zinc	5/10/2011	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	NP	-
Antimony	5/10/2011	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	0.006	-
Arsenic	5/10/2011	<0.0100	<0.0100	0.0111	<0.0100	<0.0100	0.050	-
Lead	5/10/2011	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	0.050	-
Mercury	5/10/2011	<0.000200	<0.000200	<0.000200	0.000245	<0.000200	0.002	-
Selenium	5/10/2011	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	0.050	-
Thallium	5/10/2011	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	0.002	-

AWQS = Aquifer Water Quality Standard

RPD = Relative Percent Difference

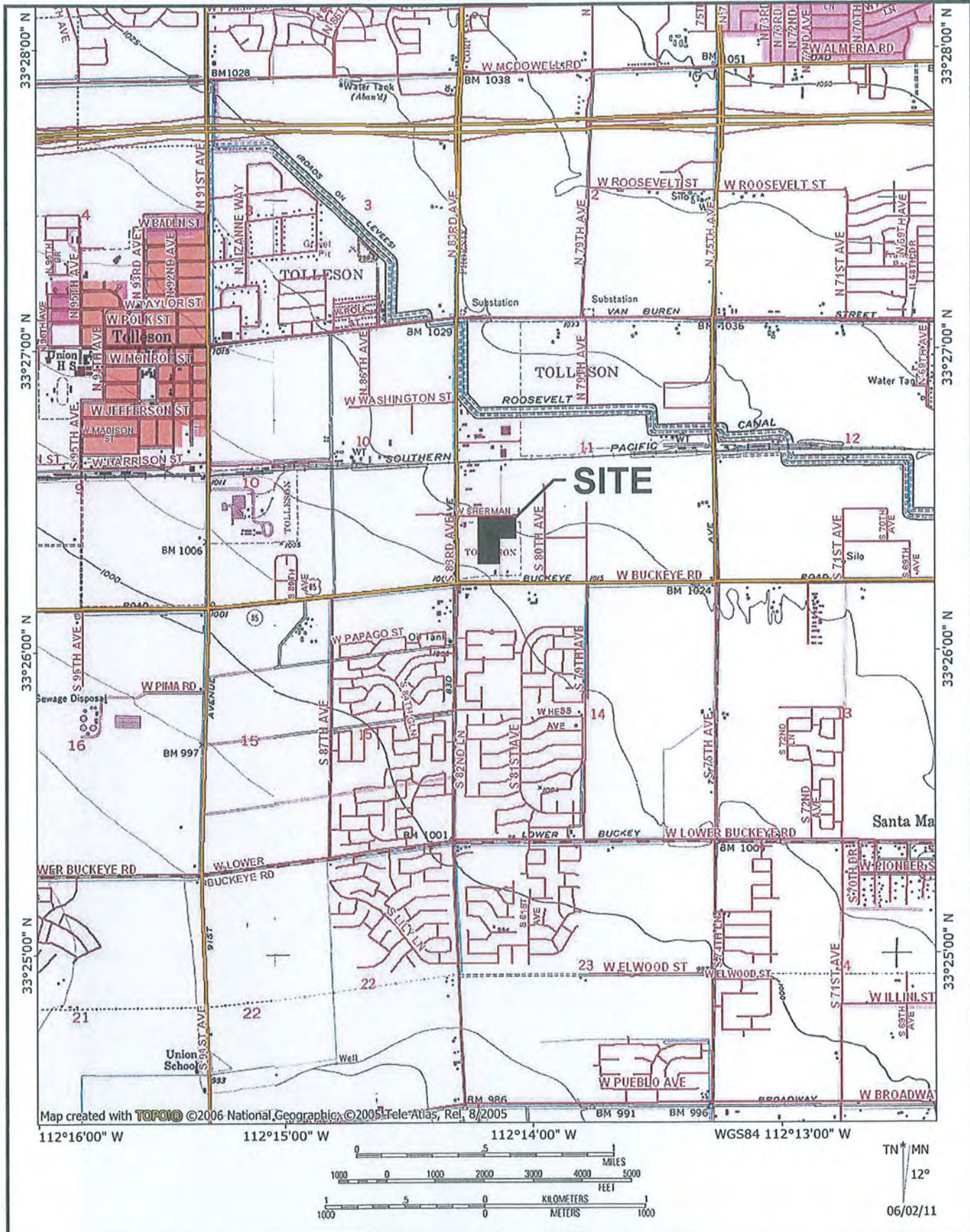
NP=None Published

<0.020 = Less Than The Practical Quantitation Limit

**Bold = Exceeds AWQS**



FIGURES



### SITE VICINITY MAP

WORLD RESOURCES COMPANY  
8113 WEST SHERMAN STREET  
PHOENIX, ARIZONA

PROJECT NUMBER: 034.41558.0001	DATE: 06/02/11	FIGURE
APPROVED BY: DH	DRAWN BY: BL	1

**VATC** ASSOCIATES INC. 9185 South Farmer Avenue, Suite 111  
Tempe, Arizona 85284

926.50

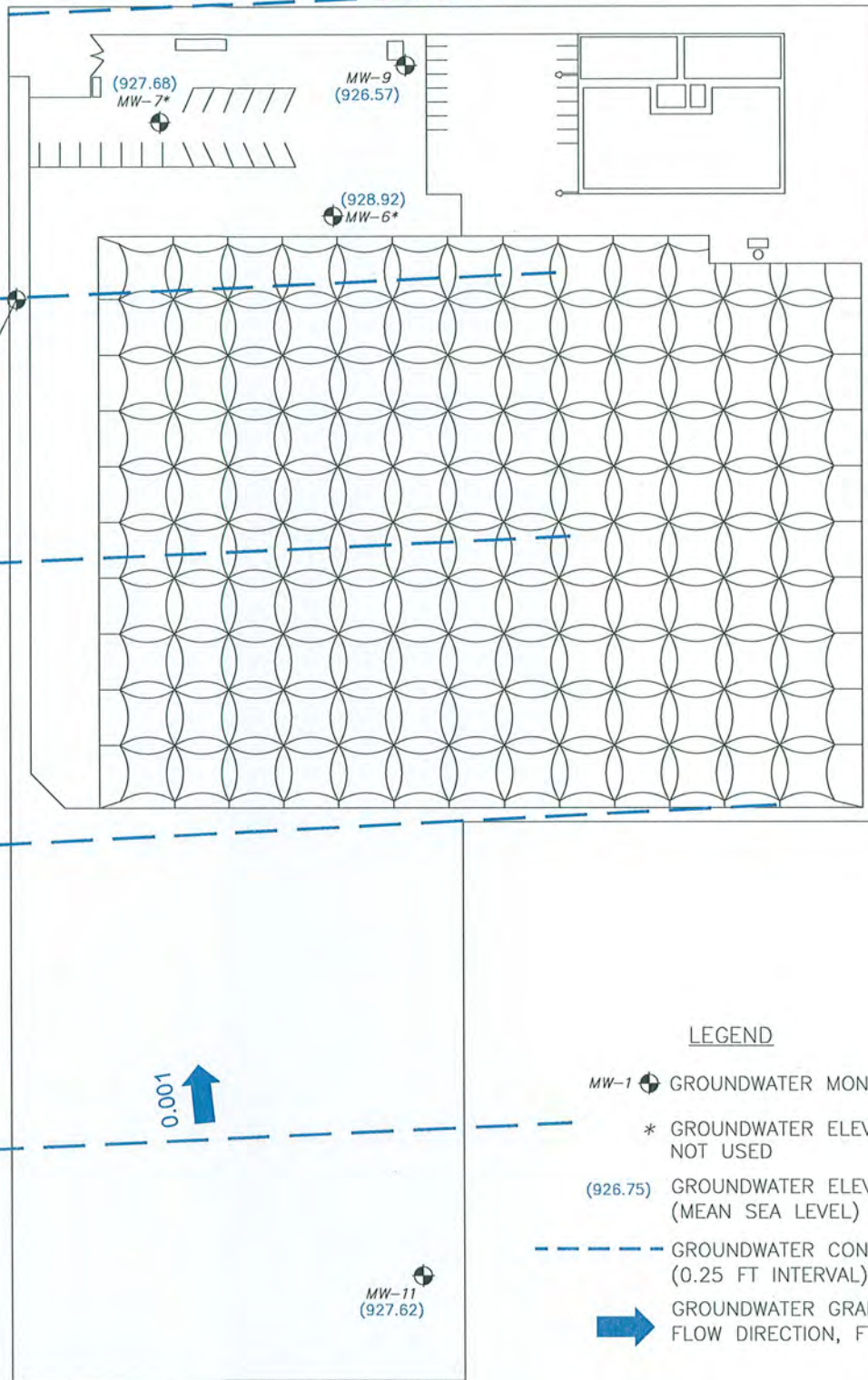
926.75

927.00

927.25

927.50

927.75



LEGEND

- MW-1 GROUNDWATER MONITOR WELL
- \* GROUNDWATER ELEVATIONS NOT USED
- (926.75) GROUNDWATER ELEVATION (MEAN SEA LEVEL)
- - - - GROUNDWATER CONTOUR (0.25 FT INTERVAL)
- GROUNDWATER GRADIENT FLOW DIRECTION, FT/FT



NOTE: SCALE AND LOCATIONS ARE APPROXIMATE

**SITE LOCATION AND POTENTIOMETRIC SURFACE MAP (10/18/11)**

WORLD RESOURCES COMPANY  
8113 W. SHERMAN STREET  
PHOENIX, AZ

PROJECT NUMBER: 034.41558.0001

DATE: 11/10/11

FIGURE

APPROVED BY: DH

DRAWN BY: BL/BK

2



9185 South Farmer Avenue, Suite 111  
Tempe, Arizona 85284

Appendix A  
Field Data Sheets



Field Report

Field Office:

To:

Attn:

Date

10-18-2011

Job No.

World Resourcer Company

Project

24-41558-0001

Task No.

Location

8113 W. Sherman, Phx, AZ

Weather

Sunny

Temperature

95°

Client

World Resourcer Company

Contractor

n/a

ATC Representative

M. Donnelly & D. Howard

Page of

7:00 - At office; service truck + depart for site. Fuel + clean windshield of truck. ~~then~~ Mobilize without issue

8:00 - Meet D. Howard on site. Sign in, wait to complete H&S client meeting.

8:40 - Organize tools, H&S meeting; site walk

9:00 - Begin Sow

well I.D.	Depth (FE.)	Comments
MU-9	90.37	
MW-6	84.83	Missing Bolts
MW-7	88.76	
MW-10	86.49	Bolts do not tighten
MW-11	83.12	

10:30 - Set up on MW-11 to purge. Currently decommissioning pump. Preparing to begin purge event on MW-11

12:30 - Setting up on MW-10 to purge.

13:45 - Setting up on MW-9 to purge. Pump decommissioned and ready to go. Take short break.

15:00 - Sample, site secure. Check out; call PM; Depart site

16:00 - At Test America. Already returned equipment to Terra Tech

Equipment Used:

Contractor Hours:

Staff Hours:

Mileage:

Copies To:

Project Manager:

Reviewed By:



Date 10/18/2011

Field Data Sheet

Project No.	34.41558.0001	Personnel	DH/MD
Site Name	WRC	Site Location	Tolleson, AZ
Site/Well No.	MW-9	Sample ID	MW-9
Weather	Sunny 85°	Duplicate ID	

MW TD		MW TOC Elev.	
MW DTW	90.37	Casing Diam.	4 inches
Purge Rate	400 ml/min.	Water Level Elev.	
Purge Method	Low Flow		

Pump Time Start	14:05	Pump Time Stop	14:40
Sample Time Start	14:35	Sample Time Stop	14:40

Time	Appearance Color/Odor	mg/L D.O.	pH	EC mS/cm or uS/cm	Temp. (°C)	TDS g/L <del>App.</del>
14:10	clear   n/a	6.65	6.97	2.32	29.0	1.50
14:15	clear   n/a	5.56	7.49	2.30	28.4	1.50
14:20	clear   n/a	5.34	8.17	2.31	29.6	1.50
14:25	clear   n/a	5.21	8.61	2.32	30.2	1.50
14:30	clear   n/a	5.53	8.81	2.32	30.5	1.50

SAL.  
1.18  
1.18  
1.18  
1.18  
1.18

Sample Container Description

Constituents	No. Bottles	Preservative
Dissolved Metals (see COC): 500 ml poly	1	HNO <sub>3</sub>
Alk, Cl, TDS, SO <sub>4</sub> , NO <sub>3</sub> , F, Turb.: 1-Liter poly	1	None
Phosphate, Backup NO <sub>3</sub> : 500 ml poly	1	H <sub>2</sub> SO <sub>4</sub>
Cyanide: 500 ml poly	1	NaOH



Date 10/18/2011

Field Data Sheet

Project No.	34.41558.0001	Personnel	DH/MD
Site Name	WRC	Site Location	Tolleson, AZ
Site/Well No.	MW-10	Sample ID	MW-10
Weather	Sunny 85°	Duplicate ID	

MW TD		MW TOC Elev.	
MW DTW	86.49	Casing Diam.	4 inches
Purge Rate	400 ml/min.	Water Level Elev.	
Purge Method	Low Flow		

Pump Time Start	12:40	Pump Time Stop	13:10
Sample Time Start	13:05	Sample Time Stop	13:10

Time	Appearance Color/Odor	mg/L D.O.	pH	EC mS/cm or uS/cm	Temp. (°C)	TDS g/L Turb.	
12:41	clear/n/a	7.20	6.99	2.33	26.58	1.50	1.19
12:45	clear/n/a	5.66	7.21	2.29	27.0	1.47	1.16
12:50	clear/n/a	5.72	8.20	2.25	27.7	1.47	1.15
12:55	clear/n/a	5.24	8.65	2.30	28.3	1.50	1.18
13:00	clear/n/a	5.36	9.09	2.33	29.0	1.51	1.19

SOL.  
1.19  
1.16  
1.15  
1.18  
1.19

Sample Container Description

Constituents	No. Bottles	Preservative
Dissolved Metals (see COC): 500 ml poly	1	HNO <sub>3</sub>
Alk, Cl, TDS, SO <sub>4</sub> , NO <sub>3</sub> , F, Turb.: 1-Liter poly	1	None
Phosphate, Backup NO <sub>3</sub> : 500 ml poly	1	H <sub>2</sub> SO <sub>4</sub>
Cyanide: 500 ml poly	1	NaOH



Date 10/18/11

Field Data Sheet

Project No.	34.41558.0001	Personnel	DH/MD
Site Name	WRC	Site Location	Tolleson, AZ
Site/Well No.	MW-11	Sample ID	MW-11
Weather		Duplicate ID	Dup.

MW TD		MW TOC Elev.	
MW DTW	83.12	Casing Diam.	4 inches
Purge Rate	400 ml/min.	Water Level Elev.	
Purge Method	Low Flow		

Pump Time Start	11:07	Pump Time Stop	11:45
Sample Time Start	11:40	Sample Time Stop	11:45

Time	Appearance Color/Odor	mg/L D.O.	pH	EC mS/cm or uS/cm	Temp. (°C)	TDS g/L Part.	SAL.
11:13	clear/na	11.66	6.95	2.095	25.5	1.36	1.07
11:20	clear/na	5.64	7.24	2.091	25.9	1.35	1.06
11:25	clear/na	4.54	8.21	2.10	27.3	1.36	1.07
11:30	clear/na	4.74	8.39	2.09	27.5	1.06	1.07
11:35	clear/na	4.75	8.62	2.09	27.6	1.36	1.07

Sample Container Description

Constituents	No. Bottles	Preservative
Dissolved Metals (see COC): 500 ml poly	1	HNO <sub>3</sub>
Alk, Cl, TDS, SO <sub>4</sub> , NO <sub>3</sub> , F, Turb.: 1-Liter poly	1	None
Phosphate, Backup NO <sub>3</sub> : 500 ml poly	1	H <sub>2</sub> SO <sub>4</sub>
Cyanide: 500 ml poly	1	NaOH



Appendix B

Laboratory Groundwater Report and  
Chain of Custody Document

## LABORATORY REPORT

Prepared For: ATC Associates - Tempe  
9185 S. Farmer Ave., Suite 111  
Tempe, AZ 85284  
Attention: David Howard

Project: World Resources Company  
34.41558.0001

Sampled: 10/18/11  
Received: 10/18/11  
Issued: 10/31/11 09:37

NELAP #01109CA Arizona DHS#AZ0728

*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. The Chain of Custody, 1 page, is included and is an integral part of this report.*

*This entire report was reviewed and approved for release.*

### CASE NARRATIVE

#### LABORATORY ID

PUJ1092-01  
PUJ1092-02  
PUJ1092-03  
PUJ1092-04  
PUJ1092-05

#### CLIENT ID

MW-9  
MW-10  
MW-11  
DUP  
Equip Blank

#### MATRIX

Water  
Water  
Water  
Water  
Water

TestAmerica Phoenix

Linda Eshelman  
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

ATC Associates - Tempe  
9185 S. Farmer Ave., Suite 111  
Tempe, AZ 85284  
Attention: David Howard

Project ID: World Resources Company 34.41558.0001

Report Number: PUJ1092

Sampled: 10/18/11

Received: 10/18/11

**SAMPLE RECEIPT:** Samples were received intact, at 6°C, on ice 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.  
N1 - Dissolved ICP (200.7), Mercury (245.1) and ICPMS (200.8) Metals - PUJ1092-01, 02, 03 and 04 - Sample filtration for dissolved analytes was performed by laboratory. The regulatory requirement is filtration within fifteen minutes of sampling.

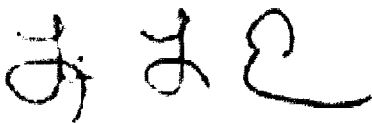
**PRESERVATION:** Samples requiring preservation were verified prior to sample analysis.

**QA/QC CRITERIA:** All analyses met method criteria, except as noted in the report with data qualifiers.  
N1a - Chloride and Sulfate - Batch 11J0709 - Results exceeded the linear range in the MS/MSD and therefore are not available for reporting. The batch was accepted based on acceptable recovery in the Blank Spike (LCS).

**COMMENTS:** No significant observations were made.

**SUBCONTRACTED:** No analyses were subcontracted to an outside laboratory.

Reviewed By:



**TestAmerica Phoenix**

Linda Eshelman  
Project Manager

*The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from TestAmerica.*

**PUJ1092 <Page 2 of 24>**

ATC Associates - Tempe  
 9185 S. Farmer Ave., Suite 111  
 Tempe, AZ 85284  
 Attention: David Howard

Project ID: World Resources Company 34.41558.0001

Report Number: PUJ1092

Sampled: 10/18/11  
 Received: 10/18/11

## DISSOLVED METALS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: PUJ1092-01 (MW-9 - Water)</b>								<b>N1</b>
Reporting Units: mg/l								
Barium	EPA 200.7	11J1043	0.010	0.036	1	10/26/2011	10/27/2011	
Beryllium	EPA 200.7	11J1043	0.0010	ND	1	10/26/2011	10/27/2011	
Cadmium	EPA 200.7	11J1043	0.0010	ND	1	10/26/2011	10/27/2011	
Calcium	EPA 200.7	11J1043	2.0	55	1	10/26/2011	10/27/2011	
Chromium	EPA 200.7	11J1043	0.010	0.010	1	10/26/2011	10/27/2011	
Copper	EPA 200.7	11J1043	0.010	ND	1	10/26/2011	10/27/2011	
Iron	EPA 200.7	11J1043	0.050	ND	1	10/26/2011	10/27/2011	
Magnesium	EPA 200.7	11J1043	2.0	35	1	10/26/2011	10/27/2011	
Mercury	EPA 245.1	11J1060	0.00020	ND	1	10/27/2011	10/27/2011	
Nickel	EPA 200.7	11J1043	0.010	ND	1	10/26/2011	10/27/2011	
Sodium	EPA 200.7	11J1043	2.0	420	1	10/26/2011	10/27/2011	
Tin	EPA 200.7	11J1043	0.10	ND	1	10/26/2011	10/27/2011	
Zinc	EPA 200.7	11J1043	0.050	ND	1	10/26/2011	10/29/2011	
<b>Sample ID: PUJ1092-01RE1 (MW-9 - Water)</b>								
Reporting Units: mg/l								
Manganese	EPA 200.7	11J1137	0.010	ND	1	10/26/2011	10/29/2011	
Potassium	EPA 200.7	11J1137	2.0	3.3	1	10/26/2011	10/29/2011	
<b>Sample ID: PUJ1092-02 (MW-10 - Water)</b>								<b>N1</b>
Reporting Units: mg/l								
Barium	EPA 200.7	11J1043	0.010	0.044	1	10/26/2011	10/27/2011	
Beryllium	EPA 200.7	11J1043	0.0010	ND	1	10/26/2011	10/27/2011	
Cadmium	EPA 200.7	11J1043	0.0010	ND	1	10/26/2011	10/27/2011	
Calcium	EPA 200.7	11J1043	2.0	65	1	10/26/2011	10/27/2011	
Chromium	EPA 200.7	11J1043	0.010	ND	1	10/26/2011	10/27/2011	
Copper	EPA 200.7	11J1043	0.010	ND	1	10/26/2011	10/27/2011	
Iron	EPA 200.7	11J1043	0.050	ND	1	10/26/2011	10/27/2011	
Magnesium	EPA 200.7	11J1043	2.0	37	1	10/26/2011	10/27/2011	
Mercury	EPA 245.1	11J1060	0.00020	ND	1	10/27/2011	10/27/2011	
Nickel	EPA 200.7	11J1043	0.010	0.012	1	10/26/2011	10/27/2011	
Sodium	EPA 200.7	11J1043	2.0	430	1	10/26/2011	10/27/2011	
Tin	EPA 200.7	11J1043	0.10	ND	1	10/26/2011	10/27/2011	
Zinc	EPA 200.7	11J1043	0.050	ND	1	10/26/2011	10/29/2011	
<b>Sample ID: PUJ1092-02RE1 (MW-10 - Water)</b>								
Reporting Units: mg/l								
Manganese	EPA 200.7	11J1137	0.010	ND	1	10/26/2011	10/29/2011	
Potassium	EPA 200.7	11J1137	2.0	3.7	1	10/26/2011	10/29/2011	

### TestAmerica Phoenix

Linda Eshelman  
 Project Manager

ATC Associates - Tempe  
9185 S. Farmer Ave., Suite 111  
Tempe, AZ 85284  
Attention: David Howard

Project ID: World Resources Company 34.41558.0001  
Report Number: PUJ1092

Sampled: 10/18/11  
Received: 10/18/11

## DISSOLVED METALS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: PUJ1092-03 (MW-11 - Water)</b>								N1
Reporting Units: mg/l								
Barium	EPA 200.7	11J1043	0.010	0.038	1	10/26/2011	10/27/2011	
Beryllium	EPA 200.7	11J1043	0.0010	ND	1	10/26/2011	10/27/2011	
Cadmium	EPA 200.7	11J1043	0.0010	ND	1	10/26/2011	10/27/2011	
Calcium	EPA 200.7	11J1043	2.0	55	1	10/26/2011	10/27/2011	
Chromium	EPA 200.7	11J1043	0.010	ND	1	10/26/2011	10/27/2011	
Copper	EPA 200.7	11J1043	0.010	ND	1	10/26/2011	10/27/2011	
Iron	EPA 200.7	11J1043	0.050	ND	1	10/26/2011	10/27/2011	
Magnesium	EPA 200.7	11J1043	2.0	32	1	10/26/2011	10/27/2011	
Mercury	EPA 245.1	11J1060	0.00020	ND	1	10/27/2011	10/27/2011	
Nickel	EPA 200.7	11J1043	0.010	ND	1	10/26/2011	10/27/2011	
Sodium	EPA 200.7	11J1043	2.0	390	1	10/26/2011	10/27/2011	
Tin	EPA 200.7	11J1043	0.10	ND	1	10/26/2011	10/27/2011	
Zinc	EPA 200.7	11J1043	0.050	ND	1	10/26/2011	10/29/2011	
<b>Sample ID: PUJ1092-03RE1 (MW-11 - Water)</b>								
Reporting Units: mg/l								
Manganese	EPA 200.7	11J1137	0.010	ND	1	10/26/2011	10/29/2011	
Potassium	EPA 200.7	11J1137	2.0	3.5	1	10/26/2011	10/29/2011	
<b>Sample ID: PUJ1092-04 (DUP - Water)</b>								N1
Reporting Units: mg/l								
Barium	EPA 200.7	11J1043	0.010	0.036	1	10/26/2011	10/27/2011	
Beryllium	EPA 200.7	11J1043	0.0010	ND	1	10/26/2011	10/27/2011	
Cadmium	EPA 200.7	11J1043	0.0010	ND	1	10/26/2011	10/27/2011	
Calcium	EPA 200.7	11J1043	2.0	54	1	10/26/2011	10/27/2011	
Chromium	EPA 200.7	11J1043	0.010	0.011	1	10/26/2011	10/27/2011	
Copper	EPA 200.7	11J1043	0.010	ND	1	10/26/2011	10/27/2011	
Iron	EPA 200.7	11J1043	0.050	ND	1	10/26/2011	10/27/2011	
Magnesium	EPA 200.7	11J1043	2.0	32	1	10/26/2011	10/27/2011	
Mercury	EPA 245.1	11J1060	0.00020	ND	1	10/27/2011	10/27/2011	
Nickel	EPA 200.7	11J1043	0.010	ND	1	10/26/2011	10/27/2011	
Sodium	EPA 200.7	11J1043	2.0	400	1	10/26/2011	10/27/2011	
Tin	EPA 200.7	11J1043	0.10	ND	1	10/26/2011	10/27/2011	
Zinc	EPA 200.7	11J1043	0.050	ND	1	10/26/2011	10/29/2011	
<b>Sample ID: PUJ1092-04RE1 (DUP - Water)</b>								
Reporting Units: mg/l								
Manganese	EPA 200.7	11J1137	0.010	ND	1	10/26/2011	10/29/2011	
Potassium	EPA 200.7	11J1137	2.0	3.4	1	10/26/2011	10/29/2011	

### TestAmerica Phoenix

Linda Eshelman  
Project Manager

ATC Associates - Tempe  
 9185 S. Farmer Ave., Suite 111  
 Tempe, AZ 85284  
 Attention: David Howard

Project ID: World Resources Company 34.41558.0001

Report Number: PUJ1092

Sampled: 10/18/11  
 Received: 10/18/11

## DISSOLVED METALS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: PUJ1092-05 (Equip Blank - Water)</b>								N1
Reporting Units: mg/l								
Barium	EPA 200.7	11J1043	0.010	ND	1	10/26/2011	10/27/2011	
Beryllium	EPA 200.7	11J1043	0.0010	ND	1	10/26/2011	10/27/2011	
Cadmium	EPA 200.7	11J1043	0.0010	ND	1	10/26/2011	10/27/2011	
Calcium	EPA 200.7	11J1043	2.0	ND	1	10/26/2011	10/27/2011	
Chromium	EPA 200.7	11J1043	0.010	ND	1	10/26/2011	10/27/2011	
Copper	EPA 200.7	11J1043	0.010	ND	1	10/26/2011	10/27/2011	
Iron	EPA 200.7	11J1043	0.050	ND	1	10/26/2011	10/27/2011	
Magnesium	EPA 200.7	11J1043	2.0	ND	1	10/26/2011	10/27/2011	
Mercury	EPA 245.1	11J1060	0.00020	ND	1	10/27/2011	10/27/2011	
Nickel	EPA 200.7	11J1043	0.010	ND	1	10/26/2011	10/27/2011	
Sodium	EPA 200.7	11J1043	2.0	ND	1	10/26/2011	10/27/2011	
Tin	EPA 200.7	11J1043	0.10	ND	1	10/26/2011	10/27/2011	
Zinc	EPA 200.7	11J1043	0.050	ND	1	10/26/2011	10/29/2011	
<b>Sample ID: PUJ1092-05RE1 (Equip Blank - Water)</b>								
Reporting Units: mg/l								
Manganese	EPA 200.7	11J1137	0.010	ND	1	10/26/2011	10/29/2011	
Potassium	EPA 200.7	11J1137	2.0	ND	1	10/26/2011	10/29/2011	

**TestAmerica Phoenix**

Linda Eshelman  
 Project Manager

ATC Associates - Tempe  
 9185 S. Farmer Ave., Suite 111  
 Tempe, AZ 85284  
 Attention: David Howard

Project ID: World Resources Company 34.41558.0001  
 Report Number: PUJ1092

Sampled: 10/18/11  
 Received: 10/18/11

## DISSOLVED METALS BY ICP/MS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: PUJ1092-01 (MW-9 - Water)</b>								<b>N1</b>
Reporting Units: mg/l								
Antimony	EPA 200.8	11J1044	0.0030	ND	1	10/26/2011	10/27/2011	
<b>Arsenic</b>	EPA 200.8	11J1044	0.0010	<b>0.0059</b>	1	10/26/2011	10/28/2011	
Lead	EPA 200.8	11J1044	0.0010	ND	1	10/26/2011	10/27/2011	
<b>Selenium</b>	EPA 200.8	11J1044	0.0020	<b>0.0043</b>	1	10/26/2011	10/28/2011	
Silver	EPA 200.8	11J1044	0.0010	ND	1	10/26/2011	10/27/2011	
Thallium	EPA 200.8	11J1044	0.0010	ND	1	10/26/2011	10/27/2011	
<b>Sample ID: PUJ1092-02 (MW-10 - Water)</b>								<b>N1</b>
Reporting Units: mg/l								
Antimony	EPA 200.8	11J1044	0.0030	ND	1	10/26/2011	10/28/2011	
<b>Arsenic</b>	EPA 200.8	11J1044	0.0010	<b>0.0051</b>	1	10/26/2011	10/28/2011	
Lead	EPA 200.8	11J1044	0.0010	ND	1	10/26/2011	10/27/2011	
<b>Selenium</b>	EPA 200.8	11J1044	0.0020	<b>0.0039</b>	1	10/26/2011	10/28/2011	
Silver	EPA 200.8	11J1044	0.0010	ND	1	10/26/2011	10/28/2011	
Thallium	EPA 200.8	11J1044	0.0010	ND	1	10/26/2011	10/27/2011	
<b>Sample ID: PUJ1092-03 (MW-11 - Water)</b>								<b>N1</b>
Reporting Units: mg/l								
Antimony	EPA 200.8	11J1044	0.0030	ND	1	10/26/2011	10/28/2011	
<b>Arsenic</b>	EPA 200.8	11J1044	0.0010	<b>0.0074</b>	1	10/26/2011	10/28/2011	
Lead	EPA 200.8	11J1044	0.0010	ND	1	10/26/2011	10/27/2011	
<b>Selenium</b>	EPA 200.8	11J1044	0.0020	<b>0.0027</b>	1	10/26/2011	10/28/2011	
Silver	EPA 200.8	11J1044	0.0010	ND	1	10/26/2011	10/28/2011	
Thallium	EPA 200.8	11J1044	0.0010	ND	1	10/26/2011	10/27/2011	
<b>Sample ID: PUJ1092-04 (DUP - Water)</b>								<b>N1</b>
Reporting Units: mg/l								
Antimony	EPA 200.8	11J1044	0.0030	ND	1	10/26/2011	10/28/2011	
<b>Arsenic</b>	EPA 200.8	11J1044	0.0010	<b>0.0072</b>	1	10/26/2011	10/28/2011	
Lead	EPA 200.8	11J1044	0.0010	ND	1	10/26/2011	10/28/2011	
<b>Selenium</b>	EPA 200.8	11J1044	0.0020	<b>0.0023</b>	1	10/26/2011	10/28/2011	
Silver	EPA 200.8	11J1044	0.0010	ND	1	10/26/2011	10/28/2011	
Thallium	EPA 200.8	11J1044	0.0010	ND	1	10/26/2011	10/28/2011	
<b>Sample ID: PUJ1092-05 (Equip Blank - Water)</b>								<b>N1</b>
Reporting Units: mg/l								
Antimony	EPA 200.8	11J1044	0.0030	ND	1	10/26/2011	10/28/2011	
Arsenic	EPA 200.8	11J1044	0.0010	ND	1	10/26/2011	10/28/2011	
Lead	EPA 200.8	11J1044	0.0010	ND	1	10/26/2011	10/28/2011	
Selenium	EPA 200.8	11J1044	0.0020	ND	1	10/26/2011	10/28/2011	
Silver	EPA 200.8	11J1044	0.0010	ND	1	10/26/2011	10/28/2011	
Thallium	EPA 200.8	11J1044	0.0010	ND	1	10/26/2011	10/28/2011	

### TestAmerica Phoenix

Linda Eshelman  
 Project Manager

ATC Associates - Tempe  
9185 S. Farmer Ave., Suite 111  
Tempe, AZ 85284  
Attention: David Howard

Project ID: World Resources Company 34.41558.0001

Report Number: PUJ1092

Sampled: 10/18/11  
Received: 10/18/11

## INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: PUJ1092-01 (MW-9 - Water)</b>								
Reporting Units: mg/l								
Alkalinity as CaCO3	SM 2320B	11J0847	6.0	390	1	10/21/2011	10/21/2011	
Bicarbonate Alkalinity as CaCO3	SM 2320B	11J0847	6.0	390	1	10/21/2011	10/21/2011	
Carbonate Alkalinity as CaCO3	SM 2320B	11J0847	6.0	ND	1	10/21/2011	10/21/2011	
Chloride	EPA 300.0	11J0709	40	490	20	10/18/2011	10/19/2011	
Cyanide, Total	SM 4500CN-E	11J0980	0.050	ND	1	10/25/2011	10/25/2011	
Fluoride	EPA 300.0	11J0709	0.40	1.3	1	10/18/2011	10/19/2011	
Hydroxide Alkalinity as CaCO3	SM 2320B	11J0847	6.0	ND	1	10/21/2011	10/21/2011	
Nitrate-N	EPA 300.0	11J0709	0.20	17	1	10/18/2011	10/19/2011	
Nitrite-N	EPA 300.0	11J0709	0.20	ND	1	10/18/2011	10/19/2011	
Phosphorus, Total - P	SM 4500-P B, E	11J0908	0.10	ND	1	10/24/2011	10/25/2011	
Sulfate	EPA 300.0	11J0709	40	220	20	10/18/2011	10/19/2011	
Total Dissolved Solids	SM 2540C	11J0806	20	1500	1	10/20/2011	10/20/2011	
Alkalinity, Phenolphthalein	SM 2320B	11J0847	6.0	ND	1	10/21/2011	10/21/2011	
<b>Sample ID: PUJ1092-01 (MW-9 - Water)</b>								
Reporting Units: NTU								
Turbidity	EPA 180.1	11J0771	0.20	0.38	1	10/19/2011	10/19/2011	
<b>Sample ID: PUJ1092-02 (MW-10 - Water)</b>								
Reporting Units: mg/l								
Alkalinity as CaCO3	SM 2320B	11J0847	6.0	400	1	10/21/2011	10/21/2011	
Bicarbonate Alkalinity as CaCO3	SM 2320B	11J0847	6.0	400	1	10/21/2011	10/21/2011	
Carbonate Alkalinity as CaCO3	SM 2320B	11J0847	6.0	ND	1	10/21/2011	10/21/2011	
Chloride	EPA 300.0	11J0709	40	500	20	10/18/2011	10/19/2011	
Cyanide, Total	SM 4500CN-E	11J0980	0.050	ND	1	10/25/2011	10/25/2011	
Fluoride	EPA 300.0	11J0709	0.40	1.1	1	10/18/2011	10/19/2011	
Hydroxide Alkalinity as CaCO3	SM 2320B	11J0847	6.0	ND	1	10/21/2011	10/21/2011	
Nitrate-N	EPA 300.0	11J0709	0.20	14	1	10/18/2011	10/19/2011	
Nitrite-N	EPA 300.0	11J0709	0.20	ND	1	10/18/2011	10/19/2011	
Phosphorus, Total - P	SM 4500-P B, E	11J0908	0.10	ND	1	10/24/2011	10/25/2011	
Sulfate	EPA 300.0	11J0709	40	250	20	10/18/2011	10/19/2011	
Total Dissolved Solids	SM 2540C	11J0806	20	1600	1	10/20/2011	10/20/2011	
Alkalinity, Phenolphthalein	SM 2320B	11J0847	6.0	ND	1	10/21/2011	10/21/2011	
<b>Sample ID: PUJ1092-02 (MW-10 - Water)</b>								
Reporting Units: NTU								
Turbidity	EPA 180.1	11J0771	0.20	0.67	1	10/19/2011	10/19/2011	

### TestAmerica Phoenix

Linda Eshelman  
Project Manager



ATC Associates - Tempe  
 9185 S. Farmer Ave., Suite 111  
 Tempe, AZ 85284  
 Attention: David Howard

Project ID: World Resources Company 34.41558.0001  
 Report Number: PUJ1092

Sampled: 10/18/11  
 Received: 10/18/11

## INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: PUJ1092-03 (MW-11 - Water)</b>								
Reporting Units: mg/l								
Alkalinity as CaCO3	SM 2320B	11J0847	6.0	410	1	10/21/2011	10/21/2011	
Bicarbonate Alkalinity as CaCO3	SM 2320B	11J0847	6.0	410	1	10/21/2011	10/21/2011	
Carbonate Alkalinity as CaCO3	SM 2320B	11J0847	6.0	ND	1	10/21/2011	10/21/2011	
Chloride	EPA 300.0	11J0709	40	420	20	10/18/2011	10/19/2011	
Cyanide, Total	SM 4500CN-E	11J0980	0.050	ND	1	10/25/2011	10/25/2011	
Fluoride	EPA 300.0	11J0709	0.40	1.5	1	10/18/2011	10/19/2011	
Hydroxide Alkalinity as CaCO3	SM 2320B	11J0847	6.0	ND	1	10/21/2011	10/21/2011	
Nitrate-N	EPA 300.0	11J0709	0.20	13	1	10/18/2011	10/19/2011	
Nitrite-N	EPA 300.0	11J0709	0.20	ND	1	10/18/2011	10/19/2011	
Phosphorus, Total - P	SM 4500-P B, E	11J0908	0.10	ND	1	10/24/2011	10/25/2011	
Sulfate	EPA 300.0	11J0709	2.0	190	1	10/18/2011	10/19/2011	
Total Dissolved Solids	SM 2540C	11J0806	20	1400	1	10/20/2011	10/20/2011	
Alkalinity, Phenolphthalein	SM 2320B	11J0847	6.0	ND	1	10/21/2011	10/21/2011	
<b>Sample ID: PUJ1092-03 (MW-11 - Water)</b>								
Reporting Units: NTU								
Turbidity	EPA 180.1	11J0771	0.20	0.27	1	10/19/2011	10/19/2011	
<b>Sample ID: PUJ1092-04 (DUP - Water)</b>								
Reporting Units: mg/l								
Alkalinity as CaCO3	SM 2320B	11J0847	6.0	410	1	10/21/2011	10/21/2011	
Bicarbonate Alkalinity as CaCO3	SM 2320B	11J0847	6.0	410	1	10/21/2011	10/21/2011	
Carbonate Alkalinity as CaCO3	SM 2320B	11J0847	6.0	ND	1	10/21/2011	10/21/2011	
Chloride	EPA 300.0	11J0709	40	420	20	10/18/2011	10/19/2011	
Cyanide, Total	SM 4500CN-E	11J0980	0.050	ND	1	10/25/2011	10/25/2011	
Fluoride	EPA 300.0	11J0709	0.40	1.5	1	10/18/2011	10/19/2011	
Hydroxide Alkalinity as CaCO3	SM 2320B	11J0847	6.0	ND	1	10/21/2011	10/21/2011	
Nitrate-N	EPA 300.0	11J0709	0.20	13	1	10/18/2011	10/19/2011	
Nitrite-N	EPA 300.0	11J0709	0.20	ND	1	10/18/2011	10/19/2011	
Phosphorus, Total - P	SM 4500-P B, E	11J0908	0.10	ND	1	10/24/2011	10/25/2011	
Sulfate	EPA 300.0	11J0709	2.0	190	1	10/18/2011	10/19/2011	
Total Dissolved Solids	SM 2540C	11J0806	20	1400	1	10/20/2011	10/20/2011	
Alkalinity, Phenolphthalein	SM 2320B	11J0847	6.0	ND	1	10/21/2011	10/21/2011	
<b>Sample ID: PUJ1092-04 (DUP - Water)</b>								
Reporting Units: NTU								
Turbidity	EPA 180.1	11J0771	0.20	0.28	1	10/19/2011	10/19/2011	

### TestAmerica Phoenix

Linda Eshelman  
 Project Manager

ATC Associates - Tempe  
9185 S. Farmer Ave., Suite 111  
Tempe, AZ 85284  
Attention: David Howard

Project ID: World Resources Company 34.41558.0001  
Report Number: PUJ1092

Sampled: 10/18/11  
Received: 10/18/11

## INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: PUJ1092-05 (Equip Blank - Water)</b>								
Reporting Units: mg/l								
Alkalinity as CaCO3	SM 2320B	11J0847	6.0	ND	1	10/21/2011	10/22/2011	
Bicarbonate Alkalinity as CaCO3	SM 2320B	11J0847	6.0	ND	1	10/21/2011	10/22/2011	
Carbonate Alkalinity as CaCO3	SM 2320B	11J0847	6.0	ND	1	10/21/2011	10/22/2011	
Chloride	EPA 300.0	11J0709	2.0	ND	1	10/18/2011	10/19/2011	
Cyanide, Total	SM 4500CN-E	11J0980	0.050	ND	1	10/25/2011	10/25/2011	
Fluoride	EPA 300.0	11J0709	0.40	ND	1	10/18/2011	10/19/2011	
Hydroxide Alkalinity as CaCO3	SM 2320B	11J0847	6.0	ND	1	10/21/2011	10/22/2011	
Nitrate-N	EPA 300.0	11J0709	0.20	ND	1	10/18/2011	10/19/2011	
Nitrite-N	EPA 300.0	11J0709	0.20	ND	1	10/18/2011	10/19/2011	
Phosphorus, Total - P	SM 4500-P B, E	11J0908	0.10	ND	1	10/24/2011	10/25/2011	
Sulfate	EPA 300.0	11J0709	2.0	ND	1	10/18/2011	10/19/2011	
Total Dissolved Solids	SM 2540C	11J0806	20	ND	1	10/20/2011	10/20/2011	
Alkalinity, Phenolphthalein	SM 2320B	11J0847	6.0	ND	1	10/21/2011	10/22/2011	
<b>Sample ID: PUJ1092-05 (Equip Blank - Water)</b>								
Reporting Units: NTU								
Turbidity	EPA 180.1	11J0771	0.20	ND	1	10/19/2011	10/19/2011	

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Project Manager

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9185 S. Farmer Ave., Suite 111  
Tempe, AZ 85284  
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Report Number: PUJ1092

Sampled: 10/18/11  
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## SHORT HOLD TIME DETAIL REPORT

	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
<b>Sample ID: MW-9 (PUJ1092-01) - Water</b>					
EPA 180.1	2	10/18/2011 14:35	10/18/2011 16:00	10/19/2011 19:00	10/19/2011 20:10
EPA 300.0	2	10/18/2011 14:35	10/18/2011 16:00	10/18/2011 18:00	10/19/2011 05:27
<b>Sample ID: MW-10 (PUJ1092-02) - Water</b>					
EPA 180.1	2	10/18/2011 13:05	10/18/2011 16:00	10/19/2011 19:00	10/19/2011 20:10
EPA 300.0	2	10/18/2011 13:05	10/18/2011 16:00	10/18/2011 18:00	10/19/2011 05:55
<b>Sample ID: MW-11 (PUJ1092-03) - Water</b>					
EPA 180.1	2	10/18/2011 11:40	10/18/2011 16:00	10/19/2011 19:00	10/19/2011 20:10
EPA 300.0	2	10/18/2011 11:40	10/18/2011 16:00	10/18/2011 18:00	10/19/2011 06:23
<b>Sample ID: DUP (PUJ1092-04) - Water</b>					
EPA 180.1	2	10/18/2011 12:00	10/18/2011 16:00	10/19/2011 19:00	10/19/2011 20:10
EPA 300.0	2	10/18/2011 12:00	10/18/2011 16:00	10/18/2011 18:00	10/19/2011 07:47
<b>Sample ID: Equip Blank (PUJ1092-05) - Water</b>					
EPA 180.1	2	10/18/2011 10:35	10/18/2011 16:00	10/19/2011 19:00	10/19/2011 20:10
EPA 300.0	2	10/18/2011 10:35	10/18/2011 16:00	10/18/2011 18:00	10/19/2011 08:15

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Project Manager

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9185 S. Farmer Ave., Suite 111  
Tempe, AZ 85284  
Attention: David Howard

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Sampled: 10/18/11  
Received: 10/18/11

## METHOD BLANK/QC DATA

### DISSOLVED METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limit	RPD RPD	Limit	Data Qualifiers
<b>Batch: 11J1043 Extracted: 10/26/11</b>										
<b>Blank Analyzed: 10/27/2011-10/29/2011 (11J1043-BLK1)</b>										
Barium	ND	0.010	mg/l							
Beryllium	ND	0.0010	mg/l							
Cadmium	ND	0.0010	mg/l							
Calcium	ND	2.0	mg/l							
Chromium	ND	0.010	mg/l							
Copper	ND	0.010	mg/l							
Iron	ND	0.050	mg/l							
Magnesium	ND	2.0	mg/l							
Nickel	ND	0.010	mg/l							
Sodium	ND	2.0	mg/l							
Tin	ND	0.10	mg/l							
Zinc	ND	0.050	mg/l							

<b>Blank Analyzed: 10/27/2011-10/29/2011 (11J1043-BLK2)</b>										
Barium	ND	0.010	mg/l							
Beryllium	ND	0.0010	mg/l							
Cadmium	ND	0.0010	mg/l							
Calcium	ND	2.0	mg/l							
Chromium	ND	0.010	mg/l							
Copper	ND	0.010	mg/l							
Iron	ND	0.050	mg/l							
Magnesium	ND	2.0	mg/l							
Nickel	ND	0.010	mg/l							
Sodium	ND	2.0	mg/l							
Tin	ND	0.10	mg/l							
Zinc	ND	0.050	mg/l							

<b>LCS Analyzed: 10/27/2011-10/29/2011 (11J1043-BS1)</b>										
Barium	0.941	0.010	mg/l	1.00		94	85-115			
Beryllium	0.930	0.0010	mg/l	1.00		93	85-115			
Cadmium	0.965	0.0010	mg/l	1.00		96	85-115			
Calcium	19.4	2.0	mg/l	21.0		92	85-115			
Chromium	0.949	0.010	mg/l	1.00		95	85-115			
Copper	0.860	0.010	mg/l	1.00		86	85-115			
Iron	0.879	0.050	mg/l	1.00		88	85-115			
Magnesium	19.2	2.0	mg/l	21.0		91	85-115			

#### TestAmerica Phoenix

Linda Eshelman  
Project Manager

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 Tempe, AZ 85284  
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 Report Number: PUJ1092

Sampled: 10/18/11  
 Received: 10/18/11

## METHOD BLANK/QC DATA

### DISSOLVED METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 11J1043 Extracted: 10/26/11</b>										
<b>LCS Analyzed: 10/27/2011-10/29/2011 (11J1043-BS1)</b>										
Nickel	0.945	0.010	mg/l	1.00		94	85-115			
Sodium	18.7	2.0	mg/l	20.0		93	85-115			
Tin	1.00	0.10	mg/l	1.00		100	85-115			
Zinc	0.983	0.050	mg/l	1.00		98	85-115			
<b>LCS Dup Analyzed: 10/27/2011-10/29/2011 (11J1043-BS1)</b>										
Barium	0.936	0.010	mg/l	1.00		94	85-115	0.5	20	
Beryllium	0.930	0.0010	mg/l	1.00		93	85-115	0.1	20	
Cadmium	0.961	0.0010	mg/l	1.00		96	85-115	0.4	20	
Calcium	19.7	2.0	mg/l	21.0		94	85-115	1	20	
Chromium	0.945	0.010	mg/l	1.00		95	85-115	0.4	20	
Copper	0.868	0.010	mg/l	1.00		87	85-115	0.8	20	
Iron	0.861	0.050	mg/l	1.00		86	85-115	2	20	
Magnesium	19.6	2.0	mg/l	21.0		93	85-115	2	20	
Nickel	0.942	0.010	mg/l	1.00		94	85-115	0.3	20	
Sodium	19.1	2.0	mg/l	20.0		95	85-115	2	20	
Tin	1.00	0.10	mg/l	1.00		100	85-115	0.05	20	
Zinc	0.999	0.050	mg/l	1.00		100	85-115	2	20	
<b>Matrix Spike Analyzed: 10/27/2011-10/29/2011 (11J1043-MS1)</b>					<b>Source: PUJ1259-02</b>					
Barium	0.957	0.010	mg/l	1.00	ND	96	70-130			
Beryllium	0.944	0.0010	mg/l	1.00	ND	94	70-130			
Cadmium	0.978	0.0010	mg/l	1.00	ND	98	70-130			
Calcium	40.8	2.0	mg/l	21.0	20.7	96	70-130			
Chromium	0.958	0.010	mg/l	1.00	0.00605	95	70-130			
Copper	0.887	0.010	mg/l	1.00	0.00218	89	70-130			
Iron	0.940	0.050	mg/l	1.00	0.0642	88	70-130			
Magnesium	29.0	2.0	mg/l	21.0	9.52	93	70-130			
Nickel	0.939	0.010	mg/l	1.00	ND	94	70-130			
Sodium	39.4	2.0	mg/l	20.0	20.5	95	70-130			
Tin	1.03	0.10	mg/l	1.00	ND	103	70-130			
Zinc	1.00	0.050	mg/l	1.00	ND	100	70-130			

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Linda Eshelman  
 Project Manager

ATC Associates - Tempe  
 9185 S. Farmer Ave., Suite 111  
 Tempe, AZ 85284  
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## METHOD BLANK/QC DATA

### DISSOLVED METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 11J1043 Extracted: 10/26/11</b>										
<b>Matrix Spike Dup Analyzed: 10/27/2011-10/29/2011 (11J1043-MSD1)</b>					<b>Source: PUJ1259-02</b>					
Barium	0.937	0.010	mg/l	1.00	ND	94	70-130	2	20	
Beryllium	0.928	0.0010	mg/l	1.00	ND	93	70-130	2	20	
Cadmium	0.954	0.0010	mg/l	1.00	ND	95	70-130	2	20	
Calcium	40.7	2.0	mg/l	21.0	20.7	95	70-130	0.4	20	
Chromium	0.937	0.010	mg/l	1.00	0.00605	93	70-130	2	20	
Copper	0.868	0.010	mg/l	1.00	0.00218	87	70-130	2	20	
Iron	0.949	0.050	mg/l	1.00	0.0642	88	70-130	1	20	
Magnesium	29.0	2.0	mg/l	21.0	9.52	93	70-130	0.1	20	
Nickel	0.922	0.010	mg/l	1.00	ND	92	70-130	2	20	
Sodium	39.3	2.0	mg/l	20.0	20.5	94	70-130	0.3	20	
Tin	1.01	0.10	mg/l	1.00	ND	101	70-130	2	20	
Zinc	0.988	0.050	mg/l	1.00	ND	99	70-130	2	20	

**Batch: 11J1060 Extracted: 10/27/11**

**Blank Analyzed: 10/27/2011 (11J1060-BLK1)**

Mercury ND 0.00020 mg/l

**Blank Analyzed: 10/27/2011 (11J1060-BLK2)**

Mercury ND 0.00020 mg/l

**LCS Analyzed: 10/27/2011 (11J1060-BS1)**

Mercury 0.0107 0.00020 mg/l 0.0100 107 85-115

**LCS Dup Analyzed: 10/27/2011 (11J1060-BSD1)**

Mercury 0.0107 0.00020 mg/l 0.0100 107 85-115 0.3 20

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Linda Eshelman  
 Project Manager

ATC Associates - Tempe  
 9185 S. Farmer Ave., Suite 111  
 Tempe, AZ 85284  
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## METHOD BLANK/QC DATA

### DISSOLVED METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 11J1060 Extracted: 10/27/11</b>										
<b>Matrix Spike Analyzed: 10/27/2011 (11J1060-MS1)</b>					<b>Source: PUJ1266-02</b>					
Mercury	0.0112	0.00020	mg/l	0.0100	ND	112	70-130			
<b>Matrix Spike Analyzed: 10/27/2011 (11J1060-MS2)</b>					<b>Source: PUJ1013-08</b>					
Mercury	0.0111	0.00020	mg/l	0.0100	ND	111	70-130			
<b>Matrix Spike Dup Analyzed: 10/27/2011 (11J1060-MSD1)</b>					<b>Source: PUJ1266-02</b>					
Mercury	0.0113	0.00020	mg/l	0.0100	ND	113	70-130	1	20	
<b>Matrix Spike Dup Analyzed: 10/27/2011 (11J1060-MSD2)</b>					<b>Source: PUJ1013-08</b>					
Mercury	0.0108	0.00020	mg/l	0.0100	ND	108	70-130	3	20	
<b>Batch: 11J1137 Extracted: 10/28/11</b>										
<b>Blank Analyzed: 10/29/2011 (11J1137-BLK1)</b>										
Manganese	ND	0.010	mg/l							
Potassium	ND	2.0	mg/l							
<b>LCS Analyzed: 10/29/2011 (11J1137-BS1)</b>										
Manganese	0.965	0.010	mg/l	1.00		96	85-115			
Potassium	18.6	2.0	mg/l	20.0		93	85-115			
<b>LCS Dup Analyzed: 10/29/2011 (11J1137-BSD1)</b>										
Manganese	0.925	0.010	mg/l	1.00		93	85-115	4	20	
Potassium	18.4	2.0	mg/l	20.0		92	85-115	1	20	
<b>Matrix Spike Analyzed: 10/29/2011 (11J1137-MS1)</b>					<b>Source: PUJ1266-02RE1</b>					
Manganese	0.975	0.010	mg/l	1.00	0.0992	88	70-130			
Potassium	57.7	2.0	mg/l	20.0	41.1	83	70-130			

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Linda Eshelman  
 Project Manager

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9185 S. Farmer Ave., Suite 111  
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## METHOD BLANK/QC DATA

### DISSOLVED METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
<b>Batch: 11J1137 Extracted: 10/28/11</b>										
<b>Matrix Spike Dup Analyzed: 10/29/2011 (11J1137-MSD1)</b>					<b>Source: PUJ1266-02RE1</b>					
Manganese	0.994	0.010	mg/l	1.00	0.0992	89	70-130	2	20	
Potassium	59.0	2.0	mg/l	20.0	41.1	90	70-130	2	20	

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Project Manager

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 9185 S. Farmer Ave., Suite 111  
 Tempe, AZ 85284  
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## METHOD BLANK/QC DATA

### DISSOLVED METALS BY ICP/MS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 11J1044 Extracted: 10/26/11</b>										
<b>Blank Analyzed: 10/27/2011-10/28/2011 (11J1044-BLK1)</b>										
Antimony	ND	0.0030	mg/l							
Arsenic	ND	0.0010	mg/l							
Lead	ND	0.0010	mg/l							
Selenium	ND	0.0020	mg/l							
Silver	ND	0.0010	mg/l							
Thallium	ND	0.0010	mg/l							
<b>Blank Analyzed: 10/27/2011-10/28/2011 (11J1044-BLK2)</b>										
Antimony	ND	0.0030	mg/l							
Arsenic	ND	0.0010	mg/l							
Lead	ND	0.0010	mg/l							
Selenium	ND	0.0020	mg/l							
Silver	ND	0.0010	mg/l							
Thallium	ND	0.0010	mg/l							
<b>LCS Analyzed: 10/27/2011-10/28/2011 (11J1044-BS1)</b>										
Antimony	0.105	0.0030	mg/l	0.100		105	85-115			
Arsenic	0.102	0.0010	mg/l	0.100		102	85-115			
Lead	0.111	0.0010	mg/l	0.100		111	85-115			
Selenium	0.109	0.0020	mg/l	0.100		109	85-115			
Silver	0.103	0.0010	mg/l	0.100		103	85-115			
Thallium	0.109	0.0010	mg/l	0.100		109	85-115			
<b>LCS Dup Analyzed: 10/27/2011-10/28/2011 (11J1044-BSD1)</b>										
Antimony	0.104	0.0030	mg/l	0.100		104	85-115	0.9	20	
Arsenic	0.101	0.0010	mg/l	0.100		101	85-115	0.9	20	
Lead	0.110	0.0010	mg/l	0.100		110	85-115	0.8	20	
Selenium	0.107	0.0020	mg/l	0.100		107	85-115	1	20	
Silver	0.103	0.0010	mg/l	0.100		103	85-115	0.04	20	
Thallium	0.109	0.0010	mg/l	0.100		109	85-115	0.6	20	

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 Project Manager

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Sampled: 10/18/11  
 Received: 10/18/11

## METHOD BLANK/QC DATA

### DISSOLVED METALS BY ICP/MS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
<b>Batch: 11J1044 Extracted: 10/26/11</b>										
<b>Matrix Spike Analyzed: 10/27/2011-10/28/2011 (11J1044-MS1)</b>					<b>Source: PUJ1258-02</b>					
Antimony	0.104	0.0030	mg/l	0.100	ND	104	70-130			
Arsenic	0.106	0.0010	mg/l	0.100	0.00474	102	70-130			
Lead	0.105	0.0010	mg/l	0.100	0.000106	105	70-130			
Selenium	0.102	0.0020	mg/l	0.100	ND	102	70-130			
Silver	0.0229	0.0010	mg/l	0.100	ND	23	70-130			M2
Thallium	0.103	0.0010	mg/l	0.100	ND	103	70-130			
<b>Matrix Spike Dup Analyzed: 10/27/2011-10/28/2011 (11J1044-MSD1)</b>					<b>Source: PUJ1258-02</b>					
Antimony	0.105	0.0030	mg/l	0.100	ND	105	70-130	0.5	20	
Arsenic	0.107	0.0010	mg/l	0.100	0.00474	103	70-130	1	20	
Lead	0.105	0.0010	mg/l	0.100	0.000106	105	70-130	0.5	20	
Selenium	0.104	0.0020	mg/l	0.100	ND	104	70-130	2	20	
Silver	0.0219	0.0010	mg/l	0.100	ND	22	70-130	4	20	M2
Thallium	0.104	0.0010	mg/l	0.100	ND	104	70-130	0.7	20	

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Linda Eshelman  
 Project Manager

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ATC Associates - Tempe  
 9185 S. Farmer Ave., Suite 111  
 Tempe, AZ 85284  
 Attention: David Howard

Project ID: World Resources Company 34.41558.0001  
 Report Number: PUJ1092

Sampled: 10/18/11  
 Received: 10/18/11

## METHOD BLANK/QC DATA

### INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limit	RPD RPD	Limit	Data Qualifiers
<b>Batch: 11J0709 Extracted: 10/18/11</b>										
<b>Blank Analyzed: 10/19/2011 (11J0709-BLK1)</b>										
Chloride	ND	2.0	mg/l							
Fluoride	ND	0.40	mg/l							
Nitrate-N	ND	0.20	mg/l							
Nitrite-N	ND	0.20	mg/l							
Sulfate	ND	2.0	mg/l							
<b>LCS Analyzed: 10/19/2011 (11J0709-BS1)</b>										
Chloride	20.5	2.0	mg/l	20.0		103	90-110			N/a
Fluoride	3.79	0.40	mg/l	4.00		95	90-110			
Nitrate-N	3.94	0.20	mg/l	4.00		99	90-110			
Nitrite-N	4.01	0.20	mg/l	4.00		100	90-110			
Sulfate	19.8	2.0	mg/l	20.0		99	90-110			N/a
<b>LCS Dup Analyzed: 10/19/2011 (11J0709-BSD1)</b>										
Chloride	19.7	2.0	mg/l	20.0		99	90-110	4	15	N/a
Fluoride	3.86	0.40	mg/l	4.00		97	90-110	2	20	
Nitrate-N	3.92	0.20	mg/l	4.00		98	90-110	0.7	15	
Nitrite-N	4.01	0.20	mg/l	4.00		100	90-110	0.05	15	
Sulfate	19.6	2.0	mg/l	20.0		98	90-110	0.7	15	N/a
<b>Matrix Spike Analyzed: 10/19/2011 (11J0709-MS1) Source: PUJ1087-03</b>										
Fluoride	6.00	0.40	mg/l	4.00	1.82	105	80-120			
Nitrate-N	4.31	0.20	mg/l	4.00	0.0810	106	80-120			
Nitrite-N	4.35	0.20	mg/l	4.00	ND	109	80-120			
<b>Matrix Spike Dup Analyzed: 10/19/2011 (11J0709-MSD1) Source: PUJ1087-03</b>										
Fluoride	6.06	0.40	mg/l	4.00	1.82	106	80-120	0.9	20	
Nitrate-N	4.38	0.20	mg/l	4.00	0.0810	107	80-120	1	15	
Nitrite-N	4.45	0.20	mg/l	4.00	ND	111	80-120	2	15	

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Linda Eshelman  
 Project Manager

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 Report Number: PUJ1092

Sampled: 10/18/11  
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## METHOD BLANK/QC DATA

### INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 11J0771 Extracted: 10/19/11</b>										
<b>Blank Analyzed: 10/19/2011 (11J0771-BLK1)</b>										
Turbidity	ND	0.20	NTU							
<b>LCS Analyzed: 10/19/2011 (11J0771-BS1)</b>										
Turbidity	19.9	0.20	NTU	20.0		100	90-110			
<b>LCS Dup Analyzed: 10/19/2011 (11J0771-BSD1)</b>										
Turbidity	20.2	0.20	NTU	20.0		101	90-110	1	20	
<b>Duplicate Analyzed: 10/19/2011 (11J0771-DUP1)</b>										
Turbidity	0.490	0.20	NTU		<b>Source: PUJ1013-01</b> 0.460			6	20	
<b>Duplicate Analyzed: 10/19/2011 (11J0771-DUP2)</b>										
Turbidity	2.77	0.20	NTU		<b>Source: PUJ1046-01</b> 2.65			4	20	
<b>Batch: 11J0806 Extracted: 10/20/11</b>										
<b>Blank Analyzed: 10/20/2011 (11J0806-BLK1)</b>										
Total Dissolved Solids	ND	20	mg/l							
<b>LCS Analyzed: 10/20/2011 (11J0806-BS1)</b>										
Total Dissolved Solids	924	20	mg/l	1000		92	80-115			
<b>LCS Dup Analyzed: 10/20/2011 (11J0806-BSD1)</b>										
Total Dissolved Solids	944	20	mg/l	1000		94	80-115	2	10	
<b>Duplicate Analyzed: 10/20/2011 (11J0806-DUP1)</b>										
Total Dissolved Solids	3760	200	mg/l		<b>Source: PUJ0990-01</b> 3880			3	10	

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## METHOD BLANK/QC DATA

### INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 11J0806 Extracted: 10/20/11</b>									
<b>Duplicate Analyzed: 10/20/2011 (11J0806-DUP2)</b>					<b>Source: PUJ1092-03</b>				
Total Dissolved Solids	1380	20	mg/l		1380		0.3	10	
<b>Batch: 11J0847 Extracted: 10/21/11</b>									
<b>Blank Analyzed: 10/21/2011 (11J0847-BLK1)</b>									
Alkalinity as CaCO3	ND	6.0	mg/l						
Bicarbonate Alkalinity as CaCO3	ND	6.0	mg/l						
Carbonate Alkalinity as CaCO3	ND	6.0	mg/l						
Hydroxide Alkalinity as CaCO3	ND	6.0	mg/l						
Alkalinity, Phenolphthalein	ND	6.0	mg/l						
<b>LCS Analyzed: 10/21/2011 (11J0847-BS2)</b>									
Alkalinity as CaCO3	254	6.0	mg/l	250		101 90-110			
<b>LCS Dup Analyzed: 10/21/2011 (11J0847-BSD2)</b>									
Alkalinity as CaCO3	249	6.0	mg/l	250		99 90-110	2	20	
<b>Duplicate Analyzed: 10/21/2011 (11J0847-DUP1)</b>					<b>Source: PUJ0886-01</b>				
Alkalinity as CaCO3	265	6.0	mg/l		266		0.4	20	
Bicarbonate Alkalinity as CaCO3	265	6.0	mg/l		266		0.4	20	
Carbonate Alkalinity as CaCO3	ND	6.0	mg/l		ND			20	
Hydroxide Alkalinity as CaCO3	ND	6.0	mg/l		ND			20	
Alkalinity, Phenolphthalein	ND	6.0	mg/l		ND			20	
<b>Duplicate Analyzed: 10/21/2011 (11J0847-DUP2)</b>					<b>Source: PUJ1013-01</b>				
Alkalinity as CaCO3	163	6.0	mg/l		164		0.8	20	
Bicarbonate Alkalinity as CaCO3	141	6.0	mg/l		143		1	20	
Carbonate Alkalinity as CaCO3	21.7	6.0	mg/l		21.4		1	20	
Hydroxide Alkalinity as CaCO3	ND	6.0	mg/l		ND			20	
Alkalinity, Phenolphthalein	10.8	6.0	mg/l		10.7		1	20	

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## METHOD BLANK/QC DATA

### INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: 11J0908 Extracted: 10/24/11</b>										
<b>Blank Analyzed: 10/25/2011 (11J0908-BLK1)</b>										
Phosphorus, Total - P	ND	0.10	mg/l							
<b>LCS Analyzed: 10/25/2011 (11J0908-BS1)</b>										
Phosphorus, Total - P	0.294	0.10	mg/l	0.300		98	90-110			
<b>LCS Dup Analyzed: 10/25/2011 (11J0908-BSD1)</b>										
Phosphorus, Total - P	0.292	0.10	mg/l	0.300		97	90-110	0.7	20	
<b>Matrix Spike Analyzed: 10/25/2011 (11J0908-MS1)</b>										
Phosphorus, Total - P	0.325	0.10	mg/l	0.300	ND	108	80-120			Source: PUJ1007-01
<b>Matrix Spike Dup Analyzed: 10/25/2011 (11J0908-MSD1)</b>										
Phosphorus, Total - P	0.317	0.10	mg/l	0.300	ND	106	80-120	2	20	Source: PUJ1007-01
<b>Batch: 11J0980 Extracted: 10/25/11</b>										
<b>Blank Analyzed: 10/25/2011 (11J0980-BLK1)</b>										
Cyanide, Total	ND	0.050	mg/l							
<b>LCS Analyzed: 10/25/2011 (11J0980-BS1)</b>										
Cyanide, Total	0.107	0.050	mg/l	0.100		107	90-110			
<b>LCS Dup Analyzed: 10/25/2011 (11J0980-BSD1)</b>										
Cyanide, Total	0.0977	0.050	mg/l	0.100		98	90-110	9	20	
<b>Matrix Spike Analyzed: 10/25/2011 (11J0980-MS1)</b>										
Cyanide, Total	0.0965	0.050	mg/l	0.100	ND	96	80-120			Source: PUJ1183-01

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## METHOD BLANK/QC DATA

### INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 11J0980 Extracted: 10/25/11</b>										
<b>Matrix Spike Dup Analyzed: 10/25/2011 (11J0980-MSD1)</b>										
Cyanide, Total	0.108	0.050	mg/l	0.100	ND	108	80-120	11	20	

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## DATA QUALIFIERS AND DEFINITIONS

- M2** Matrix spike recovery was low; the associated blank spike recovery was acceptable.
- N1** See case narrative.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

**TestAmerica Phoenix**

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**PUJ1092 <Page 23 of 24>**



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

4625 East Cotton Center Blvd. Ste 189, Phoenix, AZ 85040 (602) 437-3340 Fax: (602) 454-9303

ATC Associates - Tempe  
9185 S. Farmer Ave., Suite 111  
Tempe, AZ 85284  
Attention: David Howard

Project ID: World Resources Company 34.41558.0001  
Report Number: PUJ1092

Sampled: 10/18/11  
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## Certification Summary

### TestAmerica Phoenix

Method	Matrix	Nelac	Arizona
EPA 180.1	Water		X
EPA 200.7	Water		X
EPA 200.8	Water		X
EPA 245.1	Water		X
EPA 300.0	Water		X
SM 2320B	Water		X
SM 2540C	Water		X
SM 4500CN-E	Water		X
SM 4500-P B, E	Water		X

*Nevada and NELAP provide analyte specific accreditations. Analyte specific information for TestAmerica may be obtained by contacting the laboratory or visiting our website at [www.testamericainc.com](http://www.testamericainc.com)*

### TestAmerica Phoenix

Linda Eshelman  
Project Manager

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PUJ1092 <Page 24 of 24>

THE LEADER IN ENVIRONMENTAL TESTING  
TAL-0013-550 (10/10)

[ ] Phoenix - 4625 E. Cotton Center Blvd., Suite 189, Phoenix, AZ 85040 (602) 437-3340 FAX (602) 454-9303  
 [ ] Tucson - 1870 W. Prince Road, Suite 59, Tucson, AZ 85705 (520) 807-3801 FAX (520) 807-3803  
 [ ] Las Vegas - 6000 S Eastern Ave., Suite 5E, Las Vegas, NV 89119 (702) 429-1264

Page 1 of 1

Client Name / Address: <b>ATC Associates Inc. 9185 S. Farmer Ave, Tempe, AZ</b>			Project/PO Number: <b>World Resources Company 34.41558.0001</b>				Analysis Required									
Project Manager: <b>Dave Howard</b>			Phone Number: <b>480-894-2056</b>													
Sampler: <b>Mike Donnelly</b>			Fax Number:				Special Instructions									
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date	Sampling Time	Preservatives										
MW-9	Water	Plush	4	10/18/11	14:35		PUJ1092-01 -02 -03 -04 -05									
MW-10	↓	↓	↓	↓	13:05											
MW-11	↓	↓	↓	↓	11:40											
Dup.	↓	↓	↓	↓	12:00											
Equip. Blank	↓	↓	↓	↓	10:35											
Relinquished By: <i>Mike Donnelly</i>			Date / Time: <b>10/18/11 16:00</b>		Received By:		Date / Time:		Turnaround Time: (Check)							
Relinquished By:			Date / Time:		Received By:		Date / Time:		same day _____ 72 hours _____ 24 hours _____ 5 days _____ 48 hours _____ normal <input checked="" type="checkbox"/>							
Relinquished By:			Date / Time:		Received in Lab By: <i>Prina</i>		Date / Time: <b>10/18/11 16:00</b>		Sample Integrity: (Check) intact <input checked="" type="checkbox"/> on ice <input checked="" type="checkbox"/> <b>5-6°C</b>							

**Note:** By relinquishing samples to TestAmerica, client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.