EPA COMMUNITY INFORMATIONAL GROUP MEETING SUMMARY
MOTOROLA 52ND STREET SUPERFUND

DRAFT DOCUMENT

Prepared by:

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180 PROMENADE CIRCLE
SACRAMENTO, CALIFORNIA 95834

February 2013

Community Information Group Meeting
Motorola 52nd St. Superfund Site
January 23, 2013
BioScience High School, Phoenix, AZ

Project Team and Regulator Attendees:

United States Environmental Protection Agency (EPA): Gerry Hiatt, Martin Zeleznik, Alejandro Diaz

EPA Contractor: Sue Kraemer, Doug Hulmes, Shaw Environmental, Inc. (Shaw)

Arizona Department of Environmental Quality (ADEQ): Brian Stonebrink, Wendy Flood, Harry Hendler

ADEQ Contractor: William Neese, URS Corporation

Agency for Toxic Substances Disease Registry (ATSDR): Robert Knowles, Ben Gherhardstein

Arizona Department of Health Services (ADHS): Jennifer Botsford, Diane Eckles, Hsini Lin

Moderator: Marty Rozelle

CIG Members:
Les Holland
Wendy Abrego
Todd Schwarz
Mary Moore
Shoshana Kroeger

Additional attendees:

See Attendee List

The following acronyms may be used throughout this document:

ADEQ	Arizona Department of Environmental Quality
ADHS	Arizona Department of Health Services
ATSDR	Agency for Toxic Substances Disease Registry
CDC	Center for Disease Control
CIG	Community Information Group
COC	Contaminant of Concern
EPA	United States Environmental Protection Agency, Region 9
HHRA	Human Health Risk Assessment
RI/FS	Remedial Investigation/Feasibility Study
M52	Motorola 52nd Street Superfund Site
OU	Operable Unit
PCE	Tetrachloroethylene
TCE	Trichloroethylene
PRP	Potential Responsible Party
µg/m^3	Microgram per cubic meter
VOC	Volatile Organic Compound

Meeting Note:

On January 23, 2013, a Community Information Group (CIG) meeting was held at BioScience High School; located at 512 E. Pierce Street in Phoenix, Arizona. The meeting began at approximately 6:15 pm and adjourned at 8:11 pm. The purposes of the meeting was to update the public on the current status and remedial progress at the Motorola 52nd Street Superfund Site (M52), answer questions carried over from previous meetings, and provide an opportunity for ATSDR to present their data and information regarding M52. The meeting also provided a forum for interaction between stakeholders, regulators and the public.

The meeting notes and the PowerPoint presentations presented at this CIG meeting are posted on EPA's and ADEQ's Motorola project websites:

www.epa.gov/region09/motorola52ndst
http://www.azdeq.gov/environ/waste/sps/phxsites.html#mot52a

6:15 pm: Ms. Rozelle called the meeting to order, and asked the CIG members to introduce themselves followed by the community members, and the agency representatives.

6:23 pm: Ms. Rozelle explained we must be out of the building by 8:00 pm. She summarized the necessary changes to the agenda and reviewed the ground rules. She asked the CIG if they had any comments regarding the August and/or October meeting minutes. Mr. Holland stated he would like the Montana Health Study to be included in the minutes as he had requested in the last meeting. The CIG approved the October 2012 and August 2012 minutes with the amendment that the Montana Health Study to be included in the latter minutes.

6:29 pm: ATDSR and the Motorola 52nd Supersite Site, ATSDR - Robert Knowles

- Explained the role of ATSDR and how their agency responsibilities compared to that of EPA's and ADHS' responsibilities.

- Summarized the previous Public Health Assessment and Health Consultations for the M52. These documents evaluated groundwater and on and off site soil data for Volatile Organic Compounds (VOCs), primarily PCE and TCE. ATSDR determined that based on available data there were no exposure to VOCs through the public drinking water supply and that other exposures to VOCs were not likely to pose any threat to human health. ATSDR compared cancer rate in M52 and the rest of the State of Arizona for the years 2001-2006; there was no significance between the two rates for cancers possibly linked to TCE (i.e. kidney, liver and prostate).

- ATSDR, ADHS and the Arizona Cancer Registry will continue to assess cancer morbidity or mortality with newer available data, including birth defects.

- Summarized how an ATSDR health study is conducted and some of the requirements needed to draw successful conclusions from a health study.

- Discussed the Libby, Montana Health Study and the parameters that allowed ATSDR to show a link between exposure and the health outcome (lung disease). Discussed the data available from M52 and the challenges associated with trying to link exposure to a specific health outcome at M52.

- Summarized ATSDR goals.

6:41 pm: Ms. Rozelle asked CIG members if they had questions.

- Mr. Schwarz asked why the areas north of McDowell Road were studied instead of areas closer to the groundwater plume.

Response: Ms. Jennifer Botsford stated she believed that the area was chosen because of the way the census tracts are drawn.

Mr. Schwarz stated he thought it would be worthwhile to extend the study area to the west and south, because the recent health study covered a lot of people that were not exposed.

Response: ADHS would try to get a better answer, and perhaps superimpose the plume over the study area. Mr. Holland stated the health study said cancer rates in zip code 85008 were lower than the rate for Maricopa County; however cancer is reported where people live, not where they worked; therefore that proves that Motorola was the source for cancer in Maricopa County and no one has ever refuted that. Furthermore, the Phoenix Veterans Administration (VA) no longer reports to the cancer registry and he thought that violates federal regulations. Mr. Holland further stated there were no studies done on the air pathway, just water, there were many sources from the Motorola's plant emission stacks, many people were breathing air from the emissions, and questioned if the VA be required to report.

Response: Mr. Knowles stated they could talk to the cancer registry and find out if the VA is reporting or not reporting cancer data and why.

Mr. Holland said they are not and no author was assigned to the report.

Response: Mr. Knowles indicated he thought that was something they could check on.

- *Response to the air question*: Mr. Knowles indicated ATSDR cannot assess past exposures to air, because there is no historical air data to evaluate that pathway.

Mr. Holland indicated there are Motorola production figures on what they were producing and that directly correlates with what was coming out of the emission stacks.

Response: Mr. Knowles wasn't sure if ATSDR could use production data to estimate what may have been present in the outdoor air, but would follow up with colleagues more familiar with air modeling.

Mr. Holland referred to ATSDR's conclusion that the lower cancer rates in one zip code are not a problem; however, cancer rates are reported where you live not where you work. He indicated that this points to that area as a source and asked Mr. Knowles confirm or refute.

Response: Mr. Knowles stated that all he could say about the cancer data is that it is collected by census tract by where you live and where it was reported.

Mr. Holland stated if there are lots of cancers in a circle it seems to point that the center of the circle was that source, rather than there was no issue in one zip code.

Mr. Schwarz asked for clarification that the zip code is larger and included many census tracts.

Response: Mr. Knowles stated a zip code would probably include many census tracts and the reason census tracts are used is because that is the way the cancer register collects data, so data is comparable to the County, State or other states.

Mr. Swartz asked if there is a format that is more comparable to the plume.

Response: Mr. Knowles indicated they could probably talk to the Arizona Cancer Registry to ensure the appropriate census tracts were used in the analysis.

Ms. Moore reiterated it should be clarified that sorting data by zip code is not appropriate, because there is too much area within a zip code that is not over the groundwater contaminate plumes, and suggested that the percentage of the zip code that is over the plume should be reported.

Response: Mr. Knowles indicated the Arizona Cancer Registry may be able to produce a map that overlays the plume map with the zip code map.

Ms. Moore stated she didn't understand why there could not be a much smaller study area.

Response: Ms. Botsford stated you need a bigger area, as just one cancer case cannot be reported publicly. There must be a minimum number of cases to report the rate.

Ms. Kroeger asked if they could look at all the zip codes.
Response: Ms. Botsford stated they could look at zip codes, but if it required all the zip codes in Phoenix to be reviewed that would be too many.

Mr. Schwarz restated that they should be able to put the plume over the health study area, and still protect confidentiality.

6:54 pm: Ms. Rozelle moderated, and summarized that the group should be looking at census tracts, not zip codes, which could perhaps better match the study area to the groundwater plume.

Ms. Kroeger asked how many people were required to be exposed to warrant a more in-depth health study, such as the one conducted in Libby, Montana.

Response: Mr. Knowles indicated what is needed is a defined group of people that were exposed for a defined period of time, which was the case in Libby. He stated what is dissimilar with Motorola and Libby is that we haven't identified, so far, any health outcomes associated with Motorola and, so far, the cancer registry has not shown any increase in cancer rates that are typically associated with tetrachoroethylene (PCE) and trichloroethylene (TCE) exposure.

6:57 pm: Ms. Rozelle opened the forum for questions from the public.

Mr. Brittle stated it was suggested 20 some years ago that a health registry be maintained, and there have been many cases where people have gotten sick, cancer, etc. in the M52. However, these cases/data have never been organized into a registry. He continued to indicate that after 30 years EPA was convinced to come in and conduct a vapor intrusion study because ADEQ wouldn't do it and now they are finding places where there is a problem. Mr. Brittle indicated in the last meeting they asked who is going to do a study to find out who lived in M52, for how long, and find out if they had ever become ill, and according to EPA's analysis could have been at risk. He stated there doesn't seem to be anyone interested in identifying how long the risk was present. Mr. Brittle said he did not understand how a source and a responsible party have been identified, but the health risks can't be quantified. Mr. Brittle's stated the larger question was why ATSDR didn't suggest a vapor intrusion study, where the groundwater is 10 to 40 feet down.

Response: Mr. Knowles stated the reason why they have not done a study in the past is because they haven't had proper data to utilize.

Mr. Brittle stated, that wasn't his question; "you know how this stuff works, you know the route of exposure, it would make sense to say why don't we assess vapor intrusion; and now that vapor intrusion has been assessed we have found people are at risk. But there doesn't seem to be any will to find out what really happened." Mr. Brittle further stated the other question is: how do we get ADHS (Mr. Brittle stated dissatisfaction with ADHS's past handling of other health studies) out of the loop and just have ATSDR or a private contractor conduct a health study. Mr. Brittle further stated that under CERCLA the agency is required to do that.

Response: Mr. Knowles stated he did not have an answer, and that ATSDR has had a cooperative agreement program with ADHS for many years, as they do with other states, because ATSDR is a small agency and does not have the resources to complete these types of studies on their own.

Audience member indicated he was a small business owner at 48th Street and McDowell Road. High indoor air concentrations were identified within his building, and he is having a mitigation system installed at this time. The citizen asked if former employees tried to sue him due to exposure from vapor intrusion. "Would you guys (i.e. Agencies) be able back him up?"

Response: Mr. Knowles indicated that is a legal question that he could not answer, but perhaps he could work with EPA to get an answer.

Ms. Rozelle moderated and stated it seems like we could find an answer to this question, because it is not the first time it has come up.

Mr. Holland responded to the audience member that they cannot prove cause and effect. Audience member stated he would still have to defend himself in court. Mr. Holland stated he felt it would be thrown out of court.

Mr. Brittle stated air release information is available in the Toxic Release Inventory, and before that in air permits; but after 30 years no one to has the interest to compile it.

Ms. Rozelle asked if that is something that would work in Mr. Knowles experience.

Response: Mr. Knowles indicated that the use of TRI data is something ATSDR can look at to see if there is enough information to make a health call and said he would get back to them.

Mr. Brittle stated modeling of the air dispersion plume is something commonly done with Toxic Release Inventory data.

Response: Mr. Knowles stated that was something they can look into.

Mr. Brittle said, "You can, but will you?"

Response: Mr. Knowles said he can't answer that until he has someone look at the available data and see if there is enough information to make some type of health call based on past exposure; but if there is not enough information to make a health call, they would not be able to do it; but he can pose the question and get back to the group.

Mr. Schwarz stated one reason we're pushing for more health study is to answer whether or not exposure did cause increased cancer rates in the area, but there would still be questions of legality and causality.

Female citizen asked is a larger study going to be conducted.

Mr. Schwarz emphasized it is important to get the right study area. Same female citizen indicated that all publically available data should be included in the study; and data should be "better layered" so that common folk can look it up.

Mr. Brittle encouraged Bioscience students to obtain cancer and mortality data from public data sources as a good project to undertake.

Ms. Kroeger indicated they did have students compile this information. They completed it by zip code and did not find anything, but that could have been because they used too big of an area.

Male citizen questioned the methodology of sub-slab sampling and wanted to know why they had to come back to his home.

Response: Dr. Hiatt explained the reason they came back to his home was to see if the concentrations change seasonally.

The citizen thought the work crew had difficulty in getting a good seal. Dr. Hiatt explained the leak test.

Ms. Rozelle moderated and suggested the citizen talk privately with Dr. Hiatt regarding his particular house.

Mr. Padgett asked about effects on thyroid; and if is there a correlation.

Response: Mr. Knowles indicated there is not typically a correlation between TCE and PCE exposure and thyroid exposure; but could talk to him privately about his concern.

Mr. Padgett said his thyroid has already been removed and the issue is moot, but he thought there was information that agencies were not sharing with the public.

Mr. Knowles said he and the ADHS staff would be available after the meeting if anyone would like to talk to them individually.

Mr. Holland asked for email contacts for ADHS personnel.

7:15 pm: Operable Unit 1 (OU1) Vapor Intrusion Investigation Update, EPA - Dr. Hiatt (for Janet Rosati):

- No new data
- Provided summary of existing data and the number of home mitigations completed; most of the mitigation systems installed were based on high concentrations in sub-slab data
- February sampling event upcoming.

Questions:

Female citizen asked how effective are the depressurization mitigation systems.
Response: Dr. Hiatt stated they have been very effective based on additional samples that are collected once the mitigation system is running (a substantial decrease in indoor air concentrations is noted); and often it is a preventative measure (indoor concentrations were low, but the sub-slab concentrations were high). Same female citizen asked, how soon after a mitigation system is installed is the system checked.
Response: Dr. Hiatt indicated Ms. Rosati is working with the RP on the O&M plan; she could get back to the citizen with the details.

Ms. Moore asked how EPA considered the change of building use (example from residential to business).
Response: Dr. Hiatt stated they had one building that has changed from residential to business; but was uncomfortable talking about specific buildings due to confidential issues.

Ms. Moore asked if there were different action levels for different building uses.
Response: Dr. Hiatt stated that different building use over time is something that ATSDR could take into account; the primary issue is the frequency and duration of exposure and they can work with ATSDR to make sure they take exposure frequency and duration into account.

Male citizen stated that the subject building is his; it has been a business since 1984.

Mr. Holland asked if Dr. Hiatt was aware of the separate plume map for the 56th St. Earll WQARF site.
Response: Dr. Hiatt responded that they were aware of the site; and that the soil gas study showed that soil concentrations dropped dramatically north of area shown on the overhead (north of McDowell Road). Therefore, it appears that there is no impact from either plume in this area. Mr. Holland asked if there was any progress in combining the two areas under EPA.
Response: Dr. Hiatt stated he was not familiar with that effort.

Mr. Schwarz asked if the February sampling would be indoor air only or would outdoor air and soil vapor sampling be included.
Response: Dr. Hiatt indicated they will definitely collect indoor air and outdoor air (standard procedure); he was not sure about soil gas sampling. He did know that Freescale's consultant will be putting in a couple of soil vapor wells.

Mr. Brittle asked, what efforts were being done to assess homes further from the study area; and whether there is a risk as you went along the border of the Superfund Site that you would find more contaminants.
Response: Dr. Hiatt indicated he did not want to present the idea that these new areas were quote "outside the plume"; an area that EPA found the high soil gas sub-slab data was relatively far (north) from the groundwater plume was surprising. He mentioned one theory is that a bedrock ridge is channeling groundwater contaminants north, then curves back south to extraction wells.

Mr. Brittle stated there are two problems, 1) when you look at an area on the map (to the north) it is clearly outside the groundwater plume and 2) with this potential anomaly why this couldn't happen throughout the plume.
Response: Dr. Hiatt stated that if one looked down the street elevated concentrations were not seen, so EPA does not think contaminant migration is widespread. Mr. Brittle indicated that there was no way to know, unless you sample. *Response*: Dr. Hiatt stated that the plume map is shows 5 ppb contour, which goes right through the area of discussion and that maybe the exact edge of 5 ppb contour is not precisely defined.
Mr. Brittle asked that he thought there had been a hit of 40,000 plus ppb (parts per billion) in the area.
Response: Dr. Hiatt indicated there had been and EPA's had a lot of discussion about that; what EPA has been focusing primarily on is conducting the indoor air and sub-slab sampling, identifying the homes that need mitigation, and these are questions EPA will be getting back to once they've taken care of the vapor intrusion exposures.

Male citizen asked if they have seen enough correlation between groundwater concentrations and depth and sub-slab and indoor air concentrations.
Response: Dr. Hiatt indicated that EPA hasn't looked at that yet; but that Mr. Brittle makes a good point that the groundwater concentrations in the subject air are relatively low yet the soil vapor and sub-slab concentrations are high. Dr. Hiatt indicated that a better understanding of the subsurface in this area is needed.
Male citizen asked if there is a belief that the cause of the elevated soil vapor concentrations is from impacted groundwater or if there has been some movement laterally through the soil.
Response: Dr. Hiatt stated that he didn't think EPA has gotten that far in their review to have a strong theory; and reiterated the theory of a bedrock channeling groundwater north into this area. He indicated they were bringing up good questions. EPA is currently focusing on finding homes that need mitigation and will be getting back to these questions.

Mr. Brittle asked, given the 40,000 plus ppb soil vapor result, is there soil remediation planned.
Response: Dr. Hiatt indicated he did not know what Ms. Rosati has in mind; and restated that once EPA has a handle on the vapor intrusion issue, they will be getting back to these questions.

Female citizen asked if EPA will be presenting maps that show bedrock and water tables, is bedrock exposed, is it above the water table, etc.
Response: Dr. Hiatt stated he didn't see why not, but he was not the hydrogeologist and that he would be around after the meeting to answer more questions.

7:37 pm: OU1 Update, ADEQ - Brian Stonebrink:

- Provided a brief summary regarding deliverables associated with OU1
- Additional groundwater investigation is planned for OU1 and the agencies have agreed on well locations.

Questions:

Ms. Moore asked when ADEQ would provide the specific locations for the new groundwater wells in OU1.
Response: Mr. Stonebrink indicated that ADEQ could provide the locations by request, and suggested

anyone interested should send an email to Wayne Miller or himself. Ms. Moore asked if ADEQ could provide the well locations to everyone. *Response*: Mr. Stonebrink indicated ADEQ could do that.

Ms. Moore asked what ADEQ's timetable was to move forward with the final remedy that would be derived from the OU1 Feasibility Study.
Response: Mr. Stonebrink indicated he did not have a specific timetable and the goal was to get to the final Record of Decision (ROD) and complete the remedial investigation/feasibility study (RI/FS), and that the schedule would depend on the vapor intrusion study. Ms. Moore indicated that it may take some time before the CIG is comfortable with decisions being made by the Agencies regarding the ROD, and that the CIG would not like this going forward until after the next five-year review.
Response: Mr. Stonebrink indicated that wrapping up all of the investigation will be part of the final remedy; and the final remedy is essentially a treatment option; and doesn't necessarily mean they are done looking at data.

Mr. Brittle asked if public has any influence on remedial technologies.
Response: Mr. Stonebrink responded that ADEQ is still gathering info; working with the responsible parties and have looked at different technologies through the RI/FS process and they have brought in other entities with specialized expertise that have presented remedial technologies at past meetings.
Mr. Brittle asked if the public doesn't like the final decision, does that make any difference.
Response: Mr. Stonebrink explained there is a public comment period. Mr. Brittle asked if EPA or ADEQ made the final remedy decision.
Response: Mr. Stonebrink indicated is it a consensual decision with public input.

Ms. Flood further explained the public comment process throughout the RI/FS process.
Ms. Moore stated she appreciates the opportunity to make comments but wanted something more than comment noted when comments are responded to, and would like to work more closely with the regulators.

Female citizen asked if ADEQ will revisit the OU1 perimeters.
Response: Mr. Stonebrink clarified the boundaries of OU1 and OU2.

7:47 OU2 Update, ADEQ - Brian Stonebrink

- Summarized the Statement of Work for OU2
- Summarized activities completed by RPs

Questions:

Ms. Rozelle asked where the eastern OU2 boundary was located.
Response: Mr. Stonebrink indicated 44th Street.

Ms. Moore expressed concern over the lack of wells in between OU1 and OU2.
Response: Mr. Stonebrink agreed that there is a data gap in this area and that more wells are planned in the area during the upcoming OU2 RI/FS. Ms. Moore reiterated her desire to have more opportunity for public input.

7:55 pm Ms Rozelle moderated, moving to the next presentation due to time constraints.

OU3 Update, ERM- Mike Kraeski

- Aquifer gets thicker to the west
- Presented TCE plumes in different units; there has been a reduction in TCE concentrations mostly due to the OU2 Treatment Plant.
- Data gaps will be further assessed

Questions:

Ms. Moore indicated she understood that concentrations change over time; and pointed out there were some increases in some wells.

8:03 pm: Ms. Rozelle moderated; indicating time has run out. Ms. Kraemer indicated she had a presentation to show how to access reports online. She indicated the public could contact Ms. Rosati, Mr. Zeleznik or Mr. Diaz to request access to the online repository. Requestor would need to provide an email address.

CIG members indicated the application for Mr. Padgett's membership is essentially approved.

Ms. Moore presented information regarding the next public meeting regarding Brownfield redevelopment.

Ms. Rozelle suggested April 18th for the next meeting and summarized the following Action Items:

- The CIG requests to know the locations of new OU-1 groundwater monitoring wells prior to installation.
- Determine if there is enough previous air data for ATSDR to conduct a health study on effects of air emissions and/or vapor intrusion on public health.
- ATSDR is requested to overlay census tract data onto the plume and study areas.
- The CIG requests an Operation and Maintenance program to assess performance of SVE systems.
- The CIG requests the Agencies to provide information regarding site-wide contaminants of concern within OU-2 at the next meeting.

8:11 pm: Adjourned

ATTACHMENT 1

MEETING PRESENTATIONS

Motorola 52nd Street Superfund Site

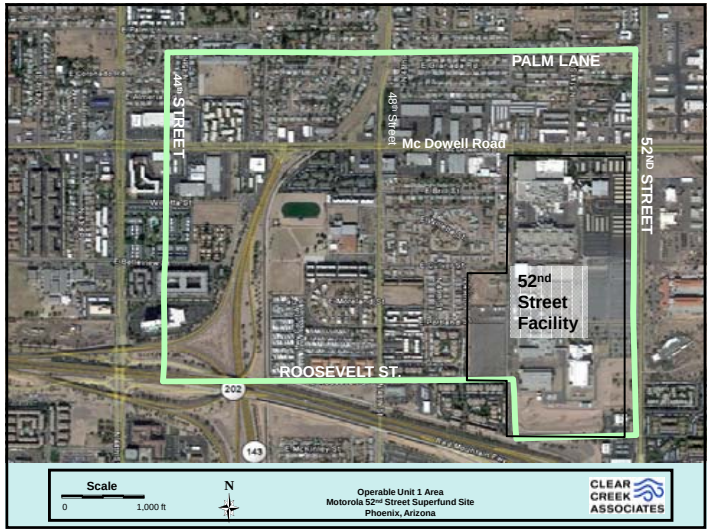
Operable Unit 1
Update – January 23, 2013

Arizona Department of Environmental Quality

U.S. Environmental Protection Agency, Region 9

OU1 UPDATE

1) **OU1 PROGRESS REPORT for JANUARY THROUGH JUNE 2012 RECEIVED BY AGENCIES**
2) **ADDITIONAL INVESTIGATION WORK PLAN UNDER REVIEW**
3) **SEPTEMBER 2012 GROUNDWATER SAMPLING EVENT COMPLETED**
3) **FUTURE ITEMS**



OU1 Other On-Going and Future Items

- OU1 Vapor Intrusion
- Courtyard and Acid Treatment Plant Area evaluations
- Final Remedial Investigation/Feasibility Study
- Final Record of Decision (ROD)

Agency Contacts

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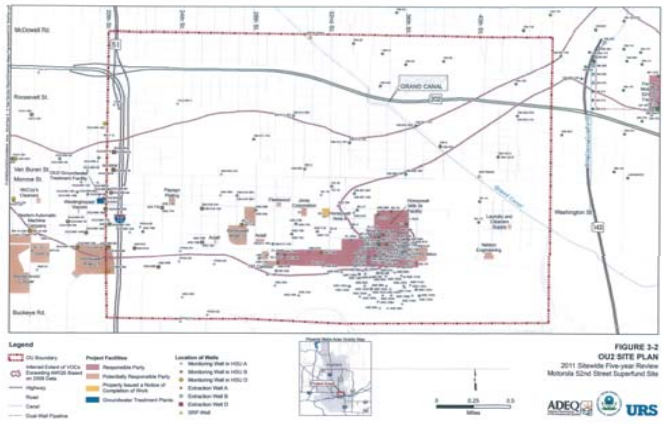
Motorola 52nd Street Superfund Site
Operable Unit 2 (OU2) - Progress Update

Community Informational Group Meeting
January 23, 2013

1

Operable Unit 2 Site-Wide Map



2

Motorola OU2 Update

- OU2 Sitewide RI/FS Draft Statement of Work has been prepared
  - Overall outline of work to be performed
  - Part of Administrative Order of Consent (AOC)
- DVelco- 401 S. 36th Street
  - Submitted Research Report, Conceptual Site Model and Draft RI/FS Work Plan
- Joray/Kachina completed the Summer Indoor Air Vapor Intrusion Assessment
  - Winter Event scheduled for mid-February.
  - SVE Pilot test scheduled for mid-February.

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Motorola OU2 Update

- Honeywell 34th St. -Feasibility Study Report pending
- Honeywell Area 13 -Submitted Research Report
  - Draft RI/FS Work Plan to follow
- Honeywell Area 21 AOC Negotiations ongoing
- Final Sitewide Contaminants of Potential Concern to be discussed at the next Technical Working Group
  - Final COPC list is needed for the Final Record of Decision and to be used during the OU2 RI/FS

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OU2 Contact Information

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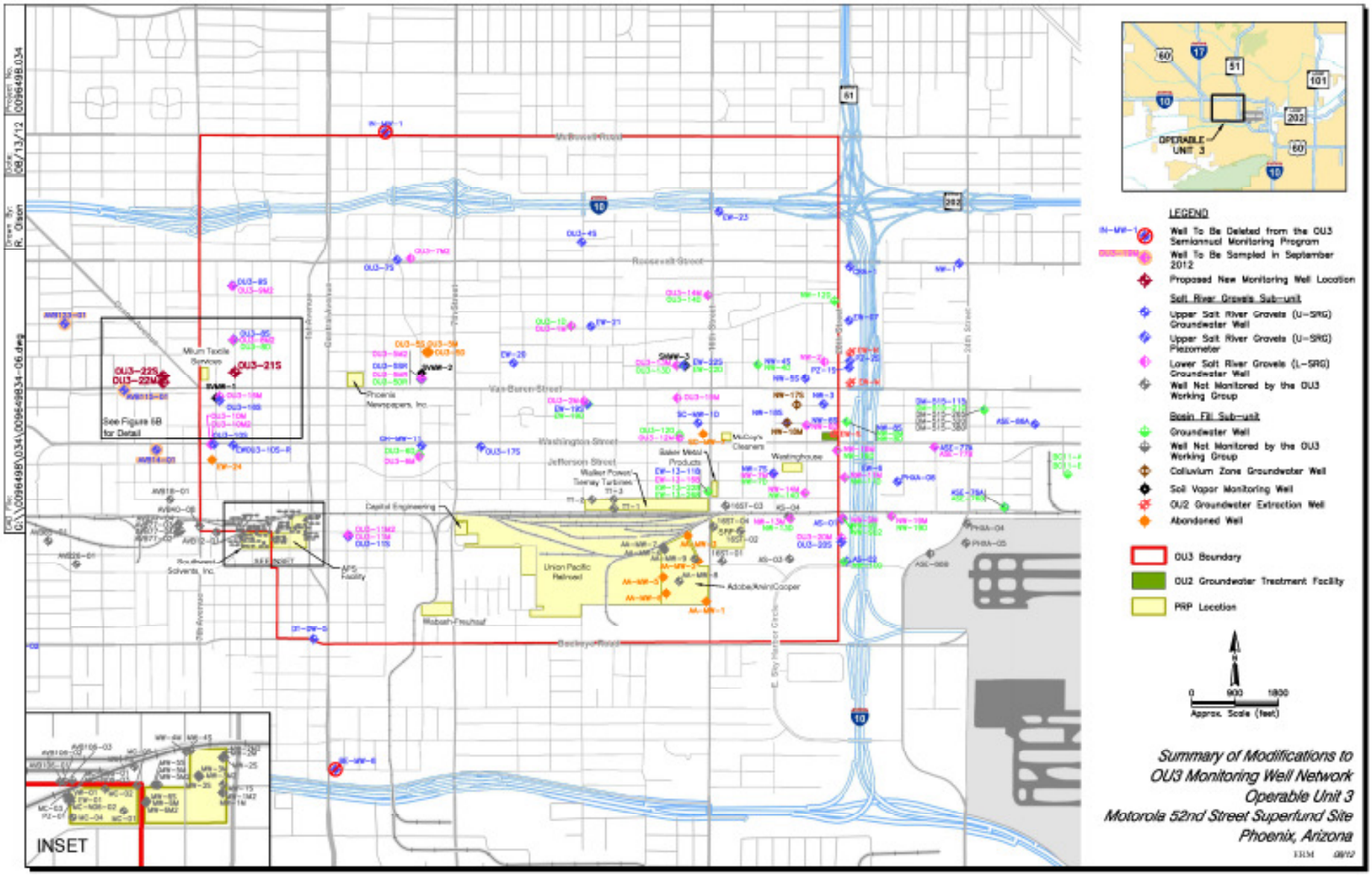
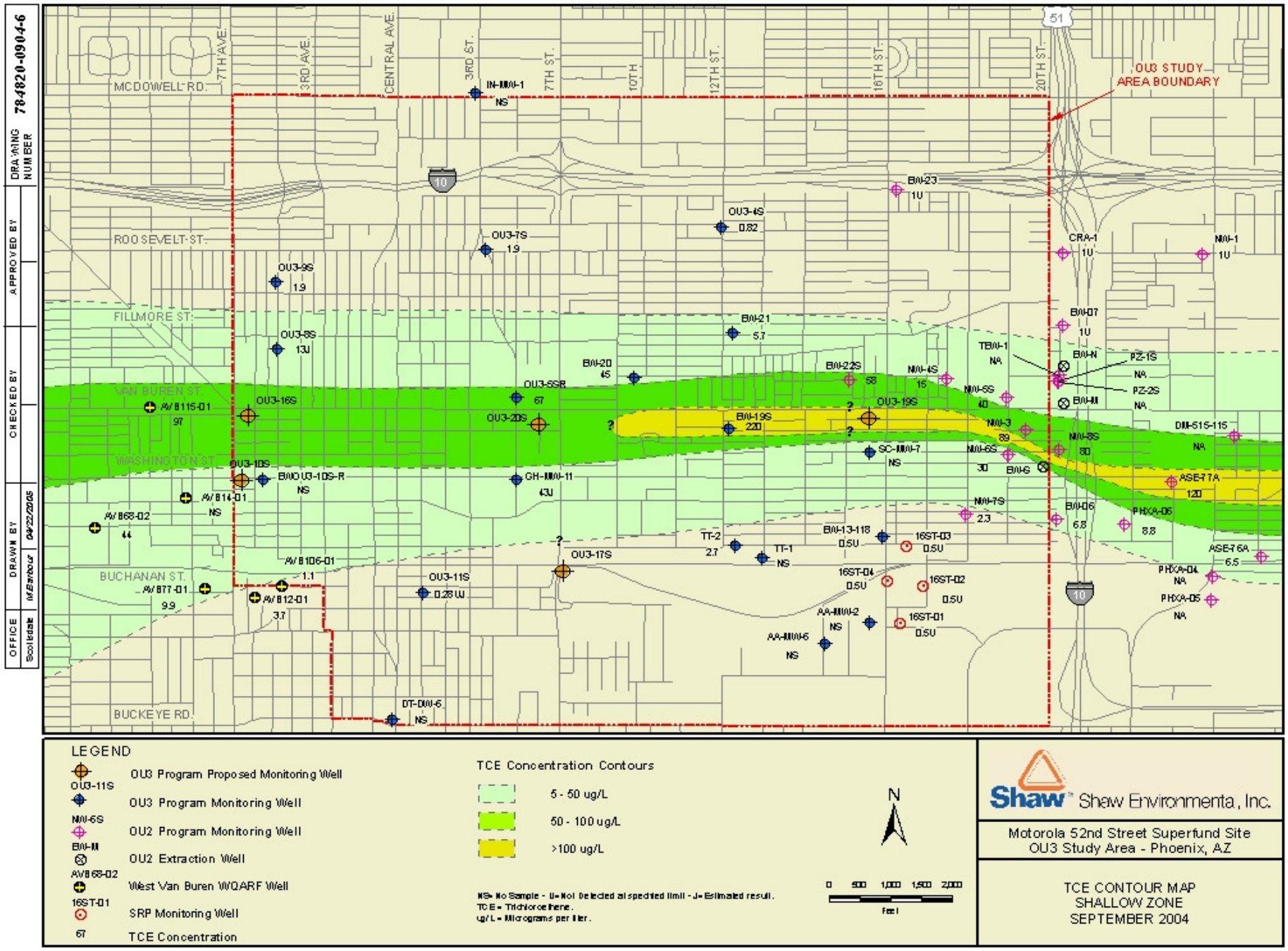
Motorola 52nd Street Superfund Site
Operable Unit 3
Groundwater RI/FS Update
January 2013

Janet Rosati (415) 972-3165
(rosati.janet@epa.gov)


OPERABLE UNIT 3
LEGEND
Well To Be Deleted from the OU3 Semiannual Monitoring Program
Well To Be Sampled in September 2012
Proposed New Monitoring Well Location
Salt River Gravels Sub-unit
Upper Salt River Gravels (U-SRG) Groundwater Well
Upper Salt River Gravels (U-SRG) Piezometer
Lower Salt River Gravels (L-SRG) Groundwater Well
Well Not Monitored by the OU3 Working Group
Basin Fill Sub-unit
Groundwater Well
Well Not Monitored by the OU3 Working Group
Colluvium Zone Groundwater Well
Soil Vapor Monitoring Well
OU2 Groundwater Extraction Well
Abandoned Well
OU3 Boundary
OU2 Groundwater Treatment Facility
PRP Location
0 900 1800
Approx. Scale (feet)
Summary of Modifications to
OU3 Monitoring Well Network
Operable Unit 3
Motorola 52nd Street Superfund Site
Phoenix, Arizona
INSET
See Figure 6B for Detail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APPROVED BY
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DRAWN BY MSanbour 04/22/2005
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FILLMORE ST.
VAN BUREN ST.
WASHINGTON ST.
BUCHANAN ST.
BUCKEYE RD.
7TH AVE.
3RD AVE.
CENTRAL AVE.
3RD ST.
7TH ST.
10TH
12TH ST.
16TH ST.
20TH ST.
OU3 STUDY AREA BOUNDARY
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OU3-8S 13J
OU3-16S
OU3-20S
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OU3-17S
OU3-11S 0.28 UJ
OU3-10S
BWOU3-10S-R NS
GH-MW-11 43J
DT-DW-6 NS
AV B115-01 97
AV B14-01 NS
AV B68-02 44
AV B106-01 1.1
AV B77-01 9.9
AV B12-01 3.7
BW-23 1U
BW-21 5.7
BW-20 45
BW-22S 58
BW-19S 220
MW-4S 15
MW-5S 40
MW-3 89
MW-6S 30
SC-MW-7 NS
MW-7S 2.3
BW-13-11S 0.5U
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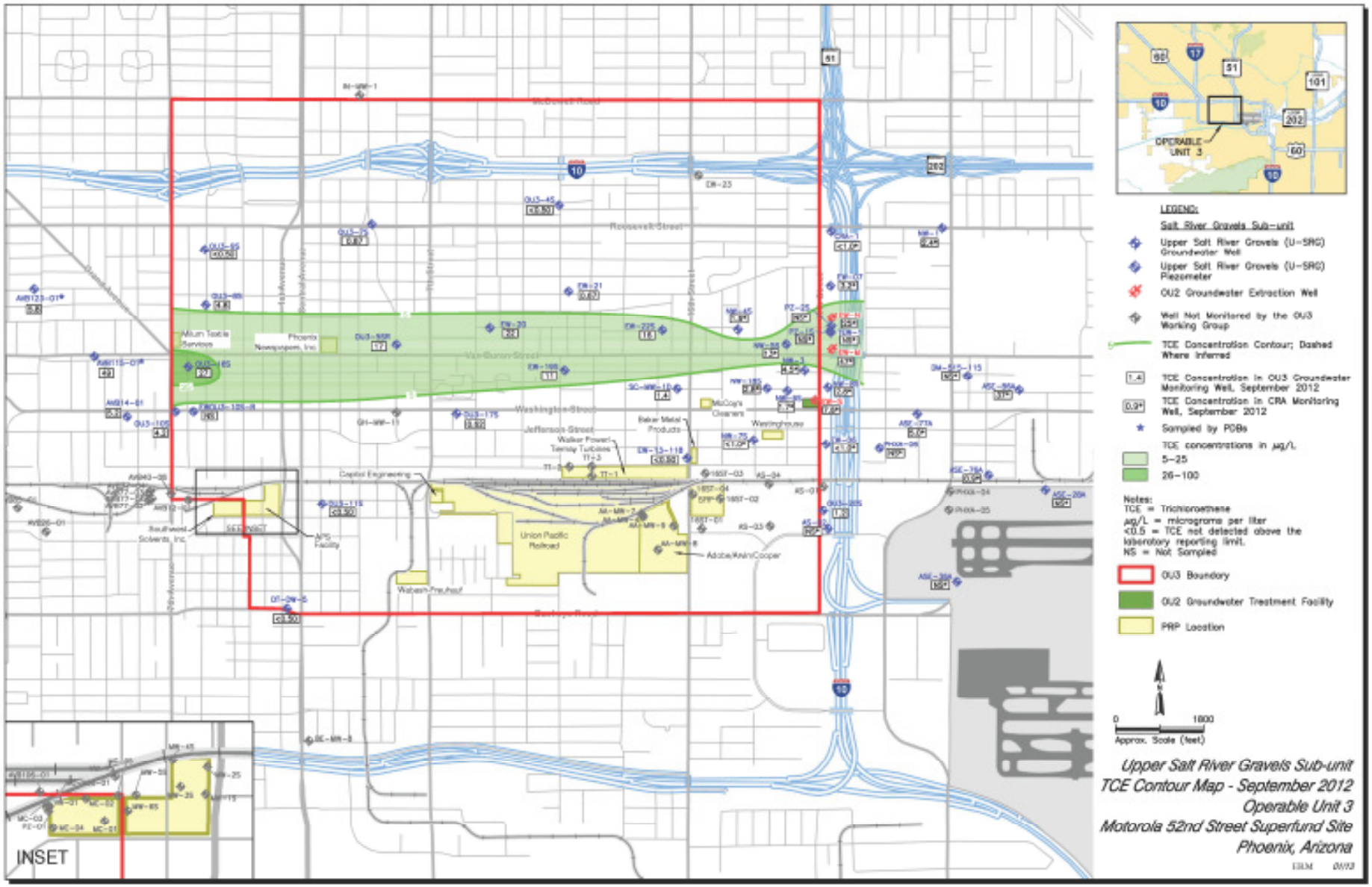
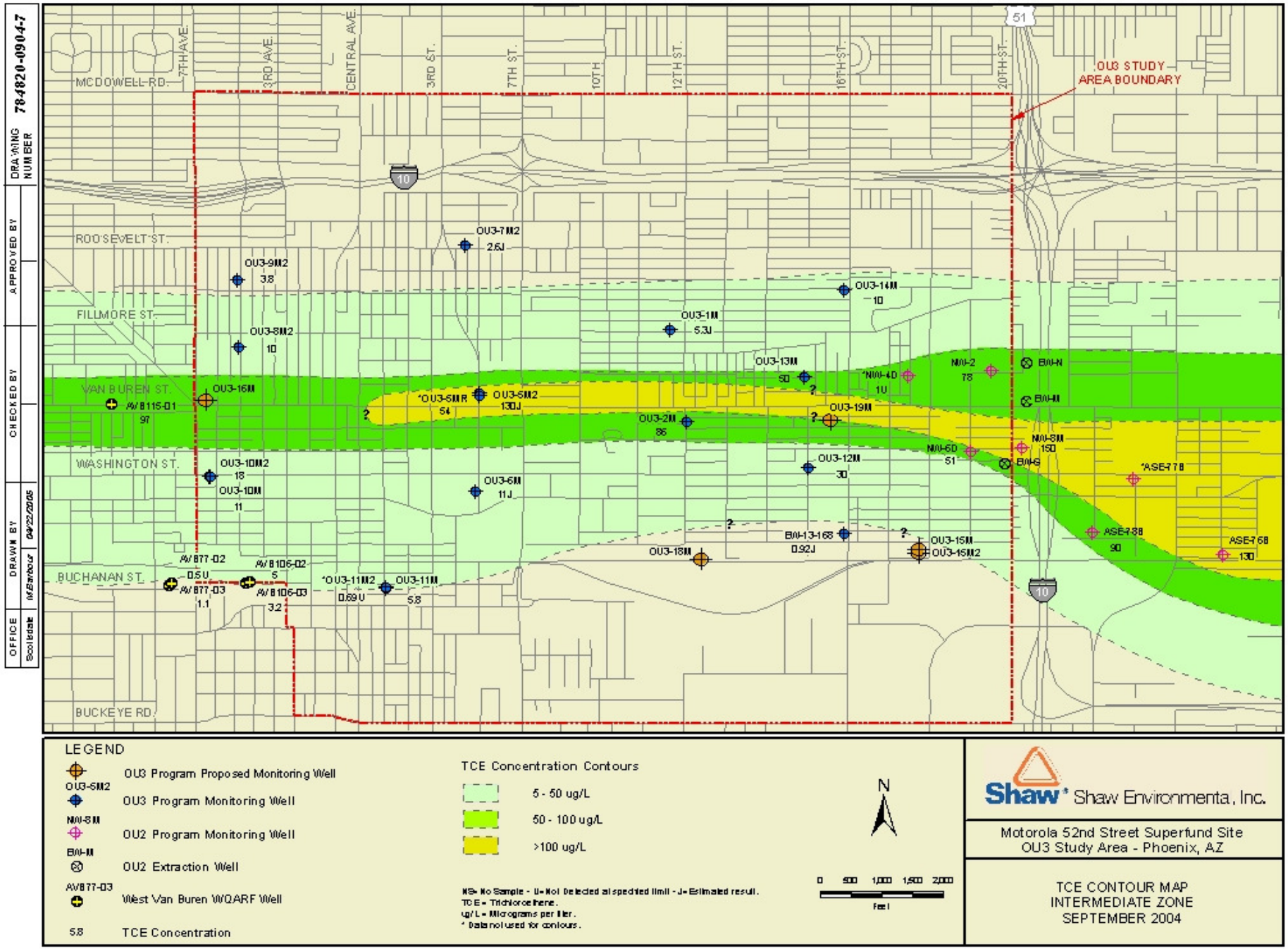
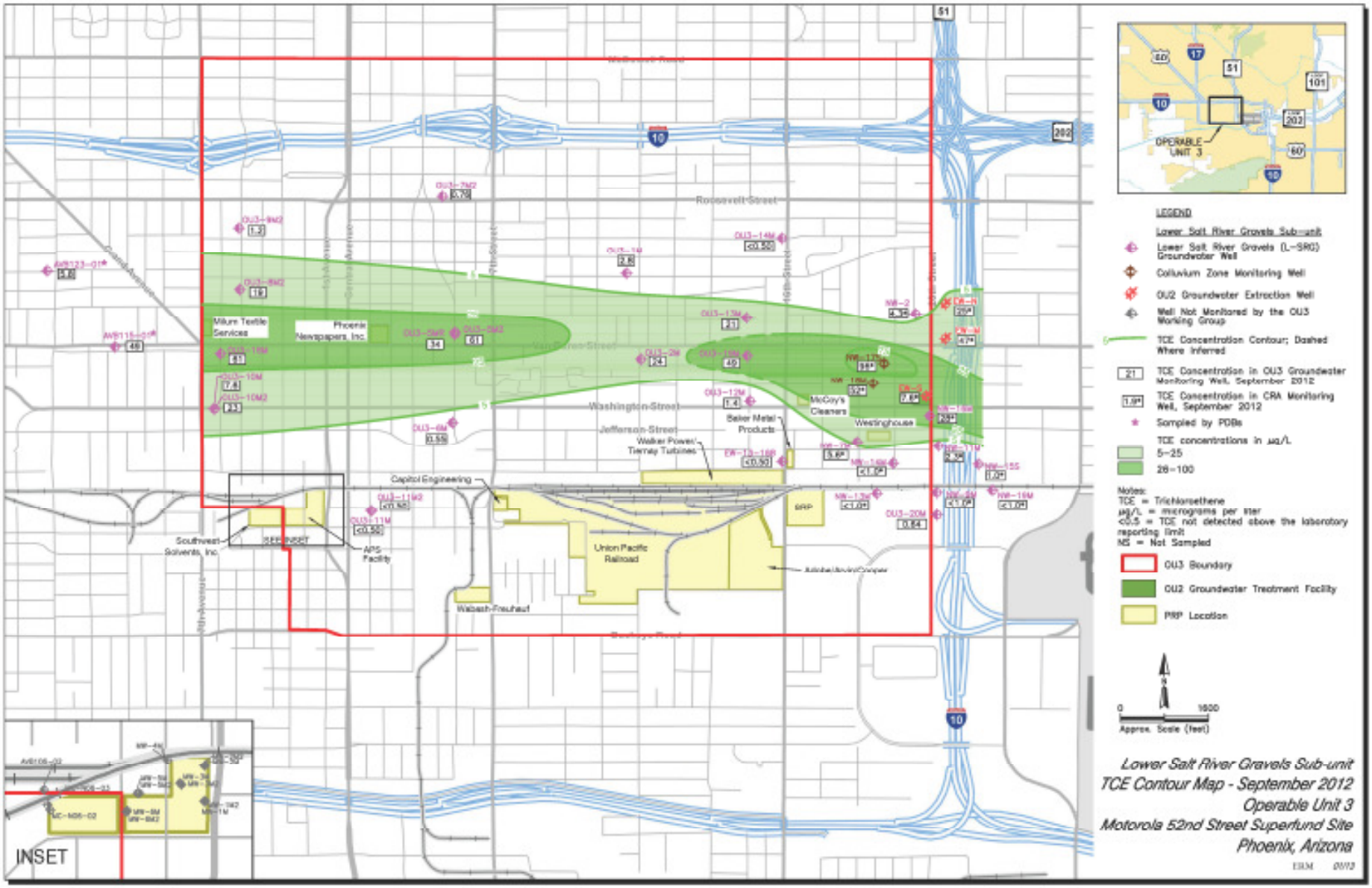
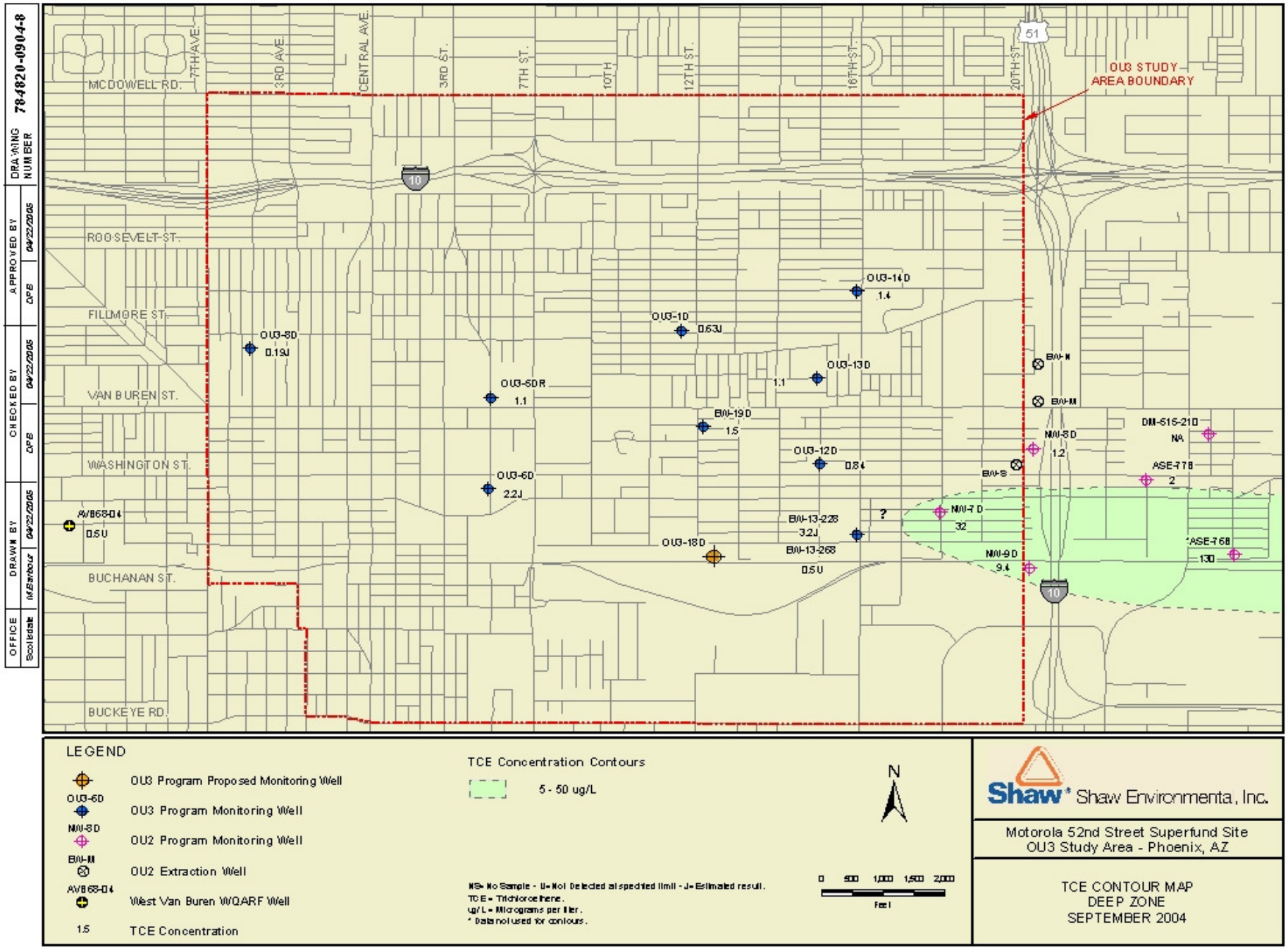
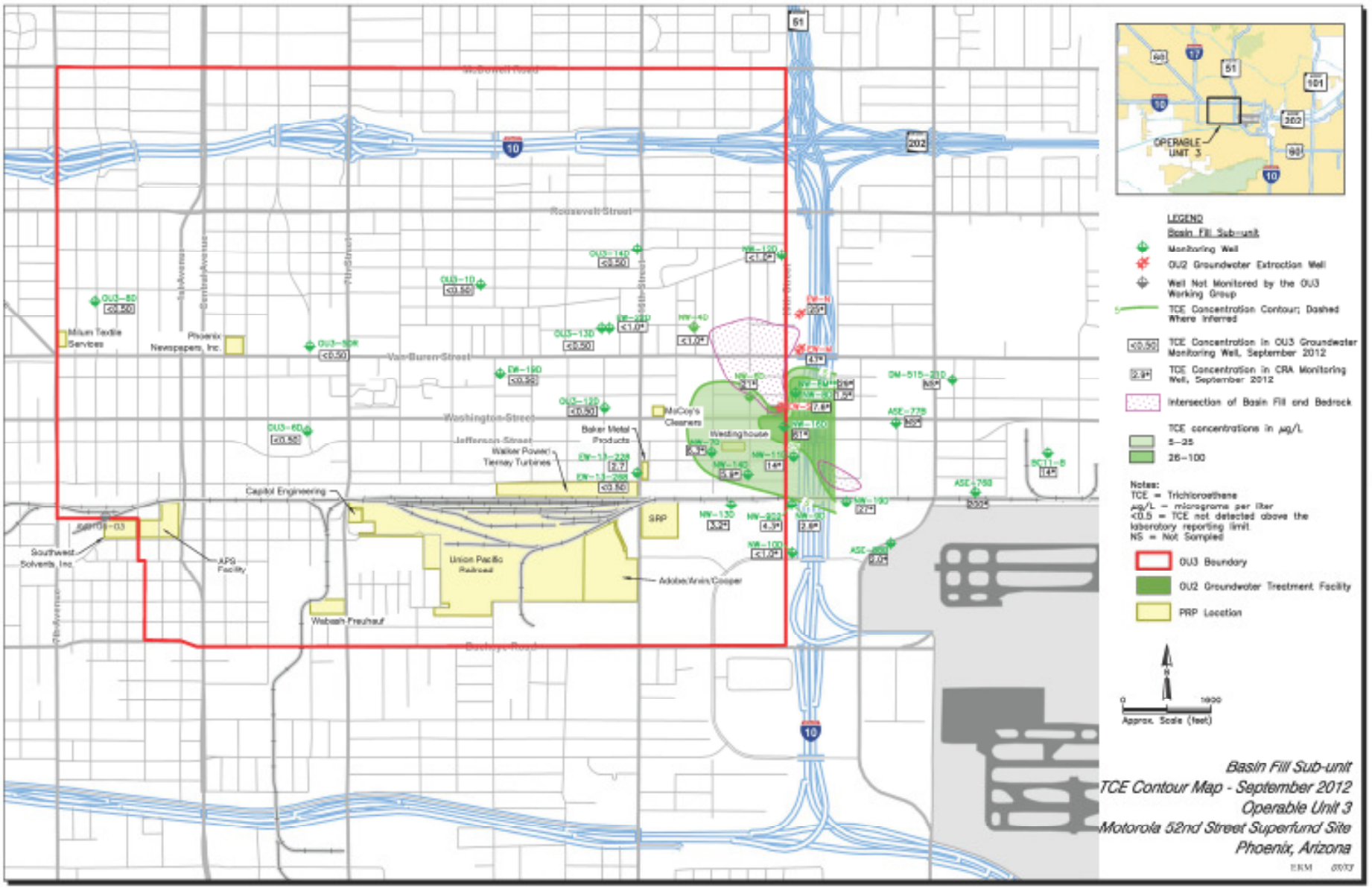
16ST-01 0.5U
AA-MW-2 NS
AA-MW-6 NS
TT-2 2.7
TT-1 NS
CRA-1 1U
MW-1 1U
BW-07 1U
TBW-1 NA
BW-N
PZ-1S NA
PZ-2S NA
BW-M
MW-8S 80
BW-6 8.8
DM-51S-11S NA
ASE-7A 120
PHXA-06 8.8
ASE-7A 6.5
PHXA-04 NA
PHXA-05 NA
LEGEND
OU3 Program Proposed Monitoring Well
OU3-11S OU3 Program Monitoring Well
MW-6S OU2 Program Monitoring Well
BW-M OU2 Extraction Well
AV B68-02 West Van Buren WQARF Well
16ST-01 SRP Monitoring Well
67 TCE Concentration
TCE Concentration Contours
5 - 50 ug/L
50 - 100 ug/L
>100 ug/L
NS= No Sample - U= Not Detected at specified limit - J= Estimated result.
TCE = Trichloroethene.
ug/L = Micrograms per liter.
N
0 500 1,000 1,500 2,000
Feet
Shaw Shaw Environmental, Inc.
Motorola 52nd Street Superfund Site
OU3 Study Area - Phoenix, AZ
TCE CONTOUR MAP
SHALLOW ZONE
SEPTEMBER 2004

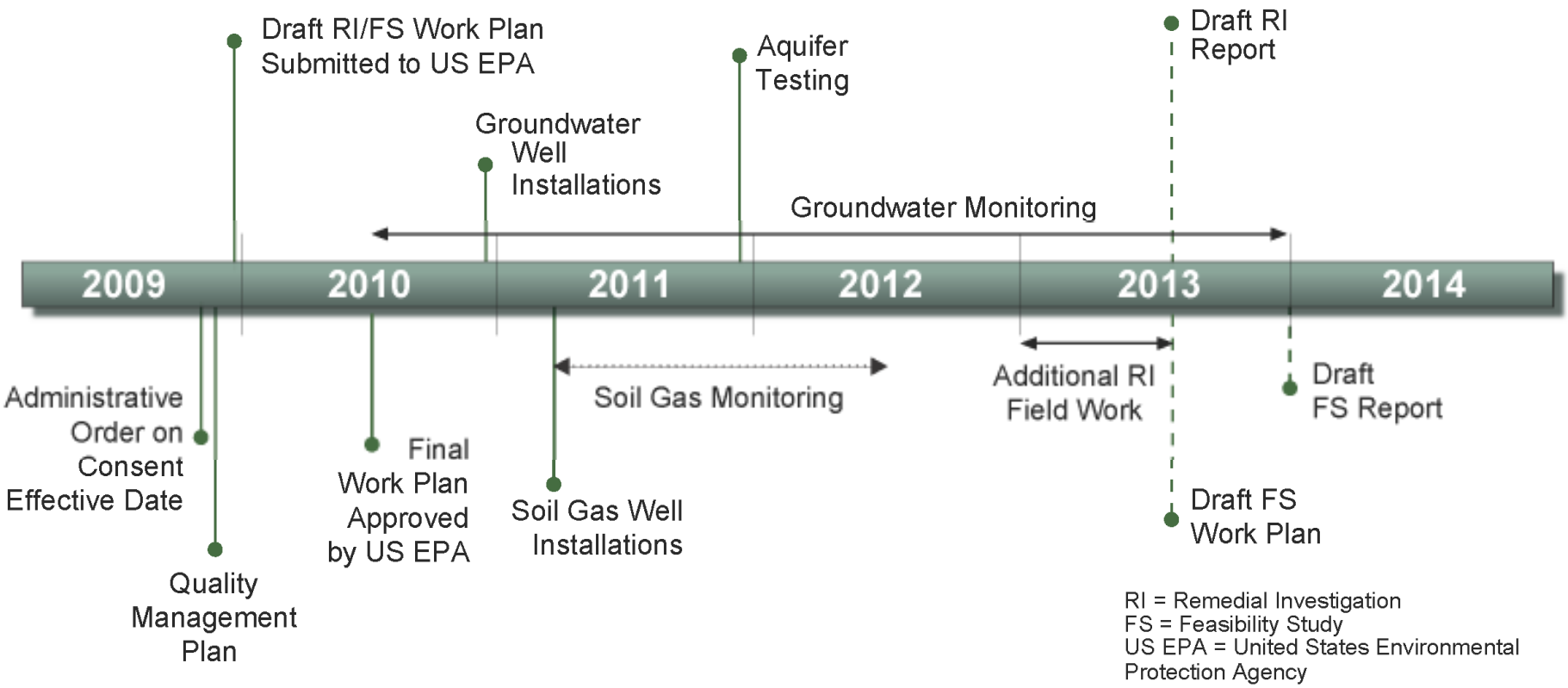

OPERABLE UNIT 3
LEGEND:
Salt River Gravels Sub-unit
Upper Salt River Gravels (U-SRG) Groundwater Well
Upper Salt River Gravels (U-SRG) Piezometer
OU2 Groundwater Extraction Well
Well Not Monitored by the OU3 Working Group
TCE Concentration Contour; Dashed Where Inferred
1.4 TCE Concentration in OU3 Groundwater Monitoring Well, September 2012
0.9* TCE Concentration in CRA Monitoring Well, September 2012
Sampled by PDBs
TCE concentrations in µg/L
5–25
26–100
Notes:
TCE = Trichloroethene
µg/L = micrograms per liter
<0.5 = TCE not detected above the laboratory reporting limit.
NS = Not Sampled
OU3 Boundary
OU2 Groundwater Treatment Facility
PRP Location
0
1800
Approx. Scale (feet)
Upper Salt River Gravels Sub-unit
TCE Contour Map - September 2012
Operable Unit 3
Motorola 52nd Street Superfund Site
Phoenix, Arizona
INSET


DRAWING NUMBER 78-4820-0904-7
APPROVED BY
CHECKED BY
DRAWN BY M.Barbour 04/22/2005
OFFICE Scottsdale
MCDOWELL RD.
7TH AVE.
3RD AVE.
CENTRAL AVE.
3RD ST.
7TH ST.
10TH
12TH ST.
16TH ST.
20TH ST.
51
OU3 STUDY AREA BOUNDARY
ROOSEVELT ST.
FILLMORE ST.
VAN BUREN ST.
WASHINGTON ST.
BUCHANAN ST.
BUCKEYE RD.
10
OU3-7M2 2.6J
OU3-9M2 3.8
OU3-14M 10
OU3-1M 5.3J
OU3-8M2 10
OU3-13M 50
*NW-4D 1U
NW-2 78
BW-N
BW-W
OU3-16M
AV B115-01 97
*OU3-5MR 54
OU3-5M2 130J
OU3-19M
OU3-2M 86
NW-8M 150
NW-6D 51
BW-S
OU3-12M 30
*ASE-7T8
OU3-10M2 18
OU3-10M 11
OU3-6M 11J
BW-13-168 0.92J
OU3-15M
OU3-15M2
ASE-7S8 90
ASE-7S6 130
OU3-18M
AV B77-02 0.5U
AV B106-02 5
AV B77-03 1.1
AV B106-03 3.2
*OU3-11M2 0.69U
OU3-11M 5.8
LEGEND
OU3 Program Proposed Monitoring Well
OU3-5M2 OU3 Program Monitoring Well
NW-8M OU2 Program Monitoring Well
BW-W OU2 Extraction Well
AV B77-03 West Van Buren WQARF Well
5.8 TCE Concentration
TCE Concentration Contours
5 - 50 ug/L
50 - 100 ug/L
>100 ug/L
NS= No Sample - U= Not Detected at specified limit - J= Estimated result.
TCE = Trichloroethene.
ug/L = Micrograms per liter.
* Data not used for contours.
N
0 500 1,000 1,500 2,000
Feet
Shaw Shaw Environmental, Inc.
Motorola 52nd Street Superfund Site
OU3 Study Area - Phoenix, AZ
TCE CONTOUR MAP
INTERMEDIATE ZONE
SEPTEMBER 2004


OPERABLE UNIT 3
LEGEND
Lower Salt River Gravels Sub-unit
Lower Salt River Gravels (L-SRG) Groundwater Well
Colluvium Zone Monitoring Well
OU2 Groundwater Extraction Well
Well Not Monitored by the OU3 Working Group
TCE Concentration Contour; Dashed Where Inferred
TCE Concentration in OU3 Groundwater Monitoring Well, September 2012
TCE Concentration in CRA Monitoring Well, September 2012
Sampled by PDBs
TCE concentrations in µg/L
5-25
26-100
Notes:
TCE = Trichloroethene
µg/L = micrograms per liter
<0.5 = TCE not detected above the laboratory reporting limit
NS = Not Sampled
OU3 Boundary
OU2 Groundwater Treatment Facility
PRP Location
0
1800
Approx. Scale (feet)
Lower Salt River Gravels Sub-unit
TCE Contour Map - September 2012
Operable Unit 3
Motorola 52nd Street Superfund Site
Phoenix, Arizona
Roosevelt Street
Washington Street
Jefferson Street
Van Buren Street
Broadway Road
Milum Textile Services
Phoenix Newspapers, Inc.
McCoy's Cleaners
Westinghouse
Baker Metal Products
Walker Power/ Tierney Turbines
Capitol Engineering
Southwest Solvents, Inc.
APS Facility
Union Pacific Railroad
Wabash-Freuhauf
INSET


DRAWING NUMBER 78-4820-0904-8
APPROVED BY DPB 04/22/2005
CHECKED BY DPB 04/22/2005
DRAWN BY MSansbury 04/22/2005
OFFICE Scottsdale
7TH AVE.
3RD AVE.
CENTRAL AVE.
3RD ST.
7TH ST.
10TH
12TH ST.
16TH ST.
20TH ST.
51
MCDOWELL RD.
ROOSEVELT ST.
FILLMORE ST.
VAN BUREN ST.
WASHINGTON ST.
BUCHANAN ST.
BUCKEYE RD.
10
OU3 STUDY AREA BOUNDARY
OU3-14D 1.4
OU3-1D 0.63J
OU3-8D 0.19J
OU3-13D 1.1
OU3-5DR 1.1
BW-N
BW-M
BW-19D 1.5
DM-515-21D NA
MW-8D 1.2
OU3-12D 0.84
ASE-77B 2
BW-S
OU3-6D 2.2J
AVB68-04 0.5U
MW-7D 32
BW-13-22B 3.2J
?
OU3-18D
BW-13-26B 0.5U
MW-9D 9.4
ASE-76B 130
LEGEND
OU3 Program Proposed Monitoring Well
OU3-6D OU3 Program Monitoring Well
MW-8D OU2 Program Monitoring Well
BW-M OU2 Extraction Well
AVB68-04 West Van Buren WQARF Well
1.5 TCE Concentration
TCE Concentration Contours
5 - 50 ug/L
NS= No Sample - U= Not Detected at specified limit - J= Estimated result.
TCE = Trichloroethene.
ug/L = Micrograms per liter.
* Data not used for contours.
N
0 500 1,000 1,500 2,000
Feet
Shaw Shaw Environmental, Inc.
Motorola 52nd Street Superfund Site
OU3 Study Area - Phoenix, AZ
TCE CONTOUR MAP
DEEP ZONE
SEPTEMBER 2004


McDowell Road
Roosevelt Street
Van Buren Street
Washington Street
Jefferson Street
Buckeye Road
10
202
51
OPERABLE UNIT 3
LEGEND
Basin Fill Sub-unit
Monitoring Well
OU2 Groundwater Extraction Well
Well Not Monitored by the OU3 Working Group
TCE Concentration Contour; Dashed Where Inferred
TCE Concentration in OU3 Groundwater Monitoring Well, September 2012
TCE Concentration in CRA Monitoring Well, September 2012
Intersection of Basin Fill and Bedrock
TCE concentrations in µg/L
5–25
25–100
Notes:
TCE = Trichloroethene
µg/L = micrograms per liter
<0.5 = TCE not detected above the laboratory reporting limit
NS = Not Sampled
OU3 Boundary
OU2 Groundwater Treatment Facility
PRP Location
Approx. Scale (feet)
Basin Fill Sub-unit
TCE Contour Map - September 2012
Operable Unit 3
Motorola 52nd Street Superfund Site
Phoenix, Arizona
ERM


Draft RI/FS Work Plan Submitted to US EPA
Aquifer Testing
Draft RI Report
Groundwater Well Installations
Groundwater Monitoring
2009
2010
2011
2012
2013
2014
Administrative Order on Consent Effective Date
Quality Management Plan
Final Work Plan Approved by US EPA
Soil Gas Monitoring
Soil Gas Well Installations
Additional RI Field Work
Draft FS Report
Draft FS Work Plan
RI = Remedial Investigation
FS = Feasibility Study
US EPA = United States Environmental Protection Agency

ATTACHMENT 2
MEETING ATTENDEE LIST

Attendance Date	First Name	Last Name	Affiliation
1/23/2013	Wendoly	Abrego	PRC
1/23/2013	Jennifer	Botsford	ADHS
1/23/2013	Steve	Brittle	Don't Waste Arizona
1/23/2013	Rene	Chase-Dufault	resident/co-chair
1/23/2013	Chloe	Cline	Bioscience High School
1/23/2013	Medina	Dulce	ASU Student
1/23/2013	Diane	Eckles	ADHS
1/23/2013	Wendy	Flood	ADEQ
1/23/2013	Ben	Gherhardstein	US Public Health Servicd
1/23/2013	Harry	Hendler	ADEQ
1/23/2013	Judy	Heywood	APS
1/23/2013	Gerald	Hiatt	EPA
1/23/2013	Les	Holland	resident
1/23/2013	Doug	Hulmes	Shaw
1/23/2013	Troy	Kennedy	Honeywell
1/23/2013	Robert	Knowles	US Public Health Service, Regional Director
1/23/2013	Sue	Kraemer	Shaw
1/23/2013	Mike	Kraeski	ERM West, Inc.
1/23/2013	Shoshana	Kroeger	Bioscience High School
1/23/2013	Tasha	Lewis	CH2M HILL
1/23/2013	Hsini	Lin	ADHS
1/23/2013	Jenn	McCall	Freescale
1/23/2013	Sal	Mestas	resident
1/23/2013	Cathe	Mestas	resident
1/23/2013	Rob	Mongrain	Arcadis
1/23/2013	Mary	Moore	resident
1/23/2013	Denise	Moreno	U of A student
1/23/2013	Barbara	Murphy	Freescale consultant
1/23/2013	William	Neese	ADEQ consultant
1/23/2013	Tom	Padgett	resident
1/23/2013	Richard	Rebollar	Bioscience High School
1/23/2013	Octavio	Rodriguez	Bioscience High School
1/23/2013	Wayne	Schurg	business owner
1/23/2013	Todd	Schwartz	resident
1/23/2013	Nadia	Smith	Bioscience High School
1/23/2013	Donn	Stoltzfus	City of Phoenix
1/23/2013	Brian	Stonebrink	ADEQ
1/23/2013	Tom	Suriano	Freescale consultant
1/23/2013	Chris	Thomas	SSD
1/23/2013	Miriam L.	Torres-Neri	Bioscience High School
1/23/2013	Sara	Turner	Bioscience High School
1/23/2013	Leeanna	Walker	ERM West, Inc.
1/23/2013	Cheyenne	Walsh	resident
1/23/2013	Tony	Ward	ERM West, Inc.
1/23/2013	Jared	Washburn	Bioscience High School
1/23/2013	Jerry D.	Worsham II	resident/attorney
1/23/2013	Martin	Zeleznik	EPA

ATTACHMENT 3
EMAIL dated JUNE 14, 2012 from LES HOLLAND to EPA REGARDING HEALTH STUDIES

Re:: FOUND: AP story from EPA Northwest Region: Health Tracking

Thursday, June 14, 2012 11:43 PM

From: "Les Holland" <les_holland@prodigy.net> Add sender to Contacts

To: "Mark Macintyre" <Macintyre.Mark@epamail.epa.gov>

Cc: "David Cooper" <Cooper.David@epamail.epa.gov>

My apologies.
I found the AP news article; I had saved it as a DRAFT. See below.

My interest is that repeatedly the M-52 CIG has been told that the EPA cannot do health studies on the past. Obviously, that was not true.

My guess is that well over 400 have died from past airborne exposures from M-52, both MOT workers and those who lived downwind.
Countless others haved lived with ongoing serious health effects.

MOT peak production was ~1973 when 12,000+ worked at the site.
From the 1950s to the 1990s, how many thousands worked at the site? Certainly 100,000+. Maybe 200,000+.
Over 100 exhaust vents from hoods sent acids and solvents into the air, many 24/7.

A recent M-52 related AZ Cancer Registry report (author not named) claimed that the M-52 ZIP code has less cancer than in the rest of Maricopa County.
My technical read is, "Of course. With M-52 as the probable source and cancers recorded at home addresses this study pinpoints M-52 as the source of the cancers."
To date, no one has refuted my brief, but powerful, analysis.

Health studies of M-52 are LONG OVERDUE !!!

Scientists seek former students in toxic MT town (Libby, 400+ dead)
Jun 4, 2010 5:08 AM (ET)

By NICHOLAS K. GERANIOS
SPOKANE, Wash. (AP) - **Researchers have embarked on an ambitious study to track the health of thousands of high school graduates over a half century** in a Montana town where a toxic mine has killed hundreds of people and made it **the deadliest Superfund site in the nation.** People who attended Libby High between 1950 and 1999 and then moved away are being asked to submit to tests to help determine the extent of contamination caused by asbestos mining and processing in the northwestern Montana town. **Researchers will track down many of the 13,000-plus** graduates with the help of the school district and alumni groups, and then ask them to undergo a battery of X-rays, CT scans and pulmonary function tests.
Dr. Stephen M. Levin of the Mount Sinai School of Medicine in New York said **the study is part of a larger range of work trying to figure out why** asbestos-related disease coming out of Libby appears to be particularly fast-moving and virulent.
"This progresses much more rapidly than your grandfather's asbestos-related disease," Levin said.
The mineral vermiculite was mined in Libby for much of the past century. At the mine's **peak in the 1970s,** operator W.R. Grace produced almost 2 million tons of ore annually and employed about 200