

EPA COMMUNITY INFORMATIONAL GROUP MEETING SUMMARY  
MOTOROLA 52<sup>ND</sup> STREET SUPERFUND

DRAFT DOCUMENT

Prepared by:

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October 2012

**Community Information Group Meeting  
Motorola 52<sup>nd</sup> St. Superfund Site  
October 24, 2012  
Sonoran Science High School, Phoenix, AZ**

**Project Team and Regulator Attendees:**

**United States Environmental Protection Agency (EPA):** Janet Rosati, Gerry Hiatt, Martin Zeleznik, David Cooper

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

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

**ADEQ Contractor:** William Neese, URS Corporation

**Technical Assistance Grant (TAG) Technical Advisor:** Richard Rushforth

**Moderator:** Marty Rozelle

**CIG Members:**

Les Holland  
Rena Chase-Dufault  
Todd Schwartz

Mary Moore  
Ruth Ann Marston  
Doug Tucker

**Additional attendees:**

See Attendee List

The following acronyms may be used throughout this document:

ADEQ	Arizona Department of Environmental Quality	HHRA	Human Health Risk Assessment
ADHS	Arizona Department of Health Services	IA	Indoor Air
ATSDR	Agency for Toxic Substances Disease Registry	RI/FS	Remedial Investigation/Feasibility Study
BSVE	Biologically Enhanced Soil Vapor Extraction	M52	Motorola 52 <sup>nd</sup> Street Superfund Site
CDC	Center for Disease Control	nZVI	Nanoscale Zero Valent Iron
CIG	Community Information Group	OU	Operable Unit
CMD	Contaminate Mass Discharge	PCE	Tetrachloroethylene
CoC	Contaminant of Concern	SIM	Selective Ion Monitoring
DCE	Dichloroethylene	TCE	Trichloroethylene
DNAPL	Dense Non aqueous phase liquid	PRP	Potential Responsible Party
EPA	United States Environmental Protection Agency, Region 9	$\mu\text{g}/\text{m}^3$	Microgram per cubic meter
		VC	Vinyl Chloride
		VOC	Volatile Organic Compound

## Meeting Note:

On October 24, 2012, a Community Information Group (CIG) meeting was held at Sonoran Science Academy; located at 4837 E. McDowell Road Street in Phoenix, Arizona. The meeting began at approximately 6:18 pm and adjourned at 8:38 pm. The primary purpose of the meeting was to update the public on the current status and remedial progress at the Motorola 52<sup>nd</sup> Street Superfund Site (M52), answer questions leftover from previous meetings, and present the latest data from indoor air and sub-slab sampling completed in Operable Unit 1 (OU1). 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.epa.gov/region09/motorola52ndst)  
<http://www.azdeq.gov/environ/waste/sps/phxsites.html#mot52a>

**6:18 pm:** Dr. Marston began the meeting; she stated the purpose of the meeting, with emphasis, that the CIG meetings assist with the speed of remediation. Dr. Marston asked those not being paid to be here to introduce themselves, then all other attendees.

**6:24 pm:** All introductions complete; Ms. Rozelle reviewed the ground rules and agenda for the meeting and opened the forum for action items.

**6:27 pm:** Ms. Moore indicated she would like Mr. Kalinowslei to do his presentation first. There were no objections from group. Ms. Moore indicated she wanted the full version of the minutes from the previous meeting, including copies of all presentations and the attendee list, before approving. Ms. Rozelle stated it has been noted internally that the PowerPoint presentations have not been posted to the websites yet. Ms. Moore wanted the audio tape from the previous meeting to compare it to the minutes. Mr. Hulmes indicated he can provide copies of the meeting minutes on flash drives.

Mr. Holland requested the health study, he provided last meeting to be included as he previously requested and had been noted in the minutes for the August meeting.

Mr. Cooper indicated that EPA tries to maintain the privacy of attendees, and suggested the previous minutes should not include the attendee list. Ms. Moore indicated the attendee lists have been included before and she thought the attendee list should be included, as these are public meetings. Mr. Brittle indicated he has been to similar meetings in Tucson and the meeting minutes included the attendees and their affiliation. Mr. Cooper indicated he would discuss the issue with ADEQ and EPA legal staff and get back to the CIG members. Ms. Rozelle, asked if just individuals' names and affiliation included were included on the attendee list. Ms. Moore indicated yes. Mr. Holland stated, for privacy reasons if someone does not want to be included, they do not have to say who they are (sign in). Ms. Rozelle confirmed that the group would wait until the next meeting to approve the amended minutes from the August 2012 CIG meeting.

### **6:35 pm: Technical Assistant Grant Presentation: Tomasz Kalinowslei – ASU PhD candidate - In Situ Microcosm Array (ISMA)**

The In-Situ Microcosm Array (ISMA) is a new technology for conducting multiple treatability studies in saturated subsurface environments (*in situ*) at the same time, in the same groundwater well. It is a self-contained device that pumps groundwater directly from the formation to conduct multiple column studies *in situ*. All groundwater entering the device is stored and retrieved with the device at the end of the subsurface deployment, eliminating the chance of adversely impacting the groundwater well and surrounding aquifer during the small-scale *in-situ* feasibility tests. The following is a summary of the presentation:

- Provided a background of existing methods and technologies (batch bottle and lab treatability studies) to select the best site specific in-situ remediation technology
- Presented a summation of advantages and disadvantages of field pilot trials

- Presented column studies that can be placed into a well. Water is drawn into the device, split into 12 channels; each channel is amended with an in-situ remediation technology, which is then pumped through sediment columns. The water from each sediment column is then collected in its own, separate bag. This water can be retrieved and analyzed at commercial labs. No water is released into the well.
- Summary:
  1. Helps to choose the best *in-situ* technology for a specific site
  2. No impact to aquifer
  3. A more detailed presentation is located on CLU IN website maintained by the EPA; and interested parties can contact Mr. Kalinowslei directly.
  4. Presented the team at ASU
- Questions:
  1. Mr. Holland asked where tests have been performed. *Response:* One location was at a Naval Air Station in San Diego.  
Have you applied for a patent? *Response:* yes
  2. Mr. Tucker asked how long batteries will last. *Response:* About 4 weeks, solar panels can extend the operating life.
  3. Ms. Moore wanted to understand how ISMA and nanoscale zero valent iron (nZVI) could work concurrently. *Response:* Mr. Kalinowslei explained you could have nZVI amend the groundwater before it enters the ISMA column, and see how the water reacts inside the sediment of an ISMA column. The advantage is that you are not releasing anything into the well. Another advantage is that with ISMA there will not be a problem distinguishing between remediation and dilution, because you can do a complete mass balance, unlike traditional pilot testing methods.
  4. Mr. Padgett asked if the team was working on their doctoral thesis. *Response:* yes
  5. Student asked for clarification regarding injecting water. *Response:* Mr. Kalinowslei explained how an amendment is injected into a well when conducting traditional pilot tests; so the team either has to drill another well or use the existing well; but the existing well cannot be used for monitoring after the pilot trial.  
Same student asked if one is injecting amendments into the water, would it be bad for the water. *Response:* That's the whole reasoning for in-situ technology is to put treatment into the well; so it depends on what you are injecting.
  6. Ms. Lewis asked how ISMA may assist with radius of influence calculations. *Response:* Mr. Kalinowslei stated he has an extensive discussion in his thesis trying to correlate clogging rates, reduction and hydraulic conductivity to assist in calculating radius of influence; but you would still have to do a field pilot trial.  
Ms. Lewis asked how the columns are packed to simulate conditions in the field. *Response:* They dry sediment and then pack it in the columns. They've have discussions about taking an actual core, but that is difficult because there are preferential flow paths along the core wall.
  7. Ms. Moore asked for more info for each in situ technology. *Response:* Mr. Kalinowslei gave a brief summary of each technology from the displayed list.

8. Mr. Brittle stated that a Professor from the University of Arizona gave a presentation in the last meeting regarding a pump and treat system at the Tucson airport using nZVI<sup>1</sup>, and 30 years of pump and treat technology; and the new methods could save a lot of time and money. *Response:* Mr. Kalinowslei reiterated that the performance of *in-situ* technologies is very site specific; the ideal situation is an area that has high concentrations, which have not mobilized very far; unfortunately that is not the case at the M52 site.  
Mr. Brittle stated that at the M52 site, there are the DNAPLs (dense nonaqueous phase liquids) in bedrock, which will always be percolating up and contaminating the water; and until we deal with the DNAPL in the bedrock, the contamination will always be there.

**7:00 pm: OU1 Vapor Intrusion Investigation Update - Janet Rosati:**

- Summarized vapor intrusion pathway and multiple lines of evidence
- Displayed soil gas, sub-slab, and indoor air results, within specific study areas
- Summarized VI investigation to date:
  1. Homes mitigated - 10
  2. Owners refused access - 3
  3. Homes pending results - 7
  4. Based on August 2012 data, only 1 step-out sample needed in the eastern direction
  5. For the February 2013 sampling round, 1 apartment complex will added
  6. Sampled collected to date - 98 homes, 4 schools, 7 commercial buildings, 49 outdoor air

**7:04 pm: Update: Indoor Air & Sub-Slab Sampling Motorola 52<sup>nd</sup> Street Site - Dr. Gerald Hiatt:**

- Is vapor intrusion happening and if so is it a health concern?
- Discussed protective numeric risk range 0.4 to 2.0 µg/m<sup>3</sup> for indoor air
- Displayed four sampling events, study areas and results
- One was building identified for mitigation based primarily on sub-slab data
- For mitigation - 18 homes identified
- Only indoor air samples were collected at schools, because it is problematic to drill into slabs within schools
- Summarized results to date: total of 22 buildings identified for mitigation

**7:15 pm: Questions:**

1. Dr. Marston: What would be the effects on proposed new construction given several buildings have needed mitigation? *Response:* Dr. Hiatt: The first thing to look at is what we know about soil vapor concentrations at the new construction's location. If the data indicates there is a potential for vapor intrusion, then it is inexpensive and easy to install mitigation systems during new construction.  
Dr. Marston voiced concern that during new construction, new excavations will be conducted and potentially present a greater risk of vapor intrusion. *Response:* Dr. Hiatt reiterated it is easy to install

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<sup>1</sup> EPA agrees with Mr. Brittle's comment that the use of an alternative technology at the Tucson Airport site has saved time and money. However, the technology being implemented at the Tucson Airport is In-Situ Chemical Oxidation (ISCO), not nZVI (Nanoscale Zero Valent Iron) as Mr. Brittle stated. The nZVI is also an in situ technology.

mitigation systems during new construction and a passive system can easily be converted and turned into an active system with a fan. The homes that have been mitigated thus far have had active systems. Ms. Rosati explained that prior to construction a Phase I Environmental Site Assessment is usually conducted, where this information will come to light. The efficient HVAC systems in commercial buildings are very effective at mitigating vapor intrusion because outdoor (makeup) air is being brought in, and EPA has not identified an issue with vapor intrusion in schools and commercial buildings. Information from the Phase I can provide data to guide in the selection of appropriate HVAC systems to mitigate potential vapor intrusion.

Dr. Marston stated there are two issues: One, the real estate agent must disclose this information when the property is sold. Two, if is not sold and someone choses to develop the property him/herself, what happens? *Response:* Ms. Rosati was not sure; there are institutional controls at other EPA sites that are further along. Dr. Marston and Ms. Rosati agreed that a better answer could be provided at the next meeting.

Mr. Tucker stated this is a situation in which the EPA could do some proactive good. He provided an example during construction of the light rail; the City and County had no information regarding soil vapor contamination during the permitting process for excavation and construction; and EPA should inform the City so they will have this information moving forward.

2. Mr. Holland inquired about the protective risk range numbers and how they would affect the northwest side of the study area. *Response:* Dr. Hiatt explained they have been using the new numbers. Mr. Holland asked if these new numbers will bring more area into the M52 Superfund Site. *Response:* Dr. Hiatt explained they've expanded the area of study due to the new numbers; but the northwest area that Mr. Holland was inquiring about will not be included in the official M52 site area. Dr. Hiatt stated they are comfortable they have defined the edge of the risk area. Mr. Schwartz asked where more stepouts will be? *Response:* Ms. Rosati explained to the east is the only direction remaining for stepouts, and they are confident the risk areas have been defined in the remaining directions. Mr. Schwartz asked if there is a spike in the area north of McDowell. *Response:* Ms. Rosati indicated yes. Ms. Rosati and Dr. Hiatt explained sampling processes and the area north of McDowell has the highest concentrations; and there is a steep gradient (concentrations drop quickly).
3. Ms. Moore voiced concern about the school being a new building, which has not cracked yet, and referenced the higher concentrations in the mechanical room that had the subsurface conduit. *Response:* Ms. Rosati indicated this may be included in five-year reviews in the future. Ms. Moore would like that; and asked if the maps have been updated with new screening levels. *Response:* Ms. Rosati and Dr. Hiatt indicated the maps still show the old levels and said they will update them.
4. Mr. Brittle indicated he was glad EPA has done the vapor intrusion and indoor air sampling; and will any health studies be conducted, saying we should have done that who knows how long ago? *Response:* Dr. Hiatt responded saying someone from ATSDR will be attending the next meeting; they have the resources to do health studies. Ms. Rozelle suggested the CIG should consider having a meeting before ATSDR's presentation to formulate questions regarding health studies. Ms. Moore presented a case where someone has lived within the study area for over 15 years, should there be a different action level? *Response:* Dr. Hiatt responded the action levels are based on 30 years, and therefore should be protective. He further explained we cannot tell if concentrations were higher or lower in the past; they could have been better and could have been worse. Ms. Rosati explained soil gas studies that were done in the 80s and 90s did not show a problem north of McDowell. Ms. Moore indicated there may have been areas that may have had more exposure in the last 30 years. *Response:* Ms. Rosati explained the assumptions of time spent within a home (24 hours a day/350 days a year) when deriving the screening levels.

#### **7:36 pm: Honeywell 34th Street Indoor Air Vapor Intrusion Assessment – Brian Stonebrink**

- Discussed the Honeywell outdoor and indoor air results, one high outdoor air result may have been due to lab cross-contamination. Mr. Stonebrink indicated Honeywell analyzed their samples by the TO-15 SIM

method and ADEQ utilized the TO-15 method; therefore the reporting limits for ADEQ's sampling are higher.

- Reviewed purpose of split sampling
- Showed an area on the map that should perhaps receive more investigation
- Showed summary of screening levels
- Conclusion: Vapor intrusion does not appear to be occurring at the Honeywell 34<sup>th</sup> Street facility and no further evaluation of vapor intrusion is warranted at this time. Honeywell will continue to monitor sub-slab samples as part of the BSVE effectiveness evaluation.

Dr. Marston asked for data tables presented to be more readable. Ms. Chase asked what the fitness center was previously used for, where a high result was noted. *Response:* Mr. Stonebrink was not sure, but indicated he would attempt to find out.

Ms. Moore asked about rooms that were not sampled, and how many buildings were sampled. *Response:* Mr. Stonebrink explained that ADEQ's split samples were collected at a 10 percent rate, and that Honeywell also collects duplicate samples, which ADEQ feels is sufficient.

Ms. Moore asked if the one outdoor sample in which there was a big discrepancy between ADEQ's and Honeywell's results was part of the split sampling. *Response:* Mr. Stonebrink replied yes.

Ms. Moore asked if ADEQ would want a larger sample size given this high result. *Response:* Mr. Stonebrink stated that one high outdoor result was not a major issue, and ADEQ did an audit of the lab.

Ms. Moore asked if Mr. Stonebrink could provide the detection limits for various analytical methods. *Response:* Mr. Stonebrink indicated the numbers displayed are the reporting limits, if denoted with a less than (<) symbol.

Ms. Moore asked for clarification regarding reporting and detection limits. *Response:* Mr. Hendler further explained detection and reporting limits, and confidence intervals: a method detection limit is the numeric value that the lab can detect an analyte with 95 percent confidence. Reporting limits are higher than the method detection limits, and add another layer of confidence to the data. Mr. Hendler said they will include reporting and method detection limits in the future displays of data.

Dr. Marston asked given the higher concentrations in the fitness room; is that more dangerous since people are working out (respiring at a faster rate). *Response:* Mr. Stonebrink replied that was reasonable; however people generally only work out a few hours per week.

Ms. Rozelle stated this might be something that ATSDR may be able to answer. Mr. Schwartz asked which solvent was detected in high concentrations in the fitness room. *Response:* Mr. Stonebrink indicated 1,1,1,2 PCE.

Mr. Swartz asked if he had the residential RSL for 1,1,1,2 PCE. *Response:* Mr. Stonebrink indicated he had them in the last presentation, but not right now.

Mr. Rozelle moderated and indicated this could be something to answer in the next meeting.

Mr. Padgett asked if 1,1,1,2 PCE was a solvent. *Response:* Mr. Stonebrink answered yes.

#### **8:00 pm: OU2 2011 Effectiveness Report - Brian Stonebrink:**

- Goal is to show VOCs concentrations in groundwater are going down
- Conclusions: Groundwater flow lines demonstrate hydraulic containment, statistically decreasing concentration trends are occurring downgradient, and TCE concentrations have decreased or thinned out demonstrating a narrowing of the plume. The OU2 Treatment System Capture Containment is effective

**8:04 pm:** Mr. Schwartz asked about a chemical concentration spike in one well. *Response:* Mr. Stonebrink explained possible reasons for data variability; such a contaminant could have been flushed out during a rainy season.

Ms. Moore stated she was very disappointed that Effectiveness Reports were not on the internet or made available to CIG members prior to the meeting and the data should be easier to read. She indicated the latest OU2 Effectiveness Report at the repository was dated 2009. Mr. Plaschke (Honeywell and Freescale contractor) stated that the 2011 Effectiveness Report was emailed to Ms. Moore and Mr. Rushforth. Ms. Moore indicated she would like to receive hard copies as they are easier to read, and would also like to review ADEQ and EPA comments. Mr. Stonebrink indicated ADEQ did not have significant comments about the Effectiveness Report.

Ms. Rozelle indicated she was confused and attempted to clarify which report was emailed. Mr. Stonebrink indicated the 2011 Effectiveness Report. Ms. Flood indicated all reports go to EPA and then to their contractor. Mr. Cooper and Ms. Rosati indicated there was some confusion about the number of copies sent to the repositories, which has been resolved. Ms. Flood stated ADEQ can provide copies to anyone who asks for them. Ms. Moore stated she thought that had been previously resolved: all CIG members wanted copies.

Mr. Padgett asked when were the Honeywell buildings constructed and if they were the original buildings on the site. Ms. Lewis (Honeywell contractor) indicated in the 1950's and yes they are the original buildings (vacant land prior). Ms. Lewis also indicated that Honeywell acquired Allied Signal and Allied Signal acquired another entity before then.

Mr. Padgett stated he had a friend that worked for this entity and may have been exposed to 1,1,2 tetrachloride. Ms. Lewis stated if he wanted to provide that information, Honeywell can look into and see if the potential exposure was in the same area where there is the one high indoor air result.

Ms. Moore stated the maps displayed appeared to be from the Effectiveness Report; does EPA and ADEQ agree with the zone of capture? *Response:* Mr. Stonebrink stated ADEQ completes their own maps and see how they compare; and yes they agree with the zone of capture.

Ms. Moore asked what data set is shown on the site-wide map? *Response:* Mr. Stonebrink answered it is from 2008 and the maps are produced in 2010; and it takes ADEQ longer to produce maps as they are regulators not consultants. Ms. Moore indicated there was another 2010 map with 2008 data. *Response:* Mr. Stonebrink indicated ADEQ will be posting maps with 2011 data soon and the most recent data is in the five-year review.

**8:18 pm:** Ms. Moore stated she had a problem with the southern boundary because it ends above (north of) the plume beneath the airport. *Response:* Mr. Stonebrink explained that most of the southern wells are below 5 ppm. Ms. Moore voiced concern that the southern extraction well was screened above bedrock. *Response:* Mr. Stonebrink indicated that new monitor wells were fairly recently installed in this area.

Mr. Padgett asked if they are installing four-inch wells. *Response:* Mr. Stonebrink indicated most wells are four-inch in diameter.

**8:21 pm:** Mr. Rozelle moderated into Calls to the Public: New CIG membership

Dr. Marston stated the group was formerly much larger and the purpose of the group is to get data, get information and disseminate information and would like to advertise for new membership, because the group was not able to get their job done with a group this size. Ms. Rozelle asked if there are specific demographics they should target. Dr. Marston replied they need to target everyone in the area. She asked how big the mailing list is; Mr. Cooper replied ~2100. Ms. Rozelle stated nothing beats phone calls to encourage people to come to these meetings.

Ms. Moore thought it would be good to meet later to discuss recruitment. Dr. Marston stated the issue, "can a group this small accomplish the group's goals?" She did not think so. She reiterated she wanted more aggressive recruitment; and water is one of the biggest issues in Arizona. She wanted to be sure not to attack to people who have not done anything wrong and people present in this room seem to those who are helping.

Mr. Tucker agreed that people want to get involved but are overwhelmed by technical issues; and there should be a simple manual to get them up to speed. Ms. Rozelle stated that is part of the recruitment process.

**8:26 pm:** Mr. Schwartz agreed it would be good to bring more people in and Mr. Rushforth has been invaluable in getting him up to speed.

Ms. Moore suggested they could have more meetings with fewer agenda items.

Dr. Marston agreed Mr. Rushforth is an invaluable resource. Mr. Tucker further agreed and expressed the value of high school students' presence.

Ms. Rozelle indicated a recruitment drive should be an action item. Dr. Marston agreed and anyone is free to email the group. There was agreement that the holiday season may not be the best time. Several ideas were exchanged about the best method for advertising for recruitment.

Ms. Flood indicated Ms. Rosetti provided notebooks to new members and asked if that is something they should continue to do. Ms. Moore stated the notebooks are helpful, but they are sometimes cumbersome to read, therefore it is best to have them electronically.

**8:32 pm:** Calls to public

An ASU student indicated if anyone was interested in the meetings for Phoenix reinvention associated with the light rail, he would be happy to provide them information.

The group agreed to January 24<sup>th</sup> for the date of the next meeting.

Ms. Rozelle summarized the following action items:

- The attendance list and the health study that Mr. Holland previously provided should be included in the meeting minutes
- Provide an audio tape of the meeting for Ms. Moore
- Update soil vapor concentrations maps with new regional screening levels
- Tables and charts displaying data in the meeting need to be bigger to facilitate reading
- Mr. Stonebrink will further explain detection and reporting limits
- Ensure repository is up to date. Mr. Stonebrink indicated reports are stored in the ADEQ records center. Ms. Moore indicated that is helpful but you have to make an appointment and one cannot review them on a Sunday afternoon
- Draft a plan for CIG recruitment
- Ms. Rosati should research ways to communicate potential soil vapor contamination to builders and excavators
- Provide health information concerning faster respiration rates in the fitness center within the Honeywell 34<sup>th</sup> St. facility, where the high 1,1,1,2-PCE result was obtained.

Ms. Rozelle briefly summarized the agenda items for next meeting; the biggest of which will be the ATSDR presentation concerning the potential to conduct a health study in the area.

**8:38 pm:** adjourned

**ATTACHMENT 1**  
**MEETING PRESENTATIONS**

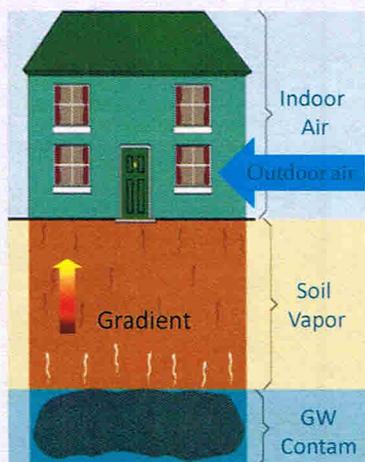
# Operable Unit 1 Vapor Intrusion Investigation Update

Janet Rosati  
US EPA Project Manager  
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## Vapor Intrusion Pathway

- Volatile organic compounds (VOCs) in the subsurface volatilize (become a gas) and migrate into the indoor air of overlying buildings.

Main VOC is TCE  
(trichloroethene)



## August 2012



## Summary of VI Investigation as of August 2012

- 10 homes mitigated
- 3 refused access
- 7 pending
- Only one step-out needed based on 8/12 data
- Apartment complex added for February 2013
- 98 homes, 4 schools, 7 commercial buildings sampled so far, 49 outdoor air samples collected.



## Update: Indoor Air & Sub-Slab Sampling – Motorola 52<sup>nd</sup> Street Site

Phoenix, AZ  
October 2012

Gerald (Gerry) Hiatt, Ph.D.  
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## Outline

- Vapor intrusion basics
- Review TCE health-based screening levels for vapor intrusion exposure
- Area-by-area presentation of results to date

## ● ● ● Use of Risk Range - Homes

TCE Protective Risk Range: **0.4 – 2  $\mu\text{g}/\text{m}^3$**

- **< 0.4  $\mu\text{g}/\text{m}^3$**  – Inhalation Risk Screening Level (IRSL)
  - Less than 1 in one-million lifetime cancer risk
  - No remediation unless potential for future VI
- **0.4 – 2  $\mu\text{g}/\text{m}^3$** 
  - Low risk: 1 - 5 in one-million lifetime cancer risk
  - Consider remediation if potential for future VI
- **EPA's Goal: residential exposures less than 2  $\mu\text{g}/\text{m}^3$** 
  - > 2  $\mu\text{g}/\text{m}^3$  risks start to increase for both non-cancer effects and cancer

## ● ● ● Updated IA & SS Results

- **4 Sampling Events:**
  - July and October of 2011
  - February and **July-August of 2012**
  - 98 houses / apartments / apartment buildings
  - 7 commercial / industrial buildings
  - 4 schools
- **Indoor air & sub-slab data validated**
  - Homeowner / resident calls not yet completed
- **Results represent testing in individual homes**
  - No addresses or specific locations identified
  - Protect privacy of volunteers

## McDowell Southside

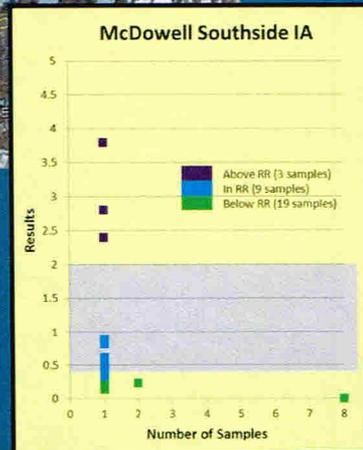


### TCE – Indoor Air (31 residences):

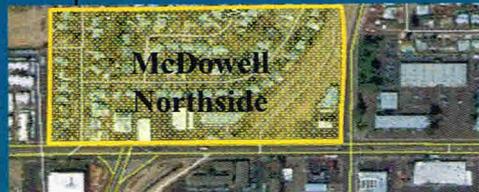
- 8 residences ND
- 11 below 0.4  $\mu\text{g}/\text{m}^3$  screening level
- 9 in 0.4 – 2  $\mu\text{g}/\text{m}^3$  protective risk range
- 3 above protective risk range

### TCE – Sub-slab (30 residences):

- 2 residences ND (non detect)
- 28 detections
- 1 building id'd for mitigation



## McDowell Northside

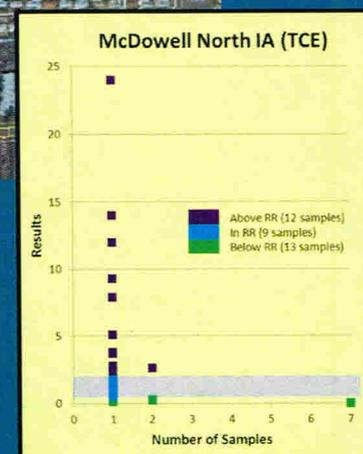


### TCE – Indoor Air (34 residences):

- 7 residences ND
- 6 below 0.4  $\mu\text{g}/\text{m}^3$  screening level
- 9 in 0.4 – 2  $\mu\text{g}/\text{m}^3$  protective risk range
- 12 above protective risk range

### TCE – Sub-slab (34 residences):

- 3 residences ND (non detect)
- 31 detections
- ## id'd for mitigation





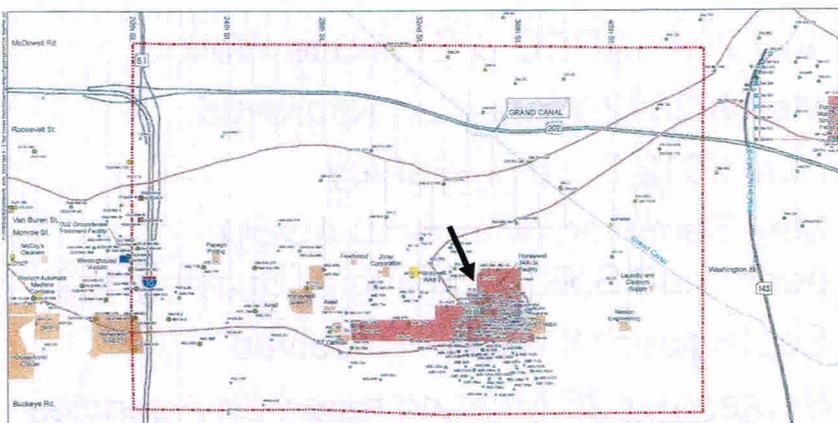


# Motorola 52nd Street Superfund Site Honeywell 34<sup>th</sup> Street Indoor Air Vapor Intrusion Assessment Report

Community Informational Group Meeting  
October 24, 2012



## Honeywell on Site-Wide Map



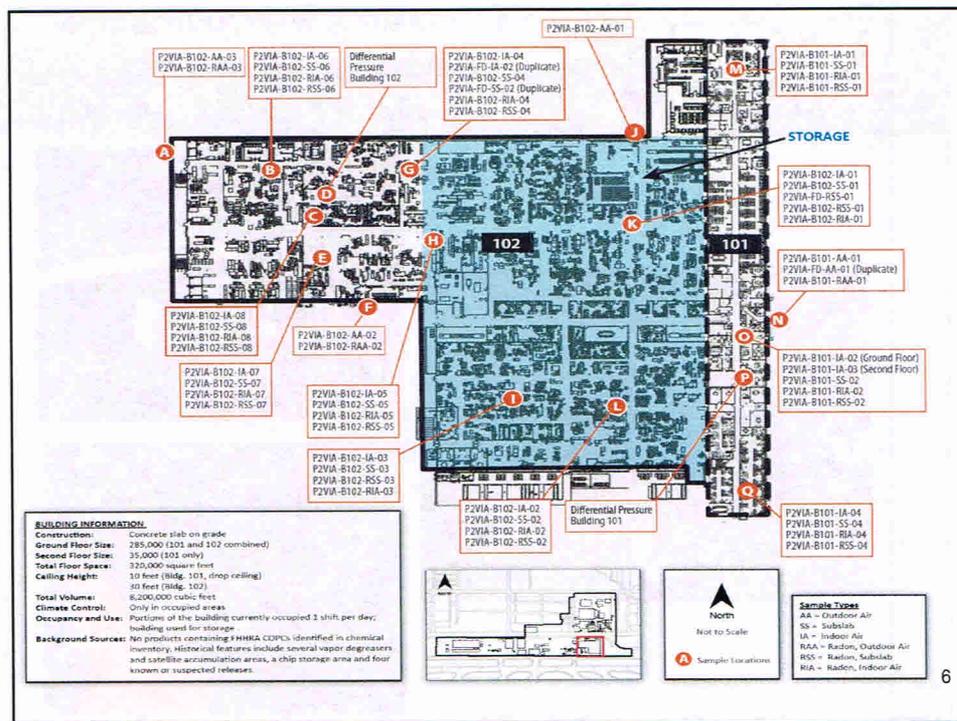
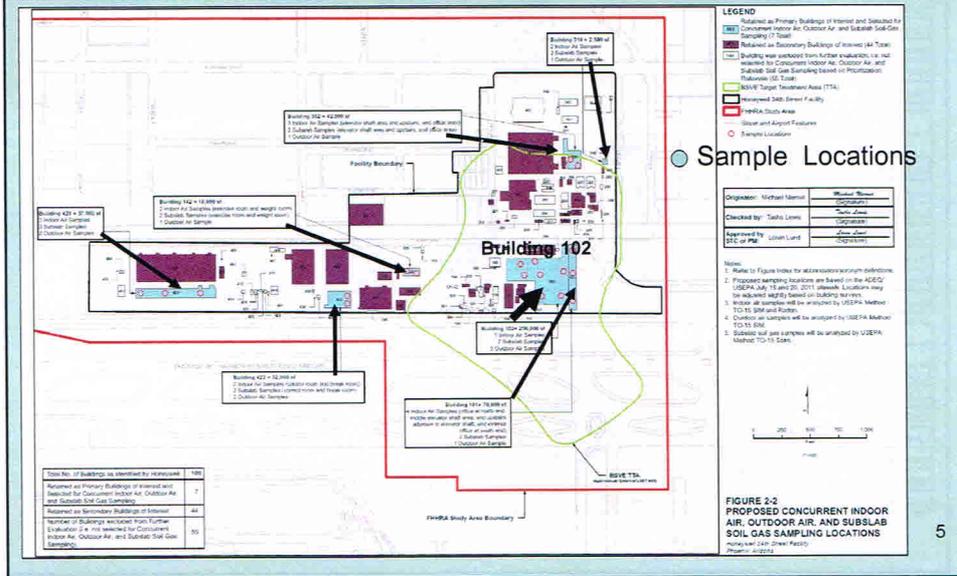
**Legend**

OU boundary	Responsible Party	Monitoring Well in HSD-A
Interred Cases of VOCs Exceeding MCLD Level on 2009 Data	Primarily Responsible Party	Monitoring Well in HSD-B
Highway	Property Status & Notice of Completion of Work	Extraction Well A
Road	Groundwater Treatment Plant	Extraction Well B
Canal	Extraction Well D	Extraction Well F
Dust-Wind Pipeline	CSP/Fuel	

**FIGURE 3-2  
OU2 SITE PLAN  
2011 Site-wide Five-year Review  
Motorola 52nd Street Superfund Site**

ADEQ URS

# Seven Buildings Sampled – Shown in Light Blue (with Arrows)





## Outdoor Air Samples

### TCE Outdoor Air/ Ambient Air (AA) Samples

Sample ID	TCE Results ug/m3	Location
Bldg 102-AA (A)	0.087	NE of Building 102
B102-AA (F)	0.297	SE
B102-AA (J)	3.67	NW
ADEQ Split (J)	<0.64	NW
B101-AA (N)	0.0797	East
B142-AA	0.078	Fitness Center-SE corner
B302-AA	0.19	Bldg 302 South Side
B310-AA	0.13	Photo Lab- West Side
B422-AA	0.079	East Side of Building
B422-AA	0.079	South Side
B429-AA	0.081	North
B429-AA	0.082	South-East

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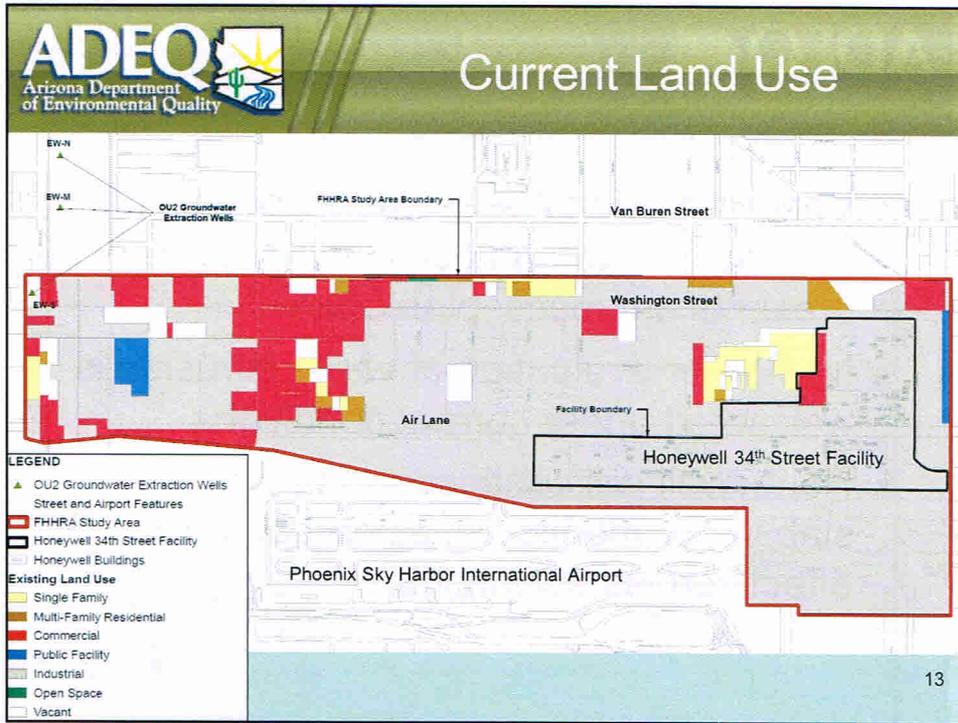
## Vapor Intrusion Bldg 102 Indoor Air Results

### Building 102 Indoor Air Samples - May 10, 2012

Industrial Air Regional Screening Levels (IARSL)

Contaminant	Result	ADEQ Split	Units	IARSL	Exceed IARSL
1,1,2,2-Tetrachloroethane	0.105	<.89	ug/m3	0.21	No
1,1,2-Trichloroethane	0.0832	<.55	ug/m3	0.77	No
1,1-Dichloroethane	0.0618	<.41	ug/m3	7.7	No
1,2-Dichloroethane	0.0766	<.45	ug/m3	0.47	No
Tetrachloroethene (PCE)	0.127	<.75	ug/m3	47	No
Trichloroethene (TCE)	0.0918	<.64	ug/m3	3	No
Vinyl chloride	0.039	<.41	ug/m3	2.8	No

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**ADEQ**  
Arizona Department of Environmental Quality

## Summary of Screening Level Assessment

Summary of Screening Level Assessment  
Honeywell 34th Street Facility, Phoenix, Arizona

Building	Condition to be Assessed	Chemical of Potential Concern						
		1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-DCA	1,2-DCA	PCE	TCE	Vinyl chloride
101/102	Do subslab soil gas concentrations exceed SGHHSLS?	No (ND)	No (ND)	No	No (ND)	No	Yes <sup>a</sup>	No (ND)
	Do subslab soil gas concentrations exceed RBSLS?	No (ND)	No (ND)	No	No (ND)	No	No	No (ND)
	Do indoor air concentrations exceed RSLs?	No	No (ND)	No	No	No	No	No (ND)
142	Do subslab soil gas concentrations exceed SGHHSLS?	No (ND)	No (ND)	No (ND)	No (ND)	No (ND)	No (ND)	No (ND)
	Do subslab soil gas concentrations exceed RBSLS?	No (ND)	No (ND)	No (ND)	No (ND)	No (ND)	No (ND)	No (ND)
	Do indoor air concentrations exceed RSLs?	Yes <sup>b</sup>	No	No (ND)	No	No	No	No (ND)
302	Do subslab soil gas concentrations exceed SGHHSLS?	No (ND)	No (ND)	No	No (ND)	No	No	No (ND)
	Do subslab soil gas concentrations exceed RBSLS?	No (ND)	No (ND)	No	No (ND)	No	No	No (ND)
	Do indoor air concentrations exceed RSLs?	No (ND)	No (ND)	No (ND)	No	No	No (ND)	No (ND)
310	Do subslab soil gas concentrations exceed SGHHSLS?	No (ND)	No (ND)	No (ND)	No (ND)	No	No	No (ND)
	Do subslab soil gas concentrations exceed RBSLS?	No (ND)	No (ND)	No (ND)	No (ND)	No	No	No (ND)
	Do indoor air concentrations exceed RSLs?	No (ND)	No (ND)	No (ND)	No	No	No (ND)	No (ND)
422	Do subslab soil gas concentrations exceed SGHHSLS?	No (ND)	No (ND)	No (ND)	No (ND)	No (ND)	No (ND)	No (ND)
	Do subslab soil gas concentrations exceed RBSLS?	No (ND)	No (ND)	No (ND)	No (ND)	No (ND)	No (ND)	No (ND)
	Do indoor air concentrations exceed RSLs?	No (ND)	No (ND)	No (ND)	No	No	No	No (ND)
429	Do subslab soil gas concentrations exceed SGHHSLS?	No (ND)	No (ND)	No	No (ND)	No	No	No (ND)
	Do subslab soil gas concentrations exceed RBSLS?	No (ND)	No (ND)	No	No (ND)	No	No	No (ND)
	Do indoor air concentrations exceed RSLs?	No (ND)	No (ND)	No	No	No	No	No

Notes:

<sup>a</sup> The concentration of TCE at one location within Building 102 was 2,700 µg/m<sup>3</sup>, which exceeded the SGHHSLS of 2,500 µg/m<sup>3</sup>. Indoor air concentrations of TCE in Building 101/102 did not exceed the RSL, indicating that vapor intrusion, if occurring, is not significant.

<sup>b</sup> The concentration of 1,1,2,2-Tetrachloroethane at one location within Building 142 was estimated at 0.54 µg/m<sup>3</sup>, which exceeded the RSL of 0.21 µg/m<sup>3</sup>. 1,1,2,2-tetrachloroethane was not detected in subslab soil gas samples at Building 142, indicating that the presence of this compound in the indoor air sample was not due to vapor intrusion.

ND = not detected



# Motorola 52nd Street Superfund Site-OU2 2011 Effectiveness Report

CIG Meeting October 24, 2012



Arizona Department of  
Environmental Quality

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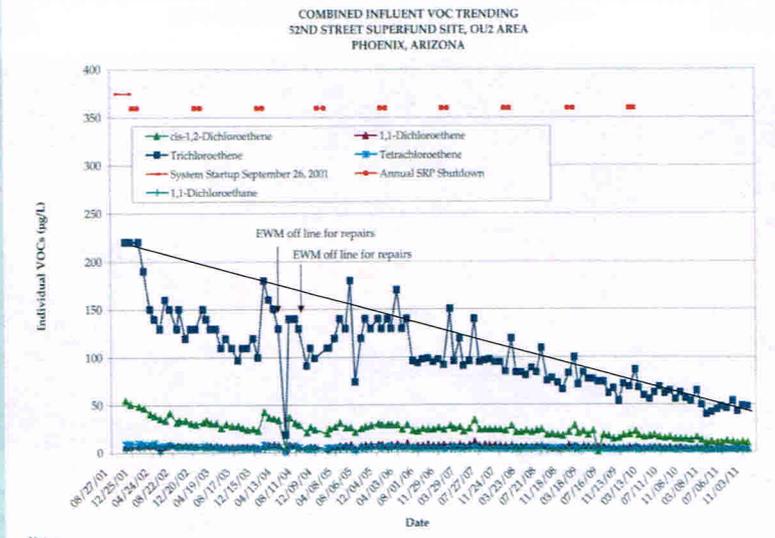
## Effectiveness Report Purpose

- Evaluate Effectiveness compared to Baseline 2001 and 2006 conditions and 2011 Reporting Year
- Show Containment of North-South width and depth of plume at I-10 and 20<sup>th</sup> Street
- Goal to Show Reduced volatile organic compounds (VOCs) concentrations in groundwater and that treatment system is being effective

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# Influent Volatile Organic Carbon Trend



Notes:  
ug/L - micrograms per Liter  
VOCs - volatile organic compounds



# Summary of TCE Decline in Extraction Wells

	TCE	TCE	TCE
<i>Extraction Well</i>	<i>2001</i>	<i>2006</i>	<i>2011</i>
<b>EWN</b>	<b>98 ug/L</b>	<b>14 ug/L</b>	<b>34 ug/L</b>
<b>EWM</b>	<b>320 ug/L</b>	<b>170 ug/L</b>	<b>29 ug/L</b>
<b>EWS</b>	<b>320 ug/L</b>	<b>33 ug/L</b>	<b>12 ug/L</b>



## Conclusion and Summary

- Groundwater flow lines demonstrate hydraulic containment
- Statistically significant decreasing concentration trends are occurring downgradient
- TCE concentrations have decreased or thinned out demonstrating narrowing of the plume
- OU2 Treatment System Capture and Containment is Effective

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## Contact Information

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**ATTACHMENT 2**  
**MEETING ATTENDEE LIST**

**Attendance**

<b>Date</b>	<b>FirstName</b>	<b>LastName</b>	<b>Affiliation</b>
10/23/2012	Deisy	Bojorquez	Balsz Elementary
10/23/2012	Steve	Brittle	Don't Waste Arizona
10/23/2012	Mario	Castaneda	Gateway Comm. College
10/23/2012	Rene	Chase-Dufault	resident/co-chair
10/23/2012	Chloe	Cline	Bioscience High School
10/23/2012	David	Cooper	EPA
10/23/2012	Wendy	Flood	ADEQ
10/23/2012	Faith	Frias	Bioscience High School
10/23/2012	John	Harlow	Reinvent Phoenix
10/23/2012	Jennifer	Haro	Bioscience High School
10/23/2012	Harry	Hendler	ADEQ
10/23/2012	Les	Holland	resident
10/23/2012	Doug	Hulmes	Shaw
10/23/2012	Troy	Kennedy	Honeywell
10/23/2012	Tasha	Lewis	CH2M HILL
10/23/2012	Ruth Ann	Marston	Phoenix Elementary
10/23/2012	Jenn	McCall	Freescale
10/23/2012	Sharen	Meade	Clear Creek Associates
10/23/2012	Alejandro	Melo	Bioscience High School
10/23/2012	Wayne	Miller	ADEQ
10/23/2012	Mary	Moore	resident
10/23/2012	Quentin	Moore	Arcadis
10/23/2012	Barbara	Murphy	Freescale consultant
10/23/2012	William	Neese	ADEQ consultant
10/23/2012	Tom	Padgett	resident
10/23/2012	Enrique	Po-pe	Bioscience High School
10/23/2012	Abigail	Rodriguez	Star Shine Academy
10/23/2012	Janet	Rosati	EPA
10/23/2012	Iridian	Ruiz	Bioscience High School
10/23/2012	Richard	Rushforth	TAG advisor
10/23/2012	Brian	Stonebrink	ADEQ
10/23/2012	Tom	Suriano	Freescale consultant
10/23/2012	Doug	Tucker	resident
10/23/2012	Sara	Turner	Bioscience High School
10/23/2012	Tony	Ward	ERM West, Inc.
10/23/2012	Sarah T.	Wilkinson, PhD	U of A Superfund Program
10/23/2012	Martin	Zeleznik	EPA