# Air Force Civil Engineer Center

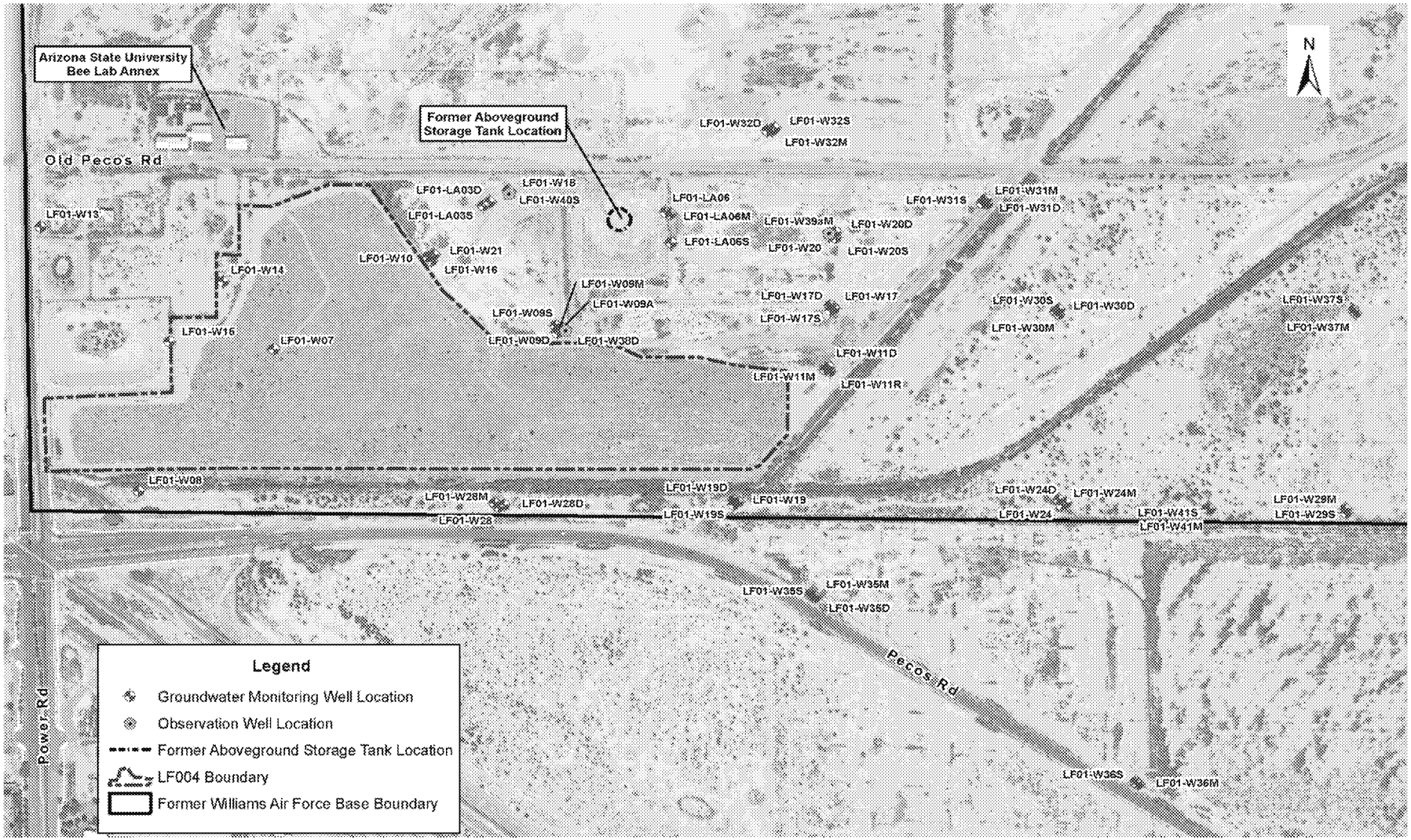
*Integrity - Service - Excellence*

## FORMER
## WILLIAMS AIR FORCE BASE

# Site LF004 Landfill Remedial Action

**BCT Conference Call**
**21 January 2016**

# Site LF004 GW Monitoring Update
# Well Locations



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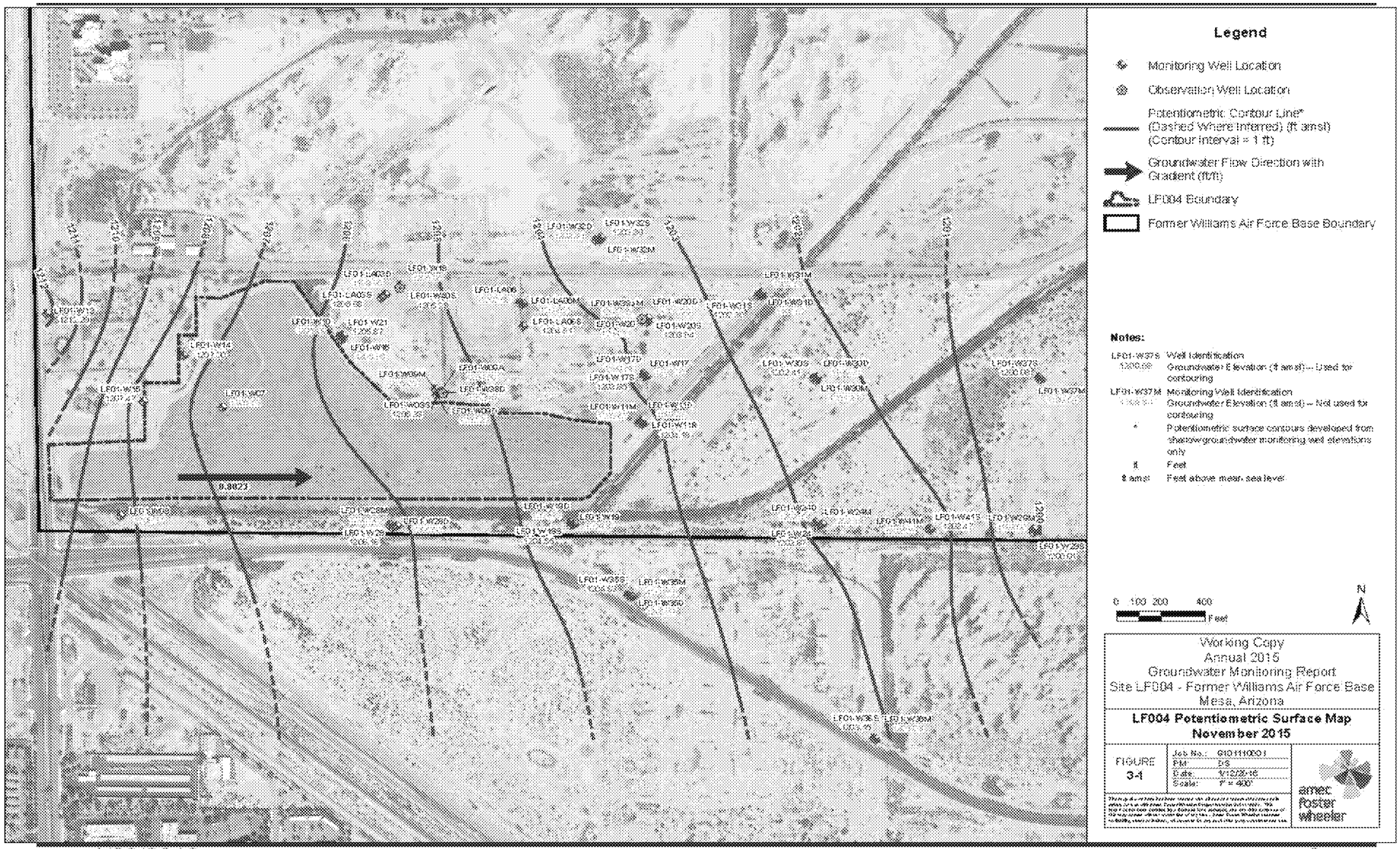
# Site LF004 GW Monitoring Update
# Flow Direction –November 2015



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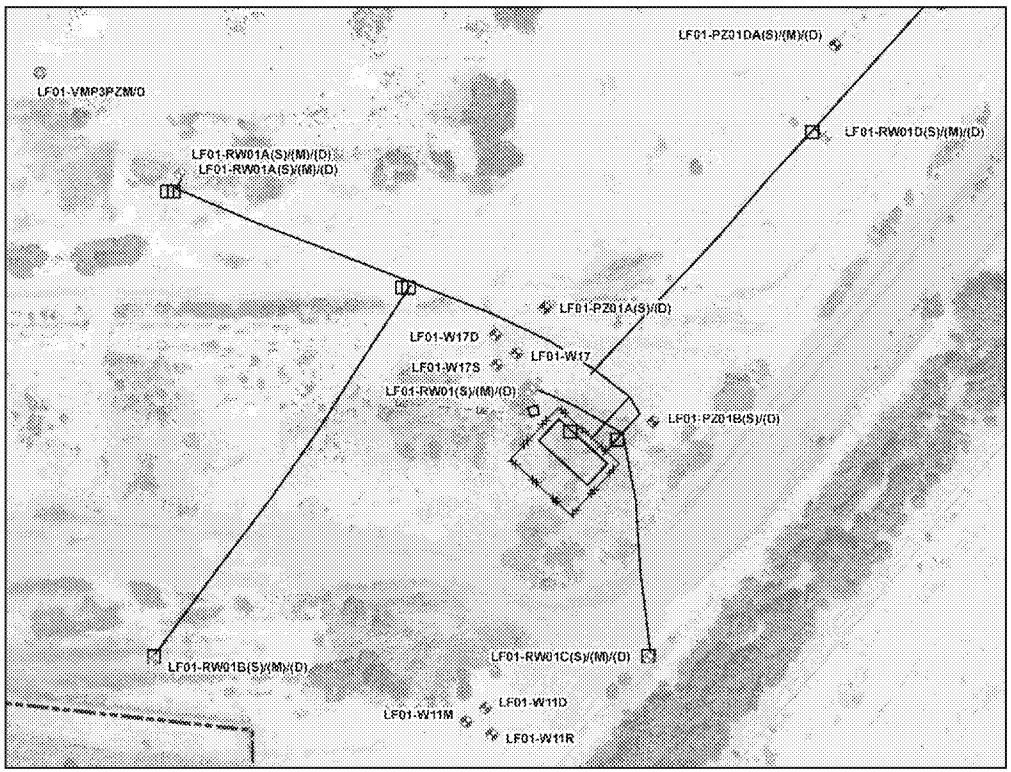
# Site LF004 Groundwater Monitoring Update November 2015 Sampling Event

- 51 wells sampled (PDBs)
- Groundwater Flow Direction – due east
- TCE & PCE only contaminants above EPA Maximum Contaminant Levels (MCLs) & Arizona Aquifer Water Quality Standards (AWQS) (AWQS/MCL) = 5 µg/L

| Concentrations > AWQS | | |
|---|---|---|
| Event | TCE<br>No. of Wells >5 µg/L | PCE<br>No. of Wells >5 µg/L |
| May 2015 | 9 | 12 |
| November 2015 | 6 | 5 |

# Site LF004
# LF01-W17 Area IWAS System Update




- Oxidant injection was expanded from RW01 to RW01A to target chemicals of concern (COCs) upgradient of W17
- Oxidant concentrations stable in W17S and RW01 since injections during Sep 2015
- Oxidant concentrations indicate distribution up to 400 feet downgradient



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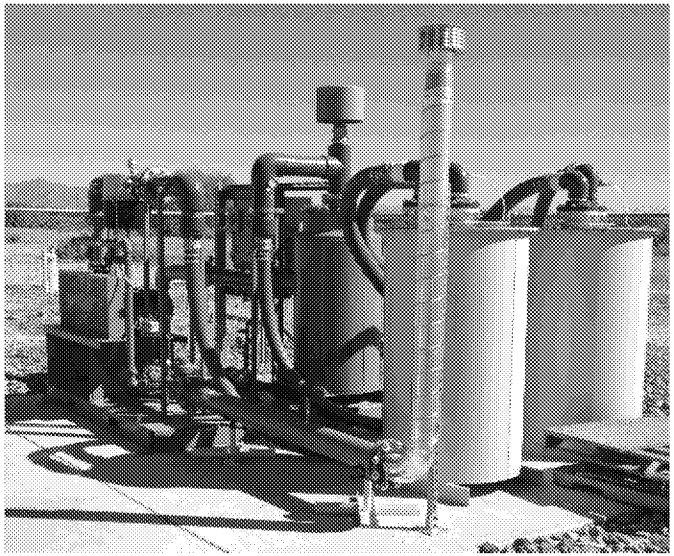
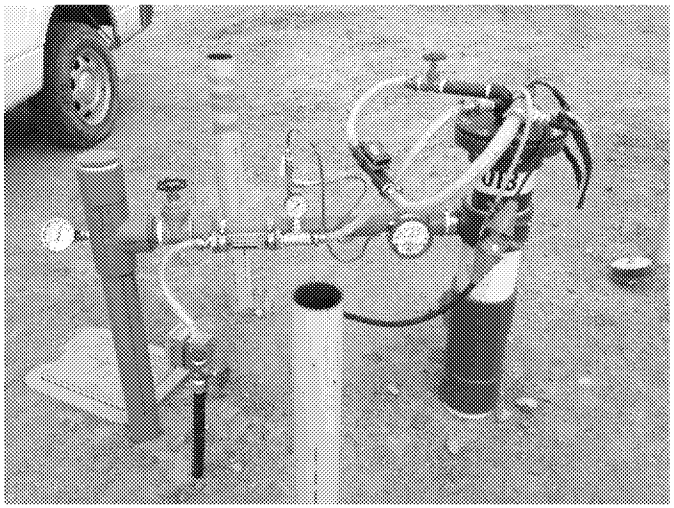
# Site LF004
# LF01-W17 Area IWAS System Update

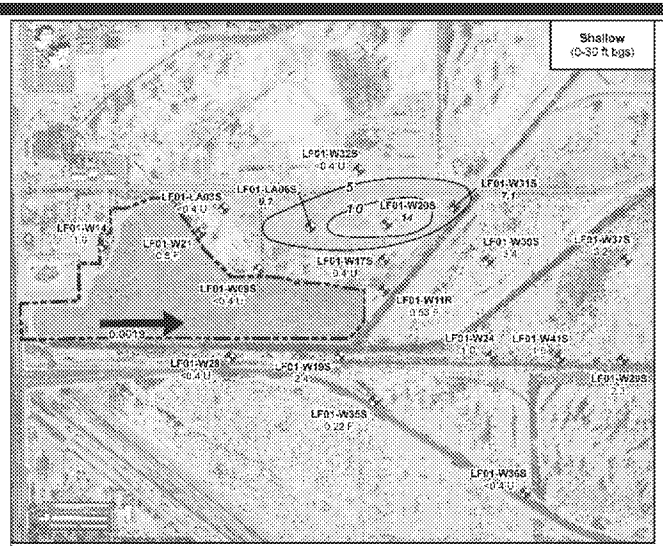
## Operations Summary through 8 Jan 2016

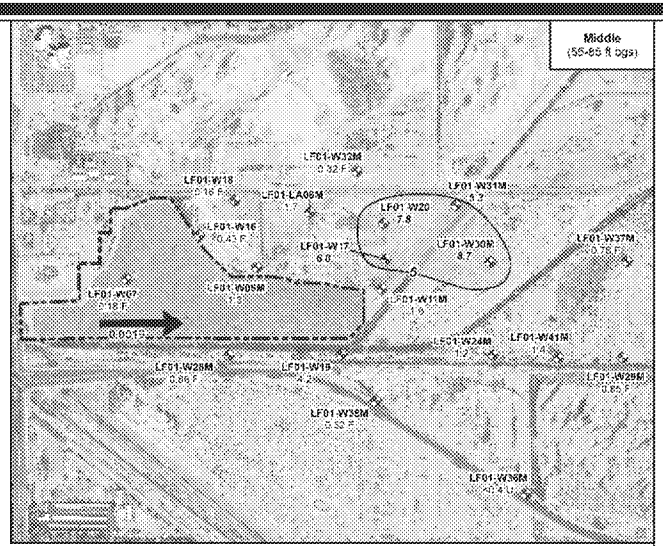
- Began operation 29 Aug 2014 (16 months of operation)
- Average 99% operational uptime for Oct-Dec 2015 reporting period
- TCE and PCE concentrations in extracted vapor are 350 and 160 micrograms per cubic meter ($\mu g/m^3$), respectively (Nov 2015); extracted vapor concentrations remain low. Air sparging shut down in Aug 2015 to increase soil gas mass removal (extracted vapor concentrations higher without air sparging)
- Estimated 6.1 pounds of TCE and PCE removed by vapor extraction; 0.7 pound since 4 Oct 2015
- All remediation wells operating

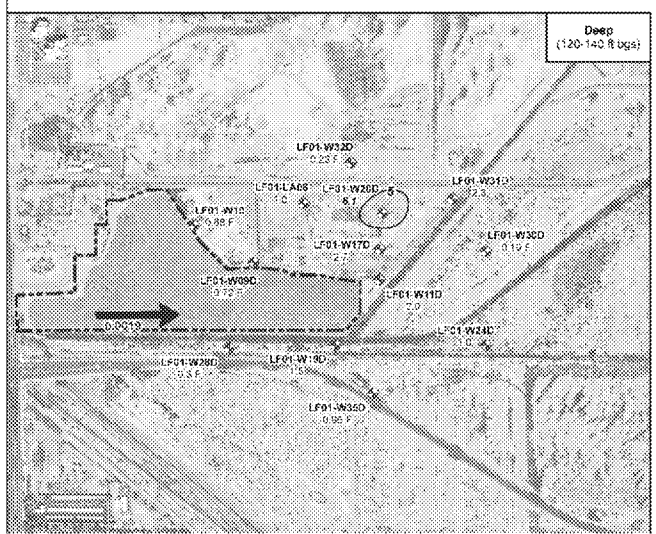


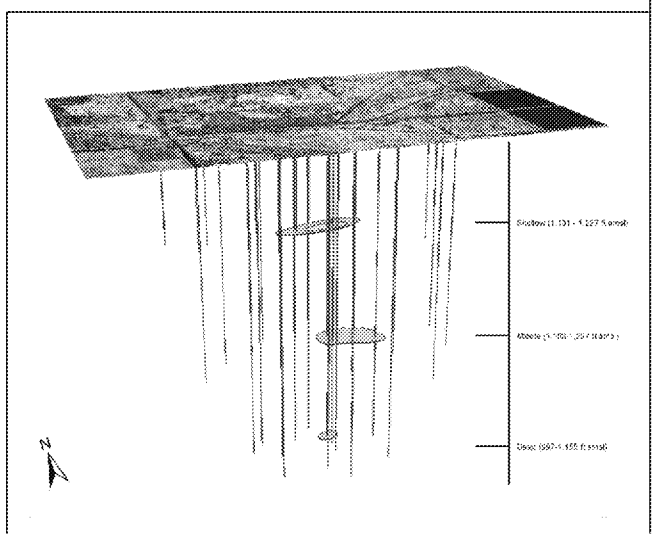


# Site LF004 GW Monitoring Update
# TCE Isoconcentration Map – May 2015




## Legend

**TCE Concentrations (µg/L) in Groundwater**

- *5-10 µg/L
- ≥10 µg/L

*AWQS/MCL = 5 µg/L

- Groundwater Flow Direction with Gradient (ft/ft)
- Monitoring Well Location
- LF004 Boundary

**Notes:**

| | |
|---|---|
| LF01-W31M | Monitoring Well Identification |
| 5.3 | Maximum TCE Concentration (µg/L) (Results that are ***italicized and bolded*** equal or exceed the AWQS/MCL of 5 µg/L) |
| µg/L | Microgram per liter |
| <1.0 | Not detected at or above the RL |
| AWQS | Arizona Aquifer Water Quality Standards |
| F | The analyte was positively identified but the associated concentration is an estimation above the MDL and below the RL |
| ft amsl | Feet above mean sea level |
| ft bgs | Feet below ground surface |
| MCL | Environmental Protection Agency Maximum Contaminant Levels |
| MDL | Method Detection Limit |
| RL | Reporting Limit |
| TCE | Trichloroethene |
| U | The analyte was analyzed for, but not detected at or above the RL shown |

0 200 400 800 Feet

N

Working Copy
May 2015 Event
Groundwater Monitoring Report
Site LF004 - Former Williams Air Force Base
Mesa, Arizona

**LF004 Depth-Specific Distribution of Trichloroethene (TCE) Concentrations in Groundwater May 2015**

FIGURE 3-3

Job No.: 9101118001
PM: EW
Date: 6/16/2015
Scale: 1" = 800'

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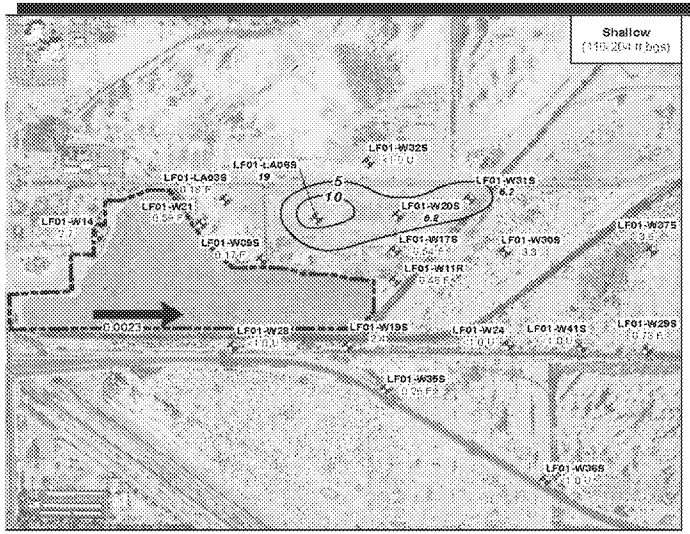
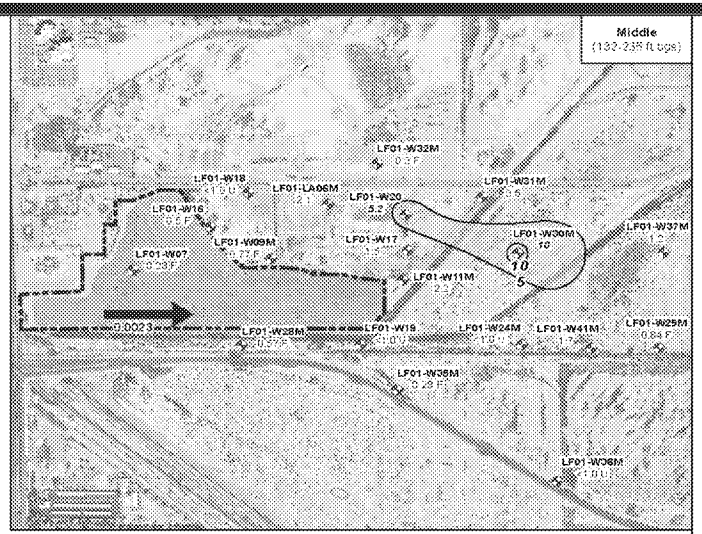
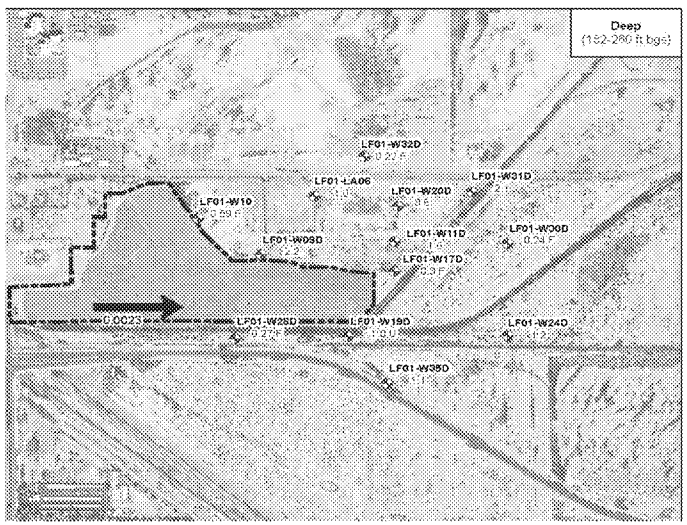
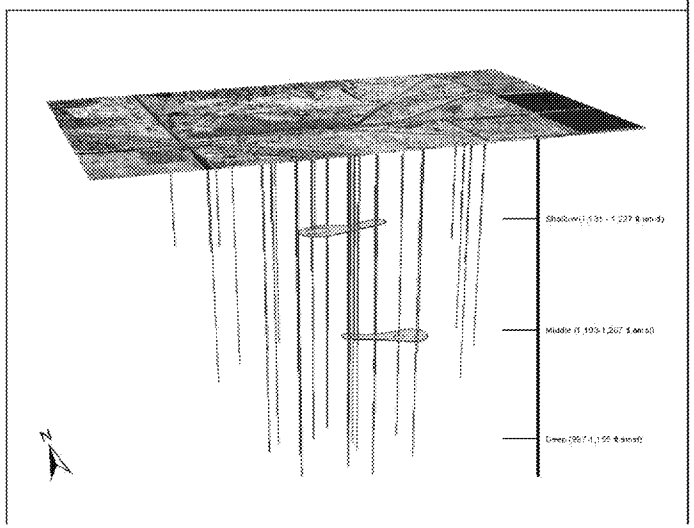
# Site LF004 GW Monitoring Update

# TCE Isoconcentration Map – November 2015




## Legend

**TCE Concentrations (µg/L) in Groundwater**

- *5-10 µg/L
- ≥10 µg/L

* AWQS/MCL = 5 µg/L

- Groundwater Flow Direction with Gradient (ft/ft)
- Monitoring Well Location
- LF004 Boundary

**Notes:**

| | |
|---|---|
| LF01-W30M | Monitoring Well Identification |
| *10* | Maximum TCE Concentration (µg/L) (Results that are ***italicized and bolded*** equal or exceed the AWQS/MCL of 5 µg/L) |
| µg/L | Microgram per liter |
| <1.0 | Not detected at or above the RL |
| AWQS | Arizona Aquifer Water Quality Standards |
| J | The analyte was positively identified but the associated concentration is an estimation above the MDL and below the RL |
| ft amsl | Feet above mean sea level |
| ft bgs | Feet below ground surface |
| MCL | Environmental Protection Agency Maximum Contaminant Levels |
| MDL | Method Detection Limit |
| RL | Reporting Limit |
| TCE | Trichloroethene |
| U | The analyte was analyzed for, but not detected at or above the RL shown |

0 200 400 800 Feet

N

Working Copy
Annual 2015
Groundwater Monitoring Report
Site LF004 - Former Williams Air Force Base
Mesa, Arizona

**LF004 Depth-Specific Distribution of Trichloroethene (TCE) Concentrations in Groundwater November 2015**

FIGURE 3-3

Job No.: 81B1110301
By: DS
Date: 10/3/2016
Scale: 1" = 800'

amec foster wheeler



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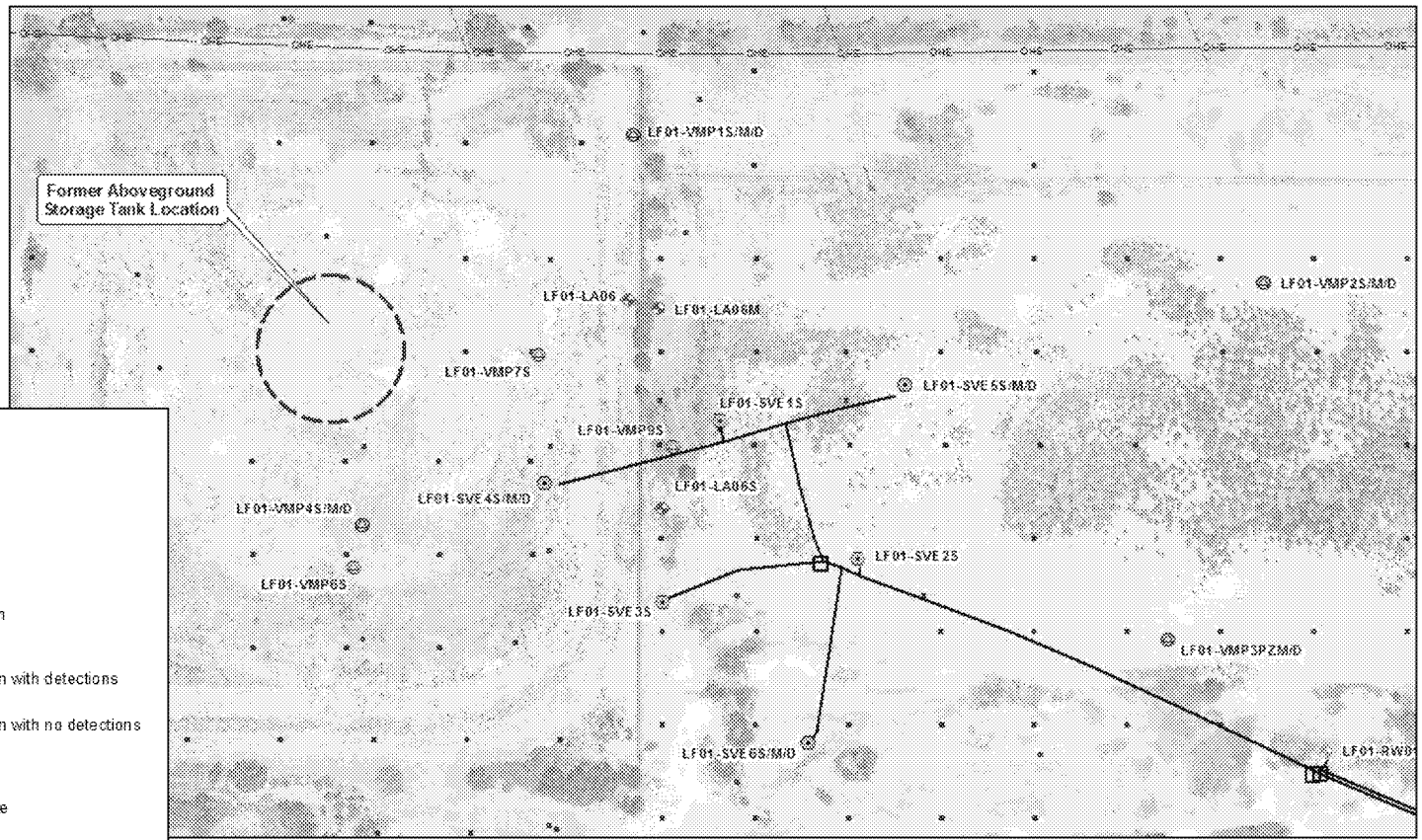
# Site LF004
# Former AST SVE System Update




**Legend**

- Monitoring Well Location
- Observation Well Location
- Piezometer Well Location
- Remediation Well Location
- Soil Vapor Extraction Well Location
- Vapor Monitoring Point Location
- Historic Soil Vapor Survey Location with detections (approximate location)
- Historic Soil Vapor Survey Location with no detections (approximate location)
- Remediation System Piping
- Chain Link Fence with Double Gate
- Overhead Electrical
- Underground Electrical
- Former Aboveground Storage Tank Location
- LF004 Boundary



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# Site LF004
# Former AST SVE System Update

**Operations Summary through 8 Jan 2016**

- Began operation 9 Sep 2014 (16 months of operation);
- System shutdown for rebound testing on 30 Nov 2015
- TCE and PCE concentrations in extracted vapor are 780 and 150 $\mu g/m^3$, respectively (Nov 2015). TCE > than 99% reduction from peak; PCE >95% reduction from peak
- Estimated 92.4 pounds of TCE and PCE removed by SVE; 0.3 pound from 4 Oct 2015 thru 30 Nov 2015

# Site LF004
# Southeast Landfill SVE System Update

## Operations Summary through 8 Jan 2016

- Began operation 12 Sep 2014 (16 months of operation)
- System shutdown for rebound testing on 30 Nov 2015
- PCE and TCE concentrations in extracted vapor are 1,700 and 320 $\mu g/m^3$, respectively (Nov 2015). PCE > than 95% reduction from peak; TCE >95% reduction from peak
- Estimated 33.4 pounds of PCE and TCE removed by SVE; 1.0 pound from 4 Oct 2015 thru 30 Nov 2015

# Site LF004
# Former AST SVE System Update

## Focused Rebound Test Plan

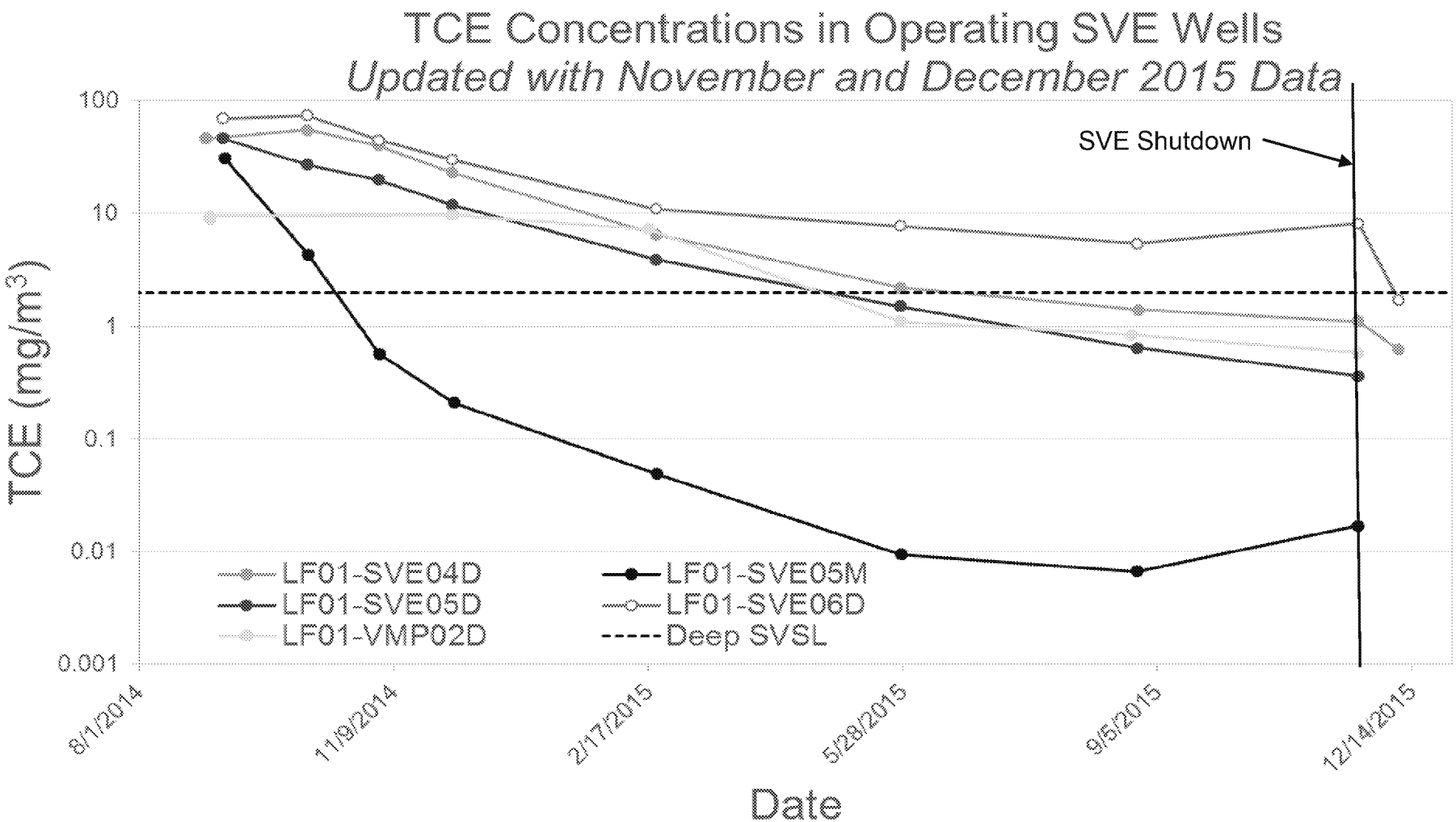
| Timeline | Sampling | Analysis |
|---|---|---|
| Pre-shutdown | Collect a complete round of samples from all SVE and VMP wells (Quarterly Sampling event) | PID and TO-15 |
| During the week after shutdown | Monitor VOCs at SVE4-S,M,D, SVE5-M,D, SVE6-S,M,D, VMP2-D, and VMP4-M,D | PID |
| 1 and 3 weeks after shutdown | Collect samples from SVE4-D and SVE6-D | PID and TO-15 |
| 1 and 3 weeks after shutdown | Monitor VOCs at SVE4-S,M, SVE5-M,D, SVE6-S,M, VMP2-D, and VMP4-M,D | PID |
| 6 weeks after shutdown | Collect a complete round of samples from all SVE and VMP wells | PID and TO-15 |

*Final round of TO-15 sampling may be postponed based on PID results*

# Site LF004
# Former AST and SE Landfill
# SVE System Update

- **Rebound Testing**
  - Conducted site wide quarterly soil vapor testing on 23 Nov 2015 (all wells open and closed to extraction were sampled)
  - Shutdown Former AST and SE Landfill SVE systems on 30 Nov 2015 for the Rebound Test
  - Following shutdown, PID concentrations were monitored at target SVE wells on a weekly basis
  - Collected samples from SVE4-D and SVE6-D on 7 Dec 2015 (1 week after shutdown) and 21 Dec 2015 (3 weeks after shutdown); collected samples from SVE7-D on 21 Dec 2015

# Site LF004
# Former AST and SE Landfill
# SVE System Update



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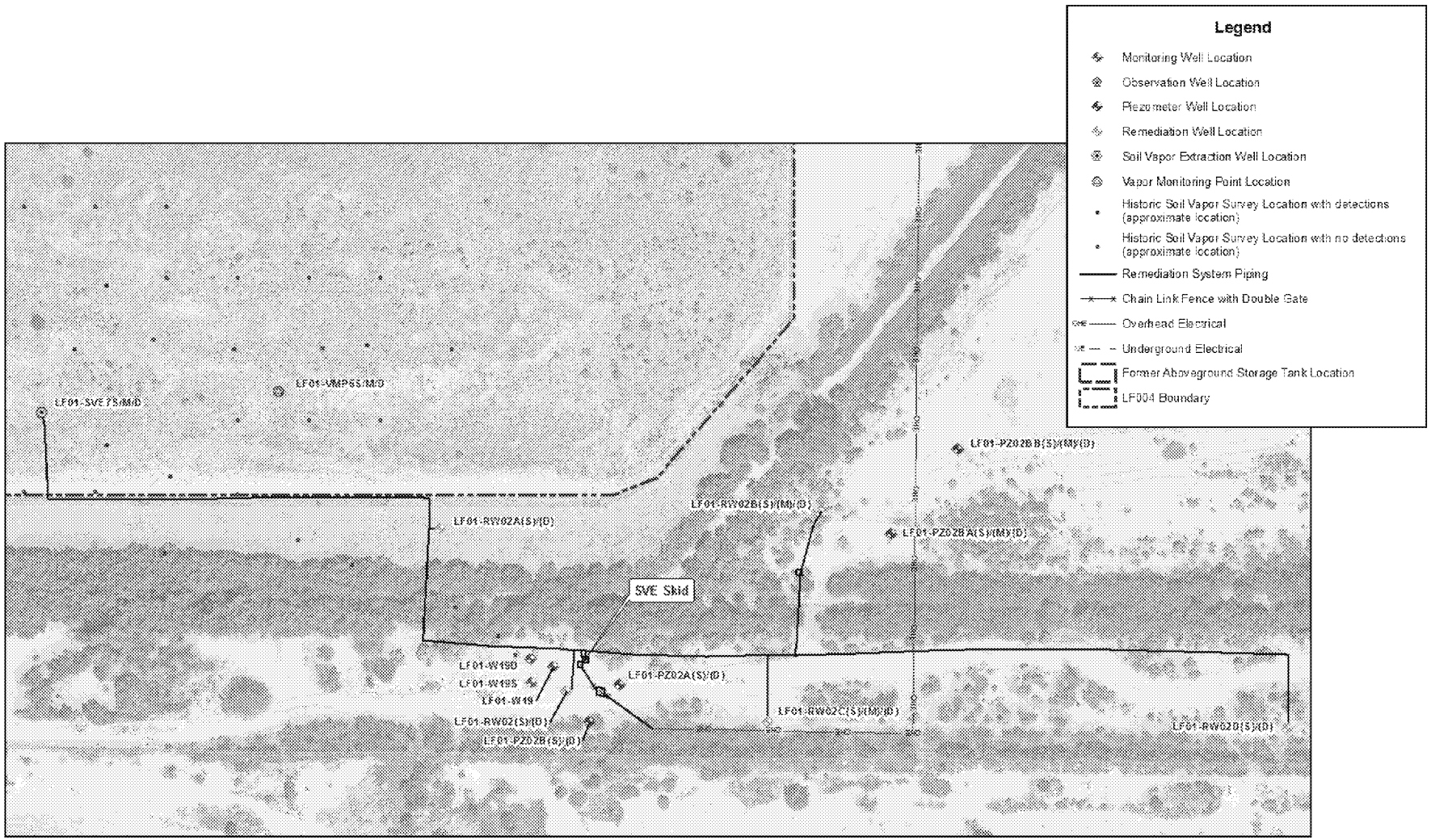
- **Preliminary Assessment of Results**
  - Analytical data collected 1 week after shutdown are currently available (from SVE4-D and SVE6-D) – results indicate lower TCE concentrations during rebound test than during operation
  - Collected PID data range from 0 to 11 ppm (highest reading observed at SVE5-M)
- **Path Forward**
  - Continue with rebound test plan

# Site LF004
# Southern Area Remediation Wells



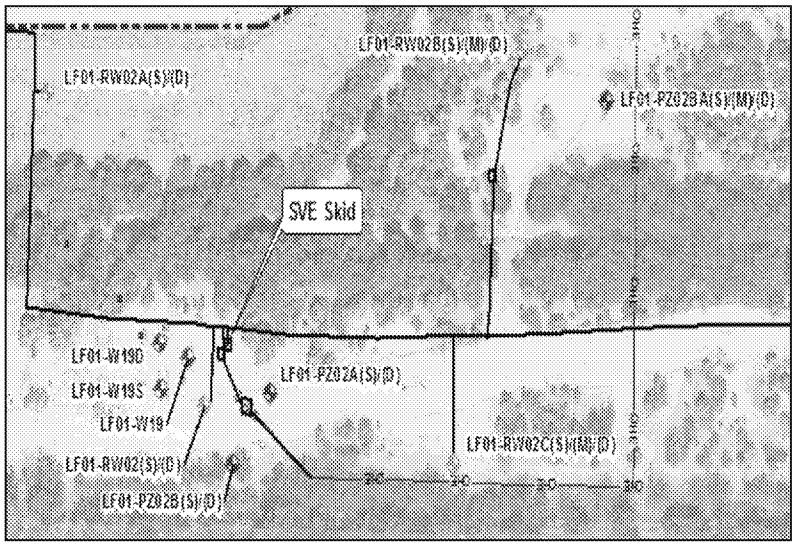



ED_005025_00003504-00016

# Site LF004
# Southern Area Oxidant Injection

## Activity Summary through 8 Jan 2016

- Began operation 15 Sep 2014 (16 months of operation)
- Presence of oxidant (field screening) following oxidant injection and extraction observed in numerous wells and piezometers in shallow, middle, and deep zones in W19 area
- Additional oxidant injection will be based on Nov 2015 analytical data



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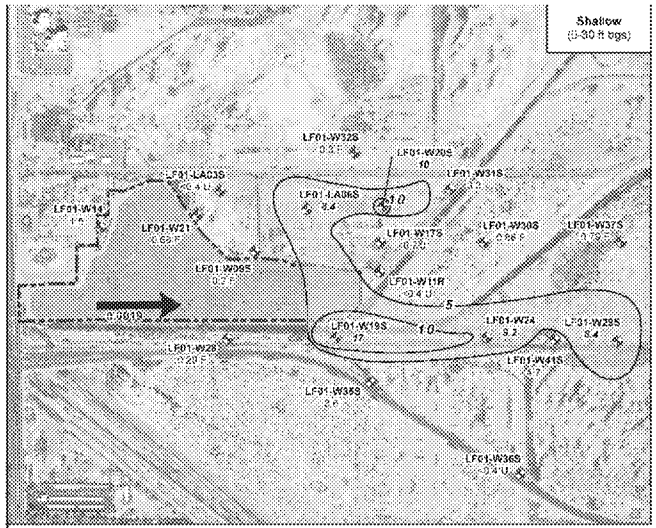
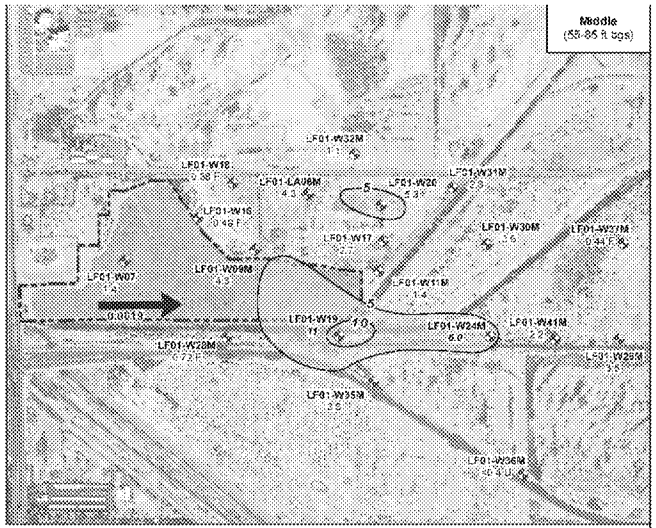
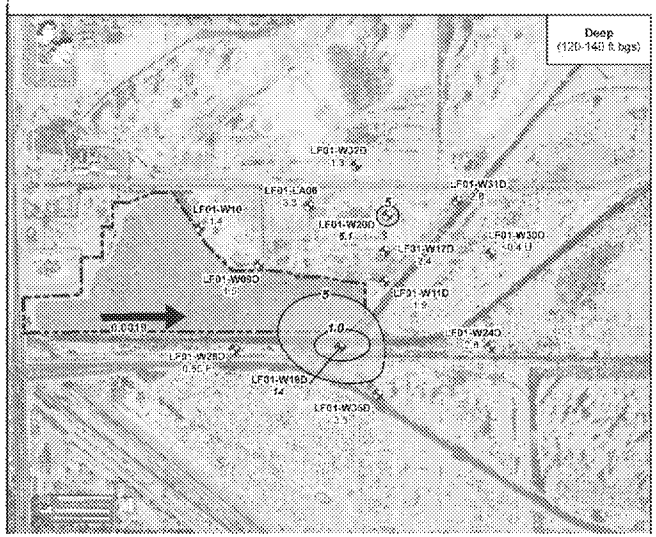
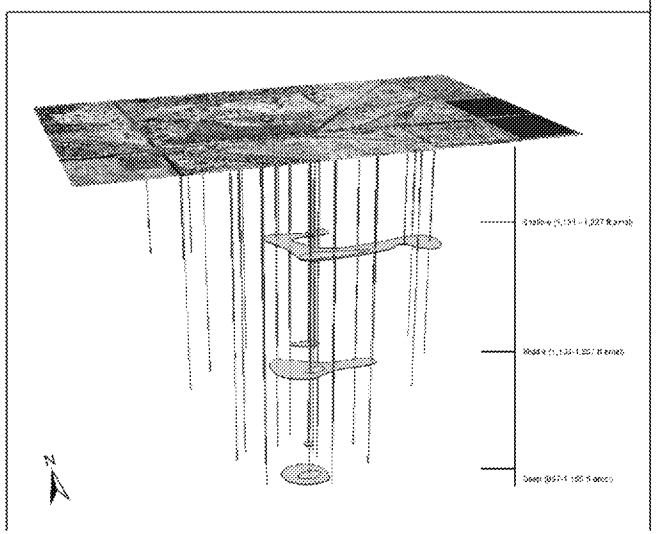
# Site LF004 GW Monitoring Update
# PCE Isoconcentration Map – May 2015




**Legend**

**PCE Concentrations (µg/L) in Groundwater**

- *5-10 µg/L
- ≥10 µg/L

*AWQS/MCL = 5 µg/L

- Groundwater Flow Direction with Gradient (ft/ft)
- Monitoring Well Location
- LF004 Boundary

**Notes:**

| | |
|---|---|
| LF01-W24M | Monitoring Well Identification |
| ***6.0*** | Maximum PCE Concentration (µg/L) (Results that are ***italicized and bolded*** equal or exceed the AWQS/MCL of 5 µg/L) |
| µg/L | Microgram per liter |
| <1.0 | Not detected at or above the RL |
| AWQS | Arizona Aquifer Water Quality Standards |
| F | The analyte was positively identified but the associated concentration is an estimation above the MDL and below the RL |
| ft amsl | Feet above mean sea level |
| ft bgs | Feet below ground surface |
| J | Indicates an estimated value |
| MCL | Environmental Protection Agency Maximum Contaminant Levels |
| MDL | Method Detection Limit |
| RL | Reporting Limit |
| PCE | Tetrachloroethene |
| U | The analyte was analyzed for, but not detected at or above the RL shown |

0 200 400 800 Feet

N

Working Copy
May 2015 Event
Groundwater Monitoring Report
Site LF004 - Former Williams Air Force Base
Mesa, Arizona

**LF004 Depth-Specific Distribution of Tetrachloroethene (PCE) Concentrations in Groundwater May 2015**

FIGURE 3-6

Job No.: 9191110001
Fig.: EW
Date: 8/21/2015
Scale: 1" = 800'

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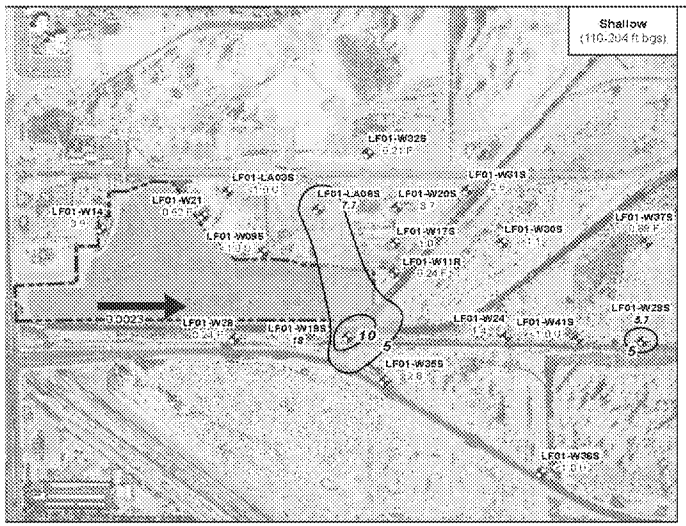
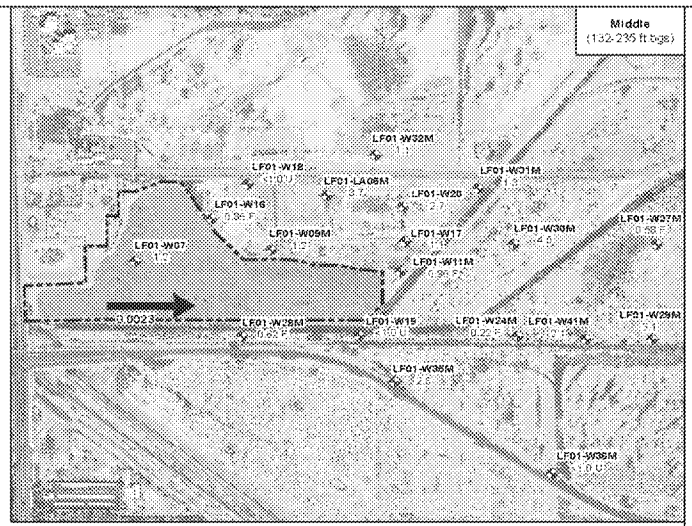
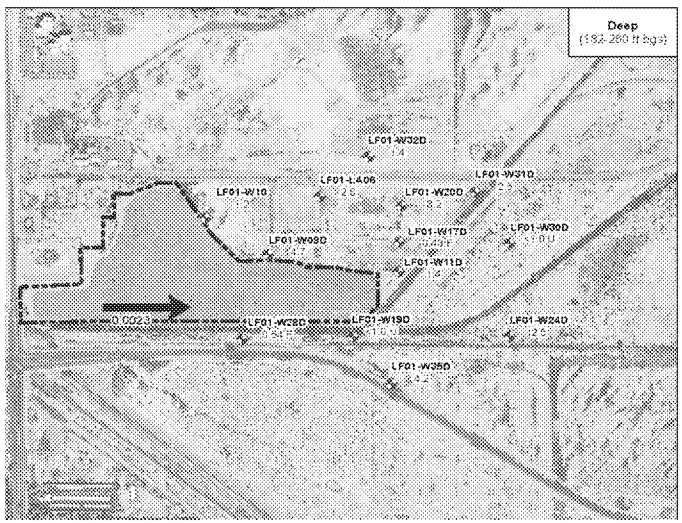
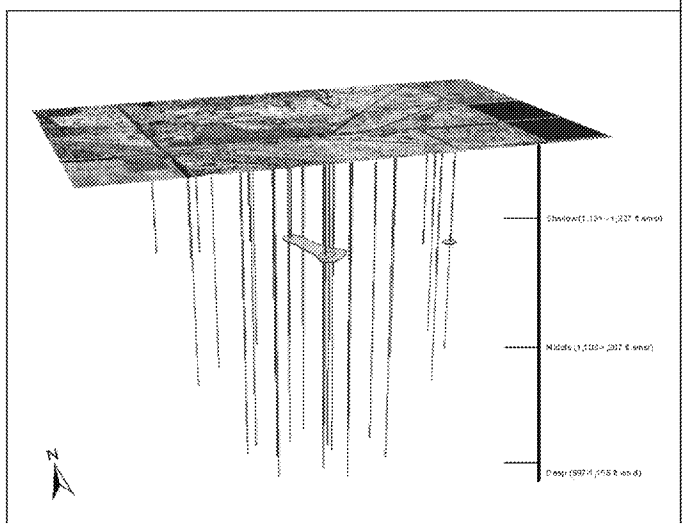
# Site LF004 GW Monitoring Update
# PCE Isoconcentration Map - November 2015




## Legend

**PCE Concentrations (µg/L) in Groundwater**

- *5-10 µg/L
- ≥10 µg/L

* AWQS/MCL = 5 µg/L

- Groundwater Flow Direction with Gradient (ft/ft)
- Monitoring Well Location
- LF004 Boundary

**Notes:**

| | |
|---|---|
| LF01-W19S | Monitoring Well Identification |
| ***18*** | Maximum PCE Concentration (µg/L) (Results that are ***italicized and bolded*** equal or exceed the AWQS/MCL of 5 µg/L) |
| µg/L | Microgram per liter |
| <1.0 | Not detected at or above the RL |
| AWQS | Arizona Aquifer Water Quality Standards |
| F | The analyte was positively identified but the associated concentration is an estimation above the MDL and below the RL |
| ft amsl | Feet above mean sea level |
| ft bgs | Feet below ground surface |
| MCL | Environmental Protection Agency Maximum Contaminant Levels |
| MDL | Method Detection Limit |
| RL | Reporting Limit |
| PCE | Tetrachloroethene |
| U | The analyte was analyzed for, but not detected at or above the RL shown |

0 200 400 800 Feet

N

Working Copy
Annual 2015
Groundwater Monitoring Report
Site LF004 - Former Williams Air Force Base
Mesa, Arizona

**LF004 Depth-Specific Distribution of Tetrachloroethene (PCE) Concentrations in Groundwater November 2015**

FIGURE 3-5

Job No.: 9101110601
PM: DS
Date: 1/12/2016
Scale: 1" = 800'

amec foster wheeler



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# Site LF004 Remediation System Recent and Upcoming Activities

- Operation of IWAS and Southern Area remediation wells will continue
- Semi-annual groundwater monitoring event scheduled for May 2016
- Rebound testing initiated in Nov 2015
- Landfill inspection was performed in Sep 2015. Minor erosion rills will be repaired in Oct/Nov 2015. Report in preparation.
- Posting of analytical data to Sharepoint will continue as results are received; available data through Dec 2015 has been posted

# Air Force Civil Engineer Center

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## FORMER
## WILLIAMS AIR FORCE BASE

# Site FT002
# Fire Training Area
# Remedial Action

**BCT Conference Call**
**21 January 2016**

# Site FT002 Update

- Soil excavation of an area (approximately 10 ft x 20 ft x 8 ft) to remove soil exceeding RSRLs began on 17 Nov 2015
- Soil samples from excavation sidewalls and bottom were screened in the field using a photoionization detector
- Confirmation soil samples for BTEX and TMB analysis (24-hour turnaround) were collected from the excavation sidewalls and bottom of the excavation on 17 Nov 2015
- RSRLs for BTEX and 1,2,4-TMB achieved for north wall, east wall (north half) and north-floor of the excavation



ED_005025_00003504-00022

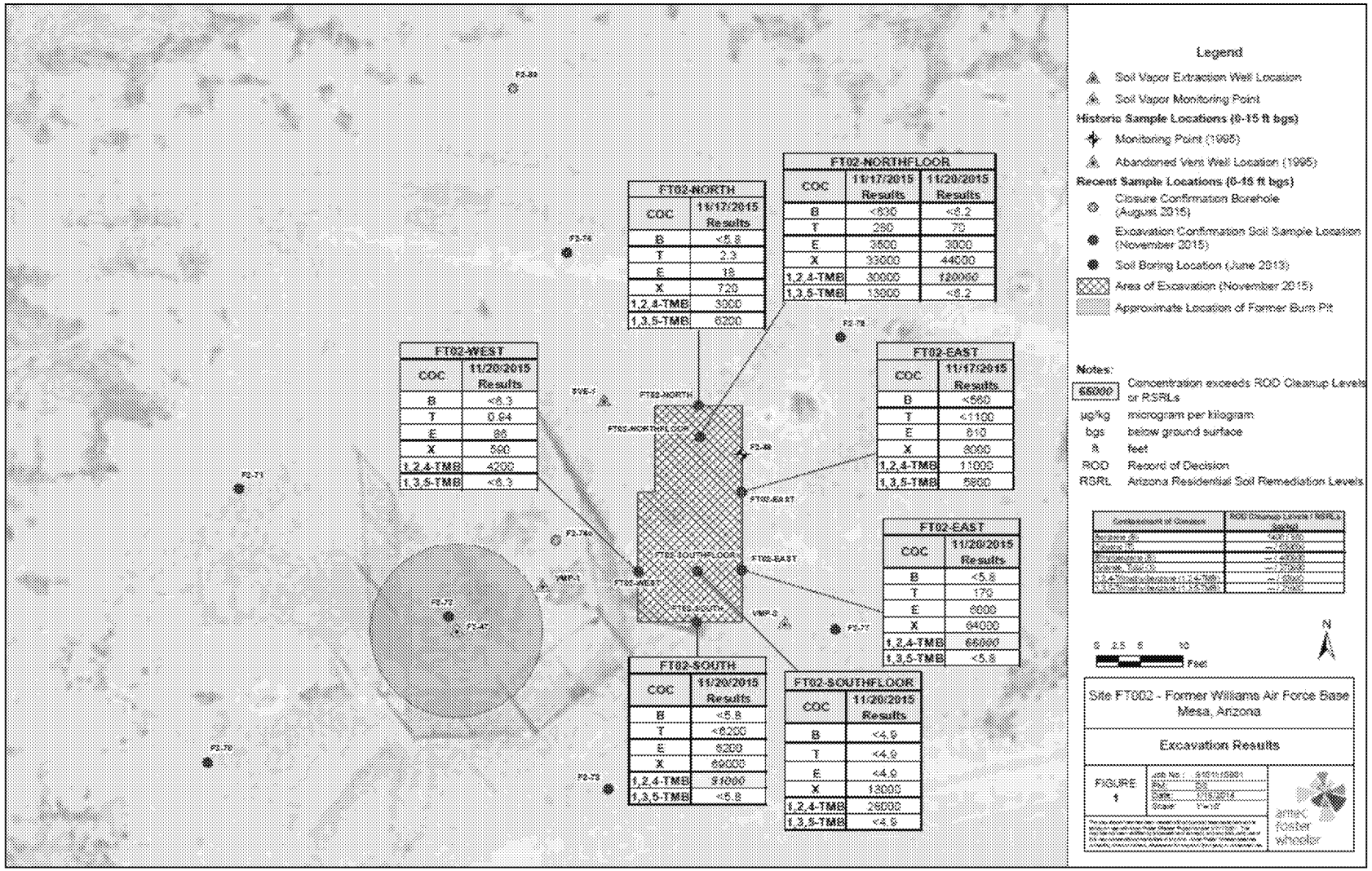
# Site FT002 Update (cont)

- 1,2,4-TMB exceeded RSRL of 52,000 micrograms per kilogram (µg/Kg) in the west wall, south wall, and south-floor of the excavation
- South half of the excavation extended vertically to 15 feet deep, laterally to the south by 5 feet and laterally to the west by 2 feet
- Confirmation samples for DoD certified analysis were collected on 20 Nov 2015 and the excavation was backfilled



ED_005025_00003504-00023

# Site FT002 – Excavation Results




| FT002-NORTH | |
|---|---|
| COC | 11/17/2015 Results |
| B | <5.8 |
| T | 2.3 |
| E | 18 |
| X | 720 |
| 1,2,4-TMB | 3000 |
| 1,3,5-TMB | 6200 |

| FT002-NORTHFLOOR | | |
|---|---|---|
| COC | 11/17/2015 Results | 11/20/2015 Results |
| B | <830 | <8.2 |
| T | 280 | 70 |
| E | 3600 | 3000 |
| X | 33000 | 44000 |
| 1,2,4-TMB | 30000 | 120000 |
| 1,3,5-TMB | 13000 | <8.2 |

| FT002-WEST | |
|---|---|
| COC | 11/20/2015 Results |
| B | <8.3 |
| T | 0.94 |
| E | 86 |
| X | 590 |
| 1,2,4-TMB | 4200 |
| 1,3,5-TMB | <8.3 |

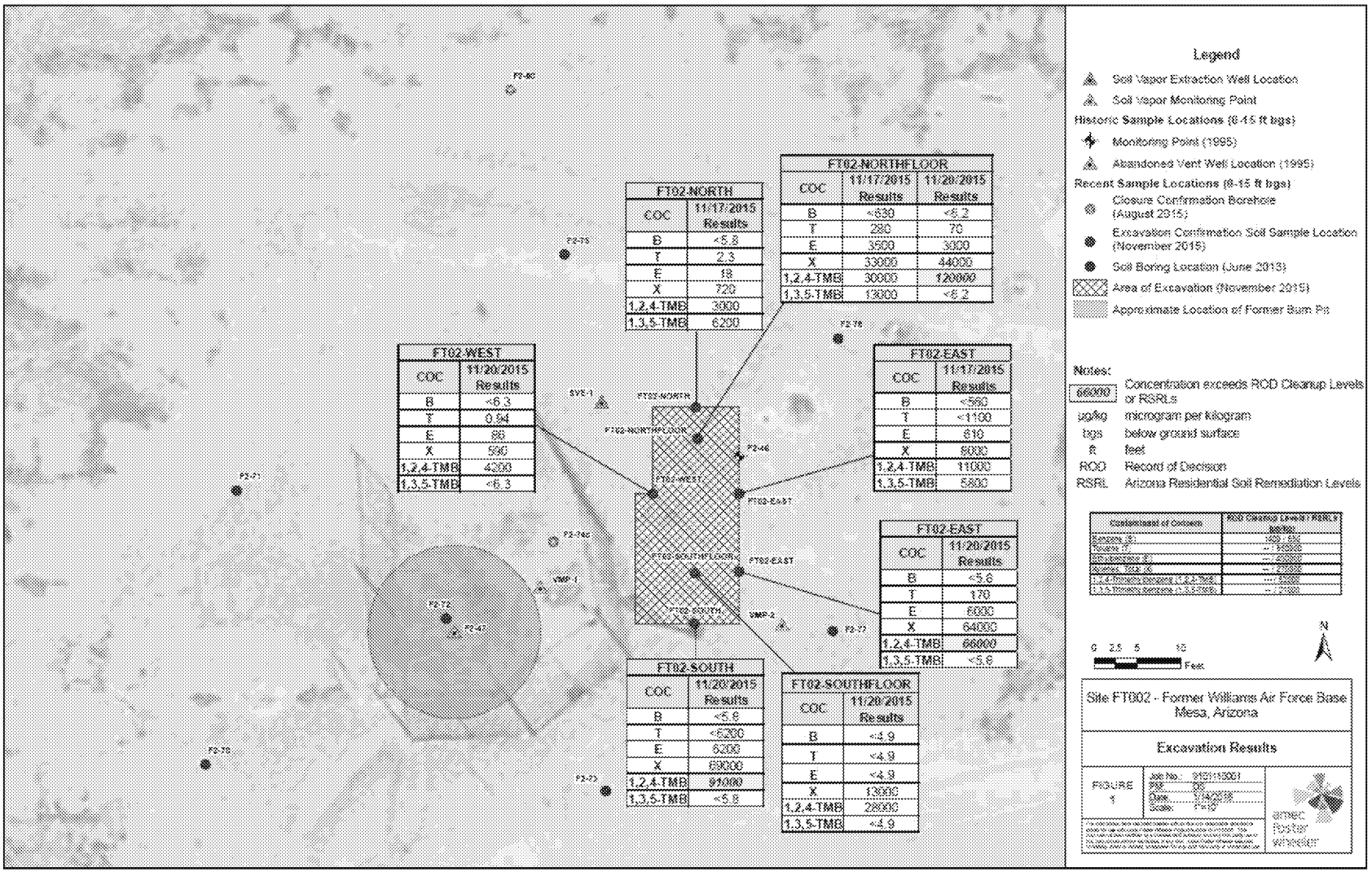
| FT002-EAST | |
|---|---|
| COC | 11/17/2015 Results |
| B | <560 |
| T | <1100 |
| E | 810 |
| X | 8000 |
| 1,2,4-TMB | 11000 |
| 1,3,5-TMB | 5600 |

| FT002-EAST | |
|---|---|
| COC | 11/20/2015 Results |
| B | <5.8 |
| T | 170 |
| E | 6000 |
| X | 64000 |
| 1,2,4-TMB | 68000 |
| 1,3,5-TMB | <5.8 |

| FT002-SOUTH | |
|---|---|
| COC | 11/20/2015 Results |
| B | <5.8 |
| T | <8200 |
| E | 8200 |
| X | 69000 |
| 1,2,4-TMB | 91000 |
| 1,3,5-TMB | <5.8 |

| FT002-SOUTHFLOOR | |
|---|---|
| COC | 11/20/2015 Results |
| B | <4.9 |
| T | <4.9 |
| E | <4.9 |
| X | 13000 |
| 1,2,4-TMB | 26000 |
| 1,3,5-TMB | <4.9 |

# Site FT002 – Excavation Results




| FT02-NORTH | |
|---|---|
| COC | 11/17/2015 Results |
| B | <5.8 |
| T | 2.3 |
| E | 18 |
| X | 720 |
| 1,2,4-TMB | 3000 |
| 1,3,5-TMB | 6200 |

| FT02-NORTHFLOOR | | |
|---|---|---|
| COC | 11/17/2015 Results | 11/20/2015 Results |
| B | <630 | <6.2 |
| T | 280 | 70 |
| E | 3500 | 3000 |
| X | 33000 | 44000 |
| 1,2,4-TMB | 30000 | 120000 |
| 1,3,5-TMB | 13000 | <6.2 |

| FT02-WEST | |
|---|---|
| COC | 11/20/2015 Results |
| B | <6.3 |
| T | 0.94 |
| E | 86 |
| X | 596 |
| 1,2,4-TMB | 4200 |
| 1,3,5-TMB | <6.3 |

| FT02-EAST | |
|---|---|
| COC | 11/17/2015 Results |
| B | <560 |
| T | <1100 |
| E | 610 |
| X | 8000 |
| 1,2,4-TMB | 11000 |
| 1,3,5-TMB | 5800 |

| FT02-EAST | |
|---|---|
| COC | 11/20/2015 Results |
| B | <5.6 |
| T | 170 |
| E | 6000 |
| X | 64000 |
| 1,2,4-TMB | 66000 |
| 1,3,5-TMB | <5.6 |

| FT02-SOUTH | |
|---|---|
| COC | 11/20/2015 Results |
| B | <5.6 |
| T | <5200 |
| E | 5200 |
| X | 69000 |
| 1,2,4-TMB | 91000 |
| 1,3,5-TMB | <5.6 |

| FT02-SOUTHFLOOR | |
|---|---|
| COC | 11/20/2015 Results |
| B | <4.9 |
| T | <4.9 |
| E | <4.9 |
| X | 13000 |
| 1,2,4-TMB | 28000 |
| 1,3,5-TMB | <4.9 |

# Site FT002 Update (cont)

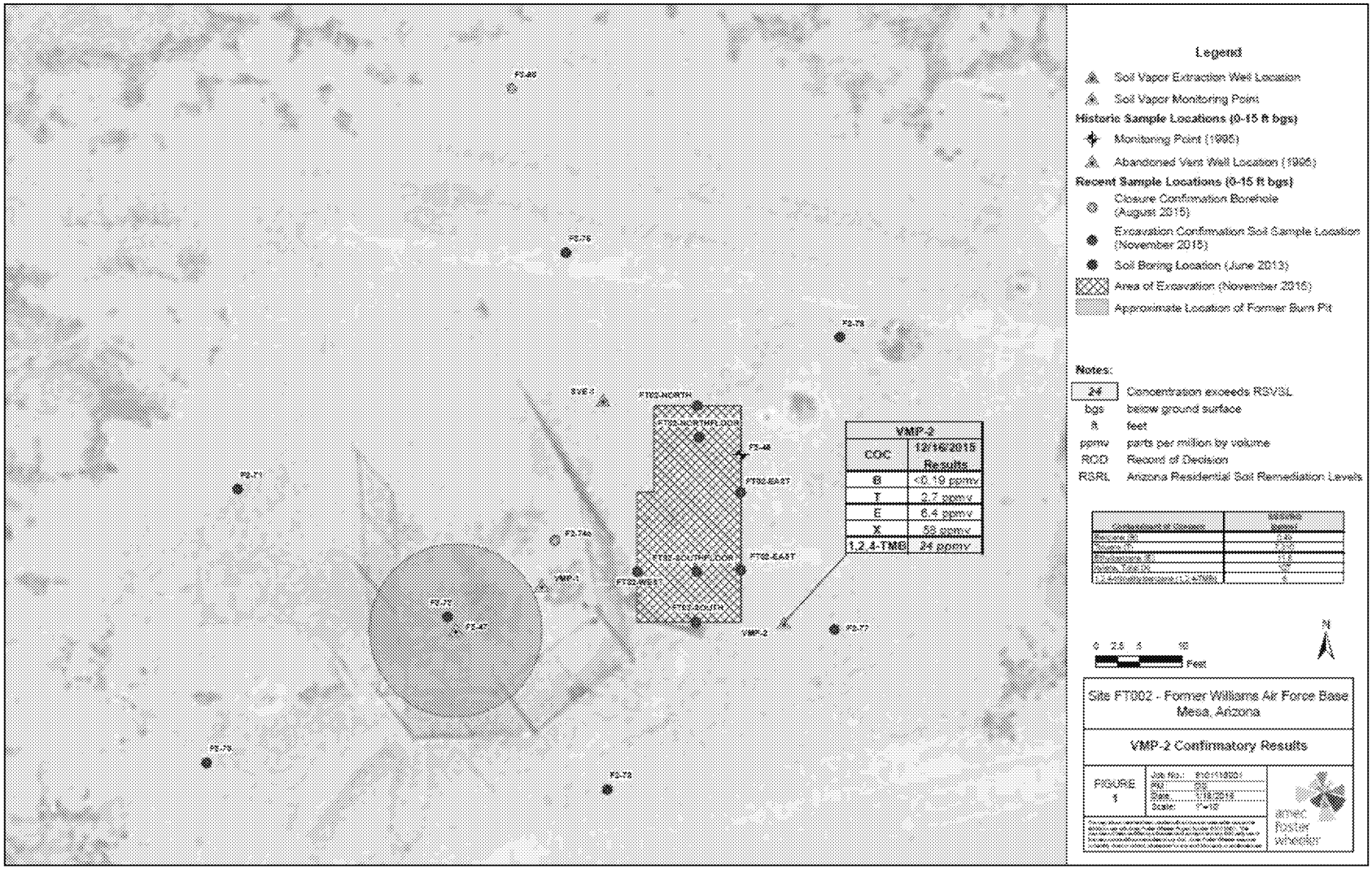
- DoD confirmation samples (20 Nov 2015) indicated 1,2,4-TMB RSRL achieved for north wall, west wall, and south-floor (15 feet deep) of the excavation

- DoD confirmation samples (20 Nov 2015) indicated 1,2,4-TMB exceeded the RSRL on the south half of the east wall and south wall of the excavation

- Disparity in 1,2,4-TMB concentrations between the north-floor samples collected on 17 Nov 2015 and 20 Nov 2015 due to sampling variability

- Confirmation soil gas sample collected from VMP-2 on 16 Dec 2015. BTEX and 1,2,4-TMB results are shown on the following slide

# Site FT002 – VMP-2 Confirmatory Results



# Site FT002 Update (cont)

- Confirmation soil gas sample collected from VMP-2 on 16 Dec 2015 was reported with 24 ppmv of 1,2,4-TMB, which is above the cleanup goal of 8 ppmv. However, the 1,2,4-TMB concentration is less than half the pre-excavation concentration of 62 ppmv.

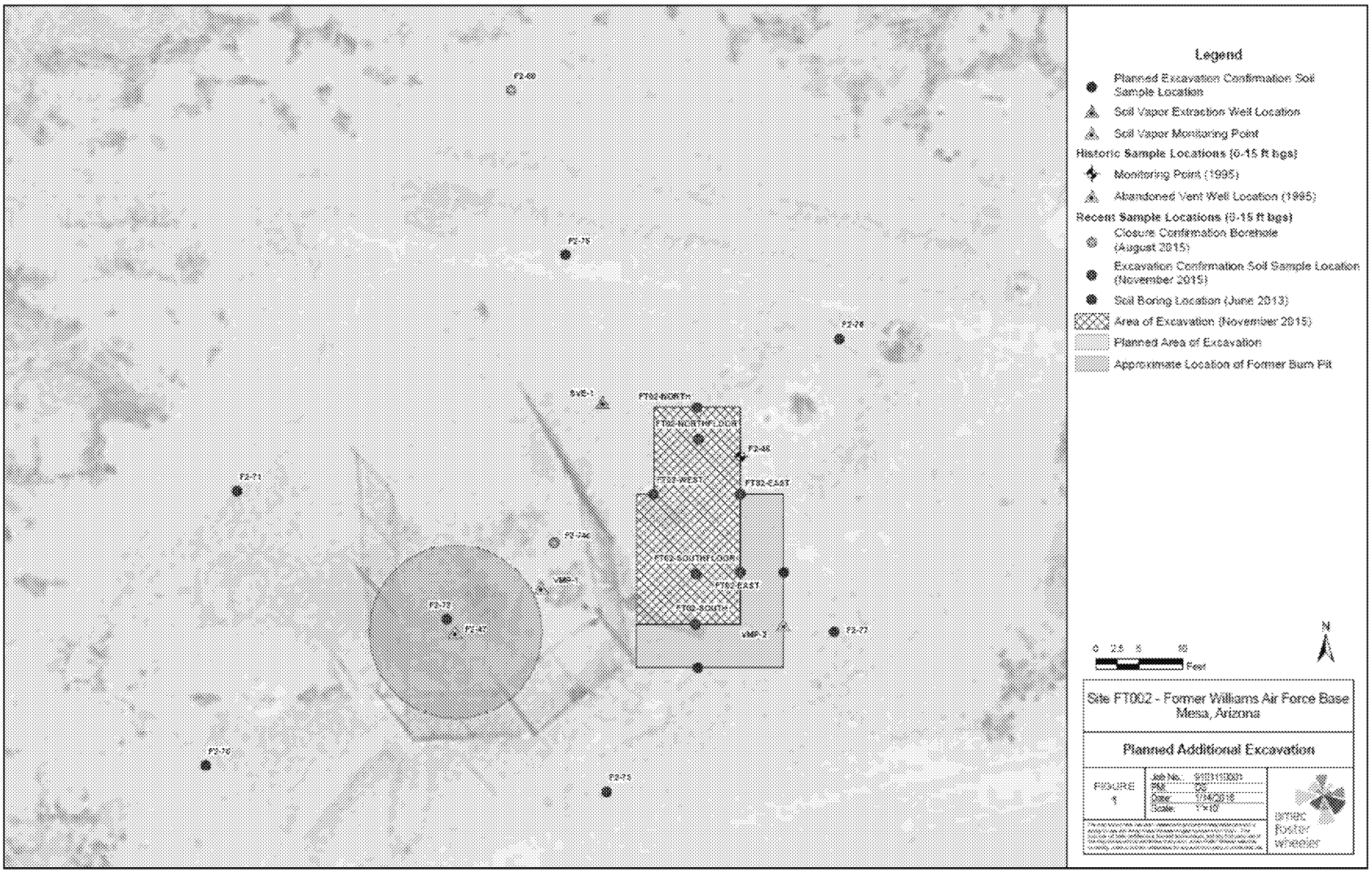


ED_005025_00003504-00028

# Site FT002 Path Forward

- The south half of the excavation is planned to be extended a minimum of 5 feet to the east and south on 28 Jan 2016; The excavation will result in the removal of VMP-2.
- Confirmation soil samples for DoD certified analysis will be collected from the east and south walls of the excavation; The excavation will remain open and secured by the fence until analytical results are received and confirm that RSRL for 1,2,4-TMB has been achieved.
- Following confirmation that the RSRL for 1,2,4-TMB has been met, the excavation will be backfilled.
- Since VMP-2 will be removed as part of the excavation, three confirmation soil gas samples will be collected from temporary probes adjacent to the southeast excavation area

# Site FT002 – Planned Additional Excavation



# Air Force Civil Engineer Center

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## *FORMER WILLIAMS AIR FORCE BASE*

# Site SS017

# Old Pesticide/Paint Shop

**BCT Meeting**
**21 January 2016**

# Air Force Civil Engineer Center

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## FORMER
## WILLIAMS AIR FORCE BASE
# Five-Year Review

**BCT Meeting**
**21 January 2016**

# Five-Year Review

- Fourth five-year review initiated
  - Review period
    Sep 2015- Sep 2016
- Site inspections completed in Dec 15/Jan 16
- Public notice published on Dec 17 and 24 2015 in the East Valley Tribune, San Tan/Queen Creek Independent, East Mesa Independent, and Daily News-Sun

# Five-Year Review Path Forward

- Conduct Survey participation
  - RAB members
  - BCT members
  - Key Stakeholders (PMGAA, GRIC, ASU, City of Mesa, City of Gilbert)
- Participation will be made available via in-person interviews, telephone interviews, or online survey tools
- Tentative schedule
  - Draft submittal in May 2016
  - Agency review May/June 2016
  - Comment resolution June/July 2016 ( A Draft Final is not anticipated but would be submitted in July 2016 if warranted)
  - Final in August 2016

# Air Force Civil Engineer Center

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## *FORMER WILLIAMS AIR FORCE BASE*

# Site ST035

# Former Building 760

**ST035 Closure Update**
**21 January 2016**

# Site ST035 Closure Strategy

The Air Force is pursuing ST035 Site closure under Arizona's Groundwater Leaking Underground Storage Tank (LUST) Case Closures Regulation R18-12-263.04. The closure strategy includes three components:

1. Remediation of the vadose zone source by the existing SVE system
2. Demonstration of natural attenuation processes for residual contamination
3. Demonstration of plume stability

# Site ST035 Closure Update

- **Corrective Action – Soil Vapor Extraction (SVE) Operated Oct 2010 – Dec 2013**
  - System monitored for a year post-shutdown
  - Rebound testing indicated majority of contamination has been removed and residual levels of chemicals of concern (COCs) will not pose threat to indoor air or groundwater
  - Soil vapor survey conducted with ADEQ UST Program direction to support a Tier 3 risk assessment of vapor intrusion (VI) into hypothetical site buildings. Maximum concentrations evaluated via Johnson & Ettinger modeling indicate calculated risks/hazards are less than accepted thresholds.

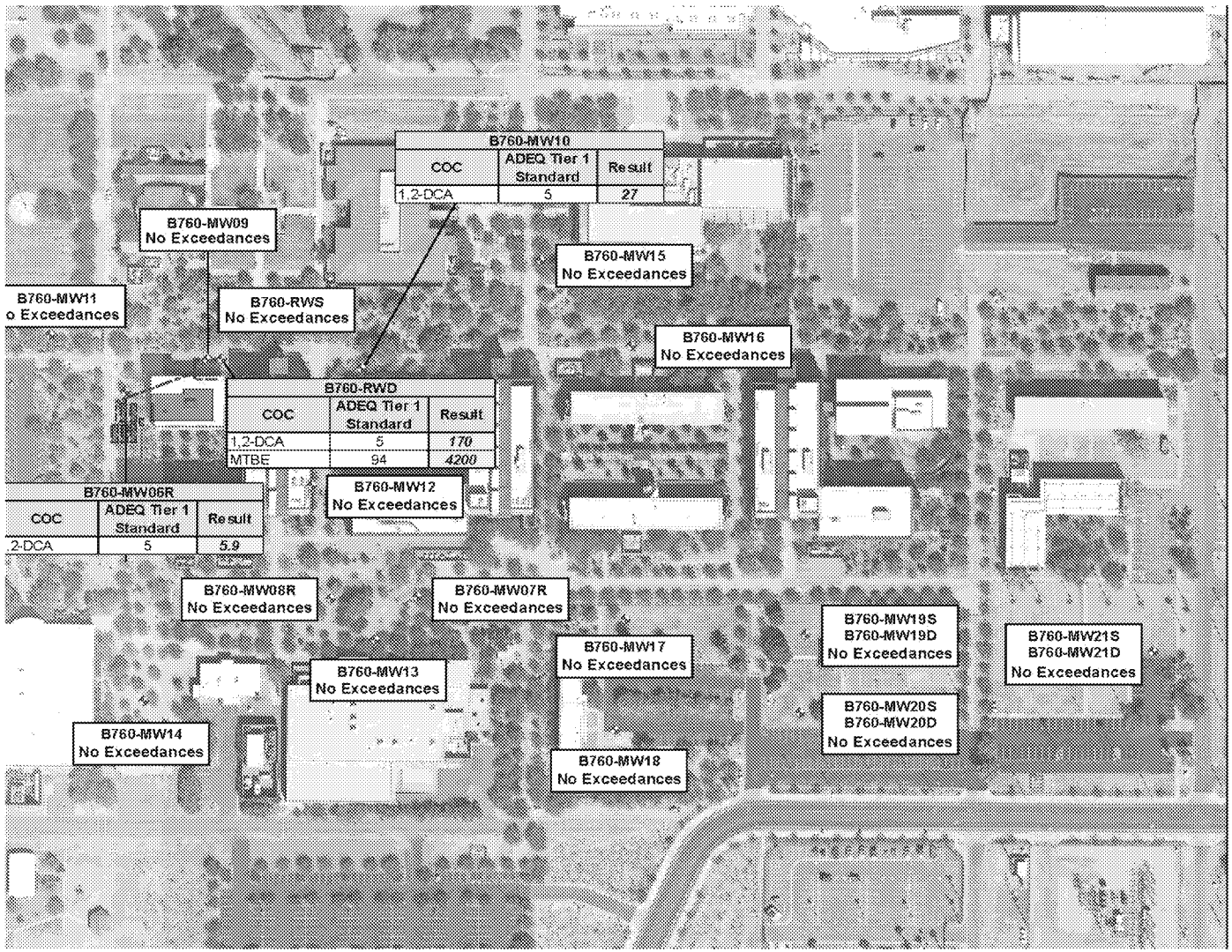
# Site ST035 Closure Update Groundwater

- Groundwater Monitoring Continues
  - 1,2-DCA plume is stable and attenuating (Tier 1 Standard = 5 µg/L)
    - Found only in MW10 (11 µg/L) and RW-D (130 µg/L) in November 2015
  - Isolated detection of MTBE at concentrations exceeding Tier 1 Remediation Standard (94 µg/) in RW-D only since November 2014
    - Decreasing since Feb 2015
  - Detections of MTBE in down gradient wells less than Tier 1 Standards for the previous four sampling events
  - Groundwater flow direction has shifted more to the east, rather than southeast, as previously seen
  - New well pair (shallow and deep) installed downgradient of source area (west of MW-16) to confirm 1,2-DCA and MTBE detections less than Tier 1 standards

# Site ST035 2015 Activities

- All monitoring wells sampled in Feb 2015
- Wells B760-RW-S and RW-D sampled in May 2015 (for MTBE and 1,2-DCA only) prior to installation of downgradient well pair to complete site characterization for MTBE and 1,2 DCA
- New monitoring well pair installed in Aug 2015 (B760-MW22S and MW22D), downgradient of original source area and screened at similar depths as RW-D
- New wells sampled in Sep 2015. Non-detect for MTBE and 1,2-DCA, as well as for other COCs
- All monitoring wells sampled in Nov 2015

# ST035 Groundwater Sampling Results for COC Exceedances February 2015




**Legend**

- Groundwater Monitoring Well Location
- Approximate Location of Former Building 760
- Approximate Location of Former Underground Storage Tank
- Approximate Location of Former Below Grade Product Distribution Line

**Notes:**

| | |
|---|---|
| B760-MW16 | Monitoring Well Identification |
| 5.9 | For 1,2-DCA, the result equals or exceeds the ADEQ UST Tier 1 Corrective Action Standard of 5 µg/L. For MTBE, the result equals or exceeds 94 µg/L, which is the Corrective Action Standard for MTBE provided by ADEQ when no drinking water well is affected (ADEQ, 2015) and the Tier 1 Risk Based Level of 20 µg/L, when water supply wells have the potential to be impacted and which is used to delineate the MTBE plume in groundwater per ADEQ Guidance (ADEQ, 2002). |
| µg/L | Microgram per liter |
| 1,2-DCA | 1,2-dichloroethane |
| ADEQ | Arizona Department of Environmental Quality |
| COC | Chemical of concern |
| MTBE | Methyl tertiary butyl ether |
| UST | Underground Storage Tank |

0 35 70 140 Feet

N

Working Copy
Groundwater Monitoring Report
February 2015
Site ST035 - Former Williams Air Force Base
Mesa, Arizona

**ST035 COC Exceedances**
**February 2015**

FIGURE 3-3

Job No.: 9101110001
PM: DG
Date: 1/15/2016
Scale: 1" = 140'

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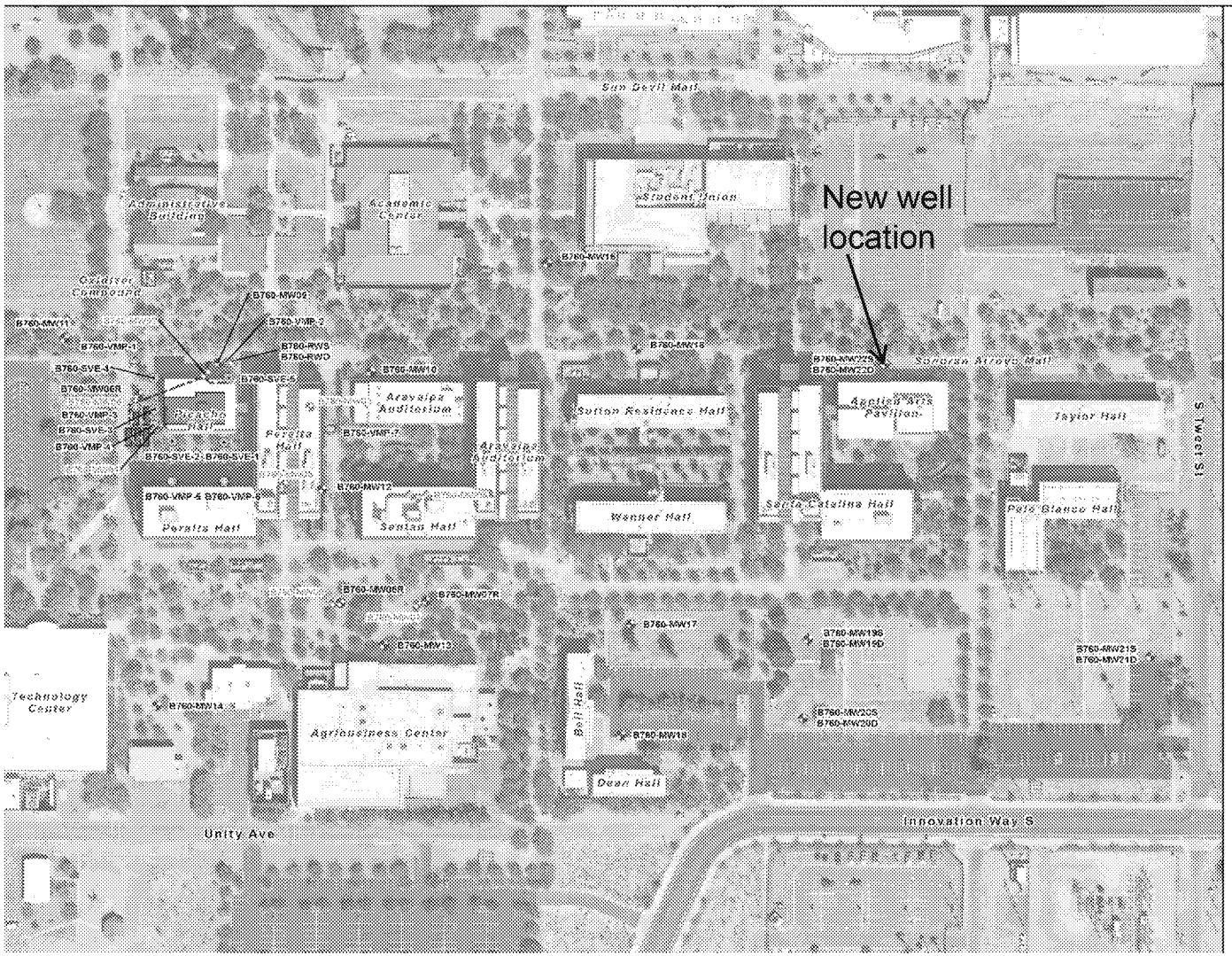
# Site ST035
# Monitoring Well Installation

- New monitoring wells, B760-MW22S and B760-MW22D, installed 19 Aug 2015
- B760-MW22S: 155 ft deep and screened from 115 ft to 155 ft bgs
- B760-MW22D: 175 ft deep and screened from 165 ft to 175 ft bgs
- Wells developed 21 Aug 2015
- Wells sampled in Sep and Nov 2015

# Site ST035 Well Location Map
## Monitoring Wells MW22S and MW22D



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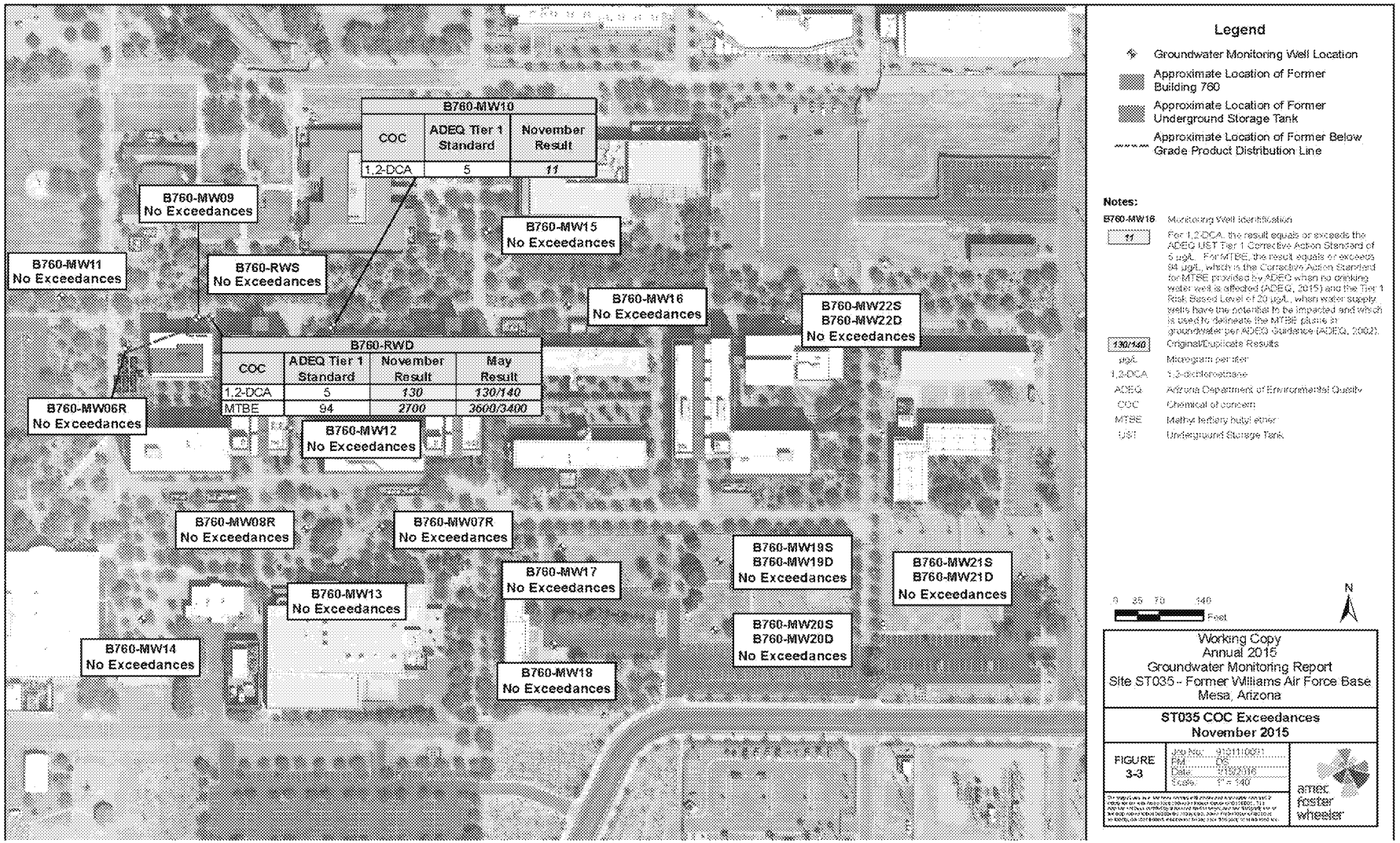
# ST035 Groundwater Sampling Results for COC Exceedances

## November 2015 (includes May sample results for RW-D)



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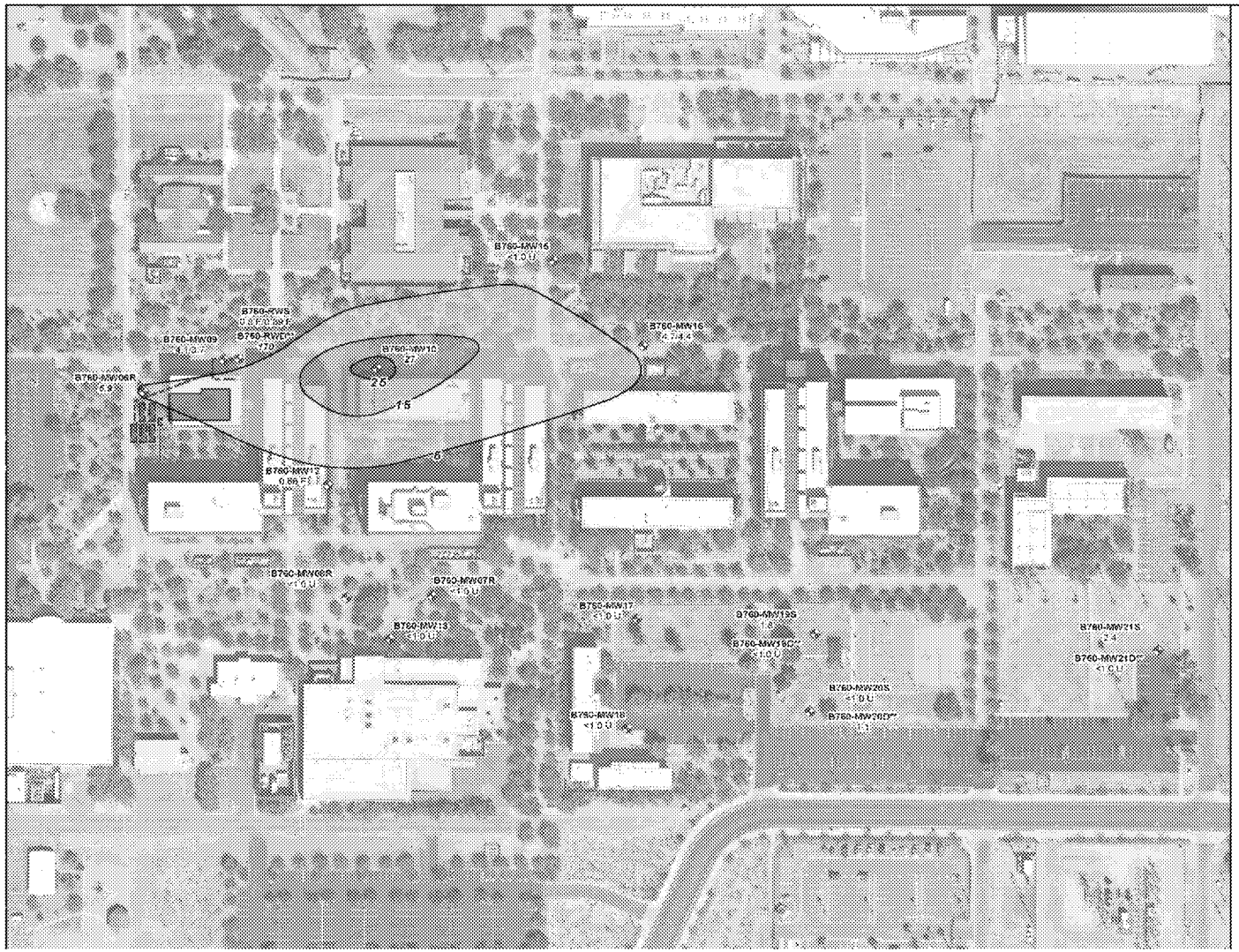
# ST035 Groundwater Sampling Results for 1,2-DCA February 2015




## Legend

**1,2-DCA Concentrations (µg/L) in Groundwater**

- <5-15 µg/L
- 15-25 µg/L
- ≥25 µg/L

* ADEQ UST Tier 1 Corrective Action Standard = 5 µg/L

- Groundwater Monitoring Well Location
- Approximate Location of Former Building 760
- Approximate Location of Former Underground Storage Tank
- Approximate Location of Former Below Grade Product Distribution Line

**Notes:**

| | |
|---|---|
| **B760-MW10** | Monitoring Well Identification |
| **27** | 1,2-DCA Concentration (µg/L) (Results that are ***italicized and bolded*** equal or exceed the ADEQ UST Tier 1 Corrective Action Standard of 5 µg/L) |
| 4.1/3.7 | Original/Duplicate Results |
| ** | Not used for isoconcentration mapping; wells are not representative of groundwater conditions |
| µg/L | Microgram per liter |
| <1.0 | Not detected at or above the RL |
| 1,2-DCA | 1,2-Dichloroethane |
| ADEQ | Arizona Department of Environmental Quality |
| F | The analyte was positively identified but the associated concentration is an estimation above the MDL and below the RL |
| MDL | Method Detection Limit |
| RL | Reporting Limit |
| U | The analyte was analyzed for, but not detected at or above the RL shown |
| UST | Underground Storage Tank |

0 35 70 140 Feet

N

Working Copy
Groundwater Monitoring Report
February 2015 Event
Site ST035 - Former Williams Air Force Base
Mesa, Arizona

**ST035 1,2-DCA Concentrations in Groundwater February 2015**

FIGURE 3-4

Job No.: 3101119001
PM: BW
Date: 5/8/2015
Scale: 1" = 140'

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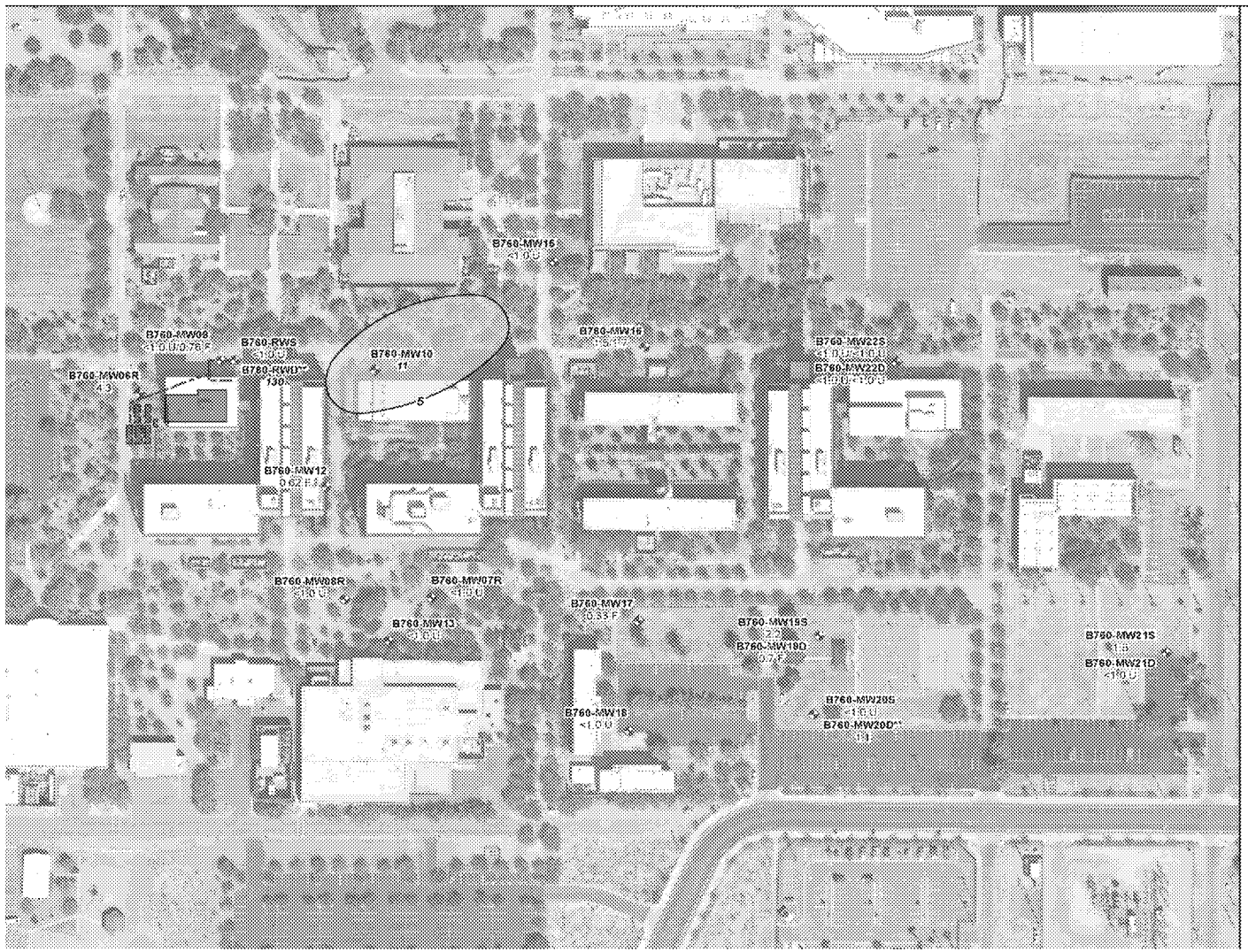
# ST035 Groundwater Sampling Results for 1,2-DCA November 2015




## Legend

**1,2-DCA Concentrations (µg/L) in Groundwater**

- *5-15 µg/L
- * ADEQ UST Tier 1 Corrective Action Standard = 5 µg/L
- Groundwater Monitoring Well Location
- Approximate Location of Former Building 760
- Approximate Location of Former Underground Storage Tank
- Approximate Location of Former Below Grade Product Distribution Line

**Notes:**

| | |
|---|---|
| **B760-MW10** | Monitoring Well Identification |
| ***11*** | 1,2-DCA Concentration (µg/L) (Results that are ***italicized and bolded*** equal or exceed the ADEQ UST Tier 1 Corrective Action Standard of 5 µg/L) |
| 1.5/1.7 | Original/Duplicate Results |
| ** | Not used for isoconcentration mapping; wells are not representative of groundwater conditions |
| µg/L | Microgram per liter |
| <1.0 | Not detected at or above the RL |
| 1,2-DCA | 1,2-Dichloroethane |
| ADEQ | Arizona Department of Environmental Quality |
| F | The analyte was positively identified but the associated concentration is an estimation above the MDL and below the RL |
| MDL | Method Detection Limit |
| RL | Reporting Limit |
| U | The analyte was analyzed for, but not detected at or above the RL shown |
| UST | Underground Storage Tank |

0 35 70 140 Feet

N

Working Copy
Annual 2015
Groundwater Monitoring Report
Site ST035 - Former Williams Air Force Base
Mesa, Arizona

**ST035 1,2-DCA Concentrations in Groundwater November 2015**

FIGURE 3-4

Job No.: 9101110001
Drn: BS
Date: 1/19/2016
Scale: 1" = 140'

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# Path Forward

- Prepare site closure report
- Continue semiannual groundwater monitoring until site closure is obtained which is anticipated to be Jul 2016
- Once site closure has been obtained, groundwater sampling at ST035 will be discontinued and monitoring wells will be abandoned