

Headquarters U.S. Air Force

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Former Williams AFB Restoration Advisory Board (RAB)



May 18, 2010

**Highland High School
4301 E. Guadalupe Rd.
Gilbert, AZ**

Headquarters U.S. Air Force

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Welcome & Introductions

Presented by: Ms. Michelle Lewis,
Mr. Bill Lopp & Mr. Len Fuchs,
RAB Community Co-Chairs



Welcome & Introductions

- **Mr. Len Fuchs, RAB Community Co-Chair**
- ❖ **Ms. Michelle Lewis, Air Force Center for Engineering & the Environment, Project Manager and RAB Co-Chair**
- **Mr. Bill Lopp, Air Force Center for Engineering & the Environment**
- **Ms. Carolyn d'Almeida, Project Manager, U.S. Environmental Protection Agency, Region IX**
- **Mr. Andre Chiaradia, Project Manager, ADEQ**



Agenda

<u>Time</u>	<u>Topic</u>	<u>Presenter</u>
7:00 p.m.	RAB meeting convenes <ul style="list-style-type: none">• Welcome and introductions• Community Co-chair remarks• Review February 2010 meeting minutes	Ms. Michelle Lewis Mr. Bill Lopp Mr. Len Fuchs Mr. Chuck Helms
7:15 p.m.	Program Updates <ul style="list-style-type: none">• Environmental Updates• Contracting Updates• Property Transfer Update	Ms. Michelle Lewis Mr. Bill Lopp Mr. Jay Harbin Mr. Ed Mears Mr. Jeff Schone
8:30 p.m.	Meeting wrap-up <ul style="list-style-type: none">• Review action items for next meeting• Call for agenda items for next meeting• Propose next RAB meeting date: Aug 24, 2010	Ms. Michelle Lewis Mr. Bill Lopp Mr. Len Fuchs
9:00 p.m.	Adjourn	Ms. Michelle Lewis Mr. Len Fuchs



Minutes and Action Items

- **Review Feb 2010 RAB meeting minutes**
- **Action Items from Feb 2010 RAB Meeting**

Presented by:
Mr. Bill Lopp
AFCEE

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Program Updates:

**Sites ST012, ST035, LF004;
Parcel N Debris Area (PNDA);
and Temporary Treatment
Facility (TTF)**



Presented by:

Ms. Michelle Lewis, Mr. Bill Lopp, AFCEE

Mr. Jay B. Harbin, URS Corp

Mr. Ed Mears and Jeff Schone, BEM Sys

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Site ST012 Update

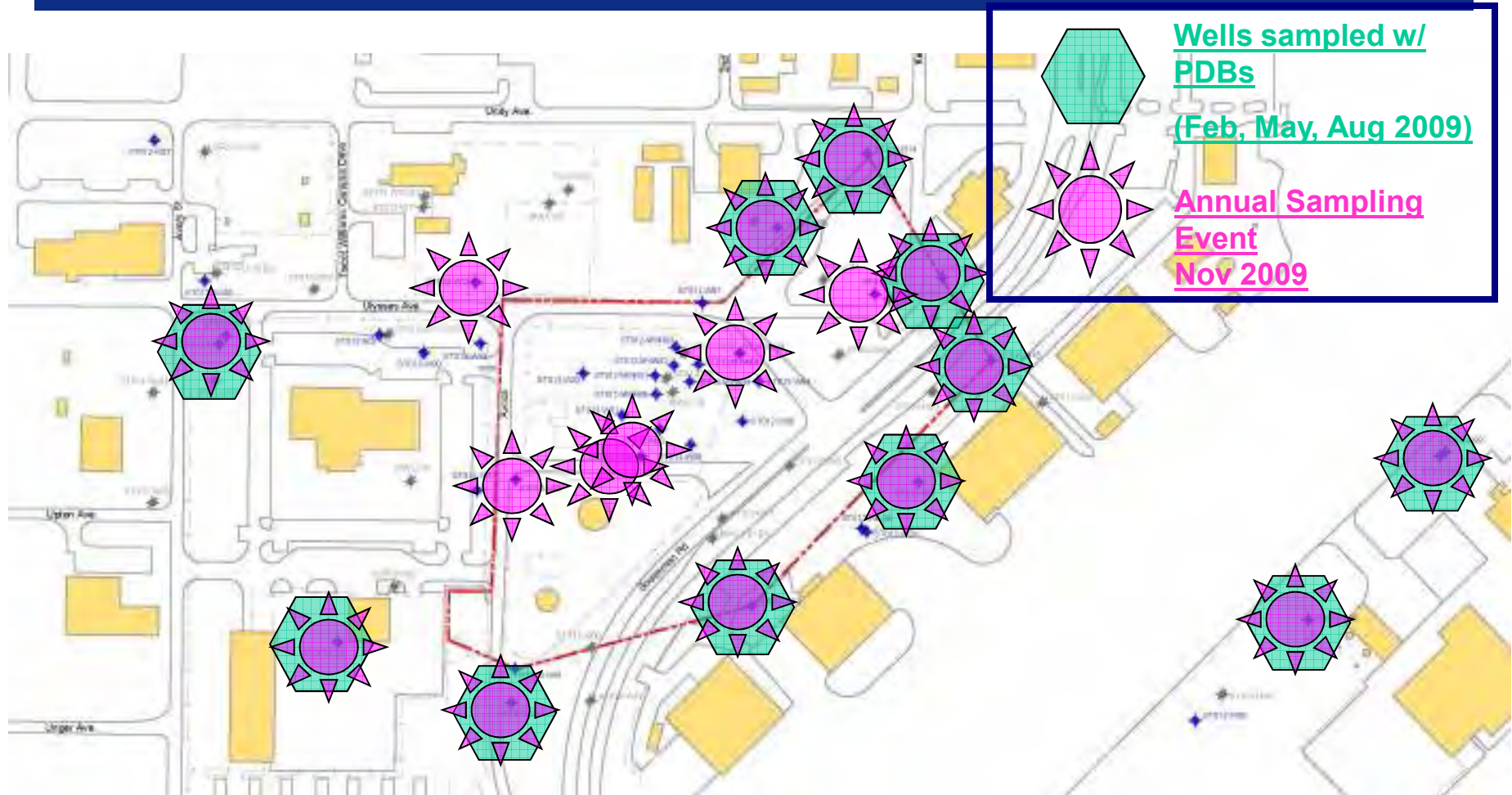


ST012 Groundwater Sampling Update

- **Air Force (AF) conducts quarterly Long Term Monitoring (LTM) at ST012 in addition operating the Soil Vapor Extraction (SVE)**
- **OU-2 Record of Decision (ROD) requires annual LTM**
- **AF also conducts quarterly sampling at sentry wells using polyethylene diffusion bags (PDBs)**
- **In 2009, AF collected groundwater samples in Feb, May, Aug, and Dec**
- **Final ST012 2009 Annual Groundwater Monitoring Report was published this month**
- **In 2010, AF will conduct two quarters of sentry well sampling with PDBs (Mar and Jun) and an Annual event in Nov 2010**

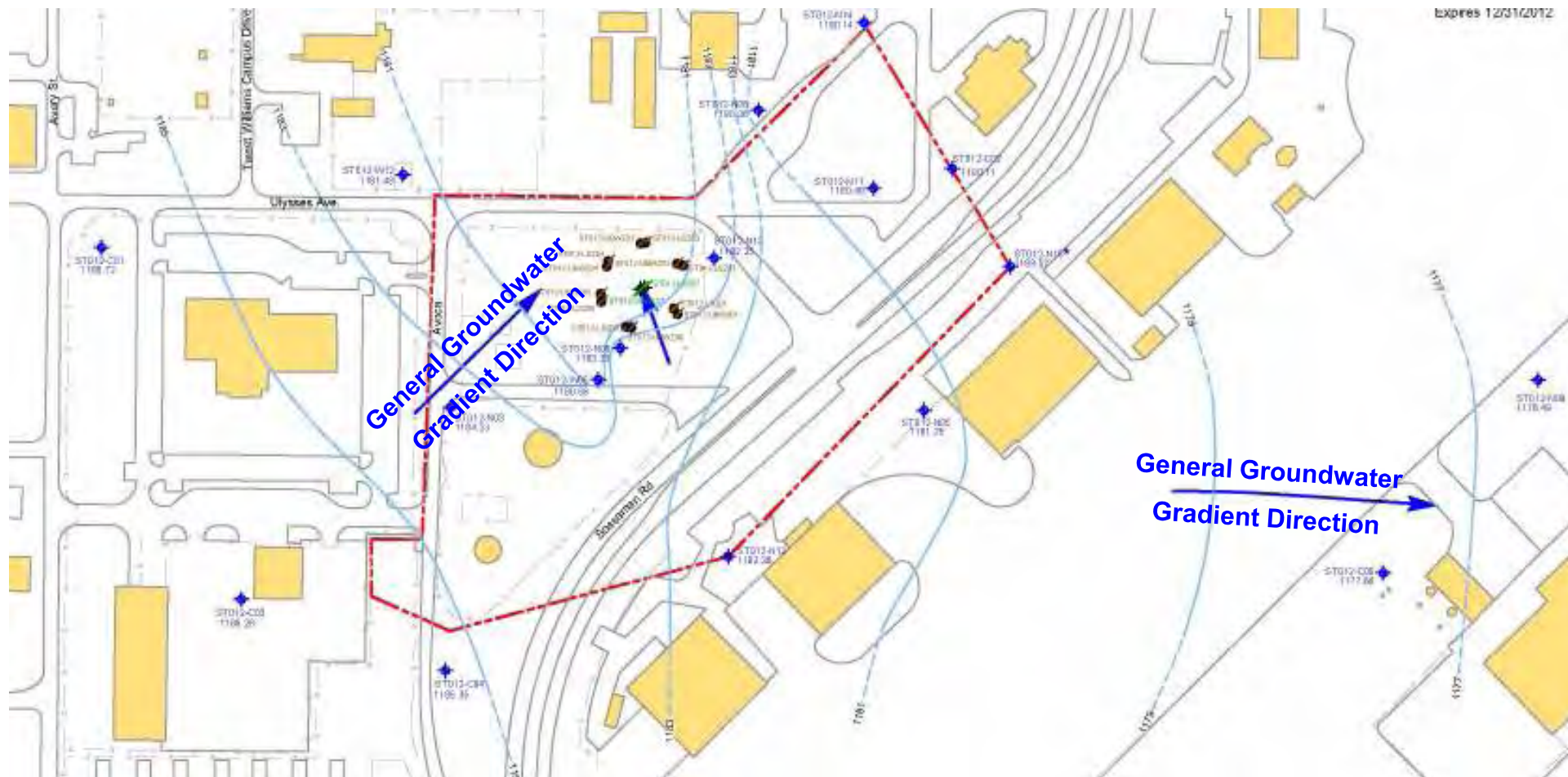


ST012 Groundwater Sampling Update Monitoring Well Locations (2009)





ST012 Groundwater Sampling Update Groundwater Gradient (Dec 2009)



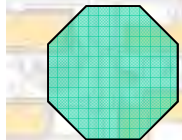


ST012 Groundwater Sampling Update Benzene Plume Map (Dec 2009)



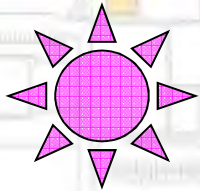


ST012 Groundwater Sampling Update Monitoring Well Locations (2010)



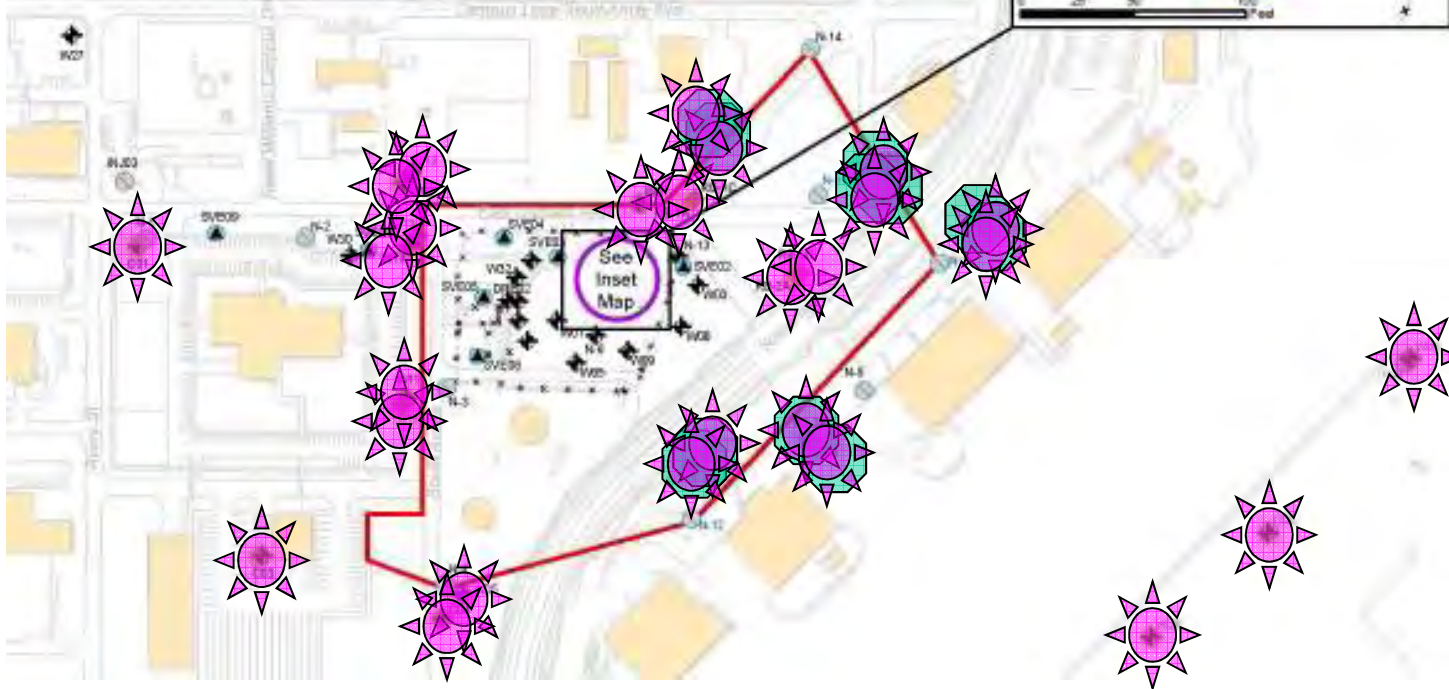
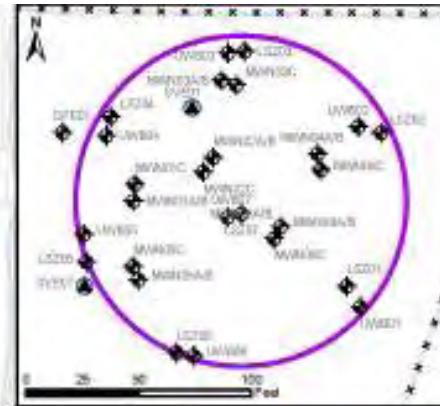
Wells with PDB Samplers

(Mar and May 2010)



Annual Sampling Event

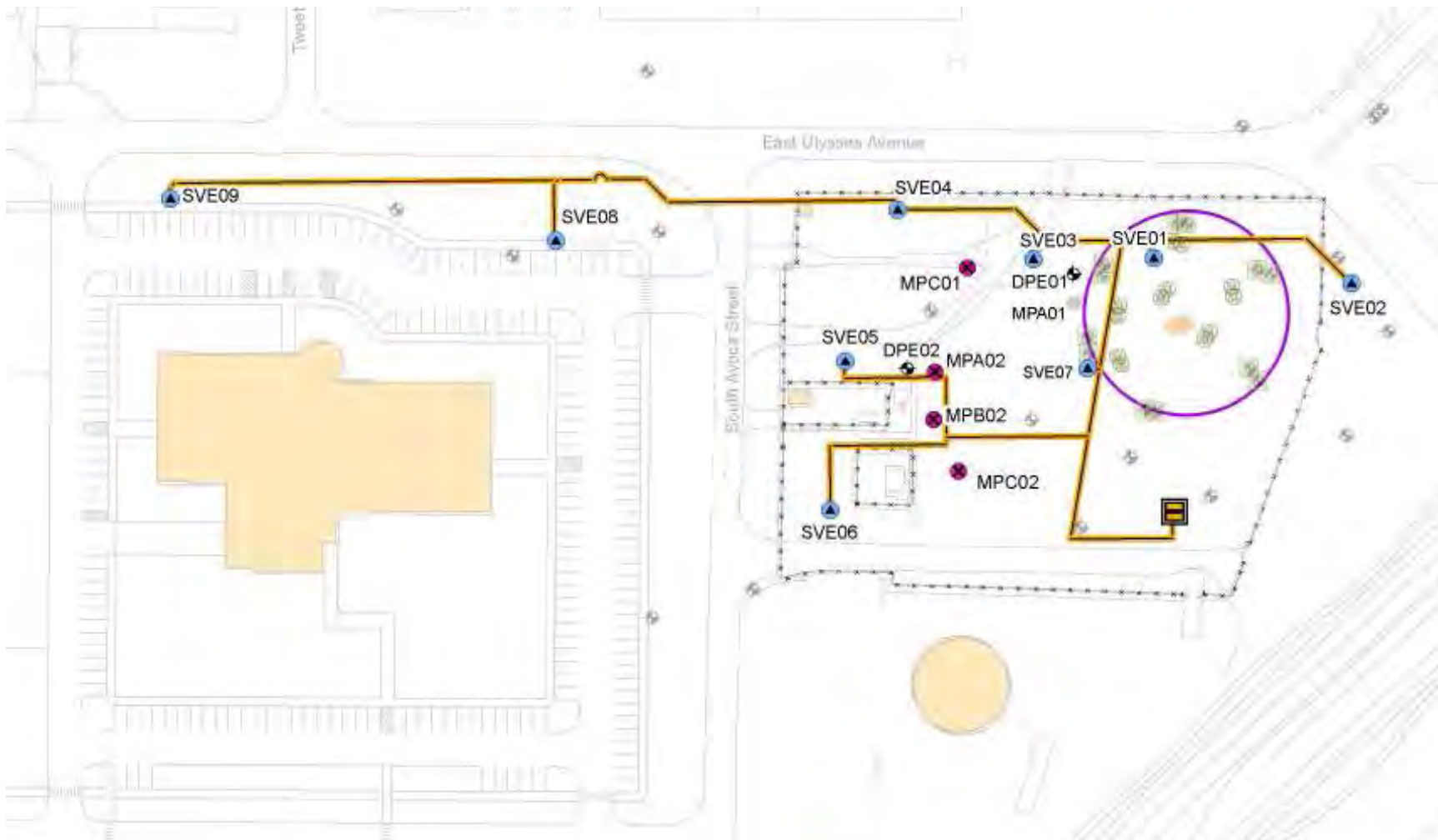
Nov 2010



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Map of Site ST012 SVE System



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Site ST012 SVE System Update (BEM O&M)

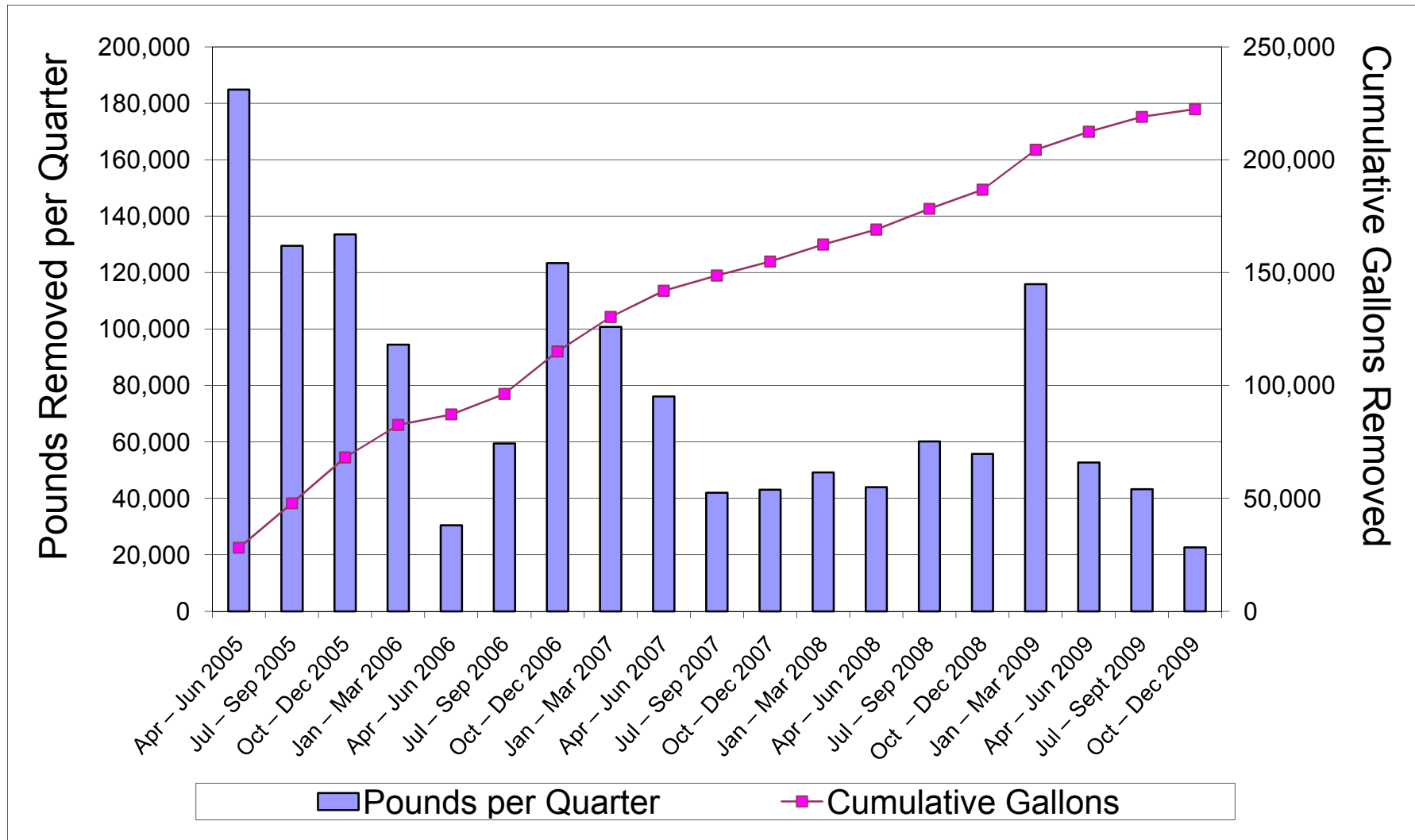
Performance Reporting (To End of Dec 09)

- SVE System Purpose
 - Reduce the time required for groundwater cleanup
 - Remove sources of fuel contamination in deep soil that may continue to impact groundwater
 - Remedial Action Objectives (RODA 1996):
 - benzene - 5 mg/kg
 - total petroleum hydrocarbons (TPH) - 2,000 mg/kg
- Internal Combustion Engines (ICE)
 - Operated from 1997 to 2003
 - Removed 2,058,000 pounds of TPH (PHC) (343,000 gallons)
- Oxidizer SVE System
 - Nine well clusters, each with three screened intervals
 - Commenced Apr 05 operated 24 hours/day, 7 days/week
 - Oct-Dec 09: PHC removed – 22,649 lbs (3,447 gallons) approximately 246 lbs/day
 - Removed 1,461,236 pounds of PHC (222,410 gallons) April 2005 to Dec 09



Site ST012 SVE System Update (BEM O&M)

Quarterly Mass Removed From Oxidizer – Apr 05 – Dec 09



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Site ST012 SVE System Update (BEM O&M) ***Biological Degradation***

- Aerobic in situ degradation observations:
 - Apr 2005 – Dec 2009: 673,000 pounds PHC degraded (102,000 gallons)
 - Oct – Dec 2009: 19,000 pounds PHC degraded (2,850 gallons)
 - Observed degradation rate decreased during TEE pilot test (see table on following slide)

- Total PHC destroyed in vadose zone from ICEs, Oxidizer System, and biodegradation is approximately 4,190,000 pounds (668,000 gal)



Site ST012 SVE System Update (BEM O&M) **Biological Degradation**

Quantities (cumulative) of Fuel Destroyed by In Situ Aerobic Degradation

SVE System Operating Period	Quarterly In Situ Aerobic Degradation of Fuel		Cumulative In Situ Aerobic Degradation of Fuel	
	Pounds	Gallons	Pounds	Gallons
Apr – Jun 2005	39,731	6,047	39,731	6,047
Jul – Sep 2005	77,136	11,741	116,867	17,788
Oct – Dec 2005	57,564	8,762	174,431	26,550
Jan – Mar 2006	60,745	9,246	235,176	35,795
Apr – Jun 2006	20,681	3,148	255,857	38,943
Jul – Sep 2006	21,492	3,271	277,349	42,214
Oct – Dec 2006	46,240	7,038	323,589	49,253
Jan – Mar 2007	46,857	7,132	370,446	56,384
Apr – Jun 2007	55,205	8,403	425,651	64,787
Jul – Sep 2007	41,061	6,250	466,712	71,037
Oct – Dec 2007	41,061	6,250	507,773	77,287
Jan – Mar 2008	39,101	5,951	546,874	83,238
Apr – Jun 2008	42,788	6,513	589,662	89,751
Jul – Sep 2008	24,486	3,727	614,148	93,478
Oct – Dec 2008	15,810	2,406	629,958	95,884
Jan – Mar 2009	12,557	1,911	642,515	97,795
Apr – Jun 2009	5,797	882	648,312	98,678
Jul – Sep 2009	5,874	894	654,186	99,572
Oct – Dec 2009	18,689	2,845	672,875	102,417



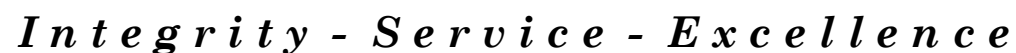
Site ST012 SVE System Update (URS O&M)

- **Task order awarded to URS 27 Jan 2010**
- **Transition to new contractor 23 Feb 2010**
- **Restarted SVE last week of Feb 2010**



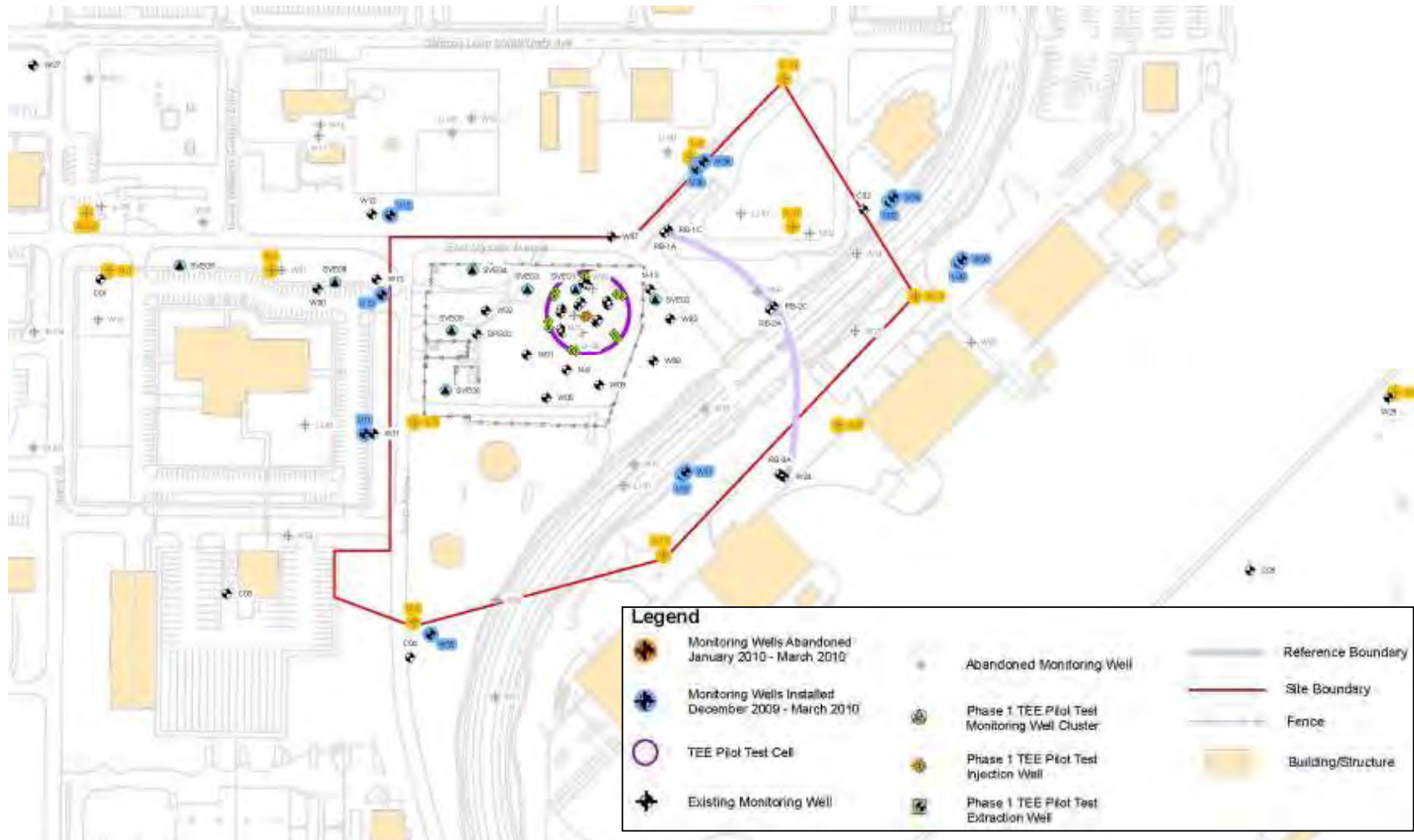
ST012 Well Replacement Update

- Replaced obsolete N-series wells with discretely screened well pairs in UWBZ and LSZ
 - Installed, Developed, Sampled and Surveyed
 - 5 – U-Series wells (Dec 09 – Mar 2010)
 - 7 – W-Series wells (Dec 09 – Mar 2010)
 - Abandoned 11 “N” wells and 1 Injection well (Jan – Mar 2010)
- Installation, Abandonment and Sampling Report
 - Draft - Jun 2010
 - Final – Aug 2010





Site ST012 Well Replacement Update Well Locations



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Site ST012 Well Replacement Update

Analytical Results for New Wells 2010

Analyte	Concentration µg/L									
	Action Level *	ST012-U02	ST012-U11	ST012-U36	ST012-U37	ST012-U38	ST012-W34	ST012-W36	ST012-W37	ST012-W38
		1/15/10	1/28/10	1/4/10	1/4/10	1/8/10	1/14/10	2/3/10	1/4/10	1/8/10
Benzene	5	2.2 B	90.7 B	36.5	51.8	1.4 BF	6.5 B	69.6 B	2,960	1.1 BF
Toluene	1,000	4 B	193 B	147	97.5	8 B	11.8 B	176 B	3,150	5.2 B
Ethylbenzene	700	1.1 B	68.6 B	121	106	5.3 B	6 B	82.5 B	1,190	1.7 BF
Xylenes, m & p	10,000+	1.3 BF	84 B	196	104	7.7 B	6.6 B	95.3 B	1,970	1.5 BF
o-Xylene	10,000+	0.6 BF	44 B	66.3	46.5	3 B	2.4 B	50.1 B	899	0.73 BF
Naphthalene	28	1 U	6.1	11.2	13	1.7	1.2	6.7	89.9	0.46 F

Notes:

* 1992 ROD Action Levels for Chemicals of Potential Concern

+ Action Level for total Xylenes is 10,000 ppb

B - Analyte is also detected in the laboratory blank.

F - The analyte is positively identified but the associated numerical value is below the practical quantitation limit.

U - Analyte analyzed for but undetected at the corresponding quantitation limit.

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Site ST035 Update



ST035 (Former Building 760) Groundwater Sampling Update

- **ST035 is a former underground storage tank (UST) site located on the ASU Polytechnic Campus**
- **AF conducts quarterly groundwater monitoring at eight monitoring wells (soon to be 13 wells)**
- **The eight original monitoring wells were replaced in 2007 - 2008 to support ASU construction of the Polytechnic Campus**
- **2009 sampling was conducted in May, Aug, and Dec**
- **Groundwater samples were analyzed for BTEX, MTBE, and EDB**
- **Final ST035 2009 Annual Groundwater Monitoring Report was published this month.**
- **In 2010, AF will conduct four quarters of well sampling (Mar – 8 wells, May – 13 wells, Aug – 13 wells, Nov – 13 wells)**

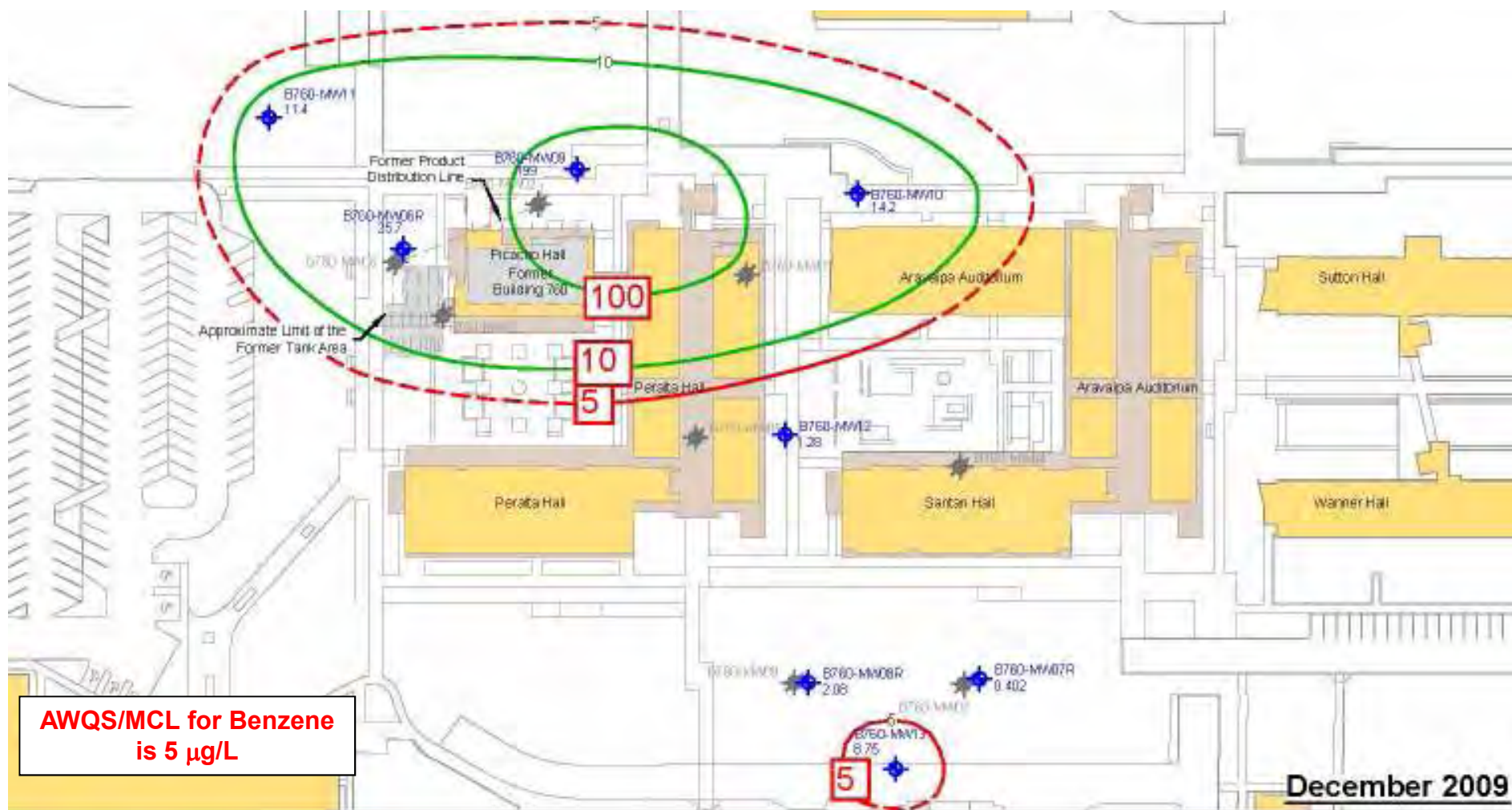


ST035 (Former Building 760) Dec 2009 Groundwater Gradient



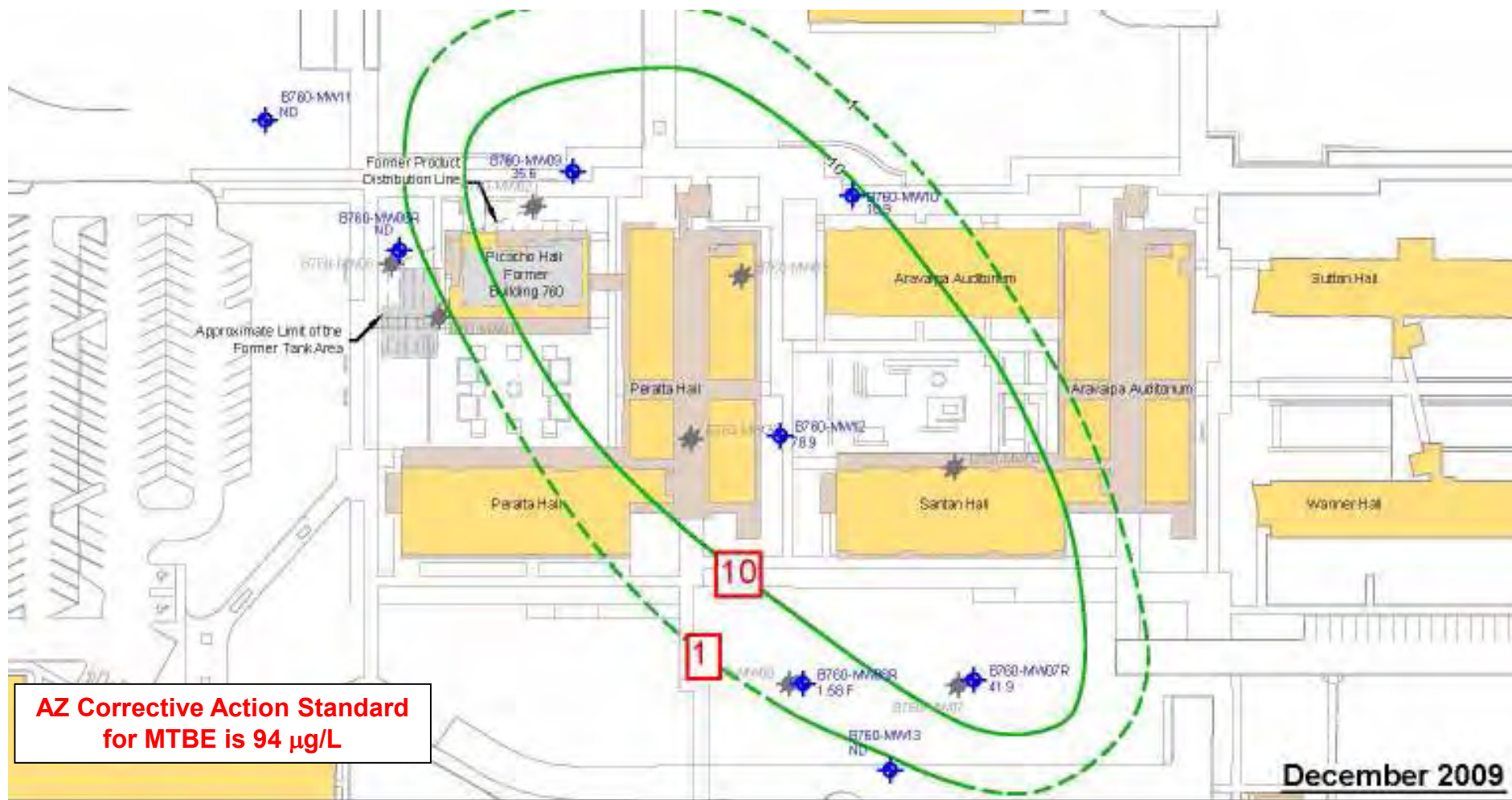


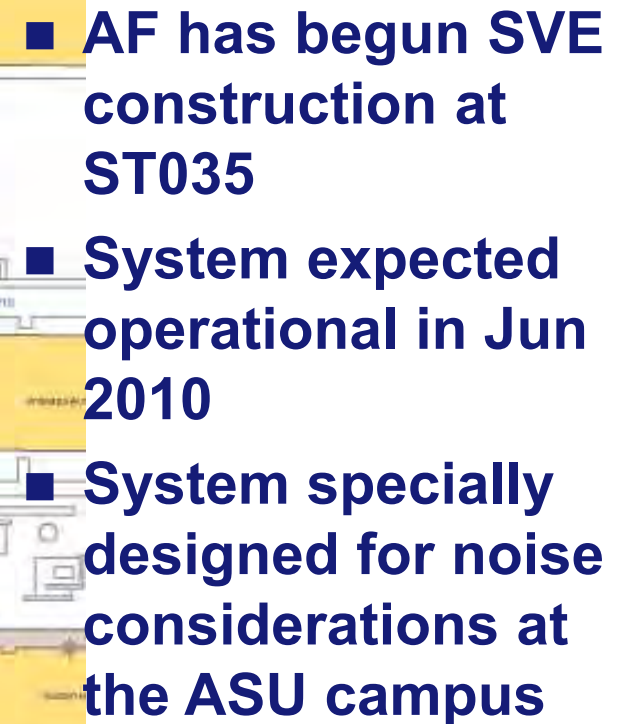
ST035 (Former Building 760) Dec 2009 Benzene Contours





ST035 (Former Building 760) Dec 2009 MTBE Contours





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Site LF004 Update



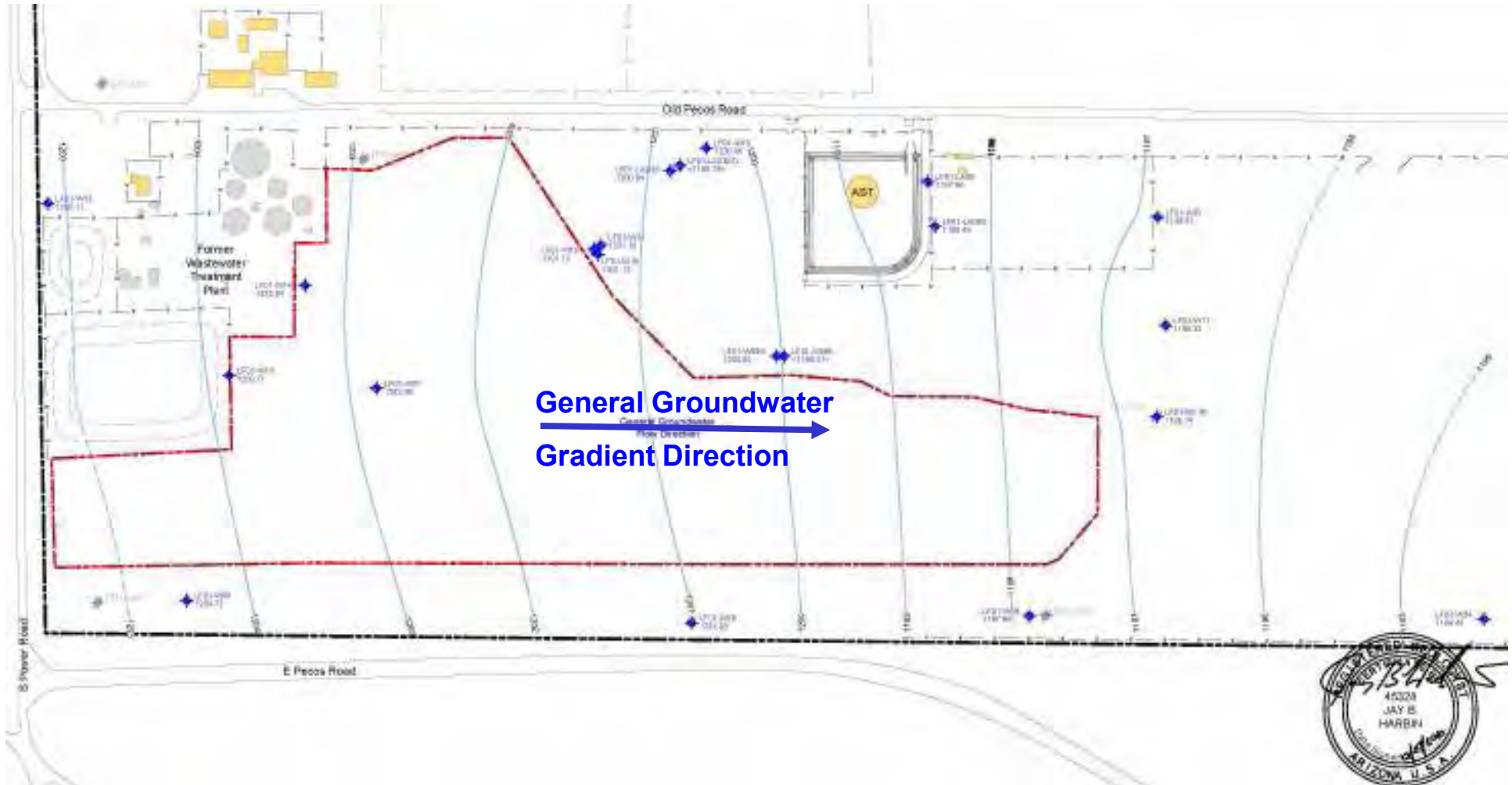
LF004 Long Term Monitoring Update

- **AF conducts LTM at the LF004 site:**
 - **Groundwater sampling using PDB samplers and conventional sampling methods two times a year**
 - **Annual landfill cap inspection and maintenance/repair (O&M)**
- **In 2009, groundwater was sampled in May and Dec**
- **2009 O&M was conducted in Jan 2010 (after completion of optimized groundwater network (discussed later))**
- **Final LF004 2009 Annual Groundwater Monitoring Report was published this month.**
- **In 2010, AF will conduct two groundwater sampling events: May and Nov 2010**



LF004 Long Term Monitoring Update

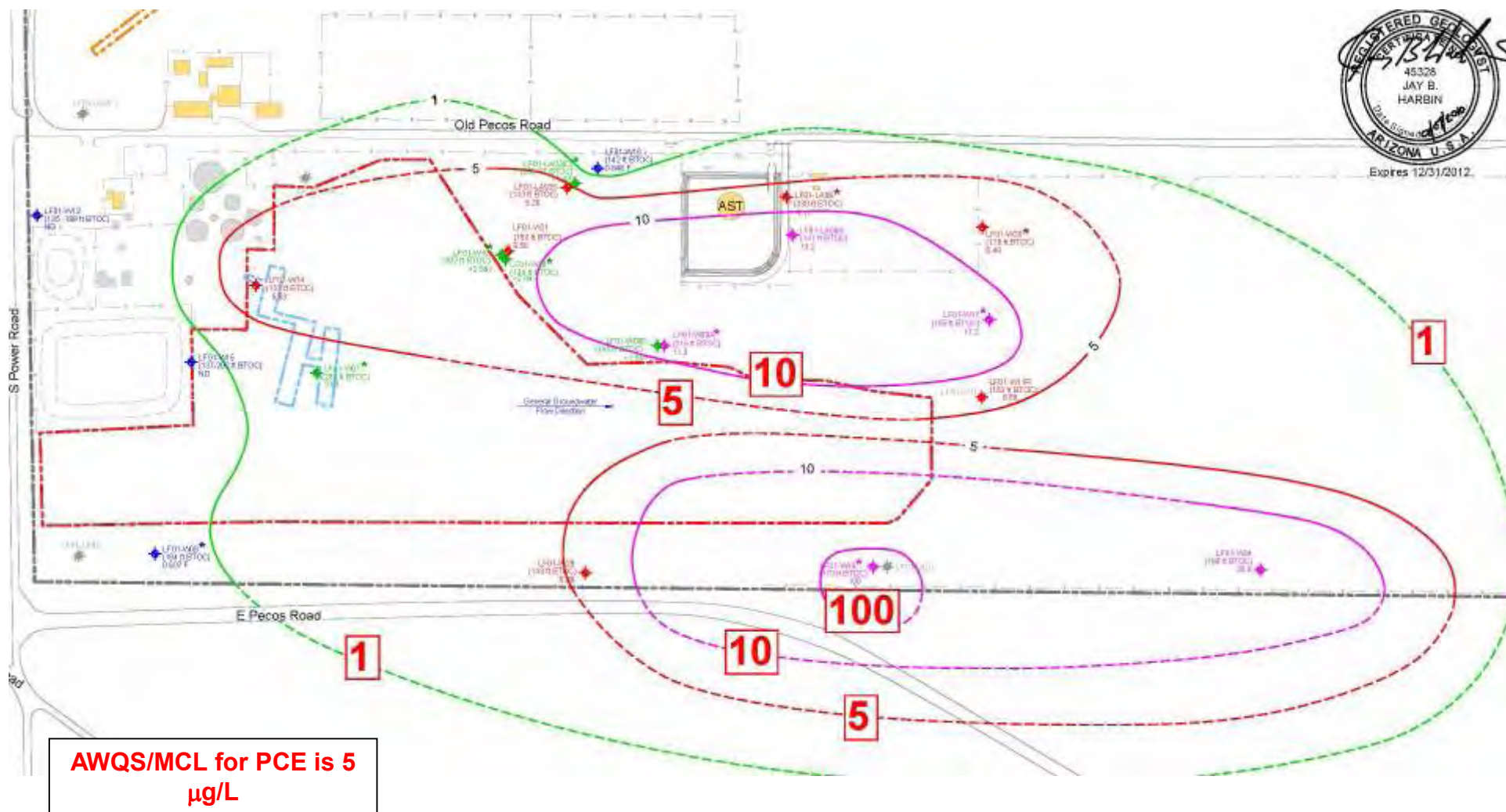
Dec 2009 Groundwater Gradient





LF004 Long Term Monitoring Update

Dec 2009 PCE Results



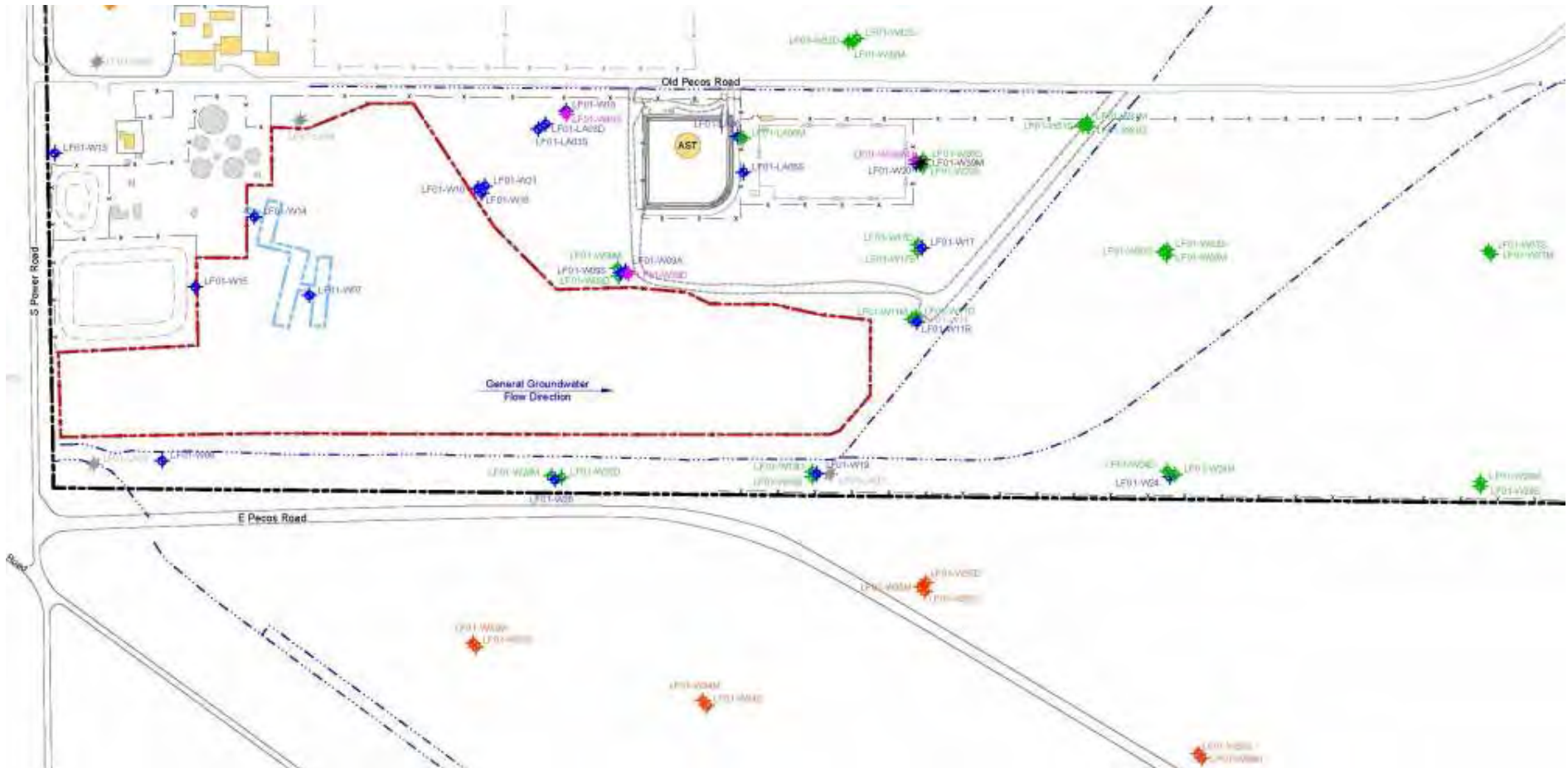


LF004 Long Term Monitoring Update Optimized Groundwater Network

- AF has installed 28 new monitoring wells at the LF004
- Monitoring wells were installed at varied depths to provide a three dimensional understanding of the TCE/PCE plume(s)
- Optimized Groundwater Network should provide both vertical and lateral delineation of the plume on site.
- AF has approval from the ADEQ/EPA and has placed under contract in installation of nine off site monitoring wells.
 - Off site monitoring wells should provide plume delineation south of landfill.
 - AF is working with Army Corps of Engineers to obtain property easements
 - Monitoring well installation expected fall 2010



LF004 Long Term Monitoring Update Optimized Groundwater Network





LF004 RI/FS Update

- **AF has completed the Supplemental Remedial Investigation and Feasibility Study (RI/FS) – Draft Document was submitted to ADEQ/EPA in Apr 2010**
- **Supplemental RI/FS Purpose:**
 - Identify shallow point source(s) of chlorinated compounds (PCE and TCE) observed in groundwater in the vicinity of the LF004 site and their potential transport mechanisms, migration routes, and exposure pathways
 - Characterize the occurrence of the PCE and TCE groundwater plume southeast of monitoring well LF01-W19 southeast of the site



LF004 RI/FS Update

■ Supplemental RI/FS Approach

- Accordance with the *Final LF004 Supplemental Remedial Investigation Work Plan, Former Williams AFB, Mesa Arizona* (URS, May 07a)
- Utilized a Triad approach by providing BCT with data from each field mob in tech memos
- The BCT provided input on sample locations and techniques at each stage
- The AF hosted a Peer Review in Oct 08 to identify data gaps
- AF mobilized to collect additional samples based on that peer review

■ AF will transition to a Performance Based Remediation (PBR) contract in early 2011

- AF has factored timely availability of the RI/FS findings to potential PBR contractors into the RI approach
- AF is striking a balance between presenting complete site characterization in this document and timely publication of this report to support a request for proposal
- AF has funded and awarded additional groundwater site characterization efforts that will be reported in other documents such as groundwater monitoring reports and groundwater well construction reports
- Gaps in groundwater delineation will be addressed under the PBR contract awarded in 2011. This characterization and appropriate remedial action will be conducted in concert with the regulatory agencies and public participation



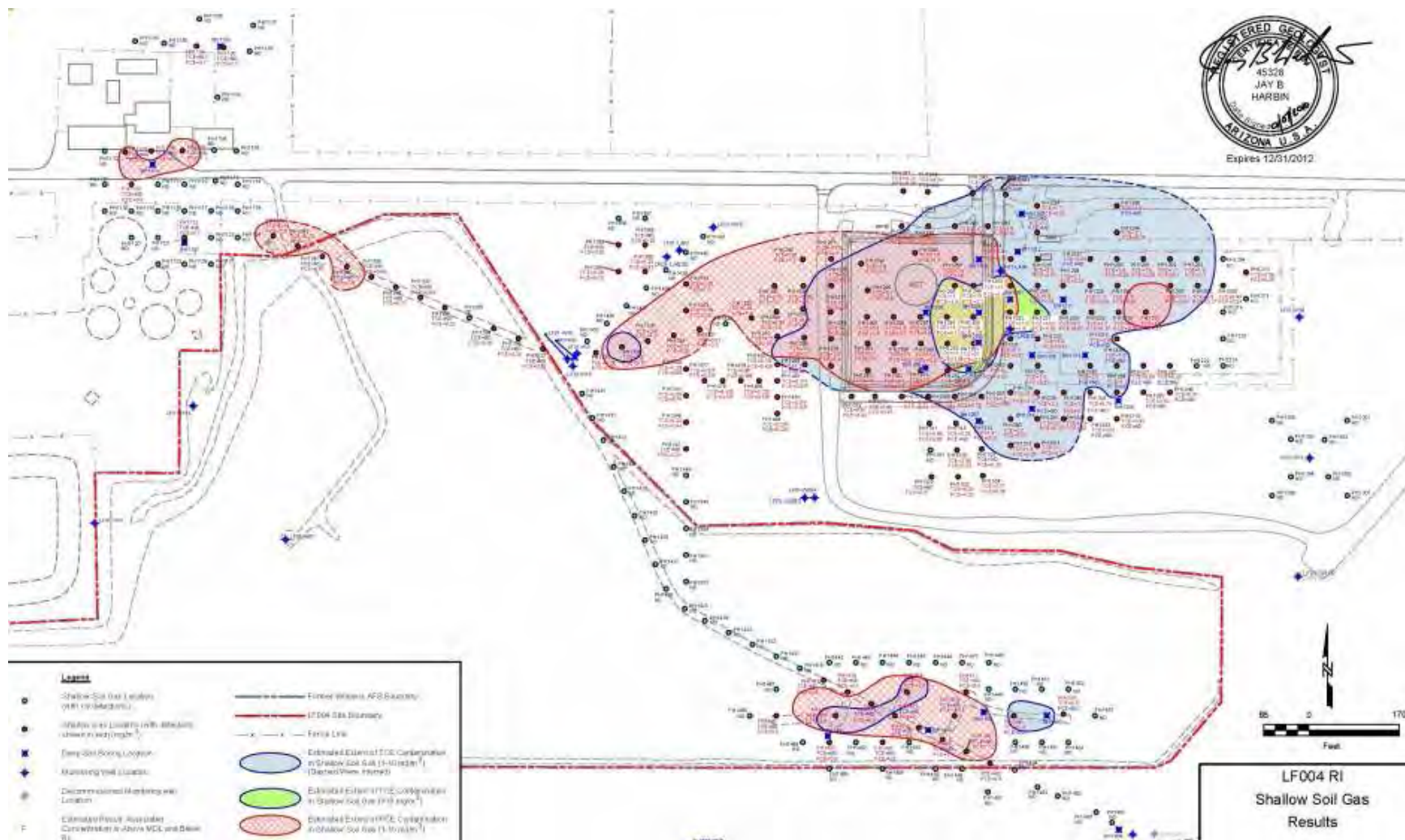
LF004 RI/FS Update

Source Area Characterization

- **Phased Characterization Approach**
 - Shallow soil gas
 - Deep Borings (soil gas and soil sampling)
 - Groundwater
- **Shallow soil gas phase**
 - Collected 283 soil gas samples
 - Focused in areas of known/suspected contamination
 - Samples analyzed onsite to allow rapid step out decisions
 - Four distinct areas with PCE and/or TCE concentrations above 1 mg/m³



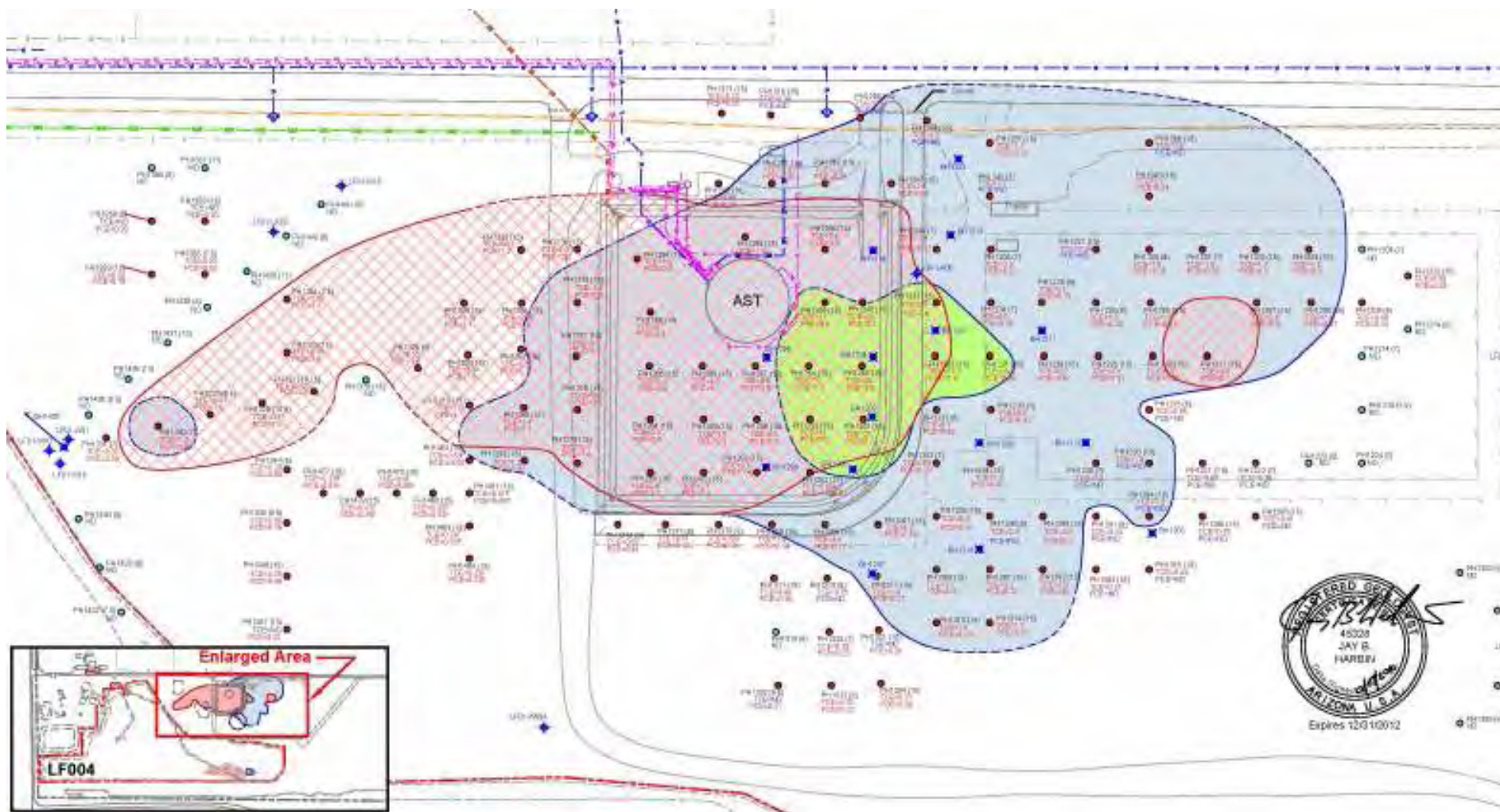
Landfill LF004 RI/FS – Source Area Characterization – Shallow Soil Gas



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Landfill LF004 RI/FS – Source Area Characterization – Shallow Soil Gas



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LF004 RI/FS Update

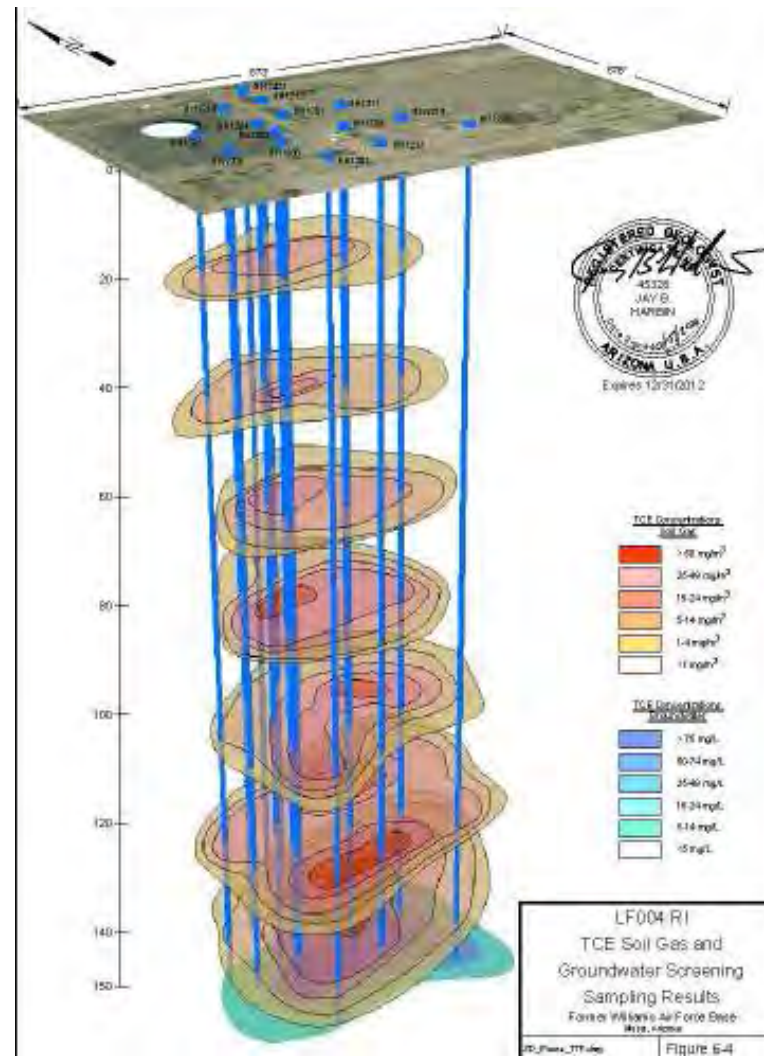
Source Area Characterization

- Deep boring phase
 - Advanced 24 deep borings
 - Areas where potential point sources were identified during the shallow soil gas sampling
 - Areas of known groundwater contamination – near well triplet (LF01-W10, LF01-W16, and LF01-W21) and LF01-W19
 - TCE was detected in 120 of 125 samples; ranging from 0.026 mg/m³ to 76 mg/m³
 - PCE was detected in 96 of 125 samples; ranging from 0.098 mg/m³ to 31 mg/m³
 - One potential source area discovered near former AST area



LF004 RI/FS Update

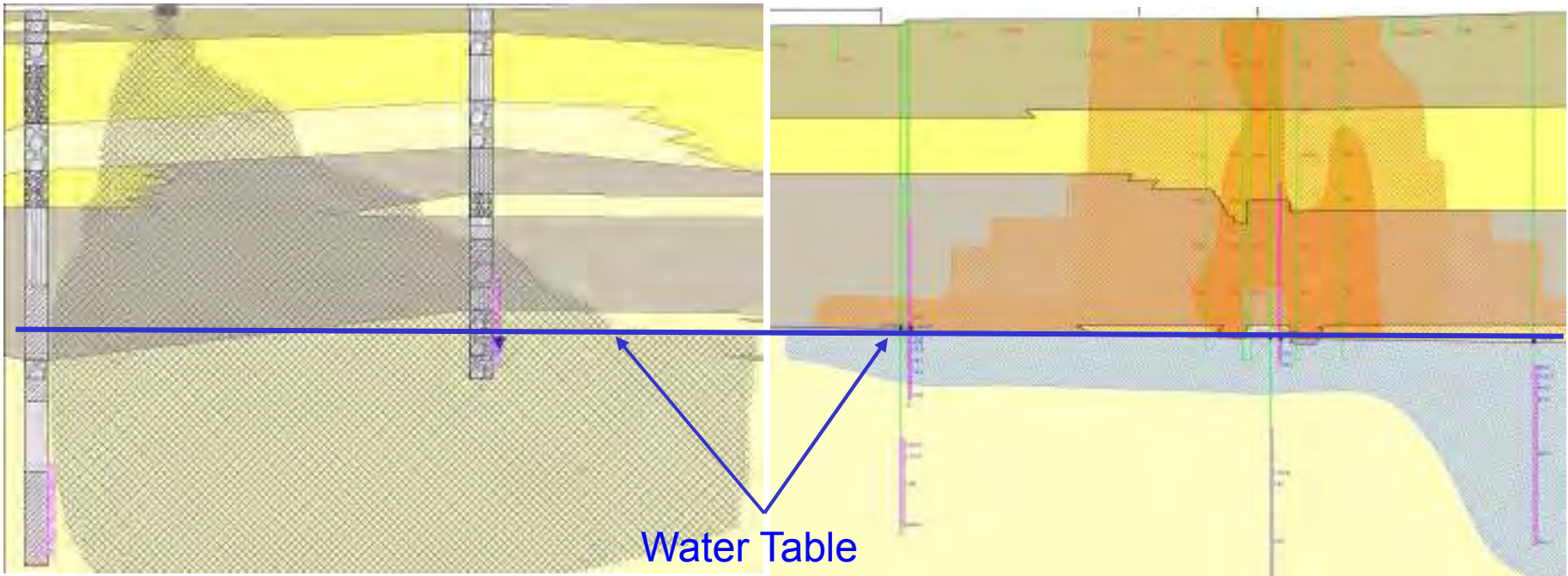
Source Area Characterization





LF004 RI/FS Update

Source Area Characterization



Conceptual Site Model

Actual Data



LF004 RI/FS Update

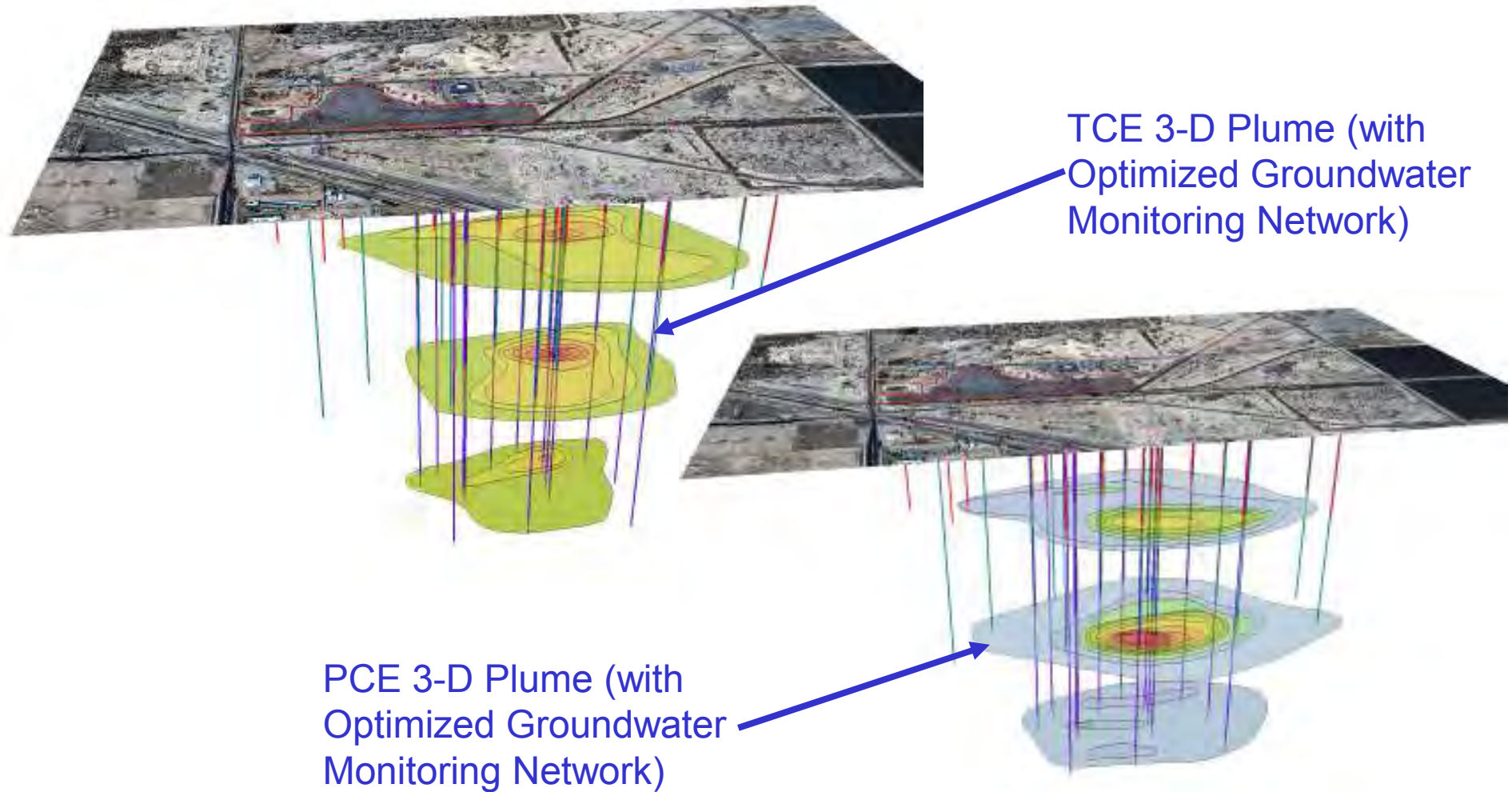
Groundwater Characterization

- Data presented in RI only up to May 09 (without benefit of the optimized groundwater network)
- An amendment to the RI in the form of a Monitoring Well Installation/Abandonment Report will include sampling data from the newly installed wells (expected later this year)
- New data will also be incorporated into Semiannual and Annual LF004 LTM Reports



LF004 RI/FS Update

Groundwater Characterization



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Parcel N Debris Area Update

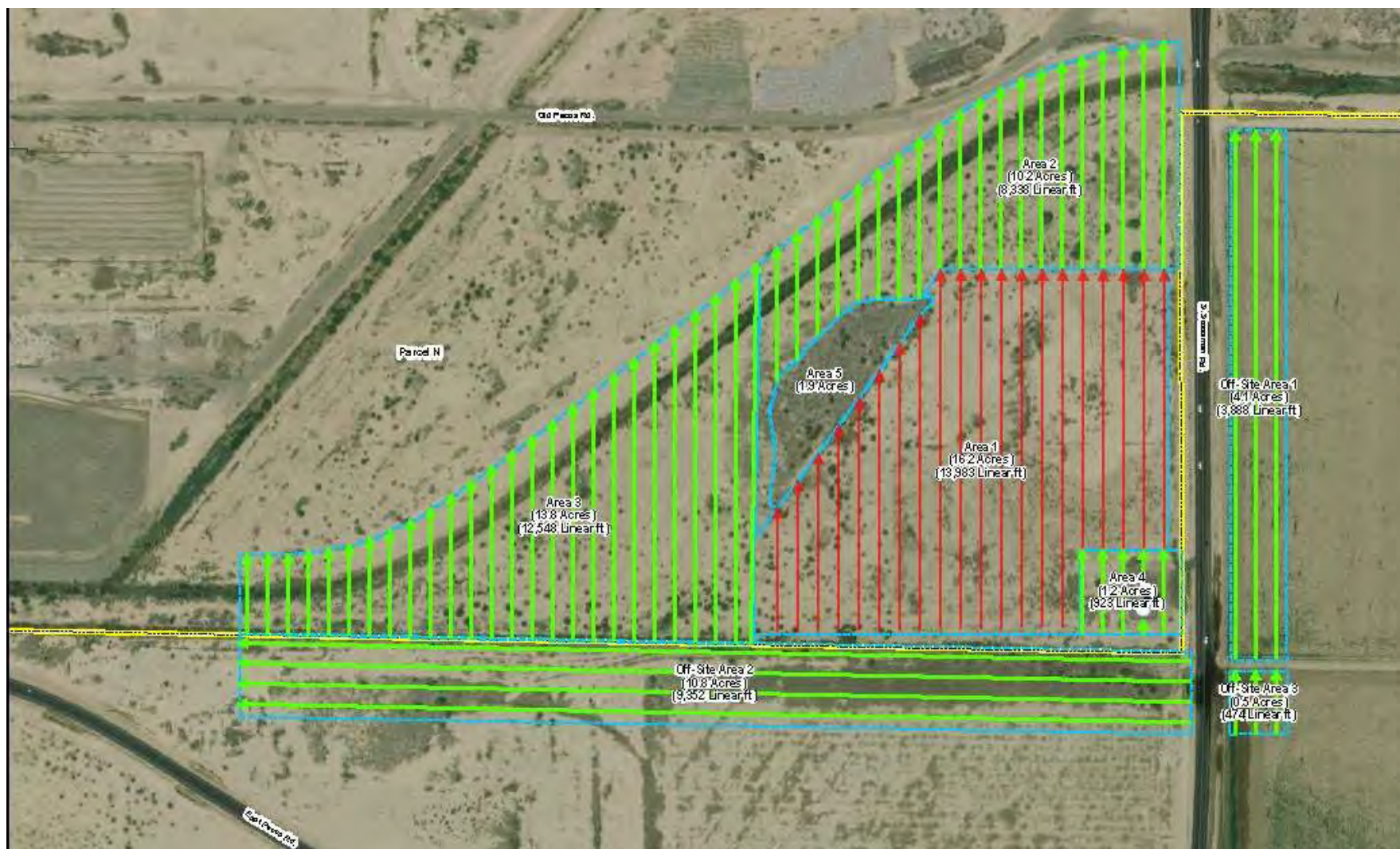


Parcel N Debris Area (PNDA) Update

- During previous site walks and PNDA by AF and ADEQ, ruptured ammunition (later identified as .50-caliber cartridge casings) were observed on the ground
- In 2008/09, AF performed a Preliminary Assessment/Site Inspection (PA/SI) to determine if munitions-related activities or other disposal or burning activities warranted additional CERCLA response actions
 - Found various inert munitions debris (MD) that appeared to be burnt
 - All MD was inert, but additional investigation was required
 - AF has prepared an Explosive Safety Plan (ESP) and follow-on work plan
 - Requested expedited review of work plan
 - Anticipates fieldwork complete Summer 2010



Parcel N Debris Area (PNDA) Update



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Temporary Treatment Facility Update



Temporary Treatment Facility Update

- Mar 01 – 3,300 cubic yards (cy) dieldrin contaminated soil removed from Site SS017 (Old Pesticide/Paint Storage Area) for bio-treatment as a “P Listed” waste at the TTF
- Treatment through Oct 02 increased volume to 6,000 cy from amendments of straw and manure but did not reduce concentrations for delisting; ceased treatment.
- Mar 05 – AF submitted a waste classification memo to properly classify the soils as non-hazardous waste that exceeds the Arizona Non-Residential Soil Remediation Level (SRLNR) of 1.1 mg/kg; ADWR concurred Aug 07
- Nov 07 – AF submitted draft final TTF soil excavation Work Plan to dispose of soil; finalized Dec 07

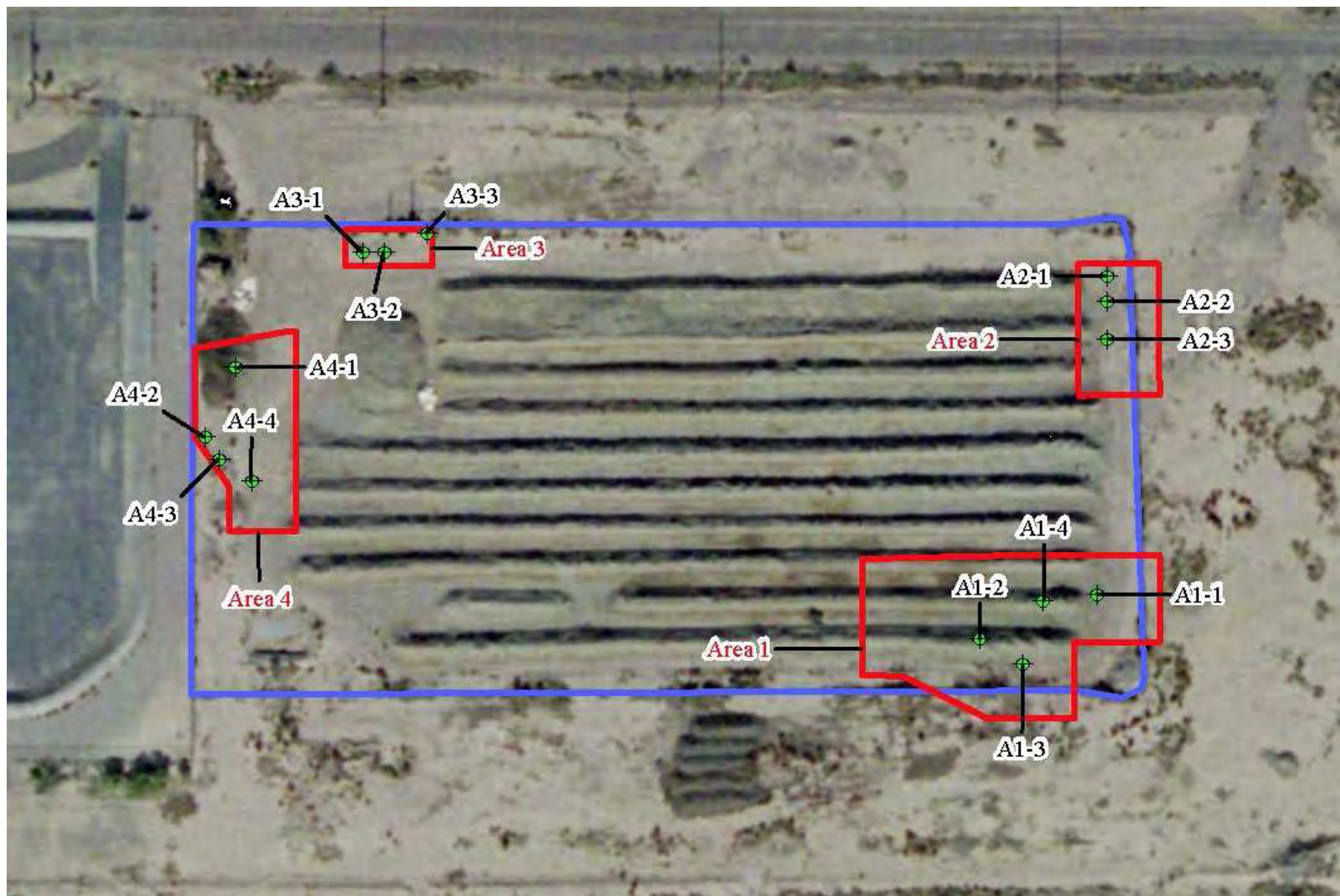


Temporary Treatment Facility Update

- Nov 07 – 8,500 cy contaminated soil and base were disposed off site; confirmation sampling showed four areas still exceeding the Residential SRL (SRLR) of 0.34 mg/kg for dieldrin
- Jul 09 – AF submitted a draft final work plan addendum to over excavate the four areas to close the TTF
- Jan 2010 – Areas for over excavation sampled for waste disposal at the Cactus Landfill located in Florence, AZ; backfill soil was sampled
- Feb 2010 – The four areas were over excavated, soil disposed of, and the TTF was backfilled to grade



Temporary Treatment Facility Update



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Temporary Treatment Facility Update

Before.....



After.....



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Contracting Update

Presented by:
Ms. Michelle Lewis and Mr. Bill Lopp,
AFCEE



Contracting Update

■ Currently under contract:

■ URS Corp

- Complete Supplemental RI/FS**
- Complete LTM Activities for 2010**
- Complete and operate SVE system at ST035 in 2010**
- Operate SVE system at ST012 in 2010**
- Conduct Site Inspection and MEC characterization at PNDA**
- Product Proposed Plan and Record of Decision for OU-6**

■ BEM Systems

- Complete ST012 TEE Evaluation Report**

■ HGL, Inc.

- Complete Soil Removal Report at TTF**



Contracting Update

- **Upcoming Contracts:**

- **5-year Review**
- **Storage and maintenance for ST012 TEE equipment**
- **Performance-Based Remediation Contract**
 - **LTM activities at all active sites**
 - **O&M activities at SVE sites (ST035 and ST012)**
 - **Amended Proposed Plan and ROD at OU-1 (LF004)**
 - **Design/Construct Remediation System at LF004**
 - **Design/Construct Remediation System at ST012**
 - **Design/Construct Groundwater Remediation System at ST035**

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Property Transfer Update



Presented by:
Ms. Michelle Lewis and Mr. Bill Lopp,
AFCEE



Property Transfer Update



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Action Items



Presented by:
Mr. Chuck Helms,
Booz Allen Hamilton

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Meeting Wrap-Up



Presented by:
Ms. Michelle Lewis and Mr. Len Fuchs,
RAB Community Co-Chairmen



Meeting Wrap-Up

- **Propose agenda items for next RAB meeting**
- **Schedule next RAB meeting**
- **Meeting adjourned**