



Fort George G. Meade

ARCADIS/PIKA Joint Venture (JV) Fort George G. Meade Contract Overview

Restoration Advisory Board Meeting March 19, 2015



US Army
Corps of Engineers
Baltimore District



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Presentation Agenda



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TOPICS

- q Overview of the Fort George G. Meade (FGGM) Bridge Contract awarded to the ARCADIS/PIKA Joint Venture (JV).
- q Update on the performance of the three OU-4 groundwater remedies:
 - Area of Concern (AOC) 1 - Building 2286/Former Building 2276 Interim Remedy
 - AOC 2 - Building 2250 Interim Remedy
 - AOC 3 - Lower Patapsco Aquifer Interim Remedy



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FGGM JV Contract Summary



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The JV is under contract to continue Remedial Action Operations (RAO) and Long-term Management (LTM) of the remedies implemented during the FGGM Performance Based Acquisition (PBA) that expired on 12/31/14. RAO/LTM activities include:

- Operable Unit 4 (OU-4):
 - Area of Concern (AOC) 1 (Building 2286/2276): Completion of the second full-scale in-situ chemical oxidation (ISCO) injection and associated quarterly performance monitoring and reporting.
 - AOC 2 (Building 2250): Continued operation of the air sparge (AS)/soil vapor extraction (SVE) system and associated quarterly performance monitoring and reporting.
 - AOC 3 (Lower Patapsco Aquifer Study Area): Continued operation of the hydraulic containment (HC) system and associated semi-annual groundwater monitoring and reporting.



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FGGM JV Contract Summary Cont.



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- Former Pesticide Shop (FGGM-13):
 - Continued long-term monitoring of groundwater and associated reporting.
- Closed Sanitary Landfill (FGGM-17):
 - Completion of the Annual Detection and Assessment Monitoring Program and associated reporting.
- Manor View Dump Site (FGGM-93):
 - Continued long-term monitoring of groundwater, methane monitoring and associated reporting.



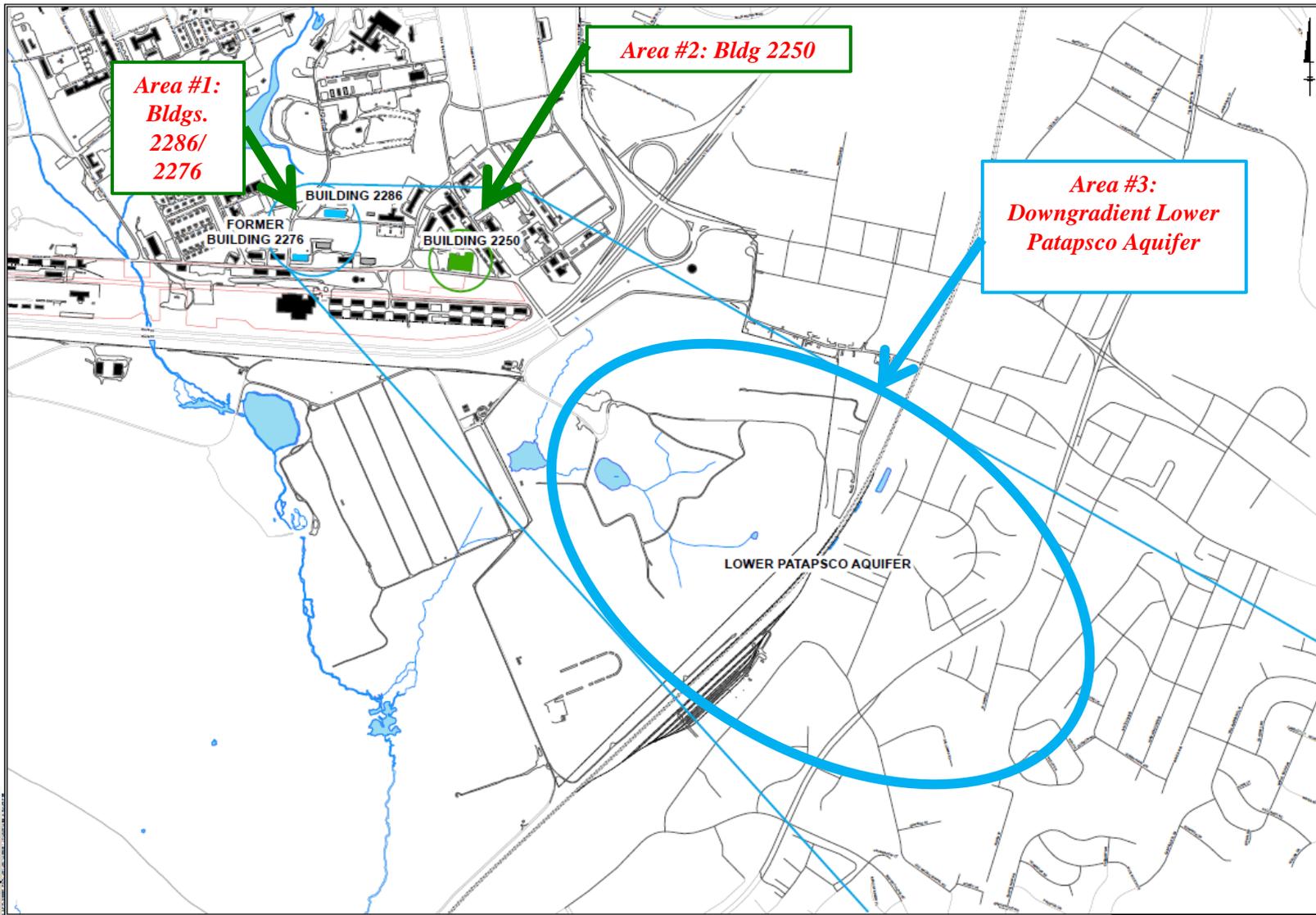
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OU-4/LPA Site Location



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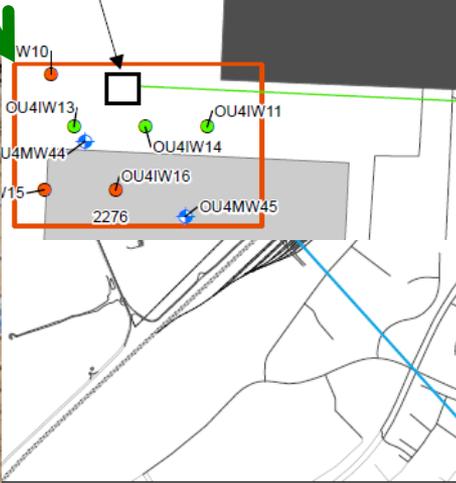
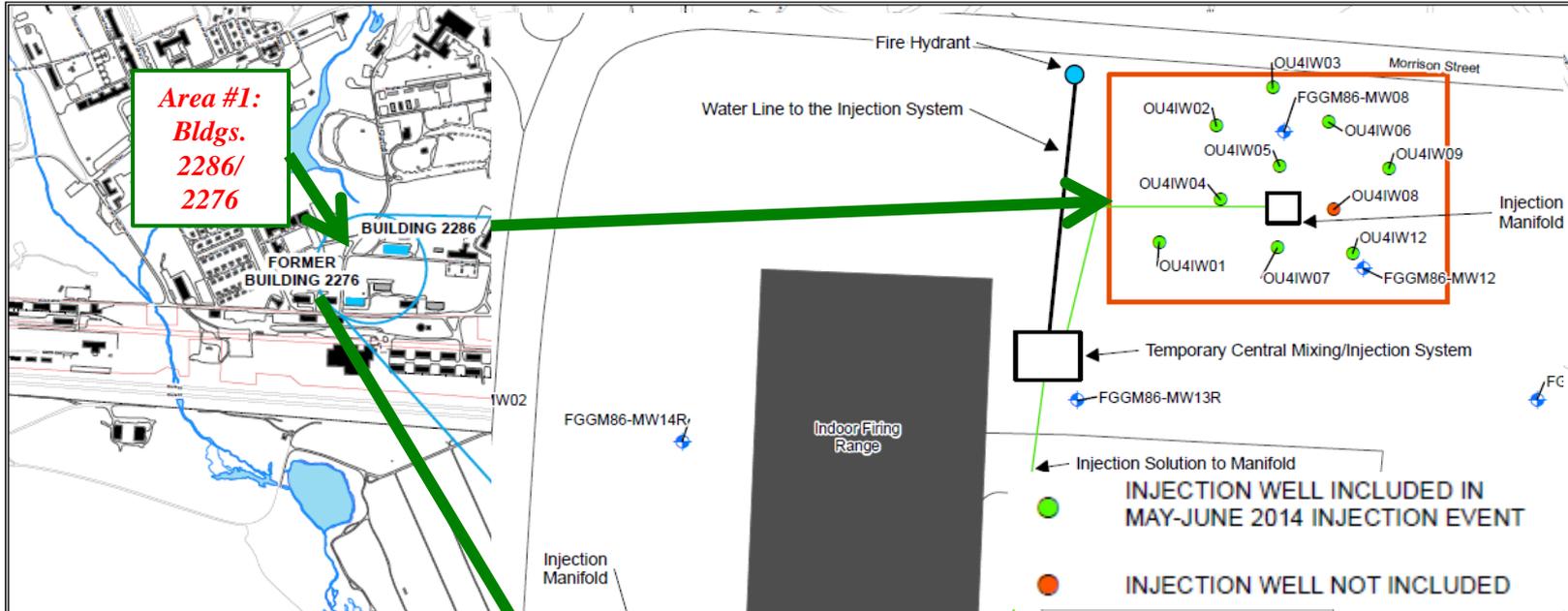
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AOC 1 – Source Treatment using In-Situ Chemical Oxidation (ISCO)



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AOC 1 – Source Treatment using In-Situ Chemical Oxidation (ISCO)



Completed activities

- Pre-design ISCO injection test completed (June 2013)
- Baseline groundwater sampling (February 2014)
- Full-scale ISCO Injections (May/June 2014)
- Quarterly Performance Monitoring (3 quarters in 2014)

Recent Activities

- Quarterly Performance Monitoring (February 2015)

On-Going Activities

- Second injection event started March/April 2015.
- Quarterly sampling following completion of injection event (April 2015).



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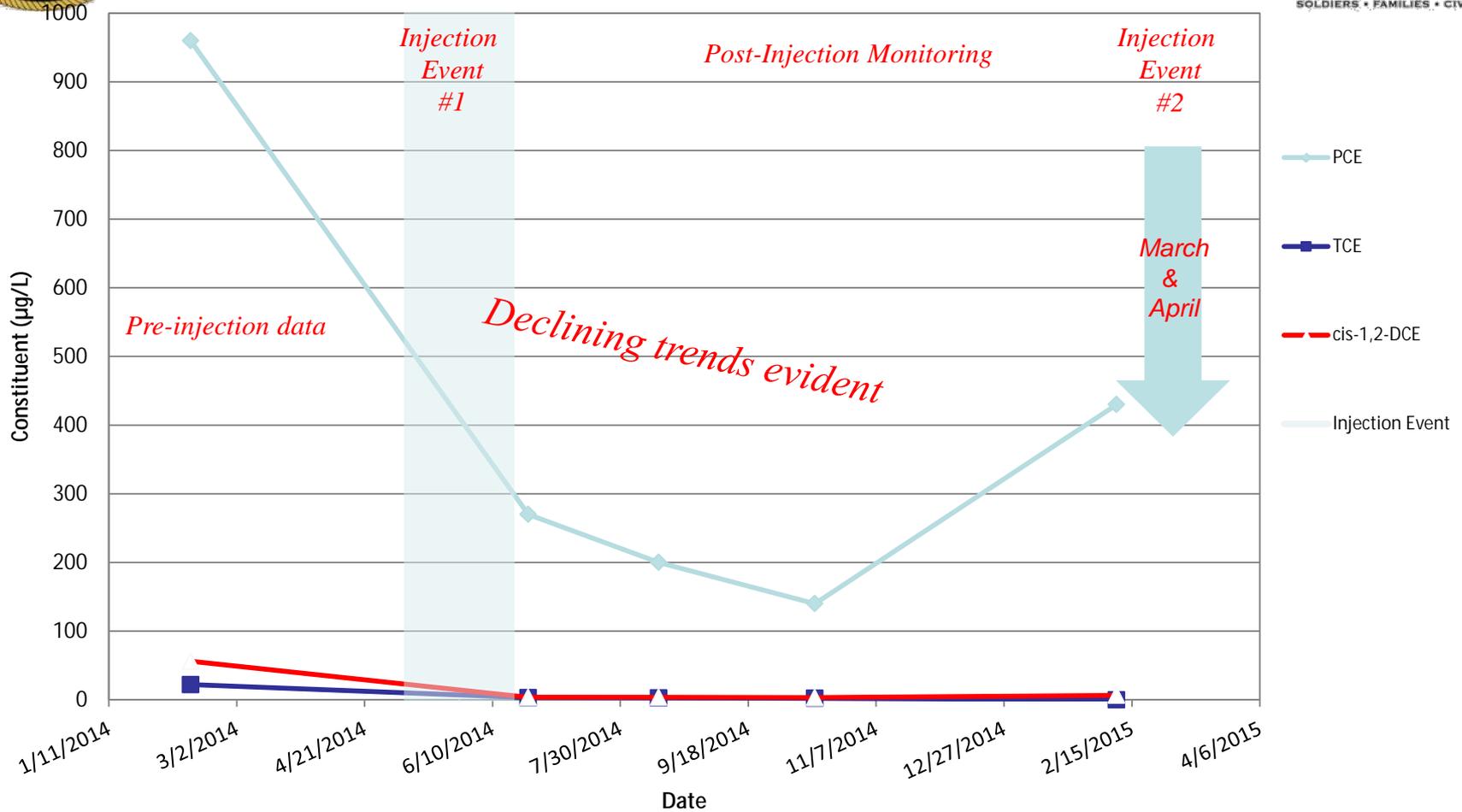


AOC 1 – Performance Summary

FMOU4-MW45



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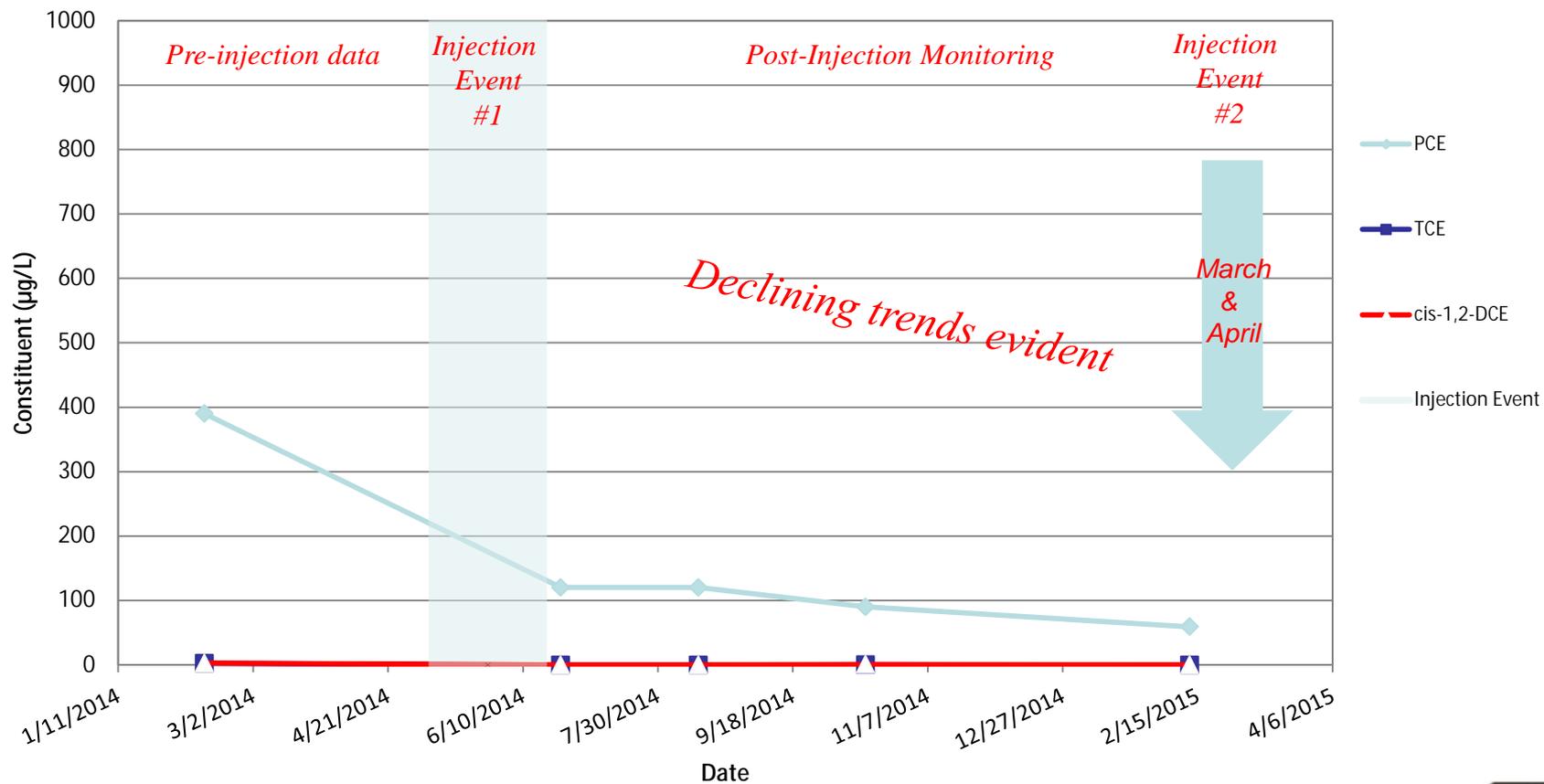




AOC 1 – Performance Summary



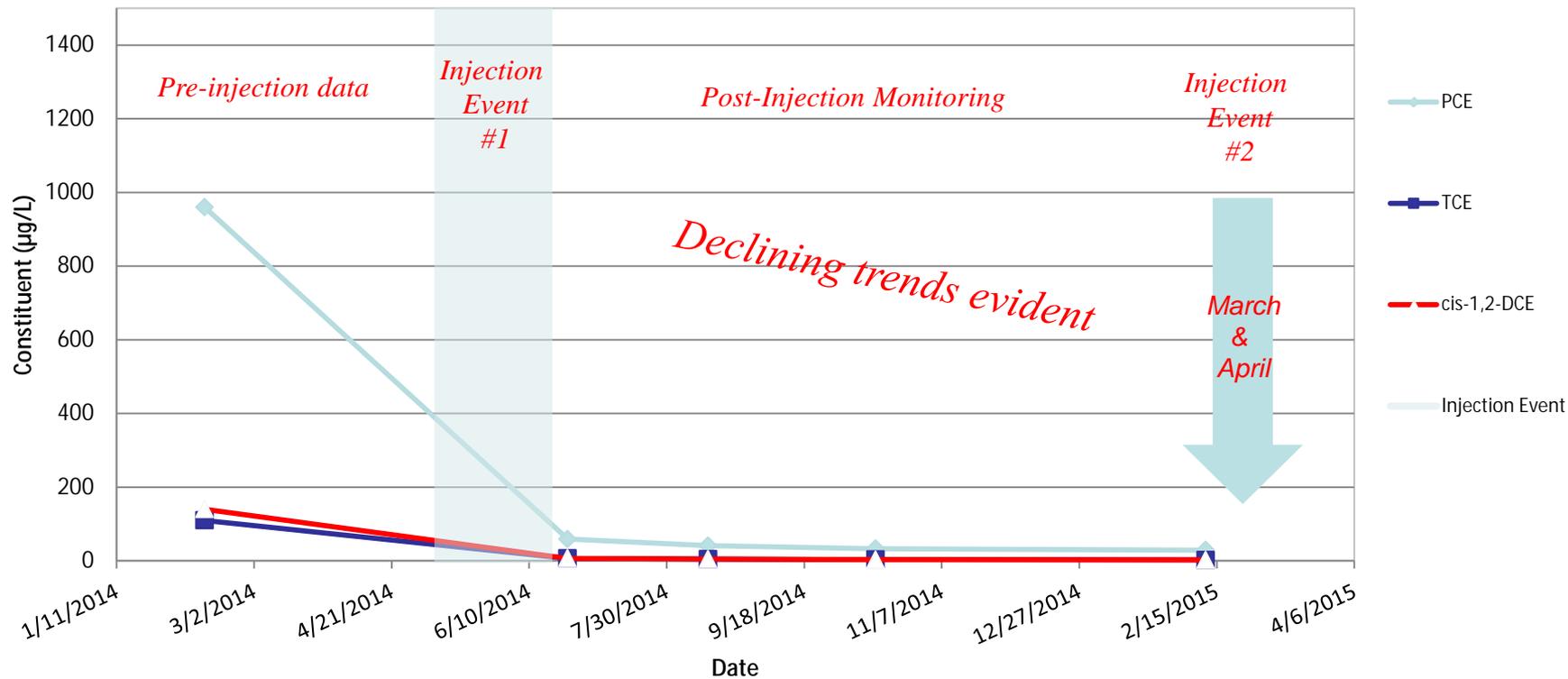
FMOU4-MW44





AOC 1 – Performance Summary

FGGM86-MW07

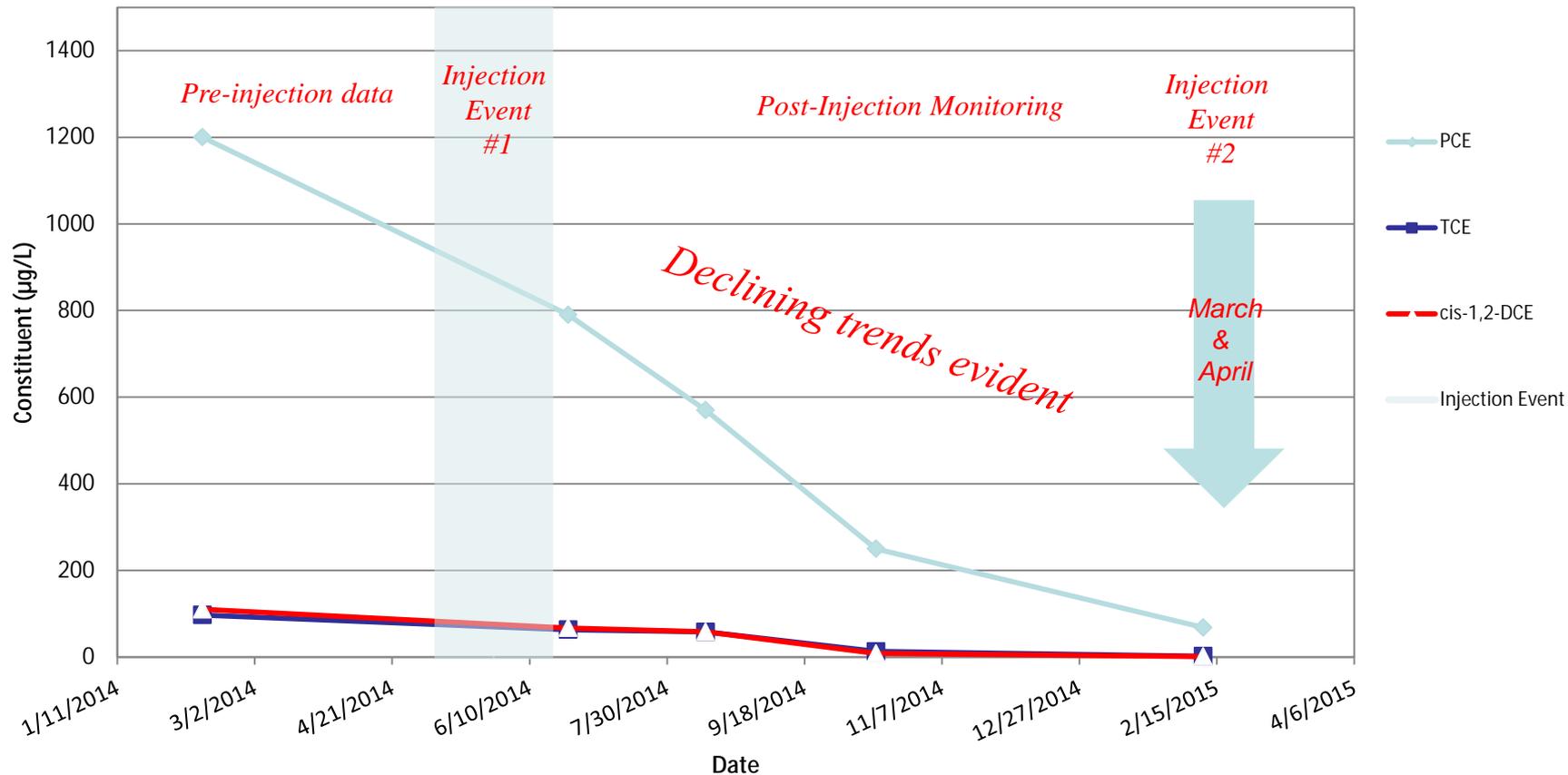




AOC 1 – Performance Summary



FGGM86-MW08

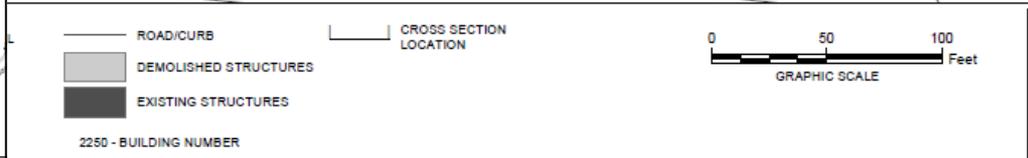
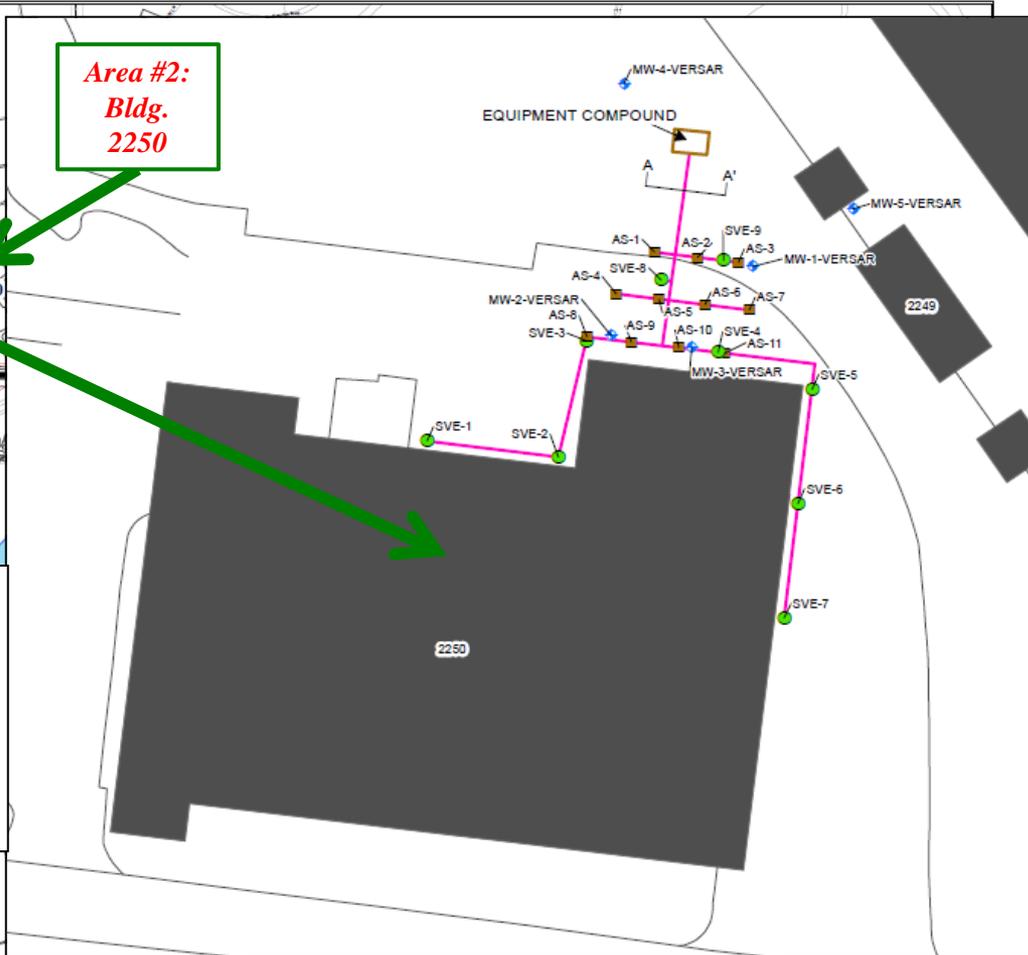
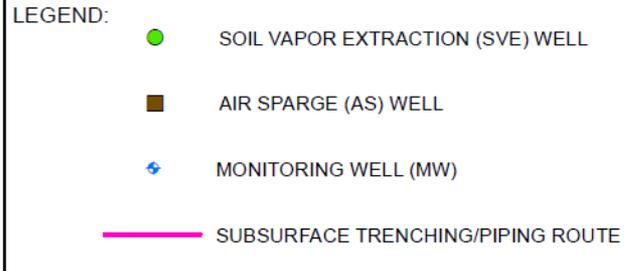
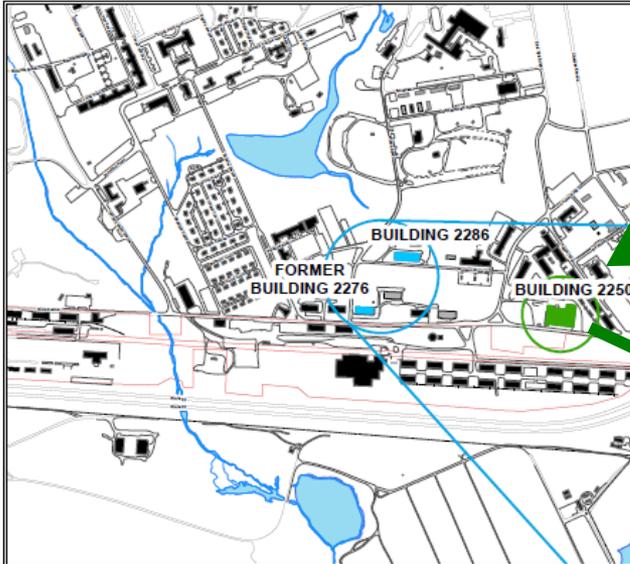




AOC 2 – Air Sparge / Soil Vapor Extraction (AS/SVE) System



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AOC 2 – Air Sparge / Soil Vapor Extraction (AS/SVE) System



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Completed activities

- Baseline groundwater sampling (February 2014)
 - AS/SVE system construction complete in March 2014.
 - AS/SVE system startup/shakedown March 2014.
- Quarterly Performance Monitoring (3 quarters in 2014)



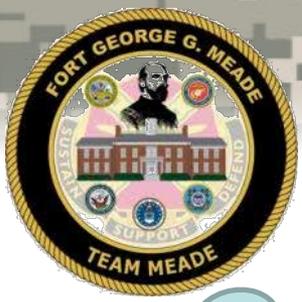
Recent Activities

- System operation & maintenance
- Quarterly Performance Monitoring (February 2015)



Future Activity

- Continued AS/SVE operation into 2015 with performance monitoring.

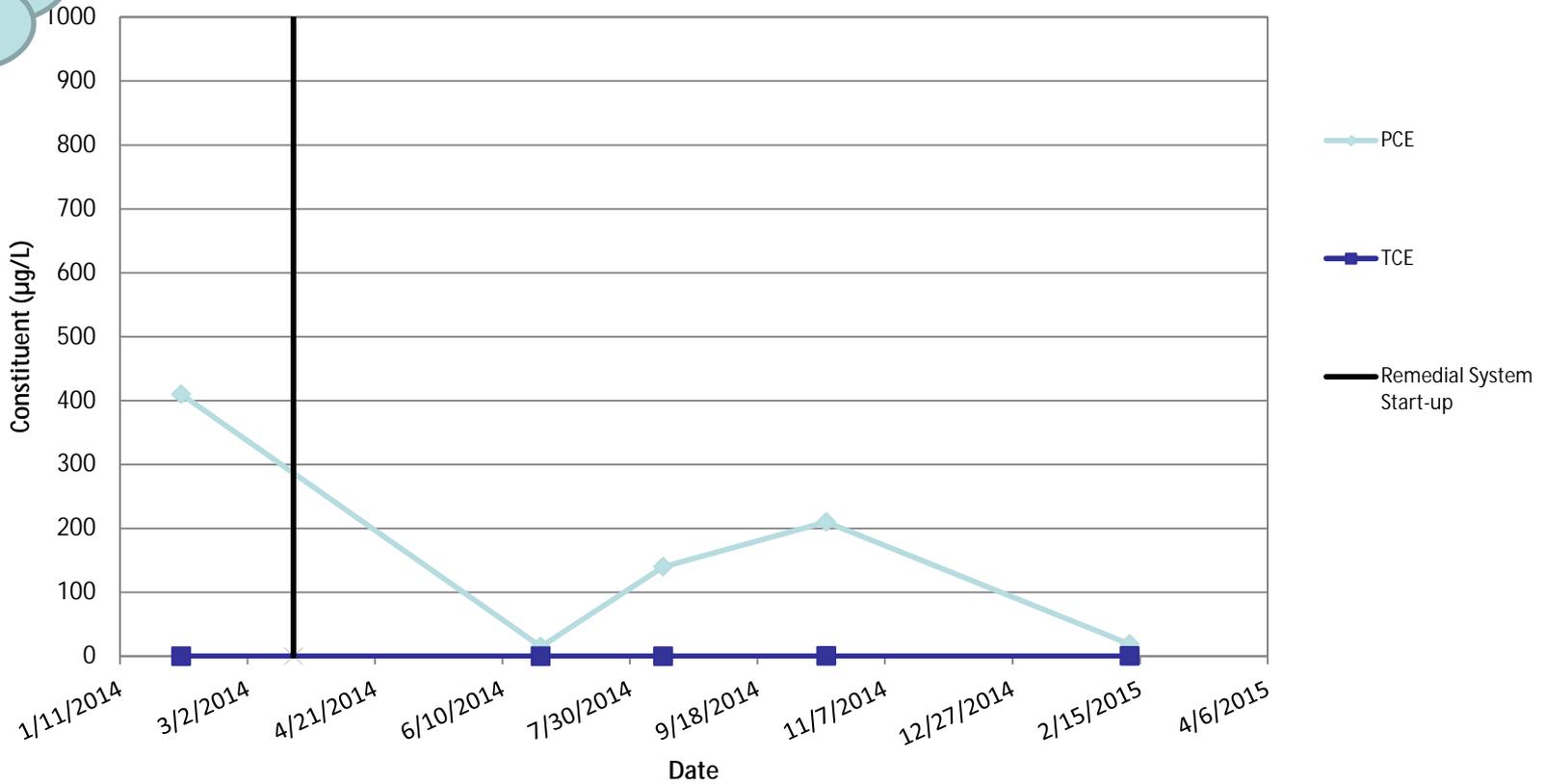


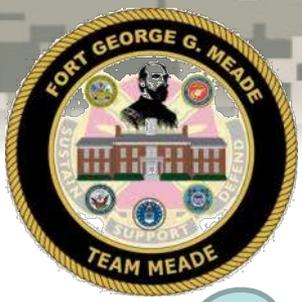
AOC 2 – Performance Summary



Historical concentrations as high as 1,000 ug/L in 2000

MW-1-VERSAR

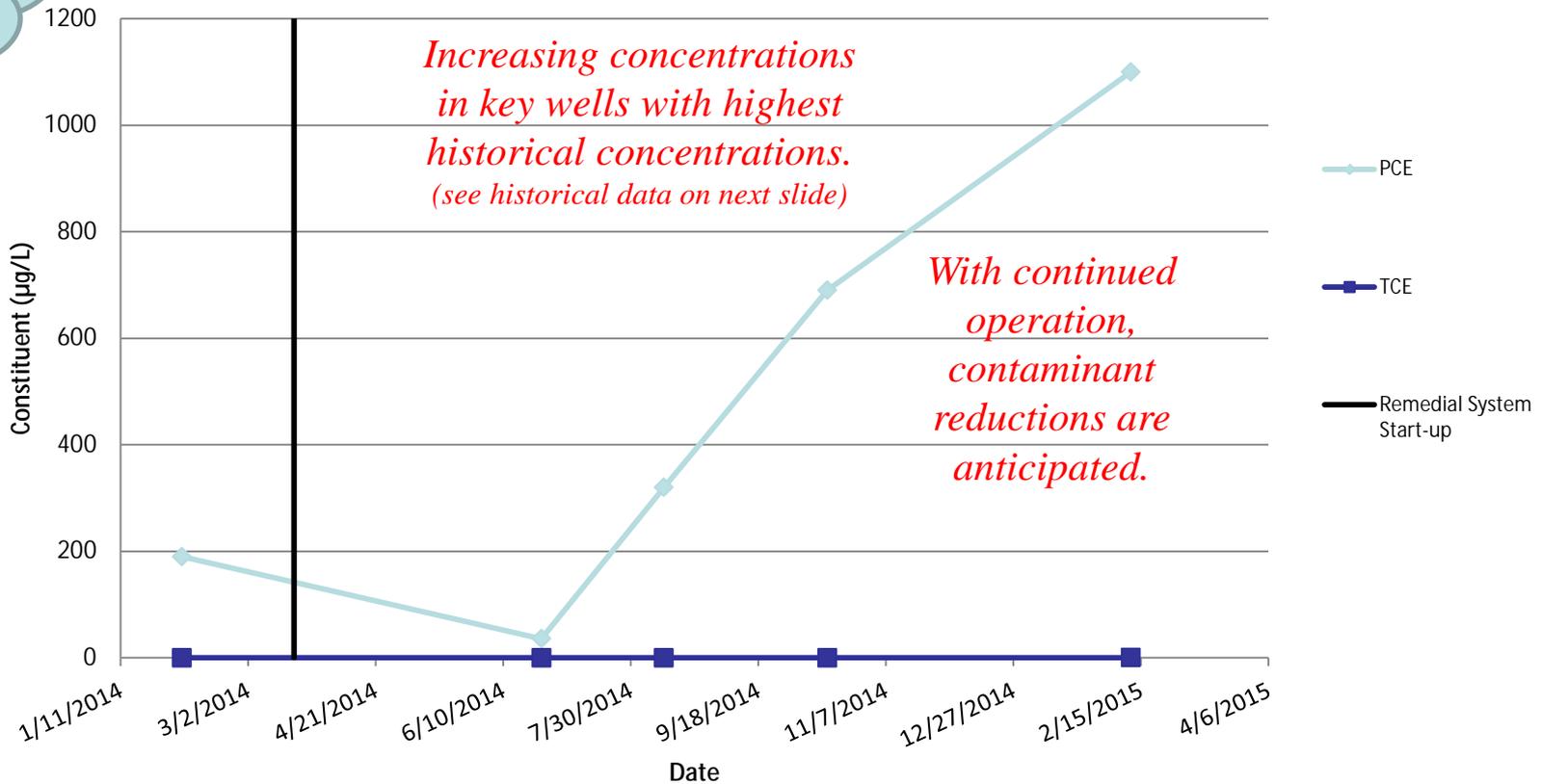




AOC 2 – Performance Summary

Historical concentrations as high as 45,000 ug/L in 1996

MW-2-VERSAR



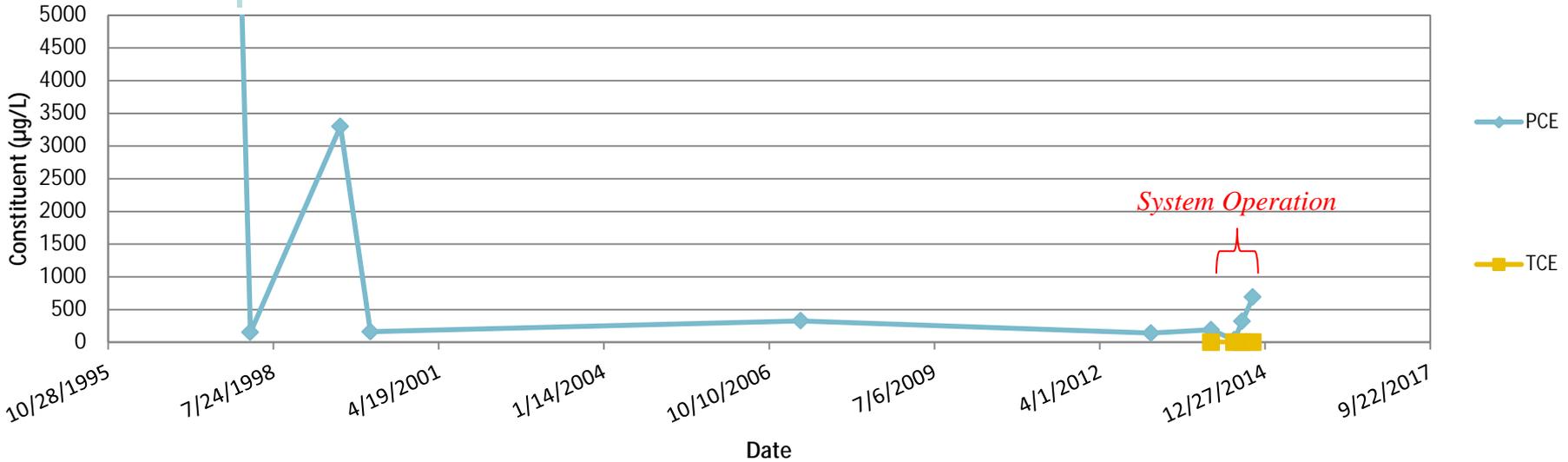


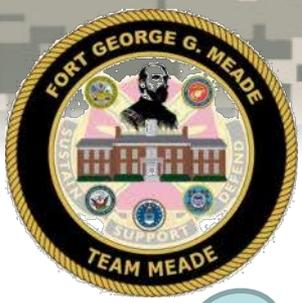
Historical Data

(to put current concentrations into perspective)

Highest detection off the chart in 1998!

MW-2-VERSAR



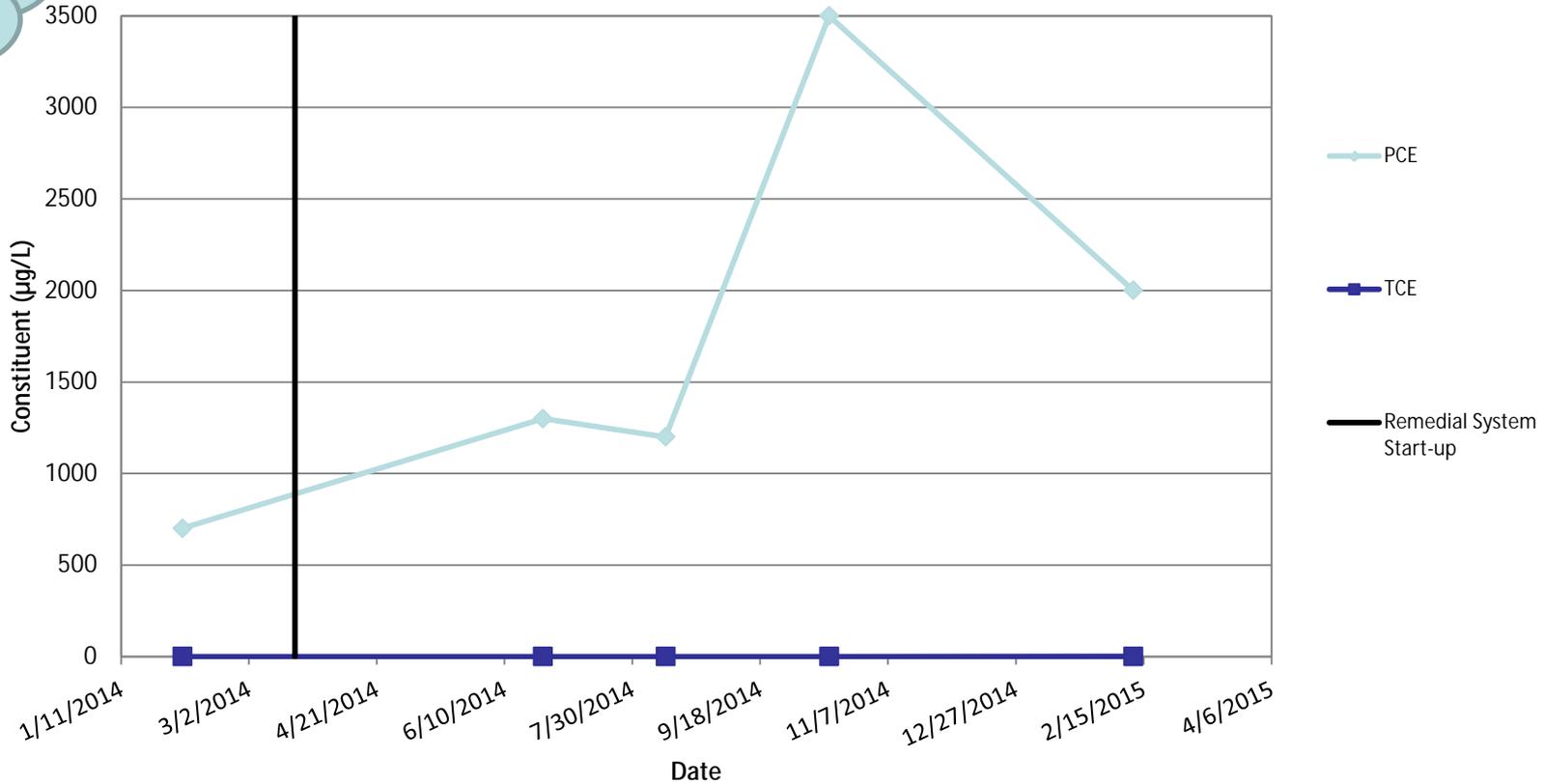


AOC 2 – Performance Summary



Historical concentrations as high as 8,400 ug/L in 1996

MW-3-VERSAR

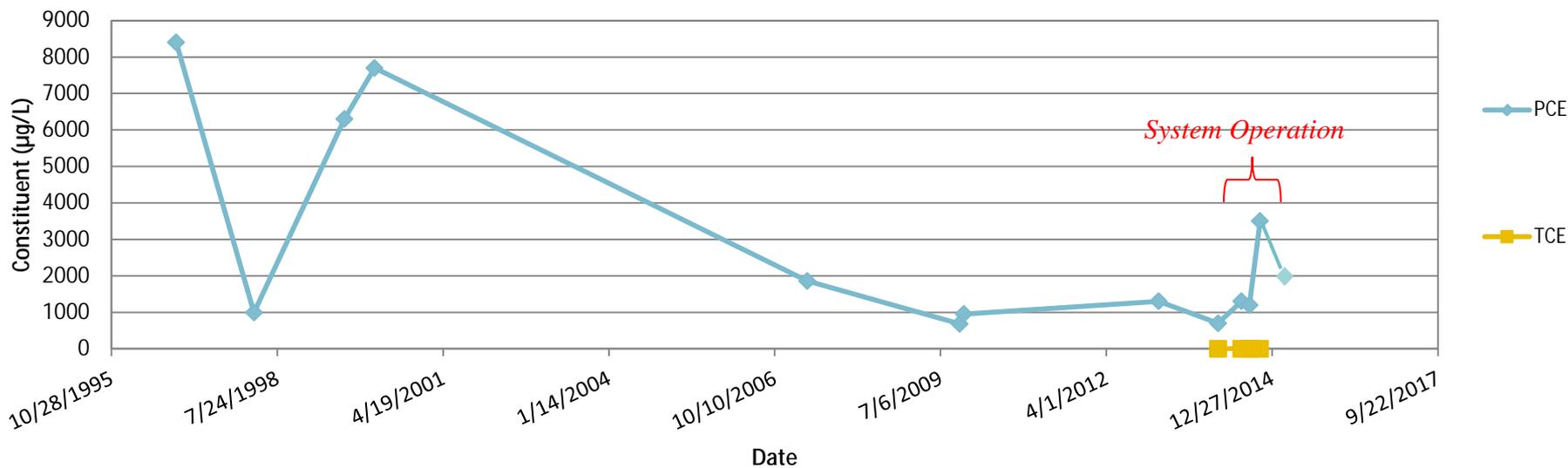




Historical Data

(to put current concentrations into perspective)

MW-3-VERSAR





AOC 3 – LPA Hydraulic Containment System



Completed activities

- HC system construction completed in March 2014.
 - Included 6 extraction wells, 4 injection wells, and 1 surface water point discharge location.
 - Included the installation of appx. 21,000 linear feet of subsurface pipe.
- System startup/shakedown completed in March 2014.
- Semi-Annual Groundwater Monitoring (August 2014).

Recent activities

- System operation & maintenance
- More than **80 million gallons** of groundwater extracted, treated, and reinjected to enhance contaminant flushing.

Future activities

- Continued operation with semi-annual sampling (Q2).

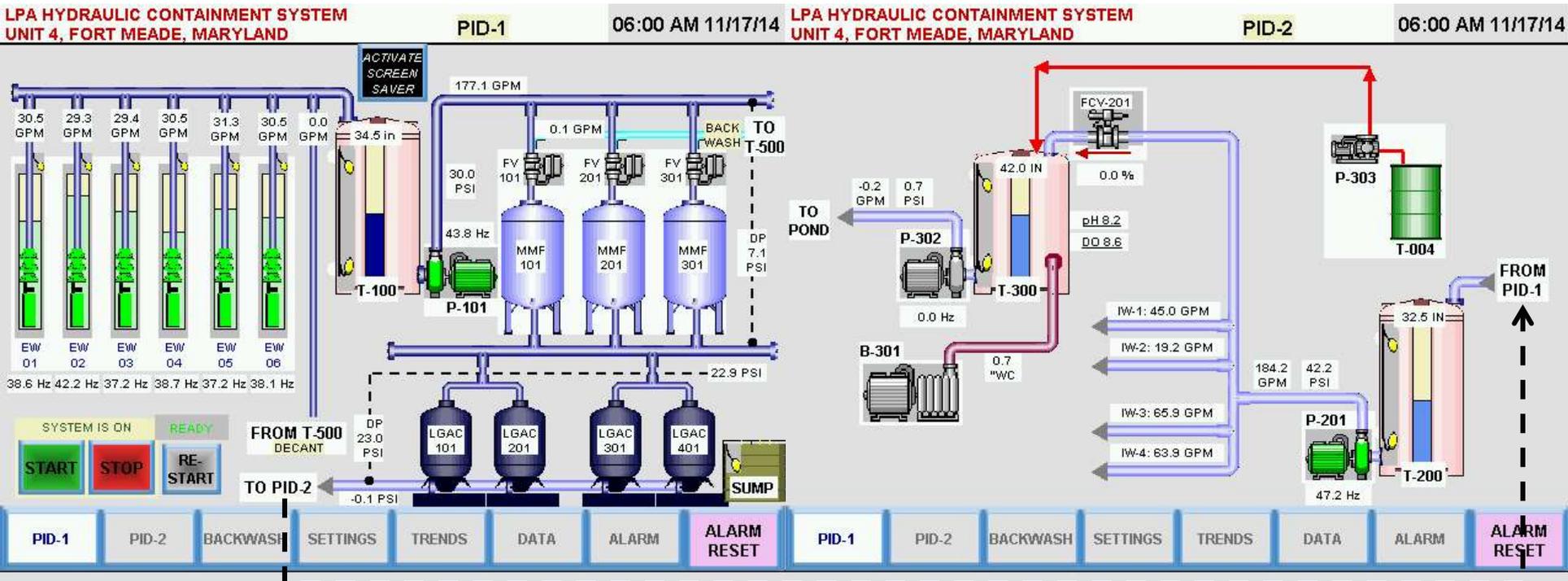




AOC 3 – Performance Summary Cont.



HC System Programmable Logic Controller Screen Captures





AOC 3 – Performance Summary



- The HC system is a long-term action to clean-up contaminated groundwater coming from upgradient OU-4 sources (e.g., Bldg. 2250, 2276, 2286) and reinject clean water to flush the downgradient aquifer over time. Groundwater modeling predicts a clean water front will reach the FGGM property boundary within 10 years.



- Future HC Activities:
Continued system operation with long-term groundwater monitoring. Updates to be provided at RAB meetings.



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Questions/Comments?



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