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MINUTES FROM THE 27 OCTOBER 2015 RESTORATION ADVISORY BOARD MEETING
NWIRP CALVERTON NY
3/30/2016
RESOLUTION CONSULTANTS

RESTORATION ADVISORY BOARD MEETING
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP), CALVERTON
CALVERTON COMMUNITY CENTER, CALVERTON, NEW YORK
TUESDAY, OCTOBER 27, 2015

The forty-third meeting of the Restoration Advisory Board (RAB) was held at the Calverton Community Center. Meeting attendees included representatives from the Navy (Joseph McCloud), New York State Department of Environmental Conservation (NYSDEC) (Henry Wilkie), Suffolk County Department of Economic Development and Planning (Andrew Freleng), Town of Riverhead (Drew Dillingham), RAB Community Members (Sid Bail, Lou Cork, Vincent Racaniello), Arcadis (Paul Martorano), Resolution Consultants (Robert Forstner, Michael Zobel), Tetra Tech (David Brayack), and H&S Environmental (Jen Good). The sign-in sheet is included as Attachment 1.

WELCOME AND AGENDA REVIEW

The Navy representative, Mr. Joseph McCloud, welcomed everyone to the RAB meeting and introduced the meeting agenda. The agenda for the meeting is included as Attachment 2. The Navy presentations are included in Attachment 3.

DISTRIBUTION AND APPROVAL OF MINUTES

Mr. McCloud asked whether the RAB members received the RAB meeting minutes from the April 2015 meeting, and if there were questions or comments on the minutes. No questions or comments were raised, and the minutes for the April 2015 RAB meeting were approved.

COMMUNITY UPDATE

Mr. Vincent Racaniello welcomed all attendees to the meeting and introduced himself as the new Community Co-Chair for the RAB.

TECHNICAL PROGRESS – GENERAL OVERVIEW OF INSTALLATION RESTORATION SITES AND SITE 2 GEOPHYSICAL INVESTIGATION UPDATE

Mr. McCloud then introduced the technical portion of the meeting, which consisted of presentations on the current activities at Sites 2, 6A/10, 7 and the Southern Area. Prior to beginning the site-specific presentations, Mr. Racaniello inquired as to the Navy's annual costs for the active remedial actions; Mr. McCloud indicated that 2015 costs for the Site 2 work were estimated at approximately $1.5 million, and costs for operation of the Fence Line Treatment System (FLTS) were about $240,000 (exclusive of the costs of a new extraction well to be installed). Other costs (including ongoing monitoring costs for Site 7 and the basewide monitoring program) were not available.

Mr. McCloud then provided an update on activities at Site 2. The presentation is included in Attachment 3. An overall timeline of the history of recent munitions response work at the site was provided, beginning with the discovery of 20-mm ammunition fragments during a soil investigation in 2010, and subsequent geophysical mapping conducted in 2010 and 2013 resulting in three removal actions from 2011 through 2012, 2014 and 2015 in order to address unexploded ordnance (UXO) and munitions and explosives of concern (MEC) issues.

Summaries of the various areas of excavation and quantities of MEC and Material Potentially Presenting an Explosive Hazard (MPPEH) handled during the 2012 and 2014 removal actions (identified as Phases II and III of the response, respectively) were presented. The most recent completed response action occurred between April and October 2014, and included munitions and environmental remedial activities. The munitions response operation used manual and mechanical screening to process approximately 4,100 cubic yards (CY) of soil. A total of 689 items classified as Material Designated as Safe (MDAS) were recovered and destroyed, and 323 items of MPPEH were destroyed in Phase III.

The combined results of digital geophysical mapping (DGM) investigations (including the original full-coverage survey conducted in 2010 [referred to as Phase I of the response] and a supplemental survey conducted in 2013) were presented. Mr. Racaniello inquired as to the technology used to identify the individual targets and saturated areas shown in the DGM output; Mr. David Brayack (Tetra Tech) responded, indicating that magnetometer responses are the basis for the DGM mapping.

Based on the results of the combined DGM output, the scope and schedule of the 2015 MEC response removal action was presented. The purpose of this action was to address the “margin” of the clearing in the northwest portion of Site 2, where the supplemental DGM investigation indicated the presence of potential MEC or MPPEH targets in forested areas that were not previously excavated. Portions of the margin area on Navy-owned property were to be excavated, screened and backfilled to a depth of 18 inches, while portions of the margin area outside of the Navy-owned property were to be excavated, screened and backfilled to a depth of 36 inches. Pictures of the ongoing action were shown, including illustrations of typical equipment, site layouts, and processing operations. Mr. McCloud noted that the pre-mobilization estimate was that about 10% of the material to be excavated would consist of “overs” (i.e., material larger than gravel-size particles that would not pass through the mechanical screener), but in practice the contractor was encountering approximately 35% overs.

The overall schedule and a summary of the work completed during the 2015 response action and upcoming activities were then presented. Mobilization occurred in June 2015, and mechanical excavation, screening and backfill took place from July through September 2015. Transportation and disposal of overs, MEC and MPPEH was ongoing in October 2015, as was site restoration. A total of 4,152 CY of soil

was excavated, screened and backfilled, 1,171 20 mm projectiles and one 3.5-inch practice rocket were removed and disposed of as MDAS, and a total of 11,980 pounds of recyclable metal was recovered. A feasibility study (FS), proposed remedial action plan and remedial design (RD) are tentatively scheduled for completion in 2016, a Record of Decision (ROD) is planned for 2017, and remedy construction is currently targeted for implementation in 2018.

Mr. Racaniello inquired as to the likely nature of the response. Mr. McCloud indicated that there are still many questions as to what might comprise a proper response, and that analysis in the FS is meant to address those questions. It was indicated that the contractor wasn't able to excavate as much as was planned in 2015 due to several issues (including the greater-than-expected quantity of overs) and that the FS will need to account for that. Mr. Brayack noted that an issue with residual munitions is that it is never certain everything was removed, and as a result a cover with land use controls (LUCs) would be the most likely action. Only five fragments recovered during the 2015 removal action were considered live, but nevertheless MEC and UXO issues remain a hazard due to the unknown residual material. Groundwater quality issues remain and the FS will seek to address that issue as well. However, with drums containing product having been removed during the 2014 response action, it is believed that the source is now eliminated and continued monitoring will be undertaken to see how groundwater quality responds. Mr. Racaniello asked if a cover might be installed before a ROD is completed. Mr. Brayack indicated this would not likely occur; the town has set aside this area for pine barren conservation in its development plan, so most likely the MEC/UXO-impacted areas would be fenced off but the remainder of the site would continue to exist as a pine barren.

TECHNICAL PROGRESS – FENCE-LINE TREATMENT SYSTEM UPDATE

Ms. Jen Good (H&S Environmental) provided an update on the operation of the Fence-Line Treatment System (FLTS). The presentation is included in Attachment 3. The FLTS was constructed pursuant to a ROD for Site 6A/10B that was issued in May 2012. The selected remedy calls for LUCs and a system to extract, treat and infiltrate groundwater in order to achieve the remedial goal of containing the spread of a plume of volatile organic compounds (VOCs) leaving the site in groundwater.

The FLTS system employs two extraction wells, air stripping equipment, and two infiltration galleries in order to control the VOC plume. Construction started in October 2012 and was completed in October 2013, and system start-up occurred on October 8, 2013.

Operating statistics and sampling data were then presented, covering a 24-month period from system startup through September 2015. System uptime and flow rates were lower in the first four months due to issues associated with system startup, but since February 2014 uptime typically exceeded 85 percent. Average influent flowrates exceeded 78 gallons per minute (gpm), and in excess of 3 million gallons of

water were treated monthly through February 2015. The system operated at a reduced rate beginning in March 2015, initially due to a seasonally-elevated groundwater table and subsequently due to reduced output from extraction well EW-2. Since May 2015, average influent flow rates declined on a monthly basis from 77.2 gpm to 68.6 gpm in September 2015.

Influent contaminant concentration trends were then presented. Generally, a downward trend has been observed since the system began operation. Based on the influent data, it is estimated that the system is currently removing less than a half pound of VOCs on a monthly basis, and the cumulative removal through September 2015 was estimated at 47.93 pounds. The FLTS maintains continued compliance with all discharge goals, including effluent levels less than the relevant New York State Department of Health (NYSDOH) Maximum Contaminant Levels (MCLs), and VOC removal efficiency exceeds 99 percent.

Due to continuing decreases in yield from extraction well EW-2, a new extraction well approximately 100 feet north of EW-2 is planned for November 2015. Mr. Racaniello asked if the location of the new well to the north would affect operation of the system as a whole. Mr. Brayack indicated that based on the capture zone of the system for the existing extraction well locations, the more northerly location of the new extraction well may help capture additional VOC inventory if the plume has shifted to east, as suggested by monitoring data. It is also hoped that the new location will avoid an apparent pocket of soils with high iron content, as iron fouling is being considered as a potential cause of the decreasing yield at EW-2.

TECHNICAL PROGRESS – SITE 7 REMEDIAL ACTION UPDATE

Ms. Good provided an update on the status of Site 7 (the former Fuel Depot). The presentation is included in Attachment 3. A summary of the site history was provided first, noting that an air sparging / soil-vapor extraction (AS/SVE) system started operation on a pilot scale in 2005 and at full scale in 2006, and was operated seasonally (April to December) through November 2013. Modifications were made over time to improve performance, but the system reached the end of its functional life, with a major blower overhaul required to continue operation. The system was shut down in November 2013 and routine monitoring began according to the “Performance and Shutdown Evaluation” plan.

A summary of the historic tank areas, the layout of injection, monitoring and extraction wells, and system performance was then shown, including a figure depicting the extent of the contaminant plume shrinking over time. Routine sampling activities conducted since system shutdown (including quarterly sampling of seven wells) were then summarized, and contaminant trends were shown. It was noted that groundwater sampling will continue on a quarterly basis through December 2015, and then on a semi-annual basis through 2016.

Mr. Robert Forstner (Resolution Consultants) then described the decommissioning of the AS/SVE system and the path forward for the site. The demolition contractor mobilized to the site on August 10, 2015, and completed removal of piping and abandonment of wells during the first week of site work. The equipment within the fabric structure was removed and all material was decontaminated and recycled or disposed. The fabric structure itself was repurposed by the manufacturer for reuse by a museum. Photographs indicating the progress of the work, including the final site condition, were shown. A construction completion report from the contractor was pending. Regarding future work, additional action in the form of in-situ remediation was considered likely. Further analysis of options and contracting were underway, with implementation targeted for 2016.

TECHNICAL PROGRESS – 2015 GROUNDWATER INVESTIGATION

Mr. Forstner provided an update on a presentation on the status of the 2015 groundwater investigation, including preliminary results from supplemental samples collected in July 2015 for various purposes, and the springtime Peconic River Area samples collected in April 2015. The presentation is included in Attachment 3.

The supplemental sampling completed in July 2015 included two locations at Site 2 that were not sampled in September 2014, additional samples at Site 6A to monitor an observed upward trend in VOC concentrations in the former source area, and additional sampling in the Southern Area in support of siting the replacement extraction well for the FLTS. Updated tag maps for the areas of supplemental sampling were presented.

The results at Site 2 show an increase in VOC concentrations at FT-MW09I, near the clearing where several drums containing product were removed during the 2014 response action. Trichloroethene results in this area have been above the MCL since the well was first installed in 2013, but are rising and reached 15 µg/L (three times the MCL of 5 µg/L) in July 2015. Results for 1,1,1-trichloroethane and 1,1-dichloroethane (13 and 47 µg/L, respectively) also exceeded MCLs (5 µg/L for both compounds) at this location for the first time in July 2015. However, at FT-MW10I (near the property line along Grumman Boulevard), VOC concentrations remained below MCLs.

Results at the Site 6A Source Area indicate that a recent increasing trend in VOC concentrations may have levelled off or reversed at the western portion of the source area, but concentrations were still increasing at the eastern end. Concentrations of ethylbenzene and isopropyl benzene (12 and 7.9 µg/L, respectively) to the west at FC-MW02SR1 in September 2014 exceeded MCLs (5 µg/L for both compounds), but in July 2015 these concentrations decreased to 3.0 µg/L for ethylbenzene (below the MCL) and 5.5 µg/L for isopropyl benzene (nominally above the MCL). Concentrations to the east at FC-MW03SR1 increased for several VOCs, and six compounds (1,1-dichloroethene, 1,1-dichlorethane,

ethylbenzene, isopropyl benzene, naphthalene and xylenes) exceeded MCLs (5 µg/L for all compounds), with concentrations of ethylbenzene and naphthalene (150 and 140 µg/L, respectively) particularly notable.

Supplemental samples were collected from three locations in the Southern Area for use in optimizing the location of the new FLTS extraction well. Piezometers SA-PZ179I, SA-PZ180I and SA-PZ181I were sampled for the first time in July 2015 (previously, these locations were used for gauging purposes only to evaluate the capture zone of the FLTS). Although VOCs were detected at SA-PZ181I (the northernmost of the three locations), none exceeded their MCL. VOC concentrations at the other two locations exceeded MCLs for at least three VOCs. At SA-PZ180I, VOCs exceeding MCLs included 1,1,1-trichloroethane (5.8 µg/L), 1,1-dichloroethane (38 µg/L) and chloroethane (10 µg/L). At SA-PZ179I, VOCs exceeding MCLs included 1,1,1-trichloroethane (21 µg/L), 1,1-dichloroethane (130 µg/L), 1,1-dichloroethene (8.4 µg/L) and chloroethane (28 µg/L). Based on the results of these supplemental samples, it was concluded that locating the replacement extraction well north of the existing EW-2 would optimize VOC recovery and treatment.

The preliminary results for the springtime component of the basewide monitoring program were also presented. The springtime component of this program includes the collection of surface water, sediment and porewater samples from locations within the Peconic River. The surface water and sediment samples are all co-located at four locations. The porewater samples are collected from existing piezometers in the northern bank of the Peconic River; two of these locations are co-located with a surface water/sediment sampling location, and the other two piezometers are located elsewhere along the bank.

Results from the April 2015 sampling in the Peconic River were generally consistent with results from prior years. VOCs were detected in all four surface water samples and two porewater samples, but none of the detected VOC concentrations exceeded their corresponding benchmark values established in the Site 6A/Southern Area RD. VOCs were also detected in three of the sediment samples; however, there are no benchmarks established in the RD for VOC concentrations in sediment. (NB – As noted at the meeting, an incorrect map was included in the handouts that did not include the April 2015 surface water, sediment and porewater data discussed above; the corrected map is included in Attachment 3.)

GENERAL DISCUSSION

Following completion of the formal presentations, an opportunity for further discussion of the progress at the site in general was provided. Regarding the FLTS and the new extraction well, Mr. Racaniello asked if EW-2 would go off-line once the new well was installed. Mr. Brayack responded, indicating that EW-2 would remain in place; since the new well will be farther away from the FLTS building than EW-2, it will

be connected via EW-2 and valving will be installed in order to regulate the source of flow in the line connecting the FLTS to EW-2 and the new extraction well.

CLOSING REMARKS

Mr. McCloud thanked the attendees for their participation. A tentative date was selected for the next RAB meeting in April 2016, to be confirmed pending identification of the meeting location in the event the Calverton Community Center is not available. The final date and location will be confirmed and communicated about one month prior to the meeting. The meeting was then adjourned.

ATTACHMENT 1

OCTOBER 27, 2015 RAB MEETING SIGN-IN SHEET

43rd RAB Meeting for NWIRP Calverton
October 27, 2015
Sign-in List

Name (Print)	Address and/or email if interested in being on mailing list	Affiliation	How did you hear about the meeting?
Robert Forstner		Resolution Consultants	
JOE McCLOUD		NAVFAC	
HENRY WILKIE		NYSDEC	
Andy Fielenz		SCDEDP	
Lou Cork		R.A.B.	
Mike Zobel		Res Con	
Dave Bragdon		Tetra Tech	
Jen Good		H+S	
Vincent Ra[illegible]		RAB	
Joel Bard		Wading River Civic	
Paul Marterano	pmarterano@arcadis.com	Arcadis	
Drew Dillingham	dillingham@townofriverhead.ny.gov	TOR	

ATTACHMENT 2

OCTOBER 27, 2015 RAB MEETING AGENDA

Agenda

Restoration Advisory Board
Naval Weapons Industrial Reserve Plant Calverton

October 27, 2015
Calverton Community Center, Calverton NY
7:00 p.m.

Welcome and Agenda Review
Joseph McCloud, NAVFAC Mid-Atlantic

Distribution of Minutes
All Members

Community Update
Vincent Racaniello, RAB Co-chair

Technical Progress

General Overview of ER Sites
Joseph McCloud, NAVFAC Mid-Atlantic

Site 2 Munitions Response Update
Joseph McCloud, NAVFAC Mid-Atlantic

Fence Line Treatment System Update
Jen Good PG, H&S Environmental

Site 7 Remedial Action Update
Jen Good PG, H&S Environmental

2015 Sampling Update
Robert Forstner PE, Resolution Consultants

Closing Remarks
Joseph McCloud, NAVFAC Mid-Atlantic

Presenters will be available after the program for questions.

ATTACHMENT 3

NAVY PRESENTATIONS – OCTOBER 27, 2015 RAB MEETING

RESTORATION ADVISORY BOARD MEETING

NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) CALVERTON, NEW YORK

October 27, 2015

General Overview of ER Sites

- **Sitewide**
  - –2015 annual sampling program completed in May & September
- **Site 2**
  - –Additional excavation completed in 2014
  - –Additional MEC work ongoing through summer/fall 2015
- **Site 6A/10B/Southern Area**
  - –Fence-line system construction completed and online October 2013
    - Replacement extraction well installation planned for November 2015
  - –OU3 ROD RD completed
- **Site 7**
  - –AS/SVE system shutdown for 2014 & 2015; monitoring ongoing

SITE 2 (FIRE TRAINING AREA) MUNITIONS RESPONSE

October 2015 Restoration Advisory Board

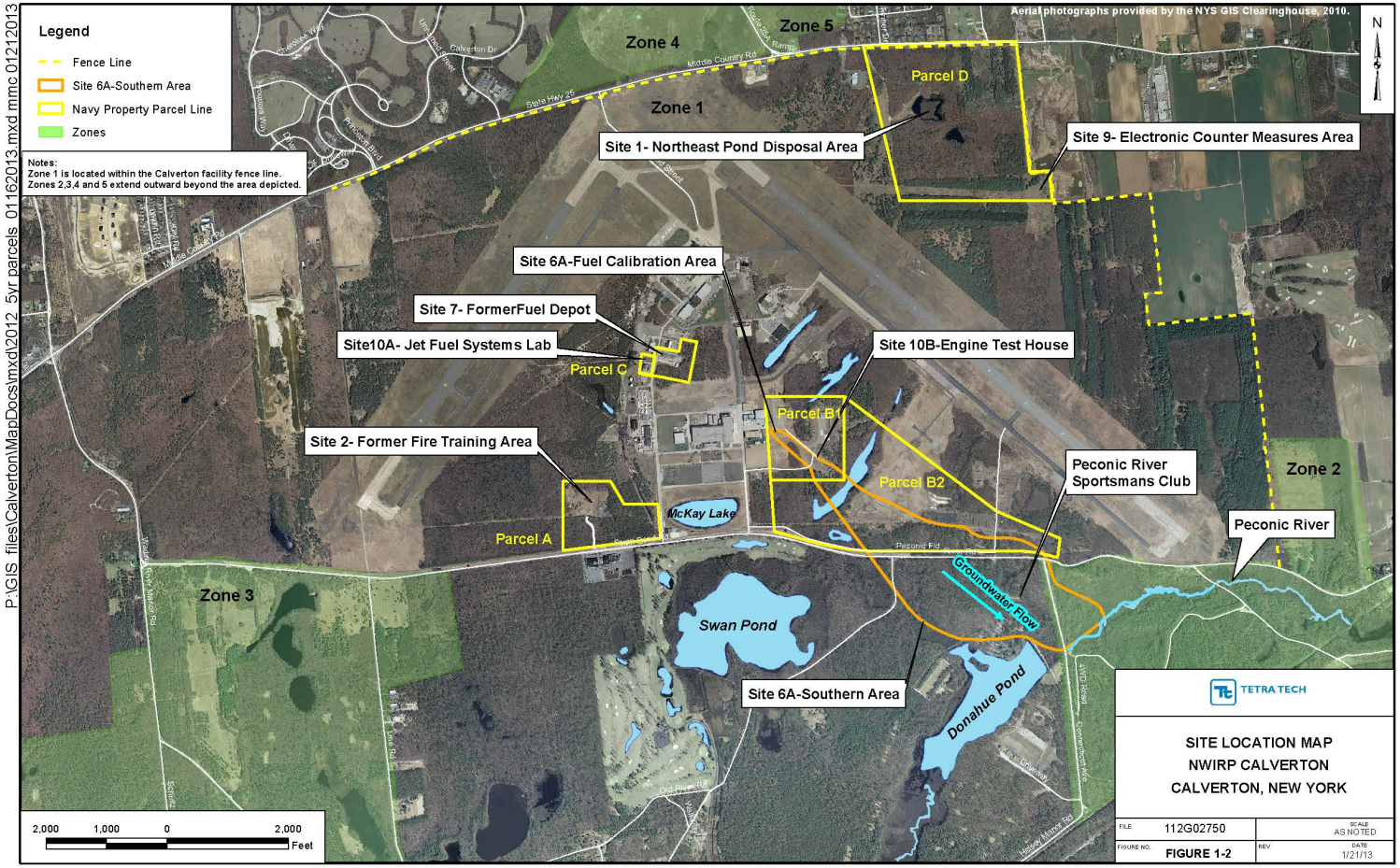
NWIRP CALVERTON, NEW YORK

October 27, 2015

Site 2 Munitions Response Outline

- **Site 2 Location**
- **Munitions Response Actions at Site 2 Overview**
- **2015 Munitions Response Action**
  - Progress to date
  - Path forward

Site 2 Location

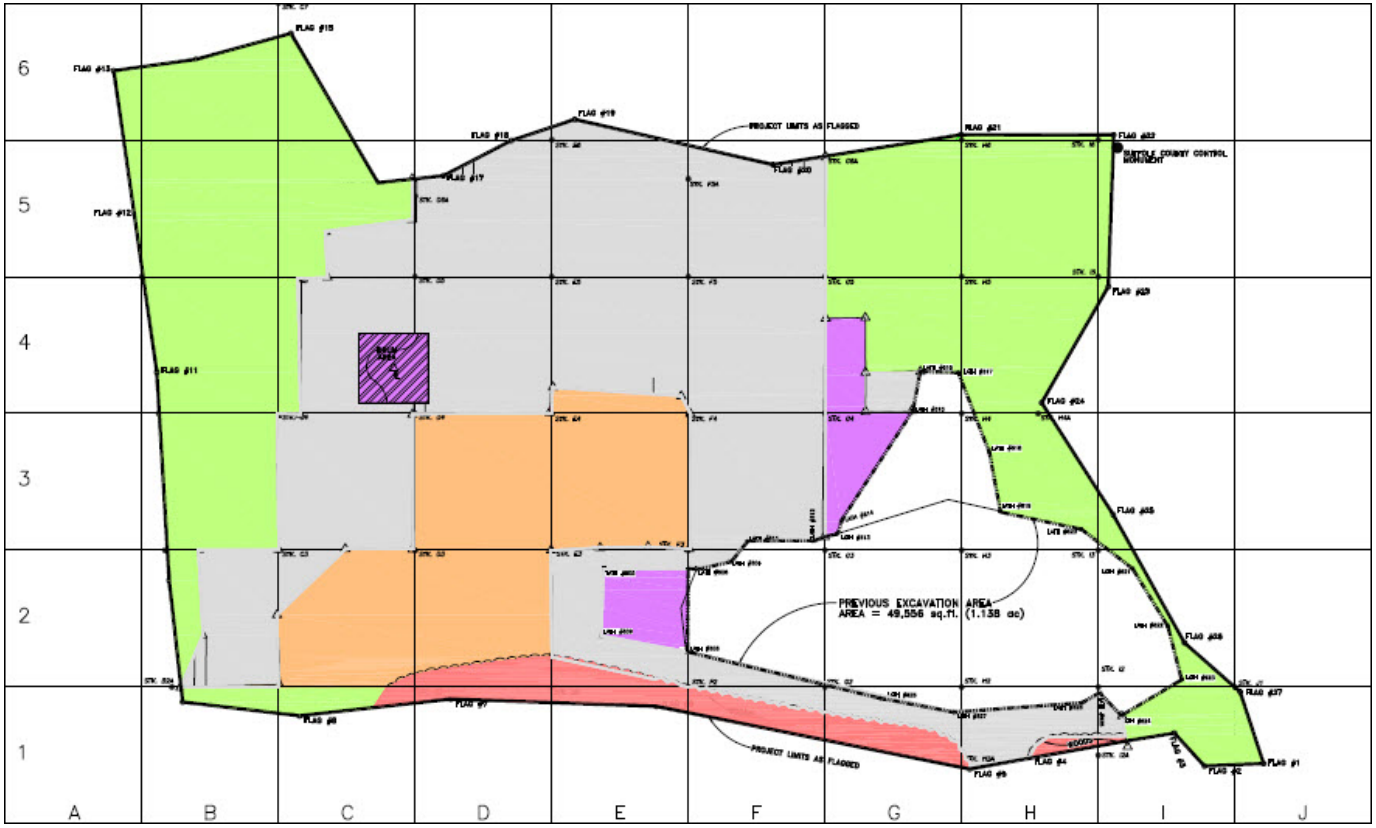


Site 2 Location

Site 2 Munitions Response - Background

- **Discovery of 20mm fragments during 2010 soil investigation**
- **Phase I Digital Geophysical Mapping (2010)**
  - –Identified 2,438 subsurface anomalies
    - 1,306 located in Saturated Response Area (SRA)
  - –Explosive Safety Submission submitted (2011)
    - (Amendment 001 approved 2013, Amendment 002 approved 2015)
- **Phase II (May 2011 to Nov 2012)**
  - –Manual/mechanical excavation, screening and backfill
    - 6.9 acres approximately 12,500 cy^3
- **Supplemental DGM survey (2013)**
- **Phase III (April 2014 to Oct 2014)**
  - – Remedial Action
    - Excavated potentially PCB- and petroleum-impacted soil (Grids C4, G4, G3, and E2)
  - – Manual/mechanical excavation screening & backfill of 4,100 cy^3 soil

Site 2 Phase II and III Excavation Area



AREA = 2.07 ACRES
SUBSURFACE MANUAL EXCAVATION OF ANOMALIES COMPLETED TO DEPTH OF NON-DETECTION. RISK CODE NEGLIGIBLE

AREA = 0.86 ACRES
SUBSURFACE MECHANICAL EXCAVATION OF ANOMALIES COMPLETED TO AVERAGE DEPTH OF 18-INCHES BGS, RISK CODE NEGLIGIBLE.

AREA = 2.39 ACRES
SUBSURFACE MECHANICAL EXCAVATION OF ANOMALIES COMPLETED TO AVERAGE DEPTH OF 18-INCHES BGS, GREATER THAN AN AVERAGE OF 18 INCHES BGS TO DEPTHS OF NON-DETECTION REMAIN UNKNOWN AND UNDEFINED, RISK CODE BI1A OR "CRITICAL".

AREA = 0.205 ACRES
PHASE II AND PHASE III PLANNED EXCAVATION AREAS TO ADDRESS ENVIRONMENTAL COCs.

Site 2 Phase II and III Results

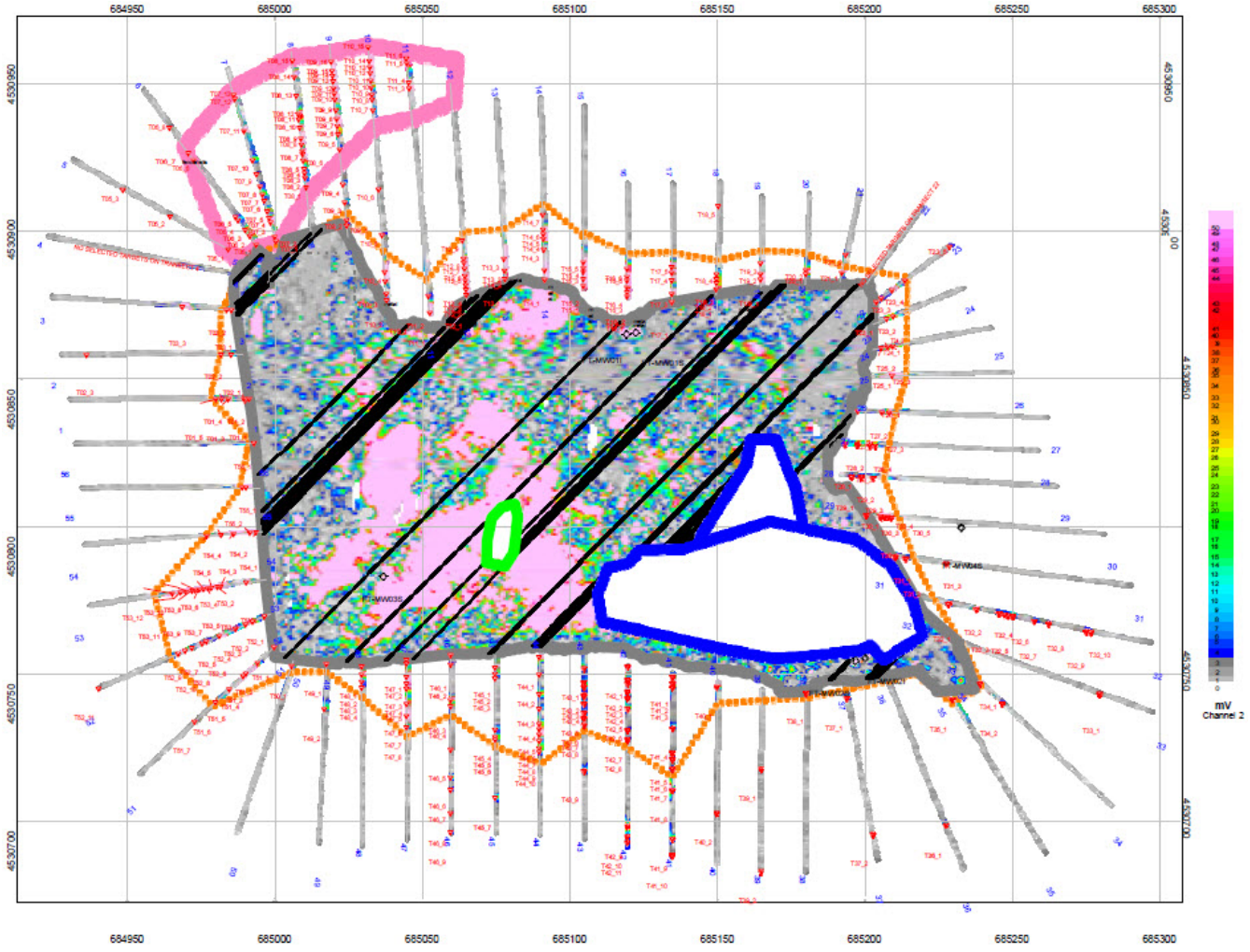
MEC/MPPEH Discovered during 2012 Phase II Remedial Action and Munitions Response Action

Category	Item	Quantity	Disposition
MEC	20-mm M56A4 HE Projectiles	2	Explosive Counter Charge
MEC	20-mm M97 HEI Projectiles	2	Explosive Counter Charge
MPPEH	20-mm Projectiles or Pieces of Projectiles (Nomenclatures non-identifiable)	17,006	Explosive Counter Charge
MDAS	.50 caliber armor piercing (AP) projectiles	59	Thermal Flashing

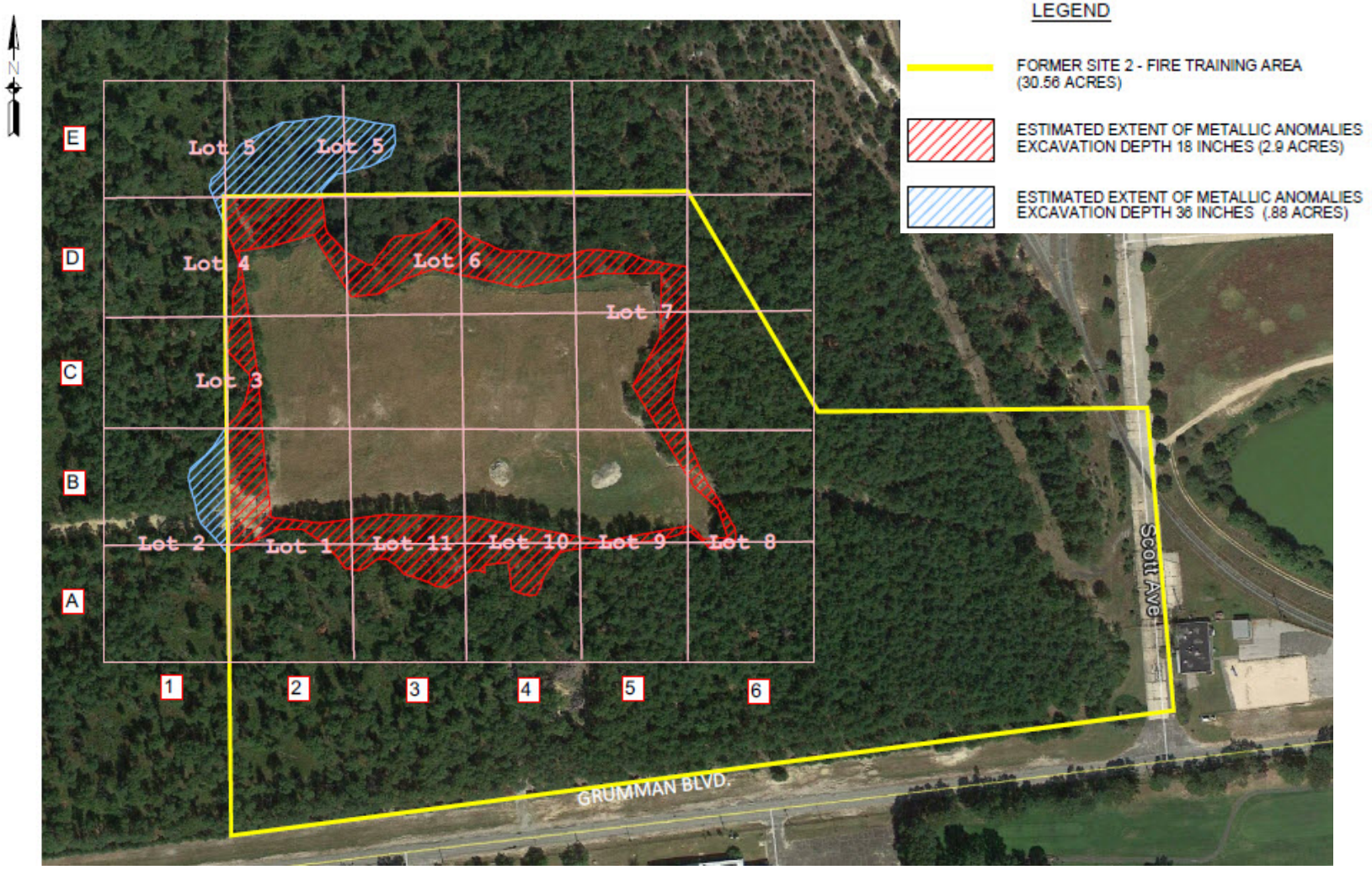
MEC/MPPEH Discovered during 2014 Phase III Remedial Action and Munitions Response Action

Category	Item	Quantity	Disposition
MPPEH	20-mm Projectiles or Pieces of Projectiles (Nomenclatures non-identifiable)	323	Explosive Counter Charge
MDAS	20-mm rounds	689	Thermal Flashing

Site 2 Supplemental DGM Survey (2013)



Site 2 Munitions Response (2015)



Site 2 Munitions Response (2015) Photo Log

Overs - Material > 3/4" spread and screened by UXO Tech

Site 2 Munitions Response (2015)

- **Current Project Schedule**
  - –Mobilization (June 2015)
  - –Mechanical soil excavation, screening & backfill (July – Sept 2015)
  - –Transportation and disposal (October 2015)
  - –Site restoration (October 2015)
  - –Demobilize (November 2015)
  - –Draft Construction Closeout Report
- **Summary**
  - –4,152 yd^3 of soil excavated, screened & backfilled
  - –1,171 20mm projectiles (MDAS)
  - –One 3.5” practice rocket fragment
  - –11,980 lbs recyclable metal
- **Future Work**
  - –Feasibility Study/PRAP/RD (2016)
  - –ROD (2017)
  - –Remedy construction (2018)

SITE 6A - SOUTHERN AREA FENCE LINE GROUNDWATER EXTRACTION TREATMENT SYSTEM

October 2015 Restoration Advisory Board

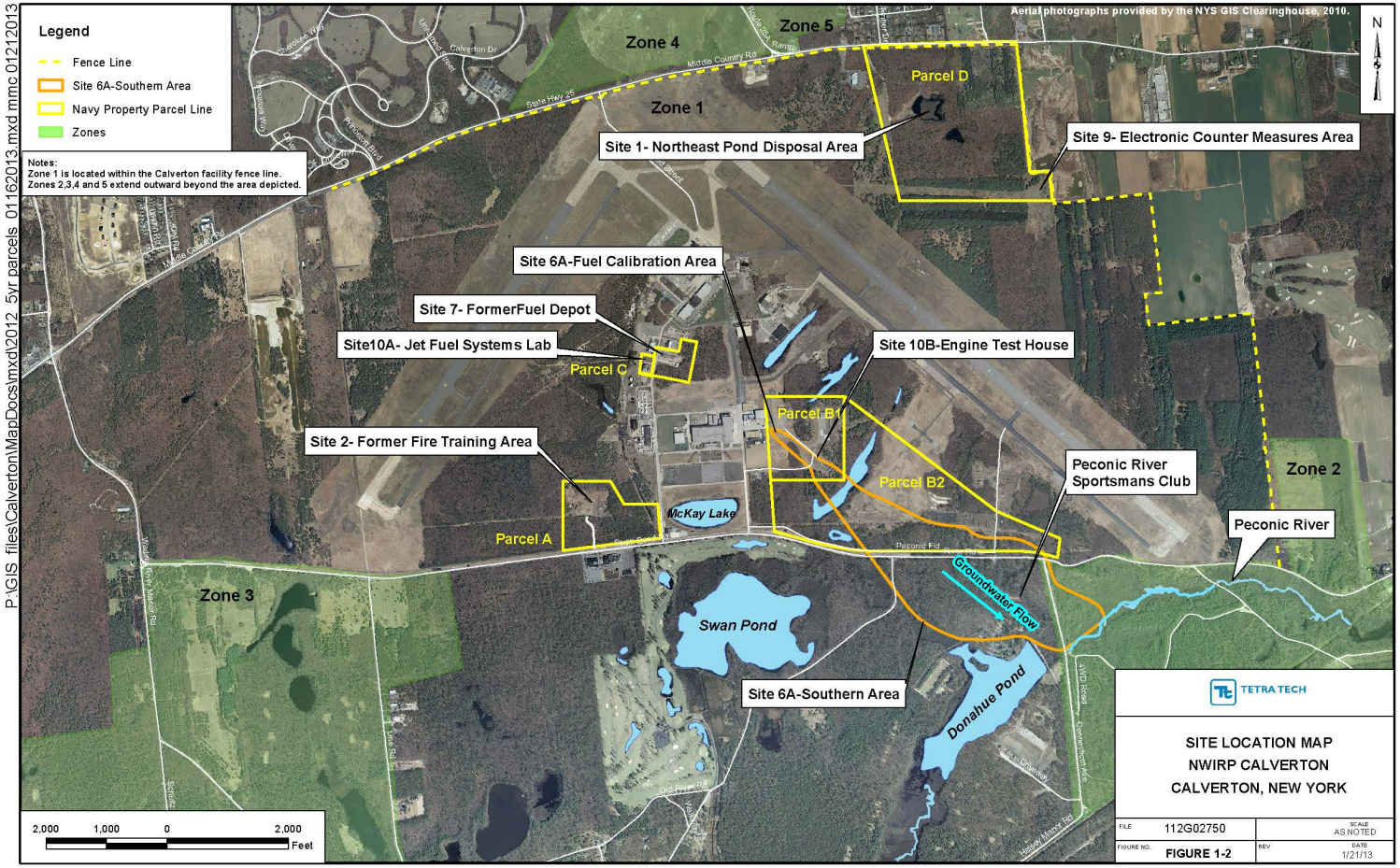
NWIRP CALVERTON, NEW YORK

October 27, 2015

Presentation Agenda

- Introduction
- System Overview
- System Operation
- System Performance
- Capture Zone
- Future Activities

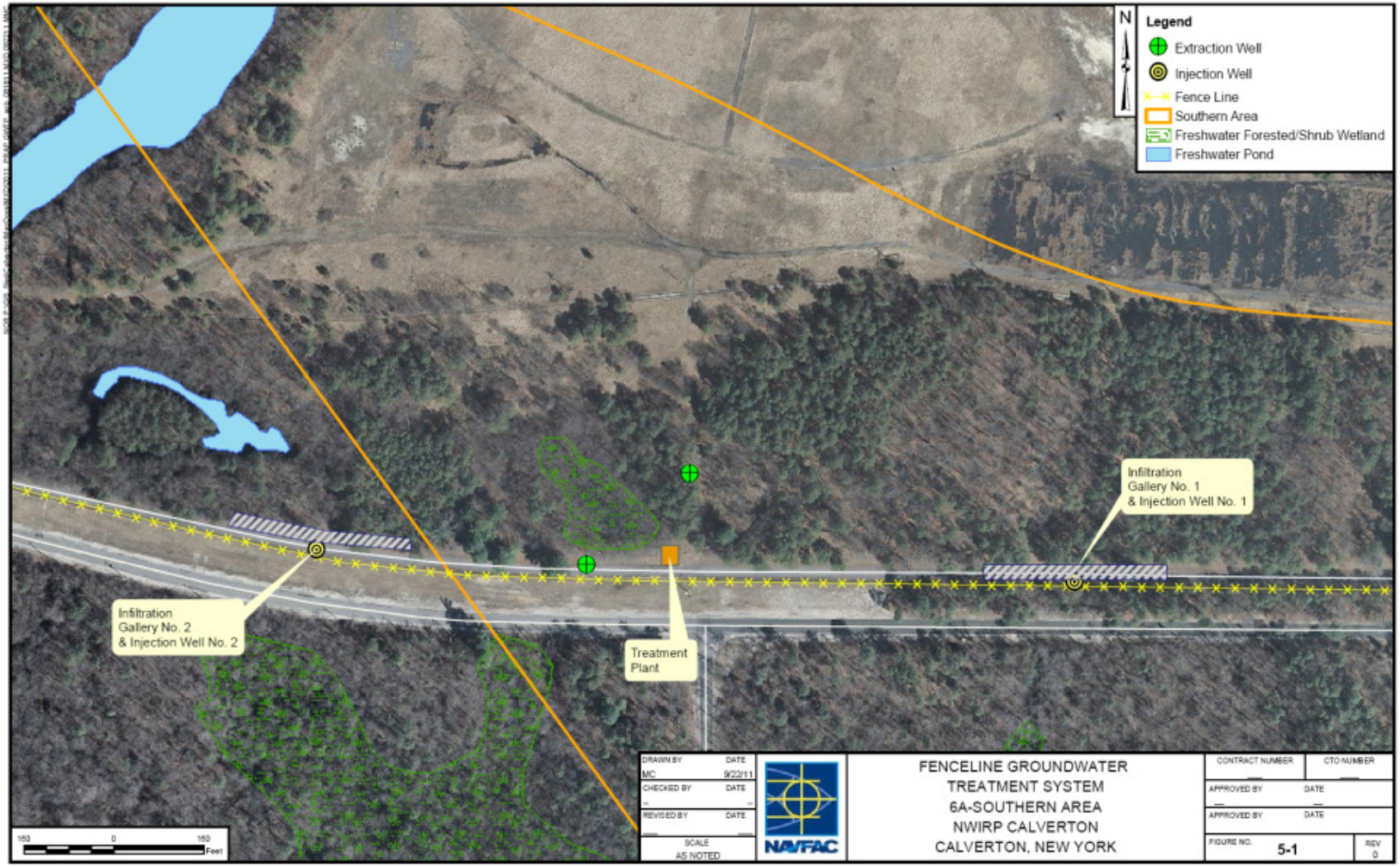
Site Layout


Legend
Fence Line
Site 6A-Southern Area
Navy Property Parcel Line
Zones
Notes:
Zone 1 is located within the Calverton facility fence line.
Zones 2,3,4 and 5 extend outward beyond the area depicted.
Aerial photographs provided by the NYS GIS Clearinghouse, 2010.
N
Zone 1
Zone 2
Zone 3
Zone 4
Zone 5
Parcel A
Parcel B1
Parcel B2
Parcel C
Parcel D
Site 1- Northeast Pond Disposal Area
Site 2- Former Fire Training Area
Site 6A-Fuel Calibration Area
Site 6A-Southern Area
Site 7- FormerFuel Depot
Site 9- Electronic Counter Measures Area
Site10A- Jet Fuel Systems Lab
Site 10B-Engine Test House
McKay Lake
Swan Pond
Donahue Pond
Peconic River
Peconic River Sportsmans Club
Groundwater Flow
Middle Country Rd
State Hwy 25
Peconic Rd
Old Riverhead Rd
Halsey Manor Rd
2,000 1,000 0 2,000
Feet
P:\GIS files\Calverton\MapDocs\mxd\2012_5yr parcels_01162013.mxd mmc 01212013
TETRA TECH
SITE LOCATION MAP
NWIRP CALVERTON
CALVERTON, NEW YORK
FILE 112G02750
SCALE AS NOTED
FIGURE NO. FIGURE 1-2
REV
DATE 1/21/13

Fence Line Treatment System Overview

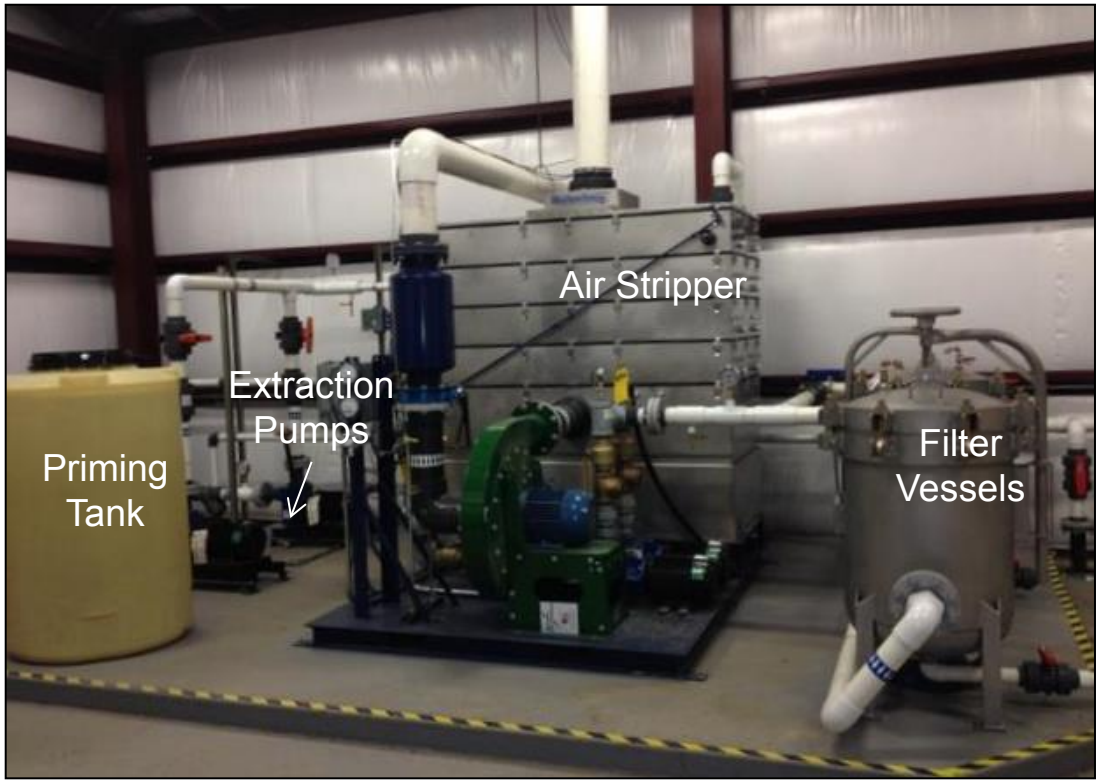
- **Record of Decision (ROD) in May 2012**
- **Selected remedy for Fence Line Area – LUCs and monitoring with extraction, treatment, and infiltration**
- **Remedial Design for Fence Line Treatment System (FLTS) in May 2012**
- **Fence Line Treatment System overview:**
  - Two extraction wells, up to 100 gallons per minute
  - VOCs removed via air stripping
  - Treated groundwater re-injected through infiltration galleries, meeting MCLs
- **Construction began in October 2012**
- **System start-up occurred 8 October 2013**

Fence Line Treatment System Overview



Fence Line Treatment System Overview

Treatment Plant Building



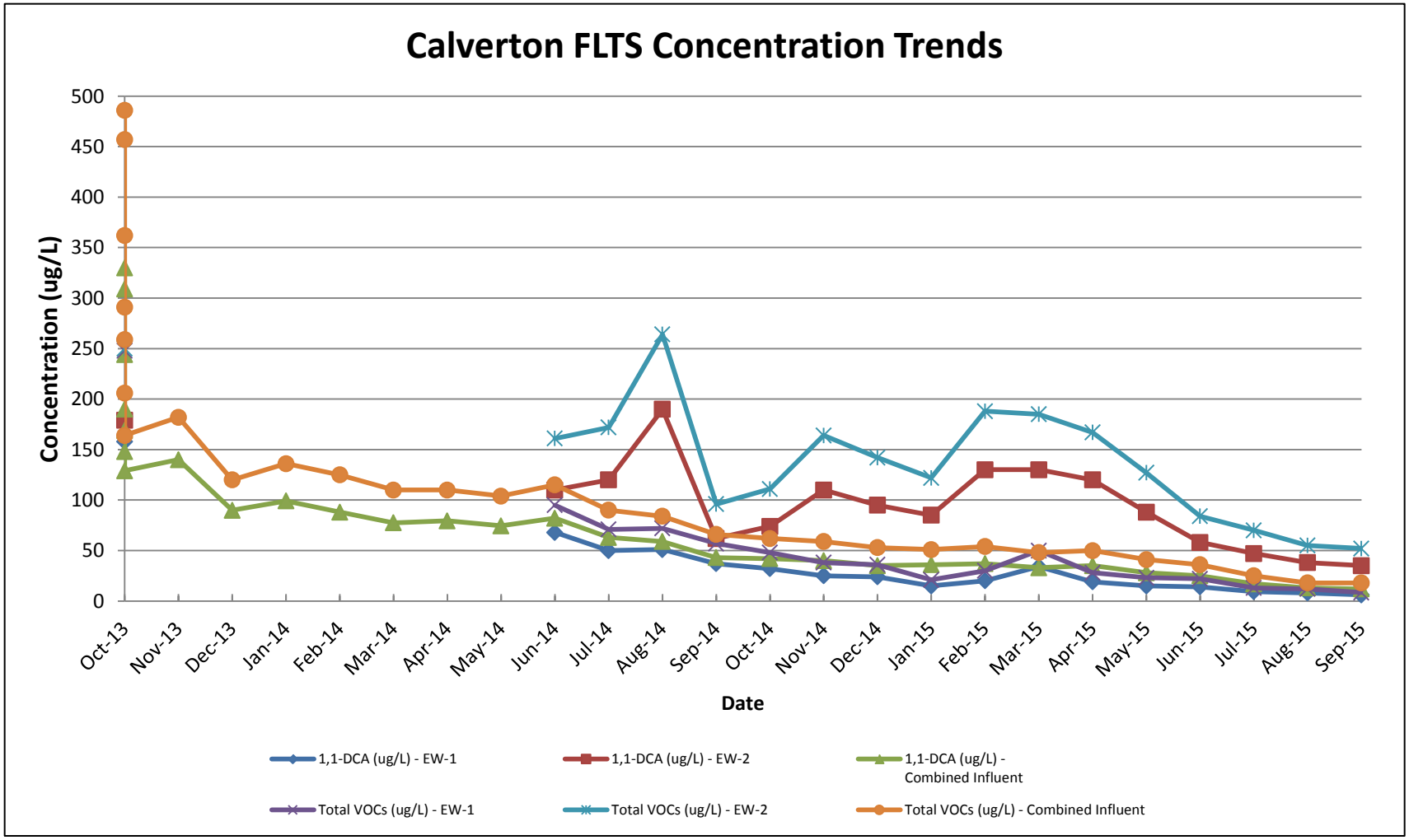
System Components

Fence Line Treatment System Operation

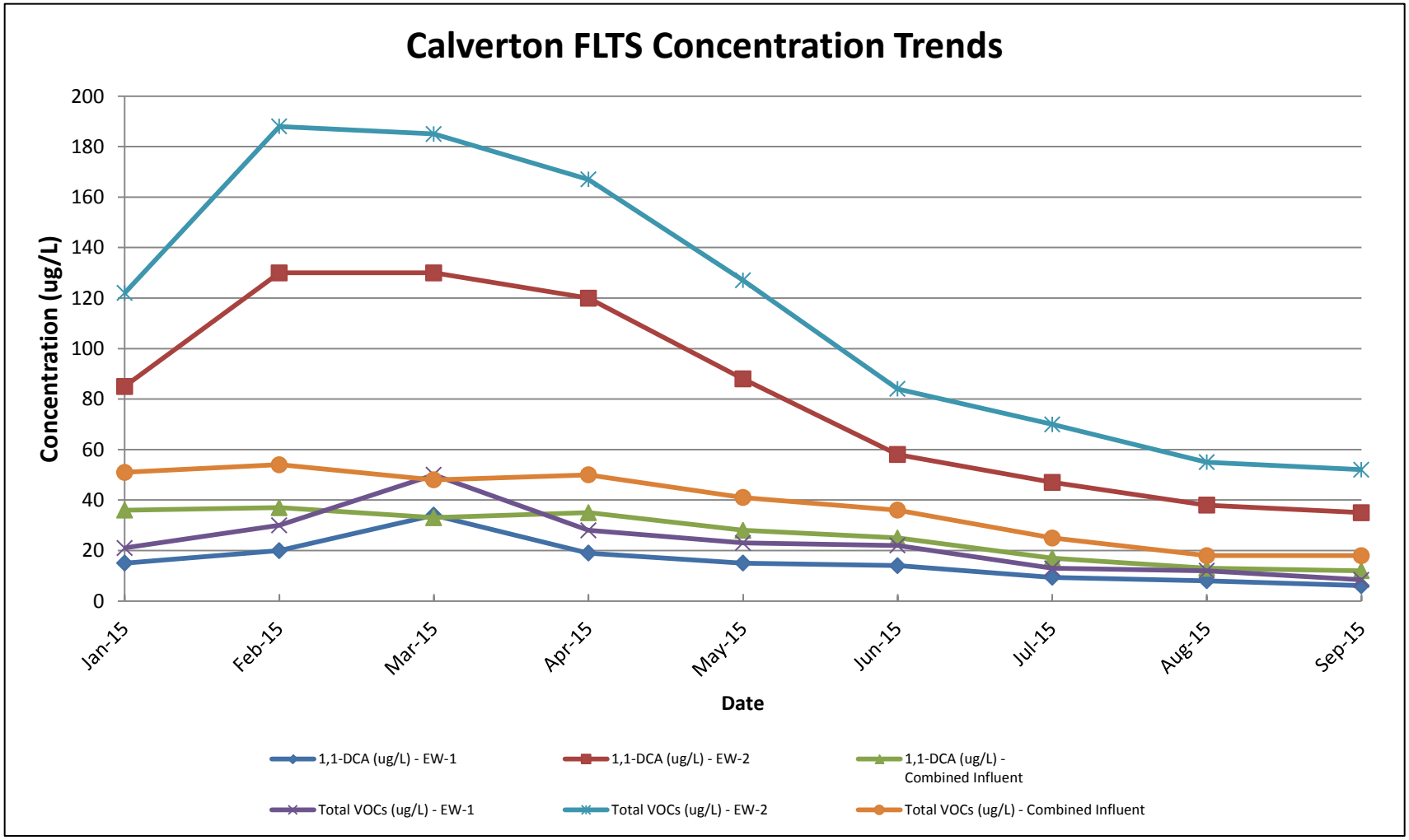
Flow Data			
Date	Total Monthly Flow (gal)	Total Cumulative Flow (gal)	Average Influent Flowrate (gpm)
Oct-13	2,976,601	2,976,601	89.9
Nov-13	2,288,925	5,265,526	78.2
Dec-13	1,715,264	6,980,790	61.5
Jan-14	2,358,016	9,338,806	77.0
Feb-14	3,814,953	13,153,759	96.2
Mar-14	3,794,639	16,948,398	91.3
Apr-14	3,683,505	20,631,903	91.0
May-14	3,658,145	24,290,048	87.9
June-14	3,149,276	27,439,324	85.0
July-14	3,113,492	30,552,816	79.4
Aug-14	3,113,492	33,666,308	81.7
Sept-14	1,949,358	35,615,666	78.8

Flow Data			
Date	Total Monthly Flow (gal)	Total Cumulative Flow (gal)	Average Influent Flowrate (gpm)
Oct-14	3,744,800	39,360,466	87.0
Nov-14	2,325,171	41,685,637	88.4
Dec-14	3,791,812	45,477,450	91.0
Jan-15	3,711,714	49,189,164	87.1
Feb-15	3,331,398	52,520,562	87.0
Mar-15	2,435,158	54,955,720	77.3
Apr-15	3,152,581	58,108,301	76.1
May-15	3,020,310	61,128,611	77.2
June-15	2,700,213	63,828,824	73.1
July-15	3,167,585	66,996,409	71.1
Aug-15	2,660,132	69,656,541	64.5
Sept-15	2,849,371	72,505,912	68.6

Fence Line Treatment System Operation



Fence Line Treatment System Operation



Fence Line Treatment System Operation

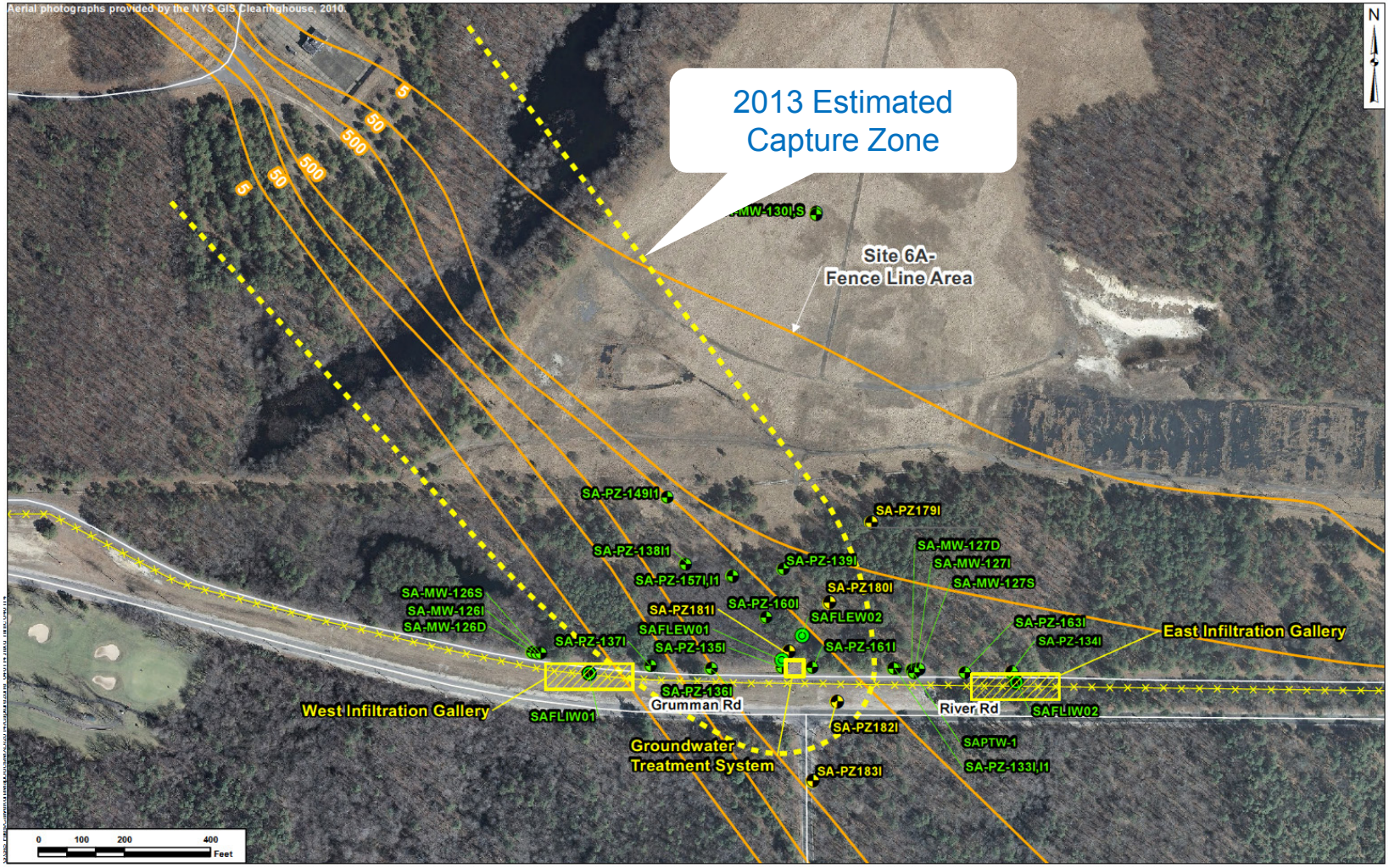
VOC Mass Removal		
Date	Monthly VOC Mass Removal (lb)	Cumulative VOC Mass Removal (lb)
Oct-13	4.04	4.04
Nov-13	3.46	7.50
Dec-13	1.70	9.20
Jan-14	2.66	11.86
Feb-14	3.95	15.81
Mar-14	3.45	19.26
Apr-14	3.35	22.61
May-14	3.16	25.77
June-14	3.00	28.77
July-14	2.32	31.09
Aug-14	2.35	33.44
Sept-14	1.06	34.50

VOC Mass Removal		
Date	Monthly VOC Mass Removal (lb)	Cumulative VOC Mass Removal (lb)
Oct-14	1.94	36.44
Nov-14	1.14	37.58
Dec-14	1.64	39.22
Jan-15	1.59	40.81
Feb-15	1.49	42.30
Mar-15	0.98	43.28
Apr-15	1.31	44.59
May-15	1.02	45.61
June-15	0.81	46.42
July-15	0.67	47.09
Aug-15	0.41	47.50
Sept-15	0.43	47.93

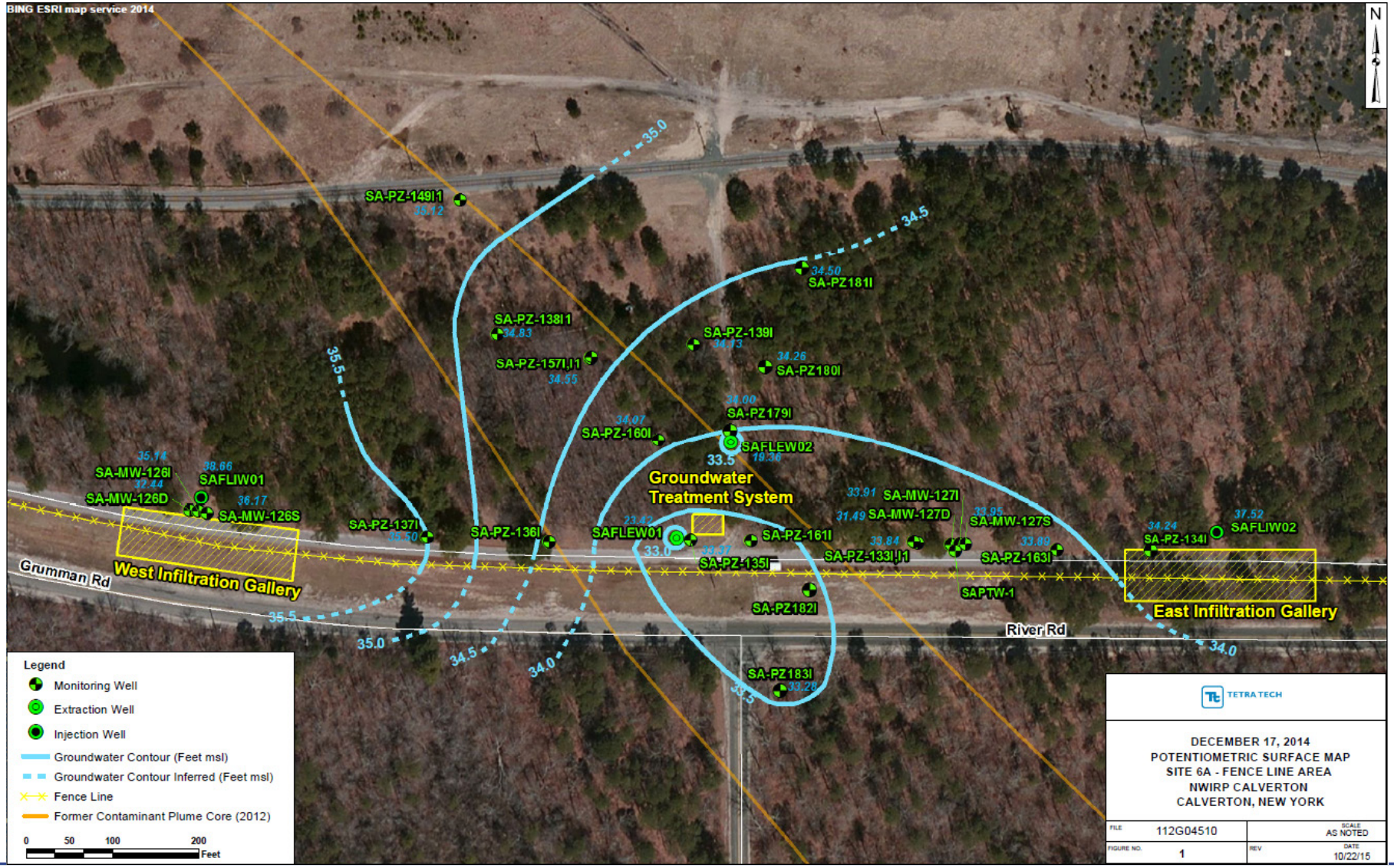
Fence Line Treatment System Performance

- Continued compliance with all discharge goals
- Continued VOC removal efficiencies of >99%
- Decreasing trend observed in influent concentrations and flow rates

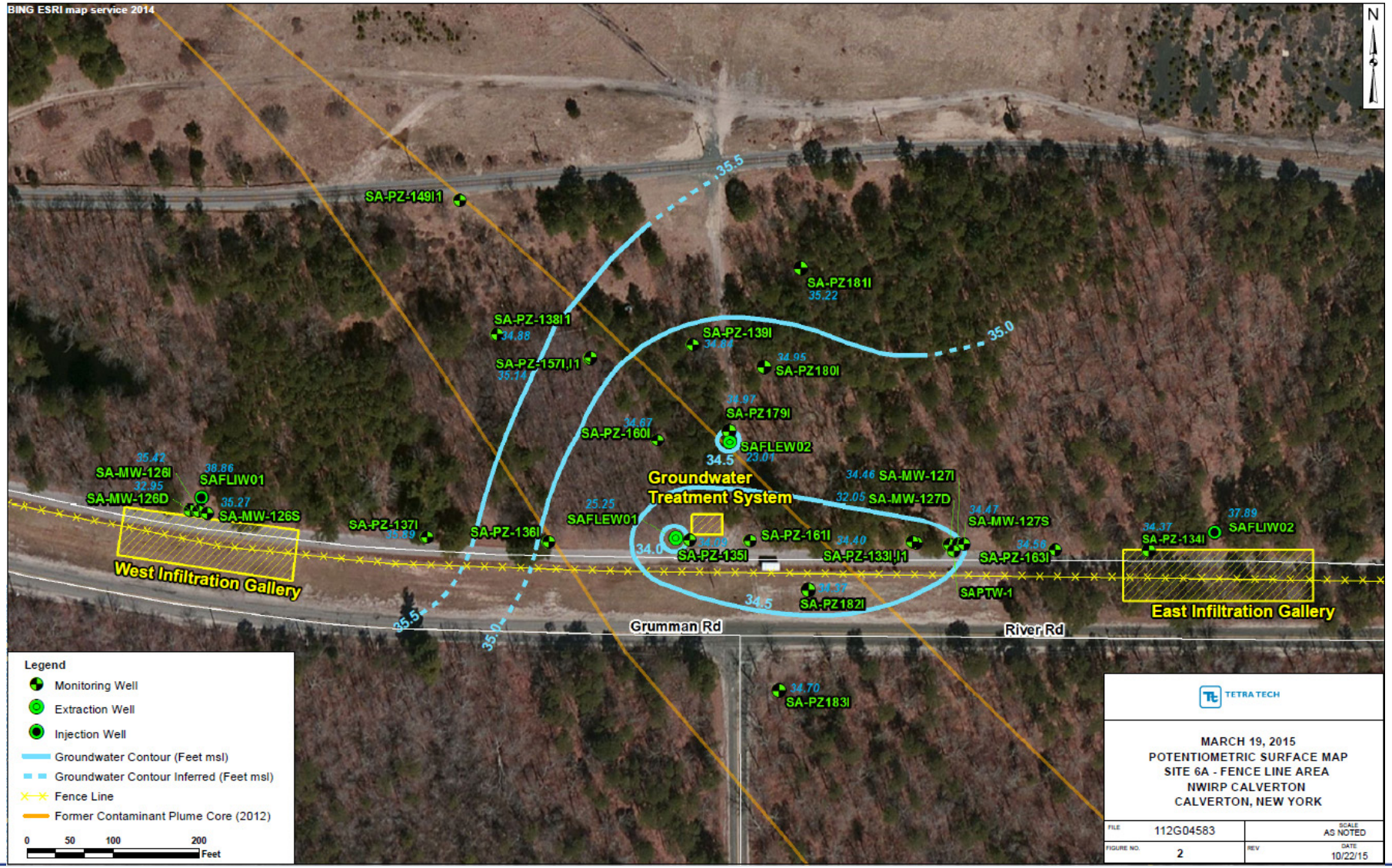
Fence Line Treatment System Capture Zone



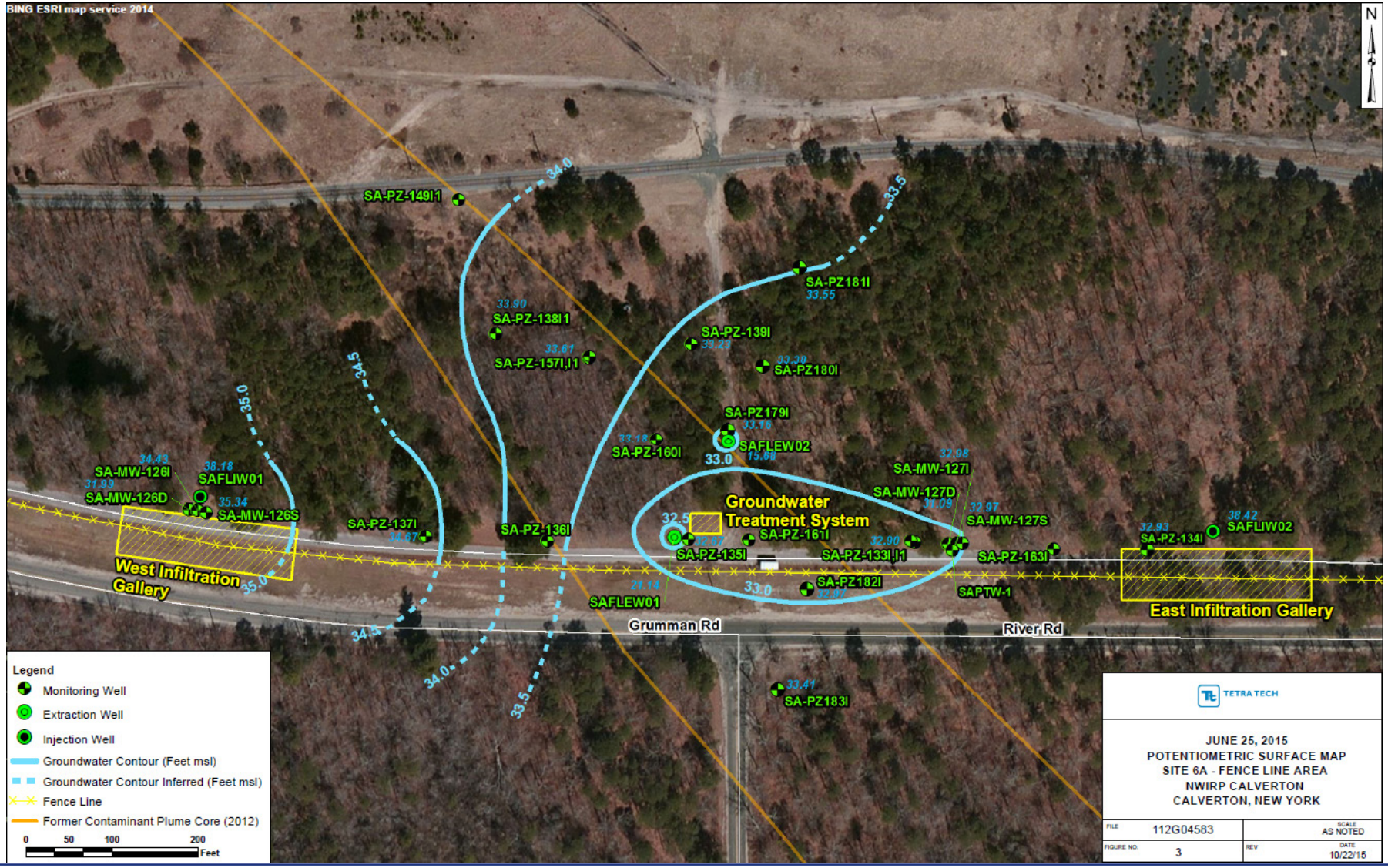
Fence Line Treatment System
Capture Zone - December 2014



Fence Line Treatment System Capture Zone - March 2015



Fence Line Treatment System Capture Zone - June 2015



Fence Line Treatment System Future Activities

- **Continue to perform monthly compliance sampling and submit monthly compliance reports.**
- **Install replacement extraction well (EW-2R) ~100 feet north of existing EW-2.**
  - Evaluate September 2015 groundwater data
  - Well installation planned for November 2015

SITE 7 – FUEL DEPOT AIR SPARGING/SOIL VAPOR EXTRACTION SYSTEM UPDATE

October 2015 Restoration Advisory Board

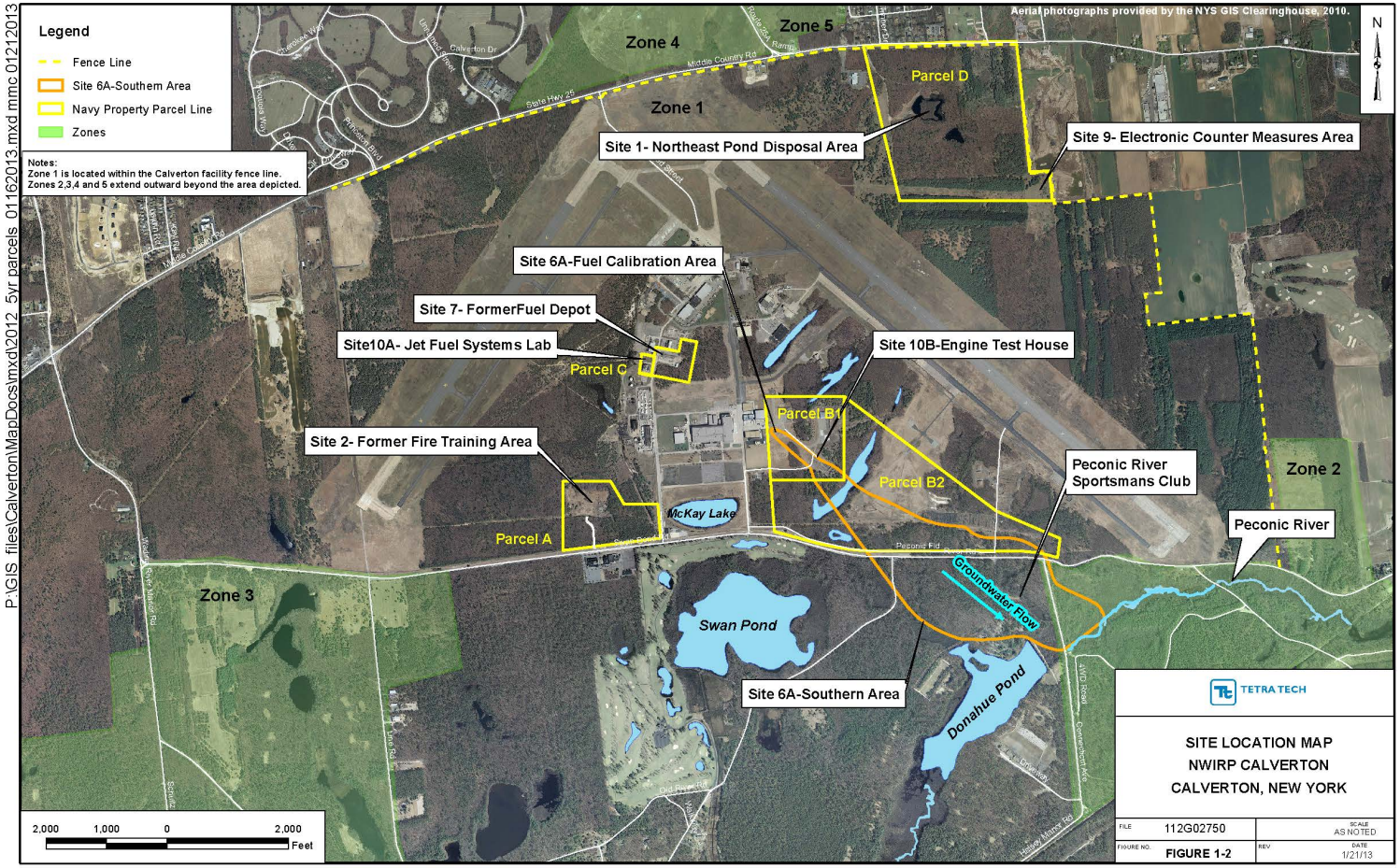
NWIRP CALVERTON, NEW YORK

October 27, 2015

Outline of Presentation

- **Introduction**
- **System Performance / Background Information**
- **Recent Activities**
  - Quarterly Groundwater Sampling
  - Decommissioning of full-scale AS/SVE system
- **Summary and Path Forward**

Introduction

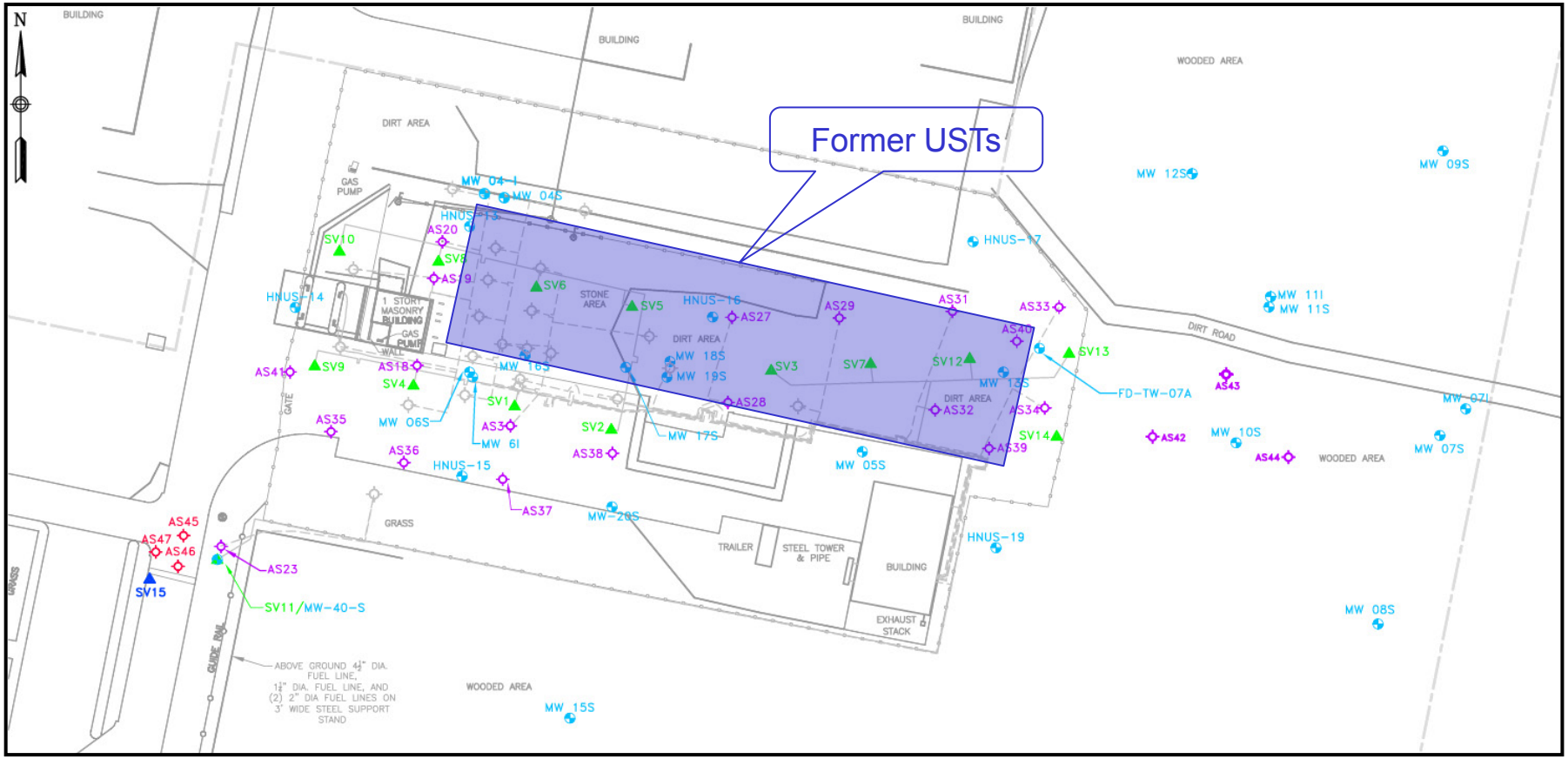


Introduction

- Air Sparing/Soil Vapor Extraction (AS/SVE) system started operation in 2005 (pilot)/2006 (full scale)
- Operated seasonally (April to December)
- Three modifications were made to the system to improve performance
- System reached end of its functional life November 2013
- System was shut down in November 2013 and monitoring began per the *Performance and Shutdown Evaluation* document (Nov 2013)

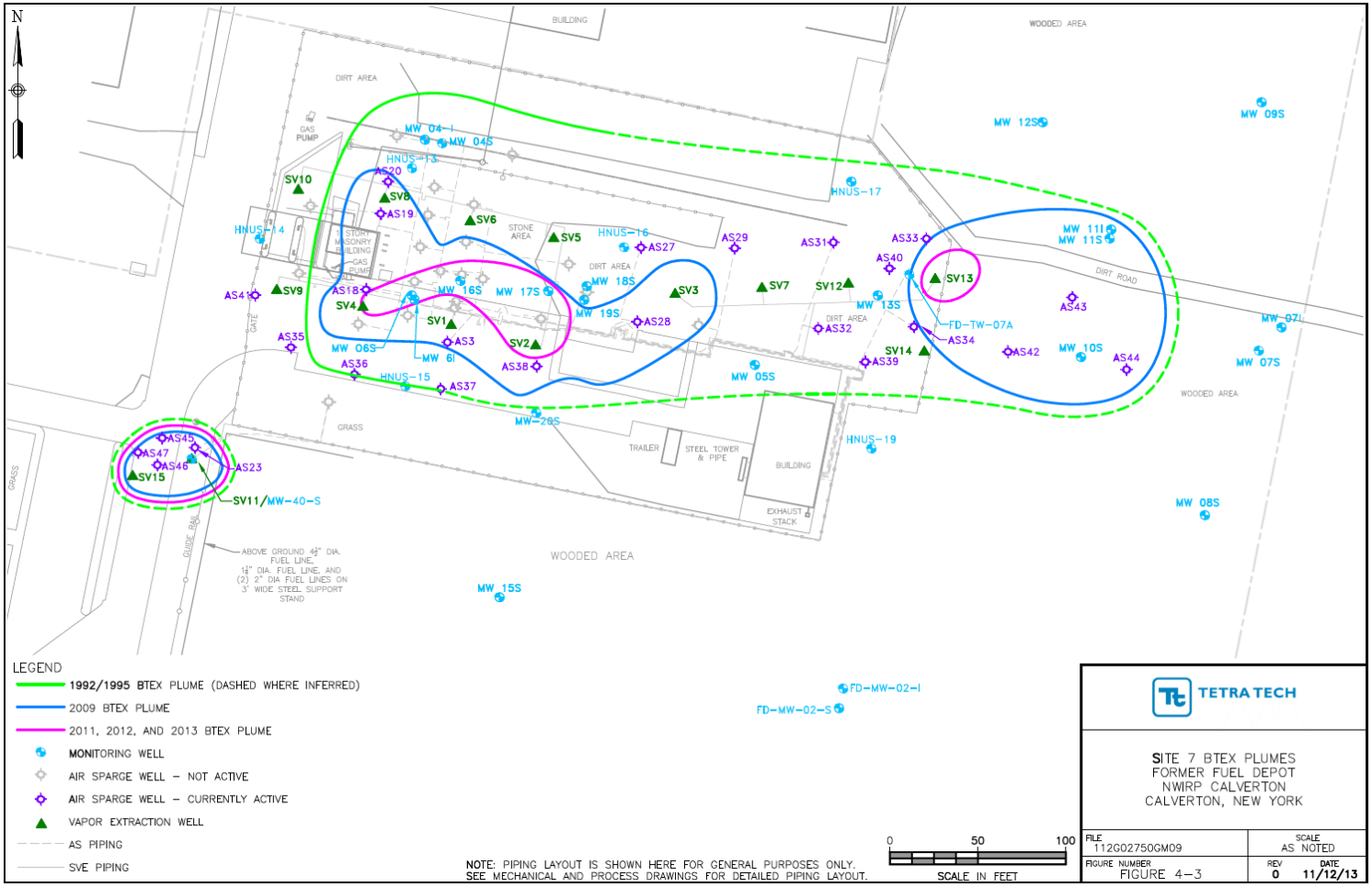
Introduction

Injection, Extraction, and Monitoring Wells



System Performance

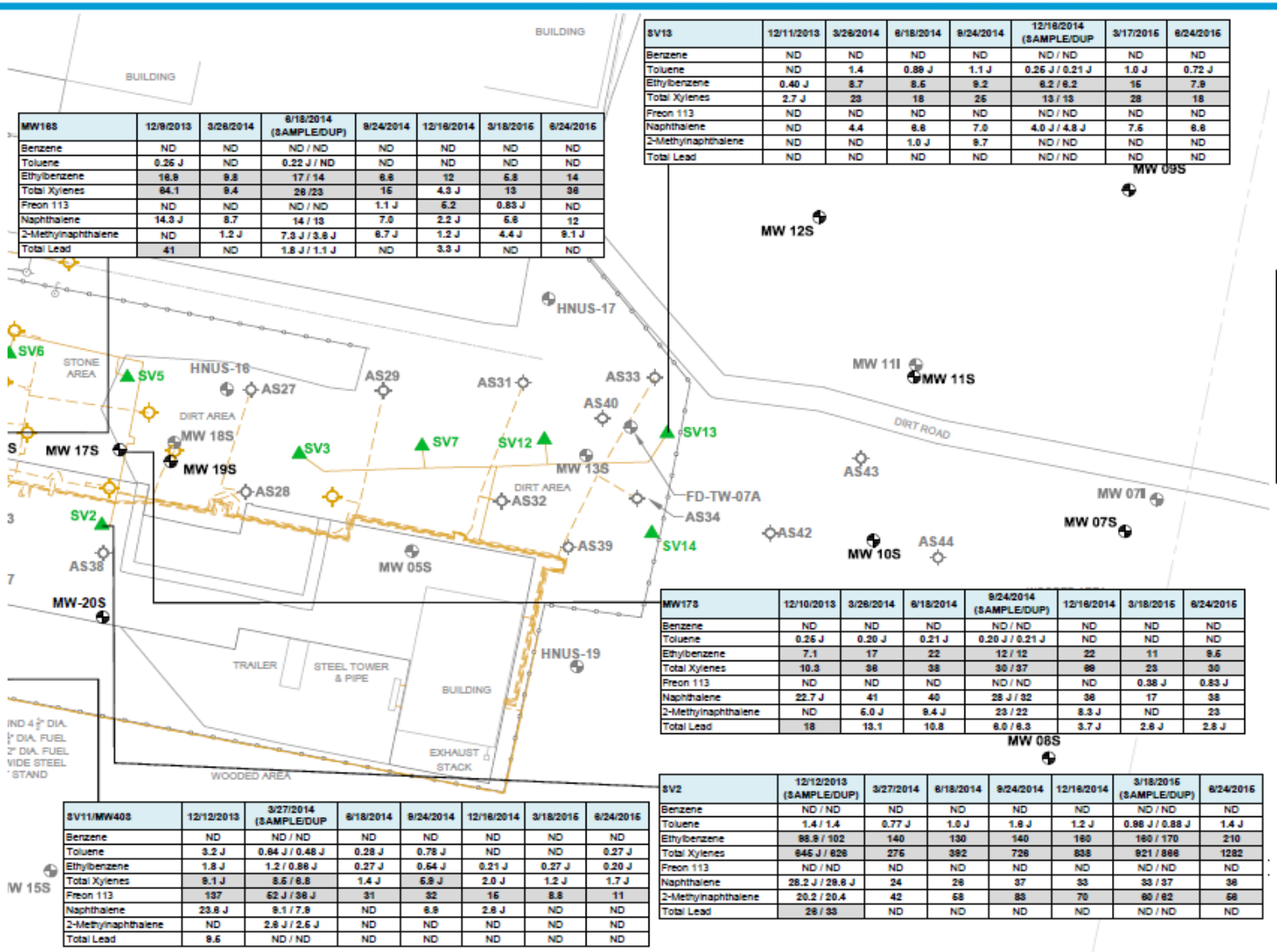
1992/1995, 2009, and 2011 to 2013 Plume Boundaries



Recent Activities

- **Seasonal groundwater sampling post system shut-down**
  - First round conducted in December 2013 – system down for one month prior to sample collection
  - Samples analyzed for select VOCs (BTEX, Freon, Naphthalene), 2-methylnaphthalene, and lead
  - Quarterly sampling of 7 wells (SV2, SV4, SV11, SV13, SV15, MW16S, MW17S) which previously had exceedances of 2003 ROD Remediation Goals
  - March, June, September, December 2014, March, June 2015
  - Beginning September 2015, four downgradient sentry wells added to monitoring well network – MW-07S, MW-07I, MW-08S, MW-09S
  - Next event – December 2015
  - Sampling frequency reduced to semi-annual for 2016 (March, December)

Quarterly Groundwater Sampling



MW16S	12/9/2013	3/26/2014	6/18/2014 (SAMPLE/DUP)	9/24/2014	12/16/2014	3/18/2015	6/24/2015
Benzene	ND	ND	ND / ND	ND	ND	ND	ND
Toluene	0.26 J	ND	0.22 J / ND	ND	ND	ND	ND
Ethylbenzene	16.9	9.8	17 / 14	6.6	12	5.8	14
Total Xylenes	84.1	9.4	26 /23	15	4.3 J	13	38
Freon 113	ND	ND	ND / ND	1.1 J	6.2	0.83 J	ND
Naphthalene	14.3 J	8.7	14 / 13	7.0	2.2 J	6.8	12
2-Methylnaphthalene	ND	1.2 J	7.3 J / 3.8 J	8.7 J	1.2 J	4.4 J	9.1 J
Total Lead	41	ND	1.8 J / 1.1 J	ND	3.3 J	ND	ND

SV13	12/11/2013	3/26/2014	6/18/2014	9/24/2014	12/18/2014 (SAMPLE/DUP	3/17/2015	6/24/2015
Benzene	ND	ND	ND	ND	ND / ND	ND	ND
Toluene	ND	1.4	0.88 J	1.1 J	0.26 J / 0.21 J	1.0 J	0.72 J
Ethylbenzene	0.40 J	8.7	8.5	9.2	8.2 / 8.2	16	7.8
Total Xylenes	2.7 J	23	18	26	13 / 13	28	18
Freon 113	ND	ND	ND	ND	ND / ND	ND	ND
Naphthalene	ND	4.4	6.6	7.0	4.0 J / 4.8 J	7.6	6.8
2-Methylnaphthalene	ND	ND	1.0 J	9.7	ND / ND	ND	ND
Total Lead	ND	ND	ND	ND	ND / ND	ND	ND

2013 Proposed Closeout Goals (ug/L)	
Benzene	5
Toluene	5
Ethylbenzene	5
Total Xylenes	5
Freon 113	5
Naphthalene	50
2-Methylnaphthalene	50
Total Lead	15

MW17S	12/10/2013	3/26/2014	6/18/2014	9/24/2014 (SAMPLE/DUP)	12/16/2014	3/18/2015	6/24/2015
Benzene	ND	ND	ND	ND / ND	ND	ND	ND
Toluene	0.25 J	0.20 J	0.21 J	0.20 J / 0.21 J	ND	ND	ND
Ethylbenzene	7.1	17	22	12 / 12	22	11	9.5
Total Xylenes	10.3	38	38	30 / 37	69	23	30
Freon 113	ND	ND	ND	ND / ND	ND	0.38 J	0.83 J
Naphthalene	22.7 J	41	40	28 J / 32	36	17	38
2-Methylnaphthalene	ND	6.0 J	9.4 J	23 / 22	8.3 J	ND	23
Total Lead	18	13.1	10.8	6.0 / 8.3	3.7 J	2.8 J	2.8 J

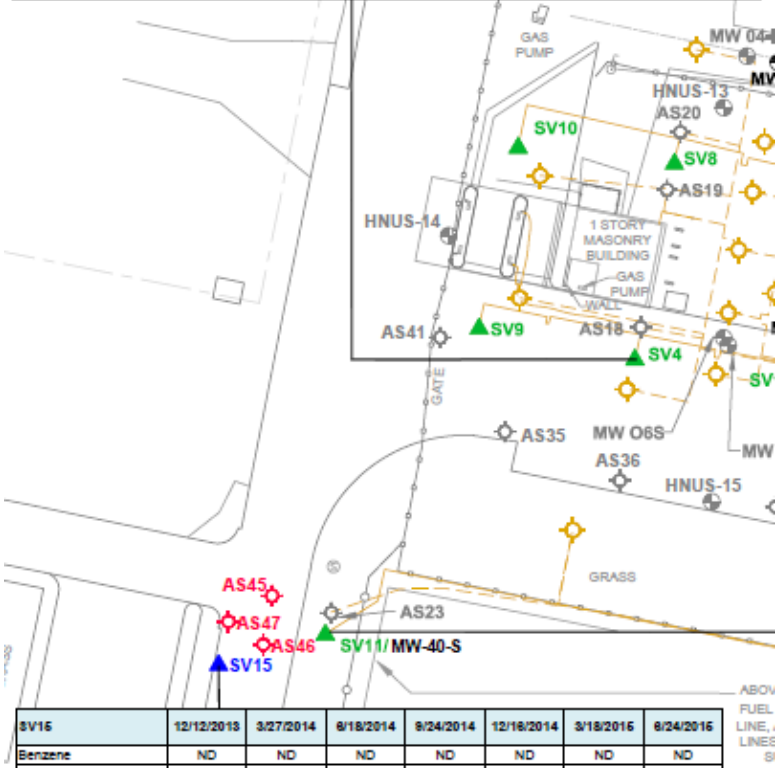
SV2	12/12/2013 (SAMPLE/DUP)	3/27/2014	6/18/2014	9/24/2014	12/16/2014	3/18/2015 (SAMPLE/DUP)	6/24/2015
Benzene	ND / ND	ND	ND	ND	ND	ND / ND	ND
Toluene	1.4 / 1.4	0.77 J	1.0 J	1.8 J	1.2 J	0.88 J / 0.88 J	1.4 J
Ethylbenzene	98.9 / 102	140	130	140	160	160 / 170	210
Total Xylenes	645 J / 628	275	382	726	838	921 / 866	1282
Freon 113	ND / ND	ND	ND	ND	ND	ND / ND	ND
Naphthalene	28.2 J / 29.8 J	24	28	37	33	33 / 37	36
2-Methylnaphthalene	20.2 / 20.4	42	58	83	70	60 / 62	68
Total Lead	26 / 33	ND	ND	ND	ND	ND / ND	ND

SV11/MW40S	12/12/2013	3/27/2014 (SAMPLE/DUP	6/18/2014	9/24/2014	12/16/2014	3/18/2015	6/24/2015
Benzene	ND	ND / ND	ND	ND	ND	ND	ND
Toluene	3.2 J	0.84 J / 0.48 J	0.28 J	0.78 J	ND	ND	0.27 J
Ethylbenzene	1.8 J	1.2 / 0.86 J	0.27 J	0.64 J	0.21 J	0.27 J	0.20 J
Total Xylenes	9.1 J	8.5 / 6.8	1.4 J	6.9 J	2.0 J	1.2 J	1.7 J
Freon 113	137	52 J / 38 J	31	32	16	8.8	11
Naphthalene	23.6 J	9.1 / 7.9	ND	6.9	2.8 J	ND	ND
2-Methylnaphthalene	ND	2.8 J / 2.6 J	ND	ND	ND	ND	ND
Total Lead	9.6	ND / ND	ND	ND	ND	ND	ND

***Gray shading - value exceeds 2013 Proposed Closeout Goal**

Quarterly Groundwater Sampling

SV4	12/12/2013	3/27/2014	6/18/2014	9/24/2014	12/16/2014	3/18/2016	6/24/2016 (SAMPLE/DUP)
Benzene	ND	ND	ND	ND	ND	ND	ND / ND
Toluene	ND	ND	ND	ND	ND	ND	ND /ND
Ethylbenzene	ND	1.9	1.7 J	4.6 J	6.2	8.2	8.7 / 8.8
Total Xylenes	6.0	2.5	1.8 J	11	14	28	43 / 43
Freon 113	ND	ND	0.46 J	2.8 J	0.41 J	0.77 J	1.8 J / 1.4 J
Naphthalene	17.4 J	7.0	7.1	14	11	7.4	9.3 / 11
2-Methylnaphthalene	ND	6.7 J	4.3 J	11	4.3 J	6.9 J	7.7 J / 7.6 J
Total Lead	2.6	ND	1.1 J	ND	0.906 J	ND	ND / ND

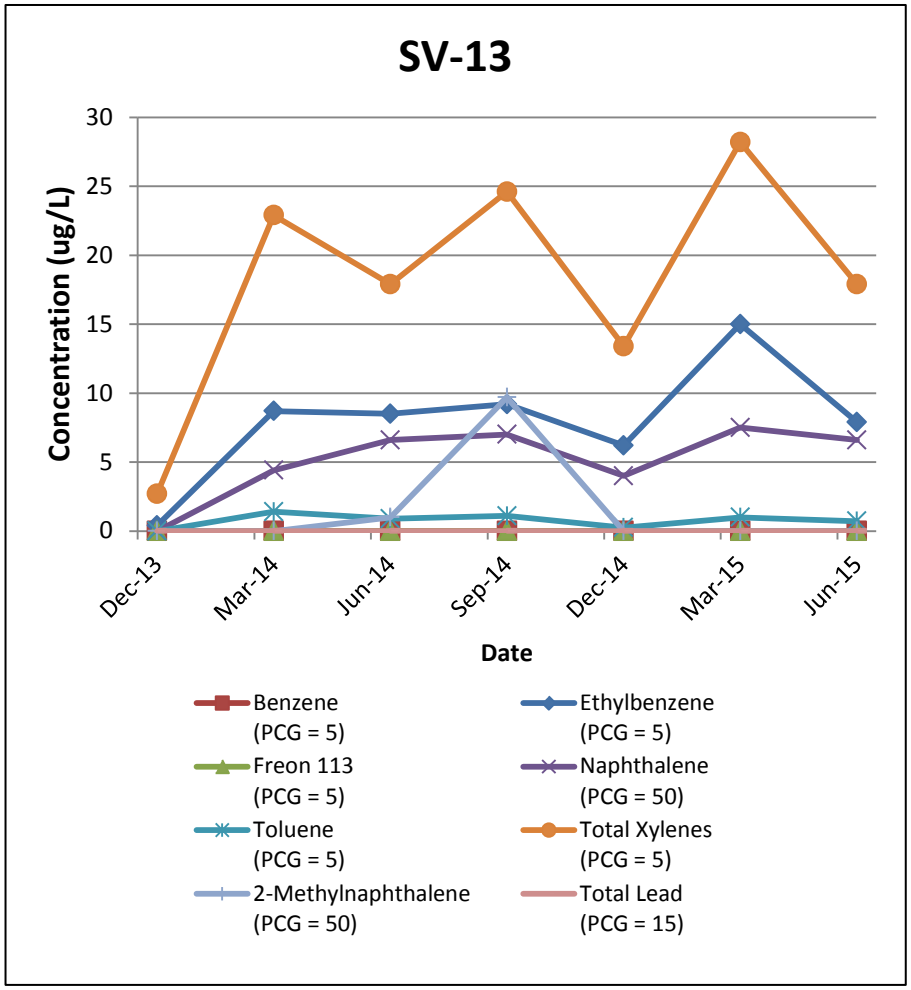


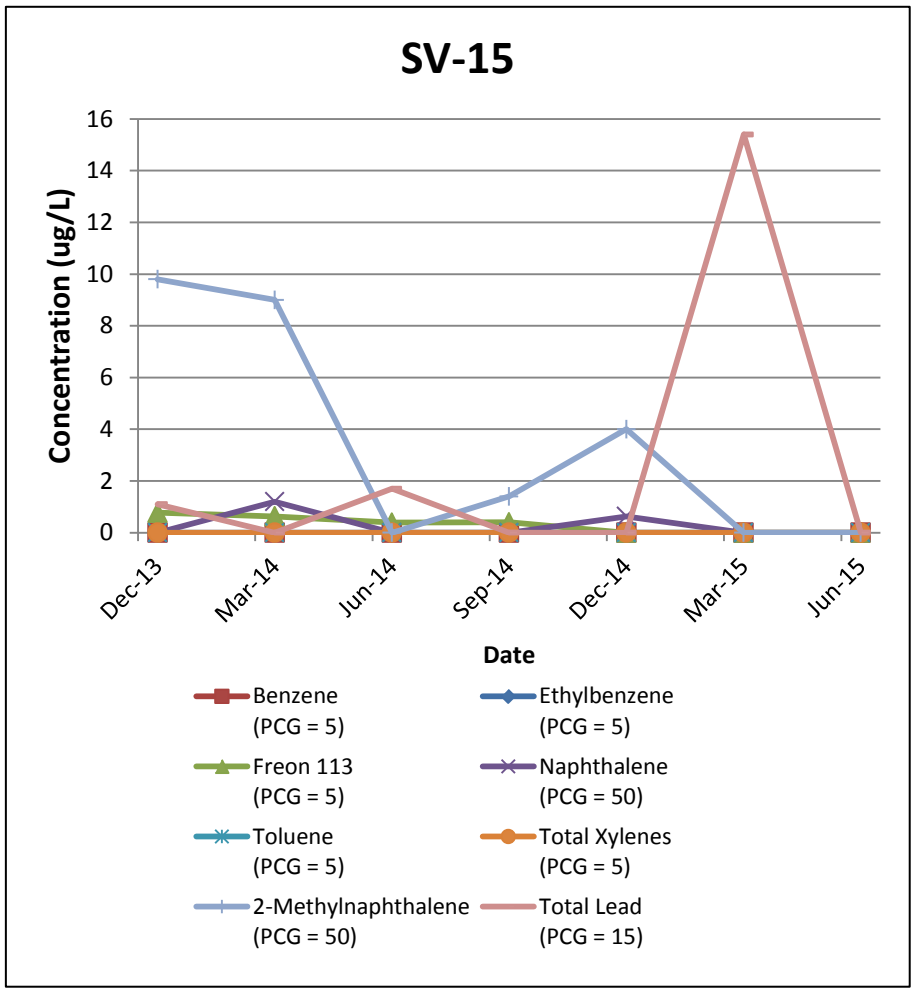
SV16	12/12/2013	3/27/2014	6/18/2014	9/24/2014	12/16/2014	3/18/2016	6/24/2016
Benzene	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	ND	ND	ND	ND	ND	ND	ND
Freon 113	0.77 J	0.83 J	0.38 J	0.40 J	ND	ND	ND
Naphthalene	ND	1.2	ND	ND	0.83 J	ND	ND
2-Methylnaphthalene	9.8	9.0 J	ND	1.4	4.0 J	ND	ND
Total Lead	1.1 J	ND	1.7 J	ND	ND	16.4	ND

2013 Proposed Closeout Goals (ug/L)	
Benzene	5
Toluene	5
Ethylbenzene	5
Total Xylenes	5
Freon 113	5
Naphthalene	50
2-Methylnaphthalene	50
Total Lead	15

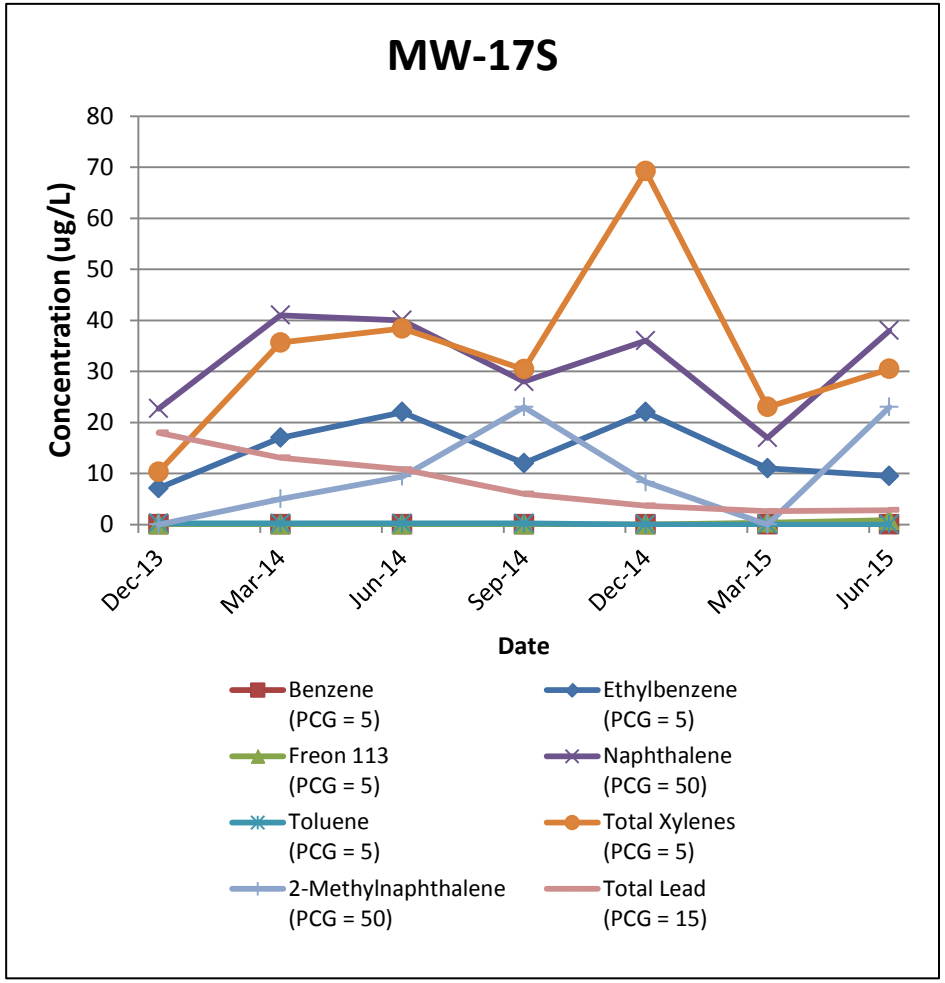
***Gray shading - value exceeds 2013 Proposed Closeout Goal**

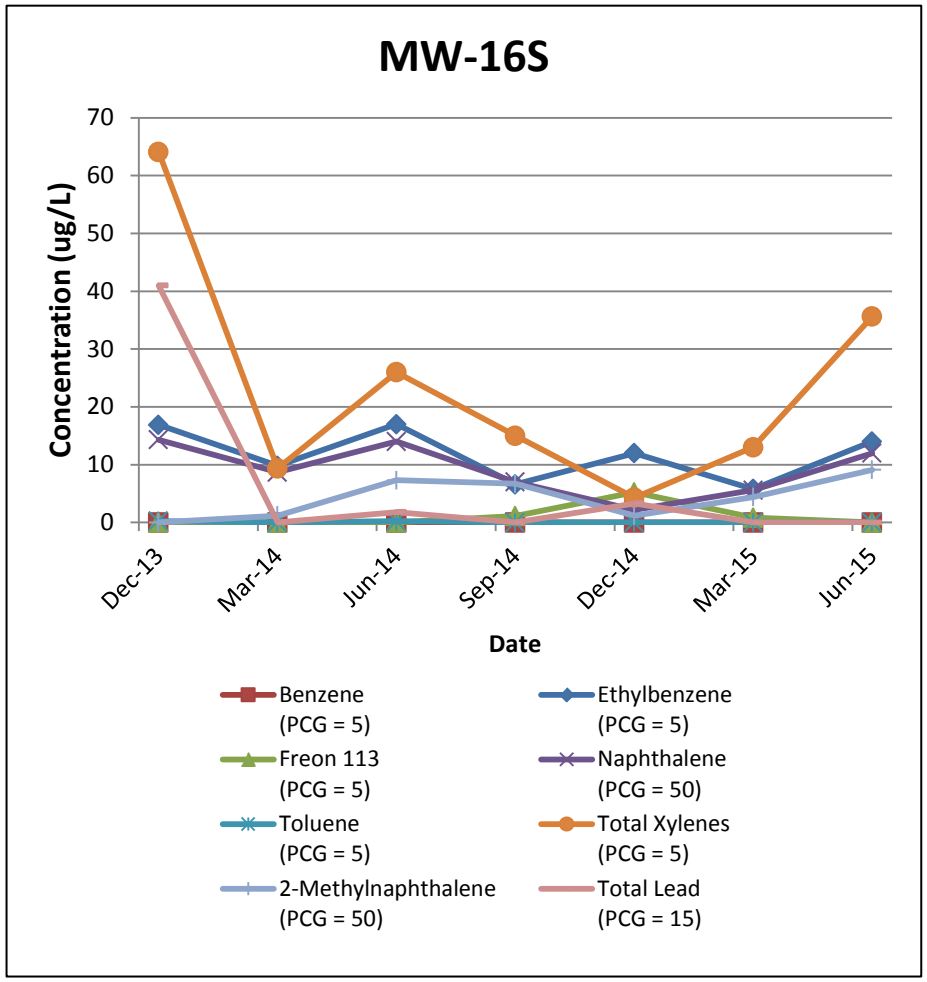
Quarterly Groundwater Sampling



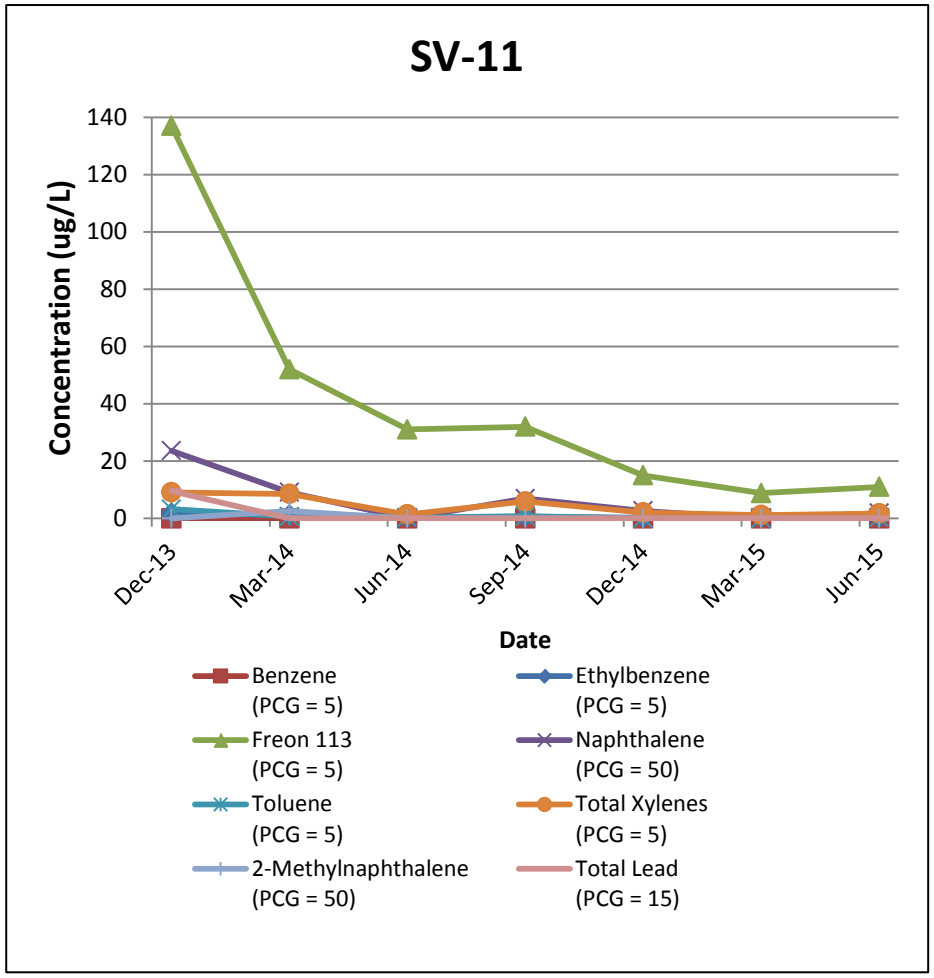


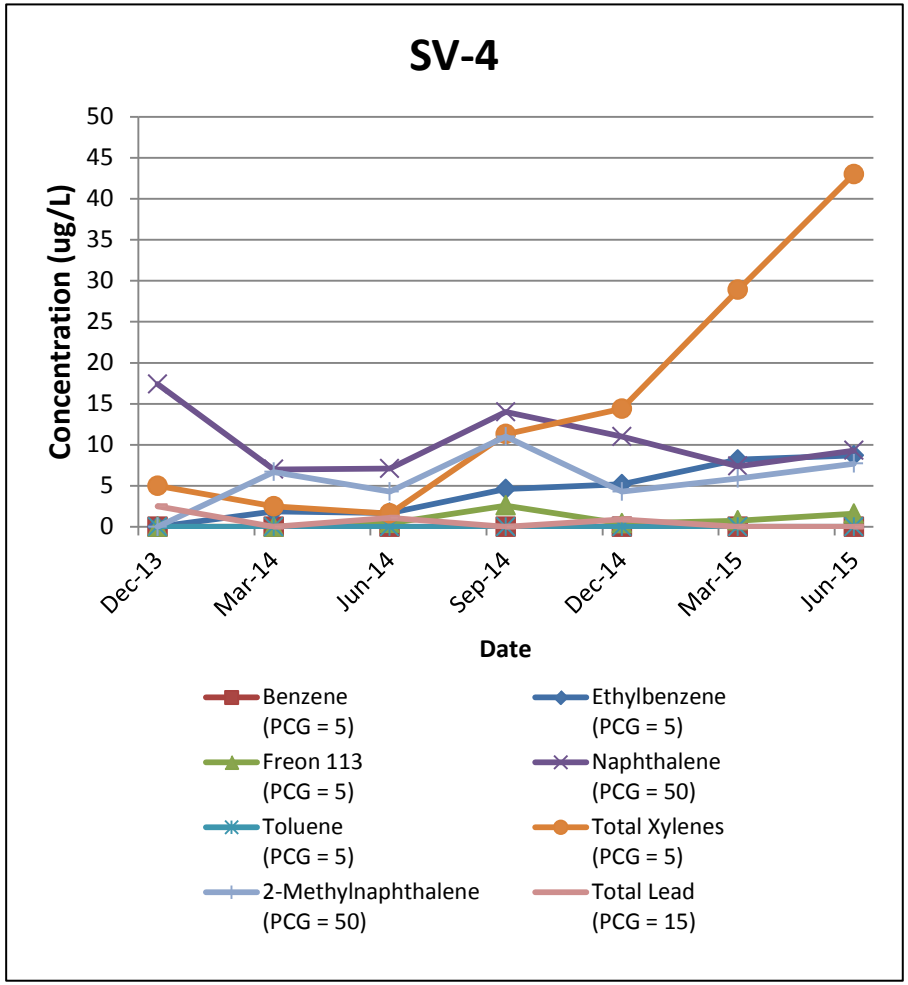
Quarterly Groundwater Sampling



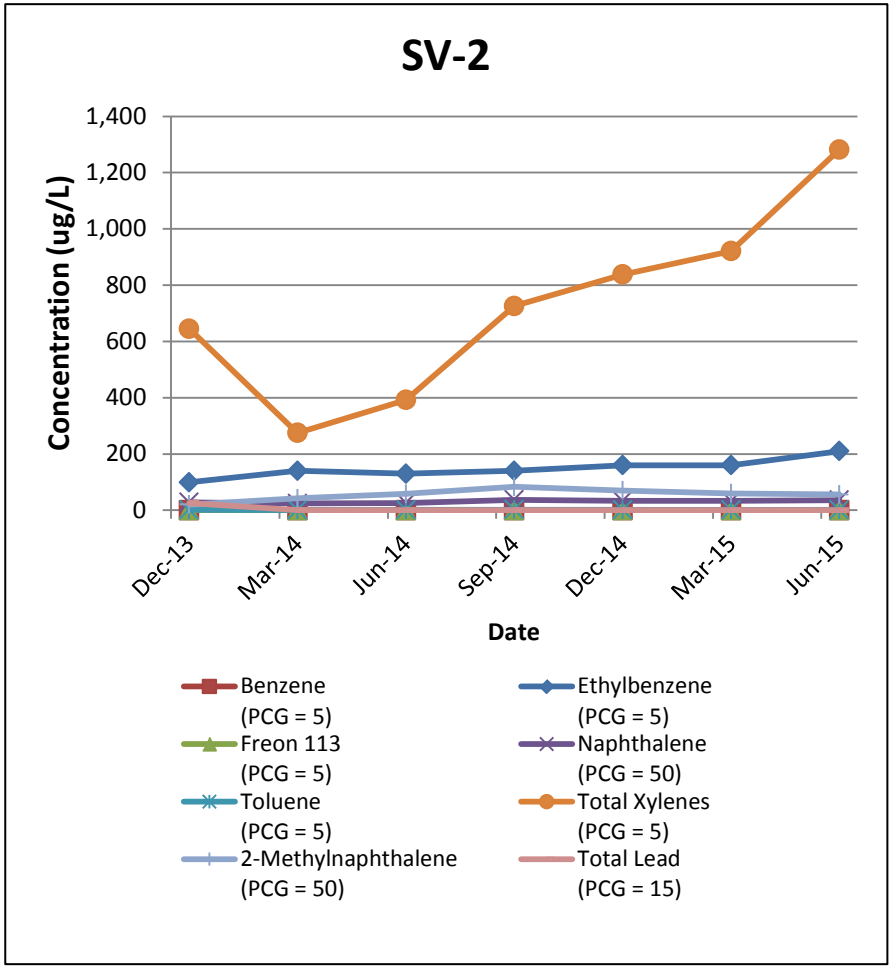


Quarterly Groundwater Sampling





Quarterly Groundwater Sampling



Decommissioning of Full-Scale AS/SVE System

- Contractor mobilized August 10, 2015
- Piping removed and wells decommissioned during first week
- Fabric structure repurposed for a museum
- All other material decontaminated and recycled or disposed

July 14 (Preconstruction)

August 13

October 14

Summary and Path Forward

- **Decommissioning of existing full-scale AS/SVE system complete**
  - –Construction completion report and closeout pending
- **Continue groundwater monitoring throughout FY2015/2016**
- **Remedial Alternative Analysis (RAA) to consider additional action (2016)**

SV4	12/12/2013	3/27/2014	6/18/2014	9/24/2014	12/16/2014	3/18/2015	6/24/2015 (SAMPLE/DUP)
Benzene	ND	ND	ND	ND	ND	ND	ND / ND
Toluene	ND	ND	ND	ND	ND	ND	ND /ND
Ethylbenzene	ND	1.9	1.7 J	4.6 J	5.2	8.2	8.7 / 8.8
Total Xylenes	5.0	2.5	1.6 J	11	14	29	43 / 43
Freon 113	ND	ND	0.45 J	2.6 J	0.41 J	0.77 J	1.6 J / 1.4 J
Naphthalene	17.4 J	7.0	7.1	14	11	7.4	9.3 / 11
2-Methylnaphthalene	ND	6.7 J	4.3 J	11	4.3 J	5.9 J	7.7 J / 7.5 J
Total Lead	2.5	ND	1.1 J	ND	0.906 J	ND	ND / ND

MW16S	12/9/2013	3/26/2014	6/18/2014 (SAMPLE/DUP)	9/24/2014	12/16/2014	3/18/2015	6/24/2015
Benzene	ND	ND	ND / ND	ND	ND	ND	ND
Toluene	0.25 J	ND	0.22 J / ND	ND	ND	ND	ND
Ethylbenzene	16.9	9.8	17 / 14	6.6	12	5.8	14
Total Xylenes	64.1	9.4	26 /23	15	4.3 J	13	36
Freon 113	ND	ND	ND / ND	1.1 J	5.2	0.83 J	ND
Naphthalene	14.3 J	8.7	14 / 13	7.0	2.2 J	5.6	12
2-Methylnaphthalene	ND	1.2 J	7.3 J / 3.6 J	6.7 J	1.2 J	4.4 J	9.1 J
Total Lead	41	ND	1.8 J / 1.1 J	ND	3.3 J	ND	ND

SV13	12/11/2013	3/26/2014	6/18/2014	9/24/2014	12/16/2014 (SAMPLE/DUP	3/17/2015	6/24/2015
Benzene	ND	ND	ND	ND	ND / ND	ND	ND
Toluene	ND	1.4	0.89 J	1.1 J	0.25 J / 0.21 J	1.0 J	0.72 J
Ethylbenzene	0.40 J	8.7	8.5	9.2	6.2 / 6.2	15	7.9
Total Xylenes	2.7 J	23	18	25	13 / 13	28	18
Freon 113	ND	ND	ND	ND	ND / ND	ND	ND
Naphthalene	ND	4.4	6.6	7.0	4.0 J / 4.8 J	7.5	6.6
2-Methylnaphthalene	ND	ND	1.0 J	9.7	ND / ND	ND	ND
Total Lead	ND	ND	ND	ND	ND / ND	ND	ND

MW17S	12/10/2013	3/26/2014	6/18/2014	9/24/2014 (SAMPLE/DUP)	12/16/2014	3/18/2015	6/24/2015
Benzene	ND	ND	ND	ND / ND	ND	ND	ND
Toluene	0.25 J	0.20 J	0.21 J	0.20 J / 0.21 J	ND	ND	ND
Ethylbenzene	7.1	17	22	12 / 12	22	11	9.5
Total Xylenes	10.3	36	38	30 / 37	69	23	30
Freon 113	ND	ND	ND	ND / ND	ND	0.38 J	0.83 J
Naphthalene	22.7 J	41	40	28 J / 32	36	17	38
2-Methylnaphthalene	ND	5.0 J	9.4 J	23 / 22	8.3 J	ND	23
Total Lead	18	13.1	10.8	6.0 / 6.3	3.7 J	2.6 J	2.8 J

SV15	12/12/2013	3/27/2014	6/18/2014	9/24/2014	12/16/2014	3/18/2015	6/24/2015
Benzene	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	ND	ND	ND	ND	ND	ND	ND
Freon 113	0.77 J	0.63 J	0.39 J	0.40 J	ND	ND	ND
Naphthalene	ND	1.2	ND	ND	0.63 J	ND	ND
2-Methylnaphthalene	9.8	9.0 J	ND	1.4	4.0 J	ND	ND
Total Lead	1.1 J	ND	1.7 J	ND	ND	15.4	ND

SV11/MW40S	12/12/2013	3/27/2014 (SAMPLE/DUP	6/18/2014	9/24/2014	12/16/2014	3/18/2015	6/24/2015
Benzene	ND	ND / ND	ND	ND	ND	ND	ND
Toluene	3.2 J	0.64 J / 0.48 J	0.28 J	0.78 J	ND	ND	0.27 J
Ethylbenzene	1.8 J	1.2 / 0.86 J	0.27 J	0.54 J	0.21 J	0.27 J	0.20 J
Total Xylenes	9.1 J	8.5 / 6.8	1.4 J	5.9 J	2.0 J	1.2 J	1.7 J
Freon 113	137	52 J / 36 J	31	32	15	8.8	11
Naphthalene	23.6 J	9.1 / 7.9	ND	6.9	2.6 J	ND	ND
2-Methylnaphthalene	ND	2.6 J / 2.5 J	ND	ND	ND	ND	ND
Total Lead	9.5	ND / ND	ND	ND	ND	ND	ND

SV2	12/12/2013 (SAMPLE/DUP)	3/27/2014	6/18/2014	9/24/2014	12/16/2014	3/18/2015 (SAMPLE/DUP)	6/24/2015
Benzene	ND / ND	ND	ND	ND	ND	ND / ND	ND
Toluene	1.4 / 1.4	0.77 J	1.0 J	1.6 J	1.2 J	0.98 J / 0.88 J	1.4 J
Ethylbenzene	98.9 / 102	140	130	140	160	160 / 170	210
Total Xylenes	645 J / 626	275	392	726	838	921 / 866	1282
Freon 113	ND / ND	ND	ND	ND	ND	ND / ND	ND
Naphthalene	28.2 J / 29.6 J	24	26	37	33	33 / 37	36
2-Methylnaphthalene	20.2 / 20.4	42	58	83	70	60 / 62	56
Total Lead	26 / 33	ND	ND	ND	ND	ND / ND	ND

Legend

- Monitoring Well (Gray Not Currently Sampled)
- Air Sparge Well - Not Active As Of December 2011
- Air Sparge Well - Currently Active As Of December 2011
- Air Sparge Well - Installed in December 2011
- Vapor Extraction Well
- Vapor Extraction Well - Installed In December 2011
- AS Piping
- SVE Piping

Notes:

DUP - Duplicate Sample

ND - Not detected above laboratory detection limit (DL).

J - Estimated value

All values presented in micrograms per liter (ug/L).

Bold values indicate detections. Shading indicates detections in exceedance of the 2013 Proposed Closeout Goal.

2013 Proposed Closeout Goals (ug/L)	
Benzene	5
Toluene	5
Ethylbenzene	5
Total Xylenes	5
Freon 113	5
Naphthalene	50
2-Methylnaphthalene	50
Total Lead	15

Note: Piping layout is shown here for general purposes only. See mechanical and process drawings for detailed piping layout.

H&S
160 East Main Street
Suite 2F
Westborough, MA 01581

SCALE IN FEET
0 50

File: CV-2015_2ndQtr.dwg
Date: 10/20/2015

FIGURE 4
GROUNDWATER CONCENTRATION MAP
2nd QUARTER 2015
DECEMBER 2013 - JUNE 2015

NWIRP CALVERTON -
FORMER FUEL DEPOT - SITE 7
CALVERTON, NEW YORK

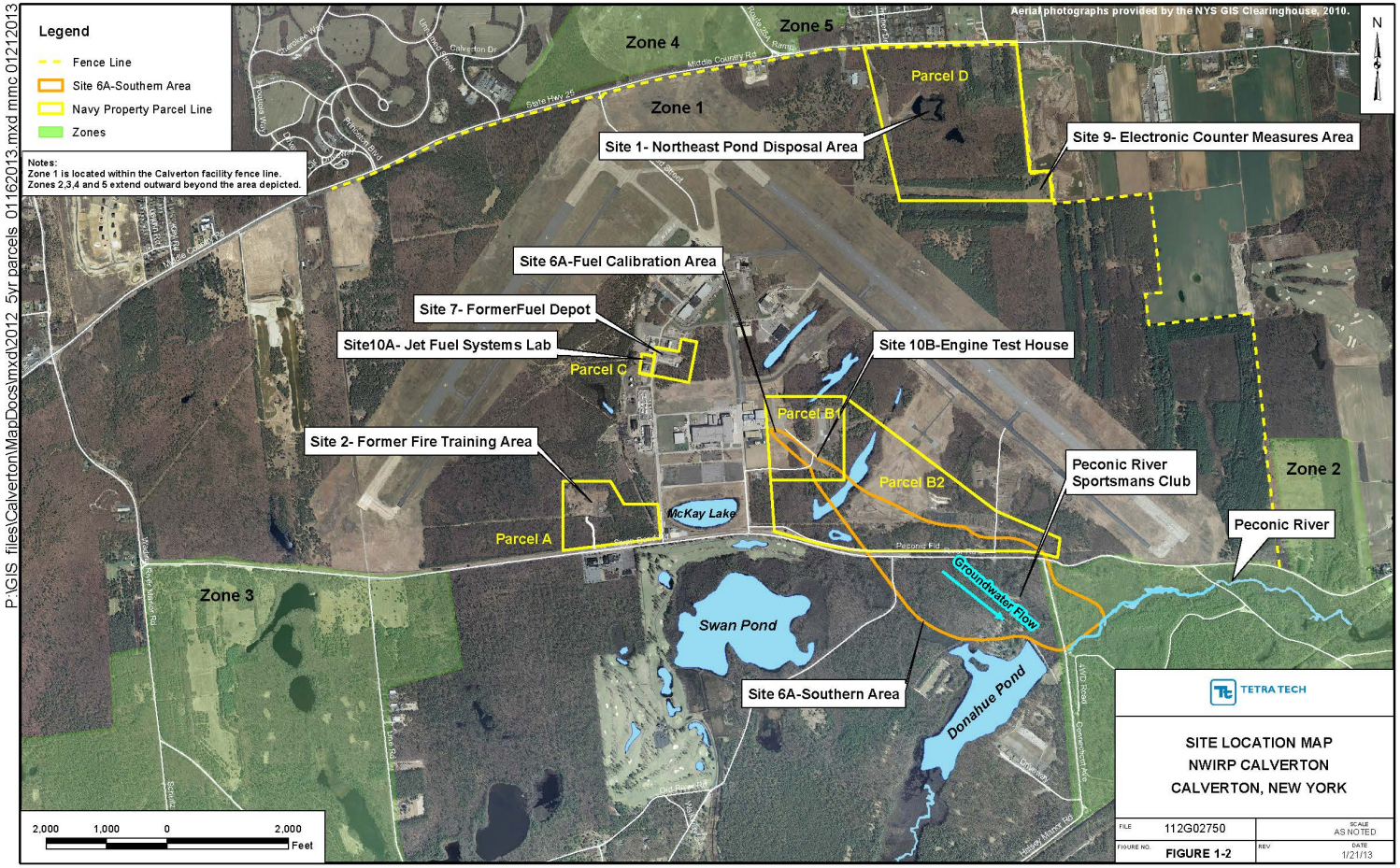
2015 SAMPLING UPDATE

October 2015 Restoration Advisory Board

NWIRP CALVERTON, NEW YORK

October 27, 2015

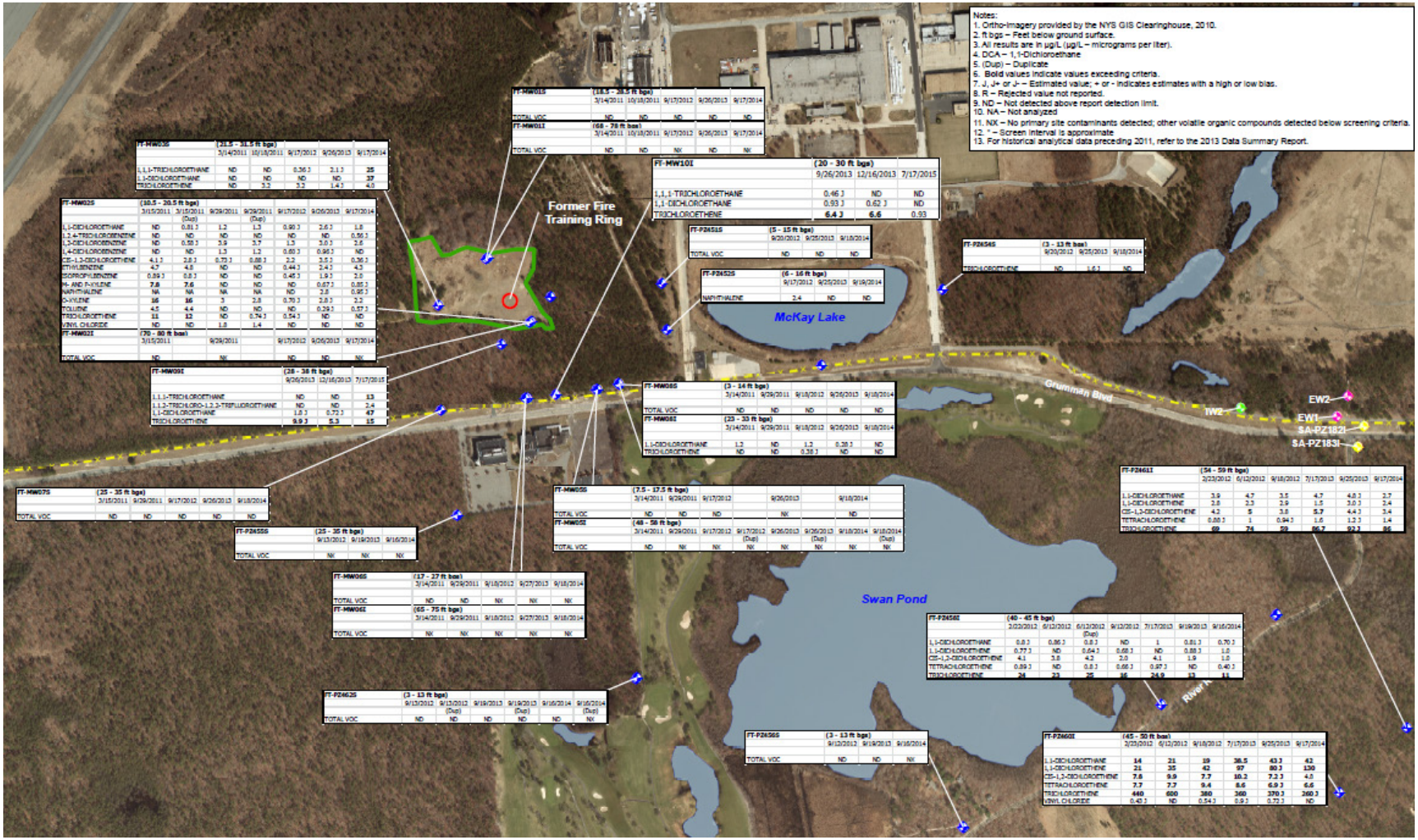
Facility Map



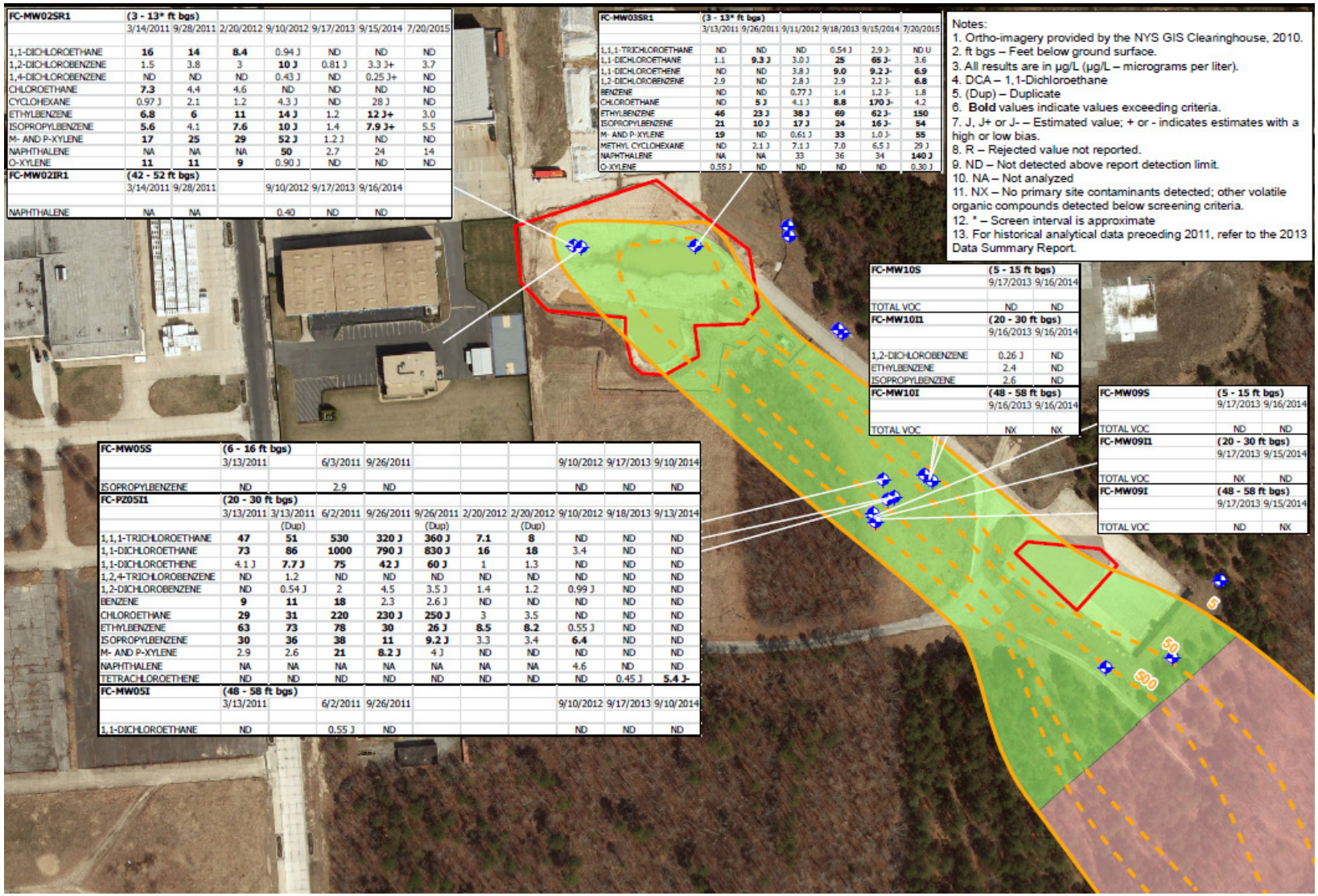
Supplemental Sampling in 2015

- **Well & Piezometer Sampling**
  - Site 2 (Fire Training Area)
    - FT-MW09 and FT-MW10I (not sampled in Sept. 2014)
  - Sites 6A (Source Area)
    - FC-MW02SR1 and FC-MW03SR1 (monitor recent concentrations)
  - Southern Area
    - SA-PZ179I, SA-PZ180I and SA-PZ181I (evaluate placement of replacement extraction well)

Site 2 Results



Site 6A Source Area Results



FC-MW02SR1	(3 - 13* ft bgs)						
	3/14/2011	9/28/2011	2/20/2012	9/10/2012	9/17/2013	9/15/2014	7/20/2015
1,1-DICHLOROETHANE	**16**	**14**	**8.4**	0.94 J	ND	ND	ND
1,2-DICHLOROBENZENE	1.5	3.8	3	**10 J**	0.81 J	3.3 J+	3.7
1,4-DICHLOROBENZENE	ND	ND	ND	0.43 J	ND	0.25 J+	ND
CHLOROETHANE	**7.3**	4.4	4.6	ND	ND	ND	ND
CYCLOHEXANE	0.97 J	2.1	1.2	4.3 J	ND	28 J	ND
ETHYLBENZENE	**6.8**	**6**	**11**	**14 J**	1.2	**12 J+**	3.0
ISOPROPYLBENZENE	**5.6**	4.1	**7.6**	**10 J**	1.4	**7.9 J+**	5.5
M- AND P-XYLENE	**17**	**25**	**29**	**52 J**	1.2 J	ND	ND
NAPHTHALENE	NA	NA	NA	**50**	2.7	24	14
O-XYLENE	**11**	**11**	**9**	0.90 J	ND	ND	ND
FC-MW02IR1	**(42 - 52 ft bgs)**						
	3/14/2011	9/28/2011		9/10/2012	9/17/2013	9/16/2014	
NAPHTHALENE	NA	NA		0.40	ND	ND	

FC-MW03SR1	(3 - 13* ft bgs)					
	3/13/2011	9/26/2011	9/11/2012	9/18/2013	9/15/2014	7/20/2015
1,1,1-TRICHLOROETHANE	ND	ND	ND	0.54 J	2.9 J-	ND U
1,1-DICHLOROETHANE	1.1	**9.3 J**	3.0 J	**25**	**65 J-**	3.6
1,1-DICHLOROETHENE	ND	ND	3.8 J	**9.0**	**9.2 J-**	**6.9**
1,2-DICHLOROBENZENE	2.9	ND	2.8 J	2.9	2.2 J-	**6.8**
BENZENE	ND	ND	0.77 J	1.4	1.2 J-	1.8
CHLOROETHANE	ND	**5 J**	4.1 J	**8.8**	**170 J-**	4.2
ETHYLBENZENE	**46**	**23 J**	**38 J**	**69**	**62 J-**	**150**
ISOPROPYLBENZENE	**21**	**10 J**	**17 J**	**24**	**16 J-**	**54**
M- AND P-XYLENE	**19**	ND	0.61 J	**33**	1.0 J-	**55**
METHYL CYCLOHEXANE	ND	2.1 J	7.1 J	7.0	6.5 J	29 J
NAPHTHALENE	NA	NA	33	36	34	**140 J**
O-XYLENE	0.55 J	ND	ND	ND	ND	0.30 J

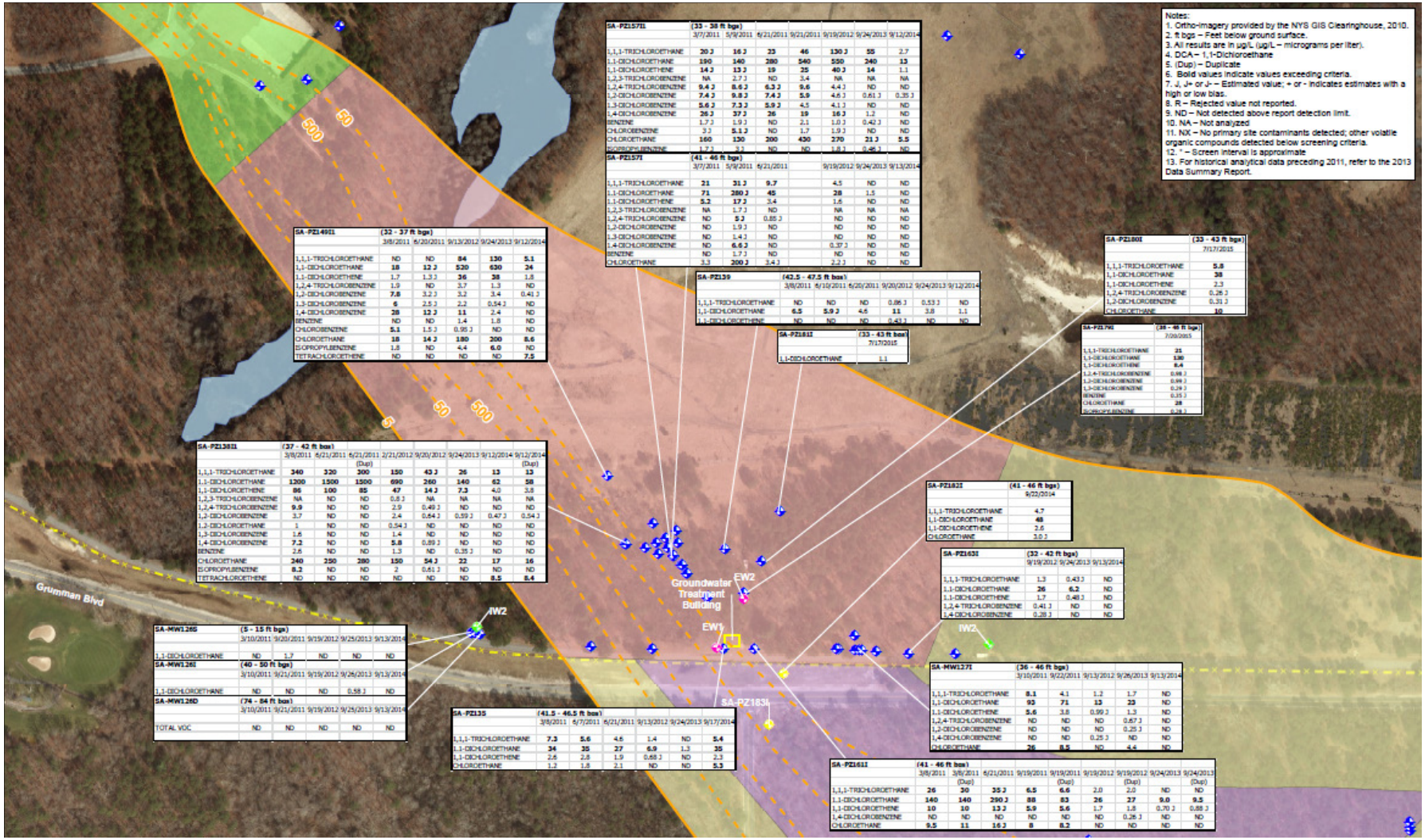
Notes:
1. Ortho-imagery provided by the NYS GIS Clearinghouse, 2010.
2. ft bgs – Feet below ground surface.
3. All results are in µg/L (µg/L – micrograms per liter).
4. DCA – 1,1-Dichloroethane
5. (Dup) – Duplicate
6. **Bold** values indicate values exceeding criteria.
7. J, J+ or J- – Estimated value; + or - indicates estimates with a high or low bias.
8. R – Rejected value not reported.
9. ND – Not detected above report detection limit.
10. NA – Not analyzed
11. NX – No primary site contaminants detected; other volatile organic compounds detected below screening criteria.
12. * – Screen interval is approximate
13. For historical analytical data preceding 2011, refer to the 2013 Data Summary Report.

FC-MW10S	(5 - 15 ft bgs)	
	9/17/2013	9/16/2014
TOTAL VOC	ND	ND
FC-MW10I1	**(20 - 30 ft bgs)**	
	9/16/2013	9/16/2014
1,2-DICHLOROBENZENE	0.26 J	ND
ETHYLBENZENE	2.4	ND
ISOPROPYLBENZENE	2.6	ND
FC-MW10I	**(48 - 58 ft bgs)**	
	9/16/2013	9/16/2014
TOTAL VOC	NX	NX

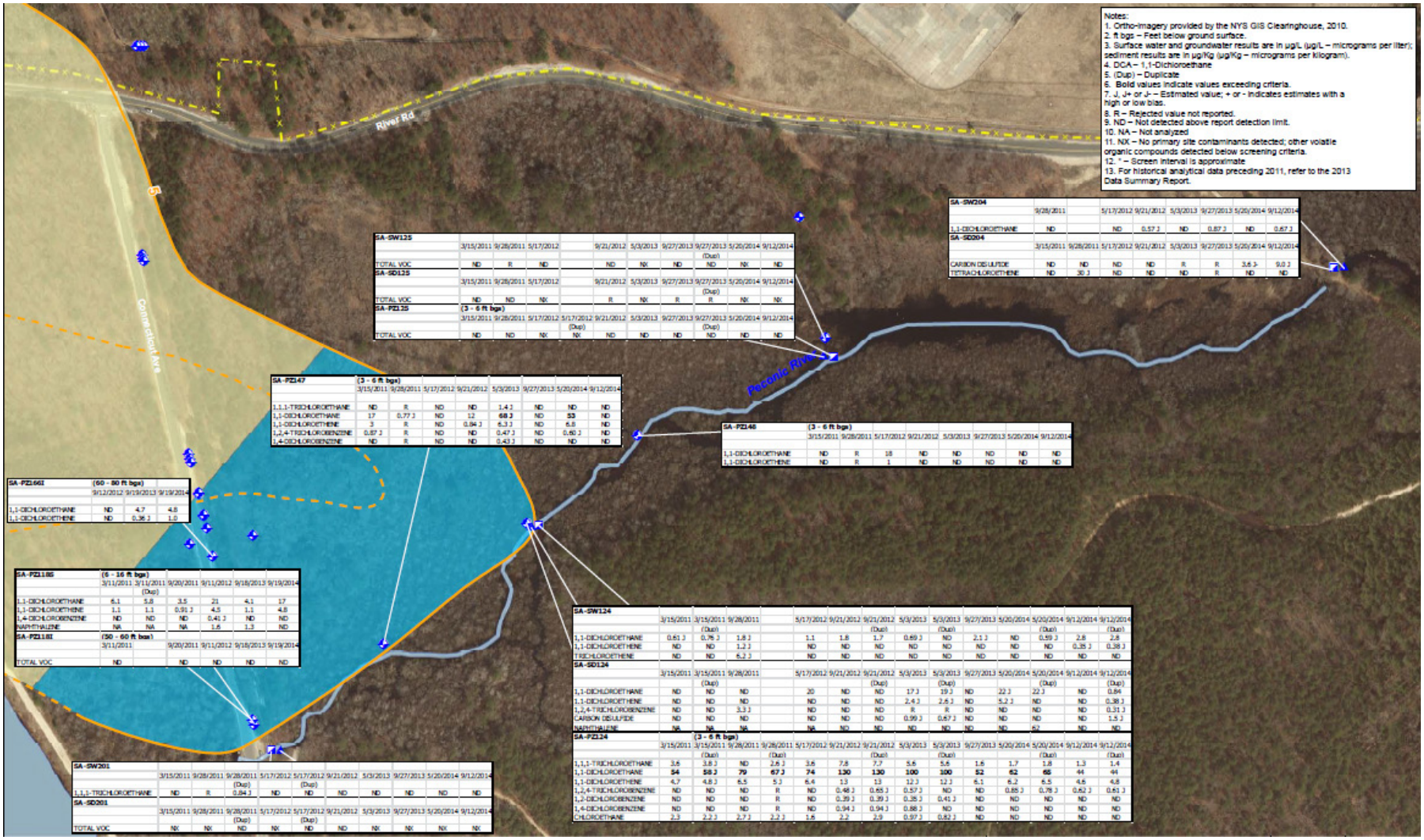
FC-MW09S	(5 - 15 ft bgs)	
	9/17/2013	9/16/2014
TOTAL VOC	ND	ND
FC-MW09I1	**(20 - 30 ft bgs)**	
	9/17/2013	9/15/2014
TOTAL VOC	NX	ND
FC-MW09I	**(48 - 58 ft bgs)**	
	9/17/2013	9/15/2014
TOTAL VOC	ND	NX

FC-MW05S	(6 - 16 ft bgs)									
	3/13/2011		6/3/2011	9/26/2011				9/10/2012	9/17/2013	9/10/2014
ISOPROPYLBENZENE	ND		2.9	ND				ND	ND	ND
FC-PZ05I1	**(20 - 30 ft bgs)**									
	3/13/2011	3/13/2011 (Dup)	6/2/2011	9/26/2011	9/26/2011 (Dup)	2/20/2012	2/20/2012 (Dup)	9/10/2012	9/18/2013	9/13/2014
1,1,1-TRICHLOROETHANE	**47**	**51**	**530**	**320 J**	**360 J**	**7.1**	**8**	ND	ND	ND
1,1-DICHLOROETHANE	**73**	**86**	**1000**	**790 J**	**830 J**	**16**	**18**	3.4	ND	ND
1,1-DICHLOROETHENE	4.1 J	**7.7 J**	**75**	**42 J**	**60 J**	1	1.3	ND	ND	ND
1,2,4-TRICHLOROBENZENE	ND	1.2	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	0.54 J	2	4.5	3.5 J	1.4	1.2	0.99 J	ND	ND
BENZENE	**9**	**11**	**18**	2.3	2.6 J	ND	ND	ND	ND	ND
CHLOROETHANE	**29**	**31**	**220**	**230 J**	**250 J**	3	3.5	ND	ND	ND
ETHYLBENZENE	**63**	**73**	**78**	**30**	**26 J**	**8.5**	**8.2**	0.55 J	ND	ND
ISOPROPYLBENZENE	**30**	**36**	**38**	**11**	**9.2 J**	3.3	3.4	**6.4**	ND	ND
M- AND P-XYLENE	2.9	2.6	**21**	**8.2 J**	4 J	ND	ND	ND	ND	ND
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	4.6	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND	ND	ND	ND	ND	0.45 J	**5.4 J-**
FC-MW05I	**(48 - 58 ft bgs)**									
	3/13/2011		6/2/2011	9/26/2011				9/10/2012	9/17/2013	9/10/2014
1,1-DICHLOROETHANE	ND		0.55 J	ND				ND	ND	ND

Fence Line Area Results



Peconic River Area Results



Summary – 2015 Supplemental Results

- **Site 2 (Fire Training Area)**
  - FT-MW09I showed MCL exceedances of 1,1,1-TCA, 1,1-DCA and TCE in July
  - FT-MW10I showed no MCL exceedances in July
  - Increase at FT-MW09I may be related to drums removed from Site 2 in 2014; evaluate next steps based on 2015 basewide data (currently being validated)
- **Site 6A (Source Area)**
  - FC-MW03SR1 continues to exceed MCLs for 1,1-DCE, ethylbenzene, isopropylbenzene; 1,2-dichlorobenzene, xylene and naphthalene also exceeded MCL in July
  - FC-MW02SR1 concentrations all below MCLs
  - Investigation to evaluate source is planned for 2016; work plan to be developed
- **Southern Area**
  - Results at SA-PZ179I through SA-PZ181I confirm plume still in this general area
  - 1,1-DCA found at all three locations; exceeded MCL at two locations

April 2015 Peconic River Sampling

- **Peconic River Area**
  - –Pore Water
    - 6 VOCs detected across two of the four locations
    - No porewater benchmarks exceeded in April 2015
  - –Sediment
    - Only lab contaminants (e.g., acetone) are naturally-occurring (carbon disulfide) VOCs detected
    - The RD did not adopt benchmarks for sediment; RD recommendation to discontinue sediment sampling is being considered for implementation
  - –Surface Water
    - 3 VOCs detected across 2 locations
    - DCA & DCE observed at SA-SW124
    - TCA at SA-SW201
    - All detections were below RD benchmarks

Upgradient of Peconic River Area (HCA/LCA)

- **RD establishes criteria for implementation**
- **Groundwater concentrations in eastern portion of High Concentration and Low Concentration Areas (HCA/LCA) provide "early notice"**
  - Data to be compared to RD benchmarks
- **If data suggests sustained exceedance of benchmarks may occur in PRA, evaluate mitigation options**
  - Conceptual options in RD include air stripping along north bank of river and in-situ degradation in HCA
- **HCA/LCA data available through September 2014 (September 2015 data currently being validated)**
  - SA-PZ118S/I and 166I less than half of benchmark since 2011
  - SA-PZ123I/I1 near or above benchmark from 2011 through 2014
  - SA-PZ131D below benchmark from 2011 through 2014
  - SA-PZ132I above benchmarks from 2012 through 2014
- **Sustained exceedance of benchmarks at PRA does not appear likely in near term, continued monitoring will re-evaluate on an annual basis**

Annual Monitoring Program

- **Well & Piezometer Sampling**
  - 81 locations, all sampled in September 2015
  - Site 2 (Fire Training Area)
    - On-property – 16 locations
    - Off-property – 7 locations
  - Sites 6A (Fuel Calibration Area) / 10B (Engine Test House)
    - 12 locations
  - Southern Area
    - On-site – 21 locations
    - Off-site – 18 locations
  - Peconic River area – 7 locations
- **Surface Water and Sediment**
  - 4 locations, all sampled in April and September 2015
  - Co-located surface water & sediment samples (plus 4 in-river piezometers)
- **Water Elevation Gauging**
  - 103 wells/piezometers (7 not measured due to damage)
  - 7 staff gauges

Questions?

Notes:
1. Ortho-imagery provided by the NYS GIS Clearinghouse, 2010.
2. ft bgs – Feet below ground surface.
3. All results are in µg/L (µg/L – micrograms per liter).
4. DCA – 1,1-Dichloroethane
5. (Dup) – Duplicate
6. **Bold** values indicate values exceeding criteria.
7. J, J+ or J- – Estimated value; + or - indicates estimates with a high or low bias.
8. R – Rejected value not reported.
9. ND – Not detected above report detection limit.
10. NA – Not analyzed
11. NX – No primary site contaminants detected; other volatile organic compounds detected below screening criteria.
12. * – Screen interval is approximate
13. For historical analytical data preceding 2011, refer to the 2013 Data Summary Report.

FT-MW03S	(21.5 - 31.5 ft bgs)				
	3/14/2011	10/18/2011	9/17/2012	9/26/2013	9/17/2014
1,1,1-TRICHLOROETHANE	ND	ND	0.36 J	2.1 J	**25**
1,1-DICHLOROETHANE	ND	ND	ND	ND	**37**
TRICHLOROETHENE	ND	3.2	3.2	1.4 J	4.0

FT-MW02S	(10.5 - 20.5 ft bgs)						
	3/15/2011	3/15/2011 (Dup)	9/29/2011	9/29/2011 (Dup)	9/17/2012	9/26/2013	9/17/2014
1,1-DICHLOROETHANE	ND	0.81 J	1.2	1.3	0.90 J	2.6 J	1.8
1,2,4-TRICHLOROBENZENE	ND	ND	ND	ND	ND	ND	0.56 J
1,2-DICHLOROBENZENE	ND	0.58 J	3.9	3.7	1.3	3.0 J	2.6
1,4-DICHLOROBENZENE	ND	ND	1.3	1.2	0.60 J	0.96 J	ND
CIS-1,2-DICHLOROETHENE	4.1 J	2.8 J	0.73 J	0.88 J	2.2	3.5 J	0.36 J
ETHYLBENZENE	4.7	4.8	ND	ND	0.44 J	2.4 J	4.3
ISOPROPYLBENZENE	0.89 J	0.8 J	ND	ND	0.45 J	1.9 J	2.0
M- AND P-XYLENE	**7.8**	**7.6**	ND	ND	ND	0.67 J	0.85 J
NAPHTHALENE	NA	NA	NA	NA	ND	2.8	0.95 J
O-XYLENE	**16**	**16**	3	2.8	0.70 J	2.8 J	2.2
TOLUENE	4.5	4.4	ND	ND	ND	0.29 J	0.57 J
TRICHLOROETHENE	**11**	**12**	ND	0.74 J	0.54 J	ND	ND
VINYL CHLORIDE	ND	ND	1.8	1.4	ND	ND	ND

FT-MW02I	(70 - 80 ft bgs)					
	3/15/2011		9/29/2011		9/17/2012	9/26/2013	9/17/2014
TOTAL VOC	ND		NX		ND	ND	NX

FT-MW09I	(28 - 38 ft bgs)		
	9/26/2013	12/16/2013	7/17/2015
1,1,1-TRICHLOROETHANE	ND	ND	**13**
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ND	ND	2.4
1,1-DICHLOROETHANE	1.8 J	0.72 J	**47**
TRICHLOROETHENE	**9.9 J**	**5.3**	**15**

FT-MW07S	(25 - 35 ft bgs)				
	3/15/2011	9/29/2011	9/17/2012	9/26/2013	9/18/2014
TOTAL VOC	ND	ND	ND	ND	ND

FT-PZ455S	(25 - 35 ft bgs)		
	9/13/2012	9/19/2013	9/16/2014
TOTAL VOC	NX	NX	NX

FT-MW06S	(17 - 27 ft bgs)				
	3/14/2011	9/29/2011	9/18/2012	9/27/2013	9/18/2014
TOTAL VOC	ND	ND	NX	NX	NX
FT-MW06I	**(65 - 75 ft bgs)**				
	3/14/2011	9/29/2011	9/18/2012	9/27/2013	9/18/2014
TOTAL VOC	NX	NX	NX	NX	NX

FT-PZ462S	(3 - 13 ft bgs)					
	9/13/2012	9/13/2012 (Dup)	9/19/2013	9/19/2013 (Dup)	9/16/2014	9/16/2014 (Dup)
TOTAL VOC	ND	ND	ND	ND	ND	NX

FT-MW01S	(18.5 - 28.5 ft bgs)				
	3/14/2011	10/18/2011	9/17/2012	9/26/2013	9/17/2014
TOTAL VOC	ND	ND	ND	ND	ND
FT-MW01I	**(68 - 78 ft bgs)**				
	3/14/2011	10/18/2011	9/17/2012	9/26/2013	9/17/2014
TOTAL VOC	ND	ND	NX	ND	NX

FT-MW10I	(20 - 30 ft bgs)		
	9/26/2013	12/16/2013	7/17/2015
1,1,1-TRICHLOROETHANE	0.46 J	ND	ND
1,1-DICHLOROETHANE	0.93 J	0.62 J	ND
TRICHLOROETHENE	**6.4 J**	**6.6**	0.93

FT-PZ451S	(5 - 15 ft bgs)		
	9/20/2012	9/25/2013	9/18/2014
TOTAL VOC	ND	ND	ND

FT-PZ452S	(6 - 16 ft bgs)		
	9/17/2012	9/25/2013	9/19/2014
NAPHTHALENE	2.4	ND	ND

FT-PZ454S	(3 - 13 ft bgs)		
	9/20/2012	9/25/2013	9/18/2014
TRICHLOROETHENE	ND	1.6 J	ND

FT-MW08S	(3 - 14 ft bgs)				
	3/14/2011	9/29/2011	9/18/2012	9/26/2013	9/18/2014
TOTAL VOC	ND	ND	ND	ND	ND
FT-MW08I	**(23 - 33 ft bgs)**				
	3/14/2011	9/29/2011	9/18/2012	9/26/2013	9/18/2014
1,1-DICHLOROETHANE	1.2	ND	1.2	0.28 J	ND
TRICHLOROETHENE	ND	ND	0.38 J	ND	ND

FT-MW05S	(7.5 - 17.5 ft bgs)							
	3/14/2011	9/29/2011	9/17/2012		9/26/2013		9/18/2014	
TOTAL VOC	ND	ND	ND		NX		ND	
FT-MW05I	**(48 - 58 ft bgs)**							
	3/14/2011	9/29/2011	9/17/2012	9/17/2012 (Dup)	9/26/2013	9/26/2013 (Dup)	9/18/2014	9/18/2014 (Dup)
TOTAL VOC	ND	NX	NX	NX	NX	NX	NX	NX

FT-PZ456S	(3 - 13 ft bgs)		
	9/12/2012	9/19/2013	9/16/2014
TOTAL VOC	ND	ND	NX

FT-PZ461I	(54 - 59 ft bgs)					
	2/23/2012	6/12/2012	9/18/2012	7/17/2013	9/25/2013	9/17/2014
1,1-DICHLOROETHANE	3.9	4.7	3.5	4.7	4.8 J	2.7
1,1-DICHLOROETHENE	2.8	2.3	2.9	1.5	3.0 J	2.4
CIS-1,2-DICHLOROETHENE	4.2	**5**	3.8	**5.7**	4.4 J	3.4
TETRACHLOROETHENE	0.88 J	1	0.94 J	1.6	1.2 J	1.4
TRICHLOROETHENE	**69**	**74**	**59**	**86.7**	**92 J**	**86**

FT-PZ458I	(40 - 45 ft bgs)						
	2/22/2012	6/12/2012	6/12/2012 (Dup)	9/12/2012	7/17/2013	9/19/2013	9/16/2014
1,1-DICHLOROETHANE	0.8 J	0.86 J	0.8 J	ND	1	0.81 J	0.70 J
1,1-DICHLOROETHENE	0.77 J	ND	0.64 J	0.68 J	ND	0.88 J	1.0
CIS-1,2-DICHLOROETHENE	4.1	3.8	4.2	2.0	4.1	1.9	1.0
TETRACHLOROETHENE	0.89 J	ND	0.8 J	0.66 J	0.97 J	ND	0.40 J
TRICHLOROETHENE	**24**	**23**	**25**	**16**	**24.9**	**13**	**11**

FT-PZ460I	(45 - 50 ft bgs)					
	2/23/2012	6/12/2012	9/18/2012	7/17/2013	9/25/2013	9/17/2014
1,1-DICHLOROETHANE	**14**	**21**	**19**	**38.5**	**43 J**	**42**
1,1-DICHLOROETHENE	**21**	**35**	**42**	**97**	**80 J**	**130**
CIS-1,2-DICHLOROETHENE	**7.8**	**9.9**	**7.7**	**10.2**	**7.2 J**	4.8
TETRACHLOROETHENE	**7.7**	**7.7**	**9.4**	**8.6**	**6.9 J**	**6.6**
TRICHLOROETHENE	**440**	**600**	**380**	**360**	**370 J**	**260 J**
VINYL CHLORIDE	0.43 J	ND	0.54 J	0.9 J	0.72 J	ND

Former Fire Training Ring

McKay Lake

Swan Pond

Grumman Blvd

River R

EW2

IW2

EW1

SA-PZ182I

SA-PZ183I

Legend

Site Boundary
Former Fire Training Ring
Fence Line
Water
New Monitoring Well
Injection Well
Extraction Well
Monitoring Well/Piezometer

DRAFT

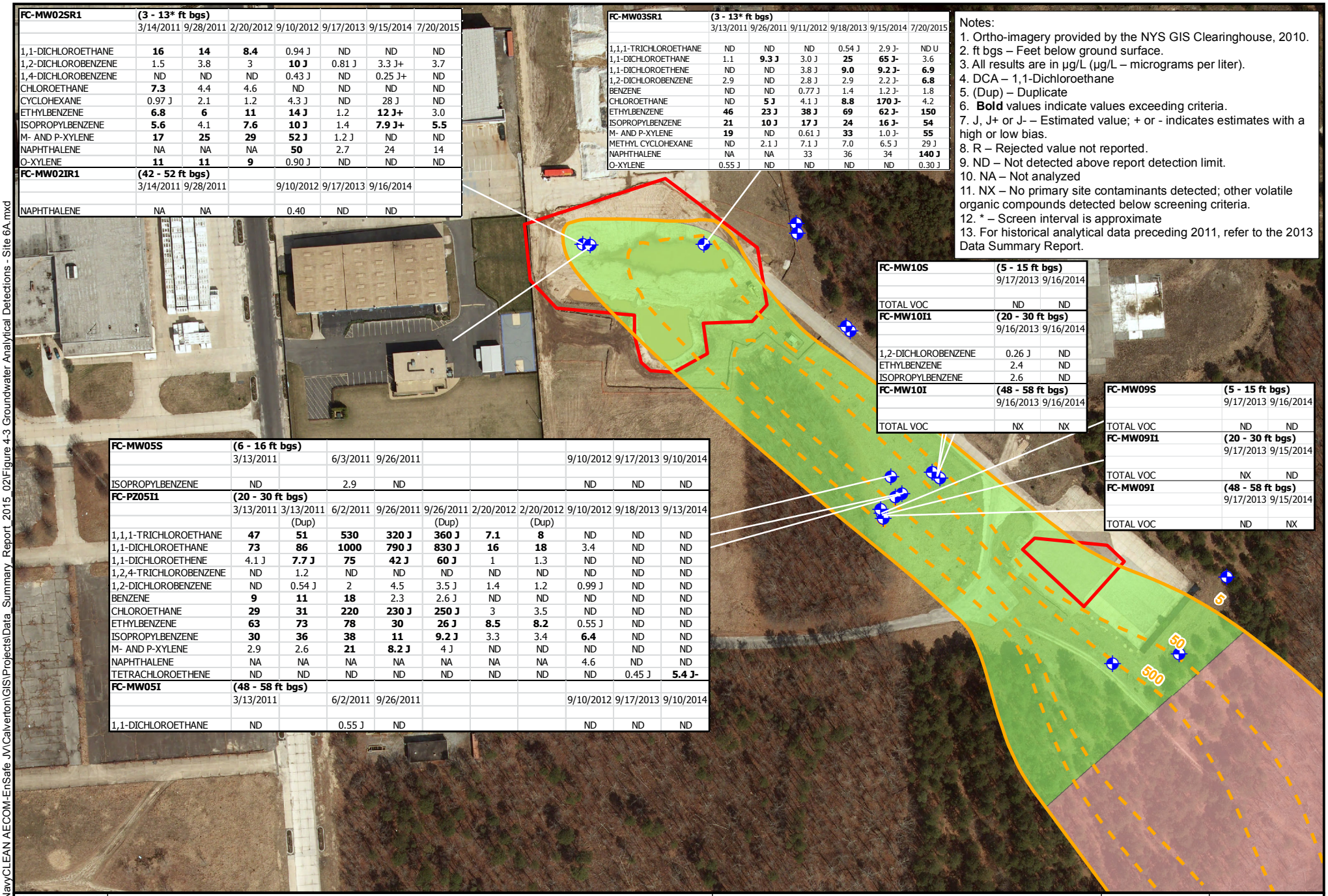
400 200 0 Feet

Groundwater Analytical Detections
Site 2 - Fire Training Area
NWIRP Calverton
Calverton, New York

RESOLUTION CONSULTANTS

Figure 4-1
Date: 10/23/2015
Project #: 60264489

File: W:\Govt\Projects\NavyCLEAN AECOM-EnSafe JV\Calverton\GIS\Projects\Data Summary Report 2015_02\Figure 4-1 Groundwater Analytical Detections.mxd



FC-MW02SR1	(3 - 13* ft bgs)						
	3/14/2011	9/28/2011	2/20/2012	9/10/2012	9/17/2013	9/15/2014	7/20/2015
1,1-DICHLOROETHANE	**16**	**14**	**8.4**	0.94 J	ND	ND	ND
1,2-DICHLOROBENZENE	1.5	3.8	3	**10 J**	0.81 J	3.3 J+	3.7
1,4-DICHLOROBENZENE	ND	ND	ND	0.43 J	ND	0.25 J+	ND
CHLOROETHANE	**7.3**	4.4	4.6	ND	ND	ND	ND
CYCLOHEXANE	0.97 J	2.1	1.2	4.3 J	ND	28 J	ND
ETHYLBENZENE	**6.8**	**6**	**11**	**14 J**	1.2	**12 J+**	3.0
ISOPROPYLBENZENE	**5.6**	4.1	**7.6**	**10 J**	1.4	**7.9 J+**	**5.5**
M- AND P-XYLENE	**17**	**25**	**29**	**52 J**	1.2 J	ND	ND
NAPHTHALENE	NA	NA	NA	**50**	2.7	24	14
O-XYLENE	**11**	**11**	**9**	0.90 J	ND	ND	ND
FC-MW02IR1	**(42 - 52 ft bgs)**						
	3/14/2011	9/28/2011		9/10/2012	9/17/2013	9/16/2014	
NAPHTHALENE	NA	NA		0.40	ND	ND	

FC-MW03SR1	(3 - 13* ft bgs)					
	3/13/2011	9/26/2011	9/11/2012	9/18/2013	9/15/2014	7/20/2015
1,1,1-TRICHLOROETHANE	ND	ND	ND	0.54 J	2.9 J-	ND U
1,1-DICHLOROETHANE	1.1	**9.3 J**	3.0 J	**25**	**65 J-**	3.6
1,1-DICHLOROETHENE	ND	ND	3.8 J	**9.0**	**9.2 J-**	**6.9**
1,2-DICHLOROBENZENE	2.9	ND	2.8 J	2.9	2.2 J-	**6.8**
BENZENE	ND	ND	0.77 J	1.4	1.2 J-	1.8
CHLOROETHANE	ND	**5 J**	4.1 J	**8.8**	**170 J-**	4.2
ETHYLBENZENE	**46**	**23 J**	**38 J**	**69**	**62 J-**	**150**
ISOPROPYLBENZENE	**21**	**10 J**	**17 J**	**24**	**16 J-**	**54**
M- AND P-XYLENE	**19**	ND	0.61 J	**33**	1.0 J-	**55**
METHYL CYCLOHEXANE	ND	2.1 J	7.1 J	7.0	6.5 J	29 J
NAPHTHALENE	NA	NA	33	36	34	**140 J**
O-XYLENE	0.55 J	ND	ND	ND	ND	0.30 J

Notes:
1. Ortho-imagery provided by the NYS GIS Clearinghouse, 2010.
2. ft bgs – Feet below ground surface.
3. All results are in µg/L (µg/L – micrograms per liter).
4. DCA – 1,1-Dichloroethane
5. (Dup) – Duplicate
6. **Bold** values indicate values exceeding criteria.
7. J, J+ or J- – Estimated value; + or - indicates estimates with a high or low bias.
8. R – Rejected value not reported.
9. ND – Not detected above report detection limit.
10. NA – Not analyzed
11. NX – No primary site contaminants detected; other volatile organic compounds detected below screening criteria.
12. * – Screen interval is approximate
13. For historical analytical data preceding 2011, refer to the 2013 Data Summary Report.

FC-MW10S	(5 - 15 ft bgs)	
	9/17/2013	9/16/2014
TOTAL VOC	ND	ND
FC-MW10I1	**(20 - 30 ft bgs)**	
	9/16/2013	9/16/2014
1,2-DICHLOROBENZENE	0.26 J	ND
ETHYLBENZENE	2.4	ND
ISOPROPYLBENZENE	2.6	ND
FC-MW10I	**(48 - 58 ft bgs)**	
	9/16/2013	9/16/2014
TOTAL VOC	NX	NX

FC-MW09S	(5 - 15 ft bgs)	
	9/17/2013	9/16/2014
TOTAL VOC	ND	ND
FC-MW09I1	**(20 - 30 ft bgs)**	
	9/17/2013	9/15/2014
TOTAL VOC	NX	ND
FC-MW09I	**(48 - 58 ft bgs)**	
	9/17/2013	9/15/2014
TOTAL VOC	ND	NX

FC-MW05S	(6 - 16 ft bgs)									
	3/13/2011		6/3/2011	9/26/2011				9/10/2012	9/17/2013	9/10/2014
ISOPROPYLBENZENE	ND		2.9	ND				ND	ND	ND
FC-PZ05I1	**(20 - 30 ft bgs)**									
	3/13/2011	3/13/2011 (Dup)	6/2/2011	9/26/2011	9/26/2011 (Dup)	2/20/2012	2/20/2012 (Dup)	9/10/2012	9/18/2013	9/13/2014
1,1,1-TRICHLOROETHANE	**47**	**51**	**530**	**320 J**	**360 J**	**7.1**	**8**	ND	ND	ND
1,1-DICHLOROETHANE	**73**	**86**	**1000**	**790 J**	**830 J**	**16**	**18**	3.4	ND	ND
1,1-DICHLOROETHENE	4.1 J	**7.7 J**	**75**	**42 J**	**60 J**	1	1.3	ND	ND	ND
1,2,4-TRICHLOROBENZENE	ND	1.2	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	0.54 J	2	4.5	3.5 J	1.4	1.2	0.99 J	ND	ND
BENZENE	**9**	**11**	**18**	2.3	2.6 J	ND	ND	ND	ND	ND
CHLOROETHANE	**29**	**31**	**220**	**230 J**	**250 J**	3	3.5	ND	ND	ND
ETHYLBENZENE	**63**	**73**	**78**	**30**	**26 J**	**8.5**	**8.2**	0.55 J	ND	ND
ISOPROPYLBENZENE	**30**	**36**	**38**	**11**	**9.2 J**	3.3	3.4	**6.4**	ND	ND
M- AND P-XYLENE	2.9	2.6	**21**	**8.2 J**	4 J	ND	ND	ND	ND	ND
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	4.6	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND	ND	ND	ND	ND	0.45 J	**5.4 J-**
FC-MW05I	**(48 - 58 ft bgs)**									
	3/13/2011		6/2/2011	9/26/2011				9/10/2012	9/17/2013	9/10/2014
1,1-DICHLOROETHANE	ND		0.55 J	ND				ND	ND	ND

Legend

- 1,1 - DCA Contour ug/L
- 1,1 - DCA Contour ug/L (Inferred)
- Excavation Area 2009/2010
- Fence Line Area
- Source Area

DRAFT

200 100 0 Feet

Groundwater Analytical Detections
Site 6A - Fuel Calibration Area
NWIRP Calverton
Calverton, New York

RESOLUTION CONSULTANTS

Figure 4-3

Date: 10/23/2015

Project #: 60264489

File: W:\Gov\Projects\NavyCLEAN AECOM-EnSafe JV\Calverton\GIS\Projects\Data_Summary_Report_2015_02\Figure 4-3 Groundwater Analytical Detections - Site 6A.mxd

Notes:
1. Ortho-imagery provided by the NYS GIS Clearinghouse, 2010.
2. ft bgs – Feet below ground surface.
3. All results are in µg/L (µg/L – micrograms per liter).
4. DCA – 1,1-Dichloroethane
5. (Dup) – Duplicate
6. **Bold** values indicate values exceeding criteria.
7. J, J+ or J- – Estimated value; + or - indicates estimates with a high or low bias.
8. R – Rejected value not reported.
9. ND – Not detected above report detection limit.
10. NA – Not analyzed
11. NX – No primary site contaminants detected; other volatile organic compounds detected below screening criteria.
12. * – Screen interval is approximate
13. For historical analytical data preceding 2011, refer to the 2013 Data Summary Report.

SA-PZ157I1	(33 - 38 ft bgs)						
	3/7/2011	5/9/2011	6/21/2011	9/21/2011	9/19/2012	9/24/2013	9/12/2014
1,1,1-TRICHLOROETHANE	**20 J**	**16 J**	**23**	**46**	**130 J**	**55**	2.7
1,1-DICHLOROETHANE	**190**	**140**	**280**	**540**	**550**	**240**	**13**
1,1-DICHLOROETHENE	**14 J**	**13 J**	**19**	**25**	**40 J**	**14**	1.1
1,2,3-TRICHLOROBENZENE	NA	2.7 J	ND	3.4	NA	NA	NA
1,2,4-TRICHLOROBENZENE	**9.4 J**	**8.6 J**	**6.3 J**	**9.6**	4.4 J	ND	ND
1,2-DICHLOROBENZENE	**7.4 J**	**9.8 J**	**7.4 J**	**5.9**	4.6 J	0.61 J	0.35 J
1,3-DICHLOROBENZENE	**5.6 J**	**7.3 J**	**5.9 J**	4.5	4.1 J	ND	ND
1,4-DICHLOROBENZENE	**26 J**	**37 J**	**26**	**19**	**16 J**	1.2	ND
BENZENE	1.7 J	1.9 J	ND	2.1	1.0 J	0.42 J	ND
CHLOROBENZENE	3 J	**5.1 J**	ND	1.7	1.9 J	ND	ND
CHLOROETHANE	**160**	**130**	**200**	**430**	**270**	**21 J**	**5.5**
ISOPROPYLBENZENE	1.7 J	3 J	ND	ND	1.8 J	0.46 J	ND

SA-PZ157I	(41 - 46 ft bgs)						
	3/7/2011	5/9/2011	6/21/2011		9/19/2012	9/24/2013	9/13/2014
1,1,1-TRICHLOROETHANE	**21**	**31 J**	**9.7**		4.5	ND	ND
1,1-DICHLOROETHANE	**71**	**280 J**	**45**		**28**	1.5	ND
1,1-DICHLOROETHENE	**5.2**	**17 J**	3.4		1.6	ND	ND
1,2,3-TRICHLOROBENZENE	NA	1.7 J	ND		NA	NA	NA
1,2,4-TRICHLOROBENZENE	ND	**5 J**	0.85 J		ND	ND	ND
1,2-DICHLOROBENZENE	ND	1.9 J	ND		ND	ND	ND
1,3-DICHLOROBENZENE	ND	1.4 J	ND		ND	ND	ND
1,4-DICHLOROBENZENE	ND	**6.6 J**	ND		0.37 J	ND	ND
BENZENE	ND	1.7 J	ND		ND	ND	ND
CHLOROETHANE	3.3	**200 J**	3.4 J		2.2 J	ND	ND

SA-PZ149I1	(32 - 37 ft bgs)				
	3/8/2011	6/20/2011	9/13/2012	9/24/2013	9/12/2014
1,1,1-TRICHLOROETHANE	ND	ND	**84**	**130**	**5.1**
1,1-DICHLOROETHANE	**18**	**12 J**	**520**	**630**	**24**
1,1-DICHLOROETHENE	1.7	1.3 J	**36**	**38**	1.8
1,2,4-TRICHLOROBENZENE	1.9	ND	3.7	1.3	ND
1,2-DICHLOROBENZENE	**7.8**	3.2 J	3.2	3.4	0.41 J
1,3-DICHLOROBENZENE	**6**	2.5 J	2.2	0.54 J	ND
1,4-DICHLOROBENZENE	**28**	**12 J**	**11**	2.4	ND
BENZENE	ND	ND	1.4	1.8	ND
CHLOROBENZENE	**5.1**	1.5 J	0.95 J	ND	ND
CHLOROETHANE	**18**	**14 J**	**180**	**200**	**8.6**
ISOPROPYLBENZENE	1.8	ND	4.4	**6.0**	ND
TETRACHLOROETHENE	ND	ND	ND	ND	**7.5**

SA-PZ139	(42.5 - 47.5 ft bgs)					
	3/8/2011	6/10/2011	6/20/2011	9/20/2012	9/24/2013	9/12/2014
1,1,1-TRICHLOROETHANE	ND	ND	ND	0.86 J	0.53 J	ND
1,1-DICHLOROETHANE	**6.5**	**5.9 J**	4.6	**11**	3.8	1.1
1,1-DICHLOROETHENE	ND	ND	ND	0.43 J	ND	ND

SA-PZ181I	(33 - 43 ft bgs)
	7/17/2015
1,1-DICHLOROETHANE	1.1

SA-PZ180I	(33 - 43 ft bgs)
	7/17/2015
1,1,1-TRICHLOROETHANE	**5.8**
1,1-DICHLOROETHANE	**38**
1,1-DICHLOROETHENE	2.3
1,2,4-TRICHLOROBENZENE	0.26 J
1,2-DICHLOROBENZENE	0.31 J
CHLOROETHANE	**10**

SA-PZ179I	(36 - 46 ft bgs)
	7/20/2015
1,1,1-TRICHLOROETHANE	**21**
1,1-DICHLOROETHANE	**130**
1,1-DICHLOROETHENE	**8.4**
1,2,4-TRICHLOROBENZENE	0.98 J
1,2-DICHLOROBENZENE	0.99 J
1,3-DICHLOROBENZENE	0.29 J
BENZENE	0.35 J
CHLOROETHANE	**28**
ISOPROPYLBENZENE	0.28 J

SA-PZ138I1	(37 - 42 ft bgs)							
	3/8/2011	6/21/2011	6/21/2011 (Dup)	2/21/2012	9/20/2012	9/24/2013	9/12/2014	9/12/2014 (Dup)
1,1,1-TRICHLOROETHANE	**340**	**320**	**300**	**150**	**43 J**	**26**	**13**	**13**
1,1-DICHLOROETHANE	**1200**	**1500**	**1500**	**690**	**260**	**140**	**62**	**58**
1,1-DICHLOROETHENE	**86**	**100**	**85**	**47**	**14 J**	**7.3**	4.0	3.8
1,2,3-TRICHLOROBENZENE	NA	ND	ND	0.8 J	NA	NA	NA	NA
1,2,4-TRICHLOROBENZENE	**9.9**	ND	ND	2.9	0.49 J	ND	ND	ND
1,2-DICHLOROBENZENE	3.7	ND	ND	2.4	0.64 J	0.59 J	0.47 J	0.54 J
1,2-DICHLOROETHANE	1	ND	ND	0.54 J	ND	ND	ND	ND
1,3-DICHLOROBENZENE	1.6	ND	ND	1.4	ND	ND	ND	ND
1,4-DICHLOROBENZENE	**7.2**	ND	ND	**5.8**	0.89 J	ND	ND	ND
BENZENE	2.6	ND	ND	1.3	ND	0.35 J	ND	ND
CHLOROETHANE	**240**	**250**	**280**	**150**	**54 J**	**22**	**17**	**16**
ISOPROPYLBENZENE	**8.2**	ND	ND	2	0.61 J	ND	ND	ND
TETRACHLOROETHENE	ND	ND	ND	ND	ND	ND	**8.5**	**8.4**

SA-PZ182I	(41 - 46 ft bgs)
	9/22/2014
1,1,1-TRICHLOROETHANE	4.7
1,1-DICHLOROETHANE	**48**
1,1-DICHLOROETHENE	2.6
CHLOROETHANE	3.0 J

SA-PZ163I	(32 - 42 ft bgs)		
	9/19/2012	9/24/2013	9/13/2014
1,1,1-TRICHLOROETHANE	1.3	0.43 J	ND
1,1-DICHLOROETHANE	**26**	**6.2**	ND
1,1-DICHLOROETHENE	1.7	0.48 J	ND
1,2,4-TRICHLOROBENZENE	0.41 J	ND	ND
1,4-DICHLOROBENZENE	0.28 J	ND	ND

SA-MW126S	(5 - 15 ft bgs)				
	3/10/2011	9/20/2011	9/19/2012	9/25/2013	9/13/2014
1,1-DICHLOROETHANE	ND	1.7	ND	ND	ND

SA-MW126I	(40 - 50 ft bgs)				
	3/10/2011	9/21/2011	9/19/2012	9/26/2013	9/13/2014
1,1-DICHLOROETHANE	ND	ND	ND	0.58 J	ND

SA-MW126D	(74 - 84 ft bgs)				
	3/10/2011	9/21/2011	9/19/2012	9/25/2013	9/13/2014
TOTAL VOC	ND	ND	ND	ND	ND

SA-PZ135	(41.5 - 46.5 ft bgs)					
	3/8/2011	6/7/2011	6/21/2011	9/13/2012	9/24/2013	9/17/2014
1,1,1-TRICHLOROETHANE	**7.3**	**5.6**	4.6	1.4	ND	**5.4**
1,1-DICHLOROETHANE	**34**	**35**	**27**	**6.9**	1.3	**35**
1,1-DICHLOROETHENE	2.6	2.8	1.9	0.68 J	ND	2.3
CHLOROETHANE	1.2	1.8	2.1	ND	ND	**5.3**

SA-MW127I	(36 - 46 ft bgs)				
	3/10/2011	9/22/2011	9/13/2012	9/26/2013	9/13/2014
1,1,1-TRICHLOROETHANE	**8.1**	4.1	1.2	1.7	ND
1,1-DICHLOROETHANE	**93**	**71**	**13**	**23**	ND
1,1-DICHLOROETHENE	**5.6**	3.8	0.99 J	1.3	ND
1,2,4-TRICHLOROBENZENE	ND	ND	ND	0.67 J	ND
1,2-DICHLOROBENZENE	ND	ND	ND	0.25 J	ND
1,4-DICHLOROBENZENE	ND	ND	0.25 J	ND	ND
CHLOROETHANE	**26**	**8.5**	ND	4.4	ND

SA-PZ161I	(41 - 46 ft bgs)								
	3/8/2011	3/8/2011 (Dup)	6/21/2011	9/19/2011	9/19/2011 (Dup)	9/19/2012	9/19/2012 (Dup)	9/24/2013	9/24/2013 (Dup)
1,1,1-TRICHLOROETHANE	**26**	**30**	**35 J**	**6.5**	**6.6**	2.0	2.0	ND	ND
1,1-DICHLOROETHANE	**140**	**140**	**290 J**	**88**	**83**	**26**	**27**	**9.0**	**9.5**
1,1-DICHLOROETHENE	**10**	**10**	**13 J**	**5.9**	**5.6**	1.7	1.8	0.70 J	0.88 J
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND	ND	0.26 J	ND	ND
CHLOROETHANE	**9.5**	**11**	**16 J**	**8**	**8.2**	ND	ND	ND	ND

Grumman Blvd

Groundwater Treatment Building

EW1

EW2

IW2

IW2

SA-PZ183I

50

500

5

50

500

Legend

- New Monitoring Well
- Injection Well
- Extraction Well
- Monitoring Well/Piezometer
- 1,1 - DCA Contour ug/L
- 1,1 - DCA Contour ug/L (Inferred)
- Fence Line Area
- Offsite High Concentration Area
- Offsite Low Concentration Area
- Source Area
- Water
- Fence Line

DRAFT

N W E S

200 100 0 Feet

Groundwater Analytical Detections Southern/Fence Line Area NWIRP Calverton Calverton, New York

RESOLUTION CONSULTANTS

Figure 4-5

Date: 10/23/2015

Project #: 60264489

File: W:\Gov\Projects\Navy\CLEAN AECOM-EnSafe JV\Calverton\GIS\Projects\Data_Summary_Report_2015_02\Figure 4-5 Groundwater Analytical Detections - Southern_Fence Line Area.mxd

Notes:
1. Ortho-imagery provided by the NYS GIS Clearinghouse, 2010.
2. ft bgs – Feet below ground surface.
3. All results are in µg/L (µg/L – micrograms per liter).
4. DCA – 1,1-Dichloroethane
5. (Dup) – Duplicate
6. **Bold** values indicate values exceeding criteria.
7. J, J+ or J- – Estimated value; + or - indicates estimates with a high or low bias.
8. R – Rejected value not reported.
9. ND – Not detected above report detection limit.
10. NA – Not analyzed
11. NX – No primary site contaminants detected; other volatile organic compounds detected below screening criteria.
12. * – Screen interval is approximate
13. For historical analytical data preceding 2011, refer to the 2013 Data Summary Report.

SA-PZ140	(44.5 - 49.5 ft bgs)				
	3/12/2011	9/21/2011	9/11/2012	9/18/2013	9/15/2014
1,1,1-TRICHLOROETHANE	4.8	8.4	2.4	1.2	ND
1,1-DICHLOROETHANE	41	**69**	33	28	6.0 J-
1,1-DICHLOROETHENE	3.1	5.1	2.5	1.9	0.46 J-
1,2,4-TRICHLOROBENZENE	1	0.83 J	0.78 J	0.56 J	ND
1,4-DICHLOROBENZENE	1.3	0.89 J	0.57 J	ND	ND
CHLOROETHANE	5.7	6.8	1.7 J	ND	ND

SA-PZ142	(40.5 - 45.5 ft bgs)					
	3/12/2011	3/12/2011 (Dup)	9/21/2011	9/11/2012	9/18/2013	9/15/2014
1,1,1-TRICHLOROETHANE	40 J	35	17	**66 J**	41	13 J-
1,1-DICHLOROETHANE	**200**	**210**	**100**	**290**	**250**	**100 J-**
1,1-DICHLOROETHENE	17 J	15	9.4	28 J	23	8.6 J-
1,2,3-TRICHLOROBENZENE	ND	ND	0.8 J	NA	NA	NA
1,2,4-TRICHLOROBENZENE	1.7 J	1.5	2.3	0.59 J	3.0	1.2 J
1,2-DICHLOROBENZENE	0.88 J	0.79 J	0.62 J	0.81 J	0.91 J	ND
1,3-DICHLOROBENZENE	0.63 J	0.62 J	ND	0.68 J	0.53 J	ND
1,4-DICHLOROBENZENE	3 J	2.8	2	3.3 J	2.2	ND
BENZENE	ND	ND	ND	0.36 J	ND	ND
CHLOROETHANE	28 J	27	7.8	48 J	21	8.0 J-

SA-PZ143	(41 - 46 ft bgs)						
	3/12/2011	9/21/2011	9/21/2011 (Dup)	9/11/2012	9/18/2013	9/17/2014	
1,1,1-TRICHLOROETHANE	**62**	**84**	**88**	**66**	**78**	48	
1,1-DICHLOROETHANE	**390**	**530**	**490**	**430**	**510**	**410**	
1,1-DICHLOROETHENE	30	36	40	35	43	34	
1,2,3-TRICHLOROBENZENE	0.94 J	0.9 J	0.9 J	NA	NA	NA	
1,2,4-TRICHLOROBENZENE	3	3.2	3	3.2	2.0	1.2	
1,2-DICHLOROBENZENE	0.66 J	0.86 J	0.94 J	1.1	0.94 J	0.65 J	
1,3-DICHLOROBENZENE	ND	ND	ND	0.51 J	0.34 J	ND	
1,4-DICHLOROBENZENE	1.3	ND	ND	2.4	1.7	ND	
BENZENE	0.55 J	0.97 J	0.95 J	0.59 J	0.79 J	0.46 J	
CHLOROETHANE	47	40	45	36	39	31	
VINYL CHLORIDE	ND	ND	ND	0.51 J	ND	ND	

SA-PZ145I	(30 - 35 ft bgs)					
	3/9/2011		9/27/2011	9/18/2012	9/25/2013	9/17/2014
1,1,1-TRICHLOROETHANE	5.6		0.98 J	0.38 J	0.48 J	0.99 J
1,1-DICHLOROETHANE	**72**		**62**	42	41 J	32
1,1-DICHLOROETHENE	7.4		5.8	4.8	3.6 J	3.2
1,2,4-TRICHLOROBENZENE	ND		1.4	1.2	0.67 J	0.72 J
1,4-DICHLOROBENZENE	ND		ND	0.59 J	0.58 J	0.76 J
CHLOROETHANE	2.1		3.1	ND	ND	ND

SA-PZ145D	(50 - 55 ft bgs)					
	3/9/2011	3/9/2011 (Dup)	9/27/2011	9/18/2012	9/25/2013	9/17/2014
1,1-DICHLOROETHANE	24 J	24	28	28	30	19
1,1-DICHLOROETHENE	1.5 J	1.4	1.8	1.9	2.1	1.4
1,2,4-TRICHLOROBENZENE	0.78 J	ND	ND	0.80 J	0.40 J	0.43 J
1,4-DICHLOROBENZENE	ND	ND	ND	0.25 J	ND	ND

EW2
Groundwater Treatment Building
EW1
IW2
IW2
SA-PZ182I
SA-PZ183I
50
500
5
River Rd
Connecticut Ave
Peconic River
Donahue Pond

Legend

- New Monitoring Well
- Injection Well
- Extraction Well
- Monitoring Well/Piezometer
- 1,1 - DCA Contour ug/L
- 1,1 - DCA Contour ug/L (Inferred)
- Fence Line Area
- Offsite High Concentration Area
- Offsite Low Concentration Area
- Peconic River Area
- Water
- Fence Line

DRAFT

300 150 0 Feet

Groundwater Analytical Detections Southern/ Offsite High Concentration Area NWIRP Calverton Calverton, New York

RESOLUTION CONSULTANTS

Figure 4-6
Date: 10/23/2015
Project #: 60264489

File: W:\Govt\Projects\Navy\CLEAN AECOM-EnSafe JV\Calverton\GIS\Projects\Data_Summary_Report_2015_02\Figure 4-6 Groundwater Analytical Detections - Southern_Offsite High Concentration Area.mxd

Notes:
1. Ortho-imagery provided by the NYS GIS Clearinghouse, 2010.
2. ft bgs – Feet below ground surface.
3. All results are in µg/L (µg/L – micrograms per liter).
4. DCA – 1,1-Dichloroethane
5. (Dup) – Duplicate
6. **Bold** values indicate values exceeding criteria.
7. J, J+ or J- – Estimated value; + or - indicates estimates with a high or low bias.
8. R – Rejected value not reported.
9. ND – Not detected above report detection limit.
10. NA – Not analyzed
11. NX – No primary site contaminants detected; other volatile organic compounds detected below screening criteria.
12. * – Screen interval is approximate
13. For historical analytical data preceding 2011, refer to the 2013 Data Summary Report.

SA-MW128I	(30 - 40 ft bgs)					
	3/10/2011	9/22/2011		9/13/2012	9/24/2013	9/16/2014
1,1,1-TRICHLOROETHANE	ND	ND		0.59 J	0.53 J	ND
1,1-DICHLOROETHANE	5.1	5		2.1	3.1	2.7
1,1-DICHLOROETHENE	ND	0.68 J		0.44 J	0.42 J	0.40 J
1,2,4-TRICHLOROBENZENE	ND	ND		ND	ND	0.44 J
SA-MW128D	**(58 -68 ft bgs)**					
	3/10/2011	9/22/2011	9/22/2011 (Dup)	9/13/2012	9/24/2013	9/16/2014
1,1-DICHLOROETHANE	2.1	2.6	2.7	2.0	1.9	3.3
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND	0.22 J

SA-PZ134	(39 - 44 ft bgs)		
	9/20/2012	9/24/2013	9/13/2014
1,1,1-TRICHLOROETHANE	0.22 J	ND	ND
1,1-DICHLOROETHANE	3.7	3.5	ND

SA-MW129S	(19.5 - 29.5 ft bgs)				
	3/10/2011	9/22/2011	9/13/2012	9/24/2013	9/22/2014
TOTAL VOC	ND	NX	ND	ND	ND
SA-MW129I	**(50 - 60 ft bgs)**				
	3/10/2011	9/22/2011	9/13/2012	9/20/2013	9/19/2014
1,1-DICHLOROETHANE	7	2.2	ND	0.75 J	ND
1,1-DICHLOROETHENE	0.64 J	ND	ND	ND	ND
SA-MW129D	**(80 - 90 ft bgs)**				
	3/10/2011	9/22/2011	9/12/2012	9/24/2013	9/19/2014
1,1-DICHLOROETHANE	2.7	3	ND	2.2	0.68 J
1,1-DICHLOROETHENE	ND	0.67 J	0.56 J	ND	0.63 J

SA-PZ122I	(39 - 49 ft bgs)					
	3/12/2011	9/23/2011		9/12/2012	9/24/2013	9/19/2014
TOTAL VOC	ND	NX		ND	ND	ND
SA-PZ122D	**(122 - 132 ft bgs)**					
	3/12/2011	9/20/2011	9/20/2011 (Dup)	9/12/2012	9/20/2013	9/19/2014
1,1-DICHLOROETHANE	1.4	1.8 J	ND	ND	1.7	1.4

SA-PZ144I	(45 - 50 ft bgs)					
	3/11/2011	3/11/2011 (Dup)	9/22/2011	9/12/2012	9/19/2013	9/16/2014
1,1-DICHLOROETHANE	4.4	4.2	4.6	2.8	3.4	2.8
1,1-DICHLOROETHENE	0.6 J	0.52 J	0.8 J	0.47 J	ND	0.46 J
1,4-DICHLOROBENZENE	ND	ND	ND	0.30 J	ND	0.39 J

SA-PZ123S	(7 - 17 ft bgs)				
	3/11/2011	9/20/2011	9/11/2012	9/19/2013	9/22/2014
1,1-DICHLOROETHANE	ND	2.6	1.0	ND	ND
SA-PZ123I1	**(32 - 42 ft bgs)**				
	3/11/2011	9/20/2011	9/11/2012	9/19/2013	9/22/2014
1,1,1-TRICHLOROETHANE	ND	9.3	22	7.4	ND
1,1-DICHLOROETHANE	11	**85**	**150**	**82**	16
1,1-DICHLOROETHENE	ND	7.8	14	8.1	2.0
1,2,4-TRICHLOROBENZENE	ND	0.92 J	ND	0.75 J	ND
1,2-DICHLOROBENZENE	ND	ND	0.26 J	0.22 J	ND
1,4-DICHLOROBENZENE	ND	0.54 J	0.54 J	ND	ND
SA-PZ123I	**(70 - 80 ft bgs)**				
	3/12/2011	9/20/2011	9/11/2012	9/19/2013	9/22/2014
1,1,1-TRICHLOROETHANE	ND	ND	1.1	1.5	2.1
1,1-DICHLOROETHANE	37	37	44	**54**	**63**
1,1-DICHLOROETHENE	4.9	4.7	5.3	4.8	7.9
1,2,4-TRICHLOROBENZENE	0.7 J	0.64 J	0.48 J	ND	ND

SA-PZ172I	(43.5 - 48.5 ft bgs)			
	2/20/2012	9/11/2012	9/18/2013	9/15/2014
1,1,1-TRICHLOROETHANE	28	22 J	19	16 J+
1,1-DICHLOROETHANE	**230**	**190**	**170**	**110 J+**
1,1-DICHLOROETHENE	17	16 J	13	8.9 J+
1,2,3-TRICHLOROBENZENE	0.78 J	NA	NA	NA
1,2,4-TRICHLOROBENZENE	2.3	0.67 J	2.1	1.8 J+
1,2-DICHLOROBENZENE	0.72 J	0.64 J	0.64 J	0.40 J+
1,3-DICHLOROBENZENE	0.51 J	0.71 J	0.52 J	R
1,4-DICHLOROBENZENE	2	3.5 J	2.8	1.1 J+
CHLOROETHANE	24	29 J	11	6.8 J+

SA-PZ171I	(41.5 - 46.5 ft bgs)			
	2/20/2012	9/11/2012	9/18/2013	9/15/2014
1,1,1-TRICHLOROETHANE	48	**66**	**91**	45 J-
1,1-DICHLOROETHANE	**390**	**470**	**580**	**150 J-**
1,1-DICHLOROETHENE	27	40	53	29 J-
1,2,3-TRICHLOROBENZENE	1.4	NA	NA	NA
1,2,4-TRICHLOROBENZENE	4	2.9	2.7	2.5 J
1,2-DICHLOROBENZENE	1.3	0.68 J	1.9	0.96 J-
1,3-DICHLOROBENZENE	0.66 J	0.32 J	1.0	0.47 J-
1,4-DICHLOROBENZENE	2.9	1.6	4.5	2.1 J-
BENZENE	ND	0.48 J	0.94 J	0.48 J-
CHLOROETHANE	25	37	49	27 J-
ISOPROPYLBENZENE	ND	ND	0.23 J	ND
NAPHTHALENE	NA	ND	ND	0.31 J

SA-MW132S	(4 - 14 ft bgs)					
	3/9/2011	9/27/2011	9/18/2012	9/25/2013		9/18/2014
1,1,1-TRICHLOROETHANE	ND	ND	ND	0.52 J		2.7
1,1-DICHLOROETHANE	ND	ND	ND	5.0		29
1,1-DICHLOROETHENE	ND	ND	ND	ND		2.3
SA-MW132I	**(27 - 37 ft bgs)**					
	3/9/2011	9/27/2011	9/18/2012	9/25/2013	5/20/2014	9/18/2014
1,1,1-TRICHLOROETHANE	ND	ND	31	**120**	**100**	**83**
1,1-DICHLOROETHANE	4.6	6.9	**150**	**740**	**660**	**500**
1,1-DICHLOROETHENE	0.94 J	1.5	16	70	60	60
1,2,4-TRICHLOROBENZENE	ND	ND	0.52 J	0.95 J	0.84 J	0.94 J
1,2-DICHLOROBENZENE	ND	ND	ND	0.63 J	0.38 J	0.54 J
1,4-DICHLOROBENZENE	ND	ND	0.80 J	1.1	ND	ND
BENZENE	ND	ND	0.34 J	1.2	1.1	1.1
CHLOROETHANE	ND	ND	12 J	ND	33 J	28
ISOPROPYLBENZENE	ND	ND	ND	1.0	ND	0.43 J
NAPHTHALENE	NA	NA	ND	3.8	ND	ND

SA-MW131I	(30 - 40 ft bgs)							
	3/9/2011	9/27/2011	9/18/2012		9/25/2013		9/18/2014	
1,1,1-TRICHLOROETHANE	ND	ND	ND		0.30 J		ND	
1,1-DICHLOROETHANE	16	ND	0.88 J		17		6.9	
1,1-DICHLOROETHENE	1.5	ND	ND		1.6		1.1	
SA-MW131D	**(60 - 70 ft bgs)**							
	3/9/2011	9/27/2011	9/18/2012	9/18/2012 (Dup)	9/25/2013	9/25/2013 (Dup)	9/18/2014	9/18/2014 (Dup)
1,1-DICHLOROETHANE	18 J	20	28	29	32 J	35	32	32
1,1-DICHLOROETHENE	2 J	2.3	3.1	3.1	2.8 J	2.8	3.0	2.8

Groundwater Treatment Building

Connecticut Ave

River Rd

SA-PZ166I

Donahue Pond

50

500

5

Legend

- Injection Well
- Extraction Well
- New Monitoring Well
- Monitoring Well/Piezometer
- 1,1 - DCA Contour ug/L
- 1,1 - DCA Contour ug/L (Inferred)
- Fence Line Area
- Offsite High Concentration Area
- Offsite Low Concentration Area
- Peconic River Area
- Water
- Fence Line

DRAFT

N W E S

300 150 0 Feet

Groundwater Analytical Detections Southern/ Offsite Low Concentration Area NWIRP Calverton Calverton, New York

RESOLUTION CONSULTANTS

Figure 4-7

Date: 10/23/2015

Project #: 60264489

File: W:\Govt\Projects\Navy\CLEAN AECOM-EnSafe JV\Calverton\GIS\Projects\Data Summary Report 2015_02\Figure 4-7 Groundwater Analytical Detections - Southern_Offsite Low Concentration Area.mxd

Notes:
1. Ortho-imagery provided by the NYS GIS Clearinghouse, 2010.
2. ft bgs – Feet below ground surface.
3. Surface water and groundwater results are in µg/L (µg/L – micrograms per liter); sediment results are in µg/Kg (µg/Kg – micrograms per kilogram).
4. DCA – 1,1-Dichloroethane
5. (Dup) – Duplicate
6. **Bold** values indicate values exceeding criteria.
7. J, J+ or J- – Estimated value; + or - indicates estimates with a high or low bias.
8. R – Rejected value not reported.
9. ND – Not detected above report detection limit.
10. NA – Not analyzed
11. NX – No primary site contaminants detected; other volatile organic compounds detected below screening criteria.
12. * – Screen interval is approximate
13. For historical analytical data preceding 2011, refer to the 2013 Data Summary Report.

River Rd

Connecticut Ave

Peconic River

SA-SW204									
	9/28/2011		5/17/2012	9/21/2012	5/3/2013	9/27/2013	5/20/2014	9/12/2014	4/24/2015
1,1-DICHLOROETHANE	ND		ND	0.57 J	ND	0.87 J	ND	0.67 J	ND
SA-SD204									
	3/15/2011	9/28/2011	5/17/2012	9/21/2012	5/3/2013	9/27/2013	5/20/2014	9/12/2014	4/24/2015
CARBON DISULFIDE	ND	ND	ND	ND	R	R	3.6 J-	9.0 J	0.85 J
TETRACHLOROETHENE	ND	**30 J**	ND	ND	ND	R	ND	ND	ND

SA-SW125											
	3/15/2011	9/28/2011	5/17/2012		9/21/2012	5/3/2013	9/27/2013	9/27/2013 (Dup)	5/20/2014	9/12/2014	4/24/2015
TOTAL VOC	ND	R	ND		ND	NX	ND	ND	NX	ND	NX
SA-SD125											
	3/15/2011	9/28/2011	5/17/2012		9/21/2012	5/3/2013	9/27/2013	9/27/2013 (Dup)	5/20/2014	9/12/2014	4/24/2015
TOTAL VOC	ND	ND	NX		R	NX	R	R	NX	NX	NX
SA-PZ125	(3 - 6 ft bgs)										
	3/15/2011	9/28/2011	5/17/2012	5/17/2012 (Dup)	9/21/2012	5/3/2013	9/27/2013	9/27/2013 (Dup)	5/20/2014	9/12/2014	4/24/2015
TOTAL VOC	ND	ND	NX	NX	ND	ND	ND	ND	ND	ND	ND

SA-PZ147	(3 - 6 ft bgs)								
	3/15/2011	9/28/2011	5/17/2012	9/21/2012	5/3/2013	9/27/2013	5/20/2014	9/12/2014	4/24/2015
1,1,1-TRICHLOROETHANE	ND	R	ND	ND	1.4 J	ND	ND	ND	ND
1,1-DICHLOROETHANE	17	0.77 J	ND	12	**68 J**	ND	**53**	ND	43 J
1,1-DICHLOROETHENE	3	R	ND	0.84 J	6.3 J	ND	6.8	ND	6.4 J
1,2,4-TRICHLOROBENZENE	0.87 J	R	ND	ND	0.47 J	ND	0.60 J	ND	0.47 J
1,4-DICHLOROBENZENE	ND	R	ND	ND	0.43 J	ND	ND	ND	ND

SA-PZ148	(3 - 6 ft bgs)								
	3/15/2011	9/28/2011	5/17/2012	9/21/2012	5/3/2013	9/27/2013	5/20/2014	9/12/2014	4/24/2015
1,1-DICHLOROETHANE	ND	R	18	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND	R	1	ND	ND	ND	ND	ND	ND

SA-PZ166I	(60 - 80 ft bgs)		
	9/12/2012	9/19/2013	9/19/2014
1,1-DICHLOROETHANE	ND	4.7	4.8
1,1-DICHLOROETHENE	ND	0.36 J	1.0

SA-PZ118S	(6 - 16 ft bgs)					
	3/11/2011	3/11/2011 (Dup)	9/20/2011	9/11/2012	9/18/2013	9/19/2014
1,1-DICHLOROETHANE	**6.1**	**5.8**	3.5	**21**	4.1	**17**
1,1-DICHLOROETHENE	1.1	1.1	0.91 J	4.5	1.1	4.8
1,4-DICHLOROBENZENE	ND	ND	ND	0.41 J	ND	ND
NAPHTHALENE	NA	NA	NA	1.6	1.3	ND
SA-PZ118I	(50 - 60 ft bgs)					
	3/11/2011		9/20/2011	9/11/2012	9/18/2013	9/19/2014
TOTAL VOC	ND		ND	ND	ND	ND

SA-SW124															
	3/15/2011	3/15/2011 (Dup)	9/28/2011		5/17/2012	9/21/2012	9/21/2012 (Dup)	5/3/2013	5/3/2013 (Dup)	9/27/2013	5/20/2014	5/20/2014 (Dup)	9/12/2014	9/12/2014 (Dup)	4/24/2015
1,1-DICHLOROETHANE	0.61 J	0.76 J	1.8 J		1.1	1.8	1.7	0.69 J	ND	2.1 J	ND	0.59 J	2.8	2.8	0.60 J
1,1-DICHLOROETHENE	ND	ND	1.2 J		ND	ND	ND	ND	ND	ND	ND	ND	0.35 J	0.38 J	0.35 J
TRICHLOROETHENE	ND	ND	6.2 J		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SA-SD124															
	3/15/2011	3/15/2011 (Dup)	9/28/2011		5/17/2012	9/21/2012	9/21/2012 (Dup)	5/3/2013	5/3/2013 (Dup)	9/27/2013	5/20/2014	5/20/2014 (Dup)	9/12/2014	9/12/2014 (Dup)	4/24/2015
1,1-DICHLOROETHANE	ND	ND	ND		20	ND	ND	17 J	19 J	ND	22 J	22 J	ND	0.84	ND
1,1-DICHLOROETHENE	ND	ND	ND		ND	ND	ND	2.4 J	2.6 J	ND	5.2 J	ND	ND	0.38 J	ND
1,2,4-TRICHLOROBENZENE	ND	ND	3.3 J		ND	ND	ND	R	R	ND	ND	ND	ND	0.31 J	ND
CARBON DISULFIDE	ND	ND	ND		ND	ND	ND	0.99 J	0.67 J	ND	ND	ND	ND	1.5 J	ND
NAPHTHALENE	NA	NA	NA		NA	ND	ND	ND	ND	ND	ND	62	ND	ND	ND
SA-PZ124		(3 - 6 ft bgs)													
	3/15/2011	3/15/2011 (Dup)	9/28/2011	9/28/2011 (Dup)	5/17/2012	9/21/2012	9/21/2012 (Dup)	5/3/2013	5/3/2013 (Dup)	9/27/2013	5/20/2014	5/20/2014 (Dup)	9/12/2014	9/12/2014 (Dup)	4/24/2015
1,1,1-TRICHLOROETHANE	3.6	3.8 J	ND	2.6 J	3.6	7.8	7.7	5.6	5.6	1.6	1.7	1.8	1.3	1.4	0.83 J
1,1-DICHLOROETHANE	**54**	**58 J**	**79**	**67 J**	**74**	**130**	**130**	**100**	**100**	**52**	**62**	**65**	44	44	50 J
1,1-DICHLOROETHENE	4.7	4.8 J	6.5	5 J	6.4	13	13	12 J	12 J	6.1	6.2	6.5	4.6	4.8	4.9 J
1,2,4-TRICHLOROBENZENE	ND	ND	ND	R	ND	0.48 J	0.65 J	0.57 J	ND	ND	0.85 J	0.78 J	0.62 J	0.61 J	0.70 J
1,2-DICHLOROBENZENE	ND	ND	ND	R	ND	0.39 J	0.39 J	0.35 J	0.41 J	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	R	ND	0.94 J	0.94 J	0.88 J	ND	ND	ND	ND	ND	ND	0.52 J
CHLOROETHANE	2.3	2.2 J	2.7 J	2.2 J	1.6	2.2	2.9	0.97 J	0.82 J	ND	ND	ND	ND	ND	2.1 J

SA-SW201												4/24/2015
	3/15/2011	9/28/2011	9/28/2011 (Dup)	5/17/2012	5/17/2012 (Dup)	9/21/2012	5/3/2013	9/27/2013	5/20/2014	9/12/2014		ND
1,1,1-TRICHLOROETHANE	ND	R	0.84 J	ND	ND	ND	ND	ND	ND	ND		1.0
SA-SD201												
	3/15/2011	9/28/2011	9/28/2011 (Dup)	5/17/2012	5/17/2012 (Dup)	9/21/2012	5/3/2013	9/27/2013	5/20/2014	9/12/2014	4/24/2015	
TOTAL VOC	NX	NX	ND	NX	ND	ND	NX	NX	NX	NX	NX	

Legend

- Monitoring Well/Piezometer
- Sediment Sampling Location
- Surface Water Sampling Location
- 1,1 - DCA Contour ug/L
- 1,1 - DCA Contour ug/L (Inferred)
- Offsite Low Concentration Area
- Peconic River Area
- Water
- Fence Line

DRAFT

N W E S

200 100 0 Feet

Analytical Detections Southern/Peconic River Area NWIRP Calverton Calverton, New York

RESOLUTION CONSULTANTS

Figure 4-8

Date: 9/24/2015

Project #: 60264489

File: W:\Govt\Projects\Navy\CLEAN AECOM-EnSafe JV\Calverton\GIS\Projects\Data_Summary_Report_2015_02\Figure 4-8 Groundwater Analytical Detections - Southern_Peconic River Area.mxd