

RESTORATION ADIVSORY BOARD MEETING NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP), CALVERTON CALVERTON COMMUNITY CENTER, CALVERTON, NEW YORK THURSDAY, NOVEMBER 7, 2013

The thirty-ninth meeting of the Restoration Advisory Board (RAB) was held at the Calverton Community Center. Meeting attendees included representatives from the Navy (James Tarr and Lora Fly), New York State Department of Environmental Conservation (NYSDEC) (Henry Wilkie), RAB Community Members (Sid Bail (representing the Wading River Civic Association), Lou Cork, Adrienne Esposito (representing the Citizens Campaign for the Environment), Bill Gunther), Suffolk County Department of Health Services (Andrew Rapiejko), Resolution Consultants (Robert Forstner, Gregory Quimby, Michael Zobel), H&S Environmental (Elizabeth Anderson, Greg Birch, Jennifer Good, John Hudacek, Al Taormina), and SCA Associates (Frank Anastasi). The sign-in sheet is included as Attachment 1.

WELCOME AND AGENDA REVIEW

The Navy representative, Mr. James Tarr, 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. Tarr asked whether the RAB members received the May 2013 RAB minutes (distributed in September 2013), and if there were questions or comments on the minutes. No questions or comments were raised, and the minutes for the May 2013 RAB meeting were approved.

COMMUNITY UPDATE

Mr. Bill Gunther inquired about the status of the bicycle lane that was the topic of a presentation by Riverhead Town Councilmember Jodi Giglio at the previous RAB meeting. Mr. Tarr indicated that the Navy is interested in cooperating, but that site security is a concern. The Navy was awaiting a response from the Town with further details on the proposal.

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

Mr. Tarr then introduced the technical portion of the meeting, which will consist of presentations on the current activities at Sites 2, 6A/10, 7 and the Southern Area.

Mr. Gregory Quimby of Resolution Consultants then provided a description of the geophysical investigation conducted at Site 2 during summer 2013 to expand the surveyed area, for the purposes of identifying any additional areas of unexploded ordnance (UXO) or munitions and explosives of concern

(MEC) outside of the areas previously surveyed. The presentation is included in Attachment 3. Background on prior UXO/MEC investigations at the site was provided. The current series of investigations of Site 2 for UXO/MEC began after several fragments of 20 mm ammunition were found during site sampling in 2010. A digital geophysical mapping survey of 7.18 acres was completed in 2010, which identified several saturated areas. A UXO remediation operation in 2012 included screening and processing of approximately 12,500 cubic yards of soil from within that area, but site observations suggested that there may be metallic anomalies remaining outside of the remedial area.

The recent survey employed the same type of equipment used in 2010, and extended the survey boundary outward to a distance of approximately 200 feet beyond the excavated area. The objective was the identification of saturated anomalous areas and any isolated responses that would be indicative of 20 mm ammunition. A limited number of survey transects were cut short due to the presence of a fence along the site boundary, but these shortened transects did not impact the results of the investigation. A total of 294 targets were identified by the survey, of which 29 were excluded based on site observations. The results suggest that the previously-mapped 7.18-acre boundary may need to be expanded by approximately 3.6 acres in order to fully delineate areas of concern for MEC and UXO.

There was a discussion of specific findings and impacts due to cut-off transects. Mr. Andrew Rapiejko inquired about the location of the fence that cut off some transects; Mr. Quimby indicated that the fence was within the Site 2 boundary to the north of the clearing, but that no targets had been found in that general area along the completed portions of the transects. Mr. Frank Anastasi noted that many of the newly-identified targets were located in the northwest corner of the site, and suggested that this was a finding of interest. Mr. Quimby agreed, and indicated that a full coverage survey would be needed to further investigate that area. Mr. Anastasi further inquired into the history of the investigation into the UXO and MEC issues at this site. Ms. Lora Fly indicated that some surface items were identified during a remedial investigation, triggering the original geophysical investigation. Based on the site history, the relocation of fill from the gun butt area is the only area that makes sense as a source of the UXO and MEC materials. In response to a further inquiry by Mr. Rapiejko as to the status of shells recovered during remediation, Ms. Fly confirmed that of 15,000 shells were recovered, three of which were considered potentially live and managed accordingly.

TECHNICAL PROGRESS - FENCE-LINE TREATMENT SYSTEM UPDATE

Ms. Jen Good provided an update on the construction and operation of the Fence Line Treatment System (FLTS). The presentation is included in Attachment 3. The FLTS was constructed pursuant to a Record of Decision for Site 6A/10B that was completed in May 2012. The selected remedy calls for land use controls 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, but Superstorm Sandy interrupted work and interfered with contractor availability, delaying completion of the system. Construction continued through 2013, and system start-up occurred on October 8, 2013. Influent and effluent samples were collected during the initial seven-day start-up period, and throughout the remainder of the month, to evaluate system performance. Initial results indicate a VOC removal efficiency of 99 percent, and that discharge goals were being met. Future work related to the FLTS includes the completion of construction punch-list items, hydraulic testing to evaluate sustainable long-term pumping and injection rates, and monthly compliance sampling and reporting.

A discussion of the FLTS followed the presentation. Mr. Vincent Racaniello asked about the effect of FLTS operation on the groundwater table, and specifically whether operation of the system might cause the plume to shift away from the wells. Ms. Fly responded, indicating that modeling was done to evaluate operation of the system, but that she would confirm the modeling scope with Mr. David Brayack of TetraTech. (Following the RAB meeting, email correspondence confirmed the scope of the modeling and the operating scenarios that were considered. In order to account for potential meandering of the plume, the system was sized with a capture zone five times the measured width of the plume, and use of the dual extraction wells and infiltration galleries can be used to push or pull the plume to ensure capture.)

Further discussion followed regarding operations. Mr. Racaniello asked if flow is equal to both infiltration galleries. Ms. Good indicated that all infiltration is currently directed to the east gallery. Mr. Rapiejko asked for clarification on how the infiltration system works. Ms. Good described the system, noting that water flows through 6-inch perforated pipe and then into a gravel trench. The system has been designed to account for the impacts of biofouling over time. Ms. Adrienne Esposito asked if there are set criteria that define when the second gallery will be employed. It was indicated that water level measurements at nearby monitoring wells will be used to evaluate whether groundwater "mounding" is occurring; if mounding is observed or if it is evident that water is not properly infiltrating via one gallery, the other would be used as necessary, and/or cleaning of discharge lines may be required.

Regarding reporting of results, Mr. Gunther asked about how monthly reports will be rolled up. Mr. Tarr responded, indicating that results will be made public and summarized in annual reports. Mr. Sid Bail inquired about the annual operating scenario and whether a winter shutdown (similar to the Site 7 system) is required; it was confirmed that the system will operate year-round and no seasonal shutdowns are required.

A discussion of operational aspects continued. Mr. Racaniello asked about actual VOC concentrations observed in the influent and effluent. Ms. Good indicated that the most recent influent results showed concentrations of approximately 400 parts per billion (ppb), with other results in the mid-200 ppb range, but that the system's design allows for operation with influent concentrations as high as 1,100 ppb and an

expected average of about 50 ppb. Ms. Good further indicated that removal efficiency so far is at about 99 percent; the only VOC detected in effluent was 1,1-dichloroethene at a concentration of approximately 1 ppb (for purposes of comparison, the regulatory maximum contaminant level [MCL] for 1,1-dicheloroethene in drinking water is 5 ppb). Mr. Racaniello asked if there was any notable difference in influent concentrations observed between the two extraction wells; Ms. Good indicated that none had been observed yet. Mr. Anastasi asked if there was any value to reducing the flow rate; Ms. Elizabeth Anderson of H & S indicated that savings would be minimal, and that operating costs wouldn't vary much with pumping rate. The only potential impact might be an increase in removal efficiency if water was pumped at a lower rate. Mr. Anastasi then asked about the shakedown period; Ms. Anderson indicated that the shakedown period would probably take about 90 days. Mr. Tarr confirmed that as time progressed, the Navy will adjust operation to optimize the system.

TECHNICAL PROGRESS -SITE 7 REMEDIAL ACTION UPDATE

Ms. Fly presented information on the background of the air sparging / soil-vapor extraction (AS/SVE) system at Site 7 (the former Fuel Depot), noting that it started operation on a pilot scale in 2005 and full scale in 2006, and has operated seasonally (April to December) through 2013. Modifications have been made to improve performance, but the system is near the end of its functional life, with a major blower overhaul required to continue operation.

Site data over time was presented that indicates the majority of site groundwater has achieved remedial goals, and that contaminant concentrations in the remaining wells are 75 to 95 percent lower than before the system began operation. It was noted that the Navy plans to not operate the system in 2014, but to continue quarterly ground water sampling to evaluate site behavior and determine whether a system overhaul and resumption of operations in 2015 is warranted.

Regarding a slide on evaluation of remedial goals, Mr. Rapiejko inquired as to whether system performance is being evaluated using soil or groundwater data. Ms. Fly indicated that only groundwater data was considered in evaluating performance over time and that no new soil data has been collected since the system began operation, but the expectation is that the goal of any future soil sampling would be to evaluate whether upper soil (0 to 15 feet below ground) concentrations support unrestricted or residential use, and whether concentrations below 15 feet are protective of groundwater.

Ms. Esposito asked about what contaminant concentrations would trigger a resumption of system operation. Ms. Fly indicated that an upward trend in concentration through 2014 might trigger a restart, but that the Navy will work with NYSDEC to evaluate Site 7 throughout the year and determine an appropriate course of action. Mr. Gunther asked if the system would be permanently shut down if there is no upward trend over the course of 2014. Ms. Fly indicated that this is a likely outcome, though groundwater monitoring would continue. If an upward trend is identified, or if elevated concentrations are limited to a small area, resumption of system operation or replacement with an alternative system might

be considered. Mr. Gunther asked about how soil data collected in the future would be used. Ms. Fly indicated that the Navy would want to ensure that soil within the range of seasonal groundwater table fluctuation isn't contributing to recontamination of groundwater.

Mr. Rapiejko noted that the contamination at Site 7 doesn't appear to have a plume, and asked if the contamination is just sitting there or if something could have or is slipping out of the site. Ms. Fly noted that the contamination was associated with the locations of the old fuel tanks, but that future reporting relating to site closeout would consider all of the site data to evaluate fate and transport of site contaminants. Mr. Tarr added that the Site 7 contaminants are petroleum hydrocarbons, which behave differently than the chlorinated VOCs at Sites 6A/10B, and that it isn't necessarily expected that there would be a plume leaving the site. Mr. Anastasi noted that while he has never been assigned to look at Site 7, the typical model is that petroleum hydrocarbon contaminants "stick" to clays, but a recent article suggests newly-understood phenomena may explain why rebound of contamination could be expected in groundwater.

Ms. Esposito asked for clarification on groundwater flow in the area, since the two "blobs" shown on the results slides indicate that there may be some movement from west to east. Ms. Fly indicated she would verify that this is the direction of flow, but noted by way of a reminder that these blobs mirror where the tanks were previously. There were three 50,000 gallon tanks in the larger blob to the west, and smaller tanks to the east near the location of the other blob of contamination. Ms. Esposito then inquired about the reason for winter shutdowns; Ms. Fly explained that that seasonal shutdown is required because the piping is above ground and subject to freezing.

Mr. Racaniello inquired about the persistence of Freon in the monitoring wells, specifically as to what remedial options have been considered and the concentrations observed. Ms. Fly indicated that ozone injections were initially considered, but the addition of more extraction wells to the AS/SVE system were thought to provide a better response to the Freon. Concentrations up to 400 ppb of Freon have been observed. Mr. Rapiejko inquired about the source of the Freon; Ms. Fly indicated it's believed to be residual contamination from a pipe that previously connected Site 10A to Site 7.

TECHNICAL PROGRESS - 2013 SITE 2 (ON- AND OFF-PROPERTY) & PECONIC RIVER INVESTIGATIONS

Mr. Tarr presented an update on additional investigations at Site 2, located both on- and off-property, and in the Peconic River area in 2013.

The objectives of the 2013 Site 2 On-Property investigation were to determine whether a significant source of VOCs is present upgradient of the existing well network, and to enhance the downgradient well network for use in evaluating the quality of groundwater leaving Site 2. Activities included installation of four borings to the clay unit for lithology and four temporary wells (each with six water samples collected)

to evaluate groundwater quality upgradient of previous investigations, and the installation of two new permanent monitor wells to evaluate downgradient water quality. The only notable result of the upgradient investigation was the detection of trichloroethene (TCE) in one temporary well at a concentration of 3 ppb, below the MCL of 5 ppb.

Mr. Anastasi noted that he doesn't see an obvious upgradient source from outside Site 2 based on these results.

The objective of the 2013 Site 2 Off-Property investigation was to determine the source of an anomalous concentration of TCE previously identified at FT-PZ460I. Activities included the installation of five soil borings for lithology to the clay unit, 13 temporary wells (each with four or five water samples collected), and four additional piezometers to evaluate groundwater flow, as well as two rounds of water level measurement using piezometers in the vicinity of FT-PZ460I. Analytical results confirm the continued presence of elevated concentrations of TCE at FT-PZ406I, and at lower levels nearby at FT-PZ461I. TCE was identified in several temporary well samples, but not at levels similar to those observed at FT-PZ460I, and no apparent source for the anomaly was identified. It was recommended that this area continue to be monitored as part of the annual site-wide investigations.

Mr. Gunther asked if preliminary results from the September 2013 site-investigation in the vicinity of FT-PZ460I are consistent with the analytical data from the Site 2 Off-Property investigation; Mr. Robert Forstner of Resolution Consultants indicated that they are similar.

The objective of the of the 2013 Peconic River investigation was to determine whether a portion of the Site 6A – Southern Area plume of 1,1-dichloroethane is flowing beside or beneath the Peconic River downriver of Connecticut Area and south of the east runway. Activities included the installation of five soil borings to the clay unit for lithology, five temporary wells (each with nine to 12 water samples) for the collection of groundwater samples and 12 piezometers to evaluate groundwater flow, as well as two rounds of water level measurements. Analytical results did not indicate evidence that the Site 6A – Southern Area plume has migrated to this area, but a flow net study may be completed pending results of an additional round of water level measurements in December 2013.

Mr. Anastasi suggested that any additional analyses might want to focus on whether the flow is under the river. The original assumption regarding flow was that groundwater discharged into the river.

GENERAL DISCUSSION

Following completion of the formal presentations, there was further discussion of the progress at the site in general. Mr. Anastasi inquired about the schedule for the Site 2 Corrective Measures Study / Feasibility Study. Ms. Fly indicated that it was being folded in with the further evaluation of the Site 2 MEC issues, and is probably about 80 percent complete.

Mr. Gunther noted that he felt that the additional studies related to Site 2 present a good story so far. Aside from the offsite anomaly, he doesn't feel as if there are any major offsite issues to be addressed.

Mr. Anastasi observed that the commencement of operations at the FLTS was a major accomplishment. It took 10 years to achieve, but it is a good thing that the project has gotten to this point. He feels confident that the releases have stopped, and that the Navy has done a good job with the installation of the FLTS.

CLOSING REMARKS

Mr. Tarr deferred selection of a date for the next RAB meeting, pending resolution of government budget negotiations and identification of an alternative meeting location if the Calverton Community Center is not available. The final date and location will be confirmed and communicated about one month prior to the meeting, which would likely be in early April 2014. The meeting was then adjourned.

ATTACHMENT 1 NOVEMBER 7, 2013 RAB MEETING SIGN-IN SHEET

39th RAB Meeting for NWIRP Calverton November 7, 2013 Sign-in List

Name (Print)	Address and/or email if interested in being on mailing list	Affiliation	How did you hear about the meeting?	
Mike Zobel				
Jim TARR				
Bill Guthe				
Andrew RADIETILO				
HENRY WILKIE				
Did Bail				
Ler Good				
GREG BIRCH				
AL TADROLINA				
Low Cork				
Adrenne Exposite				
HUDALEK JOHN				
Robert Forstner		7		

39th RAB Meeting for NWIRP Calverton November 7, 2013 Sign-in List

Name (Print)	Address and/or email if interested in being on mailing list	Affiliation	How did you hear about the meeting?
Frank Anasta	Si .		
Frank Anasta Greg Quimby			
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ATTACHMENT 2 NOVEMBER 7, 2013 RAB MEETING AGENDA

Agenda

Restoration Advisory Board Naval Weapons Industrial Reserve Plant Calverton

November 7, 2013
Calverton Community Center, Calverton NY 7:00 p.m.

Welcome and Agenda Review

James Tarr CPG, NAVFAC Mid-Atlantic

Distribution of Minutes

All Members

Community Update

Bill Gunther, RAB Co-chair

Technical Progress

General Overview of ER Sites

James Tarr CPG, NAVFAC Mid-Atlantic

Site 2 Geophysical Investigation Update

Greg Quimby PE, Resolution Consultants

Fence Line Treatment System Update

Jen Good PG, H&S Environmental

Site 7 Remedial Action Update

Dave Brayack PE, Tetra Tech Jen Good PG, H&S Environmental

2013 Site 2 (On- and Off-Property) & Peconic River Investigations

Dave Brayack PE, Tetra Tech

Closing Remarks

James Tarr CPG, NAVFAC Mid-Atlantic

Presenters will be available after the program for questions.

ATTACHMENT 3

NAVY PRESENTATIONS - NOVEMBER 7, 2013 RAB MEETING



Restoration Advisory Board (RAB) Meeting

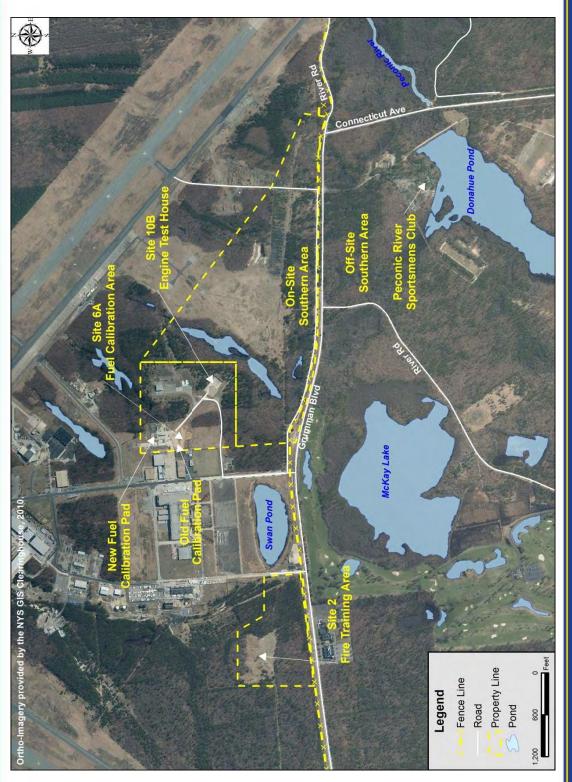
Site 2 Munitions Response (Fire Training Center)

Naval Weapons Industrial Reserve Plant (NWIRP) Calverton, New York

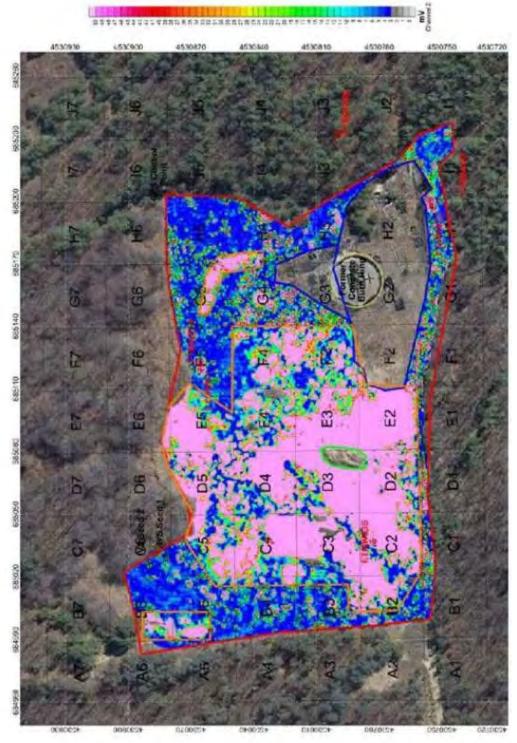
November 7, 2013



Site 2 Location



Site 2 Previous DGM Results



Source: AGVIQ-CH2M Hill

DGM Survey Operations



Additional Digital Geophysical Mapping conducted to evaluate subsurface anomalies

- Employed EM61-MK2, same equipment used in 2010 DGM survey
- Data was collected from transects
- Spacing designed to detect a 56-ft diameter area at 95% confidence
- Transects extended 200' from boundary of excavated area
- Eleven were cut off due to existing fence; did not impact investigation results
- Objective was to identify saturated anomalous areas and any isolated responses indicative of 20mm projectiles
- No intrusive investigation was conducted; analysis was qualitative in nature

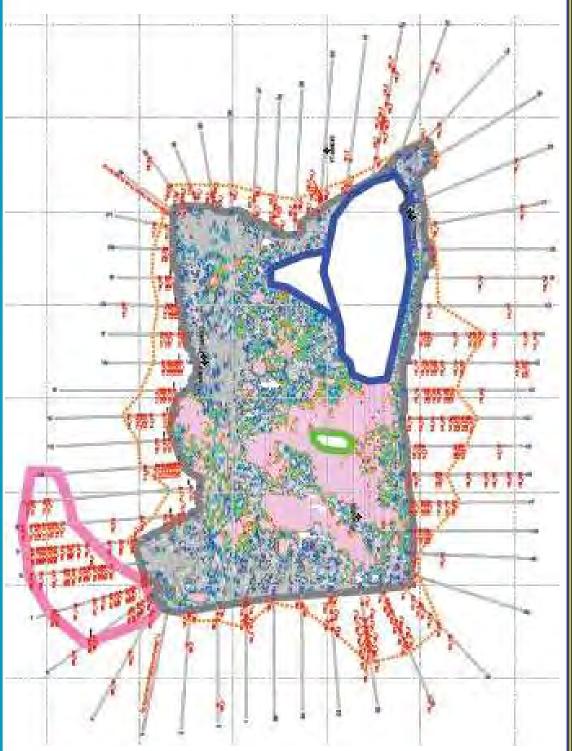
Planned DGM Transect Locations





Supplemental DGM Results





Summary of Results



- 294 targets identified; 29 were excluded based on site observations
- Spatial distribution of targets allowed for qualitative analysis of the residual anomalous area
- Results suggest the 7-acre boundary may need to be expanded by approximately 3.6 acres





Site 2 Estimated Residual Anomalous Area







Restoration Advisory Board (RAB) Meeting

Fence Line Treatment System Update

Naval Weapons Industrial Reserve Plant (NWIRP) Calverton, New York

November 7, 2013

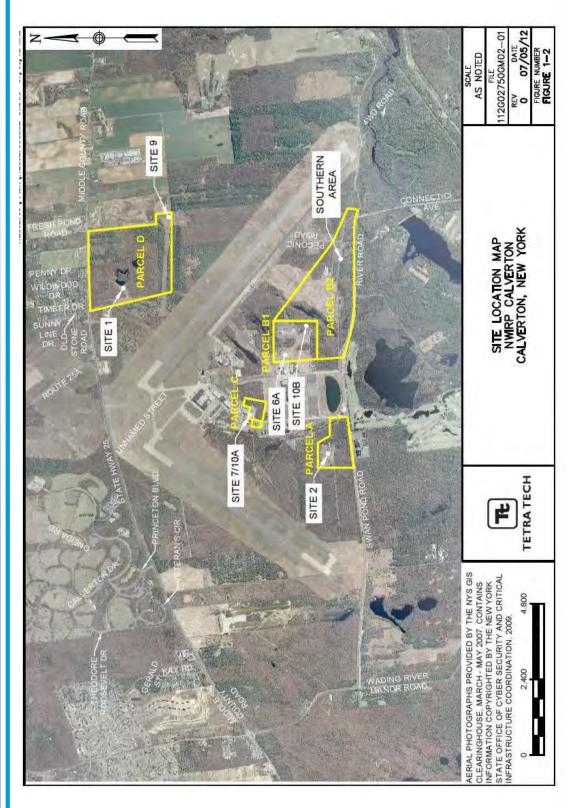
Outline of Presentation



- Introduction
- FLTS Design Overview
- FLTS Construction Summary
- FLTS Start-up and Current System Performance
- FLTS Future Activities



Site Layout





Site 6A—Southern Area Design Overview



- Record of Decision (ROD) in May 2012
- Remedial Design for FLTS in May 2012
- interrupts construction, interferes with supplies and contractors Construction started in October 2012, "Super Storm Sandy"
- Construction continues throughout 2013
- System start-up occurred 8 October 2013

11/07/2013

Selected Remedy / FLTS Design

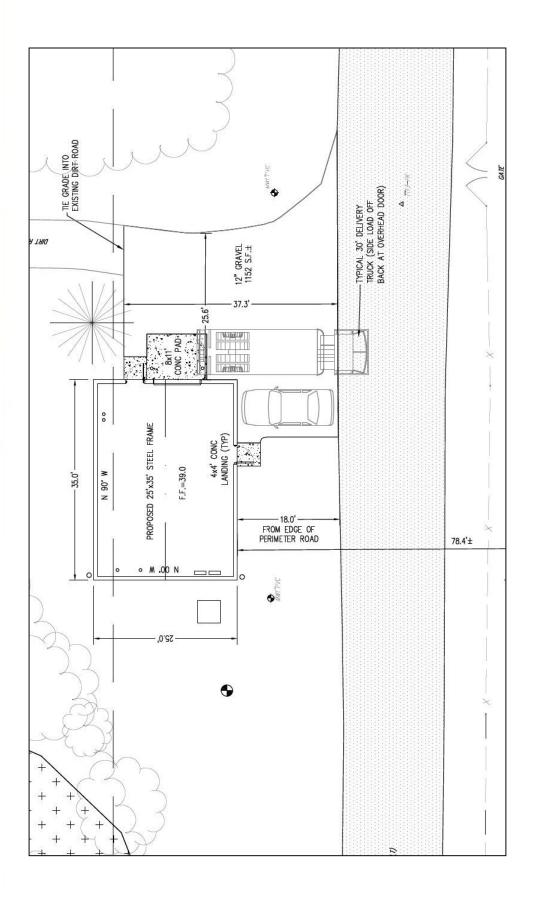


- Selected remedy for Fence Line Area LUCs and monitoring with extraction, treatment, and infiltration
- FLTS overview:
- Two extraction wells, total of 100 gallons per minute
- VOCs removed via air stripping
- Treated groundwater re-injected through infiltration galleries, meeting MCLs



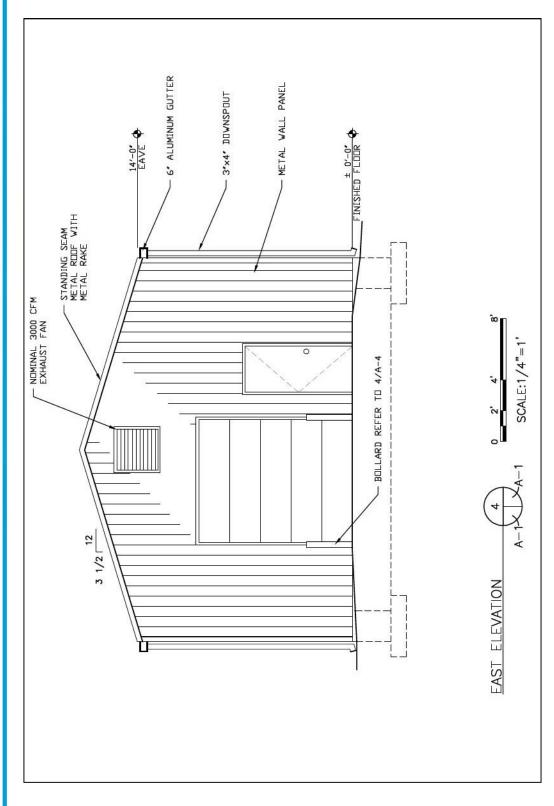
FLTS Design





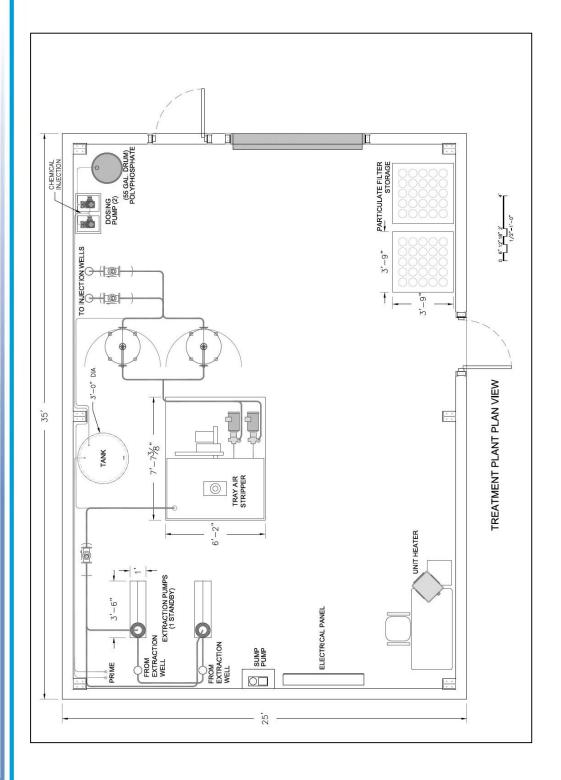


FLTS Design



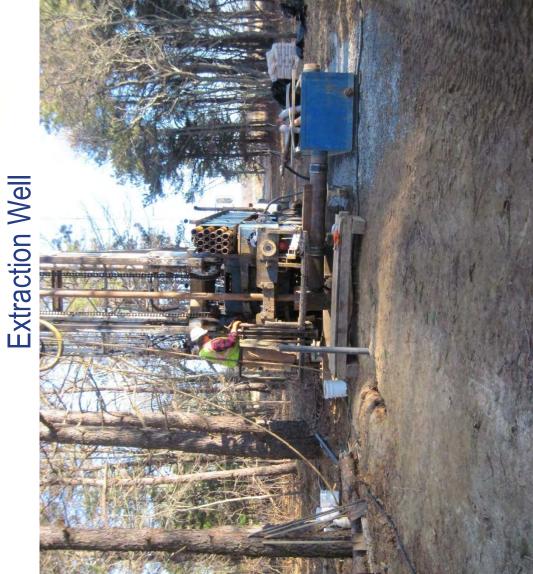


FLTS Design





FLTS Construction Phase



FLTS Construction Phase



Treatment Plant Foundation and Extraction Well



FLTS Construction Phase



Infiltration Gallery



21

Completed FLTS—Current View







Completed FLTS—Current View

Inside View



Completed FLTS—Current View



Extraction Pumps





Completed FLTS—Current View

Air Stripper





Completed FLTS—Current View

Bag Filter Units



Completed FLTS—Current View





FLTS Performance —Oct 2013



- Start-up of FLTS occurred on 8 October 2013
- Initial 7-day continuous manned operation
- Initial flow rate of ~85 gpm
- Flow rate has now been increased to ~100 gpm
- throughout remainder of month to confirm system is performing as Collected influent and effluent samples during 7-day start-up and designed / meeting discharge criteria
- Removal efficiencies of greater than 99%
- Discharge goals being met

FLTS Future Activities



- Complete remaining construction punch-list items
- Submit construction completion report
- Perform hydraulic testing (step-drawdown test and yield test) to determine long-term sustainable pumping/injection rates for the extraction wells and the injection system
- Perform monthly compliance sampling
- Submit monthly compliance reports
- Complete O&M Manual for FLTS (Tetra Tech)



Restoration Advisory Board (RAB) Meeting

Air Sparging/Soil Vapor Extraction System Site 7 (Fuel Depot) **Evaluation**

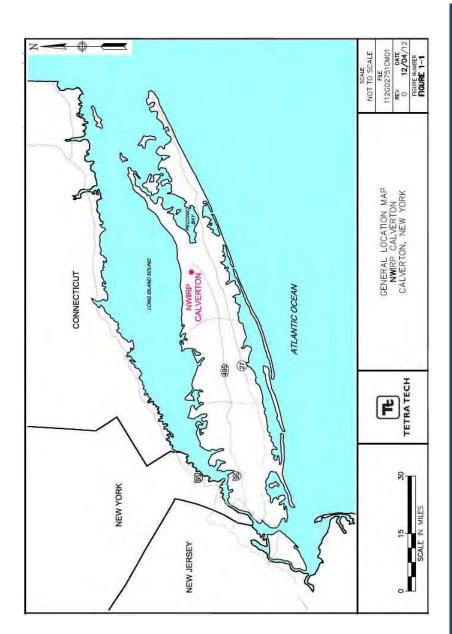
Naval Weapons Industrial Reserve Plant (NWIRP) Calverton, New York

November 7, 2013

Outline of Presentation



- Introduction
- ROD Objective
- System Performance
- Remediation Goal Evaluation
- Data Gaps
- Summary





Introduction



Introduction



- Air Sparing/Soil Vapor Extraction (AS/SVE) system started operation in 2005 (pilot)/2006 (full scale)
- Operated seasonally (April to December) through 2013
- Three modifications were made to the system to improve performance
- System is near the end of its functional life (major blower overhaul required)



ROD Objective



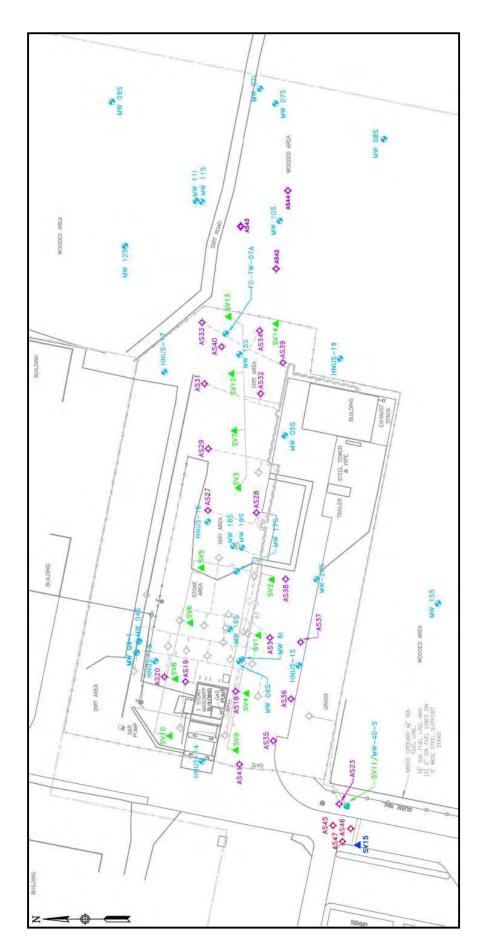
Objective (2003 ROD):

- Environmental Concentration (NYSDEC) and will be considered to be the point effectiveness will be made by the Navy and the New York State Department of controlled". In other words, when the plot of contaminant concentration versus "Air Sparging system will be operated until (1) the selected remediation goals determined to no longer operate in an effective manner. The determination of for soil and groundwater are achieved or (2) such time that the system is at which contaminant concentrations in groundwater become "diffusion time becomes flat or asymptotic."
- "If groundwater remediation goals cannot be achieved or the aquifer cannot be restored, then at a minimum, the following remediation goals should be met:
- Reduce human exposure (ingestion, dermal contact, and inhalation) to groundwater having contaminants in concentrations greater than the remediation goals.
- Prevent further migration of contaminants."

Introduction



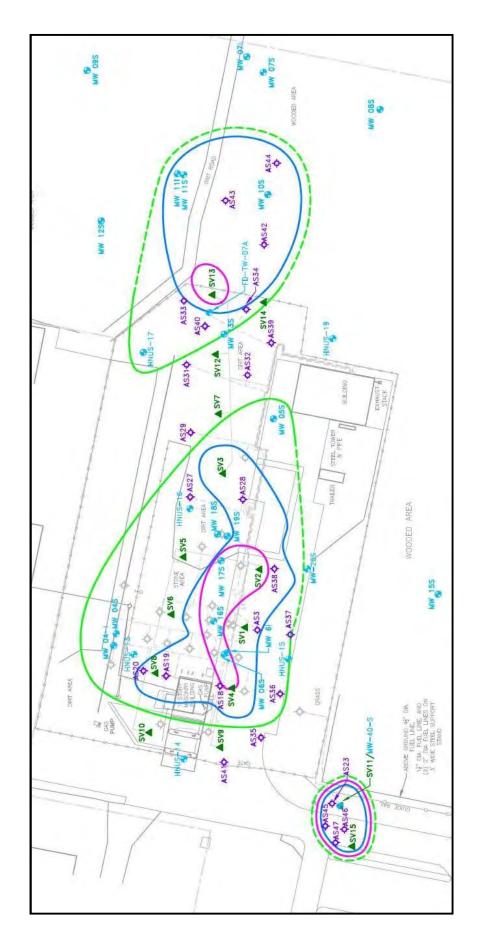
Injection, Extraction, and Monitoring Wells



System Performance



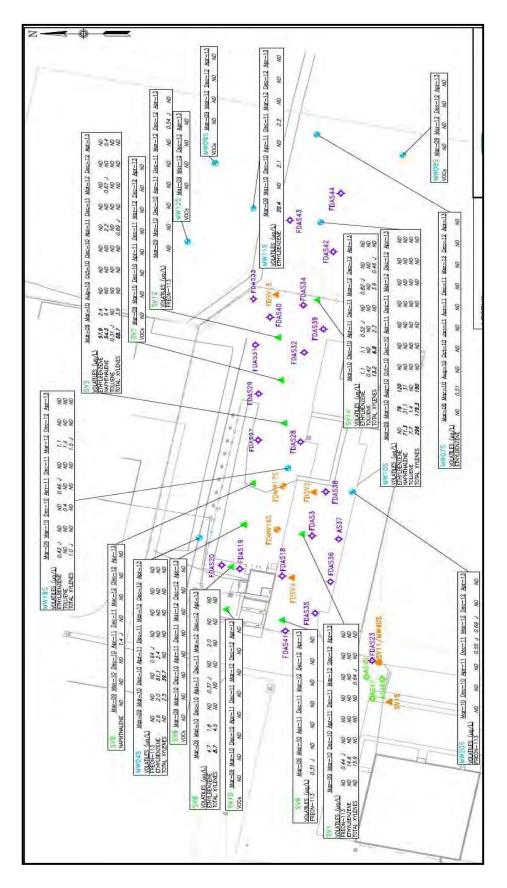
1992/1995, 2009, and 2011 to 2013 Plume Boundaries



System Performance



20 of 27 Wells have achieved the ROD remediation Goals

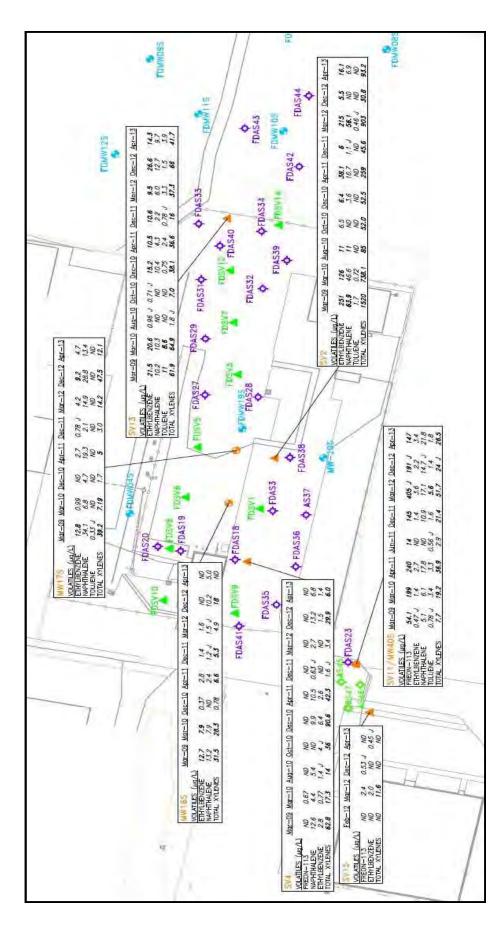




System Performance



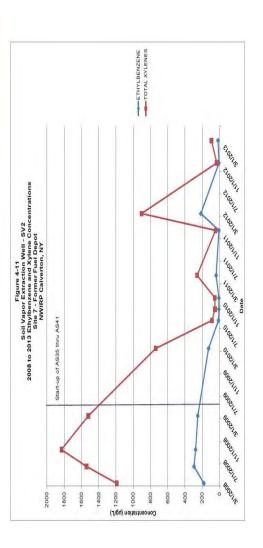
7 of 27 Wells have some exceedances of ROD remediation Goals



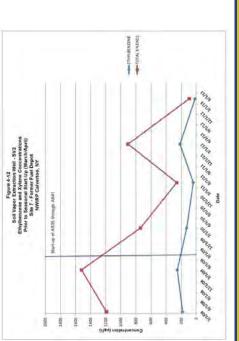
(Seasonal Variation—SV2) System Performance



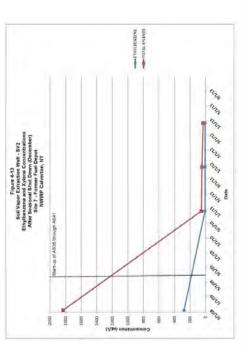
SV2 Well - All



SV2 Well - Spring



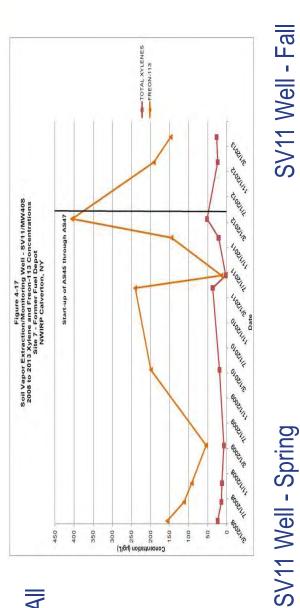
SV2 Well - Fall



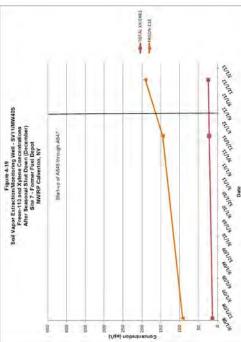
(Seasonal Variation—SV11) System Performance

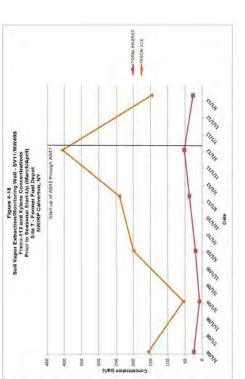


SV 11 Well - All



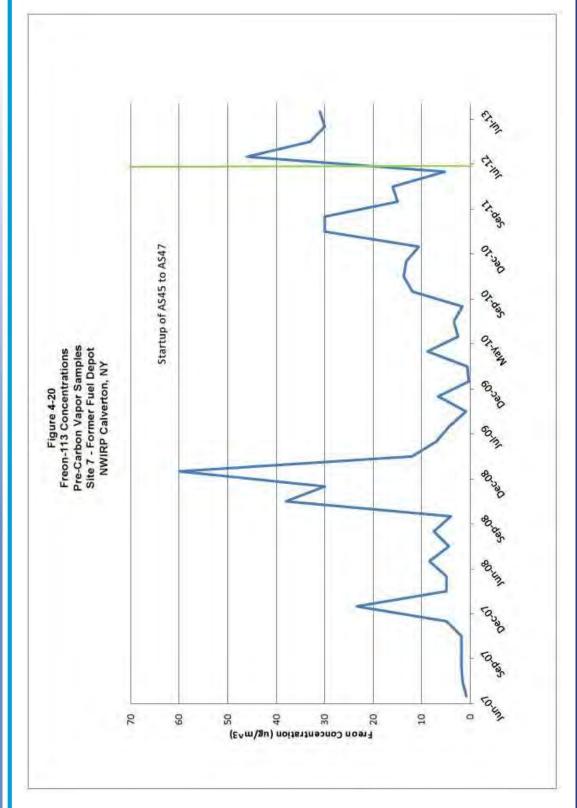
SV11 Well - Fall





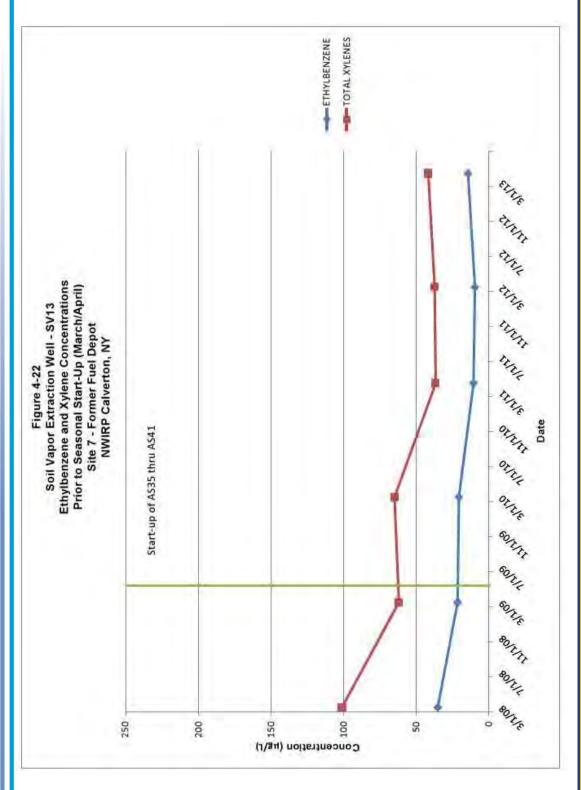
System Performance (Freon Removal)





System Performance (SV13 - Spring)





Remediation Goal Evaluation (Groundwater)



Groundwater Update based on NYSDOH MCLs

Table 4-1
Groundwater Remediation Goals
Site 7 - Former Fuel Depot
NWIRP Calverton, NY

	2003 ROD	R AND THE RESERVE		
Chemical	Remediation Goals (µg/L)	NYSDOH MCL ¹ (µg/L)	US EPA MCL ² (µg/L)	2013 Proposed Closeout Goal
VOCs				
Freon	AD.	9	NA	9
Benzene		S		Ş
Ethylbenzene	3	s	200	9
Toluene	£,	s:	000'1	Ş
Xylenes	uz.	9	10,000	9
SVOCS				
2-Methylnaphthalene ⁽³⁾	90	20	NA	20
Naphthalene ⁽⁵⁾	10	90	NA	50
Inorganics				
Lead	15/25	25	15	15
Market N				

Notes:

NYSDOH (New York State Department of Health), 2010. Part 5, Subpart 5-1 Public Water Systems,

Table 3 Organic Chemicals, Maximum Contaminant Level Determination, March.

² US EPA (United States Environmental Protection Agency), 2009. National Primary Drinking Regulations.

List of Contaminants and their MCLs, May.

³ 2-Methylnaphthalene and naphthalene are considered to be unspecified organic contaminants. MCL - Maximum Contaminant Levels.

NA - Not Available.

VOC - volatile organic compounds.

SVOCs - Semivolatile organic compounds.

µg/L - micrograms per liter.

Remediation Goal Evaluation (Soil)



- ROD Goals were based on TAGM 4046 which was replaced by Part 375 Regulations
- Revised Goals (2013 Proposed Closeout Goals) would be based on depth below ground surface:
- 0 to 15 feet Unrestricted Use, Residential Use, and/or Protection of Groundwater (leaching)
- Greater than 15 feet Protection of Groundwater
- No soil data since prior to system operation
- Protection of groundwater can be monitored with the 27 groundwater wells at

Data Gaps



- Seasonal groundwater quality without system in operation
- Post system startup soil data

Summary



- System has operated for 7 years, including three upgrades to optimize performance
- The latest upgrades in 2012 have enhanced treatment in the SV-11 Area (Freon)
- The majority of the site groundwater has achieved the remediation goals (MCLs) and concentrations in the remaining wells are 75 to 95 percent lower than presystem operation
- The Navy is proposing to not operate the system in 2014 to evaluate potential effects of stabilization and rebound on groundwater quality
- Specifically, in 2014, monitor 7 wells on a quarterly basis for all contaminants of
- Sample select site soils for VOCs and polynuclear aromatic hydrocarbons (PAHs)
- Evaluate data at the end of 2014, to determine whether a 2015 restart is warranted
- Continued system operation will require a major overhaul of its blowers



Restoration Advisory Board (RAB) Meeting

Site 2 - On-Property & Off-Property **Peconic River Area** Site Investigations

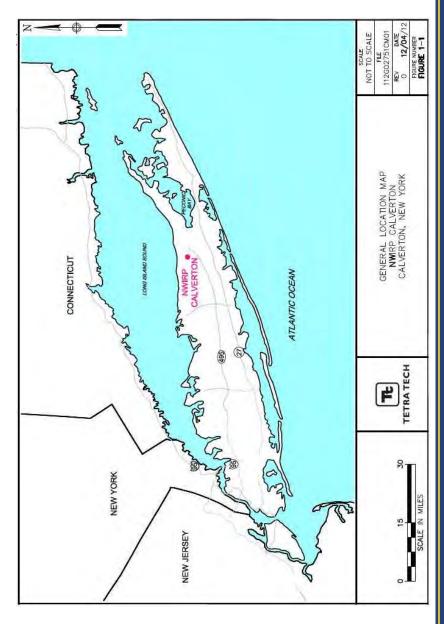
Naval Weapons Industrial Reserve Plant (NWIRP) Calverton, New York

November 7, 2013

Outline of Presentation

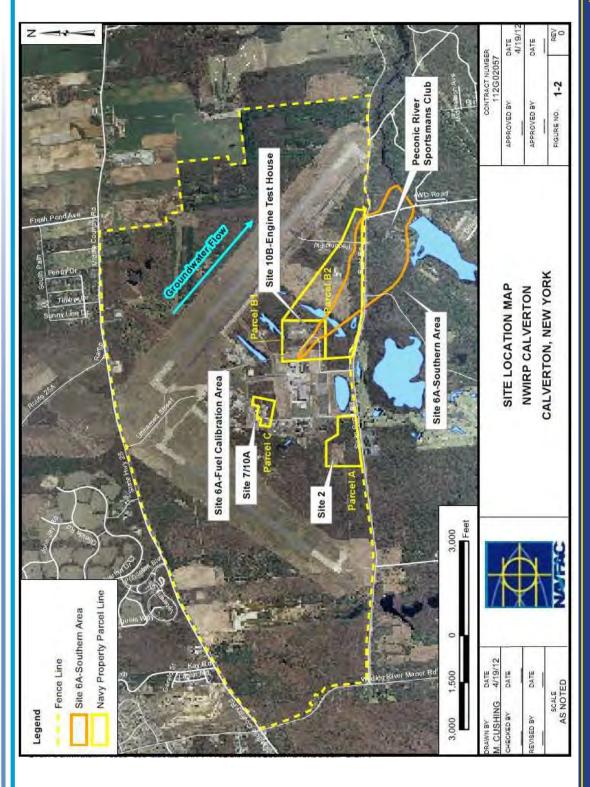


- Introduction
- Site 2 On-property Investigation
- Site 2 Off-property Investigation
- Peconic River Area Investigation





Introduction

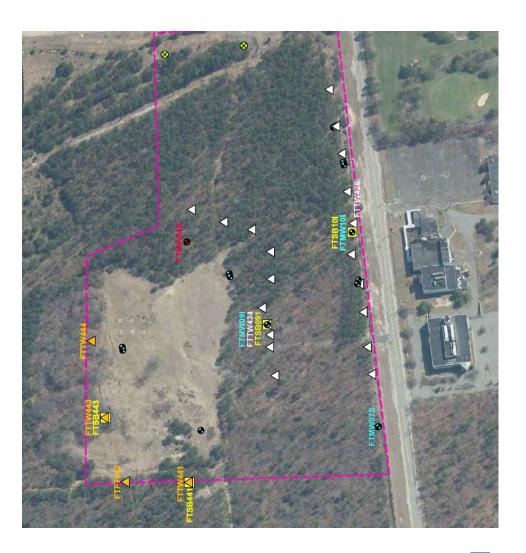




Objective: 1. Determine whether a downgradient monitor well network VOCs is present and 2, enhance significant upgradient source of for water quality

Activities Conducted:

- Installed 4 soil borings to clay unit (30 to 82 feet) for lithology
- with 6 water samples for analysis Installed 4 temporary wells, each
- Installed 2 permanent monitor wells to evaluate downgradient groundwater quality
- TCE detected in one temporary well at 3 µg/L (FT-TW444)







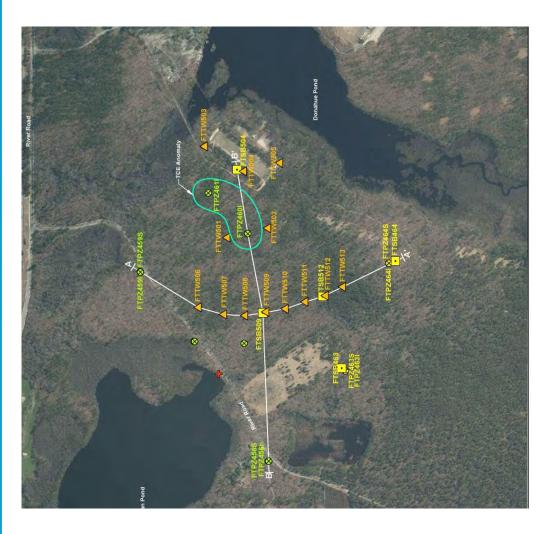
11/07/2013



Objective: Determine the source of the TCE Anomaly identified in FTPZ460I

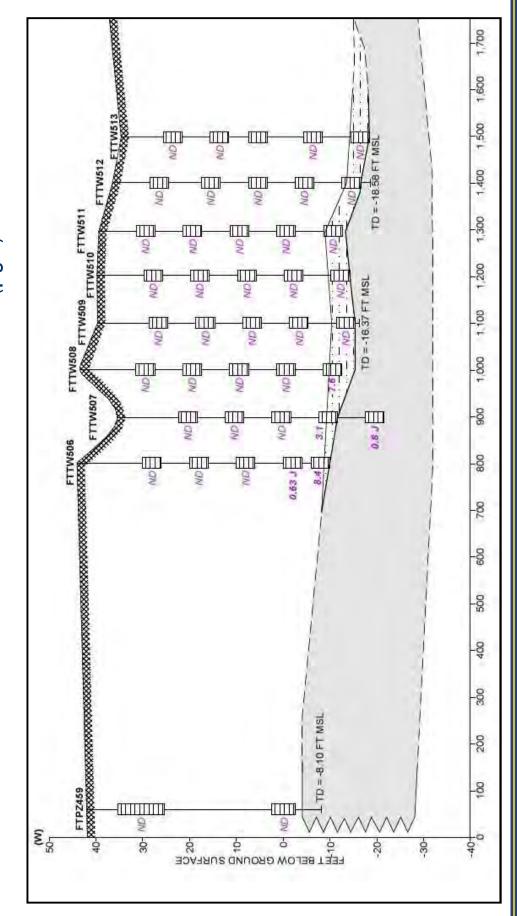
Activities Conducted:

- Installed 5 soil borings to clay unit (approx. 50 feet) for lithology
- Installed 13 temporary wells, each with 4 to 5 water samples for analysis
- Installed 4 additional piezometers to evaluate groundwater flow
- Collected 2 rounds of water level measurements



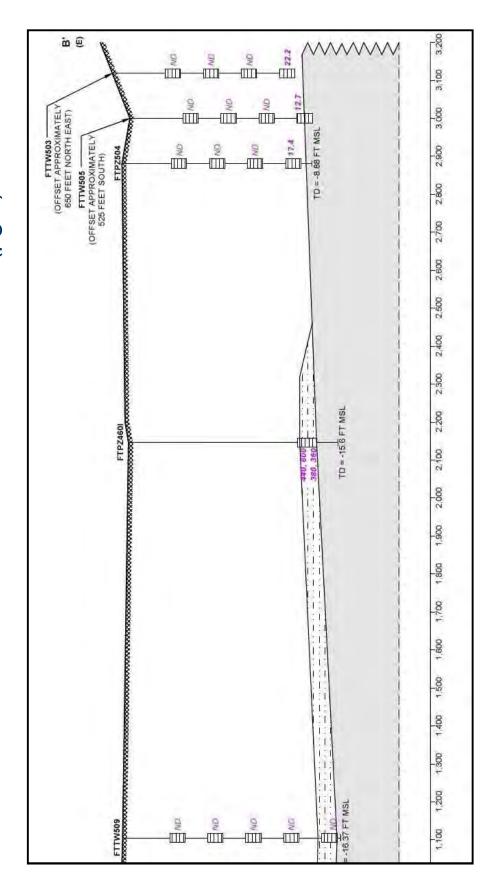


Cross Section A-A' – with TCE Results (µg/L)





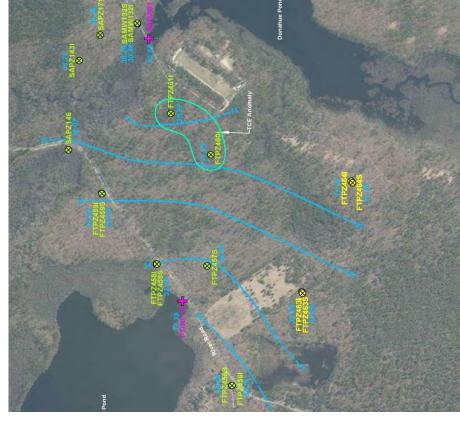
Cross Section B-B' - With TCE Results (µg/L)

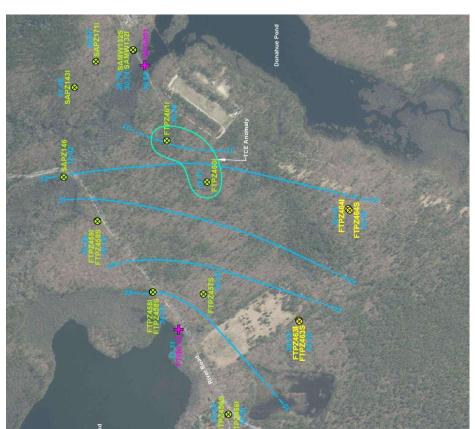




Potentiometric Surface Map (July 2013)

Potentiometric Surface Map (Aug 2013)



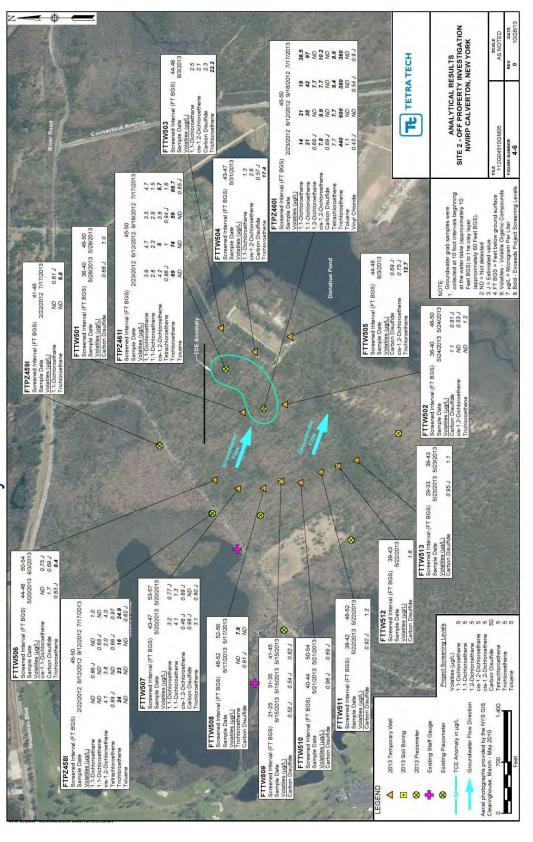


11/07/2013





Analytical Results





Summary:

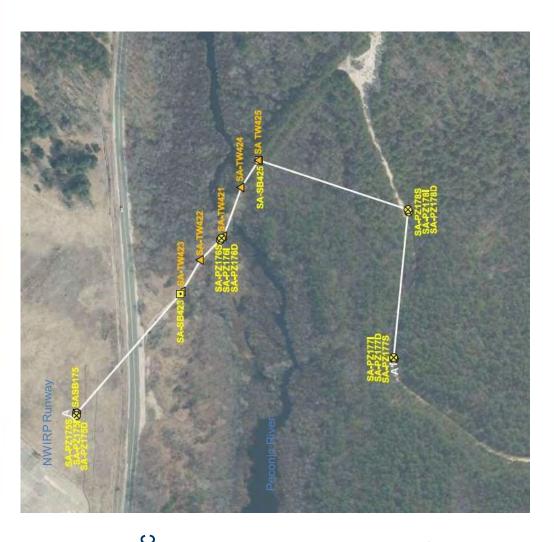
- apparent source in this area, especially west or north of River Road Groundwater flow is from the west and the TCE Anomaly has no
- Recommend that this area continue to be monitored with the Site-Wide Investigation



is flowing beside or under the Peconic Area Groundwater Plume (1,1-DCA) portion of the Site 6A - Southern Objective: Determine whether a River in this area

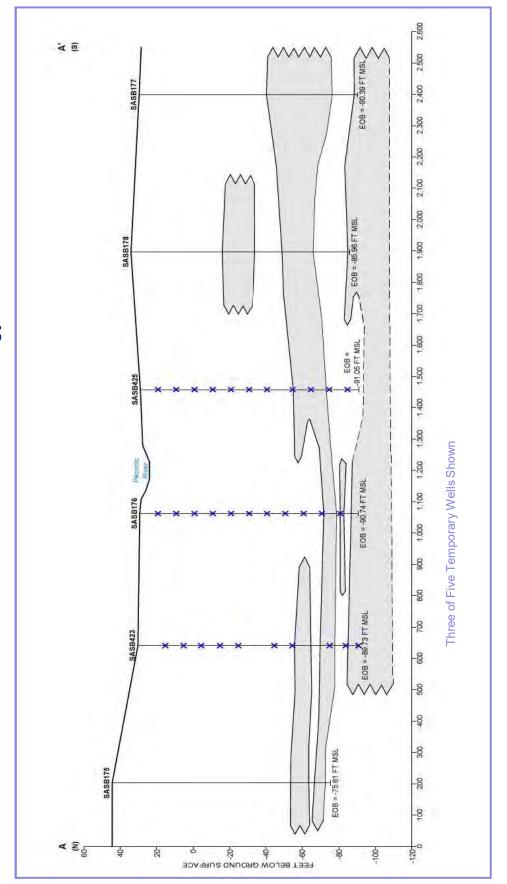
Activities Conducted:

- Installed 5 soil borings to clay unit (approx. 120 feet) for lithology
- Installed 5 temporary wells, each with 9 to 12 water samples for analysis
- Installed 12 piezometers to evaluate horizontal and vertical flow
- Collected 2 rounds of water level measurements



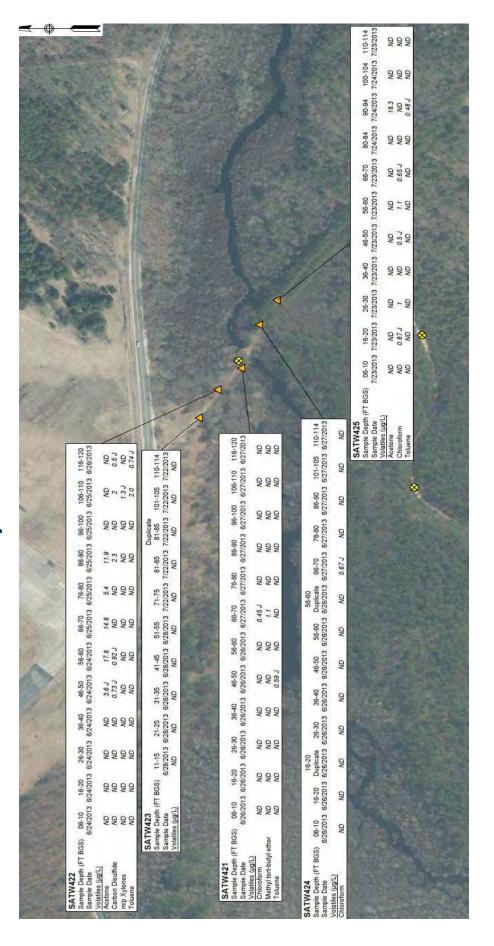


Cross Section A-A' - Lithology





Analytical Results





Summary:

- No evidence that the Site 6A Southern Area plume has migrated to this area
- Pending December 2013 water level measurements, a flow net study will be completed



QUESTIONS?