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MEETING MINUTES AND PRESENTATION FROM 22 APRIL 2010 RESTORATION ADVISORY BOARD MEETING WITH ATTACHED UPCOMING MEETING ANNOUCEMENT (PUBLIC DOCUMENT) NWIRP CALVERTON NY
10/14/2010
TETRA TECH

TETRA TECH

NOR-00873

October 14, 2010

Project Number 112G02045

Reference: Contract No. N62470-08-D-1001
Contract Task Order No. WE08

Subject: RAB Meeting Notification and Meeting Minutes
NWIRP Calverton, New York

MEMORANDUM

FOR THE MEMBERS OF THE RESTORATION ADVISORY BOARD (RAB) FOR THE INSTALLATION RESTORATION PROGRAM AT NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) CALVERTON, NEW YORK

The Navy would like to announce that a ***Restoration Advisory Board (RAB)*** meeting has been scheduled for Thursday, November 4, 2010. This meeting is open to the general public and will begin at 7:00 PM. The location of the meeting is the ***Calverton Community Center, Grumman Boulevard, Calverton, New York.***

Items that will be discussed during this meeting will include:

- Southern Area Field Investigations
- Southern Area Corrective Measures
- October 2010 Interagency Meeting

Attached for your review are the minutes from the RAB meeting held on April 22, 2010. The Navy requests that you review the meeting minutes and provide comments that you have to the Remedial Project Manager, Ms. Lora Fly or to the RAB Community Co-Chair, Mr. Bill Gunther. These minutes will be discussed and approved at the November 4, 2010 meeting. If you need additional information, please call Ms. Lora Fly at (757) 341-2012, or email, lora.fly@navy.mil.

Sincerely,

David D. Brayack
Project Manager

Distribution:
NAVFAC Mid-Atlantic, Lora Fly
NAVAIR, Richard Smith
NYSDEC (Albany), Larry Rosenmann
NYSDEC (Albany), Henry Wilkie
NYSDEC (Stony Brook), Katy Murphy
NYSDEC (Stony Brook), Walter Parrish
NYSDOH, Steve Karpinski
SCDHS, Andrew Rapiejko
USEPA Region II, Ellen Stein
USEPA Region II, Carla Struble
Town of Riverhead, Chris Kempner
Tetra Tech NUS, David Brayack
ECOR Solutions, Al Taormina
H&S, Patrick Schauble
Community Co-Chair, Bill Gunther
Community RAB Member John Armentano
Community RAB Member, Sidney Bail
Community RAB Member, Art Binder
Community RAB Member, Louis Cork
Community RAB Member, Harry Histand
Community RAB Member, Jean Mannhaupt
Community RAB Member, Adrienne Esposito
Community RAB Member, Vincent Racaniello

Non-RAB Member Mailing List:
Frank Anastasi (SCA Associates)
Tony Muratore
Public Repository
Administrative Record

RESTORATION ADVISORY BOARD MEETING
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP), CALVERTON
CALVERTON COMMUNITY CENTER, CALVERTON, NEW YORK
THURSDAY, APRIL 22, 2010

The thirty-second meeting of the Restoration Advisory Board (RAB) was held at the Calverton Community Center. Meeting attendees included representatives from the Navy (Jim Brantley, Lora Fly, and Tom Kreidel), New York State Department of Environmental Conservation (NYSDEC) (Larry Rosenmann, Bill Spitz, and Henry Wilkie), RAB Community Members (John Armentano, Bill Gunther, Jean Mannhaupt, Ann Miloski, and Vincent Racaniello), Suffolk County Department of Health Services (SCDHS) (Andrew Rapiejko), Peconic River Sportsman Club (PRSC) (Anthony Muratore), Tetra Tech NUS, Inc. (David Brayack, Debbie Cohen, and Robert Sok), ECOR Solutions, Inc. (Matt Lapp, Jen Good, and Al Taormina), H&S Environmental (Jill Ann Parrett), AGVIQ Environmental (Stephen Matney) and Frank Anastasi (SCA Associates). In addition, Mr. Edward Romaine (Suffolk County Legislator) attended the meeting. Approximately 6 guests attended the meeting. The meeting sign-in sheet is provided as Attachment 1.

WELCOME AND AGENDA REVIEW

The Navy representative, Ms. Lora Fly, welcomed everyone to the RAB meeting and introduced the meeting agenda. The agenda for the meeting is included as Attachment 2.

DISTRIBUTION AND APPROVAL OF MINUTES

Ms. Fly asked whether the RAB members received the November 2009 RAB minutes, which were distributed in April 2010, and asked whether there were questions or comments on the minutes. There were no questions or comments, and the minutes for the November 2009 RAB meeting were approved.

COMMUNITY UPDATE

Mr. Bill Gunther, RAB Community Co-chair, mentioned that RAB Community Member, Bob Conklin, passed away in December 2009. Mr. Gunther talked about Mr. Conklin's contribution to the RAB and how he was a community spearhead for environmental clean-up efforts. Mr. Conklin had a great love for the Peconic River and for protecting the environment. Ms. Fly read a letter of condolence from the Captain of Naval Facilities Engineering Command that was sent to Mr. Conklin's wife and family.

Before proceeding with technical progress presentation, there were several general community items discussed. The following summarizes the discussions:

- The Honorable Edward Romaine, the Suffolk County Legislator, expressed his concerns related to the Navy's approach for addressing volatile organic compound (VOC) groundwater contamination affecting PRSC drinking water and entering the Peconic River. In the past year, he has not seen progress in providing drinking water to PRSC and in remediating the contamination to prevent it from entering the Peconic River. Ms. Fly explained that PRSC has a treatment system on their drinking water wells and the Navy is in the process of extending the public water line to service PRSC. Ms. Fly explained that the Navy is moving quickly, but the releases are old and the complicated site conditions slow the process. The Navy's presentation for the RAB will provide the status of investigations and planned actions to address VOC contamination that is migrating to the Peconic River. One possible remedial option, bioremediation, is being tested to see whether it will be effective in addressing the groundwater contamination.

- Mr. Edward Romaine asked that the SCDHS test the water at PRSC. Mr. Andrew Rapiejko replied that SCDHS regularly tests the water at PRSC and will provide the results to the legislative office.

- A RAB Community Member recommended that a member of Citizen's Campaign for the Environment (CCE) become a RAB Community Member. Ms. Fly and Mr. Gunther will discuss this further and proceed with the necessary paperwork to begin the nomination process.

- Ms. Fly explained that the recent heavy rains have affected some of the remediation activities and the technical progress presentations will discuss how the Navy is addressing potential concerns.

TECHNICAL PROGRESS – SITE 7 REMEDIAL ACTIVITIES

Mr. Matt Lapp (ECOR Solutions, Inc.) provided a presentation on the status of remedial activities at Site 7 – Former Fuel Depot, explaining that ECOR was subcontracted by the Operation and Maintenance (O&M) contractor (H&S) to provide continued support for the site remediation work. The presentation is included as Attachment 3.

The treatment system is an Air Sparge/Soil Vapor Extraction (AS/SVE) System to remove BTEX, naphthalene, and Freon from shallow groundwater at Site 7. Groundwater contamination has not been found in deeper-zone groundwater at Site 7. The treatment system was constructed in 2004. The majority of the contamination in soil above the water table was remediated as part of the tank removal at Site 7 and the remaining soil contamination is being addressed by the AS/SVE system. The system was designed to remove VOC contamination from groundwater approximately 30 feet below ground surface (bgs) through volatilization and providing oxygen to enhance insitu biodegradation.

Mr. Lapp reviewed the operational activities since the winter shutdown in December 2009. Groundwater samples were collected in December 2009 after system shutdown and in March 2010 before restarting the system. Mr. Lapp reviewed the system runtimes and mass removals, including the updated information since activation of the new AS/SVE wells in July 2009. Mr. Lapp reviewed a figure showing the recent (2007 to 2010) groundwater concentrations for the wells that are monitored as part of the treatment system evaluation.

Mr. Lapp explained that the recent heavy rainfall resulted in higher than normal water table levels that are affecting operation of the system, and the system was shut down for repairs to the SVE piping. Typically the water table is 19 to 20 feet bgs; however, the water table is currently 13 feet bgs. Water is covering the vapor well screens and was being drawn into system piping where the weight and momentum caused damage to the piping. The knockout tank prevented water damage to the blowers. The soil vapor extraction system is currently operating; however, the air sparging system remains off until the water table subsides enough to allow restarting the system. Shutdown of the AS system may extend the time it takes to reach remediation goals, so the Navy would like to determine whether the system can be restarted sooner under controlled conditions until the water table returns to typical levels. Mr. Brayack indicated that a controlled re-start of the AS system will be conducted within the next two weeks.

The primary focus of the system is to address residual contamination in three areas where contamination remains. Mr. Lapp indicated that most of the site wells are consistently less than groundwater clean-up levels and other wells are approaching the clean-up levels. Contaminant mass removal through the SVE system increased after the installation of the new AS/SVE wells in 2009 and is anticipated to continue to address residual contamination. The Navy is planning to collect and evaluate operational data to optimize the system for the remainder of the year.

There were several questions regarding groundwater contamination and the treatment system. The following summarizes the questions and answers:

- What is the source of Freon in groundwater at the site? Mr. Brayack explained that there may have been a fuel line which was originally tested with Freon. The Freon contaminations have been reduced by 90 percent, but there remains contamination that is not effectively being treated by the system. This summer an evaluation will be conducted to determine what is necessary to treat this remaining area of Freon contamination.

- Why not design the system to run during the winter? Mr. Brayack explained that treatment was not as effective during the winter and that winter operation is problematic because of moisture in the system.

TECHNICAL PROGRESS – SITES 6A AND 10B REMEDIAL ACTIONS

Mr. Steve Matney, AGVIQ Environmental, provided a presentation on the status of the Site 6A and Site 10B remedial actions. The presentations for Sites 6A and 10B are included in Attachment 4.

Site 6A is the Fuel Calibration Area. This area was used from the 1950s to the mid 1980s to test jet aircraft systems. Previous actions at the site included removal of an underground fuel storage tank and installation and operation of a free product recovery system. The fuel was found to be mixed with chlorinated solvents. Between 1987 and 1992, a groundwater extraction system was used to enhance free product removal. Groundwater was discharged to an unlined ditch and culvert system that ultimately entered the area where groundwater contamination has been identified (Southern Area). A Corrective Measures Study (CMS) for soil contamination was prepared in May 2006, and a remedy was selected in 2008. The remedy consists of excavation and offsite disposal of contaminated soil and enhanced bioremediation of residual soil contamination below the water table.

Since the last RAB meeting, excavation activities at Site 6A were completed (in January 2010). During excavation, field screening was used to segregate potentially clean soil from contaminated soil. The excavated soil was tested and soil that met reuse criteria was used as backfill. Excavated soil that did not meet reuse criteria was disposed off site. Soil was excavated to the water table (approximately 8 feet bgs) or slightly deeper where possible. Confirmation samples along side walls of the excavation were collected. To facilitate biodegradation of residual contamination below the water table, oxygen releasing compound (ORC) was applied to the bottom of the excavation prior to backfilling. Mr. Matney showed a figure of the site and indicated that the southern portion of the excavated area is now being backfilled. The excavation area was expanded in the southern area because confirmation sampling results in the southern portion of the excavation showed that contamination extended beyond the planned excavation area. There are 13 monitoring wells at Site 6A that are included in the facility-wide monitoring program. Three wells removed during excavation have been replaced. Groundwater monitoring of the site will be conducted as part of the annual facility-wide monitoring program.

As discussed at the last RAB meeting, the remedial action for Site 10B was completed in June 2009. However, since the last RAB meeting, the Navy identified an additional area that needs to be addressed. Mr. Matney explained that a former electrical transformer pad area was identified and sampling of soil under the pad indicated PCB contamination in surficial soil. The pad and surficial soil (to approximately 2 feet bgs) were removed. The Navy is waiting for confirmation sampling results before backfilling this area.

In answer to a question of whether truck traffic during the removal action was any trouble, RAB Community Member Ann Miloski, who lives near NWIRP Calverton, indicated that she did not have any concerns.

TECHNICAL PROGRESS - DECEMBER 2009 INTERAGENCY MEETING

Ms. Fly (Navy) provided an update on the December 2009 interagency meeting. Ms. Fly explained that Navy is holding a series of technical meetings to address concerns related to groundwater contamination from NWIRP Calverton. As discussed at the last RAB, meetings were held in July and December 2009 to determine the additional steps needed to address contamination in the offsite Southern Area.

Mr. Frank Anastasi attended the December 2009 meeting and provided information to the RAB Community Members. The RAB Community Members appreciated Mr. Anastasi being able to attend the technical meeting and then providing an update to the Community Members.

Another technical meeting has not been planned at this time. The Navy is preparing a CMS for the Southern Area, and the Navy and regulators will schedule additional technical meetings as needed after the draft CMS has been completed.

TECHNICAL PROGRESS – 2009 GROUNDWATER INVESTIGATION SUMMARY

Mr. Rob Sok, Tetra Tech, provided a presentation on the status of 2009 groundwater investigations and the current understanding of groundwater contamination at NWIRP Calverton. The presentation is included in Attachment 5.

The Navy is conducting annual facility-wide groundwater monitoring that includes 13 monitoring wells at Site 2 – Fire Training Area, 13 monitoring wells at Site 6A – Old Fuel Calibration Area, 3 monitoring wells at Site 10B – Engine Test House, and approximately 30 monitoring wells in the Southern Area. The wells at Site 6A include the wells that were replaced after the removal action was completed. In September 2009, the Navy also conducted additional investigation in the Southern Area to identify potential additional source areas (hot spots) and identify potential data gaps in the understanding of groundwater contaminant migration in the area. Other 2009 field activities included staff gauge installation on the PRSC property, slug testing of 26 monitoring wells, quarterly sampling of PRSC wells, and semi-annual surface water and sediment sampling.

Mr. Sok reviewed slides showing groundwater contour and results maps for each site and Peconic River sampling results. During review of the results, the meeting attendees requested 11 by 17 size figures of results be provided at RAB meetings so that the results are more readable.

For Site 2, Mr. Sok explained that groundwater flow was to the southeast. In September 2009, after the soil excavation in 2008, there was a continued decrease in contaminant concentrations in groundwater. Approximately 0.1 inch of free product was found in one well adjacent to the excavation area. Higher thicknesses of free product were previously found in this well.

For Sites 6A, 10B, and Southern Area, water levels are taken on a regular basis to develop a better understanding of groundwater flow. In the past, groundwater flow has been to the southeast, but after the recent heavy rainfall, groundwater flow was more to the south. Wells sampled after soil excavation at Sites 6A and 10B are showing a decrease in concentrations. The next sampling of the wells at these sites will be in September 2010. For the Southern Area, a general downward trend in concentrations was also noted.

Mr. Sok showed the results for groundwater at PRSC before and after treatment and explained that the treatment system was working well. When some low level contamination was detected in the treated groundwater, the Navy replaced the carbon treatment units. Mr. Sok reviewed the Peconic River sampling activities and results and indicated that there were a few detections of VOCs.

The September 2009 sampling that was conducted to investigate potential source areas of the Southern Area showed contamination was not present in most of the investigated area. One area of higher contamination was identified on site, which is upgradient of previously identified groundwater contamination. The Navy will continue to investigate this area as a potential source.

Slug testing was conducted at 26 monitoring wells that suggested the groundwater hydraulic conductivity was greatest in the upper portion of the surficial aquifer. Slug testing involves the rapid introduction and then removal of a tube in a monitoring well and then measuring the rate at which groundwater levels recover. It was noted that slug testing is not always accurate, especially in water table wells. The middle and lower portions of the surficial aquifer had similar hydraulic conductivities. The greatest contamination is present in the middle portion of the surficial aquifer above a local aquitard. Mr. Sok then reviewed an isoconcentration map for 1,1-DCA results, showing the area where concentrations were approximately 1,000 ug/L. Of particular interest is an area offsite of the Navy property (County property) in which there is no data. The Navy is working with the County on access to investigate this area. Mr. Sok reviewed the groundwater plume cross-section figure, showing how contamination is moving in the plume and how the aquitard and Peconic River affect groundwater and contaminant flow. Mr. Sok explained that the initial estimates of groundwater flow rates based on slug test results provide a general order of magnitude understanding of flow rates within the aquifer. However, the planned pumping tests will provide better estimates of groundwater flow rates.

Mr. Sok then reviewed the biodegradation sampling that was conducted in November 2009. The results were evaluated to determine the natural biodegradation of chlorinated VOCs. Based on the evaluation, the Navy concluded that natural anaerobic conditions exist in groundwater and near the River. The Navy will use these results to support an enhanced in-situ anaerobic biodegradation pilot study in 2010. In 2010, the Navy will also continue quarterly PRSC sampling and groundwater level measurements, semi-annual surface water and sediment sampling, annual groundwater sampling, and additional groundwater investigation.

TECHNICAL PROGRESS – SCDHS PECONIC RIVER SAMPLING

Mr. Andrew Rapiejko, SCDHS, provided a presentation on the status of SCDHS sampling of the Peconic River. The presentation is included in Attachment 6.

In August 2009, SCDHS collected pore water and surface water samples at approximately 16 locations. The pore water samples were collected using a Trident probe by pushing the probe about 1 foot into the sediment. The probe provides conductivity and temperature information to determine whether more groundwater or river water is in the pore water. Mr. Rapiejko presented the results of sampling in August and December 2009, mentioning that four additional samples were collected in December 2009 (locations 16 to 19) in areas where greater VOC concentrations were detected. VOCs were not detected in the surface water samples and there were several detections in pore water samples. The VOC detections in pore water samples are in the vicinity of existing monitoring wells, which also show VOC contamination.

In answer to a question of what does the evidence of VOC contamination in the river mean to the Navy, the Navy indicated that surface water concentrations are consistently less than drinking water standards and is not showing contamination within the river. However, the Navy is taking steps toward a remedy for groundwater contamination. The next two presentations will provide the work the Navy is doing related to upcoming groundwater investigations and corrective measures. Mr. Rapiejko indicated that SCDHS has been reviewing various draft reports recently that show that the Navy has been working hard to move forward with a remedy for groundwater contamination.

In answer to a question of why the groundwater plume delineation does not show the 50 ug/L contour extending to the pore water samples from the river, the Navy indicated that the isoconcentrations are general illustration of the contamination. A single detection slightly greater than 50 ug/L mixed with several other detections less than 50 ug/L were not enough evidence to shift the contour line.

TECHNICAL PROGRESS – 2010 GROUNDWATER INVESTIGATIVE ACTIVITIES

Mr. Sok and Mr. David Brayack, Tetra Tech, provided a presentation on the status of 2010 groundwater investigative activities. The presentation is included in Attachment 5.

A work plan addendum was submitted in March 2010 describing additional investigation activities to better define groundwater contamination and flow in the Southern Area. The work includes installation of 8 continuous soil borings, installation of 13 temporary wells, installation and sampling of 19 piezometers, collection of water level measurements, and surveying of piezometers, temporary wells, and borings. In addition, sampling around a potential source area (former septic system at the Hush House) will be conducted to determine whether a source area is present. The septic system was located between Sites 6A and 10B. The sampling will include installation of one continuous soil boring, installation of one temporary well downgradient of the former cesspool and two temporary wells located downgradient of the former leech field.

The Navy has been able to complete some of the planned investigation and is working on access arrangements for sampling locations on County property and in the Peconic River. Mr. Rapiejko mentioned that the County collected split samples for some of the samples. In an answer to a question of whether there was any benefit to getting biodegradation information as part of the 2010 investigation activities, Mr. Brayack indicated that a biodegradation study will obtain the necessary information.

TECHNICAL PROGRESS – SOUTHERN AREA CORRECTIVE MEASURES

Mr. Brayack, Tetra Tech, provided a presentation on the evaluation of potential corrective measures for the Southern Area groundwater contamination. The presentation is included in Attachment 5.

During the review of the conceptual site model for contamination in the Southern Area, Mr. Brayack indicated that the information being collected in currently planned investigations will be important for determining the best methods to remediate the contamination. Two primary unknowns for developing remediation plans are whether there is one or two plumes with DCA contamination greater than 500 ug/L and whether contamination is trapped in the aquitard.

Remedial options being evaluated are natural attenuation with monitoring, groundwater extraction and treatment (hydraulic containment and mass removal), enhanced in-situ anaerobic biological treatment, and in-situ air sparging. Mr. Brayack reviewed a figure with potential treatment locations, including locations in the middle portion of the plume and the downgradient edges of the plume along Connecticut Avenue and by the Peconic River. Another figure presented shows the potential treatment areas in relation to wetland areas and endangered species zones that will need to be considered when evaluating remedial options.

Mr. Brayack explained the information needed for the evaluation of groundwater extraction and enhanced biodegradation that will be collected. Data are not required at this time to evaluate air sparging. For consideration of groundwater exaction, data will be needed to establish extraction well layout, extraction rates, and treatment requirements. The approach is to conduct pump tests to determine horizontal and vertical conductivity. Two pump test wells will be installed in the portion of the plume where the greatest levels of contamination are present. For enhanced in-situ anaerobic biodegradation, the Navy will evaluate the effectiveness of ethyl lactate (EL) injection to accelerate in-situ anaerobic biodegradation of the VOC contamination. Mr. Brayack mentioned that hydrogen release compound (HRC), molasses, and vegetable oil are other types of products can be used for enhance anaerobic biodegradation. The Navy is evaluating EL, which is a corn derivative, because it has a low viscosity and is completely water soluble. EL breakdown is relatively fast (weeks to months) and it breaks down to ethanol and lactic acid. The Navy is evaluating use of EL as a source area/hot spot treatment option.

Mr. Brayack explained the pilot study for EL injection. The EL would be injected at the selected locations at the top of the aquitard unit. Wells that intercept groundwater from the treatment area would be selected to evaluate changes in groundwater concentrations corresponding to 1, 2, 4, and 6 months after EL injection. Existing wells will be used for the pilot study; additional wells would be needed for a full-scale treatment system. The Navy is planning to install the monitoring locations in June, conduct the initial test in July or August 2010, and then monitor groundwater conditions through December 2010. After the pilot study is finished, the Navy will complete the CMS report. The current schedule for the CMS for NYSDEC review is March 2011. After the CMS is complete a statement of basis will be prepared that selects the remedy for the Southern Area. The statement of basis is provided for public comment.

Mr. Rosenmann requested that a technical meeting be scheduled soon after the Navy expects to have the results from the various investigations and testing. Ms. Fly will provide data as they become available. The Navy and regulators will then need to decide at what point there are sufficient data to warrant a technical meeting. The Navy will propose some tentative dates based on the current status of work. Ms. Fly proposed that the next RAB meeting be held approximately two weeks after the technical meeting so that the Navy and regulators can provide the results of the investigation, testing, and technical discussions.

CLOSING REMARKS

Ms. Fly indicated that based on the availability of data and schedule for the technical meeting, the schedule for RAB meetings will need to be changed. Ms. Fly will coordinate with Mr. Gunther and

NYSDEC to determine dates for the next technical meeting and RAB meeting. The RAB will then be informed.

Ms. Fly thanked everyone for coming to the meeting and asked whether the RAB members had any other questions. Mr. Gunther suggested that the order of presentations in the future be changed to provide the topics that are more of a concern (e.g., Southern Area groundwater contamination) at the beginning and the general status update presentation after. In answer to whether the RAB Community Members would prefer hard copies of documents instead of electronic copies on compact disc, the RAB indicated that the Navy should continue to provide electronic copies only. There were no further questions. The meeting was then adjourned.

ATTACHMENT 1

APRIL 22, 2010 RAB MEETING SIGN-IN SHEET

32nd RAB Meeting for NWIRP Calverton
April 22, 2010
Sign-In List

Name	Address (if interested in being on mailing list)	Organization	How Did You Hear of Meeting?
LARRY ROSENMANN		NYSDEC	
Donna Derasmo		Comm. Member	US Navy
Vincent Racaniello		RAB	
Michael White		News-Review	
Jon Monn Lampt		RAB	
Frank Anastasi		SCA Assoc. RAB Tech. Advisor	
John ARMENTANO		PRSC	
Jan M. Milaski	RAB	Zone Resident	Calverton Civic Org.
Stephen Maranca		AGVIQ-CH2M Hill	
AL TAORMINA		ECOR.	
Adrienne Esposito		CCE	Citizen's campaign for the environment
~~Adrian~~ Lora Fly		Navy	
Debbie Cohen		TtNUS	
Rob Sok		TtNUS	
Jen Good		ECOR	

32nd RAB Meeting for NWIRP Calverton
April 22, 2010
Sign-In List

Name	Address (if interested in being on mailing list)	Organization	How Did You Hear of Meeting?
Anthony Muratore		PRSC	
MATT LAPP		ECOR	
Dave Brayack		TtNUS	
Jill Ann Parrett		H&S Env.	
Jim Brantley		NAVFAC	
Tom Kreidel		NAVFAC	
Henry Wilkie		NYSDEC	
Andrew Rapiejko		SCDHS	
Bill Gunther		RAB	
Bill Spitz		NYSDEC	STONYBROOK
Ed Romaine		Suffolk County	
Bill Faulk		Suffolk County Legislature	
[illegible]		Pvt.	Invite Sec. of the Navy

ATTACHMENT 2

APRIL 22, 2010 RAB MEETING AGENDA

Agenda

Restoration Advisory Board
Naval Weapons Industrial Reserve Plant Calverton

April 22, 2010
Calverton Community Center, Calverton NY
7:00 p.m.

Welcome and Agenda Review
Lora Fly, NAVFAC Mid-Atlantic

Distribution of Minutes
All Members

Community Update
Bill Gunther, RAB Co-chair

Technical Progress

Site 7 Remedial Activities
H&S/ECOR

Sites 6A and 10B Remedial Actions
Steve Matney, Agviq

December 2009 Interagency Meeting
Lora Fly, NAVFAC

2009 Groundwater Investigation Summary
Rob Sok, Tetra Tech

SCDHS – Peconic River Sampling
Andy Rapiejko, SCDHS

2010 Groundwater Investigative Activities
Rob Sok, Tetra Tech/ Dave Brayack, Tetra Tech

Southern Area Corrective Measures
Dave Brayack, Tetra Tech

Closing Remarks
Lora Fly

Presenters will be available after the program for questions.

ATTACHMENT 3

ECOR SOLUTIONS, INC. PRESENTATION

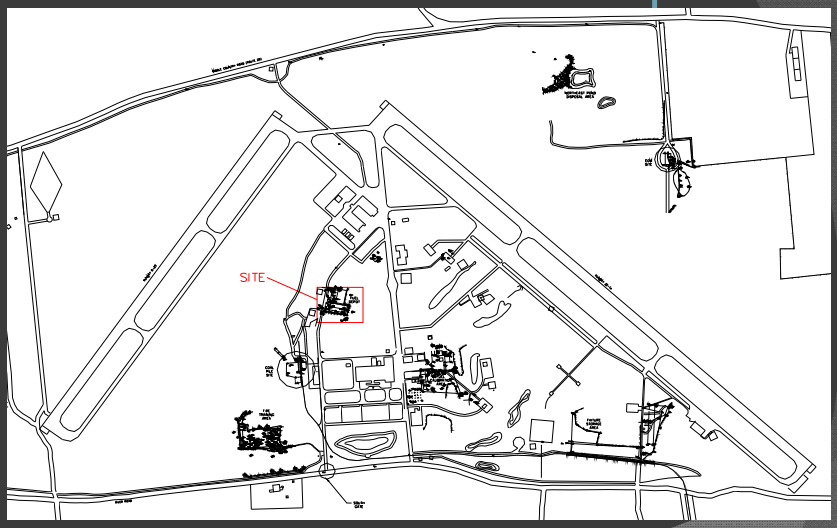
Site 7: Former Fuel Depot
Air Sparge/Soil Vapor Extraction System
Former Naval Weapons Industrial Reserve Plant
Calverton, NY

Restoration Advisory Board Meeting
April 22, 2010

Project Overview

- Constituents of Concern:
  - BTEX, Naphthalene, and Freon in groundwater
- AS/SVE System constructed 2004
- Goal:
  - Mass removal of groundwater VOC constituents via soil vapor extraction
  - Promote enhanced aerobic biodegradation via air sparging
  - Operate and maintain AS/SVE system until remediation goals are attained

Site 7: Former Fuel Depot



Area Map

Operational Activities

- December 13, 2009 system shutdown for winter
- December 14-16, 2009 groundwater samples collected
- March 1-3, 2010 - Latest groundwater samples collected
- March 8, 2010 – System restarted following winter shutdown
- Performed weekly O&M visits following start-up:
  - Monitored vapor-phase carbon adsorbers
  - Obtained instrument measurements
  - Performed general site inspections

Operational Difficulties

- On April 7, 2010 the system was shutdown to repair damaged SVE piping resulting from a much higher than normal water table (13 feet bgs – normally 19-20 feet)
- Water was covering vapor well screens (10-25 ft) and being drawn into system piping where the weight and momentum caused damage. Knockout tank prevented damage to blowers
- System remains off until the water table subsides

System Runtime

Yearly runtimes*:

2007 – 6066 hrs (95.0%)
2008 – 5799 hrs (94.6%)
2009 – 6004 hrs (98.6%)

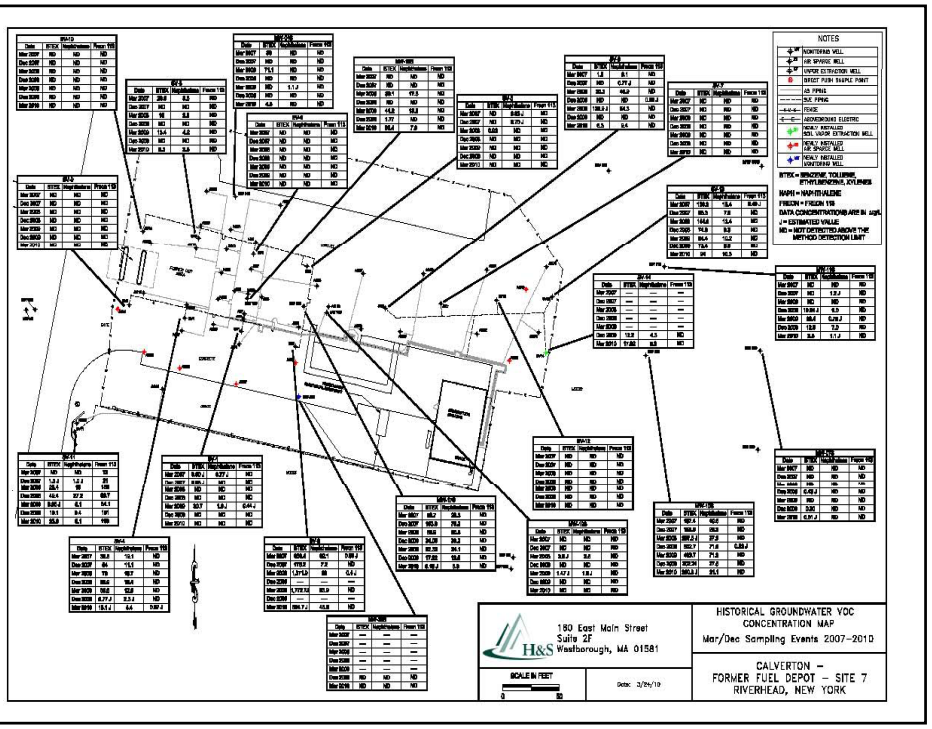
Monthly runtimes (2009-2010):

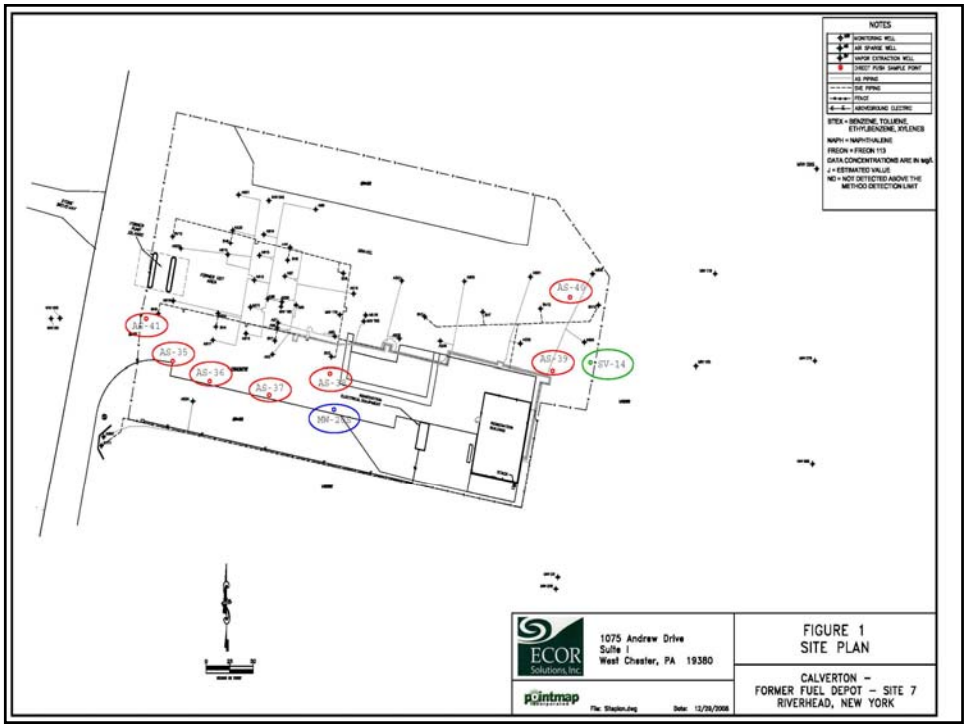
April – 648 hrs (100%)
May – 728 hrs (97.8%)
June – 712 hrs (98.9%)
July – 672 hrs (90.3%)
August – 720 hrs (96.7%)
September – 714 hrs (99.2%)
October – 718 hrs (96.5%)
November – 716 hrs (99.4%)
December – 304 hrs (100%)
March (2010) – 547 hrs (99.1%)

*Downtime includes shutdowns for sampling

Current Site Conditions

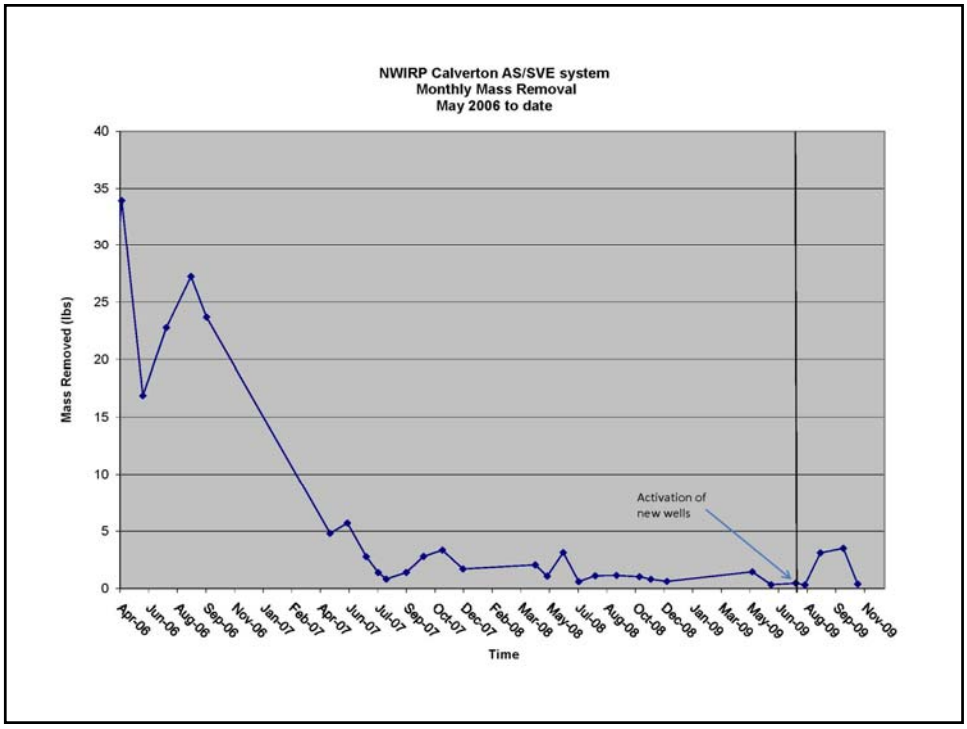
- Several wells (SV-1, 6, 7, 8, 9, 10, 12 and MW-04S, 07S, 19S, 20S) have been consistently below groundwater clean-up standards
- Other wells (SV-3, 4, 13 and MW-11S, 17S) are approaching clean-up levels
- Some optimization of the system along with the addition of new wells installed in June/July 2009 should help to increase removal in remaining areas

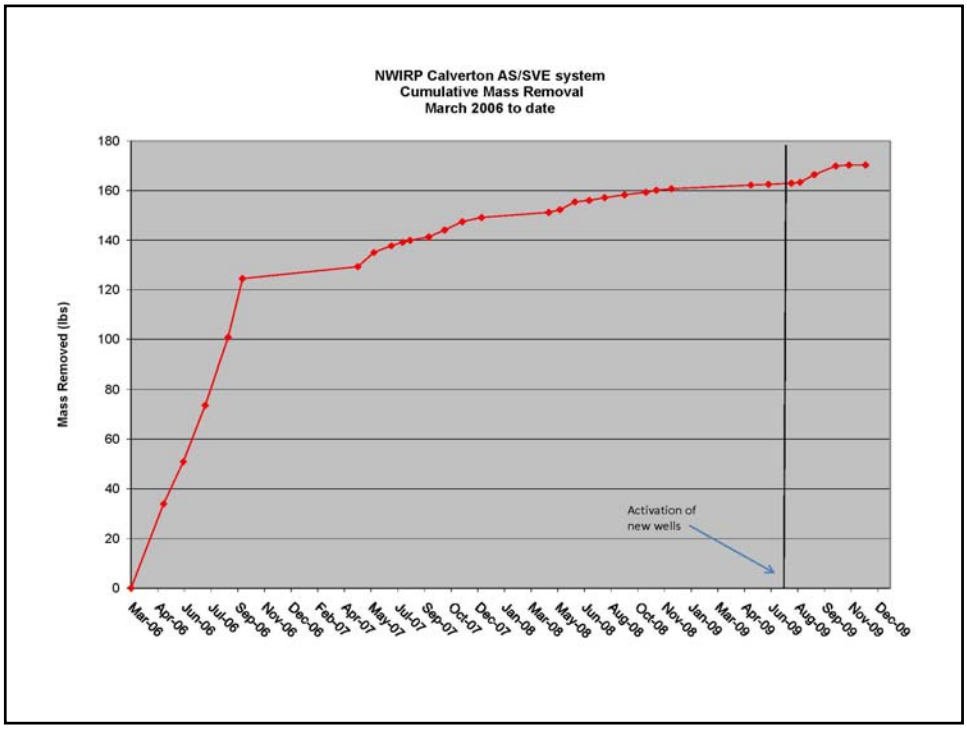




Mass Removal Statistics

- Cumulative Mass Removals:
  - 2007 – 24.72 lbs
  - 2008 – 11.54 lbs
  - 2009 – 9.57 lbs
- Monthly Mass Removals (2009):
  - April/May – 1.4 lbs
  - June – 0.32 lbs
  - July – 0.39 lbs
  - August – 0.32 lbs
  - September – 3.10 lbs
  - October – 3.50 lbs
  - November – 0.39 lbs
- Mass removed since system inception– 170.3 lbs
- Monthly mass removal reaching asymptotic level


NWIRP Calverton AS/SVE system
Monthly Mass Removal
May 2006 to date
Mass Removed (lbs)
Time
Activation of new wells


NWIRP Calverton AS/SVE system
Cumulative Mass Removal
March 2006 to date
Mass Removed (lbs)
Activation of new wells

Future Activities

- Monitor water table
- Collect groundwater samples following winter shutdown in December 2010.
- Collect and evaluate operational data (flowrates, vacuum/pressures, PID readings, etc.) to optimize the system for the remainder of the year.

Questions?

ATTACHMENT 4

AGVIQ ENVIRONMENTAL PRESENTATION

Site 6A Fuel Calibration Area, Removal Action

Naval Weapons Industrial Reserve Plant (NWIRP)
Calverton, New York
April 22, 2010

Site 6A Fuel Calibration Area - Removal Action

- Site Activities:
- Excavation Activities:
  - Started: 7/6/10
  - Completed: 1/18/2010
  - Depth reached: 8-10 FT BGS
- Backfilling: 1/19 – 3/2010
- Site Restoration:
  - Started: 4/2/2010-Onging

Photo Date: 2/23/10

Site 6A Fuel Calibration Area - Removal Action

- Backfill imported and placed: 16,280 CYDS:
  - 4,000 CYDs Re-use
  - 12,820 CYDs imported
- Waste material offsite: 19,551 TONS (13,034 CYDs)
- TSCA material offsite: 491.43 TONS

Photo Date: 2/23/10

AGVIQ CH2M HILL

Site 6A Fuel Calibration Area - Removal Action Stockpiling

- Soils are stockpiled on 10 mil polyethylene sheeting. Piles are covered and secured every day.
- Approximately 17,000 CYDs excavated and managed onsite (4/14/10)

Photo Date: 2/23/10

AGVIQ CH2M HILL

Site 6A Fuel Calibration Area - Removal Action Excavation to Water Table – Southern Area

- Excavation to the water table (approximately 8 ft below ground surface).
- Confirmation samples were collected along the side wall of the excavation.

Photo Date: 3/22/10

AGVIQ CH2M HILL

Site 6A Fuel Calibration Area - Removal Action ORC application-Southern Area

- After completion of excavation to the water table and/or 1 FT below to 8 ft below ground surface ORC (Permeox) is applied
- To date 4,900 lbs. of ORC have been applied to the excavation at Site 6A.

Photo Date: 3/18/10

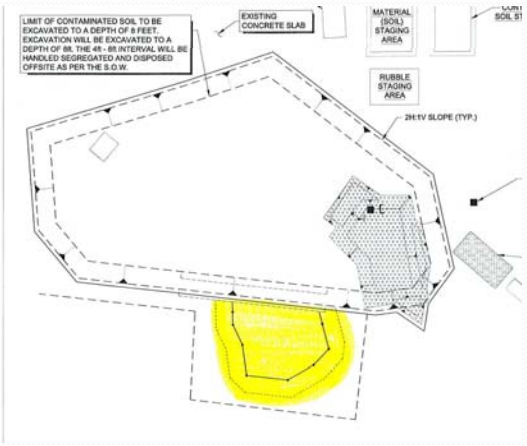
AGVIQ CH2M HILL

Site 6A Fuel Calibration Area - Removal Action

Overall Progress View of the As-Built/Grid Map for areas completed and backfilled as of 4/14/10 at Site 6A.

Site 6A Fuel Calibration Area - Removal Action (Southern Area-Phase IV)

Additional removal of ~2,000 CYDs of soil along the southern portion of the excavation. This area was completed and backfilled has started (4/14/10)



Site 10B Engine Test House - Removal Action (Additional Areas)

Removal Area

Site 10B Engine Test House - Removal Action (Additional Areas)

Additional Area at Site 10B (Engine Test house). Former electrical transformer pad area. Removal of ~20 CYDs of soil samples collected (4/14/10).

Photo Dates: 4/12/10

Before Excavation

After Excavation

ATTACHMENT 5

TETRA TECH PRESENTATION

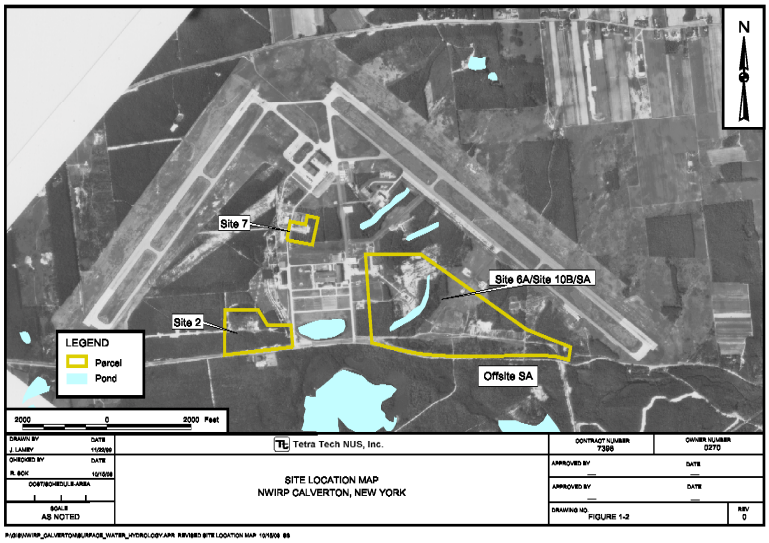
NAVFAC
Naval Facilities Engineering Command
NAVFAC MID-ATLANTIC

2009 Groundwater Investigation Summary

RAB Presentation

Naval Weapons Industrial Reserve Plant (NWIRP)
Calverton, New York
April 22, 2010

NWIRP Calverton –Site Location Map



Summary of 2009 Field Activities

Annual Facility-Wide Groundwater Monitoring (September 2009):

- Site 2-Former Fire Training Area (13 monitoring wells)
- Site 6A-Old Fuel Calibration Area (10 monitoring wells)
- Site 10B-Engine Test House (3 monitoring wells)
- Southern Area (30 monitoring wells)

Southern Area groundwater investigation targeting potential source areas and identified data gaps:

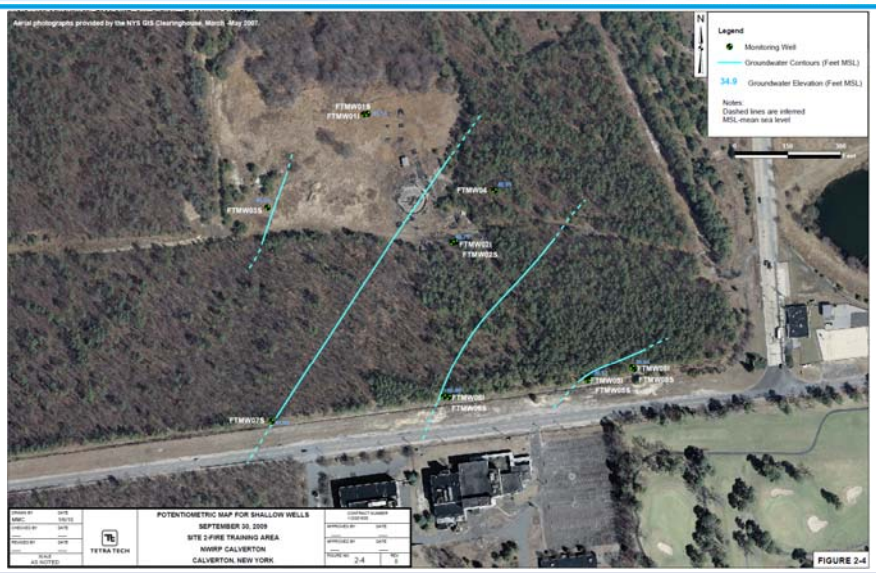
- Groundwater grab and temporary well sampling at three discrete depths (17 locations – March and September 2009)
- Onsite and offsite monitoring well installation (3 shallow, 4 intermediate, and 1 deep well) - to address data gaps and support the ongoing groundwater monitoring program

Summary of 2009 Field Activities

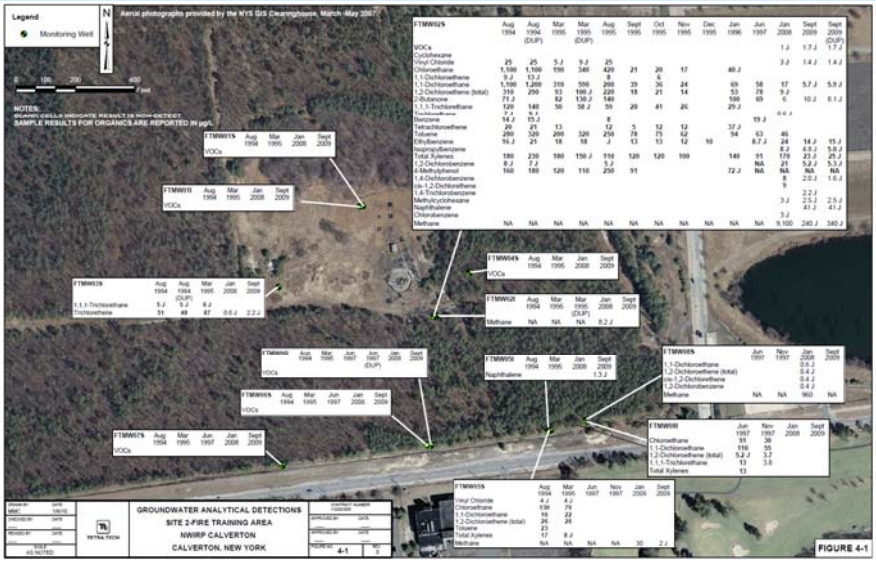
Other 2009 Field Activities:

- Staff gauges installed (2 located on PRSC property)
- Installed reference/survey point for Peconic River elevation
- Slug Testing conducted at 26 monitoring wells
- Conducted quarterly PRSC sampling
- Conducted semi-annual surface water and sediment sampling
- Biodegration study
- Site 7 groundwater sampling conducted by H&S

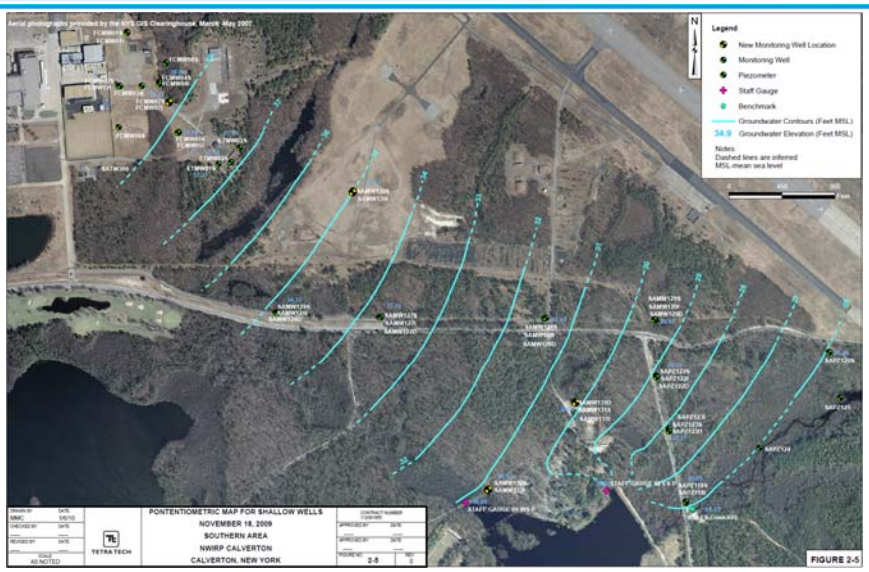
Site 2 Groundwater Contour Map



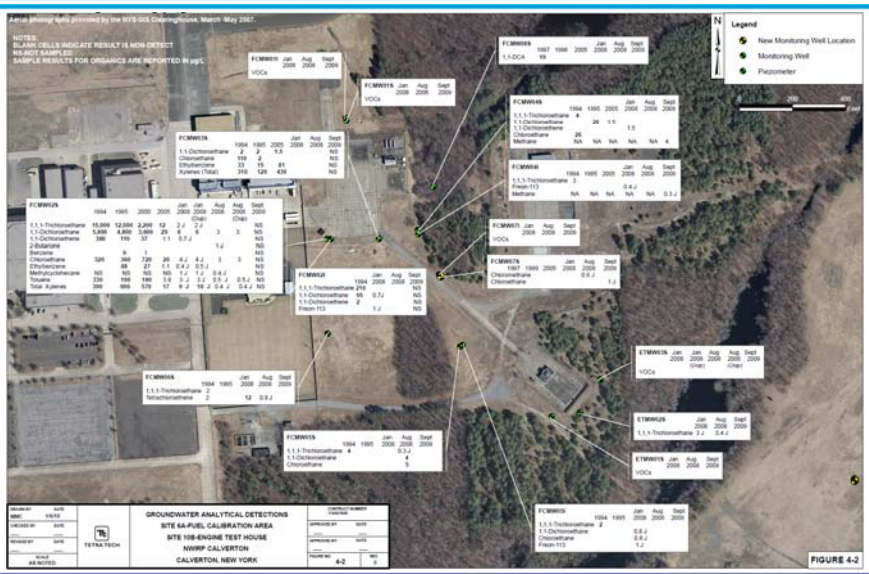
Site 2 Groundwater Results



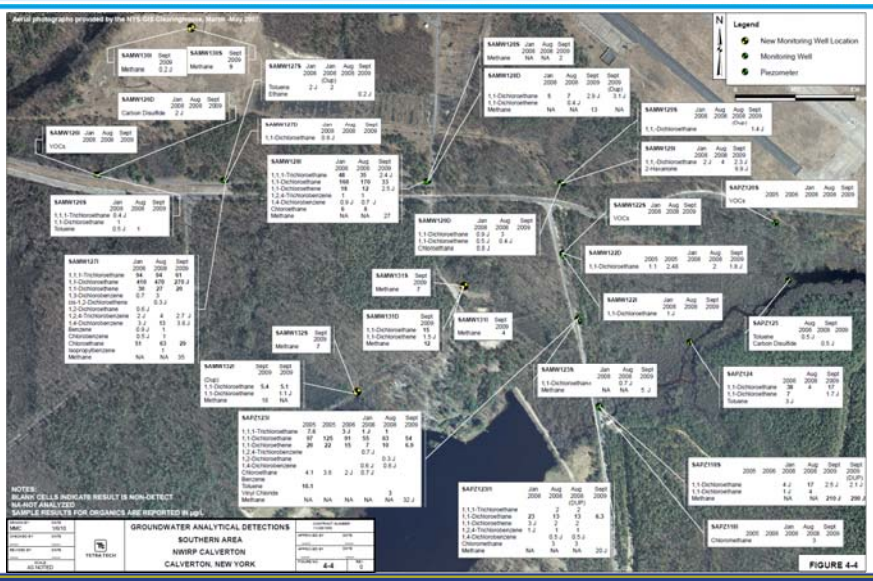
Site 6A,10B, and Southern Area Groundwater Contour Map



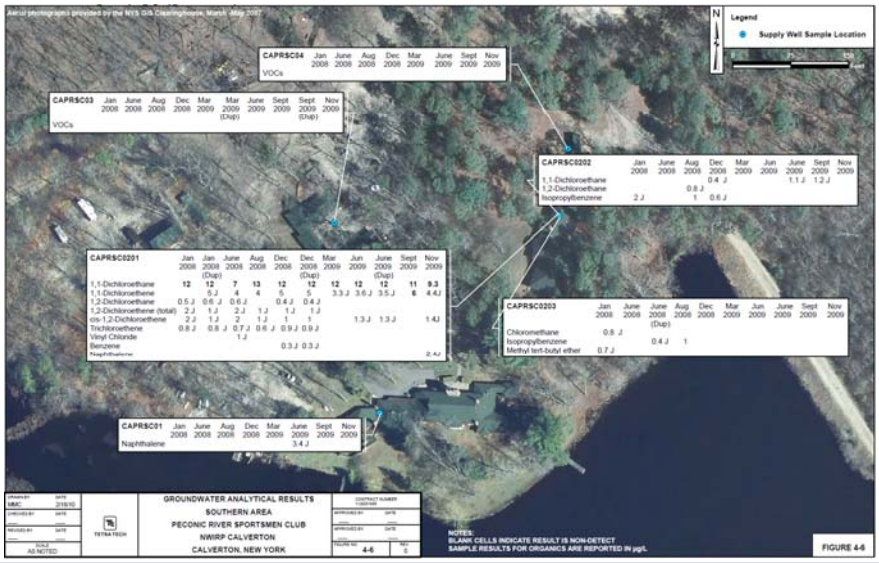
Site 6A and 10B Monitoring Well Results



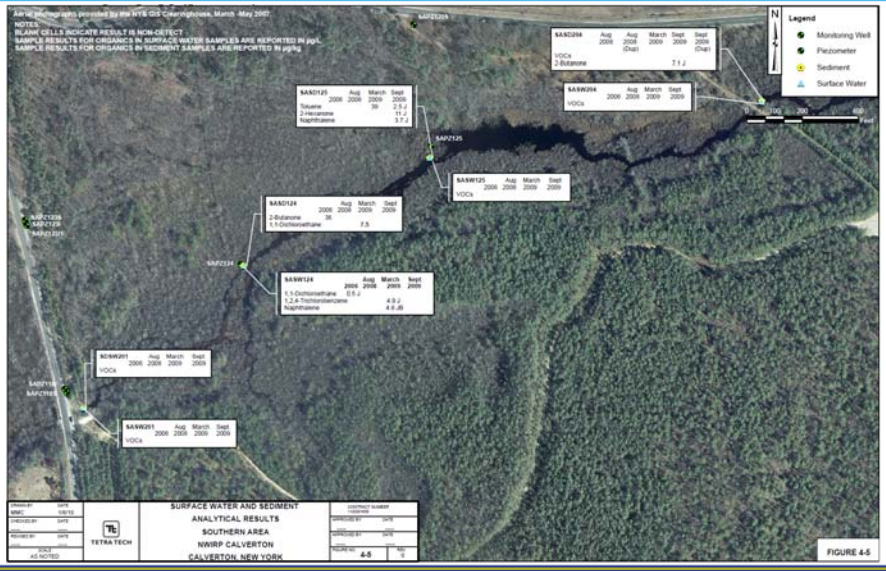
Southern Area Monitoring Well Results



Peconic River – Quarterly Sampling Results

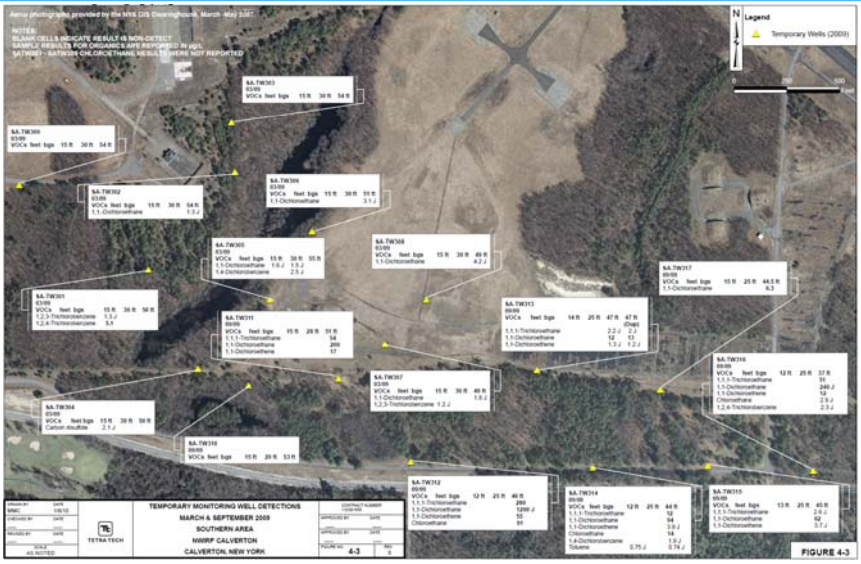


Peconic River – Surface Water, Sediment, and Peizometer locations



Southern Area – Groundwater Grab/Temporary Well Locations

Southern Area – Groundwater Grab/Temporary Well Results



Slug Testing Results

Slug Test Data:

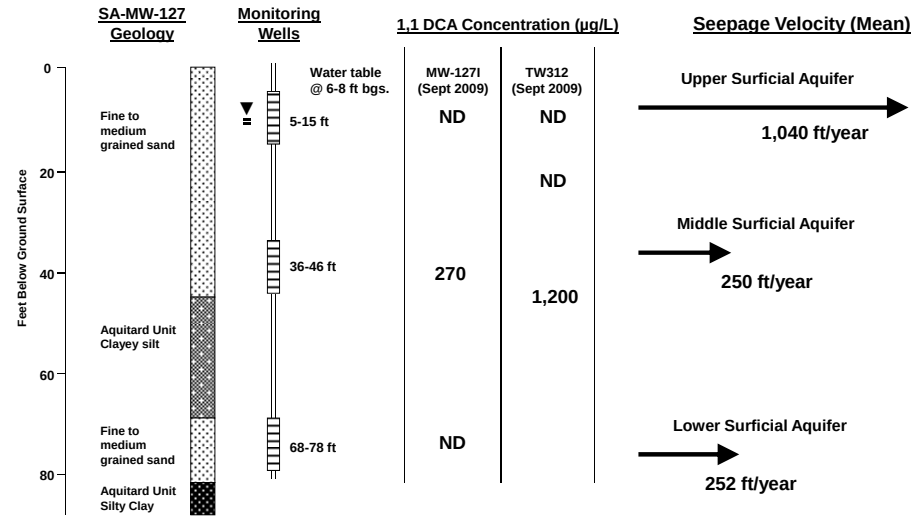
- Slug Testing conducted at 26 monitoring wells
- Slug testing indicated average hydraulic conductivities for the three zones at:

  340 ft/day - Upper surficial

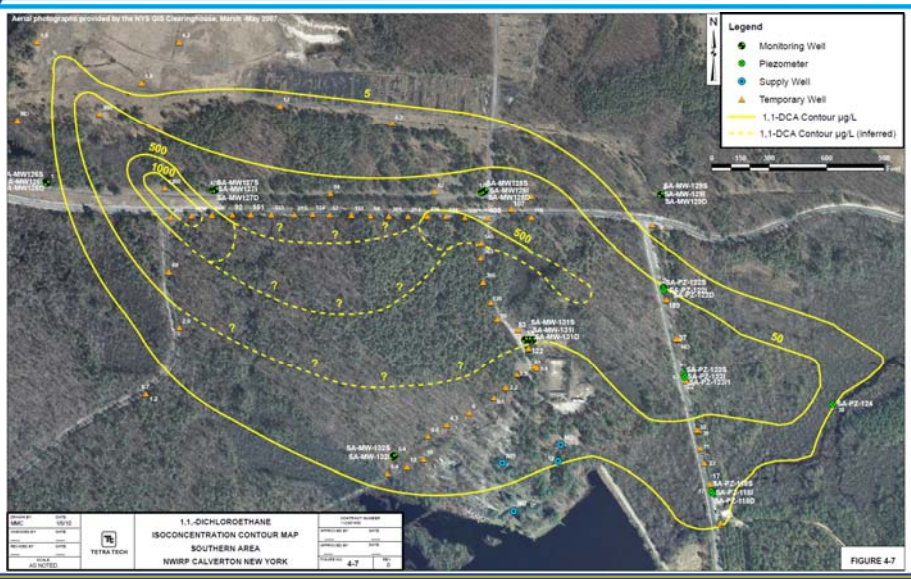
  90 ft/day - Middle surficial

  115 ft/day - Lower surficial

Slug Testing Summary

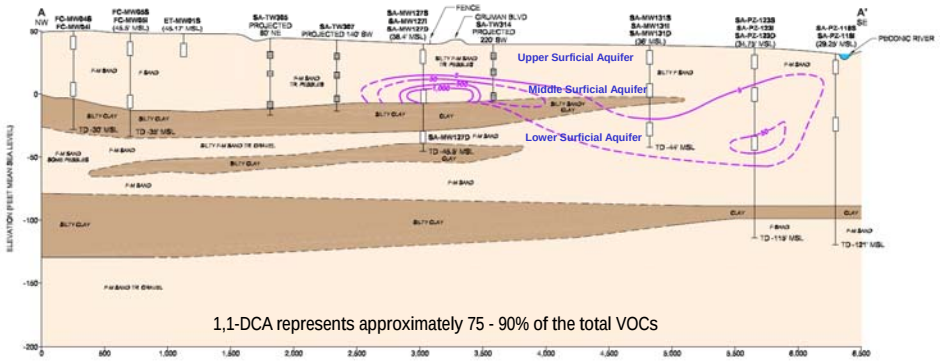


1,1 DCA Isoconcentration Map



Groundwater Plume Cross-Section

Cross Section, Site 6A (left) to Peconic River (right) - Total VOCs



Upper Surficial Aquifer – approximately 3 years to reach Peconic river

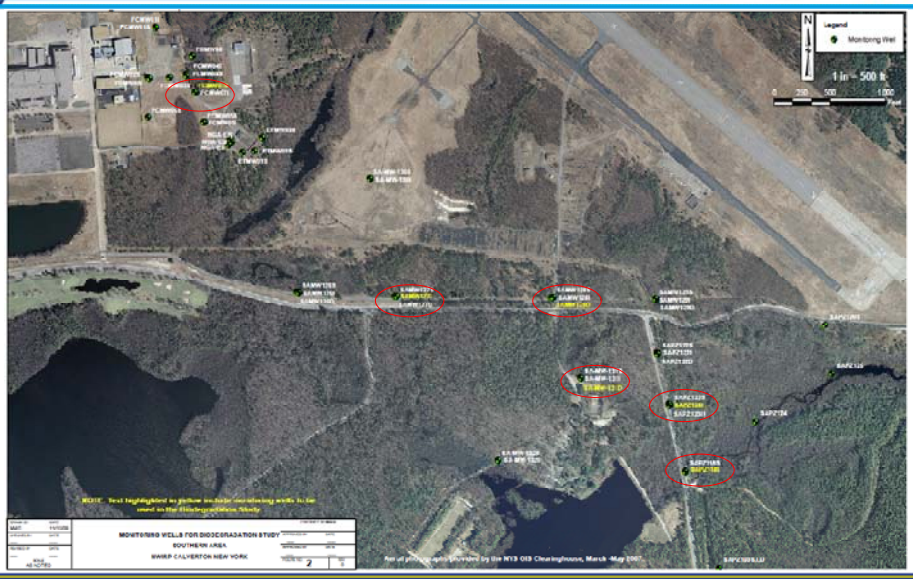
Middle Surficial Aquifer – approximately 14 years to reach Peconic river

Lower Surficial Aquifer – approximately 14 years to reach Peconic river

Biodegradation Sampling

- Navy sampled six monitoring wells in November 2009 to evaluate natural biodegradation of chlorinated VOCs
- Tests conducted for VOCs, dissolved gases, DO, ORP, DHC and DHB bacteria, soluble iron and manganese,
- TCA, DCA, and chloroethane degrade anaerobically with the ultimate end products of methane, ethane, and ethene
- Chloroethane will also degrade aerobically to carbon dioxide and chloride

Biodegradation Study – Well Location Map



Biodegradation Sampling

Conclusion: Natural anaerobic conditions already exist in deeper groundwater and near the River.

- Enhanced In-situ Anaerobic Biodegradation – Pilot Test in 2010

2010 Groundwater Activities

- Quarterly PRSC sampling and groundwater level measurements
- Semi-annual surface water and sediment sampling (spring and fall 2010)
- 2010 Annual groundwater sampling event (fall 2010)
- Additional groundwater investigation

QUESTIONS ?

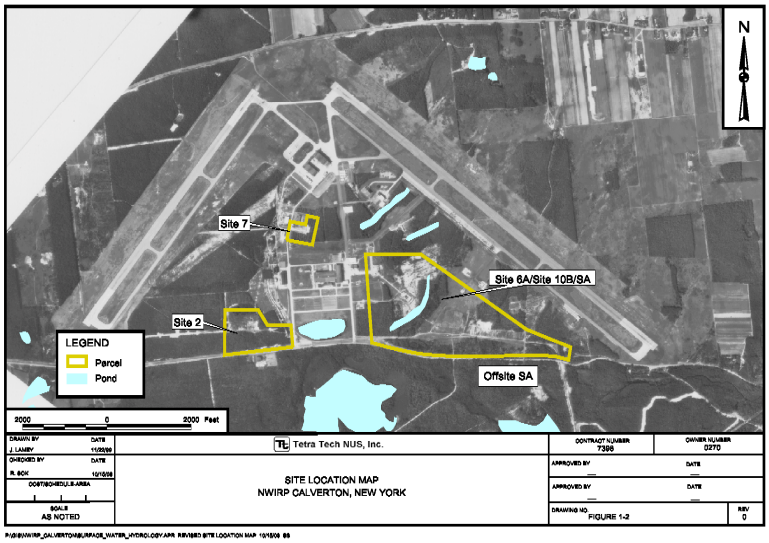
NAVFAC
Naval Facilities Engineering Command
NAVFAC MID-ATLANTIC

2010 Groundwater Investigation Work Plan Addendum

RAB Presentation

Naval Weapons Industrial Reserve Plant (NWIRP)
Calverton, New York
April 22, 2010

NWIRP Calverton –Site Location Map



March 2010 Work Plan Addendum Summary

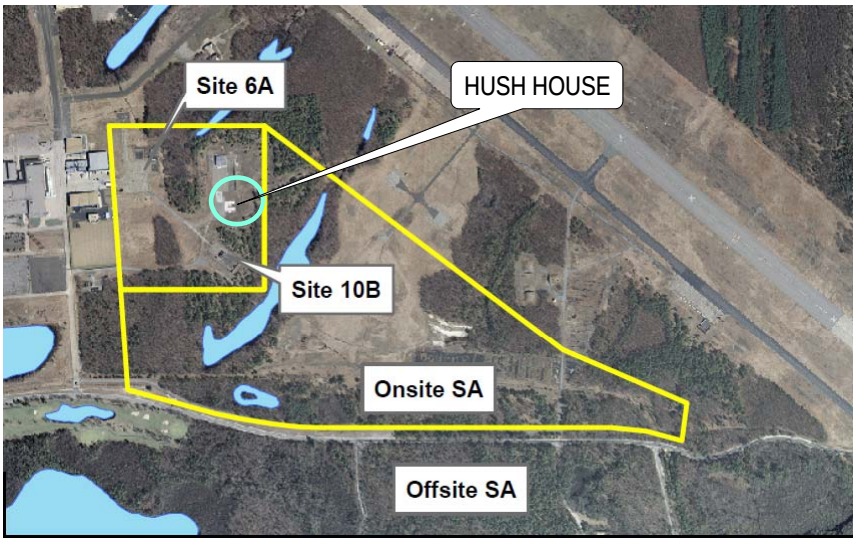
Purpose:

- To better define groundwater contamination and flow in the Southern Area

Work Plan includes:

- Installation of 8 continuous soil borings
- Installation of 13 temporary well locations
- Installation and sampling of 19 piezometers
- Collection of water level measurements
- Surveying of piezometers, temporary wells, and borings

NWIRP Calverton – Hush House Location Map



March 2010 Work Plan Addendum
Hush House

Hush House (potential source area) includes the following work:

- Installation of 1 continuous soil boring
- Installation of 3 temporary well locations
  - ➢ One temporary well located downgradient of former cesspool
  - ➢ Two temporary wells located downgradient of former leech field

March 2010 Work Plan Addendum
Southern Area Groundwater Investigation

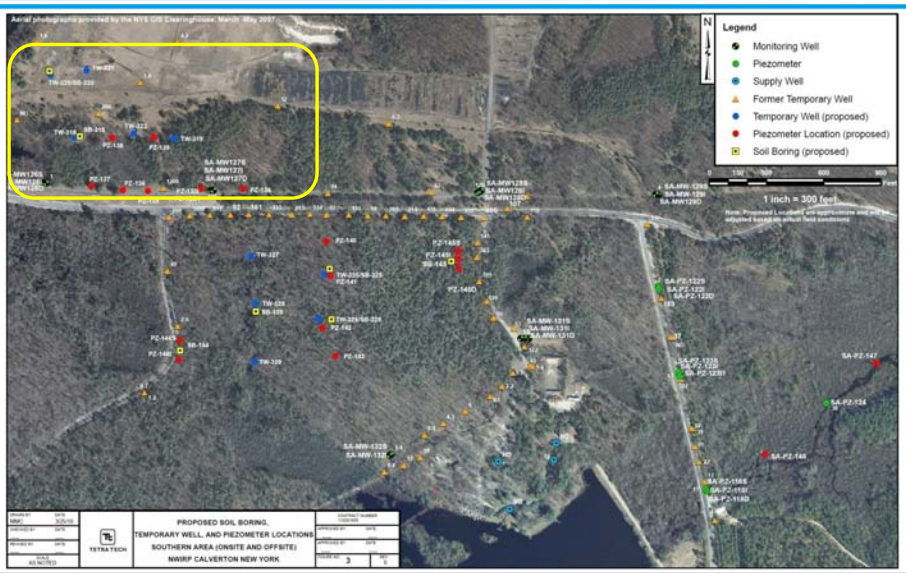
March 2010 Work Plan Addendum
Southern Area Groundwater Investigation

Onsite - Southern Area
- Two continuous soil borings
- Five temporary well locations
- Installation and sampling of 8 piezometers
- Water level measurements
- Conducted PRSC sampling and GAC replacement

Offsite - Southern Area – County Property
- Five continuous soil borings
- Five temporary well locations
- Installation and sampling of 9 piezometers

Offsite - Southern Area – Peconic River
- Two additional piezometers along the Peconic River

March 2010 Work Plan Addendum
Southern Area Groundwater Investigation



March 2010 Work Plan Addendum
Southern Area Groundwater Investigation

- Onsite - Hush House and Southern Area (Completed April 9, 2010)
- Offsite - Southern Area – County Property (Pending Access Agreement)
- Offsite - Southern Area – Peconic River
  (Piezometer installation postponed due to high water conditions)

QUESTIONS ?

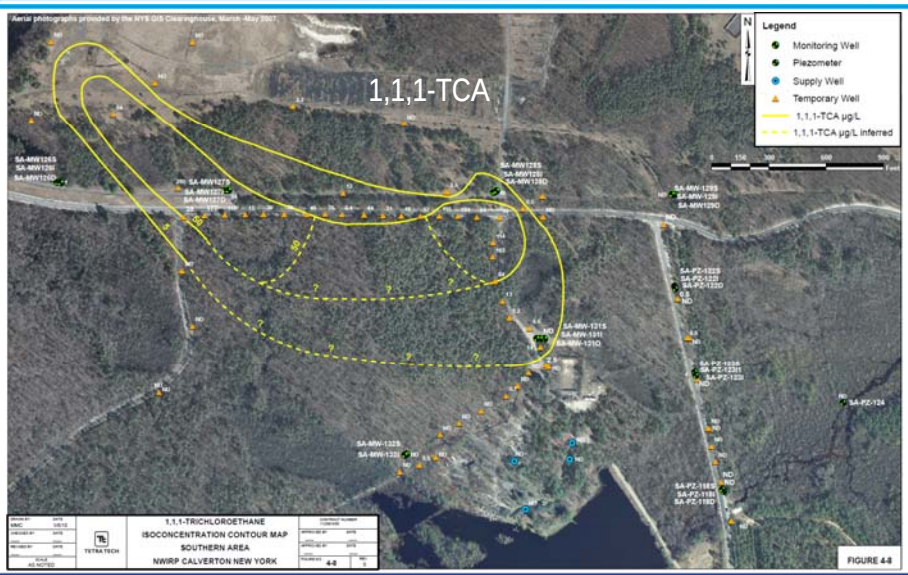
NAVFAC
Naval Facilities Engineering Command
NAVFAC MID-ATLANTIC

Southern Area Corrective Measures

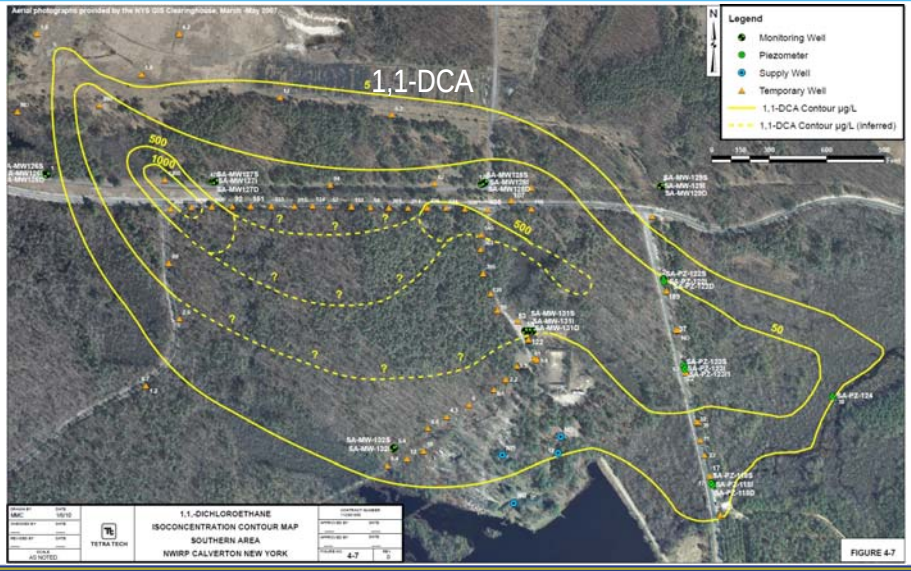
RAB Presentation

Naval Weapons Industrial Reserve Plant (NWIRP)
Calverton, New York
April 22, 2010

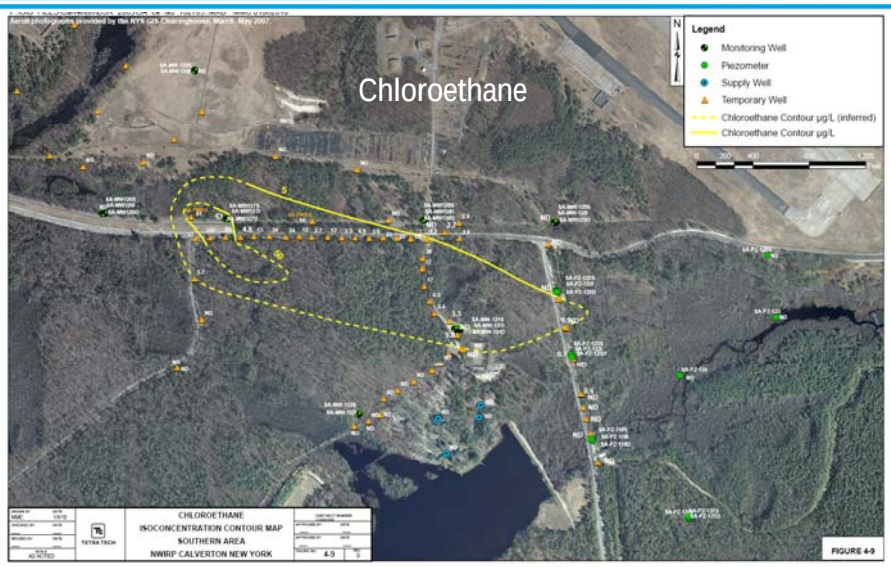
Southern Area Corrective Measures



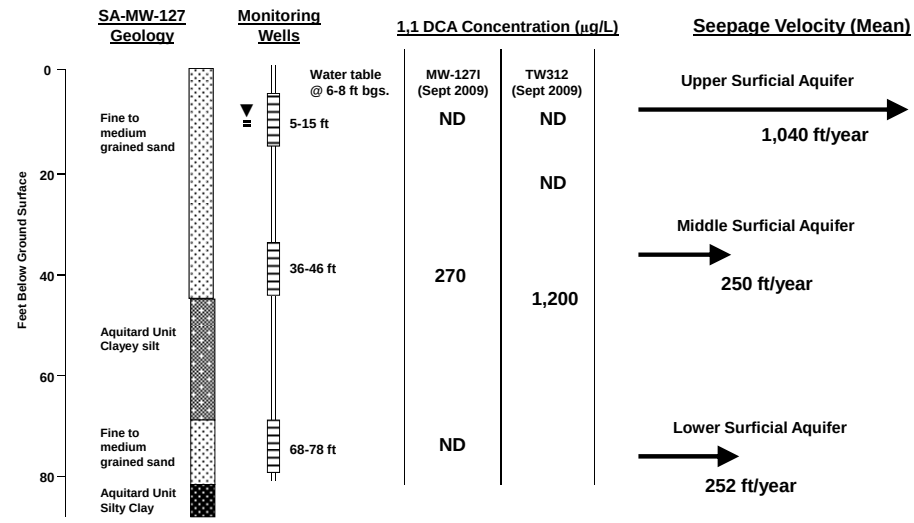
Southern Area Corrective Measures



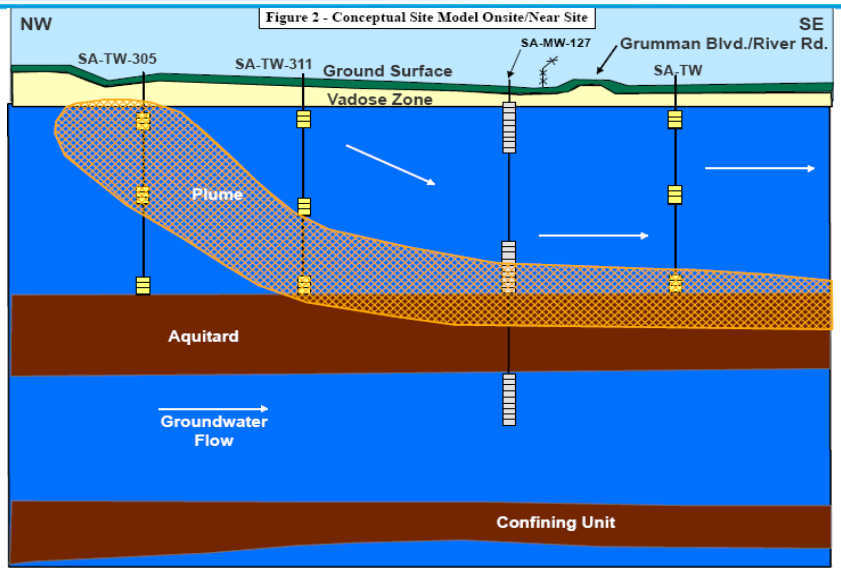
Southern Area Corrective Measures



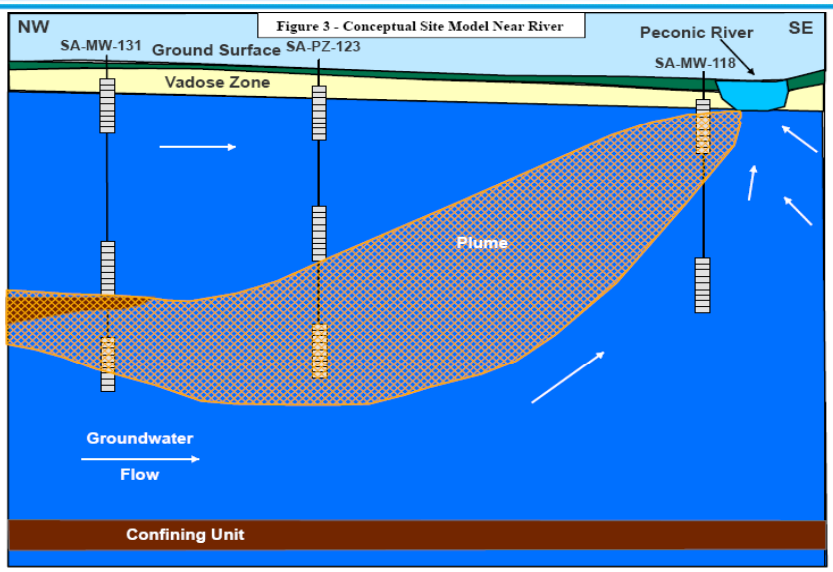
Southern Area Corrective Measures



Southern Area Corrective Measures



Southern Area Corrective Measures



Southern Area Corrective Measures

Remedial Options:

- Natural Attenuation with Monitoring
- Groundwater Extraction and Treatment
  - Hydraulic containment
  - Contaminant removal
- Enhanced In-situ Anaerobic Biological Treatment
- In-situ Air Sparging/Biosparging (Aerobic Process)

Southern Area Corrective Measures

General information needed to evaluate Remedial Options:

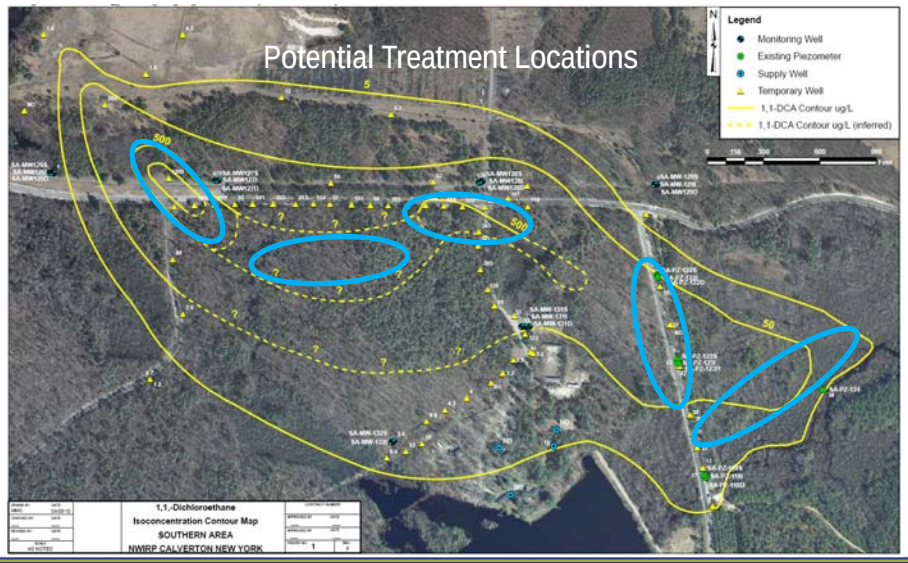
- Extent of contamination (width, depth, and length)
- Flow characteristics – hydraulic and contaminant
- Point of compliance and cleanup goals

Southern Area Corrective Measures

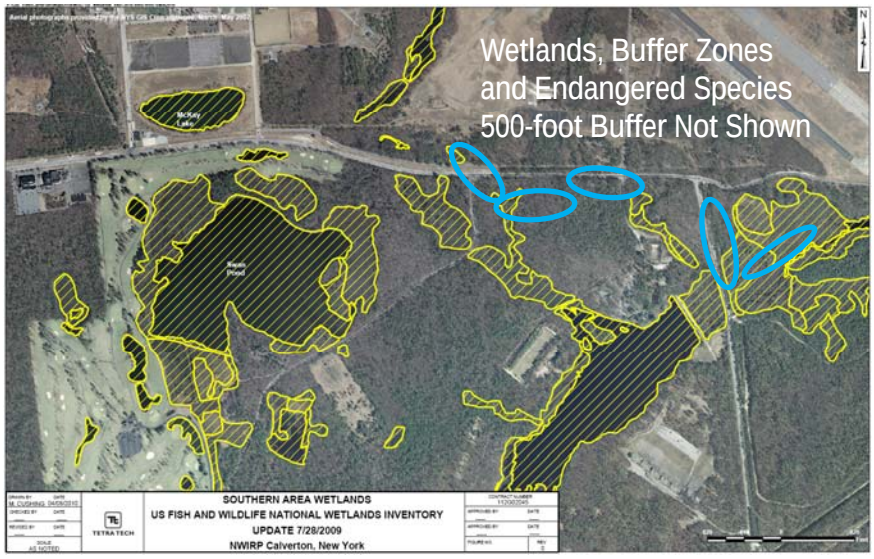
Treatment Locations:

- Navy property
- Offsite – County property
- Connecticut Avenue
- Former Navy property - adjacent to Peconic River

Southern Area Corrective Measures



Southern Area Corrective Measures



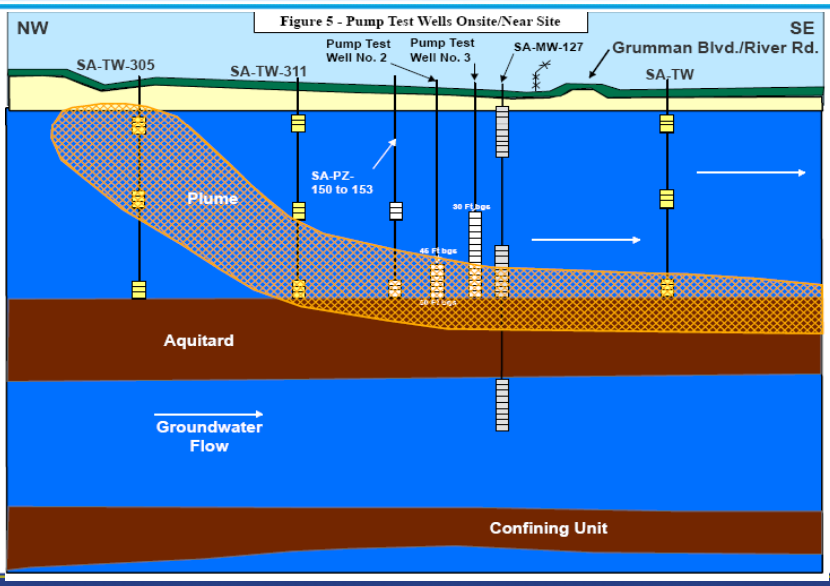
Southern Area Corrective Measures

Groundwater Extraction Data Needs

- Objective: Collect data to establish extraction well layout, extraction rates, and treatment requirements
- Approach: Conduct pump tests to determine horizontal and vertical conductivity:
  - Step draw down tests: 10, 50, ~100 gpm for up to 90 minutes
  - 24-hour pump test: 10 to 100+ gpm (Onsite only)
  - Analytical Testing

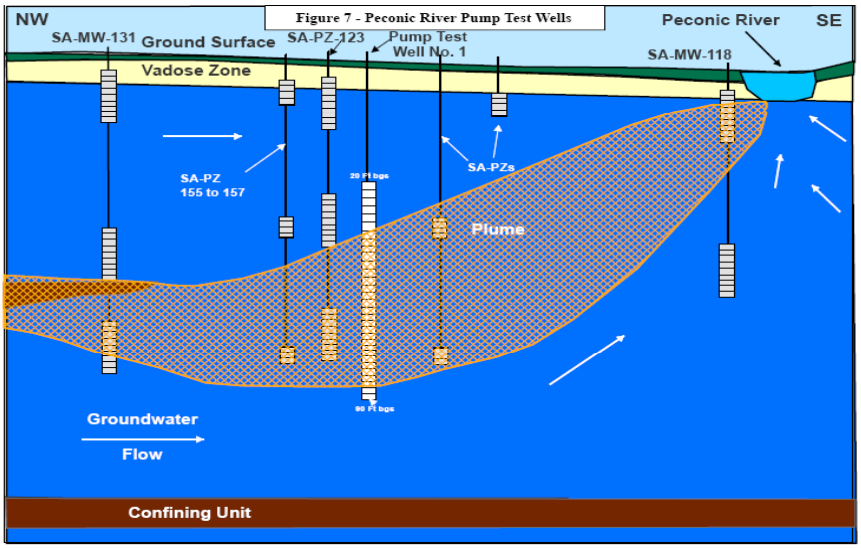
Southern Area Corrective Measures

Southern Area Corrective Measures



Southern Area Corrective Measures

Southern Area Corrective Measures



Southern Area Corrective Measures

Enhanced In-situ Anaerobic Biodegradation:

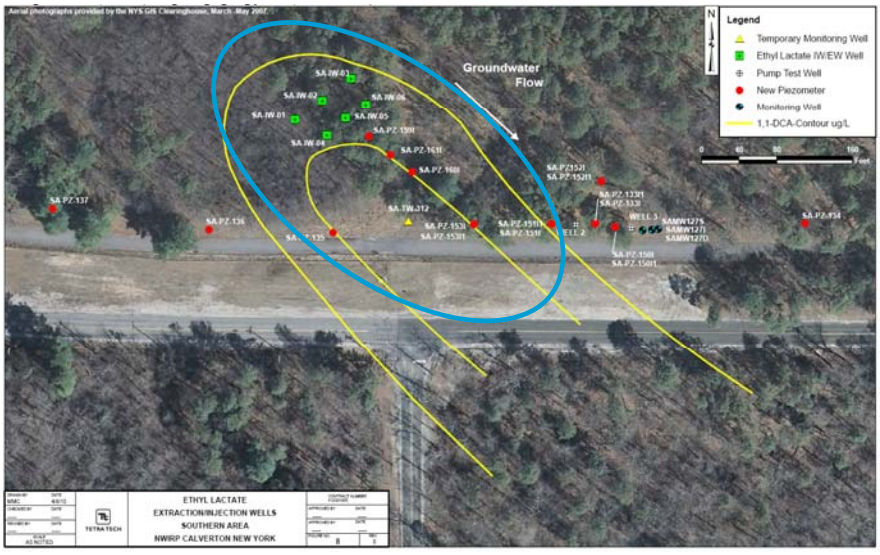
- Objective: Evaluate the effectiveness of ethyl lactate (EL) injection to accelerate in-situ anaerobic biodegradation of chlorinated solvents in Southern Area groundwater:
  - 1,1,1-trichloroethane (TCA)
  - 1,1-dichloroethane (DCA)
  - 1,1-dichloroethene (DCE)
  - Chloroethane (CA)
- EL is a corn derivative, has a low viscosity and is completely water soluble
- EL breakdown is relatively fast (weeks to months), and more than one injection is commonly required, first forms ethanol and lactic acid

Southern Area Corrective Measures

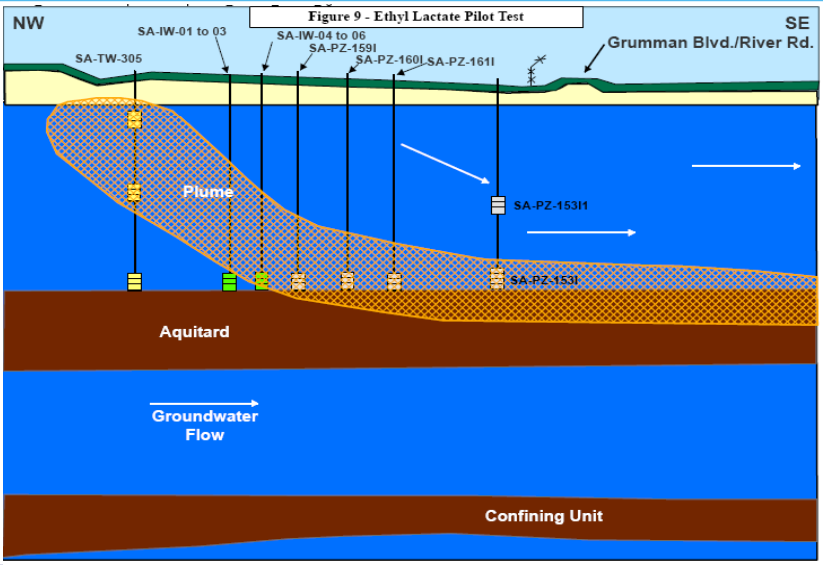
Field Activities:

- Install monitoring points in June
- Conduct tests in July/August 2010
- Monitoring through December 2010

Southern Area Corrective Measures



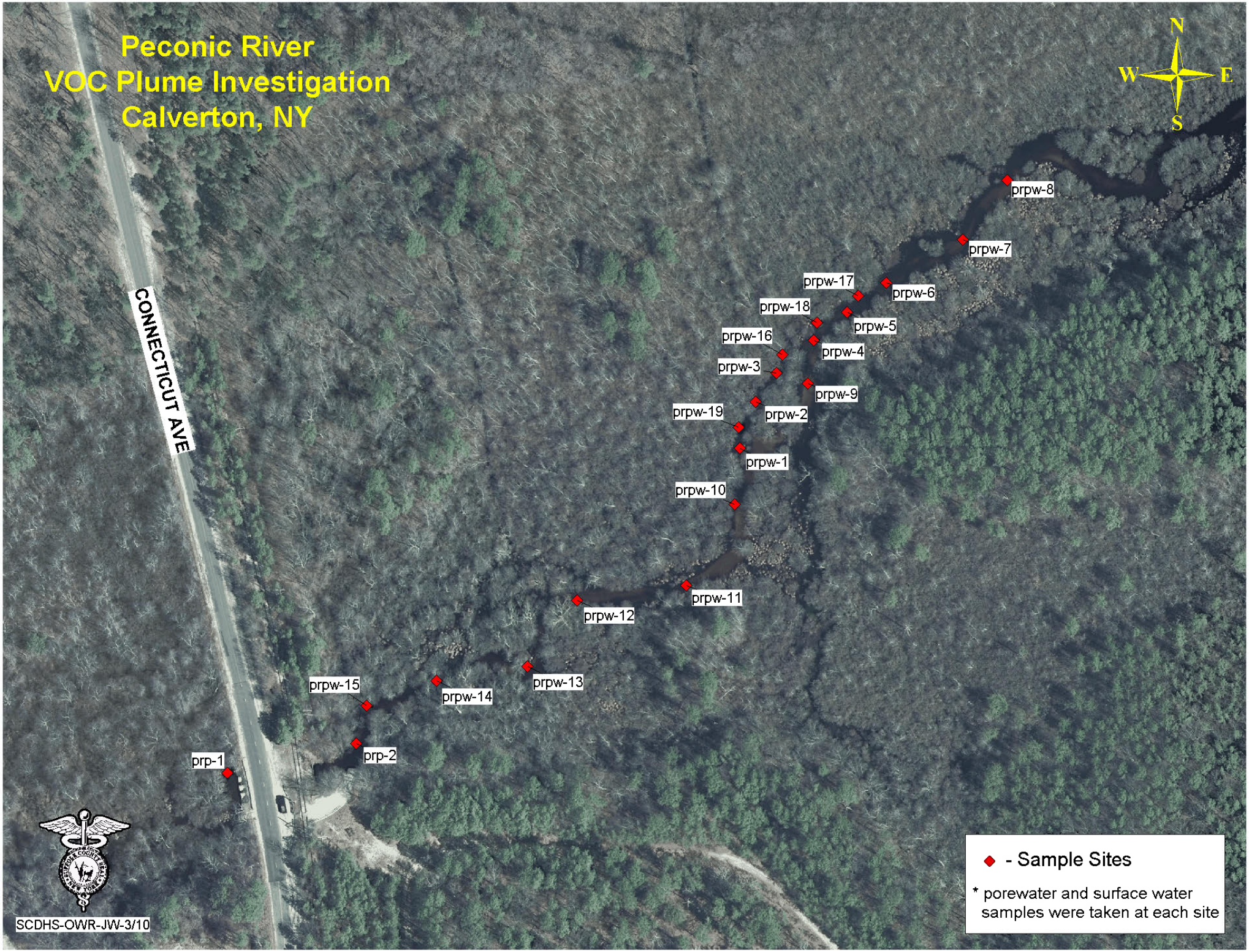
Southern Area Corrective Measures



Questions ?

ATTACHMENT 6

SCDHS FIGURE/RESULTS


Peconic River
VOC Plume Investigation
Calverton, NY
N
W
E
S
CONNECTICUT AVE
prpw-8
prpw-7
prpw-17
prpw-6
prpw-18
prpw-5
prpw-16
prpw-4
prpw-3
prpw-9
prpw-19
prpw-2
prpw-1
prpw-10
prpw-11
prpw-12
prpw-13
prpw-15
prpw-14
prp-2
prp-1
- Sample Sites
* porewater and surface water samples were taken at each site
SCDHS-OWR-JW-3/10

Peconic River VOC Plume Investigation : Porewater and Surface Water Results

Site ID	Sample Type	Sample Date	Longitude	E/W	Latitude	N/S	Carbon disulfide	1,1-Dichloroethene	1,2,4-Trichlorobenzene	Chloroethane	Methylene chloride	1,1-Dichloroethane	1,1,1-Trichloroethane
prp-1	Pore Water	8/5/2009	-72.77403	W	40.90068	N	<.5	<.5	<.5	<.5	<.5	2.7	<.5
prs-1	Surface Water	8/5/2009	-72.77403	W	40.90068	N	<.5	<.5	<.5	<.5	<.5	1.3	<.5
prp-2	Pore Water	8/5/2009	-72.77340	W	40.90080	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prs-2	Surface Water	8/5/2009	-72.77340	W	40.90080	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prpw-1	Pore Water	8/19/2009	-72.77175	W	40.90182	N	0.5	6.5	0.8	0.5	<.5	40	0.8
prsw-1	Surface Water	8/19/2009	-72.77175	W	40.90182	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prpw-2	Pore Water	8/19/2009	-72.77172	W	40.90192	N	<.5	1.6	0.5	<.5	<.5	9.7	<.5
prsw-2	Surface Water	8/19/2009	-72.77172	W	40.90192	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prpw-3	Pore Water	8/19/2009	-72.77167	W	40.90197	N	<.5	2	<.5	<.5	<.5	13	<.5
prsw-3	Surface Water	8/19/2009	-72.77167	W	40.90197	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prpw-4	Pore Water	8/19/2009	-72.77140	W	40.90210	N	<.5	5	<.5	0.8	<.5	30	<.5
prsw-4	Surface Water	8/19/2009	-72.77140	W	40.90210	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prpw-5	Pore Water	8/26/2009	-72.77132	W	40.90220	N	<.5	11	0.5	1	<.5	57	<.5
prsw-5	Surface Water	8/26/2009	-72.77132	W	40.90220	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prpw-6	Pore Water	8/26/2009	-72.77112	W	40.90230	N	<.5	1	<.5	<.5	<.5	9.5	<.5
prsw-6	Surface Water	8/26/2009	-72.77112	W	40.90230	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prpw-7	Pore Water	8/26/2009	-72.77075	W	40.90247	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prsw-7	Surface Water	8/26/2009	-72.77075	W	40.90247	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prpw-8	Pore Water	8/26/2009	-72.77060	W	40.90263	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prsw-8	Surface Water	8/26/2009	-72.77060	W	40.90263	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prpw-9	Pore Water	8/27/2009	-72.77148	W	40.90193	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prsw-9	Surface Water	8/27/2009	-72.77148	W	40.90193	N	0.7	<.5	<.5	<.5	<.5	<.5	<.5
prpw-10	Pore Water	8/27/2009	-72.77180	W	40.90158	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prsw-10	Surface Water	8/27/2009	-72.77180	W	40.90158	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prpw-11	Pore Water	8/27/2009	-72.77206	W	40.90126	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prsw-11	Surface Water	8/27/2009	-72.77206	W	40.90126	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prpw-12	Pore Water	8/31/2009	-72.77255	W	40.90125	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prsw-12	Surface Water	8/31/2009	-72.77255	W	40.90125	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prpw-13	Pore Water	8/31/2009	-72.77285	W	40.90105	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prsw-13	Surface Water	8/31/2009	-72.77285	W	40.90105	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prpw-14	Pore Water	8/31/2009	-72.77317	W	40.90097	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prsw-14	Surface Water	8/31/2009	-72.77317	W	40.90097	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prpw-15	Pore Water	8/31/2009	-72.77337	W	40.90088	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prsw-15	Surface Water	8/31/2009	-72.77337	W	40.90088	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prpw-16	Pore Water	12/8/2009	-72.77157	W	40.90202	N	<.5	0.6	<.5	<.5	<.5	8.4	<.5
prsw-16	Surface Water	12/8/2009	-72.77157	W	40.90202	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prpw-17	Pore Water	12/8/2009	-72.77133	W	40.90218	N	<.5	6.4	<.5	1.8	<.5	42	<.5
prsw-17	Surface Water	12/8/2009	-72.77133	W	40.90218	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prpw-18	Pore Water	12/8/2009	-72.77142	W	40.90213	N	<.5	0.9	<.5	4.1	<.5	4.2	<.5
prsw-18	Surface Water	12/8/2009	-72.77142	W	40.90213	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5
prpw-19	Pore Water	12/8/2009	-72.77178	W	40.90177	N	<.5	<.5	<.5	<.5	<.5	0.5	<.5
prsw-19	Surface Water	12/8/2009	-72.77178	W	40.90177	N	<.5	<.5	<.5	<.5	<.5	<.5	<.5