RESTORATION ADVISORY BOARD MEETING
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP), BETHPAGE
TOWN OF OYSTER BAY ICE SKATING CENTER COMMUNITY ROOM
1001 STEWART AVENUE, BETHPAGE, NEW YORK
WEDNESDAY, NOVEMBER 3, 2010

The twenty-sixth meeting of the Restoration Advisory Board (RAB) was held at the Town of Oyster Bay's Ice Skating Center Community Room in Bethpage, New York. Meeting attendees included representatives from the Navy (Lora Fly, and Tom Kreidel), New York State Department of Environmental Conservation (NYSDEC) (Steven Scharf and Walter Parish), New York State Department of Health (NYSDOH) (Steve Karpinski), Nassau County Department of Health (Joe DeFranco), Bethpage Water District (Anthony Sabino), Town of Oyster Bay (Richard Pfaender), RAB Community Members (Eugena Mazzara, Jim McBride, Rosemary Styne, and Roy Tringali), Tetra Tech (David Brayack, Debbie Cohen, and Robert Sok), ECOR Solutions, Inc. (Greg Gangemi and Will Torres), and ARCADIS (David Stern). There were five guests at the meeting, including two Bethpage residents and two representatives from the Nassau County Executive Office. 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. The presentations for the meeting are included in Attachment 3.

The two representatives from the Nassau County Executive Office, Ms. Rose Walker and Mr. Brian Nugent, introduced themselves. Ms. Fly indicated that they are the replacements on the RAB for Ed and Linda Mangano.

COMMUNITY UPDATE AND REVIEW AND APPROVAL OF MEETING MINUTES

Ms. Fly asked whether the RAB members received the April 2010 minutes, which were distributed in October 2010, and asked whether there were questions or comments on the minutes. There were no questions or comments. The April 2010 RAB minutes were approved. The RAB minutes from 2009 were also approved. Ms. Fly reminded the Community RAB members that a replacement for the Community RAB Co-chair was needed and to please contact her if they were able to replace the current Community RAB Co-chair.

Mr. Steve Scharf, Project Manager from NYSDEC, provided a brief explanation of NYSDEC's role and responsibilities for NWIRP Bethpage project.

TECHNICAL PROGRESS – ENVIRONMENTAL RESTORATION PROGRAM OVERVIEW

Ms. Fly reviewed fiscal year (FY) 10 actual and FY11 planned funding for the NWIRP Bethpage Environmental Restoration (ER) program. The presentation is provided in Attachment 3, and shows the actual execution of projects in FY10 and planned execution of project for FY11. Ms. Fly explained that a total of $3.5 million was funded in FY10. FY10 and FY11 projects include continued annual costs associated with two treatment systems (GM-38 and Site 1), continued investigations, and construction of a treatment system on a public supply well. Remedial activities for Site 1 soil vapor and soil contamination and for the regional groundwater investigation will continue in FY11.

SITE 1 SOIL VAPOR EXTRACTION CONTAINMENT SYSTEM

Mr. Will Torres (ECOR) provided a presentation on the status of the Site 1 soil vapor extraction containment system. The system is being operated to remove volatile organic compounds (VOCs) in soil gas and prevent offsite migration of VOCs from Site 1. The system consists of 12 soil vapor extraction wells that were installed between 35 to 60 feet below ground surface (bgs). An existing building at Site 4 is being used to house the extraction blowers and vapor treatment system. The treatment system consists of vapor phase activated carbon to remove the VOCs before discharge to the atmosphere. Several monitoring points in the residential neighborhood are being used to ensure that the system is capturing the offsite soil gas. System construction completion and start up occurred in December 2009. Tetra Tech's 6-month prove out of the system was completed in June 2010, and ECOR began long-term operation and maintenance (O&M) activities. Sampling results since system start up show VOC concentrations are decreasing.

Questions and discussion regarding the presentation include the following:

- Several questions were asked about the effectiveness of the system and whether the volume of contamination being removed has decreased or leveled out. The Navy explained that the system is meeting or exceeding the design goals. A round of sampling was recently completed that included sampling of homes and the vapor extraction system. Although there are no set treatment goals, an evaluation of the effectiveness of the system will be conducted.
- What was the previous treatment system used at Site 1? The Navy explained that in the past an air sparge/vapor extraction system was operated to treat soil and groundwater contamination at Site 1. The recent soil vapor containment system is being operated to prevent soil vapor contamination from migrating off site. A later presentation this evening will review the planned treatment system for soil vapor contamination at Site 1.

NAVFAC Naval Facilities Engineering Command

NAVFAC MIDLANT, NORFOLK, VA

Restoration Advisory Board

ER Program Overview

Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, New York
November 3, 2010

FY-10 ACTUAL EXECUTION

PROJECT	FUNDED	REMARKS
Operation Cost for GM-38 and Site 1 SVE Containment System	$ 1,292,000	Yearly costs
Regional Groundwater Investigation	$ 940,407	Currently drilling
Site 1 – Soil Vapor Investigation – On Site and Off Site	$ 281,230	On going
Site 1 – PCB Soil Investigation	$ 518,381	On going
Site 4 – Treatability Study	$ 376,214	Work plan to NYSDEC
Community Support	$ 105,963	On going
TOTAL for FY-10 =	*$3,514,195*	

FY-11 PLANNED EXECUTION

- Operation and Maintenance of GM-38 Groundwater Treatment System and Site 1 SVE Containment System
- Construction of Treatment Supply on Public Water Supply
- Operation Maintenance and Monitoring of Soil Vapor Intrusion Investigation
- Offsite Regional Groundwater Investigation
- Site 1 Soil and Groundwater Investigation of PCB

GM-38 AREA GROUNDWATER REMEDIATION PROJECT

Mr. Torres provided a presentation on the status of the GM-38 Area Groundwater Remediation Project since the April 2010 RAB presentation. The treatment system is being operated to remove VOCs from groundwater. The primary treatment process is air stripping followed by carbon polishing. The extracted water is being treated to meet NYSDEC treatment standards before discharge into either one injection well or into a county recharge basin. Vapor from the air stripping process is being treated with carbon prior to venting to the atmosphere. Tetra Tech's 6-month prove out of the system was completed in March 2010, and ECOR began long-term O&M activities. The operator monitors system equipment, performs preventative maintenance, obtains instrument measurements, and performs general site inspections. Air and water compliance sampling and quarterly groundwater sampling are also being conducted. Mr. Torres indicated that a round of samples was recently collected (on November 3, 2010).

Questions and discussion regarding the presentation include the following:

- A resident living nearby asked how the recent digging is affecting the area. The Navy explained that construction as part of the GM-38 system was completed in 2009. The construction the resident observed is not related to a Navy project.
- Are there any problems with vandalism? The treatment system is surrounded by a fence and there have been no recent problems with vandalism.
- There was discussion about the recharge basin that is being used for discharge of treated water and whether treatment for prevention of mosquitoes is being conducted for the basin. The recharge basin was previously a dry basin and is now a wet basin. Therefore there will be standing water in the basin. The basin was supposed to be added to the County list for basins to treat for prevention of mosquitoes. Mr. Pfaender (Town of Oyster Bay) and Joe DeFranco (Nassau County Health Department) will follow-up to confirm that the basin is being treated.

OPERABLE UNIT (OU) 2 OFFSITE GROUNDWATER INVESTIGATION & PUBLIC WATER SUPPLY DESIGN

Mr. Brayack discussed the progress of the offsite groundwater investigation (GM-75 area), which is part of OU2, and the public water supply design. The presentation is included in Attachment 3.

The purpose of the investigation is to delineate the area of groundwater contamination south of NWIRP Bethpage. Contamination in this area is deep. The investigation includes installation of vertical profile borings to quickly screen areas for the presence, depth, and concentration of contamination. Permanent

monitoring wells are being installed to confirm the presence or absence of contamination and to develop contamination concentration trends. The vertical profile borings are approximately 12-inch diameter holes drilled into the ground. Drilling of each boring takes 4 to 6 weeks to complete. Samples of groundwater are collected during drilling at various depths and the borings extend to the Raritan Clay layer at a depth of up to 840 feet bgs. Approximately 36 groundwater samples per boring are collected and analyzed for VOCs. Based on the results of the analysis, permanent monitoring wells may be installed. Six vertical profile borings were completed in 2009, and based on the results additional profile borings and permanent monitoring wells were located. The additional borings and monitoring wells are being installed (started in October 2010), and the work is expected to continue through summer 2011. Mr. Brayack showed figures of the 2009 borings and the planned 2010/2011 borings and monitoring wells, and photographs of the drill rig for the vertical profile boring program. Mr. Brayack explained that other non-Navy investigations, that may use a similar type of drill rig, are being conducted in the general area.

Mr. Brayack reviewed the planned treatment system for an offsite public water supply well. The Navy will install a treatment system on the public supply well as a precaution to be able to treat groundwater if VOC concentrations begin to increase. The design will include a granular activated carbon treatment system. The design will be completed in early 2011 and construction is anticipated to begin in summer 2011.

Questions and discussion regarding the presentation include the following:

- There was discussion of where the plume is and whether there are plans to drill additional borings or wells in the Town of Oyster Bay. The current southern edge of the plume is south of the Hempstead Turnpike. The Navy will be submitting applications for permits to drill in the Town of Oyster Bay once the locations are confirmed. The Navy will inform Mr. Pfaender before submitting the application so that he can assist with the approval process.
- Where are the 2009 boring data available? A data report was prepared and provided to the various regulatory agencies as well as the Bethpage Water District.

SITE 1 SOIL VAPOR INTRUSION

Mr. Robert Sok (Tetra Tech) provided a presentation on the status update of the Site 1 soil vapor investigation and indoor air sampling. The presentation is included in Attachment 3.

Mr. Sok began with a review of the site history. Treatment of volatile organic compound (VOC) contamination in soil and groundwater at Site 1 was conducted from 1998 to 2002. Based on 2006 New York State Department of Health (NYSDOH) vapor intrusion guidelines, the Navy re-evaluated onsite soil gas concentrations and the potential migration of VOCs. In addition, the Navy is evaluating indoor air

quality in offsite residential housing. As discussed at previous RAB meetings, soil gas sampling results from the soil gas investigation at the eastern fence line of Site 1 indicated elevated levels at the fence line. From 2008 to 2010, the Navy conducted soil gas sampling on site and in the adjacent residential neighborhood. From 2009 to 2010, the Navy also conducted indoor air and sub-slab sampling in homes along 10th and 11th streets. Initial sampling results indicated VOCs above NYSDOH guidelines in some samples. The Navy installed portable air purification units (APUs) as temporary mitigation measure, and in several homes, sealed utility access sumps in basements and installed Sub-Slab Depressurization (SSD) systems. In January 2010, a soil vapor extraction (SVE) containment system began operation to prevent soil gas from continuing to move off site. Sampling results from the latest round (March 2010) indicated that all indoor air levels were below NYSDOH air guidelines. Other preliminary evaluations of the SVE system operation show the system is operating effectively. Sampling data from the July to August 2010 sampling event are being evaluated. The next sampling events are planned for November 2010 and March 2011. Sampling will include 15 indoor air samples, 13 sub-slab samples, 6 outdoor air samples, 5 SSD system stack samples (one for each of the operating systems), and 11 soil gas samples at permanent sampling locations.

SITE 1 PCB INVESTIGATION

Mr. Sok provided a presentation on the status of the PCB investigation at Site 1. The presentation is included in Attachment 3.

From the 1950's to early 1980's, PCB wastes were staged at Site 1. Investigation of the site showed that release of PCB wastes has resulted in soil and groundwater contamination. The horizontal extent of soil contamination was delineated; however, the vertical extent of PCB-contaminated soil in the source area has not been delineated. The investigation is being conducted to collect data to determine the vertical extent of PCB-contaminated soil in the source area and the horizontal and vertical extent of groundwater contamination if present beyond the site boundary.

Mr. Sok reviewed the work completed and work in progress. Onsite field test kits are being used to provide PCB results for soil with confirmatory soil samples being analyzed in a fixed-base laboratory. Groundwater grab samples are being collected in downgradient soil borings to guide placement of permanent monitoring wells. The initial soil borings and groundwater grab sampling was completed in August 2010. Monitoring well installation began in October 2010. Well installation and development is ongoing and is anticipated to be complete in November 2010 so that sampling of the wells can be conducted in December 2010.

Questions and discussion regarding the presentation include the following:

- Does the past work in the dry wells relate to the current investigation of PCBs at Site 1? The dry wells and PCB contamination are related and both are part of Site 1. The PCB investigation is focused on determining whether the PCB contamination in soil is adversely affecting groundwater or could adversely affect groundwater in the future. The Navy is using a new drilling technique to determine whether the PCB contamination is deep and whether it could be mobilized by other contaminants (e.g., VOCs). The Navy has not detected any residual VOC contamination at the site; only low PCB concentrations have been detected.
- Why is the Navy drilling deeper if PCBs are not being detected in shallower soil? The Navy needs to drill deeper to confirm soil lithology in the area to assess the potential for contaminant migration and also to confirm that PCB contamination has not migrated deeper.

CLOSING REMARKS

Ms. Fly asked whether there were any other questions or comments. With no questions or comments, Ms. Fly proposed the next RAB meeting be held in April 2011. The Navy will provide information on the specific date in April. Ms. Fly thanked everyone for coming to the meeting and the meeting was adjourned. [Post-meeting note: The next RAB meeting was subsequently scheduled for April 6, 2011.]

ATTACHMENT 1

NOVEMBER 3, 2010 RAB MEETING SIGN-IN SHEET

26th RAB Meeting for NWIRP Bethpage
November 3, 2010
Sign-In List

Name	Address (if interested in being on mailing list)	Organization	How Did You Hear of Meeting?
DAVID STERN		ARCADIS	NYSC
Steven Scharf	625 Bdwy Albany NY 12233-7015	NYSDEC	—
Steve Karpinski	Flanigan Sq Troy NY	NYSDOH BEEI	
Frank Anastasi	SCA Assoc.	Navy	
Tom Kreidel		NAVFAC Mid-Atlantic	
Dan Grindstaff	230 11th St	NCDH	
Joe DeFranco	106 Charles Lindbergh Blvd, Uniondale NY		
Jose Walker	1550 Franklin Ave Mineola, NY 11501	17 Leg. District Nassau County Legislator	
Brian Nugent		Nassau County Executives office	
ROY TRINGALI		RAB	NEWS PAPER
Rick Pfaender		ToB	
Jim McBride		Community member	

26th RAB Meeting for NWIRP Bethpage
November 3, 2010
Sign-In List

Name	Address (if interested in being on mailing list)	Organization	How Did You Hear of Meeting?
WALTER PARISH	50 CIRCLE RD. STONYBROOK NY	NYSDEC - R-1.	
Will Torres	ECOR Solutions	torres@ecor-solutions.com	?
Anthony D. Matteo	27 Mohar LN Bethpage NY		
Eugenia Mazzone			
Rosemary Stypa	15 Shubert Ln Bethpage		Reg. Member.
Robert Sak		TTNUS	
Greg Gangemi	ECOR Solutions		
Anthony Sabino	Bethpage NY		
David Brayack	Tetra Tech		
Debbie Cohen	TetraTech		
Lora Fly		NAVY ~~AAI~~	

ATTACHMENT 2

NOVEMBER 3, 2010 RAB MEETING AGENDA

Agenda

Restoration Advisory Board
Naval Weapons Industrial Reserve Plant Bethpage

November 3, 2010
Town of Oyster Bay Ice Skating Center Community Room
1001 Stewart Avenue, Bethpage, New York
7:00 p.m.

Welcome and Agenda Review
Lora Fly, NAVFAC Mid-Atlantic

Meeting Minutes
All Members

New York State Department of Environmental Conservation
Steve Scharf, NYSDEC

Technical Progress

Site 1 - Soil Vapor Extraction Containment System
Matt Lapp, Ecor

GM-38 Operation
Matt Lapp, Ecor

OU 2 - Offsite Groundwater Investigation & Public Water Supply Design
David Brayack, Tetra Tech

Site 1 – Soil Vapor Intrusion
Rob Sok, Tetra Tech

Site 1 - PCB Investigation
Rob Sok, Tetra Tech

Closing Remarks
Lora Fly

Presenters will be available after the program for questions.

ATTACHMENT 3

NAVY AND TETRA TECH PRESENTATIONS

Naval Facilities Engineering Command
NAVFAC MID-ATLANTIC

Restoration Advisory Board (RAB) Meeting

OU2 - Offsite Groundwater Investigation and Public Water Supply Design

Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage
November 3, 2010

OU2 INVESTIGATION - PURPOSE

- Delineate area of groundwater contamination in the areas south of NWIRP Bethpage
- Program consists of:
  - Vertical profile borings - used to quickly screen areas for the presence, depth, and concentration of contamination
  - Permanent monitoring wells - to confirm presence/absence of contamination and develop trends.

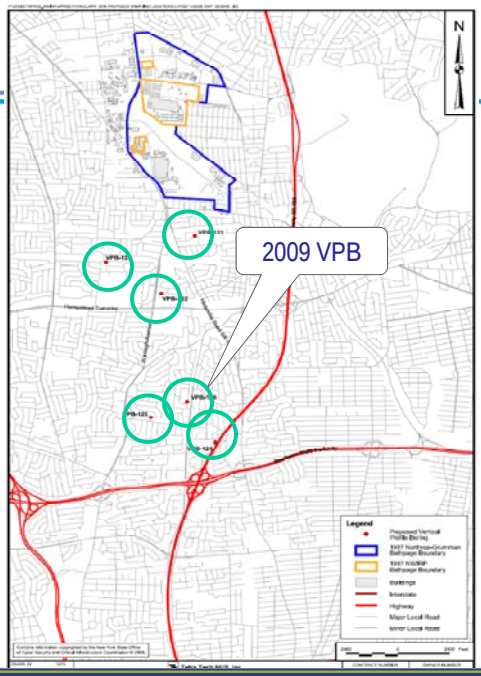
OU2 INVESTIGATION - VERTICAL PROFILE BORING PROGRAM

- A vertical profile boring is a 12-inch diameter hole drilled into the ground. At select depths, the drilling is stopped, sampling device is lowered to depth, and a sample of the water is collected
- The borings will extend to the Raritan Clay Layer at a depth up to 840 feet below ground surface
- 36 groundwater samples will be collected per boring and analyzed for VOCs

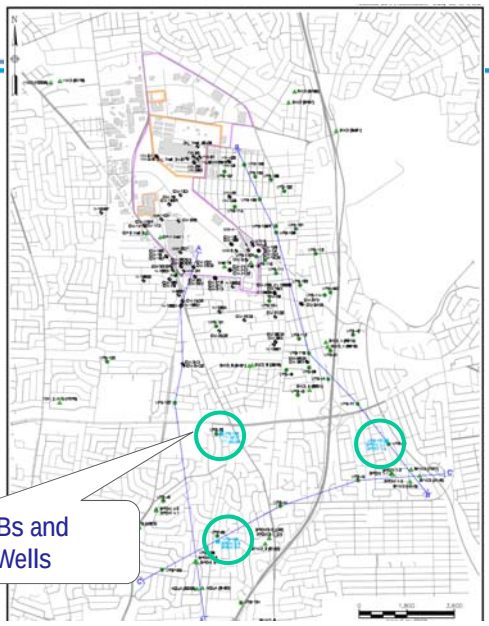
OU2 INVESTIGATION - VERTICAL PROFILE BORING PROGRAM (Cont.)

- Each boring requires 4 to 6 weeks to complete
- Six locations were completed in 2009
- Addition borings and monitoring wells are currently being installed (started 10-25-10) - through summer 2011
- One boring and two wells will address a well field south east of NWIRP Bethpage, government funding treatment system being installed
- One boring and two wells will address a well field south of NWIRP Bethpage
- Navy currently designing a treatment system, installation planned for 2011

2009 Vertical Profile Borings



2010/2011 Vertical Profile Borings and Monitoring Wells



OU2 INVESTIGATION - VERTICAL PROFILE BORING PROGRAM (Cont.)

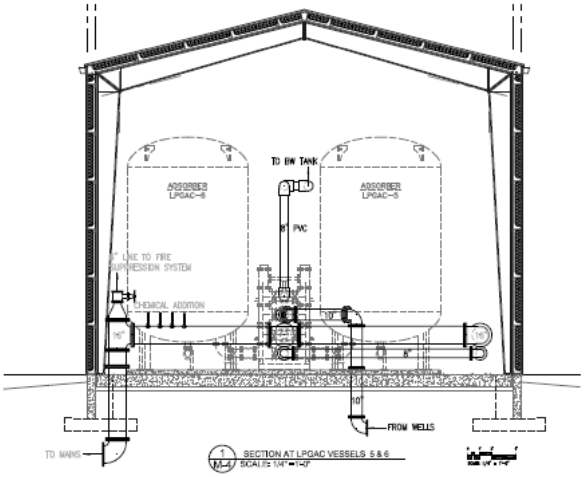
OU2 INVESTIGATION - VERTICAL PROFILE BORING PROGRAM (Cont.)

OU 2 PUBLIC WATER SUPPLY DESIGN

- Navy is currently designing a Granular Activated Carbon treatment system for an offsite Public Water Supply
- Design started in 2009 and will be completed in early 2011
- Construction is anticipated to start in summer 2011

OU 2 PUBLIC WATER SUPPLY DESIGN

Liquid Phase Granular Activated Carbon System - Profile



Questions

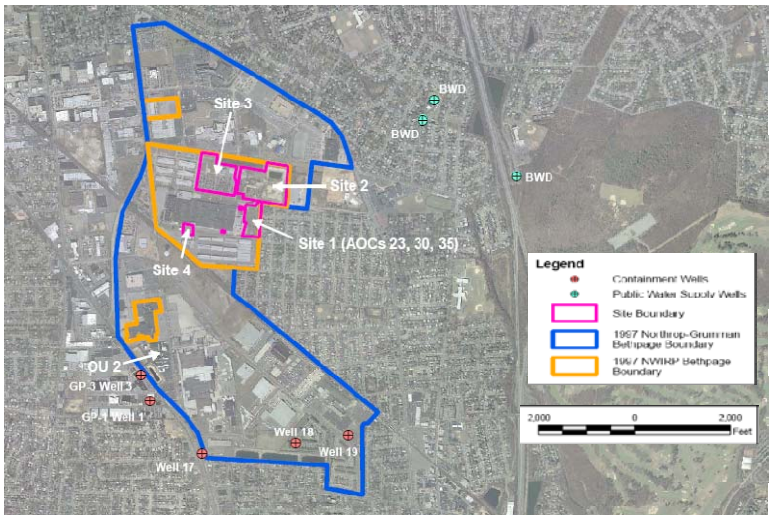
NAVFAC
Naval Facilities Engineering Command
NAVFAC MID-ATLANTIC

Restoration Advisory Board
(RAB) Meeting

Site 1 – Soil Vapor Investigation and
Indoor Air Sampling Update

Naval Weapons Industrial Reserve
Plant (NWIRP) Bethpage
November 3, 2010

FACILITY MAP



SOIL VAPOR OVERVIEW

- October 2006 New York State Department of Health issued soil vapor intrusion guidelines
- 2008 - 2010 Navy conducted soil gas sampling onsite and in adjacent residential neighborhood
- 2009 – 2010 Navy conducted sampling and monitoring in homes
- Initial sampling results indicated VOCs above NYSDOH guidelines in some samples
- Portable carbon air filtration units (APUs) and SSD systems installed as temporary mitigation measure
- January 2010 – SVE Containment System begins operation

SOIL VAPOR INTRUSION

- March 2010 Sampling Event - All indoor air results are less than DOH guidelines
- Other preliminary evaluations of SVE system operation (i.e., vacuum readings in neighborhood) are positive
- July-August 2010 Sampling Event conducted, data being evaluated

APU AND SSD SYSTEM PHOTO

SVE CONTAINMANT SYSTEM PHOTO

SVE Containment System Blowers

FUTURE ACTIONS

- Sampling events planned for November 2010 and March 2011
- Each sampling event to include approximately:
  - 15 indoor air samples
  - 13 sub-slab samples
  - 6 outdoor air samples
  - 5 SSD system stack samples
  - 11 soil gas samples

QUESTIONS ?

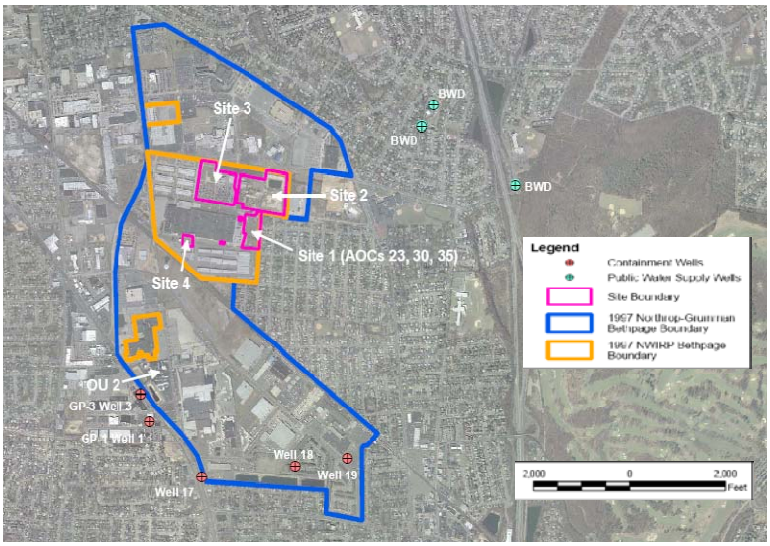
NAVFAC
Naval Facilities Engineering Command
NAVFAC MID-ATLANTIC

Site 1 – Former Drum Marshalling Area PCB Investigation Update

RAB Presentation

Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage
November 3, 2010

FACILITY MAP



SITE 1 – FORMER DRUM MARSHALLING AREA INVESTIGATION ACTIVITIES

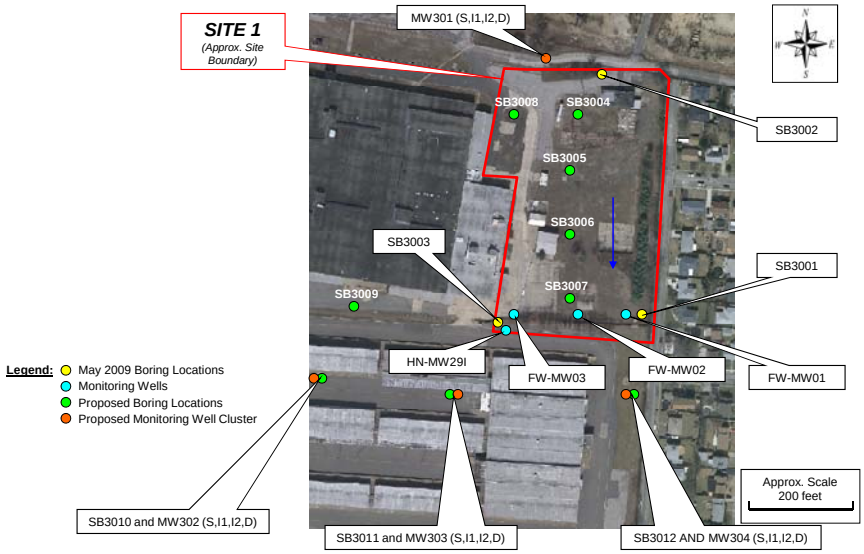
Work Completed:

- Nine soil borings to a depth of approximately 220 feet bgs
- Subsurface soil sampling via onsite field test kits (PCBs)
- Confirmatory soil samples (fixed based laboratory)
- Groundwater grab samples collected in downgradient soil borings to guide placement of permanent monitoring wells

Work in Progress:

- Well installation (15 wells) to monitor potential migration of PCBs and VOCs in groundwater (four depths at each downgradient cluster)
- Monitoring well depths based on soil boring lithology, source area PCB sampling, and groundwater grab results

SITE 1 – PROPOSED MONITORING WELLS AND BORING LOCATIONS



SITE 1 – FORMER DRUM MARSHALLING AREA INVESTIGATION ACTIVITIES

PCB INVESTIGATION SCHEDULE

Initial Soil Borings and Groundwater Grab Sampling:

- Fieldwork was completed in August 2010

Monitoring Well Installation and Sampling:

- Fieldwork began on October 11, 2010
- Well Installation and Well Development is ongoing and anticipated completion in November 2010

Monitoring Well Sampling:

- Sampling in December 2010

Questions ?