TETRA TECH

NOR-01017

March 16, 2011

Project Number: 112G02019

Reference: Contract No. N62470-08-D-1001
Contract Task Order No. WE06

Subject: RAB Meeting Notification

MEMORANDUM

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

The Navy would like to announce that a **Restoration Advisory Board (RAB)** meeting has been scheduled for Wednesday, April 6, 2011. This meeting is open to the general public and will begin at 7:00 PM. The location of the meeting is ***the Bethpage Community Center, 103 Grumman Road West, Bethpage, New York.***

Items that will be discussed during this meeting will include:

- Site 1 Soil Vapor
- Offsite Groundwater Investigation
- Public Water Supply Design
- GM-38 Operation Status
- Site 1 Soil Investigations

Attached for your review are the minutes from the RAB meeting held on November 3, 2010. The Navy requests that you review the meeting minutes and provide comments that you have to the Remedial Project Manager, Ms. Lora Fly. These minutes will be discussed and approved at the April 6, 2011 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

Tetra Tech NUS, Inc.
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USEPA Region II, Carla Struble
Town of Oyster Bay, Hon. John Venditto
Town of Oyster Bay, Richard Pfaender
Town of Oyster Bay DPW, Matt Russo
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ECOR Solutions, Al Taormina
Northrop Grumman, John Cofman
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ARCADIS, David E. Stern
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Community RAB Member, Rose Walker
Community RAB Member, Brian Nugent
Community RAB Member, Ed Resch
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Community RAB Member, Roy Tringali
Community RAB Member, Rosemary Styne
Community RAB Member, Eugenia Mazzara

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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	NYSDEC
Steven Scharf	625 Bdwy Albany NY 12233-7015	NYSDEC	—
Steve Karpinski	Flanigan Sq Troy NY	NYSDEN BBBS	
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	15350 Franklin Ave Mineola, NY 11501	17 Leg. District Nassau County Legislator	
Brian Nugent	" "	Nassau County Executives office	
ROY TRINGALI		RAB	NEWS PAPER
Rich 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 Mohr LN Bethpage NY		
Eugenia Mazzone			
Rosemary Styne	15 Shubert Ln Bethpage	Reg. Member.	
Robert Sot		TTNUS	
Greg Gangemi	ECOR Solutions		
Anthony Sabino	Bethpage NY		
David Brayack	Tetra Tech		
Debbie Cohen	Tetra Tech		
Lora Fly	~~AMSE~~ NAVY		

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

NAVFAC
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.

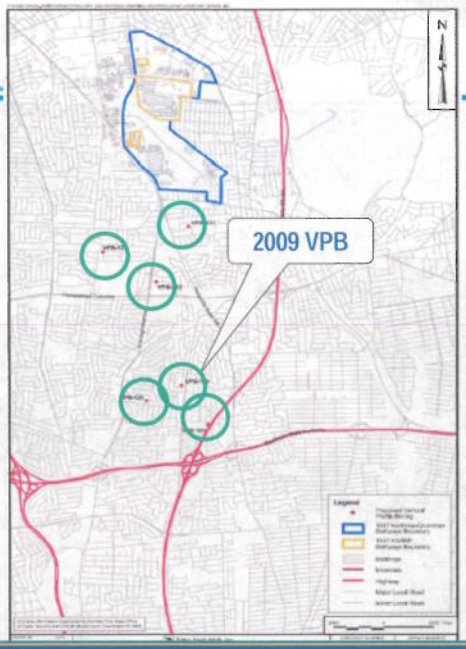
OU2 INVESTIGATION - VERTICAL PROFILE BORING PROGRAM

- 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

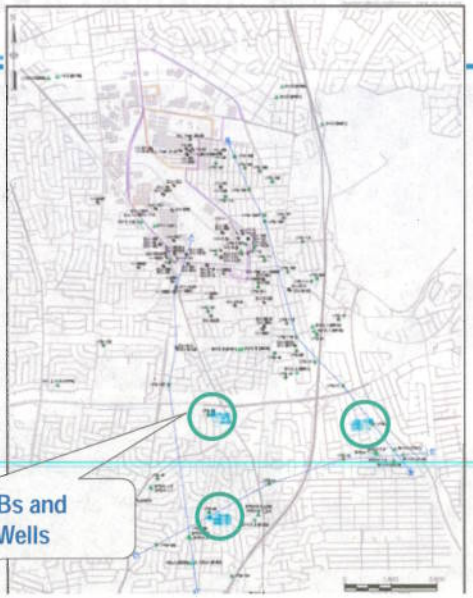
OU2 INVESTIGATION - VERTICAL PROFILE BORING PROGRAM (Cont.)

- 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.)

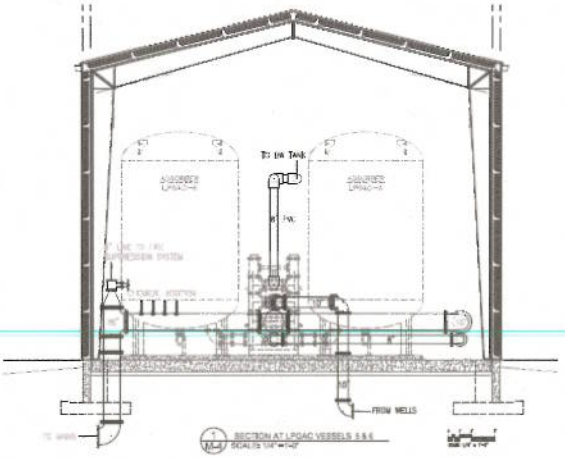
OU2 INVESTIGATION - VERTICAL PROFILE BORING PROGRAM (Cont.)

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



OU2 ACTIVITIES

Questions

Agenda

Restoration Advisory Board
Naval Weapons Industrial Reserve Plant Bethpage

April 6, 2011
Bethpage Community Center
Bethpage, New York
7:00 p.m.

Welcome and Agenda Review
Lora Fly, NAVFAC Mid-Atlantic

Meeting Minutes
All Members

Technical Progress

Site 1 Activities - Update
Rob Sok, Tetra Tech

GM-38 Operation
David Brayack, Tetra Tech

Soil Vapor Extraction Containment System
David Brayack, Tetra Tech

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

Closing Remarks
Lora Fly

Presenters will be available after the program for questions.

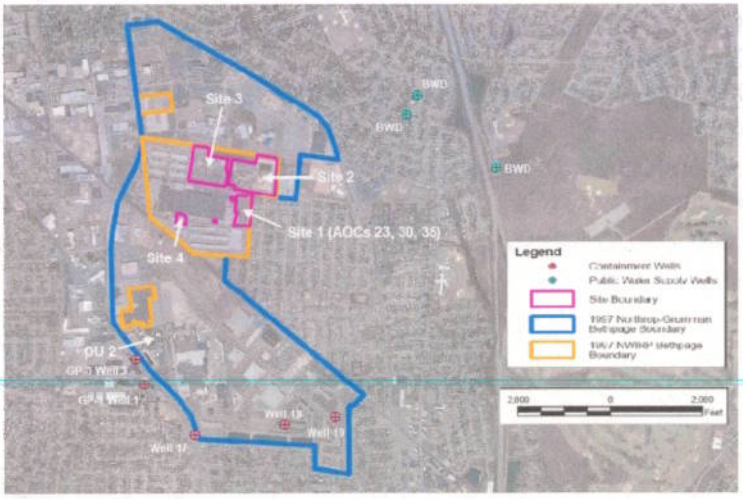
NAVFAC
Naval Facilities Engineering Command
NAVFAC MID-ATLANTIC

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



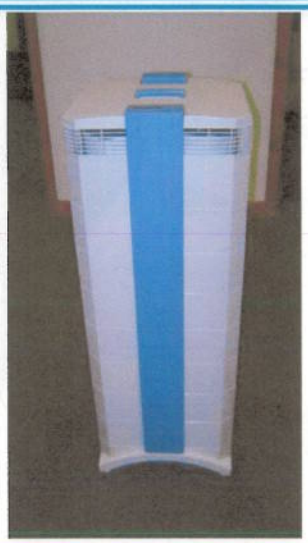
SOIL VAPOR OVERVIEW

- 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

SITE 1 – FORMER DRUM MARSHALLING AREA INVESTIGATION ACTIVITIES

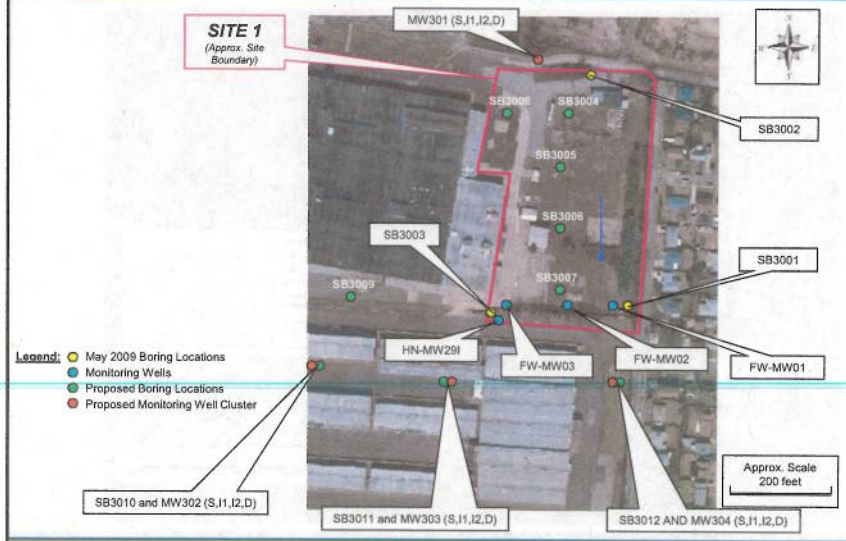
Work Completed:

- 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 ?

NAVFAC
Naval Facilities Engineering Command
NAVFAC MID-ATLANTIC

Restoration Advisory Board (RAB) Meeting

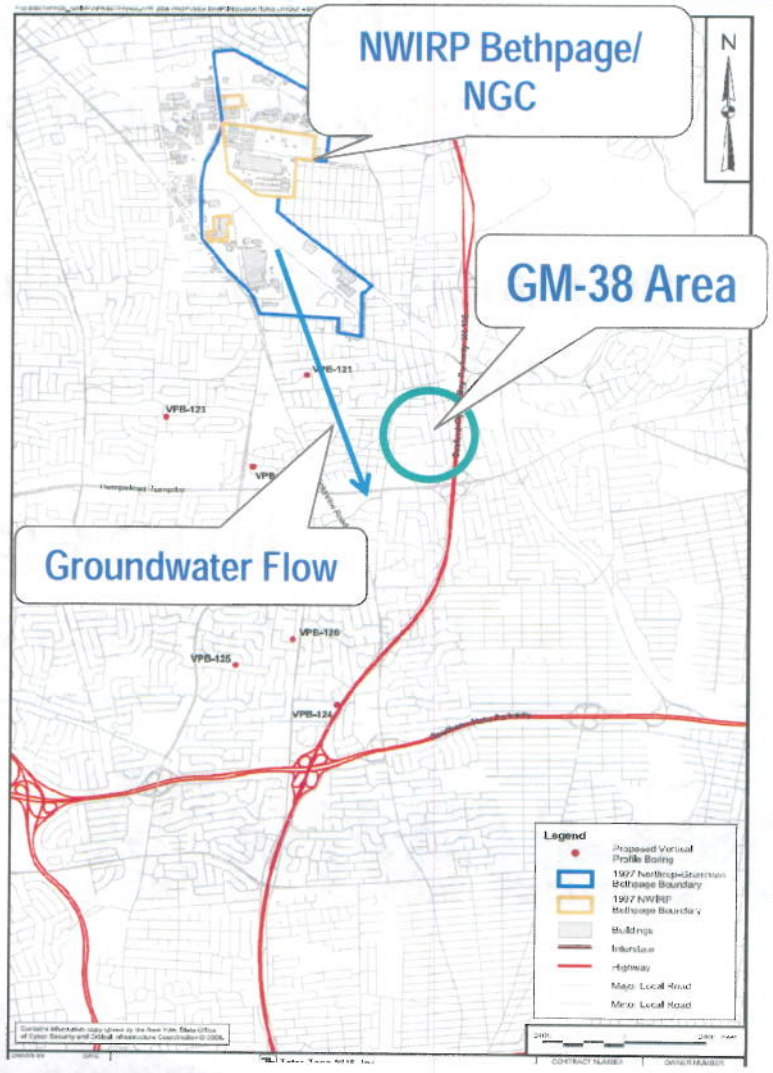
GM-38 Remedial Action and Soil Vapor Extraction Containment System Operation

Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage

April 6, 2011

GM-38 REMEDIAL ACTION

- Purpose: Treat an area of higher concentration volatile organic compound (VOC)-impacted groundwater
- System started operation in October 2009 and will continue to operate for approximately 5 years
- Extracts 46 million gallons of water and 200 pounds of VOCs per month

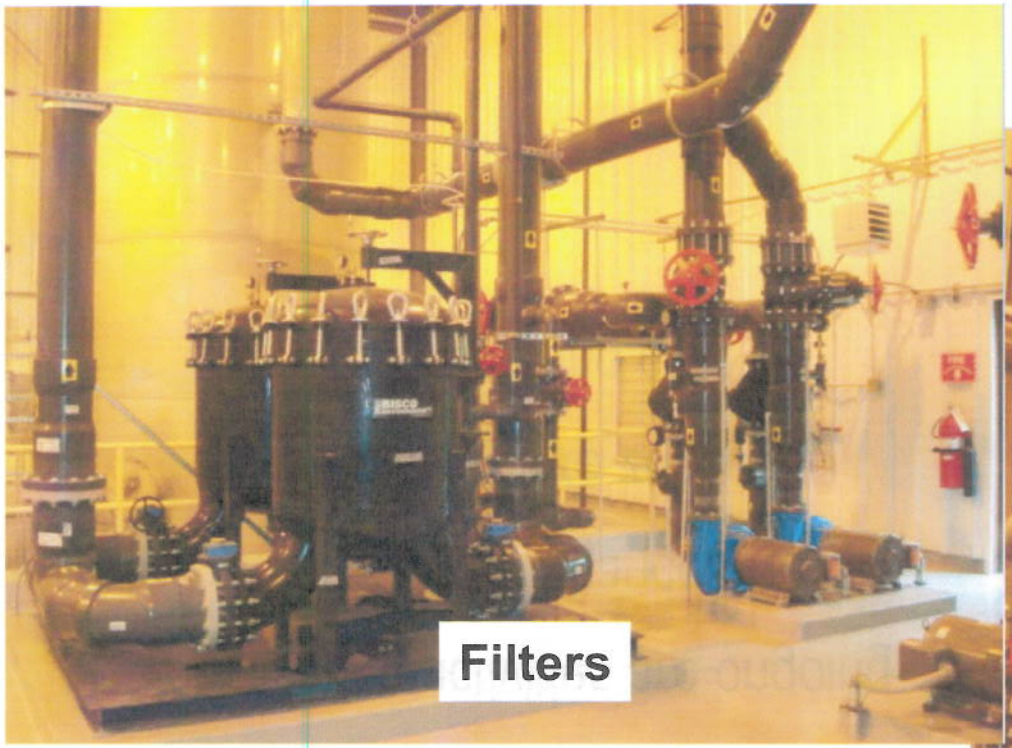


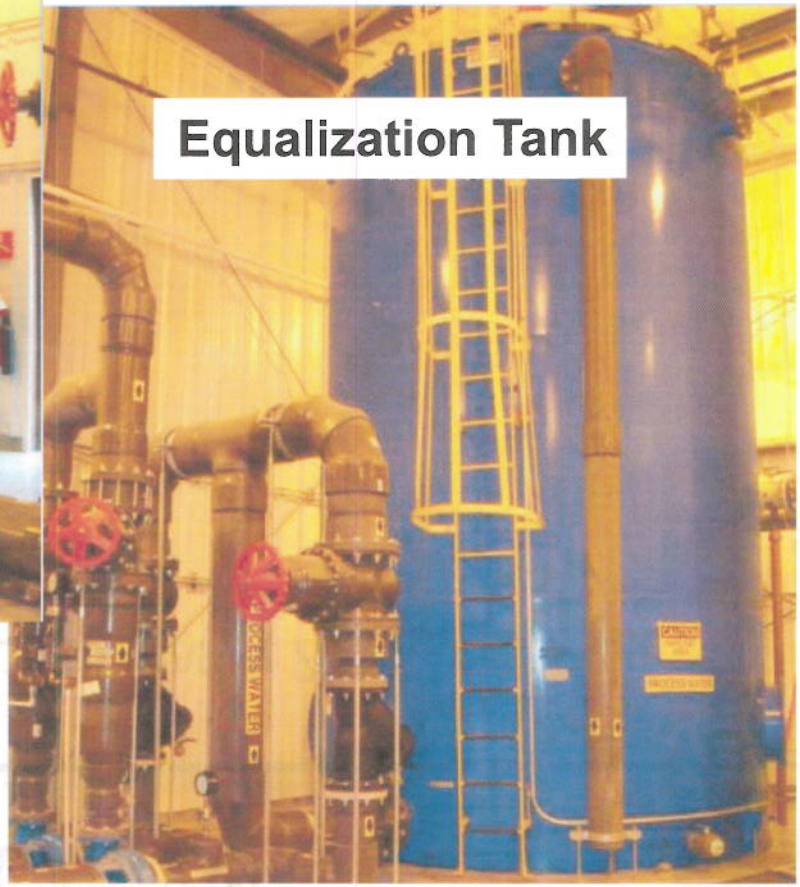
GM-38 REMEDIAL ACTION

- System started operation in October 2009
- Extracts 46 million gallons of water and 200 pounds of VOCs per month

GM-38 REMEDIAL ACTION

GM-38 REMEDIAL ACTION





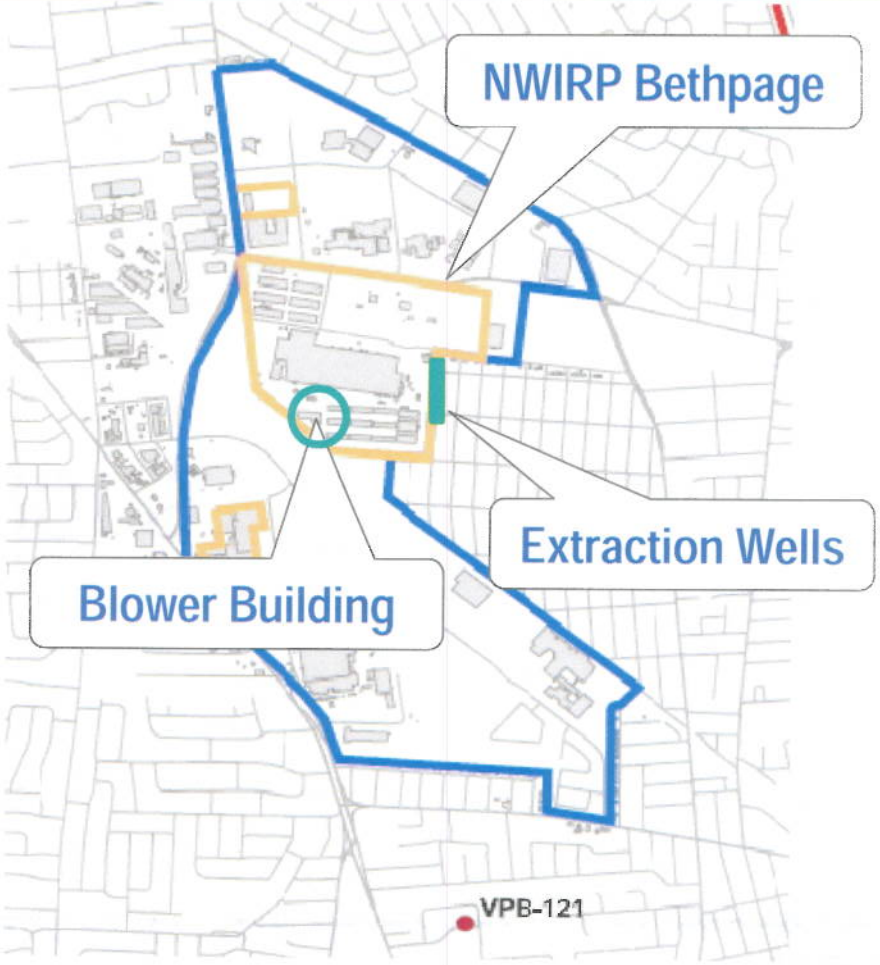
GM-38 REMEDIAL ACTION

- System is expected to operate until approximately 2014
- Optimization activities are ongoing
  - Improve performance
  - Evaluate capture zone
  - Reduce operating cost

Questions

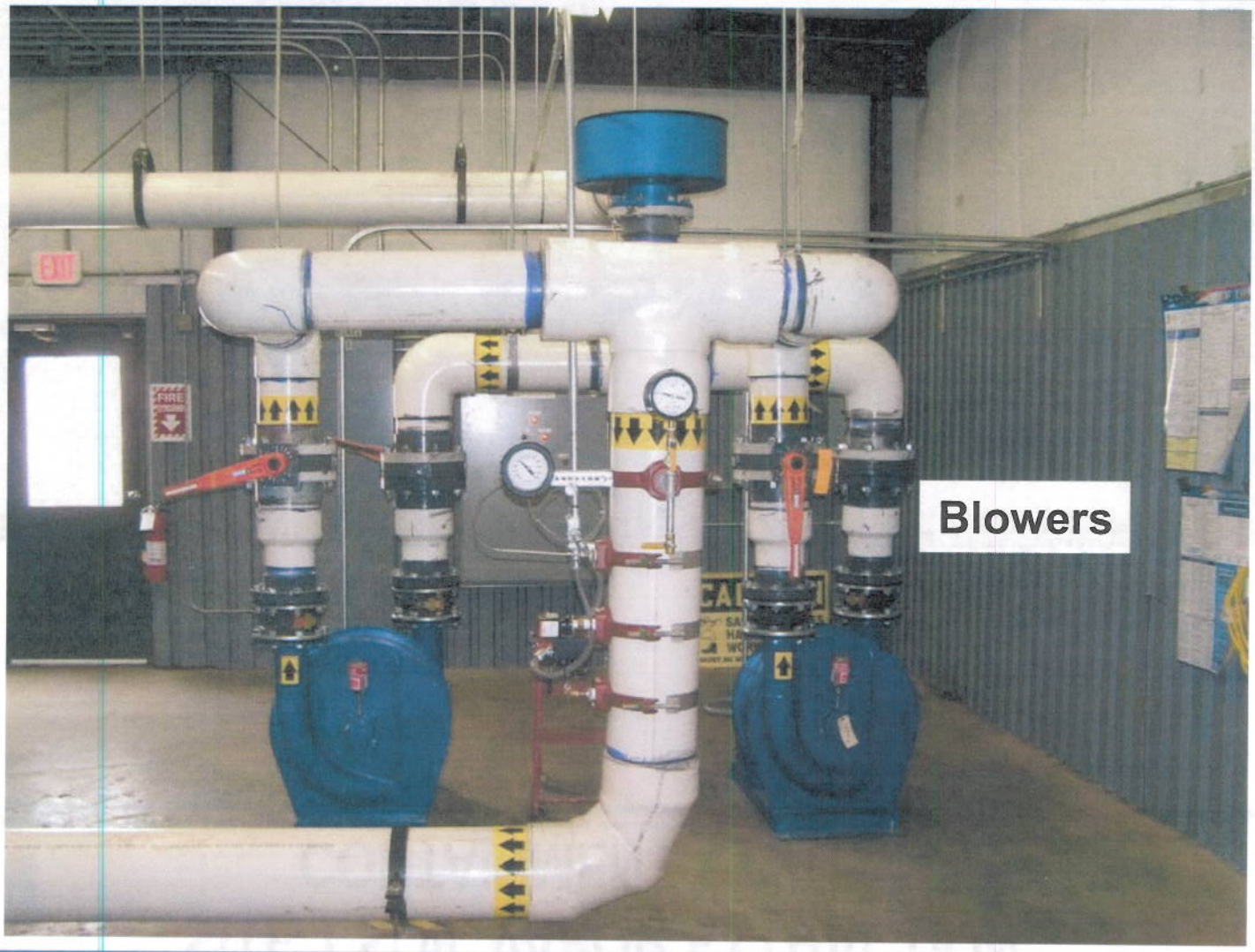
SITE 1 SOIL VAPOR EXTRACTION CONTAINMENT SYSTEM

- Purpose: Prevent offsite migration of Site 1 VOC-impacted soil gas and cleanup offsite soil gas
- System started operation in January 2010 and continues to operate
- Extracts approximately 500 cubic feet per minute of soil gas from 12 wells located along Site 1 fence line



SITE 1 SOIL VAPOR EXTRACTION CONTAINMENT SYSTEM

SITE 1 SOIL VAPOR EXTRACTION CONTAINMENT SYSTEM



SITE 1 SOIL VAPOR EXTRACTION CONTAINMENT SYSTEM

- System is expected to operate until approximately 2015
- Optimization activities are ongoing
  - Improve performance
  - Evaluate capture zone
  - Reduce operating cost

SITE 1 SOIL VAPOR EXTRACTION CONTAINMENT SYSTEM

NAVFAC

Questions

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Naval Facilities Engineering Command
NAVFAC MID-ATLANTIC

Restoration Advisory Board (RAB) Meeting

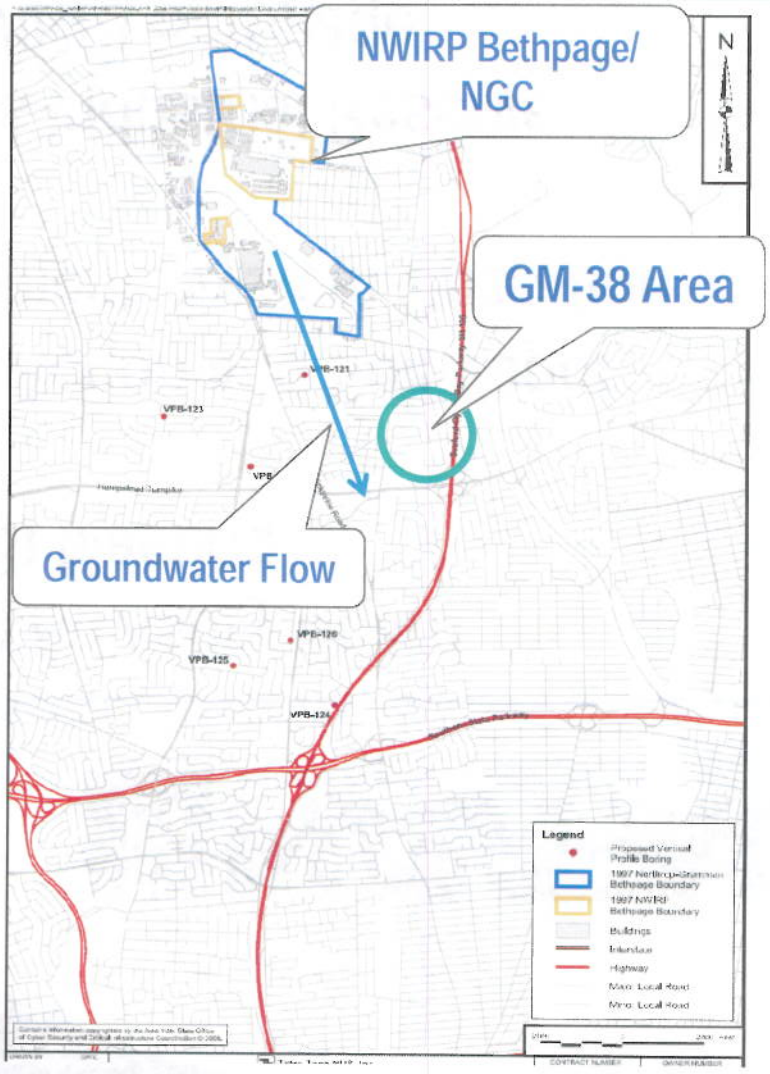
GM-38 Remedial Action and Soil Vapor Extraction Containment System Operation

Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage

April 6, 2011

GM-38 REMEDIAL ACTION

- Purpose: Treat an area of higher concentration volatile organic compound (VOC)-impacted groundwater
- System started operation in October 2009 and will continue to operate for approximately 5 years
- Extracts 46 million gallons of water and 200 pounds of VOCs per month



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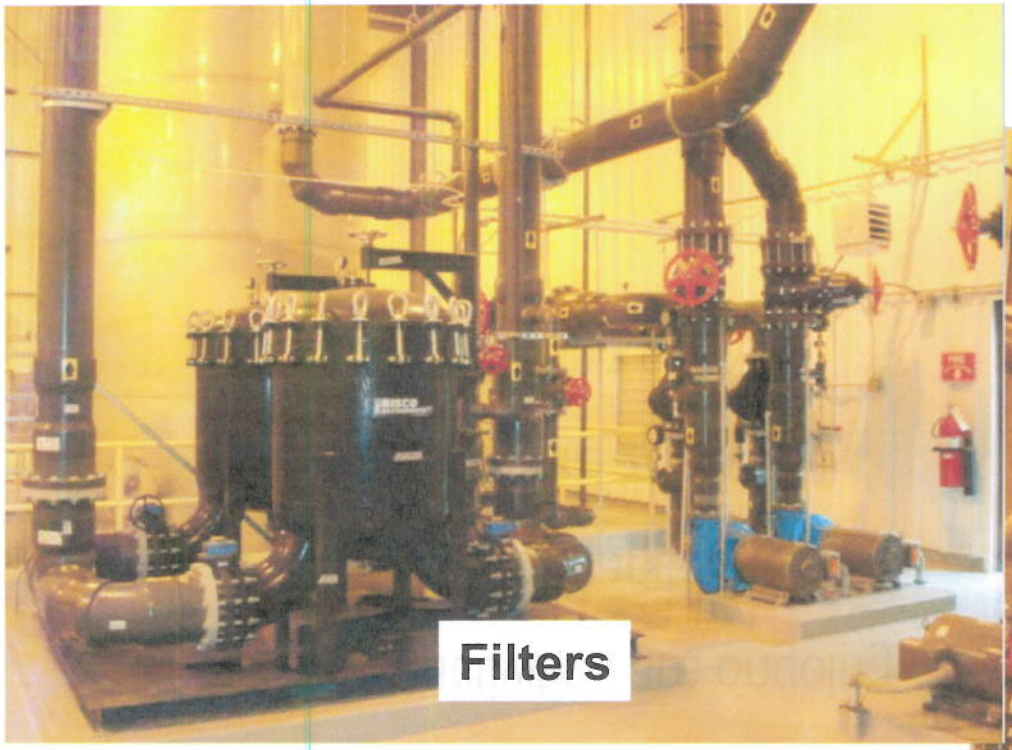
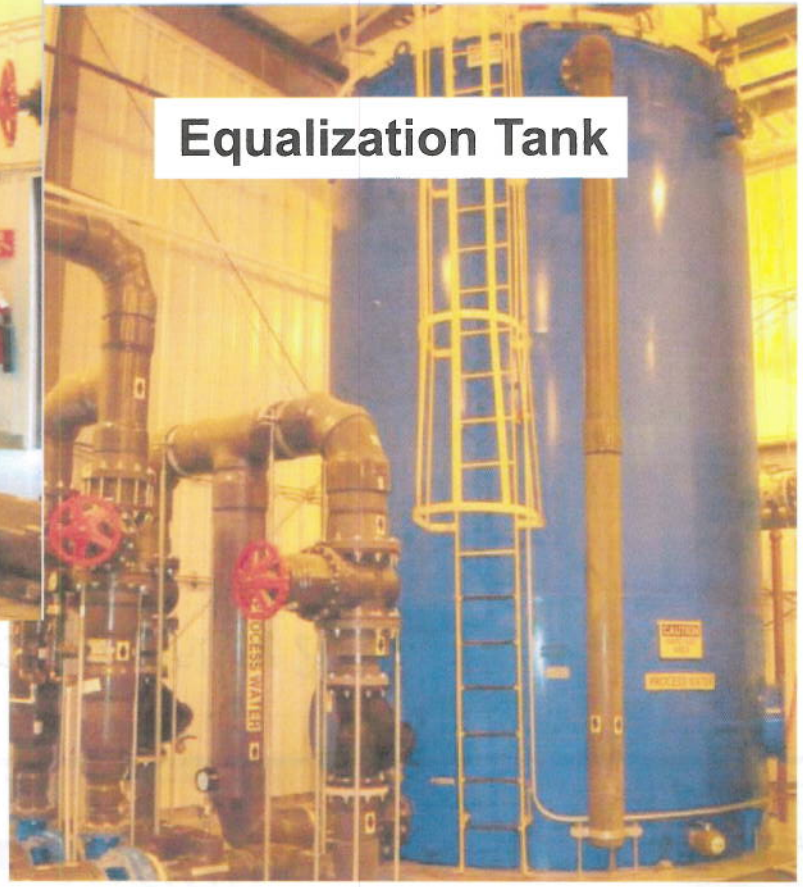




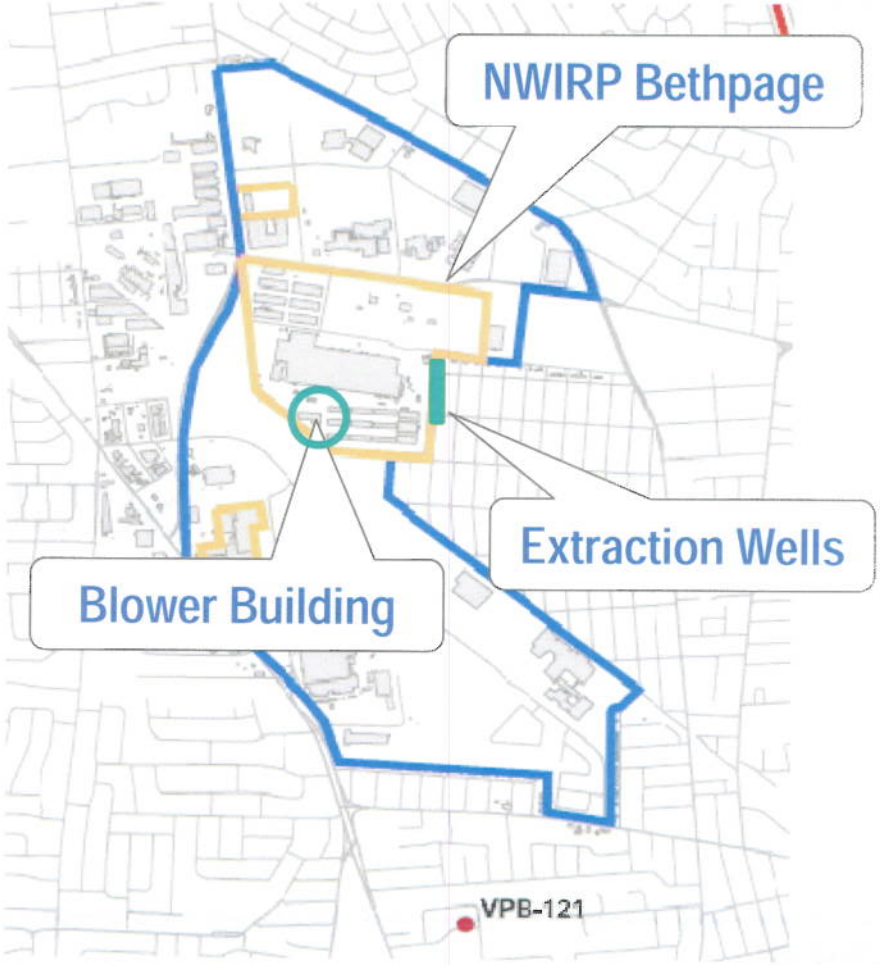
GM-38 REMEDIAL ACTION

- System is expected to operate until approximately 2014
- Optimization activities are ongoing
  - Improve performance
  - Evaluate capture zone
  - Reduce operating cost

Questions

SITE 1 SOIL VAPOR EXTRACTION CONTAINMENT SYSTEM

- Purpose: Prevent offsite migration of Site 1 VOC-impacted soil gas and cleanup offsite soil gas
- System started operation in January 2010 and continues to operate
- Extracts approximately 500 cubic feet per minute of soil gas from 12 wells located along Site 1 fence line



SITE 1 SOIL VAPOR EXTRACTION CONTAINMENT SYSTEM

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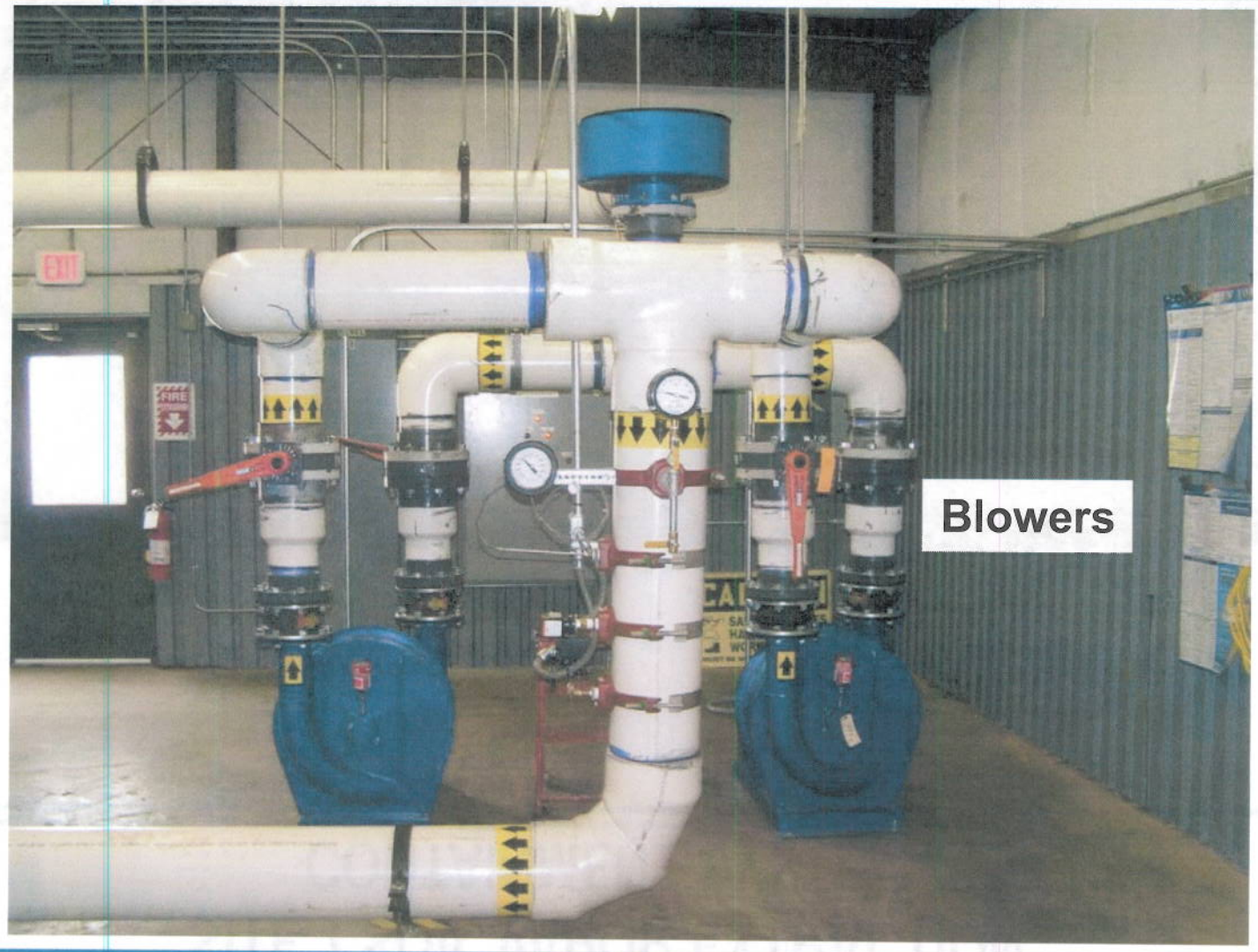

SITE 1 SOIL VAPOR EXTRACTION CONTAINMENT SYSTEM

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SITE 1 SOIL VAPOR EXTRACTION CONTAINMENT SYSTEM

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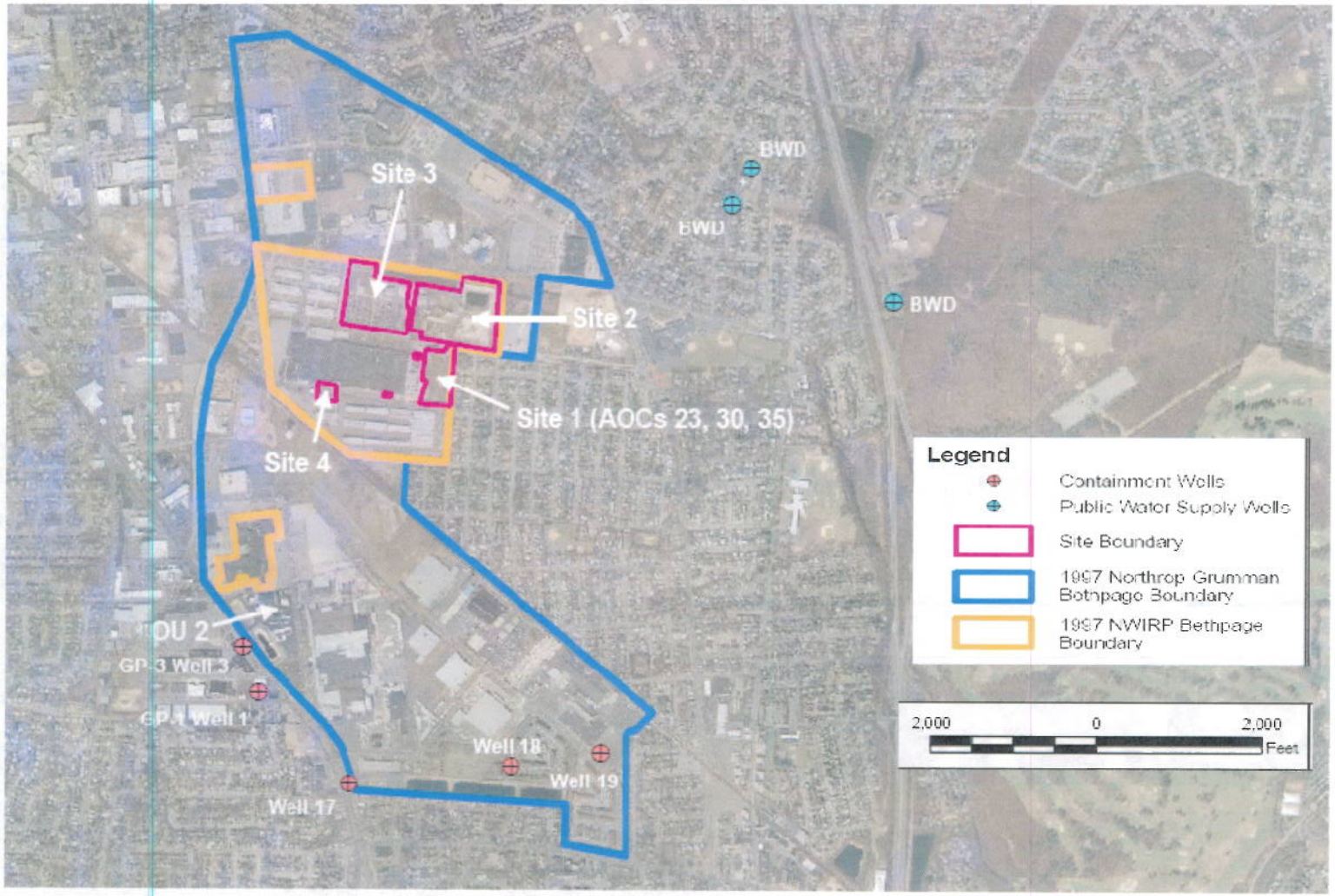
Site 1 Activities - Update

Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage

April 6, 2011

FACILITY MAP



SOIL VAPOR OVERVIEW

- October 2006 New York State Department of Health issued soil vapor intrusion guidelines
- 2008 to 2011 - Navy conducted soil gas sampling onsite and in adjacent residential neighborhood
- 2009 to 2011 - Navy conducted sampling and monitoring in homes
- Initial indoor air sampling results indicated VOCs above NYSDOH air guidelines in some samples
- Portable carbon air filtration units (APUs) and sub-slab depressurization (SSD) systems installed as temporary mitigation measures
- January 2010 – Soil Vapor Extraction (SVE) Containment System began operation

APU AND SSD SYSTEM PHOTO

SVE CONTAINMENT SYSTEM PHOTO

SOIL VAPOR INTRUSION

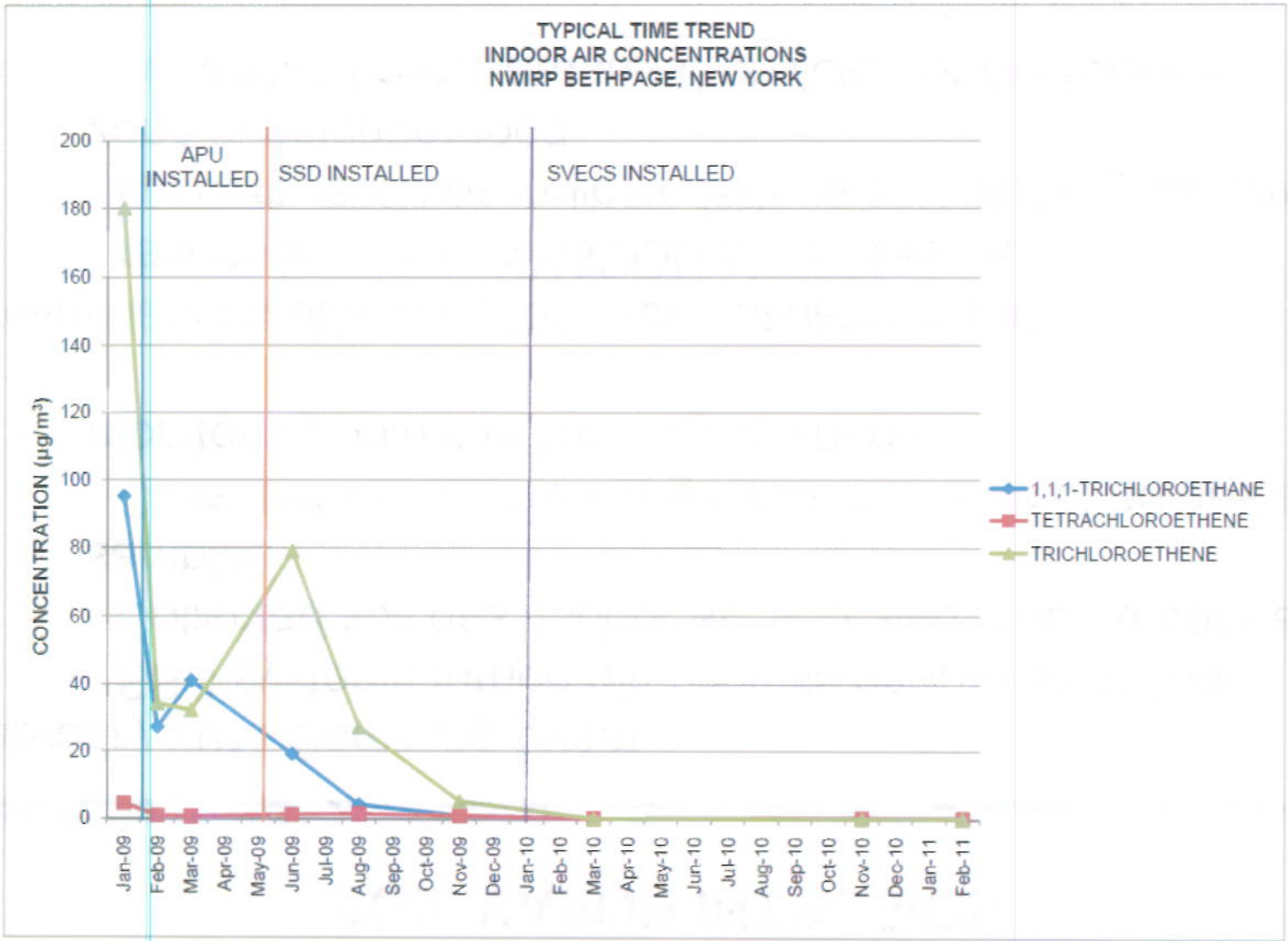
- Sampling events conducted in March 2010 and November 2010
- March 2010 Sampling Event - All indoor air results were less than NYSDOH air guidelines
- November 2010 Sampling Event - All indoor air results were below NYSDOH air guidelines and NFA is recommended based on NYSDOH matrix evaluation
- Preliminary evaluations of SVE system operation through 2010 were good
- Navy, NYSDEC, and NYSDOH meeting was held on January 19, 2011 to discuss 2010 results and future sampling and data collection needs in 2011

SOIL VAPOR INTRUSION

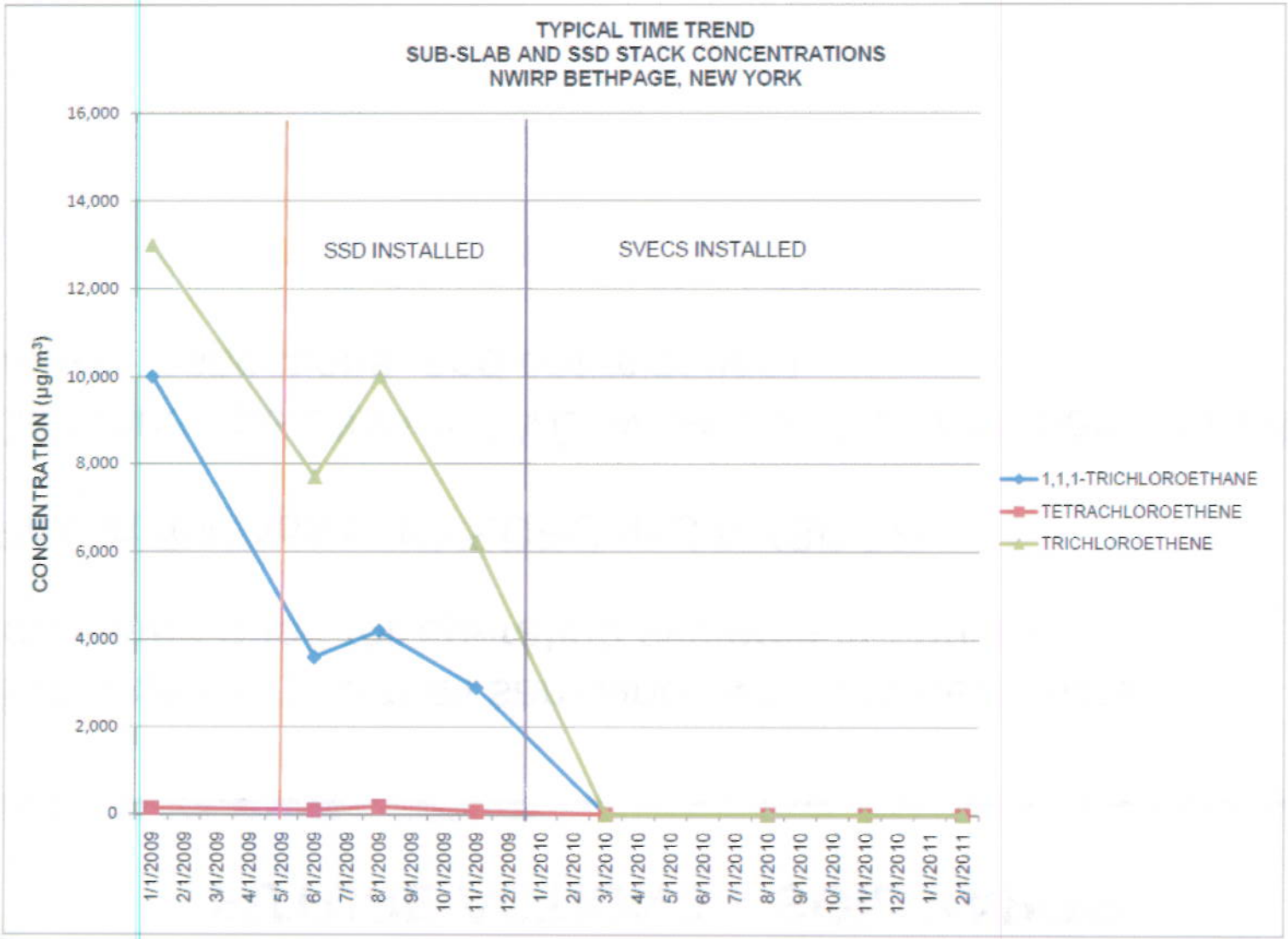
- February 2011 Sampling Event
  - SSD systems turned off 3 weeks prior to sampling
  - Collected soil gas, indoor air, sub-slab, and outdoor air samples
  - Collected vacuum readings from sub-slab of homes and monitoring points in the neighborhood

- Preliminary results are good (non-validated data)
  - results less than NYSDOH air guidelines
  - vacuum readings indicate SVE is establishing capture zone in neighborhood
  - continued downward trend of VOC concentrations

TYPICAL TIME TREND – INDOOR AIR



TYPICAL TIME TREND – SUB-SLAB/SSD STACK



FUTURE ACTIONS – SOIL VAPOR

- Evaluate data from all sampling events to determine continuing need for operating systems in homes
- Report findings to NYSDEC and NYSDOH
- Continue operation of SVE system on Navy property (O&M, weekly inspections, and optimization)

PCB INVESTIGATION UPDATE

- Monitoring wells installed (15 new wells installed up to 220 ft bgs)
- Conducted groundwater sampling events in early December 2010 and March 2011
- Data evaluation is in progress
- Meeting with NYSDEC to discuss results and next steps

PCB INVESTIGATION UPDATE

QUESTIONS ?

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OU2 - Offsite Groundwater Investigation and Public Water Supply Design

Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage

April 6, 2011

OU2 GROUNDWATER INVESTIGATION - PURPOSE

- Delineate area of groundwater contamination in 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

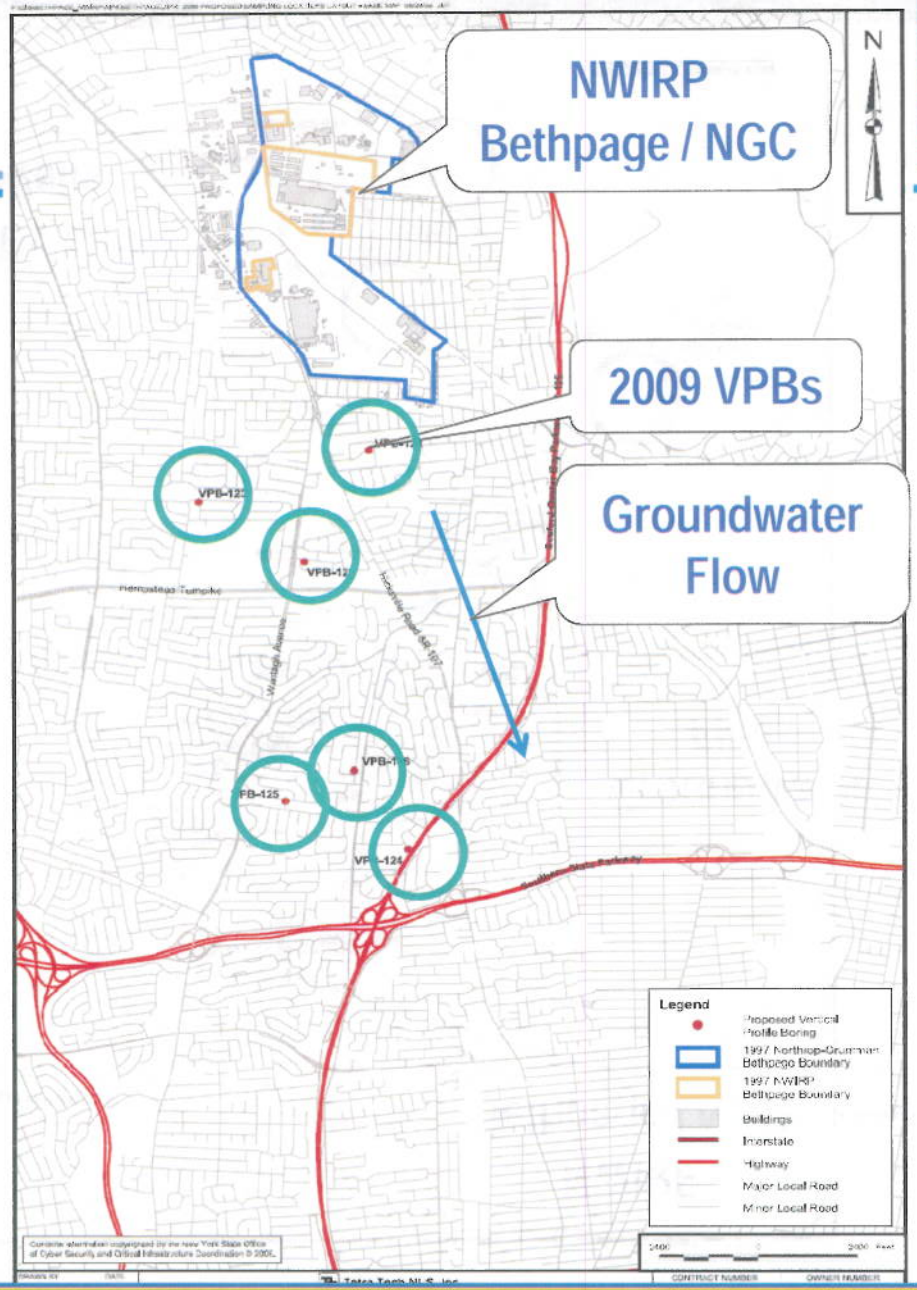
OU2 INVESTIGATION - VERTICAL PROFILE BORING PROGRAM

- A vertical profile boring is a 12-inch diameter hole drilled into the ground. At select depths, the drilling is stopped, a 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

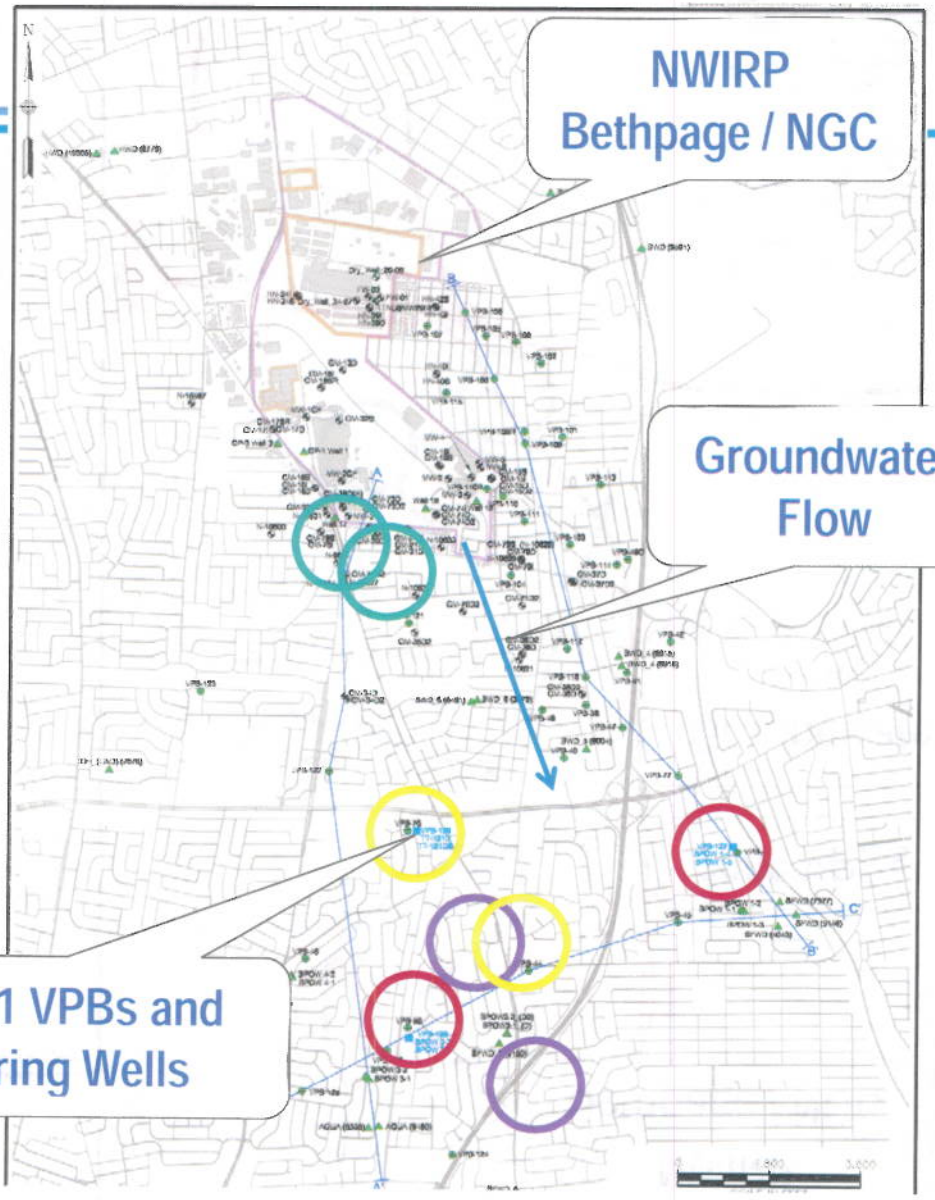
OU2 INVESTIGATION - VERTICAL PROFILE BORING PROGRAM (Cont.)

- Each boring requires 4 to 6 weeks to complete
- Six locations were completed in 2009
- Addition borings and monitoring wells are currently being installed through 2011
  - One boring (completed) and three wells (in progress) will address a well field south east of NWIRP Bethpage
  - One boring and two wells (completed in Mar 11) will address a well field south of NWIRP Bethpage
- Navy currently designing a treatment system, installation planned for 2012

2009 Vertical Profile Borings



2010 to 2012 Vertical Profile Borings and Monitoring Wells



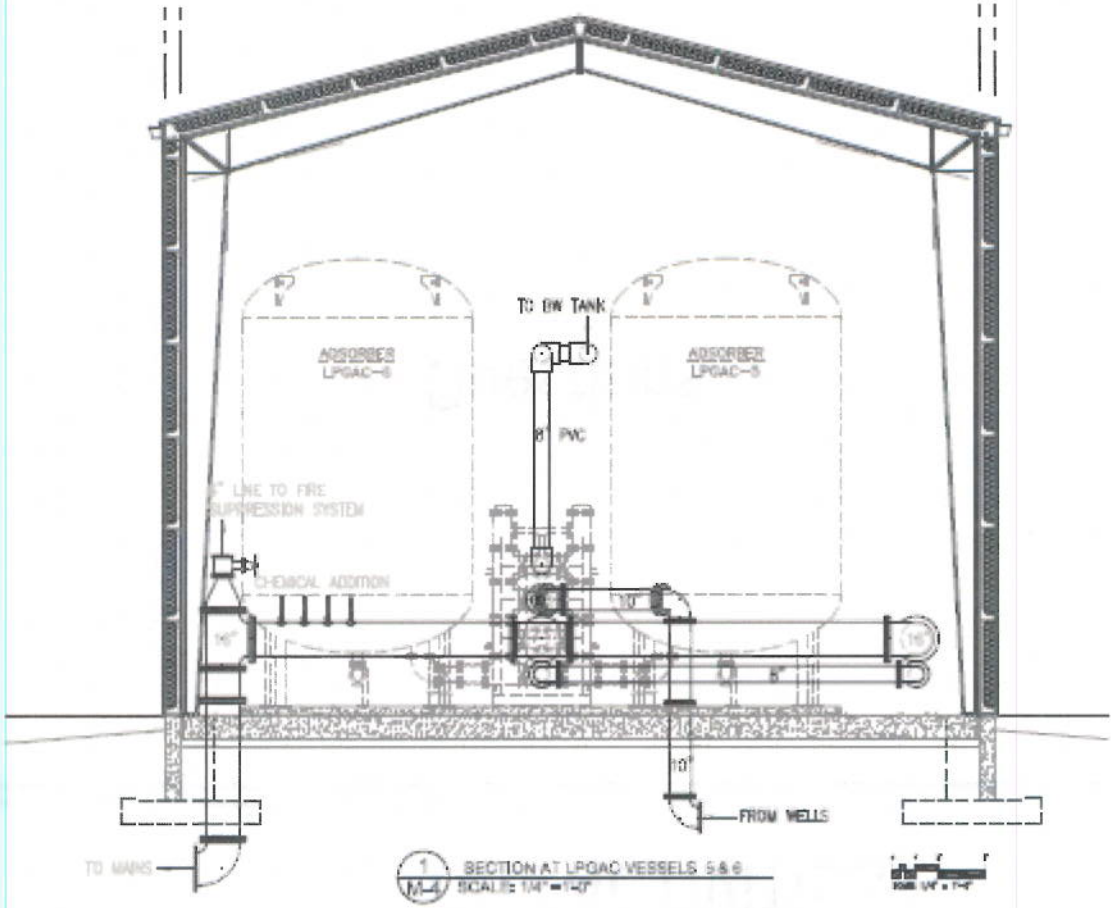
OU2 INVESTIGATION - VERTICAL PROFILE BORING PROGRAM

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 2011
- Construction is anticipated to start in late 2011 or early 2012

OU 2 PUBLIC WATER SUPPLY DESIGN

Liquid Phase Granular Activated Carbon System - Profile



OU2 ACTIVITIES

Questions