1-30-003B

RESTORATION ADVISORY BOARD (RAB) MEETING
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT BETHPAGE
BETHPAGE COMMUNITY CENTER
BETHPAGE, NEW YORK
WEDNESDAY, AUGUST 2, 2006

The sixteenth meeting of the RAB began at approximately 7:15 p.m. Meeting attendees included representatives from the Navy (Susan Clarke), Town of Oyster Bay, New York State Department of Transportation, Bethpage Water District, RAB community members (Rosemary Styne and Roy Tringali), and local residents.

WELCOME AND AGENDA REVIEW

The Navy representative, Susan Clarke, Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic, welcomed everyone to the RAB meeting. Ms. Clarke went over the meeting agenda. The agenda for the meeting is included as Attachment 1.

Since the June 2006 RAB meeting, the Navy has been working on arranging site access for construction for the GM-38 remedy. The meeting with the Town of Oyster Bay before the RAB meeting was related to the site access arrangements. For Area of Concern (AOC) 22, the pilot-scale evaluation of an innovative bioremedial technology to remove petroleum contamination from an underground storage tank area is being conducted. The system was operated through June 2006 and Tetra Tech NUS, Inc. (TtNUS) will begin soil and groundwater sampling and analysis to evaluate the effectiveness of the treatment technology.

REVIEW AND APPROVAL OF MEETING MINUTES

Because of the limited number of RAB community members present at the June 7, 2006 RAB meeting, the review and approval of the April 2005 minutes were tabled until the August 2006 meeting. The April 2005 minutes were included as an attachment to the June 2006 minutes. Ms. Clarke inquired whether the RAB members received the June minutes, which were distributed in July 2006, and whether there were any questions.

Ms. Styne asked whether Route 135 could be used as an access to the GM-38 treatment area. Mr. John Petroff of NYDOT indicated that federal highway regulations would not allow use of Route 135 to access a construction site. Ms. Clarke indicated that the Navy will need to use some of the local roads to access the area and the transportation route is part of the presentation for the GM-38 remedy. Although main roads will be used, the Navy will not be able to avoid residential areas.

A community member saw a well drill rig south of the railroad tracks and wondered whether it was being used as part of any of the Navy's remediation work at NWIRP Bethpage. The Navy said it was not part of any Navy work and that it might be part of a Long Island Power Authority (LIPA) project.

The approval of the minutes was tabled again because of the limited number of RAB community members present at the meeting.

GM-38 REMEDY UPDATE

Mr. Stravros Patselas from Tetra Tech EC, Inc. provided a progress update on the GM-38 Remedy Final Design, including the history of the project, treatment system design, well installations, construction and operation and maintenance. The slides of the presentation of the Groundwater Remediation Project are provided as Attachment 2.

The presentation was similar to the presentation from June 2006. The main updates related to the GM-38 remedy presented at the August 2006 meeting were:

> Wells were installed in 2004 and 2005 and additional wells will be installed during construction. The number of monitoring wells that will be installed was increased and a recovery well will also be installed during construction
> The treatment plant will be installed in the back of a utility easement, near Route 135. Originally, permanent and temporary access roads to the area were planned. However, now the main access will be from Broadway Avenue; Sophia Road will not be used as an access road.
> Some of the esthetic considerations as part of the construction include constructing a berm and planting 100 new trees to minimize the visibility of the treatment plant from nearby homes. Also, a chain link fence with privacy screening will be installed. The Navy will try to maintain as many of the existing trees as possible. Based on community concerns, motion-activated lights will be used for exterior building lighting and no audible exterior alarms will be used. An auto-dial alarm system will be used to contact people when there is an unscheduled shut down of the system. If the system shuts down, it must be manually restarted; therefore, someone needs to go to the treatment plant when the alarm system is triggered.

Mr. Tringali asked whether any Town of Oyster Bay departments would be notified as part of the auto-dial alarm system. Mr. Patselas indicated that only Navy personnel and contractors would be contacted.

Mr. Patselas indicated that there was some delay in the anticipated schedule because the Navy is still working on obtaining real estate access agreements. Once the access agreements are in place, the Navy will competitively bid the project. The bidding process is expected to take up to 2 months and construction is expected to begin in fall 2006. Construction is expected to end summer 2007 and plant start up activities to be conducted from summer to fall 2007. Start of operation and maintenance is anticipated for fall 2007.

CLOSING REMARKS

Ms. Clarke asked whether there were additional questions. There were no further questions. The next meeting will be Wednesday November 1, 2006, at the regularly scheduled time. The meeting was adjourned at approximately 7:50 pm.

ATTACHEMENT 1
AUGUST 2, 2006 MEETING AGENDA

Agenda

Restoration Advisory Board
Naval Weapons Industrial Reserve Plant Bethpage

August 2, 2006
Bethpage Community Center, Bethpage, NY
7:00 p.m.

Welcome and Agenda Review
Susan Clarke, NAVFAC Mid-Atlantic

Meeting Minutes
All Members

GM-38 Remedy Update
Stavros Patselas, Tetra Tech FW

Closing Remarks
Susan Clarke, NAVFAC Mid-Atlantic

Presenters will be available after the program for questions.

ATTACHEMENT 2
GROUNDWATER REMEDIATION PROJECT AT GM-38

NAVFAC
Naval Facilities Engineering Command

Groundwater Remediation Project

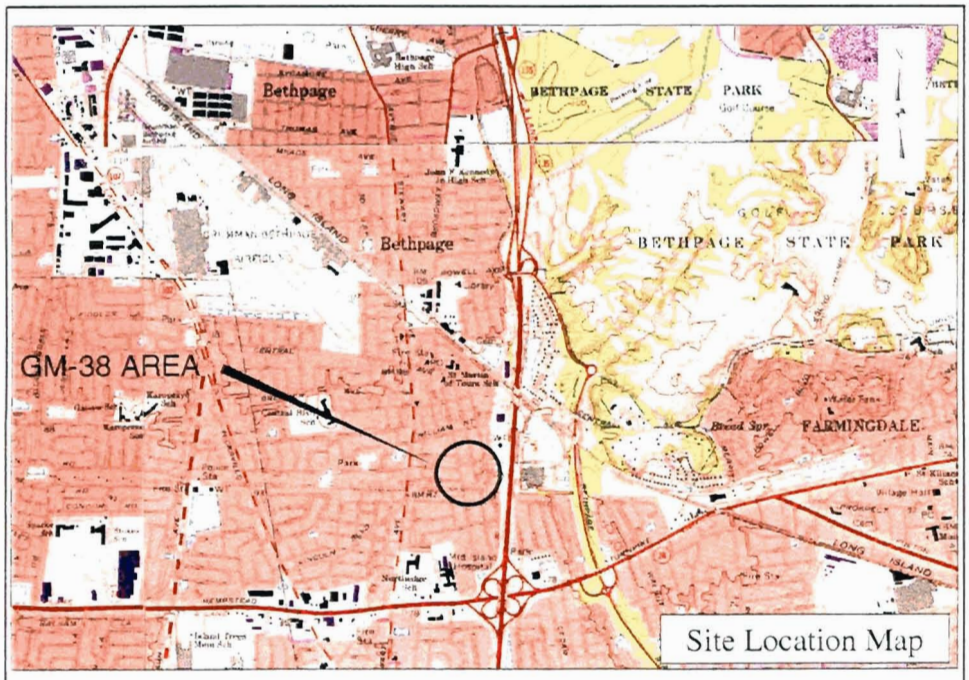
Naval Weapons Industrial Reserve Plant
Bethpage, NY [redacted]
GM-38 Are[redacted]

Restoration Advisory Board Meeting

August 2, 2006

TETRA TECH EC, INC

Zero Incident Performance
Zip



Site Location Map

Groundwater Remediation Project

- Site History
- Treatment System Design
- Well Installations
- Construction
- Operation & Maintenance

NAVFAC Tt

Groundwater Remediation Project

- Project History
- Treatment System Design
- Well Installations
- Construction
- Operation & Maintenance

NAVFAC Tt

Project History

- Chlorinated solvents detected in GW
- GW pump & treat system installed on Northrop Grumman property (Nov 1998)
- GM-38 Area delineated (June 2000-April 2002)
- Conceptual Plans to design and build GWTP in GM-38 Area for mass removal (February 2003)

NAVFAC Tt

Project History (cont'd)

- Community Workshop (September 2004)
- Pre-design investigation (Nov 04 – May 05)
- Draft Remedial Design (February 2005)
  - Reviewed by Navy and Third Party Consultant
- Sampled the GM-38 Area wells (July 2005)
- 90% Draft Final Design (November 2005)
  - Reviewed by same plus NYS DEC, TOB, Nassau County, and public

NAVFAC Tt

Project History (cont'd)

- Received all public review comments (mid - January 2006)
- Response to comments letter (March 2006)
- NYS DEC requests to finalize design (April 10, 2006)
- Final Design (May 8, 2006)
- RAB Meeting presents final design (June 7, 2006)
- Construction phase planning (November 2005 – ongoing)

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Groundwater Remediation Project

- Site History
- Treatment System Design
- Well Installations
- Construction
- Operation & Maintenance

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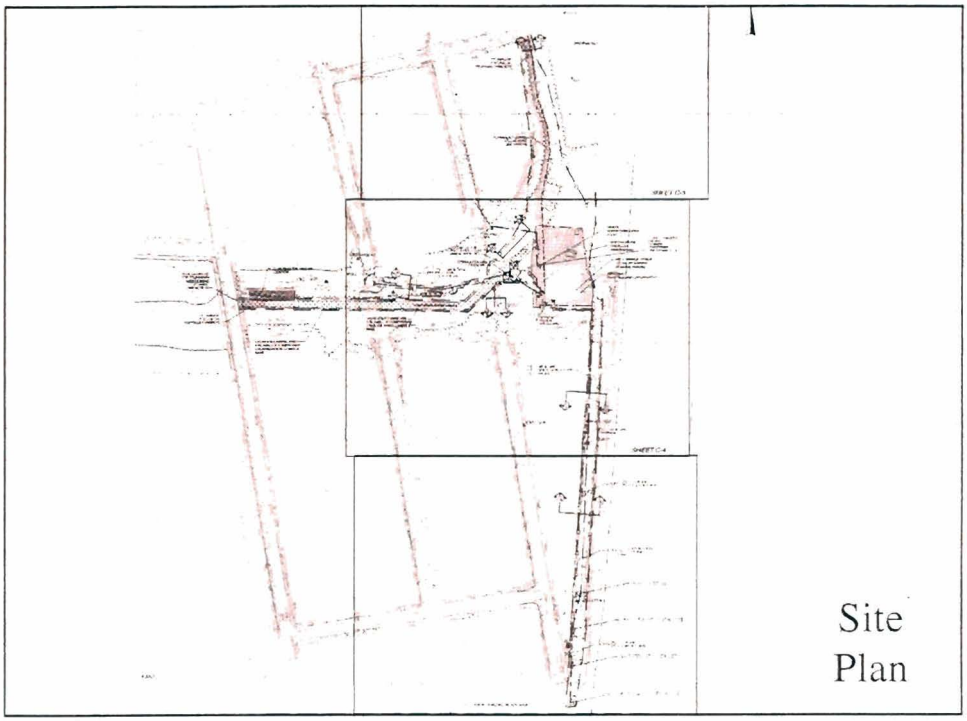
Treatment System Design

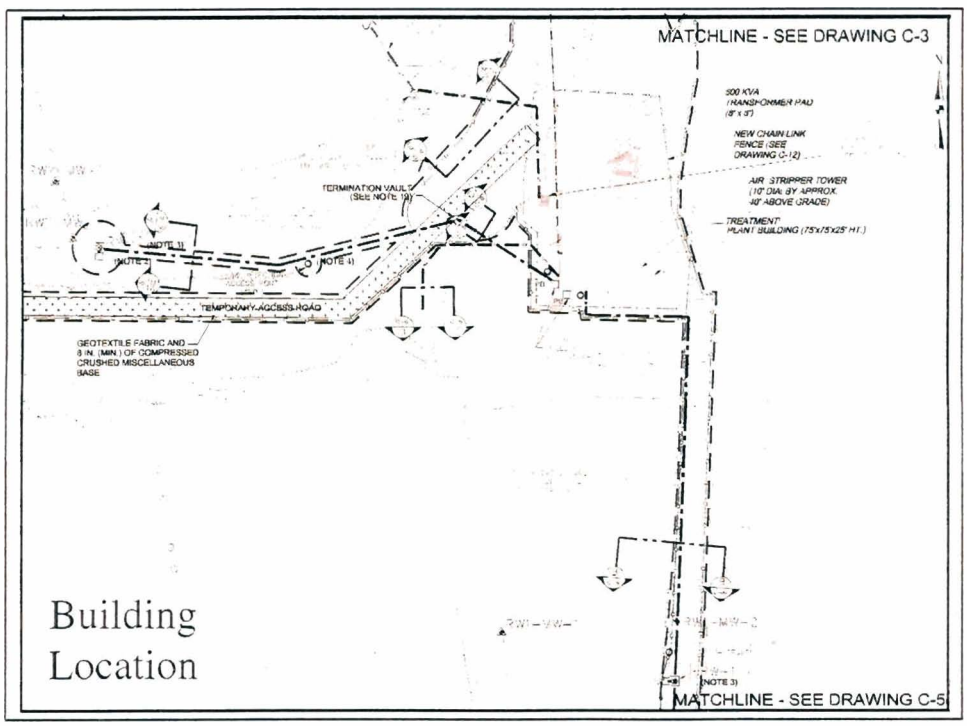
- Mass Removal of Volatile Organic Compounds (VOC's) from groundwater
- Process Flow Rate = 1,100 gallons per minute (gpm)
- Max. Design Flow Rate = 1,375 gpm
- Pumping from two or three recovery wells

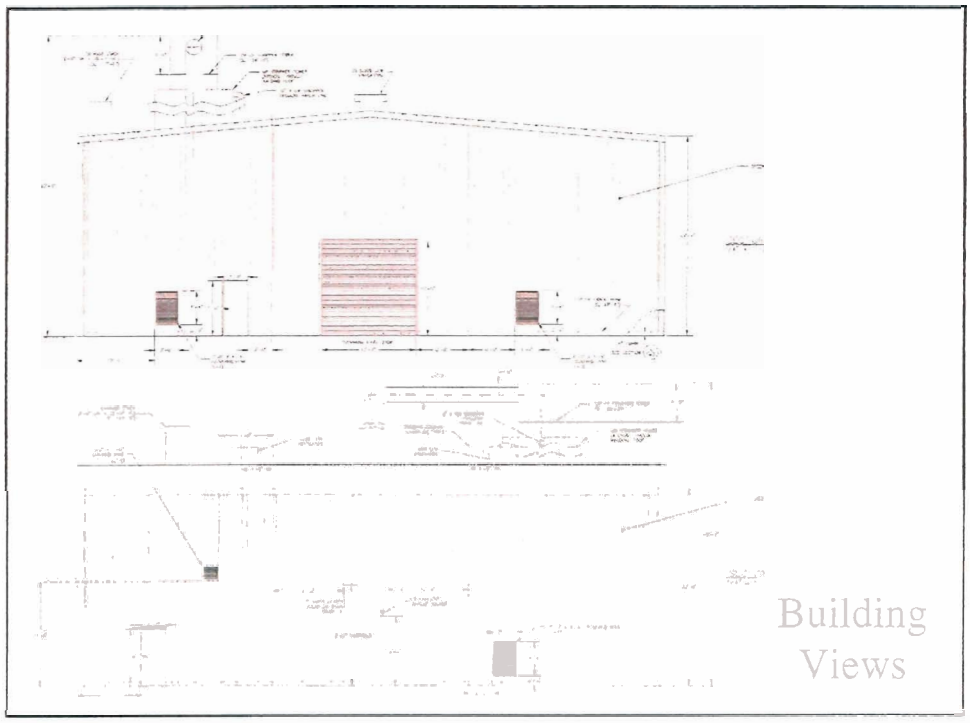
Treatment System Design (cont'd)

- Primary treatment is Air Stripping
- Secondary treatment (polish) is Carbon Media

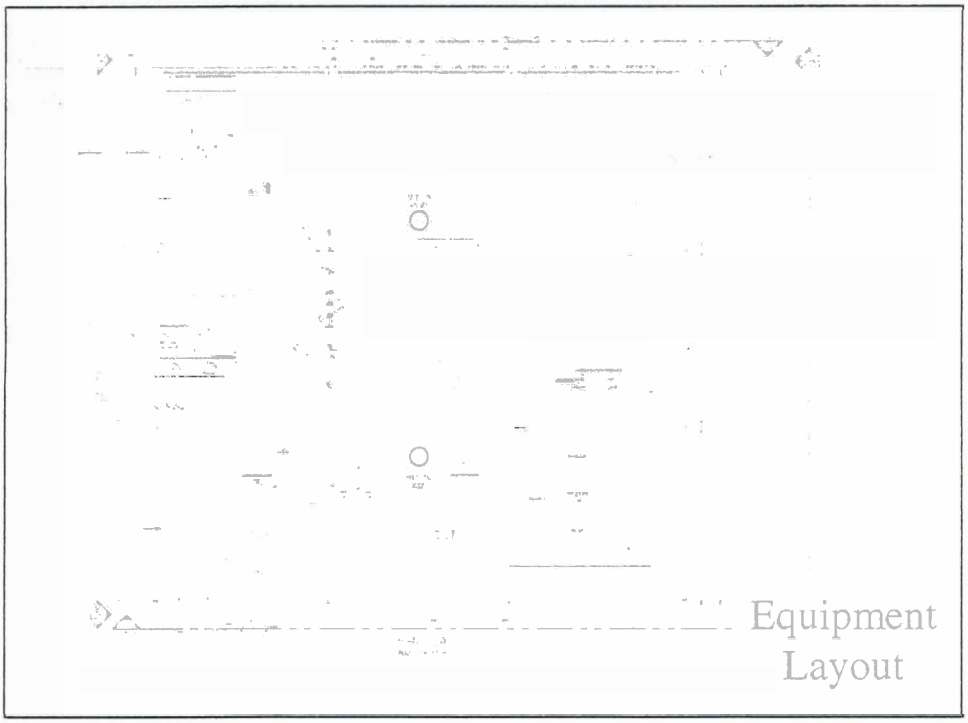
  Vapors from Air Stripping Treated w/ Carbon Media
- Inject treated water into four injection wells


Site
Plan

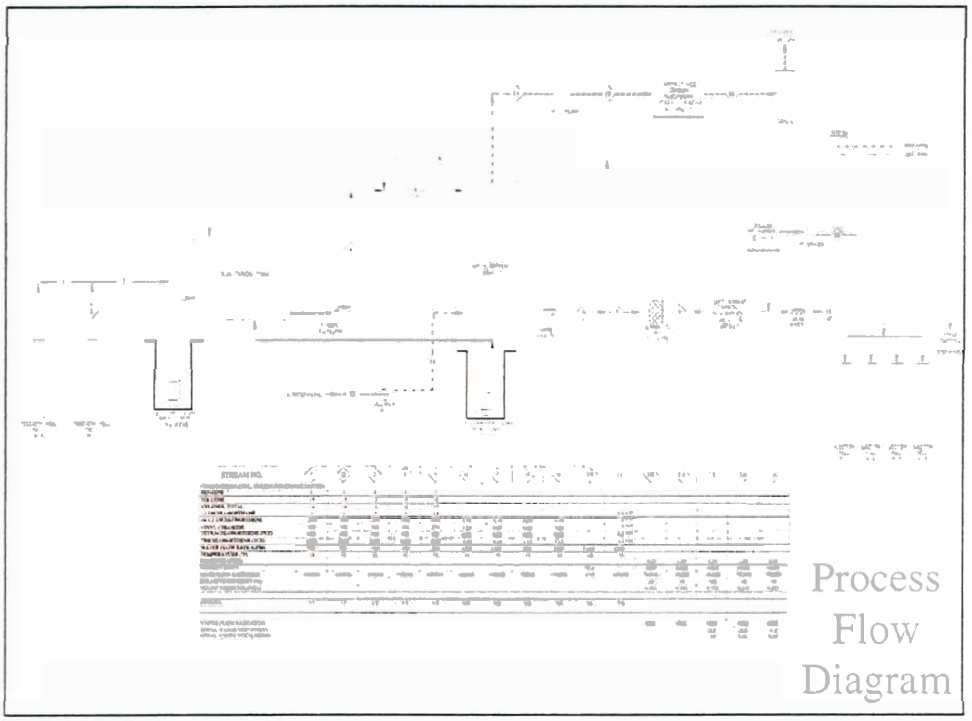

MATCHLINE - SEE DRAWING C-3
500 KVA
TRANSFORMER PAD
(8' x 8')
NEW CHAIN LINK
FENCE (SEE
DRAWING C-12)
AIR STRIPPER TOWER
(10' DIA. BY APPROX.
40' ABOVE GRADE)
TREATMENT
PLANT BUILDING (75'x75'x25' HT.)
TERMINATION VAULT
(See NOTE 10)
(NOTE 11)
(NOTE 1)
(NOTE 1)
TEMPORARY ACCESS ROAD
GEOTEXTILE FABRIC AND
8 IN. (MIN.) OF COMPRESSED
CRUSHED MISCELLANEOUS
BASE
(NOTE 3)
MATCHLINE - SEE DRAWING C-5
Building
Location



Building Views



Equipment Layout



Process Flow Diagram

Groundwater Remediation Project

- Site History
- Treatment System Design
- Well Installations
- Construction
- Operation & Maintenance

Well Installations

- Currently installed (Nov 2004 - May 2005)
  - 2 Recovery Wells
  - 1 Injection Well
  - 6 Monitoring Wells
- To be installed during construction
  - 3 Injection Wells
  - 1 Recovery Well
  - 8 Monitoring Wells

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Groundwater Remediation Project

- Site History
- Treatment System Design
- Well Installations
- Construction
- Operation & Maintenance

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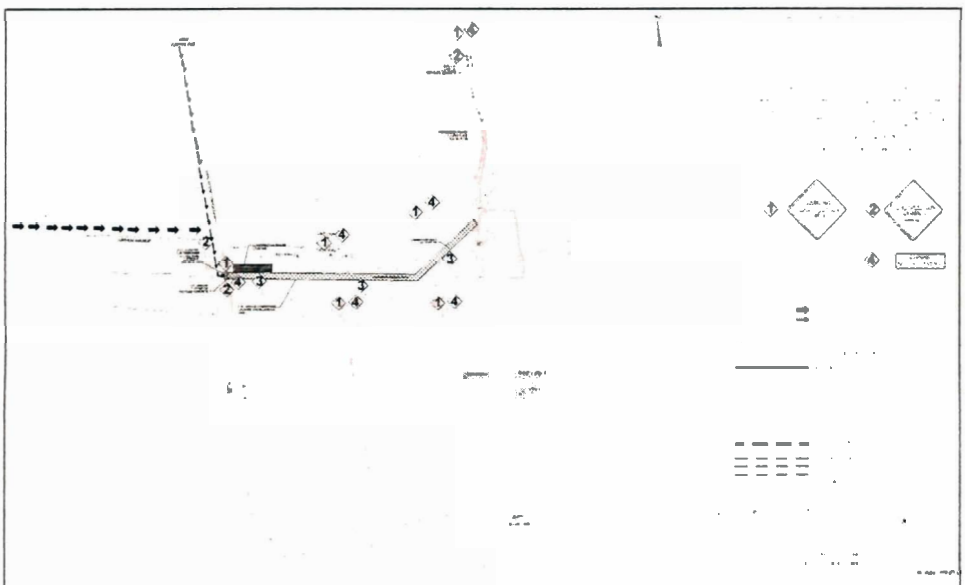
Construction

- Project Signage and Traffic Controls
- Erosion and Sediment Controls
- Access Roads (permanent and temporary)
- Install Building Footers and Foundation
- Trenching to Recovery and Injection Wells
- Utility Tie-in Connections (electric, phone, water, and sanitary sewer)
- Building Floor

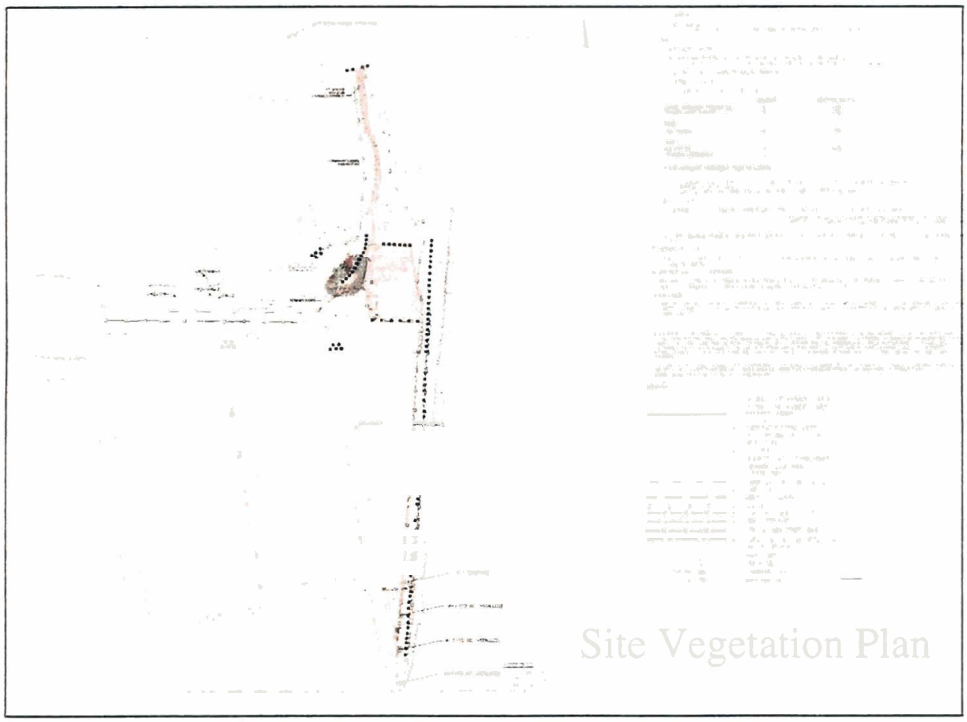
NAVFAC Tt



Traffic Control Plan

Construction (cont'd)

- Set Large Equipment with Crane
- Erect Building Structure
- Interior Piping and Electric
- Install Fire Alarm and Security Systems
- Install and Test Instrumentation
- Test and Balance All Systems
- Site Restoration



Esthetic Considerations

- Excavated soil used to construct berm
- Maintain as many existing trees as possible
- 100 new trees to be planted
- Building exterior to be a natural color
  Exterior building lights are motion activated
- No audible exterior alarms
- Chain link fence with privacy screening

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Groundwater Remediation Project

- Site History
- Treatment System Design
- Well Installations
- Construction
- Operation & Maintenance

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Operation & Maintenance

- Operate 24 hours per day
- Trained personnel visits
  - 3 days per week during initial 6 months
  - Additional visits as needed

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Operation, Maintenance and Monitoring Plan

- Monitoring plan currently being developed
- Operation & Maintenance plan to follow
- Establishes method of operating & tracking progress of GWTP
- Sampling frequency (system & wells)
- Modify GW model with analytical results
  - Decrease in Total VOC over time
- Emergency response and troubleshooting

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Safety Considerations

- Double-walled extraction piping and access ports
- GWTP sloped floor to sump – contain spills
- Liquid-phase carbon units – Total VOC polish
- Backflow preventor on influent potable water line
- Instrumentation
  - Monitor key operating parameters
  - Redundant controls to ensure safe operation
  - Automatic system shut-down signals
  - Requires manual restart
  - Telemonitoring system

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Future Operating Considerations

- Piping to termination vaults
  - One vault for future discharge location
- Current GWTP flow will be 1100 gpm
  - Maximum capacity = 1375 gpm (+25%)
- GWTP can treat future development water
  - Water piped/transported to GWTP sump

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Project Status

- Obtain real estate access agreements from three property owners – Town of Oyster Bay, NYS DOT and Long Island Railroad
- Obtain all necessary local permits
- Competitive bidding for all subcontracted work and equipment
- Notice to Proceed from NYS DEC
- Mobilize and start construction

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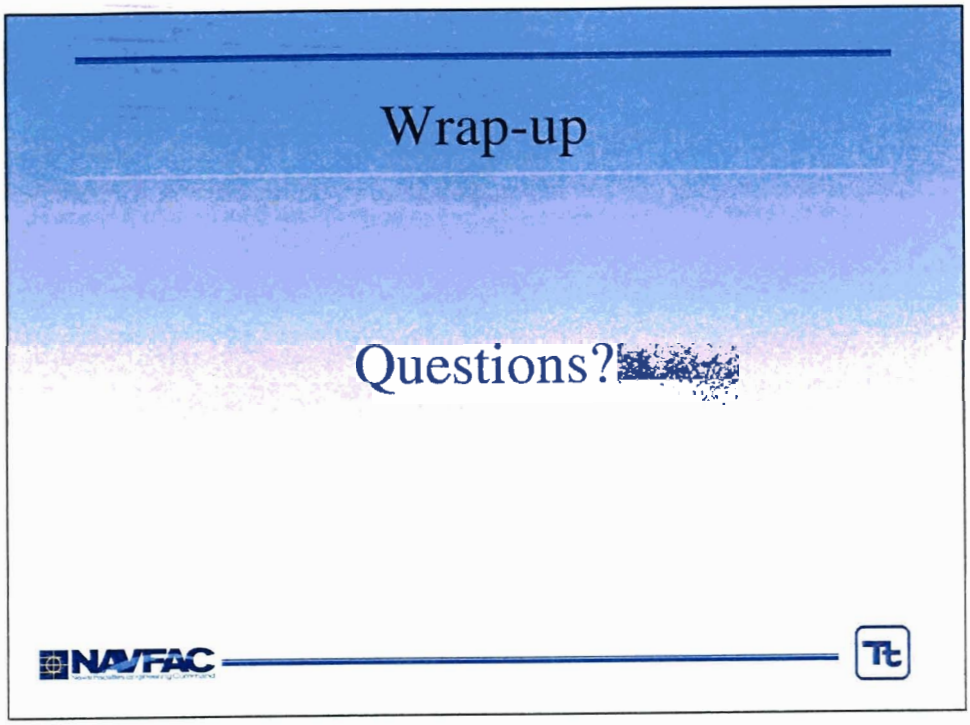
Anticipated Schedule

Milestones	Date
Project Planning	On-going
Mobilization & Start of Construction	Fall 2006
End of Construction	Summer 2007
Plant Start-Up and Shakedown	Summer - Fall 2007
Start of Operation & Maintenance	Fall 2007

NAVFAC Tt


Wrap-up
Questions?
NAVFAC

11/1/06 RAB

NAVFAC MIDLANT, NORFOLK, VA

NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) BETHPAGE, NEW YORK INSTALLATION RESTORATION PROGRAM

BUDGET UPDATE – FY-06 ACTUAL COSTS AND FY-07 EXECUTION PLAN

Restoration Advisory Board (RAB) Meeting

11/01/2006

NWIRP Bethpage FY-06 ACTUAL EXECUTION

PROJECT	COST	REMARKS
GM-38 – Additional Well Drilling and Plant Construction	$3,653,466 (awarded 12/15/05)	Currently in process of obtaining Site Access
Community Relations and Consultation Support	$156,688 (awarded 01/23/06)	TtNUS providing continuous support
TOTAL for FY-06 =	*$3,810,154*	

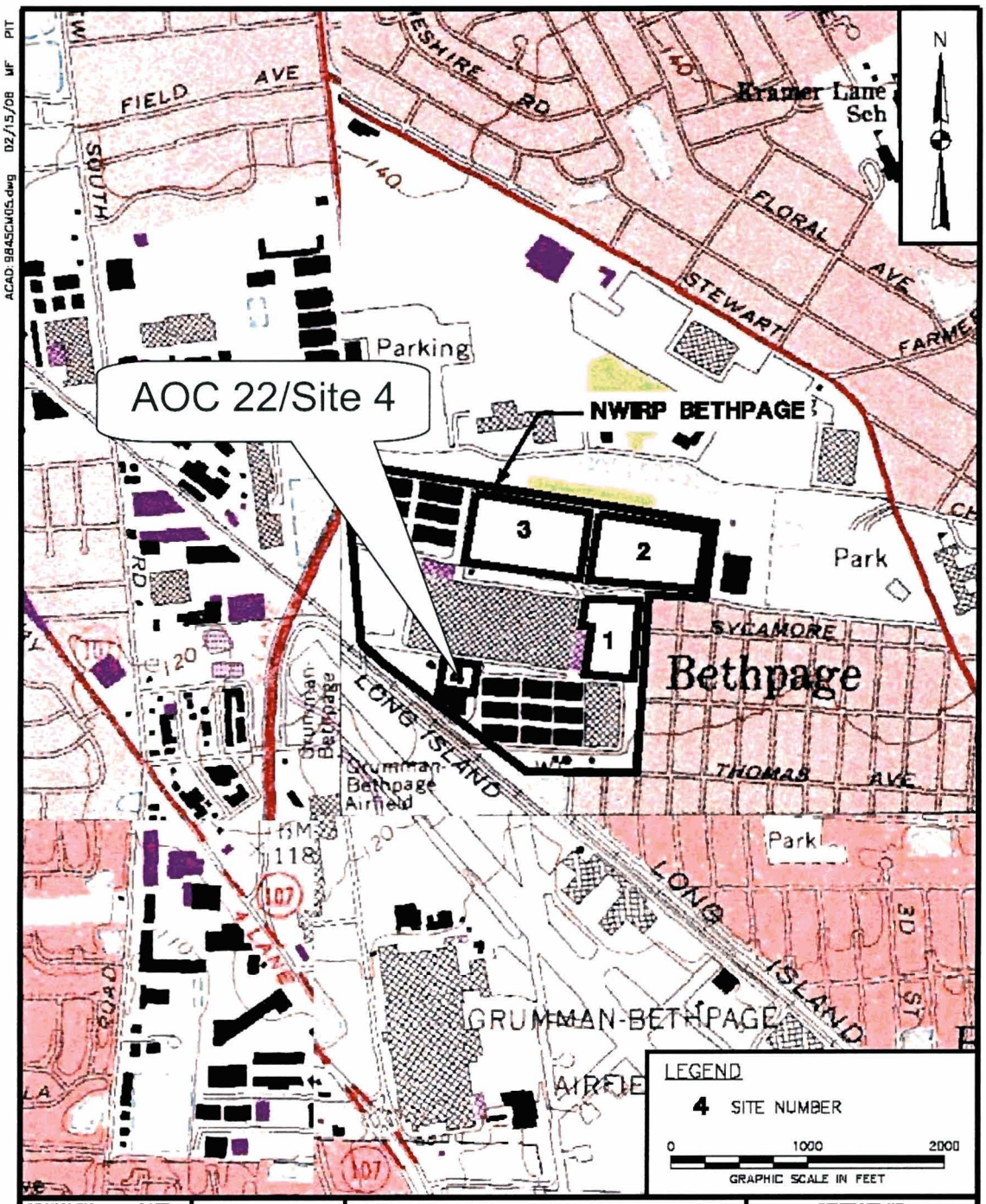
NWIRP Bethpage FY-07 PLANNED EXECUTION

PROJECT	*COST*
Site 1 – PCB Remediation	$2,552,494 (Estimated Cost, to be awarded in the spring)
GM-75 Investigation	$1,298,894 (Estimated Cost, to be awarded soon)
Site 4 – AOC 22, Confirmation Sampling and Additional Plume Investigation	$220,100 (Estimated Cost)
5 Year Review Projects for the Recharge Basins and Salvage Storage Yard	$30,000 (Estimated Cost for both reviews)
TOTAL for FY-07 =	*$4,101,488*

11/1/06
RAB
NWIRP

AOC 22/Site 4
Former Underground
Storage Tank Area Update

NWIRP Bethpage
November 1, 2006
Restoration Advisory Board (RAB) Meeting

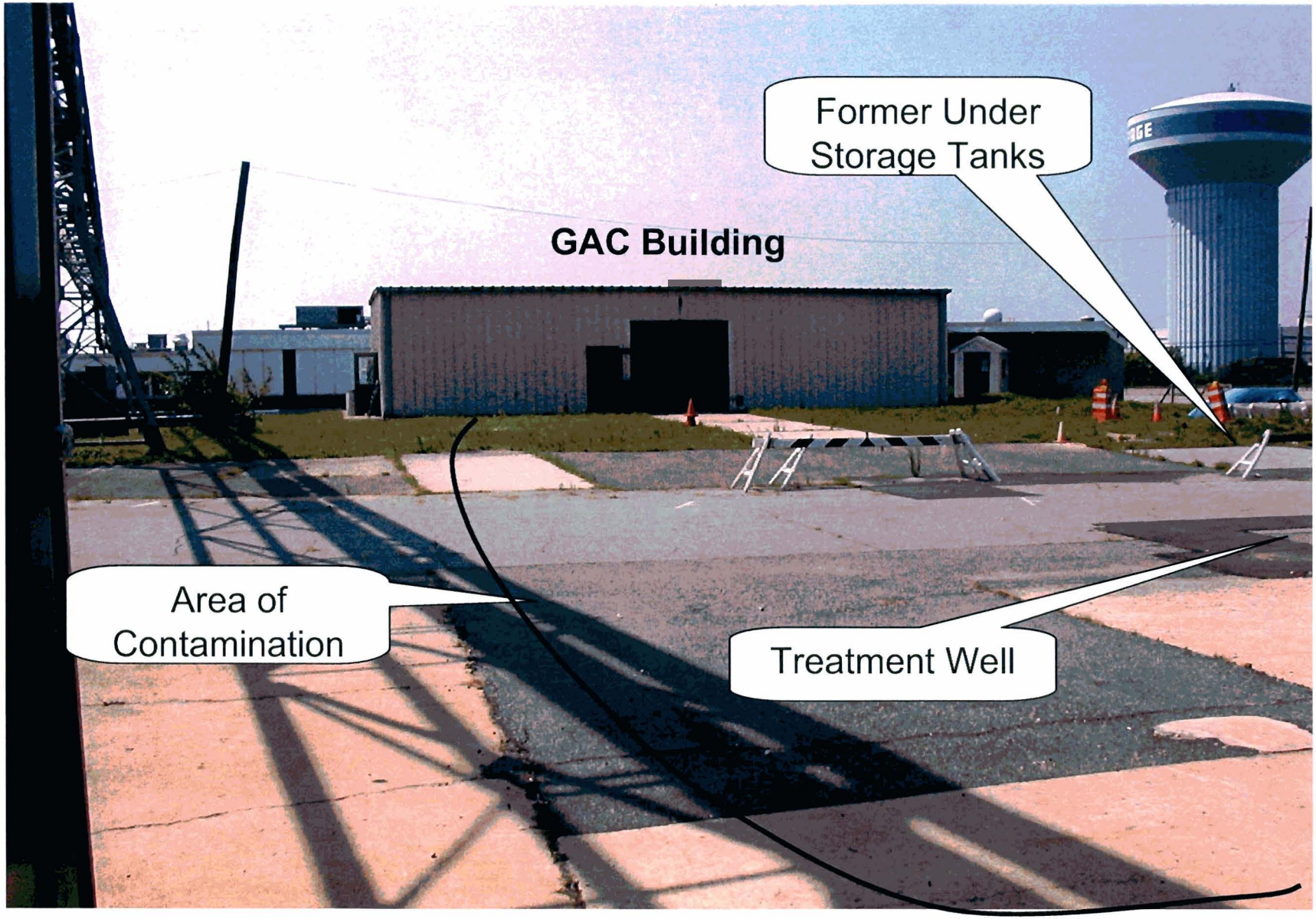


DRAWN BY MF DATE 12/9/05	Tetra Tech NUS, Inc.	SITE LOCATION MAP ESD NWIRP BETHPAGE BETHPAGE, NEW YORK	CONTRACT NO. 9845
CHECKED BY DATE			OWNER NO. 0002
REVISED BY DATE			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 2-1 REV. 0

FORM CADD NO. TTNUS-AV.DWG - REV 1 -9/10/98

ACAD: 9845CM05.dwg 02/15/08 MF PIT

Site 4/AOC 22 Area



Site History

- Three underground storage tanks active in 1940s to 1960s.
- Contained No. 6 Fuel Oil
- Tanks were removed at an unknown time, probably early 1980s.
- Underground tank slabs/saddles remain.

Environmental Concerns

- Petroleum contamination, measured as total petroleum hydrocarbons (TPH), is primary concern.
- Contamination is mostly adhered to soils – not mobile.
- Polynuclear aromatic hydrocarbons (PAHs) primary chemicals of concern.
- Majority of contamination is near the water table (60 feet below ground surface).
- Limited impact to groundwater.

Closed Loop Bioremediation System

- Treatment Goal: Provide 90 percent reduction in TPH concentration.
- Treat soils and petroleum through the use of surfactants and biodegradation.
- System operated from fall 2004 to spring 2006.
- System demobilized from site in August 2006.
- Based on soil data, approximately 15 percent removal of TPH as of September 2005.

Next Steps

- Conduct final round of soil and groundwater testing scheduled for December 2006.
- Evaluate petroleum removal.
- Evaluate potential for formation of free product on groundwater and migration through groundwater.
- Report in spring 2007.