



DEPARTMENT OF THE NAVY
NAVAL SUBMARINE BASE NEW LONDON
GROTON, CONNECTICUT 06349-5000

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22 January 2004

From: Commanding Officer, Naval Submarine Base New London
To: Distribution

Subj: RESTORATION ADVISORY BOARD (RAB) MEETING

Encl: (1) Proposed Agenda
(2) Draft 9 September 03 RAB Minutes

1. The next RAB meeting has been scheduled for February 4, 2004 at 6:30 pm, at the Best Western Olympic Inn, 360 Route 12, Groton, CT (860) 445-8000.
2. The local press and public are invited to attend this meeting. Questions from the public are welcome during this meeting.
3. Enclosure (1) is the meeting agenda. Enclosure (2) is the draft minutes from the previous RAB meeting. Please contact Ms. Melissa Griffin at (860) 694-5191, if you have any questions.


MICHAEL BROWN
Environmental Director, Acting
By direction of
the Commanding Officer

Subj: RESTORATION ADVISORY BOARD (RAB) MEETING

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Tetra Tech NUS (Corey Rich)
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Foster Wheeler (Larry Kahrs)
Foster Wheeler (Patricia Ghoring)
Connecticut College/Botany Dept.
NCIS (Mr. Richard Dawelius)
EPA Region 1 Community Relations Coordinator (Ms. Pam Harting-Barrat PhD)
EA Engineering (Mr. Charles McLeod)
New London Day (Mr. Robert Hamilton)
Mr. Bernard Boylan
Mr. Steve Cicoria
Mr. Bart Pearson
Mr. Noah Levine
Mr. Larry Gibson
Mrs. Deborah Motycka Downie
Mr. Andrew Parrella
Ms. Susan Orill
Mr. Norman Richards
Mr. Harry Watson
Mr. John Vitkevich
Batelle Corporation (Ms. Patty White)
Mr. John Nugent (CT College Government Dept.)
Mr. Brian Gainer (ECC)
Ms. Virginia de Lima (USGS)

SUBMARINE BASE NEW LONDON
RESTORATION ADVISORY BOARD
MEETING

6:30 PM February 4, 2004

Best Western Olympic Inn
360 RT. 12, Groton, CT

AGENDA

1. **Review of Minutes From Last Meeting** *20 Minutes*
Dick Conant, SUBASE New London
2. **Results of the Thames River Pilot Study** *30 Minutes*
Mr. Dean Neptune and Mr. Donald Gunster, *Battelle*
3. **Area A Downstream Year 3 Functions and Values Assessment** *30 Minutes*
Ms. Patricia Gohring and Mr. Joe Fischl, *TTFW*
4. **Set Future Meeting Date** *10 Minutes*
Melissa Griffin, SUBASE New London

Enclosure (1)

Meeting Minutes

Restoration Advisory Board Installation Restoration Program Naval Submarine Base New London Groton, Connecticut

9 September 2003

Attendees:

Jennifer Stump (EPA Contractor)
Mark Evans (EFANE)
Dick Conant (NLSB)
Noah Levine (RAB Member)
Deborah Downie (RAB Community Co-Chair)
Corey Rich (Tetra Tech NUS)
Lauren Valla (CT College)
Alexa Ball (CT College)
Alex Werner (CT College)
Larry Gibson (Public)
Bart Pearson (Public)
Justin Eddings (CT College)
Susan Getty (CT College)
John Hansen (CT College)
Lauren Richter (CT College)
Elizabeth Lingo (CT College)
Liz Cryan (CT College)
Darien Gainer (ECC contractor)

1. Mr. Dick Conant opened the RAB meeting at 6:35 PM. The meeting began with a review of the minutes from the last meeting held on 26 February 03 at the Best Western Olympic Inn. Hearing no objections or changes, the 26 February 03 minutes were accepted.
2. Mr. Corey Rich of Tetra Tech presented the data from the Base-wide Groundwater OU data gap investigation, see attached presentation. Mr. Rich indicated that the "New Source Area" adjacent to Stream 5 and Triton Avenue may require a remedial action to remove an estimated 27 gallons of residual petroleum and 550 cubic yards of soil and sediments. Risk at the New Source Area was primarily attributed to PAHs associated with the asphalt pavement along Triton Avenue and the weathered oil release from abandoned drums at the site. An FS is recommended for the New Source Area with the selected alternatives being No Action; Institutional Controls; or Excavation
At Site 7 (Torpedo Shops) low levels of VOCs and PAHs were detected, but there was no unacceptable risk. One potential source area is the former septic tank adjacent to Building 325, which may require remedial action to remove and dispose of properly. An

FS is recommended for this site with the selected alternatives being No Action; Institutional Control; or Excavation

Site 15 (Spent Acid) underwent a removal action in 1994 to remove the spent acid tank and associated lead contaminated soils. The Groundwater OU investigation found only minor elevated levels of metals in and adjacent to the site. The risk assessment showed no unacceptable risk; hence, an FS is not recommended for this site.

Site 20 (Area A Weapons Center) indicated low level hits for organic compounds and inorganic analytes. No unacceptable risk was determined for the site and an FS is not recommended.

3. Mr. Darien Gainer of EEC presented on the recent Landfill Cap inspections, see presentation attached. No noted deficiencies were observed at the Goss Cove site, as was expected due to the relative newness of the landfill cap at this location. The Area A landfill cap needed maintenance work to clear sediment and vegetation from the drainage diversion ditch; seal cracks that have opened up in the asphalt wearing surface; and cut and/or herbicide vegetation that is establishing on the rip-rapped side slope of the cap. At DRMO, subsidence was noted south of the cap. This area of subsidence requires investigation and corrective measures to insure that the integrity of the cap is not undermined in the future.

4. The next RAB has been scheduled for 6:30 PM on 4 February 2003 at the Best Western Olympc Inn. Having no further business, Mr. Conant closed the RAB meeting at 8:25 PM.



Landfill Inspections 2003

Naval Sub Base - New London

ENVIRONMENTAL ORDINANCE O&M



Goss Cove

No	Item	Deficiency	Recommended Action
1	Perimeter fencing	Mangate at gas vent M compound is low and dragging on ground.	Raise gate hinges approximately 3-inches.
2	Perimeter fencing	Fencing at east perimeter (north of entrance) missing some bottom screen ties, a section of screen is bent, and a portion of the upper tension wire is loose	Replace the missing screen ties and tighten the upper tension wire (Note: recommend using steel ties for additional security - existing ties are Aluminum).
3	Perimeter fencing	Vines growing on eastern section of sewage pump station fence.	Cut and remove vines.
4	Perimeter fencing	West section of fencing, adjacent to Nautilus pier, missing some screen ties to the upper tension wire.	Replace missing screen ties with steel ties.
5	Perimeter fencing	Section of fencing along the west perimeter, north end of site, is missing upper tension wire.	Replace tension wire.
6	Perimeter fencing	Mangate located along western perimeter at north end of site is misaligned and does not latch.	Adjust gate hinges and re-align gate.
7	Perimeter fencing	Missing screen ties at west fence section near northwest corner.	Replace missing screen ties with steel ties.

ENVIRONMENTAL ORDINANCE O&M



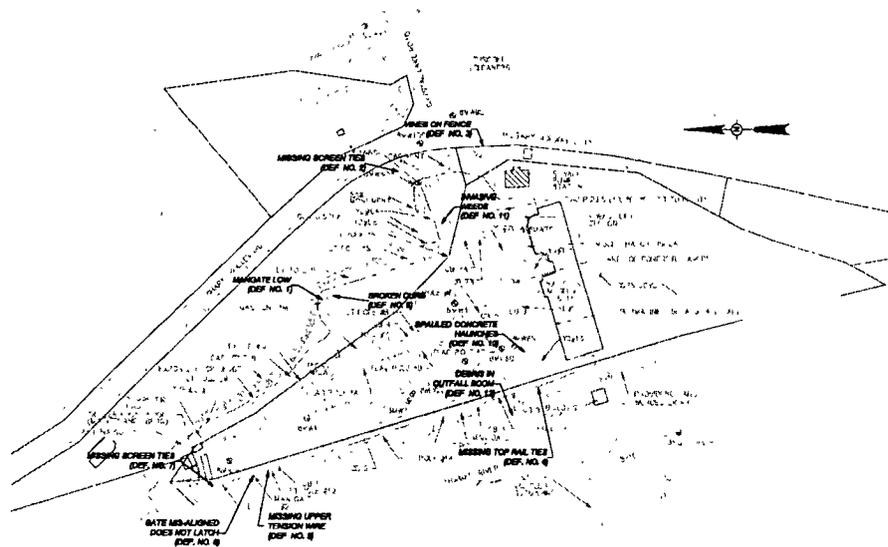
Goss Cove

No	Item	Deficiency	Recommended Action
8	Perimeter fencing	General.	Recommend that steel ties be used to reinforce the fence screening thereby increasing the site security and reducing the required fence maintenance.
9	Concrete curbing	One section of concrete curbing has been damaged at the northeast portion of the parking area.	Recommended that the damaged portion of the curbing be repaired in-place.
10	Southwest Submarine Display	Significant spalling of the two concrete haunches was noted. Corrosion of the reinforcing steel was evident due to staining and the concrete could be removed in small sections.	It is recommended that the deteriorated, spalled concrete be removed from the haunches and repaired in accordance with American Concrete Institute (ACI), Technical Document 546R-96: Concrete Repair Guide.
11	Vegetative Areas	Invasive weeds in grassed areas.	Control weeds using a licensed pesticide applicator.
12	Box Culvert Discharge	Debris accumulated in floating debris boom around the box culvert discharge.	Remove debris on regular basis.

ENVIRONMENTAL ORDINANCE O & M



Goss Cove



ENVIRONMENTAL ORDINANCE O & M



AREA A

No.	Item	Deficiency	Recommended Action
1	Security Fencing and Gates	Damaged fence sections along southwest perimeter.	Repair all sections of damaged fencing along the southwest perimeter
2	Security Fencing and Gates	Damaged fence sections at deployed parking area.	Replace aluminum screen ties with steel ties.
3	Security Fencing and Gates	Lack of site security.	Secure all gates (i.e., closed and locked) to prevent unauthorized access and reduce the potential for vandalism and unauthorized dumping or staging.
4	Signage	Lack of site security.	Erect additional signage on the gates that identifies the site as a landfill cap and restricts access, such as, "LANDFILL CAP AREA - NO UNAUTHORIZED ENTRY OR DUMPING/STAGING". Also post signage with a contact authority including name and telephone number for persons requesting access.
5	Vegetation	Vegetated/grass areas not stabilized.	Place additional grass seed in bare areas. Re-inspect at the end of the 2003 growing season to determine if additional erosion mitigation measures are warranted.

ENVIRONMENTAL ORDINANCE CO. M



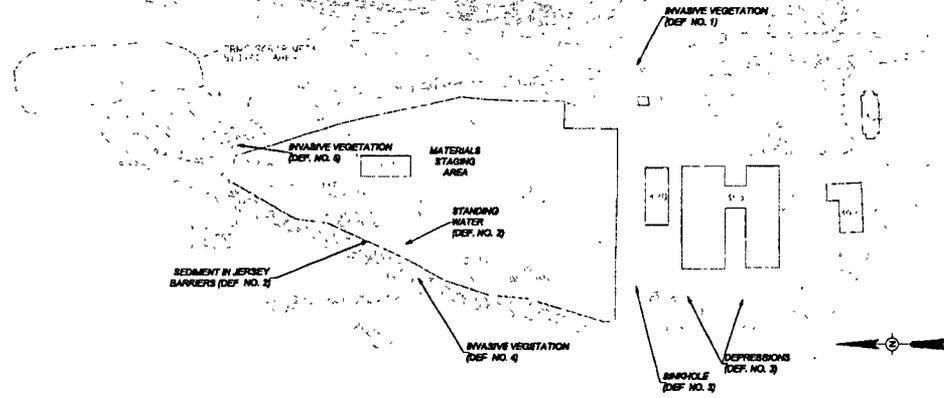
AREA A

No.	Item	Deficiency	Recommended Action
6	Asphalt Cap System	Cracking at paving-lane joints.	Seal the cracks as specified in report. Note, review installation warranty to assess contractor liability.
7	Gabion System	Becoming over-grown with vegetation (vines) and wind-blown trash in area.	Remove over-grown vegetation from the gabion wall and accumulated wind-blown debris on and adjacent to (wetland area) the system.
8	Drainage Channels	Accumulated sediment and debris obstructing flow	Remove sediment and debris. Implement routine (quarterly), periodic maintenance to identify potential obstructions and remove them.
9	Housekeeping and Maintenance	Disorderly staging of equipment and materials and potential damage to cap systems	Minimize equipment and materials staging in a systematic, orderly manner and use protective surfaces (e.g., concrete blocks, steel plates, pallets, etc.) to prevent damage to the asphalt cap and subsurface cap system components such as the gas collection and venting system and monitoring wells
10	Housekeeping and Maintenance	Wind-blown trash throughout site	Implement routine maintenance schedule (quarterly) for collection and removal of trash

ENVIRONMENTAL ORDINANCE CO. M



AREA A



ENVIRONMENTAL ORDINANCE O&M



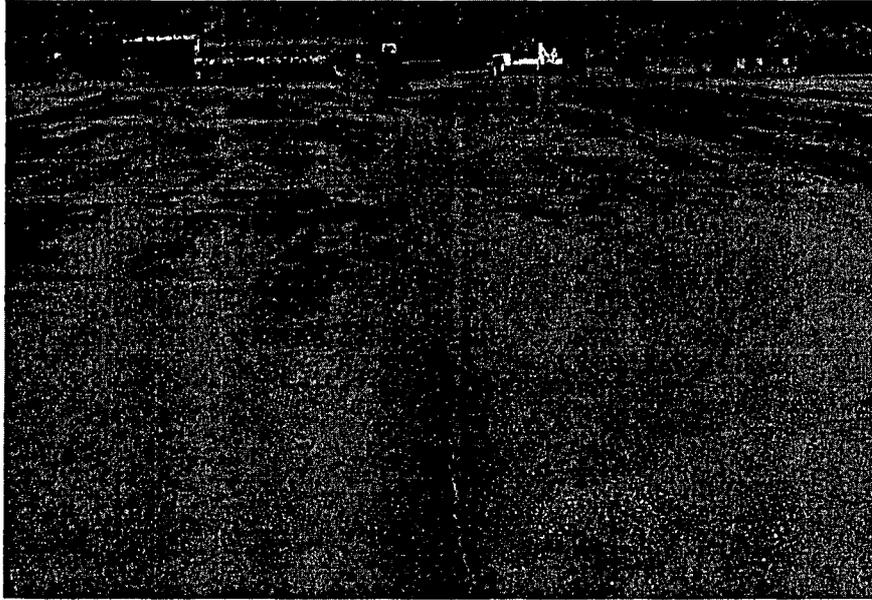
AREA A



ENVIRONMENTAL ORDINANCE O&M



AREA A



ENVIRONMENTAL ORDINANCE O&M



AREA A



ENVIRONMENTAL ORDINANCE O&M



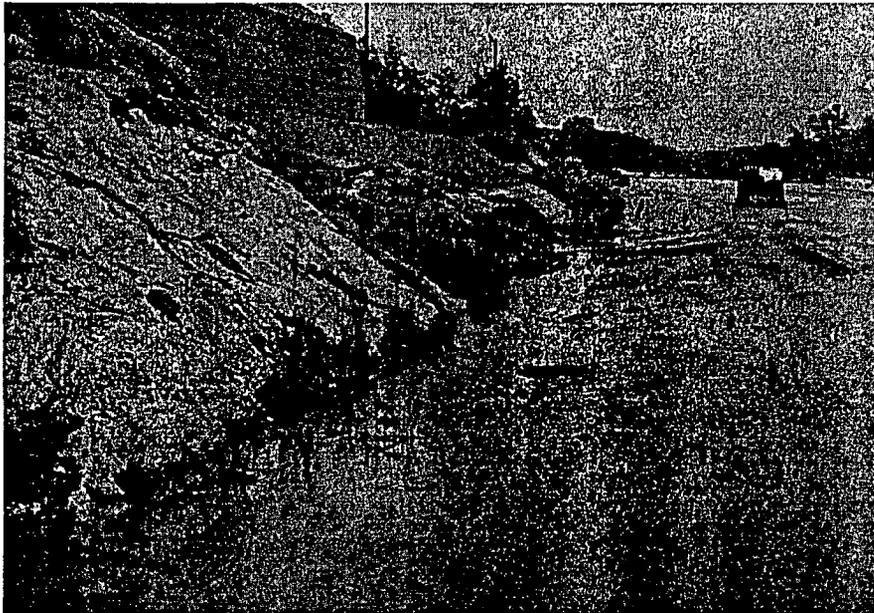
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ENVIRONMENTAL ORDINANCE O&M



AREA A



ENVIRONMENTAL ORDINANCE O&M



AREA A



ENVIRONMENTAL ORDINANCE O&M



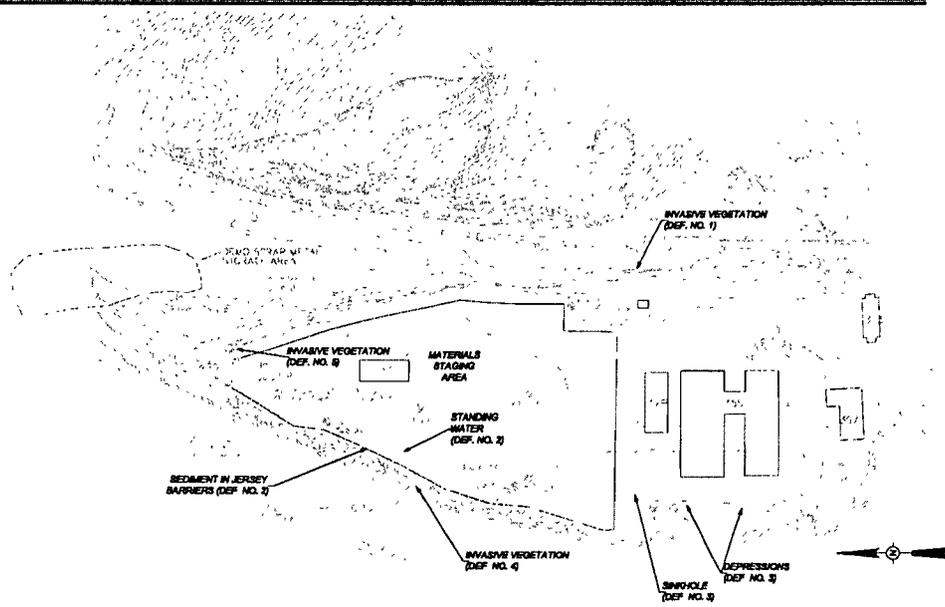
DRMO

No	Item	Deficiency	Recommended Action
1	Security Fencing	Vegetation overgrowing east perimeter fencing.	Control / remove vegetation.
2	Asphalt Cap	Sedimentation around jersey barriers at west perimeter restricting surface drainage.	Remove sediment.
3	Adjacent to Asphalt Cap	Sinkhole and depressions adjacent to southern limit of cap.	Investigate cause of sinkholes and depressions and repair.
4	Shore-Line Protection	Vegetation growing in rip-rap protection.	Control / remove vegetation.
5	Catch-Basin Inlet	Vegetation covering CB inlet.	Control / remove vegetation.

ENVIRONMENTAL ORDINANCE O&M



DRMO

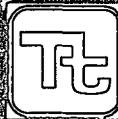


ENVIRONMENTAL ORDINANCE O&M

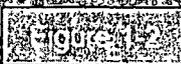


Basewide Groundwater Operable Unit Remedial Investigation Update/Feasibility Study

Restoration Advisory Board Meeting
Naval Submarine Base New London
Groton, Connecticut
September 9, 2003



INTRODUCTION

- Purpose – Use results of Data Gap Investigation (DGI) in conjunction with previous investigation results to finalize Remedial Investigation (RI)/Feasibility Study (FS) work for sites.
- Sites included in RI Update/FS were Site 3 (Area A Downstream), Site 7 (Torpedo Shops), Site 14 (Overbank Disposal Area Northeast (OBDANE)), Site 15 (Spent Acid Storage and Disposal Area), and Site 20 (Area A Weapons Center). 
- Results of the FS will be used to determine appropriate media-specific Remedial Actions (RAs) for sites.



SITE 3 – AREA A DOWNSTREAM (NSA)



SITE 3 – AREA A DOWNSTREAM (NSA)



SITE 3 - AREA A DOWNSTREAM

RI Update

FIGURE 1

FIGURE 2

FIGURE 3

- Nature & Extent (N&E) - Petroleum and PAH contamination in Site 3 - NSA soil. Stained soil evident. Estimate approximately 27 gallons of petroleum product in 550 cubic yards of soil. Low concentration chlorinated VOCs and PAHs in groundwater. Estimate <1 gallon of VOCs in 20,000,000 gallons of groundwater.
- Human Health Risk Assessment (HHRA) - Potential unacceptable risks to future hypothetical child and adult residents. Primarily PAHs in soil pose a potential contaminant migration issue to groundwater.
- Ecological Risk Assessment (ERA) - No significant risks from direct exposure to soil or potential exposure from migration of soil to sediment or groundwater to surface water.



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SITE 14 - OBDANE

RI Update

- N&E - No new data collected during DGI. Typical inorganics detected in groundwater during BGOURI.
- HHRA - Supplemental HHRA of Site 14 data concluded that there are no significant risks from exposure to Site 14 groundwater.



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SITE 3 – AREA A DOWNSTREAM AND SITE 14 – OBDANE

■ RI Update Recommendations:

- Prepare FS to address Site 3 NSA soil Contaminants of Concern (COCs).
- Prepare FS to address groundwater COCs (Collectively evaluate TCE at Site 3 and Site 7).
- No additional ecological investigations required.
- Prepare No Further Action (NFA) decision document for Site 14 groundwater.



SITE 3 – AREA A DOWNSTREAM

■ Feasibility Study – Soil RAOs

- Protect current receptors (construction workers, employees, and trespassers) from incidental exposure to soil contaminated with petroleum constituents > Preliminary Remediation Goals (PRGs).
- Protect existing groundwater quality by preventing the leaching of petroleum constituents from soil at concentrations > PRGs.
- Protect aquatic ecological receptors by preventing the migration of free petroleum oil from the site soil into the surface water.
- Protect potential future residential receptors from incidental exposure to soil contaminated with petroleum constituents > PRGs.



SITE 3 - AREA A DOWNSTREAM

■ Feasibility Study - Soil Alternatives

- Alternative S1 - No Action: Conduct mandatory 5-Year Reviews (\$54,000)
- Alternative S2 - Institutional Controls: Prohibit future development with land use restrictions, natural degradation, conduct 5-Year Reviews, and limited monitoring (\$175,000)
- Alternative S3 - Excavation and Offsite Disposal: Excavate and dispose 550 cubic yards of contaminated soil and site restoration (\$363,000)



SITE 3 - AREA A DOWNSTREAM

■ Feasibility Study - Groundwater RAOs

- Protect current receptors (construction workers) from incidental exposure to groundwater contaminated with petroleum and VOC contamination at concentrations $>$ PRGs.
- Protect potential future residential receptors from regular ingestion of groundwater contaminated with chlorinated VOCs at concentrations $>$ PRGs.
- Protect aquatic ecological receptors by preventing the migration of groundwater contaminated with petroleum hydrocarbons at concentrations $>$ PRGs to surface water.



SITE 3 - AREA A DOWNSTREAM

■ Feasibility Study – Groundwater Alternatives

- Alternative GW1 – No Action: Conduct mandatory 5-Year Reviews (\$54,000):
- Alternative GW2 – Natural Attenuation with Monitoring and Institutional Controls: Prohibit future use of groundwater with land use restrictions until < PRGs, natural degradation, 5-Year Reviews, and regular monitoring (\$248,000).



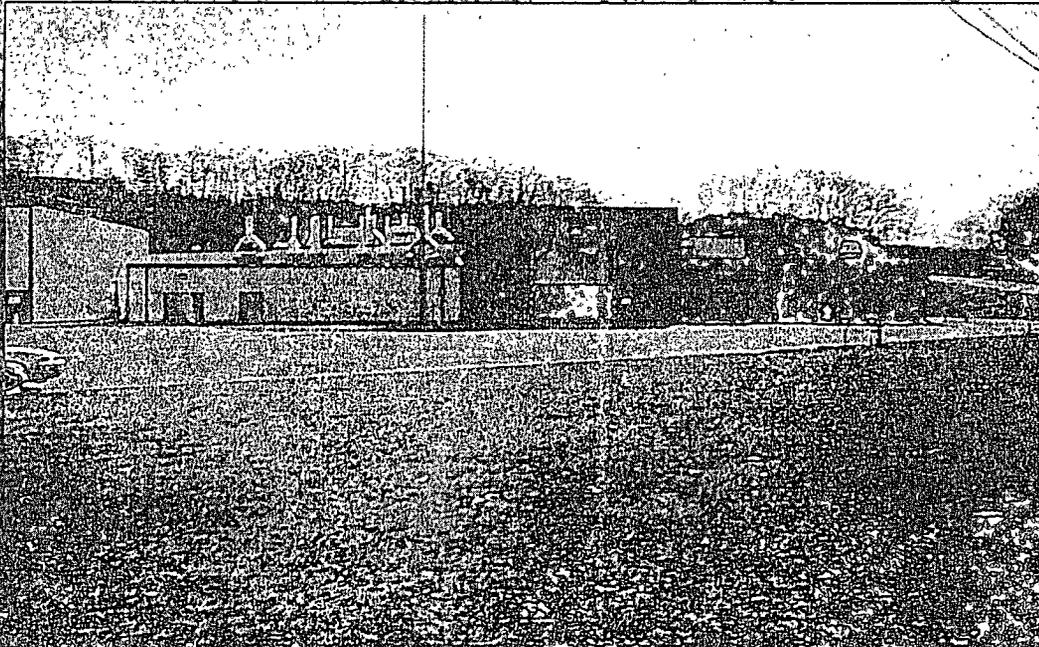
SITE 3 - AREA A DOWNSTREAM

■ FEASIBILITY STUDY – Factors to consider during evaluation of alternatives

- No immediate threat to human health or the environment.
- Site located on secure military facility.
- The facility is active (no foreseeable change).
- Potable water supply available and no current use of groundwater.
- Facility has an existing Site Use Restriction Policy.



SITE 7 – TORPEDO SHOPS



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SITE 7 – TORPEDO SHOPS

■ RI Update

FIGURE 6-1

FIGURE 6-2

- N&E – PAHs and potential VOCs in soil and VOCs in the groundwater. Estimate approximately 6 gallons of PAHs in 1,700 cubic yards of soil, < 1 gallon of VOCs in 90 cubic yards of soil, and < 1 gallon of VOCs in 170,000 gallons of groundwater.
- HHRA – No unacceptable risks from exposure to soil, but potential unacceptable risks to future hypothetical residents from exposure to groundwater. PAHs and inorganics in soil pose potential contaminant migration issues to groundwater. SVOCs and inorganics in groundwater pose potential contaminant migration issue to surface water.



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SITE 7 - TORPEDO SHOPS

■ RI Update Recommendations

- Prepare FS to address Site 7 soil COCs.
- Prepare FS to address Site 7 groundwater COCs (other than TCE).



SITE 7 - TORPEDO SHOPS

■ Feasibility Study - Soil RAOs

- Protect current receptors from incidental exposure to soil contaminated with PAHs at concentrations > PRGs.
- Protect existing groundwater quality by preventing the leaching of PAHs in soil at concentrations > PRGs.
- Protect aquatic ecological receptors by preventing the erosion of soil containing COCs at concentrations > PRGs.
- Protect potential future receptors from incidental exposure to soil contaminated with PAHs at concentrations > PRGs.



SITE 7 – TORPEDO SHOPS

■ Feasibility Study - Soil

- Alternative S1 – No Action: Conduct mandatory 5-Year Reviews (\$54,000).
- Alternative S2 – Institutional Controls with Permeable Cover: Prohibit future development with land use controls, natural degradation, maintain existing soil cover, 5-Year Reviews, and periodic testing (\$62,000).
- Alternative S3 - Excavation and Offsite Disposal: Excavate and dispose 1,700 cubic yards of PAH-contaminated soil and 90 cubic yards of VOC-contaminated soil, and site restoration (\$688,000).



SITE 7 – TORPEDO SHOPS

■ Feasibility Study – Groundwater RAOs

- Protect current receptors from incidental exposure to groundwater contaminated with organics at concentrations greater > PRGs.
- Protect potential future receptors from regular ingestion of groundwater contaminated with benzene and chlorinated hydrocarbons at concentrations > PRGs.
- Protect aquatic ecological receptors by preventing the migration of groundwater contaminated with COCs at concentrations > PRGs to surface water.



SITE 7 – TORPEDO SHOPS

■ Feasibility Study – Groundwater

- Alternative GW1 – No Action: Conduct mandatory 5-Year Reviews (\$54,000).
- Alternative GW2 – Natural Attenuation with Monitoring and Institutional Controls: Prohibit future use of groundwater with land use controls until < PRGs, natural degradation, 5-Year Reviews, and conduct regular monitoring (\$265,000).
- Alternative GW3 – Extraction and Offsite Discharge: Extract approx. 1,250,000 gallons of groundwater from one extraction well, pre-treat groundwater if necessary, and discharge groundwater under permit to Groton POTW (\$1,130,000).



SITE 15 – SASDA



SITE 15 – SASDA

■ RI Update



- N&E – Inorganics in soil and groundwater.
- HHRA – Results indicate that there are no unacceptable risks associated with exposure to or migration of contamination in site soil or groundwater.



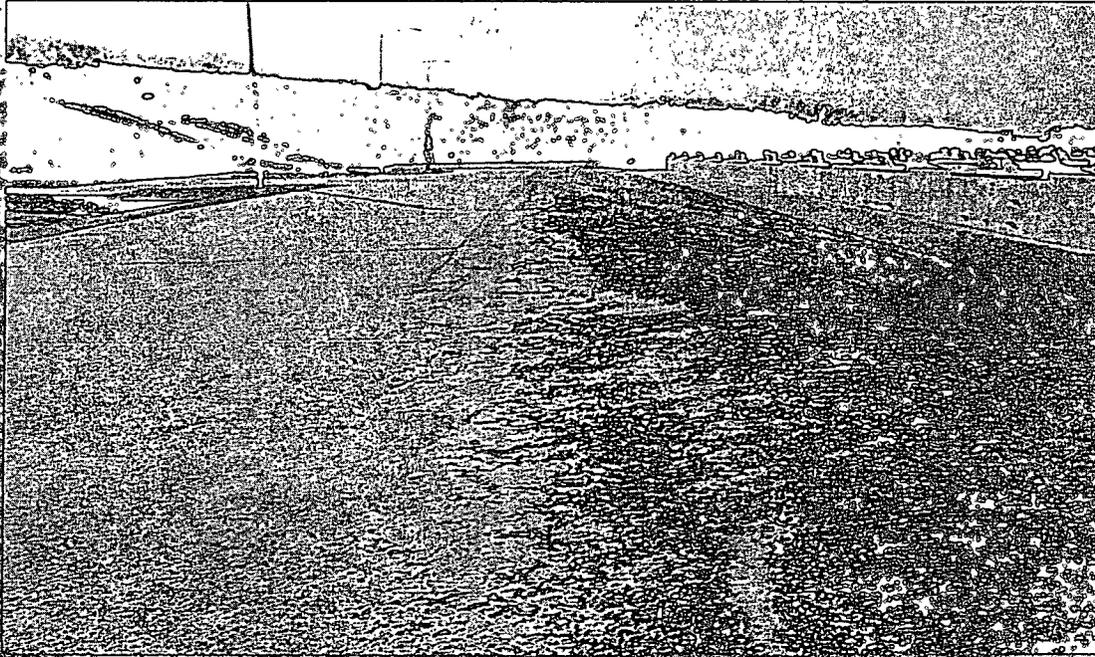
SITE 15 – SASDA

■ RI Update Recommendations

- No need to prepare FS for soil Operable Unit (OU) or amend the current NFA Record of Decision (ROD) for the soil OU.
- No need to prepare FS for groundwater OU and a NFA decision document should be prepared for the groundwater OU.



SITE 20 - AREA A WEAPONS CENTER



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SITE 20 - AREA A WEAPONS CENTER

■ RI Update

FIGURE 3-17

- N&E - VOCs, SVOCs, and inorganics in groundwater.
- HHRA - No unacceptable risks from direct exposure to or migration of contaminants in site soil or groundwater.



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SITE 20 - AREA A WEAPONS CENTER

■ RI Update Recommendations

- No need to prepare FS or amend existing ROD for soil OU.
- No need to prepare FS for groundwater OU and a NFA decision document should be prepared for the groundwater OU.



PROJECT SCHEDULE

- Draft RI Update/FS (April 2003 - Completed)
- Draft Final RI Update/FS (Sept/Oct 2003)
- Final RI Update/FS (Oct/Nov 2003)
- Draft Proposed Plans/Records of Decision (Oct/Nov 2003)

