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

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

Subj: RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES

Encl: (1) Minutes from February 2, 2000 RAB Meeting
(2) Site Management Plan Presentation
(3) Annual Groundwater Monitoring Report Presentation

1. Minutes from the February 2, 2000 RAB Meeting are attached for review.

2. Please contact Ms. Darlene Ward at (860) 694-4256 if you have any comments or questions regarding the meeting minutes.

ANDREW J. STACKPOLE
Environmental Director
By direction of the
Commanding Officer

Enclosures

Subj: RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES

Distribution:
Foster Wheeler (Larry Kahrs)
SUBASENLON (Commanding Officer)
NORTHNAVFACENGCOM (Mark Evans)
CTDEP (Mark Lewis)
CINCLANTFLT (Chuck McGuire)
USEPA (Kymberlee Keckler)
CNRNE (LCDR Ross)
CNRNE (Robert Jones)
New London Health Dept. (Brain Savageau)
Ledgelight Health District (Felix Prokop III)
Uncas Health District (Arthur Cohen)
Town of Waterford (Thomas Wagner)
ATSDR (Carole Hossam)
Town of Groton (Deborah James)
City of New London (Pamela Kilbey-Fox)
CT Dept. of Agriculture (Jim Citak)
SUBASENLON Env. Health Center (Andrea Lunsford)
SUBASENLON PUBLIC AFFAIRS (Chief Polson)
NOAA (Kenneth Finkelstein, Ph.D.)
Groton City Conservation Commission (L.J. Chmura, Chairman)
Groton City Conservation Commission (Dave Paskausky)
Tetra Tech NUS, Inc. (Matthew Bartman)
USEPA (Stacy Greendlinger)
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

MINUTES OF RESTORATION ADVISORY BOARD (RAB) MEETING

To: NSB-NLON RAB Meeting Attendees and RAB Members
(See attached Distribution List)

Subject: RAB Meeting Minutes - 2 February 2000
Installation Restoration Program
Naval Submarine Base - New London (NSB-NLON)
Groton, Connecticut

Attendees of the Meeting

Richard Conant	NSB-NLON
Darlene Ward	NSB-NLON
Andy Stackpole	NSB-NLON
Chris Zendin	PAO NSB-NLON
Mark Evans	Navy
Greta Deirocini	Navy
Kymberlee Keckler	EPA
Stacy Greendlinger	EPA
Mark Lewis	CTDEP
Mark Mengel	Tetra Tech
Kevin White	Foster Wheeler
Tom Fowler	Foster Wheeler
Rick Lord	Foster Wheeler
Felix Prokop	Ledgelight Health District
Noah Levine	RAB Member
Susan Orrill	RAB Co-Chair Member
Deborah Downie	RAB Member
Larry Gibson	RAB Member

The meeting agenda and attendance sheet are included in Attachment 1.

Welcome and Introduction

Darlene Ward opened the meeting at 6:30 p.m. Prior meeting minutes were approved.

enclosure 1

Detailed Minutes:

Mark Evans gave a presentation on the Site Management Plan. He discussed some of the upcoming environmental projects and schedules for Subase. See Attachment 1.

Norman Richards: With so many reports coming out, will these be in the repository so that, for example, between draft and final, there will be opportunity to review and comment?

Mark Evans: Yes. We've been keeping drafts and draft finals in the repositories.

We are scanning every report that we've done and all of our correspondence and everything is being put on CDs. Our first draft version of that is completed. It came out to be ten CDs. Every time we submit a report, we'll put it on a CD. The only software you need is Adobe Acrobat to read it. If anybody wants to be put on the list to get the CDs, let me or Darlene know and we'll get you on the mailing list.

Tom Fowler from Foster Wheeler gave a presentation on Area A Downstream project. He discussed the progress of the remediation of the Area A Downstream. He provided photos and discussed the future schedule of the remediation.

Sue Orrill: So when we were out there, the water was being transferred to that green area? I don't know what the name is.

Tom Fowler: Yes. That's the OBDA pond. We're still doing that because as this series of streams which is stream 4 followed by 3 followed by 5 are all connected. Obviously, we want to minimize the amount of water we have to deal with. That's ongoing.

Sue Orrill: And so all the water courses that are downstream from there, have not begun removal yet or remediation?

Tom Fowler: Correct, downstream of the plastic pipe. We still have yet to do that. What will happen at that point, we'll move that pipe, divert flow down the northeastern side of the site, and then focus on the remainder of the water bodies which is upper pond, the lower pond, stream 2, and the OBDA pond, and stream 1.

Sue Orrill: How dangerous was it moving the excavator in there?

Tom Fowler: As far as danger, it wasn't really a dangerous situation, just difficult. All the operating engineers are

qualified people. They know how to run their own equipment. Basically, if it was a dangerous thing, he wouldn't have brought himself in there, but it did slow things down.

Sue Orrill: Where is the weir structure? Is it an outflow point for the pond?

Tom Fowler: The way the water flows and the way we'll reestablish flow, it exits stream 4, fills up upper pond, and when it reaches a certain elevation, it leaves through stream 3. We're going to do that same thing and make the water level of the upper pond variable. It can be higher. It will be the same as it was as the stream level bottom before we got there, and then we'll raise that up, as necessary, to have more flooding.

Sue Orrill: What is the timetable of when you expect to finish stream 4, 5, and 3 and the upper pond, the removal not necessarily the restoration? Isn't that all in the one water flow?

Tom Fowler: It is. We have three to four hot spots in stream 5 which consist of short lengths of the stream of 30 feet in length that we are moving. And that's out of a total stream length of 600 feet.

At this point we're looking at a total length of 100 to 150 feet. That should be done within this week or next week, and then we're going to start excavating upper pond at that time. We're going to do that in two layers because upper pond has distinct geological layers. There's a layer on top and below that's sandy. We want to remove that separately to make it easier. The sandy layer requires less work. The organic is more difficult. We're planning to take three or four weeks to remove what's in the upper pond. That will bring us to late February.

Sue Orrill: So that would be just the removal and obviously, once you're sure all is gone, and then I assume you have to do the diversion the other way and then begin the other side. And what's the expected time frame for the area that's in green, the other side?

Kevin White: We hope to have all the excavation, weather permitting, all the excavation complete by June of this year. Obviously, weather permitting and based upon the sampling. We hoped to be out of there by now, but the sampling keeps coming back. The excavation and the subgrade restoration should be finished by June.

Felix Prokop: Are you doing any blasting in the ledge?

Tom Fowler: No blasting. As I showed in the picture before, we did do some hydraulic hammering, which is banging at it until it breaks.

Felix Prokop: You're not planning to do any blasting?

Tom Fowler: No. We're close to the weapon storage handling ground. Our office trailer is over a mile away from the site. That makes our job difficult because we have to leave to make phone calls and return to see anything out there in the field, where normally you have a trailer at the site where you can see everything. Since we couldn't even store a trailer with people in it within a mile of the compound, we will not be doing any blasting of any sort.

Felix Prokop: So you're hauling in all riprap?

Tom Fowler: Yes. We're importing that. We're using any large rocks, anything bigger than one to two feet in diameter. It's something that's easily sorted from the excavation. Anything we remove we power wash, which is high pressure washing on the material handling pads and use that in the restoration. We've already done that, removing any sediment that's sitting on the rocks that we're putting back.

Deborah Downie: Do you have a mobile lab out there or are you using kits?

Tom Fowler: We're using kits. I would say we have something in between. We have certain small facilities that chemists use and they have a table set up. It's not an official laboratory. We have STI kits that are made by them. They are used for testing of DDT and DDE.

Deborah Downie: Then you send a certain amount off to the lab?

Tom Fowler: We excavate and sample the limits of all the excavation, which is the floor and the walls, which is every 30 linear feet, and then the field chemist will screen those for DDTR. If they fail that field cleaning, we have certain goals for the site.

For soil sediment the remedial goal is two parts per million and soil is five parts per million. If it fails either of those, we will go back and excavate. If it passes that, we will send that sample to a lab for confirmation that it indeed passed and its laboratory results that give us the hard data that we use to say we completed remedial activities. Having the field kits out there enables us to make decisions quicker. And so far they

have been useful. If they give us data that day or the next day, we can go back and target certain areas.

Norman Richards: I realize an activity of this magnitude had to have a lot of temporary impacts that you have restoration planned for. I was wondering how did you strategically anticipate what you would need for restoration? How did you anticipate potential effects as far as fragmentation and those types of things?

Tom Fowler: As far as impacts to the site, our goal was to return it as close as possible to existing conditions, minus pesticides. So, we did an initial survey and took a graphic survey, and wetland delineation had already been done for each of the water bodies except one. And we also identified some species on our own.

Before we started removing the trees, we identified what was in the wetlands, what species, and how many to establish our frequency for replanting the trees. Also, evaluating existing soils within the water bodies several different characteristics, organic carbon and PH. We've done all those things. And what we've done is to integrate the planning work of civil engineers who are the people who help us plan where water is going to go, what we're going to do with the water, how we're going to excavate and what order. And also wetland scientists will then help us do the restoration, like what materials we're going to need, what planning we're going to need, things like that.

Norman Richards: So, essentially focusing on habitat restoration in the interim for things like, for example, you can anticipate that the first warm night in April when there's a rain, there will be a massive salamander migration. I'm just wondering, for example, the silt fences that you have up, will the obstruction be a problem? Have you thought those kinds of things through?

Tom Fowler: The interim things have been less of a focus because we're going to be moving construction equipment in and out until we've seeded everything. The nature of construction equipment is kind of a destructive thing. And so what I'm saying is, until we've completed all the restoration as far as topsoil and seeding, it's been mainly the consideration that the site is going to be damaged until then. Then it's our job to fix all of that.

Mark Mengal from Tetra Tech gave a presentation on the Annual Groundwater Monitoring report. He discussed the results of the first year of sampling at Site 6 DRMO. See Attachment 2.

Deborah Downie: Are you primarily trying to comply with the RSR?

Mark Mengal: We hope to.

Sue Orrill: And this is a similar question about the endpoint. It says if the current trends continue, which means a constant level, then is that what the current trend is?

Mark Mengal: Right now, there's very little detections that are exceeding the primary criteria and discussions will have to be had with the State and EPA and the Navy to decide when there will be an endpoint. I know the State of Connecticut has an initial five-year plan. Is that what it is, Mark?

Mark Evans: In the groundwater monitoring plan we set up a flowchart. Does it say five years or a three we could start to consider revisions?

Kymberlee Keckler: It's at year three we evaluate trends.

Mark Evans: We evaluate the sampling at three years, and then make decisions. Either reduce sampling parameters or frequencies or other changes.

Sue Orrill: You're actually analyzing for how many other things besides these?

Mark Mengal: The numbers, I don't know, but the full TCL list.

Sue Orill: What you're saying is, you may recommend monitoring for these things that are above the secondary criteria?

Mark Mengal: That could be a recommendation.

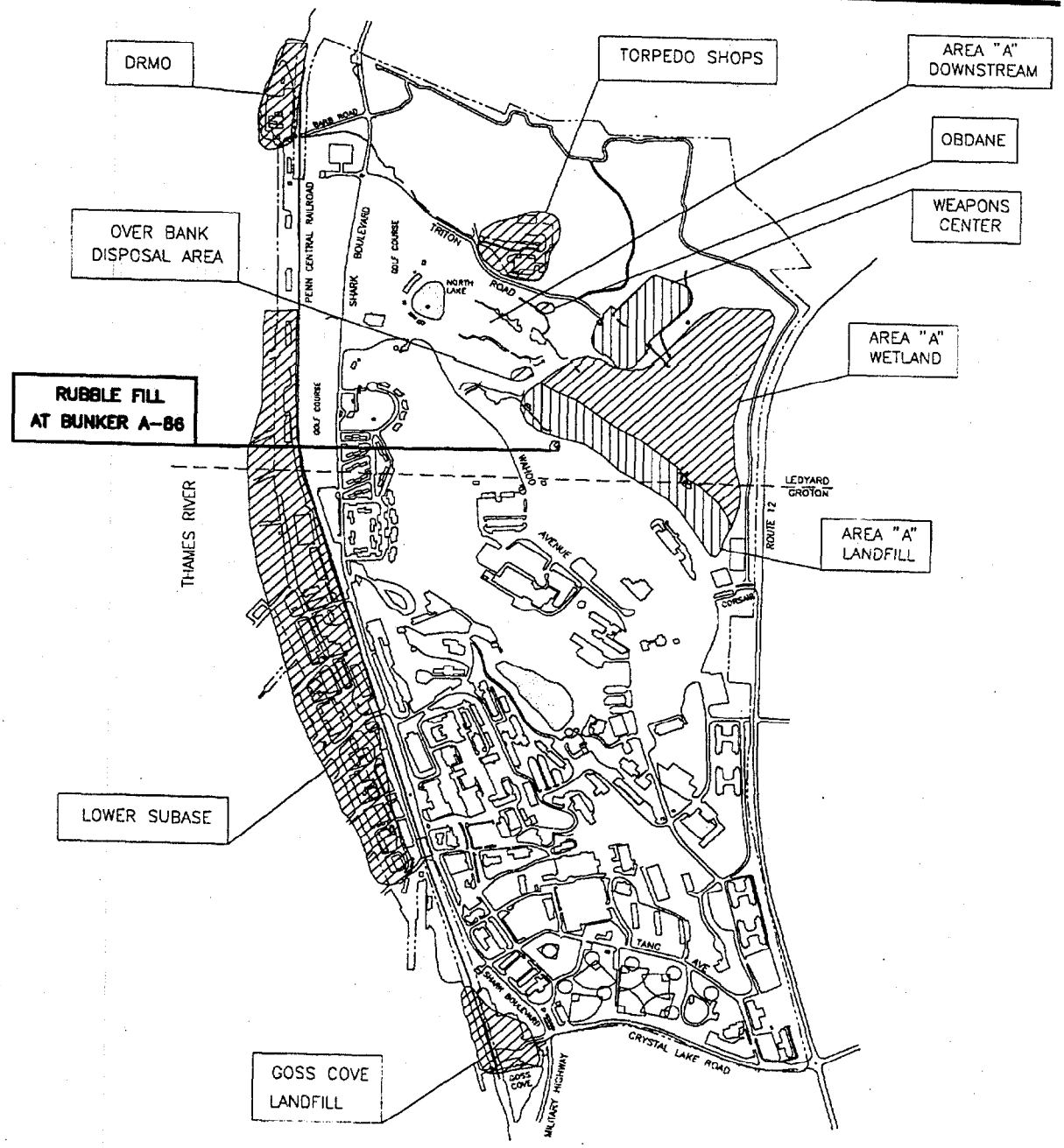
Norman Richards: In the aroclor 1260, did you look for any of the other aroclors?

Mark Mengal: I believe all the aroclors were looked at. I believe that's the only one that was detected.

Meeting concluded at 8:30 p.m.

The next meeting will be held on 3 May 2000, 12:00 p.m.

NAVAL SUBMARINE BASE - NEW LONDON



enclosure 2

GOSS COVE LANDFILL
SITE 8

- REMEDIAL DESIGN
  - 35% SUBMISSION *FEBRUARY 2000*
  - 100% SUBMISSION *MAY 2000*
  - FINAL DESIGN *JUNE 2000*

- REMEDIAL ACTION
  - START OF CONSTRUCTION *OCTOBER 2000*
  - END OF CONSTRUCTION *JUNE 2001*

AREA A WEAPONS SITE 20

- FEASIBILITY STUDY
  - DRAFT FINAL — *FEBRUARY 2000*
  - FINAL — *APRIL 2000*
- PROPOSED PLAN
  - DRAFT — *APRIL 2000*
  - FINAL — *MAY 2000*

AREA A WEAPONS SITE 20 (CONT'D)

- RECORD OF DECISION
  - DRAFT — *MAY 2000*
  - FINAL — *JUNE 2000*
- REMEDIAL DESIGN — *SEPT 2000*
- REMEDIAL ACTION — *MAY 2001*

LOWER SUBASE SITES

- FEASIBILITY STUDY
  - DRAFT FINAL — *MARCH 2000*
  - FINAL — *MAY 2000*
- PROPOSED PLAN
  - DRAFT — *JULY 2000*
  - FINAL — *DEC 2000*

LOWER SUBASE SITES

- RECORD OF DECISION
  - DRAFT *JAN 2001*
  - FINAL *JUNE 2001*
- REMEDIAL DESIGN *FY 2002*
- REMEDIAL ACTION *FY 2003/2004*

BASEWIDE GROUNDWATER OPERABLE UNIT

- REMEDIAL INVESTIGATION WORK PLAN
  - DRAFT FINAL *MARCH 2000*
  - FINAL *MAY 2000*

- FIELDWORK
  - START OF FIELDWORK *MAY 2000*
  - COMPLETE FIELDWORK *AUG 2000*

BASEWIDE GROUNDWATER OPERABLE UNIT

- REMEDIAL INVESTIGATION REPORT
  - DRAFT *FEB 2001*
  - FINAL *OCT 2001*

- FEASIBILITY STUDY *FY2002*
- REMEDIAL DESIGN *FY 2003*
- REMEDIAL ACTION *FY 2004/2005*

RESTORATION ADVISORY BOARD MEETING

ANNUAL GROUNDWATER MONITORING REPORT

for the

DEFENSE REUTILIZATION AND MARKETING OFFICE (DRMO)

Naval Submarine Base-New London
Groton, CT

February 2, 2000

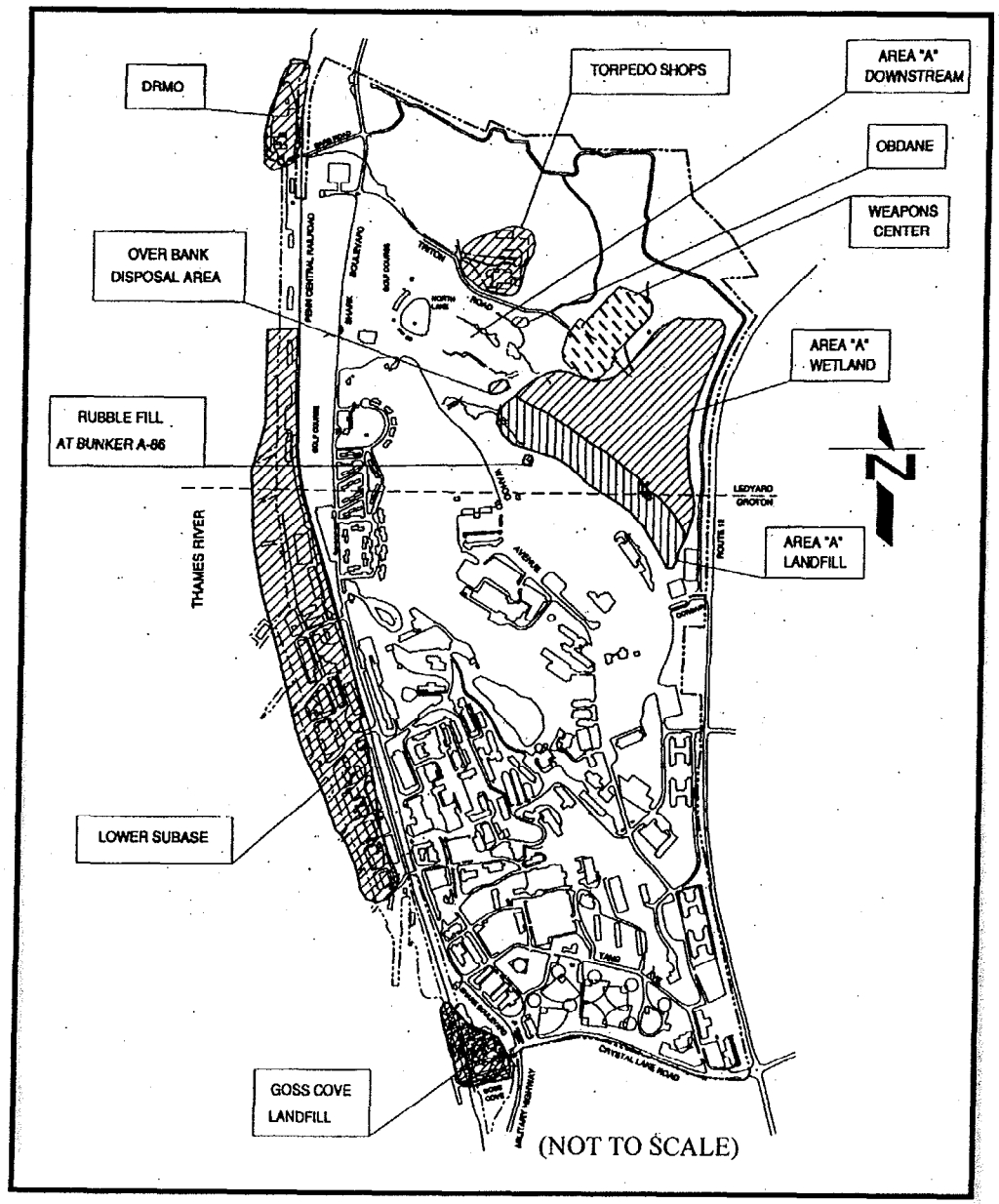
Tetra Tech NUS, Inc. (TtNUS)
Mark Mengel

SITE LOCATION

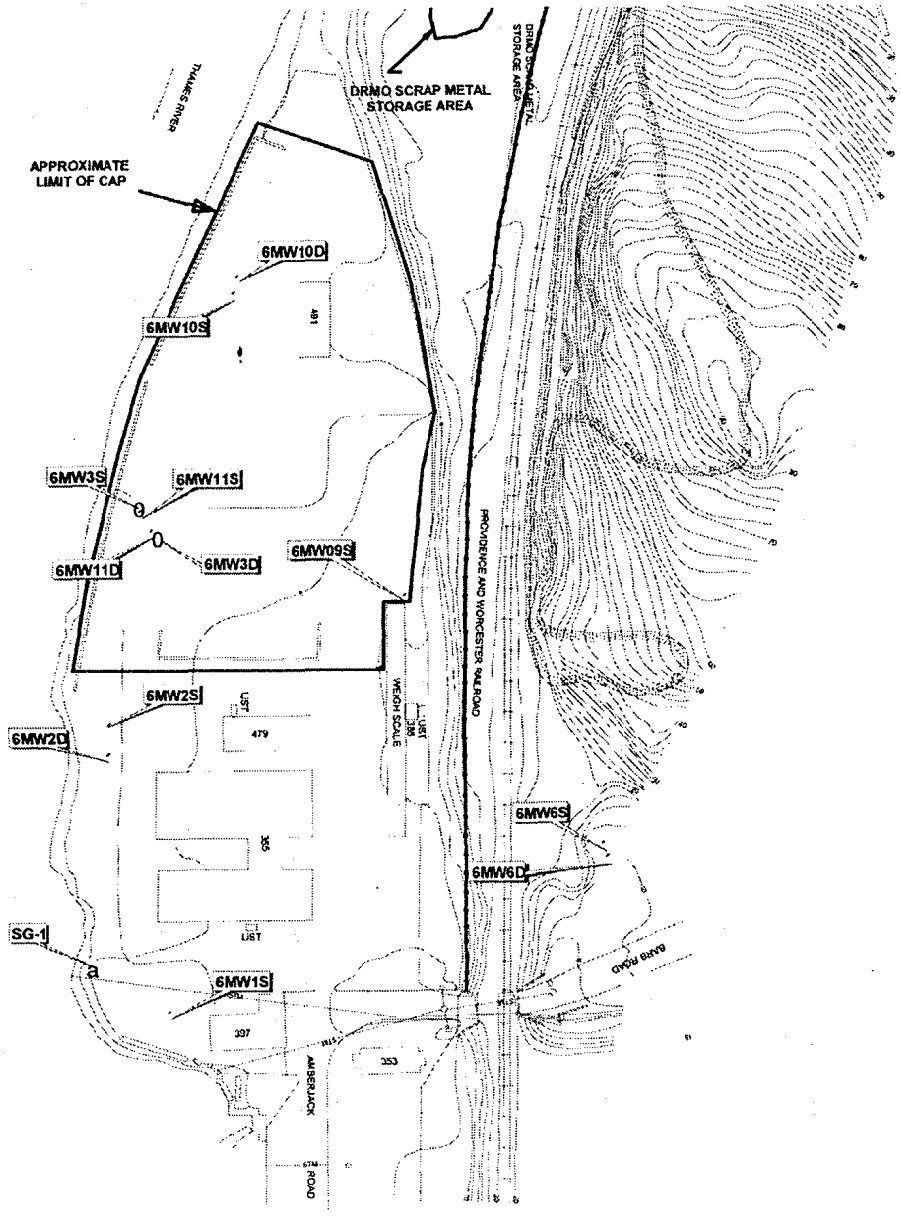
- Extreme northwestern portion of NSB-NLON adjacent to the Thames River.

- West of Shark Boulevard at the end of Barb Road.

Site Location



Site Location



SITE HISTORY

- DRMO used as landfill and non-salvageable waste burning area from 1950 to 1969.
- Metal and wood products historically stored over most of the site.
- Building 491 (unpaved northern part of site) used for battery storage and acid handling.
- Buildings 355 and 479 (paved southern part of site) used for general storage.

INVESTIGATION HISTORY

- Initial Site Assessment (IAS) (Envirodyne, 1992)
  - Additional investigations recommended
- Phase I Remedial Investigation (Brown & Root, 1992)
- Phase II Remedial Investigation (Brown & Root, 1995)

INVESTIGATION HISTORY (CONT.)

- Time Critical Removal Action (OHM, 1995)
  - 4700 tons of contaminated soil excavated (lead, PAHs and PCBs).
  - Excavated area backfilled and GCL/geotextile and asphalt cap installed.
  - Remainder of DRMO paved with asphalt.

- Feasibility Study (FS) (Brown & Root, 1997)
- Proposed Remedial Action Plan (PRAP) (Brown and Root, 1997)

INVESTIGATION HISTORY (CONT.)

- Record of Decision (ROD) (Brown & Root, 1998)
- Four Alternatives
  - (1) No Action
  - (2) Institutional Controls and Groundwater Monitoring
  - (3) "Hot Spots" Excavation, Offsite Disposal, Institutional Controls, and Groundwater Monitoring
  - (4) Excavation, Onsite Treatment, and Offsite Disposal
- Selected Remedy
  - (2) Institutional Controls and Groundwater Monitoring

GROUNDWATER MONITORING PLAN

- GMP issued February 1998
- Quarterly sampling of ten monitoring wells
- Low flow sampling methodology
- Samples analyzed for TCL organics and TAL inorganics
- Focus on 28 COPCs identified in GMP
- Low/high tide static water levels

DATA EVALUATION

- Consisted of four rounds of groundwater sampling
- 6MW9S, 6MW11S, and 6MW11D only sampled three times due to well damage
- 41 samples (37 including 4 duplicates)

- Monitoring Criteria (CT Remediation Standards)
  - Primary Monitoring Criteria (Site-Specific SWPCs using dilution factor of 100)
  - Secondary Monitoring Criteria (Federal AWQCs and CT WQCs)

DATA EVALUATION (CONT.)

- No COPCs (VOCs, SVOCs, PEST/PCBs, Metals) detected at concentrations exceeding primary monitoring criteria.

- No VOC concentrations exceeding secondary monitoring criteria.

DATA EVALUATION (CONT.)

- SVOCs exceeding secondary monitoring criteria
  - bis(2-ethylhexyl)phthalate (BEHP) (6 of 41) (7 - 130 ug/L)
  - benzo(a)anthracene (1 of 41) (0.11 ug/L)
  - benzo(a)pyrene (2 of 41) (0.082 ug/L - 0.13 ug/L)
  - benzo(b)fluoranthene (2 of 41) (0.089 ug/L - 0.13 ug/L)
  - benzo(k)fluoranthene (1 of 41) (0.13 ug/L)

- PEST/PCBs exceeding secondary monitoring criteria
  - Arochlor 1260 (1 of 41) (0.23 ug/L)

DATA EVALUATION (CONT.)

- Metals exceeding secondary screening criteria

Metal Total/ Dissolved	Frequency of Exceedance	Concentration Range (ug/L)	Criteria (ug/L)
Arsenic	5 of 41	2.4 to 15.9	0.14
	4 of 41	2.5 to 12.7	
Copper	9 of 41	3.0 to 7.7	2.4
	5 of 41	2.4 to 3.9	
Silver	1 of 41	4.3	1.9
	3 of 41	2.0 to 5.5	
zinc	5 of 41	111 to 513	81
	7 of 41	91.3 to 451	

CONCLUSIONS

- Through one year of groundwater monitoring (four sampling rounds), no exceedances of primary monitoring criteria..

- Minor exceedances of secondary monitoring criteria for BEHP, PAHs, Arochlor 1260, arsenic, copper, silver, and zinc.

- Exceedances do not exhibit any notable increasing or decreasing trends.

RECOMMENDATIONS

- To date seven rounds of groundwater sampling have been completed.
- Considerations for annual monitoring
  - Reducing the number of parameters to be analyzed.
  - Reducing the sampling frequency.
  - Monitoring well integrity in the event of extended monitoring.
  - Discuss endpoint for monitoring if current trends continue.