



DEPARTMENT OF THE NAVY
NAVAL DISTRICT WASHINGTON
WEST AREA
101 STRAUSS AVENUE
INDIAN HEAD, MARYLAND 20640-5035

N00174.AR.000431
NSWC INDIAN HEAD
5090.3a

IN REPLY REFER TO
5090
Ser 044SJ/16
FEB 23 2004

Mr. Elmer Biles
6315 Indian Head Highway
Indian Head, MD 20640

Dear Mr. Biles:

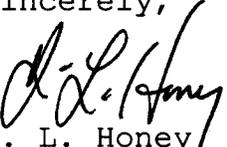
We are forwarding the minutes from the Installation Restoration (IR) Program Restoration Advisory Board (RAB) meeting that was held on Thursday, February 19, 2004 at the Indian Head Senior Center, which is located at 100 Cornwallis Square, Indian Head, Maryland.

We would like to thank everyone that attended the RAB meeting. We hope to see all of you at the next meeting, which is scheduled for Thursday, June 17, 2004, at the Indian Head Senior Center.

As discussed in the meeting, we would like to conduct a visit of Stump Neck prior to our next meeting so we can show you the sites that we will be sampling in the near future. We will provide you the details of this site visit once it has been scheduled.

If you have any comments or questions concerning this matter, please contact Mr. Shawn Jorgensen on (301) 744-2263 or Ms. Heidi Morgan on (301) 744-2265.

Sincerely,


T. L. Honey
Captain, U.S. Navy
Area Operations Officer

Encl: 1. Minutes from RAB Meeting of 19 Feb 04

Copy to:
RAB Members
Meeting Attendees
ATSDR (D. Jackson)
CH2M Hill (A. Estabrook)
NDW (J. Kidwell)
TetraTech (G. Latulippe)

INSTALLATION RESTORATION PROGRAM



NAVAL DISTRICT WASHINGTON,
INDIAN HEAD

101 STRAUSS AVENUE
INDIAN HEAD, MARYLAND
20640-5035



RESTORATION ADVISORY BOARD (RAB) MEETING

Date of Meeting: February 19, 2004

Restoration Advisory Board (RAB) Member Participants:

Mr. Elmer Biles (C)	Mr. Vincent Hungerford (C) *
Mr. Gary Davis (L)	Mr. Shawn Jorgensen (N) **
Mr. Curtis DeTore (S)	Mr. Wayne McBain (C)

RAB Members Not in Attendance:

Mr. Stephen Elder (L)	Mr. Fred Pinkney (F)
Mr. Jeff Morris (N)	Ms. Karen Wigger (L)
Mr. Dennis Orenshaw (F)	

Additional Attendees:

Mr. Scott Bohnhoff (N)	Mr. Joseph Rail (N)
Mr. Butch Dye (S)	Mr. Alex Schuman (N)
Ms. Tara Landis (N)	Mr. George Wilmot (C)
Ms. Heidi Morgan (N)	

* Co-Chair

** Acting Co-Chair

C = Community

F = Federal Official

K = Contractor

L = Local Official

N = Navy Official

R = Newspaper Reporter

S = State Official

Major Issues Discussed/Accomplished:

1. Arrival/Welcome

Mr. Shawn Jorgensen of the Naval District Washington, Indian Head (NDW, IH) began the meeting by introducing himself and welcoming everyone to the Indian Head Senior Center. In addition, Mr. Jorgensen introduced a guest at the meeting, Mr. Butch Dye, who is the Program Administrator for Hazardous Waste from the Maryland Department of the Environment (MDE). The Federal Facility Section of the Environmental Restoration and Redevelopment group, where Mr. Curtis DeTore works, was recently moved under the Hazardous Waste Program. The move was made because a lot of the Comprehensive Environmental Restoration, Compensation, and Liability Act (CERCLA) cleanups involve hazardous waste from past disposal practices. This move will help to facilitate cleanups at federal facilities.

Mr. Jorgensen then presented the meeting agenda, which is included in Attachment A.

In addition, Mr. Jorgensen provided the attendees with an updated Installation Restoration (IR) Site Status list, which is included in Attachment B. The list, which was last updated on October 17, 2002, highlights the projects that have been completed and the projects that have begun since the last update. Most noteworthy are the completion of the removal action at Site 12 - the Town Gut Landfill, and the completion of various site screening assessments, which identified no further action for five sites.

2. Site 57 Pilot Scale Studies

Mr. Shawn Jorgensen discussed the injection of Hydrogen Release Compound (HRC) at Site 57 (Trichloroethylene (TCE) Building 292) to remediate the shallow groundwater of TCE. A small area adjacent to Building 292 was selected as the test area. This area has the highest concentration of TCE in the groundwater. The HRC degradation process supplies food and an environment to stimulate the microbes that break down TCE. Mr. Jorgensen provided preliminary data showing that the TCE is decreasing in the test area. The findings report for this project should be available in the summer of 2004. He also discussed the new proposed technology to remediate various breakdown products of TCE, including dichloroethylene (DCE) and vinyl chloride (VC). The technology is called In-Situ Submerged Oxygen Curtain (ISOC). Mr. Jorgensen explained that an oxygenated environment, which the ISOC technology provides, stimulates the microbes that break down the DCE and VC. The pilot study will be performed for six months, beginning in early 2004. The submittal of the findings report is expected to be submitted in late 2004.

A copy of Mr. Jorgensen's presentation is provided in Attachment C.

3. Site Screening Report and Concurrence for No Further Action for Site 5

Mr. Shawn Jorgensen discussed the results of the Site Screening Assessment (SSA) that was performed on IR Site 5, Building 731 X-ray Facility. The final report recommends no further action at the site and the Navy and EPA signed a Concurrence for No Further Action, which is included in the SSA Report.

A copy of Mr. Jorgensen's presentation is included in Attachment D.

4. Site 28 Remedial Investigation Preliminary Results

Ms. Heidi Morgan of NDW, IH provided preliminary results of the remedial investigation (RI) activities that took place in May 2003 at Site 28 (Original Burning Ground/Zinc Reclamation Furnace). The fieldwork consisted of taking surface and subsurface soil, sediment, surface water, and groundwater samples. Installation of shallow groundwater monitoring wells was performed in August 2003 and sampling of the wells occurred in September 2003. Heavy metals, especially zinc, were found in soil, subsurface soil, sediment, and shallow groundwater. As a result, the RI report will recommend a feasibility study be conducted to evaluate remedial alternatives. In addition, a Baseline Ecological Risk Assessment (BERA) will be conducted to further evaluate risk to ecological receptors.

A copy of Ms. Morgan's presentation is included in Attachment E.

5. Lab Area Baseline Ecological Risk Assessment (BERA)

Ms. Heidi Morgan discussed the current status of the Lab Area. The Remedial Investigation Report, which was completed in January 2004, identified mercury, arsenic, and lead as contaminants of potential concern in various media, including surface soil, subsurface soil, and wetland sediment. The report recommends that a BERA be performed to further evaluate potential risks to ecological receptors. In addition, the report recommends that an Engineering Evaluation and Cost Analysis (EECA) be conducted to determine the best method to remove contaminated soil and sediment and restore the affected wetlands. The report also recommended that a feasibility study be conducted to address remaining potential human health risks.

A copy of Ms. Morgan's presentation is provided in Attachment F.

6. Site 47 Baseline Ecological Risk Assessment (BERA)

Mr. Joseph Rail of the Engineering Field Activity Chesapeake (EFACHES) discussed the status of Site 47, Mercuric Nitrate Disposal Area. The Remedial Investigation Report for the site states that volatile organic compounds (VOCs) detected in the groundwater pose a potential risk to human health and further evaluation of ecological risk is necessary due to metals in surface soil and sediment. Therefore, a BERA will be conducted at the site to further evaluate ecological risk from surface soil and sediment. The BERA work plan is currently under review by the EPA. In addition, a feasibility study (FS) will be conducted to address potential risks to human health from the shallow groundwater at the site.

A copy of Mr. Rail's presentation is provided in Attachment G.

7. Mattawoman Creek Study Update

Mr. Joseph Rail provided an update on the Mattawoman Creek Study. The study was conducted to assess the potential ecological and human health risks associated with facility-related contaminants in the Creek. The final report was completed in January 2004. The report states that limited potential risks exist to human health and the environment from the Creek and there are uncertainties concerning the Creek that will need to be addressed in the future to more fully characterize those potential risks. Planned studies that will be conducted in the future will help to address these uncertainties.

A summary of the uncertainties, recommendations, and planned actions is included in Attachment H.

8. Comments, Questions, and Answers

Numerous comments were made and questions asked during the meeting. These comments, questions, and answers are provided in Attachment I.

9. Conclusion

Mr. Shawn Jorgensen presented the tentative agenda for the June 17, 2004 RAB meeting, which is included in Attachment J. Mr. Jorgensen then concluded the meeting by thanking all in attendance.

**NAVAL DISTRICT WASHINGTON, INDIAN HEAD
INSTALLATION RESTORATION (IR) PROGRAM
RESTORATION ADVISORY BOARD (RAB) MEETING
AGENDA**

February 19, 2004

- 5:00 - 5:05** **ARRIVAL/WELCOME**
Mr. Shawn Jorgensen
Naval District Washington, Indian Head (NDW, IH)
IR Project Manager
- 5:05 – 5:20** **UPDATE ON SITE 57 PILOT STUDIES**
Mr. Shawn Jorgensen
- 5:20 – 5:30** **SITE 5 SITE SCREENING ASSESSMENT REPORT AND
CONCURRENCE FOR NO FURTHER ACTION**
Mr. Shawn Jorgensen
- 5:30 – 5:45** **SITE 28 REMEDIAL INVESTIGATION PRELIMINARY RESULTS**
Ms. Heidi Morgan
NDW, IH
IR Project Manager
- 5:45 - 6:00** **LAB AREA BASELINE ECOLOGICAL RISK ASSESSMENT (BERA)**
Ms. Heidi Morgan
- 6:00 – 6:20** **SITE 47 BERA**
Mr. Joseph Rail
Engineering Field Activity, Chesapeake (EFACHES)
IR Program Manager
- 6:20 – 6:30** **MATTAWOMAN CREEK STUDY UPDATE**
Mr. Joseph Rail
- 6:30 - 7:00** **COMMENTS, QUESTIONS, AND ANSWERS**
- 7:00** **ADJOURN**

INSTALLATION RESTORATION (IR) SITE STATUS

2/19/04

SITE NAME - SITE NUMBER(S)	PHASE IN IR PROGRAM							ADDITIONAL ACTIONS*	
	SITE SCREENING	REMEDIAL INVESTIGATION	FEASIBILITY STUDY	PROPOSED PLAN	RECORD OF DECISION	REMEDIAL DESIGN	REMEDIAL ACTION	ENG. EVAL./ COST ANAL.	REMOVAL ACTION
Soak Out Area - 44	X	O	X	O	O	X	X		
Town Gut Landfill - 12	X	O	O	O	O	O	X	O	O
Scrap Yard - 41	X	O	O	O				O	
Olsen Road Landfill - 42	X	O	O	O		O			
Trichloroethylene (Bldg. 292) - 57	X	O	O						
Mercuric Nitrate Disposal Area - 47	X	O	O						
Caffee Road Landfill - 11	X	O	O						
Paint Disposal Area - 13	X	O		O					
Disposed Metal Parts - 17	X	O	O						
Bronson Road Landfill - 21	X	O							
X-Ray Bldg. #2 (Bldg. 588) - 25	X	O		O					
Lab Area - 15, 16, 49, 50, 53, 54, 55	X	O	O						
Building 1349, Hypo Spill - 6	X	O							
Organics Plant - 39	X	O							
Abandoned Drums - 45	X	O		O					
Original Burning Ground - 28	X	O							
X-Ray Building 731 - 5	O	X	X	X	X	X	X		
SN: Tool Burial - 32	O	X	X	X	X	X	X		
SN: Scrap Metal Pit - 33	O								
SN: Tool Burial - 34	O	X	X	X	X	X	X		
SN: Closed Landfill - 36	O								
SN: Causeway - 37	O								
Building 101 Dry Well - 51	O	X	X	X	X	X	X		
Building 102 Dry Well - 52	O	X	X	X	X	X	X		

LEGEND

 - Not Required	 - Completed since last update (10/17/02)
 - In Progress	 - Started since last update (10/17/02)
 - Completed	

* NOTE: Additional Actions can be performed, if warranted.



NAVAL DISTRICT WASHINGTON,
INDIAN HEAD
RESTORATION ADVISORY BOARD



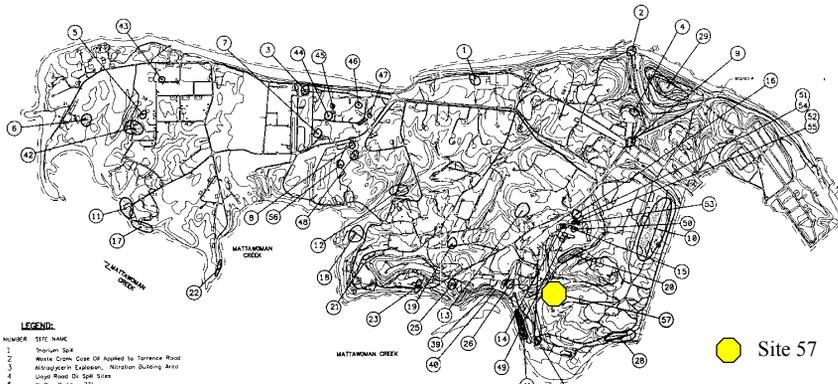
Site 57 – Trichloroethylene
Pilot Study Update
HRC® and ISOCT™

Shawn Jorgensen
IR Project Manager

February 19, 2004



NDW, Indian Head
IR Site Map



LEGEND:

SITE NUMBER SITE NAME

- 1 Thorium Spill
- 2 Waste Drum Cover Off Highway to Terrace Road
- 3 Anthracene Exposure - Recreation Building Area
- 4 Long Road Dr Spill Sites
- 5 K-Hey Building TSI
- 6 Building 1342, Pogo Saw
- 7 Building 682, Inkjet Spill
- 8 Building 180, Mercury Deposits
- 9 Petroleum Residue On Soil
- 10 Single-base Phosphate Oxide Spill
- 11 Corrosive Liquids
- 12 Lead Oil Leachate
- 13 Fuel Oil Leachate
- 14 Fuel Oil Leachate Ground
- 15 Waste Acid Disposal Pit
- 16 Mercury Deposits in Washbasin, Plumber Lab
- 17 Laboratory Chemical Spill
- 18 Disposal Metal Parts Along Shoreline
- 19 Fuel Tank
- 19 Corch Beams at Oil Collection Hooves
- 20 Single-base Phosphate Facilities
- 21 Benzene Residue Locations
- 22 HD Waste Burning Site
- 23 Impoundment of Salt Discharges from Extraction Plant
- 24 Abandoned Open Lines
- 25 Waste Discharge At River Building No 2
- 26 Thermal Destructor 2
- 27 Thermal Destructor 1
- 28 Original Burning Ground
- 29
- 30
- 30-38 Sludge Neck Areas (SEE FIGURE 3-2)
- 39 Original Plant Outfall
- 40 Polysulfone Catalyst in Sediments
- 41 Sludge Vial
- 42 Ocean Pile Locations
- 43 Yellow Chloride Site
- 44 Spill Cont. Area
- 45 Abandoned Drums
- 46 Calcium Sulfide Spill
- 47 Mercury Inshore Disposal Area
- 48
- 48 Chemical Disposal Area
- 49 Building 180: Copper Scales
- 51 Building 180: Dry Wall
- 52 Building 180: Dry Wall
- 53 Mercury Contamination of the Heating System
- 54 Building 180
- 55 Building 180
- 56 IMBT - Lead Contamination
- 57 TCE Building 292 Area

APPROXIMATE SITE LOCATION

INVERTED STREAM

NAVAL RESERVE BOUNDARY

CONTOUR INTERVAL OF FEET

FLOW DIRECTION

0 1000 2000

SCALE IN FEET



Site 57 HRC[®] Pilot Study



- *Purpose of Pilot Study*
 - *To determine if Hydrogen Release Compound[®] (HRC[®]) could be used to accelerate bioremediation of trichloroethylene in the shallow groundwater at IR Site 57.*
- *HRC[®]*
 - *Degrades in the environment by hydrolysis to lactic acid and glycerol*
 - *Provides food for microbes*
 - *Fosters anaerobic conditions*
 - *Facilitates breakdown of trichloroethylene (TCE) by microbes*
 - *Is Propanoic acid, 2-[2-[2-(2-hydroxy-1-oxopropoxy)-1-oxopropoxy]-1-oxopropoxy]-1,2,3-propanetriyl ester*

HRC[®] Pilot Study Area



ISOC Pilot Study Area

Aerial View of Site 57 Trichloroethylene - 1999



HRC[®] Pilot
Study Area

Aerial View of Site 57 Trichloroethylene HRC[®] Pilot Study Area - 1999



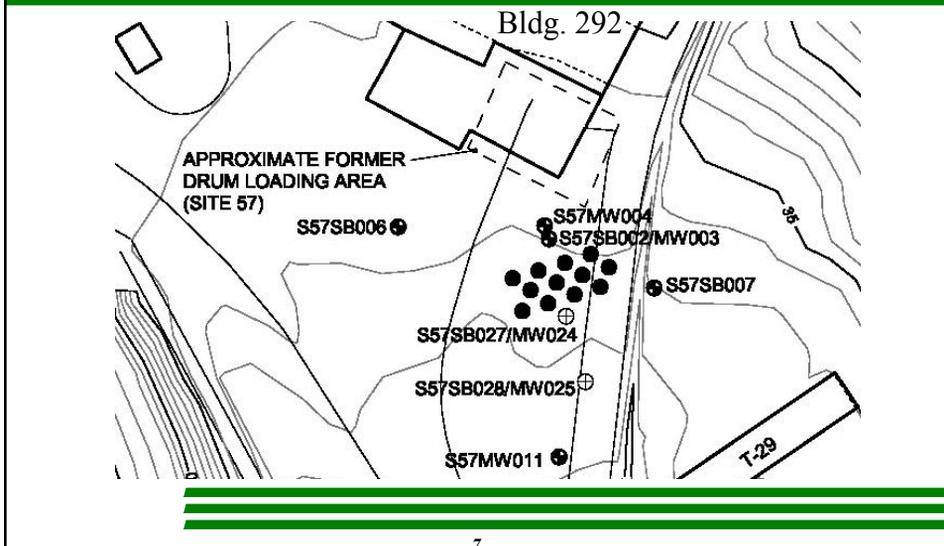
Site 57 HRC[®] Pilot Study



- *Pilot Study included:*
 - *Installing two monitoring wells downgradient of pilot study area*
 - *Sampling shallow groundwater in monitoring wells upgradient and downgradient of pilot study area prior to using HRC[®]*
 - *Injecting HRC[®] into the shallow groundwater (6 to 12 feet deep) at 12 locations in a 10-foot by 28-foot grid downgradient of Building 292*
 - *Resampling wells at predetermined intervals after injection of HRC[®] into the shallow groundwater to determine effectiveness*



Site 57 HRC® Pilot Study



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Site 57 HRC® Pilot Study



- *Six-month pilot study began week of 12 May 2003*
 - *Groundwater samples taken 13 May 2003 prior to HRC® injection*
 - *Groundwater samples taken or to be taken in the future*
 - *Month 1: 19 and 20 June 2003*
 - *Month 2: 29 and 30 July 2003*
 - *Month 4: 25 and 26 September 2003*
 - *Month 6: 19 and 20 November 2003*
- *Findings report of pilot study expected in early 2004*

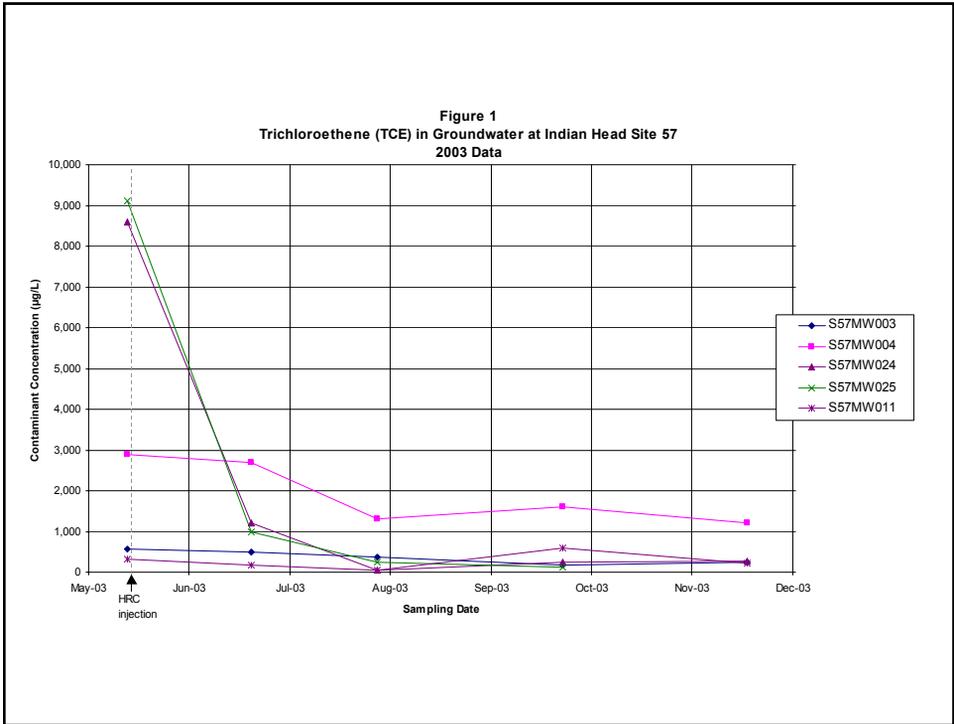
8



Site 57 - Pilot Study Area Prior to HRC® Injection



Site 57 - Pilot Study After Fieldwork Completed





Site 57 ISOC™ Pilot Study



- *Purpose of Pilot Study*
 - *To determine if In Situ Aerobic Bioremediation could be used to accelerate bioremediation of chlorinated volatile organic compounds (VOCs) in the shallow groundwater downgradient of IR Site 57.*
- *In Situ Submerged Oxygen Curtain (ISOC™)*
 - *Fosters aerobic conditions*
 - *Facilitates breakdown of VOCs by microbes*





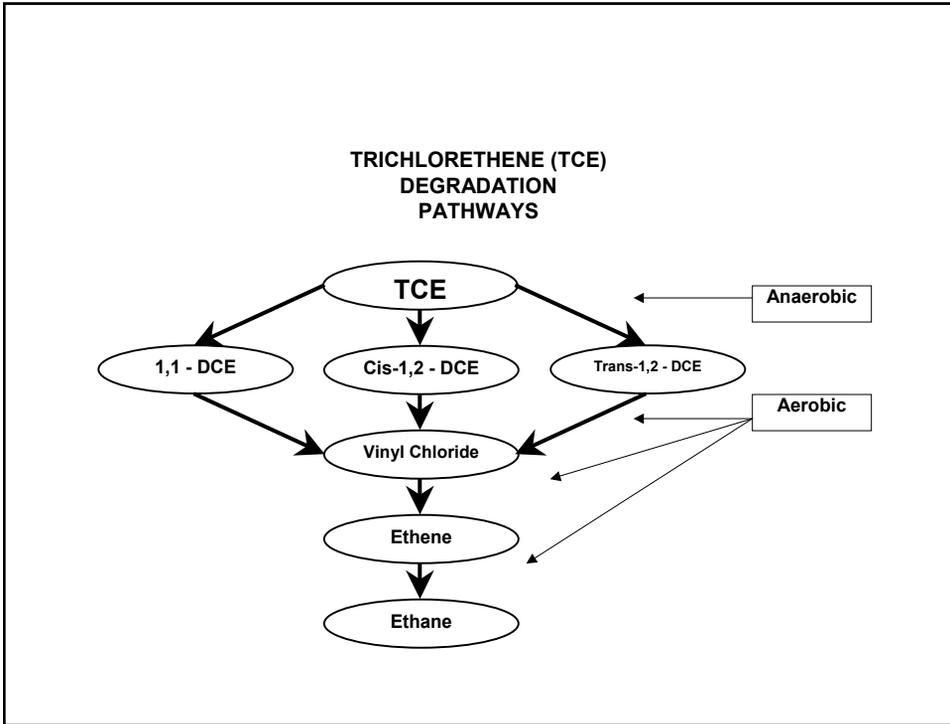
Site 57 – ISOC Pilot Study Area



Site 57 ISOC™ Pilot Study



- *Pilot Study includes:*
 - *Installing one monitoring well and three ISOC wells surrounding the monitoring well*
 - *Sampling shallow groundwater in monitoring well surrounded by ISOC wells and sampling downgradient well prior to injecting oxygen*
 - *Inject oxygen into ISOC wells*
 - *Resampling wells at predetermined intervals after injection of oxygen into the ISOC wells to determine effectiveness*



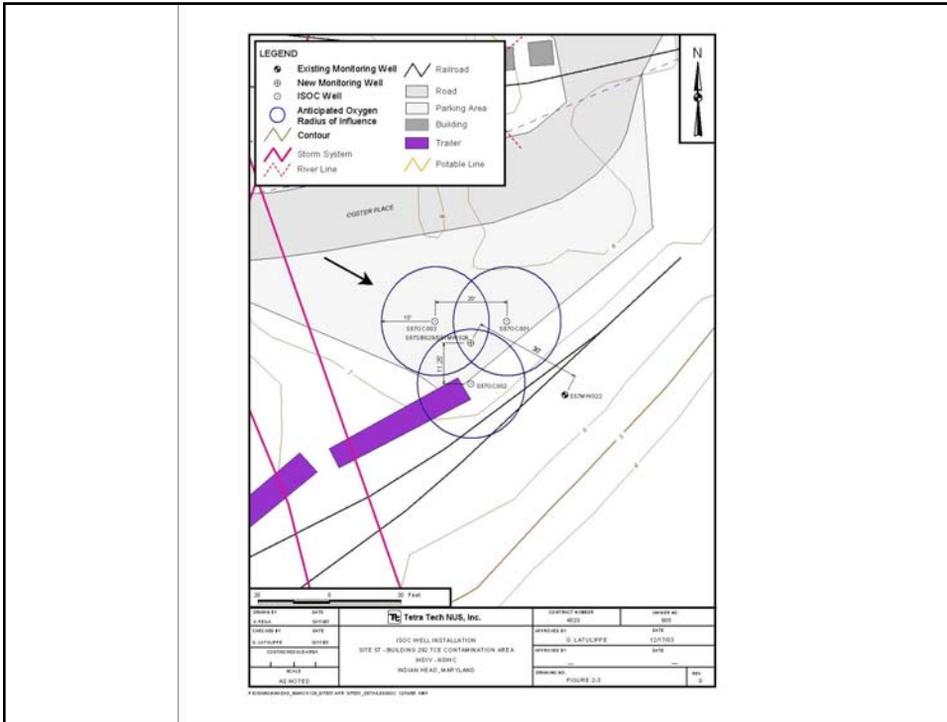


Site 57 ISOC™ Pilot Study



- *Six-month pilot study to begin in 2004*
 - *Groundwater samples to be taken prior to oxygen injection*
 - *Additional groundwater samples to be taken in the future*
 - *One Month after ISOC™ startup*
 - *Two Months after ISOC™ startup*
 - *Four Months after ISOC™ startup*
 - *Six Months after ISOC™ startup*
- *Findings report of pilot study expected in late 2004*

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Site 57 HRC® Pilot Study



- *Dollars Spent on Site 57*
 - *HRC® Pilot Study - \$163 K*
 - *Estimate for ISOC™ Pilot Study – \$124 K*
 - *Total Spent to Date - ~\$1.6 M*
 - *Remedial Investigation (RI)*
 - *Soil removal for dock extension*
 - *Soil vapor extraction (SVE) pilot study*
 - *Removal Action – pipe relining*
 - *HRC pilot study*
 - *Feasibility Study (FS)*
 - *Proposed Plan*
 - *Record of Decision (ROD)*



NAVAL DISTRICT WASHINGTON,
INDIAN HEAD
RESTORATION ADVISORY BOARD



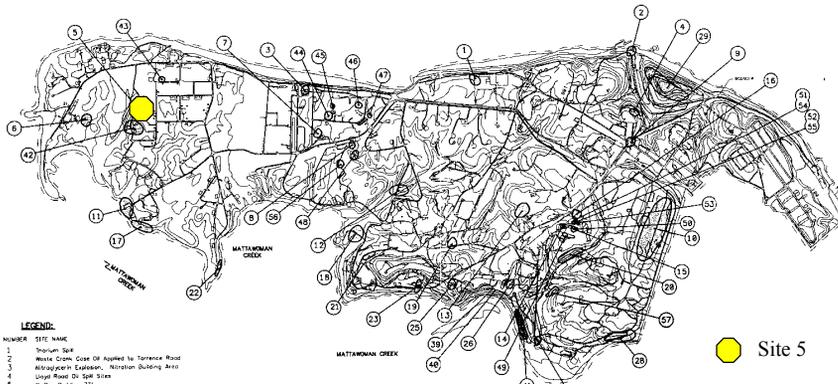
Site 5 - X-ray Building 731
Site Screening Assessment Report

Shawn Jorgensen
IR Project Manager

February 19, 2004



NDW, Indian Head
IR Site Map



LEGEND:

SITE NUMBER	TITLE NAME
1	Thorium Spill
2	Waste Canister Cover Off Located In Terrace Road
3	Anthracene Exposure - Recreation Building Area
4	Urethane Road Dr Spill Sites
5	X-Ray Building 731
6	Building 1349, Pogo Saw
7	Building 682, Lead Spill
8	Building 789, Mercury Deposits
9	Plutonium Aerosol On Soil
10	Single-base Propellant Canister Spill
11	Canister Base Leaking
12	Lead Oil Leaking
13	Paint Spill on Concrete Ground
14	Waste Acid Container PI
15	Mercury Deposits in Washbasin, Pharmacy Lab
16	Leaking Chemical Container
17	Disposal Metal Parts Along Shoreline
18	Lead Inland
19	Crutch Beams at Oil Collection Hooves
20	Single-base Powder Facilities
21	Ballroom Floor Leaking
22	HQ Waste Burning Site
23	Impoundment Of Salt Discharges from Extraction Plant
24	Abandoned Drain Lines
25	Waste Discharge At Pier Building No 2
26	Thermal Destructor 2
27	Thermal Destructor 1
28	Original Burning Ground
29	330-38
30	Original Plant Outfall
40	Polonium Catalyst in Sediments
41	Spill Tank
42	Open Pore Leaking
43	Yellow Chloride Spill
44	Spill Cistern Area
45	Abandoned Drums
46	Chromium Sulfate Spill
47	Mercury Inland Disposal Area
48	Abandoned/Spill/Remediation Area
49	Chemical Disposal Area
50	Building 180: Crust Spill
51	Building 180: Dry Wall
52	Building 180: Dry Wall
53	Mercury Contamination of The Drain System
54	Building 180
55	Building 180
56	IMBT - Lead Contamination
57	TOE Building 292 Area

Site 5





Site 5 Site Screening Report



- *Background of Site 5 - X-Ray Building 731*
 - *Building constructed in 1953*
 - *Process waste water containing silver discharged to open swales prior to 1965*
 - *Removal action (soil) performed*
 - *Swale 1: November 1992 to January 1993*
 - *Swale 2: December 1994*
 - *Cleanup level for Silver was 10 parts per million (ppm)*
- *Purpose of Site Screening Sampling*
 - *Determine if silver is in shallow groundwater*



IR Site 5 X-ray Building 731



Swale 1 - Looking South

Swale 2 - Looking Northeast





Site 5 Site Screening Report



- *Site Screening Project awarded in February 2001*
- *Shallow groundwater, sediment, and surface water sampled in August 2001*
- *Problems encountered with August 2001 Fieldwork*
 - *Filtered equipment blank contained metals*
 - *Most results for filtered metals were rejected*
 - *Sediment and surface water samples taken in incorrect locations*
- *Groundwater, sediment, and surface water resampled February 2002*



Site 5 Site Screening Report



- *Human health risk screening results (potential risks)*
 - *Groundwater*
 - *Initial screening resulted in a small number of COPCs (Arsenic, Chromium, 1,1-DCE, PCE, Bis(2-ethylhexyl)phthalate)*
 - *After subsequent evaluation (included in Final SSA Report, December 2003) no COPCs were retained*
 - *Surface water*
 - *Initial screening retained iron as COPC*
 - *Subsequent evaluation eliminated iron as COPC in surface water*
 - *Sediment*
 - *None*
- *Ecological risk assessment results (potential risks)*
 - *None*



Site 5 - Site Screening Report Recommendation/Cost



- *Final Site Screening Report indicates no potential human health or ecological risk and recommends no further action*
- *A concurrence letter for no further action at this site was signed by Navy and EPA in January, 2004*
- *\$125,000 spent on site screening study*
- *\$968,000 spent on site to date, includes interim removal actions and current site screening study*



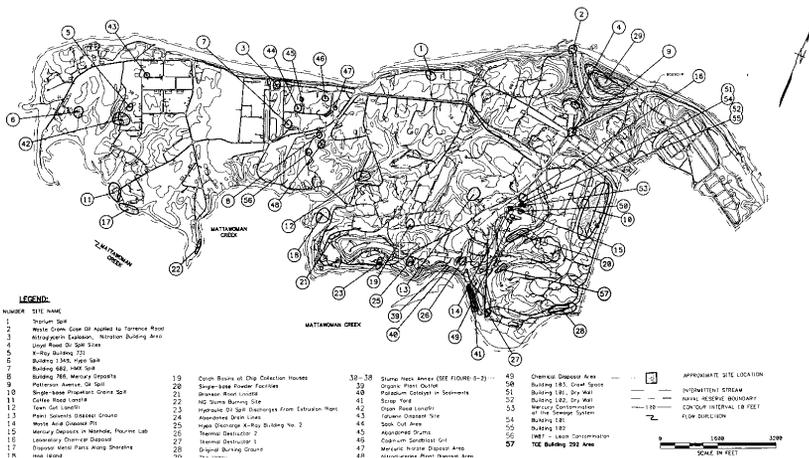
**NAVAL SURFACE WARFARE CENTER
INDIAN HEAD DIVISION
RESTORATION ADVISORY BOARD**



**Remedial Investigation
Project Status**

**Site 28 - Original Burning Ground and Zinc Recovery
Furnace**

Heidi Morgan
IR Project Manager
February 19, 2004





Remedial Investigation Project Site 28



- ***Background of Site 28 - Original Burning Ground and Zinc Recovery Furnace***
 - *Approximately 1.8 acres near the Activity's Boundary Line Adjacent to Mattingly Ave on the Mattawoman Creek*
 - *Burning Cages located on the shoreline of the Mattawoman Creek*
 - *Materials burned Smokeless Powder*
 - *Zinc Recovery Furnace Built prior to 1926*
 - *Appears to have been used as Central Area for Salvaging Zinc (for the Navy)*
 - *1926 - 212,000 lbs. of Pig Zinc Reclaimed*
 - *1927 - 435,000 lbs. of Pig Zinc Reclaimed*



Remedial Investigation Project Status - Site 28



- ***Remedial Investigation (RI) Work at Site 28***
 - *RI Field Sampling May 2003*
 - *Surface and Subsurface Samples: 35 (plus 4 background)*
 - *Shallow Groundwater Samples: 12 (plus 2 background)*
 - *Surface Water Samples: 3*
 - *Sediment Samples: 18*
 - *RI Monitoring Well Installation August 2003*
 - *Installed Monitoring Wells: 4 (plus 1 background)*
 - *RI Sampling September 2003*
 - *Sampled the Monitoring Wells*



*Remedial Investigation Project
Status - Site 28*





*Remedial Investigation Project
Status - Site 28*



*Remedial Investigation Project
Status - Site 28*





Remedial Investigation Project Status - Site 28



- *Summary of Remedial Investigation Findings*
 - *As expected, soil around the former Zinc Recovery Furnace contains elevated levels of metals, especially zinc.*
 - *Elevated levels of zinc and other metals, also were present in the sediment downgradient of the former zinc recovery furnace and in groundwater samples collected at the site.*
 - *VOCs, SVOCs, and explosives compounds were detected at levels somewhat above background, but they contribute negligibly to human health and ecological risk.*



Remedial Investigation Project Status - Site 28



- *RI Recommendations*
 - *Due to potential risks calculated for a future resident of the site (per EPA regulations), a feasibility study is recommended to evaluate remedial alternatives.*
 - *A baseline ecological risk assessment also will be conducted to further evaluate risk to ecological receptors*



Remedial Investigation Project Status - Site 28



- *Contract Awarded – September 2001*
 - *Draft Work Plan – December 2001*
 - *Final Work Plan – April 2003*
 - *Field Work*
 - *May 2003*
 - *August 2003 (Groundwater Well Installation)*
 - *Draft RI Report – February 2004*
- *Cost to Date \$480,000*





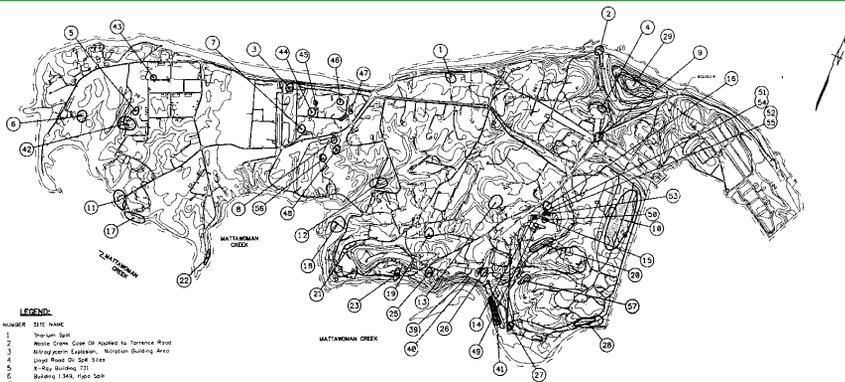
NAVAL SURFACE WARFARE CENTER
 INDIAN HEAD DIVISION
 RESTORATION ADVISORY BOARD



Remedial Investigation

Lab Area (Sites 14, 15, 16, 49, 50, 53, 54 and 55)
Project Status

Heidi Morgan
 IR Project Manager
 February 19, 2004



- LEGEND:**
- SITE NUMBER SITE NAME
- 1 Turbulent Spit
 - 2 Waste Drain Catcher (W. Adjacent to Terrace Road)
 - 3 Airspace Enclosure - Navigation Building Area
 - 4 Loop Road Dr. Site 15
 - 5 N-100 Building 721
 - 6 Building 134A, Prop. Spill
 - 7 Building 88B, Prop. Spill
 - 8 Building 78A, Mercury Deposits
 - 9 Petroleum Avenue Dr. Spill
 - 10 Single-base Phosphate Green Spill
 - 11 Colter Road Leach
 - 12 Train Spit Landfill
 - 13 Heavy Solvents (Dioxin) Ground
 - 14 Waste Acid Disposal Pit
 - 15 Heavy Solvents in Methods, Fluorine Lab
 - 16 Laboratory Chemical Deposits
 - 17 Chlorine Head Pans along Shoreline
 - 18 Ice Island
 - 19 Couch Room at Chip Detection House
 - 20 Single-base Phosphate Deposits
 - 21 Storage Area Leach
 - 22 NO Oxide Burning Site
 - 23 Hydrofluoric Acid Spill (Discharge from Exhaust Stack)
 - 24 Fluorine Oxide Leach
 - 25 Prop. Discharge #4-Prop. Building No. 2
 - 26 Thermal Oxidizer 2
 - 27 Thermal Oxidizer 1
 - 28 Digital Burning Station
 - 29
 - 30-38 Storage Area (SEE FIGURE 4-2)
 - 39 Storage Pits, Outdoor
 - 40 Petroleum Catalyst in Sediments
 - 41 Storage Pits
 - 42 Drain Hole Landfill
 - 43 Organic Disposal Site
 - 44 Sewer C/A Area
 - 45 Acid/Alkali Storage
 - 46 Calcium Sulfide Spill
 - 47
 - 48
 - 49 Chemical Disposal Area
 - 50 Building 183, Civil Spill
 - 51 Building 180, Dry Well
 - 52 Building 182, Dry Well
 - 53 Mercury Contamination at the "Orange" Station
 - 54 Building 88
 - 55 Building 193
 - 56
 - 57 100' x 400' Contaminated Area Building 192 Area

APPROXIMATE SITE LOCATION

UNIDENTIFIED CRIMINAL

NAVAL RESERVE BOUNDARY

CONTOUR INTERVAL 10 FEET

FLOW DIRECTION

SCALE IN FEET

0 1000 2000



Lab Area - Project Status



- 14 - The Old Waste Acid Pit
 - 15 - Mercury Deposits in Manhole, Fluorine Lab
 - 16 - Laboratory Chemical Disposal
 - 49 - Chemical Disposal Pit
 - 50 - Building 103 Crawl Space
 - 53 - Mercury Contamination of Sewage System
 - 54 - Building 101 Mercury Contamination
 - 55 - Building 102 Mercury Contamination
- Due to the proximity of these sites to one another, and the similar suspected chemicals involved, these sites were studied as one area.



Lab Area - Project Status Sites 15, 16, 53, 54, and 55





Lab Area - Project Status Sites 15, 16, 50, 53 and 55



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Lab Area - Project Status



- *Remedial Investigation Completed Jan 2004*
- *Potential Human Health Risk*
 - *Mercury in Surface and Subsurface Soil*
 - *Arsenic in the Emergent Wetlands Sediment*
 - *Lead in Surface Soil*
- *Potential Ecological Risk*
 - *Lead in Surface Soil, Wetland Sediment, and Surface Water*
 - *Mercury in Surface Soil, Wetland Sediment, and Surface Water*

6



Lab Area Project Status



- *Perform a Baseline Ecological Risk Assessment (BERA)*
 - *To further Evaluate the Potential Ecological Risk*
- *Perform an EE/CA*
 - *Remove Contaminated Sediment and Soil and Restore the Emergent Wetland.*
- *Perform a Feasibility Study*
 - *To address remaining Human Health Risk*



Lab Area - Project Status





Lab Area - Project Status Schedule and Budget



- *Feasibility Study (FS)*
 - *Contract Award – February 2004*
 - *Draft Feasibility Study – Date to be determined*
 - *Cost for FS - \$21,000*

- *BERA*
 - *Contract Awarded – January 2004*
 - *Fieldwork – Fall 2004*
 - *Cost of BERA - \$150,000 (not including EE/CA)*





**NAVAL DISTRICT WASHINGTON,
INDIAN HEAD
RESTORATION ADVISORY BOARD**



**Remedial Investigation
Project Status**

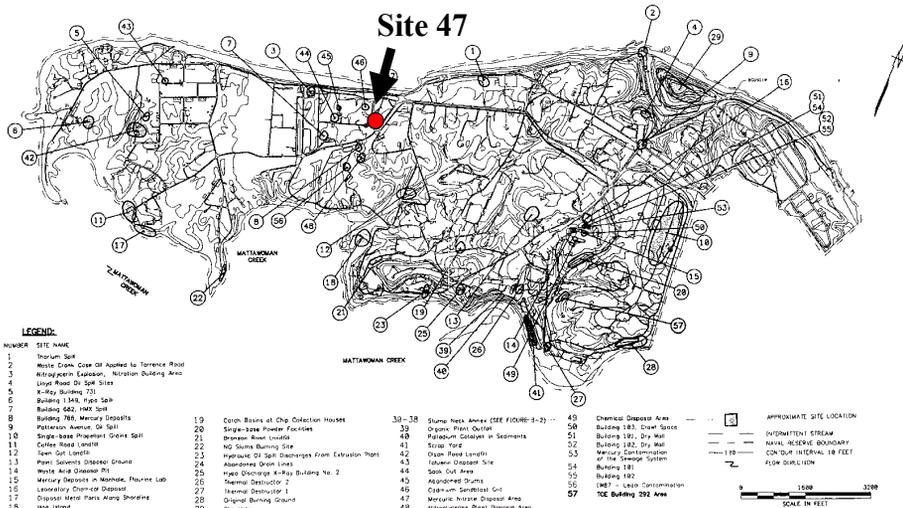
Site 47 - Mercuric Nitrate Disposal Area

Joe Rail
EFACHES

February, 2004



**NDW, Indian Head
IR Site Map**





Remedial Investigation Project Status - Site 47



- **Background of Site 47 - Mercuric Nitrate Disposal Area**
 - Mercuric Nitrate was reportedly disposed in approximately 24 sq. ft. area
 - Limestone chips reportedly used to neutralize spent nitric acid
 - Procedure carried out between 1957 and 1965
 - Interviews with former employees also indicated disposal of barium slurry in pit adjacent to Building 856 and use/disposal of carbon tetrachloride in processes conducted in building.
 - Initial sampling performed for Site Inspection (SI) in 1992 and 1993
 - Final SI Report (March 4, 1994) recommended further study



IR Site 47





Remedial Investigation Project Status - Site 47



- *Remedial Investigation (RI) Work at Site 47*
 - *November 1998 – August 2002*
 - *RI work included:*
 - *Installing 15 shallow Groundwater Monitoring Wells*
 - *Surface and Subsurface Soil Samples*
 - *Sediment Samples*
- *Final Remedial Investigation Report December 2003*



Remedial Investigation Project Status - Site 47



- *Primary concern is VOCs detected in groundwater:*
 - *Carbon Tetrachloride and breakdown products (chloroform, methylene chloride and chloromethane)*
 - *Perchloroethene and breakdown products (trichloroethene, dichloroethene, and vinyl chloride)*
 - *Dichloroethane*
- *Human health risk was calculated at unacceptable levels for both current and future use scenarios due to VOCs and arsenic in groundwater*
- *Ecological risk screening determined that further evaluation of ecological risk is necessary.*



Remedial Investigation Project Status - Site 47



- *A work plan for a baseline ecological risk assessment of surface soil and sediment is under review by EPA.*
- *Next step will be a Draft Feasibility Study for groundwater, tentatively scheduled for submittal in Spring 2004.*



Site 47 Budget



- *Dollars Spent to-date on IR Site 47 - \$300,000*
- *Total projected cost:*
 - *Baseline Ecological Risk Assessment - \$120,000*
 - *Feasibility Study, Proposed Plan, Record of Decision - \$80,000*

MATTAWOMAN CREEK STUDY REPORT SUMMARY

REPORT UNCERTAINTIES

Based on discussions between the Navy and the regulators, it was determined that there were four main sources of uncertainties in this report. These uncertainties are listed below and then discussed in more detail in the subsequent sections of this report.

- The extent of facility-related chemicals in sediment across the Mattawoman Creek study area is not fully characterized.
- The impact of sediment transport on the distribution of contamination in study area sediments is not fully understood. The fate and extent of the sediment contamination associated with facility-related releases has not been defined near some IR locations.
- The lack of correlation between sediment toxicity tests and sediment chemistry leads to uncertainty regarding some risk determinations.

RECOMENDATIONS

Based on the results of this Mattawoman Creek Study, it is recommended that consideration be given to the following:

- Sediment sampling to define Navy-related contaminant concentrations in additional depositional locations within the study area.
- Surface water and sediment sampling in locations of high recreational activity to better define potential human health risks resulting from Navy activity. Areas where potential risks to benthic macroinvertebrates from chemicals in the sediment have been identified (Areas 1, 4, and 5), collect additional data necessary to reduce the uncertainties in the risk determinations.
- Human health and environmental risks should be reevaluated after accepted perchlorate reference doses become available.

PLANNED ACTIONS

Several additional samples to address the above recommendations will be collected during the next mobilization for sampling in the creek (Summer 2004). Also, some additional site-specific samples are planned during upcoming investigations.

INSTALLATION RESTORATION PROGRAM



NAVAL DISTRICT WASHINGTON,
INDIAN HEAD
101 STRAUSS AVENUE
INDIAN HEAD, MARYLAND
20640-5035



RESTORATION ADVISORY BOARD (RAB) MEETING COMMENTS, QUESTIONS AND ANSWERS

February 19, 2004

Arrival/Welcome

No questions were asked nor comments made during this topic.

Site 57 Pilot Scale Studies

No questions were asked nor comments made during this topic.

Site Screening Report and Concurrence for No Further Action for Site 5

No questions were asked nor comments made during this topic.

Site 28 Remedial Investigation Preliminary Results

Question: Is the casing of the well by this site intact enough to ensure that no contaminants can get into the lower aquifer?

Answer: Yes. The integrity of the casing is okay. The Navy stopped using the well because the screen was failing and the well began to pull in sand.

Question: Because of the steep hill, isn't erosion common at this site?

Answer: Yes, and the eroding material goes directly into the Creek.

Question: When did the Navy stop using this site?

Answer: In the 1950s, the zinc recovery furnace disappeared from the maps. Therefore, use of the furnace ceased prior to the 1950s.

Lab Area Baseline Ecological Risk Assessment (BERA)

Question: Can or did the contaminants from this site get into the Mattawoman Creek?

Answer: Effluent from the Lab Area buildings used to discharge directly into the Creek through pipes.

Site 47 Baseline Ecological Risk Assessment

No questions were asked nor comments made during this topic.

Mattawoman Creek Study Update

Question: Can you quantify what you mean by "add some additional samples?"

Answer: The number of samples and their locations will be identified in the work plan for the fieldwork.

Question: Since comments on this document are due by April 16, 2004, should we reiterate what we have already stated?

Answer: Yes, that way we can document your comments and prepare a formal response.

Comment: It is important to note that hurricane Isabel may have affected the Creek and embankments. The surge and extremely high tides could have disrupted the normal flow of the Creek and moved an enormous amount of sediment and deposited more sediment through abnormal erosion. This type of erosion/deposition would change the results of the samples that were taken during the study.

**NAVAL DISTRICT WASHINGTON,
INDIAN HEAD**

**INSTALLATION RESTORATION (IR) PROGRAM
RESTORATION ADVISORY BOARD (RAB)
MEETING AGENDA
(Tentative)**

June 17, 2004

- 1. Update on Sites 11 and 21**
- 2. Site 17 Update**
- 3. Site 42 Update**
- 4. Update on Site 57 Pilot Studies**
- 5. Potential Pilot Study at Site 47**
- 6. Overview of Site Screening for 13 Sites**