



**DEPARTMENT OF THE NAVY**

INDIAN HEAD DIVISION  
NAVAL SURFACE WARFARE CENTER  
101 STRAUSS AVE  
INDIAN HEAD MD 20640-5035

5090  
Ser 046C/93  
12 Jul 01

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, June 21, 2001 at the Indian Head Senior Center, which is located at 100 Cornwallis Square, Indian Head, Maryland.

Please note that the next RAB meeting is scheduled for **October 18, 2001**, from 7:00 - 9:00 p.m. at the Indian Head Senior Center. Please be sure to mark this date on your calendar if you have not already done so.

We are also forwarding copies of the Responsiveness Summaries from the draft final Records of Decision (ROD) for the following sites:

- Site 12 - Town Gut Landfill of April 2001
- Site 41 - Scrap Yard of May 2001
- Site 44 - Soak Out Area of May 2001.

A Responsiveness Summary is the official response to community comments on the Proposed Plan for a site. The response is formulated by the Navy in conjunction with the Environmental Protection Agency (EPA) and the Maryland Department of the Environment and is included in the ROD for the site. The ROD is the official decision document outlining the selected remedy for a site, as presented in the Proposed Plan for that site.

Once the Navy and the EPA sign the ROD, it is placed in the Administrative Record, which is a compilation of information established for all sites and supports the selected remedy for these sites. In addition, a copy of the ROD for each site will be placed into the Information Repositories after they have been signed.

One item that wasn't mentioned during the meeting was the cost of the Mattawoman Creek Study. The cost for the study through the final work plan is \$307,000. The cost for the sampling effort, including the preparation of the final ecological risk assessment, is \$618,000. This results in a total cost of \$925,000 for the study when it is completed.

Also, for your information, we have included a summary of IR sites, based on the signed Federal Facility Agreement between the Navy and the EPA. The summary shows which category each site is in (site requiring a Remedial Investigation; site requiring a site screening; Area of Concern requiring a desktop audit; or site that is active, permitted, or closed). The summary also shows the work that has been completed at each site and the next step in the process. We hope that you find it useful.

Once again, we would like to thank everyone that attended the RAB meeting. We hope to see all of you at the next RAB meeting on Thursday, October 18, 2001, at the Indian Head Senior Center from 7:00 to 9:00 p.m.

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

Sincerely,



CHERYL L. DESKINS  
Acting Director,  
Environmental Division  
By direction of the Commander

Encl:

- (1) Minutes from RAB Meeting of 21 Jun 01
- (2) Draft final Responsiveness Summary for Site 12
- (3) Draft final Responsiveness Summary for Site 41
- (4) Draft final Responsiveness Summary for Site 44
- (5) Summary of IR Sites

Copy to:

RAB Members

Meeting Attendees

ATSDR (D. Jackson)

CH2M Hill (A. Estabrook) (w/o encls. [2-5])

TetraTech (G. Latulippe) (w/o encls. [2-5])

TetraTech (K. Cabbage) (w/o encls. [2-5])

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Blind copy to:  
A/B  
OC  
PA  
04  
09/09A  
045NR

Writer: S. Jorgensen, Code 046C, X2263  
Typist: S. Jorgensen, 1 Jul 01  
Community Co-Chair, Mr. Vince Hungerford

046C SM  
046S SM

SAA for per VH email.

# INSTALLATION RESTORATION PROGRAM



INDIAN HEAD DIVISION,  
NAVAL SURFACE WARFARE CENTER  
101 STRAUSS AVENUE  
INDIAN HEAD, MARYLAND  
20640-5035



## RESTORATION ADVISORY BOARD (RAB) MEETING

**Date of Meeting:** June 21, 2001

### Restoration Advisory Board (RAB) Member Participants:

|                           |                             |
|---------------------------|-----------------------------|
| CAPT Marc A. Siedband (N) | Mr. Curtis DeTore (S)       |
| Mr. William Bohli (N)*    | Mr. Vincent Hungerford (C)* |
| Mr. Gary Davis (L)        |                             |

### RAB Members Not in Attendance:

|                       |                         |
|-----------------------|-------------------------|
| Mr. Elmer Biles (C)   | Mr. Dennis Orenshaw (F) |
| Mr. Stephen Elder (L) | Mr. Fred Pinkney (F)    |
| Mr. Jeff Morris (N)   | Ms. Karen Wiggen (L)    |

### Additional Attendees:

|                         |                     |
|-------------------------|---------------------|
| Ms. Sherry Deskins (N)  | Ms. Tara Landis (N) |
| Ms. Anne Estabrook (K)  | Mr. Joe Olcott (C)  |
| Mr. Shawn Jorgensen (N) | Ms. Lisa Sperka (C) |

\* Co-Chair

**C** = Community  
**F** = Federal Official  
**K** = Contractor  
**L** = Local Official  
**N** = Navy Official  
**R** = Newspaper Reporter  
**S** = State Official

ENCL (1)

## **Major Issues Discussed/Accomplished:**

### **1. Meeting Introduction**

Mr. William Bohli of the Indian Head Division, Naval Surface Warfare Center (IHDIV-NSWC) began the meeting by introducing himself and welcoming everyone to the Indian Head Senior Center.

Mr. Bohli then presented the meeting agenda, which is included as Attachment A.

### **2. Site Screening of Installation Restoration (IR) Site 5**

Mr. Shawn Jorgensen of the IHDIV-NSWC provided a brief history of IR Site 5 - X-ray Building 731 and stated that sampling is scheduled to begin in July 2001. The sampling effort will include obtaining three surface soil/sediment samples, three subsurface soil boring samples, and five shallow groundwater samples (three from monitoring wells to be installed and two from existing monitoring wells). The cost for this site screening effort is approximately \$130,000.

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

### **3. Remedial Investigation (RI) of IR Sites 6, 39, and 45**

Mr. Shawn Jorgensen provided information on the sampling effort at IR Sites 6, 39, and 45. Sampling was recently completed and the RI Report is expected in October 2001. The cost for this RI work is approximately \$300,000.

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

### **4. Mattawoman Creek Study Update**

Mr. Shawn Jorgensen provided an update of the work performed to date on the Mattawoman Creek Study and the future schedule for the study. The draft work plan, containing the finalized problem formulation and the sampling and analysis plan, has recently been reviewed by the EPA's Biological Technical Assistance Group (BTAG). This work plan will be provided to the Restoration Advisory Board (RAB) for review.

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

5. Update on RI Work at IR Sites 11, 13, 17, 21 and 25

Ms. Anne Estabrook of CH2M Hill provided the status of the work performed at the following IR sites: IR Site 11 - Caffee Road Landfill, IR Site 13 - Paint Solvents Disposal Ground, IR Site 17 - Disposed Metal Parts Along Shoreline, IR Site 21 - Bronson Road Landfill, and IR Site 25 - Hypo Discharges From X-ray Building No. 2.

All sampling has been completed at these sites and the draft RI Report is expected in July 2001. The cost for this effort is approximately \$675,000.

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

6. Lab Area Update

Ms. Anne Estabrook discussed seven sites on which RIs are being conducted. These include: IR Site 15 - Mercury Deposits in Manhole, Fluorine Lab; IR Site 16 - Laboratory Chemical Disposal; IR Site 49 - Chemical Disposal Pit; IR Site 50 - Building 103 Crawl Space; IR Site 53 - Mercury in the Sewage System; IR Site 54 - Building 101 Mercury Contamination; IR Site 55 - Building 102 Mercury Contamination. Ms. Estabrook provided a brief background on these sites and stated that due to the close proximity of these sites to one another, and the similar suspected chemicals involved, they are being studied as one area.

During the sampling effort, the Chemical Disposal Pit (Site 49) was removed to facilitate sampling the soil under the pit. While attempting to get samples below the pit, a concrete slab was discovered approximately two feet below the bottom of the pit. In addition, a brick wall surrounds the concrete slab. This appears to be the former Waste Acid Disposal Pit, Site 14, which we were previously unable to locate.

Fieldwork was completed in June 2001 and the draft RI Report is expected in August 2001. The cost of this RI work is estimated at \$300,000.

A copy of Ms. Estabrook's presentation is included in Attachment F.

7. Update on IR Site 47 - Mercuric Nitrate Disposal Area

Ms. Anne Estabrook provided information on the additional sampling that was conducted at Site 47 to better define the nature and extent of contamination at the site. Additionally,

the sampling was conducted to obtain information on shallow groundwater at the site, such as flow direction.

The draft final RI Report for this effort is anticipated in August 2001 at a cost of \$200,000.

A copy of Ms. Estabrook's presentation is located in Attachment G.

#### 8. Comments, Questions, and Answers

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

#### 9. Conclusion

Mr. William Bohli concluded the meeting by thanking all in attendance. Mr. Bohli then provided the tentative agenda for the next meeting scheduled for Thursday, October 18, 2001, from 7:00 to 9:00 p.m. at the Indian Head Senior Center. A copy of the tentative agenda is included as Attachment I.

**INDIAN HEAD DIVISION,  
NAVAL SURFACE WARFARE CENTER  
INSTALLATION RESTORATION (IR) PROGRAM  
RESTORATION ADVISORY BOARD (RAB) MEETING  
AGENDA**

June 21, 2001

**7:00 - 7:10**

**ARRIVAL/WELCOME**

Mr. William H. Bohli  
Indian Head Division, Naval Surface Warfare Center  
Head, Safety Department

**7:10 - 7:20**

**SITE SCREENING OF IR SITE 5**

Mr. Shawn Jorgensen  
Indian Head Division, Naval Surface Warfare Center  
IR Project Manager

**7:20 - 7:35**

**REMEDIAL INVESTIGATION OF IR SITES 6, 39, AND 45**

Mr. Shawn Jorgensen

**7:35 - 7:45**

**MATTAWOMAN CREEK STUDY UPDATE**

Mr. Shawn Jorgensen

**7:45 - 8:00**

**UPDATE ON IR SITES 11, 13, 17, 21, AND 25**

Ms. Anne Estabrook  
CH2M Hill  
Project Manager

**8:00 - 8:15**

**LAB AREA UPDATE**

Ms. Anne Estabrook

**8:15 - 8:30**

**UPDATE ON IR SITE 47**

Ms. Anne Estabrook

**8:30 - 9:00**

**COMMENTS, QUESTIONS, AND ANSWERS**

**9:00**

**ADJOURN**



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



**Site Screening - Project Status**

***Site 5 - X-ray Building 731***

*Shawn Jorgensen  
IR Project Manager*

*June 21, 2001*

1



**Site Screening - Project Status  
Site 5 - X-ray Building 731**



**• Background**

- X-ray facility (Building 731) formerly released spent fixer, which contains silver, to two drainage ditches located in the rear of the building
- Estimated 720 pounds of silver released from 1953-1977
- Two Removal Actions to physically remove source (silver-contaminated soil) and eliminate pathway were conducted
  - Swale #1 (Eastern swale): 1992-1993
  - Swale #2 (Western swale): 1994-1995

2



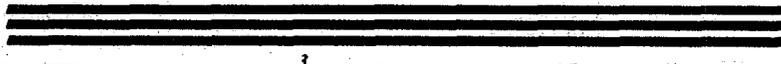
## *IR Site 5 X-ray Building 731*



Swale 1 - Looking South



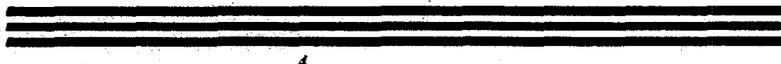
Swale 2 - Looking Northeast



## *Site Screening - Project Status Site 5 - X-ray Building 731*

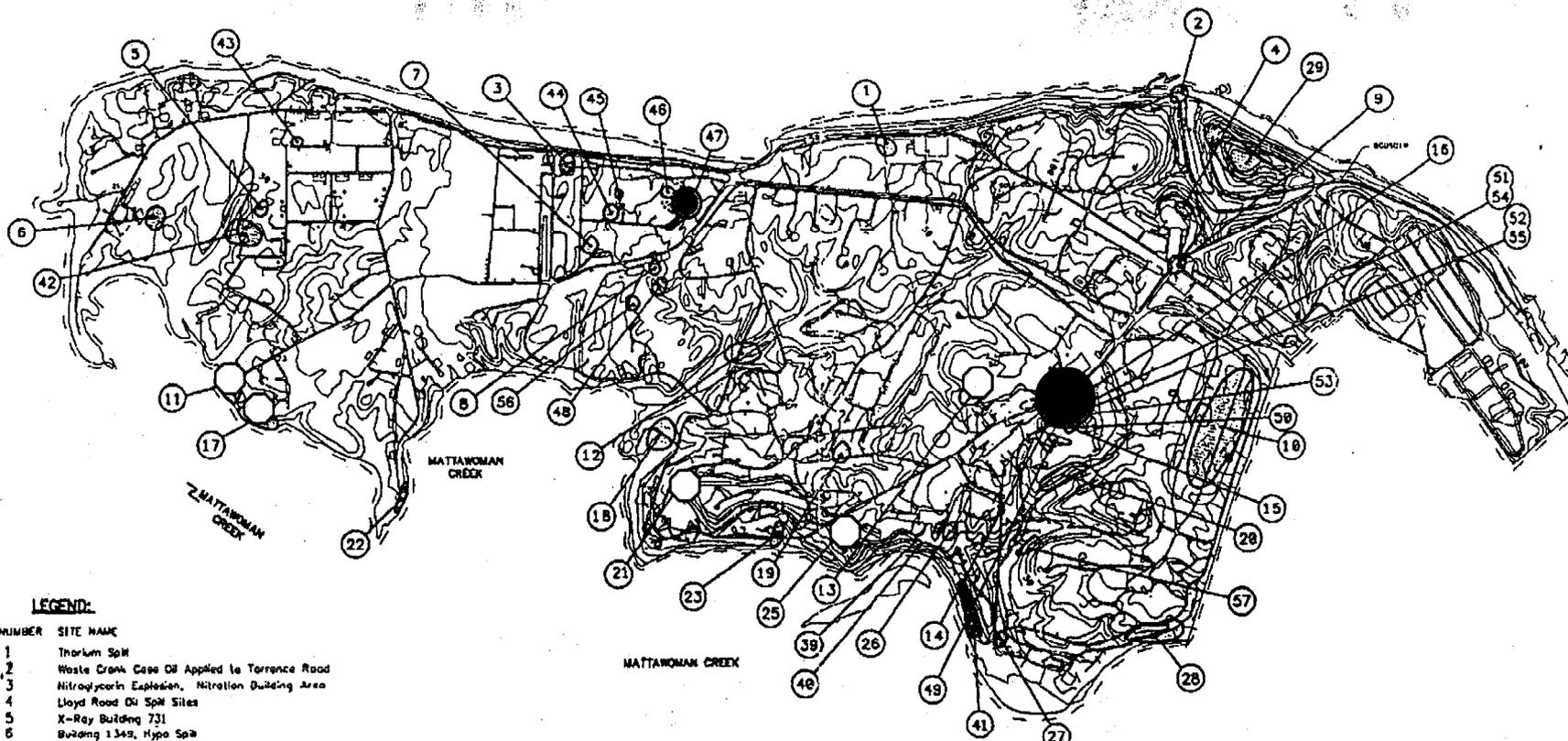


- *Work to be completed*
  - *Surface Soil / Sediment Samples: 3*
  - *Subsurface Soil Boring Samples: 3*
  - *Groundwater Samples: 5*
    - *Three from monitoring wells to be installed for Site Screening*
    - *Two from existing monitoring wells*





# NSWC Indian Head IR Site Map



### LEGEND:

#### SITE NUMBER SITE NAME

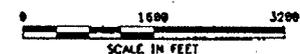
- 1 Thorium Spill
- 2 Waste Crank Case Oil Applied to Torrance Road
- 3 Nitroglycerin Explosion, Nitration Building Area
- 4 Lloyd Road Oil Spill Sites
- 5 X-Ray Building 731
- 6 Building 1349, Hypo Spill
- 7 Building 682, HMX Spill
- 8 Building 766, Mercury Deposits
- 9 Patterson Avenue, Oil Spill
- 10 Single-base Propellant Grains Spill
- 11 Coffee Road Landfill
- 12 Teen Cut Landfill
- 13 Paint Solvents Disposal Grounds
- 14 Waste Acid Disposal Pit
- 15 Mercury Deposits in Manhole, Fluorine Lab
- 16 Laboratory Chemical Disposal
- 17 Disposal Metal Parts Along Shoreline
- 18 Hse Island

- 19 Catch Basins at Chip Collection Houses
- 20 Single-base Powder Facilities
- 21 Bronson Road Landfill
- 22 NG Sludge Burning Site
- 23 Hydraulic Oil Spill Discharges From Extrusion Plant
- 24 Abandoned Drain Lines
- 25 Hypo Discharge X-Ray Building No. 2
- 26 Thermal Destructor 2
- 27 Thermal Destructor 1
- 28 Original Burning Ground
- 29

- 30-38 Sludge Neck Areas (SEE FIGURE 2-2)---
- 39 Organic Plant Outfall
- 40 Palladium Catalyst in Sediments
- 41 Scrap Yards
- 42 Oxon Road Landfill
- 43 Toluene Disposal Site
- 44 Soak Cut Area
- 45 Abandoned Drums
- 46 Cadmium Sandblast Crib
- 47 Mercuric Nitrate Disposal Area
- 48 Nitrocellulose Plant Disposal Area

- 49 Chemical Disposal Area
- 50 Building 183, Crust Space
- 51 Building 181, Dry Wall
- 52 Building 182, Dry Wall
- 53 Mercury Contamination of the Sewage System
- 54 Building 181
- 55 Building 182
- 56 (WB7 - Lead Contamination)
- 57 TCE Building 292 Area

- APPROXIMATE SITE LOCATION
- INTERMITTENT STREAM
- NAVAL RESERVE BOUNDARY
- CONTOUR INTERVAL 10 FEET
- FLOW DIRECTION

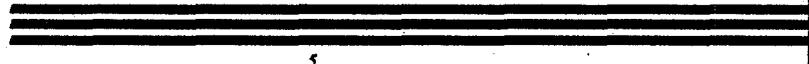




## *Site Screening - Project Status Future Schedule*



- *Site Screening*
  - *Final Work Plan: June 2001*
  - *Field Work: July 2001*
  - *Draft Site Screening Report: December 2001*
  - *Cost for Site Screening: \$130,000*



5



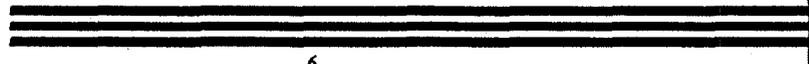
## *Additional Information*



### *Information Repositories*

Indian Head Division  
Naval Surface Warfare Center  
Building 620 (Powder Keg)  
101 Strauss Avenue  
Indian Head, MD  
20640-5035

Charles County Public Library  
La Plata Branch  
Charles & Garrett Streets  
La Plata, MD 20646



6



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

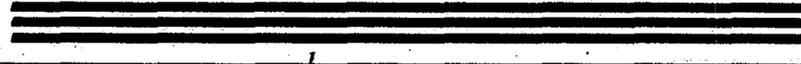


**Remedial Investigations (RI) - Project Status**

***Sites 6, 39, and 45***

*Shawn Jorgensen  
IR Project Manager*

*June 21, 2001*



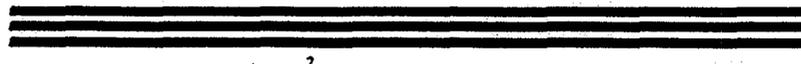
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***6, 39, and 45 - Project Status  
Sites Being Studied***



- *6 - Radiographic Facility, Building 1349*
- *39 - Silver Release to Sediments*
- *45 - Abandoned Drums*



2



**6, 39, and 45 - Project Status**  
**Site 6 - Radiographic Facility, Bldg 1349**



- **Background**
  - X-ray facility control building (Building 1349) used to release spent fixer, which contains silver, to a drainage ditch on side of building from 1965 to 1977
- **Sampling Completed**
  - Surface Soil Samples: 10 (includes 1 background sample)
  - Subsurface Soil Boring Samples: 5 (includes 1 background sample)
  - Sediment / Surface Soil: 3
  - Surface Water: 2
- **Potential Future Sampling**
  - Groundwater Samples: 3 (Three wells will be installed if contamination is found in surface and subsurface samples)



**IR Site 6**  
**Radiographic Facility, Building 1349**



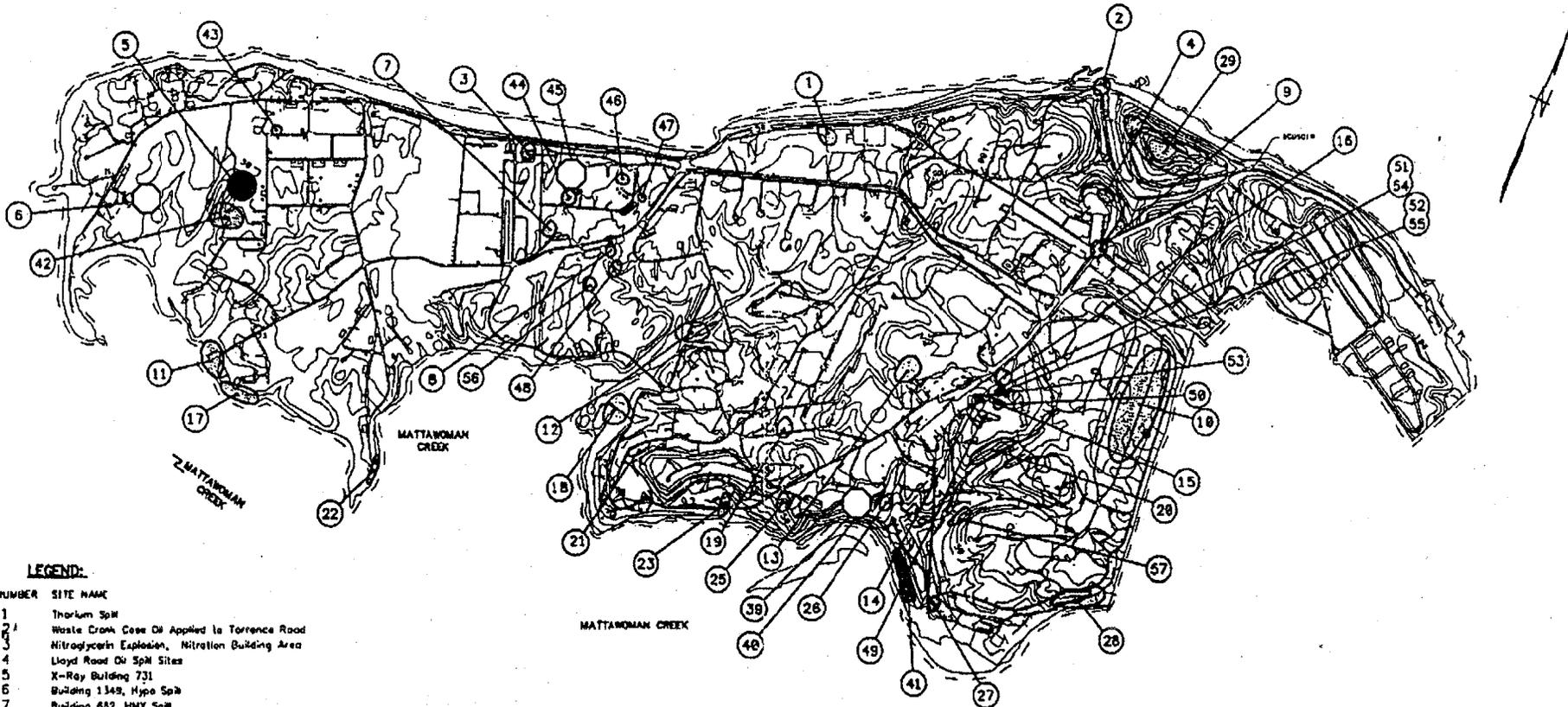
Looking north at Buildings 1349 and 1718

Looking southeast from Buildings 1349 and 1718





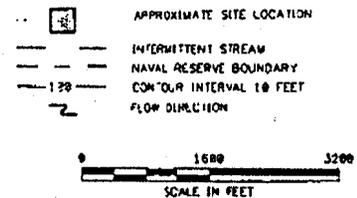
# NSWC Indian Head IR Site Map



**LEGEND:**

SITE NUMBER SITE NAME

- |    |  |    |   |       |                                   |    |  |
|----|--|----|---|-------|-----------------------------------|----|--|
| 1  | Thorium Spill                                    | 19 | Catch Basins at Chip Collection Houses              | 38-38 | Stump Neck Annex (SEE FIGURE 2-2) | 49 | Chemical Disposal Area                     |
| 2  | Waste Crank Case Oil Applied to Torrence Road    | 20 | Single-base Powder Facilities                       | 39    | Organic Plant Outfall             | 50 | Building 183, Crawl Space                  |
| 3  | Nitroglycerin Explosion, Nitration Building Area | 21 | Bronson Road Landfill                               | 40    | Palladium Catalyst in Sediments   | 51 | Building 101, Dry Wall                     |
| 4  | Lloyd Road Oil Spill Sites                       | 22 | NG Slums Burning Site                               | 41    | Scrap Yard                        | 52 | Building 102, Dry Wall                     |
| 5  | X-Ray Building 731                               | 23 | Hydraulic Oil Spill Discharges From Extrusion Plant | 42    | Orson Road Landfill               | 53 | Mercury Contamination of the Sewage System |
| 6  | Building 1349, Hypo Spill                        | 24 | Abandoned Drain Lines                               | 43    | Caluenn Disposal Site             | 54 | Building 181                               |
| 7  | Building 682, HMX Spill                          | 25 | Hypo Discharge X-Ray Building No. 2                 | 44    | Soak Cut Area                     | 55 | Building 182                               |
| 8  | Building 716, Mercury Deposits                   | 26 | Thermal Destructor 2                                | 45    | Abandoned Drums                   | 56 | [WB7 - Lead Contamination]                 |
| 9  | Patterson Avenue, Oil Spill                      | 27 | Thermal Destructor 1                                | 46    | Cadmium Sandblast Crit            | 57 | TCE Building 292 Area                      |
| 10 | Single-base Propellant Grains Spill              | 28 | Original Burning Ground                             | 47    | Mercuric Iodate Disposal Area     |    |  |
| 11 | Coffee Road Landfill                             | 29 |   | 48    | Nitrocellulose Plant Nearest Area |    |  |
| 12 | Teen Gut Landfill                                |    |   |       |                                   |    |  |
| 13 | Paint Solvents Disposal Grounds                  |    |   |       |                                   |    |  |
| 14 | Waste Acid Disposal Pit                          |    |   |       |                                   |    |  |
| 15 | Mercury Deposits in Manhole, Flourite Lab        |    |   |       |                                   |    |  |
| 16 | Laboratory Chemical Disposal                     |    |   |       |                                   |    |  |
| 17 | Disposal Metal Parts Along Shoreline             |    |   |       |                                   |    |  |
| 18 | Isle Island                                      |    |   |       |                                   |    |  |





**6, 39, and 45 - Project Status**  
**Site 39 - Silver Release to Sediments**



- **Background**
  - Buildings 497 and 498 constructed in 1942
  - Various chemicals manufactured in Building 497
  - Building 498 is an oven for drying Nitroguanidine (NQ)
  - Unknown amount of Silver released to sediment between 1961 and 1965
  - Possible releases of NQ from oven stack
  - Site Inspection Report of 1994 contains previous sediment sampling data



**6, 39, and 45 - Project Status**  
**Site 39 - Silver Release to Sediments**



- **Sampling Completed for RI**
  - Surface Soil Samples: 21 (includes 1 background sample)
  - Subsurface Soil Boring Samples: 21 (includes 1 background sample)
- **Potential Future Sampling**
  - Groundwater: 3 (Three wells will be installed if contamination is found in surface and subsurface samples)



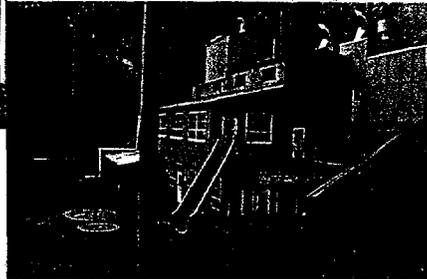
## *IR Site 39*

### *Silver Release to Sediments*



**Building 497**

**Building 498**



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## *6, 39, and 45 - Project Status*

### *Site 45 - Abandoned Drums*



- *Background*
  - *Approximately 21 empty rusted drums found in the woods near IR Site 44 - Soak Out Area*
  - *Drums believed to have contained unknown solvent used at Soak Out Area (late 1960s to early 1970s)*
  - *Site Inspection Report of 1994 contains previous sampling data*

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## 6, 39, and 45 - Project Status Site 45 - Abandoned Drums



- **Sampling Completed for RI**
  - Surface Soil Samples: 5 (includes 1 background sample)
  - Subsurface Soil Samples: 4 (includes 1 background sample)
  - Sediment: 4
  - Surface Water: 2
  - Shallow Groundwater: 4 (grab samples)
- **Potential Future Sampling**
  - Groundwater: 4 (Four wells will be installed if contamination is found in surface and subsurface samples)

9

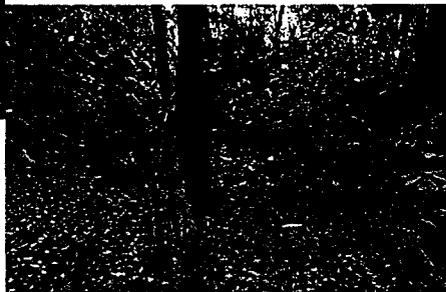


## IR Site 45 Abandoned Drums



Looking northeast at Site 45

Looking southeast at Site 45



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## 6, 39, and 45 - Project Status Future Schedule



- **Remedial Investigation**
  - *Final Work Plan: March 2001*
  - *Field Work:*
    - *Sites 39 and 45: April - May 2001*
    - *Site 6: June 2001*
  - *Draft RI Report: October 2001*
  - *Cost for RI: \$300,000*

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## 6, 39, and 45 - Project Status Future Schedule



- **Feasibility Study**
  - *Contract Award: September 2001*
  - *Draft Feasibility Study: July 2002*
  - *Cost for Feasibility Study: \$80,000*

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



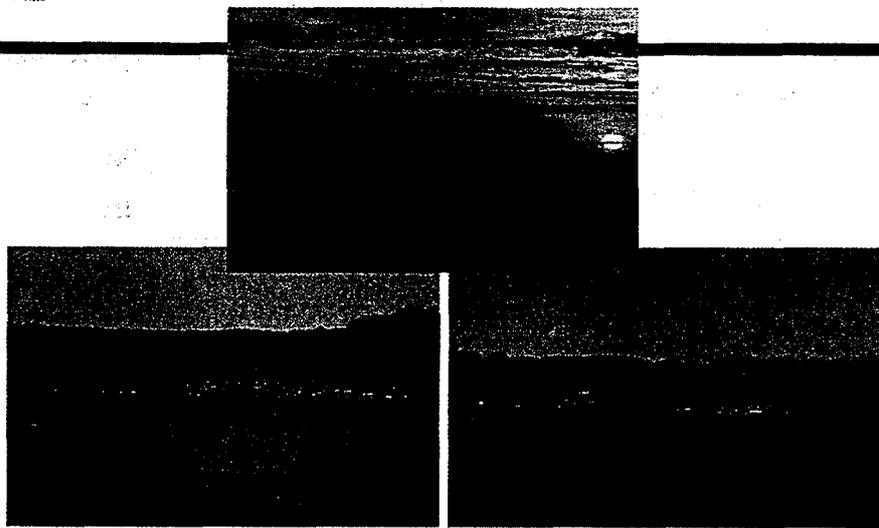
**Mattawoman Creek Study Update**

*Shawn Jorgensen  
IR Project Manager*

*June 21, 2001*



**Mattawoman Creek Study Update  
Mattawoman Creek**





## **Mattawoman Creek Study Update 8-Step Eco Risk Assessment Process**



- **Screening Risk Assessment (SRA)**
  - **Step 1 - Site Visit**
    - *Pathway Identification / Problem Formulation*
    - *Toxicity Evaluation*
  - **Step 2 - Exposure Estimate / Risk Assessment**
- **Baseline Ecological Risk Assessment (BERA)**
  - **Step 3a - Refinement of Conservative Exposure Assessment**
  - **Step 3b - Problem Formulation**
  - **Step 4 - Study Design**
    - *Comments recently received from EPA's Biological Technical Assistance Group (BTAG) on Draft Work Plan*
    - *Work Plan currently being amended to address comments*

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## **Mattawoman Creek Study Update 8-Step Eco Risk Assessment Process (continued)**



- **Step 5 - Verification of Field Sampling Design**
  - *Performed prior to actual sampling activities*
  - *Tentatively scheduled for mid-August*
- **Step 6 - Site Investigation and Data Analysis**
  - *Fieldwork tentatively scheduled to start mid- to late-August*
- **Step 7 - Risk Characterization**
- **Step 8 - Risk Management Decision**
  - *Conducted throughout process*

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## *Mattawoman Creek Study Update Planned Analyses*



- *Sediment "Triad"*
  - *Co-located samples*
  - *Chemical Analysis*
  - *Toxicity Testing*
  - *Benthic macroinvertebrate community analysis*
- *Surface Water for Chemical Analysis*

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## *Mattawoman Creek Study Update Planned Analyses (continued)*



- *Fish for Chemical Analysis*
  - *Whole-body samples (for Eco Risk Assessment)*
  - *Fillets (for Human Health Risk Assessment)*
- *Vegetation for Chemical Analysis*
- *Food Chain Modeling*

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## ***Mattawoman Creek Study Update Human Health Risk Scenarios***



- *Residential*
  - *Recreational Users (including boaters and swimmers)*
  - *Construction Worker*
- *Note: All scenarios will include evaluation of contact with sediment and surface water and/or fish ingestion, as appropriate.*

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## ***Mattawoman Creek Study Update Study Design (Work Plan)***



- *Locations to be sampled*
- *Media to be sampled at each location*
- *Quantity of samples per location per media*
- *Type of analysis for each sample*
- *Analytical methods to be employed*
- *Field methods for collecting samples*

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## ***Mattawoman Creek Study Update Future Schedule***



- ***Step 4 - Draft Final Study Design***
  - *Late-July 2001*
- ***Step 5 - Verification of Field Sampling Design***
  - *Mid- to Late-August 2001*
- ***Step 6 - Site Investigation and Data Analysis:***
  - *Scheduled to Begin Late-August*
  - *Sampling will be completed in three weeks*
  - *Data Analysis to be completed by November 2001*
- ***Step 7 - Risk Characterization***
  - *Draft Report to be completed by February 2002*



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



**Remedial Investigations - Project Status**

***Sites 11, 13, 17, 21, and 25***

*Anne Estabrook  
CH2M HILL*

*June 21, 2001*



***Sites 11, 13, 17, 21, and 25 - Project Status  
Sites Studied***



- *11 - Caffee Road Landfill*
- *13 - Paint Solvents Disposal Ground*
- *17 - Disposed Metal Parts Along Shoreline*
- *21 - Bronson Road Landfill*
- *25 - Hypo Discharges From X-ray Building No. 2*



## Sites 11, 13, 17, 21, and 25 - Project Status

### Site 11 - Caffee Road Landfill



- **Background**
  - One to two acre area located at the end of Caffee Road on the shore of Mattawoman Creek
  - Contains various building debris, bulk metal items, and residue from open burning
- **Completed Sampling**
  - Surface Soil Samples: 36
  - Subsurface Soil Boring Samples: 7
  - Groundwater Samples: 11
  - Surface Water Samples: 7
  - Sediment Samples: 7
  - Waste Samples: 2
- **Metals were detected in soils and groundwater**



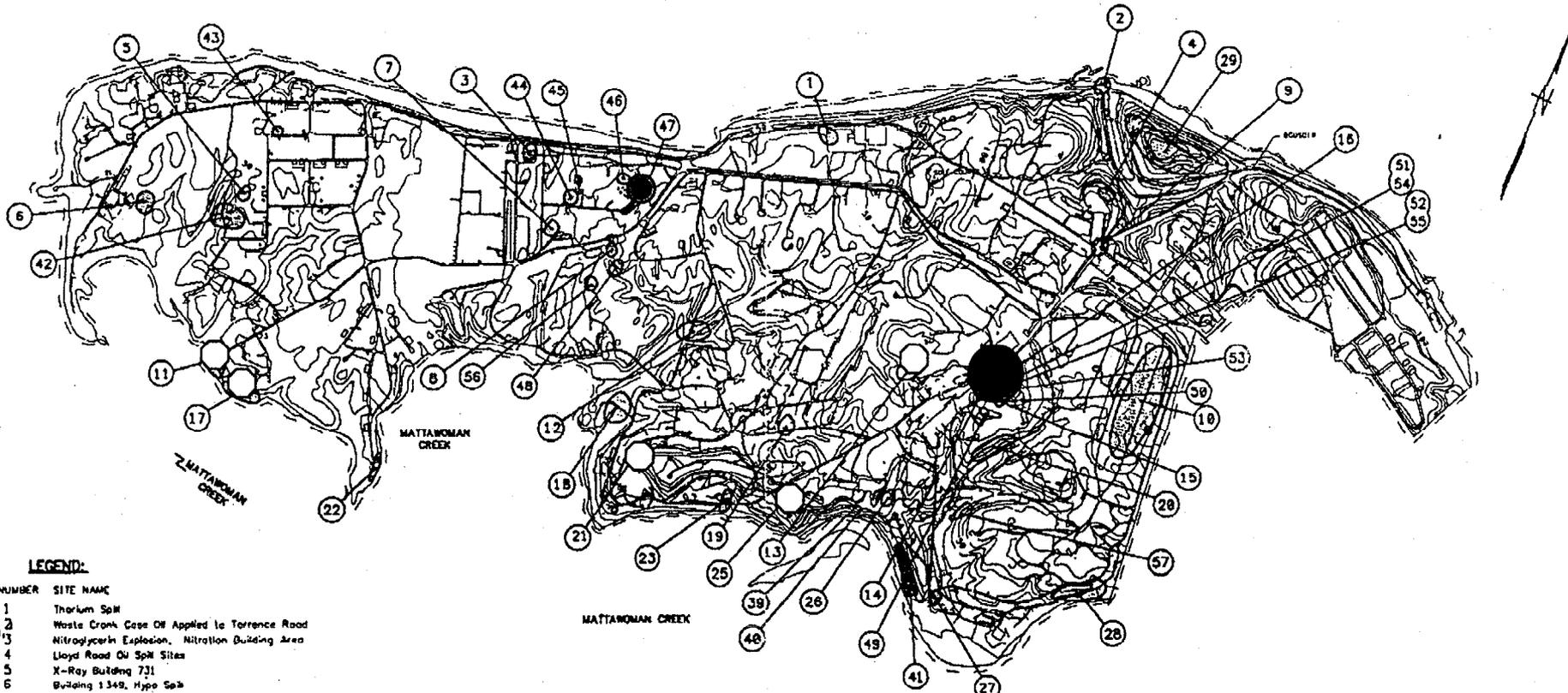
## IR Site 11

### Caffee Road Landfill





# NSWC Indian Head IR Site Map



**LEGEND:**

**SITE NUMBER SITE NAME**

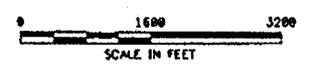
- 1 Thorium SpM
- 2 Waste Crank Case Oil Applied to Torrence Road
- 3 Nitroglycerin Explosion, Nitration Building Area
- 4 Lloyd Road Oil SpM Sites
- 5 X-Ray Building 731
- 6 Building 1348, Hypo SpM
- 7 Building 682, HMX SpM
- 8 Building 768, Mercury Deposits
- 9 Patterson Avenue, Oil SpM
- 10 Single-base Propellant Grains SpM
- 11 Coffee Road Landfill
- 12 Teen Cut Landfill
- 13 Paint Solvents Disposal Ground
- 14 Waste Acid Disposal Pit
- 15 Mercury Deposits in Manhole, Fluorine Lab
- 16 Laboratory Chemical Disposal
- 17 Disposal Metal Parts Along Shoreline
- 18 Hae Island

- 19 Catch Basins at Chip Collection Houses
- 20 Single-base Powder Facilities
- 21 Bronson Road Landfill
- 22 NC Slums Burning Site
- 23 Hydraulic Oil SpM Discharges from Extrusion Plant
- 24 Abandoned Drain Lines
- 25 Hypo Discharge X-Ray Building No. 2
- 26 Thermal Destructor 2
- 27 Thermal Destructor 1
- 28 Original Burning Ground
- 29

- 30-38 Slums Neck Annex (SEE FIGURE 3-2)
- 39 Organic Plant Outfall
- 40 Palladium Catalyst in Sediments
- 41 Scrap Yard
- 42 Ogan Road Landfill
- 43 Toluene Disposal Site
- 44 Sock Cut Area
- 45 Abandoned Drums
- 46 Cadmium Sandblast Oil
- 47 Mercury Nitrate Disposal Area
- 48

- 49 Chemical Disposal Area
- 50 Building 103, Draft Space
- 51 Building 101, Dry Well
- 52 Building 102, Dry Well
- 53 Mercury Contamination of the Sewage System
- 54 Building 181
- 55 Building 182
- 56 IWB7 - Lead Contamination
- 57 TCE Building 202 Area

- [Symbol] --- APPROXIMATE SITE LOCATION
- [Symbol] --- INTERMITTENT STREAM
- [Symbol] --- NAVAL RESERVE BOUNDARY
- [Symbol] --- CONTOUR INTERVAL 10 FEET
- [Symbol] --- FLOW DIRECTION

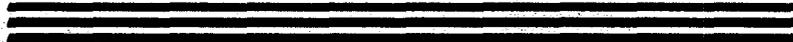




**Sites 11, 13, 17, 21, and 25 - Project Status**  
**Site 13 - Paint Solvents Disposal Ground**



- **Background**
  - Approximately 200 square-foot area located behind Building 870
  - Contains paint-related wastes - thinners, solvents, and used paint
  - Disposal took place from 1953 to 1979
  - Estimated 20,000 pounds of waste disposed (~2,000 gallons)
- **Completed Sampling**
  - Surface Soil Samples: 7
  - Subsurface Soil Boring Samples: 4
  - Groundwater Samples: 0
- **Metals, petroleum products, and organic compounds were detected at low levels in soil samples**



5



**IR Site 13**  
**Paint Solvents Disposal Ground**



6



**Sites 11, 13, 17, 21, and 25 - Project Status**  
**Site 17 - Disposed Metal Parts Along**  
**Shoreline**



- **Background**
  - 1,000-foot stretch of shoreline along Mattawoman Creek located east of Caffee Road Landfill
  - Metal parts disposed of from 1960 - 1980
  - Drums disposed of in woods (dates unknown)
- **Completed Sampling**
  - Surface Soil Samples: 11
  - Subsurface Soil Boring Samples: 11
  - Sediment Samples: 6
  - Surface Water Samples: 6

7



**Sites 11, 13, 17, 21, and 25 - Project Status**  
**Site 17 - Disposed Metal Parts Along**  
**Shoreline/Drums in Woods**



- **Phase 2 Sampling (completed October 2000)**
  - Surface Soil Samples: 5
  - Subsurface Soil Boring Samples: 5
  - Groundwater Samples: 3
  - Installation Of 3 Groundwater Monitoring Wells
- **A solvent (trichloroethene) and by-products detected in two soil samples and one groundwater sample**

8



## *IR Site 17*

### *Disposed Metal Parts Along Shoreline*



9



## *Sites 11, 13, 17, 21, and 25 - Project Status*

### *Site 21 - Bronson Road Landfill*

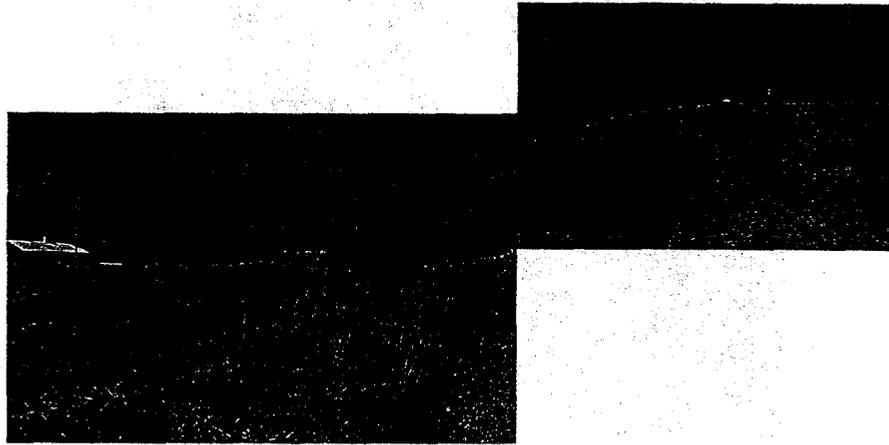


- **Background**
  - 2-acre "borrow pit" near Building 1384
  - Contains solid waste from various manufacturing processes
  - Disposal occurred from 1975 to 1982
  - Waste and estimated amounts include
    - Solid waste - 1,500 tons
    - Barium sludge - 2.5 tons
    - Asbestos - 3.3 tons
    - Paint sludge - 3 tons
- **Completed Sampling**
  - Surface Soil Samples: 22
  - Groundwater Samples: 4
- **Contaminants only detected at very low levels in soil and groundwater**

10



## *IR Site 21 Bronson Road Landfill*



11



## *Sites 11, 13, 17, 21, and 25 - Project Status Site 25 - Hypo Discharges From X-Ray Building No. 2*



- *Background*
  - *Drainage swales located behind Building 588*
  - *Reportedly contains silver from spent fixer and developer used to process x-ray film*
  - *Discharged from 1944 - 1964*
  - *Estimated 864 pounds of silver discharged*
- *Completed Sampling in Two Phases*
  - *Surface Soil Samples: 24 (21 first phase, 3 second phase)*
  - *Subsurface Soil Samples: 6*
  - *Groundwater Samples: 2*
- *Low levels of silver and other metals detected in soil, no silver found in groundwater*

12



## *IR Site 25*

### *Hypo Discharges From X-Ray Building No. 2*



13



## *Sites 11, 13, 17, 21, and 25 - Project Status*

### *Future Schedule*



- *Remedial Investigation*
  - *Contract Award - February 2000*
    - *Draft Work Plan - May 2000*
    - *Final Work Plan - July 2000*
    - *Field Work*
      - *Phase 1 - July 2000*
      - *Phase 2 - October 2000*
    - *Draft RI Report - July 2001 (delayed from April 2001)*
  - *Cost for RI - \$675,000*

14



**Sites 11, 13, 17, 21, and 25 - Project Status  
Future Schedule**



- **Feasibility Study**
  - *Contract Award - May 2001*
  - *Draft Feasibility Study - February 2002*
  - *Cost for Feasibility Studies - \$115,000*



**Sites 11, 13, 17, 21, and 25 - Project Status  
Additional Information**



***Information Repositories***

Indian Head Division  
Naval Surface Warfare Center  
Building 620 (Powder Keg)  
101 Strauss Avenue  
Indian Head, MD  
20640-5035

Charles County Public Library  
La Plata Branch  
Charles & Garrett Streets  
La Plata, MD 20646



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



**Remedial Investigation  
Work Plan**

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

*Anne Estabrook  
CH2M HILL*

*June 2001*

1



***Lab Area - Project Status  
Sites To Be Studied***



- *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.*

2



### **Lab Area - Project Status Site Background**



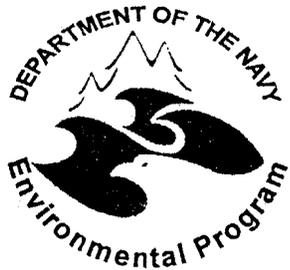
- **Site 15 - Mercury Deposits in Manhole, Fluorine Lab**
    - Laboratory waste released from Buildings 502 and 103 to storm sewer from 1942 to 1981
    - Reported release of approximately 1 pound of mercury and 64 pounds of lead
  
  - **Site 16 - Laboratory Chemical Disposal**
    - Laboratory waste released from wastewater collection system in Building 600 from 1944 to present
    - Potential chemicals include acids, amines, cyanide compounds, metals, chlorinated solvents and non-chlorinated solvents
    - Actual chemicals and amounts released unknown
- 
- 
- 



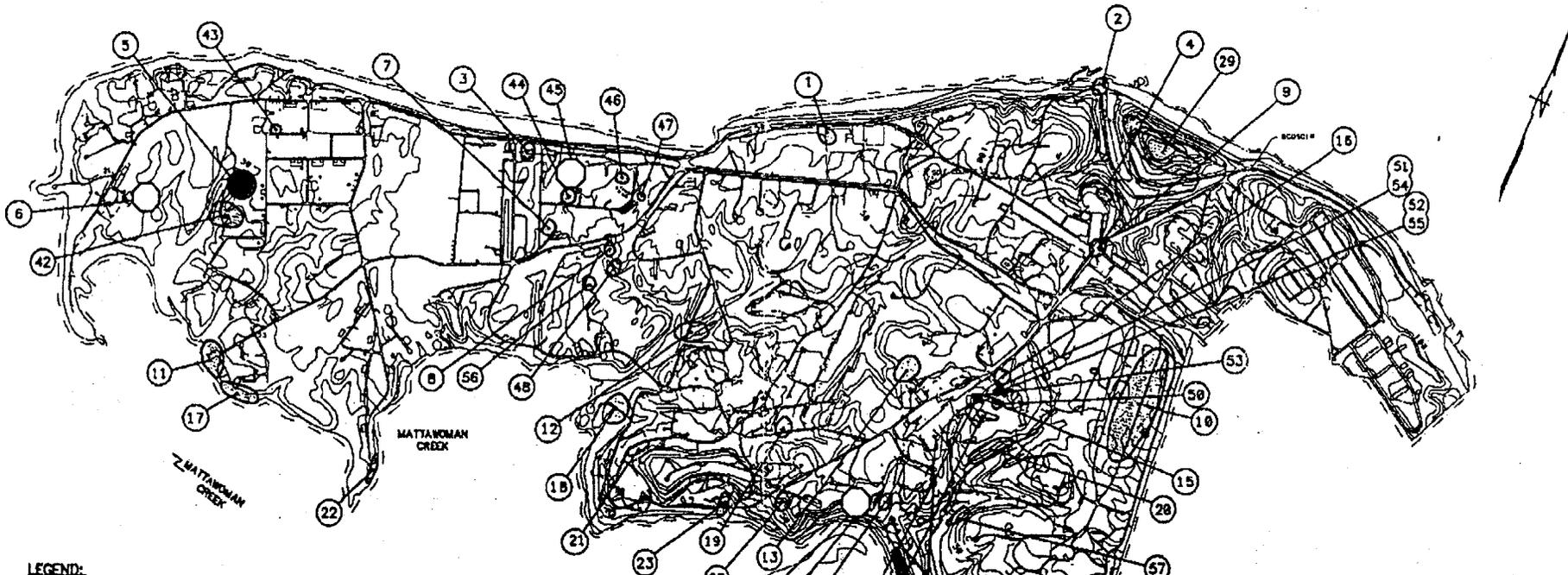
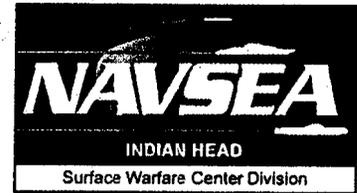
### **Lab Area - Project Status Site Background**



- **Site 49 - Chemical Disposal Pit**
    - Disposal of laboratory waste into a brick pit
    - Had limited use up to the early 1970's
    - Actual chemicals and amounts disposed unknown
  
  - **Site 50 - Building 103 Crawl Space**
    - From 1902 to 1985, the two sinks in Building 103 drained to the ground under the building
    - Mercury-containing equipment was once used in the building.
    - Actual chemicals and amounts discharged unknown
- 
- 
-



# NSWC Indian Head IR Site Map



**LEGEND:**

**SITE NUMBER SITE NAME**

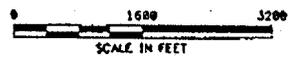
- 1 Thorium Spill
- 2 Waste Crank Case Oil Applied to Torrence Road
- 3 Nitroglycerin Explosion, Nitration Building Area
- 4 Lloyd Road Oil Spill Sites
- 5 X-Ray Building 731
- 6 Building 1349, Hypo Spill
- 7 Building 682, HMX Spill
- 8 Building 766, Mercury Deposits
- 9 Patterson Avenue, Oil Spill
- 10 Single-base Propellant Grains Spill
- 11 Coffee Road Landfill
- 12 Teen Gul Landfill
- 13 Paint Solvents Disposal Ground
- 14 Waste Acid Disposal Pit
- 15 Mercury Deposits in Manhole, Flowline Lab
- 16 Laboratory Chemical Disposal
- 17 Disposal Metal Parts Along Shoreline
- 18 Hae Island

- 19 Catch Basins at Chip Collection Houses
- 20 Single-base Powder Facilities
- 21 Bronson Road Landfill
- 22 NG Shums Burning Site
- 23 Hydraulic Oil Spill Discharges From Extrusion Plant
- 24 Abandoned Drain Lines
- 25 Hypo Discharge X-Ray Building No. 2
- 26 Thermal Destructor 2
- 27 Thermal Destructor 1
- 28 Original Burning Ground

- 38-38 Stuma Neck Annex (SEE FIGURE B-2)
- 39 Organic Plant Outfall
- 40 Palladium Catalyst in Sediments
- 41 Scrap Yard
- 42 Ocean Road Landfill
- 43 Solvents Disposal Site
- 44 Soak Cut Area
- 45 Abandoned Drums
- 46 Cadmium Sandblast Cit
- 47 Mercuric Nitrate Disposal Area
- 48 Nitration Plant Flammable Area

- 49 Chemical Disposal Area
- 50 Building 103, Crust Space
- 51 Building 101, Dry Wall
- 52 Building 102, Dry Wall
- 53 Mercury Contamination of the Sewage System
- 54 Building 101
- 55 Building 102
- 56 [W87 - Lead Contamination]
- 57 TCE Building 202 Area

- 4 APPROXIMATE SITE LOCATION
- INTERMITTENT STREAM
- NAVAL RESERVE BOUNDARY
- CONTOUR INTERVAL 10 FEET
- FLOW DIRECTION





## Lab Area - Project Status Site Background

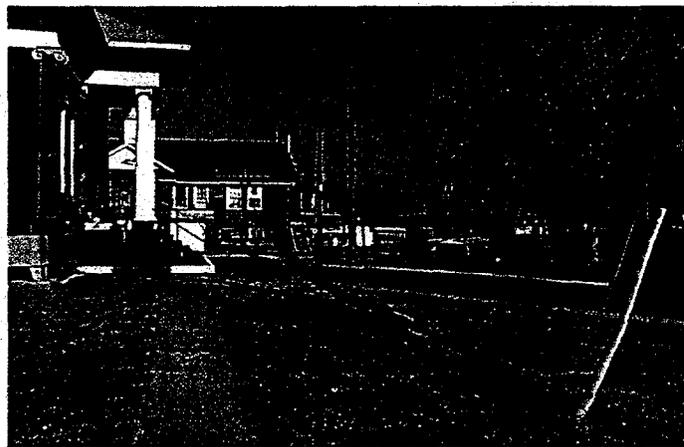


- *Site 53 - Mercury Contamination of Sewage System*
  - *Mercury from Building 102 released to storm and sanitary sewer systems from 1909 through 1986*
  - *Laboratory workers estimated one liter of mercury lost per month. This translates into 28,000 pounds over the 77 year history.*
- *Site 54 - Building 101 Mercury Contamination and Site 55 - Building 102 Mercury Contamination*
  - *Mercury contamination in flooring of buildings*
  - *Possible discarding of small amounts of mercury outside of these buildings*

5



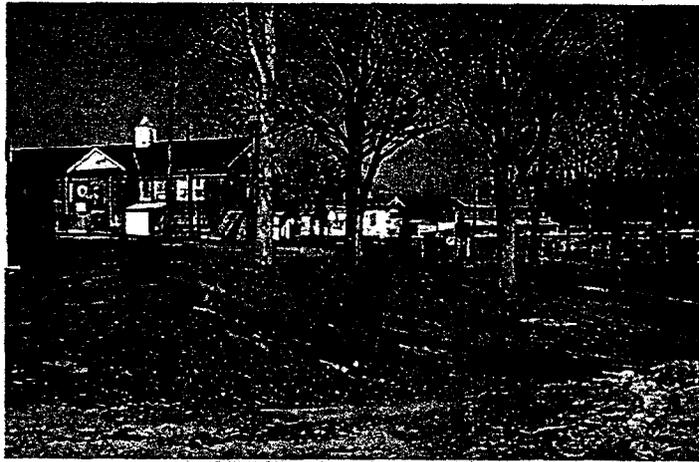
## Lab Area - Project Status Sites 15, 16, 53, 54, and 55



6



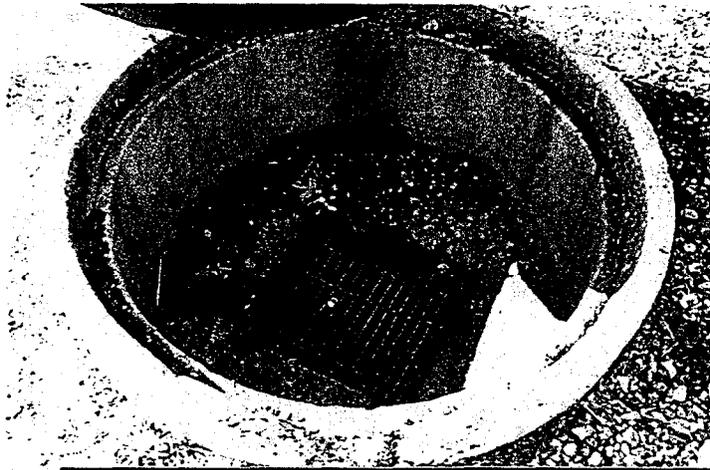
*Lab Area - Project Status  
Sites 15, 16, 50, 53 and 55*



7



*Lab Area - Project Status  
Site 49*



8



## Lab Area - Project Status Site 49



9



## Lab Area - Project Status Scope of Investigation



- *Samples Collected*
  - 80 surface soil samples around building
  - 27 subsurface soil samples around potentially leaking pipes plus one beneath the Chemical Disposal Pit
  - 8 sediment samples inside manholes (out of 14 attempted)
  - 6 sediment samples in “wetland area”
  - 1 surface water sample in “wetland area” (out of 3 attempted)
- *No groundwater sampled because soils are impermeable and groundwater is very deep*
- *Chemical Disposal Pit removed and disposed of offsite*

10



## *Lab Area - Project Status Removal of Chemical Disposal Pit*



11



## *Lab Area - Project Status Schedule and Budget*



- *Remedial Investigation (RI)*
  - *Contract Award - February 2000*
  - *Field Work - Completed June 2001*
  - *Draft RI Report - August 2001 (delayed from June 2001)*
  - *Cost for RI - \$300,000*
- *Feasibility Study (FS)*
  - *Contract Award - December 2000*
  - *Draft Feasibility Study - December 2001*
  - *Cost for FS, Proposed Plan, and Record of Decision - \$80,000*

12



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



**Remedial Investigation  
Project Status**

***Site 47 - Mercuric Nitrate Disposal Area***

*Anne Estabrook  
CH2M HILL*

*June 21, 2001*

1



***Remedial Investigation Project  
Status - Site 47***

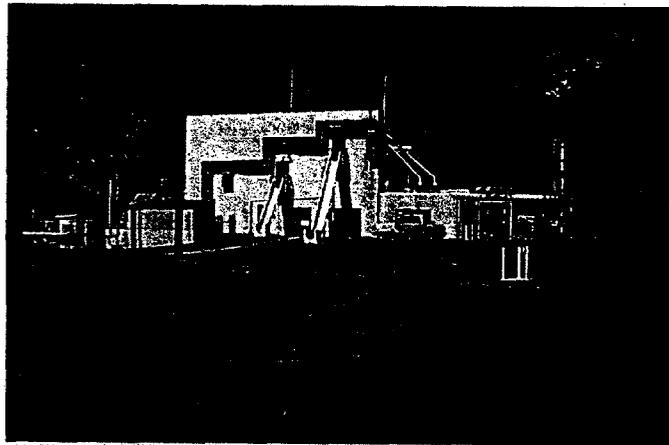


- ***Background of Site 47 - Mercuric Nitrate Disposal Area***
  - *Mercuric Nitrate was reportedly disposed in area approximately 24 sq. ft.*
  - *Limestone chips reportedly used to neutralize spent nitric acid*
  - *Procedure carried out between 1957 and 1965*
  - *Initial sampling performed for Site Inspection (SI) in 1992 and 1993*
  - *Final SI Report (March 4, 1994) recommended further study*

2



## IR Site 47



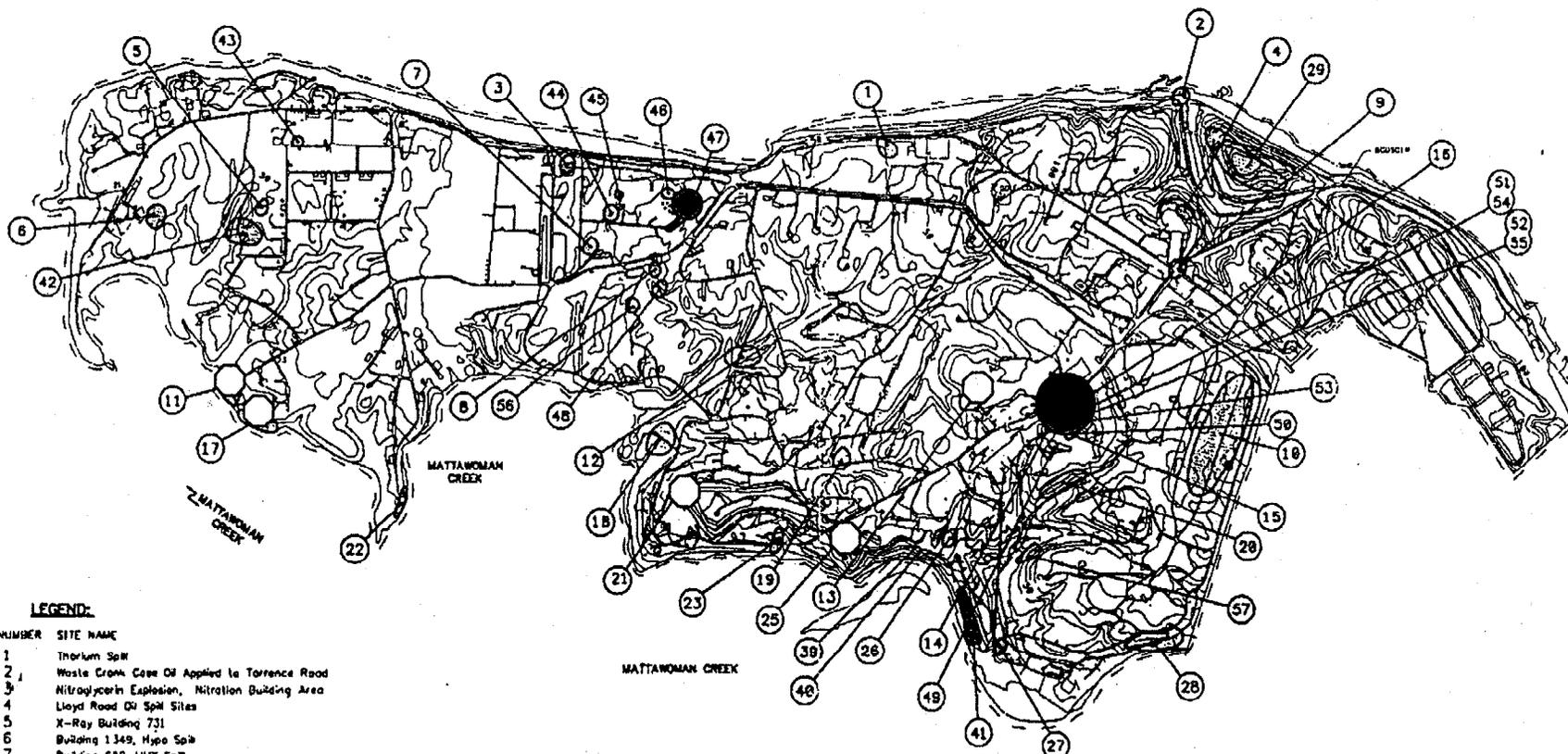
## Remedial Investigation Project Status - Site 47



- *Remedial Investigation (RI) Work at Site 47*
  - *Project awarded in November 1998*
  - *Mobilization for field work began July 6, 1999*
  - *RI work included:*
    - *Installing 4 shallow groundwater monitoring wells around Building 856 and sampling the wells*
    - *Taking 10 surface soil samples from around Building 856*
    - *Taking 4 sediment samples from the ditch south of Building 856*
  - *Draft RI report received May 2000 (was expected in December 1999) recommended further investigation*



# NSWC Indian Head IR Site Map



**LEGEND:**

SITE NUMBER SITE NAME

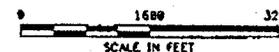
- 1 Thorium Spill
- 2 Waste Crank Case Oil Applied to Torrence Road
- 3 Nitroglycerin Explosion, Nitration Building Area
- 4 Lloyd Road Oil Spill Sites
- 5 X-Ray Building 731
- 6 Building 1349, Hypo Spill
- 7 Building 682, HMX Spill
- 8 Building 768, Mercury Deposits
- 9 Patterson Avenue, Oil Spill
- 10 Single-base Propellant Grains Spill
- 11 Coffee Road Landfill
- 12 Teen Gut Landfill
- 13 Paint Solvents Disposal Ground
- 14 Waste Acid Disposal Pit
- 15 Mercury Deposits in Manhole, Flourite Lab
- 16 Laboratory Chemical Disposal
- 17 Disposal Metal Parts Along Shoreline
- 18 Hax Island

- 19 Catch Basins at Chip Collection Houses
- 20 Single-base Powder Facilities
- 21 Bronson Road Landfill
- 22 NG Slums Burning Site
- 23 Hydraulic Oil Spill Discharges From Extrusion Plant
- 24 Abandoned Drain Lines
- 25 Hypo Discharge X-Ray Building No. 2
- 26 Thermal Destructor 2
- 27 Thermal Destructor 1
- 28 Original Burning Ground
- 29

- 38-38 Sluice Neck Annex (SEE FIGURE 3-2)---
- 39 Organic Plant Outfall
- 40 Palladium Catalyst in Sediments
- 41 Scrap Yards
- 42 Ocean Road Landfill
- 43 Toluene Disposal Site
- 44 Soak Cut Area
- 45 Abandoned Drums
- 46 Cadmium Sandblast Cist
- 47 Mercuric Nitrate Disposal Area
- 48 Nitration Plant Disposal Area

- 49 Chemical Disposal Area
- 50 Building 183, Crawl Space
- 51 Building 191, Dry Wall
- 52 Building 182, Dry Wall
- 53 Mercury Contamination of the Sewage System
- 54 Building 181
- 55 Building 182
- 56 IWB7 - Lead Contamination
- 57 TCE Building 292 Area

- [X] --- APPROXIMATE SITE LOCATION
- - - - - INTERMITTENT STREAM
- --- NAVAL RESERVE BOUNDARY
- 1:20 --- CONTOUR INTERVAL 10 FEET
- FLOW DIRECTION





## **Remedial Investigation Project Status - Site 47**



- *Draft Final RI Report August 2000*
- *Phase II Sampling*
  - *Purpose*
    - *To define the distribution of contaminants in groundwater, the directions of groundwater flow, and the depth, conductivity, and thickness of the clay layer.*
    - *To define the nature and extent of contamination in soil, sediment, and surface water in the drainage ditch originating at Site 47 and to locate the reported acid disposal area*

5



## **Remedial Investigation Project Status - Site 47**



- *Samples Collected*
  - *11 Membrane Interface Probe/Electrical Conductivity Shallow Groundwater Samples*
  - *12 Direct Push Groundwater Samples at 7 Locations*
  - *6 Shallow Subsurface Soil Samples*
  - *10 Surface Soil/Sediment Samples*
  - *10 Shallow Groundwater Monitoring Well Samples (6 new and 4 existing wells)*

6



## **Remedial Investigation Project Status - Site 47**



- **Results - obtained information to help evaluate remedial alternatives**
  - *Better definition of groundwater flow direction and subsurface profile*
  - *Information on hydraulic properties of shallow aquifer*
  - *Better definition of "plume" of carbon tetrachloride and other VOCs in groundwater*
  - *Better definition of extent of contamination in surface soils*

7



## **Site 47 Future Schedule and Budget**



- *Fieldwork Completed June 2001*
- *Draft Final RI Report Revision I Expected August 2001*
- *Draft Final RI Report Revision II Expected October 2001*
- *Dollars Spent to-date on IR Site 47 - \$200,000*
- **Total projected cost:**
  - *Field investigation and RI report - \$300,000*
  - *Feasibility Study, Proposed Plan, Record of Decision - \$80,000*

8

# INSTALLATION RESTORATION PROGRAM



INDIAN HEAD DIVISION,  
NAVAL SURFACE WARFARE CENTER  
101 STRAUSS AVENUE  
INDIAN HEAD, MARYLAND  
20640-5035



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

June 21, 2001

### Site Screening of Installation Restoration (IR) Site 5

Question: At the end of this effort, will all of the silver have been removed?

Answer: No. Cleanup levels will be based on a risk assessment.

Question: Was the worst contamination at 10 parts per million (ppm)?

Answer: No, that is the level we cleaned up to during the removal actions.

Question: Is there a federal or state action level for silver?

Answer: The cleanup level is dependent on the risk assessment, ecological more so than human health. Concentrations, pathways, and receptors are evaluated for the risk assessment.

Comment: EPA Region III's Risk-Based Concentrations (RBCs) for human health were not available during the initial removal actions. In addition, the ecological risk screening levels are much lower than RBCs.

Question: After the results are collected, who makes the decision on cleanup?

Answer: The contractor puts the data into a risk model to determine the potential risk. The EPA, Maryland Department of the Environment (MDE) and the Navy determine cleanup levels based on the risk assessment.

Comment: The Toxicity Identification Evaluation (TIE) Study that was performed on IR Site 42 - Olsen Road Landfill, which is downgradient of Site 5, showed that the silver is not in a form that is bioavailable.

Question: After the site is cleaned up, if land use changes, do we need to do more?

Answer: The land is currently specified for industrial use. If the Activity were transferred to the community for residential use, then we would need to reevaluate the site prior to land transfer.

Question: What lab is used to analyze samples and is it a certified lab?

Answer: Various labs are used for sample analysis. They are all certified by EPA.

### Remedial Investigation (RI) of IR Sites 6, 39, and 45

#### Site 6

Question: Is the pipe shown in the picture of Site 6 on page 4 of the slides a discharge pipe?

Answer: No. It is for storm drainage to help prevent erosion.

#### Site 39

Question: Silver is the concern, not nitroguanidine (NQ) or nitrocellulose (NC)?

Answer: All of these chemicals are a concern.

Question: Is hydrazine considered a carcinogen?

Answer: Yes.

Question: Has the building been tested for suspected chemicals?

Answer: No, it hasn't been tested. However, the building would have to be decontaminated before it can be reused.

Comment: Hydrazine is volatile and probably won't be found at the site. NQ is more of a concern, since it is not soluble in water and is easy to see.

#### Site 45

Question: What was the solvent that was used at the Soak Out Area (Site 44)?

Answer: Reportedly, it was a solvent known as 901B, which contains mercaptan. No additional information can be found on this solvent.

Question: What happened to the drums at Site 45?

Answer: Only rusted pieces of drums remained at the site in the early 1990s. They were taken away and recycled.

Question: When the site is declared clean, will we record it somewhere so it doesn't come up again?

Answer: A Record of Decision (ROD) for the site will be prepared and signed by the Navy and the EPA. RODs are kept in the Administrative Record, which contains all documents related to site sampling and cleanup.

### Mattawoman Creek Study Update

Question: When the plan was prepared, were outfalls above Indian Head considered?

Answer: Yes. There are approximately 17 outfalls between Indian Head and Brandywine.

Question: Do they know if there are any seasonal effects, such as from heavy rains or dry summers?

Answer: Yes. The most important seasonal effect is the abundance of flora and fauna to sample, which is in early spring or fall. Initially, the sampling was going to be conducted in the spring. That has now changed to the fall.

### Update on RI Work at Sites 11, 13, 17, 21, and 25

#### Site 11

Question: Metals are being found at this site, which is to be expected. Do you know what metals?

Answer: Primarily arsenic and iron were found. Other metals were found at low levels.

#### Site 13

No questions were asked nor comments made on Site 13.

#### Site 17

Question: Is this site closer to the Potomac River than Caffee Road?

Answer: Site 17 is slightly upstream from Site 11. Therefore, it is not closer to the Potomac River than Site 11.

#### Site 21

No questions were asked nor comments made on Site 21.

#### Site 25

No questions were asked nor comments made on Site 25.

#### Lab Area Update

No questions were asked nor comments made on the Lab Area.

#### Update on IR Site 47 - Mercuric Nitrate Disposal Area

Question: Did you find the disposal pit for the mercuric nitrate?

Answer: No.

Question: Does the additional work required at this site exceed your budget?

Answer: No. In the past, we did not receive a lot of money. However, for the past couple of years, our funding has increased and has remained steady. The MDE is pleased with the amount of dollars that we have received and the amount of work that we are accomplishing.

#### Miscellaneous

Question: How many sites do we have and will we get into additional sites next year?

Answer: We have discussed 17 sites during these meeting. Sites 6, 39, and 45 are the last of the high priority sites. We are scheduled to begin some medium priority sites next year. We will also continue the work that has been started on the high priority sites.

**INDIAN HEAD DIVISION,  
NAVAL SURFACE WARFARE CENTER**

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

**October 18, 2001**

- 1. IR Sites 11, 13, 17, 21, and 25 Update**
- 2. Update on Lab Area**
- 3. IR Site 47 Update**
- 4. Update on IR Site 57**
- 5. Mattawoman Creek Study Update**
- 6. Update on IR Sites 5, 6, 39, and 45**

### 3.0 RESPONSIVENESS SUMMARY

The Responsiveness Summary is a concise and complete summary of significant comments received from the public and includes responses to these comments. The Responsiveness Summary was prepared after the public comment period (which ended on March 2, 2001) in accordance with guidance in "Community Relations in Superfund: A Handbook" (OSWER Directive 9320.3B, January 1992). The Responsiveness Summary provides the decision maker with information about the views of the community. It also documents how the Navy, EPA, and MDE considered public comments during the decision-making process and provides answers to major comments.

#### 3.1 OVERVIEW

The Proposed Plan as presented to the public identified removal, containment, land use controls, monitoring, and 5-year site reviews as the preferred remedial alternative. Wastes in the wetland areas and adjacent to the ponds would be excavated and hauled off site for disposal. The landfill would be covered with at least 2 feet of soil and revegetated.

Land use controls would consist of maintaining records of the contamination at Site 12 in the Base Master Plan and designating the site as a restricted or limited-use area. Residential development and shallow groundwater use would not be permitted. EPA and the state would be notified of proposed construction plans at Site 12 prior to commencement of any construction activities.

Long-term monitoring of groundwater and surface water would be conducted to confirm that migration of contaminants from the site into the environment is not occurring and to determine the need for future actions. A statutory review will be conducted within 5 years after initiation of remedial action to ensure that the remedy is, or will be, protective of human health and the environment.

#### 3.2 BACKGROUND ON COMMUNITY INVOLVEMENT

The public comment period for the proposed action for Site 12 began on January 16, 2001 and ended on March 2, 2001. A public meeting was held on January 23, 2001 at the Indian Head Senior Center, 100 Cornwallis Square, Indian Head, Maryland, to accept verbal comments on the proposed action. None of the comments received would require a revision to the proposed remedy.

#### 3.3 SUMMARY OF COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND NAVY RESPONSES

Following is a summary of the responses to comments received during the public comment period.

1. When will the Base Master Plan be updated?

Response: There is currently no schedule in place for updating the Base Master Plan. However, funding has been approved for this effort. Until the Navy updates the Base Master Plan for IHDIV-NSWC, we will continue to use the systems we have in place to ensure that personnel are not put at risk from IR sites.

2. What are the systems the Navy has in place to control risks?

Response: Site 12 is located within the facility's restricted access area. As a result, a permit must be secured from the Safety Department prior to commencing construction activities on the site. Safety Department personnel at IHDIV-NSWC review Geographic Information System (GIS) maps, which include IR sites, prior to approving any permits for construction work. In addition, through the National Environmental Policy Act (NEPA), the environmental office reviews work proposed by the Public Works Department for environmental issues, including the location of IR sites, prior to approving them. In addition, IHDIV-NSWC has implemented a training program for personnel that work or may possibly work at sites where there is a potential for unacceptable health risks. Training includes information on the contamination present, the potential risks involved in working at the site, and ways to reduce or eliminate those risks. This will be an ongoing process and will include employees and contractors whose work involves the disturbance of soil at or near IR sites.

3. I continue to be bothered by the failure to designate a buffer area around the site. A buffer area would be of use if leaching of contaminants and migration outside the site area may occur between the 5-year periodic review cycles. I urge that a buffer area of at least 50 feet be designated around the site.

Response: The Navy, with concurrence of the EPA and MDE, does not believe that a buffer area around this site would be necessary to protect human health or the environment. The proposed cover protects human health and ecological receptors by eliminating direct contact with contaminants. Site 12 is within an industrial area with controlled access. Signs will be posted to minimize the potential for trespassers.

The additional soil and the smooth surface grades resulting from the installation of the soil cover would also minimize the potential for leachate generation. Contaminants that leach from the landfill would migrate to shallow groundwater. At Site 12, shallow groundwater flows toward the

adjacent ponds. The ponds have not been adversely affected by groundwater discharges although the landfill has been present for more than 30 years. Therefore, it is unlikely that the ponds would be adversely affected within 5 years. In addition, the 5-year reviews are formal reports that document the results from long-term monitoring. Initially, this monitoring will be conducted more frequently than every 5 years and will include sampling to ensure that the ponds do not become adversely affected by the landfill. The Navy will review the sampling results and will submit them to EPA and MDE for review.

### 3.0 RESPONSIVENESS SUMMARY

The Responsiveness Summary is a concise and complete summary of significant comments received from the public and includes responses to these comments. The Responsiveness Summary was prepared after the public comment period (which ended on April 6, 2001) in accordance with the guidance in "Community Relations in Superfund: A Handbook" (OSWER Directive 9230.3B, January 1992). The Responsiveness Summary provides the decision maker with information about the views of the community. It also documents how the Navy, EPA, and MDE considered public comments during the decision-making process and provides answers to major comments.

#### 3.1 OVERVIEW

The Proposed Plan as presented to the public identified removal, land use controls, monitoring, and 5-year site reviews as the preferred remedial alternative. Soil contaminated above clean-up levels based on protection of human health (non-residential exposure scenarios) and ecological receptors would be excavated and hauled off site for disposal and possibly treatment.

Land use controls would consist of maintaining records of the remaining contamination at Site 41 in the Base Master Plan and designating the site as a restricted or limited-use area. Residential development and shallow groundwater use would not be permitted. EPA and the state would be notified of proposed construction plans at Site 41 prior to commencement of any construction activities.

Long-term monitoring of groundwater would be conducted to confirm that migration of contaminants from the site into the environment is not occurring and to determine the need for future actions. A statutory review would be conducted within 5 years after initiation of remedial action to ensure that the remedy is, or will be, protective of human health and the environment.

#### 3.2 BACKGROUND ON COMMUNITY INVOLVEMENT

The public comment period for the proposed action at Site 41 began on February 13, 2001 and ended on April 6, 2001. A public meeting was held on February 20, 2001 at the Indian Head Senior Center, 100 Cornwallis Square, Indian Head, Maryland to accept verbal comments on the proposed action. None of the comments received require a revision to the proposed remedy.

#### 3.3 SUMMARY OF COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND NAVY RESPONSES

Following is a summary of the responses to comments received during the public comment period:

1. When will the Base Master Plan be updated?

Response: There is currently no schedule in place for updating the Base Master Plan. However, funding is available through the IR program for this effort. Until the Navy updates the Base Master Plan for IHDIV-NSWC, we will continue to use the systems we have in place to ensure that personnel are not put at risk from IR sites.

2. What are the systems the Navy has in place to control risks?

Response: Site 41 is located within the facility's restricted access area. Therefore, a permit must be secured from the Safety Department prior to commencing construction activities on the site. Safety Department personnel at IHDIV-NSWC review Geographic Information System (GIS) maps, which include IR sites, prior to approving any permits for construction work. In addition, through the National Environmental Policy Act (NEPA), the environmental office reviews work proposed by the Public Works Department for environmental issues, including the location of IR sites, prior to approving them. In addition, IHDIV-NSWC has implemented a training program for personnel that work or may possibly work at sites where there is a potential for unacceptable health risks. Training includes information on the contamination present, the potential risks involved in working at the site, and ways to reduce or eliminate those risks. This will be an ongoing process and will include employees whose work involves the disturbance of soil at or near IR sites. Likewise, Activity personnel inform contractors of known/potential contaminants at the site. However, it is up to the contractor's health and safety personnel to instruct them on the proper personal protective equipment required to work at the site.

3. During the public meeting, it was mentioned that the site is currently in use as a scrap yard. I had thought that active use of the site had been discontinued. Is this correct? Is there still residual scrap in the area? If so, when will it be removed?

Response: The scrap yard is active, and the Navy has no plans to discontinue this use in the future. Scrap materials will continue to be stored until they are sold to be recycled or reused. Materials currently stored in the yard are not the source of contamination at the site. Materials that could cause contamination in the future will not be stored at the site. Hazardous materials, such as PCBs, are no longer stored in the scrap yard, and current Station instructions prohibit the acceptance of hazardous materials at the scrap yard.

4. The selected remedy includes land use controls to restrict future site use and prevent use of contaminated shallow groundwater. Does "restrict" mean to "prohibit" or is it envisioned that there could be some identified uses of the site in the future?

Response: "Restrict" does not mean "prohibit." Once the selected remedy has been implemented, the site would still not be suitable for residential development, and groundwater would not be suitable as a source of drinking water. These uses would be prohibited. There would be no unacceptable risks to human health for other, non-residential uses. Institutional controls applied to the scrap yard following remedy implementation will confine land use to the industrial exposure assumptions used in the human health risk assessment performed in the Remedial Investigation Report.

5. Mattawoman Creek is within 30 feet of the fenced scrap yard, and there is a dirt road within this 30-foot area. Is this road still being used? Has the dirt road been checked for contaminant runoff from the scrap yard compound? Will the roadway continue to be checked? Does the continued use of the road by either vehicle or on foot pose any potential health risks? Have you considered rerouting the roadway?

Response: The dirt road is currently in use. Soil samples have been collected from the area between the scrap yard and Mattawoman Creek, including the dirt road. As part of the selected remedy, contaminated soil will be removed in the area between the scrap yard and the creek. Confirmation samples will be collected during excavation activities to be sure that the soil contamination has been removed; therefore, additional sampling will not be required after the remediation has been completed. Following completion of the remedial action, there will be no unacceptable risks to human health from using the road; therefore, rerouting the road would not be required.

### **3.0 RESPONSIVENESS SUMMARY**

The Responsiveness Summary is a concise and complete summary of significant comments received from the public and includes responses to these comments. The Responsiveness Summary was prepared after the public comment period (which ended on April 6, 2001) in accordance with guidance in "Community Relations in Superfund: A Handbook" (OSWER Directive 9320.3B, January 1992). The Responsiveness Summary provides the decision maker with information about the views of the community. It also documents how the Navy, EPA, and MDE considered public comments during the decision-making process and provides answers to major comments.

#### **3.1 OVERVIEW**

The Proposed Plan as presented to the public identified that no remedial action is necessary to protect human health and the environment.

#### **3.2 BACKGROUND ON COMMUNITY INVOLVEMENT**

The public comment period for the no-action decision for Site 44 began on February 13, 2001 and ended on April 6, 2001. A public meeting was held on February 20, 2001 at the Indian Head Senior Center, 100 Cornwallis Square, Indian Head, Maryland, to accept verbal comments on this decision. No verbal comments were received.

#### **3.3 SUMMARY OF COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND NAVY RESPONSES**

No comments were received during the public comment period or the public meeting.

# SUMMARY OF INSTALLATION RESTORATION (IR) SITES

7/9/01

TOTAL NUMBER OF SITES = 145

## Requirements from the Federal Facilities Agreement (FFA) Signed 9 December 2000

|  |   |
|--|---|
| <u>Sites Requiring Remedial Investigations/Feasibility Studies (RI/FS)</u> | <u>26</u>   |
| Remedial Investigations (RI) conducted =                                   | 6   |
| Remedial Investigations (RI) being conducted =                             | 16  |
| Remedial Investigations (RI) to be conducted =                             | 4   |
| Feasibility Studies (FS) conducted =                                       | 3   |
| Feasibility Studies (FS) potentially to be conducted =                     | 22  |
| Feasibility Studies (FS) not required =                                    | 1 (Site 44)   |
| Proposed Plans finalized =   | 3   |
| Records of Decision under review =   | 3   |
| Removal Actions conducted on these sites =                                 | 2 (Site 56 - May to Oct 96)<br>(Site 57 - Oct - Nov 98) |

|  |  |
|--|--|
| <u>Sites Requiring Site Screening (Limited Sampling)</u> | <u>37</u>  |
| Removal Actions conducted on these sites =               | 4 (Site 5 - Jan 93)<br>(Site 5 - Jan 95)<br>(Site 8 - 1984)<br>(Site 8 - Jun - Oct 94) |

|  |           |
|--|-----------|
| <u>Areas of Concern (AOC) Sites Requiring a Desk-Top Audit</u> | <u>41</u> |
|--|-----------|

Note: All available information on these sites will be reviewed to determine if additional study is required. If so, then the site will proceed to Site Screening. If not, then the site will be closed out.

|  |           |
|--|-----------|
| <u>Sites That Are Active, RCRA Permitted, or RCRA Closed</u> | <u>41</u> |
|--|-----------|

Note: Action will be taken on these sites only if release or potential release of hazardous waste is discovered.

# IR SITES REQUIRING RI/FS

7/9/01

| SITE | NAME                                       | RFA | PA | SI | RI | FS | PP | ROD | RD | RA | RC | COMMENTS   |
|------|--|-----|----|----|----|----|----|-----|----|----|----|--|
| 6    | Building 1349, Hypo Spill                  | D   | F  | X  | O  |    |    |     |    |    |    | MAS-56   |
| 11   | Caffee Road Landfill                       | D   | F  | X  | O  |    |    |     |    |    |    | MAS-37   |
| 12   | Town Gut Landfill                          | D   | F  | F  | F  | F  | F  | DF  | D  |    |    | MAS-11   |
| 13   | Paint Solvents Disposal Ground             | D   | F  | X  | O  |    |    |     |    |    |    | MAS-12   |
| 15   | Mercury Deposits in Manhole, Fluorine Lab  | D   | F  | X  | O  |    |    |     |    |    |    | MAS-15   |
| 16   | Laboratory Chemical Disposal               | D   | F  | X  | O  |    |    |     |    |    |    | MAS-60   |
| 17   | Disposal Metal Parts Along Shoreline       | D   | F  | X  | O  |    |    |     |    |    |    | MAS-M  |
| 21   | Bronson Road Landfill                      | D   | F  | X  | O  |    |    |     |    |    |    | MAS-16   |
| 25   | Hypo Discharge X-Ray Building No. 2        | D   | F  | X  | O  |    |    |     |    |    |    | MAS-61   |
| 39   | Organics Plant                             | X   | F  | F  | O  |    |    |     |    |    |    |  |
| 40   | Palladium Catalyst in Sediments            | X   | F  | F  | O  |    |    |     |    |    |    |  |
| 41   | Scrap Yard                                 | X   | F  | F  | F  | F  | F  | D   |    |    |    |  |
| 42   | Olsen Road Landfill                        | X   | F  | F  | F  | DF |    |     |    |    |    |  |
| 43   | Toluene Disposal Site                      | X   | F  | F  | T  |    |    |     |    |    |    |  |
| 44   | Soak Out Area                              | X   | F  | F  | F  | X  | F  | D   |    |    |    |  |
| 45   | Abandoned Drums                            | X   | F  | F  | O  |    |    |     |    |    |    |  |
| 46   | Cadmium Sandblast Grit                     | X   | F  | F  | T  |    |    |     |    |    |    |  |
| 47   | Mercuric Nitrate Disposal Area             | X   | F  | F  | DF |    |    |     |    |    |    |  |
| 48   | Nitroglycerine Plant Disposal Area         | X   | F  | F  | T  |    |    |     |    |    |    |  |
| 49   | Chemical Disposal Area                     | X   | F  | F  | O  |    |    |     |    |    |    |  |
| 50   | Building 103, Crawl Space                  | X   | F  | F  | O  |    |    |     |    |    |    |  |
| 53   | Mercury Contamination of the Sewage System | X   | F  | F  | O  |    |    |     |    |    |    |  |
| 54   | Building 101                               | X   | F  | F  | O  |    |    |     |    |    |    |  |
| 55   | Building 102                               | X   | F  | F  | O  |    |    |     |    |    |    |  |
| 56   | IW87 - Lead Contamination                  | X   | F  | X  | T  |    |    |     |    |    |    | Removal Action Conducted in May-Oct 1994. Included Pipe Cleanout, Relining, and soil cleanup to 10 ppm Lead. |
| 57   | TCE Building 292 Area                      | X   | F  | X  | F  |    |    |     |    |    |    | Removal Action Conducted in Oct-Nov 1998. Included Pipe Cleanout and Relining.                               |

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CERCLA Steps  
 PA = Preliminary Assessment  
 SI = Site Inspection  
 RI = Remedial Investigation  
 FS = Feasibility Study  
 PP = Proposed Plan

ROD = Record of Decision  
 RD = Remedial Design  
 RA = Remedial Action  
 RC = Response Complete

MAS = Main Area SWMU  
 SNS = Stump Neck SWMU  
 SWMU = Solid Waste Management Unit

# IR SITES REQUIRING SITE SCREENING

7/9/01

| SITE | NAME   | RFA | VI | RFI | PA | SI | SS | RI | FS | PP | ROD | RD | RA | RC | COMMENTS   |
|------|--|-----|----|-----|----|----|----|----|----|----|-----|----|----|----|--|
| 1    | Thorium Spill                                    | D   | X  | X   | F  | X  |    |    |    |    |     |    |    |    | MAS-E  |
| 2    | Waste Crank Case Oil Applied to Torrense Road    | D   | X  | X   | F  | X  |    |    |    |    |     |    |    |    | MAS-75   |
| 3    | Nitroglycerin Explosion, Nitration Building Area | D   | X  | X   | F  | X  |    |    |    |    |     |    |    |    | MAS-8  |
| 4    | Lloyd Road Oil Spill Sites                       | D   | X  | X   | F  | X  |    |    |    |    |     |    |    |    | MAS-76   |
| 5    | X-Ray Building 731                               | D   | X  | X   | F  | X  |    |    |    |    |     |    |    |    | MAS-55. Removal Actions conducted Jan 1993 and Jan 1995. Soil cleaned to 10 ppm Silver.                      |
| 7    | Building 682, HMX Spill                          | D   | X  | X   | F  | X  |    |    |    |    |     |    |    |    | MAS-22   |
| 8    | Building 766, Mercury Deposits                   | D   | X  | X   | F  | X  |    |    |    |    |     |    |    |    | MAS-7. Removal Action conducted 1984. Removal Action conducted Jun-Oct 1994. Soil cleaned to 10 ppm Mercury. |
| 9    | Patterson Avenue, Oil Spill                      | D   | X  | X   | F  | X  |    |    |    |    |     |    |    |    | MAS-A  |
| 10   | Single-base Propellant Grains Spill              | D   | X  | X   | F  | X  |    |    |    |    |     |    |    |    | MAS-C  |
| 14   | Waste Acid Disposal Pit                          | D   | X  | X   | F  | X  |    |    |    |    |     |    |    |    | MAS-14   |
| 18   | Hog Island                                       | X   | X  | X   | F  | X  |    |    |    |    |     |    |    |    |  |
| 19   | Catch Basins at Chip Collection Houses           | X   | X  | X   | F  | X  |    |    |    |    |     |    |    |    |  |
| 20   | Single-base Powder Facilities                    | X   | X  | X   | F  | X  |    |    |    |    |     |    |    |    |  |
| 22   | NG Slums Burning Site                            | D   | X  | X   | F  | X  |    |    |    |    |     |    |    |    | MAS-77   |
| 23   | Hydraulic Oil Spill Discharges From Extrusion    | D   | X  | X   | F  | X  |    |    |    |    |     |    |    |    | MAS-17, 18   |
| 24   | Abandoned Drain Lines                            | D   | X  | X   | F  | X  |    |    |    |    |     |    |    |    | MAS-K  |
| 26   | Thermal Destructor 2                             | D   | X  | X   | F  | X  |    |    |    |    |     |    |    |    | MAS-63   |
| 27   | Thermal Destructor 1                             | D   | X  | X   | F  | X  |    |    |    |    |     |    |    |    | MAS-62   |
| 28   | Original Burning Ground                          | X   | X  | X   | F  | X  |    |    |    |    |     |    |    |    |  |
| 29   | The Valley                                       | D   | X  | X   | F  | X  |    |    |    |    |     |    |    |    | MAS-F  |
| 30   | Stump Neck Impact Area                           | F   | X  | X   | F  | X  |    |    |    |    |     |    |    |    | SNS-22   |
| 31   | Old Demolition Range                             | F   | X  | X   | F  | X  |    |    |    |    |     |    |    |    | SNS-23   |
| 32   | Suspected Tool Burial Site                       | F   | X  | X   | F  | X  |    |    |    |    |     |    |    |    | SNS-11   |
| 33   | Scrap Metal Pit                                  | F   | X  | X   | F  | X  |    |    |    |    |     |    |    |    | SNS-7  |
| 34   | Tool Burial Site                                 | F   | X  | X   | F  | X  |    |    |    |    |     |    |    |    | SNS-8  |
| 35   | Torpedo Burial Site                              | F   | X  | X   | F  | X  |    |    |    |    |     |    |    |    | SNS-9  |
| 36   | Inactive Disposal Site                           | F   | X  | X   | F  | X  |    |    |    |    |     |    |    |    | SNS-10   |
| 37   | Causeway   | F   | X  | X   | F  | X  |    |    |    |    |     |    |    |    | SNS-24   |
| 38   | Rum Point Landfill                               | F   | D  | X   | F  | X  |    |    |    |    |     |    |    |    | SNS-1  |
| 58   | Range 3 Burn Point                               | F   | X  | D   | X  | X  |    |    |    |    |     |    |    |    | SNS-2  |
| 59   | Chicamuxen Creek's Edge Site A                   | F   | X  | D   | X  | X  |    |    |    |    |     |    |    |    | SNS-3  |
| 60   | Chicamuxen Creek's Edge Site B                   | F   | D  | X   | X  | X  |    |    |    |    |     |    |    |    | SNS-4  |

# IR SITES REQUIRING SITE SCREENING

7/9/01

| SITE | NAME           | RFA | VI | RFI | PA | SI | SS | RI | FS | PP | ROD | RD | RA | RC | COMMENTS |
|------|----------------|-----|----|-----|----|----|----|----|----|----|-----|----|----|----|----------|
| 61   | Range 6        | F   | D  | D   | X  | X  |    |    |    |    |     |    |    |    | SNS-5    |
| 62   | Air Blast Pond | F   | D  | X   | X  | X  |    |    |    |    |     |    |    |    | SNS-6    |
| 63   | Area 8         | X   | D  | X   | X  | X  |    |    |    |    |     |    |    |    | SNS-25   |
| 64   | IED            | X   | D  | X   | X  | X  |    |    |    |    |     |    |    |    | SNS-26   |
| 65   | IOD            | X   | D  | X   | X  | X  |    |    |    |    |     |    |    |    | SNS-27   |

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- CERCLA Steps
- PA = Preliminary Assessment
  - SI = Site Inspection
  - RI = Remedial Investigation
  - FS = Feasibility Study
  - PP = Proposed Plan
  - ROD = Record of Decision
  - RD = Remedial Design
  - RA = Remedial Action
  - RC = Response Complete

- RCRA Steps
- RFA = RCRA Facility Assessment
  - VI = Verification Investigation
  - RFI = RCRA Facility Investigation
  - SWMU - Solid Waste Management Unit
- Other
- SS = Site Screening
  - MAS = Main Area SWMU
  - SNS = Stump Neck SWMU

## AREAS OF CONCERN (SITES REQUIRING A DESK-TOP AUDIT)

7/9/01

| SITE                 | NAME                                      | AUDIT | SS | RI | FS | PP | ROD | RD | RA | RC | COMMENTS |
|----------------------|---|-------|----|----|----|----|-----|----|----|----|----------|
| Main Area SWMU 4,5   | Underground Storage Tanks(B 290/525)      |       |    |    |    |    |     |    |    |    |          |
| Main Area SWMU 6     | Used Battery Accumulation Area (B 766)    |       |    |    |    |    |     |    |    |    |          |
| Main Area SWMU 27    | Waste Oil Storage Area (Goddard Power)    |       |    |    |    |    |     |    |    |    |          |
| Main Area SWMU 38    | Caffee Road Waste Oil Storage Area        |       |    |    |    |    |     |    |    |    |          |
| Main Area SWMU 40-46 | Wastewater Collection/Treatment Tanks     |       |    |    |    |    |     |    |    |    |          |
| Main Area SWMU 47-51 | Spent Acid Storage/Treatment Tanks        |       |    |    |    |    |     |    |    |    |          |
| Main Area SWMU 64-66 | Waste Water Storage Tanks (Bldg. 1596)    |       |    |    |    |    |     |    |    |    |          |
| Main Area SWMU 69    | Temp Dumpster for Explosive Scrap         |       |    |    |    |    |     |    |    |    |          |
| Main Area SWMU 70    | Temp Areas for Drummed Explosive Scrap    |       |    |    |    |    |     |    |    |    |          |
| Main Area SWMU 72    | Oil/Water Separators                      |       |    |    |    |    |     |    |    |    |          |
| Main Area SWMU 74    | Unlined Overland Drainage Ditches         |       |    |    |    |    |     |    |    |    |          |
| Main Area AOC G      | Sand Blasting Sand Storage Area           |       |    |    |    |    |     |    |    |    |          |
| Main Area AOC H      | Drum at Fuel Storage Area                 |       |    |    |    |    |     |    |    |    |          |
| Main Area SWMU 20    | Safety Burn Point                         |       |    |    |    |    |     |    |    |    |          |
| Main Area SWMU 21    | Caffee Road Decontamination Burn Point    |       |    |    |    |    |     |    |    |    |          |
| Stump Neck SWMU 12   | Waste Oil Storage Site                    |       |    |    |    |    |     |    |    |    |          |
| Stump Neck SWMU 15   | Spent Photographic Solution Storage       |       |    |    |    |    |     |    |    |    |          |
| Stump Neck SWMU 17   | Building 2015 - Chemicals Lab Accum. Area |       |    |    |    |    |     |    |    |    |          |
| Stump Neck SWMU 18   | Waste Pile                                |       |    |    |    |    |     |    |    |    |          |
| Stump Neck SWMU 19   | Disposal Area #1                          |       |    |    |    |    |     |    |    |    |          |
| Stump Neck SWMU 20   | Disposal Area #2                          |       |    |    |    |    |     |    |    |    |          |
| Stump Neck SWMU 21   | Drum Storage Area                         |       |    |    |    |    |     |    |    |    |          |
| Stump Neck SWMU 28   | Old Skeet and Trap Range                  |       |    |    |    |    |     |    |    |    |          |
| Stump Neck SWMU 29   | Pistol Range                              |       |    |    |    |    |     |    |    |    |          |
| Stump Neck SWMU 16   | Thermal Treatment Tank                    |       |    |    |    |    |     |    |    |    |          |
| Stump Neck SWMU 13   | Pink Water Treatment Tank                 |       |    |    |    |    |     |    |    |    |          |
| Stump Neck SWMU 14   | Photographic Lab Septic System            |       |    |    |    |    |     |    |    |    |          |
| Stump Neck SWMU 30   | Building 2015 Dry Well                    |       |    |    |    |    |     |    |    |    |          |

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Other  
 SS = Site Screening  
 SWMU = Solid Waste Management Unit

## SITES THAT ARE ACTIVE, RCRA PERMITTED, OR RCRA CLOSED

7/9/01

| SITE          | NAME  | STATUS | COMMENTS   |
|---------------|---|--------|--|
| SWMU 1        | Inactive Container Storage Unit                         | C      | Pad near Bldg. 859 closed under RCRA in Apr 89                               |
| SWMU 2        | Active Container Storage Unit (Bldg. 455)               | P      |  |
| SWMU 3        | PCB Storage (Bldg. 1440)                                | P      |  |
| SWMU 8        | Drum Accumulation Area (Bldg. 766)                      | A      |  |
| SWMU 9,10     | Spent Acid Tanks at Biazzi Plant                        | A      |  |
| SWMU 13       | Drum Accumulation Area (Bldg. 870)                      | I      |  |
| SWMU 17,18    | Oil/Water Separator and Oil Storage Tank-Extrusion      | I/R    | Separator no longer used. Tank Removed under UST program.                    |
| SWMU 19       | Cast Plant (Strauss Avenue) Burn Point                  | A      |  |
| SWMU 23       | Sewage Treatment Plant                                  | A      |  |
| SWMU 24       | Spent Hexane/Acetone Accumulation Area (Extrusion)      | A      |  |
| SWMU 25       | Fly Ash Bag House (Goddard Power Plant)                 | A      |  |
| SWMU 26       | Trench Drain and Oil/Water Separator (Goddard)          | R      | Removed and Replaced   |
| SWMU 28       | Ash Precipitation System (Goddard Power Plant)          | A      |  |
| SWMU 29       | Acid Neutralization Tank (Goddard Power Plant)          | A      |  |
| SWMU 30,31,32 | Coal Storage Area Sump and Neutralization Pits          | A      |  |
| SWMU 33,34,35 | Waste Water Sump and Settling Tanks (Organic Chemicals) | A      |  |
| SWMU 36       | Radiator (Classified Paper Incinerator)                 | I      |  |
| SWMU 39       | Drum Storage Area (Bldg. 314)                           | R      | Removed  |
| SWMU 52       | Nitroglycerin Slums Storage (Bldg. 891)                 | A      | Bldg. 891 is the NG Slum House and is an approved <90-day accumulation site. |
| SWMU 53,54    | Spent Fixer Storage Tanks (Bldg. 266)                   | A      |  |
| SWMU 57       | Asbestos Storage (Bldg. 296)                            | A      |  |
| SWMU 58,59    | Asbestos Storage Dumpsters (by Bldg. 299)               | R      | Removed  |
| SWMU 61       | Building 588 Area                                       | I      | Pad located outside of Building 588  |
| SWMU 67       | Temporary Waste Accumulation Area                       | A      |  |
| SWMU 68       | Wastewater Catch Basins and Tanks                       | A      |  |
| SWMU 71       | Accumulation Dumpsters for Metal Scrap                  | A      |  |
| SWMU 73       | Refuse Collection Dumpsters                             | A      |  |
| SWMU 78       | Temporary Solvent Storage at Organic Chemical Plant     | R      | Removed  |
| AOC D         | Coal Storage Area                                       | A      |  |
| AOC I         | Storage Building at Machine Shop                        | A      |  |
| AOC J         | Ballistic Test Areas                                    | A      |  |
| AOC L         | Fuel Oil Tank Secondary Containment Area (Goddard)      | A      |  |
| AOC N         | Carpentry Shop (Bldg. 314) Dust Collector               | A      |  |

\* C = RCRA Closed  
 P = RCRA Permitted  
 A = Active  
 I = Inactive  
 R = Removed

**Note:** Action will be taken on these sites only if release or potential release of hazardous waste is discovered.