



**DEPARTMENT OF THE NAVY**

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

5090  
Ser 046C/205  
6 Nov 98

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, October 15, 1998, enclosure (1).

Please note that the next RAB meeting is scheduled for Thursday, February 18, 1999, from 7:00 - 9:00 p.m. Please be sure to mark this date on your calendar if you have not already done so. Also, we are looking into other locations to hold our meetings. Therefore, you will be informed in a reminder letter or postcard of the location of the meeting prior to February 18, 1999.

A few questions arose during the RAB meeting that we were unable to answer. However, since the meeting, we have consulted with the appropriate people, including Indian Head Division, Naval Surface Warfare Center (IHDIV-NSWC) employees and contractors, and are providing the questions and responses below.

Question: Was radon testing performed on drinking water at the base?

Answer: Yes. On January 14, 1998, the Maryland Department of the Environment (MDE) sampled wells at IHDIV-NSWC in the Patuxent and Patapsco aquifers for radon. We will be requesting copies of the sample analyses shortly. However, if radon had been detected over permissible limits in the drinking water, the MDE would have contacted us immediately.

Question: While taking samples last week at Installation Restoration Site 57, Trichloroethylene, was the clay layer punctured?

Answer: No. Groundwater ranged from 6 to 14 feet below the ground surface. The subsurface materials consisted of sand and gravel with minor amounts of clay and silt. However, a clay layer (confining unit) was not encountered.

5090  
Ser 046C/205

Question: Was the Engineering Evaluation and Cost Analysis (EECA) that you are requesting comments on by November 9, 1998, sent to RAB members?

Answer: Yes. The EECA was sent to RAB members with the minutes from the last RAB meeting, which was held on June 18, 1998. The letter forwarding the EECA is dated July 7, 1998, with the serial number 5090 Ser 046C/131.

We would like to thank those of you that attended the meeting once again and hope to see you next year at the next RAB meeting on February 18, 1999.

If you have any additional comments or questions concerning these matters, you may contact Mr. Shawn Jorgensen on (301) 743-6745.

Sincerely,



SUSAN P. ADAMS  
Head, Safety Department  
By direction of the Commander

Encl:

(1) Minutes from RAB Meeting of 15 Oct 98

Copy to:

RAB Members

EFACHES (Code 181)

Meeting Attendees

Interested Parties

# 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: October 15, 1998

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

Capt John Walsh (N)	Mr. Vincent Hungerford (C) *
Ms. Susan Adams (N) *	Mr. Kim Lemaster (S)
Mr. Elmer Biles (C)	Mr. Dennis Orenshaw (F)
Ms. Celia Carroll (C)	Mr. Robert Sadorra (N)

### RAB Members Not in Attendance:

Ms. Lynn Covington (C)	Ms. Patricia Haddon (L)
Mr. Gary Davis (L)	Mr. John McDevitt (C)
Mr. Stephen Elder (L)	Mr. Fred Pinkney (F)
Mr. Charles Ellison (C)	

### Additional Attendees:

Ms. Christina Adams (N)	Mr. Shawn Jorgensen (N)
Ms. Sherry Deskins (N)	Mr. Mark Yeaton (C,N)

\* Co-Chair

C = Community  
F = Federal Official  
L = Local Official  
N = Navy Official  
S = State Official

ENCL (1)

## Major Issues Discussed/Accomplished:

### 1. Meeting Introduction

Ms. Susan Adams of the Indian Head Division, Naval Surface Warfare Center (IHDIIV-NSWC) began the meeting by welcoming everyone. Ms. Adams also apologized for the last minute change in meeting location, since the meeting was held in the cafeteria rather than the library of the General Smallwood Middle School.

Ms. Adams then presented the meeting agenda, which is included as Attachment A.

### 2. IR Sites 12, 39/41, 42, and 44 Remedial Investigation Report Status

Mr. Shawn Jorgensen of IHDIIV-NSWC provided the status of the Remedial Investigation Report for IR Sites 12, 39/41, 42, and 44. The report is currently in draft form and contains some incorrect information. Corrections should be completed in December 1998 and a copy of the draft final report will be provided to RAB members, upon request, for review. In addition, a copy of the report will be placed in the Information Repositories. A copy of Mr. Jorgensen's presentation is included in Attachment B.

### 3. IR Site 57 Removal Action and Remedial Investigation Status

Mr. Robert Sadorra of the Engineering Field Activity Chesapeake (EFACHES) discussed the removal action work taking place at IR Site 57. The work initially included the relining of approximately 800 feet of storm sewer pipe. The storm sewer pipe was videotaped prior to relining to determine its integrity and to determine if sediment would have to be removed prior to relining. Based on the videotape, the majority of the pipe was clean enough to reline without having to remove sediment. However, the upper section of pipe, approximately 100 feet, was found to be deteriorated to the point that relining may not be possible. Therefore, the upper section of pipe may need to be removed and replaced.

Mr. Robert Sadorra also discussed the current Remedial Investigation (RI) efforts at IR Site 57. In anticipation of possible pipe removal, as discussed above, the RI work was broken up into two phases. The first phase included obtaining soil and groundwater samples near the location of Building 292 and the storm sewer pipe to determine if areas of high trichloroethylene (TCE) concentrations exist in those areas. During the possible pipe removal work, soil with TCE hot spots may also be removed. The sample results are expected to be available in November 1998.

To end his presentation, Mr. Sadorra showed a short videotape of the actual pipe relining work that took place at IR Site 57. A copy of Mr. Sadorra's presentation is provided in Attachment C.

#### 4. Fiscal Year 1999 Budget/Schedule

Mr. Sadorra discussed the fiscal year (FY) 1999 budget and the planned work that will take place during FY 1999. Over one million dollars has been budgeted to conduct Remedial Investigation (RI) fieldwork and prepare RI work plans for 12 sites. In addition, the first phase of work required to obtain an ecological risk assessment of the Mattawoman Creek has been budgeted for FY 1999.

A copy of Mr. Sadorra's presentation, which provides a breakdown of the work to be conducted in FY 1999, is included in Attachment D.

#### 5. Comments, Questions, and Answers

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

#### 6. Future Schedule for 1999

Ms. Susan Adams suggested the following schedule for RAB meetings to be held in calendar year 1999:

February 18, 1999  
June 17, 1999  
October 21, 1999

Please note that these are the third Thursdays in the months of February, June and October 1999. Please ensure that these dates are placed on you calendars.

#### 7. Conclusion

Ms. Susan Adams concluded the meeting by thanking all in attendance and presented the tentative agenda for the next RAB meeting on February 18, 1999, which is included as Attachment F. A reminder will be sent to RAB members and interested citizens prior to the meeting.

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

October 15, 1998

7:00 - 7:10      ARRIVAL/WELCOME

Ms. Susan P. Adams  
Indian Head Division, Naval Surface Warfare  
Center  
Head, Safety Department

7:10 - 7:20      IR SITES 12, 39/41, 42, AND 44 REMEDIAL  
INVESTIGATION REPORT STATUS

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

7:20 - 7:40      IR SITE 57 REMOVAL ACTION STATUS

Mr. Robert Sadorra  
Engineering Field Activity Chesapeake  
Remedial Project Manager

7:40 - 8:00      IR SITE 57 REMEDIAL INVESTIGATION STATUS

Mr. Robert Sadorra

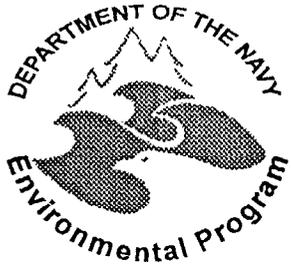
8:00 - 8:20      FISCAL YEAR 1999 BUDGET/SCHEDULE

Mr. Robert Sadorra

8:20 - 9:00      COMMENTS, QUESTIONS, AND ANSWERS

9:00              ADJOURN

**Attachment A**



# *Remedial Investigation Report Status*



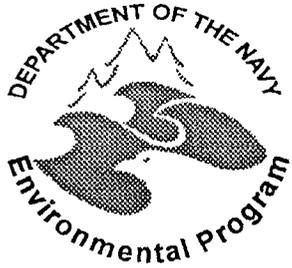
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## *INDIAN HEAD DIVISION NAVAL SURFACE WARFARE CENTER RESTORATION ADVISORY BOARD*

*October 15, 1998*

*Shawn Jorgensen  
Installation Restoration  
Project Manager*

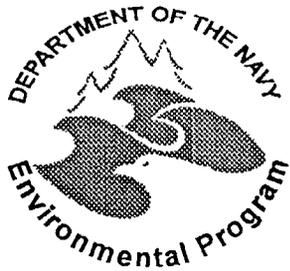
Attachment B



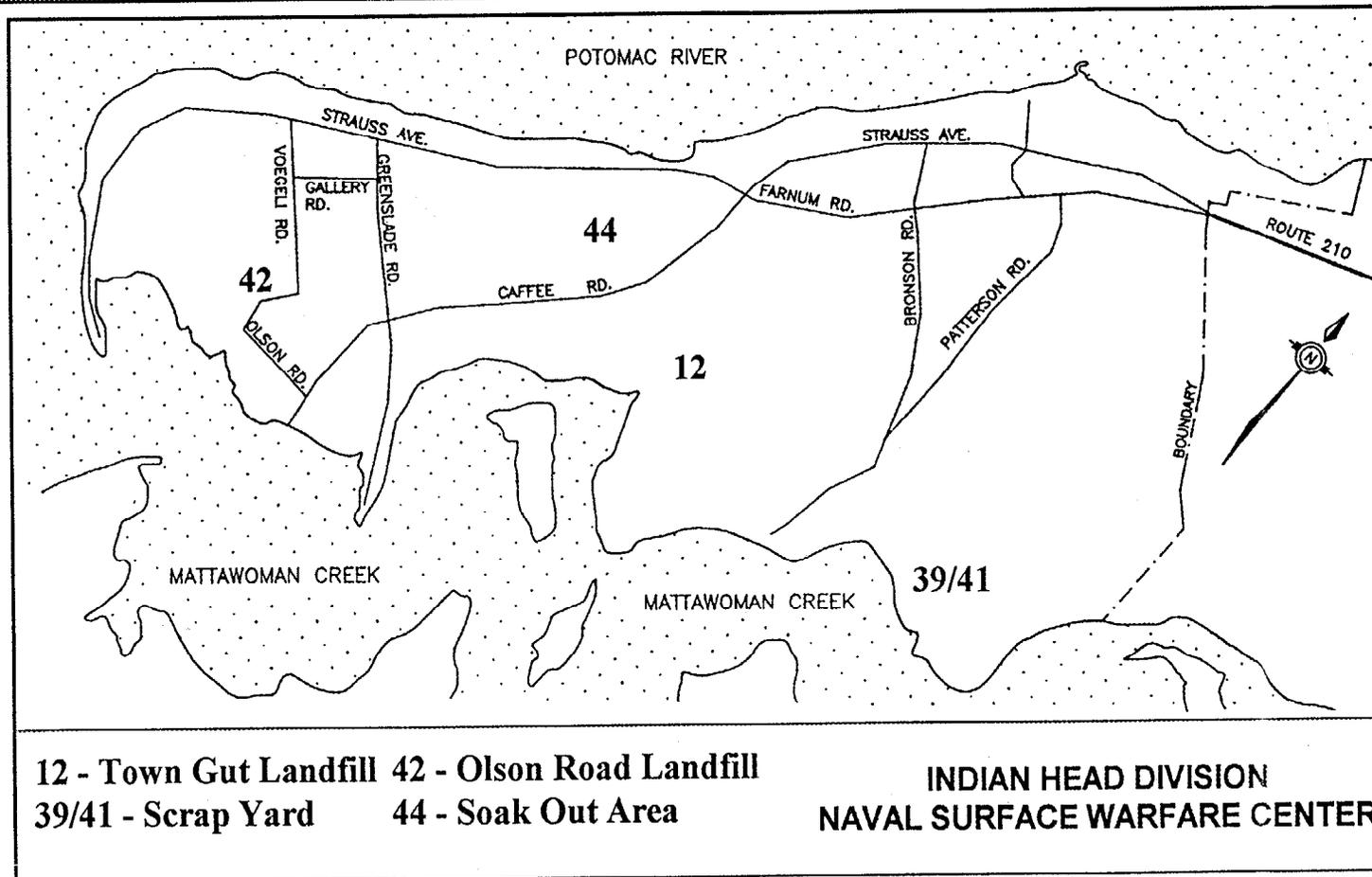
# *Remedial Investigation Report Status*



- 
- *Sites Investigated*
    - *Site 12 - Town Gut Landfill*
    - *Site 39/41 - Scrap Yard*
    - *Site 42 - Olson Road Landfill*
    - *Site 44 - Soak Out Area*



# Remedial Investigation Report Status



12 - Town Gut Landfill 42 - Olson Road Landfill  
39/41 - Scrap Yard 44 - Soak Out Area

INDIAN HEAD DIVISION  
NAVAL SURFACE WARFARE CENTER



# *Remedial Investigation Report Status*



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## *• Background*

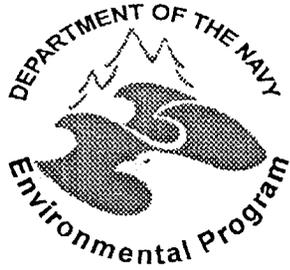
- Field Work Conducted August 1997 - November 1997*
- Draft Report Completed May 1998*
- Comments Received from:*
  - US Fish & Wildlife (August 18, 1998)*
  - US EPA Biological Technical Assistance Group (September 24, 1998)*
  - Navy Environmental Health Center (August 11, 1998)*



# *Remedial Investigation Report Status*



- 
- *Future Plans for Report*
    - *Changes Required by Contractor*
    - *Meeting with BTAG for Comment Clarification*
    - *Draft Final Report - December 1998*



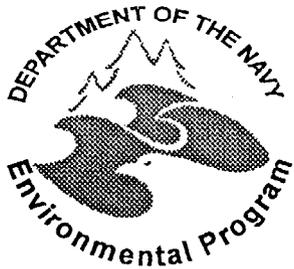
# *Remedial Investigation Report Status*



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- *Future Plans for Sites*

- *Site 12 - Feasibility Study (ARAR)*
- *Site 39/41 - Feasibility Study (Potential Human Health and Ecological Risk)*
- *Site 42 - Feasibility Study (ARAR)*
- *Site 44 - No Further Action*
  - *Sampled for Ammonium Perchlorate (AP)  
October 8, 1998*
  - *Need to Resample for AP*



# *Remedial Investigation Report Status*



- 
- *Applicable or Relevant and Appropriate Requirements (ARARs)*
    - *Federal, state, and local laws and regulations that must be considered when choosing removal and remedial actions*
      - *Resource Conservation and Recovery Act (RCRA)*
      - *Clean Water Act (CWA)*



# *Remedial Investigation Report Status*



- 
- *Summary of Remedial Investigation (RI)  
for Sites 12, 39/41, 42, and 44*
    - *Fieldwork*
    - *Sample Analysis*
    - *RI Report*
      - *Changes Required on Draft Report*
      - *Draft Final Report Due December 1998*



# *Remedial Investigation Report Status*



- 
- *RAB Members*
    - *If you would like a copy of the draft final Remedial Investigation Report, when it becomes available (December 1998), please contact:*
      - *SHAWN JORGENSEN*
        - *Phone - (301) 743-6745*
        - *Facsimile - (301) 743-4180*
  - *Other Community Members*
    - *Draft Final RI Report, when completed, will be available in the Information Repositories*



# *Remedial Investigation Report Status*



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- *Information Repository Locations*

- *Indian Head Division, Naval Surface Warfare Center  
Building D-40*

- *Charles County Public Libraries*

*Potomac Branch  
3225 Ruth B. Swann Dr  
Indian Head, MD  
20640*

*La Plata Branch  
Charles & Garrett Streets  
La Plata, MD  
20646*



# *Site 57 Removal Action Status Bldg. 292 TCE Contamination*

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

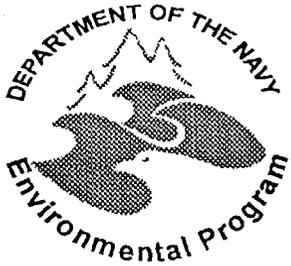
*October 15, 1998*

*Robert Sadorra, RPM  
Engineering Field Activity Chesapeake*

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# *Site 57 Removal Action Status Project Background*

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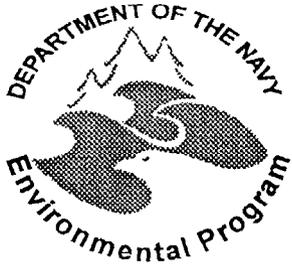
- *TCE discovered in IW-80*
- *Bldg. 292 used TCE for degreasing until 1989 and decanted TCE to drums located outside of the building near storm sewer manhole (MH-1)*
- *Sampling in MH-1 revealed TCE contamination while upstream manholes had no contamination*
- *Soil gas, soil, and groundwater sampling confirmed elevated levels of TCE in soil and groundwater*



# *Site 57 Removal Action Status Project Background*

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- *High concern of accelerated contaminant migration from groundwater infiltration into the storm sewer*
- *Engineering Evaluation / Cost Analysis was completed*
- *EE/CA supported Storm Sewer Rehabilitation*
- *Completed preliminary video inspection of the sewer piping to evaluate the condition of the pipe and determine the feasibility to reline*
- *Initial indications were that, in spite of the poor condition of the sewer, the pipes could be lined and the project would be completed by September*



# *Site 57 Removal Action Status Project Plans*

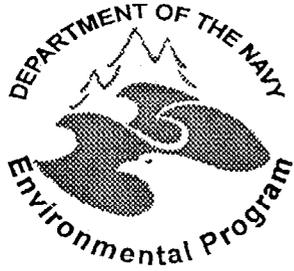
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- *New conditions have evolved which have slightly changed project plans and schedule*
- *The lining of approximately 100 ft section of 24" pipe up gradient of MH-1 does not appear to be feasible*
- *The section will require point repair / replacement*
- *Problems:*
  - *Requires mobilization of heavy equipment*
  - *Requires excavation and disposal of RCRA F-listed soil*
  - *May require dewatering of groundwater also considered F-listed*
  - *Adds major delay to the project and to the following RI*



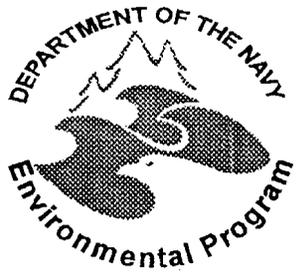
# *Site 57 Removal Action Status Project Plans*

- 
- The Navy is currently lining the the 24" pipe down gradient*
  - 12" line from MH-1 to Bldg. 292 is also being lined*
  - The Navy is currently developing project scope and negotiating costs to replace the 100 ft. unrepairable section*
  - Also evaluating the cost and feasibility to perform TCE contaminated hot spot removal of soils in the area*
  - However, need to determine the extent of soil contamination and define the removal area*
  - Phased the Site 57 Remedial Investigation to proceed with the soil investigation during the Removal Action*

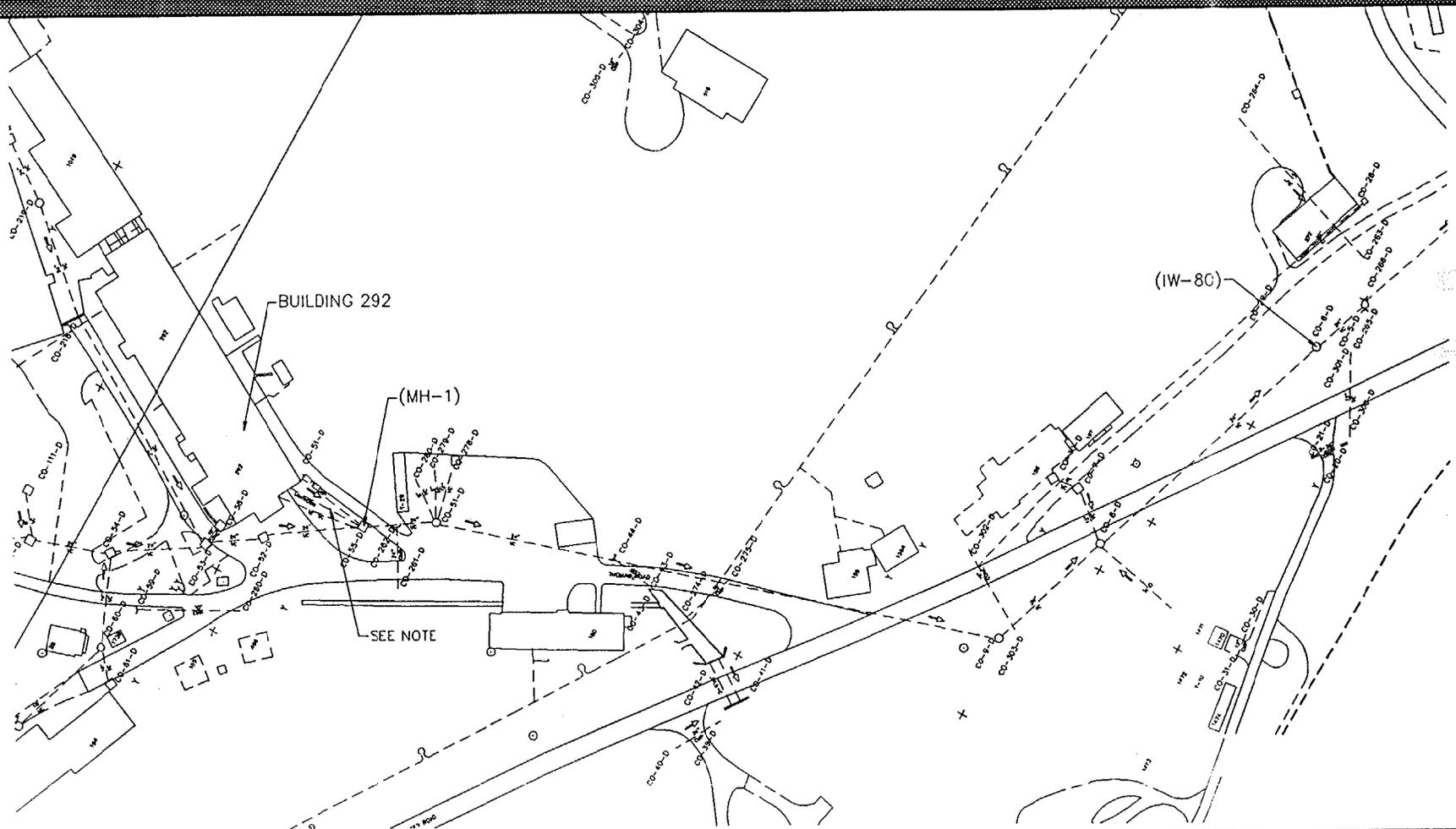


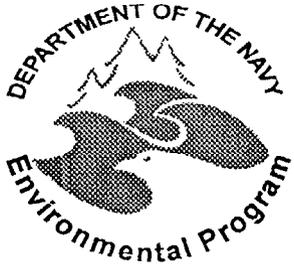
# *Site 57 Removal / RI Status Project Plans*

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- *The RI soil data will be gathered to evaluate the possibility of conducting soil removal in addition to the pipe replacement*
    - *Field work completed October 9*
    - *Data should start coming in by November 2*
    - *Magnitude and extent of soil contamination determined by November 9*
    - *Cost and feasibility of hot spot removal can then be established*
  - *EE/CA has been reopened for public comment to include the additional alternative of Hot Spot Removal*
    - *End of public comment period also scheduled for November 9*
  - *Plans to remobilize for Sewer Replacement and possible Hot Spot Removal by November 16*
    - *Currently securing additional funding for cost growth*
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# Site 57 Removal Action Status Project Plans

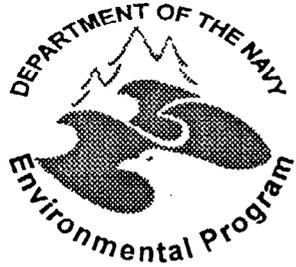




# *Site 57 Remedial Investigation Status Project Plans*

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- *The RI soil data has been phased to accelerate*
  - *Field work completed October 9*
  - *Data should start coming in by November 2*
  - *Magnitude and extent of soil contamination determined by November 9*
- *Remobilize for the remainder of the field work January 11*
- *Complete field work February 12*
- *Draft report scheduled complete early July but will attempt to accelerate*
- *RI will identify extent of contamination in both soils and groundwater after the effects of the Removal Action*



# *FY 99 Planned Schedule and Budget*

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

*October 15, 1998*

*Robert Sadorra, RPM  
Engineering Field Activity Chesapeake*

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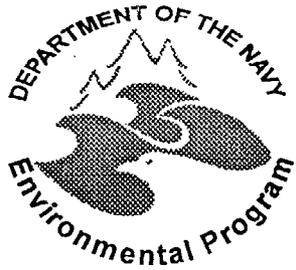
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# *FY 99 Planned Schedule and Budget*

<u><i>Project Title</i></u>	<u><i>Expected Award Date</i></u>	<u><i>Budgeted Cost</i></u>
<i>Remedial Investigation – Sites: 47, 53 Field Work / Report</i>	<i>11/15/98</i>	<i>\$ 148,000</i>
<i>Remedial Investigation – Sites: 49 Field Work / Report</i>	<i>11/30/98</i>	<i>\$ 100,000</i>
<i>Feasibility Study – Sites: 12, 39/41, 42, 44 Work Plan / Field Work / Report</i>	<i>1/15/99</i>	<i>\$ 240,000</i>
<i>Remedial Investigation – Sites: 11,13,17,21,25 Work Plan / Some Field Work</i>	<i>5/15/99</i>	<i>\$ 305,000</i>
<i>Ecological Assessment of Mattawoman Creek Work Plan / Field Work</i>	<i>5/15/99</i>	<i>\$ 270,000</i> <b><i>\$ 1,063,000</i></b>
<i>Feasibility Study – Site 57 Work Plan / Field Work / Report</i>	<i>8/30/99</i>	<i>\$ 125,000</i> <i>(Swing)</i>

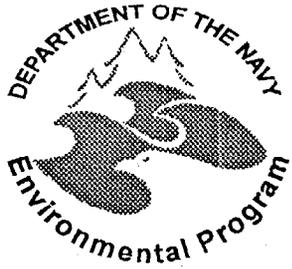


# *RI Sites 47 and 53*

## *Schedule and Budget*

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- *Expected Award: 11/15/98*
  - *Budget: \$148,000*
  - ***Site 47 - Mercuric Nitrate Disposal Area***
    - *Mercuric Nitrate was disposed in area approximately 24 sq. ft.*
    - *limestone chips used to neutralize spent catalyst*
    - *Procedure carried out between 1957 and 1965*
    - *RI will include additional soil, sediment and groundwater sampling*
  - ***Site 53 - Mercury in the Sewage System***
    - *1909 - 1986, mercury was reported loss in the sewage system in the general laboratory area in the northeastern part of the Activity*
    - *RI will be phased to include research of the layout, video taping of the sewers, sampling plan development, field work and reporting.*
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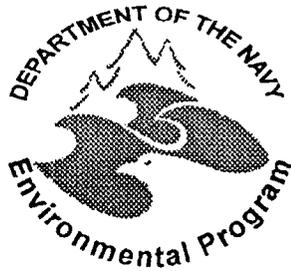


# *RI Site 49*

## *Schedule and Budget*

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- *Expected Award: 11/30/98*
- *Budget: \$100,000*
- ***Site 49 - Chemical Disposal Pit***
  - *Located in the northeastern laboratory area*
  - *Circular concrete pit 2.5 feet in diameter and 3 feet deep*
  - *Pit was used to dispose of laboratory containers*
  - *Contents of the containers were collected in the bottom of the pit and drained from the pit via a drain line to the sanitary sewer system*
  - *RI will include smoke test to identify drainage outlets, sediment sampling around drainage outlets, removal of the concrete pit, and soil sampling beneath the pit.*



# *FS Sites 12, 39/41, 42, 44*

## *Schedule and Budget*

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- *Expected Award: 1/15/99*
- *Budget: \$240,000*
- *Site 12 - Town Gut Landfill*
- *Sites 39/41 - Organics Plant / Scrap Yard*
- *Site 42 - Olson Road*
- *Site 44 - Soak Out Area*
  
- *FS will evaluate alternatives to address risk and ARARs at the site.*

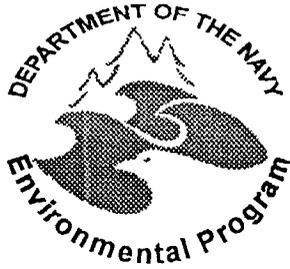


# *RI Sites 11,13,17,21,25*

## *Schedule and Budget*

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- *Expected Award: 5/15/99*
  - *Budget: \$305,000*
  - *Site 11 - Caffee Road Landfill*
  - *Site 13 - Paint Solvents Disposal Ground*
  - *Site 17 - Disposal of Metal Parts along the Shoreline*
  - *Site 21 - Bronson Road Landfill*
  - *Site 25 - Hypo Discharge X-ray Bldg. No. 2*
  
  - *RI still requires work plan development. Field work will not begin until late summer.*
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# *Assessment of Mattawoman Creek Schedule and Budget*

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- *Expected Award: 5/15/99*
- *Budget: \$270,000*
- *Evaluate the effects of IR sites and other sources on the ecological health of Mattawoman Creek.*
- *Phase I - Chemical Screening*
- *Phase II - Toxicity and Benthic Analysis*



# *FS Site 57*

## *Schedule and Budget*

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- *Expected Award: 8/30/99 swing • Budget: \$125,000*
- *Site 57 - Building 292 TCE Contamination*
  - *Begin a feasibility study to evaluate alternatives for final remediation of the site*

# 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

October 15, 1998

### IR Sites 12, 39/41, 42, and 44 Remedial Investigation (RI) Report Status

Question: What do you mean that incorrect values of silver concentrations at IR Site 42 can put you over in risk?

Answer: Two removal actions have taken place at IR Site 5, which is adjacent to IR Site 42, to remove silver contaminated soil. The RI report contains silver concentrations in soil that existed prior to the removal actions. These values are a magnitude higher (i.e., 125 parts per million (ppm) versus 10 ppm) than those that currently exist at the site. Therefore, because these higher concentrations were used, the ecological risk assessment for this site in the report is incorrect. The result stated that a potential ecological risk exists at this site from the silver concentrations. However, when the correct, lower numbers are used, the potential ecological risk may no longer exist.

Question: Was radon testing performed on drinking water at the base?

Answer: We are not sure, but will check with the water group to determine if this testing has been performed.

Question: Are all of the reports paper documents?

Answer: Currently, yes. However, we have a draft copy of the electronic Information Repository. We are currently reviewing it for completeness. As for this RI report, we do not currently have an electronic copy. However, if you would prefer an electronic copy, we can certainly provide that to you, instead of a paper copy.

Question: Is the contractor providing these reports on CD?

Answer: No, we do not normally get an electronic copy, on CD or on floppy disk. We plan to change that in the future.

Comment: If you would like a copy of the report in electronic format, please let us know and in the future, we will provide reports to you on disk.

Question: Can we view the report on the base web site?

Answer: No. We do not have copies of IR documents on the IHDIV-NSWC web site.

### IR Site 57 Removal Action and Remedial Investigation Status

Question: What is the thickness of the new liner?

Answer: The thickness of the liner is 12 millimeters, which is about a half of an inch.

Question: How many lines go into the manhole (MH-1)?

Answer: An 8-inch line and a 10-inch line enter the manhole from across the street from Building 292. Another 8-inch line enters the manhole from the same side as Building 292. Video surveys of these pipes show that these lines were abandoned with sand or concrete. The main 24-inch line is at the bottom of the manhole and water flows parallel with the street. A 15-inch line carrying stormwater from the side of Building 292 enters the manhole. And, a 12-inch line carrying steam condensate from within Building 292 enters the manhole. Therefore, 6 lines enter MH-1 and only one line, the 24-inch line on the bottom, carries effluent from the manhole.

Question: Is most of the trichloroethylene (TCE) located along the line that we can't reline?

Answer: Based on previous sampling, which included soil-vapor, limited soil, and two groundwater samples, a "plume" exists from the ball valve on the outside of Building 292 to the manhole. Therefore, some of the TCE is located along the line that we currently do not believe that we can reline.

Question: Could you use a smaller pipe and put it inside of the large 24-inch pipe as a way of relining pipe to stop infiltration of TCE contaminated groundwater into it?

Answer: Only one contractor that does this type of work, called sliplining, seemed interested in bidding on this job. However, after seeing the pipe and the size of the pipe, the contractor stated that the largest pipe that they have ever relined using sliplining was an 18-inch pipe. He also stated that the 24-inch pipe was too big to reline this way and maintain its integrity.

Question: Do we know how groundwater is flowing in the area?

Answer: No. We do not currently have enough data. However, in general groundwater follows topography. Therefore, groundwater should be flowing towards the Mattawoman Creek. We will have a better idea once wells are installed during the Remedial Investigation (RI).

Question: How much contamination is located outside of the pipe? Wasn't there a lot of contamination on the outside?

Answer: The highest concentration of TCE is located approximately 20 feet from the corner of Building 292 and decreases as you approach the manhole and 24-inch pipe.

Comment: The concentration of the TCE in the pipe is less than what is in the ground because it gets diluted with the water flowing in the pipe.

Question: Are we going to try to remove all of the TCE contaminated soils around the area of the pipe, including under the pipe?

Answer: That will depend on if the TCE in the soil is highly concentrated and if it is cost effective to do so.

Comment: You should reach clay at 25 to 30 feet.

Question: If you excavate hot spots and replace the soil with clean fill material, won't that clean fill become contaminated also? TCE in soil vapors could contaminate the clean fill.

Answer: That is correct. However, a liner will be placed in the hole prior to installing the pipe and clean fill. This will keep that TCE-contaminated soil segregated from the clean fill.

Question: Lining the manhole and pipe prevents migration of TCE through the pipe, but what happens to the TCE that remains in the soil? Won't we have continued migration through the ground? It will take some time for groundwater contamination levels to stabilize in the area.

Answer: The pipe bedding is the most obvious path for the TCE contaminated groundwater to follow. As part of the RI effort, we will be installing wells along this bedding to determine how the pipe relining will affect the flow of TCE through the groundwater.

Comment: Please consider abandoning the pipe in place and rerouting the current flow through the pipe.

Comment: If we are required to remove the pipe in order to stop infiltration, a barrier may be installed in the location of the manhole to stop or decrease the flow of TCE downgradient.

Question: During the soil removal, will the soil be stored on-site or removed off-site immediately?

Answer: A roll-off dumpster will be used, similar to the removal action at IR Site 56 (Lead Contaminated Pipe from Building 790), to store the contaminated soil on-site. The dumpster will be lined to prevent any soil or liquid from leaking out of it and it will be covered to prevent rainwater from entering it.

Question: Will this impact any operations at Building 292?

Answer: As required during all construction work, the proper personnel will be contacted prior to any work being performed. To date, we have not had a problem working with production schedules.

Question: What about fluctuating groundwater levels in the area? How deep will the wells be and if you encounter clay, will you go through it?

Answer: Based on the soil-vapor extraction study that was performed, the groundwater fluctuated from 8 to 11 feet below the surface. Monitoring wells have a 10-foot screen to account for fluctuating groundwater levels. Therefore, once groundwater is reached, the well will extend five feet down and the well screen will be placed from 5 feet below the surface of the groundwater to 5 feet above the surface of the groundwater.

Question: Was the clay layer punctured during the sampling that took place last week?

Answer: We will check with the contractor to determine if the clay layer was reached during sampling. Sampling was performed using a geoprobe. All holes made during sampling were grouted to ensure that we did not create a pathway for contamination migration.

Question: Why was the truck containing the liner refrigerated? How long was the liner and what was the cost?

Answer: The truck was refrigerated to prevent the resin on the liner from curing. The resin cures at room temperatures, but heat speeds up the curing process. The liner was approximately 700 feet long and the cost of the project to reline 700 feet of storm sewer pipe was \$90,000. This was actually cheaper than replacing the pipe because pipe replacement would require the disposal of TCE contaminated soil, which is considered a listed hazardous waste.

Question: Were people working the relining job throughout the night?

Answer: Yes. However, the actual relining was completed during the day. The night crew was on-site to ensure the curing process was completed successfully.

Question: Is there a collar around the ends of the pipe liner?

Answer: Yes. The collar prevents groundwater from passing through the space between the liner and the existing storm sewer pipe.

Question: How long is the contractor on-site?

Answer: The contractor was on-site for approximately two weeks.

Question: Did the government get a warranty with this work?

Answer: No. However, Insituform has been relining pipes for approximately 20 years. In fact, the first pipe that was relined using this method is located in England. Insituform recently videotaped that pipe and found the liner to still be in good condition after 20 years of being in service.

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Question: About how deep is the pit at IR Site 49?

Answer: The pit is only three to four feet deep.

Question: Are you also taking samples upgradient in Mattawoman Creek?

Answer: Yes.

Comment: The Smithsonian is currently taking samples in the Mattawoman Creek for the Charles County National Pollutant Discharge Elimination System (NPDES) permit. Perhaps these sample results could be useful to the Navy for the ecological risk assessment.

Question: Was the Engineering Evaluation and Cost Analysis (EECA) that you are requesting comments on by November 9, 1998, sent to RAB members?

Answer: We believe so, but we will confirm this in the meeting minutes.

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

**February 18, 1999**

- 1. IR Site 57 Update**
  
- 2. Remedial Investigation:**
  - Site 47 – Mercuric Nitrate Disposal Area**
  - Site 53 – Mercury Contamination of Sewage System in the Laboratory Area**
  
- 3. Aerial Photographic Analysis (EPIC Study)**
  
- 4. Stump Neck Sites**