



DEPARTMENT OF THE NAVY

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

5090
Ser 046C/133
30 Jun 97

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 19, 1997, enclosure (1).

For those RAB Members who were not in attendance, we are also forwarding the Findings Report for the Pilot-Scale Soil Vapor Extraction Study of May 1997, which was handed out at the meeting.

If you have any comments or questions, you may contact Mr. Shawn Jorgensen on (301) 743-6745/6746. In addition, you may FAX your comments/questions to (301) 743-4180 or submit them in writing to the address above, attention Code 046.

Sincerely,

A handwritten signature in cursive script that reads "Susan P. Adams".

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

Encl:

- (1) Minutes from RAB Meeting of 19 Jun 97
- (2) Findings Report Pilot-Scale Soil Vapor Extraction Study Site 57 - Former Drum Loading Area dtd May 1997

Copy to:
RAB Members
EFACHES (Code 181)

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 19, 1997

Restoration Advisory Board (RAB) Member Participants:

Ms. Susan Adams (N) *	Mr. Charles Ellison (C)
Mr. Elmer Biles (C)	Ms. Donna Lynch (S)
Ms. Celia Carroll (C)	Mr. Fred Pinkney (F)
Ms. Lynn Covington (C)	Mr. Robert Sadorra (N)
Mr. Gary Davis (L)	

RAB Members Not in Attendance:

Mr. Stephen Elder (L)	Mr. John McDevitt (C)
Ms. Patricia Haddon (L)	Mr. Dennis Orenshaw (F)
Mr. Vincent Hungerford (C) *	

Additional Attendees:

Ms. Sherry Deskins (N)	Ms. Monica Weingart (C)
Mr. Craig Farkos (K)	Mr. Thomas Weingart (C)
Mr. Shawn Jorgensen (N)	Mr. Mark Yeaton (C,N)
Ms. Elaine Magdinec (N)	

* Co-Chair

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

Major Issues Discussed/Accomplished:

1. Meeting Introduction

Ms. Susan Adams of the Indian Head Division, Naval Surface Warfare Center (IHDIV-NSWC) began the meeting by presenting the meeting agenda, which is included as Attachment A. Since new RAB members were in attendance, Ms. Adams had everyone introduce themselves.

2. Public Health Assessment (PHA)

Mr. Shawn Jorgensen briefly discussed the PHA which is being prepared by the Agency for Toxic Substances and Disease Registry (ATSDR). It is important to note that a public comment copy of the PHA (brown cover) will be released in the future. A copy of the brown cover PHA will be sent to each RAB member and copies will be placed in the Information Repositories. In addition, a notice announcing the availability of the document will be placed in the local newspaper. The public will have 30 days to comment on the PHA.

Due to fiscal year 1997 funding issues between the ATSDR and the Department of the Navy (DoN), a stop-work action has been ordered to the ATSDR for all sites funded by Environmental Restoration, Navy funds. Therefore, although the brown cover public comment copy is scheduled to be available in late July 1997, this date may change until funding negotiations between the ATSDR and DoN have been completed. A copy of Mr. Jorgensen's presentation is provided in Attachment B.

3. Remedial Investigation Status

Mr. Rob Sadorra provided a brief summary of the Navy IR Program and discussed where IHDIV-NSWC currently is in the process, the Remedial Investigation (RI) phase. The Navy is scheduled to begin work on four of the six high priority sites in the current RI work plan in July 1997. These sites include 12, 39/41, 42, and 44. A draft RI report should be available in November or December 1997. A copy of Mr. Sadorra's presentation is provided in Attachment C, Section I.

4. Background Sampling

Mr. Rob Sadorra discussed a new IR effort, statistical background sampling. During IR investigations, sample results are compared to risk-based concentrations (RBCs) to determine if a health risk exists at a site. Since these RBCs are conservative and not site specific, they can sometimes be lower than natural background levels. If the Navy were required to clean up to the RBCs at

these sites, then the entire Activity would have to be remediated. Therefore, statistical background sampling will provide a range of background values at Indian Head and Stump Neck for many commonly occurring substances, such as iron, zinc, manganese, etc. In this way, investigation results can be compared to both RBCs and background samples. A copy of Mr. Sadorra's presentation is provided in Attachment C, Section II.

5. Soil Vapor Extraction (SVE) Pilot Scale Study Results

Mr. Craig Farkos provided a brief history of IR Site 57 and the results of the SVE pilot scale study. A copy of the report, which will be included as an appendix in the Engineering Evaluation and Cost Analysis for the Removal Action at IR Site 57, was handed out to everyone at the meeting.

Several problems were encountered during the study. The depth to groundwater was three feet less than it was during the soil-gas survey performed in September 1995 (8 feet versus 11 feet). This occurred because the SVE study was performed during the wet season (late March) while the soil gas survey was performed during the dry season (September), which resulted in water being pulled out of the extraction well in addition to the vapor. Also, the effects of pulling vacuum on the extraction well were only realized in the monitoring point five feet from the well at a depth of four feet. The vacuum could not be "seen" in any of the other monitoring points. And, varying soil grain sizes noted during the construction of the extraction well suggest that a clay lens exists between six and eight feet below ground surface. This would hinder the ability to pull vacuum on soils in the area (small radius of influence of the extraction well). A copy of Mr. Farkos' presentation is provided in Attachment D.

6. Future Plans for IR Site 57

Mr. Rob Sadorra discussed the future plans for IR Site 57. He stated that the Navy is seeking alternative methods for remediating the site, including bioremediation technologies which will be included in a revised Engineering Evaluation and Cost Analysis. However, the first priority is to prevent migration of the trichloroethylene, which may involve relining pipes in the area of contamination, including relining the manhole. Also, IR Site 57 will undergo an accelerated RI to better characterize the site and determine a means of site remediation. A copy of Mr. Sadorra's presentation is provided in Attachment C. Section III.

7. Comments, Questions, and Answers

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

8. Conclusion

Ms. Susan Adams concluded the meeting by thanking all in attendance and presented the tentative agenda for the next RAB meeting, which is included as Attachment F. This meeting has been scheduled for October 16, 1997. 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**

June 19, 1997

- 7:00 - 7:10 ARRIVAL/WELCOME
- Ms. Susan P. Adams
Indian Head Division, Naval Surface Warfare Center
Head, Safety Department
- 7:10 - 7:20 PUBLIC HEALTH ASSESSMENT
- Mr. Shawn Jorgensen
Indian Head Division, Naval Surface Warfare Center
IR Project Manager
- 7:20 - 7:35 REMEDIAL INVESTIGATIONS STATUS
- Mr. Robert Sadorra
Engineering Field Activity Chesapeake
Remedial Project Manager
- 7:35 - 7:45 BACKGROUND SAMPLING
- Mr. Robert Sadorra
- 7:45 - 8:15 SOIL VAPOR EXTRACTION PILOT SCALE STUDY RESULTS
- Mr. Craig Farkos
Brown & Root Environmental
- 8:15 - 8:30 FUTURE PLANS FOR IR SITE 57
- Mr. Robert Sadorra
- 8:30 - 9:00 COMMENTS, QUESTIONS, AND ANSWERS
- 9:00 ADJOURN

PUBLIC HEALTH ASSESSMENT (PHA)

Shawn Jorgensen

Why and What is a PHA?

- Required by law (Comprehensive Environmental Restoration, Compensation, and Liability Act (CERCLA)) for sites on the National Priorities List (NPL)
- An evaluation of all potential exposures, including past, present, and future, to determine if people are being exposed to hazardous substances, and, if so, whether that exposure is harmful and should be stopped or reduced

Who Conducts the PHA?

- The Agency for Toxic Substances and Disease Registry (ATSDR)
 - An agency of the U.S. Public Health Service
 - Established by Congress in 1980 under CERCLA

What are the Steps to Prepare a PHA?

- NPL Listing (9/95)
- Site Scoping Visit (11/18/96-11/21/96)
- Data Evaluation/Validation (Completed)
- Initial Release Draft (Red Cover) (6/13/97)
- Agency Review and Comment Period (6/13/97-7/3/97)

What are the Steps to Prepare a PHA? (continued)

- Public Comment Release (Brown Cover)
- Public Review and Comment Period
- Final Release (Blue Cover)
- Periodic Update of Public Health Action Plan

Current Problem and Result

- Funding Issue Between ATSDR and Department of the Navy (DON)
- Stop Work Action on All Environmental Restoration, Navy (ER,N) Funded Sites, including Indian Head

Future Schedule

- Dependent on ATSDR and DON Negotiations
- Public Comment Release (Brown Cover) Will be Distributed to RAB Members
- Public Comment Release (Brown Cover) Will be Placed in IR Repositories and Availability Will be Advertised in Newspaper



Indian Head RAB

19 June 97

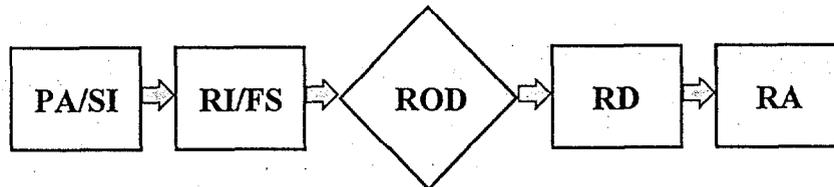
Robert Sadorra

Engineering Field Activity
Chesapeake

Indian Head RAB - EFA Chesapeake

1

CERCLA Process



- PA Preliminary Assessment
- SI Site Inspection
- RI Remedial Investigation
- ROD Record of Decision
- RD Remedial Design
- RA Remedial Action



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1

Remedial Investigation (RI)

- ◆ 16 Sites in the Draft Final Work Plan
- ◆ Currently Being Reviewed
- ◆ Expecting Only Minor Modifications to Finalize



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Remedial Investigation (RI)

- ◆ Currently Awarding the Field Work
- ◆ Contract Ready to go to the Field Soon After Review
- ◆ Negotiate Next Week
- ◆ Mobilize Early July



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Remedial Investigation (RI)

◆ Four High Priority Sites this Year:

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

◆ Four of Six High Priority Sites in the Work Plan



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Section II

Background Investigation

- ◆ Statistical Background
- ◆ Establish Preexisting Conditions Prior to Releases Associated with the IR Sites
- ◆ Risk-Based Concentration (RBC) Levels Tend to be Very Conservative
 - Used as Initial Screens
 - Must Also Consider Background Levels



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Background Investigation

- ◆ Anthropogenic Background
 - Influenced By Man
- ◆ Knowing Background Allows for Better Site Decisions



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Background Investigation

- ◆ Environmental Media
 - Surface and Subsurface Soils
 - Ground Water
 - Fresh Water Sediment
- ◆ One Program-Stump Neck and Indian Head
 - Similar Geological Formations
 - Reduced Sampling
 - Reduced Cost
 - Improved Statistical Validity



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Background Investigation

- ◆ Start in Conjunction with our Other Environmental Investigations
- ◆ Save Time and Money
 - Mobilization
 - Subcontract Procurement



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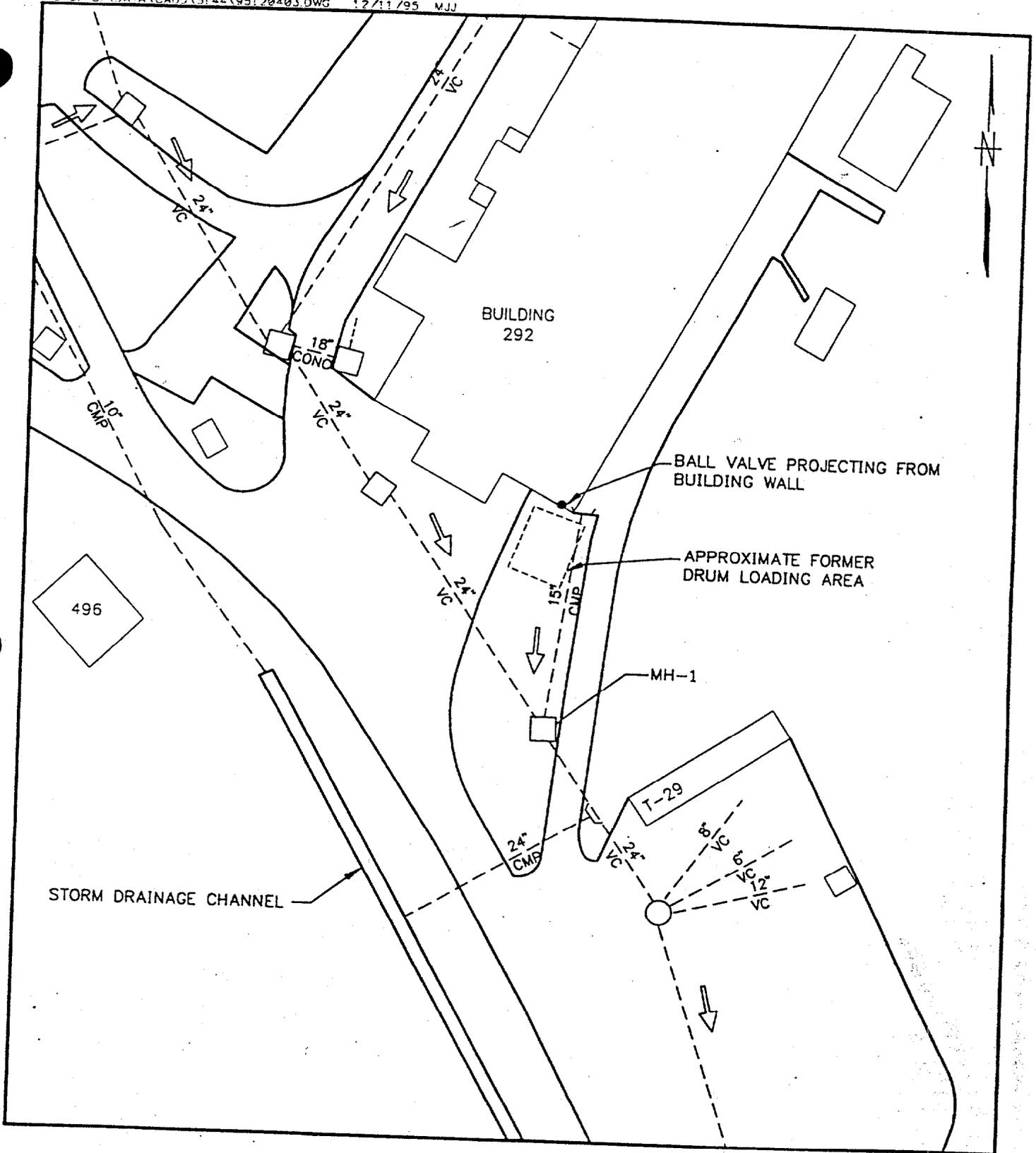
Section III

Future of Site 57

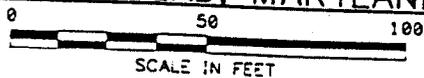
- ◆ Methanotrophic Bioremediation
- ◆ Redesign the EE/CA
- ◆ Problem: Storm Sewer System Inflow
- ◆ Objective: Prevent Migration
- ◆ Need Better Characterization
- ◆ Accelerate RI on the Site

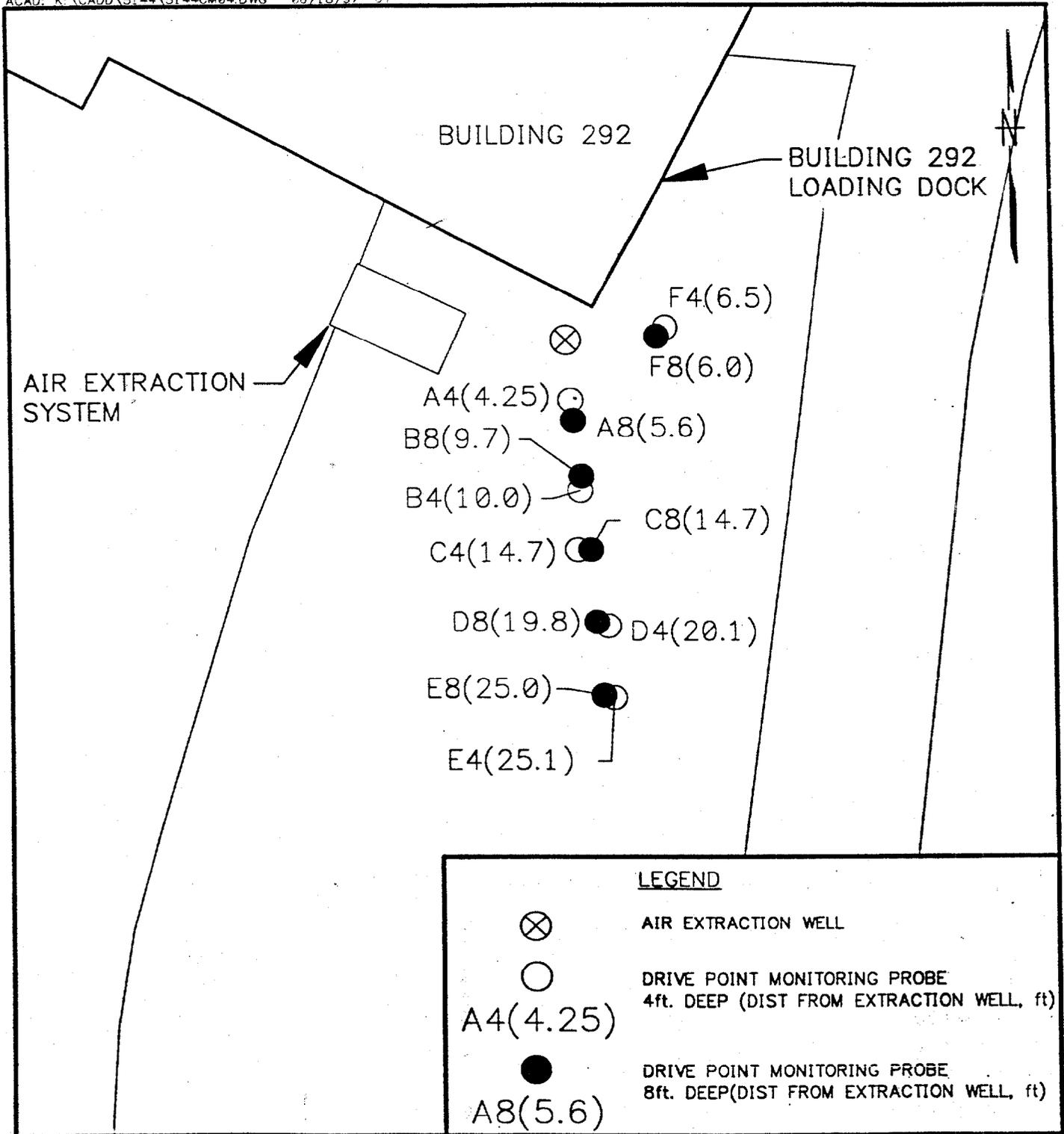


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**BUILDING 292, FORMER DRUM LOADING AREA
NAVAL SURFACE WARFARE CENTER,
INDIAN HEAD, MARYLAND**

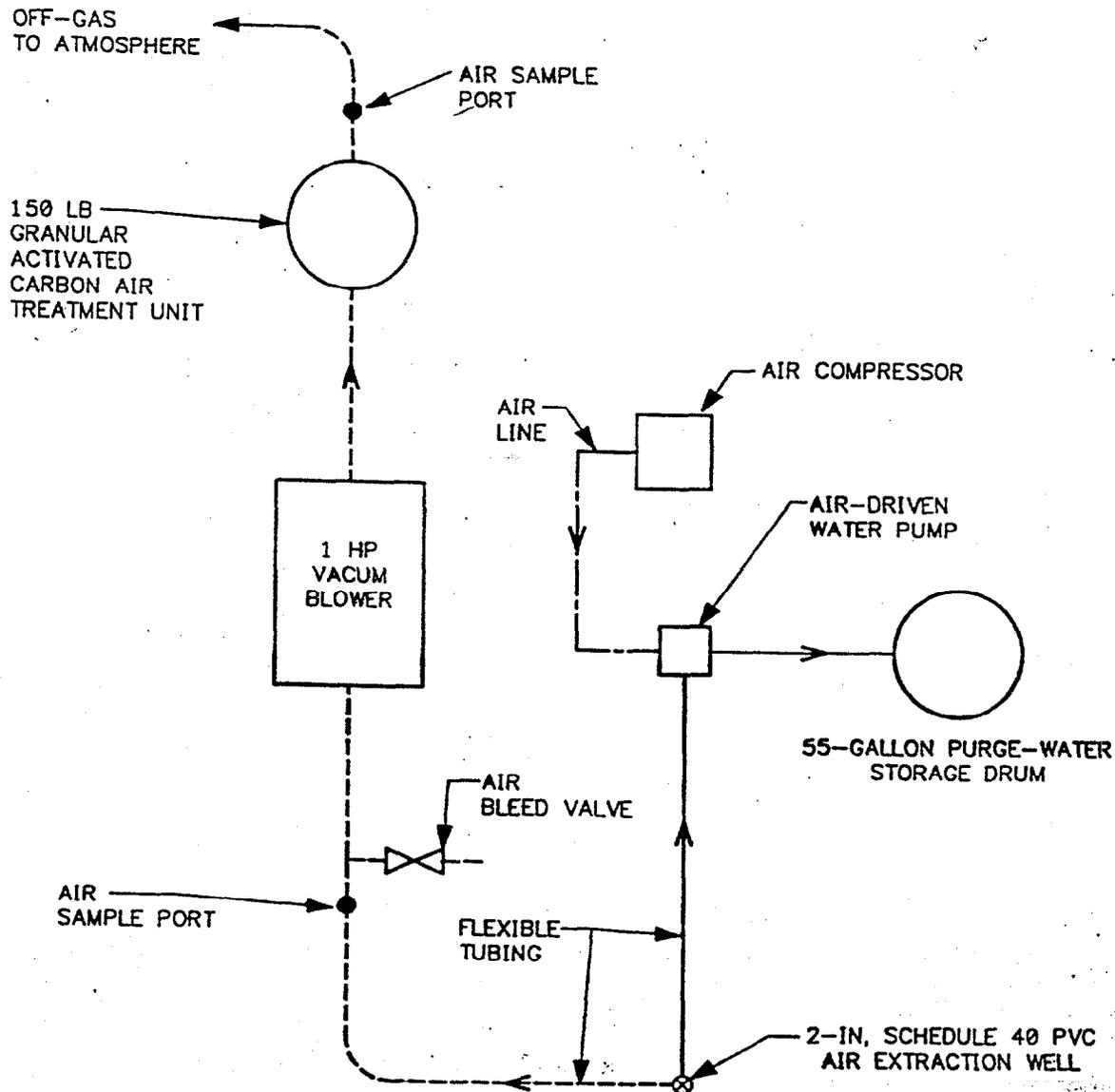




SOIL VAPOR EXTRACTION PILOT-TEST LAYOUT
SITE 57 - FORMER DRUM LOADING AREA
NAVAL SURFACE WARFARE CENTER,
INDIAN HEAD, MARYLAND

FIGURE 2-3





LEGEND
- - - - - AIR FLOW
- - - - - PURGE WATER FLOW
- - - - - PRESSURIZED AIR FLOW

SOIL VAPOR EXTRACTION SYSTEM LAYOUT
SITE 57 - FORMER DRUM LOADING AREA
NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND
NOT TO SCALE

FIGURE 2-2

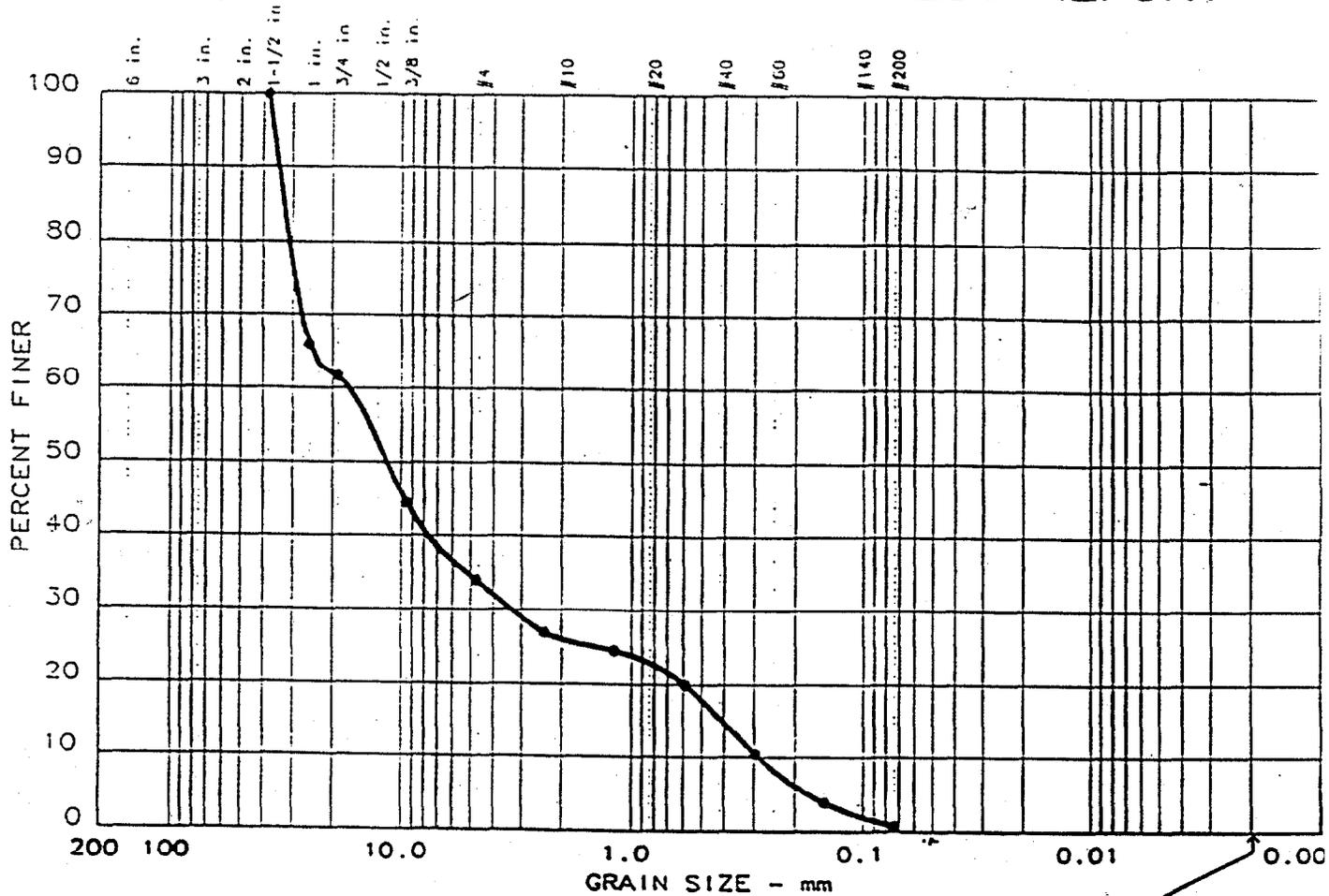
TABLE 2-1

**DRIVE POINT VACUUM MONITORING DATA
AT DRIVE POINT SAMPLE LOCATION A4
April 1, 1997 and April 2, 1997
NSWC, INDIAN HEAD, MD**

Time (min)	Vacuum at Well (in. H ₂ O)	Air Flow at Well (cfm)	Drive Point Vacuum** (in. H ₂ O)	Time (min)	Vacuum at Well (in. H ₂ O)	Air Flow at Well (cfm)	Drive Point Vacuum (in. H ₂ O)
0.4	15	NR	0.25	0.5	45	9.3	0.60
3.8	15	NR	0.30	1.0	45	9.3	0.65
9.3	15	NR	0.20	2.7	45	9.3	0.70
12.4	15	NR	0.05	3.2	45	9.3	0.80
13.3	15	NR	-0.15	4.1	45	9.3	0.85
13.8	15	NR	-0.20	12.3	45	9.3	0.80
16.0	15	NR	-0.50	14.2	45	9.3	0.70
16.4	15	NR	-0.60	15.6	45	9.3	0.65
16.7	15	NR	-0.70	16.0	45	9.3	0.60
17.5	15	NR	-0.75	18.5	45	9.3	0.60
18.1	15	NR	-0.80	21.4	45	9.3	0.90
18.8	15	NR	-0.70	23.0	45	9.3	0.95
20.8	15	NR	-0.70	24.3	45	9.3	0.95
35.8	15	NR	-0.05	25.8	45	9.3	1.00
44.5	15	NR	-0.30	26.1	45	9.3	0.95
46.8	15	NR	-0.40	28.9	45	9.3	1.00
49.0	15	NR	-0.40	41.5	45	9.3	1.05
51.5	15	NR	-0.60	50.4	45	9.3	1.05
55.0	15	NR	-0.45	61.6	45	9.3	1.05
63.8	15	NR	-0.50				
77.0	15	NR	-0.20				
0.3	30	7	0.30	0.2	60	11.7	1.00
0.7	30	7	0.35	0.4	60	11.7	1.20
3.0	30	7	0.40	4.7	60	11.7	1.20
5.1	30	7	0.40	6.4	60	11.7	1.15
6.9	30	7	0.35	11.4	60	11.7	1.15
8.3	30	7	0.40	17.3	60	11.7	0.95
11.6	30	7	0.45	18.2	60	11.7	0.85
15.7	30	7	0.45	20.6	60	11.7	0.80
17.1	30	7	0.45	32.1	60	11.7	0.75
19.7	30	7	0.50	37.6	60	11.7	0.70
24.0	30	7	0.50	43.9	60	11.7	0.70
28.5	30	7	0.55	49.2	60	11.7	0.65
41.4	30	7	0.55	61.1	60	11.7	0.60
48.3	30	7	0.55	63.2	60	11.7	0.55
63.7	30	7	0.50	70.7	60	11.7	0.50
77.0	30	7	0.50	77.5	60	11.7	0.45
84.7	30	7	0.50	89.1	60	11.7	0.40
98.4	30	7	0.50	96.2	60	11.7	0.35
				98.2	60	11.7	0.30

- * - An induced vacuum was detected only in drive point A4 throughout all test events.
- ** - Negative values indicate induced pressure at the drive point location.
- NR - Value not recorded.

GRAIN SIZE DISTRIBUTION TEST REPORT



Test	%+75 _{mm}	% GRAVEL	% SAND	% SILT	% CLAY
• 2	0.0	66.1	33.2	0.7	

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
• NA	NA	32.92	16.69	11.55	3.330	0.4097	0.2867	2.32	58.2

MATERIAL DESCRIPTION	USCS	AASHTO
• WELL-GRADED GRAVEL WITH SAND	GW	A-1-a

Project No.: 97720
 Project: NSWC, INDIAN HEAD, MD (CTO 209)
 • Location: BUILDING 292, STATION NO. S0-02-0910
 Date: 4-3-97

Remarks:
 PILOT-SCALE AIR
 EXTRACTION WELL.
 DEPTH: 9.0 TO 10.0 FT.
 MOISTURE CONTENT: 7.5%

FIGURE 2-1B

DRIVE POINT MONITORING DATA AT DRIVE POINT A4
30 in. H₂O Vacuum, 7 cfm Air Flow at Well

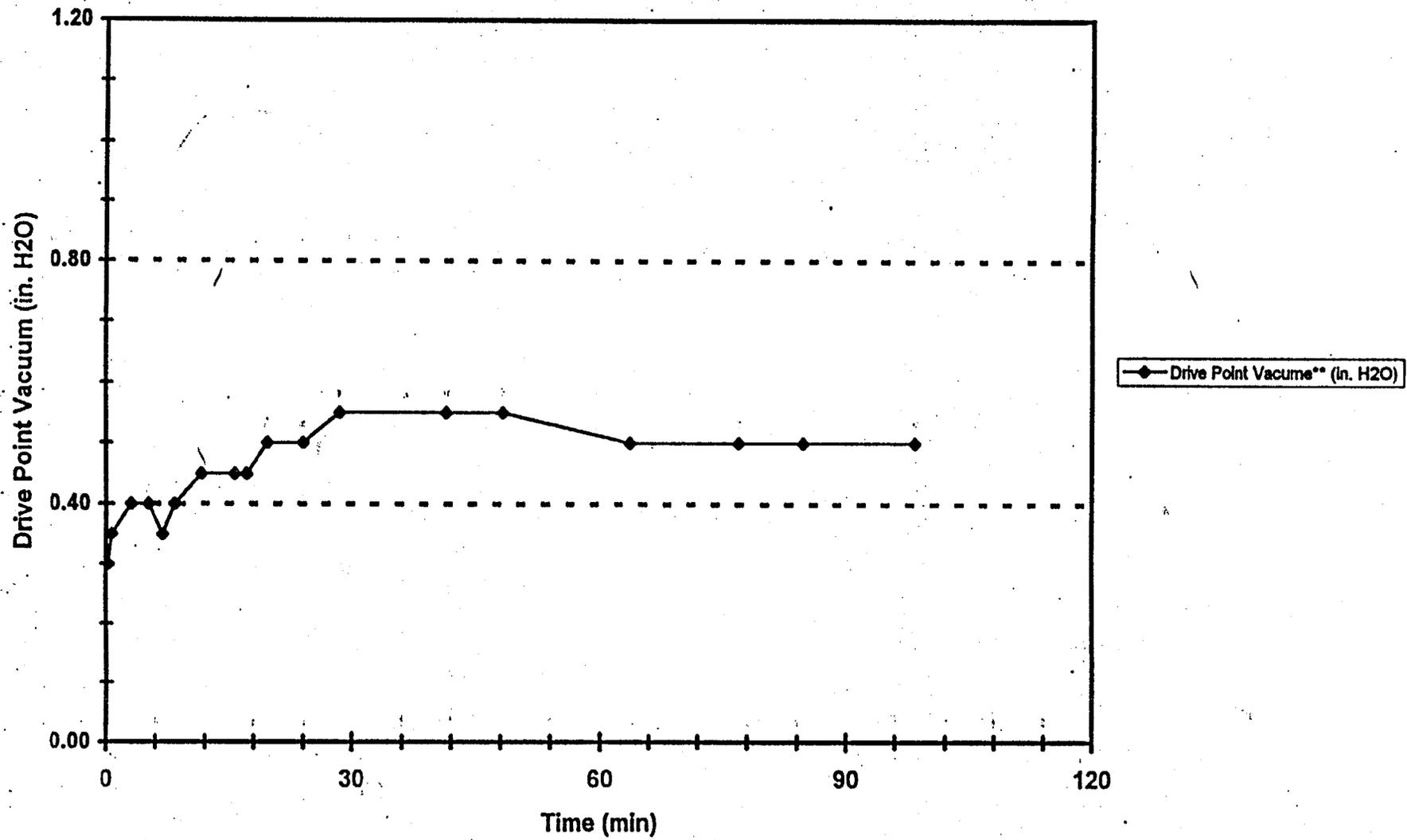


FIGURE 2-1C

DRIVE POINT MONITORING DATA AT DRIVE POINT A4
45 in. H₂O Vacuum, 9.3 cfm Air Flow at Well

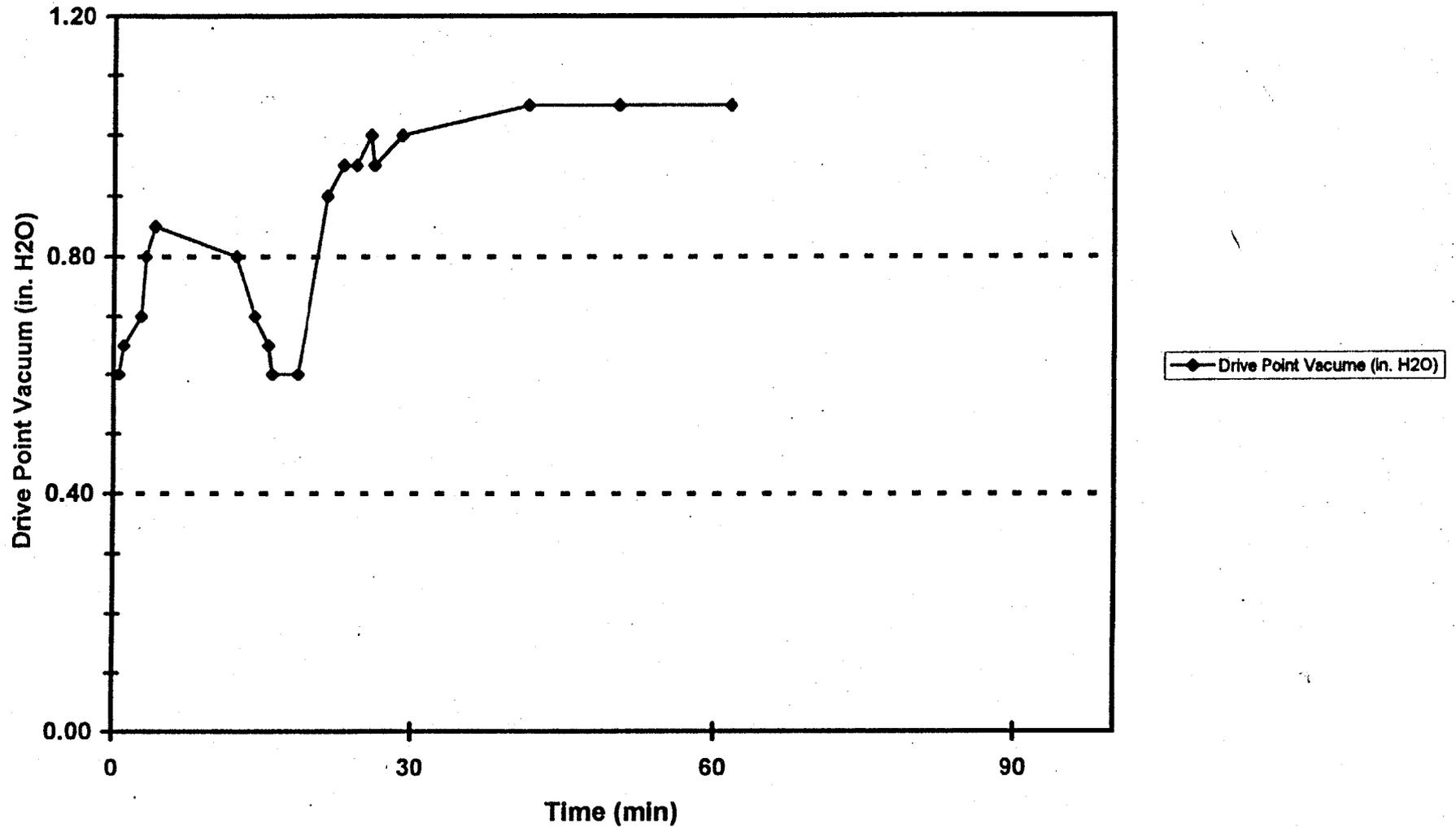


TABLE 2-2

DRIVE POINT SAMPLE ANALYTICAL RESULTS
April 2, 1997
NSWC, INDIAN HEAD, MD

SAMPLE IDENTIFICATION	1,1 DCE ug/L	1,2 DCE ug/L	TCA ug/L	TCE ug/L
7:00 AM - 30 in H₂O Vacuum				
Baseline*			0.005	
SG-M-1				
SG-A4-1			0.1	1
SG-A8-1		8	0.4	32
SG-B4-1		4	0.9	22
SG-B8-1				
SG-C4-1		4	4	92
SG-C8-1		2	0.3	8
SG-D4-1				
SG-D8-1		2	0.6	28
SG-E4-1	NS	NS	NS	NS
SG-E8-1	NS	NS	NS	NS
SG-F4-1			1	23
SG-F8-1			0.4	290
12:00 PM - 45 in H₂O Vacuum				
Baseline*			0.009	
SG-M-2	2	50	2	370
Carbon-1				
SG-A4-2				0.06
SG-A8-2			0.2	50
SG-B4-2			0.9	37
SG-B8-2				
SG-C4-2			4	110
SG-C8-2		5	0.2	11
SG-D4-2				0.05
SG-D8-2			0.3	21
SG-E4-2	NS	NS	NS	NS
SG-E8-2	NS	NS	NS	NS
SG-F4-2	0.2		2	36
SG-F8-2				220
4:00 PM - 60 in H₂O Vacuum**				
Baseline*			0.006	
SG-M-3			3	340
Carbon-2				
SG-A4-3			0.01	

Blank - Concentration below detection limits.

NS - Location not sampled.

* - Ambient air sample.

** - Remaining locations not sampled due to relative similarity of first two rounds of analytical results.

CONCLUSIONS FROM THE PILOT-SCALE SOIL-VAPOR EXTRACTION STUDY

- 1. Moist clay lens located between 6 feet bgs and 8 feet bgs and high water table between 8 feet bgs and 10 feet bgs inhibited collection of volatilized contaminants.**
- 2. Moist clay lens and high water table inhibited the air circulation pattern that would have promoted contaminant volatilization from soils.**
- 3. Vacuum intensity within the soils and the horizontal and vertical vacuum limits did not increase with increasing vacuum created at the well screen.**
- 4. The subsurface conditions at Site 57 are not well suited to the application of Soil Vapor Extraction technology.**

INSTALLATION RESTORATION PROGRAM



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RESTORATION ADVISORY BOARD (RAB) MEETING COMMENTS, QUESTIONS, AND ANSWERS June 19, 1997

Public Health Assessment (PHA)

Question: Is there anything in the PHA that will take considerable time to complete, should we call the RAB members together to discuss issues?

Answer: There are no urgent problems identified in the PHA. The Navy is still providing comments and information to clarify issues.

Question: Is the Navy moving on with the issues in the PHA without being given the money or being told to do so?

Answer: We are not waiting on the final PHA to address the issues contained within it. In addition, we will discuss the PHA at the next RAB meeting and try to have the Agency for Toxic Substances and Disease Registry (ATSDR) available to answer questions.

Remedial Investigation (RI) Work Plan and Site Priorities List

Question: When will the work plan be finalized?

Answer: We plan to be in the field to perform work on four sites in July 1997. The regulators (EPA and MDE) have agreed to accelerate their review of this proposed work at these four sites to allow us to get started on the investigation.

Question: What material do you have that provides detailed information on the sites?

Answer: The Site Inspection Reports, Phase I (1992) and Phase II (1994), the Initial Assessment Study (1983) and the Confirmation Study (1985) provide information on all of the sites in the RI Work Plan. In addition, Fact

Sheets on these sites can be found in the Appendices of the Community Relations Plan. All of these documents can be found in the Information Repositories, which are located at the Indian Head Division, Naval Surface Warfare Center General Library, Building D-40; and the La Plata Branch of the Charles County Public Library.

Question: How does looking at old photographs help?

Answer: Old photographs, especially aerial photographs, show areas of disturbance which can assist in identifying where some of the older sites exist and their size/dimensions.

Question: Has a baseline study on all of the sites been completed?

Answer: Samples have not been taken at all of the sites, only the ones that the Navy believed required further study. However, limited sampling will be performed at most, if not all, sites in the future.

Question: Why are you negotiating this work with contractors that are working at Stump Neck?

Answer: The Navy uses the Comprehensive Long-term Environmental Action, Navy (CLEAN) contract for the preparation of work plans and to perform sampling. Under the CLEAN contract, one contractor is awarded the contract and individual activities, such as sampling efforts, are task orders under the one contract. Using the CLEAN contract has expedited the contracting process. Since sampling is being performed at Stump Neck in mid-July, we plan to take background samples at the same time. This will save money by eliminating mobilization and demobilization costs.

Question: Do you have a rough timeline for the schedule?

Answer: We plan to be in the field in July 1997 with results available in the late fall.

Comment: Are these sites still in use?

Answer: The landfills are not operating, the scrap yard is currently used to store metals that are for sale, and the Soak Out Area has been closed since the 1970's.

Background Sampling

Question: How do you know where to take background samples and shouldn't background samples be as clean as possible?

Answer: We attempt to find locations that have not been impacted by man. Sample results will be statistically analyzed to determine if we are correct.

Question: Will sampling only occur within the boundaries of the base?

Answer: Yes.

Question: Do you plan to look at other background data from the United States Geologic Survey (USGS) and the United States Fish & Wildlife Service (USFWS)?

Answer: We don't know of any samples of soils and shallow groundwater taken by the USGS or the USFWS on our Activity. However, some background samples have been taken in support of other programs at our Activity that we are using for this effort.

IR Site 57 Soil Vapor Extraction (SVE) Pilot Scale Study

Question: What is the safe level for trichloroethylene (TCE) in soil-gas?

Answer: A risk-based concentration (RBC) number for soil-gas has not been established. However, the soil screening level for transfer from soil to air and groundwater are 3 milligrams per kilogram (mg/kg) and 0.02 mg/kg, respectively. The exceedance of these values in some areas of IR Site 57 implies that a potential risk exists. However, these numbers are very conservative and are not site specific, i.e., many assumptions were made in order to obtain the RBCs. Some of these assumptions include: homogeneous soil, no clay layers, daily exposure, etc. Ultimately, further study is needed to determine the actual risk for this specific site.

Question: Will this go away on it's own?

Answer: No. TCE breaks down over time into other chlorinated compounds. Many, many years would be required to breakdown the TCE at this site.

Question: How do you clean vapors?

Answer: In our case, vapors pulled from the TCE contaminated soil were passed through a carbon filter which adsorbs the TCE. However, other methods do exist.

Question: When you say well (vapor extraction well) is it just a hole in the ground?

Answer: Yes. The screen on the well is a piece of pipe four feet long with slits in it. The area between the well pipe, which is constructed of polyvinyl chloride (PVC), and the hole in the ground is grouted to prevent anything from the surface, including air, from entering the hole made for the well.

Question: Sometimes the ground is very tight, can you pull air through it?

Answer: Yes. But typically, when you pull vacuum on the vapor extraction well, you begin to notice vacuum at monitoring points further and further away from the well. However, the only monitoring point that "felt" the vacuum during this study was located five feet away from the well at a depth of four feet. This may have been the result of a clay lens located six to eight feet below the surface and the high groundwater level (8 feet below the surface versus 11 feet below the surface in September 1995).

Question: Perhaps this should have been done during the "dry" season.

Answer: It may have worked, but would not have reflected the natural conditions at the site.

Question: What is currently being done in Building 292?

Answer: Metal parts used in rocket motors are lined with a rubber-like substance. Also, a small (100 gallon) vapor degrease which uses trichloroethane (TCA, not TCE) is used to degrease the parts before the liner can be placed on the part.

Question: What was the depth of the well?

Answer: The well was placed at a depth of 10 feet. Therefore, the screen, which is the area where water and vapor can enter the well, is at a depth of 6 to 10 feet.

Question: What type of soil analysis did you do prior to this pilot scale study?

Answer: None, other than the soil grain size which was obtained during the well installation.

Comment: Soil sampling should have been done prior to the pilot test to determine if the soil was amenable to soil vapor extraction.

Question: Were samples taken of the vapor pulled from the well and, if so, was it sampled for anything other than TCE?

Answer: Yes, samples were taken of the vapors that were pulled from the well and they were sampled for trichloroethylene (TCE), trichloroethane (TCA), 1,1-dichloroethene (1,1-DCE), and 1,2-dichloroethene (1,2-DCE). The last three chemicals are breakdown products of TCE.

Question: So SVE will not work at IR Site 57?

Answer: SVE worked, but not good enough. In other words, it would not be cost effective to use SVE at this site.

Comment: The results are based on the soil composition at this one area where the extraction well is installed. It could be an anomaly which may be the worst case. Perhaps it could work in another area of the site.

Question: What database do we have to collect information like this so we don't make the same mistake again?

Answer: Currently, none. But you can bet that one will be started very soon.

Question: One of the other alternatives in the Engineering Evaluation and Cost Analysis is excavation. Wouldn't that expose the air to the contaminants.

Answer: Yes. Therefore, contractors performing the work would have to wear the proper personal protective equipment and air monitoring would have to be conducted to ensure that no one, including contractors and Activity personnel, is exposed to levels of TCE above those set by the Occupational Safety and Health Act (OSHA).

Future Plans for IR Site 57

Question: Since you had so much trouble pulling air through the soil for SVE, won't you also have a problem pushing methane into the soil.

Answer: Not necessarily. The use of horizontal wells may help us overcome that problem. However, before we even consider another alternative, the Engineering Evaluation and Cost Analysis must be changed and geotechnical samples must be obtained.

Question: Have you done any confirmation sampling of the TCE levels estimated by the computer model?

Answer: No.

Question: Do you have any idea how long it takes to bioremediate naturally?

Answer: No. However, it will probably take an extremely long time.

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

October 16, 1997

- 1. Agency for Toxic Substance and Disease Registry**
- 2. IR Site 57 Update**
- 3. Remedial Investigation Work Update**
- 4. Background Sampling Update**
- 5. Plans for Fiscal Year 1998**