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NSWC INDIAN HEAD
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Community Relations Plan
for
Installation Restoration Program
Indian Head Division
Naval Surface Warfare Center

Indian Head, Maryland

March 1995

NSWC
Naval Surface Warfare Center
INDIAN HEAD DIVISION

ENCLOSURE(2)

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1.0 INTRODUCTION

The Indian Head Division, Naval Surface Warfare Center (IHDIV-NSWC) has always been committed to ensuring that Indian Head is a safe and healthy place to work and live. In 1981, although not required by Federal law, the Navy began its own cleanup campaign to restore sites impacted by past operations to their original condition. This Community Relations Plan (CRP) presents the public involvement program for the ongoing Installation Restoration (IR) Program studies at IHDIV-NSWC, Indian Head, Maryland. The CRP is designed to create and foster an understanding of the community's perspective of the IR Program and to keep the community involved and informed of the progress in the IR Program. The objective of the IR Program is to identify, assess, characterize, and cleanup or control contamination from past waste disposal operations and material spills at Navy and Marine Corps activities.

The CRP has three objectives:

- To set up channels for communicating information to the public.
- To provide opportunities for citizens to express their concerns.
- To solicit input from the public.

The CRP identifies mechanisms to facilitate the communication of necessary technical information and concerns between IHDIV-NSWC and the public in an effort to help the community fully understand the progress and results of the investigation and future cleanup. The CRP is designed to support technical progress in the IR Program while providing a mechanism to meet the needs and concerns of the community. Because of this, the CRP is a dynamic document that is periodically reviewed and revised.

The CRP outlines the objectives of community relations activities and presents the techniques used to meet those objectives. This section is the introduction to the remainder of the CRP. A background of IHDIV-NSWC is included in Section 2. The community relations history is included in Section 3. Section 4 details issues and concerns voiced by the community. Community relations objectives, techniques used to meet those objectives, and implementation of these objectives are provided in Section 5. Community relations activities to date are included in Section 6. Appendix A contains a list of acronyms and abbreviations, Appendix B contains the Fact Sheets for each site, Appendix C is a list of interested parties, Appendix D contains a sample community interview questionnaire, and Appendix E contains the Restoration Advisory Board (RAB) and RAB Member Fact Sheets.

2.0 SITE BACKGROUND

2.1 OVERVIEW

The IHDIV-NSWC is a military facility located in northwestern Charles County, Maryland; 25 miles southwest of Washington, D.C. The main facility occupies approximately 2,500 acres on the Cornwallis Neck Peninsula. It is bounded by the Potomac River to the northwest, west, and south, Mattawoman Creek to the south and east, and the town of Indian Head to the northeast (see Figure 2-1).

The mission of IHDIV-NSWC is as follows:

- Provide primary technical capability in Energetics for all warfare centers through engineering, fleet and operational support, manufacturing technology, limited production, industrial base support, and secondary technical capability through research, development, test and evaluation for energetic materials, ordnance devices and components, and related ordnance engineering standards to include chemicals, propellants and their propulsion systems, explosives, pyrotechnics, warheads, and simulators.

- Provide support including special weapons support, explosive safety and ordnance environmental support to all warfare centers, military departments, and the ordnance industry.

- Execute other responsibilities as assigned by Commander, Naval Surface Warfare Center.

2.2 HISTORY

The IHDIV-NSWC was established in 1890 on a 659-acre tract known totally as Cornwallis Neck. Within 1 year, an additional purchase of 222.75 acres, known as Mount Pleasant Farm, was made. The Stump Neck Annex properties, 1,084 acres known as Mason's Enlargement, were purchased in 1901. Presently, the Division sits on approximately 2,500 acres, not including Stump Neck Annex.

The U.S. Naval Proving Ground was the Division's predecessor whose function was to proof all Navy guns. The history of the division began in 1890 when all proofing activities were moved to the remote, rural locality of Indian Head.

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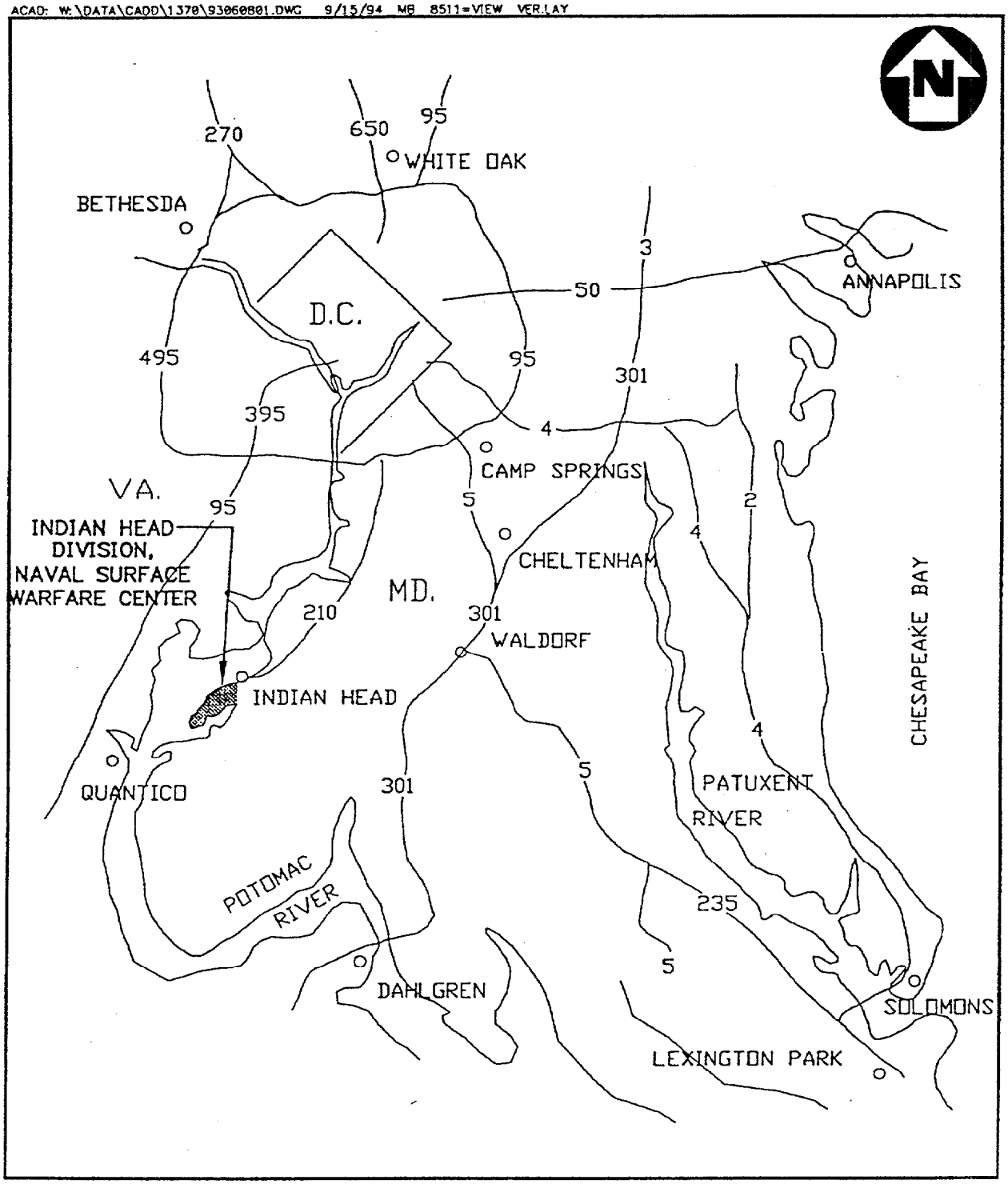


FIGURE 2-1

VICINITY MAP
INDIAN HEAD DIVISION NSWC
NOT TO SCALE

Halliburton NUS CORPORATION

Assigned the task of building this new proving ground for the Navy was young Ensign Robert Brooke Dashiell, USN. Though his stay in the area was brief, he contributed a unique resolve, determination, and farsightedness in designing and building a modern gun-proofing facility.

At the turn of the century, progress and developments in the scientific and engineering fields were mirrored in the changes occurring at the Division. Gun proofing was the Division's primary mission, but it was the research and manufacturing of smokeless powder which initially earned this facility its cornerstone in history. With the foresight and intelligence of chief chemist Dr. George W. Patterson and chemist Dr. Walter W. Farnum, the Division burgeoned into a key developer and supplier of smokeless powder and the high explosive ammonium picrate.

Major changes occurred when America's participation in World War I ushered in a flood of additional work. During this period, the Naval Proving Ground established extensive propellant manufacturing, experimental programs, and test programs. In 1918, the Division was enlarged by the purchase of 1,160 acres of adjacent land, and a 13.8mile railroad spur was laid from the Naval Proving Ground to the Pennsylvania Railroad junction at White Plains, Maryland.

During the early 1900's, when powder factory buildings were under construction, the Division was commanded by Lieutenant Joseph Strauss, later Chief of the Bureau of Ordnance. World War I would benefit from his leadership as Rear Admiral Strauss. Shortly after the war, the Division was active in the development and manufacturing of flashless gun powder. During this period, it was under the command of Captain Harold R. Stark, later Admiral Stark, Chief of Naval Operations.

The proofing of all Navy guns continued until 1921, when this function was moved to a Division-administered detachment at Dahlgren, Virginia. This change occurred because the hazards of increased traffic on the Potomac made it difficult to get a clear period when the safety limits of the station were not exceeded. That same year, the Division was renamed the Naval Powder Factory, a title more descriptive of its main functions. In 1932, Dahlgren became a separate and independent facility.

For a brief period in the early 1920's, the Division was the home of Dr. Robert H. Goddard, a pioneer in modern rocket development. He spent three productive years doing primary work on rockets and rocket propulsion. The Division was also the site of work done by a group known as the National Defense Research Committee (NDRC), Section H, which developed the bazooka at the Division for use by the Army's infantry in the 1940's.

World War II brought a resurgence of activity to the Naval Powder Factory. Never before had this facility produced so much smokeless, flashless, and reworked gun powder, and Explosive "D" (ammonium picrate). New facilities were built and new products manufactured. Fundamental research in rocketry and rocket propellant grains for bombardment rockets, bazookas, and air-to-ground anti-tank weapons began in 1940. A new Explosive "D" plant was completed in 1942, and the extrusion plant with a new double-base product line began operations in 1943.

Time and again during the war, the Naval Powder Factory was honored by the Secretary of the Navy with the Navy's "E" Pennant for Excellence in the production of naval ordnance. A message from the Chief of the Bureau of Ordnance dated November 6, 1945, reads, in part, "In the production of propellant powders and explosives, the efforts and results of the Powder Factory have met the requirements beyond expectation. For this excellent four-year performance the Bureau expresses its sincere appreciation."

Technological changes took place with the construction of a pilot plant facility in 1949. Named in honor of Dr. George W. Patterson, the Division's first powder expert and chief chemist, the Patterson Pilot Plant was responsible for the research and development of solid propellants for new rockets and guided missiles. Over the years, the Division has been responsible for many of the propulsion programs leading to the Standard Anti-Radiation Missile (ARM), Sidewinder, Anti-Submarine Rocket (ASROC), and ZUNI rocket.

The emergency of the Korean conflict contributed to advancing the Division's efforts in gun propellant research and production. Four additional manufacturing plants for nitroglycerin, cast propellants, cordite, and nitroguanidine were constructed. Again, a name change was instituted to more correctly identify it with its new mission in rocket and gun propellant development and production. In 1958, the Division became known as the Naval Propellant Plant. One of the highlights of the 1950's was the important production and testing work that was done at the Division for the propulsion system of the Polaris missile.

By the early 1960's, the Division had an underwater weapons program that had developed a new liquid monopropellant, OTTO Fuel II, for the Mark 46, Mod 1, and Mark 48 torpedoes. By 1961, an on-line computer facility for ballistic evaluation had been completed. It had also produced the X-259 second-stage motor for the Athena rocket, the X-248 third-stage motor for the Scout missile, and had developed inert diluent and pneumatic mixing processes.

In 1966, the Division's name was changed to the Naval Ordnance Station. During the 1960's, its technical director, Joe L. Browning, foresaw the need for further expansion in engineering areas. No longer should the Division be limited to production work as its major function. A focus toward engineering offered an opportunity for further growth in the capabilities of both its personnel and in its facilities. As a result of

Mr. Browning's diligent efforts and sagacity, the Naval Ordnance Station quickly evolved into an important engineering facility for propulsion systems.

In recent years, the Division has developed unique technical expertise in the areas of electronic missile simulators and air-crew escape propulsion systems. It benefits from having a wide cross section of rocket propulsion processing and engineering expertise.

A resulting product line is the station's cartridge-actuated device (CAD)/propellant-actuated device (PAD) program. These devices provide the various energy sources to perform the many functions required to eject and parachute air crews to safe recovery. They also provide the energy for a myriad of other functions such as stores release, cable cutting, inflation, etc. The Division is the Department of Defense (DOD) manager for CADs and PADs. The CAD/PAD program is designed to eliminate duplication of effort within DOD.

In 1992, the Division became a part of the newly-formed Naval Surface Warfare Center. As a result of the Base Realignment and Closure (BRAC) 1993 decision, the Indian Head Division was established as the Navy's single-site, full-spectrum energetics center with the transfer of the Navy's principal Research, Development, Test, and Evaluation (RDT&E) capability for explosives, components, and warheads technology from the White Oak Division to the Indian Head Division. Its role is to provide expertise in the field of "energetics" not only to the other members of the Center, but also to the other Warfare Centers established in the underwater and air warfare areas. Today, the Indian Head Division is the only facility able to synthesize propellants and explosives from test tube to full-scale production. The outcome of this engineering work is a complete technical data package for new propulsion systems that permits competitive procurement from industry. The Division serves as the engineering authority. It sets the guidelines for measuring the quality of commercially manufactured products. No other Department of Defense facility has this total energetics capability.

2.3 REGULATORY AND ENVIRONMENTAL HISTORY

Environmental studies at IHDIV-NSWC and all other Naval facilities are conducted under the DOD Installation Restoration (IR) Program. The IR Program was authorized by instruction from the Chief of Naval Operations (OPNAV), OPNAVINST 5090.1, dated May 2, 1983. Funding to pay for these environmental studies are allocated for DOD sites under the Defense Environmental Restoration Account (DERA).

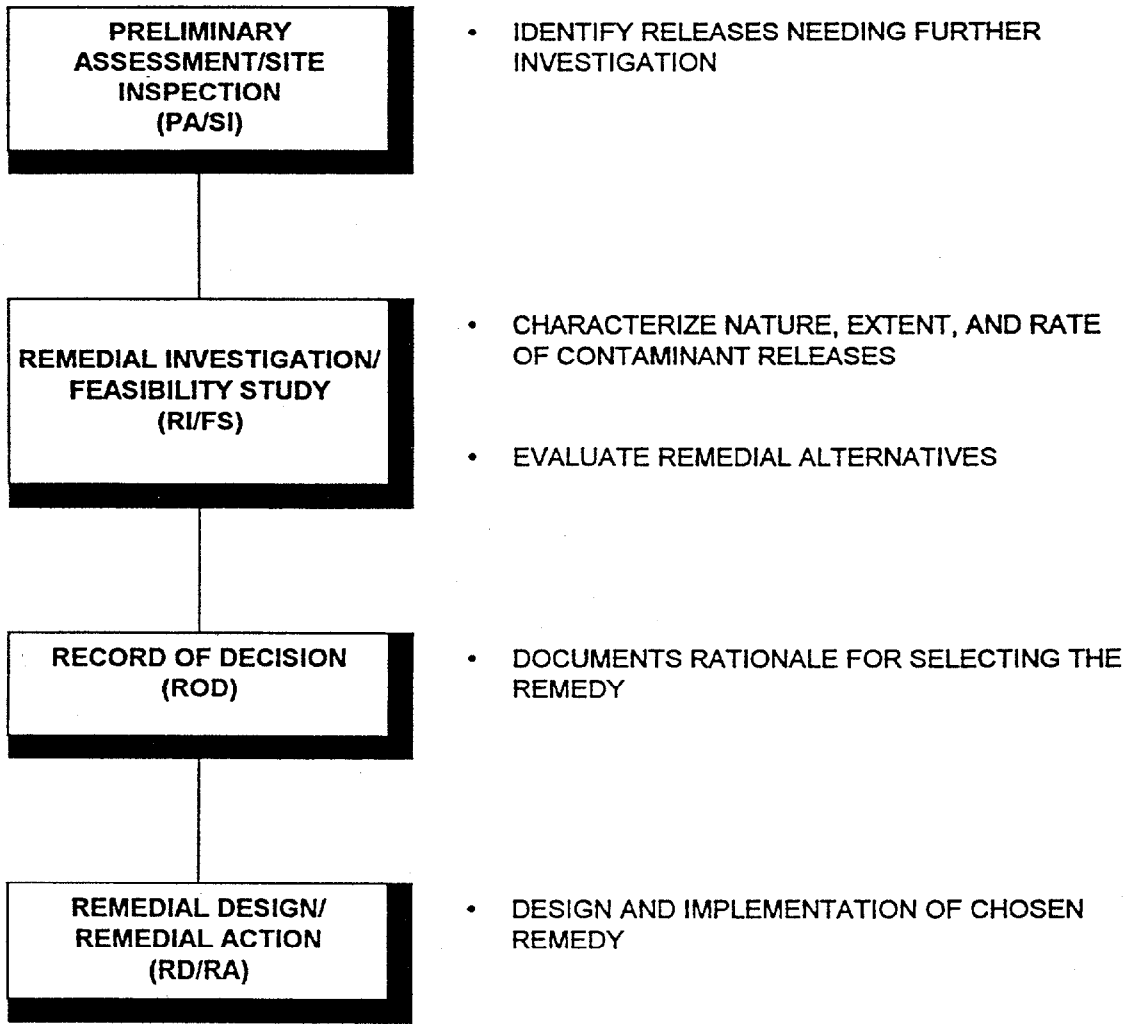


FIGURE 2-2

CERCLA PROCESS
INDIAN HEAD DIVISION, NSWC

The IR Program parallels the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) (see Figure 2-2). Under the CERCLA program, abandoned waste sites that potentially contained hazardous constituents undergo several phases of environmental study that would ultimately determine the need for a remedy, and if necessary, the selection and implementation of the remedy for the site. The phases of investigation include the Preliminary Assessment/Site Inspection (PA/SI), Remedial Investigation/Feasibility Study (RI/FS), Record of Decision (ROD) and Remedial Design/Remedial Action (RD/RA). CERCLA also provides for removal actions if a site poses an immediate threat to human health or the environment.

The first IR Program objective is the collection and evaluation of data and historical evidence indicating the existence of hazardous constituents that might have contaminated the facility or that pose a health hazard on or off the facility. An Initial Assessment Study (IAS) was completed in 1983 for IHDIV-NSWC. The IAS is equivalent to the Preliminary Assessment (PA) in the CERCLA process. The IAS examined 38 potential sites (Table 2-1). Three sites (Sites 5, 8, and 12) were recommended for further study based on the historical information. Two additional sites (Sites 6 and 25) were recommended for further study if the further investigation of Site 5 indicated the need. A Supplemental Preliminary Assessment (PA) Report for IHDIV-NSWC was prepared in January 1992. The Supplemental PA evaluated an additional 17 sites (Sites 39 to 55). All but two sites (Sites 51 and 52) were recommended for further study. A summary of the Site Inspection (SI) under the IR Program is presented in Table 2-1 and is described below.

A Confirmation Study, the equivalent of an SI, was prepared in 1985. The Confirmation Study involved the collection and analysis of samples from each site recommended for further study in the IAS. The purpose of the Confirmation Study was to confirm the presence of suspected contamination at Sites 5, 8, and 12. The Confirmation Study concluded that silver contamination was present at Site 5, but didn't pose a threat to human health or the environment. Mercury contamination at Site 8 was also confirmed and was considered a potential threat to human health and the environment. Corrective action at Site 8 was recommended. No surface contamination was detected at Site 12. Slightly elevated concentrations of heavy metals were found at Site 12 but were not attributable to Site 12. Monitoring at Site 12 was recommended to detect future impact of deeply-buried contaminants, if any.

As a follow-up to the Supplemental Preliminary Assessment, a Site Inspection (SI) was conducted on Sites 39 through 50, and Sites 53, 54, and 55 in two phases. Phase I focused on Site 42, Olson Road Landfill. Phase II focused on the remainder of the sites. Based on the results of the SI, all the sites were recommended for further study to determine the nature and extent of contamination and to identify the appropriate remedial action required.

Removal actions are completed at Sites 5 and 8. The removal actions involved the excavation of contaminated soils to prevent transport of the contamination into the environment. Soils from Site 5 were contaminated with silver. These soils were used to reclaim a gravel borrow pit at Rum Point on the Stump Neck Annex of IHDIV-NSWC. Soils from Site 8 were contaminated with mercury and were placed in the soil cover of a magazine, Building 606, at the IHDIV-NSWC.

There are 20 active IR sites at IHDIV-NSWC (see Figure 2-3). Each site is described in more detail in Appendix B.

TABLE 2-1
INVESTIGATION SUMMARY
INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND

Site No.	Site Name	Preliminary Assessment (PA) or Initial Assessment Study (IAS)	Site Inspection (SI) or Confirmation Study (CS)	Recommendation from IAS/CS or PA/SI	Contaminants of Concern*	Comments
1	Thorium Spill	IAS, May 1983	Not Applicable	No further investigation	Not Applicable	
2	Waste Crank Case Oil Applied to Torrence Road	IAS, May 1983	Not Applicable	No further investigation	Not Applicable	
3	Nitroglycerin Explosion, Nitration Building Area	IAS, May 1983	Not Applicable	No further investigation	Not Applicable	
4	Lloyd Road Oil Spill Sites	IAS, May 1983	Not Applicable	No further investigation	Not Applicable	
5	X-Ray Building 731	IAS, May 1983	Confirmation Study, Sept. 1985	• No further investigation unless future changes in land use	• Silver	• Removal Action, Swale 1 completed 1993; Swale 2, completed January 1995
6	Building 1349, Hypo Spill	IAS, May 1983	Not Applicable	No further investigation	Not Applicable	
7	Building 682, HMX Spill	IAS, May 1983	Not Applicable	No further investigation	Not Applicable	
8	Building 766, Mercury Deposits	IAS, May 1983	Confirmation Study, Sept. 1985	• Initiate a 5-year mercury monitoring program	• Mercury	• Removal Action, Initiated June 1994
9	Patterson Avenue, Oil Spill	IAS, May 1983	Not Applicable	No further investigation	Not Applicable	
10	Single-base Propellant Grains Spill	IAS, May 1983	Not Applicable	No further investigation	Not Applicable	
11	Caffee Road Landfill	IAS, May 1983	Not Applicable	No further investigation	Not Applicable	
12	Town Gut Landfill	IAS, May 1983	Confirmation Study, Sept. 1985	• Continue monitoring	• Metals	
13	Paint Solvents Disposal Ground	IAS, May 1983	Not Applicable	No further investigation	Not Applicable	
14	Waste Acid Disposal Pit	IAS, May 1983	Not Applicable	No further investigation	Not Applicable	
15	Mercury Deposits in Manhole, Flourine Lab	IAS, May 1983	Not Applicable	No further investigation	Not Applicable	
16	Laboratory Chemical Disposal	IAS, May 1983	Not Applicable	No further investigation	Not Applicable	
17	Disposal Metal Parts Along Shoreline	IAS, May 1983	Not Applicable	No further investigation	Not Applicable	
18	Hog Island	IAS, May 1983	Not Applicable	No further investigation	Not Applicable	

TABLE 2-1
INVESTIGATION SUMMARY
INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND
(Continued)

Site No.	Site Name	Preliminary Assessment (PA) or Initial Assessment Study (IAS)	Site Inspection (SI) or Confirmation Study (CS)	Recommendation from IAS/CS or PA/SI	Contaminants of Concern*	Comments
19	Catch Basins at Chip Collection Houses	IAS, May 1983	Not Applicable	No further investigation	Not Applicable	
20	Single-base Powder Facilities	IAS, May 1983	Not Applicable	No further investigation	Not Applicable	
21	Bronson Road Landfill	IAS, May 1983	Not Applicable	No further investigation	Not Applicable	
22	NG Slums Burning Site	IAS, May 1983	Not Applicable	No further investigation	Not Applicable	
23	Hydraulic Oil Spill Discharges From Extrusion Plant	IAS, May 1983	Not Applicable	No further investigation	Not Applicable	
24	Abandoned Drain Lines	IAS, May 1983	Not Applicable	No further investigation	Not Applicable	
25	Hypo Discharge X-Ray Building No. 2	IAS, May 1983	Not Applicable	No further investigation	Not Applicable	
26	Thermal Destructor 2	IAS, May 1983	Not Applicable	No further investigation	Not Applicable	
27	Thermal Destructor 1	IAS, May 1983	Not Applicable	No further investigation	Not Applicable	
28	Original Burning Ground	IAS, May 1983	Not Applicable	No further investigation	Not Applicable	
29	The Valley	IAS, May 1983	Not Applicable	No further investigation	Not Applicable	
30-38	Stump Neck Annex	IAS, May 1983	These sites are being addressed as part of the Stump Neck Annex permit under the Resource Conservation and Recovery Act (RCRA)			
39	Organics Plant	IAS, May 1983	Final SI Report, Phase II, March 1994	• Additional investigation to assess the nature/extent of sediment contamination	Elemental silver and possibly silver nitrate, dinitropropanol, ethylene dichloride, methyl chloride, and formaldehyde	
40	Palladium Catalyst in Sediments	IAS, May 1983	Final SI Report, Phase II, March 1994	• Additional study at Site 39 should overlap discharge point at Site 40 to better define extent of contamination • Analyze Mattawoman Creek sediments for palladium	• Palladium • Sediments; UDMH	• No further investigation is recommended

TABLE 2-1
INVESTIGATION SUMMARY
INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND
(Continued)

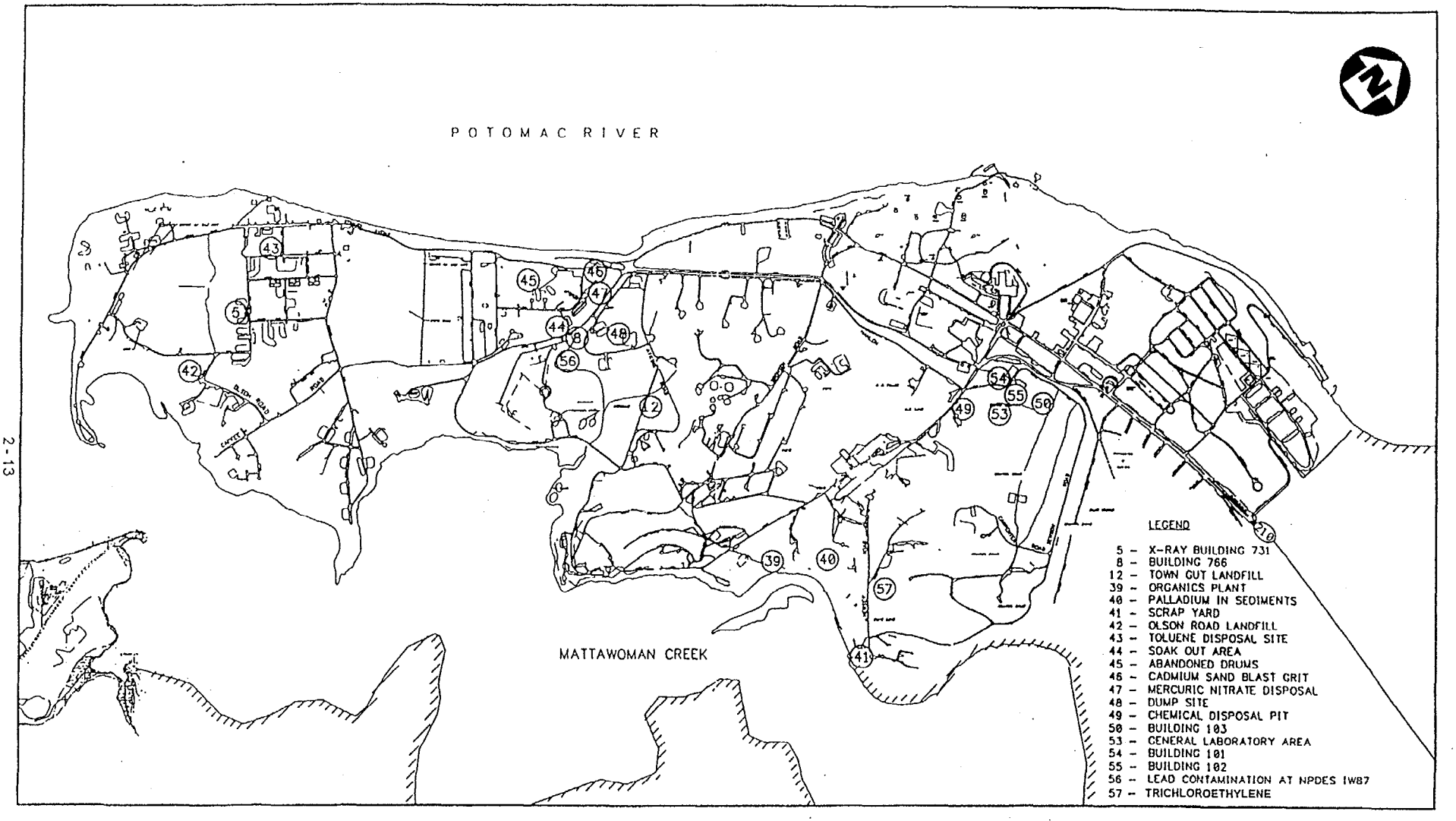
Site No.	Site Name	Preliminary Assessment (PA) or Initial Assessment Study (IAS)	Site Inspection (SI) or Confirmation Study (CS)	Recommendation from IAS/CS or PA/SI	Contaminants of Concern*	Comments
41	Scrap Yard	IAS, May 1983	Final SI Report, Phase II, March 1994	• Additional investigation to assess the nature/extent of sediment contamination • Quarterly groundwater sampling program • Additional investigation to assess the nature/extent of soil/groundwater contamination	• Sediments; BNA, UDMH, HBNQ, PNC • Groundwater; trichloroethylene, heptachlor epoxide, endosulfan II • Soils; VOCs, BNA, metals, TPH • Polychlorinated biphenyls	
42	Olson Road Landfill	IAS, May 1983	Final Phase I SI, July 1992	• Install groundwater monitoring wells, characterize soil for leachate potential	• Unknown	
43	Toluene Disposal Site	IAS, May 1983	Final SI Report, Phase II, March 1994	• Additional investigation to assess the nature/extent of soil contamination • Additional soil gas survey	• Toluene • Soils; VOCs, BNAs, metals, TPH	
44	Soak Out Area	IAS, May 1983	Final SI Report, Phase II, March 1994	• Quarterly groundwater sampling program • More comprehensive field investigation to determine nature/extent of contamination	• Groundwater; chlorinated solvents • Soils; TPH, acetone, BNAs • Pennchem 9018	
45	Abandoned Drums	IAS, May 1983	Final SI Report, Phase II, March 1994	• Analyze soils for volatiles and semivolatile organic compounds	• VOCs	• Before subsequent field activities, remove and dispose all drums
46	Cadmium Sandblast Grit	IAS, May 1983	Final SI Report, Phase II, March 1994	• Additional soil sampling	• Soils; cadmium, lead	
47	Mercuric Nitrate Disposal Area	IAS, May 1983	Final SI Report, Phase II, March 1994	• Additional investigation to determine nature/extent of soil contamination • Install shallow monitoring wells	• Soils; VOC, BNAs, silver	

TABLE 2-1
INVESTIGATION SUMMARY
INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND
(Continued)

Site No.	Site Name	Preliminary Assessment (PA) or Initial Assessment Study (IAS)	Site Inspection (SI) or Confirmation Study (CS)	Recommendation from IAS/CS or PA/SI	Contaminants of Concern*	Comments
48	Nitroglycerine Plant Disposal Area	IAS, May 1983	Final SI Report, Phase II, March 1994	• Additional investigation to assess the nature/extent of soil contamination	• Unknown	
49	Chemical Disposal Area	IAS, May 1983	Final SI Report, Phase II, March 1994	• Additional investigation to assess soil contamination	• Unknown	
50	Building 103, Crawl Space	IAS, May 1983	Final SI Report, Phase II, March 1994	• Additional investigation to assess the nature/extent of soil contamination	• Mercury, sulfuric acid	
51	Building 101, Dry Wall	IAS, May 1983	Not Applicable	Not Applicable	• None	
52	Building 102, Dry Wall	IAS, May 1983	Not Applicable	Not Applicable	• None	
53	Mercury Contamination of the Sewage System	IAS, May 1983	Final SI Report, Phase II, March 1994	• Recover free product (mercury) from sewers	• Mercury	
54	Building 101	IAS, May 1983	Final SI Report, Phase II, March 1994	• Additional study to assess an appropriate removal method	• Elemental mercury	
55	Building 102	IAS, May 1983	Final SI Report, Phase II, March 1994	• Additional study to assess an appropriate removal method	• Mercury	
56	IW87 - Lead Contamination				• Lead	Contamination detected during routine water sampling under NPDES
57	TCE Building 292 Area				• Trichloroethylene	Contamination detected during routine water sampling under NPDES

BNA = Base-Neutrals/Acid Extractables (Semivolatile Organic Compounds)
HBNQ = High Bulk Nitroguanidine
IAS = Initial Assessment Study (Equivalent to a Preliminary Assessment)
NPDES = National Pollutant Discharge Elimination System
PNC = Plastisol Nitrocellulose
TPH = Total Petroleum Hydrocarbons
UDMH = Unsymmetrical Dimethylhydrazine
VOC = Volatile Organic Compounds

NOTE: See Fact Sheets in Appendix B for complete site information.



FACILITY MAP AND
IR SITE LOCATIONS
INDIAN HEAD DIVISION NSWC

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FIGURE 2-3

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3.0 COMMUNITY RELATIONS BACKGROUND

The Community Relations Program for the IHDIV-NSWC IR Program began with the development of a Community Relations Plan (CRP), dated November 1989. The CRP is a formal plan for community relations activities at IHDIV-NSWC. The CRP is designed to create opportunities for public involvement in the IR Program at the Activity, identify community relations activities to promote involvement, and allow citizens the opportunity to learn about the NSWC and the ongoing IR Program. The CRP is dynamic to reflect the technical progress of the IR Program, while being responsive to the needs and concerns of the community. Because of this, IHDIV-NSWC periodically reviews and revises the CRP to reflect new technical information and progress.

Following the development of the CRP, two information repositories were established at the LaPlata Branch of the Charles County Public Library and the IHDIV-NSWC General Library (Building D-40). The information repositories are files containing current information, technical reports, reference documents, and community relations materials pertaining to the IR Program activities at IHDIV-NSWC. All documents generated throughout the IR Program are available for public review.

Another important aspect of the IHDIV-NSWC community relations effort was the establishment of a Technical Review Committee (TRC). The TRC was established in accordance with requirements of the IR Program. This committee actively participates in the development of work scopes for studies and provides technical reviews and comments during the execution of the studies and the selection of remedial technologies. TRC members include representatives from the U.S. Navy, U.S. Fish and Wildlife Service, Maryland Department of the Environment, Charles County Health Department, Charles County Planning and Growth Management, Indian Head Waste Water Treatment Plant, and community representatives. IHDIV-NSWC has now expanded community participation by converting the TRC into a Restoration Advisory Board (RAB). The RAB will serve as an outgrowth of the TRC concept by providing a more comprehensive forum for discussing environmental cleanup issues and serving as a mechanism for RAB members to provide input reflective of the broader community's concerns.

4.0 COMMUNITY ISSUES AND CONCERNS

This CRP was developed to better understand and address the community issues and concerns, and the community's informational needs as they relate to the IHDIV-NSWC. Information received during TRC/RAB meetings and community interviews were combined for analysis and incorporated into the CRP. Questions asked during the community interviews were arranged into the following categories: general awareness, level of concern, information needs, and level of involvement. The Public Affairs Officer, in conjunction with the Environmental Division, reviews and revises the CRP periodically in response to changes in community relations needs and to technical progress.

The questions asked and responses given during the community interviews were compiled into summary format below. This summary is intended to present generalized issues and concerns, rather than reiterate specific comments.

4.1 GENERAL BACKGROUND

The interviews for this CRP were conducted during September 1994. Thirteen interviews were held, involving six women and seven men.

One of the 13 people interviewed for the CRP revision had lived in the area for a short time (five years or less). Six others had been residents for 18 to 30 years; six others had been Charles County natives for 55 to 80 years. Four were under 50 years old.

Two interviewees had never themselves been employed by the Activity or had a family member who had worked there. Seven had been employed as civilian workers; ten had one or more family members who had been employed in some capacity; and six fell into both categories.

Ten people reported they felt the Activity had been an excellent neighbor over time. Three others rated the Activity's relationship with the County as good to very good.

4.2 GENERAL AWARENESS

Only two interviewees indicated any depth of knowledge about both past and present operations at the Activity. Most were comfortably familiar with the Activity's mission before, during, and after World War II until approximately the last decade. After operational focus shifted from production to research and development (concurrent with a decline in employment by local personnel), the level of understanding of Activity operations decreased dramatically.

Because virtually all those interviewed knew that the long-standing mission of the Activity was production of energetics and propellants, most understood that environmental cleanup activities were necessary and were occurring on the Activity. None, however, could identify with accuracy either specific chemicals or the sites targeted for current cleanup activities.

4.3 LEVEL OF CONCERN

Many interviewees mentioned the August 1994 magazine explosion as the principal issue that had most captured the public's interest about the Activity. None of them, however, expressed any fear or concern about Activity safety because of the explosion; it was viewed as something that happens periodically in places where ammunition and explosives are stockpiled. In fact, several commented that the affect on the area was muted because the magazine performed as designed; the magazine was built to channel the explosive force through the roof and out three walls, so the wall closest to the residential area remained intact. Several interviewees concluded that the Activity's effort to emphasize safety over the years had paid off.

On the issue of environmental cleanup, a few who addressed directly the question about their level of concern expressed the view that the Activity has been doing everything it can to deal with the contamination created by past operations. Several wanted to be sure that the cleanup was being done correctly. One interviewee noted that the Activity had been the recipient of several environmental awards and that distinction should be publicized to provide the public some level of comfort.

One interviewee suggested that the "burn point" (Strauss Avenue Thermal Treatment Point) had created a measure of concern for people boating on the Potomac. The thermal treatment point is an area used to dispose of propellant. When this area is used, the burning and flashing can be seen from the river. People who are not aware of this practice have been frightened and concerned about its effect on the area.

Several interviewees expressed concern about the possibility that the Activity might be decommissioned, a situation many expressed would be a serious blow to the entire area's economy. Two people expressed concern that unless the Activity proved it was a consistently responsible neighbor, both in addressing contaminants present and in recognizing adjacent residential land use, the community support necessary to prevent its closure would not be forthcoming. Further, they felt that the Activity needs to be more proactive in ensuring there is an adequate buffer between its property and other (residential) interests. The Activity also needs to re-establish a solid connection to the community and educate it about the facility's mission.

A number of interviewees expressed a concern for the long-term impact of the Activity on the quality and quantity of the area's groundwater supply.

Additional concerns included: the health and safety of the approximately 700 students and staff in proximity to the Activity; the proliferation of hydrilla, a fast-growing alga, in Mattawoman Creek; the general health of Mattawoman Creek; and assurance that no drums full of hazardous waste are buried on the Activity .

4.4 INFORMATION NEEDS

None of those interviewed knew about the information repositories, the two locations where the documents generated about the Activity cleanup are available for public review. The existing repositories are listed in Appendix C. Suggestions for other information repository locations included the Bryans Road and community college libraries, and the Town Hall.

The Flash Point (the Activity's monthly newsletter) was mentioned by four interviewees as the source of most of its information about the Activity environmental cleanup. Other sources cited for obtaining information about the cleanup were direct contact with the Activity Public Affairs Office, the Town newsletter, word of mouth, Town Council meetings, the county newspaper, and the Maryland Independent.

When asked how they would like to receive information about the Activity cleanup, most interviewees responded that the articles in the local newspaper and Town of Indian Head Newsletter were good sources of information (particularly if the reporter had some basic understanding of the cleanup process). Several thought small neighborhood meetings would be useful, followed by timely articles. Once they were aware of their existence, six persons indicated they might visit the local information repositories.

Three people thought regular updates mailed to their homes would be a useful way to stay updated about the cleanup. Other useful sources of information: fact sheets (for three persons, one stressing that they should not be mass mailed) and personal visits from Activity representatives (three persons). Large public meetings were not met with much enthusiasm, and then only infrequently. Two interviewees strongly suggested that periodic, arranged site visits would enhance both the community's understanding of the Activity cleanup and its relationship with the civilian community. However, one person suggested that since the cleanup was going smoothly, the Activity might be making a mistake by trying to educate the public about it, since it would stir up concerns that might not be alleviated easily.

In response to a question about what information method works best in the Indian Head community, comments ranged from publication of articles after meetings, to the county newspaper, the Indian Head newsletter, creation of a community advisory group, and speeches to civic organizations.

When asked how the interviewee would get information about the Activity if they had a question or concern, 11 said they would contact the Activity Public Affairs Office. One individual responded that he would call or write the Base Commander; two indicated that they would ask a neighbor, friend or relative; and one stated she would call Town Hall or the office of some elected official.

4.5 LEVEL OF INVOLVEMENT

All interviewees were asked if they would like to become involved in the Activity cleanup activities. Less than half (six) said they would. Only five were aware of the existence of the Restoration Advisory Board (RAB). Six asked to receive more information on the RAB and nine requested that their name be placed on the mailing list to receive information on Activity cleanup activities.

5.0 COMMUNITY RELATIONS OBJECTIVES, TECHNIQUES, AND IMPLEMENTATION

5.1 OBJECTIVES

The objective of all community relations efforts is to foster open communication between the government, the public, and other responsible and interested parties. A goal of the CRP is to build two-way communication between the community and the Navy in an effort to:

- Inform the public regarding the progress of planned and ongoing actions at the site.
- Communicate the results of the investigation and risk assessment when available.
- Receive feedback from the public as to their specific concerns and information needs.
- Provide the public the opportunity to comment on and participate in addressing technical decisions associated with the site.

A format of open communication serves to lessen and resolve conflicts, to keep the residents informed of the investigation progress, and to assist in the remediation decision-making process for the site.

5.2 TECHNIQUES

Community relations programs require the use of appropriate communication methods that are tailored to educate the public with the remedial investigations. The techniques implemented are governed by program requirements and/or policy issues defined by the decision-maker. In developing an effective community relations strategy for IHDIV-NSWC, several techniques are appropriate .

5.2.1 Key Point-of-Contact

The Public Affairs Officer (PAO) is the key point-of-contact with the community for IHDIV-NSWC. The PAO is responsible for ensuring that inquiries regarding the progress of the environmental investigations, remedial actions, and other decisions regarding the IR process are responded to in a timely and accurate manner. The PAO disseminates information to the public regarding environmental restoration activities. The PAO's address and phone number are provided in Appendix C. The PAO coordinates all technical queries with the Environmental Division of the Activity.

5.2.2 Public Information Dissemination

Techniques used to relay information to the public include the following:

- Information Repository. An information repository is maintained by the Activity's Environmental Division to ensure that copies of all public documents including administrative records, technical reports, and fact sheets pertaining to the site are readily available to interested parties. Information repositories are established at the Charles County Public Library and the IHDIV-NSWC General Library (see Appendix C).

- Mailing List. An internal mailing list is established and maintained by the Public Affairs Office to identify persons interested in the site investigation activities. Those on the list include Restoration Advisory Board (RAB) members, local and state officials, and facility personnel. Other interested individuals wishing to be added to the mailing list should state so in writing and submit their name, title, address, and phone number to the Public Affairs Office key point-of-contact listed in Appendix C. Individuals on the mailing list will receive notices of community meetings and additional information upon request.

- Public Notices/News Releases. Public notices and news releases are published in local newspapers to announce major environmental restoration activities and formal public participation events, such as public hearings and public comment periods. This information will be sent to the Maryland Independent and the LaPlata Ledger.

5.2.3 Local Community and Media Communications Techniques

Techniques to provide information to the public include the following:

- Responsiveness Summary. Responsiveness summaries document oral and written public input submitted at public meetings, public hearings, or during a public comment period. This summary, developed by the Environmental Division, provides a clear record on community concerns about the IR Program for consideration in planning for future community relations activities and the approach to environmental activities. These summaries are made available to the public in the information repository.

- Fact Sheets/Brochures. Fact sheets, written by the Environmental Division, present technical and/or enforcement information, serve to announce public meetings, and provide background information to the public prior to a meeting. Fact sheets/brochures are an effective method for communicating this type of information to the public. It is necessary for all information to be clear, concise, and easily understood.

5.2.4 Community Interviews

Meetings with local government officials, residents living near the site, other concerned and interested citizens, and representatives from local organizations such as the Chamber of Commerce, and other civic and environmental associations provide information to the IHDIV-NSWC on community needs and concerns. A total of 13 interviews were conducted during September 1994 to update the Community Relations Plan. The decision to conduct additional interviews as events and cleanup actions occur will be made by the Public Affairs Office with input from the Environmental Division.

5.2.5 Public Meetings

Public meetings, both informal and formal, are used to inform the community about ongoing site activities and findings, and to discuss and receive citizen feedback on proposed courses of action. Meetings are usually held in association with milestones in the response process, such as the release of technical reports. Public meetings are announced in advance via press releases, newspaper notices, and direct mailings to the mailing list. In addition, small informal meetings (workshops) to keep key groups and citizens informed of site activities are held as appropriate. The Public Affairs Office, in conjunction with the Maryland Department of Environment, is responsible for meeting logistics. The Environmental Division provides technical support, as required.

5.2.6 Restoration Advisory Board

A Restoration Advisory Board (RAB), formerly the Technical Advisory Committee (TRC), was established at IHDIV-NSWC. The purpose of the RAB is to: act as a forum for discussion and exchange of information between the Navy, regulatory agencies and the community on environmental restoration topics; provide an opportunity for local community members to review the progress and participate in the decision-making process by reviewing and commenting on actions and proposed actions involving the site; and to serve as an outgrowth of the TRC concept by providing a more comprehensive forum for

discussing environmental cleanup issues and serving as a mechanism for RAB members to give advice as individuals.

The RAB includes representatives from the Navy, the Maryland Department of Environment, the Environmental Protection Agency, Charles County Health Department, Charles County Planning and Growth Management, U.S. Fish & Wildlife Service, Indian Head Waste Water Treatment Plant, and community representatives and is co-chaired by a representative each from the community and IHDIV-NSWC. The RAB meets three or four times per year or on an as needed basis; those meetings will be announced in the Maryland Independent and the LaPlata Ledger. Meeting minutes will be made available to interested parties. Fact Sheets describing the activities and responsibilities of the RAB and RAB Members are included as Appendix E.

5.2.7 Environmental Education

An array of events will be planned to provide a community forum to educate the public concerning the environment and environmental investigations and provide the public an opportunity to discuss the subject matter on an informal, one-on-one basis with the decision-maker. ECOFAIRS are an example of the type of event that is used to disseminate information to the public. Additional methods include technical demonstrations that show the public how specific investigations (e.g., well drilling) or remedial activities are being conducted.

5.2.8 Periodic Site Tours

The Public Affairs Office will schedule periodic tours of the Activity, focusing on active environmental cleanup areas, to educate the surrounding community about the Activity and its environmental restoration program.

6.0 COMMUNITY RELATIONS ACTIVITIES TO DATE

The community relations activities conducted to date for IHDIV-NSWC's Installation Restoration (IR) Program are presented in this section of the CRP. It is important to note that the CRP and community relations schedule are dynamic; both are updated as necessary to respond to changing community concerns and on-going progress in the IR Program.

IHDIV-NSWC COMMUNITY RELATIONS ACTIVITY SCHEDULE

Activity	Date
Technical Review Committee/Membership Letter (Expansion)	June 1991
Technical Review Committee (Meeting #1)	July 1991
Technical Review Committee (Meeting #2)	October 1991
Establish Information Repositories	October 1991
Technical Review Committee (Meeting #3)	February 1992
Technical Review Committee (Meeting #4)	May 1992
Technical Review Committee (Meeting #5)	August 1992
Technical Review Committee (Meeting #6)	November 1992
Technical Review Committee (Meeting #7)	February 1993
Technical Review Committee (Meeting #8)	September 1993
Technical Review Committee (Meeting #9)	January 1994
Technical Review Committee (Meeting #10)	May 1994
Public Meeting (Solicit RAB Members)	July 1994
Technical Review Committee (Meeting #11)	August 1994
Conduct Community Interviews (13 interviews)	September 1994
RAB Training	December 1994
RAB Meeting (Meeting #1, Open to Public)	January 26, 1995

REFERENCES

ENSAFE/Allen & Hoshall, July 1992. Final Site Inspection Report Phase I, Indian Head Division, Naval Surface Warfare Center.

ENSAFE/Allen & Hoshall, March 1994. Final Site Inspection Report, Phase II, Indian Head Division, Naval Surface Warfare Center.

EPA (U.S. Environmental Protection Agency), January 1992. Community Relations in Superfund - A Handbook.

NEESA (Naval Energy and Environmental Support Activity), May 1983. Initial Assessment Study of Naval Ordnance Station, Indian Head, Maryland.

NEESA (Naval Energy and Environmental Support Activity), January 1992. Preliminary Assessment Report, Naval Ordnance Station, Indian Head, Maryland.

APPENDIX A

ACRONYMS AND ABBREVIATIONS

ACRONYMS AND ABBREVIATIONS

CERCLA	Comprehensive Environmental Response Compensation and Liability Act of 1980
CRP	Community Relations Plan
CS	Confirmation Study
DERA	Defense Environmental Restoration Account
DOD	Department of Defense
DON	Department of Navy
DRMO	Defense Reutilization and Marketing Office
EE/CA	Engineering Evaluation/Cost Analysis
EFACHES	Engineering Field Activity, Chesapeake
EPA	U.S. Environmental Protection Agency
FS	Feasibility Study
IAS	Initial Assessment Study
IHDIV-NSWC	Indian Head Division, Naval Surface Warfare Center
IRP	Installation Restoration Program
IW	Industrial Wastewater
MD	Maryland
MDE	Maryland Department of the Environment
NACIP	Navy Assessment and Control of Installation Pollutants Program
NAVFAC	Naval Facilities Engineering Command
NOS	Naval Ordnance Station
NPDES	National Pollutant Discharge Elimination System
NSWC	Naval Surface Warfare Center
PA	Preliminary Assessment
PCBs	Polychlorinated Biphenyls
POLs	Petroleum, Oils and Lubricants
RA	Removal Action
RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RI	Remedial Investigations
ROD	Record of Decision
SI	Site Inspection
TRC	Technical Review Committee
UDMH	Unsymmetrical Dimethylhydrazine
USF&W	U. S. Fish & Wildlife Service

APPENDIX B

INSTALLATION RESTORATION SITES

FACT SHEETS

INSTALLATION RESTORATION SITES
FACT SHEETS

FOR

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

Please note that the information presented in these Fact Sheets was obtained from numerous reports on studies that were conducted at the Indian Head Division, Naval Surface Warfare Center. These reports are available for public review at the Installation Restoration information repositories, which are located at the Center's General Library (Building D-40), and the LaPlata Branch of the Charles County Public Library.

FOREWORD

UPDATE NUMBER 3

The following changes were made to the Fact Sheets on February 28, 1995:

a. The Fact Sheets were completely reformatted for inclusion into the Community Relations Plan (CRP). In this way, everytime the CRP is updated, the Fact Sheets will also be updated to reflect new developments and information.

b. Fact Sheets for two newly discovered sites were added. These include IR Site 56, Lead Contamination at Industrial Wastewater (IW) Outfall 87; and IR Site 57, Trichloroethylene.

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Updated: 03/17/95

X-RAY BUILDING 731
(IR Site 5)
Fact Sheet

1. **Contamination:**

   Silver from spent fixer and developer

2. **Location:**

   Drainage swales behind Building 731 which flow to the Mattawoman Creek

3. **From:**

   Discharge of spent fixer and developer for X-Ray film

4. **When:**

   1953 to 1977

5. **Generated By:**

   Fixer and developer are used in developing X-Ray film. Some of the silver, which is on the film, gets "fixed" to the X-Ray and the remainder of the silver is washed off. Both the fixer and developer, which contain silver, were discharged behind Building 731 into two separate swales.

6. **Amount:**

   Estimated 720 pounds of silver.

7. **Work Completed:**

   a. The site was identified in the Initial Assessment Study (IAS) of the Naval Assessment for the Control of Industrial Pollutants (NACIP) Program. NACIP is the former name of the Navy Installation Restoration Program (IR) and the IAS is equivalent to the Preliminary Assessment (PA) portion of the IR program.

   b. A Confirmation Study, the NACIP equivalent of an IR Site Inspection (SI) was completed in 1985 to determine if silver was actually present in the sediment at the site.

   c. A Removal Action was performed on the eastern swale from November 1992 through January 1993. The silver contaminated soil of the swale was removed, solidified/stabilized, and placed in an earthen berm.

   d. A Removal Action was performed on the western swale from December 1994 through January 1995. The silver contaminated soil of the swale was removed and placed in a borrow pit at Rum Point on Stump Neck Annex. The soil was covered with an impermeable layer of soil (clay), which was then covered with top soil and reseeded.

8. **Current Status:**

   No other work is planned at this time.

Updated: 03/17/95

MERCURY CONTAMINATION FROM BUILDING 766
(IR Site 8)
Fact Sheet

1. **Contamination:**

   Mercury

2. **Location:**

   The drainage system from Building 766, which included: a storm water manhole, a ditch, and a pond which discharges into the Mattawoman Creek

3. **From:**

   Lab operations

4. **When:**

   1958-1981

5. **Generated By:**

   During sensitivity tests, nitrometer bulbs which contained mercury sometimes exploded under pressure. After testing, the spent mercury, which also contained sulfuric acid, was poured into a "slop jar." Tap water was run into the jar to remove the sulfuric acid from the mercury. Small spills from transferring mercury to the "slop jar" were common. Jars of mercury often broke while rinsing in the sink.

6. **Amount:**

   Estimates range from 23 to 500 pounds of elemental mercury

7. **Work Completed:**

   a. The site was identified in the Initial Assessment Study (IAS) of the Naval Assessment for the Control of Industrial Pollutants (NACIP) Program. NACIP is the former name of the Navy Installation Restoration Program (IR) and the IAS is equivalent to the Preliminary Assessment (PA) portion of the IR program.

   b. A Confirmation Study, the NACIP equivalent of an IR Site Inspection (SI) was completed in 1985 to determine if mercury was actually present in the sediment at the site.

   c. While construction work was being performed in the area of Building 766 in 1985, the contractor inadvertently broke the drain pipe leading from the building to a manhole. Mercury was discovered in the pipe and ground at the site of excavation. Approximately 200 drums of mercury contaminated soil was removed from the area near the manhole and was properly disposed.

   d. The floor drains were sealed shut with concrete and sink drains were re-routed to the sewage treatment system. In addition, mercury traps were placed on the drains to collect any mercury that may inadvertently enter the drain.

MERCURY CONTAMINATION FROM BUILDING 766
(IR Site 8)
Fact Sheet

(continued)

e. A Confirmation Study was performed in 1985, to determine the extent of mercury contamination throughout the ditch. The mercury in the soil was present in the highest concentration directly under the pipe which discharges into the ditch. The mercury concentrations then decreased downstream from the pipe. The Confirmation Study recommended monitoring mercury levels over a 5-year period. Water monitoring samples taken between the pond and the Mattawoman Creek did not indicate any movement of the mercury.

f. The U.S. Fish and Wildlife Service sampled fish in the Mattawoman Creek for the 5-year period ending in 1991, to determine if fish were bioaccumulating mercury. Fish upstream from the entrance location to the Creek have been sampled to determine background levels of mercury within the fish. The background level is the amount of mercury that is normally found in the fish. They have also sampled fish downstream from the entrance location to the Creek to determine if the levels are different. In the past, fish downstream were found to contain mercury at a level slightly higher than those upstream. The latest report from the U.S. Fish and Wildlife Service indicates that the mercury levels in both the fish upstream and downstream from IR Site 8 contain equivalent levels of mercury. Mercury levels of the fish from both areas, however, have been within regulatory limits.

g. A potential problem with IR Site 8 is the transport of mercury downstream through entrainment, especially during storm events, such as heavy rains. Although the tidal pond acts as a natural sediment basin, a weir was installed in June 1992. The weir provides additional settling time to ensure that any sediment that has flowed from the upper section of the stream into the pond will not exit into the Mattawoman Creek.

h. Approximately 200 water and sediment samples were taken from the ditch, the pond, and Mattawoman Creek during the week of 24 August 1992 to better characterize the location and extent of mercury in the drainage system. Based on the sample results, an Engineering Evaluation and Cost Analysis (EECA) was prepared to determine the best alternative to be taken to ensure protection of human health and the environment. The alternative recommended in the EECA was to remove the area of highest mercury contamination. This area, the upper section of the stream, could be considered a source to the receptor (tidal pond) downstream, was approximately 300 feet in length, and contained mercury in concentrations above 10 parts per million (ppm).

i. In October 1992, a biomonitoring program was initiated to determine the effect of mercury on the biota (plant and animal life) in the tidal pond. The results of the study, which is still being conducted, do not show any adverse affects on the biota of the pond due to the mercury.

j. In June 1994, the Removal Action to remove the mercury contaminated sediment in the first 300 feet of the ditch, as recommended in the EECA, was begun. The soil that was removed was placed in the soil cover of an explosives storage magazine, Building, 606. The soil was capped with clay and then topsoil and was reseeded. This work was completed in December 1994.

8. **Current Status:**

No other work is planned at this time.

Updated: 03/17/95

TOWN GUT LANDFILL
(IR Site 12)
Fact Sheet

1. **Contamination:**

Construction debris, including scrap metal, empty cans and drums containing paint and varnish residue; demolition debris, such as asphalt, concrete, and rubble. Possible chemical waste

2. **Location:**

Approximately 3.3 acres bisected by Atkins Road extension

3. **From:**

Disposal of landscaping waste, fill material, rubble, and construction debris.

4. **When:**

1968 to 1980

5. **Generated By:**

Disposal of various wastes

6. **Amount:**

Unknown

7. **Work Completed:**

a. The site was identified in the Initial Assessment Study (IAS) of the Naval Assessment for the Control of Industrial Pollutants (NACIP) Program. NACIP is the former name of the Navy Installation Restoration Program (IR) and the IAS is equivalent to the Preliminary Assessment (PA) portion of the IR program.

b. A Confirmation Study, the NACIP equivalent of an IR Site Inspection (SI) was completed in 1985 to determine if contamination was actually present at the site. Low levels of metals were found in the sediment at this site. The CS recommended monitoring the site for five years to ensure that no contamination is migrating from the landfill.

c. The five year monitoring results did not show that any contamination is migrating from this area.

8. **Current Status:**

This site will continue to the Remedial Investigation/Feasibility Study phase of the IR Program.

SILVER RELEASE TO SEDIMENTS
(IR Site 39)
Fact Sheet

1. **Contamination:**

   Elemental silver and possibly silver nitrate, dinitropropanol (DNPOH), ethylene dichloride, methyl chloride, and formaldehyde.

2. **Location:**

   Mattawoman Creek southeast of Building 497

3. **From:**

   Production of Bis-2,2-Dinitropropyl Acetal/Formal

4. **When:**

   1961 to 1965.

5. **Generated By:**

   Release of silver and silver nitrate during production of Acetal/Formal. Silver nitrate was used as a catalyst in the production of Acetal/Formal, a plasticizer, or propellant binder, used in Polaris rocket motors. In the reaction, the silver nitrate catalyst was converted to elemental silver. The silver was recovered from the reaction vessel and was returned to the supplier to undergo nitration back to silver nitrate. However, interviews with Navy personnel revealed that a significant amount of silver, as well as the other chemicals listed above, may have entered the creek through spills and human error, such as valves mistakenly left open.

6. **Amount:**

   Unknown.

7. **Work Completed:**

   A Site Inspection (SI) under the Navy Installation Restoration (IR) Program was conducted as recommended by the Preliminary Assessment to determine if contamination is actually present. This inspection included taking four ponar grab samples from the top sediment of the Mattawoman Creek and two sediment samples in the Creek near Industrial Wastewater Outfall 05 (IW05). These samples were analyzed for Acetal/Formal, Pelletized Nitrocellulose (PNC), Unsymmetrical Dimethylhydrazine (UDMH), High Bulk Density Nitroguanidine (HBNQ), TALs, VOCs, and BNAs.

8. **Current Status:**

   Additional sampling was recommended in the SI. Therefore, this site will continue to the Remedial Investigation/Feasibility Study phase of the IR Program.

Updated: 03/17/95

PALLADIUM CATALYST IN SEDIMENT
(IR Site 40)
Fact Sheet

1. **Contamination:**

   Palladium

2. **Location:**

   Mattawoman Creek southeast of Building 497

3. **From:**

   Production of Unsymmetrical-Dimethylhydrazine (UDMH)

4. **When:**

   1974 and 1975

5. **Generated By:**

   Release of Palladium, a catalyst used n the production of UDMH. Forty percent of the catalyst purchased by the NAVORDSTA was lost and cannot be accounted for. Therefore, it is possible that this catalyst entered the Mattawoman Creek.

6. **Amount:**

   Using the 40% estimated loss of the total purchased, the total amount of palladium that may have entered the creek is 88 pounds.

7. **Work Completed:**

   A Preliminary Assessment was performed and a Site Inspection was not recommended under the Navy Installation Restoration program because palladium is not a regulated hazardous substance. However, a Site Inspection was performed to ensure that a problem does not exist. This inspection included taking four ponar grab samples from the top sediment of the Mattawoman Creek and two sediment samples in the Creek near the wastewater outfall, which is no longer in use. These samples were analyzed for Palladium.

8. **Current Status:**

   Further study at this site was not recommended in the SI. Therefore, no other work is planned at this time.

SCRAP YARD
(IR Site 41)
Fact Sheet

1. **Contamination:**

Polychlorinated Biphenyls (PCBs)

2. **Location:**

Scrap Yard behind Building 436

3. **From:**

Storage of PCB and PCB contaminated transformers. By definition, PCB transformers contain oil with greater than 500 parts per million (ppm) of PCBs, while PCB contaminated transformers contain oil within 50 to 500 ppm PCBs.

4. **When:**

From the 1960's to 1988.

5. **Generated By:**

Before Building 1440 was dedicated to the storage of removed PCB equipment, transformers containing PCBs were stored at the Scrap Yard. Transformers, some in poor condition, which leaked PCB oil on the ground were stored at the northwest end of the Scrap Yard near the Creek.

6. **Amount:**

Unknown

7. **Work Completed:**

A Site Inspection under the Navy Installation Restoration Program was conducted as recommended in the Preliminary Assessment to determine if contamination is actually present. This SI included:

a. Obtaining eight samples for soil-gas analysis of VOCs from eight locations.

b. Taking 15 soil samples, three samples per boring at approximately 5 foot intervals, from five soil borings and analyzing for TCL's, TALs, and TPHs.

c. Installing three monitoring wells and obtaining six groundwater samples, two from each well. These samples will be analyzed for TCLs, TALs, and TPHs.

d. Obtaining nine soil samples, three per boring at approximately 5 foot intervals, during the installation of monitoring wells. These samples will be analyzed for TCLs, TALs, and TPHs.

e. Taking 11 sediment samples from the Mattawoman Creek and analyzing for TCLs, TALs, and TPHs.

8. **Current Status:**

Additional sampling was recommended in the SI. Therefore, this site will continue to the Remedial Investigation/Feasibility Study phase of the IR Program.

Updated: 03/17/95

OLSON ROAD LANDFILL
(IR Site 42)
Fact Sheet

1. **Contamination**

   Unknown

2. **Location:**

   Near Building 1728

3. **From:**

   Disposal of various solid wastes from all over Station

4. **When:**

   A period of approximately 5 years ending in 1987

5. **Generated By:**

   Normal operations. Whether hazardous wastes were disposed at the landfill cannot be confirmed or denied by activity records or personnel. Analysis of the former topography suggests that earth moving equipment was used to fill the area.

6. **Amount:**

   Unknown

7. **Work Completed:**

   A Site Inspection was performed under the Navy Installation Restoration Program, as recommended in the Preliminary Assessment, as described below:

   a. Branches, pallets, and other visible debris that was located on the site were removed to facilitate sampling efforts.

   b. A Magnetometer and Ground Penetrating Radar (GPR) were used to scan the subsurface of the landfill for any buried obstructions that would impede drilling or present a potential hazard.

   c. Approximately 75 soil samples were collected at various depths from 24 soil borings and analyzed for VOCs, TCLs, TALs, and TPHs.

   d. Four of the soil borings were completed as permanent groundwater monitoring wells and two soil borings were completed as temporary groundwater monitoring wells.

   e. Nine groundwater samples were obtained from the six monitoring wells and three grab groundwater samples were taken from 3 bore holes. These samples were analyzed for VOCs, TCLs, TALs, and TPHs.

OLSON ROAD LANDFILL
(IR Site 42)
Fact Sheet
(continued)

f. Fifteen sediment samples were collected from the swale located to the northwest and south of the landfill and were analyzed for VOCs, TCLs, TALs, and TPHs.

g. Four surface water samples were taken in the swale and analyzed for VOCs, TCLs, TALs, and TPHs.

8. **Current Status:**

Additional sampling was recommended in the SI. Therefore, this site will continue to the Remedial Investigation/Feasibility Study phase of the IR Program.

Updated: 03/17/95

TOLUENE DISPOSAL
(IR Site 43)
Fact Sheet

1. **Contamination:**

   Toluene

2. **Location:**

   By utility pole across the street from Building 1041

3. **From:**

   Disposal of toluene used for propellant removal

4. **When:**

   Parts cleaning operations took place from the late 1950's through November 1989. It is estimated that for a period of approximately two years during the operation, spent solvent was improperly disposed at the base of the pole.

5. **Generated By:**

   After parts were cleaned within Building 1041, the spent solvent was normally combined or "slummed" with sawdust in a 55 gallon drum for treatment at the Strauss Avenue Thermal Treatment Point. Occasionally, however, the spent solvent was carried across the street to the utility pole and poured on the ground at the base of the pole.

6. **Amount:**

   One report estimated that 15 to 20 gallons per week of spent solvent was disposed at the base of the pole. We are unable to determine the amount of solvent disposed at this site.

7. **Work Completed:**

   a. A Preliminary Assessment was performed and a Site Inspection was recommended under the Navy Installation Restoration program to determine if contamination is actually present.

   b. A Site Inspection under the Navy Installation Restoration Program was conducted. This inspection included obtaining 10 soil-gas samples from 10 borings and analyzing for VOCs. In addition, four soil samples were taken using a hand auger at a depth not greater than three feet for analysis of VOCs, BNAs, and TPHs.

8. **Current Status:**

   Additional sampling was recommended in the SI. Therefore, this site will continue to the Remedial Investigation/Feasibility Study phase of the IR Program.

Updated: 03/17/95

SOAK OUT AREA
(IR Site 44)
Fact Sheet

1. **Contamination:**

An unknown nonflammable solvent, believed to be Pennchem 9018, a polysulfide solvent containing mercaptan.

2. **Location:**

Area approximately 75 feet east of Building 1363 and 40 feet south of Building 907.

3. **From:**

Removal of propellant from rocket motor catapult tubes

4. **When:**

Late 1960's to early 1970's

5. **Generated By:**

Rocket motor catapult tubes were allowed to soak in the solvent contained in two 55 gallon drums that were welded together. The tubes soaked for 2 to 3 days and were then removed without regard to solvent spillage. However, a smaller catch tank was placed in the larger tank to collect pieces of propellant that would fall out of the tubes.

6. **Amount:**

Unknown

7. **Work Completed:**

A Site Inspection under the Navy Installation Restoration Program was conducted as recommended in the Preliminary Assessment to determine if contamination is actually present. This inspection included:

a. Obtaining 15 soil samples from 15 borings for soil gas analysis of VOCs.

b. Taking nine soil boring samples, three samples per boring at approximately 5 foot intervals, from three soil borings.

c. Installing two monitoring wells and obtaining four groundwater samples, two from each well. These samples were analyzed for VOCs, BNAs, and TPHs.

d. Obtaining 6 soil samples, three per boring at approximately 5 foot intervals, during the installation of monitoring wells. These samples were analyzed for VOCs, BNAs, and TPHs.

e. Taking two soil boring samples using a hand auger to a depth of 1 foot and analyzing for VOCs, BNAs, and TPHs.

8. **Current Status:**

Additional sampling was recommended in the SI. Therefore, this site will continue to the Remedial Investigation/Feasibility Study phase of the IR Program.

Updated: 03/17/95

ABANDONED DRUMS
(IR Site 45)
Fact Sheet

1. **Contamination:**

   Unknown

2. **Location:**

   250 feet west of Building 1363

3. **From:**

   Unknown

4. **When:**

   Estimated 15 to 20 years ago

5. **Generated By:**

   Unknown. Possibly the same solvent that was used in the Soak Out Area.

6. **Amount:**

   Assuming the 21 55-gallon drums and two overpack drums had been full, a total of 1295 gallons of solvent would have leaked onto the ground.

7. **Work Completed:**

   A Site Inspection under the Navy Installation Restoration Program was conducted as recommended in the Preliminary Assessment to determine if contamination is actually present. Three soil samples were taken from three soil borings with a hand auger. The borings were obtained at a depth not greater than three feet. These samples were analyzed for VOCs, BNAs, and TALs. In addition, four soil-gas samples were taken and analyzed for VOCs.

8. **Current Status:**

   Additional sampling was recommended in the SI. Therefore, this site will continue to the Remedial Investigation/Feasibility Study phase of the IR Program.

CADMIUM SANDBLAST GRIT
(IR Site 46)
Fact Sheet

1. **Contamination:**

   Cadmium

2. **Location:**

   Gravel area behind Building 855

3. **From:**

   Sandblast grit disposal

4. **When:**

   Mid 1960's to possibly early 1980's

5. **Generated By:**

   Rocket catapult tubes plated with cadmium were sandblasted at Building 855 as part of a resurfacing operation. Often, the cadmium-contaminated grit was dumped in the gravel area behind Building 855.

6. **Amount:**

   Estimates as to the amount, frequency, and time period over which the grit was disposed near the building could not be confirmed.

7. **Work Completed:**

   a. A Preliminary Assessment was performed and a Site Inspection was recommended under the Navy Installation Restoration program to determine if contamination is actually present.

   b. A Site Inspection under the Navy Installation Restoration Program was conducted. This inspection included taking nine soil samples using a hand auger and analyzing them for TALs.

8. **Current Status:**

   Additional sampling was recommended in the SI. Therefore, this site will continue to the Remedial Investigation/Feasibility Study phase of the IR Program.

Updated: 03/17/95

MERCURIC NITRATE DISPOSAL AREA
(IR Site 47)
Fact Sheet

1. **Contamination:**

Mercuric Nitrate

2. **Location:**

South of the concrete pad behind Building 856

3. **From:**

Disposal of mercuric nitrate dissolved in nitric acid

4. **When:**

From 1957 through 1965

5. **Generated By:**

Mercuric nitrate is a catalyst that was used to produce hydrazinium nitroformate, an oxidizer used in the propellants for the Polaris missile. The spent solution, one ounce of mercuric nitrate dissolved in 98% nitric acid, was poured from 55 gallon drums onto a 6 x 4 foot bed of limestone chips.

6. **Amount:**

Assuming enough limestone was present to neutralize the nitric acid, 274 pounds of mercuric nitrate (equivalent to 169 pounds of elemental mercury) would have precipitated out as a salt.

7. **Work Completed:**

a. A Preliminary Assessment was performed and a Site Inspection was recommended under the Navy Installation Restoration program to determine if contamination is actually present.

b. A Site Inspection under the Navy Installation Restoration Program was conducted. This inspection included taking two soil samples with a hand auger in the ditch where the mercuric nitrate may have settled, and analyzing for VOCs, BNAs, and TALs. In addition, 10 soil samples were taken with a hand auger at the south edge of the concrete pad. The samples were taken at various depths from zero to one foot and were analyzed for VOCs, BNAs, and TALs. No limestone was found during the sampling.

8. **Current Status:**

Additional sampling was recommended in the SI. Therefore, this site will continue to the Remedial Investigation/Feasibility Study phase of the IR Program.

NITROGLYCERIN PLANT DISPOSAL AREA
(IR Site 48)
Fact Sheet

1. **Contamination:**

   Unknown.

2. **Location:**

   On the hill behind Building 766.

3. **From:**

   Unknown, possibly laboratory samples.

4. **When:**

   Unknown.

5. **Generated By:**

   Unknown. Bottles, metal scrap, solvent containers, and refuse, possibly generated at Building 766, are visible on the hill. Most containers appear to be old and empty.

6. **Amount:**

   Unknown

7. **Work Completed:**

   A Preliminary Assessment was performed and a Site Inspection was recommended under the Navy Installation Restoration program to determine if contamination is actually present.

   a. Two soil samples were taken on the hillside where the bottles and scrap are located in 1991. The samples were analyzed for mercury to determine if this site could be a source of mercury at the Building 766 ditch. No mercury was detected in the samples.

   b. A Site Inspection under the Navy Installation Restoration Program was conducted. This SI included obtaining nine soil samples from three borings, three per boring at approximately 5 foot intervals. These samples were analyzed for VOCs, BNAs, and TPHs.

8. **Current Status:**

   Because three unknown BNA Tentatively Identified Compounds (TICs), which may be naturally occurring, were detected, additional sampling was recommended in the SI. Therefore, this site may continue to the Remedial Investigation/Feasibility Study phase of the IR Program.

Updated: 03/17/95

CHEMICAL DISPOSAL PIT
(IR Site 49)
Fact Sheet

1. **Contamination:**

   Unknown

2. **Location:**

   Northeast of Building 444.

3. **From:**

   Lab Operations.

4. **When:**

   Limited use up to the early 1970's

5. **Generated By:**

   Bottles containing wastes were placed on a steel grate in the pit and the drop plate was dropped. The plate then crushed the bottles containing waste chemicals. The glass fell into a wire basket and the contents of the bottles were allowed to soak into the bottom of the pit.

6. **Amount:**

   Unknown

7. **Work Completed:**

   a. A Preliminary Assessment was performed and a Site Inspection was not recommended under the Navy Installation Restoration program. According to Navy personnel, the pit received little, if any, use. No visible signs of disposal can be seen, such as chemical stains or broken glass.

   b. Five soil samples were taken at one soil boring and were analyzed for VOCs, BNAs, TALs, and nitrate esters. One soil sample from inside the pit was obtained and was analyzed for VOCs, BNAs, TALs, and nitrate esters.

8. **Current Status:**

   Additional sampling was recommended in the SI. Therefore, this site will continue to the Remedial Investigation/Feasibility Study phase of the IR Program.

BUILDING 103 CRAWL SPACE
(IR Site 50)
Fact Sheet

1. **Contamination:**

Elemental mercury and possibly other chemicals.

2. **Location:**

Crawl space of Building 103.

3. **From:**

Sinks in Building 103.

4. **When:**

From 1902 to 1985. During construction in 1985, we discovered that the sinks did not drain to either the sanitary or storm sewer system. Instead, the sinks discharged directly to the soil under Building 103.

5. **Generated By:**

Laboratory equipment containing mercury was used in Building 103 at various times. During sensitivity tests, nitrometer bulbs, which contained mercury, sometimes exploded under pressure. After testing, the spent mercury, which also contained sulfuric acid, was poured into a "slop jar." Tap water was run into the jar to remove the sulfuric acid from the mercury. Small spills from transferring mercury to the "slop jar" were common. Jars of mercury often broke while rinsing in the sink. Other chemicals were also placed in the sinks. A visual inspection of the crawl space revealed possible asbestos insulation covering the pipes. The insulation appeared to be in good condition.

6. **Amount:**

Unknown.

7. **Work Completed:**

a. The sinks were re-routed to the sanitary sewer system. In addition, chemicals are no longer put down the sink.

b. A Site Inspection under the Navy Installation Restoration Program was conducted as recommended in the Preliminary Assessment to determine if contamination is actually present. This inspection included taking soil boring samples from the crawl space under Building 103 and analyzing for VOCs, BNAs, TALs, and nitrate esters.

8. **Current Status:**

Additional sampling was recommended in the SI. Therefore, this site will continue to the Remedial Investigation/Feasibility Study phase of the IR Program.

Updated: 03/17/95

BUILDING 101 DRY WELL
(IR Site 51)
Fact Sheet

1. **Contamination:**

   None

2. **Location:**

   Dry well by Building 101

3. **From:**

   N/A

4. **When:**

   N/A

5. **Generated By:**

   Initially, it was believed that a laboratory waste stream was separated for disposal purposes. The volatile component was evaporated in a flash tank while the remaining liquid wastes were discharged into a dry well. However, inspection of Department of the Navy, Bureau of Yards and Docks drawings revealed that the flash tank did not discharge to the dry well.

6. **Amount:**

   None.

7. **Work Completed:**

   A Preliminary Assessment was performed and a Site Inspection was not recommended under the Navy Installation Restoration program.

8. **Current Status:**

   Based on the evidence of the Department of the Navy, Bureau of Yards and Docks drawings, this site has been dropped from the IR Program. However, if any waste was placed in the dry well, the contamination will be found from wells and soil borings taken in the area. (See IR Site 53.)

BUILDING 102 DRY WELL
(IR Site 52)
Fact Sheet

1. **Contamination:**

   None

2. **Location:**

   Dry well by Building 102

3. **From:**

   N/A

4. **When:**

   N/A

5. **Generated By:**

   Initially, we believed that a laboratory waste stream was separated for disposal purposes. The volatile component was evaporated in a flash tank while the remaining liquid wastes were discharged into a dry well. However, inspection of Department of the Navy, Bureau of Yards and Docks drawings revealed that the flash tank did not discharge to the dry well.

6. **Amount:**

   None.

7. **Work Completed:**

   A Preliminary Assessment was performed and a Site Inspection was not recommended under the Navy Installation Restoration program.

8. **Current Status:**

   Based on the evidence of the Department of the Navy, Bureau of Yards and Docks drawings, this site has been dropped from the IR Program. However, if any waste was placed in the dry well, the contamination will be found from wells and soil borings taken in the area. (See IR Site 53.)

Updated: 03/17/95

MERCURY CONTAMINATION OF THE SEWAGE SYSTEM
(IR Site 53)
Fact Sheet

1. **Contamination:**

   Mercury

2. **Location:**

   Storm and Sanitary Sewer Pipes

3. **From:**

   Building 102

4. **When:**

   1909 through 1986

5. **Generated By:**

   In 1969, approximately 10 pounds of mercury were discovered in a storm sewer manhole and in 1989, approximately one pound of mercury was discovered in a sanitary sewer manhole. Both manholes have drain line connections to Building 102. Laboratory equipment that contain mercury, such as nitrometers, were used extensively in Building 102. Mercury often entered drains during the cleaning of laboratory equipment. In 1986, when mercury traps were placed on all sinks in Building 102, mercury was discovered in the U-joints of the sinks.

6. **Amount:**

   The Draft Preliminary Assessment Report states that only about ten percent of the mercury sent to Building 102 was returned to the Building 444 storage vault for reclamation. Laboratory workers estimated that approximately one liter of mercury was lost per month. Therefore, it is possible that 28,000 pounds of mercury could have been discharged to the drain lines over the 77 year period that the building operated without mercury traps on the sinks.

7. **Work Completed:**

   a. The ten pounds of mercury discharged in the storm sewer manhole in 1969 was recovered.

   b. The one pound of mercury discharged in the sanitary sewer manhole in 1989 was recovered.

   c. A television inspection of the gravity sewer lines was conducted in late 1988. The vitrified clay and terra-cotta pipes were broken, cracked, sagging, separated and, in some cases, collapsed. Mercury contamination of the sewage sludge rose to 150 parts per million while the television inspection was being conducted. This suggests that the sewer cleaning, which was done prior to the television inspection, washed mercury down to the Sewage Treatment Plant. Mercury levels have since dropped to approximately 25 parts per million, the concentration typically measured in the sludge prior to 1988.

MERCURY CONTAMINATION OF THE SEWAGE SYSTEM
(IR Site 53)
Fact Sheet
(continued)

d. A Site Inspection under the Navy Installation Restoration Program was conducted and included:

1) Taking 26 soil samples from 13 borings. One sample per boring was located below the level of the sewer line. These samples were analyzed for mercury and nitrate esters. In addition, some samples were analyzed for VOCs, BNAs, TAL, and TPH.

2) Obtaining 4 sediment samples from sanitary and storm sewer manholes and analyzing for mercury and nitrate esters.

e. In addition, during the SI, six monitoring wells were to be installed. However, at a depth of approximately 41 feet, a marker bed was encountered that was subsequently identified as a unit of the Tertiary Brandywine Formation, which is on top of the Patapsco Formation. The Upper Patapsco Formation is a confining unit which is estimated to be 100 feet thick. Therefore, no shallow water-bearing zones were present.

8. Current Status:

Additional sampling was recommended in the SI. Therefore, this site will continue to the Remedial Investigation/Feasibility Study phase of the IR Program.

Updated: 03/17/95

BUILDING 101
(IR Site 54)
Fact Sheet

1. **Contamination:**

Elemental mercury

2. **Location:**

Basement of Building 101

3. **From:**

Use of laboratory equipment that contained mercury and possibly leaking pipes.

4. **When:**

From building construction in 1909 to mid 1980's

5. **Generated By:**

In January 1990, several droplets of mercury were discovered on the insulation of a steam pipe located in the southeast corner room of the basement in Building 101. In addition, in the mid 1980's, an employee noticed solvent odors in the basement when solvent was flushed down the sink in the room above, indicating a leaky pipe.

Laboratory equipment that contained mercury was used in the room above the basement where mercury was discovered. A 1918 blueprint shows four nitrometers located in this room. During sensitivity tests, nitrometer bulbs, which contained mercury, sometimes exploded under pressure. After testing, the spent mercury, which also contained sulfuric acid, was poured into a "slop jar." Tap water was run into the jar to remove the sulfuric acid from the mercury. Small spills from transferring mercury to the "slop jar" were common. Jars of mercury often broke while rinsing in the sink.

6. **Amount:**

Unknown

7. **Work Completed:**

A Site Inspection under the Navy Installation Restoration Program was conducted as recommended in the Preliminary Assessment to determine the extent of contamination. This inspection included:

a. Taking five wipe samples within the building and analyzing for mercury.

b. Taking five media samples from within the building and analyzing for mercury.

c. Obtaining five soil boring samples from beneath the building and analyzing for mercury and nitrate esters.

8. **Current Status:**

Additional sampling was recommended in the SI. Therefore, this site will continue to the Remedial Investigation/Feasibility Study phase of the IR Program.

BUILDING 102
(IR Site 55)
Fact Sheet

1. **Contamination:**

   Mercury

2. **Location:**

   Building 102

3. **From:**

   Use of laboratory equipment that contained mercury

4. **When:**

   From building construction in 1909 to 1963 when renovations to the building were made.

5. **Generated By:**

   On October 6, 1987, metallic mercury was discovered dripping from the ceiling onto the sink table top of the coffee mess, located in the northern end of the basement of Building 102. Review of Department of the Navy, Bureau of Yards and Docks drawings indicate that a nitrometer was once located in the room directly above the area were the metallic mercury was discovered.

   While installing mercury traps in the sinks of Building 102 in 1986, the plumber reported approximately a teaspoon of mercury in each of the U-joints.

   During sensitivity tests, nitrometer bulbs, which contained mercury, sometimes exploded under pressure. After testing, the spent mercury, which also contained sulfuric acid, was poured into a "slop jar." Tap water was run into the jar to remove the sulfuric acid from the mercury. Small spills from transferring mercury to the "slop jar" were common. Jars of mercury often broke while rinsing in the sink.

6. **Amount:**

   Unknown

7. **Work Completed:**

   a. During building renovations in 1963, the nitrometer operation was moved to the south room on the first floor of Building 102 and the floor was sealed with a two inch layer of concrete.

   b. In the mid 1970's, the nitrometer was moved to the southern room in the basement of Building 102 and in the early 1980's, the floor drains were sealed to prevent mercury release in case of a spill.

   c. Cleanup of the mercury began after the mercury was found dripping from the ceiling, but promptly ceased after asbestos was discovered.

BUILDING 102
(IR Site 55)
Fact Sheet
(continued)

d. Plastic sheeting was placed under the ceiling to encapsulate the leaking mercury and the northern end of the building was closed to protect the health of the employees.

e. In February of 1989, the building was abandoned. In June 1991, the water supply to the building was disconnected to eliminate the potential for mercury contamination of the sludge generated from sewage treatment.

f. A Site Inspection under the Navy Installation Restoration Program was conducted. This inspection included:

1) Taking five wipe samples within the building and analyzing for mercury.

2) Taking five media samples from within the building and analyzing for mercury.

3) Obtaining five soil boring samples from beneath the building and analyzing for mercury and nitrate esters.

8. Current Status:

Additional sampling was recommended in the SI. Therefore, this site will continue to the Remedial Investigation/Feasibility Study phase of the IR Program.

Updated: 03/17/95

LEAD CONTAMINATION AT INDUSTRIAL WASTEWATER OUTFALL (IW) 87
(IR Site 56)
Fact Sheet

1. **Contamination:**

   Lead

2. **Location:**

   Pit, pipe, and sediment leading to IW 87 from Building 790

3. **From:**

   Washdown of Lead-lined Floor

4. **When:**

   1953 to October 1992

5. **Generated By:**

   Building 790 contains a tank of nitric acid and a tank of sulfuric acid. The fumes from these acids get on the walls and floor inside the building, requiring a periodic washdown of the walls and floor. The fumes from the strong acids dissolved the lead from the flooring, and the washdown provided a route for the dissolved lead to discharge from the building to IW 87.

6. **Amount:**

   Unknown

7. **Work Completed:**

   An Engineering Evaluation and Cost Analysis (EECA) has been prepared to determine the best method for cleaning this lead from the pit, pipe, and sediment.

8. **Work Being Done:**

   A Removal Action is scheduled to be performed as outlined in the EECA in calendar year 1995.

Updated: 03/17/95

TRICHLOROETHYLENE
(IR Site 57)
Fact Sheet

1. **Contamination:**

   Trichloroethylene (TCE)

2. **Location:**

   Building 292

3. **From:**

   Possible discharges and spills from drainage of vapor degreasing tank

4. **When:**

   1964 to 1989

5. **Generated By:**

   Emptying of 2000 gallon vapor degreasing tank. The cleaning system used TCE vapors to clean metal parts. The 2000 gallon tank of TCE was emptied and refilled approximately every six months.

6. **Amount:**

   Unknown. Extent of contamination to be determined

7. **Work Completed:**

   A Scope of Work for the site characterization and engineering analysis of this area has been written.

8. **Work Being Done:**

   A site characterization of the soil and groundwater is scheduled for completion in calendar year 1995, to determine the extent of TCE contamination.

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ATTACHMENT A

TARGET COMPOUND LIST (TCL)

AND

TARGET ANALYTE LIST (TAL)

TARGET COMPOUNDS

Table 1 - Volatile Organic Compounds (VOCs)

Acetone
Benzene
Bromodichloromethane
Bromoform
Bromomethane
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
Dibromochloromethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
trans-1,2-Dichloroethene
1,2-Dichloropropane
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Ethylbenzene
2-Hexanone
Methyl ethyl ketone (2-Butanone)
4-Methyl-2-pentanone
Methylene chloride
Styrene
1,1,2,2-Tetrachloroethane
Tetrachloroethene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Toluene
Vinyl acetate
Vinylchloride
Xylene

TARGET COMPOUNDS (continued)

Table 2 - Base-Neutral Extractable Organic Compounds (BN)

Acenaphthene
Acenaphthylene
Anthracene
Benzo(a)anthracene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(g,h,i)perylene
Benzyl alcohol
bis (2-Chloroethyl) ether
bis (2-Chloroethoxy) methane
bis (2-Chloroisopropyl) ether
bis (2-Ethylhexyl) phthalate
4-Bromophenyl phenyl ether
Butyl benzyl phthalate
4-Chloroaniline
2-Chloromaphthalene
4-Chlorophenyl phenyl ether
Chrysene
Dibenzo(a,h)anthracene
Dibenzofuran
Dibutyl phthalate
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
3,3'-Dichlorobenzidine
Diethyl phthalate
Dimethyl phthalate
2,4-Dintrotoluene
2,6-Dintrotoluene
Di-n-octyl phthalate
Fluoranthene
Fluorene
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Indeno(1,2,3-cd)pyrene
Isophorone
2-Methylnaphthalene
Naphthalene
2-Nitroanaline
3-Nitroanaline
4-Nitroanaline
Nitrobenzene
N-Nitrosodi-n-propylamine
N-Nitrosodiphenylamine
Phenanthrene
Pyrene
1,2,4-Trichlorobenzene
2,4,6-Trichlorophenol

TARGET COMPOUNDS (continued)

Table 3 - Acid Extractable Organic Compounds (A)

Benzoic Acid
4-Chloro-3-methyl phenol
2-Chlorophenol
2,4-Dichlorophenol
2,4-Dimethylphenol
2-Methyl-4,6-dinitrophenol
2,4-Dinitrophenol
2-Methyl phenol
4-Methyl phenol
2-Nitrophenol
4-Nitrophenol
Pentachlorophenol
Phenol
2,4,5-Trichlorophenol

TARGET COMPOUNDS (continued)

Table 4 - Pesticides and PCBs

Alpha-BHC
Beta-BHC
Delta-BHC
Gamma-BHC (lindane)
Heptachlor
Aldrin
Heptachlor epoxide
Endosulfan I
Dieldrin
4,4'-DDE
Endrin
Endosulfan II
4,4'-DDD
Endosulfan sulfate
4,4-DDT
Methoxychlor
Endrin ketone
Chlordane
Toxaphene
PCB-1016
PCB-1221
PCB-1232
PCB-1242
PCB-1248
PCB-1254
PCB-1260

TARGET ANALYTES (TAL)

Table 5 - Metals

Aluminum
Antimony
Arsenic
Barium
Beryllium
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Magnesium
Manganese
Mercury
Nickel
Potassium
Selenium
Silver
Sodium
Thallium
Tin
Vanadium
Zinc

ATTACHMENT B

TOPOGRAPHIC MAPS

OF

INSTALLATION RESTORATION SITES

Figure B-1
Topographic Map of IR Site 5

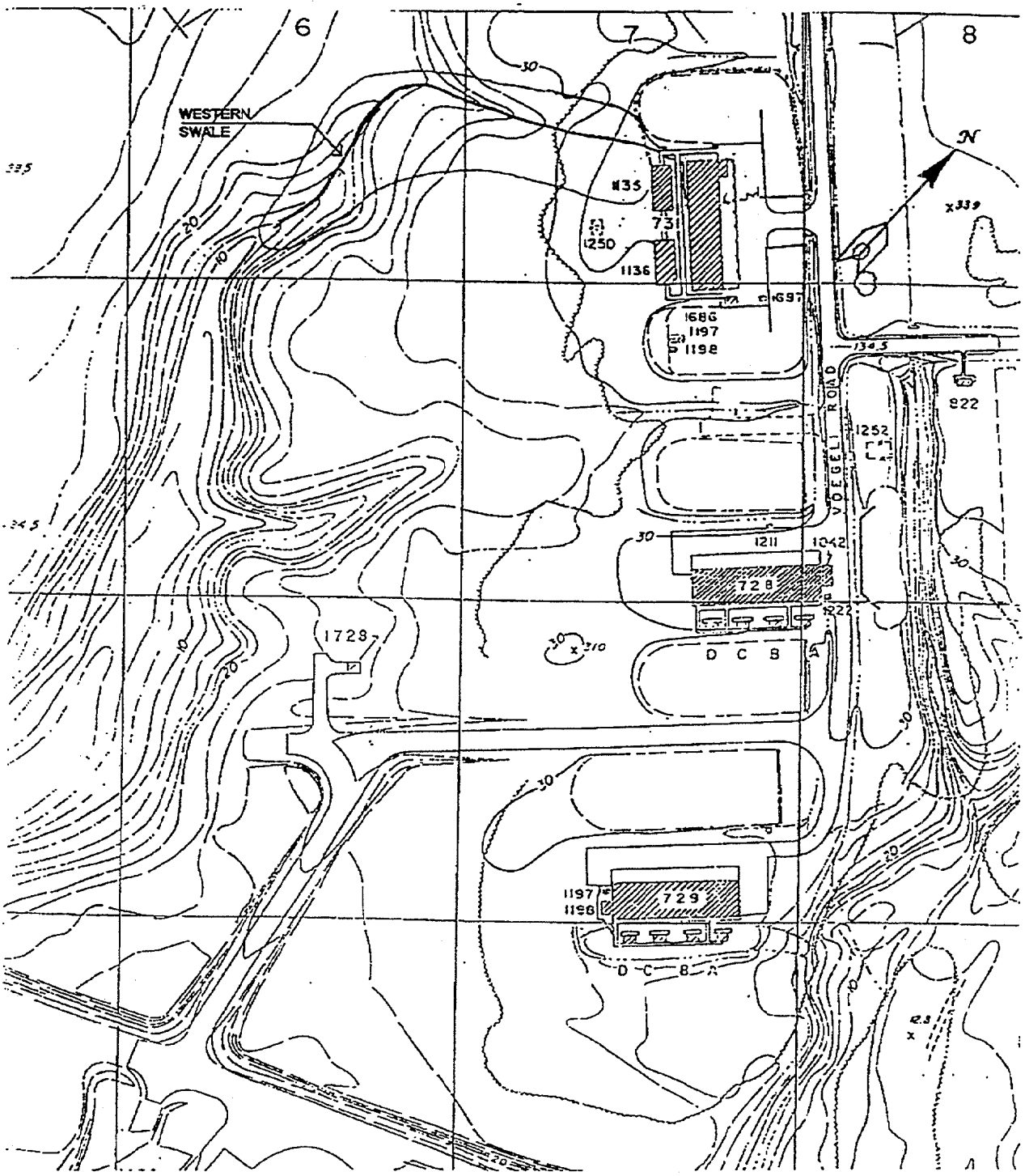

Figure B-2
Topographic Map of IR Sites 8 and 48

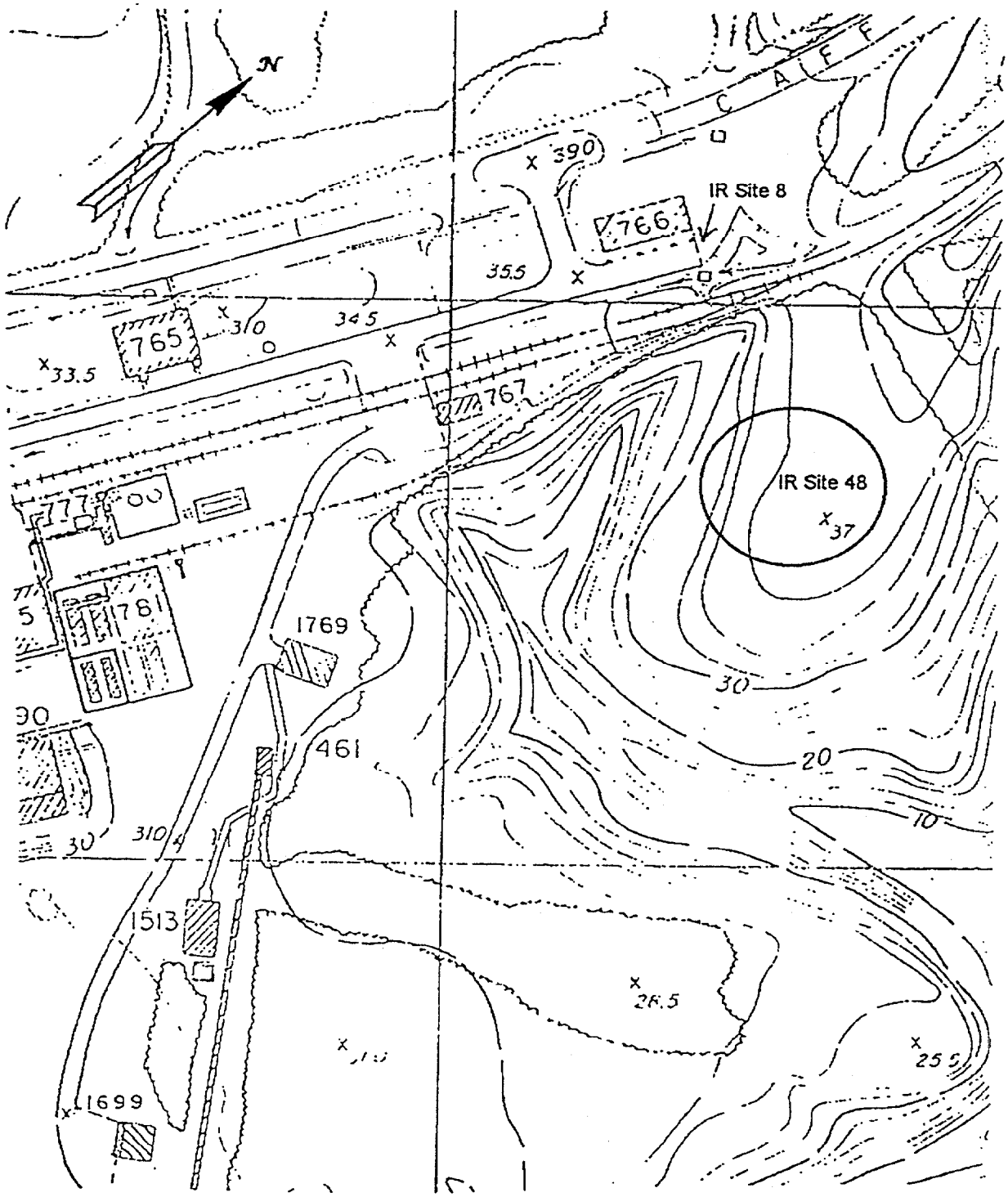

Figure B-3
Topographic Map of IR Site 12

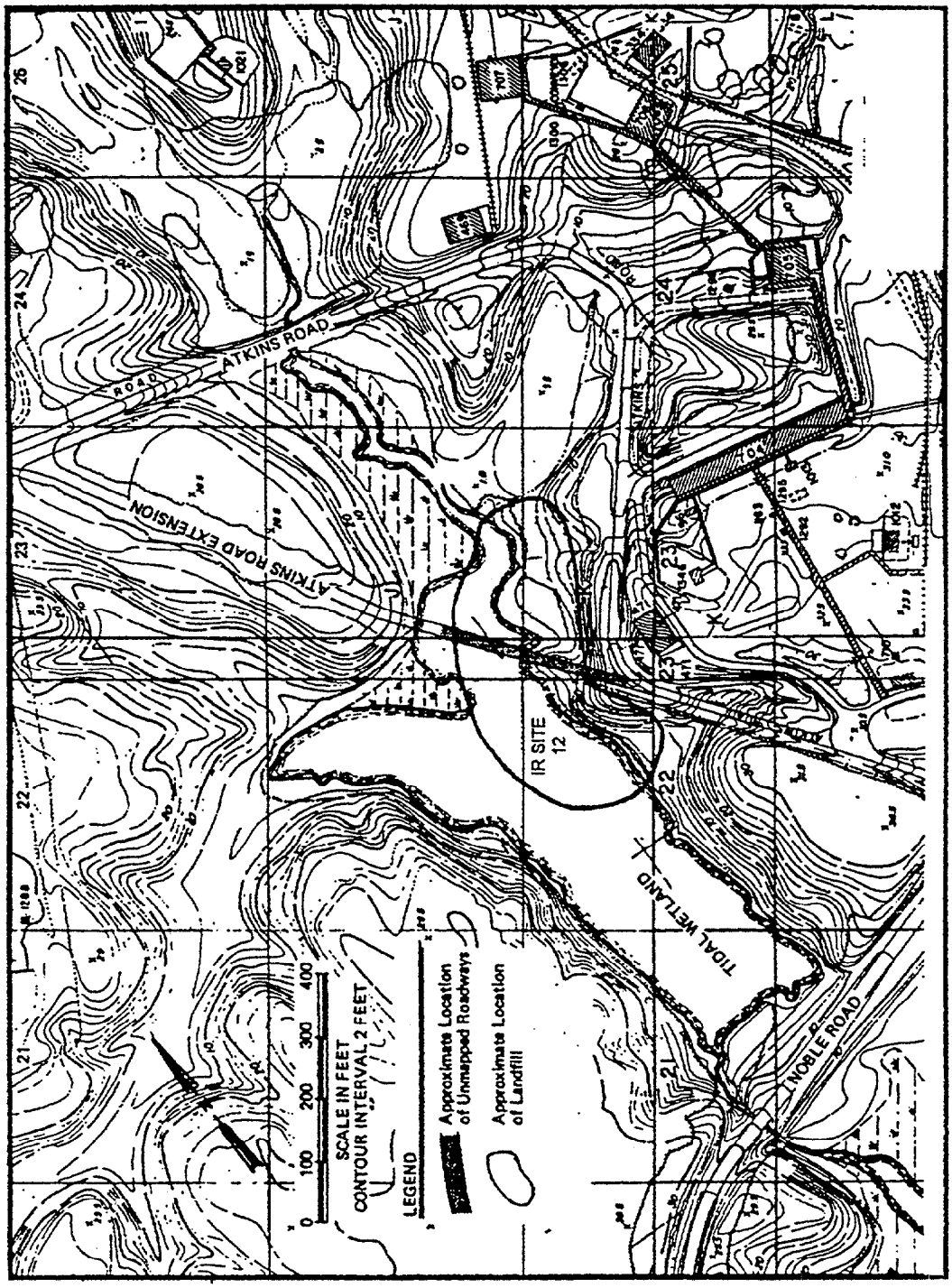

Figure B-4
Topographic Map of IR Sites 39 and 40

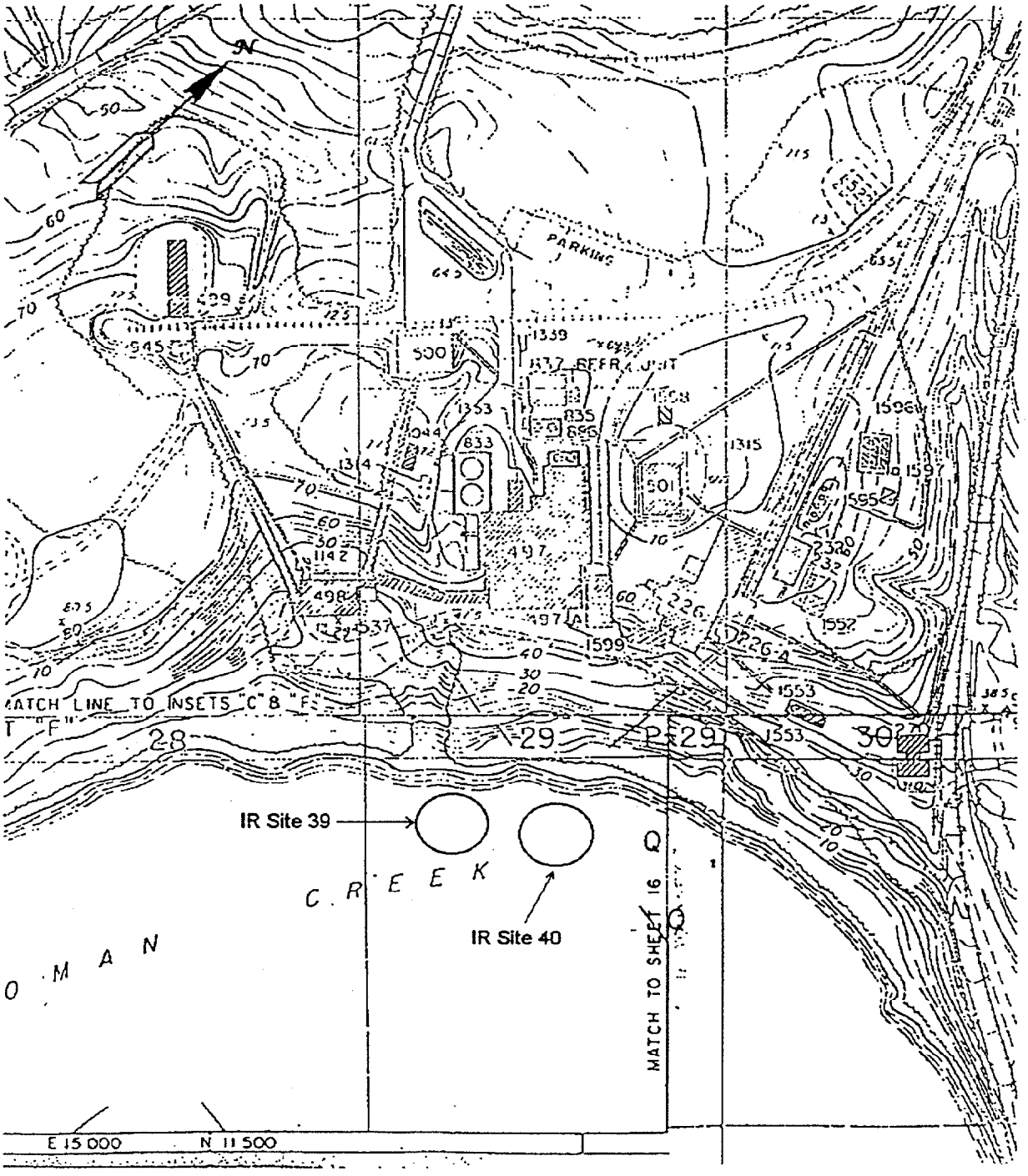

Figure B-5
Topographic Map of IR Site 41

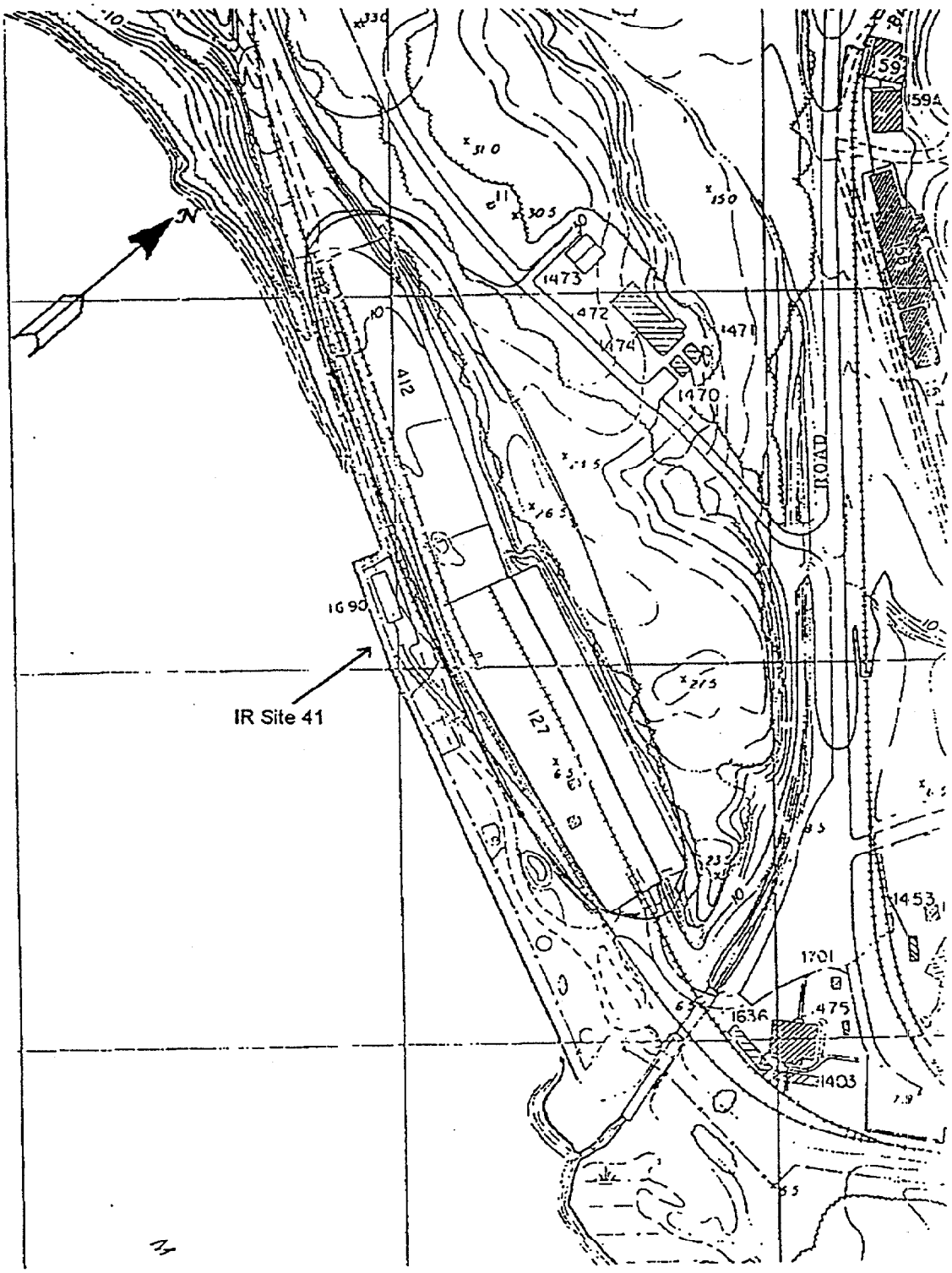

Figure B-6
Topographic Map of IR Site 42

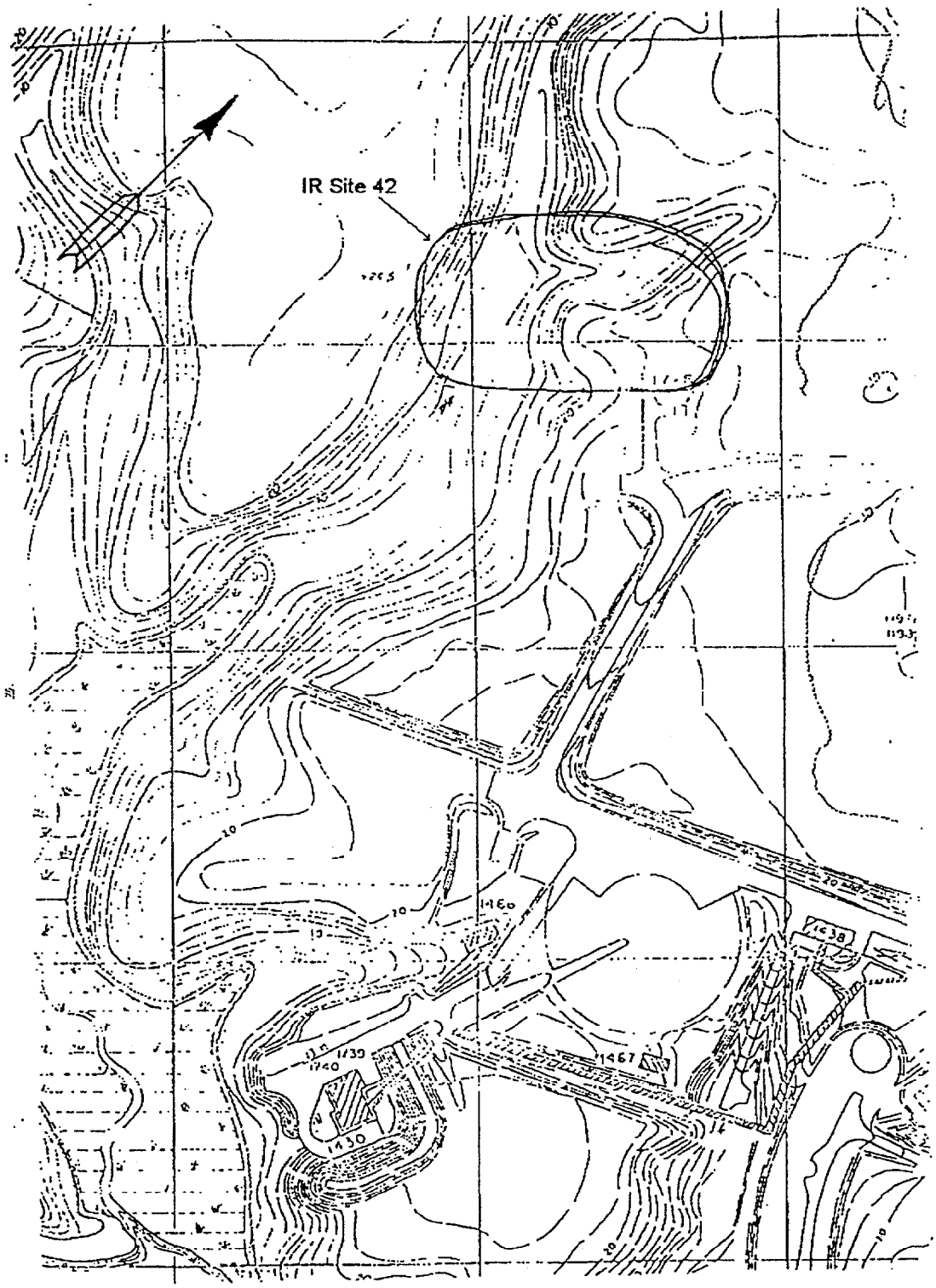

Figure B-7
Topographic Map of IR Site 43

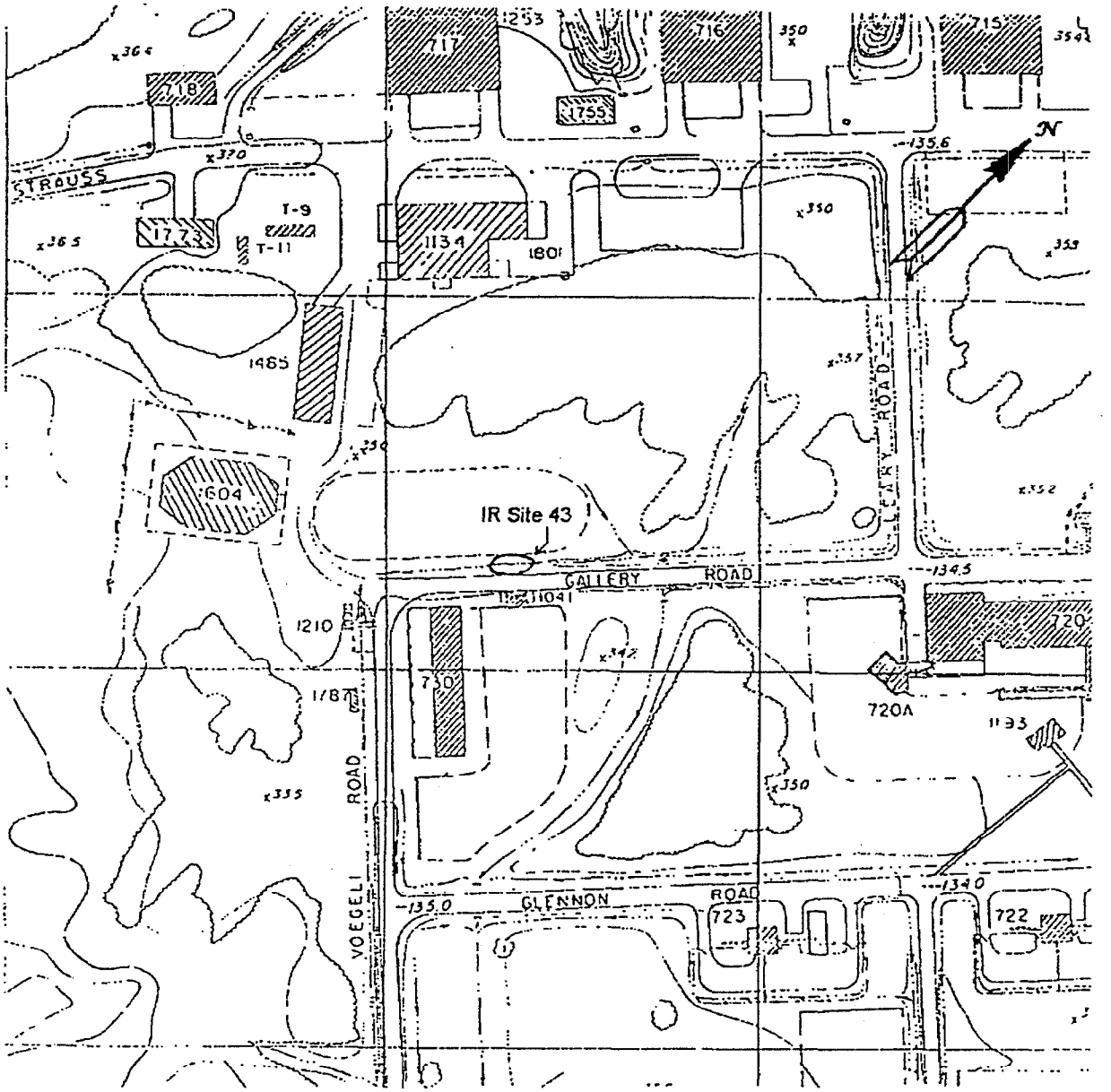

Figure B-8
Topographic Map of IR Sites 44 and 45

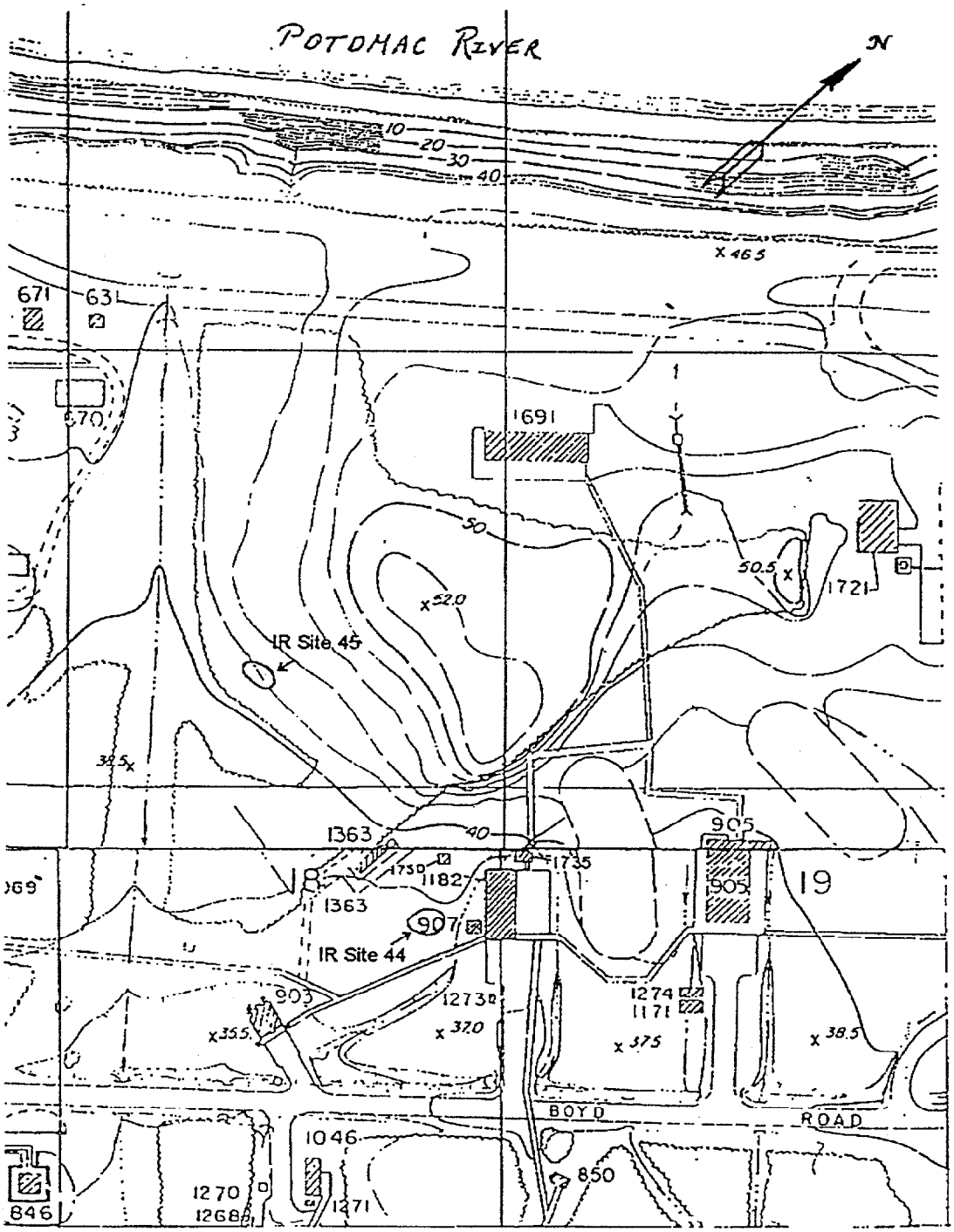

Figure B-9
Topographic Map of IR Sites 46 and 47

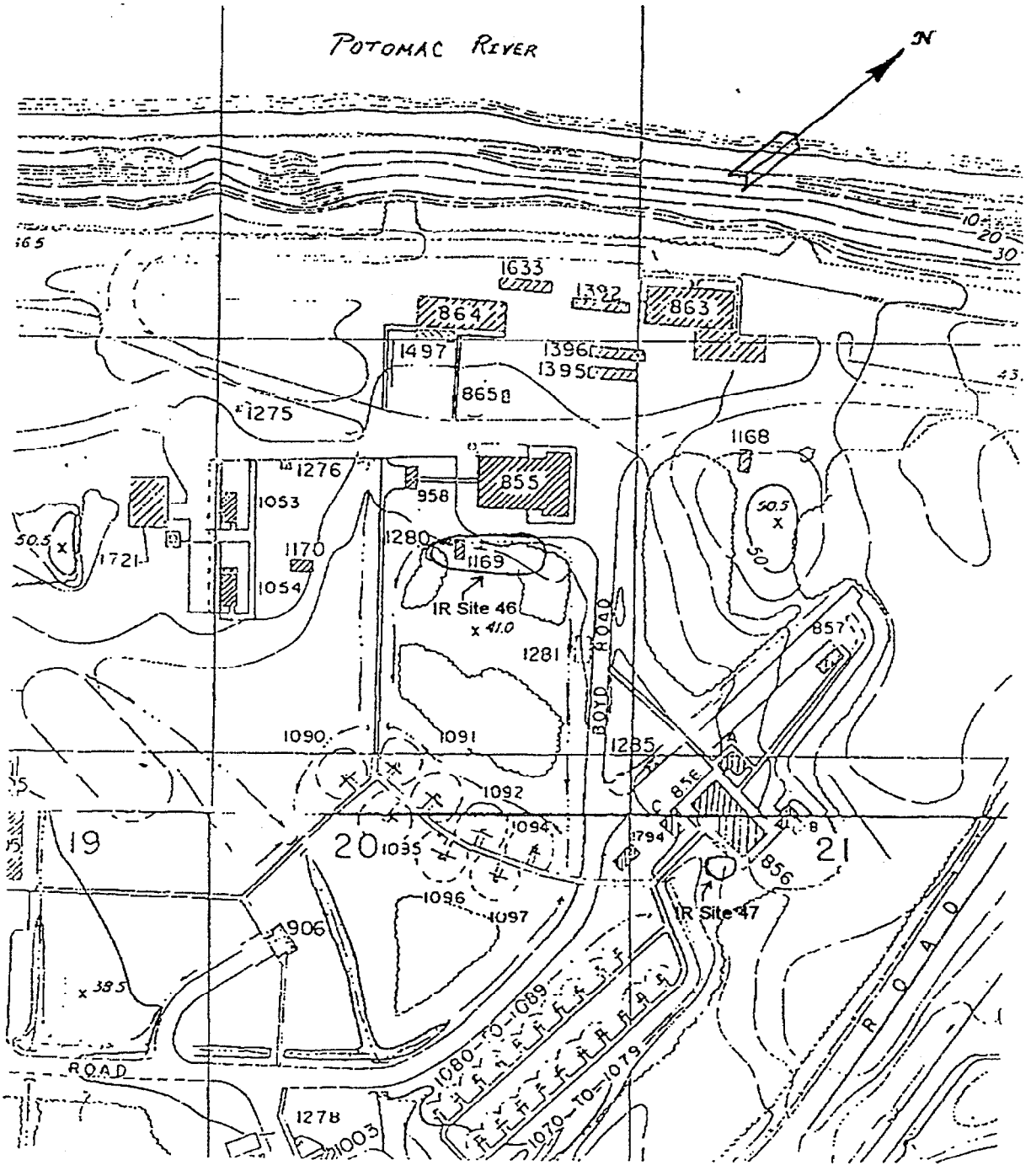

Figure B-10
Topographic Map of IR Sites 49, 50, 51, 52, 53, 54, and 55

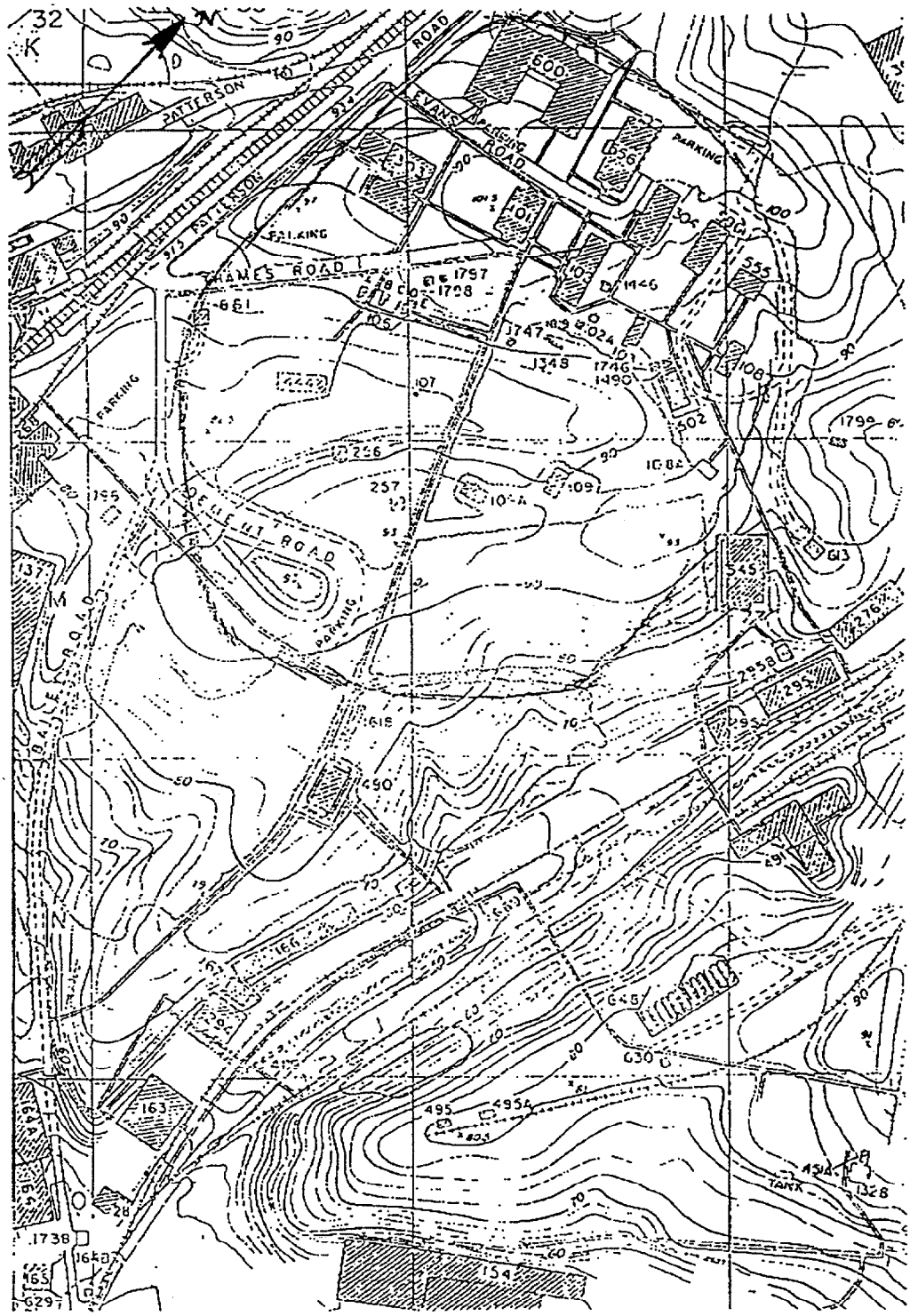

Figure B-11
Topographic Map of IR Site 56

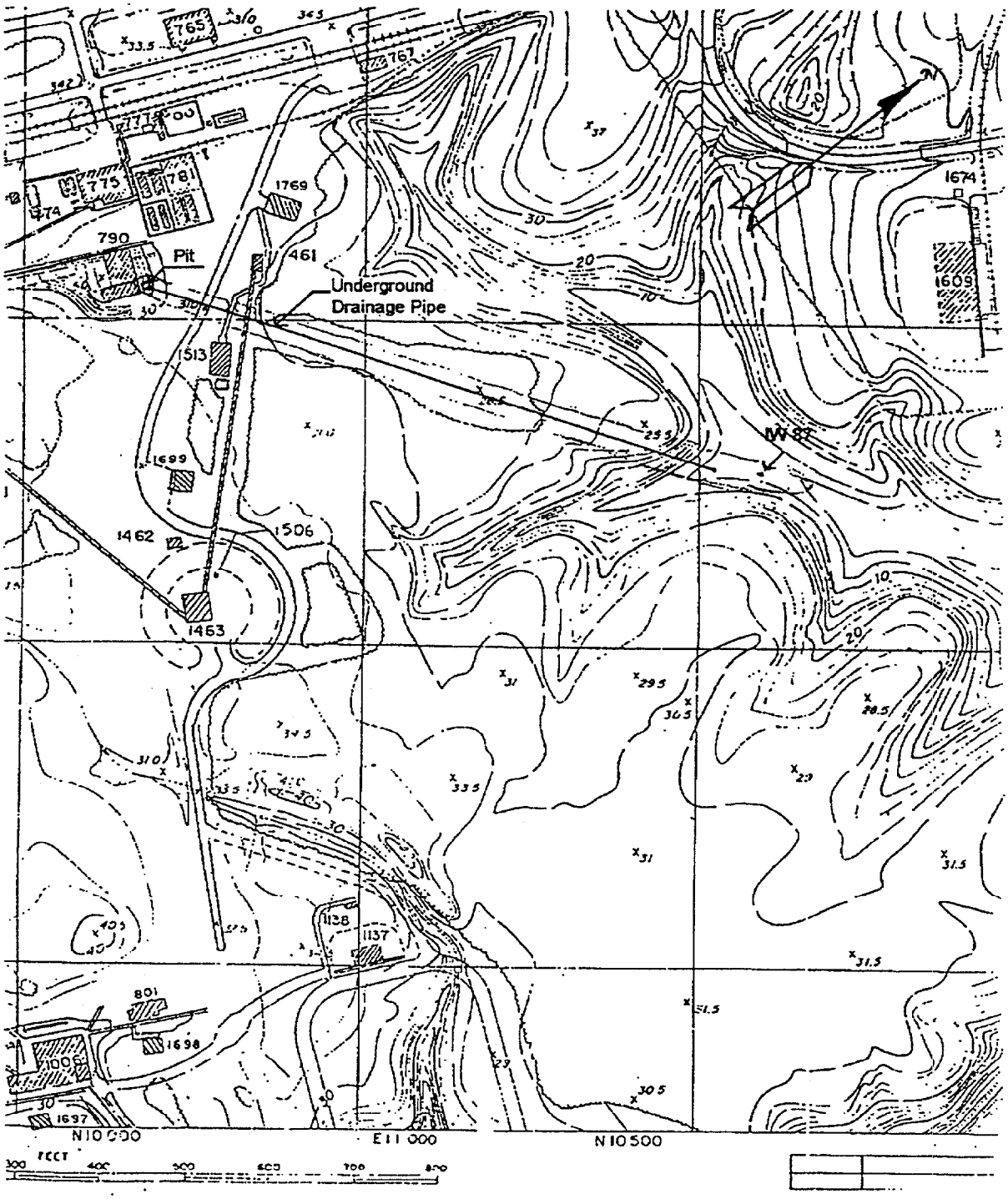

Figure B-12
Topographic Map of IR Site 57

APPENDIX C

LIST OF INTERESTED PARTIES

LIST OF CONTACTS & INTERESTED PARTIES

A. Navy Points of Contact

Ms. Christina Adams
Public Affairs Officer
Indian Head Division,
Naval Surface Warfare Center
101 Strauss Avenue
Indian Head, MD 20640-5035
(301) 743-4304/4627

Ms. Susan Adams
Environmental Division Director
Indian Head Division,
Naval Surface Warfare Center
101 Strauss Avenue
Indian Head, MD 20640-5035
(301) 743-6745/6746

Ms. Cheryl Deskins
Waste Management and Prevention Branch
Indian Head Division,
Naval Surface Warfare Center
101 Strauss Avenue
Indian Head, MD 20640-5035
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Mr. Shawn Jorgensen
Environmental Project Engineer
Indian Head Division,
Naval Surface Warfare Center
101 Strauss Avenue
Indian Head, MD 20640-5035
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Mr. Thomas Symalla
Environmental Project Engineer
Indian Head Division,
Naval Surface Warfare Center
101 Strauss Avenue
Indian Head, MD 20640-5035
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Mr. Shawn Phillips
Remedial Project Manager
Engineering Field Activity-Chesapeake
Naval Facilities Engineering Command
Washington Navy Yard, Building 212
901 M. Street, SE
Washington, DC 20374-5018
(202) 685-3274

B. U.S. Senate

Mr. Paul S. Sarbanes
SH-309 Hart Senate
Office Building
Washington, DC 20510-2002
(202) 224-4524

Ms. Barbara A. Mikulski
SH-709 Hart Senate
Office Building
Washington, DC 20510-2003
(202) 224-4654

C. House of Representatives

Mr. Steny H. Hoyer
1705 Longworth House
Office Building
Washington, DC 20515-2005
(202) 225-4131

D. Maryland Legislature

Mr. Thomas McLain Middleton
Maryland Senate
13290 Cedar Hill Place
Waldorf, MD 20601

Mr. Thomas E. Hutchens
Maryland House of Delegates
P.O. Box 9, Chapel Point Road
La Plata, MD 20646

Mr. Samuel C. Linton
Maryland House of Delegates
P.O. Box 110, Holly Springs Road
Nanjemoy, MD 20662

Mr. Van T. Mitchell
Maryland House of Delegates
6538 Ellenwood Drive
La Plata, MD 20646

E. County Officials

Mayor Dennis J. Scheessele
4198 Indian Head Highway
Indian Head, MD 20640

Mr. Arthur Comstock, Councilman
4198 Indian Head Highway
Indian Head, MD 20640

Mr. Warren A. Bowie, Councilman
4198 Indian Head Highway
Indian Head, MD 20640

Mr. Joseph A. Mangini
Town Manager
4198 Indian Head Highway
Indian Head, MD 20640

Mr. Thomas Fritz
Charles County Administrator
P.O. Box B
La Plata, MD 20646

Mr. Bob Fuller
Charles County Commissioner
P.O. Box B
La Plata, MD 20646

Mr. Charles Kisamore
Charles County Commissioner
P.O. Box B
La Plata, MD 20646

Mr. Danny Mayer
Charles County Commissioner
P.O. Box B
La Plata, MD 20646

Mr. Murry Levy, President
Charles County Commissioner
P.O. Box B
La Plata, MD 20646

Mr. Marland Deen
Charles County Commissioner
P.O. Box B
La Plata, MD 20646

F. Federal Agencies

Mr. Dennis Orenshaw (3HW72)
U.S. Environmental Protection Agency
Region III
841 Chestnut Building
Philadelphia, PA 19107

Mr. Bob Foley
U.S. Fish & Wildlife Service
1825 Virginia Street
Annapolis, MD 21401
(410) 573-4519

G. State Agencies

Mr. Kim Lemaster
Maryland Department of the Environment
Environmental Response and Restoration Program
2500 Broening Highway
Baltimore, MD 21224
(410) 631-3440

H. Restoration Advisory Board (RAB) Members
* RAB Co-Chair

* Ms. Susan Adams
Environmental Division Director
Indian Head Division,
Naval Surface Warfare Center
101 Strauss Avenue
Indian Head, MD 20640-5035
(301) 743-6745/6746

Mr. Elmer Biles
6315 Indian Head Highway
Indian Head, MD 20640
(301) 283-6298

Mr. Gary Davis
Director, Enviromental Health
Charles County Health Department
P.O. Box 777
La Plata, MD 20646
(301) 934-9294

Mr. Stephen Elder
Supervisor, Waste Water Treatment Plant
Indian Head Town Hall
1107 Strauss Avenue
Indian Head, MD 20640
(301) 743-5511

Mr. Charles Ellison
Banyan Management Corp.
P.O. Box 719
Waldorf, MD 20604
H-(301) 932-0921
W-(301) 870-9211

Mr. Bob Foley
U.S. Fish & Wildlife Service
1825 Virginia Street
Annapolis, MD 21401
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Dr. Philip Giguere
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Bryans Road, MD 20616
H-(301) 375-7081
W-(301) 283-6211

Ms. Patricia Haddon
Planning & Growth Management
Charles County Government Bldg.
P.O. Box B
La Plata, MD 20646
(301) 645-0540

Ms. Marsha Atlee Harley
Box 117-A, Route 1
Bryans Road, MD 20616
H-(301) 283-0723
W-(202) 208-6191

* Mr. Vincent Hungerford
504 Indian Head Avenue
Indian Head, MD 20640
H-(301) 743-7453
W-(703) 739-5890

Mr. Kim Lemaster
Maryland Department of the Environment
Environmental Response and Restoration Program
2500 Broening Highway
Baltimore, MD 21224
(410) 631-3440

Mr. Shawn Phillips
Remedial Project Manager
Engineering Field Activity-Chesapeake
Naval Facilities Engineering Command
Washington Navy Yard, Building 212
901 M. Street, SE
Washington, DC 20374-5018
(202) 685-3274

Ms. Kristen Sprague
P.O. Box 314
Port Tobacco, MD 20677
H-(301) 934-3219
W-(202) 434-7219

I. Newspapers

Ms. Angela Breck, Editor
Maryland Independent
7 Industrial Park Circle
Waldorf, MD 20602

Ms. Carol Mahoney, Editor
La Plata-Indian Head Ledger
7 Industrial Park Drive
Waldorf, MD 20602

J. Document Repository Locations

Charles County Public Library,
LaPlata Branch
Charles & Garrett Streets
La Plata, MD 20646
(301) 934-9001

Hours of Operation:

Mon-Thu	9:00 am - 8:00 pm
Fri	12:00 pm - 5:00 pm
Sat	Summer (Closed); 9:00 am - 5:00 pm (After Labor Day)
Sun	Closed

INDIV-NSWC General Library
Indian Head Division,
Naval Surface Warfare Center
Building D-40
Indian Head, MD 20640-5035
(301) 743-4747

Hours of Operations:

Mon-Fri	9:00 am - 5:30 pm
Sat-Sun	Closed

APPENDIX D

INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INSTALLATION RESTORATION PROGRAM
SAMPLE COMMUNITY INTERVIEW QUESTIONNAIRE

INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INSTALLATION RESTORATION PROGRAM
COMMUNITY INTERVIEWS

Date and Time: _____

Name of Interviewee: _____

Address: _____

_____

Interviewers: Jennifer McGraw; Betsy Horne

Interviewer: Introduce all those present at the interview and their titles/purpose. Please explain the purpose of the interview process: information gathering, to ascertain the community's issues and concerns about IHDIV-NSWC and ongoing environmental investigations and what will be done with this information after the completion of the interview process. This is a good time to explain the Installation Restoration Program and how the interviews fit into the process.

I. General Background:

1) How long have you lived in the area?

_____ years

2) Have you or any member of your family ever worked for IHDIV-NSWC?

Interviewee		Family Member	
_____	Military employee	_____	Military employee
_____	Civilian employee	_____	Civilian employee
_____	Contract employee	_____	Contract employee

3) Based on your past experience, how would you characterize IHDIV-NSWC as a neighbor?

_____ Excellent
_____ Good
_____ Fair
_____ Poor

II. General Awareness:

1) How well do you understand the kind of work that goes on at IHDIV-NSWC?

_____ No knowledge
_____ Knowledgeable (Explain):

2) Are you aware of the environmental cleanup being conducted at Indian Head?

_____ No
_____ Yes

If the interviewee is knowledgeable about the environmental cleanup of a specific site (i.e., Biazzi Site or the X-Ray Building Site) please indicate above and proceed with the following questions. If no, go to III

2.a) What is your understanding of the nature of the problem at the _____ site?

2.b) What is your primary concern about this site?

2.c) Where did you learn about this site?

III. Level of Concern:

1) What are your current concerns about the environmental studies and cleanup being conducted at the IHDIV-NSWC?

2) What kinds of issues about the IHDIV-NSWC have attracted the most attention?

IV. Information Needs:

1) Were you aware that two information repositories have been set up in your area?

_____ Yes
_____ No

Interviewer: Inform the interviewee of the two locations of the information repositories: IHDIV General Library and the Charles County Public Library in La Plata. Explain what type of documents can be found in the repository.

2) How do you presently get information about the IHDIV-NSWC and/or the ongoing environmental investigations?

3) How would you like to receive additional information on the IHDIV-NSWC environmental program?

_____ Regular updates mailed to your home
_____ Site and restoration fact sheets
_____ Visit the information repository
_____ Personal visit/telephone call from IHDIV-NSWC
_____ Articles in the local newspaper
_____ Articles in the Town of Indian Head newsletter
_____ Small neighborhood meeting
_____ Large public meeting

3.a) In your opinion, what method works best in the Indian Head community? (See above list)

4) If you had a question or an issue to raise about IHDIV-NSWC, what would you do?

_____ Ask a neighbor, friend or relative
_____ Call the Town Hall
_____ Call the County Commissioner's office of other elected officials
_____ Call the IHDIV-NSWC Public Affairs Office
_____ Call the IHDIV-NSWC main number listed in the telephone directory

4.a) Who at this office would you call?

V. Level of Involvement

1) Would you like to get involved in the environmental cleanup process at IHDIV-NSWC?

_____ Yes
_____ No

2) Were you aware of IHDIV-NSWC's Restoration Advisory Board (RAB)?

_____ Yes
_____ No

Interviewer: Explain the purpose of the RAB and the requirements to become a RAB member.

3) Would you like to receive information on the RAB?

_____ Yes
_____ No

4) Would you like your name and address added to the mailing list?

_____ Yes
_____ No

VI. Referrals

1) Since the community's involvement is an important part of IHDIV-NSWC's Installation Restoration Program/environmental cleanup program, can you think of anyone else whom you think we should talk with, add to the mailing list, or interview?

VII. Final Question

1) If there is one thing I would like to tell the Commander of Indian Head, it is .....

APPENDIX E

RESTORATION ADVISORY BOARD FACT SHEETS

INSTALLATION RESTORATION PROGRAM

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

RESTORATION ADVISORY BOARD (RAB) FACT SHEET

Background

The Indian Head Division, Naval Surface Warfare Center (IHDIV, NSWC) has always been committed to ensuring that Indian Head is a safe and healthy place to work and live. In 1981, although not required by Federal law, the Navy began its own cleanup campaign to restore sites impacted by past operations to their original condition. This program ultimately became known as the Navy Installation Restoration (IR) program.

As part of the Navy's IR Program, a Technical Review Committee (TRC) was formed at IHDIV, NSWC in 1991, to inform members of our local community about the cleanup of former operating sites and to solicit their opinions and concerns with these issues. The TRC has served as a forum to discuss problems with restoration efforts, and more importantly, to discuss concerns and obtain workable solutions that are satisfactory to all members of the TRC.

The Department of the Navy is now expanding community participation by converting TRCs into Restoration Advisory Boards (RABs).

What is a RAB?

The RAB is a group established to allow individuals the opportunity to give advice to the IHDIV, NSWC on their restoration program and to act as a focal point for the exchange of information between IHDIV, NSWC and the Indian Head community. The RAB is intended to bring together community members who reflect the diverse interests of the area, enabling the early and continued two-way flow of information, concerns, values, and needs between the community and IHDIV, NSWC.

The RAB will work in partnership with the IHDIV, NSWC on cleanup issues and related matters.

RABs will not make decisions on environmental restoration activities, but will provide information, suggestions, and community input to be used by IHDIV, NSWC in making decisions on actions and proposed actions involving releases or threatened releases and cleanups of former operating sites.

How RAB will be Established

The RAB will be established from the TRC by:

* Expanding the TRC to include additional community representatives;
* Establishing Co-Chairs, one from the community and one from IHDIV, NSWC; and
* Opening meetings to the public.

Responsibilities of a RAB

The RAB shall:

- Conduct regular meetings, open to the public, at convenient times and locations;
- Keep meeting minutes, make them available to interested parties, and publish them in a local newspaper;
- Develop and use a mailing list of names and addresses of interested parties who wish to receive information on the cleanup program;
- Provide a forum for individual members to give advice and make recommendations on environmental restoration issues to the IHDIV, NSWC (RABs will not vote on issues or make recommendations as a body); and
- Establish a procedure for public participation

INSTALLATION RESTORATION PROGRAM

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

RESTORATION ADVISORY BOARD (RAB) MEMBERSHIP FACT SHEET

RAB Membership Requirements:

RAB members should live or work in or near the Indian Head Division, Naval Surface Warfare Center. To ensure opinions about environmental restoration reflect diverse interests within the local community, RAB membership should include, but is not limited to:

* Local residents and community members
* Local reuse committees
* Current TRC members
* Local officials/agencies
* Business community
* School districts
* IHDIV, NSWC employees/residents
* Local environmental groups/activities
* Civic/public interest organizations
* Religious community
* Other regulatory agencies
* Labor organizations
* Local homeowners organizations
* Navy and State environmental agencies

The majority of RAB members should be from the local community in keeping with the goal of increased public involvement.

Once selected, RAB members will be provided initial orientation to enable them to perform their duties.

Responsibilities of RAB Members:

RAB members are expected to:

- Identify and review project requirements
- Provide comments on actions and proposed actions involving releases or threatened releases at IHDIV, NSWC from past operations
- Review documents and provide timely comments
- Recommend priorities among sites or projects
- Identify applicable standards
- Review budget information
- Attend RAB meetings. If a member fails to attend two consecutive meetings, he/she may be asked to relinquish his/her membership
- Report back to organized groups to which they belong or represent and serve as a conduit for information flow to and from the community
- Serve in a voluntary capacity for two years
- Be available to community members and groups to facilitate the exchange of information and/or concerns between the community and the RAB

Responsibility of the RAB Community Co-Chair

The RAB Community Co-Chair shall:

- Ensure that community issues and concerns related to environmental restoration/cleanup are discussed
- Assist IHDIV, NSWC in communicating technical information in understandable terms
- Assist in passing on information to the public
- Coordinate with IHDIV, NSWC to prepare and distribute meeting agendas prior to each RAB meeting
- Work with the Navy Co-Chair to review and distribute RAB meeting minutes