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**FINAL**

**INSTALLATION RESTORATION PROGRAM  
PHOTOGRAPH ALBUM**

**NAVAL WEAPONS STATION YORKTOWN  
YORKTOWN, VIRGINIA**

**CONTRACT TASK ORDER 0351**

**JULY 3, 1996**

*Prepared for:*

**DEPARTMENT OF THE NAVY  
ATLANTIC DIVISION  
NAVAL FACILITIES  
ENGINEERING COMMAND  
*Norfolk, Virginia***

*Under:*

**LANTDIV CLEAN Program  
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*Coraopolis, Pennsylvania***

## **NAVAL WEAPONS STATION YORKTOWN INSTALLATION RESTORATION PROGRAM SITE AND SITE SCREENING AREA PHOTOGRAPH ALBUM**

This album, developed and maintained by the Naval Weapons Station Yorktown (WPNSTA Yorktown), in Yorktown, Virginia presents a photographic perspective for Installation Restoration Program (IRP) sites and site screening areas (SSAs) at the Station. Sites and SSAs are currently under investigation to determine potential threat to human health and the environment and if necessary, environmental cleanup alternatives. Figure 1 presents the locations of the areas of investigation (Sites and SSAs).

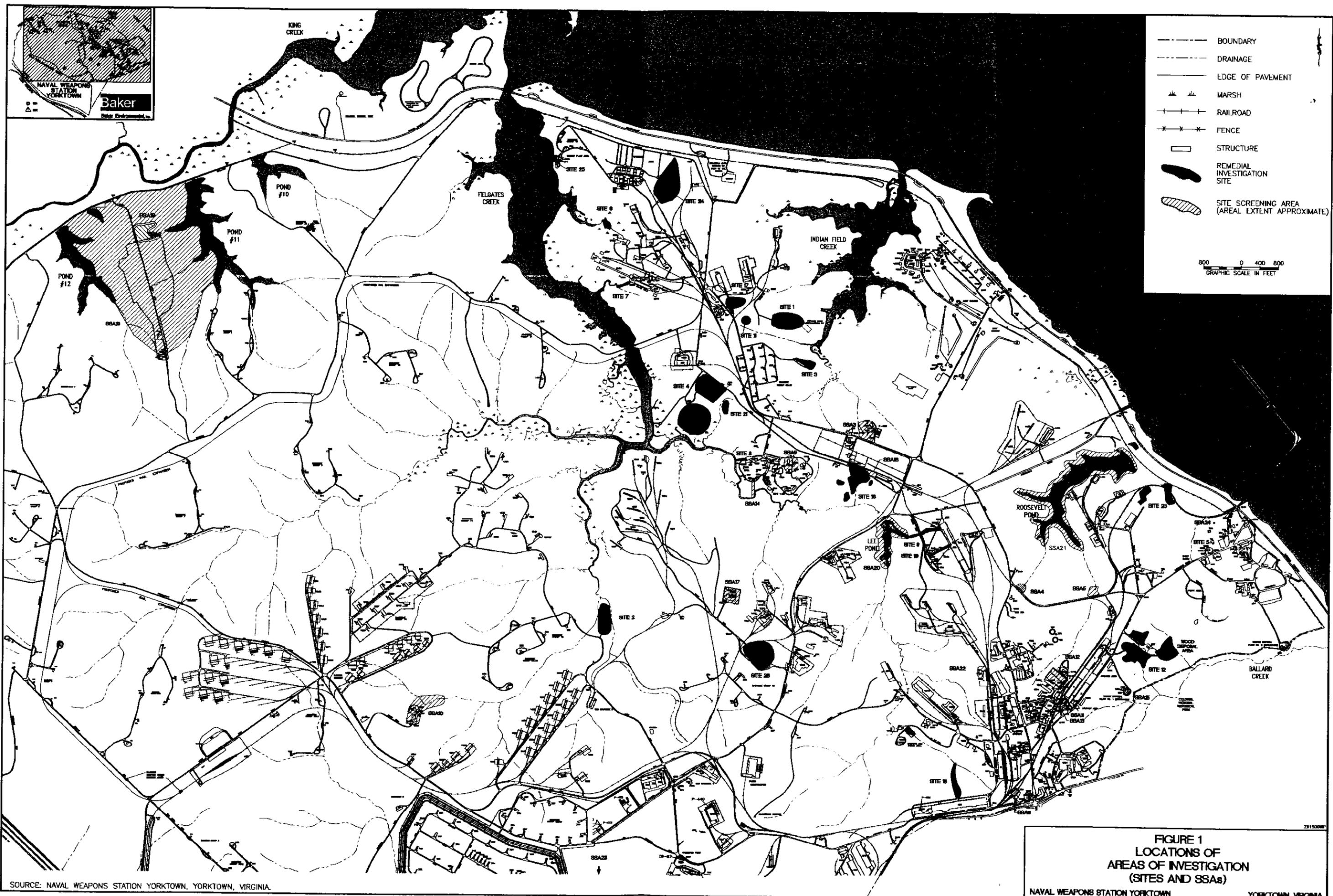
### **INSTALLATION RESTORATION PROGRAM HISTORY**

Activities at WPNSTA Yorktown have generated a variety of wastes including: solvents, packaging, oils, scrap metal, lumber and missile hardware. WPNSTA Yorktown followed conventional, accepted disposal practices (land filling) from 1918 until the late 1970s. Many landfills were undeveloped natural depressions filled with debris, then covered and seeded with grasses.

In 1975, the Department of Defense (DoD) began a program to assess past hazardous and toxic materials storage and disposal activities. The goal of this program, the DoD's IRP, was and is to address uncontrolled hazardous waste sites by mitigating hazards to health and welfare.

In 1981, the DoD's IRP was reissued, with additional responsibilities and authorities delegated to the Secretary of Defense. As a result, the Navy initiated the Navy Assessment and Control of Installation Pollutants (NACIP) Program to comply with DoD's new IRP requirements. The NACIP Program utilized a three-phased approach, including an Initial Assessment Study (IAS), Confirmation and Characterization Studies, and Remedial Measures.

To comply with Federal laws, the Navy restructured the IRP. The current IRP is consistent with applicable Commonwealth and Federal environmental laws.



SOURCE: NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA.

**FIGURE 1**  
**LOCATIONS OF**  
**AREAS OF INVESTIGATION**  
**(SITES AND SSAs)**  
 NAVAL WEAPONS STATION YORKTOWN YORKTOWN, VIRGINIA

## **Installation Restoration Program Process**

The current IRP approach includes: conducting a Preliminary Assessment/Site Inspection (PA/SI) or its equivalent to identify potential threats to human health or the environment; conducting a Remedial Investigation (RI) designed to analyze contaminants, evaluate possible contaminant migration, and assess human health and environmental risks; issuance of a Feasibility Study (FS) to define a set of actions that can be taken to mitigate existing or potential impacts to human health or the environment including the “No Action” alternative; issuance of a Preliminary Remedial Action Plan (PRAP) for public input on the type of remedial action to be taken; and issuance of a Record of Decision (ROD) which explains the selection process, the rationale for the chosen remedial alternative, remedial action and agreement by the lead agency and oversight agencies.

After the ROD is signed, the Remedial Design/Remedial Action process begins depending on the type of remedy selected. After approval of the design and construction specification, the remedial action (i.e., cleanup) begins.

## IRP History at WPNSTA Yorktown

On October 15, 1992, WPNSTA Yorktown was included on the National Priorities List (NPL) primarily due to the facility's proximity to wetlands and the potential impact on the surrounding environment.

Previous investigation reports completed through the IRP include an Initial Assessment Study (IAS) (July 1984), two Confirmation Study Reports (June 1986 and June 1988), a Remedial Investigation (RI) Interim Report (July 1991), a Site 21 Site Inspection Report (February 1992), a Focused Biological Sampling and Risk Evaluation Report (April 1993), and a Round One RI Report (July 1993). The following paragraphs briefly describe the most important previous investigations conducted at WPNSTA Yorktown.

### Initial Assessment Study

The purpose of the IAS was to identify and assess sites posing a potential threat to human health and/or the environment due to contamination from past operations. A total of 19 potentially contaminated sites was identified based on information from historical records, aerial photographs, field inspections, and personnel interviews. Each site was evaluated for the type of contamination, migration pathways, and pollutant receptors. The IAS concluded that 15 of the 19 sites were of sufficient threat to human health or the environment to warrant Confirmation Studies.

### Confirmation Study

Two rounds of data were obtained during the Confirmation Study. During the first round of sampling, conducted in the winter of 1986, environmental samples were collected from the 15 sites identified in the IAS. This effort was documented in the "Confirmation Study Step IA (Verification), Round One." The initial sampling effort included:

- Installation and sampling of 26 monitoring wells
- Collection of 21 surface water and sediment samples
- Collection of 26 surface soil samples
- Chemical analysis of the samples collected

## IRP History at WPNSTA Yorktown

The second round of sampling was conducted during November and December 1987. The Round Two effort included:

- Collection of 26 groundwater samples from the previously installed wells
- Collection of 26 surface water and 32 sediment samples
- Collection of 12 surface soil samples
- Chemical analysis of the samples collected

The results of the analyses and comparisons with appropriate regulatory standards were presented in the "Confirmation Study Step IA (Verification), Round Two." The results of these field efforts were combined and summarized in the Draft RI Interim Report. This report was subsequently revised by Versar in 1991 to incorporate comments from the Technical Review Committee (TRC); this report is referred to as the RI Interim Report. The RI Interim Report recommended that further RI activities be completed at 14 of the 15 sites for which data were available.

### Site 21 Site Investigation

In November 1990, WPNSTA Yorktown personnel identified an additional site (Site 21, the Battery and Drum Disposal Area) that had not been included in the previous investigations. A Site Investigation (SI) at Site 21 was conducted in October 1991. Three monitoring wells were installed and sampled, and surface and subsurface soil samples were collected. The results of this investigation were presented in the "Draft Final Site Inspection Report, Site 21-Battery and Drum Disposal Area, Naval Weapons Station Yorktown, Yorktown, Virginia."

### Focused Biological Sampling and Preliminary Risk Evaluation

The Focused Biological Sampling and Preliminary Risk Evaluation Report summarized the results of a limited biological tissue, surface water, and sediment sampling effort conducted in October 1992. The primary object of the sampling program was to evaluate the potential human health risk associated with consumption of fish and shellfish taken from select waters within WPNSTA Yorktown.

## IRP History at WPNSTA Yorktown

### Round One RI

The RI Interim Report recommended that 14 of the 15 sites be included for further study. However, based on evaluation of the available data, all 15 sites were recommended for further study during the Round One RI. In addition, based on the data obtained from the SI at Site 21, this site also was included in the Round One study.

The Round One RI sampling effort included:

- Geophysical investigations
- Biota investigations
- Tidal investigations
- Aquifer testing
- Monitoring well installation (23 wells)
- Collection of 51 groundwater samples (22 new wells, 29 existing wells; one newly installed well was dry)
- Collection of 196 surface water and sediment samples
- Collection of 115 surface soil samples
- Collection of 48 subsurface soil samples
- Chemical analysis of the samples collected

The results of the Round One RI indicated that further investigation was needed at all of the 16 sites, with the exception of Site 5, to better define the nature and/or extent of contamination associated with each site. A No Action Record of Decision (ROD) was finalized in September, 1994 for Site 5.

### Round Two RIs/SSA Investigations

The Round Two RI field investigation was conducted for: (1) Sites 6, 7, 12, 16 and SSA 16 and Background for the York River Drainage Area in 1994; (2) Sites 9 and 19 in 1995 to supplement the Round One RI; (3) and Sites 1 and 3 in 1996 to supplement the Round One RI. Additional soil, subsurface soil, surface water, sediment and groundwater samples and biota were collected.

## **IRP History at WPNSTA Yorktown**

In addition to the Round Two RI, SSAs 1, 3, 6, 7, 12, and 15 were investigated during 1994. Environmental media including surface soil, subsurface soil, groundwater, surface water, and sediment were investigated at those SSAs having potential impacts to these media. SSAs 2, 17, 18, and 19 were investigated in early 1995 and SSAs 8, 11, 12, and 13 were investigated in early 1996. Again, surface soil, subsurface soil, groundwater, surface water and sediment were investigated where applicable.

Based on the results of the Site Screening Process (SSP), SSAs 1, 6, 7, and 18 will be retained as Sites 23, 24, 25, and 26, respectively for additional RI/FS efforts. These SSAs posed unacceptable human health and/or ecological risk as a result of risk screening.

Most of the Sites and SSAs are still in the IRP process. The SSAs may be eliminated from further investigation or may be nominated to become a Site. Table I presents the list of sites and SSAs evaluated during these investigations. As part of this photograph album, site and SSA descriptions are provided.

Site descriptions describe the history of the disposal practices at each of the recently investigated RI/FS sites included in the FFA, the four newly added sites which were former SSAs, and the site which has been added for investigation and evaluation which was not included in the FFA. The information presented is from previous studies and has been updated based on additional historical review and discussions with WPNSTA Yorktown personnel. The site descriptions are presented in numerical order for ease of reference.

SSA descriptions describe the history of past disposal practices at each of the SSAs currently included in the FFA and the four SSAs which have been added for investigation and evaluation which were not included in the FFA. As these are newly identified areas, there is limited information available. The information contained in the following sections has been adapted from USEPA Region III's "RCRA Solid Waste Management Unit Investigation," and "Study Area Analysis, Yorktown Naval Weapons Station Yorktown, Yorktown, Virginia," Volume I.

**Table 1: IRP Site and  
SSA Summary**

Site	Name
1	Dudley Road Landfill
2	Turkey Road Landfill
3	Group 16 Magazine Landfill
4	Burning Pad Residue Landfill
5	Surplus Transformer Storage Area
6	Explosives-Contaminated Wastewater Impoundment
7	Plant 3 Explosives-Contaminated Wastewater Discharge Area
8	NEDED Explosives-Contaminated Wastewater Discharge Area
9	Plant 1 Explosives-Contaminated Wastewater Discharge Area
10 *	Felgates Creek Fill Area
11	Abandoned Explosives Burning
12	Barracks Road Landfill
13 *	Building Rubble Disposal Site
14 *	Aviation Field
15 *	Electric Shop Disposal Area
16	West Road Landfill
17	Holm Road Landfill
18	Building 476 Discharge Area
19	Conveyor Belt Soils at Building 10
21	Battery and Drum Disposal Area
22	Burn Pad
23	Building 428 Teague Road Disposal Area
24	Aviation Field
25	Building 373 Rocket Plant
26	Building 1816 Mark 48 Waste Otto Fuel

**Table 1: IRP Site and  
SSA Summary**

<b>SSA</b>	<b>Name</b>
1	(became Site 23)
2	Former EOD Burning/Disposal Area
3	Fire Training Pits and Vicinity
4	Weapons Casing/Drum Disposal Area
5	Bypass Road Landfill
6	(became Site 24)
7	(became Site 25)
8	Building 350 Rail Roundhouse Maintenance Area Trench Outfall
9	Building 1751 Chemistry Laboratory Neutralization Unit and Drainage Area
10	Building 28 X-Ray Facility Tank Drain Field
11	Building 3 Neutralization Unit
12	Public Works Storage Yard/Building 683 Vicinity
13	Building 529 Battery Drainage Area
14	Building 537 Discharge to Felgates Creek
15	Sewage Treatment Plant #1/Sludge Drying Beds and Discharge Area
16	Building 402 Metal Disposal Area and Environs
17	Building 1456 Mark 46 Waste Otto Fuel
18	(became Site 26)
19	Beaver Road/Ponds 11 and 12 Drainage Area and Environs
20	Lee Pond
21	Roosevelt Pond
22	Sand Blasting Grit Pile
23	Coal Storage Area
24	Bracken Road Incinerator and Environs

\* Determined in the Initial Assessment Study as not posing a hazard to human health or the environment.  
No further study was recommended.

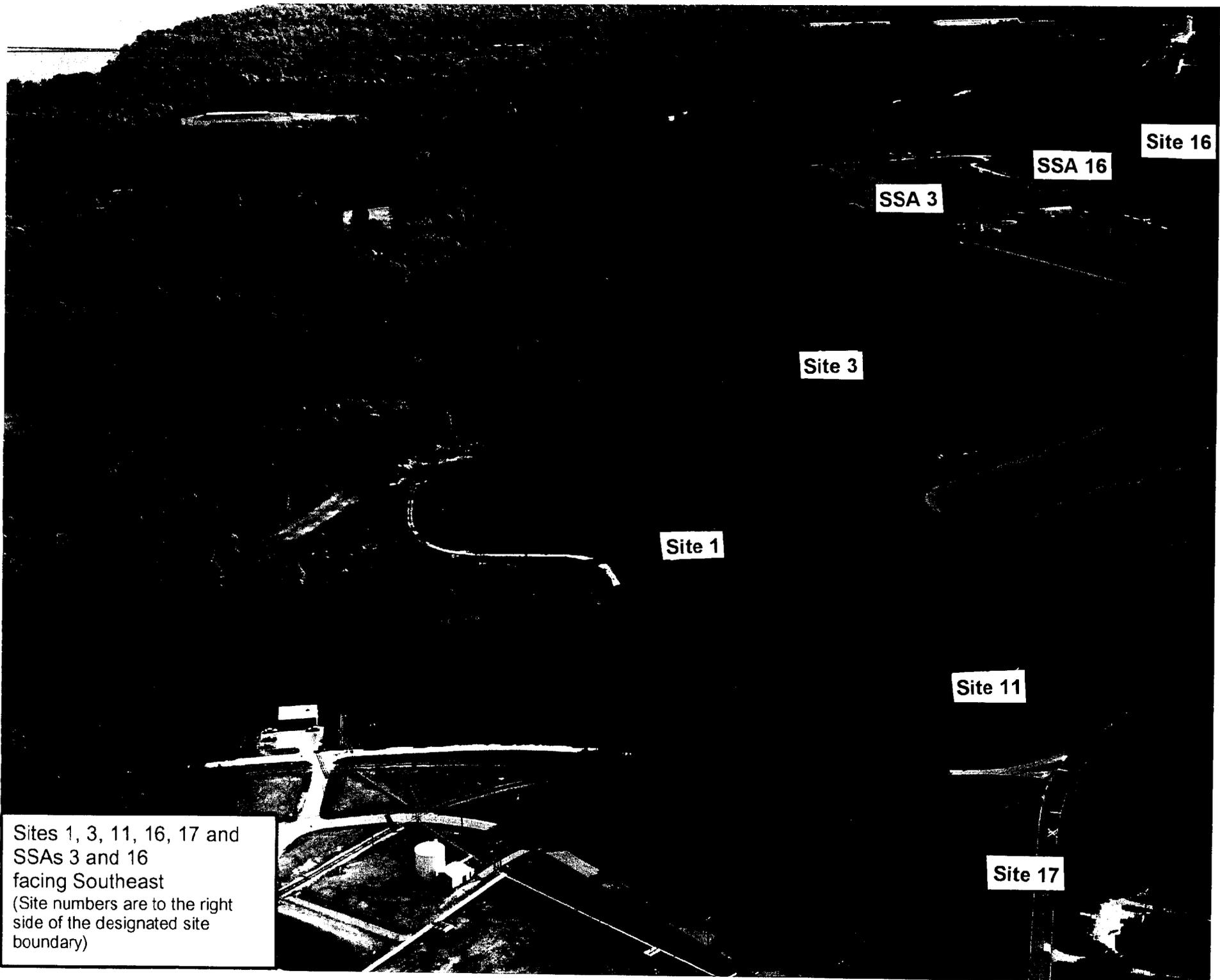
These sites and SSAs appear in numeric order.

## **Additional Sources of Information**

If you would like to learn more about the Installation Restoration Program at the WPNSTA Yorktown, you may review the Community Relations Plan and any of the reports in one of the Information Repositories listed below. The Station contact is Mr. Thomas Black, Public Affairs Officer at the WPNSTA Yorktown (804) 887-4444.



Naval Weapons Station  
Yorktown Entrance - Gate 3  
(February 1993)



Site 16

SSA 16

SSA 3

Site 3

Site 1

Site 11

Site 17

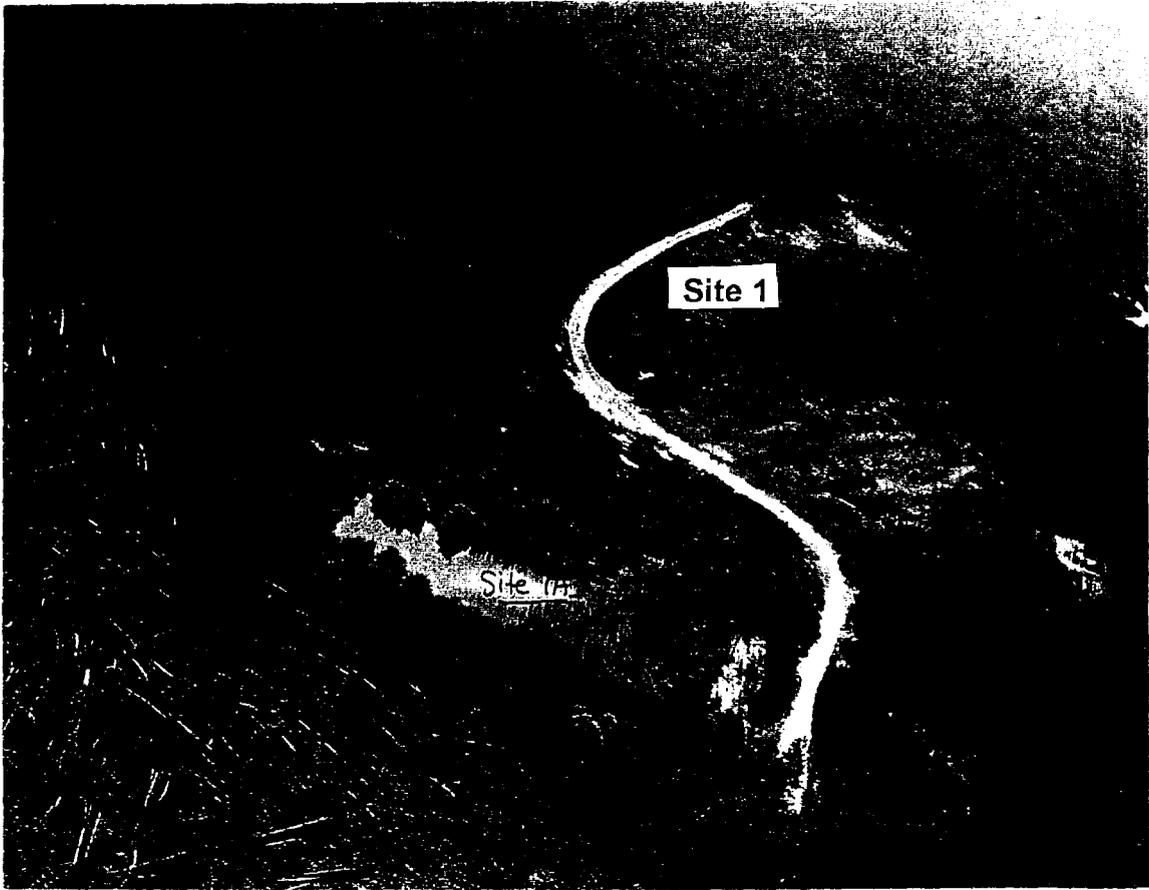
Sites 1, 3, 11, 16, 17 and  
SSAs 3 and 16  
facing Southeast  
(Site numbers are to the right  
side of the designated site  
boundary)

## Site 1 - Dudley Road Landfill

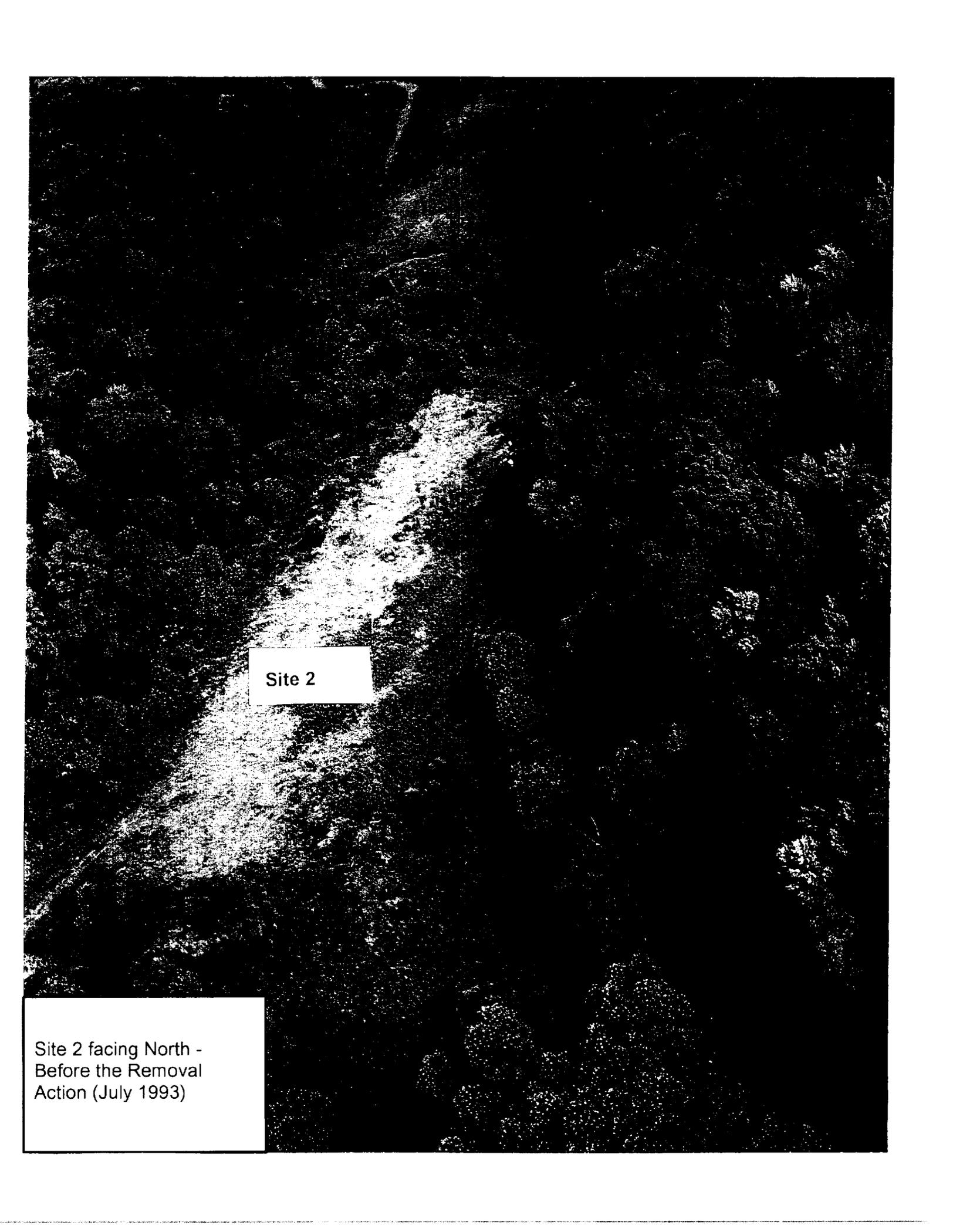
Site 1 is a 6-acre area located just north of the headwaters of Indian Field Creek. The solid waste landfill was in use from approximately 1965 to 1979 for general disposal, with one area used for disposal of plastic lens grinding waste until 1983. The solid waste landfill operated under a conditional permit (No. 287) issued by the Commonwealth of Virginia. The site was originally used for sand mining. There is an abandoned sand reclamation pit on the eastern edge of the site and a pond in the western portion of the landfill area. The water level of the pond fluctuates greatly. Seasonal ponding also occurs in the southeastern section of the site. Wastes disposed within the depression created by sand mining included asbestos insulation from steam piping; oil, grease, paint, and solvent containers; nitramine-contaminated carbon; household appliances; scrap metal banding; construction rubble; plastic lens grinding wastes; tree limbs; lumber; packaging wastes; electrical wires; and waste oil. The landfill received an estimated 255 tons of waste during the time in which the site was in use. Currently, the landfill is covered by approximately 2 feet of soil and the abandoned sand reclamation area is covered by 8 feet of soil.



Site 1 facing South



Site 1 facing Southeast

An aerial photograph showing a cleared path or road cutting through a dense, dark forest. The path is lighter in color, indicating cleared land. A small white rectangular box with the text "Site 2" is positioned over the path. The overall image is in high-contrast black and white.

Site 2

Site 2 facing North -  
Before the Removal  
Action (July 1993)

## Site 2 - Turkey Road Landfill

Site 2 is a 5-acre landfill located east of Turkey Road in a wetland area adjacent to the southern branch of Felgates Creek. Operations at the landfill reportedly began in the 1940s and ceased in 1981. Wastes disposed in this landfill include mercury and carbon-zinc batteries, tree stumps and limbs, construction rubble, missile hardware (e.g., wings, fins and power packs), electrical devices, and unidentified drums and/or tanks. Waste quantities have been estimated at 240 tons during the period of use. Hard waste material (mine casings) was primarily located along the tributaries to the southern branch of Felgates Creek. A removal of hard waste material was conducted during the summer of 1994 at Site 2.



Site 2 facing East- Before  
the Removal Action  
(site is open area on right side  
of photograph)



Site 2 - Landfill Debris  
(October 1990)



Site 2 - Removed Landfill  
Debris (November 1994)



Site 2 - Removed Landfill  
Debris (November 1994)



Site 2 facing South -  
After Removal Action



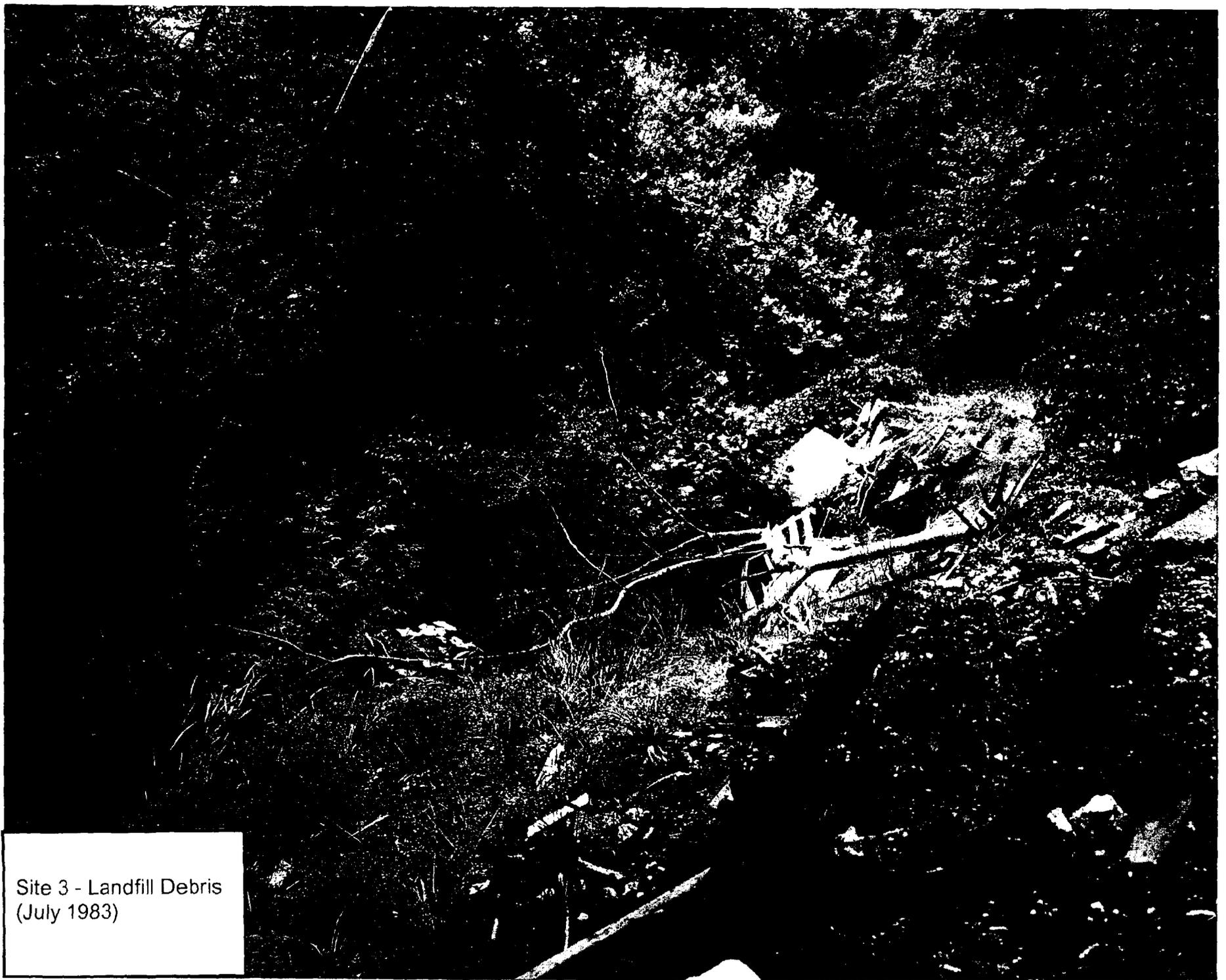
Site 2 facing North -  
After Removal Action



Site 3 facing West  
(site is tree area at bottom  
center of photograph)

### Site 3 - Group 16 Magazine Landfill

Site 3 is a 2-acre area located behind the Group 16 magazines, just south of Site 1 (separated from Site 1 by a ravine), along the headwaters of Indian Field Creek. The landfill is named for its proximity to the Group 16 Magazines. The history of this landfill is unrelated to the operations at the magazines. The landfill area was reportedly in use from 1940 to 1970 and received an estimated 90 tons of waste during the time in which the site was in use. The site was originally used for sand mining. Wastes that were disposed within the depression created by sand mining include solvents, sludge from boiler cleaning operations, grease trap wastes, Imhoff tank skimmings containing oil and grease, and animal carcasses. Currently, most of the site, which is overgrown with trees, is covered by approximately 2 feet of soil with some scattered surface debris.



Site 3 - Landfill Debris  
(July 1983)



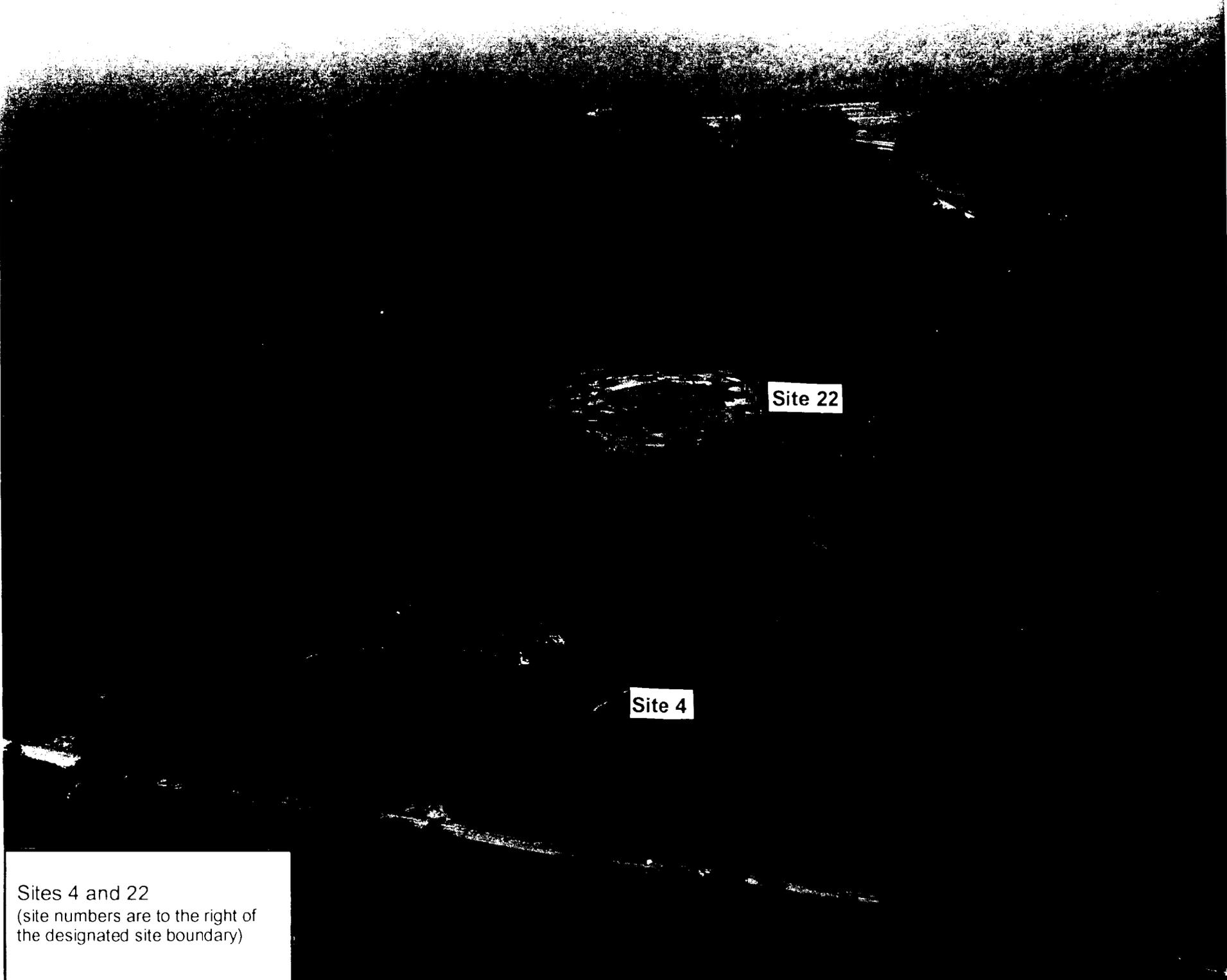
Site 3 - Landfill Debris  
(July 1983)



Site 3 - Landfill Debris  
(July 1983)



Site 3 - Mine casing



Site 22

Site 4

Sites 4 and 22  
(site numbers are to the right of  
the designated site boundary)

#### **Site 4 - Burning Pad Residue Landfill**

Site 4 is a 6-acre landfill located adjacent to the explosives burning facility just south of West Road. This area was in use between 1940 and 1975 and received an estimated 595 tons of waste during the time in which the site was in use. Carbon-zinc batteries from underwater weapons, burning pad residues, tree stumps, fly ash from coal-fired burners, mine casings, electrical equipment, and transformers were reportedly buried at this site. A large battery disposal area was identified in the southeastern portion of the site. In addition, construction debris, pipes, glass, concrete, bottles, cans, and drums have been discovered in various locations within the 6-acre area. An ash pile was present in the northeastern corner of the site. A removal action was conducted at Site 4 during the summer of 1994 and the area has been revegetated.



Site 4 - Burning Pad  
Residue (July 1991)



Site 22

Site 4

Sites 4 and 22  
Site 4 - After Removal Action  
(site numbers are to the right of the  
designated site boundary)

An aerial photograph of a site, likely a military or industrial installation. The image is high-contrast, with a dark background and bright highlights. A rectangular fenced area is visible in the upper left quadrant. A central road or path runs through the site. Various structures, including buildings and utility poles, are scattered throughout. A large, curved structure is visible in the lower right. The overall scene is a complex of man-made structures in a dark, possibly wooded or undeveloped area.

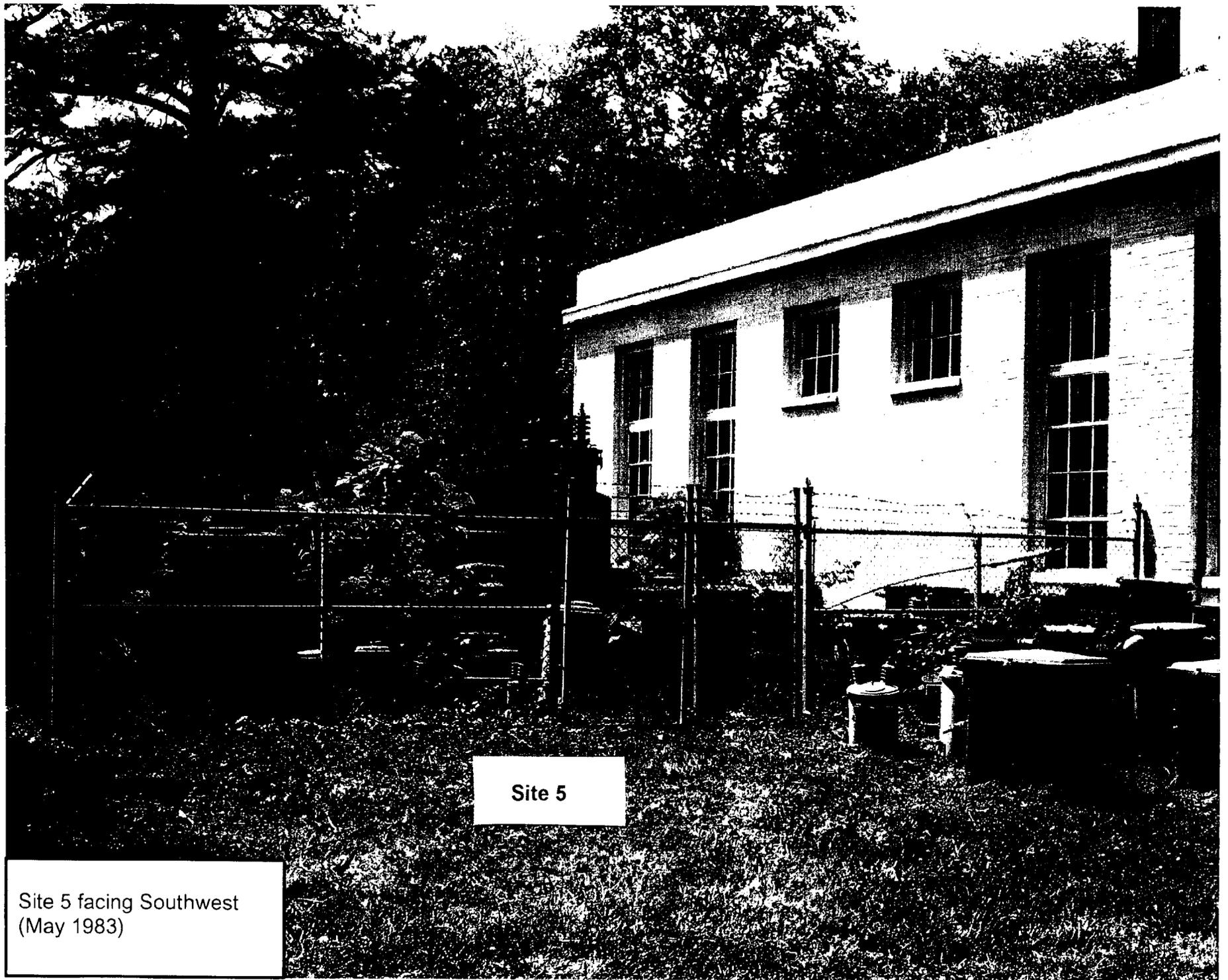
Site 5

Site 5 facing North  
(fenced area)

## Site 5 - Surplus Transformer Storage Area

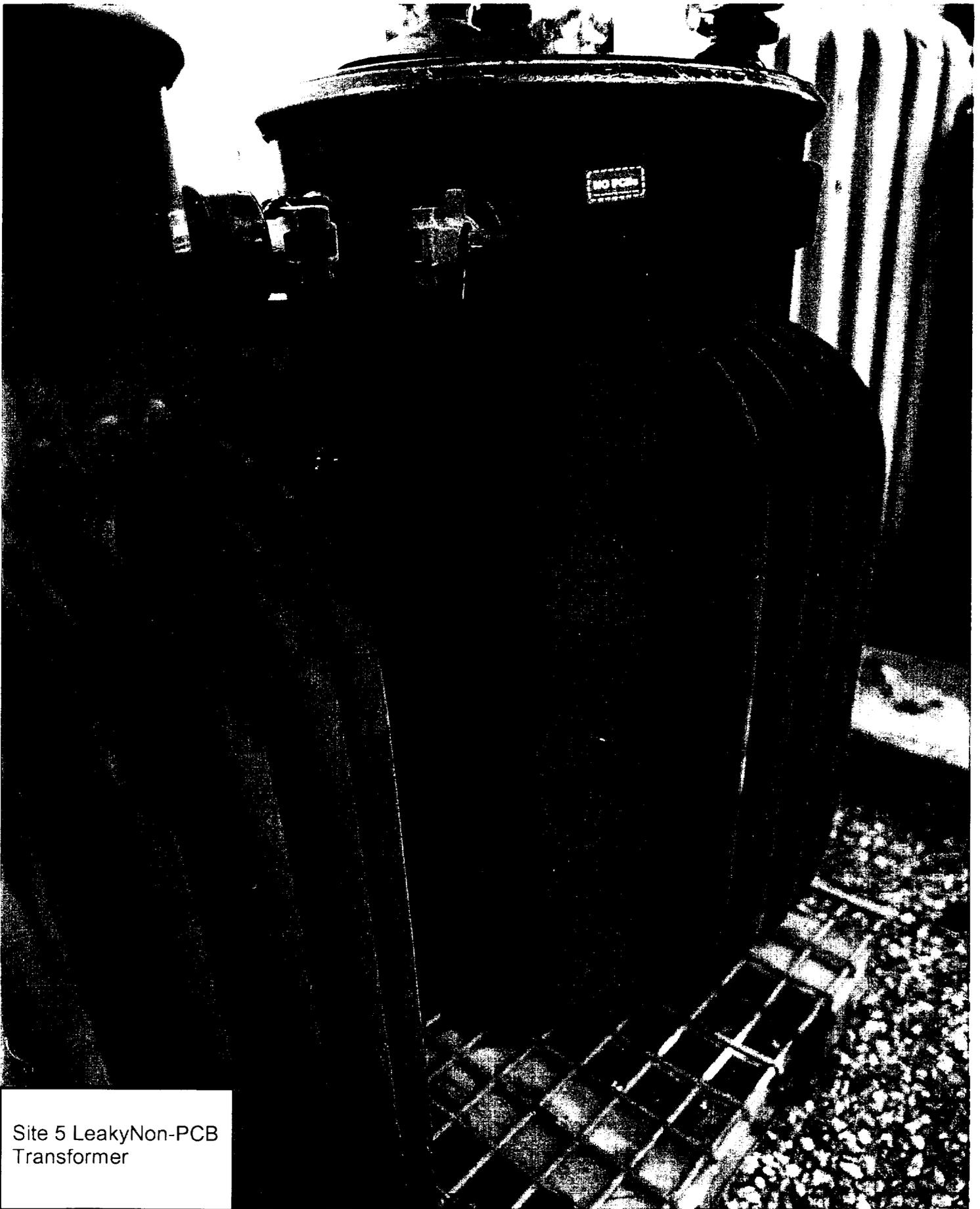
Site 5 is located near Barracks Road in the northeastern portion of the Station adjacent to the south end of Building 76. Site 5 is also referred to as OU I. The area is approximately 1,000 square feet in size and is fenced. Two concrete pads are located within the fenced area; the remainder of the area is covered with gravel. This site was used from 1940 to 1981 as a storage area for surplus polychlorinated biphenyl (PCB)-containing transformers which were stored on and around the two large concrete pads. After 1981, only non-leaking transformers were stored at this location. Currently, the stored transformers have been removed and the site is no longer used as a transformer storage area.

An estimated 300 pounds of PCB-containing fluids reportedly leaked from stored transformers. A cleanup effort, conducted in December 1982, included the removal of contaminated soil at Site 5. However, the success of this removal effort was not documented (i.e., no information on the amount of soil removed, verification samples, and type and source of backfill). The recently completed Round One RI investigation and a Risk Evaluation confirmed that the contaminated soil was successfully removed during this effort. Based on the results of the Risk Evaluation and limited confirmational sampling by USEPA Region III, a No Action ROD was finalized for Site 5 (OU I) on September 29, 1994.



Site 5

Site 5 facing Southwest  
(May 1983)



Site 5 LeakyNon-PCB  
Transformer



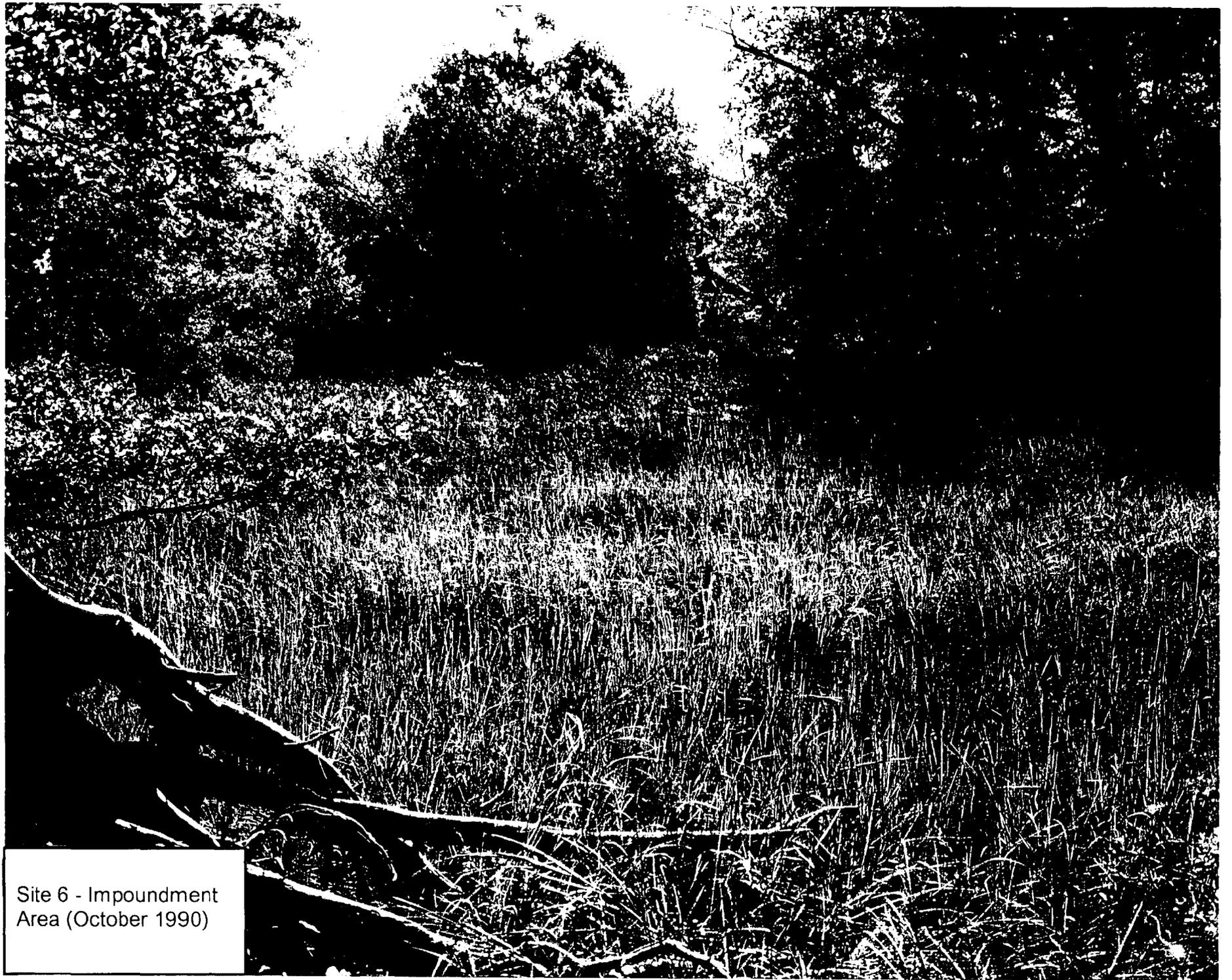
Site 6 facing North

## Site 6 - Explosives-Contaminated Wastewater Impoundment

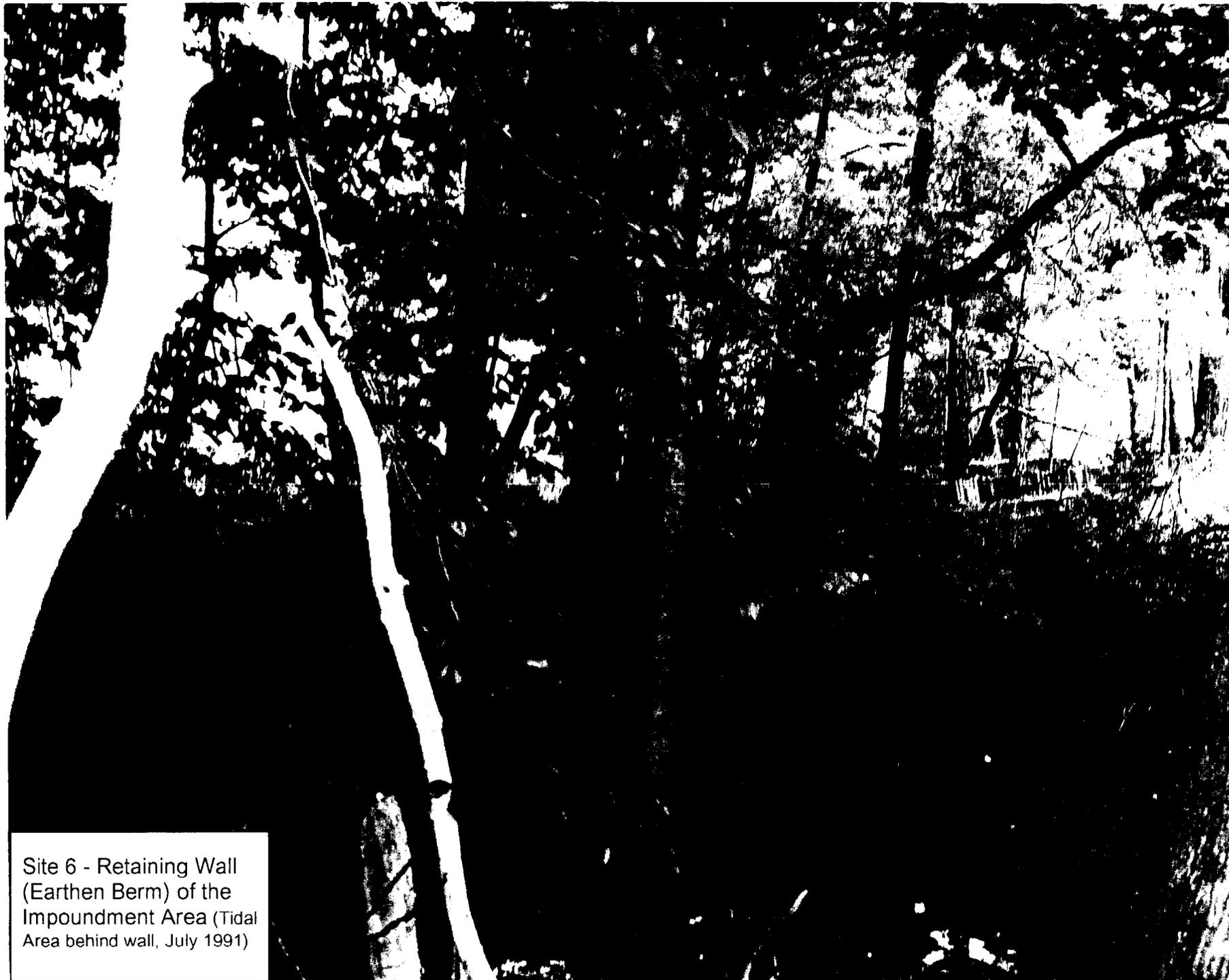
Site 6 contains a 3-acre, unlined, surface impoundment located adjacent to wetlands along a small tributary to the main branch of Felgates Creek. This area was in use between 1942 and 1975 and received contaminated wastewater from the explosives reclamation facility at Building 109 and from weapons loading operations at Building 110 (AOC C and SWMU 179). The impoundment area was used as a settling basin for nitramine-contaminated washdown water. In 1975, a carbon adsorption tower was installed to treat the contaminated wastewater prior to discharge into the drainage way. A National Pollutant Discharge Elimination System (NPDES) permit was granted by USEPA Region III to allow this discharge. In 1986, the effluent from the tower was diverted to the sanitary sewer and ultimately to the Hampton Roads Sanitation District (HRSD). Currently, the impoundment collects only surface runoff from the area between Buildings 109 and 110 (Building 109, pipes and wires have been identified in the FFA for additional RI/FS activities). In addition, north of the impoundment and northwest of Building 1249, a previously excavated area has been identified via aerial photography. This area is currently wooded, but a concrete foundation and concrete rubble are evident.



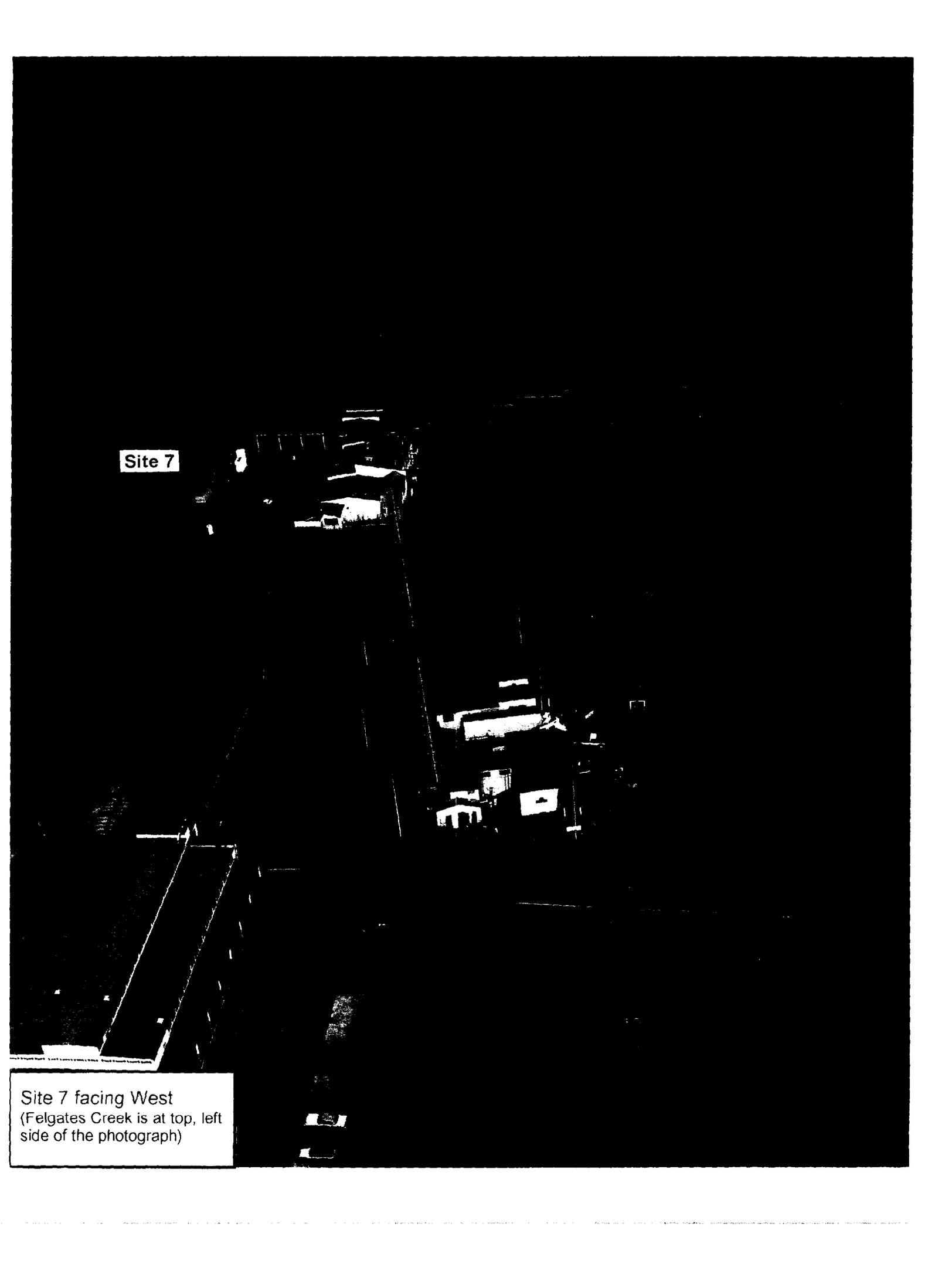
Site 6 - Building 109  
Drainage Culvert  
(October 1990)



Site 6 - Impoundment  
Area (October 1990)



Site 6 - Retaining Wall  
(Earthen Berm) of the  
Impoundment Area (Tidal  
Area behind wall, July 1991)

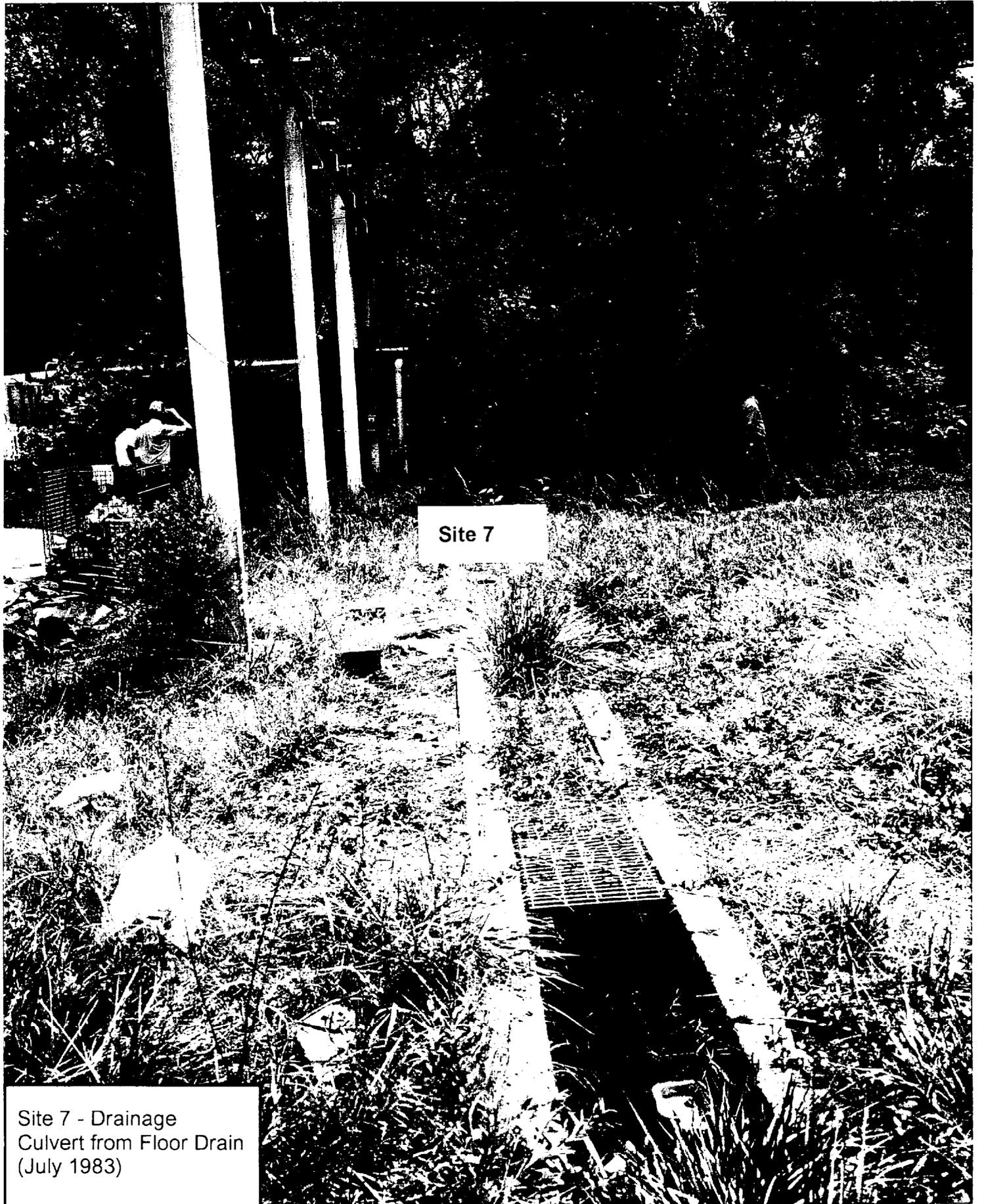
An aerial photograph of a site, likely a road or construction area. The image is mostly black with some white highlights. A road or path runs diagonally from the bottom left towards the top center. There are some rectangular shapes that could be buildings or structures. The text 'Site 7' is visible in the upper left quadrant.

Site 7

Site 7 facing West  
(Felgates Creek is at top, left  
side of the photograph)

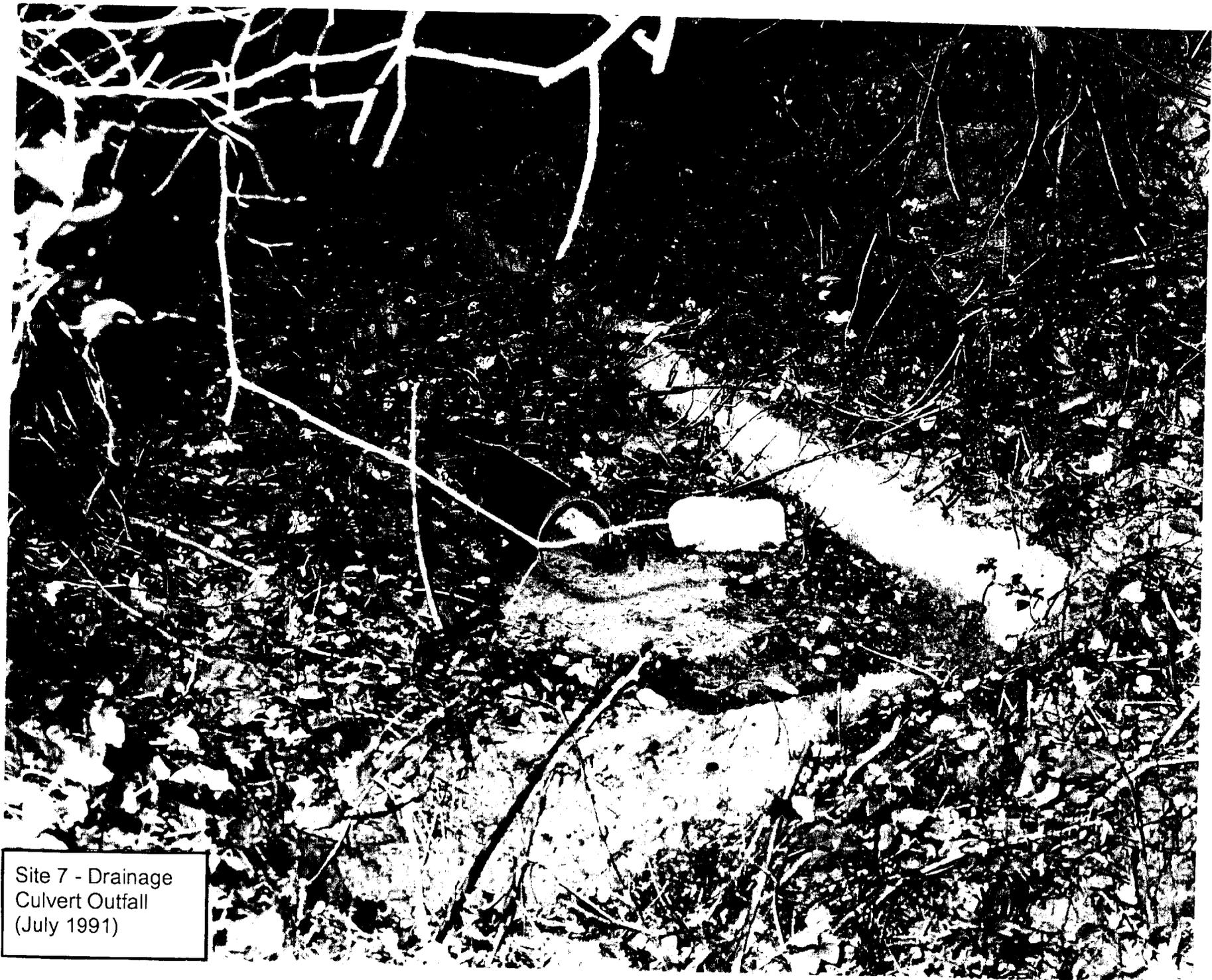
**Site 7 - Plant 3 Explosives-Contaminated  
Wastewater Discharge Area**

Site 7 is a 300-foot long (approximately) drainage area located adjacent to wetlands and along a small tributary to Felgates Creek, approximately one mile upstream from the confluence of Felgates Creek and the York River. This drainage area received nitramine-contaminated wastewater from Loading Plant 3 between the years 1945 and 1975. In 1975, a carbon adsorption tower was installed to treat the contaminated wastewater prior to discharge into the drainage way. An NPDES permit was granted by the USEPA Region III to allow this discharge. In 1986, the effluent from the tower was diverted to the sanitary sewer and ultimately to HRSD. Currently, the site has reverted to a natural drainage area and receives no discharge from the Plant 3 complex.

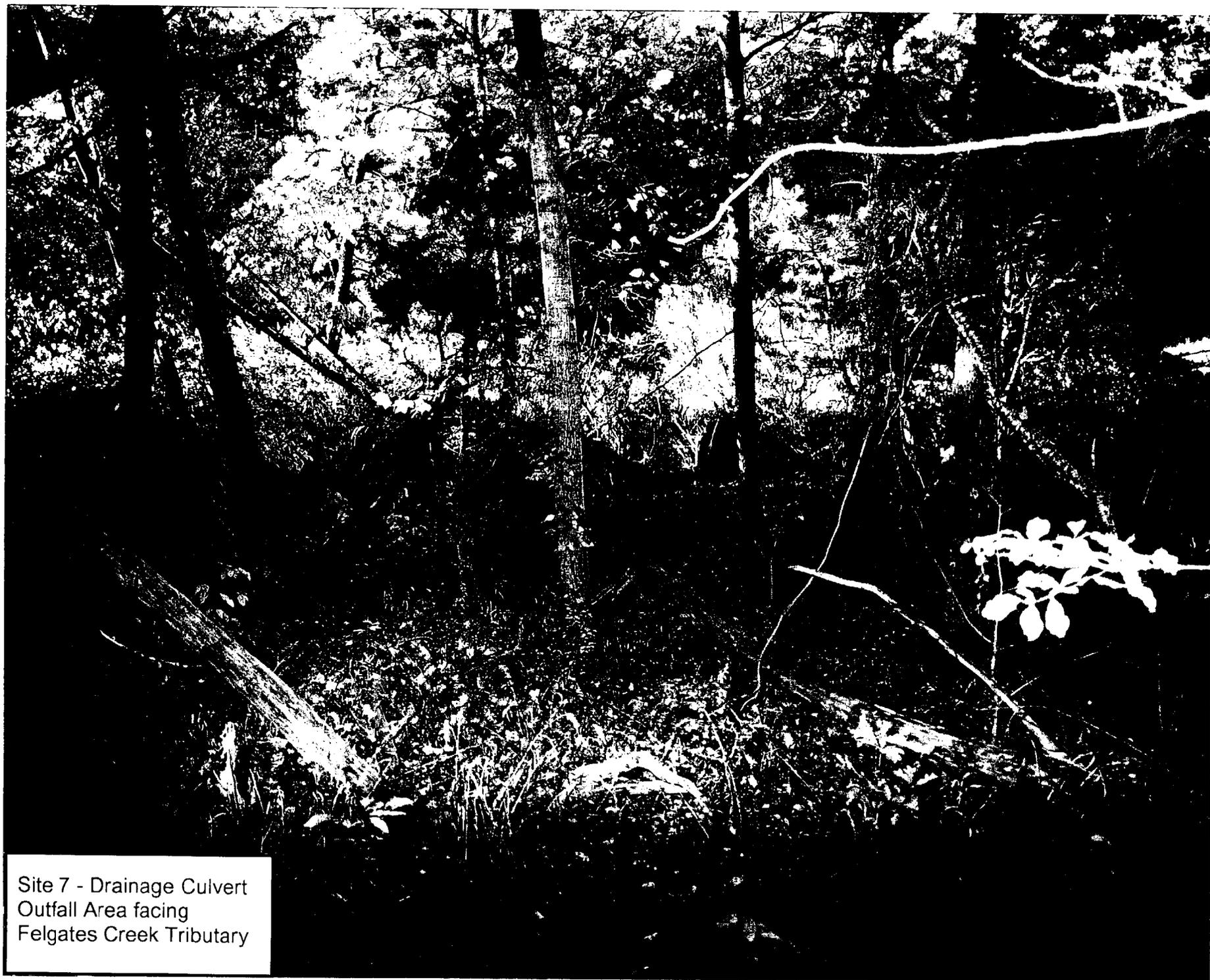


Site 7

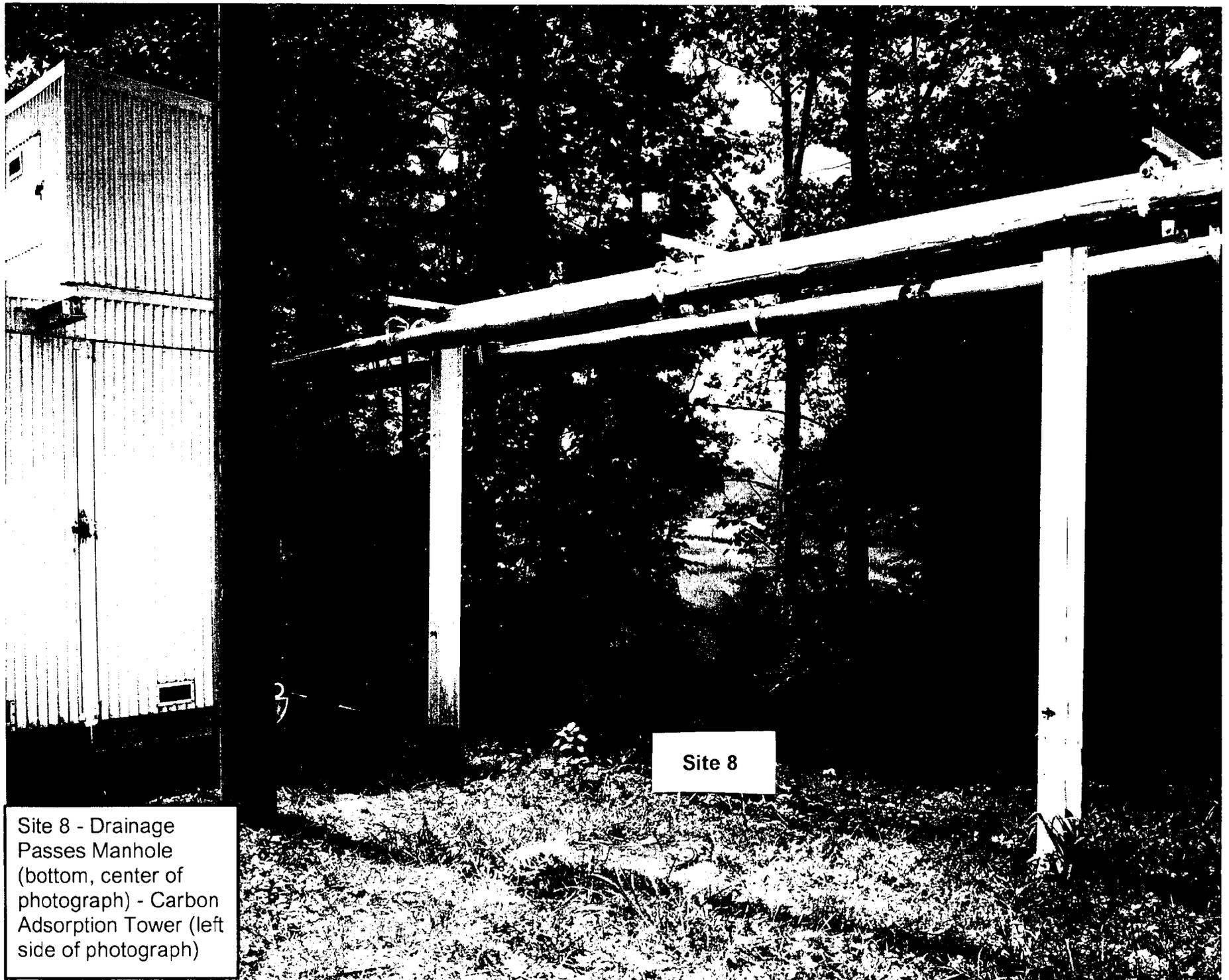
Site 7 - Drainage  
Culvert from Floor Drain  
(July 1983)



Site 7 - Drainage  
Culvert Outfall  
(July 1991)



Site 7 - Drainage Culvert  
Outfall Area facing  
Felgates Creek Tributary



Site 8

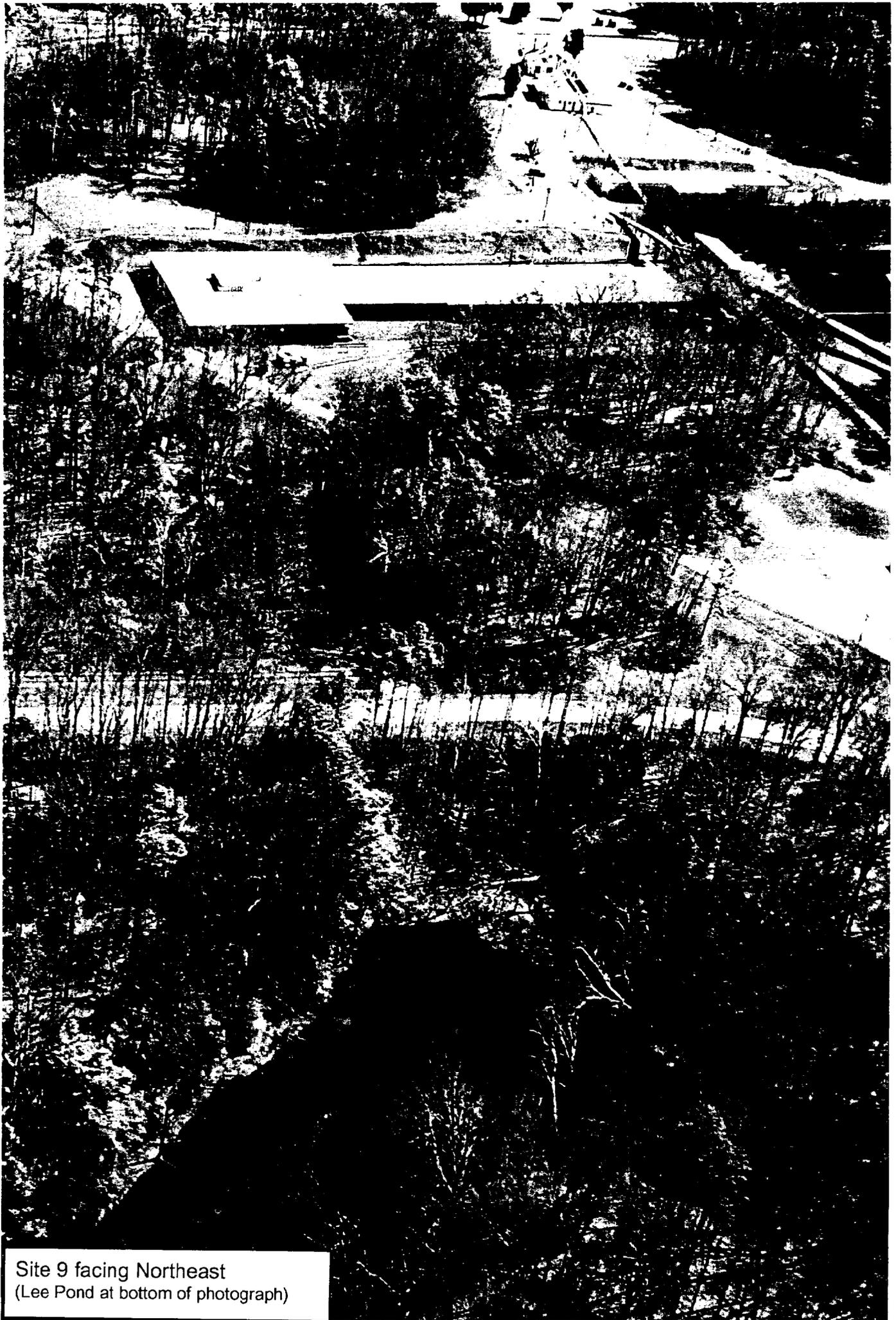
Site 8 - Drainage  
Passes Manhole  
(bottom, center of  
photograph) - Carbon  
Adsorption Tower (left  
side of photograph)

**Site 8 - NEDED Explosives-Contaminated  
Wastewater Discharge Area**

Site 8 is a 300-foot drainage way located along the eastern branch of Felgates Creek, approximately 1.5 miles from the confluence of the creek and the York River. This area received wastewater from the Naval Explosives Development Engineering Department (NEDED) complex (Building 456) from 1940 to 1975. The wastewater reportedly contained unspecified solvents, spent/neutralized acids, and nitramine compounds. In 1975, a carbon adsorption tower was installed to treat the contaminated wastewater prior to discharge into the drainage area. An NPDES permit was granted by USEPA Region III to allow this discharge. In 1986, the effluent from the tower was diverted to the sanitary sewer and ultimately to HRSD. Currently, the site has reverted to a natural drainage area.



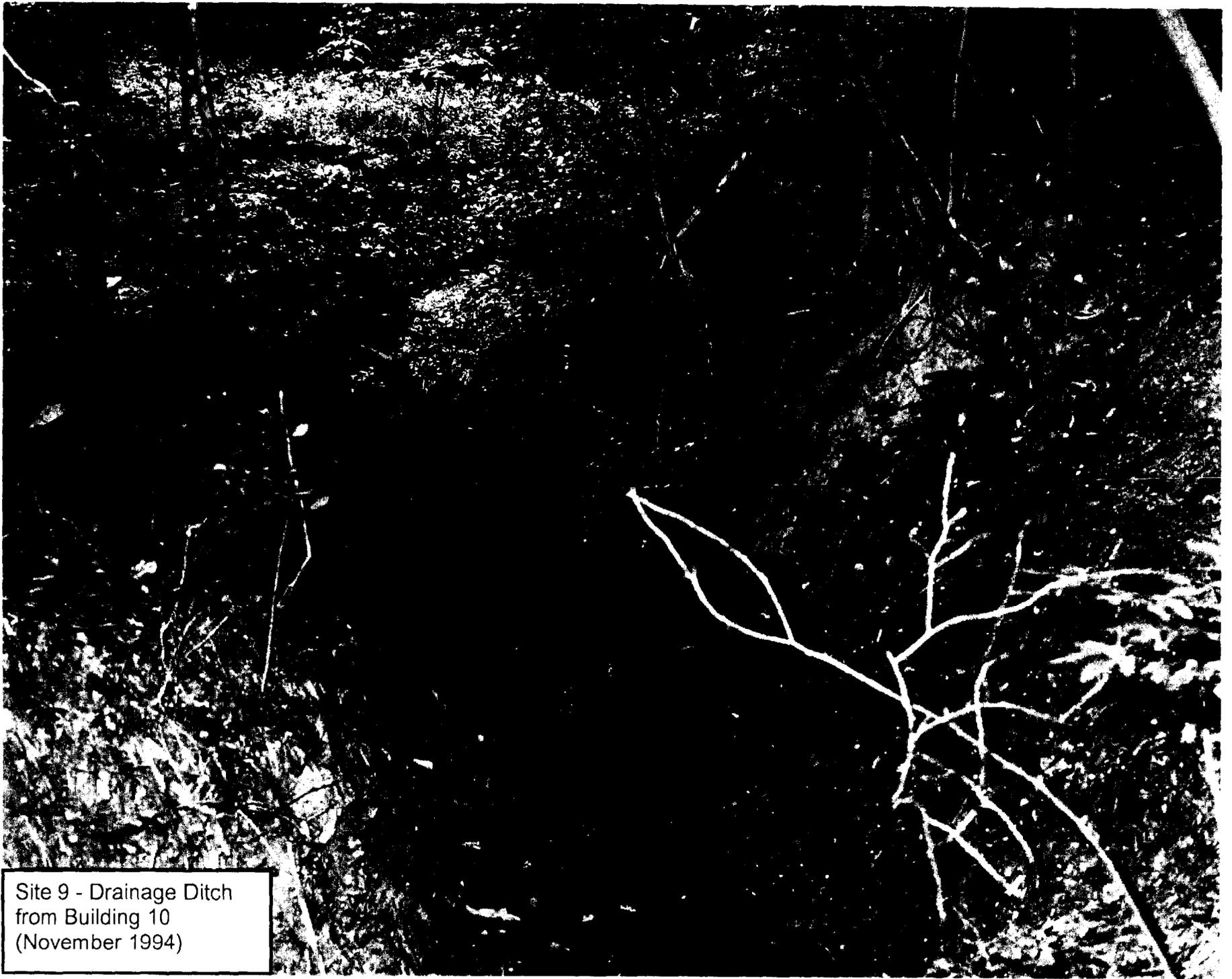
Site 8 - Drainage  
Outfall (July 1991)



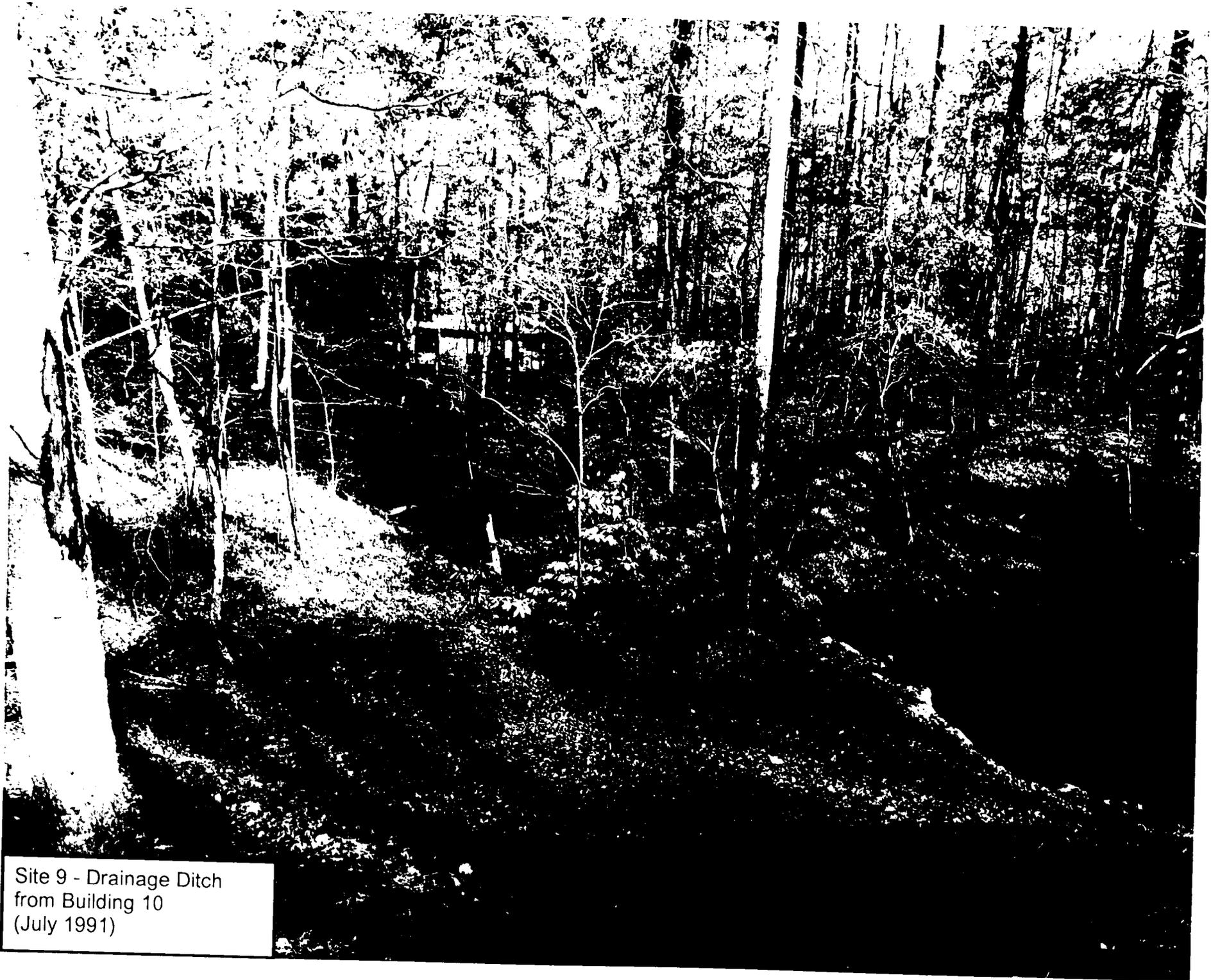
Site 9 facing Northeast  
(Lee Pond at bottom of photograph)

**Site 9 - Plant 1 Explosives-Contaminated  
Wastewater Discharge Area**

Site 9 is a 600-foot drainage ditch located just east of Lee Pond, which empties into the eastern branch of Felgates Creek and topographically downslope from Site 19 (Section 2.1.15). This area was reportedly in use from the late 1930s to 1975. Contaminants in the wastewater from Plant 1 (Building 10) included nitramine compounds as well as organic solvents. During the more than 40 years that the drainage area was used, an estimated 6,800 pounds of nitramine- and solvent-contaminated material may have been discharged to the area. A carbon adsorption tower was installed in 1975 to treat the contaminated wastewater prior to discharge into the drainage area. An NPDES permit was granted by USEPA Region III to allow this discharge. In 1986, the effluent from the tower was diverted to the sanitary sewer and ultimately to HRSD. Currently, the site has reverted to a natural drainage way for surface runoff from surrounding areas and receives no discharge from the Plant 1 complex. A limited removal action was conducted for hard waste present at Site 9 in the natural drainage way between Bollman Road and Lee Pond during the summer and early fall of 1994.



Site 9 - Drainage Ditch  
from Building 10  
(November 1994)



Site 9 - Drainage Ditch  
from Building 10  
(July 1991)



Site 9 - After Removal  
Action facing Site 19  
(Along Bollman Road,  
November 1994)



Site 9 - Drainage Culvert Outfall from Building 10 (begining of Site 9)



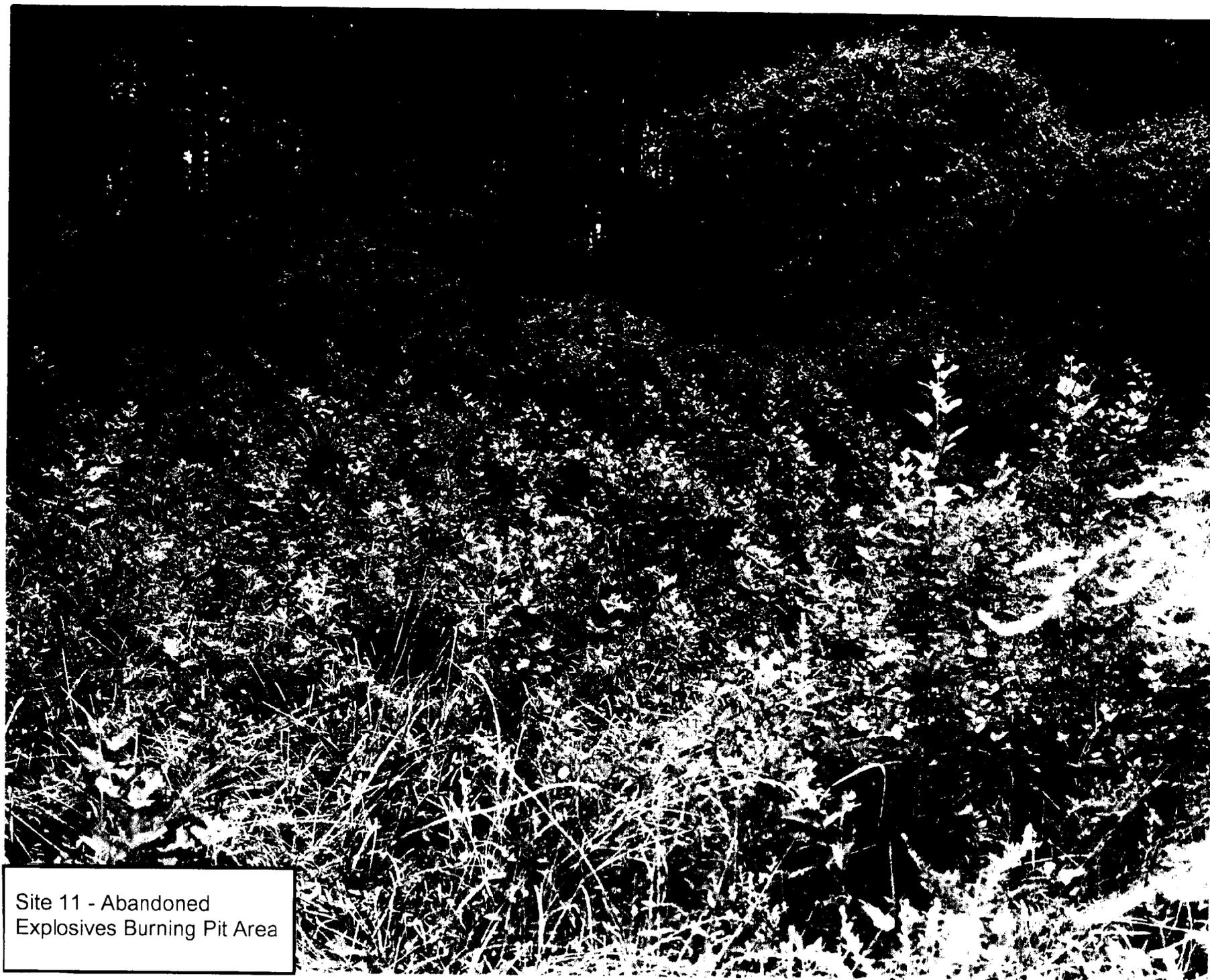
Site 17

Site 11

Sites 11 and 17  
facing North

**Site 11 - Abandoned Explosives  
Burning Pits**

Site 11 is an area of approximately 0.5-acres located south of Dudley Road, east of Main Road, west of Site 1, and north of a drainage channel leading to Indian Field Creek. This area was used from 1930 to 1950 for burning ordnance and ordnance-contaminated waste. Ashes and residues from the open burning of nitramine-containing wastes and sludges are potentially present at the site. During the 20 years that the pits were used approximately 200 pounds of nitramine waste residues may have been deposited. Currently, the area is thickly vegetated.



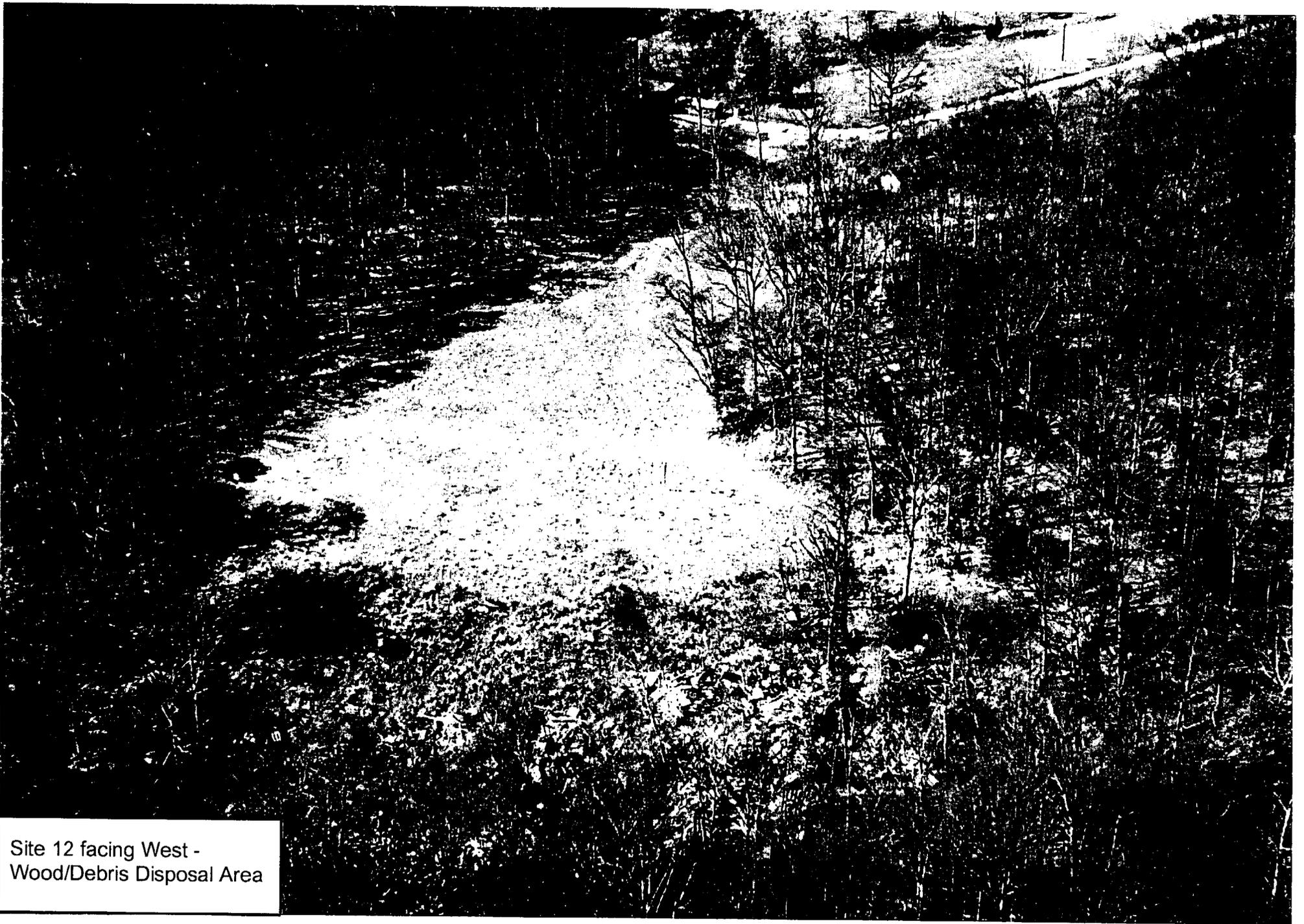
Site 11 - Abandoned  
Explosives Burning Pit Area



Site 12 facing North  
(Area A foreground,  
Area B/C background)

## Site 12 - Barracks Road Landfill

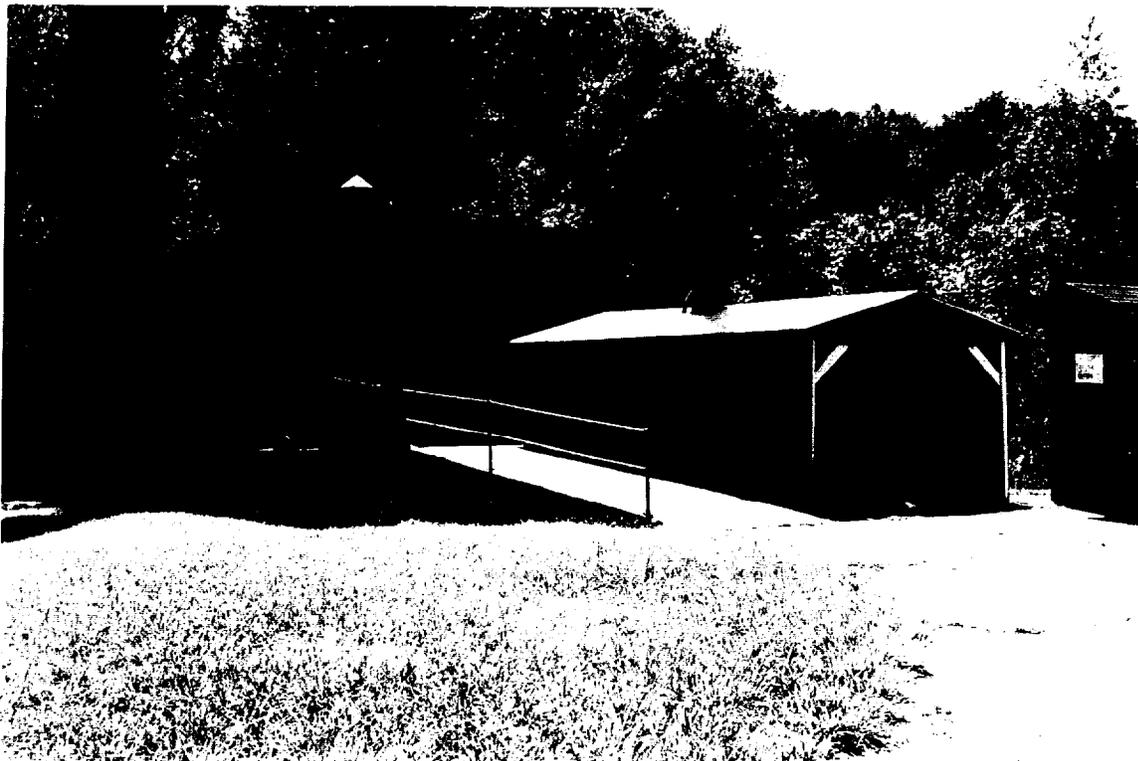
Site 12 is a 4-acre landfill located east of Barracks Road, north of the community of Lackey, and northwest of the Colonial National Historical Park along a drainage swale leading to Ballard Creek. This area was in operation from approximately 1925 to the mid-1960s. Wastes reported to have been disposed include refuse, scrap wood, and nitramine-contaminated packaging. Because this facility was the predecessor to the Dudley Road Landfill (Site 1), it is likely that wastes similar to those identified at Site 1 (Section 2.1.1), including solvents, also were disposed in this area. The landfill received an estimated 1,400 tons of waste during the time the site was in use. Adjacent to the landfill are two incinerators (SWMU 142 and SWMU 143) formerly used to burn a variety of waste, both industrial and nonindustrial. Incineration ash from incineration activities was disposed on the hillside behind the incinerator buildings. Scrap metal, charred wood and cloth, and medicine bottles were observed in the ash. Located approximately 400 feet east of Site 12 is the Wood/Debris Disposal Area (formerly SWMU 164 and now considered a part of Site 12), which is approximately 4 acres in size. This area consists of a steep ravine in which wooden pallets and construction debris have been disposed. Each area is currently vegetated and drains toward Ballard Creek.



Site 12 facing West -  
Wood/Debris Disposal Area



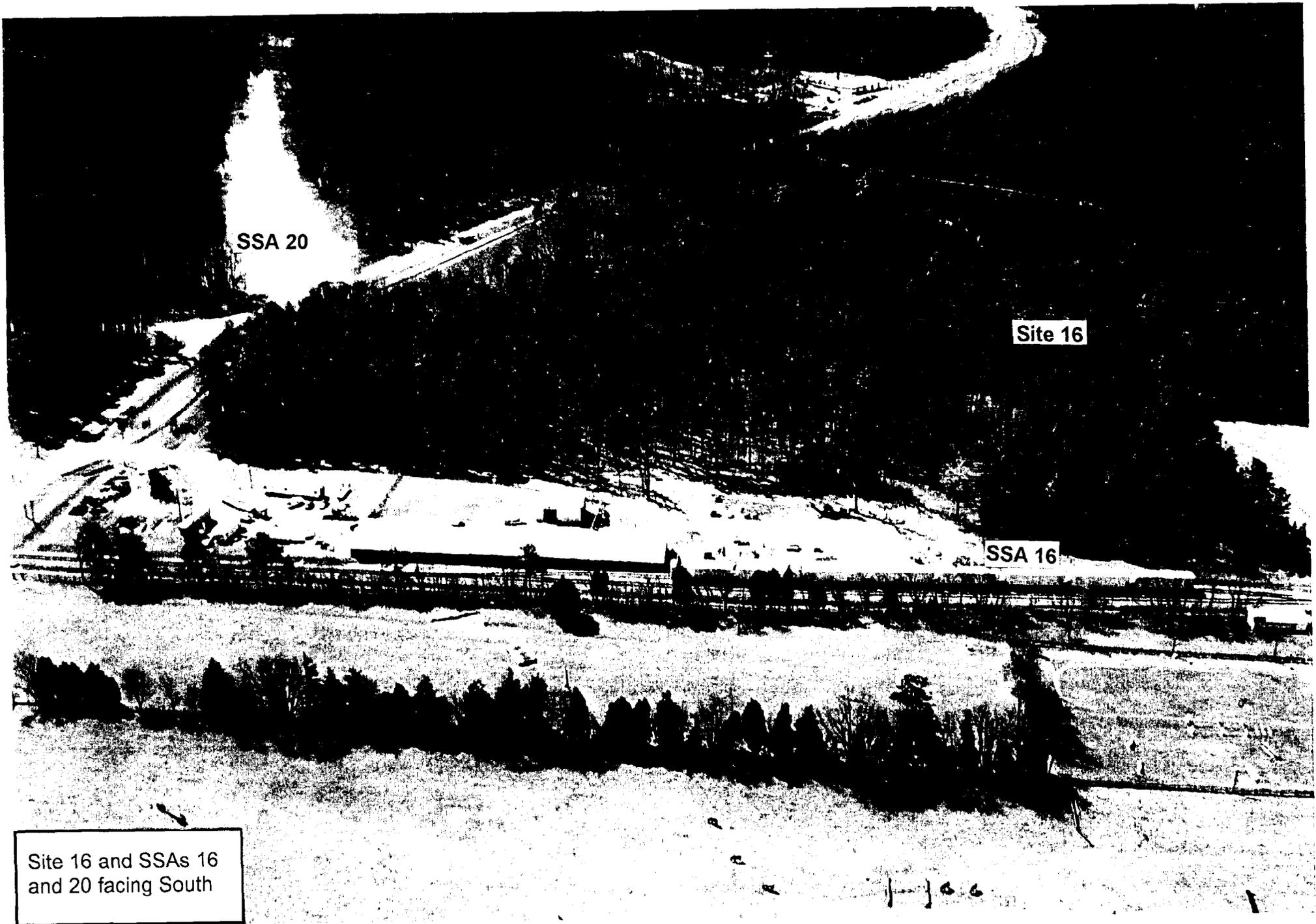
Site 12 facing Southeast -  
Wood/Debris Disposal Area



Site 12 - Two Incinerators (SWMU 142 and SWMU 143) facing Southwest



Site 12 - Wood/Debris Disposal Area



SSA 20

Site 16

SSA 16

Site 16 and SSAs 16  
and 20 facing South

## Site 16 - West Road Landfill

Site 16 is a 5-acre area located adjacent to West Road near Indian Field Road. This site was operated from the early 1950s to the early 1960s. Site 16/SSA 16 also is referred to as OU II. Wastes reported to have been disposed include dry carbon-zinc (Leclanche) batteries, banding materials, pressure transmitting fluid, unknown types of chemicals, and 55-gallon drums (contents unknown). An investigation at this site in 1992 confirmed the presence of drums, scrap metal, batteries, mine casings, and construction debris. Another waste area was also identified beneath one of the drum piles. This waste area consisted of glass containers, cans, and newspapers. Landfill boundaries are not evident from visual observation of the area. The site is wooded, except for the northern portion along West Road, which is covered with grasses. A removal action was conducted at Site 16 during the summer of 1994 to eliminate drums, scrap metal, batteries, and construction debris. Site 16 was evaluated in conjunction with SSA 16 because of its near proximity and geophysical data which indicate overlap between the two areas. Based on the results of the risk evaluation and limited confirmational sampling by USEPA Region III, a "No Further Remedial Action with Institutional Controls" ROD was finalized for Site 16/SSA 16 (OU II) on September 29, 1995.



Site 16 - Landfill Debris  
Before Removal Action  
(October 1990)



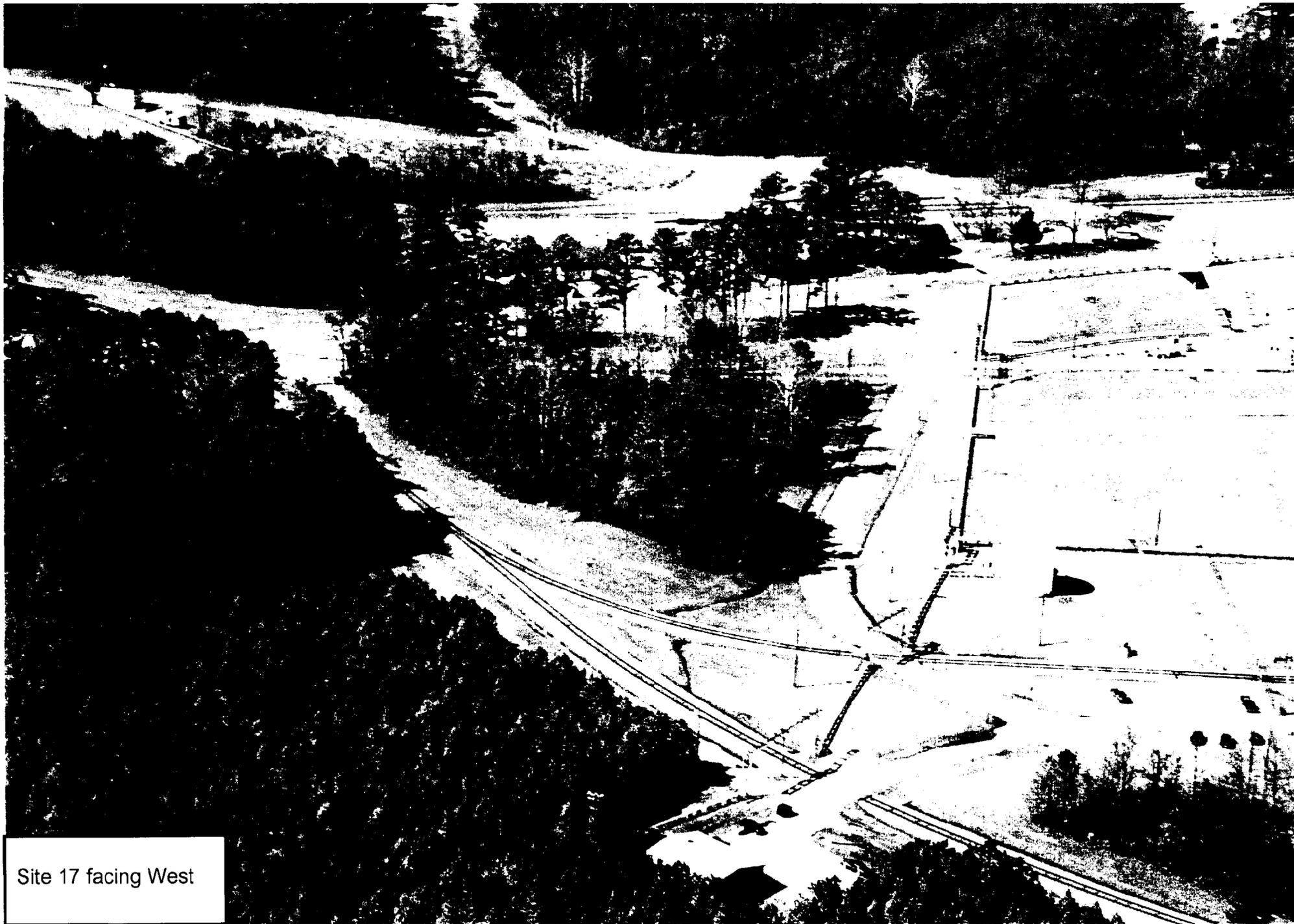
Site 16 - Landfill Debris Before Removal Action (September 1993)



Site 17 facing North

### Site 17 - Holm Road Landfill

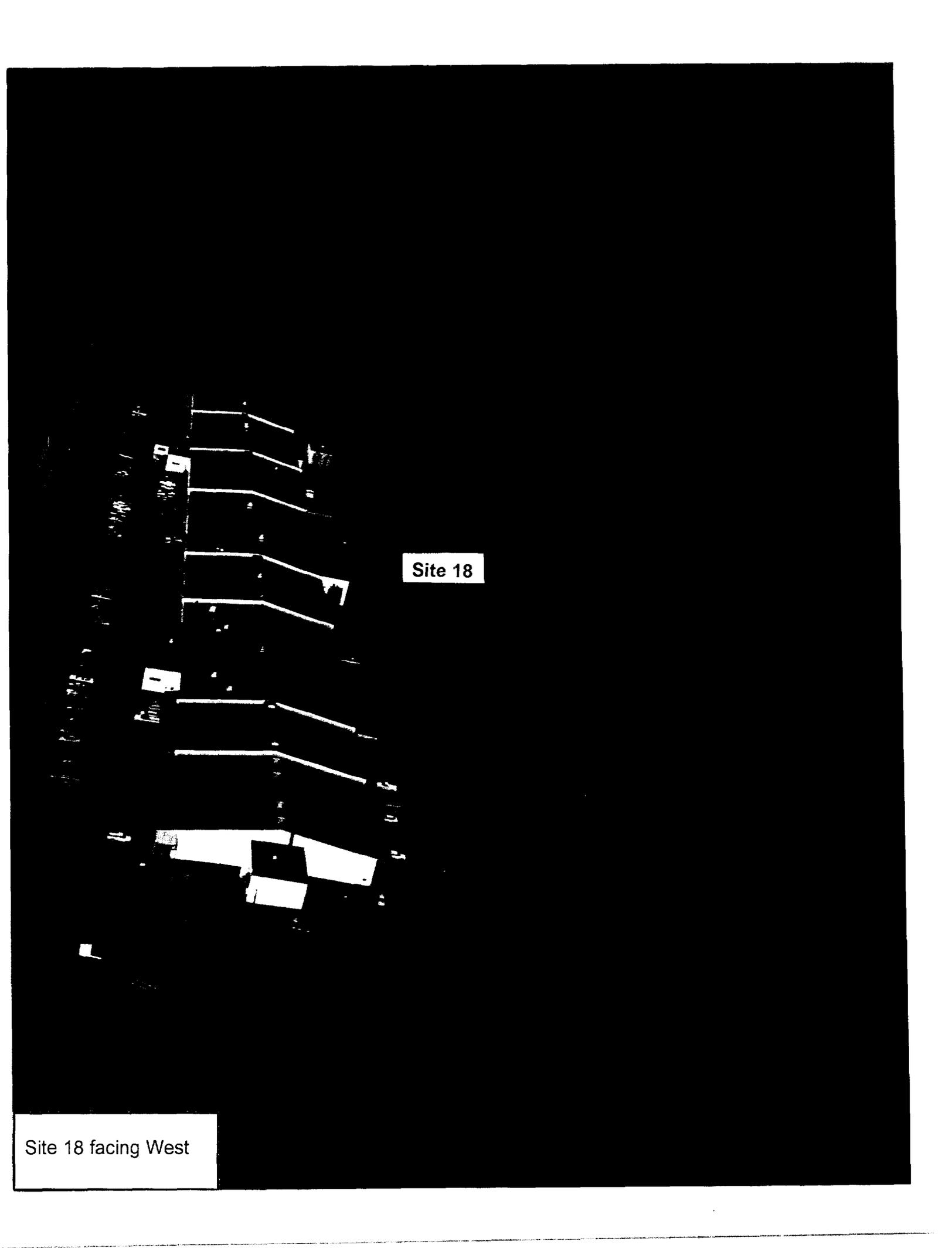
Site 17 is a 2-acre landfill located south of Holm Road and east of Main Road. The site was operated for approximately 10 years, from the 1950s to the 1960s. Wastes reportedly disposed include acid batteries from underwater weapons, hydraulic fluids (Dolconik) from the demilling of torpedoes, other types of hydraulic fluids, drums from the Public Works Department and ordnance production shops, and scrap metal. An estimated 60 tons of waste was deposited during the period the landfill was in use. Currently, the site is overgrown with mature trees and no evidence of surficial waste is apparent. In addition, results from the geophysical investigation of this site during the Round One RI did not indicate any evidence of buried material.



Site 17 facing West



Site 17 - Exposed Mine Casing - Northeast Portion of Site - No Other Visible Material



Site 18

Site 18 facing West

### Site 18 - Building 476 Discharge Area

Site 18 is a one-quarter mile long, unlined drainage ditch located north of Building 476 in the southeastern area of the Station along a small tributary leading to Lee Pond. This area was in use for approximately 20 years from the 1940s to the 1960s. The discharge into the area reportedly contained battery acid waste, consisting of hydrochloric acid or calcium hydroxide and dissolved metals such as lead, cadmium, nickel, and antimony. An estimated 100 to 200 pounds of metal may have been discharged during the operational period. Battery acid waste is no longer discharged from Building 476 into this drainage way.



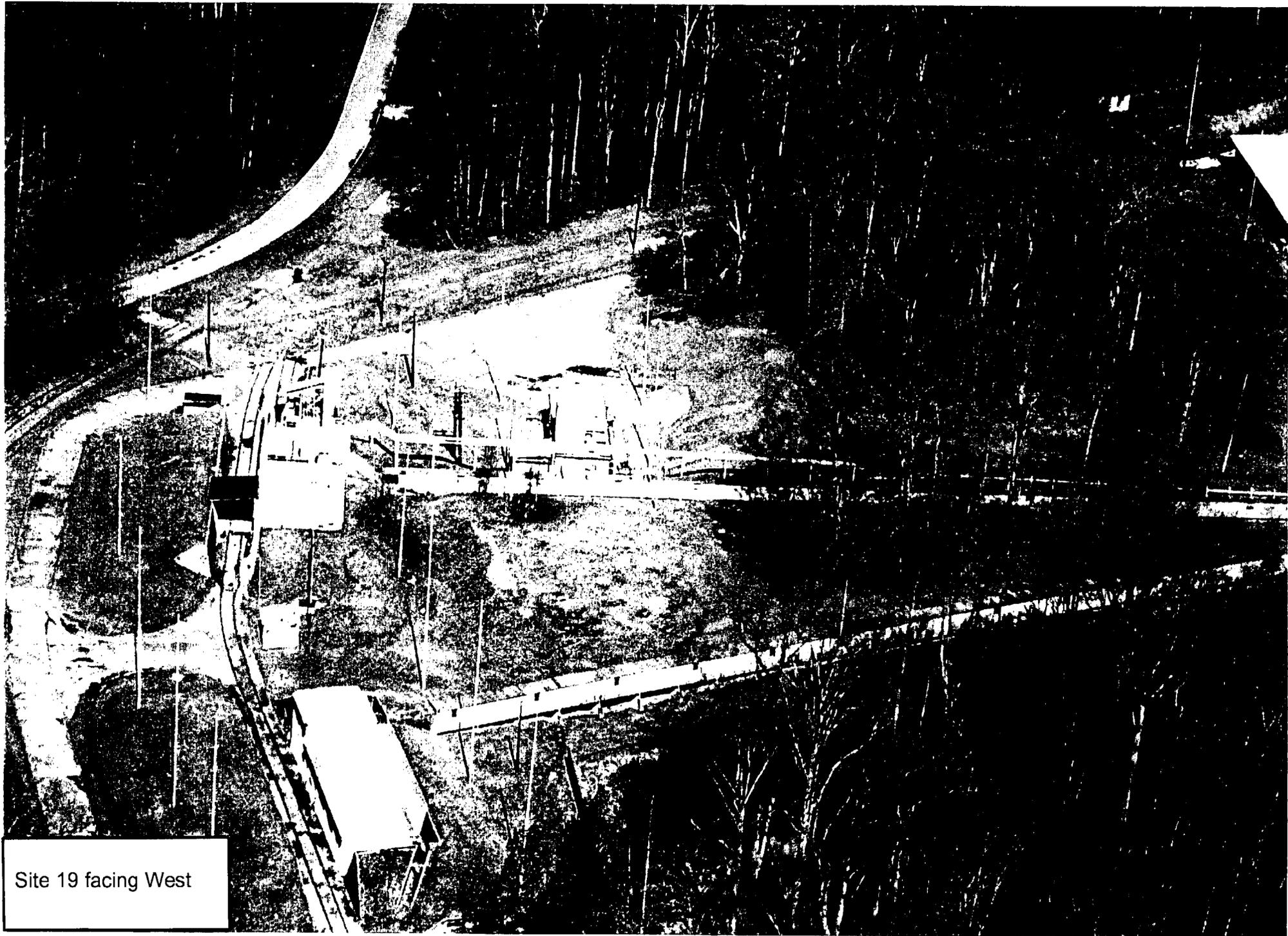
Site 18 - Drainage Culvert  
(beginning of Site 18, July 1991)



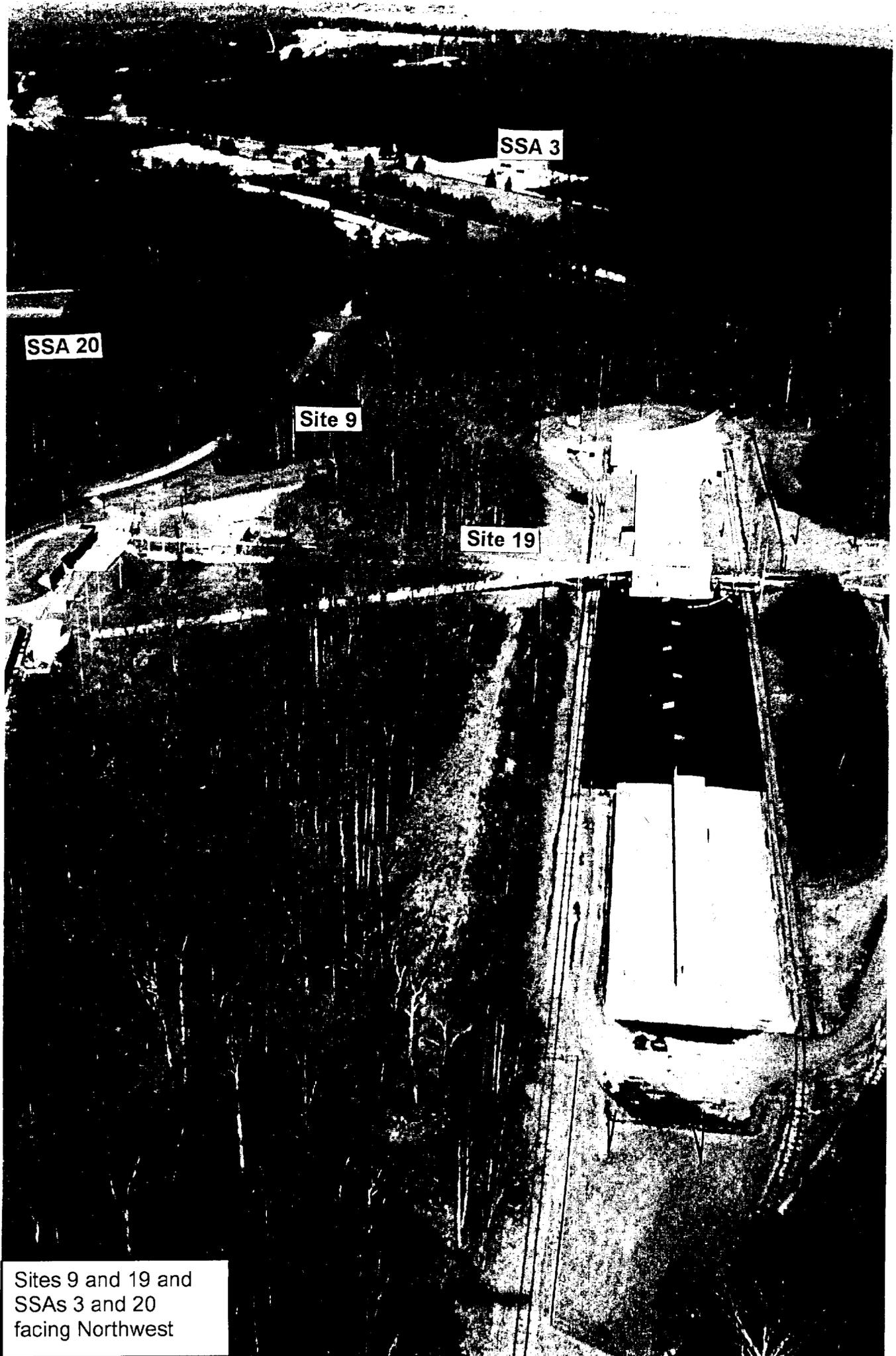
Site 19 facing North

**Site 19 - Conveyor Belt Soils at  
Building 10**

Site 19 is a 500-foot long soil strip located beneath and around Building 10, approximately 300 feet from Site 9 and connected to Site 9 via a concrete drainage channel. Nitramine-contaminated soil was reported beneath the conveyor belt between Buildings 10 and 98. In 1973/1974, soil below the conveyor belt was removed; however, later tests indicated that contamination remained.



Site 19 facing West



SSA 3

SSA 20

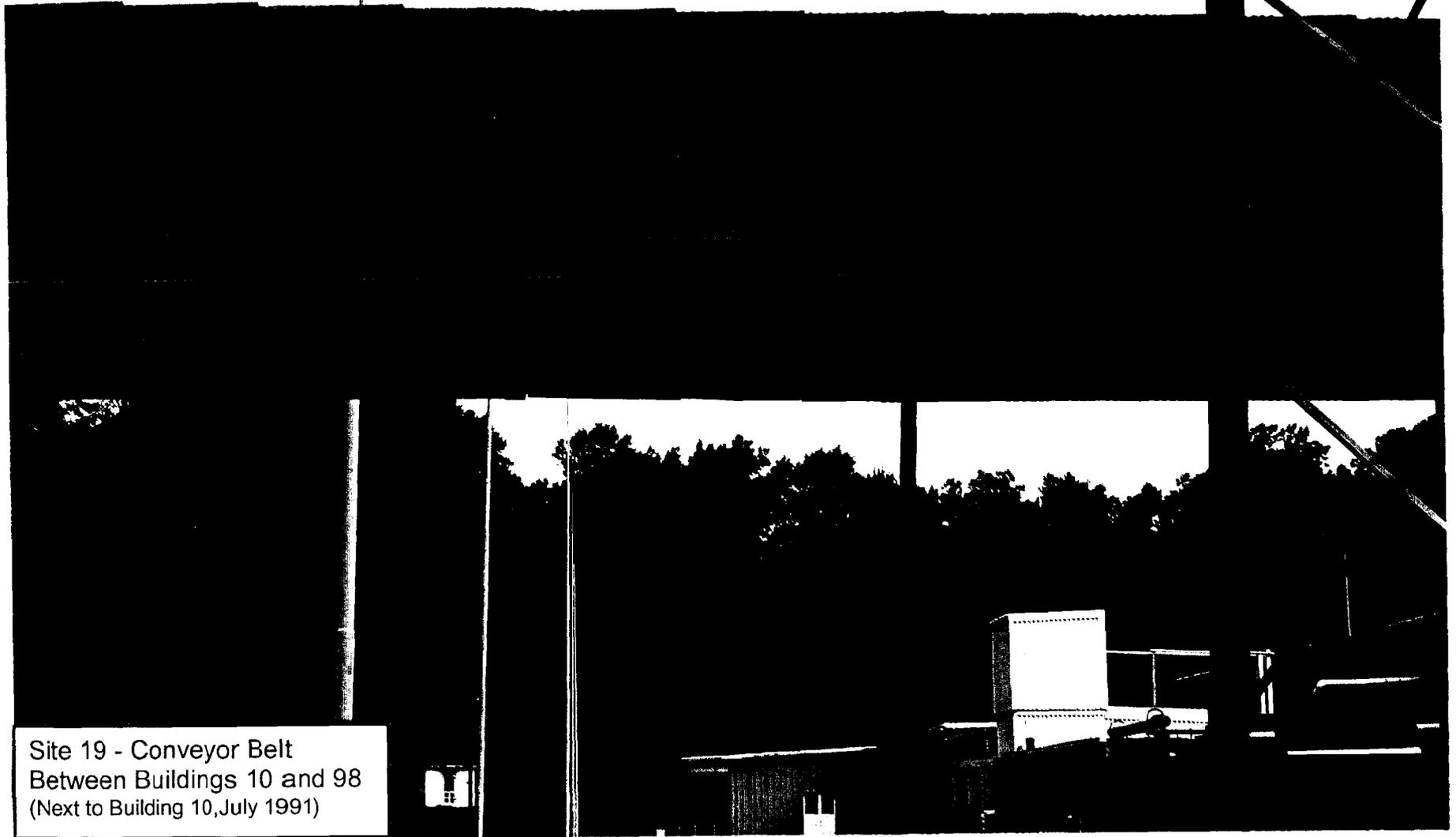
Site 9

Site 19

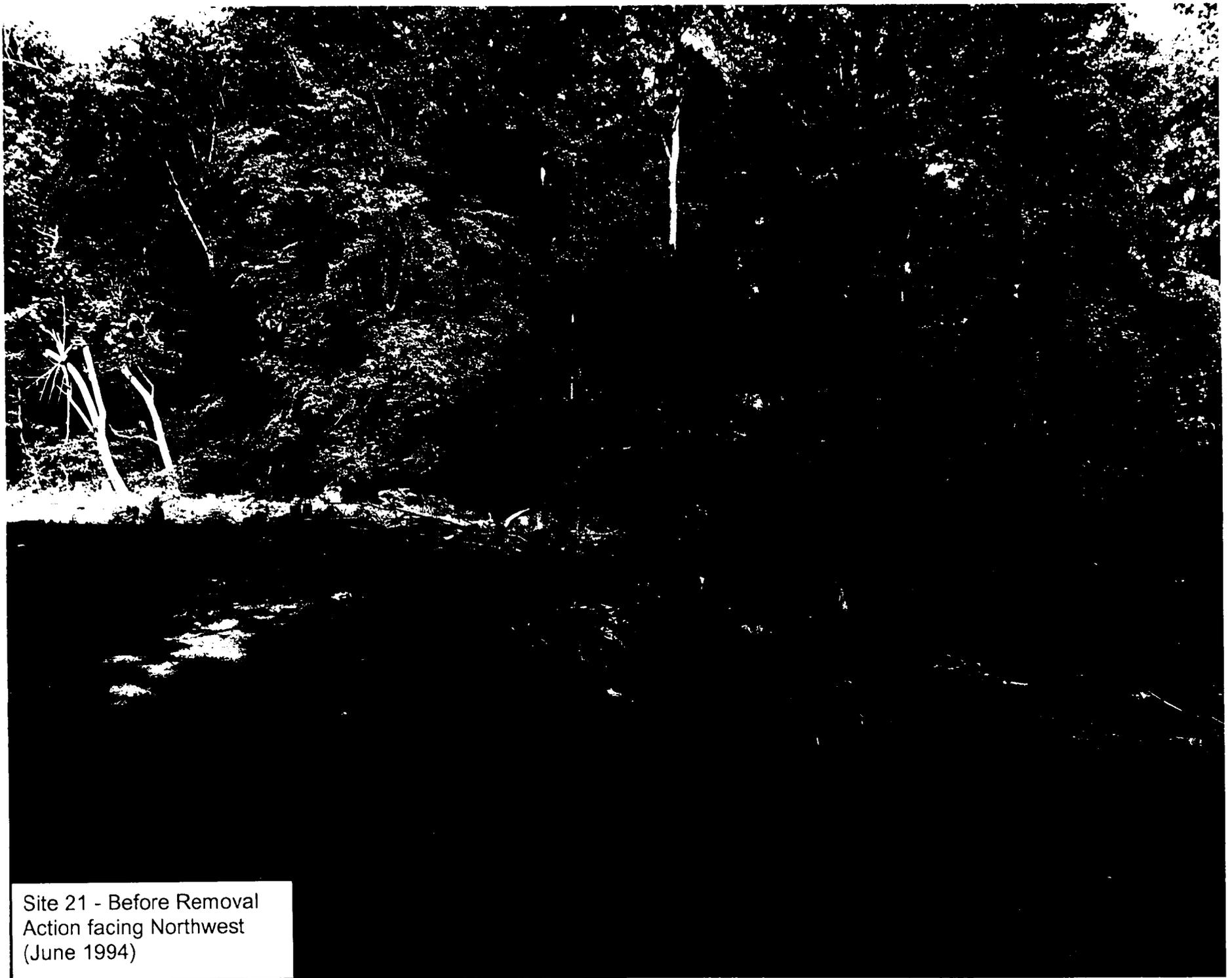
Sites 9 and 19 and  
SSAs 3 and 20  
facing Northwest



Site 19 - Conveyor Belt  
Between Buildings 10 and 98  
(July 1991)



Site 19 - Conveyor Belt  
Between Buildings 10 and 98  
(Next to Building 10, July 1991)



Site 21 - Before Removal  
Action facing Northwest  
(June 1994)

**Site 21 - Battery and Drum  
Disposal Area**

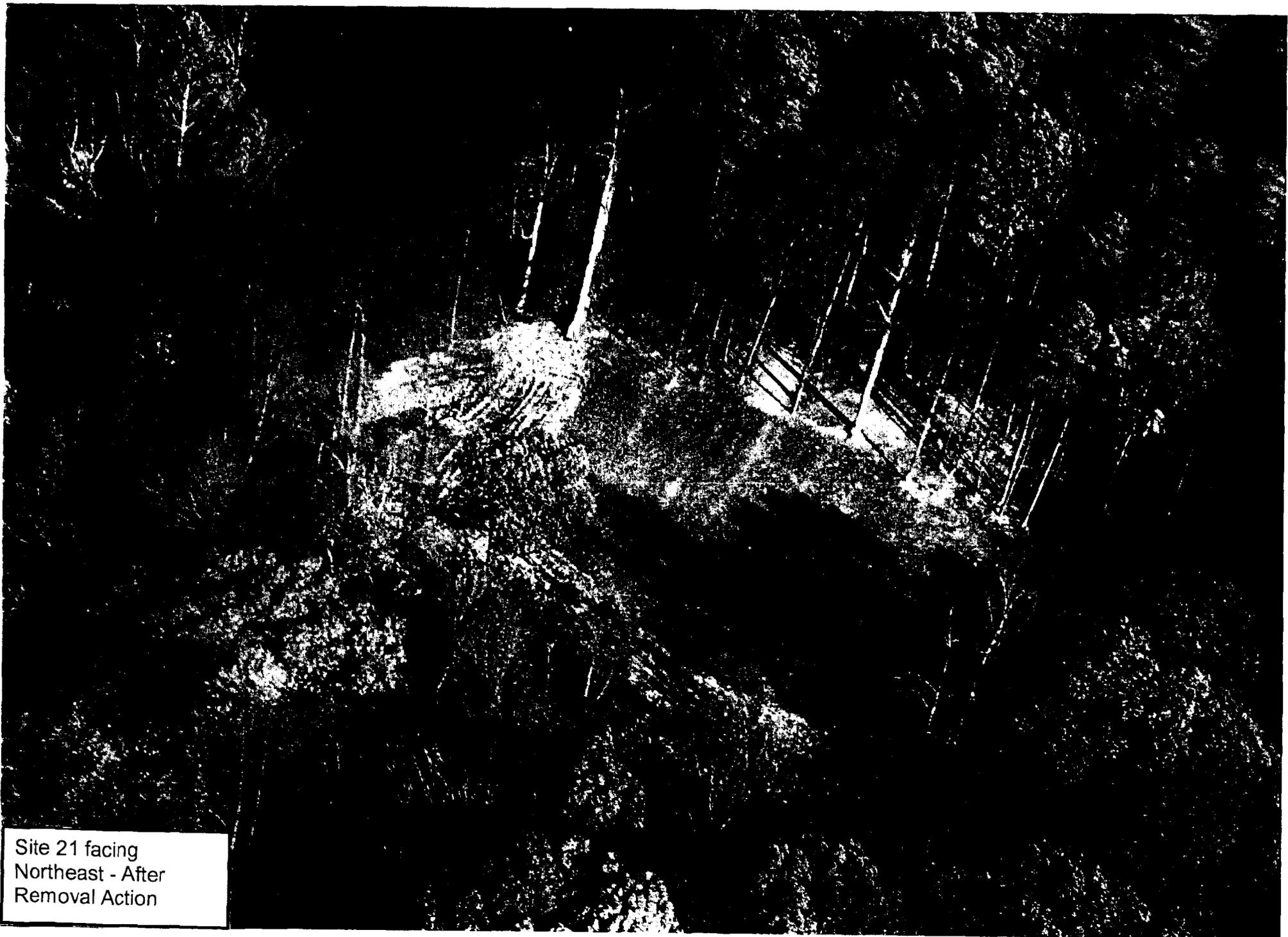
Site 21 covers approximately 1 acre and is located south of West Road adjacent to the ravine that separates Site 21 from Site 4. Historical information for this site is limited. Wastes identified in this area include various sized cans and drums, dry carbon-zinc batteries (Leclanche), empty solvent containers, and scrap metal. A removal action was conducted at Site 21 during the summer of 1994 to remove batteries, drums and debris. The site has been revegetated in those areas affected by the removal.



Site 21 - Landfill Debris  
(Battery)



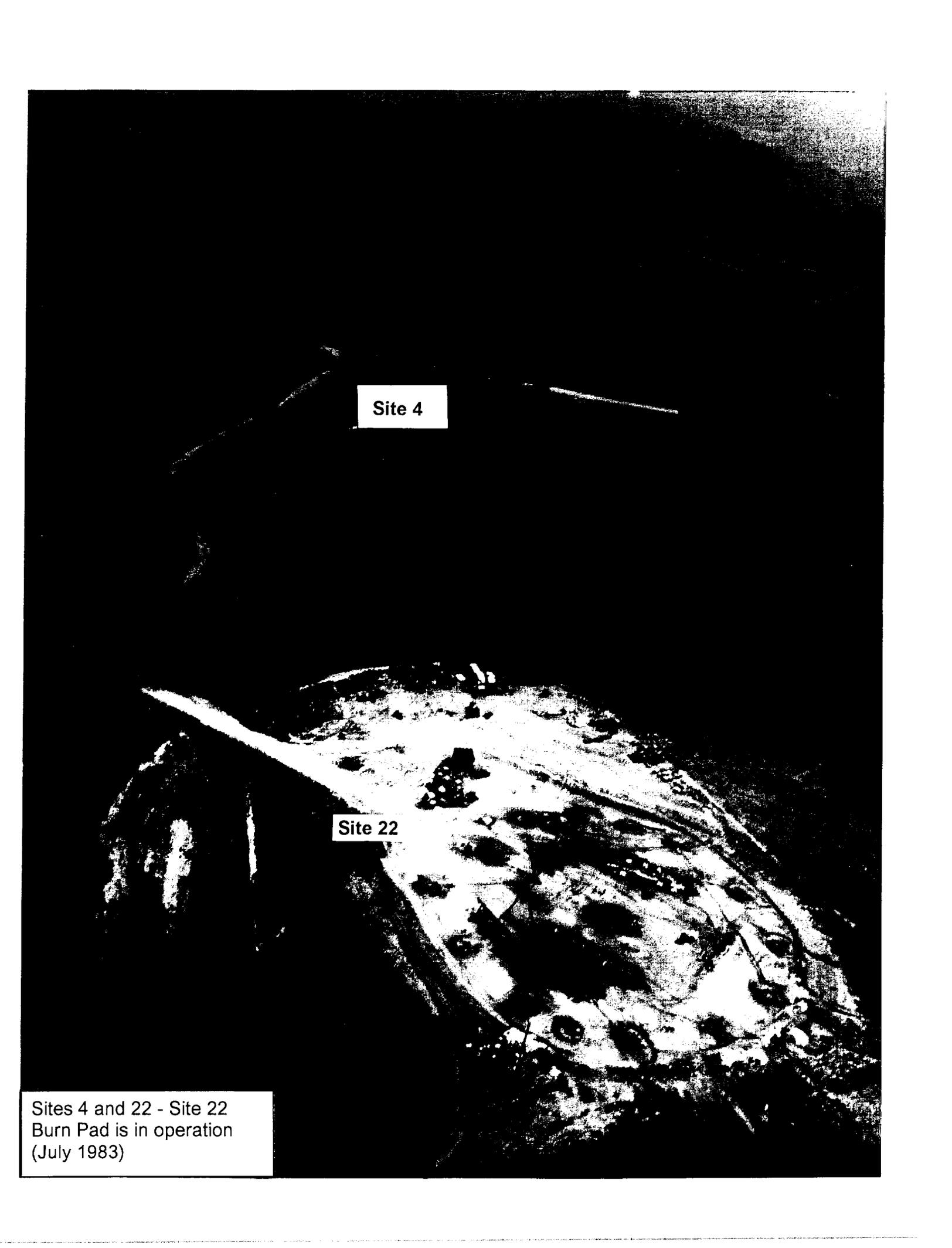
Site 21 - Landfill Debris



Site 21 facing  
Northeast - After  
Removal Action



Site 21 - After Removal  
Action facing North  
(November 1994)

An aerial photograph showing a landscape with two sites marked. Site 4 is a small, dark, rectangular area in the upper center. Site 22 is a larger, irregularly shaped area in the lower center, appearing to be a burn pad. The surrounding terrain is dark and textured, possibly forested or scrubland. The image is high-contrast, with deep blacks and bright whites.

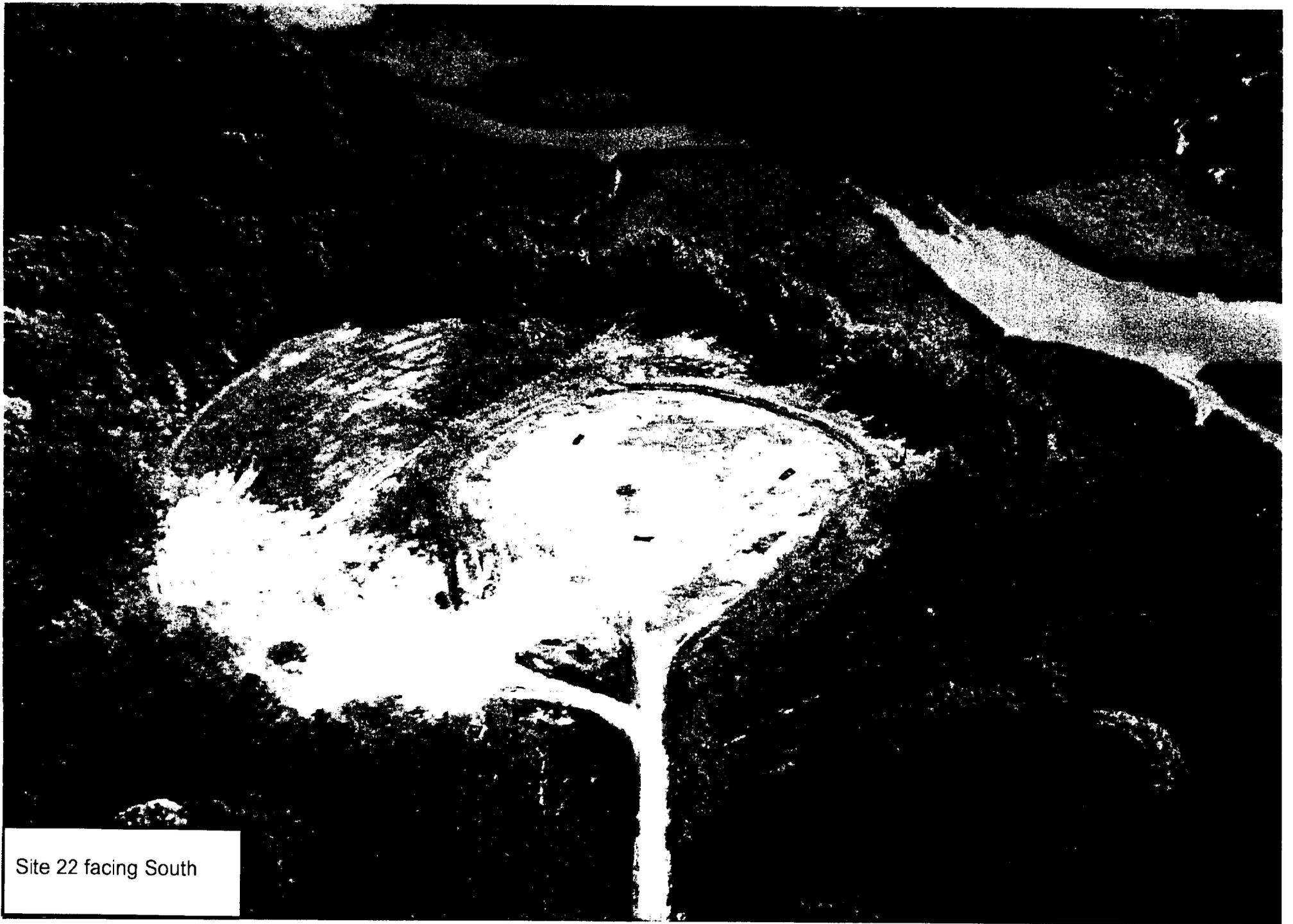
Site 4

Site 22

Sites 4 and 22 - Site 22  
Burn Pad is in operation  
(July 1983)

## Site 22 - Burn Pad

Site 22 covers approximately 9 acres and is located in the central portion of the Station between Sites 4 and 21. A circular array of 11 steel burning pans were used for burning waste plastic explosives and spent solvents. The pans surround a 150-foot inch diameter circular area. Currently the burn pad is not in use and the area is relatively clean, with limited scattered debris. Analytical data are not currently available for environmental media at the Site 22.



Site 22 facing South



Site 22 facing South  
Burn Pads surrounding  
the Site



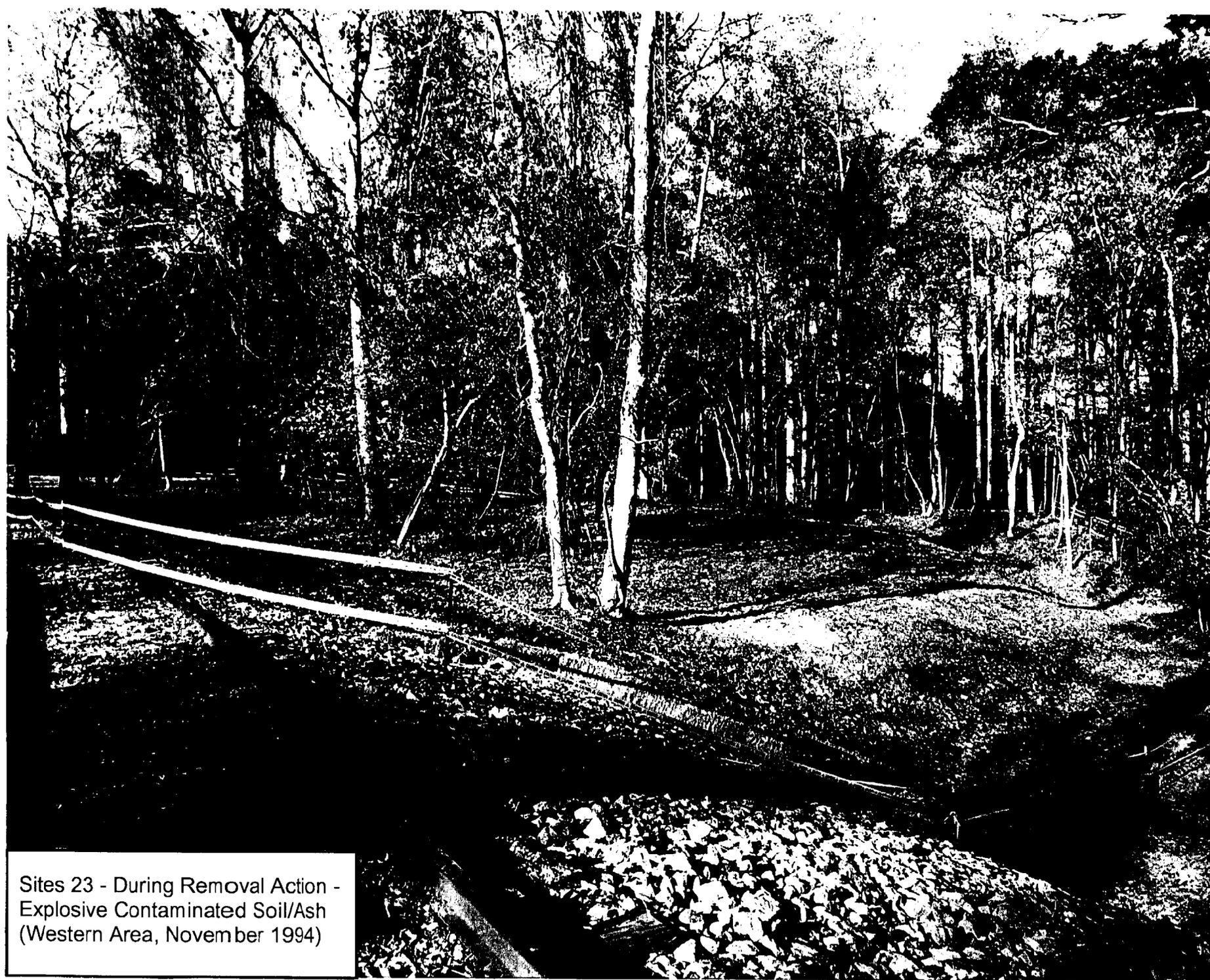
Site 23 facing East

**Site 23 - Building 428 Teague Road  
Disposal Area**

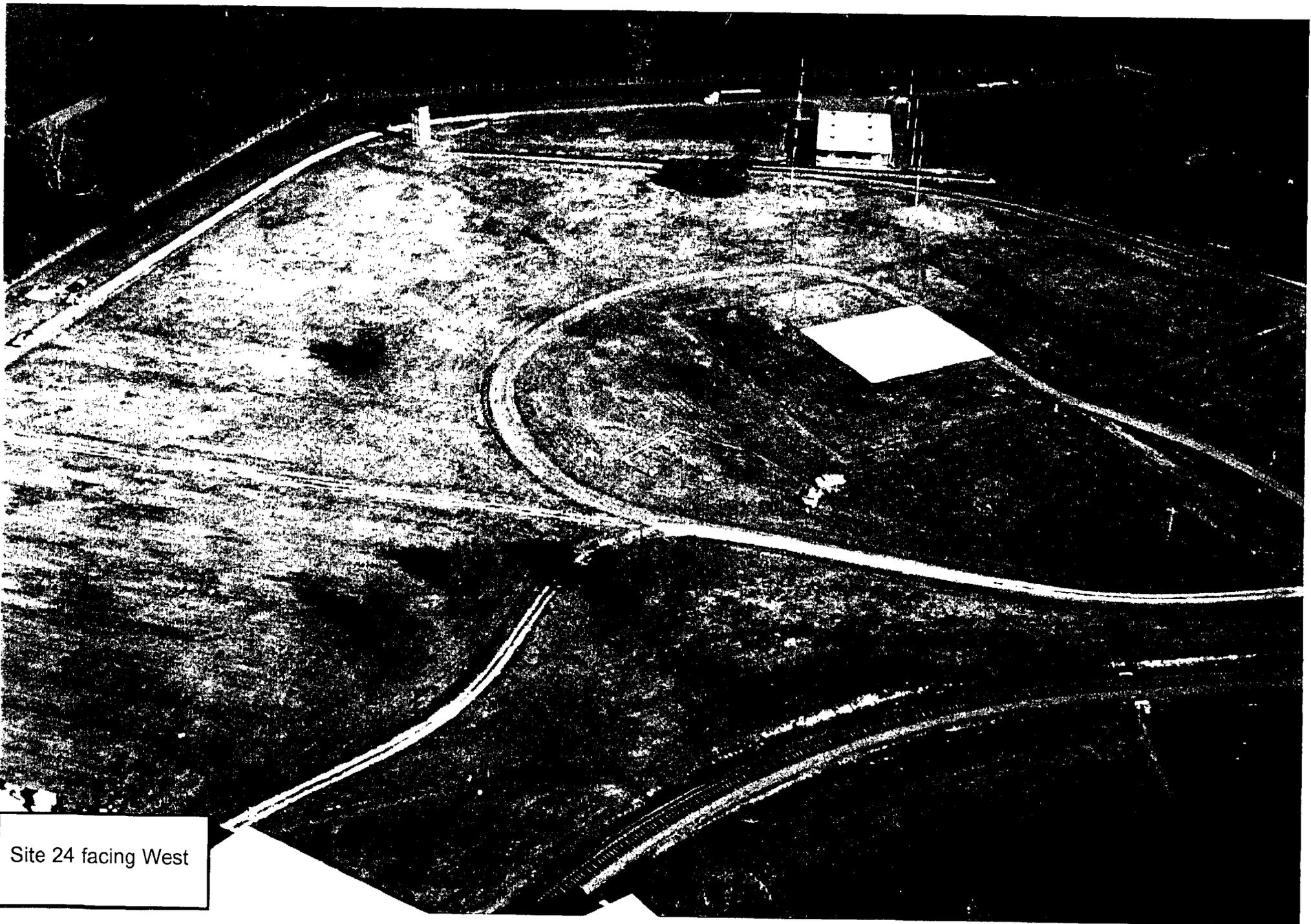
Site 23 (a portion of former SSA 1) is approximately 2.8 acres in size and is located northeast of Building 428, in the northeast portion of the Station along the Station boundary. The size of the site is comprised of 5 smaller areas of SSA 1 which are adjacent to the railroad tracks, the unnamed ditch and is within the western portion of the former SSA boundary. The York River is located to the north of Site 23 and Roosevelt Pond bounds the area to the west/northwest. The area is wooded and bisected by a railroad track that was constructed in 1919 and operated until 1989. Disposal activities reportedly began in 1940 and ceased in 1960. A pier fire occurred in the mid-1950s and debris from this fire may have been disposed in this area (1955 to 1957). Aerial photography suggests that past waste storage practices occurred at Site 23 (primarily in 1945). From 1960 to the present there is no evidence of additional waste storage or release. However, a land survey, conducted in the fall of 1993 as part of a removal action, indicated discrete piles of debris that appear to have been dumped on top of native soil, while other areas of debris appear to be partially buried. The debris was identified as concrete rubble; scrap metal; wooden pilings and railroad ties; empty fuel cans; empty, open, and corroded drums; asbestos pipe insulation; and shingles. A removal action was conducted during the summer and early fall of 1994 to remove surface debris present at Site 23. Items removed included two 55-gallon drums of paint cans/spilled paint, 443 tons of wooden creosote timbers (remains of the burnt pier), 763 tons of ordinary non-hazardous debris, 1,119 tons of debris containing non-friable asbestos, 1,680 pounds of pipe wrapped with friable asbestos, 31 tons of recyclable metal, and two truck batteries. Approximately 5,800 tons of TNT and trinitrobenzene contaminated ash/soil also was removed from an area north of the railroad tracks at the northeast portion of the site. Contaminants of potential concern at Site 23 include polynuclear aromatic hydrocarbons (PAHs) that may be associated with former disposal activities. Additional IRP activities will include investigation of subsurface contamination, impacts on shallow groundwater and an ecological evaluation/habitat evaluation of the unnamed ditch.



Sites 23 - During Removal  
Action (Eastern Area,  
November 1994)



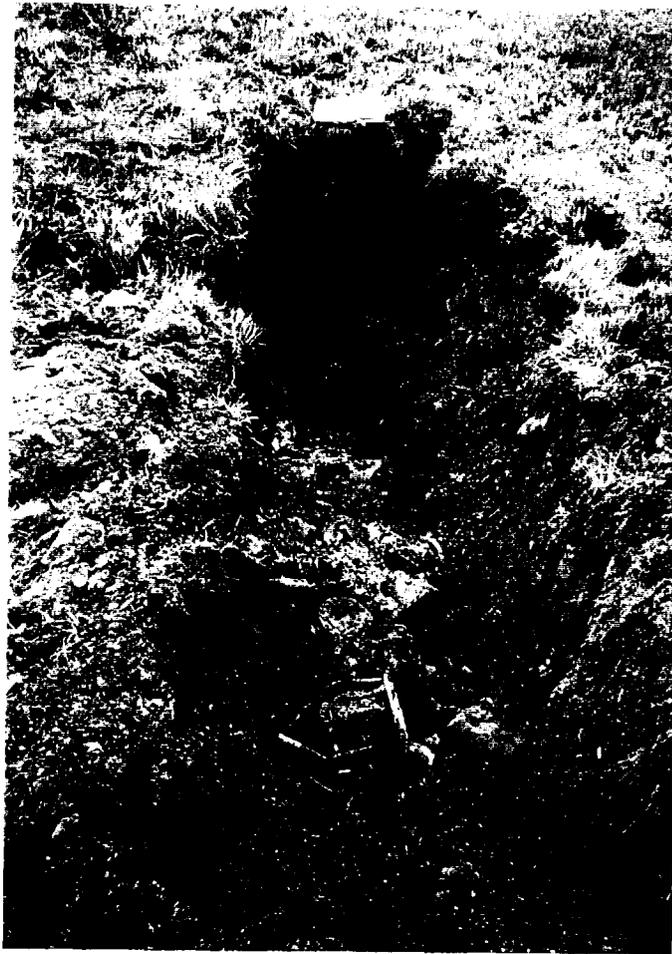
Sites 23 - During Removal Action -  
Explosive Contaminated Soil/Ash  
(Western Area, November 1994)



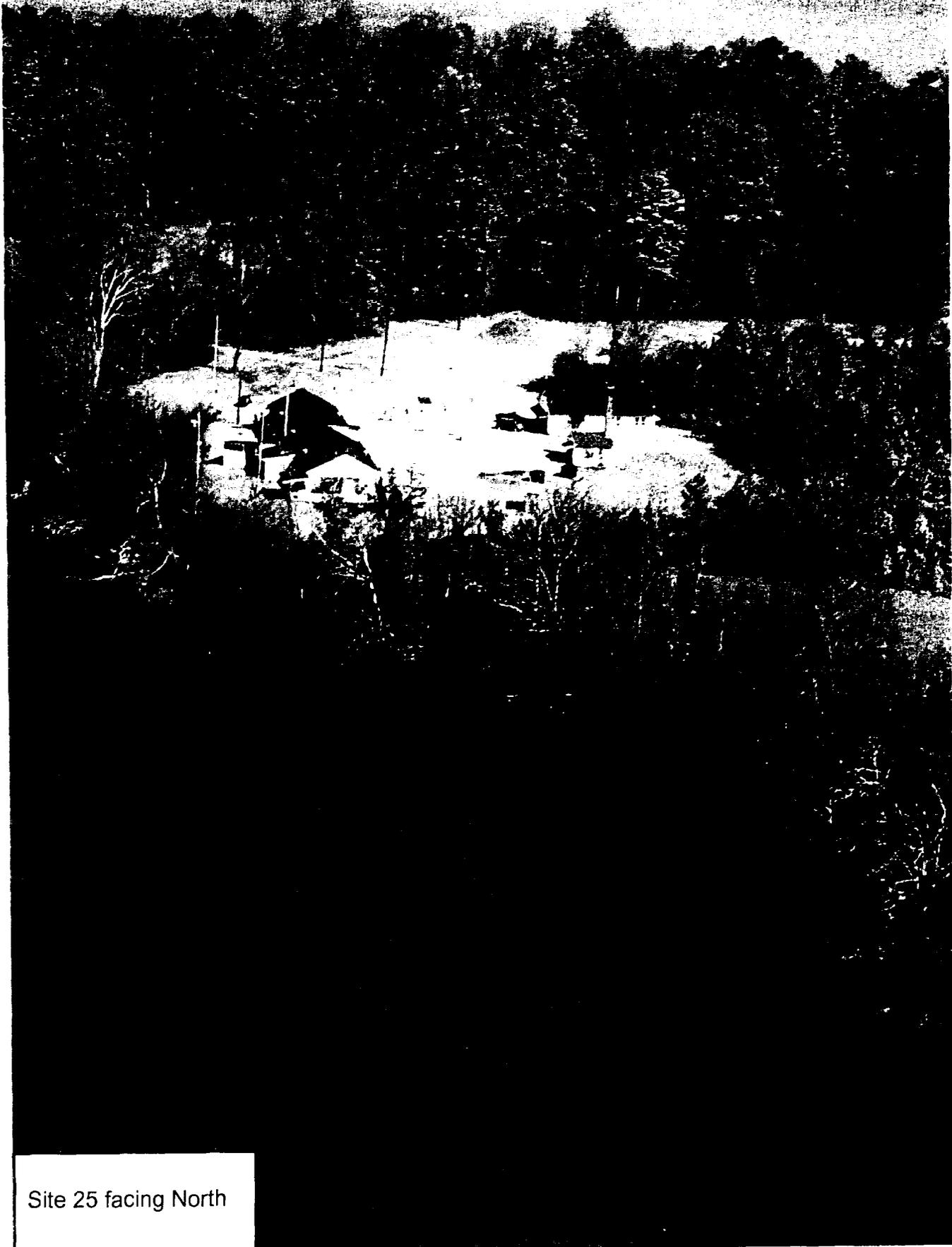
Site 24 facing West

## Site 24 - Aviation Field

Site 24 (a portion of former SSA 6) is an area (approximately 15 acres in size) located around the helicopter landing pad. It is bounded by Bellfield Road to the north, railroad tracks to the east, Main Road to the south, and storage areas to and west. The site is an open grassy area around the helicopter landing pad where mine components coated with PCB-1254 containing antifoulant were discovered in the subsurface soil. Historically, the area was used as an aviation field until 1927, after which it was used for storage of munitions in underground caches. Aerial photography indicates that peak storage activity on the ground surface occurred in 1968. No storage of liquid or hazardous waste was reported or observed. In addition, this area may also have been used briefly as an explosives burning area although available data do not indicate the presence of nitramines/nitroaromatics.



Site 24 - Debris Uncovered During Test Pitting Operations (November 1994)



Site 25 facing North

## Site 25 - Building 373 Rocket Plant

Site 25 (a portion of former SSA 7), the Rocket Plant, is approximately 0.14 acres in size and is located immediately northwest of Building 373. Site 25 consists of a 500-gallon (approximately) precast concrete pipe, which was used as an underground storage tank (UST), and the associated cast iron piping. The concrete pipe was installed vertically into the ground with a bottom section cast to the concrete pipe.

Prior to the 1960s, wash/rinse water from the cleanup of formulation/pouring equipment drained into a settling basin within the building for removal of suspended solids. The solids were open burned at Site 4 (Burning Pad Residue Landfill). The wash/rinse water subsequently was discharged into Felgates Creek. The discharge line to the creek was plugged in the early 1960s and a 500-gallon UST was installed to contain the wash/rinse water. From the 1960s to 1980s, the UST received batch wastes from NEDED assembly operations of 2.75-inch rockets as well as the wash/rinse waters. Once the tank was filled, the water was filtered through a carbon unit and discharged to the sanitary sewer system. The UST was closed in the early 1980s when the current aboveground storage tank (AST) was installed. Materials contained within the tanks consisted of binders, curatives, catalysts, stabilizers, and explosives.

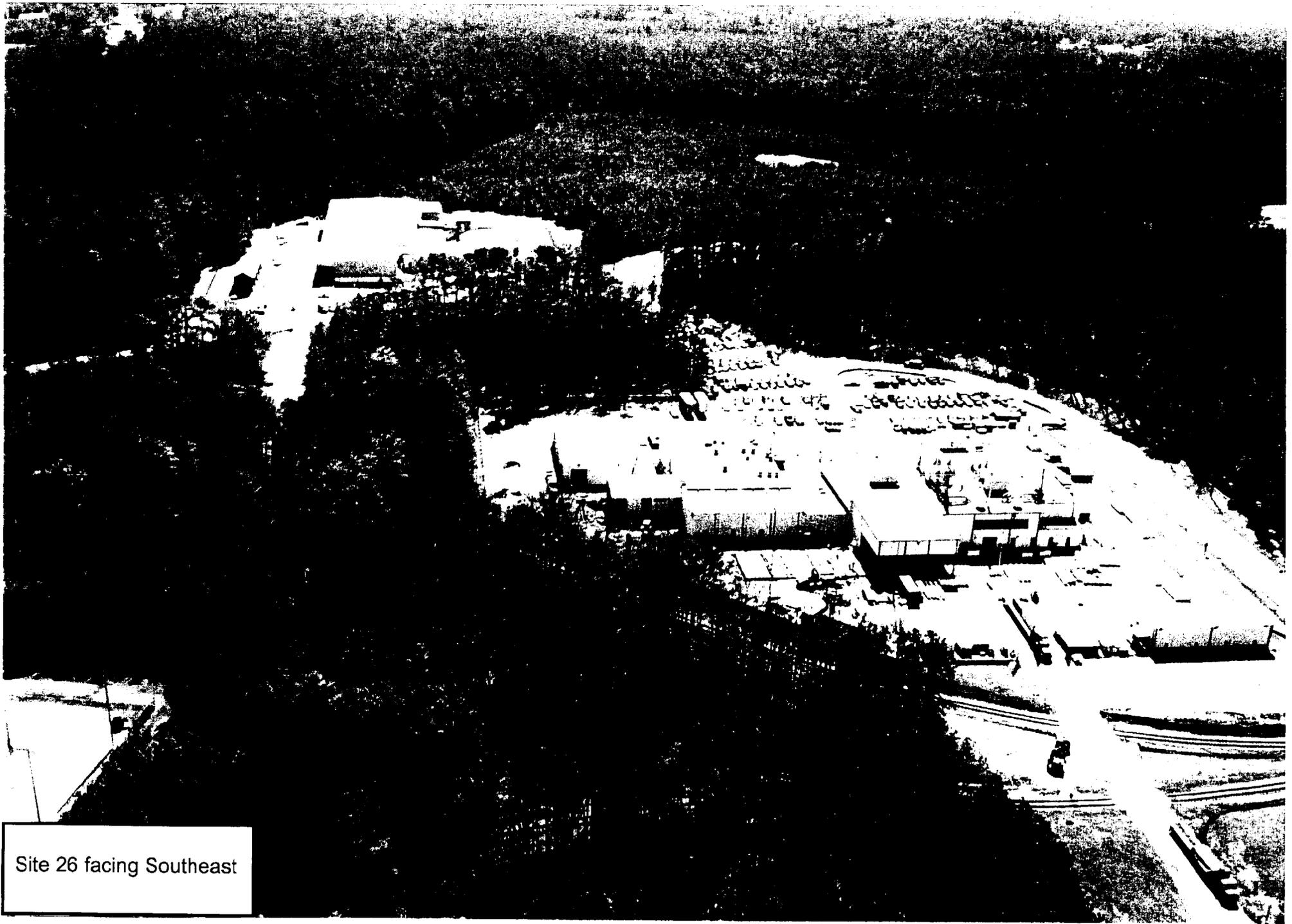
In addition to the above areas, USEPA Region III personnel reportedly found "hard waste" (empty mine casings and other miscellaneous wastes) in the woods south/southeast of SSA 7. A removal was conducted in June/July of 1996 to remove the 500-gallon UST and associated piping. During the removal action, the bottom section, which had been cast to the concrete pipe, was heavily stained. The soil from beneath the UST was removed. There were no visible signs of staining along the sides of the UST or in the soil surrounding the sides of the UST. A strong solvent odor was prominent during the removal activities.



Site 25 facing South



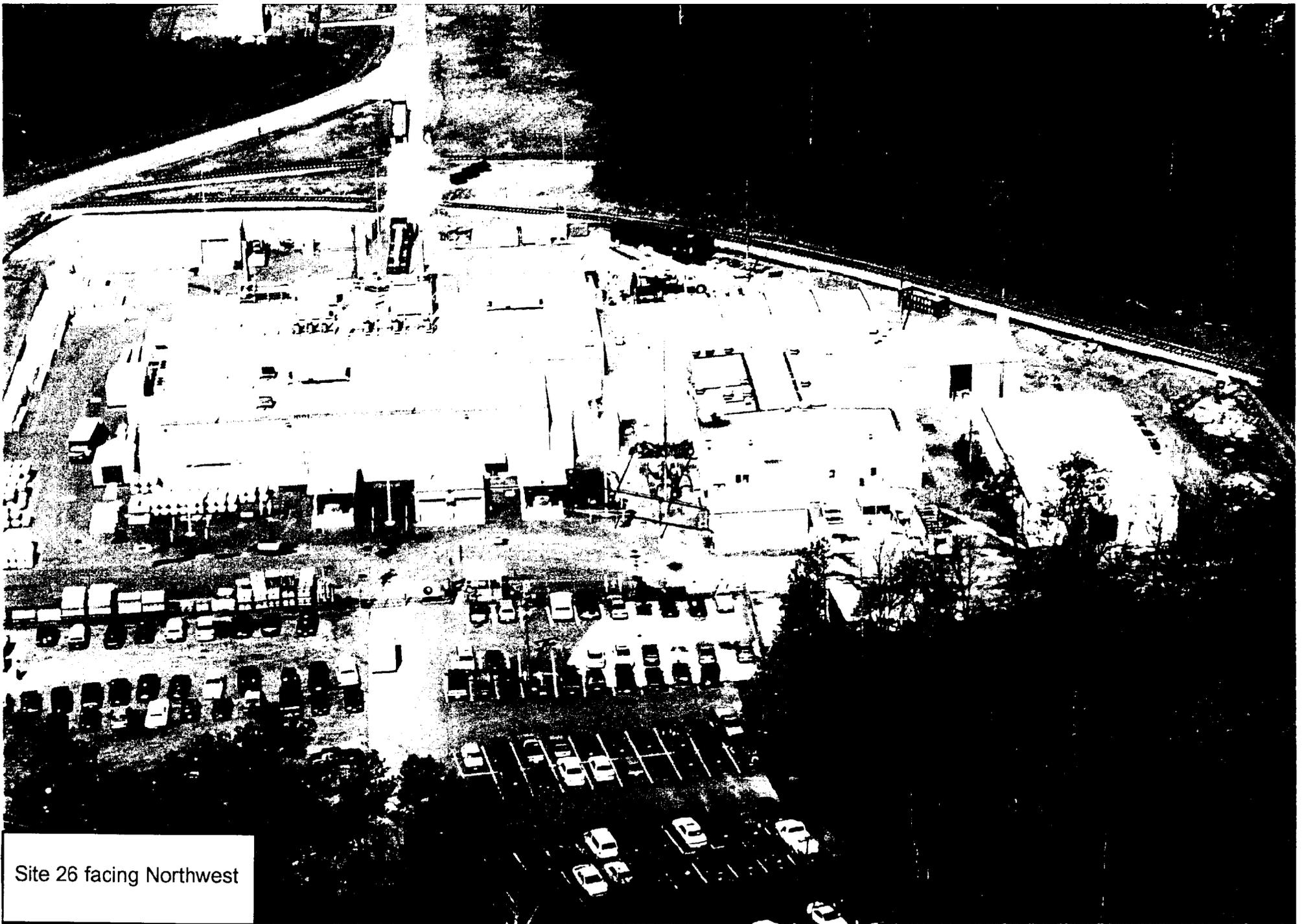
Site 25 - Debris Uncovered During Test Pitting Operations (November 1994)



Site 26 facing Southeast

**Site 26 - Building 1816 Mark 48  
Waste Otto Fuel Tank**

Site 26 (formerly SSA 18) is approximately 6.7 acres in size and is located in the central portion of the Station at Building 1816 north of Sharpe Road and west of the intersection of Sharpe Road and Lee Road. A 2,500-gallon concrete UST and network of ancillary drain pipes that was used formerly to store waste Otto fuel was located within this area. This fuel consists of a mixture of Otto fuel and water, which may have also contained oil, denatured ethyl alcohol, detergent, and trace amounts of cyanide, halogenated hydrocarbons, and heavy metals. In late 1987, waste Otto fuel was discovered leaking from the tank. The fuel was removed, the tank was cleaned, and a RCRA closure permit was filed. In March 1995, the 2,500-gallon waste Otto fuel UST was removed along with an 8,000-gallon UST located in the vicinity. Site 26 has been retained as an IRP site because of chlorinated volatiles detected in shallow groundwater. The extent of this contamination has not yet been adequately defined.



Site 26 facing Northwest



Site 26 facing Southeast



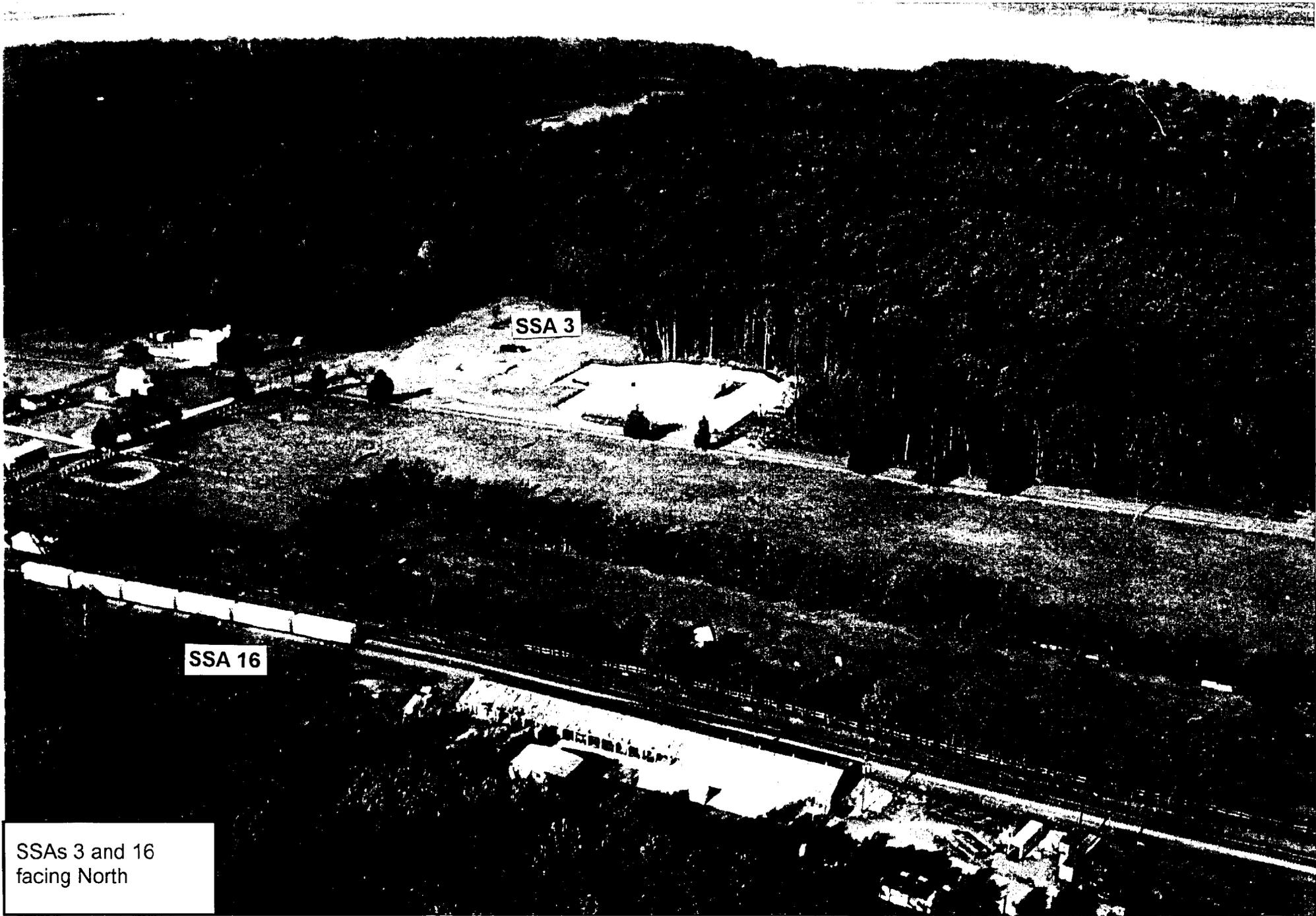
SSA 19

SSA 2

SSAs 2 and 19  
facing West (SSA 2  
is wooded area to the  
right of the photograph)

**SSA 2 - Former EOD  
Burning/Disposal Area**

SSA 2 is an irregular, U-shaped area located at the north end of the existing Explosives Ordnance Disposal (EOD) range and occupies an area of approximately 400 feet by 450 feet. The area was wooded and strewn with non-explosive arming devices, MK 46 shipping containers, various types of scrap metal, and debris. Numerous earthen berms and depressions indicate the historical use of bulldozers and other earth-moving equipment throughout the SSA. Demolition records indicate that the area was the original site of the EOD range for WPNSTA Yorktown and was actively used throughout the 1950s and 1960s for routine destruction of ordnance material. The area was closed in 1970 and operations were moved south to the present EOD range location. Anecdotal information indicates that the move was prompted by growing concerns that range operations might cause forest fires in the wooded areas bordering the SSA. A removal action was conducted at SSA 2 during the summer and early fall of 1994 to remove three dump truck loads of scrap metal, 14 containers of lead, and 11 live ordnance pieces. The scrap metal included torpedo casings, bomb casings, powder cans, used detonation devices, tractor parts, marsh matting and other miscellaneous debris. Based on the results of the SSP, no further RI/FS activities will be conducted at SSA 2; however, long-term monitoring of groundwater will be conducted as part of the Part B RCRA permit. Specifications of the long-term monitoring will be presented as part of the final permit.



SSA 3

SSA 16

SSAs 3 and 16  
facing North

### SSA 3 - Fire Training Pits and Vicinity

SSA 3 occupies an area of approximately 2.7 acres and is located just north of Main Road and Site 16, the West Road Landfill, in the north central portion of the Station. The area consists of three concrete oil pits; one is T-shaped and the other two are rectangular. One rectangular pit is located at the eastern end of the field, the second rectangular pit is located in the western end of the field, and the T-shaped pit is located in the central section of the field, where a patch of stressed vegetation is evident. Berms were built around each of the pit areas in 1986 and a roof was added to each area in 1991. Debris was reportedly placed in each of the pits, doused with jet fuel and set on fire. In addition, in the vicinity of the pits, there appeared to be portions of a tanker trailer that was formerly used for confined space entry training. The trailer is open on the bottom and placed directly on the soil. The inside of the trailer is blackened and burned. A removal action is currently being conducted (FY 1996) to remove the fire training pits.



SSA 3 facing West



SSA 3 - Fire Training Pits



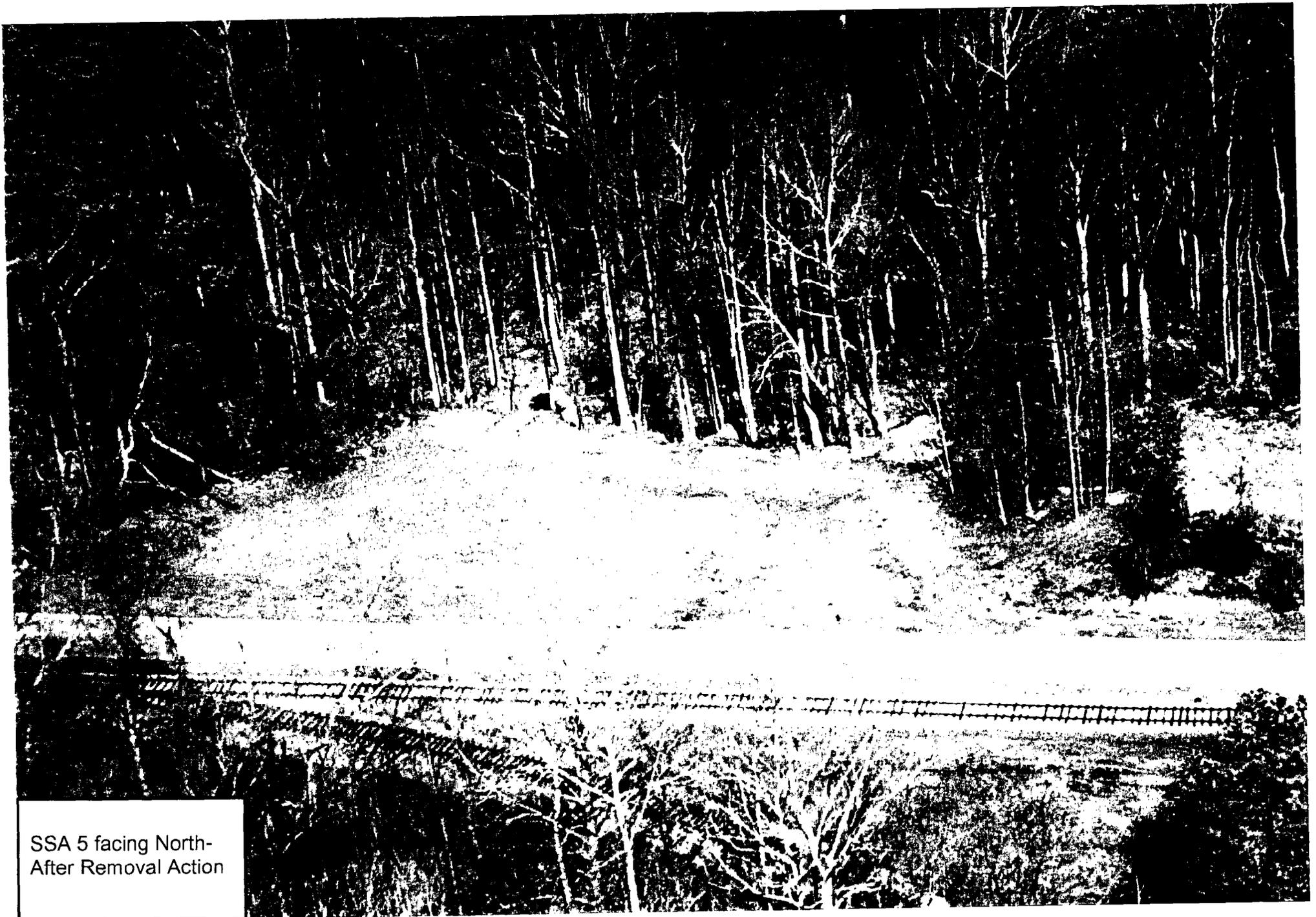
SSA 4 facing Northeast -  
After Removal Action

**SSA 4 - Weapons Casing/Drum  
Disposal Area**

SSA 4 occupies approximately one-half acre between Main Road and Bypass Road at the headwaters of one of the tributaries leading to Roosevelt Pond. The area consists of a ravine in which debris, including weapons casings and drums, were deposited. There is a flat, grassy area just along the roadway, indicating that this area may have been an old landfill. Some of the material in the ravine may have been present as a result of landfilling activities. A removal action was conducted at SSA 4 during the summer and early fall of 1994 to remove surface debris in the ravine.



SSA 4 facing  
Southwest -  
Drainage Area



SSA 5 facing North-  
After Removal Action

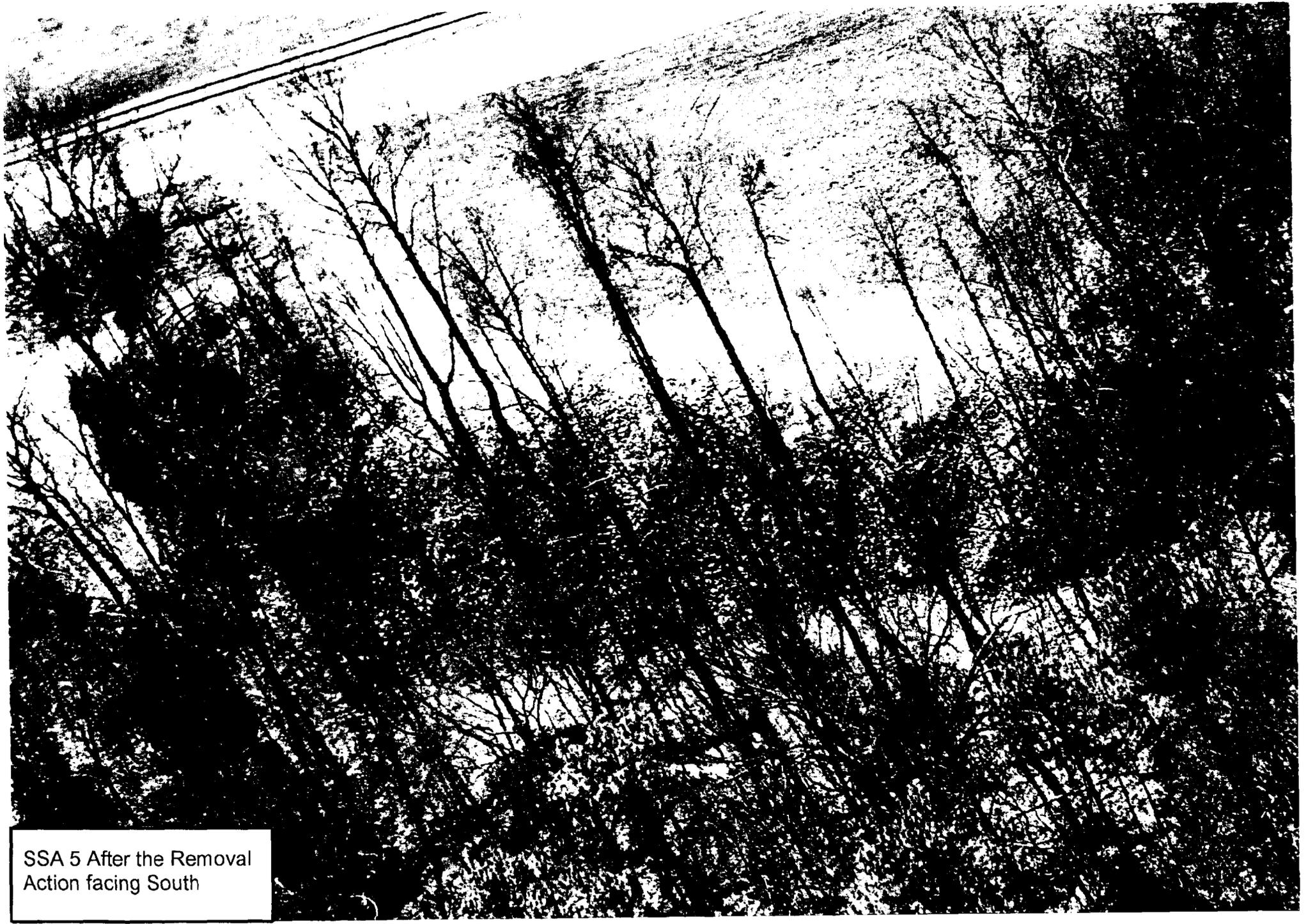
## SSA 5 - Bypass Road Landfill

SSA 5 is located just north of Bypass Road and covers approximately 0.9 acres. This area consists of a ravine in which debris is evident. A small stream passes through the site and exits from a culvert that begins south of Bypass Road. The small stream is the second tributary which flows into Roosevelt Pond. Both Bypass Road and the railroad system were constructed in 1919 and are still in use.

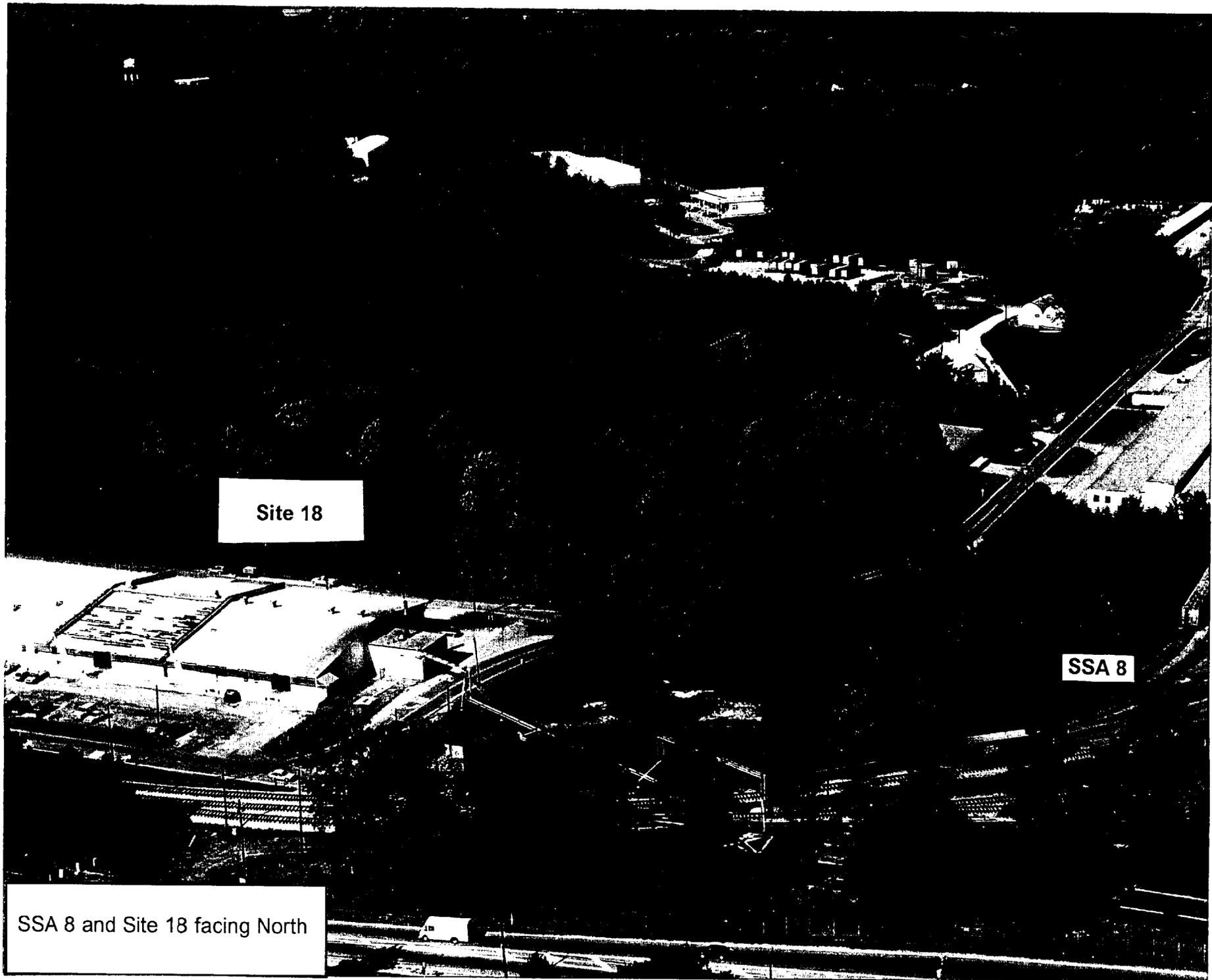
Metal debris, with lesser amounts of concrete and miscellaneous materials, were present at SSA 5. Two empty drums were present. No wood materials were identified among the surface debris piles. A removal action was conducted at SSA 5 during the summer of 1994 to remove the small amount of ordinary debris including empty drums, pipes, scrap metal, and rubble.



SSA 5 facing West -  
After Removal Action



SSA 5 After the Removal  
Action facing South



Site 18

SSA 8

SSA 8 and Site 18 facing North

**SSA 8 - Building 350 Rail Roundhouse  
Maintenance Area Trench Outfall**

SSA 8 occupies an area of approximately 0.4 acres, and is located outside Building 350, on the western side of the railroad tracks, in the southeastern corner of the Station. Within Building 350 there is one concrete trench, which was (and is presently) used to access train engines from below. The trench is used for train maintenance and there are no records of any releases from the trench. Some dripping from the maintenance activities may have fallen into the trench, but these were covered with absorbent material and put into drums for disposal. The floor of the trench appears heavily stained; however, the trench drain has been plugged. The drain pipe from the trench leads to a catch basin approximately 100 yards south of the locomotive repair building. The outfall associated with the catch basin extends under the railroad tracks toward Bollman Road. Natural surface drainage (overland flow) extends under Bollman Road toward the wooded area east of Site 18.

Photographs for this Site Screening Area are not available at this time.

**SSA 9 - Building 1751 Chemistry Laboratory  
Neutralization Unit and Drainage Area**

SSA 9 occupies an area of approximately 1.9 acres, and is located adjacent to Building 1751 in the north central portion of the Station (near Site 8, the NEDED Explosives-Contaminated Wastewater Discharge Area). This SSA consists of a below-grade cylindrical unit into which acids from the Chemistry Lab are discharged for neutralization. The integrity of the unit is unknown, it is below ground. In addition, there are four underground septic tanks in the area. Historical records indicate that industrial waste may have been stored in these tanks.

Photographs for this Site Screening Area are not available at this time.

**SSA 10 - Building 28 X-Ray  
Facility Tank Drain Field**

SSA 10 is located at Building 28 in the south central portion of the Station and occupies an area of approximately 5.8 acres. The area consists of a septic tank drain field that receives sanitary wastewater from the X-Ray Facility at Building 28. Before silver recovery units were installed, the tanks may have stored hazardous wastes. Stressed vegetation is apparent in this area.

Photographs for this Site Screening Area are not available at this time.

## SSA 11 - Building 3 Neutralization Unit

SSA 11 is located at the southeast corner of Building 3 in the eastern section of the Station (southwest of Site 12 near SSAs 12 and 13) and occupies an area of approximately 0.2 acres. SSA 11 consists of an open, metal tank (approximately 3 feet by 5 feet by 3 feet deep) and associated trench and sump. This tank was apparently used for neutralization of wastes from an unknown process, but has been inactive for at least 15 years. Chipping and pitting are evident in the trench and sump. The trench drains to the storm sewer system. The outfall from the SSA 11 storm sewer system is located in the vicinity of the headwaters of Ballard Creek.

Photographs for this Site Screening Area are not available at this time.

**SSA 12 - Public Works Storage  
Yard/Building 683 Vicinity**

SSA 12 is approximately 1.5 acres in size and is located in the Public Works (PW) storage yard and the surrounding area in the eastern portion of the Station near Site 12 and SSAs 11 and 13. Surface water bodies are not located in near proximity of this SSA. One area consists of a field, approximately 150 feet by 300 feet, in which waste generated by the Public Works Department is stored. Drums of used motor oil and used batteries were observed on pallets and directly on the ground. Historically, the area was used to store old tires. Another area, controlled by Building 645, consists of a fenced in yard used to store new electrical transformers and other electrical equipment. Used or damaged transformers were not stored at SSA 12. The new transformers were staged on pallets before installation. Historical records indicated that wastes may have been stored in this area in the past. In addition, there is a formerly wooded area where demolition debris were reportedly deposited. Concrete debris are visible at the edge of the area. Currently, approximately one-half of the area is used for vehicle storage.

In September 1994, a soil investigation was conducted by Baker at SSA 12 related to the proposed location of a new building (P-518). This investigation involved the sampling of surface and subsurface soil to determine if site soil was contaminated, and thus, affecting the construction of the new building.

In February 1996, the potential presence of an UST was discovered during site reconnaissance. It is reported that the UST is a gasoline UST and as such will be addressed under the Department of Defense (DoD) UST Program.

Photographs for this Site Screening Area are not available at this time.

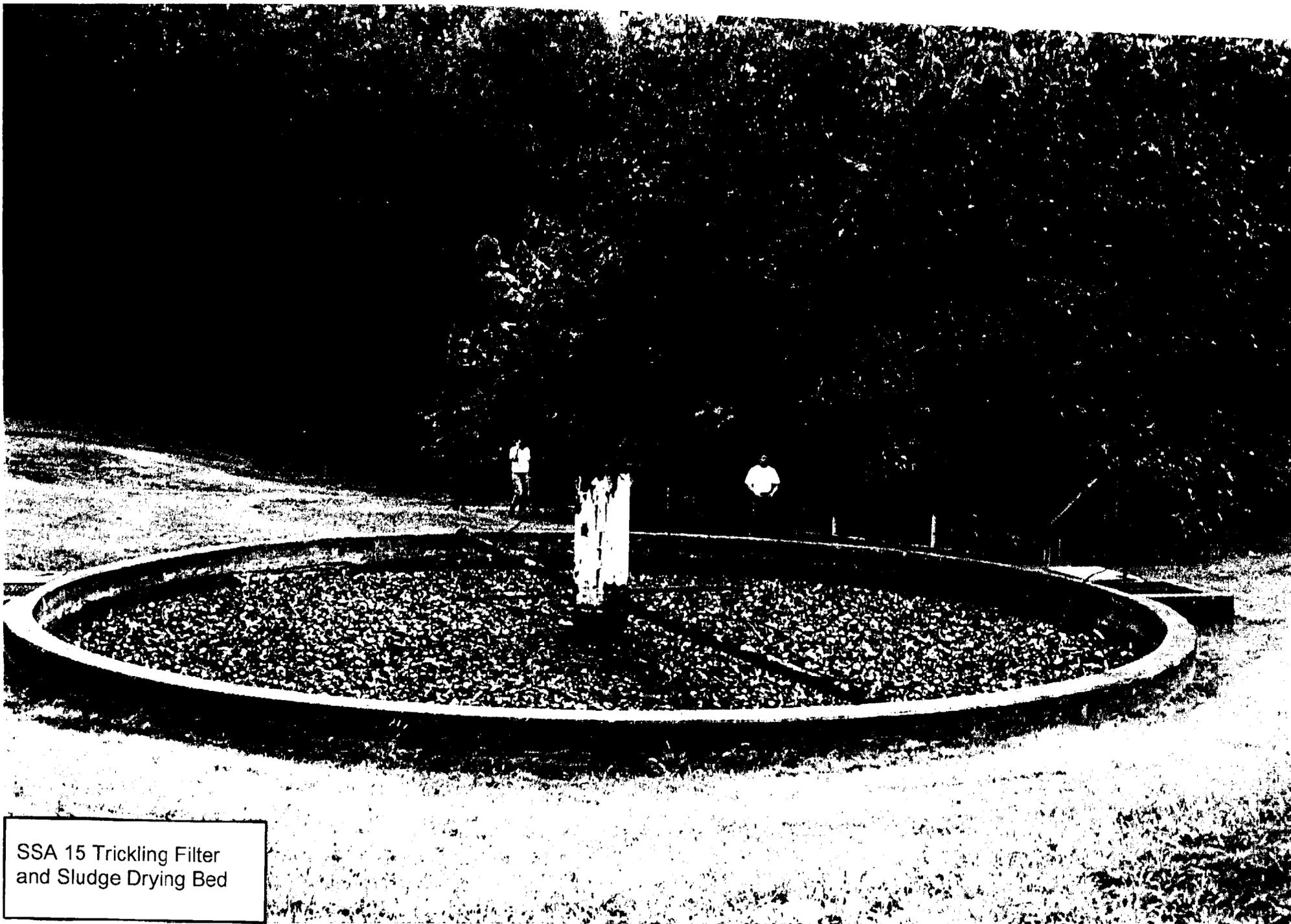
**SSA 13 - Building 529 Battery  
Drainage Area**

SSA 13 occupies an area of approximately one-half of an acre and is located outside of Building 529 in the eastern portion of the Station near Site 12 and SSAs 11 and 12. The area consists of pavement where neutralized battery washwater, created from washing the external portion of the batteries and neutralizing the washwater with baking soda, was released and migrated to a storm drain approximately 100 feet away. The storm drain is located below the southeastern corner of the concrete platform of Building 529. The pavement on the western side of Ballard Road and the eastern side of Building 529 is sloping on all sides toward the storm drain. The surface water is channeled to the storm sewer system and eventually to the Ballard Creek headwaters. The entire area is asphalt covered. The pavement is currently worn, but intact, with some vegetation apparent.

Photographs for this Site Screening Area are not available at this time.

**SSA 14 - Building 537 Discharge to  
Felgates Creek**

SSA 14 occupies an area of approximately 0.4 acres and is located outside of Building 537 between Site 8 (NEDED Explosives-Contaminated Wastewater Discharge Area) and SSA 9 (Building 1751 Chemistry Laboratory Neutralization Unit and Drainage Area), in the north central portion of the Station. This SSA consists of a pipe leading from the building, through which nitramine-contaminated wastewater was reportedly discharged to Felgates Creek. Some rubble and rusted piping were found where this pipe was reportedly located.



SSA 15 Trickling Filter  
and Sludge Drying Bed

**SSA 15 - Sewage Treatment Plant #1/Sludge  
Drying Beds and Discharge Area**

SSA 15 is comprised of the sewage treatment plant (STP) #1/Sludge Drying Beds and Discharge Area and represents AOCs 5, 6, and 7, which are also former sewage treatment plants. SSA 15 is located in the southeastern corner of the Station, east of Buildings 3 and 4 and south of Site 12 (Barracks Road Landfill). This site covers approximately 0.3 acres and consists of an Imhoff tank, a trickling filter, a sludge drying bed, and a chlorination unit. Wastewater reportedly entered the Imhoff tank, which operated as a primary settling basin for the waste. The water then was passed through the trickling filter for biological treatment and pumped back to the Imhoff tank for secondary settling. The water was chlorinated in the chlorination unit and discharged to a tributary of Ballard Creek. Sludge from the Imhoff tank periodically was removed and placed in the sludge drying bed. STP #1 received and managed only sanitary waste from physical plants and the Officer's Club located nearby, but may have treated nitramine-containing and other industrial wastewater. WPNSTA Yorktown personnel have reported, during the operation of STP #1, a mercury-containing bearing on the trickling filter cracked, allowing mercury to be released. Also, WPNSTA Yorktown personnel indicated that sludges from SSA 15 were transported to SSA 6 and landfarmed. Currently, substantial vegetation is present in the sludge drying bed. Based on the results of the SSP, no further RI/FS activities will be conducted however, because of its proximity to Site 12 and the Industrial Area, final action at SSA 15 will be addressed in the Site 12 ROD. No further RI efforts are recommended for AOCs 5, 6, and 7.

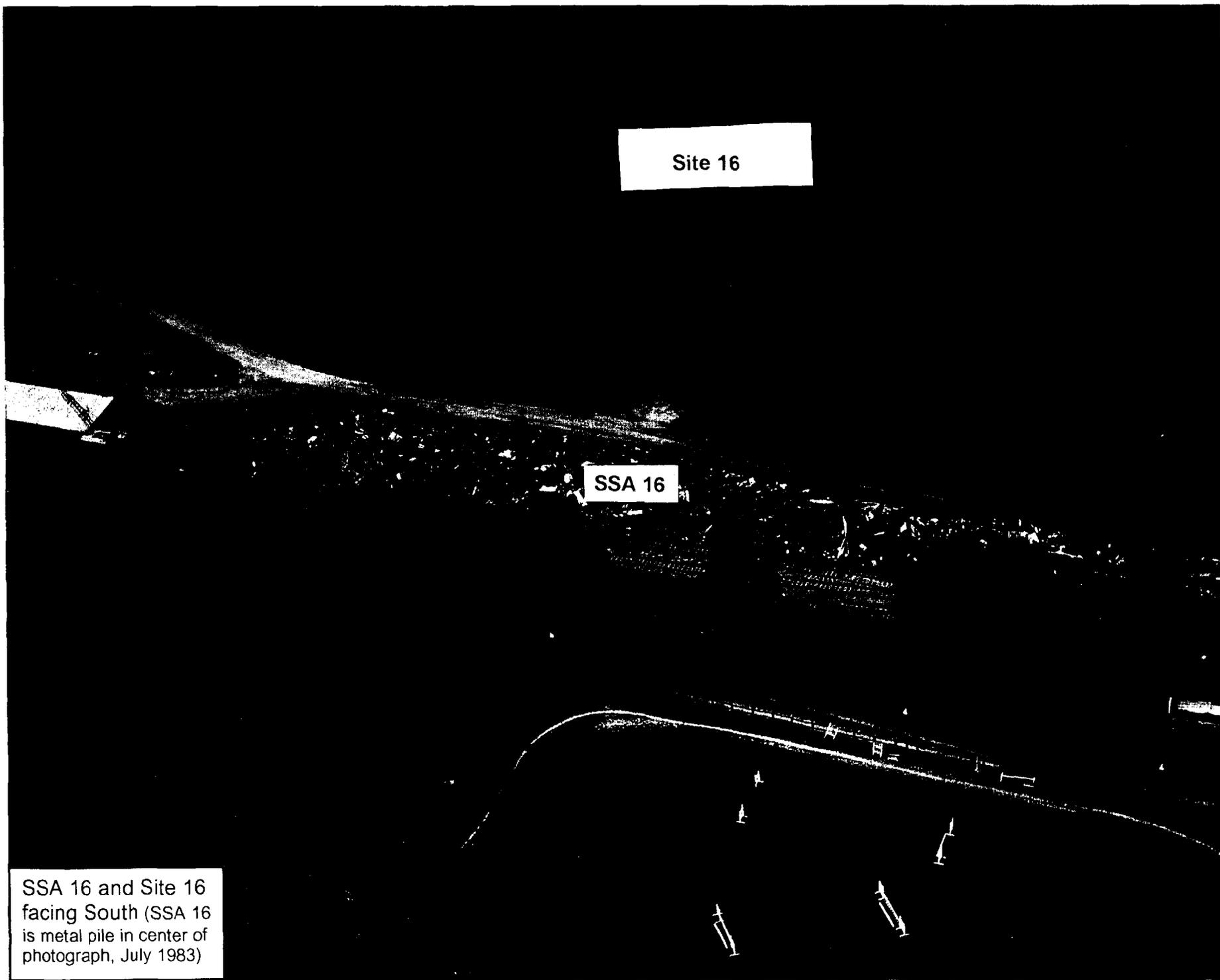


SSA 15 Wastewater  
Discharge Point into  
Ballard Creek Tributary

Site 16

SSA 16

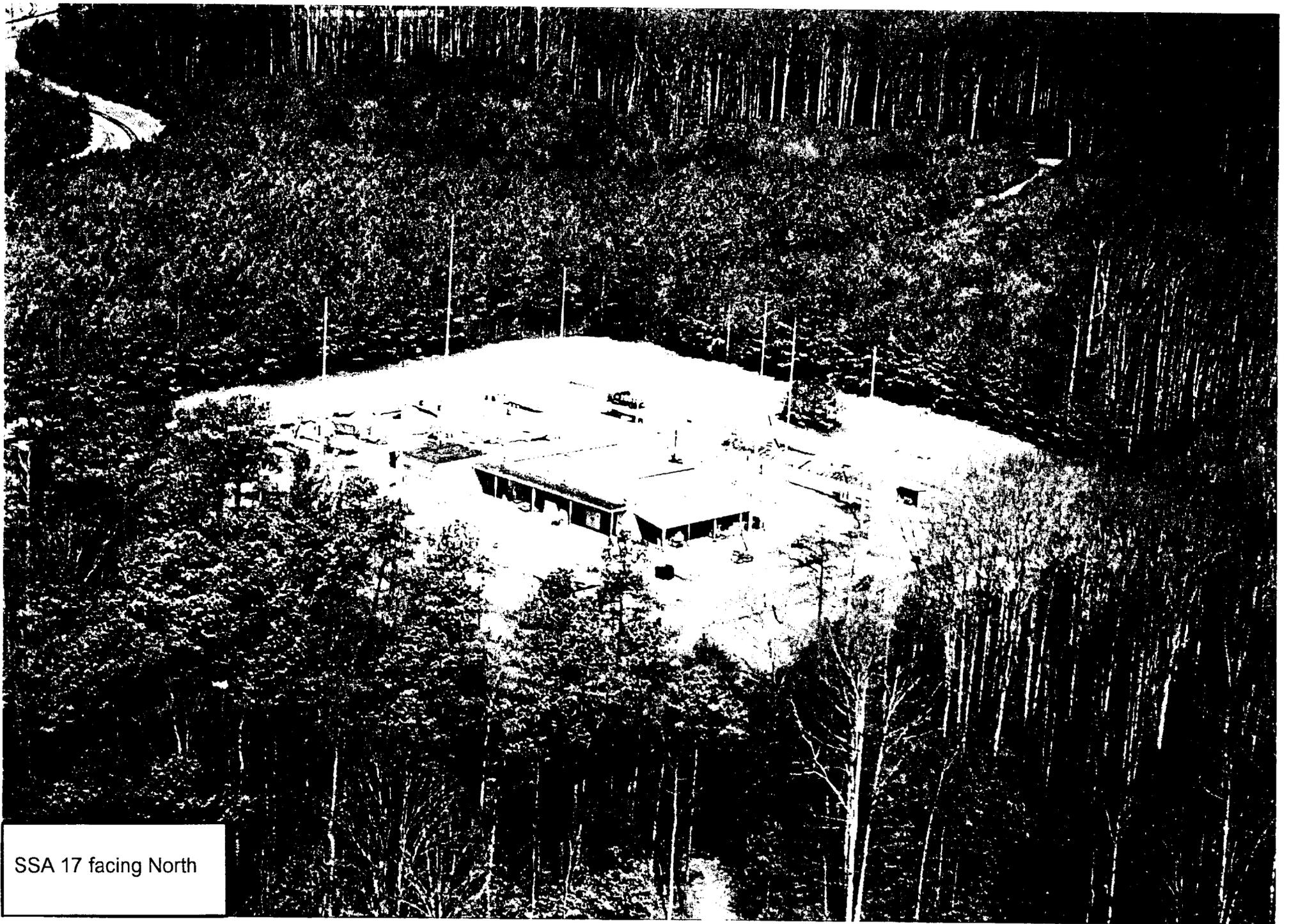
SSA 16 and Site 16  
facing South (SSA 16  
is metal pile in center of  
photograph, July 1983)



**SSA 16 - Building 402 Metal  
Disposal Area and Environs**

SSA 16 is located between West Road and a set of railroad tracks, just west of Building 402 and encompasses the northern area of Site 16. The area is a large dirt field, approximately 0.4 acres in size, where scrap metal was stored. Site 16/SSA 16 also is referred to as OU II. Dumpsters containing scrap metal are located on the lower southwest side of the yard; scrap metal and empty drums also are scattered over the ground surface near these dumpsters. This area was reportedly used for scrap metal storage prior to the construction of the Hazardous Waste Storage Facility.

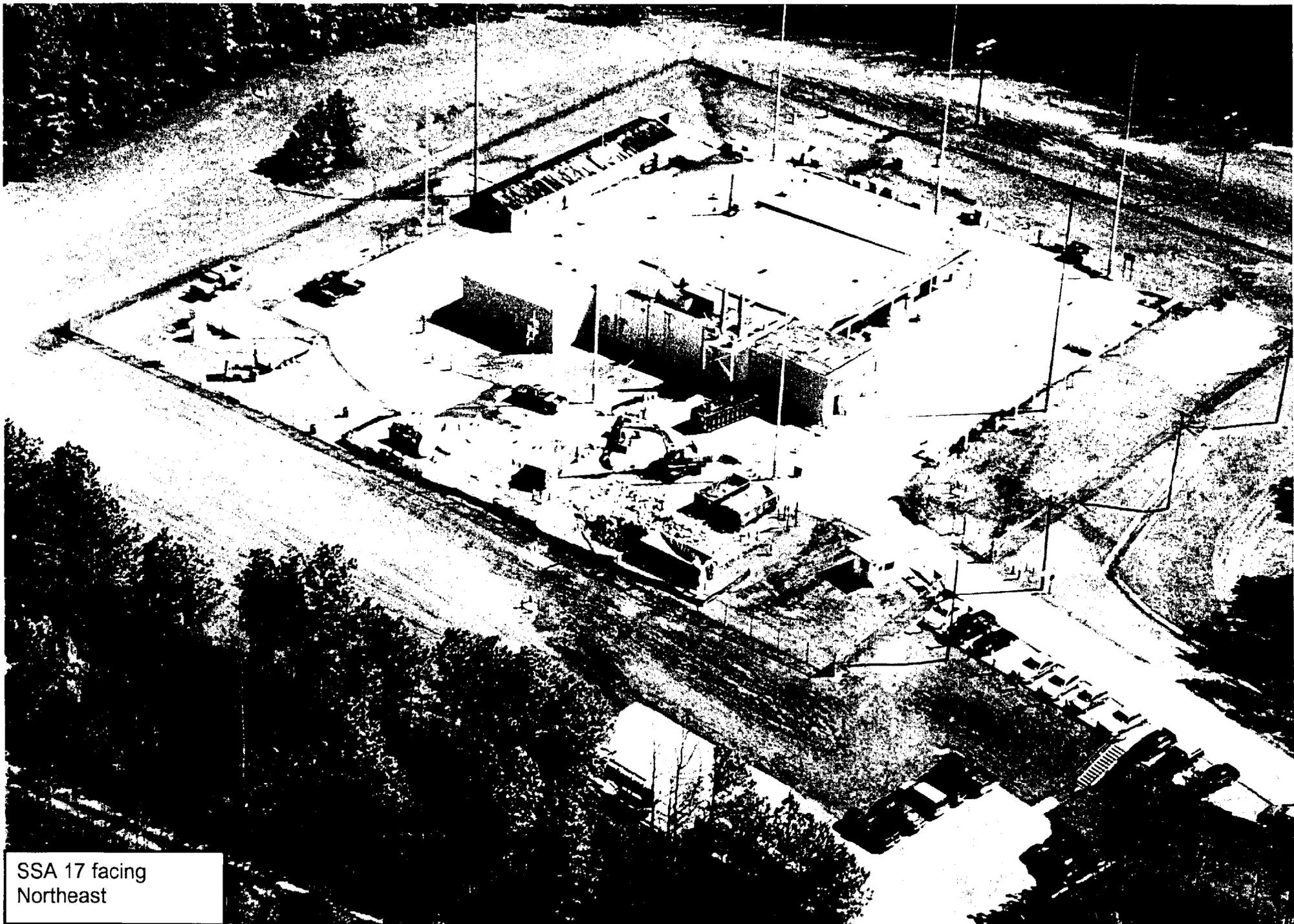
SSA 16 was evaluated in conjunction with Site 16 because of its near proximity and geophysical data which indicate overlap between the two areas. Based on the results of the risk evaluation and limited confirmational sampling by USEPA Region III, a "No Further Remedial Action with Institutional Controls" ROD was finalized for Site 16/SSA 16 (OU II) on September 29, 1995.



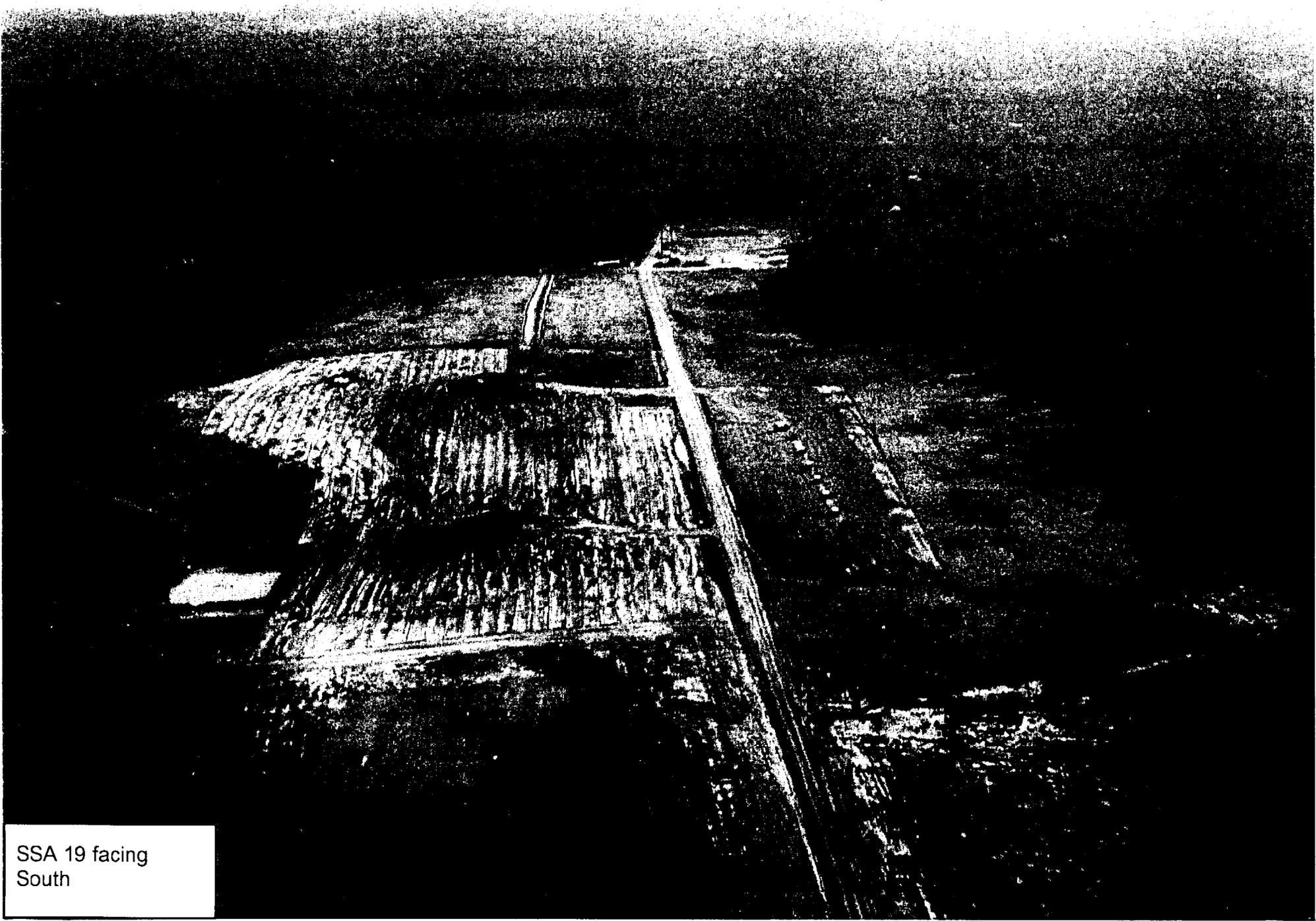
SSA 17 facing North

**SSA 17 - Building 1456 Mark 46  
Waste Otto Fuel Tank**

SSA 17, which occupies an area of approximately 330 feet by 310 feet, is located northwest of SSA 18 in the central portion of the Station. This SSA is located approximately 400 feet north of Sharpe Road and approximately 2,000 feet northwest of the intersection of Sharpe and Lee Roads. This area previously consisted of an inactive, 5,000-gallon, underground steel tank and a network of ancillary drain pipes; the tank was located under the parking apron. This tank was used to store waste Otto fuel generated during cleaning procedures associated with MK 46 torpedo activities. Waste Otto fuel is a mixture of Otto fuel and water which potentially contained oil, denatured ethyl alcohol, detergent, and trace amounts of cyanide. In June 1988, a tank integrity test was performed on the waste Otto fuel tank. The tank system failed the hydrostatic integrity test and was subsequently taken out of service, the floor drains leading to the tank were sealed, and a RCRA closure and post-closure plan was submitted to VDEQ in November 1988. The 5,000-gallon waste Otto fuel UST system was removed in March 1995. The MK 46 torpedo shop subsequently accumulated waste Otto fuel in compatible, 55-gallon drums, which were stored for less than 90 days prior to transport off site for disposal. Waste Otto fuel is not currently generated or stored at SSA 17. Based on the results of the SSP, no further RI/FS activities will be conducted at SSA 17.



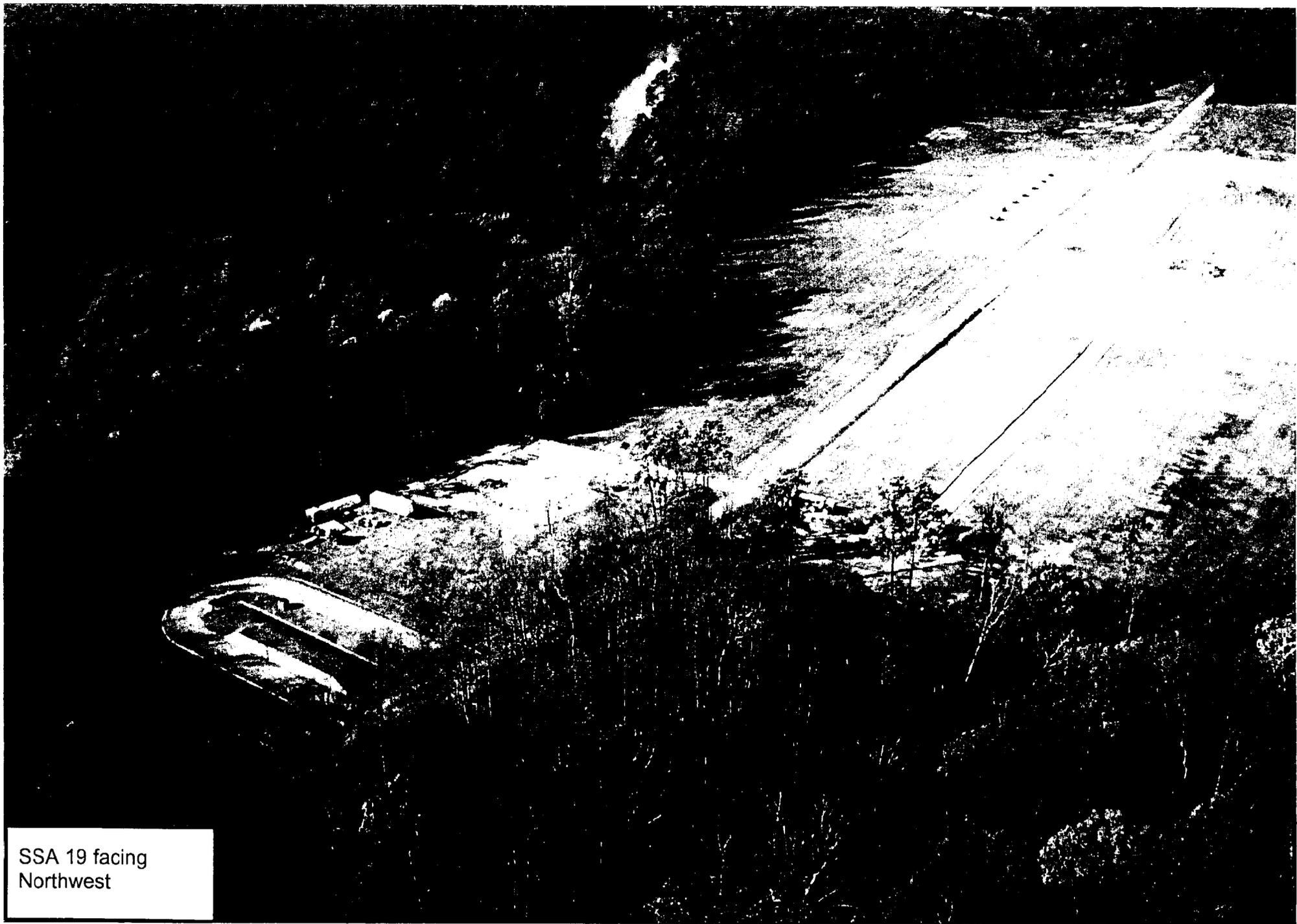
SSA 17 facing  
Northeast



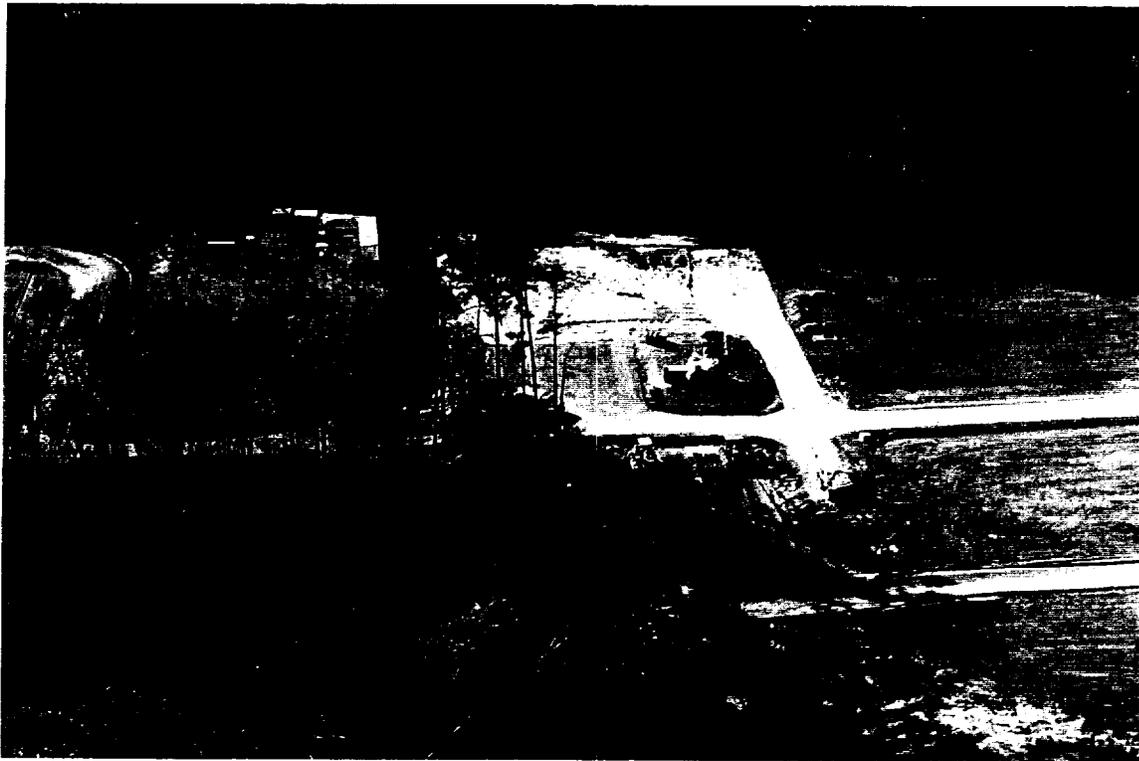
SSA 19 facing  
South

**SSA 19 - Beaver Road/Ponds 11 and 12  
Drainage Area and Environs**

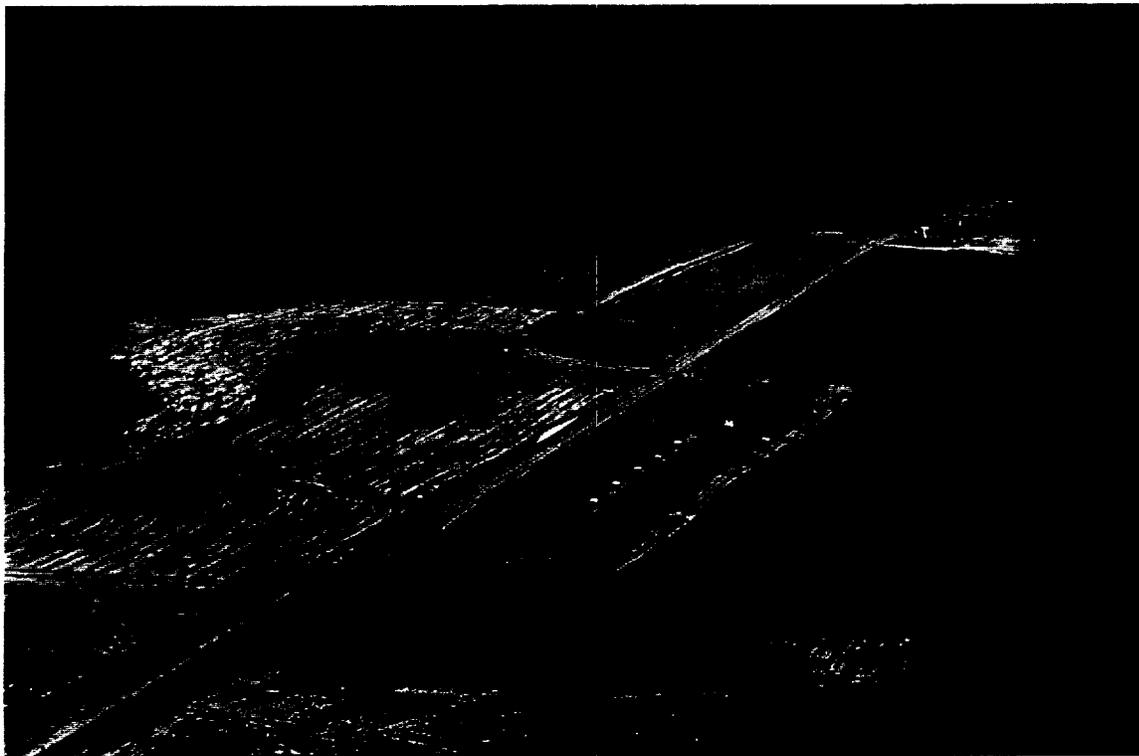
SSA 19, which occupies an area of approximately 164 acres (3,000 feet by 3,500 feet), is located in the northwestern section of the Station and encompasses the area surrounding the EOD range, including drainage into Ponds 11 and 12. A smaller pond, Pond 11A, is situated along the northwest perimeter of the SSA. SSA 19 is circumjacent to SSA 2. The area is used for explosive waste destruction. The EOD range began operations in 1970 when the former disposal range (SSA 2) was taken out of service. Soil is stacked approximately 40 feet above ground surface, holes are dug about 12 to 20 feet into the mound of soil, the holes are filled with explosive ordnance and backfilled. The explosives are detonated; the same soil is used repeatedly. During the winter, this area is covered and grass is grown to prevent erosion. Unlined settling ponds collect runoff, through pipes, from this area. Effluent from these ponds may discharge to nearby Ponds 11 and 12 and ultimately to King Creek and the York River. In addition, nine metal containers of varying sizes are used for burning explosive waste when hotter burning is required. This type of burning is performed one to two times per year, primarily in the summer. Based on the results of the SSP, no further RI/FS activities will be conducted at SSA 19.



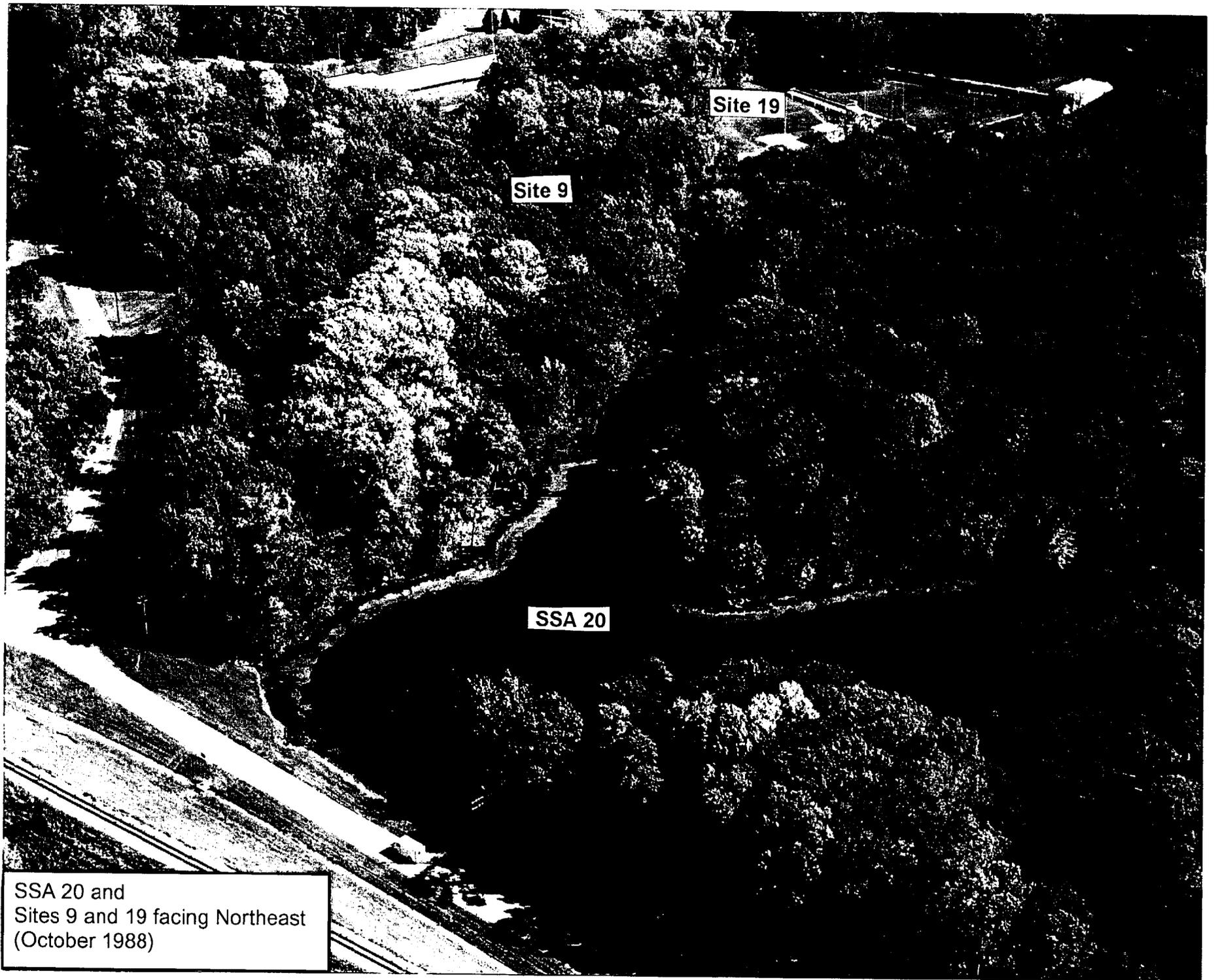
SSA 19 facing  
Northwest



SSA 19 -Staging Area (Turret Area) facing West (southern portion of SSA 19)



SSA 19 facing Southeast



SSA 20 and  
Sites 9 and 19 facing Northeast  
(October 1988)

## SSA 20 - Lee Pond

Lee Pond is an approximately 4.1 acre pond located in the east central portion of the Station. The pond receives drainage from Building 10 at Site 9 located due east of the pond. The drainage area is approximately 500 to 600 feet in length and was subjected to a limited removal action in 1994. Lee Pond also receives stormwater runoff from the industrial area and sites therein such as Sites 18 and 19 and SSAs 8 and 22.

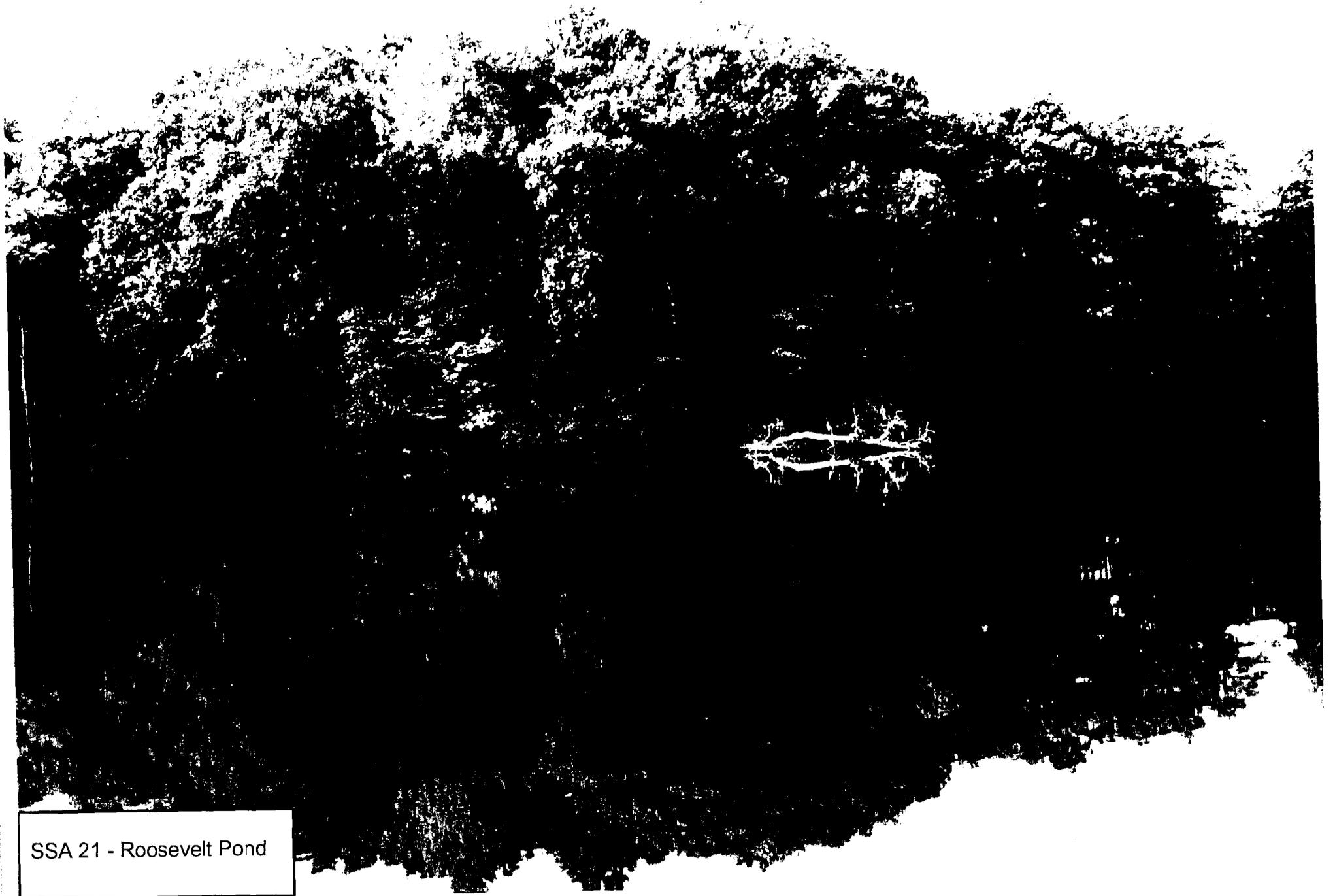
Lee Pond empties into a channel which in turn flows around the Site 16/SSA 16 study area into Felgates Creek. The pond has been subjected to limited investigations by the Commonwealth of Virginia in 1994 and a Focused Biological Sampling and Preliminary Risk Evaluation. Water levels in Lee Pond are raised and lowered during summer and winter respectively for support of the local ecology.



SSA 20 facing West  
to Site 9



SSA 20 facing South



SSA 21 - Roosevelt Pond

## SSA 21 - Roosevelt Pond

Roosevelt Pond is an approximately 22.2 acre pond located in the eastern portion of the Station. The pond receives stormwater from the industrial area and sites therein such as SSAs 4 and 5.

Roosevelt Pond empties into the York River. The pond has been subjected to limited investigations by the Commonwealth of Virginia in 1994 and a Focused Biological Sampling and Preliminary Risk Evaluation.

Photographs for this Site Screening Area are not available at this time.

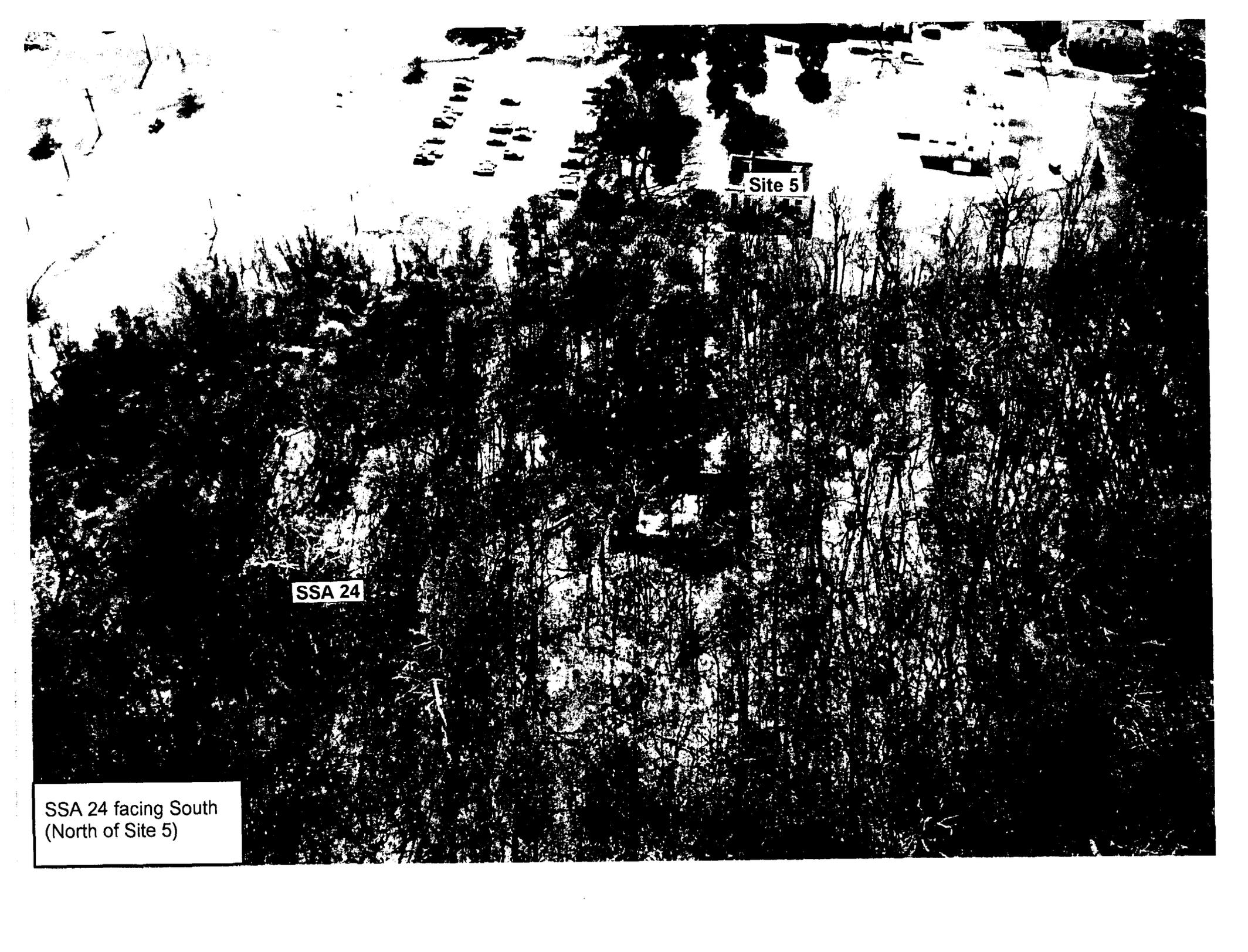
## SSA 22 - Sand Blasting Grit Pile

Site Screening Area 22 (formerly AOC 4) is an area which consists of approximately 0.5 acres in the eastern portion of WPNSTA Yorktown adjacent to Building 530. Building 530 was built and put into operation in 1945 and operated until the early to mid 1980s. Bomb fins and wings, inert bomb casings, and various other inert ordnance items were grit blasted inside Building 530 in a blasting booth and outside at the northern end of the building near a personnel door. Blasting material may have been composed of coal slag or steel grit. The blasting booth within the building utilized a dust collector. The dust which was accumulated in the dust collector may have been deposited in the vicinity of the northern side of Building 530. AOCs were investigated in 1995 by Baker Environmental, Inc. (Baker). Elevated concentrations of cadmium were detected in SSA 22 soil samples which warranted its retention for further investigation under the SSP.

Photographs for this Site Screening Area are not available at this time.

## SSA 23 - Coal Storage Area

The Coal Storage Area (formerly AOC 21) is an area of approximately 1 acre adjacent to Building 708. Coal was stored in this area from 1953 to the 1970s. The coal pile was surrounded by a 9-inch thick reinforced concrete wall. The walled in storage area is referred to as Building 1827. Every 20 feet a hole 2 by 6 inches was located at the ground surface of Building 1827 on the northern side of the walled area. These holes were to release water from the coal storage area. Currently, only residual coal remains within the coal storage area. As with other AOCs, SSA 23 was investigated in 1995 and elevated concentrations of inorganics including arsenic and vanadium were detected in surface soil samples. Some samples were collected near the drainage holes in the wall surrounding the coal pile. Additional investigation under the SSP is therefore necessary to determine potential human health risks and ecological concerns associated with this SSA.

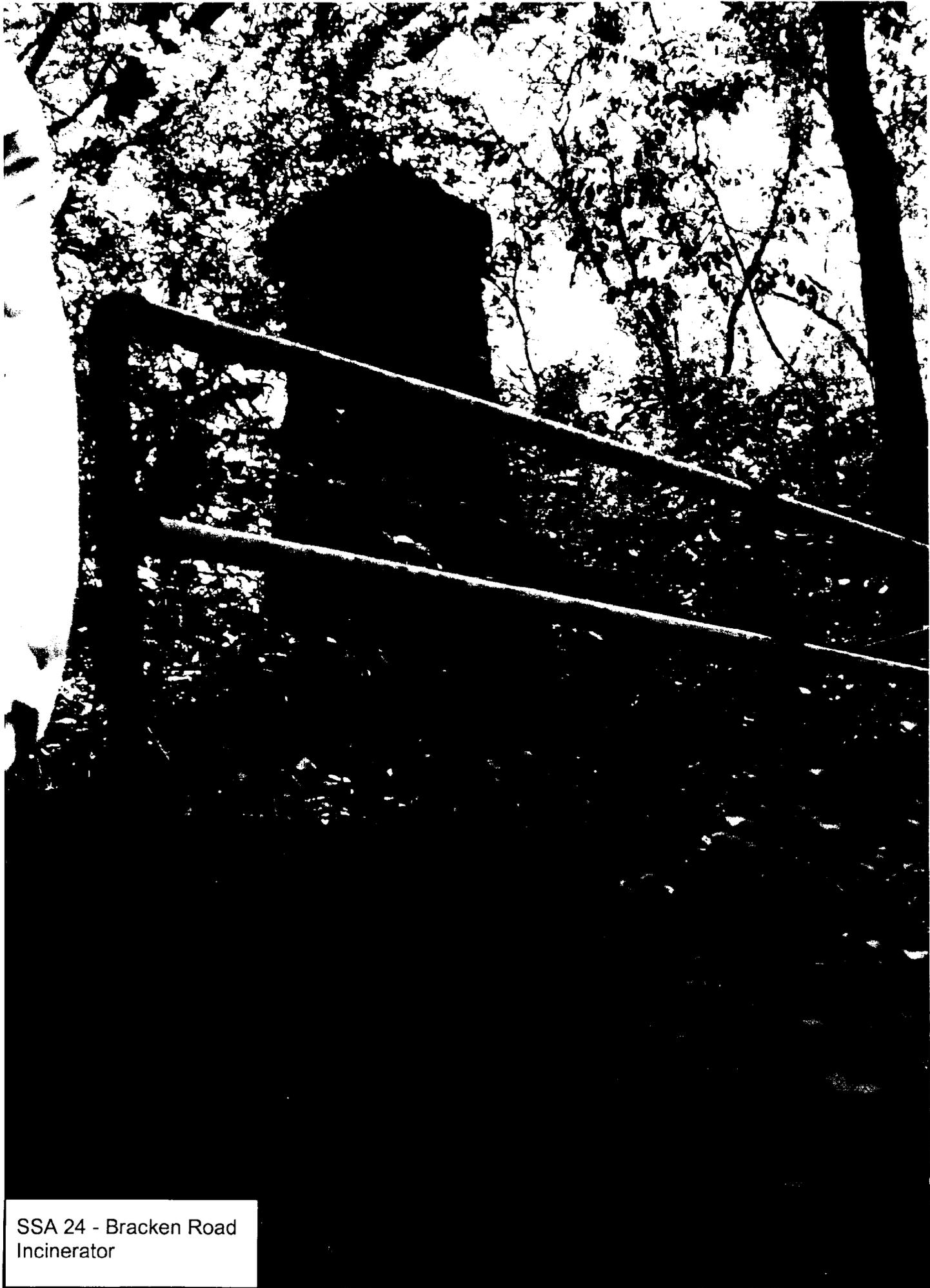


SSA 24

SSA 24 facing South  
(North of Site 5)

**SSA 24 - Bracken Road Incinerator  
and Environs**

The Bracken Road Incinerator (formerly AOC 22) is in an area approximately 0.1 acres located north of Site 5 (Surplus Transformer Storage Area), northeast of a cooling pond (76A), and south of railroad tracks. The USEPA conducted sampling activities and detected metals and nitramine compounds exceeding regulatory screening levels. Additional investigation under the SSP is therefore necessary to determine potential human health risks and ecological concerns associated with this SSA.



SSA 24 - Bracken Road  
Incinerator