

Naval Weapons Station Earle

Community Relations Plan October 1999



This plan outlines community relations activities to be conducted during the Remedial Investigation/Feasibility Study and Remedial Design/Remedial Action phases of the Navy's Installation Restoration Program.

Anyone having further questions concerning this plan, please write to:

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This plan is divided into the following sections:

1. Overview of Community Relations
2. Implementation Responsibility
3. Capsule Site Description
4. Community Background
5. Highlights of the Community Relations Program
6. Activities and Personnel
7. Information Resources

Appendices

- A Installation Restoration Program Summary, October 1999

**NAVAL WEAPONS STATION EARLE
INSTALLATION RESTORATION PROGRAM
COMMUNITY RELATIONS PLAN**

1. Overview of Community Relations Plan

As part of the Navy's Installation Restoration Program (IRP), the Navy is currently studying and cleaning up sites at Naval Weapons Station Earle associated with past disposal practices of municipal and industrial wastes. The purpose of these efforts is to determine the nature and extent of environmental impact, if any, evaluate remedial alternatives, and take remedial actions, if necessary.

This Community Relations Plan (CRP) outlines activities being conducted during the Remedial Investigation/Feasibility Study (RI/FS) and Remedial Design/Remedial Action (RD/RA) phase of the IRP. The remedial investigation is designed to obtain and characterize site information needed to identify, select, design and implement remedial actions.

The CRP was developed in accordance with current community relations requirements under the Comprehensive Environment Response, Compensation and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) and Navy IRP guidance.

Specific objectives of this CRP are to:

(1) Provide a means by which public concerns can be addressed and information can be disseminated throughout the studies and be used to evaluate the impact of proposed remedial actions on the community;

(2) Provide a mechanism for incorporating public comments into the process in a timely and meaningful way;

(3) Provide accurate, timely and understandable information to affected and interested parties and the media;

(4) Identify individuals and groups that may become interested in the site as work progresses; and

(5) Modify the CRP as necessary to respond to community concerns.

In particular, the CRP for Naval Weapons Station Earle should enlist the support and cooperation of officials in Monmouth County and the communities of Colts Neck, Wall, Howell, Tinton Falls and Middletown.

Community interest in the site is moderate at the present time. This plan will help prepare the command for any possible increase in the level of interest and educate the local community to better understand the process.

The area under study is within Naval Weapons Station Earle's boundaries. (See map at appendix A). As such, the authority to respond as the lead agency to any potential contamination problem currently rests with the Department of Defense, as designated by the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

2. Implementation Responsibility

The Commanding Officer, Naval Weapons Station Earle, is responsible for implementing the CRP. The Naval Facilities Engineering Command and its regional Engineering Field Division office located in Philadelphia, Pa., provide additional consultation and technical assistance.

3. Capsule Site Description

Site Location: The Naval Weapons Station Earle is in an area of low relief located within the Outer Coastal Plain. The station is divided into two parts, the mainside area located in Colts Neck, and the waterfront area, located in Leonardo. Three major rivers, the Shark, the Manasquan, and the Swimming, drain the mainside part of the station. The station is part of the New Jersey Atlantic Coastal Plain, a geological formation consisting of a sequence of thick, unconsolidated sand and clay deposits. The mainside area contains outcrops of the Hornerstown Sand, the Vincentown Formation, and the Cohansey Sand. The waterfront and the Chapel Hill areas of the station contain outcrops of the Wenonah Formation, Navesink Formation and Red Bank Sands.

Three of the streams draining portions of the station are tributaries to rivers used for surface water reservoirs. The northwest corner of the station drains into Mine Brook, which flows to the Swimming River Reservoir. The southeast portion of the station drains to the Shark River, water source for the Glendola Reservoir. The Manasquan River, draining south from the base, is a source of water for the Manasquan River reservoir in Howell Township. Surface water drainage from the waterfront area enters Sandy Hook Bay

directly and through Compton, Ware and Wagner Creeks. None of these are used for water supply.

The main station is also a recharge area for the Vincentown and Kirkwood aquifers. Although these aquifers are not used for public water systems in the areas surrounding the station, they are used for both private and public water supply in the Jersey Coast area east of the main station and for domestic supply in areas without public water systems near the station. The direction of groundwater flow is from the recharge areas to the east and southeast, indicating that areas most likely to be affected by groundwater migration of contaminants would be south and east of the main station. At present, groundwater quality in these aquifers is within acceptable standards.

Other Monmouth County contaminated sites, located in the vicinity of Naval Weapons Station Earle, are listed on the "New Jersey List of Contaminated Sites." The list is available from the New Jersey Department of Environmental Protection or can be reviewed at the Monmouth County Library, Eastern Branch located in Shrewsbury, New Jersey.

Site History: Naval Weapons Station Earle was commissioned in 1943. The station was most active during World War II when a large portion of the ammunition and explosives used in the European theater of operations was shipped from this facility. The station loaded over 731,000 tons of ammunition on vessels during that time. Following World War II, activities at the station decreased in response to lessening demands for munitions.

The principal mission of Earle--the storage, maintenance, renovation and control of munitions--has remained relatively unchanged since those years. The scope of industrial operations needed to accomplish this mission is limited to repainting and repairing munitions. In addition to ordnance operations, the station hosts non-ordnance related tenant operations such as Commander, Logistics Group Two, including four homeported AOE fast combat support ships and various support functions (supply, fleet maintenance, and public works) which have also been sources of potentially hazardous waste materials.

Sources of contamination: Wastes from ordnance operations have included waste solvents, blasting grit or shot, paints and metals and explosives from unserviceable munitions, as well as trash, such as packing material, lumber and rags. Because most ordnance paint removal uses grit or shot blasting, solvents are present only as paint

thinners or for equipment cleaning. Metals and explosives from unserviceable munitions are largely recoverable through Defense Property Disposal Office and military sales.

Wastes from non-ordnance operations included a broader range of waste types, including oils and small amounts of pesticides, oil and lead-based paints, solvents, degreasers, acids, metal scrap and dunnage.

Although current waste disposal methods at Naval Weapons Station Earle are in accordance with environmental protection laws, past disposal methods, which were widely used and acceptable at the time, consisted mostly of burial of waste in landfills. It has since been recognized that this method can cause long-term problems through release of pollutants into the soil and ground water. Landfills previously used are being capped and groundwater is being monitored from wells located at the landfill perimeter.

Installation Restoration Program: In response to the growing awareness of site contamination from past waste disposal practices, Congress directed the United States Environmental Protection Agency (EPA) to develop a comprehensive national program to manage past disposal sites. This program is outlined in the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA).

The Department of Defense (DoD) named this program the Installation Restoration Program (IRP) and instructed the services to comply with guidelines. The IRP is designed to identify, report, and correct environmental deficiencies at DoD installations. The full IRP process consists of the following steps:

- (1). The Preliminary Assessment/Site Investigation (PA/SI). The purpose of the PA/SI is to evaluate the seriousness of any hazardous substance release, or threat of release, and to recommend additional response action at the site. As a result, no action may be taken if available data indicate no threat or potential threat to public health or the environment. Alternatively, the best response action may be an immediate removal of the threat or potential threat. The PA/SI therefore, establishes the priority for scheduling a site inspection by characterizing the site. The PA at Naval Weapons Station Earle began in 1981.

- (2). The Remedial Investigation/Feasibility Study (RI/FS). During this part of the IRP extensive on-site investigations take place, including physical and analytical

monitoring to quantify the extent of the problem and alternatives are developed for possible corrective measures.

(3). The Remedial Action Plan is evaluated and implemented if findings from the previous findings of the IRP warrant such action.

4. Community Background

Community Profile: Naval Weapons Station Earle borders on the New Jersey (Monmouth County) townships of Colts Neck, Wall, Howell, Tinton Falls and Middletown. Monmouth County has both a higher per capita personal income (\$20,565) and a higher median family income (\$53,590) than the State average. Colt Neck's median family income (\$77,849) is second among the towns in Monmouth County. (Source: 1990 Census) Also, according to that census, median housing value for Monmouth County is \$180,400, for Colt Neck \$369,800, for Tinton Falls \$167,400, for Wall \$190,800, for Howell \$158,300 and for Middletown \$187,700.

Community Concerns: Publicity about potentially hazardous waste sites at Naval Weapons Station Earle peaked in September of 1984 when it was announced that the station was about to be added to the National Priorities List (NPL). Concern at that time centered on the nature and extent of environmental impacts to the Naval Weapons Station Earle property and to surrounding communities: whether landfill sites were near streams, whether surface water sampling was being done, what the sizes and location of the sites were, and whether people were working in the areas listed as contaminated. These questions were raised by the media, and answered in detail. (Press clippings of the questions & answers are located in the Public Affairs Office Administrative files).

No specific concerns regarding site contamination have been raised since that time, and none were voiced during the community interviews held in conjunction with the development of the original draft of this plan. The majority of people interviewed had little or no knowledge about our sites. All interviewees were pleased with our pro-active approach to informing area residents of our activities in conjunction with the IRP and our plans for keeping them informed as we go through the IRP process. Specific concerns are raised and addressed at the quarterly Restoration Advisory Board (RAB) meetings. Further, minutes of these meetings are contained in the administrative record at Naval Weapons Station Earle (Department code: 04).

5. Highlights of the Community Relations Program

The community relations program for Naval Weapons Station Earle is designed to provide information to the public and the media on a timely basis, and to encourage public involvement in the program. It is intended to be flexible so that, as community information needs evolve and change, the community relations program can be revised. This CRP should also help strengthen the credibility of Naval Weapons Station Earle as a responsible neighbor, both with local citizens and governmental agencies.

The primary means for community involvement in the IRP is the Restoration Advisory Board (RAB). Membership on the RAB consists of representatives from NWS Earle, federal and state environmental agencies, the Monmouth County Public Health Officer, and officials and residents of local municipalities. The community co-chair is the Monmouth County Health Officer; the Navy co-chair is a Station Environmental Engineer. The meetings are open to the public and are regularly covered by local media.

Meetings are held quarterly on Thursday evenings. Public notice of the meetings is made in local newspapers. Subjects covered include status of all ongoing studies and remedial actions, as well as discussion of possible remedial alternatives for sites determined to require remediation.

We strive to provide timely, concise, and easily understood information to interested parties and the media. The schedule, purpose and results of technical activities are readily available to the public. Fact sheets concerning our waste disposal sites are also made available. Inquiries are handled quickly, courteously, and consistently. Information regarding the IRP will be presented in an easily understood and non-technical format. Finally, to ensure that inquiries from the media are handled efficiently and consistently, the Public Affairs Officer (PAO) has been designated as the spokesperson and single point of contact.

6. Activities and Personnel

Copies of the draft final CRP will be provided to the information repository (listed in section 7) in anticipation of public involvement requirements. The draft final CRP may be reviewed by any interested party. Comments will be accepted throughout the duration of the RI/FS because the CRP is considered a "living document;" that is the CRP will remain flexible and adaptable to changing community information and involvement needs.

At the completion of the RI/FS and prior to implementing the remedial action, the Naval Weapons Station Earle Public Affairs Officer (PAO) will review the CRP and recommended any changes, and prepare a Responsiveness Summary which will require review by involved agencies, the public, government officials (including appropriate members of congress) and key community leaders.

7. Information Resources

The PAO will be the key contact for project inquiries and questions. The PAO is the central information source and will help build trust between the agency and citizens.

The PAO will keep a logbook of all citizens' requests and comments, and how each one was handled. This activity will ensure that an institutional memory continues after the study has been completed. It will also assist new team members in learning about the level of community involvement.

An information repository has been established at the Eastern Branch of the Monmouth County Library Route 35, Shrewsbury, NJ 07701. Telephone: 842-5995/5996/5997. Hours: Mon., Tues., Wed., Thurs., 9-9, Fri., Sat., 9-5, Sun. 1-5, except during July, August or holiday weekends.

The following information will be included in the repository, as it becomes available:

- a. Documentation of site sampling reports
- b. Brochures, fact sheets
- c. Copies of press releases and newspaper clippings that refer to the sites.
- d. The Remedial investigation draft and final reports
- e. The responsiveness summary to the FS draft report
- f. The signed record of decision document
- g. The remedial design
- h. Copies of federal legislation and regulations

related to the site, including but not limited to the National Contingency Plan (NCP), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Superfund Amendment and Reauthorization Act of 1986 (SARA), and the DoD Installation Restoration Program.

An index of the documents will be included with the materials, which will explain what each document is, how it relates to the RI/FS, and who to contact for more information. The PAO will maintain the information repository and make sure that files are kept up to date. Publicity regarding the repository will be included in each press release issued on the project.

Mailing List:

The PAO will maintain and update a mailing list of interested citizens. Local businesses near the base, interested groups, and local residents or property owners will be added to the list upon expressed interest.

Program Summary:

The Program Summary (at Appendix A) contains the following information:

- (a) Site history and background
- (b) Site map
- (c) Process for public involvement

Public Comments and Public Meeting:

A public comment period of at least 30 days is required for review of any draft Feasibility Study report. During this public comment period, a meeting is scheduled to obtain comments. The meeting will be scheduled during the evening and focus on soliciting comments from the public. The meeting will be publicized at least three weeks before the comment period.

Anyone having further questions concerning this plan,
please write to:

Mrs. Nancy Eldridge
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NWS EARLE INSTALLATION RESTORATION PROGRAM



SITE SUMMARY – OCTOBER 1999

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OVERVIEW

The Naval Weapons Station (NWS) Earle is located 47 miles southeast of New York City in Monmouth County, New Jersey. The Station consists of an inland 10,248 acre Main Base and a 706 acre waterfront area connected by a Navy-controlled right-of-way containing a private road and rail line. NWS Earle was named to the United States Environmental Protection Agency's (EPA) National Priority List (NPL) on August 30, 1990.

An Initial Assessment Study (IAS) conducted in 1982 identified 29 waste disposal sites at NWS Earle and led to further investigation of 11 sites.

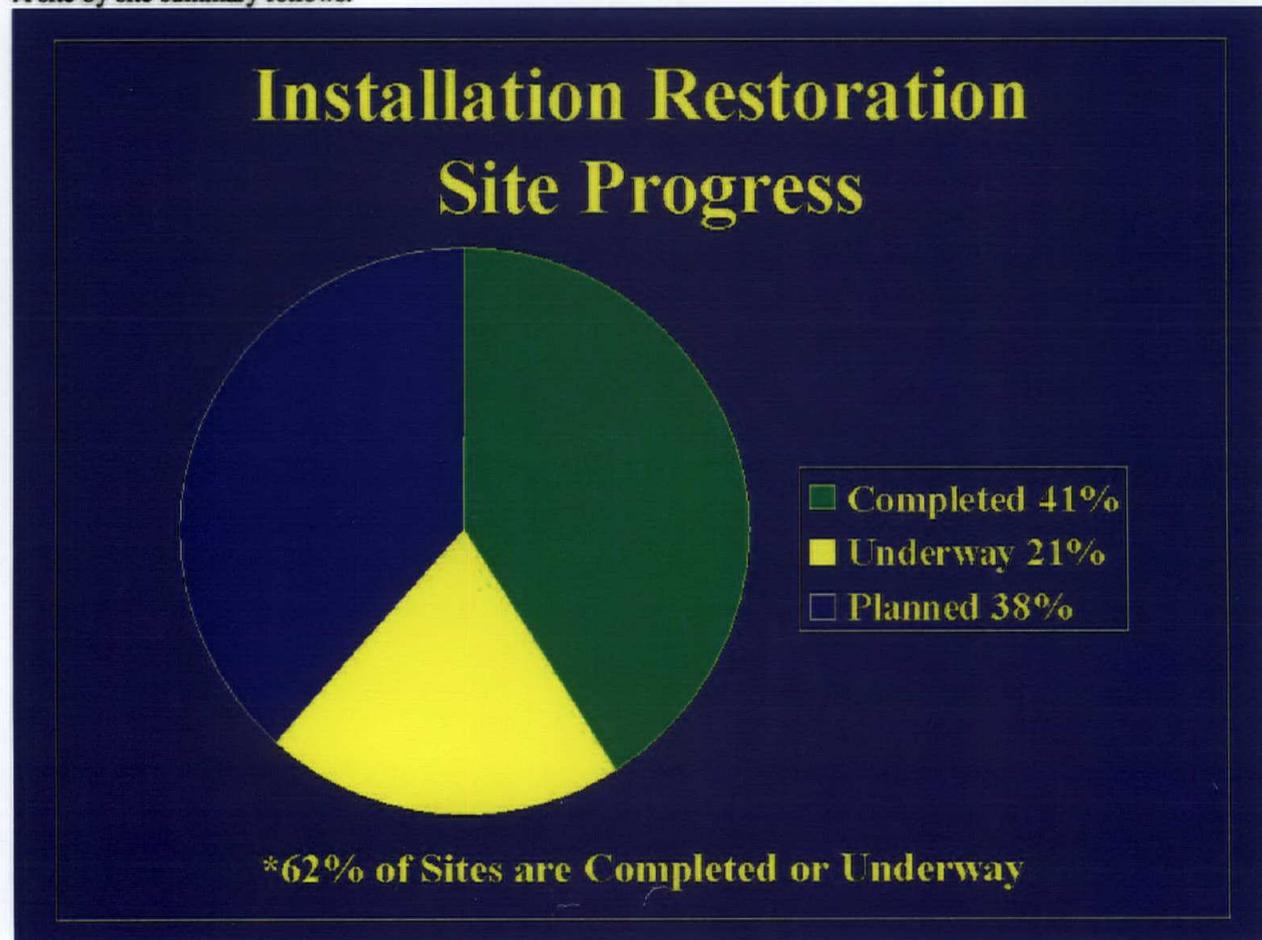
Upon being named to the NPL, the Navy agreed to conduct a Site Investigation at 16 additional sites. The remaining 2 sites from the IAS were not included because they were permitted operations under the Resource Conservation and Recovery Act (RCRA).

In January 1992, the EPA requested a Preliminary Assessment of 17 additional sites based upon aerial photography analysis. This report, completed in August 1992, recommended additional work at only 1 site, but the Navy agreed to further investigation at 2 additional sites based upon regulatory comments.

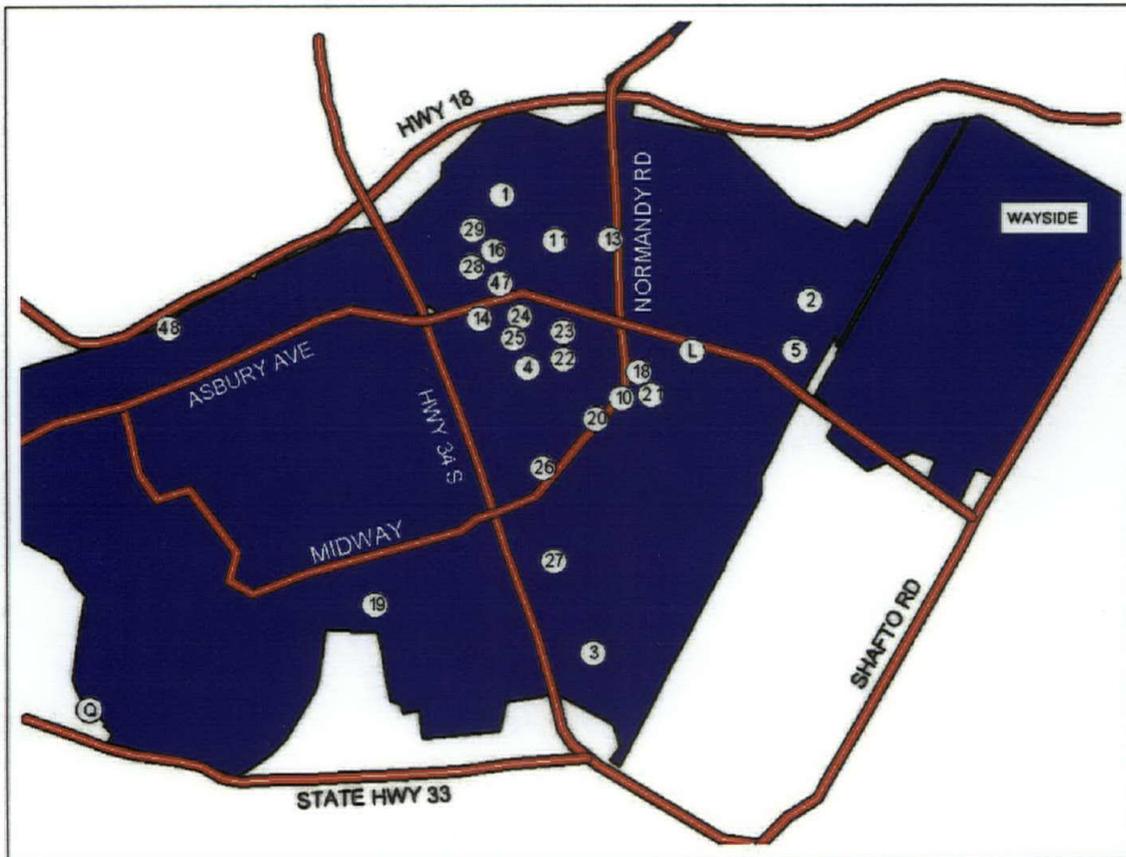
A Restoration Advisory Board (RAB) was established in February 1995. The RAB membership includes local community representatives and is co-chaired by the Monmouth County Health Officer. The RAB meets quarterly, and is open to the public.

Due to concerns about data gaps, site relationships and background conditions, all sites were consolidated into a comprehensive Remedial Investigation (RI) which was completed in July 1996. An RI Addendum, finalized in January 1998, focused on 7 sites where the results of the 1996 RI were inconclusive. These two documents have served as the basis for Remedial Action decisions.

Since the inception of the Program, 62% of all sites identified have been cleaned up, are in the process of being cleaned up, or have been found to require no further action. The chart below illustrates program progress to-date. A site by site summary follows.



Mainside Site Overview



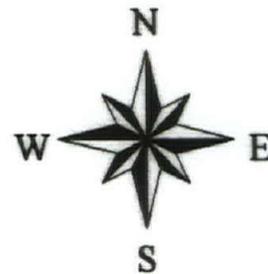
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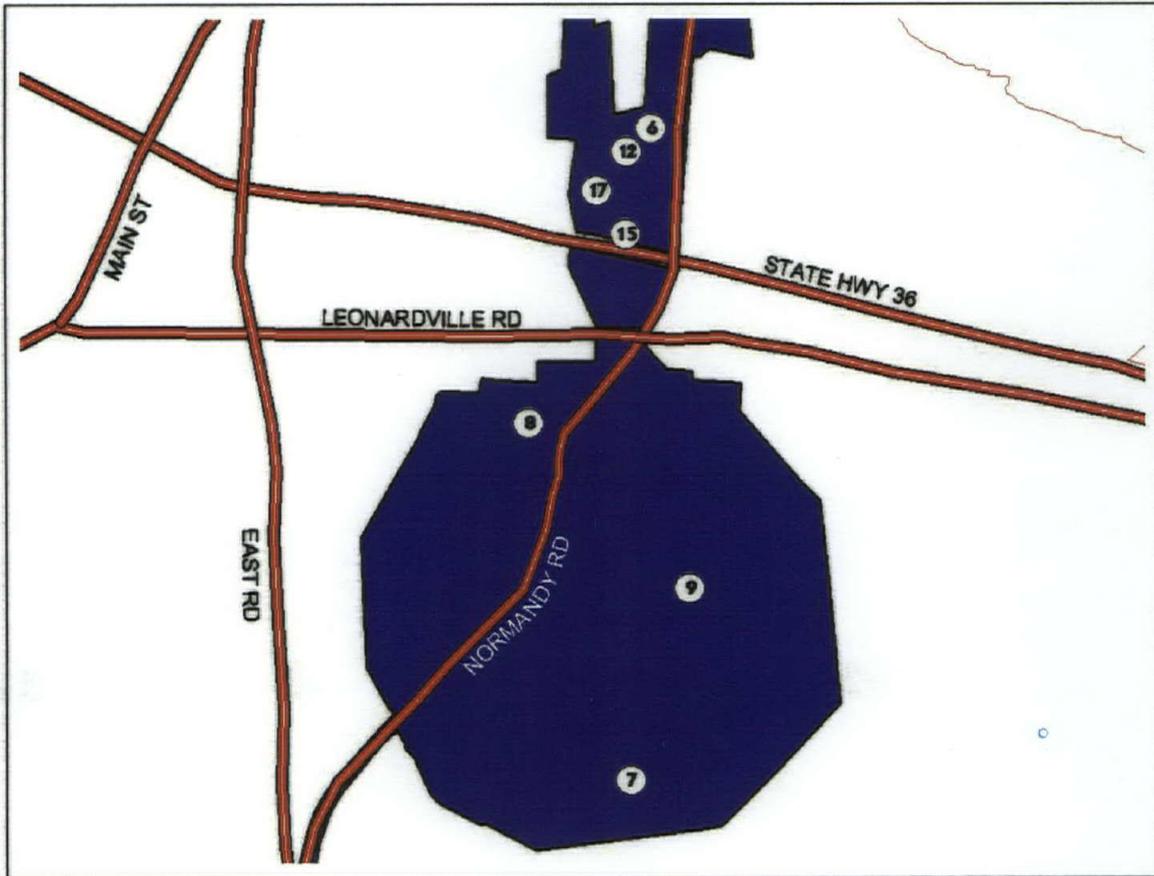


LEGEND:

-  SITES
-  NWS EARLE PROPERTY
-  NJ ROADS



Waterfront Site Overview



SCALE 1:17,500



LEGEND:

- SITES
- NWS EARLE PROPERTY
- NJ ROADS



SITE #1: FORMER ORDNANCE DEMOLITION RANGE

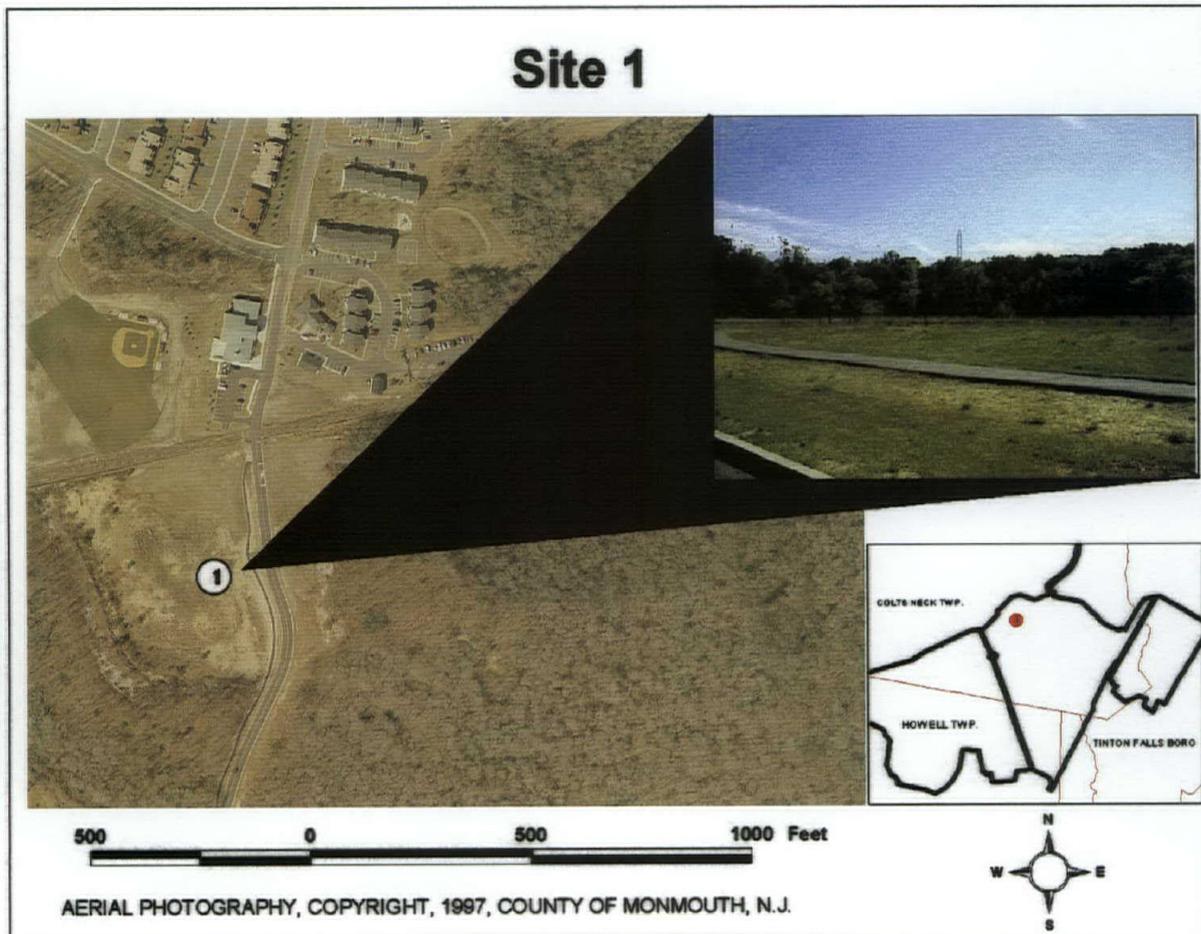
SITE HISTORY

A 6 acre site near the intersection of Saipan and Macassar Roads which was used for ordnance demolition from 1943 to 1974. Upon closure, the surface was covered with diesel fuel-soaked hay which was burned to ensure that no explosives remained. A communications tower was located on the site for several years. It is now open space.

SITE STATUS

The Phase II Site Investigation indicated low levels of metals, explosives and organics in the soil and groundwater. Additional soil and groundwater samples taken during the 1995 Remedial Investigation delineated the extent of the affected area.

Several compounds were detected at levels slightly above regulatory guidelines, but remediation may not be necessary or practical. Excavation of impacted soils would disrupt the natural succession occurring on the site. Any future land use should include measures to minimize exposure to groundwater and subsurface soils.



SITE #2: ACTIVE ORDNANCE DEMOLITION RANGE

SITE HISTORY

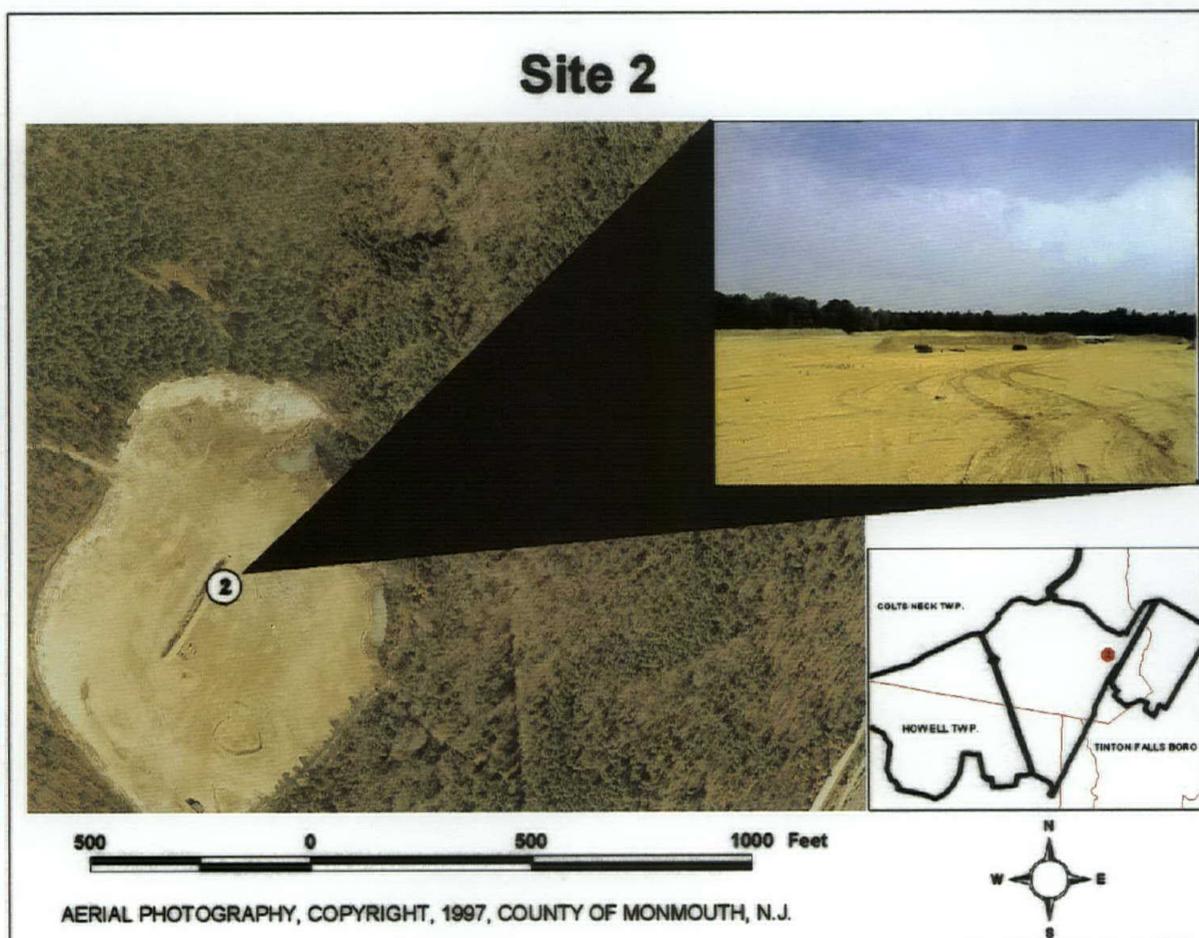
An 11 acre ordnance demolition range which has been used since 1974 and is subject to Subpart X of the Resource Conservation and Recovery Act (RCRA) as a miscellaneous hazardous waste treatment unit.

SITE STATUS

Low levels of explosives and metals have been detected in soil and groundwater samples on site. Explosives compounds were only detected in one monitoring well near the center of the site. Elevated metal levels in the groundwater appear to be related to suspended solids in the samples.

Sampling was conducted around the site perimeter during the Remedial Investigation which concluded that soils outside the bermed area have not been significantly impacted.

Ordnance disposal operations are expected to continue at this site. Process modifications have been made to minimize their environmental impact. Sampling has concluded that the impact from past operations has been negligible. Annual sampling of the seven monitoring wells at the site will be conducted as a requirement of the Subpart X permit process for NWS Earle. This data will be evaluated on a continuing basis.



SITE #3: LANDFILL SOUTHWEST OF "F" GROUP

SITE HISTORY

A 5 acre site which received approximately 4,800 tons of domestic and industrial wastes between 1960 to 1968. The site was used as a skeet range in the 1970s.

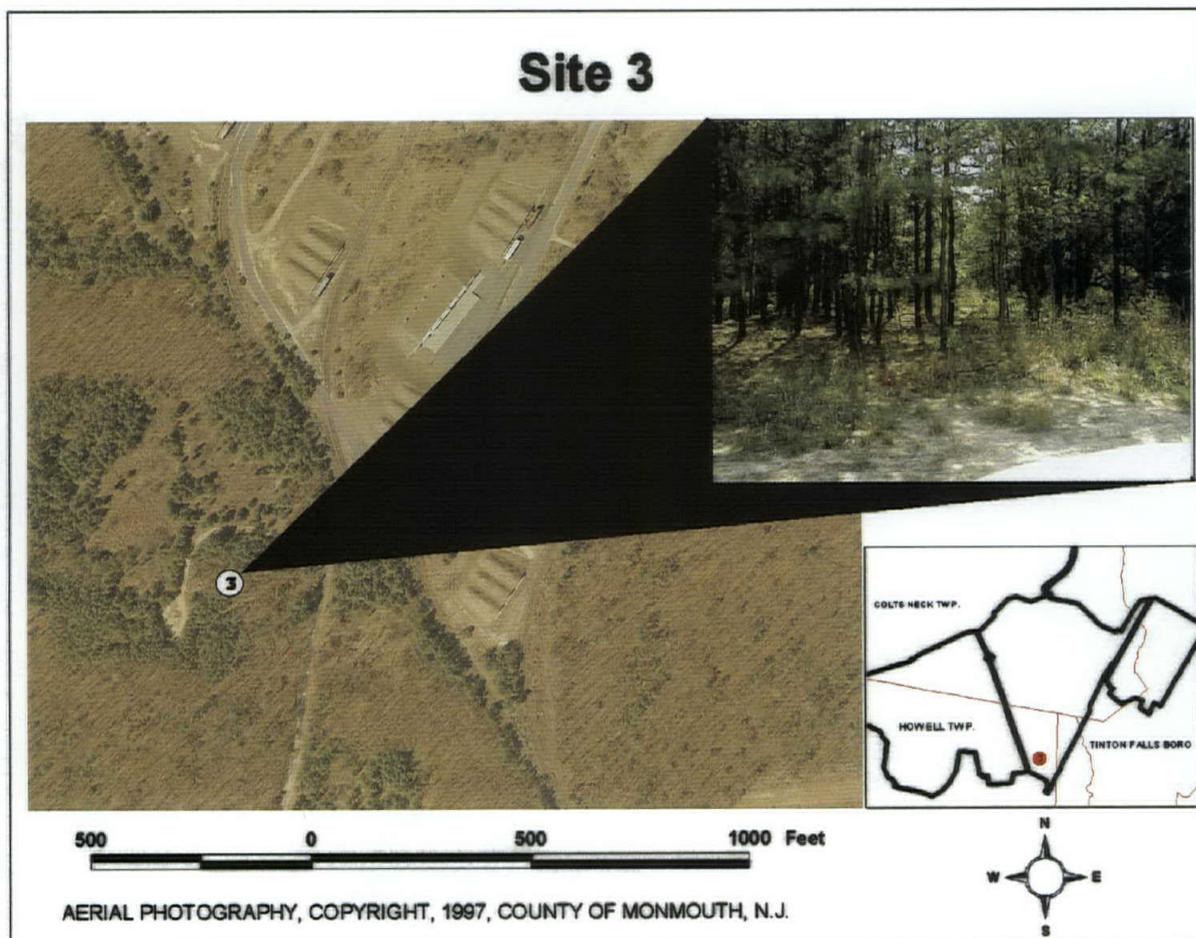
SITE STATUS

A total of eight (8) monitoring wells have been installed at this site. Several metals and indicator parameters for landfill leachate were detected in low concentrations. A soil gas survey was conducted to identify the location and extent of a potential VOC source area near one of the wells.

Test pits have been dug to examine waste materials and subsurface soils. Most of the material encountered was typical municipal trash. Several oil filters and antifreeze containers were found in the vicinity of the highest VOC readings from the soil gas survey.

The presence of several hydrocarbon compounds in the sediments of a nearby drainage ditch suggests a limited impact as the result of overland runoff from the landfill site.

A Feasibility Study for this site is currently being reviewed by the Environmental Protection Agency and the New Jersey Department of Environmental Protection. Options being considered include capping in accordance with the Presumptive Remedy for CERCLA Municipal Landfill Sites and other limited actions such as institutional controls which would limit access to the site and restrict groundwater use.



SITE #4: LANDFILL WEST OF "D" GROUP

SITE HISTORY

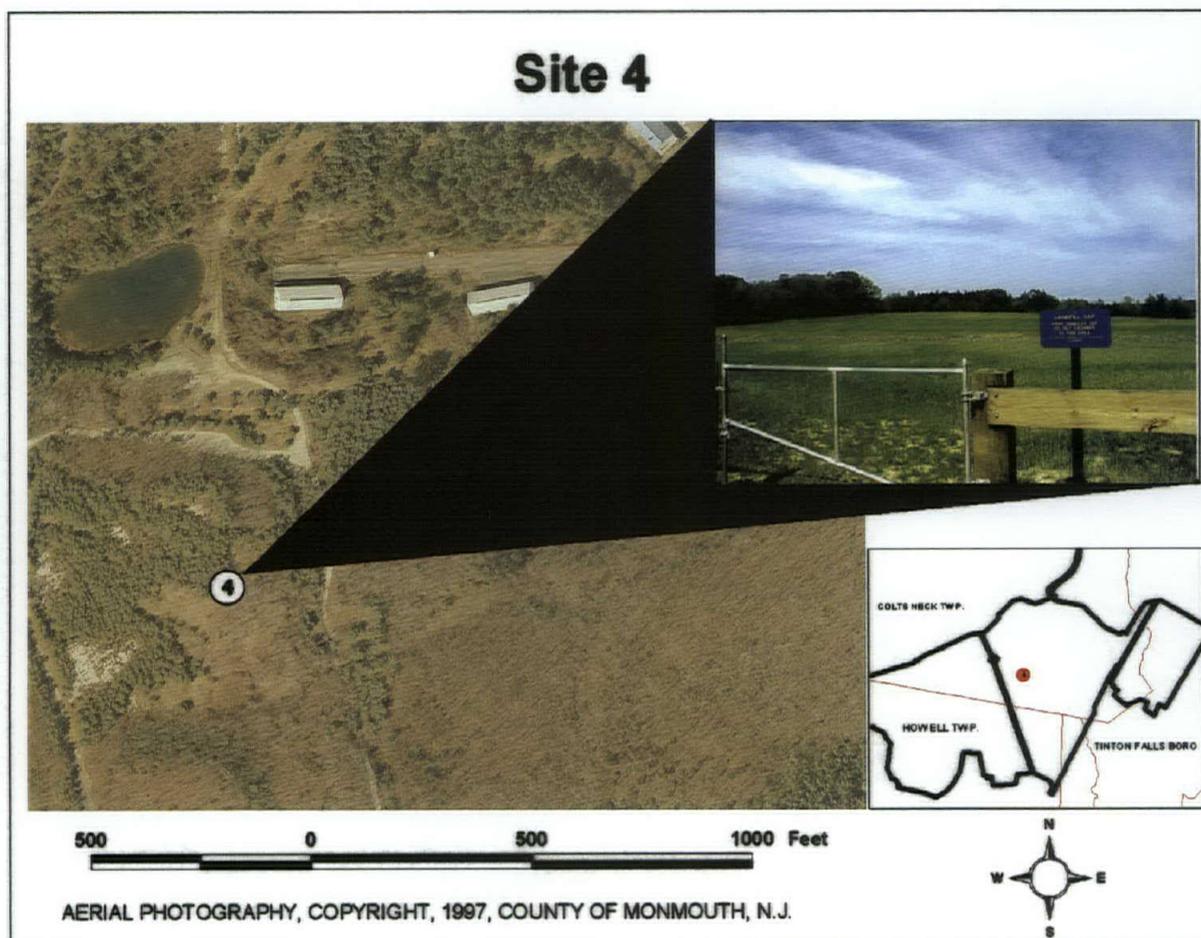
A 5 acre site east of Macassar Road which received approximately 10,200 tons of mixed domestic and industrial wastes from 1943 to 1960. Materials were placed in trenches, burned, then covered. Pine trees were planted on much of the site in the early 1980s.

SITE STATUS

Low levels of solvents and metals have been detected in shallow groundwater at the landfill boundaries. After significant investigation, no concentrated source area of solvents could be identified. Hydropunch samples collected during the 1995 Remedial Investigation did not detect any migration of the solvents into deeper aquifers. PCBs were found in one sediment sample at a very low concentration.

The Record of Decision for remediation of this site was signed in August 1997. The selected remedy consisted of regrading and capping the landfill, prohibiting use of groundwater in the adjacent area and long-term periodic monitoring of groundwater conditions.

Construction of the landfill cap was completed in July of 1998. Post remediation groundwater monitoring is underway.



SITE #5: LANDFILL WEST OF ARMY BARRICADES

SITE HISTORY

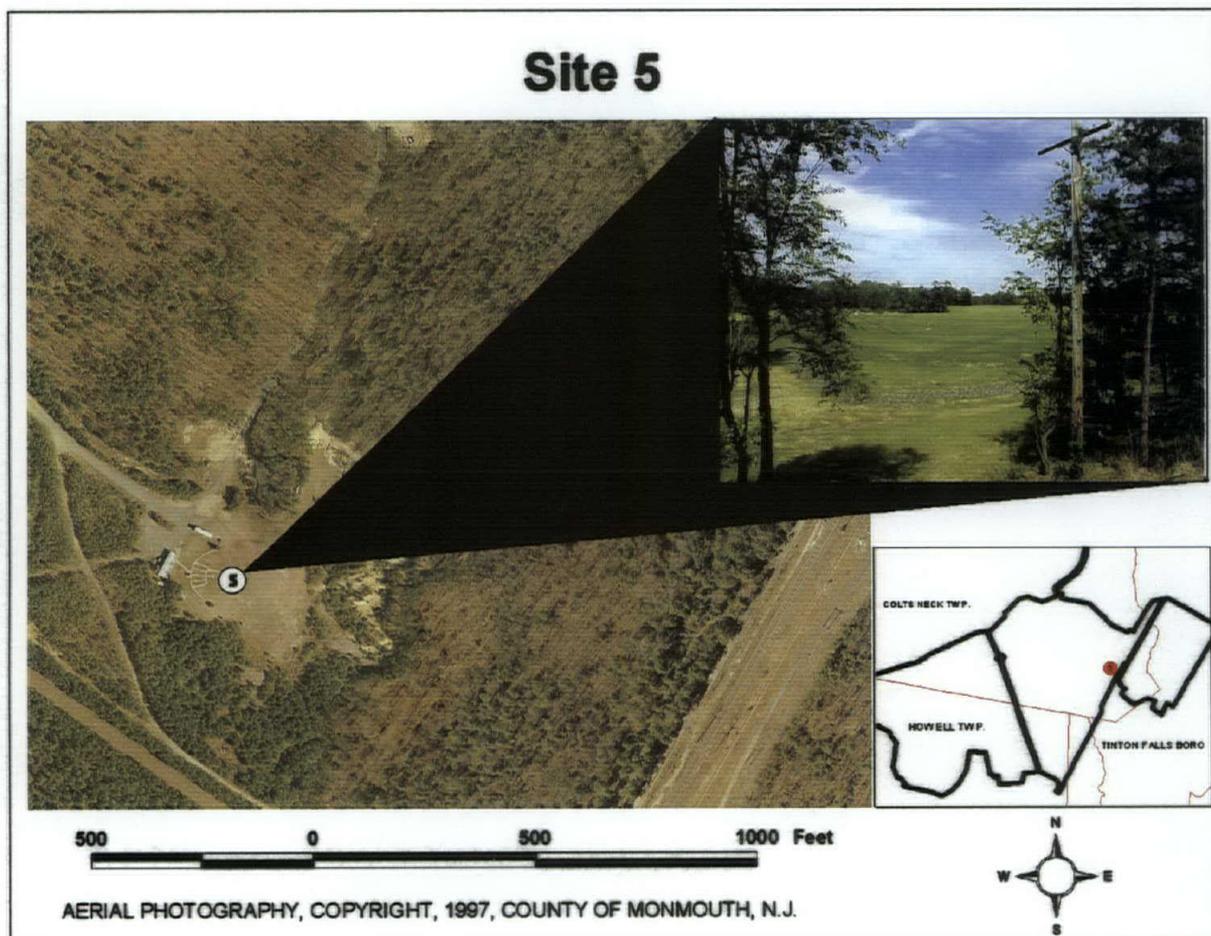
A 13 acre site where approximately 6,600 tons of mixed domestic and industrial wastes were placed in pits and covered between 1968 and 1978. A portion of the site was previously used as a skeet range by the shooter's club.

SITE STATUS

Low levels of solvents and metals have been detected in shallow groundwater at the landfill boundaries. After significant investigation, no concentrated source area of solvents could be identified. Hydropunch samples collected during the 1995 R.I. did not detect any lateral migration of the solvents beyond the extent of existing monitoring wells.

The Record of Decision for remediation of this site was signed in August 1997. The selected remedy consists of regrading and capping the landfill, prohibiting use of groundwater in the adjacent area and long-term periodic monitoring of groundwater conditions.

Construction of the landfill cap was completed in the July, 1998. As part of the project, the shooter's club skeet range was closed and lead-impacted soils from the shot fall area were disposed of off-site. Post remediation groundwater sampling is underway.



SITE #6: LANDFILL WEST OF NORMANDY ROAD

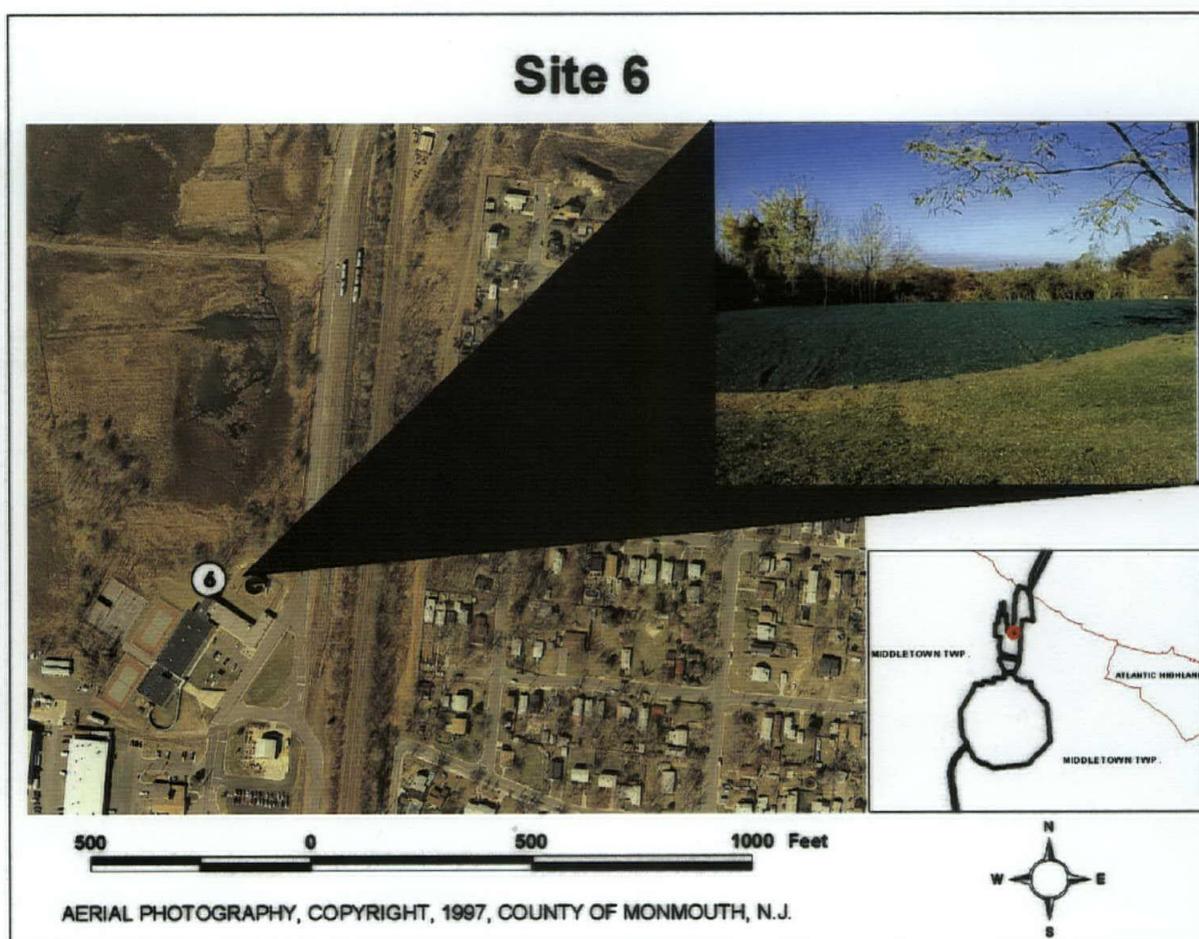
SITE HISTORY

A 4 acre landfill in the waterfront area where refuse from waterfront area operations were burned and covered from 1943 to 1965.

SITE STATUS

Low levels of several metals were found in the soils and groundwater. Solvents and pesticides were also detected at very low levels (near instrument detection limits). Site is significant because of adjacent tidal marsh and close proximity to Sandy Hook Bay. Additional samples taken in the marsh concluded there has been minimal impact to the marsh.

A "bank stabilization" project is underway to prevent erosion and migration of landfill materials into the marsh. No actions beyond this project are planned for this site.



SITE #7: LANDFILL SOUTH OF "P" BARRICADES

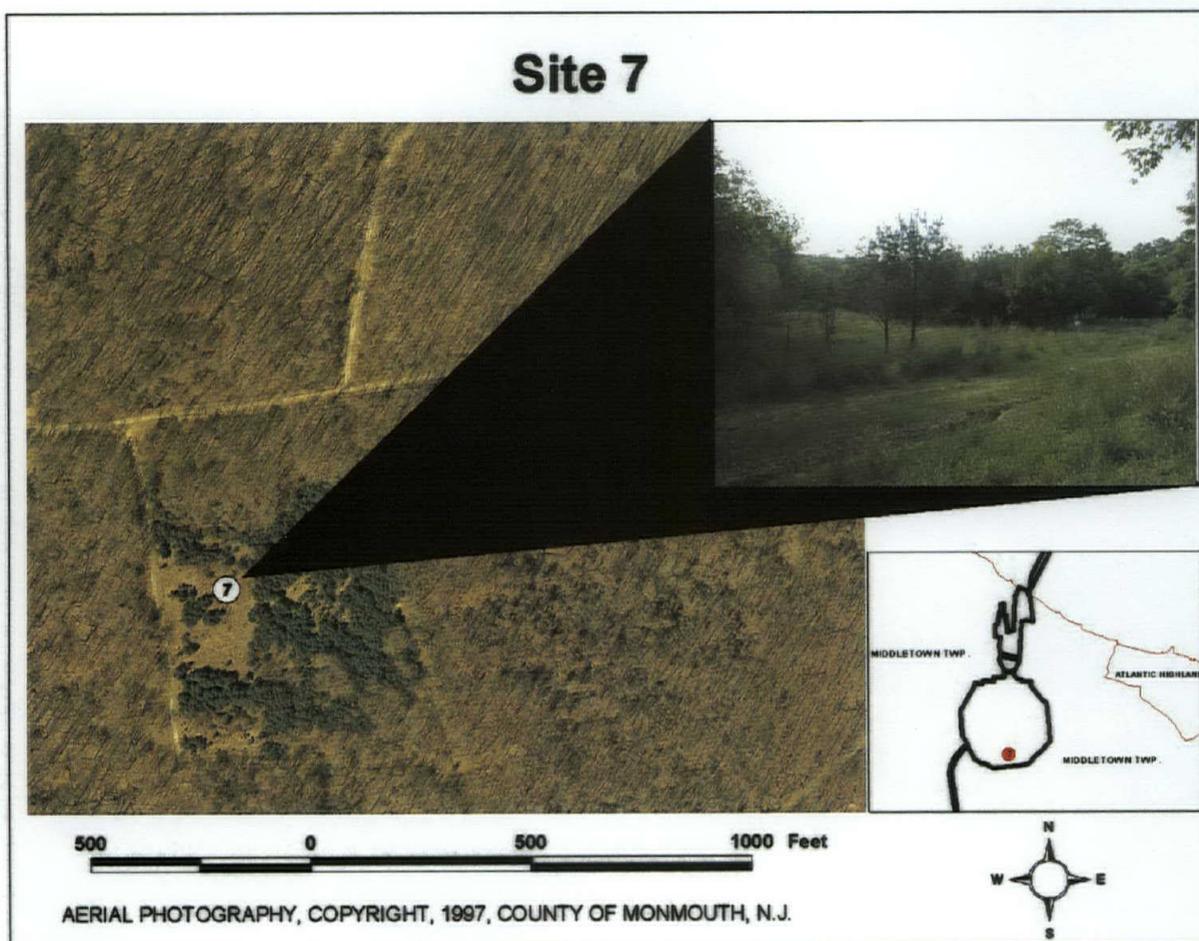
SITE HISTORY

A 5 acre site in the Chapel Hill area used for disposal of Waterfront Area wastes from 1965 to 1977. The site is now an open grassy area with some scrub pines surrounded by woodlands.

SITE STATUS

Low levels of several solvents, metals and pesticides were detected in monitoring wells. Some of the results were believed to be due to the sampling methods used so all wells were resampled using a low flow technique. Slightly elevated metals were still detected. Chlorobenzene was found at a level above New Jersey groundwater standards in one sample.

Extensive remedial activity does not appear to be warranted and would disrupt to natural ecological succession occurring on the site. A Feasibility Study will be prepared in Fiscal Year 2000 to determine what actions, if any, should be performed.



SITE #8: LANDFILL EAST OF BLDG. S-186

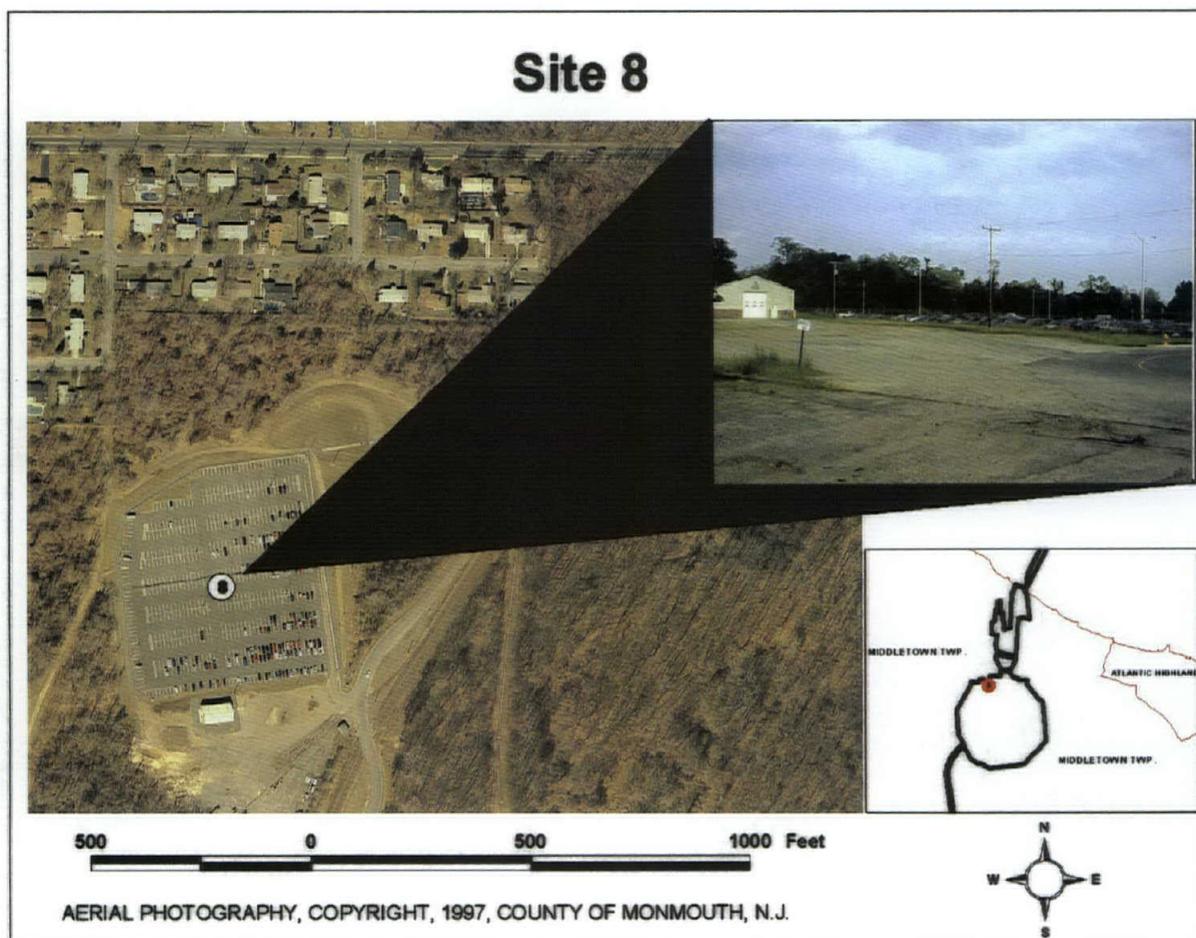
SITE HISTORY

A 1 acre site used from 1943 to 1965 for dunnage (lumber) burning and disposal.

SITE STATUS

A site-specific Site Investigation was completed in October 1981. It indicated no further action was warranted. A parking lot has been built on this site.

No further action is planned.



SITE #9: LANDFILL SOUTHEAST OF "P" BARRICADES

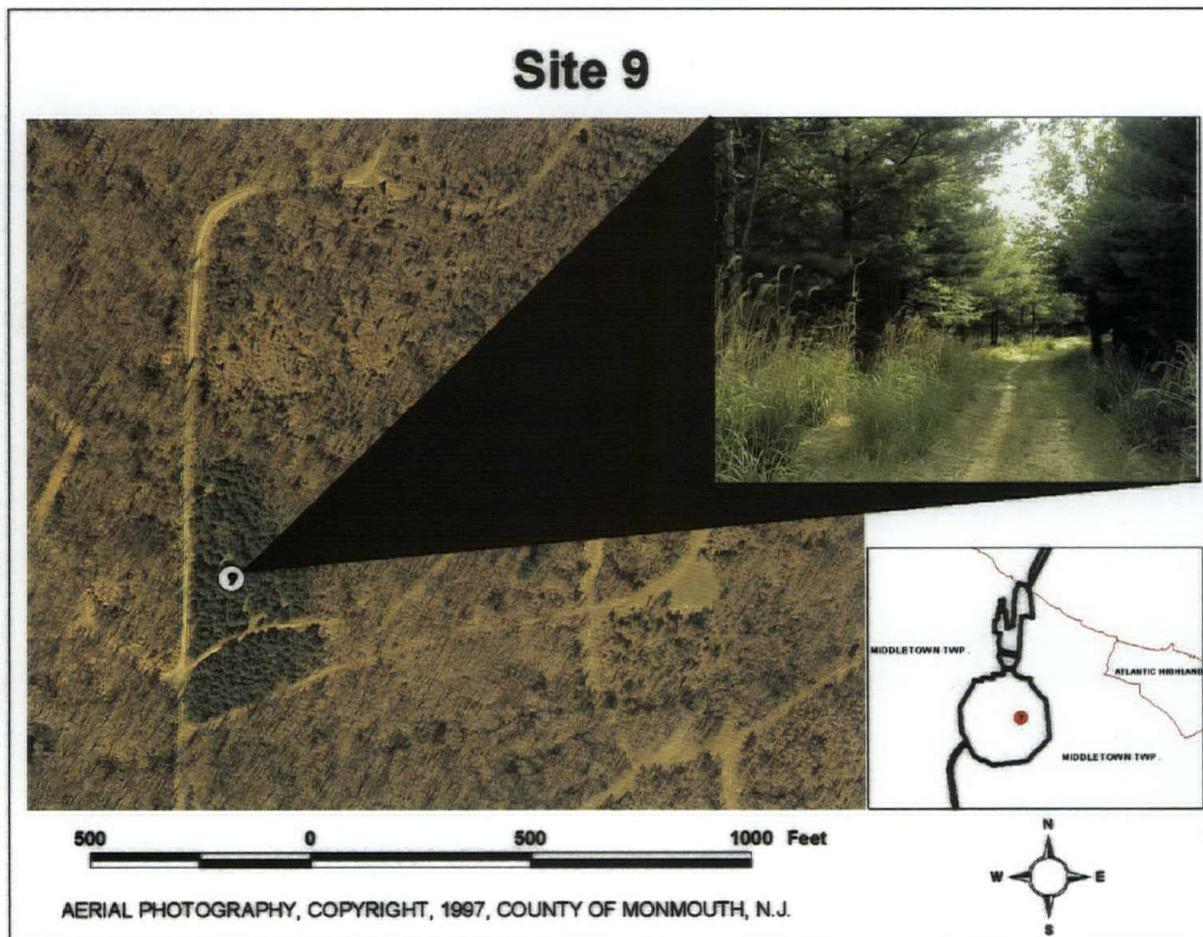
SITE HISTORY

A 3 acre site in the Chapel Hill area used from 1967 to 1972 for dunnage (lumber) burning and disposal. Pine trees were planted on the site in the 1970s.

SITE STATUS

Low levels of pesticides, metals, and cyanide were found in soils to be below standards that would require cleanup. Two additional test pits were dug at the northern landfill boundary during the 1995 Remedial Investigation to examine the soils. A nearby spring and stream was also sampled. Several metals were present in surface water and sediments, but these may not be related to the landfill.

Extensive remedial activity does not appear to be warranted and would disrupt to natural ecological succession occurring on the site. A Feasibility Study will be prepared to determine what actions, if any, should be performed. Additional characterization of the stream may be warranted.



SITE #10: SCRAP METAL LANDFILL NEAR BLDG. 589

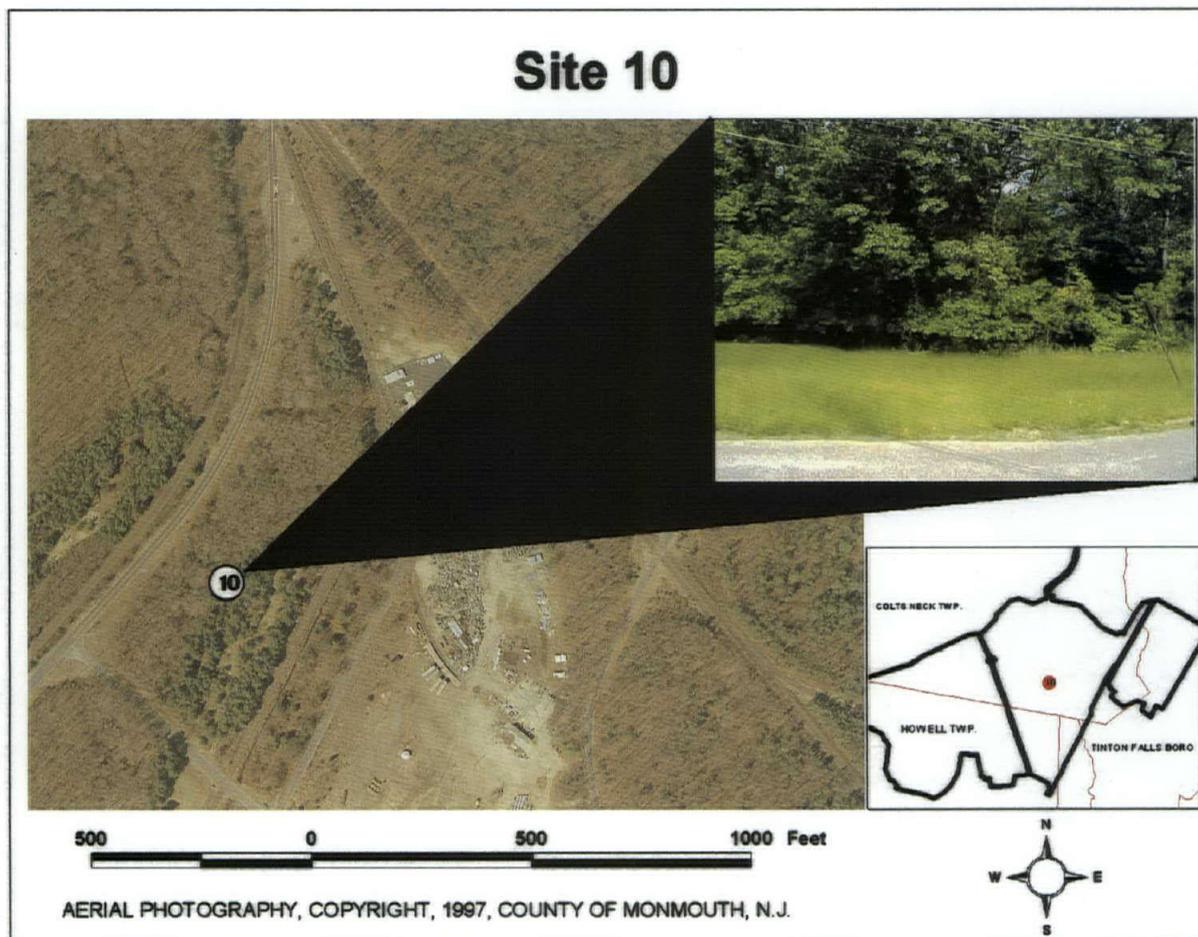
SITE HISTORY

A 2 acre site at the intersection of Munda and Midway Roads which was used for disposal of demilitarized (inert) munitions, empty cases, and paint chips from 1953 to 1965.

SITE STATUS

Lead and chromium have been detected in the groundwater. Low-flow sampling was used to determine that there was little mobility of the metals. Scrap metal is exposed on the ground surface.

A Feasibility Study is being reviewed by the U. S. EPA and the New Jersey Department of Environmental Protection to determine an appropriate means of preventing exposure to the landfill materials. Options being considered include capping in accordance with the Presumptive Remedy for CERCLA Municipal Landfill Sites and other limited actions such as institutional controls which would limit erosion on the site and restrict groundwater use.



SITE #11: CONTRACT ORDNANCE DISPOSAL AREA

SITE HISTORY

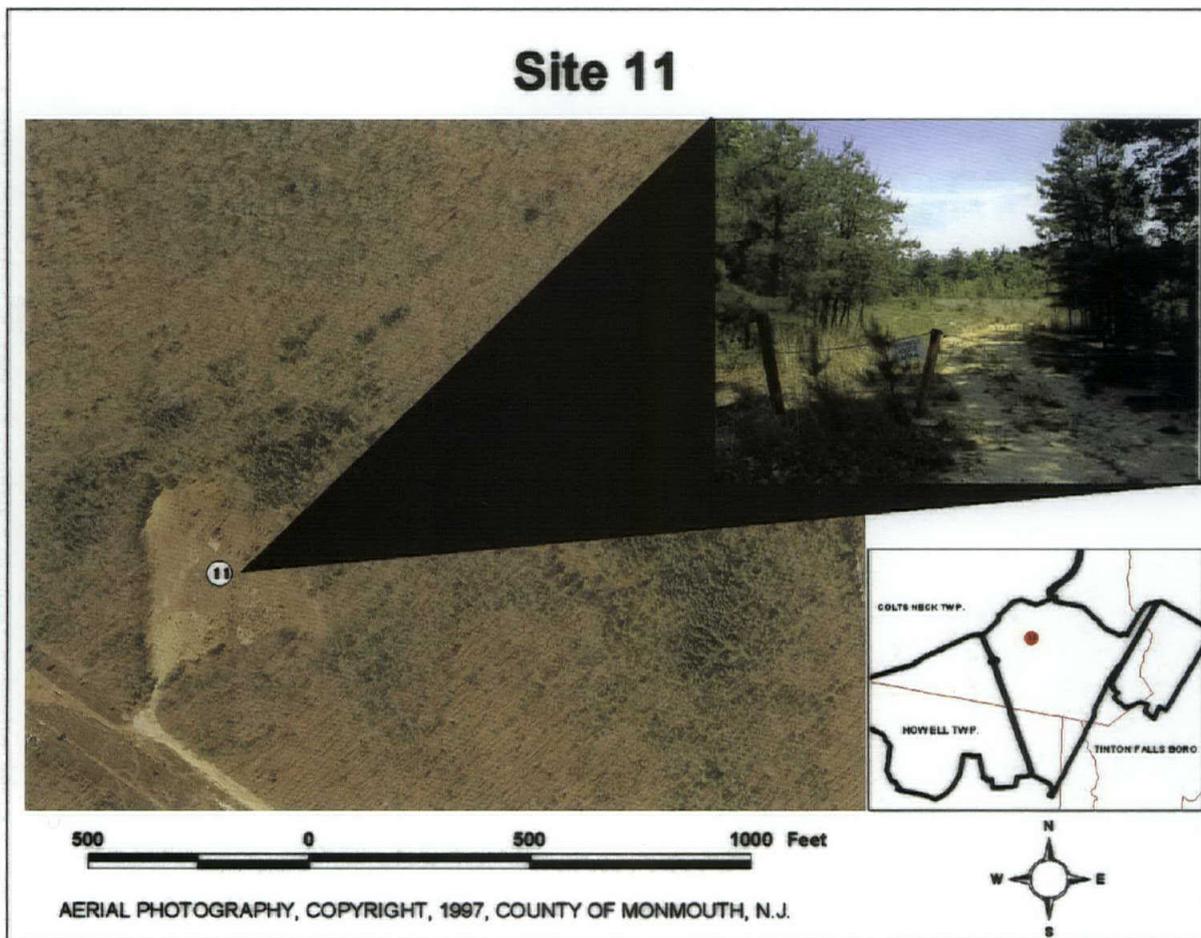
A 2 acre site at coordinates 725-579 which was used for several years by contractors for burning of obsolete ordnance. Site was also used for fire-fighting training from 1974-1977. Site is significant due to presence of Knieskern's Beaked Rush, an endangered plant species.

SITE STATUS

Some low-level hydrocarbon residues are present in the soils, but no explosive compounds have been detected. Solvents found in one round of groundwater analyses were later confirmed to be attributable to lab contamination.

Remediation of soils at this site is considered undesirable since it would likely interfere with propagation of the endangered plant species.

The Knieskern's Beaked Rush is mowed annually to facilitate propagation of the species.



SITE #12: BATTERY ACID SPILL SITE

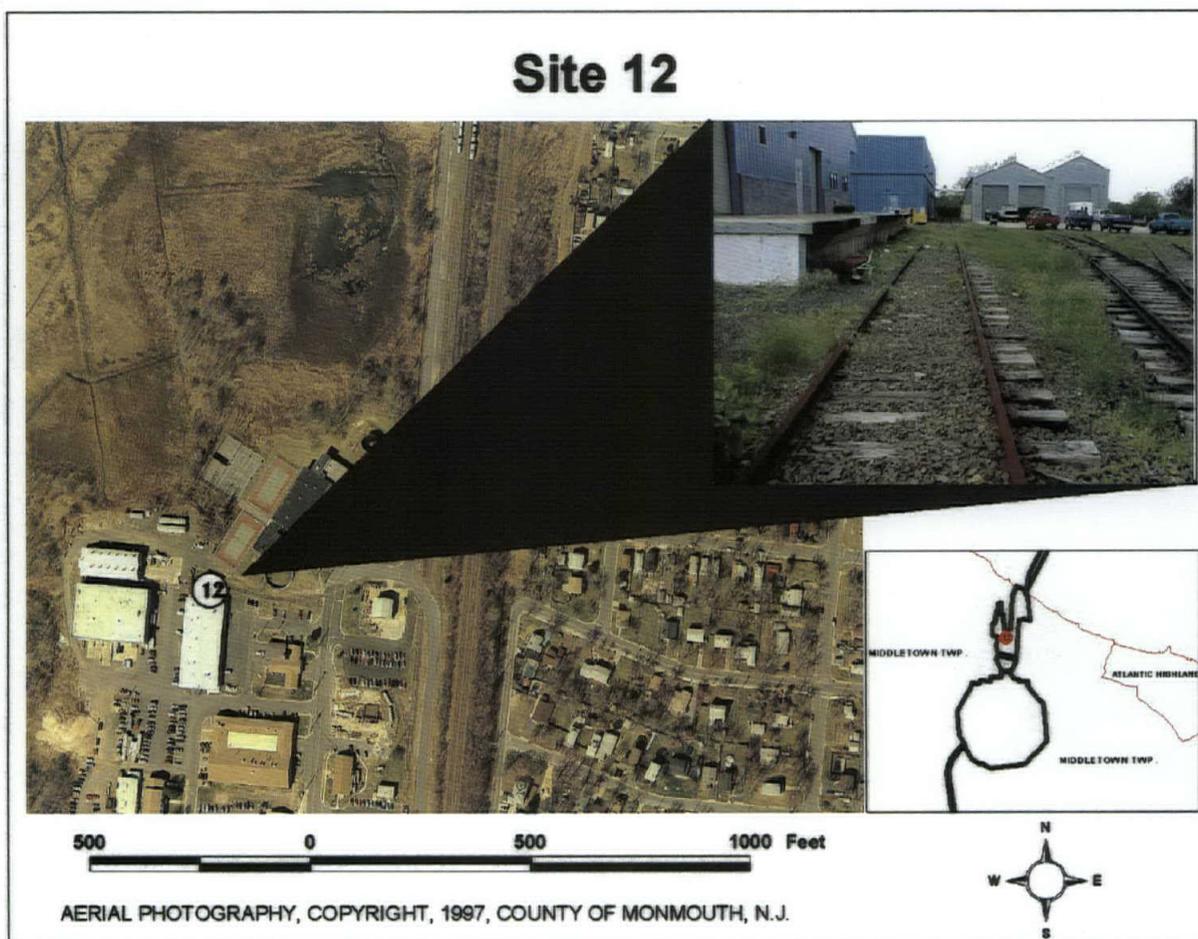
SITE HISTORY

A small paved area behind Bldg. R-14 at the Waterfront Area which was used as a staging area for shipments of spent forklift batteries. An unknown amount of electrolyte was disposed at the site.

PROJECT STATUS

Elevated lead levels were found in sediment and surface water samples from a nearby storm drain. Additional soil samples were taken in 1995 near the site and the Site 6 marsh investigation included samples near the storm drain discharge point. The soil samples defined a small source area with relatively high lead levels. Subsurface concentrations were much lower. Samples from the marsh did not identify any significant impact.

A surface soil removal action is planned in the Fall of 1999.



SITE #13: DEFENSE PROPERTY DISPOSAL OFFICE YARD

SITE HISTORY

Site was used for storage of various items including scrap metal, forklift batteries, and transformers. Some of these items were buried at the northern end of the site between 1960 and 1983. Currently used as a secured long-term parking area.

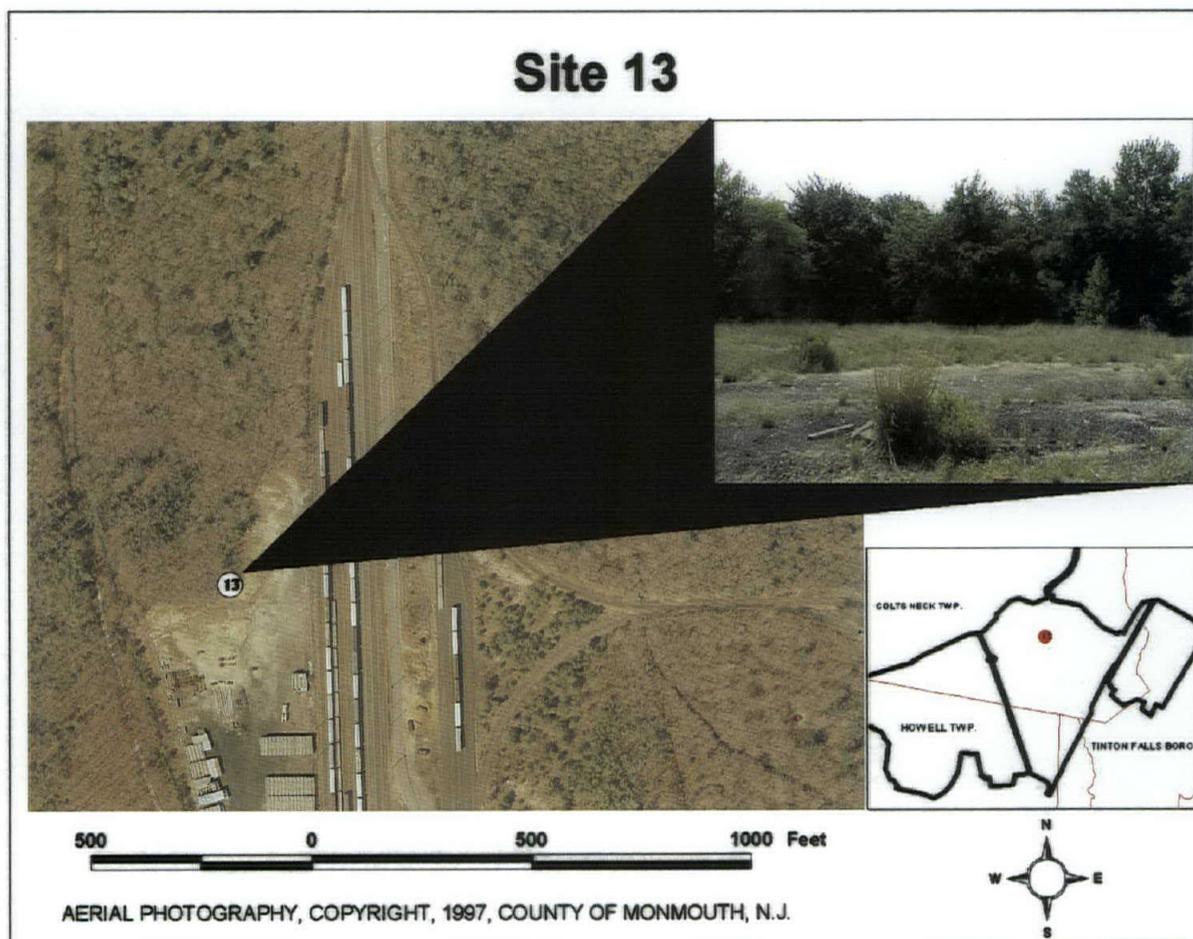
PROJECT STATUS

Metals and PCBs were detected in soils on-site. Additional test pits were then dug to determine the extent of the filled area and samples were collected from nearby wetlands to determine if they have been impacted. Groundwater wells were installed near the landfill boundary.

Several organic compounds were detected in the initial groundwater samples so a hydropunch investigation was conducted to determine lateral and vertical migration. An additional deeper monitoring well was also installed. This additional sampling concluded that migration has been minimal.

Surficial debris was removed from the landfilled area by Navy personnel in May, 1997.

A draft Feasibility Study is being reviewed by the U. S. EPA and the New Jersey Department of Environmental Protection to determine a means of preventing exposure to the landfill materials. Options being considered include capping in accordance with the Presumptive Remedy for CERCLA Municipal Landfill Sites and other limited actions such as institutional controls which would limit erosion on the site, monitor groundwater conditions, and restrict groundwater use.



SITE #14: DEFENSE PROPERTY DISPOSAL OFFICE WAREHOUSE

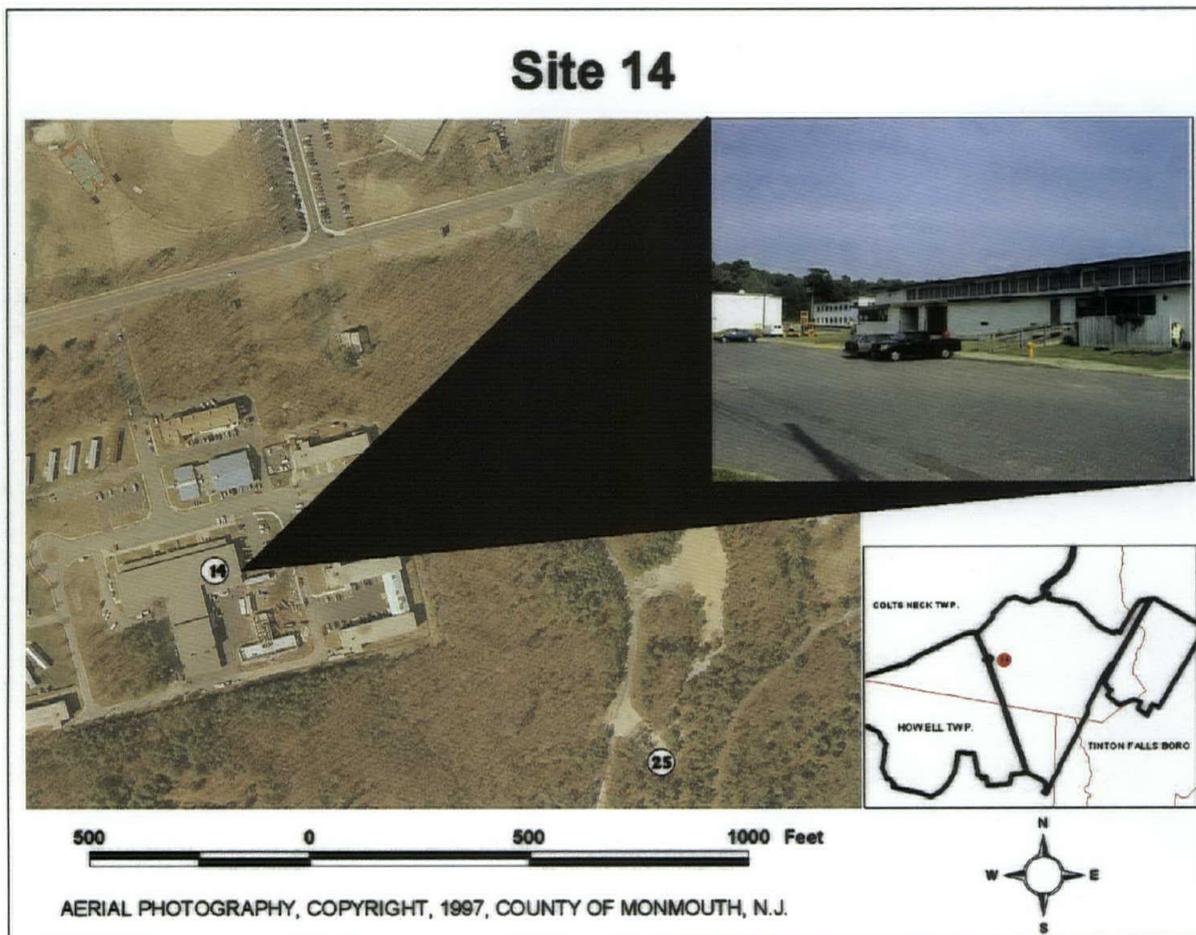
SITE HISTORY

A 16,000 square foot storage building for items awaiting processing (Bldg. C-33) where a mercury spill of one to several ounces occurred in 1970. The exact location of the spill has not been determined. Interviews indicated that the mercury was cleaned up by vacuuming.

SITE STATUS

Initial investigations were limited to interviews with long-term employees to try to pinpoint the spill area. Since the exact location could not be identified, the Navy tested floor sweepings in 1995 to look for any residual mercury. Results were negative.

Based on confirmation sampling following the removal action, no further action is planned for this site. A "no further action" Record of Decision was signed by the U. S. EPA and the Navy in September, 1999.



SITE #15: SLUDGE DISPOSAL NEAR WATERFRONT SOUTH GATE

SITE HISTORY

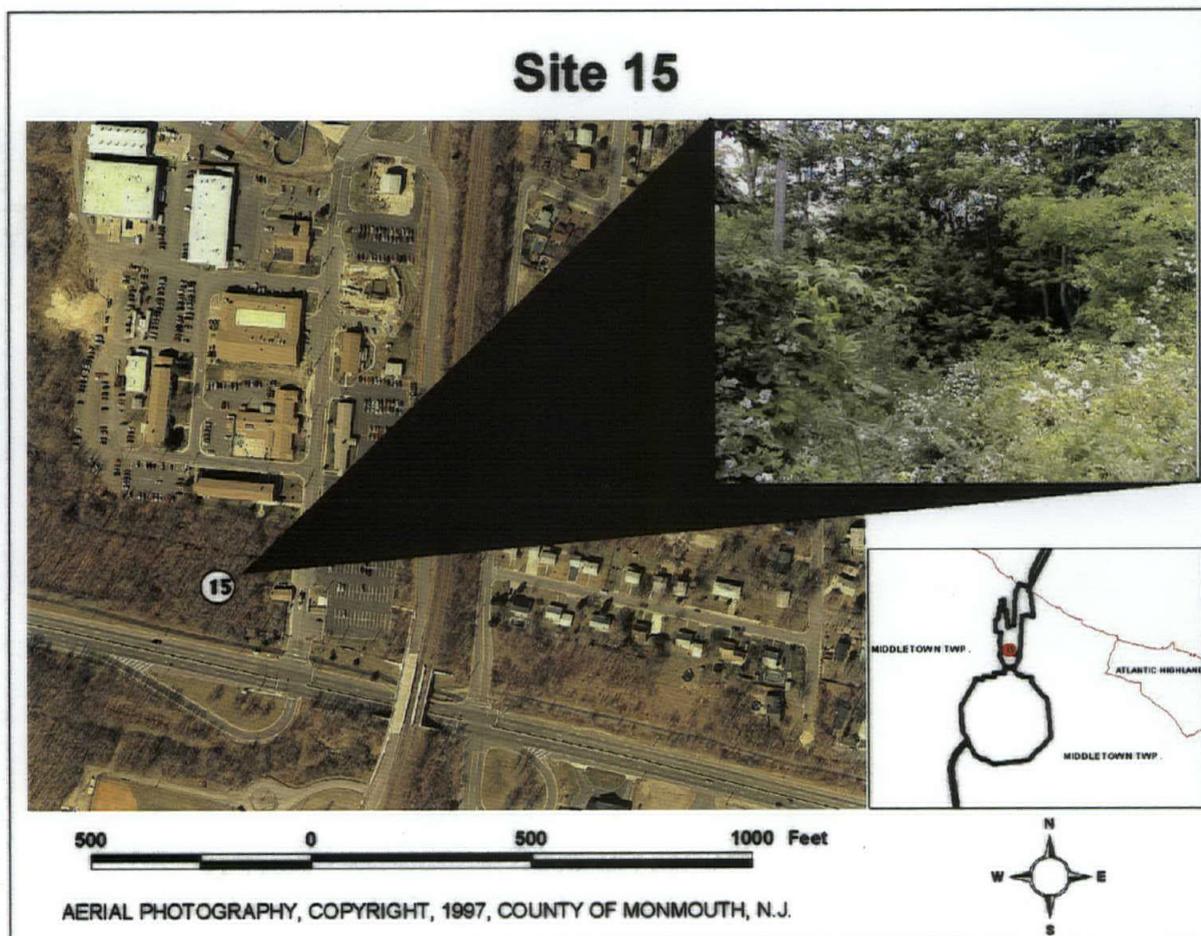
A small drainage swale adjacent to a railroad grade where an unknown quantity of oily bilge waste was disposed in the early 1970's.

PROJECT STATUS

Small quantities of organic compounds were found in soils and sediments, but not in groundwater. Additional soil, sediment and surface water samples determined the impacted area was minimal and no discrete source area was observed. Samples taken from the downgradient marsh to observe the cumulative impact of the waterfront sites showed minimal impact.

CURRENT PLANS

No further action is planned at this site. An overall waterfront management plan to prevent erosion and migration of site-related contaminants into the marsh may be appropriate.



SITE #16: DIESEL FUEL LINE TO BLDG. C-50

SITE HISTORY

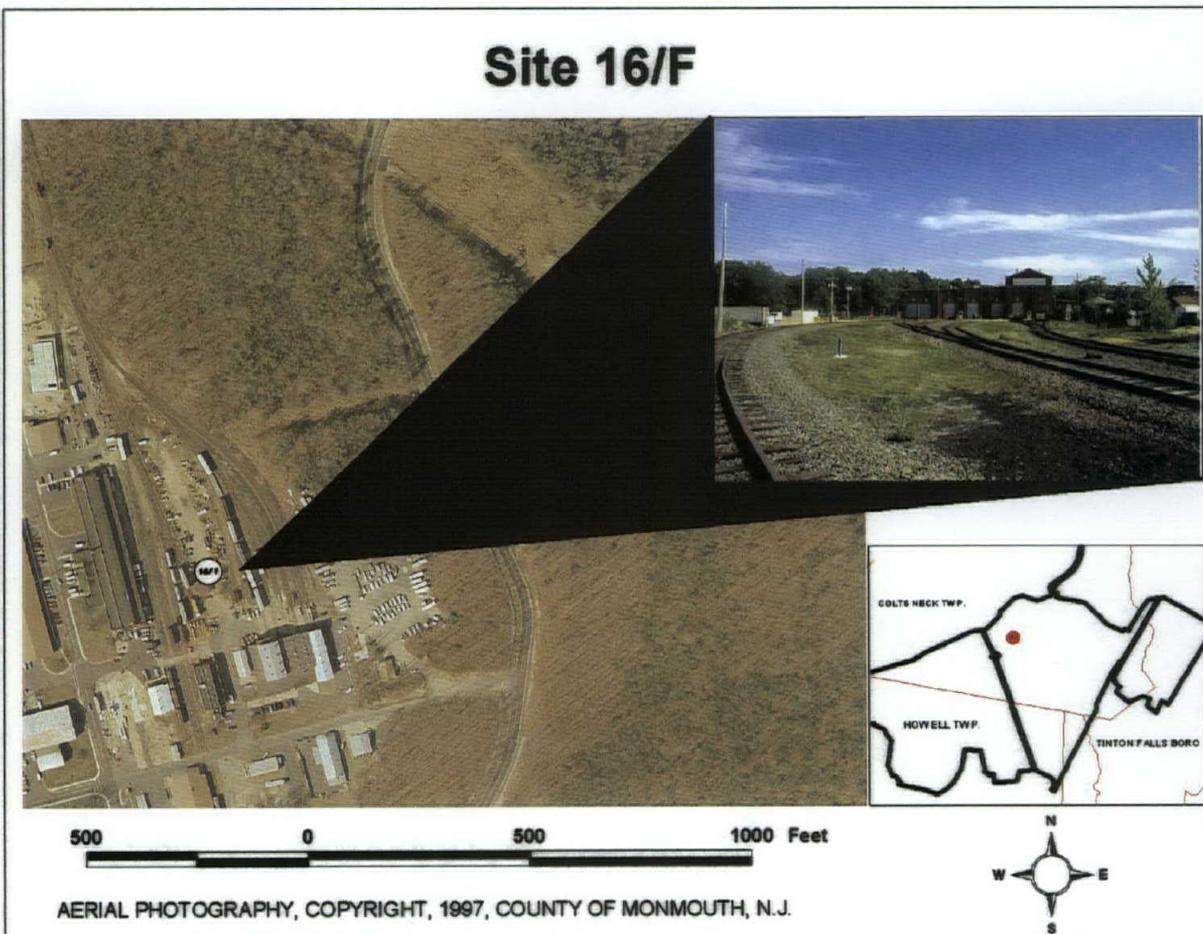
Site of an underground pipe leak in June 1977. The line was excavated at that time and it was determined at that time that about 50 gallons of fuel was lost.

SITE STATUS

Sampling during the Site Investigation found hydrocarbon contamination area-wide in the soils. It was thought this could be attributed to site usage as a rail yard. An extensive soil gas survey was conducted in 1995 to determine any "hot spots" and to pick appropriate locations for monitoring wells. This investigation led to the discovery of a large concentration of "free-product" diesel fuel on top of the shallow groundwater.

A pilot scale "bioslurper" system was installed in 1996 to determine whether the free-product fuel could be recovered. High concentrations of iron in the shallow groundwater interfered with the fuel recovery, but system modifications were made to overcome this problem. A large-scale system was designed in 1997 and was operated from February 1998 through May 1999. Approximately 5000 gallons of diesel fuel has been recovered using the bioslurper process.

An independent evaluation is being conducted to determine the feasibility and effectiveness of removing any more diesel fuel.



SITE #17: DISPOSAL SITE BEHIND TRNG. BARGE, WATERFRONT

SITE HISTORY

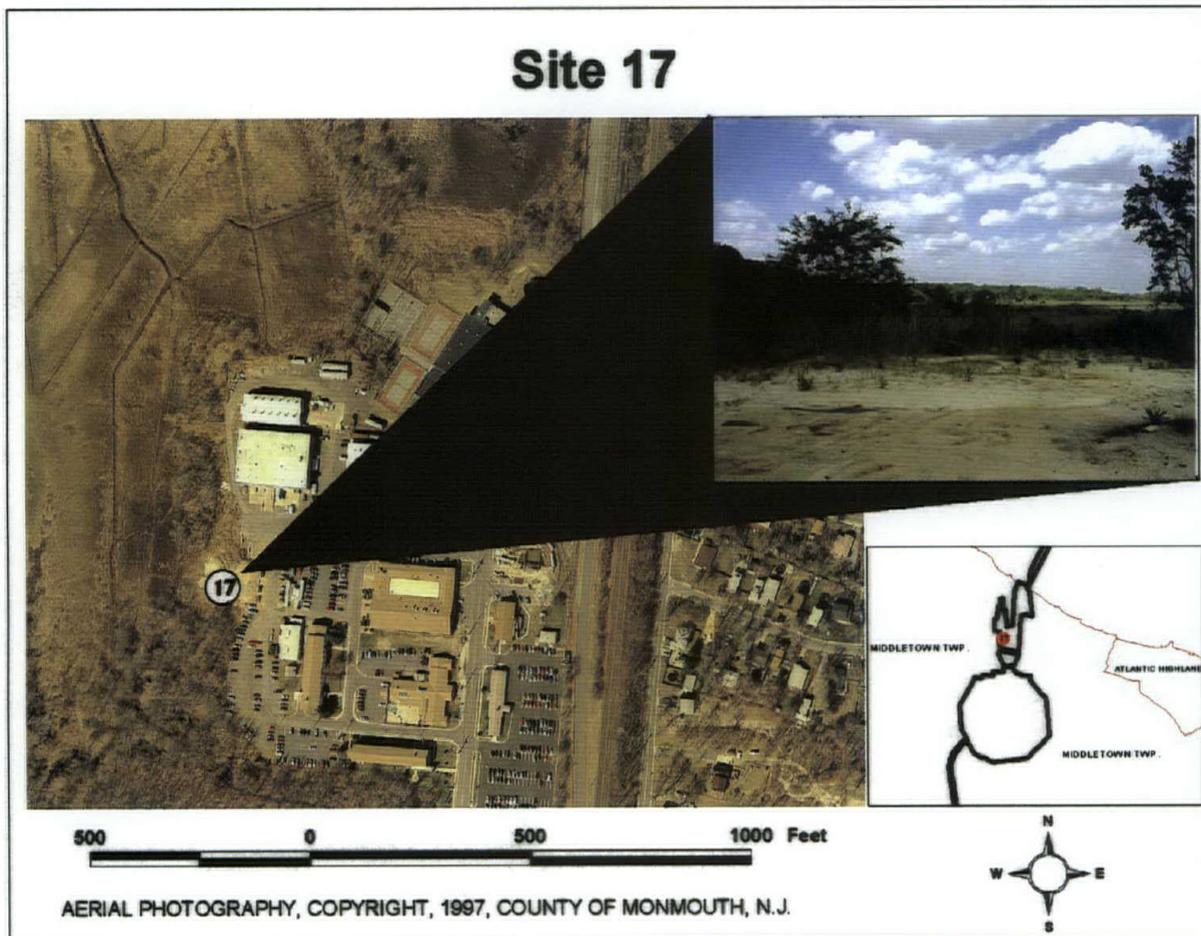
Approximately 3 acre site adjacent to a tidal marsh where assorted construction debris and forklift vehicles were disposed. The site is approximately 500 feet southwest of Site 6.

SITE STATUS

Impact appears to be minimal but the close proximity of the marsh must be considered. Samples were taken in the marsh and from any locations where water was seeping out of the landfill site or there was evidence of previous seepage. Several compounds were detected above ecological screening levels at the toe of the fill area. These compounds were not detected in samples taken further out into the marsh.

In July of 1999 it was determined by regulatory personnel from the New Jersey Department of Environmental Protection that natural growth in the area was sufficient to promote erosion control.

Other than installing a guardrail for the adjacent parking lot, there are no current plans for any actions at this site.



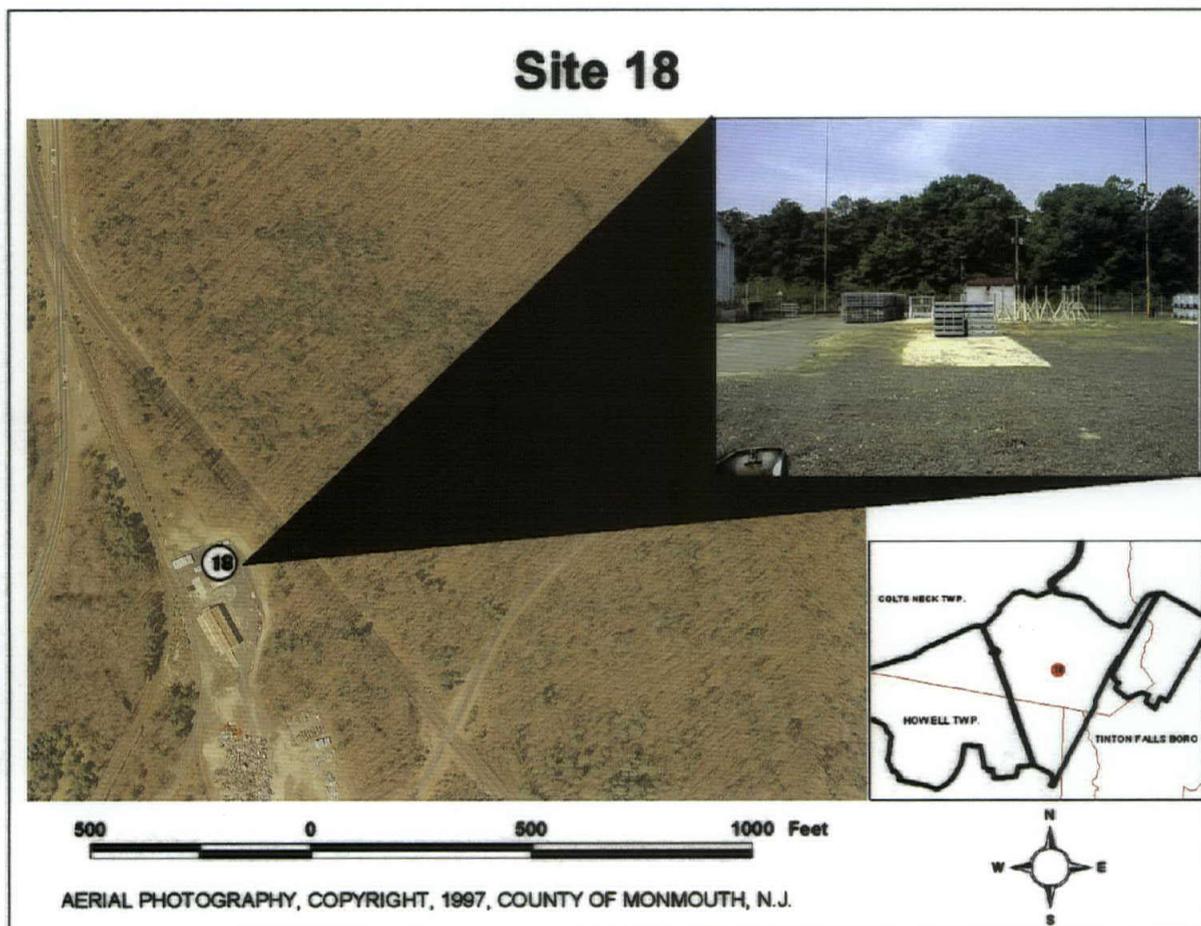
SITE #18: DEMILITARIZATION FURNACE

SITE HISTORY

A state-permitted furnace, building 589, which was used from 1978 to 1989 to demilitarize small caliber (up to 40 mm) ammunition by burning.

SITE STATUS

The furnace was removed under closure in accordance with the Resource Conservation and Recovery Act. Closure and soil sampling plans were submitted to NJDEP and were carried out. Clean closure was certified by the New Jersey Department of Environmental Protection in May, 1995.



SITE #19: PAINT SLUDGE DISPOSAL SITE ADJ. TO BLDG. S-34

SITE HISTORY

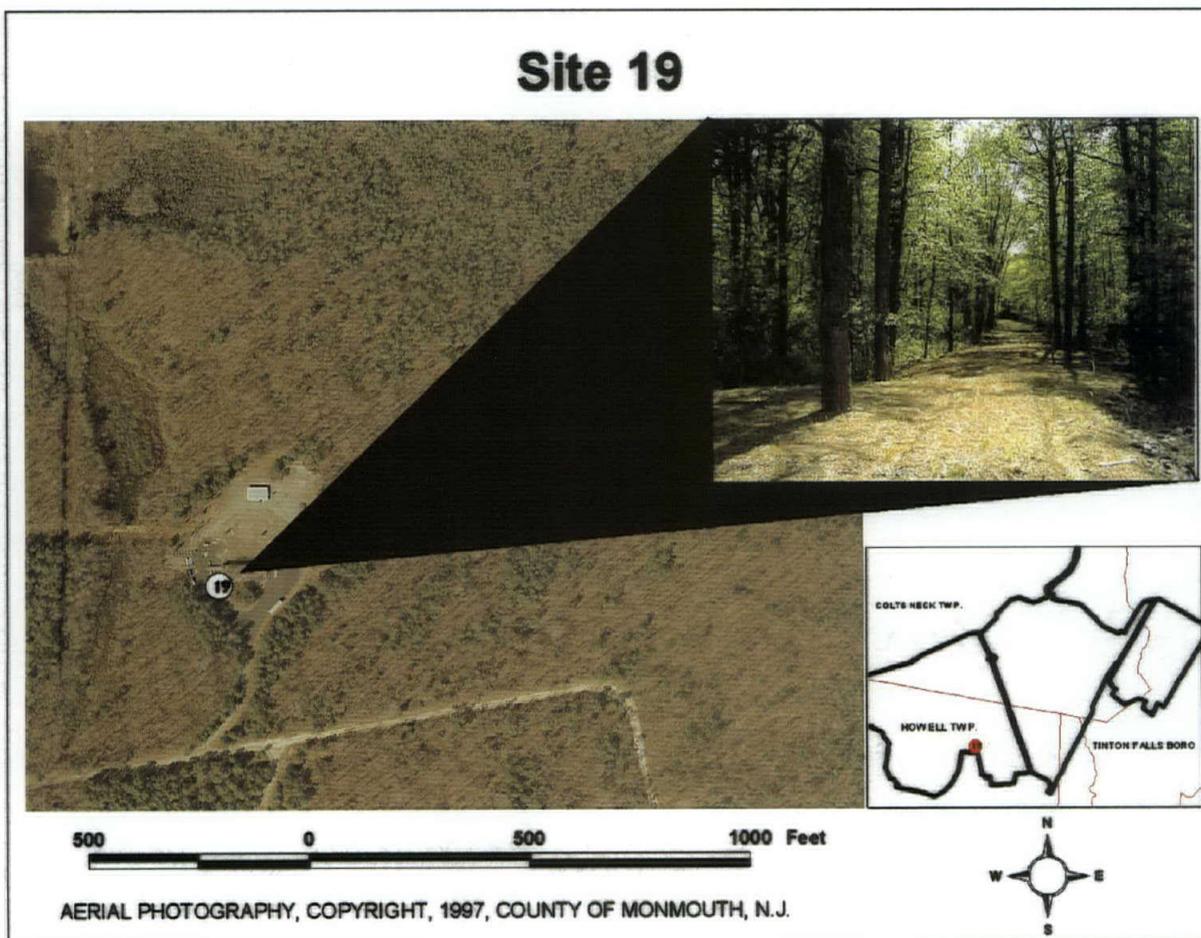
This site was used for disposal of paint chips and sludge from maintenance operations in the former Bldg. S-34. Part of the site is now used for forklift driver training.

SITE STATUS

Elevated levels of lead and chromium have been found in the soils in an on-site surface depression and the drainage ditch leading away from it. Subsurface soil samples determined concentrations decreased rapidly with depth. Monitoring wells showed slightly elevated metals in the groundwater.

The Record of Decision for remediation of this site was signed in August 1997. The selected remedy consisted of excavation of impacted soils in the two areas, backfilling with clean soil, paving of the filled surface depression, prohibition of groundwater usage in the adjacent area and long-term periodic monitoring of groundwater conditions.

The Remedial Action is was completed in 1998. Post-remediation monitoring will be implemented in accordance with the Record of Decision for this site.



SITE #20: GRIT BLAST DISPOSAL SITE ADJ. TO BLDG. 544

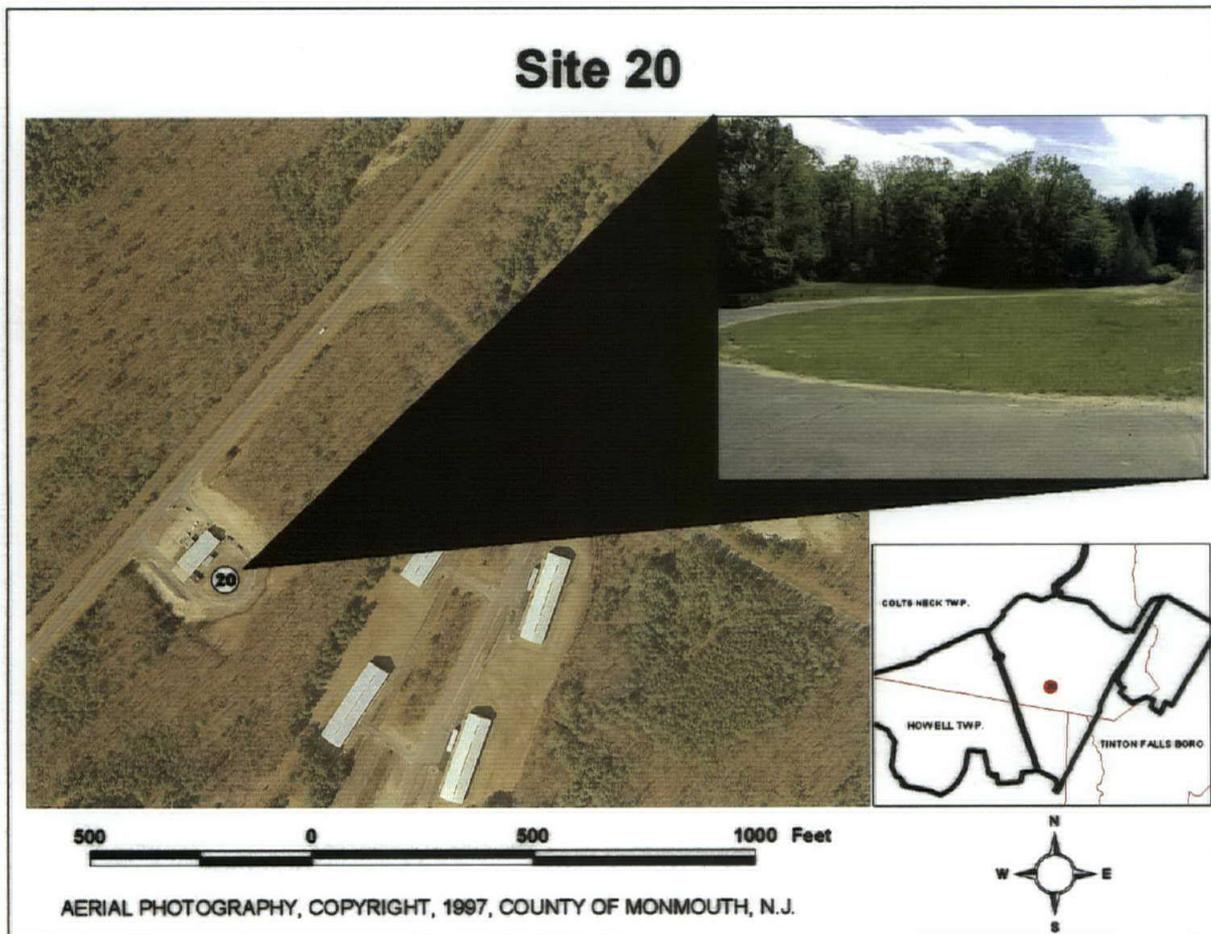
SITE HISTORY

Site included a spent sand blast grit pile and a surrounding shallow drainage area behind Bldg. 544 along Midway Road.

SITE STATUS

Metals were detected in the soils and sediments at the site. An interim removal action was conducted in 1994 to remove the grit pile and visibly impacted soils. A drawing review in preparation for the removal action found an underground leach field which was studied during the 1995 Remedial Investigation. Soil borings were taken in the area of the leach field and in nearby wetlands. Confirmatory soil samples were also taken in the excavated areas to confirm the removal.

Based on confirmation sampling following the removal action, no further action is planned for this site. A "no further action" Record of Decision was signed by the U. S. EPA and the Navy in September, 1999.



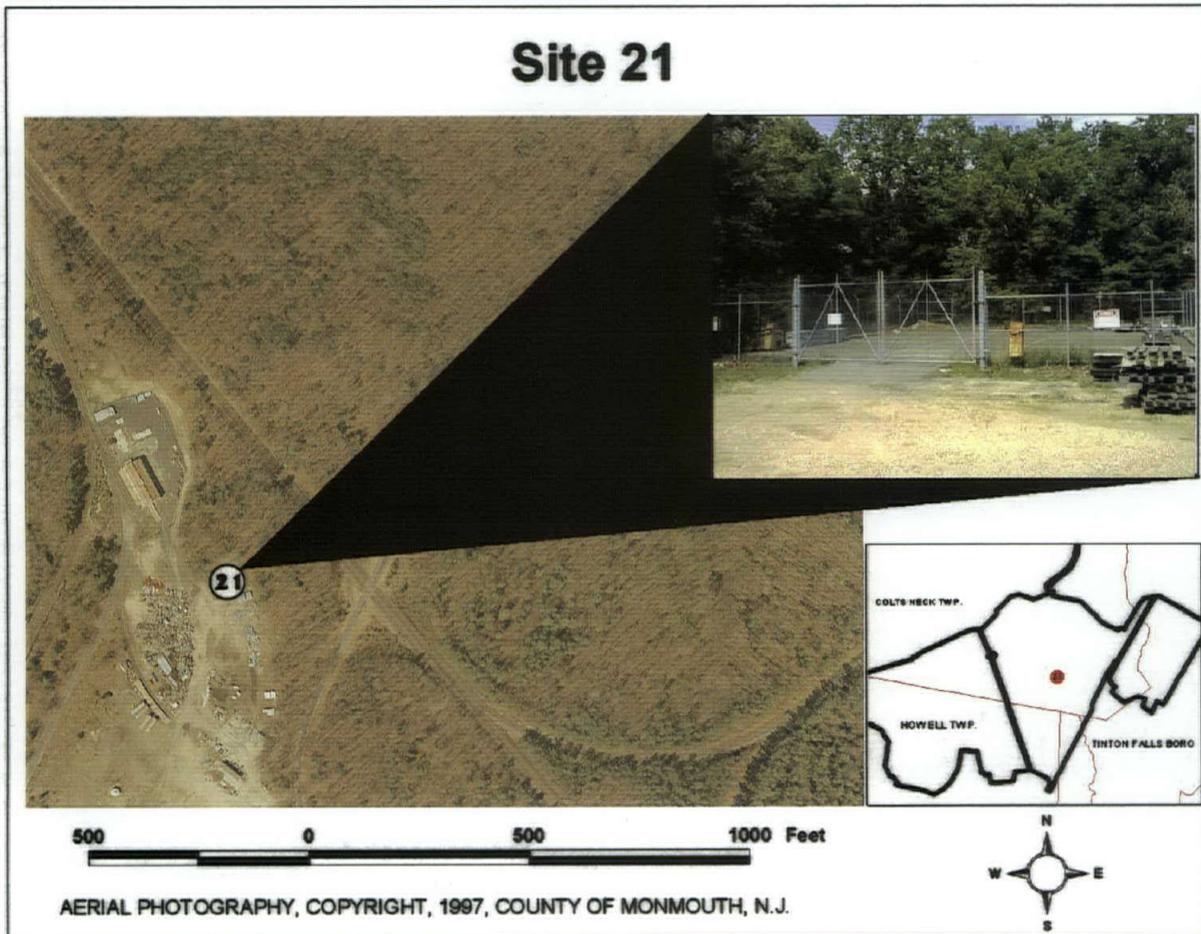
SITE #21: BAGHOUSE & CYCLONE DUST STORAGE NEAR BLDG. S-589

SITE HISTORY

A storage pad for dust recovered from the air pollution control equipment on the demilitarization furnace which was used 1978-1989. Some containerized solid hazardous wastes were intermittently stored on this site until December, 1998. Site 21 was included in NWS Earle's hazardous waste storage permit. A new, state-of-the-art hazardous waste storage facility has been constructed and is currently being used for the storage of hazardous wastes on NWS Earle.

SITE STATUS

Site 21 (referred to as "the DEMIL Storage Pad") is no longer used as a permitted hazardous waste storage area. Closure of this area is being performed in accordance with the conditions of the hazardous waste storage permit.



SITE #22: PAINT SLUDGE DISPOSAL SITE ADJ. TO BLDG. D-2

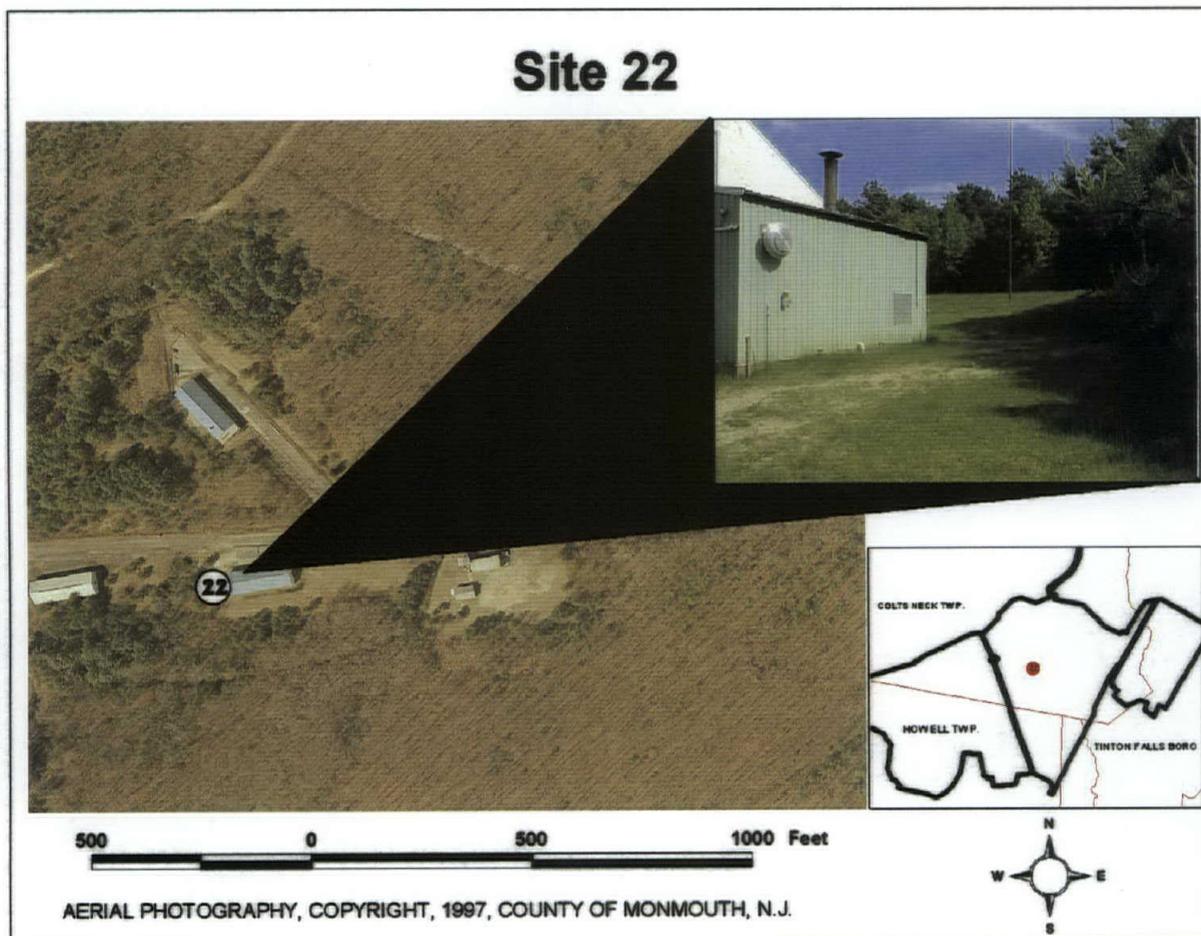
SITE HISTORY

Approximately 50 square foot area of stressed vegetation and discolored soils where paints were dumped behind the building.

SITE STATUS

Low level contamination has been found in the soils and a shallow drainage area. Since soil sampling confirmed significant levels of metals and paint residues in a somewhat limited area, a removal action was conducted in 1996.

Based on confirmation sampling following the removal action, no further action is planned for this site. A "no further action" Record of Decision has been signed by the U. S. EPA and the Navy in September, 1999.



SITE #23: PAINT SLUDGE DISPOSAL SITE ADJ. TO BLDG. D-5

SITE HISTORY

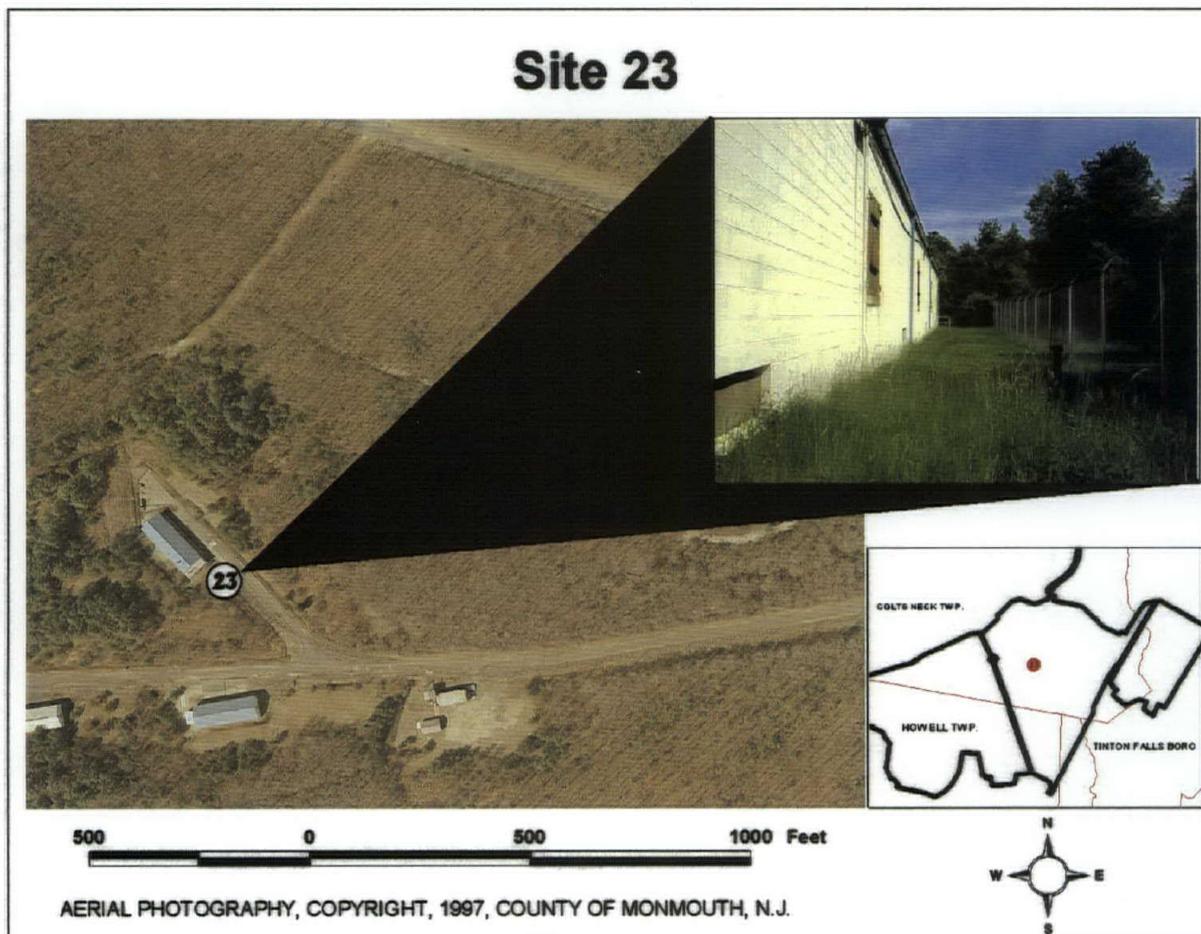
Approximately 200 square foot area of bare soil behind building with signs of paint spillage.

SITE STATUS

Elevated levels of volatile organics, lead and chromium were detected during Site Investigation sampling. Three monitoring wells were drilled and additional surface water and sediment samples were taken in 1995 to define the extent of contamination. Elevated metals were detected in the groundwater, but the samples had very high turbidity which indicated at least some of the reported value was due to suspended solids.

Since soil sampling confirmed significant levels of metals and paint residues in a somewhat limited area, a removal action was conducted in 1996.

Based on confirmation sampling following the removal action, no further action is planned for this site. A "no further action" Record of Decision was signed by the U. S. EPA and the Navy in September, 1999.



SITE #24: CLOSED PISTOL RANGE

SITE HISTORY

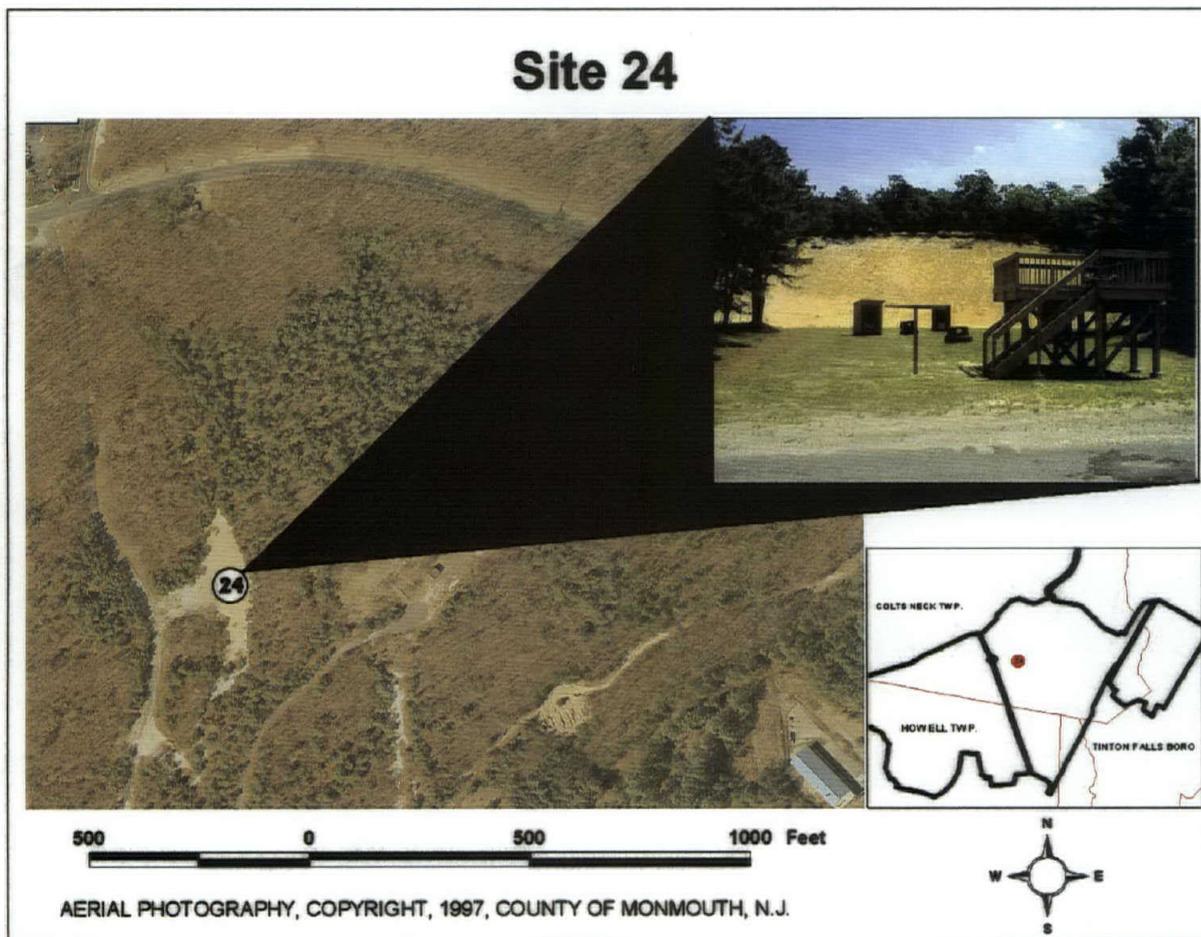
A small arms range located at coordinates 721-571 south of Esperance Road. A steeply sloping sand face forms the impact berm.

SITE STATUS

A significant amount of lead slugs were present in the impact berm. The subsurface soil under the berm was sampled and it was determined the lead had not migrated. A removal action was performed in 1996 to remove the slugs. After separation, the cleaned soil was placed back on the site.

Based on confirmation sampling following the removal action, no further action is planned for this site. A "no further action" Record of Decision has been signed by the U. S. EPA and the Navy in September, 1999.

An archery range has been established as a reuse for this site.



SITE #25: CLOSED PISTOL RANGE

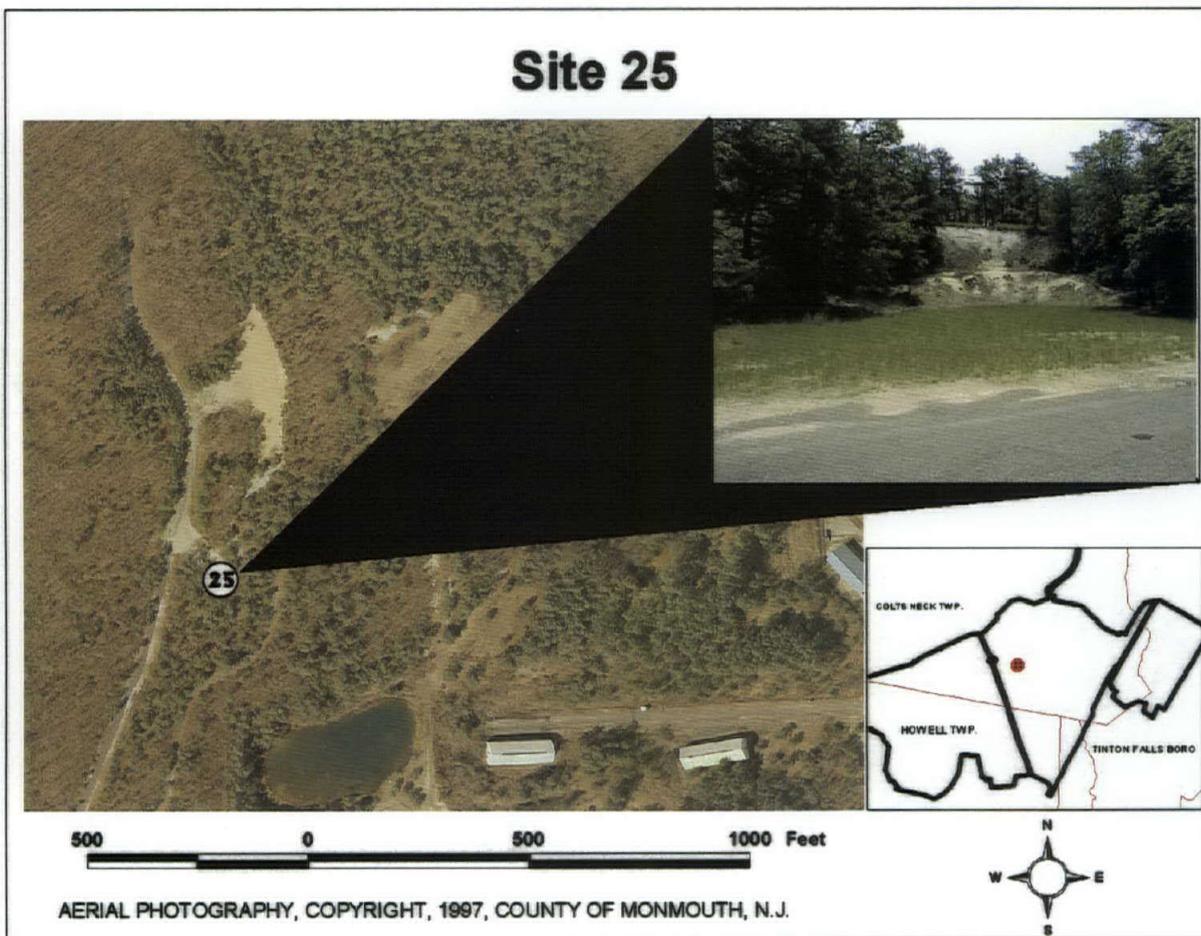
SITE HISTORY

Similarly constructed small arms range located near Site 24 at coordinates 721-572.

SITE STATUS

A significant amount of lead slugs were present in the impact berm. The subsurface soil under the berm was sampled and it was determined the lead had not migrated. A removal action was performed in 1996 to remove the slugs. After separation, the cleaned soil was placed back on the site.

Based on confirmation sampling following the removal action, no further action is planned for this site. A "no further action" Record of Decision has been signed by the U.S. EPA and the Navy in September, 1999.



SITE #26: EXPLOSIVE "D" WASHOUT AREA NEAR BLDG. GB-1

SITE HISTORY

A 1 acre site where ammonium picrate was recovered from 5" shells for one year in the late 1960's. Drainage went to an outdoor percolation pit.

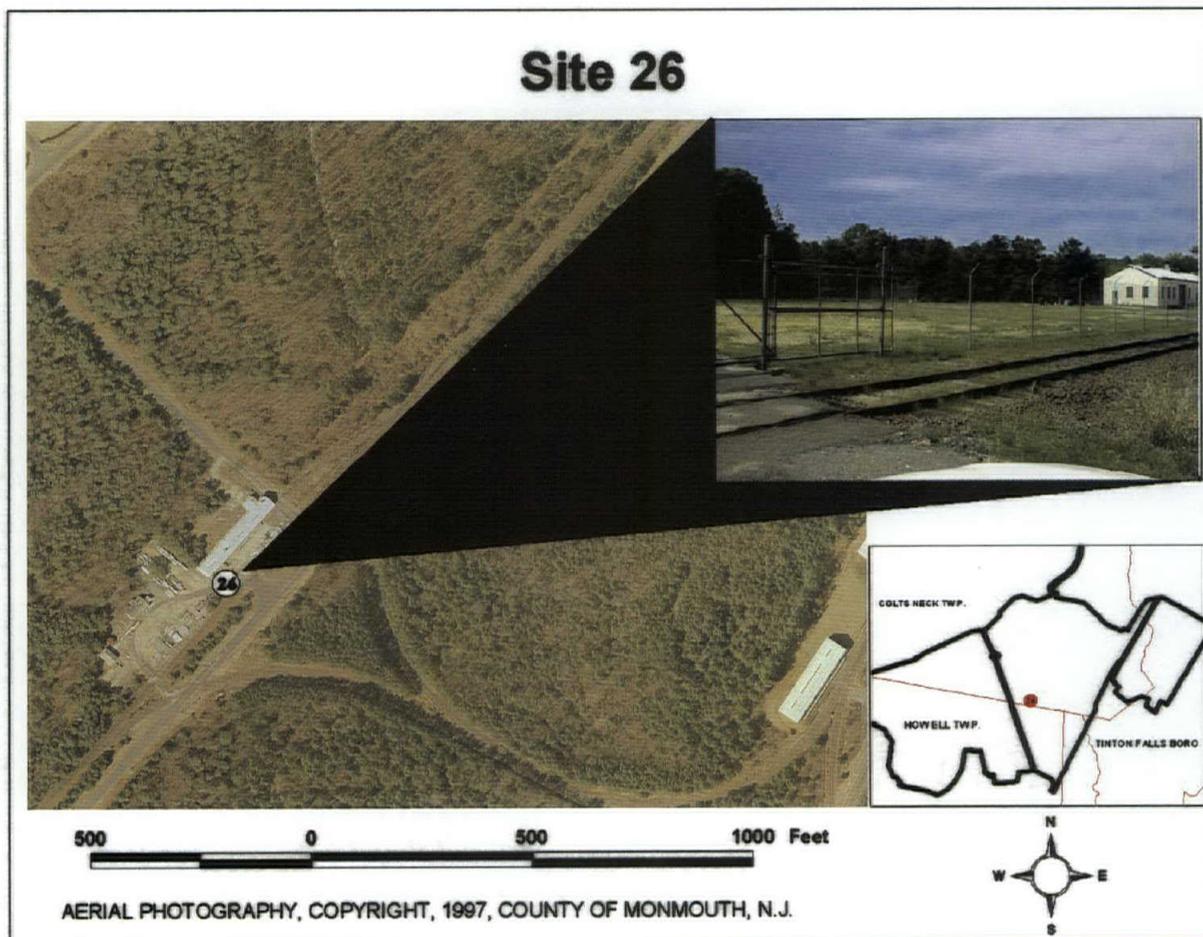
SITE STATUS

Slightly elevated levels of explosives have been detected. Trichloroethylene (TCE) was detected in one well during 1992 sampling. It was believed to be associated with an underground vault. A soil gas survey and hydropunch sampling were conducted to find the source and extent of the TCE. These studies determined that significant concentrations of TCE were present just above a clay layer located 25 feet below the ground surface. The plume is approximately 350 feet long and 130 feet wide. The underground vault was determined to be a source area.

A Proposed Plan was announced in December 1997 for remediation of the site using air sparging and soil vapor extraction. A removal action was conducted in February, 1998 to remove the vault. A Record of Decision was issued in 1998 which documented the remedial method for this site as air sparging/soil vapor extraction.

In May, 1999 a pilot process study was completed; the information obtained from the pilot system operation will form the basis of design for the full scale, air sparging/soil vapor extraction system.

The full scale system design will be completed in the Fall, 1999 with installation of the system to take place in the late winter, early spring of the year 2000.



SITE #27: PROJECTILES REFURBISHING AREA

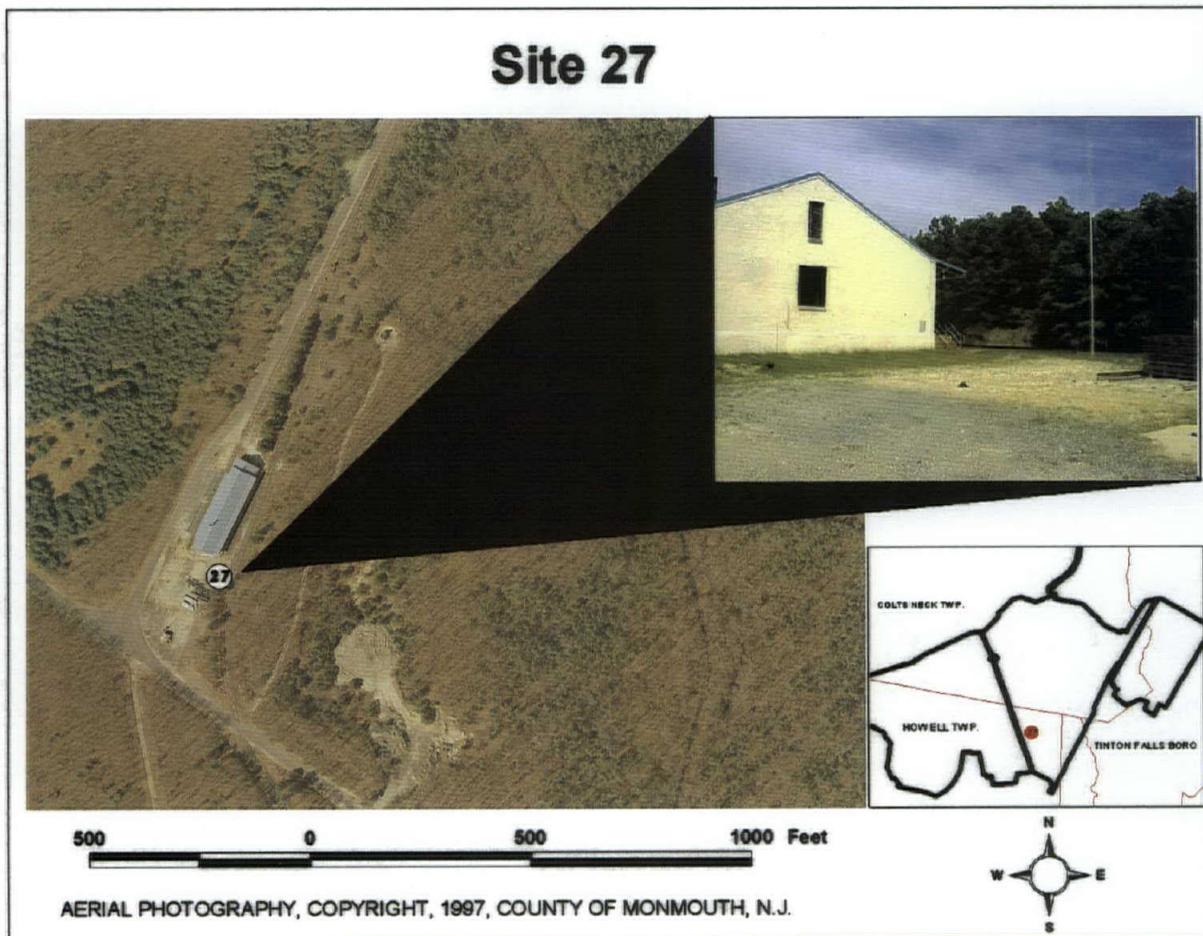
SITE HISTORY

A small area behind Building E-14 off of Normandy Road. Projectiles were shot-blasted, repainted and restenciled in the building. Paint wastes were apparently dumped outside.

SITE STATUS

Paint residues were present on the ground surface. Elevated levels of metals and PCBs were found in the soils. Additional soil borings were sampled at 3 depths to determine the extent of contamination. Since the extent was well defined, a removal action was conducted in 1996.

Based on confirmation sampling following the removal action, no further action is planned for this site. A "no further action" Record of Decision has been signed by the Environmental Protection Agency and the Navy in September, 1999.



SITE #28: WASTE OIL TANK

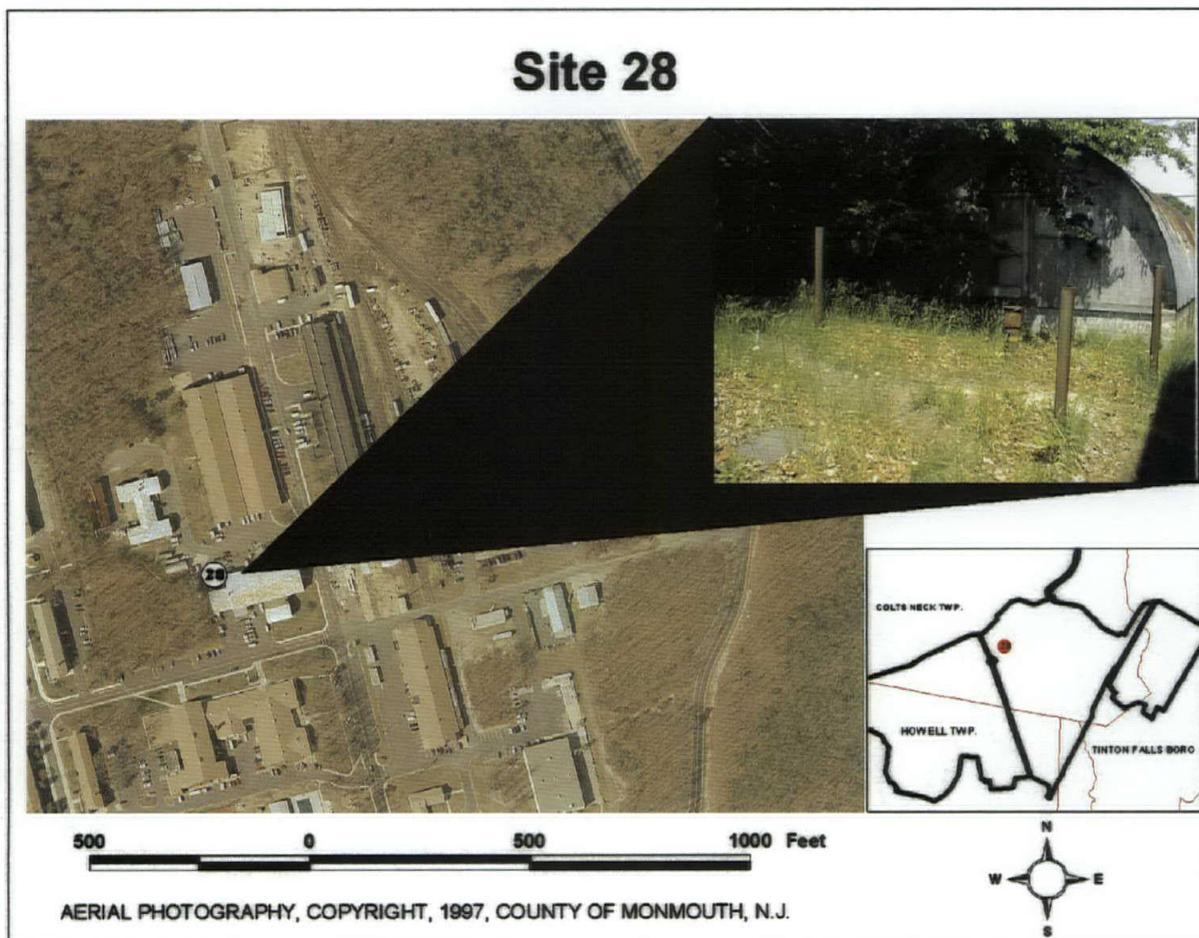
SITE HISTORY

An underground waste oil tank behind Building C-14 which has been closed in accordance with underground tank requirements.

SITE STATUS

Post-closure monitoring has been completed.

No further action is necessary.



SITE #29: PCB SPILL SITE, NORTH OF BLDG. C-16

SITE HISTORY

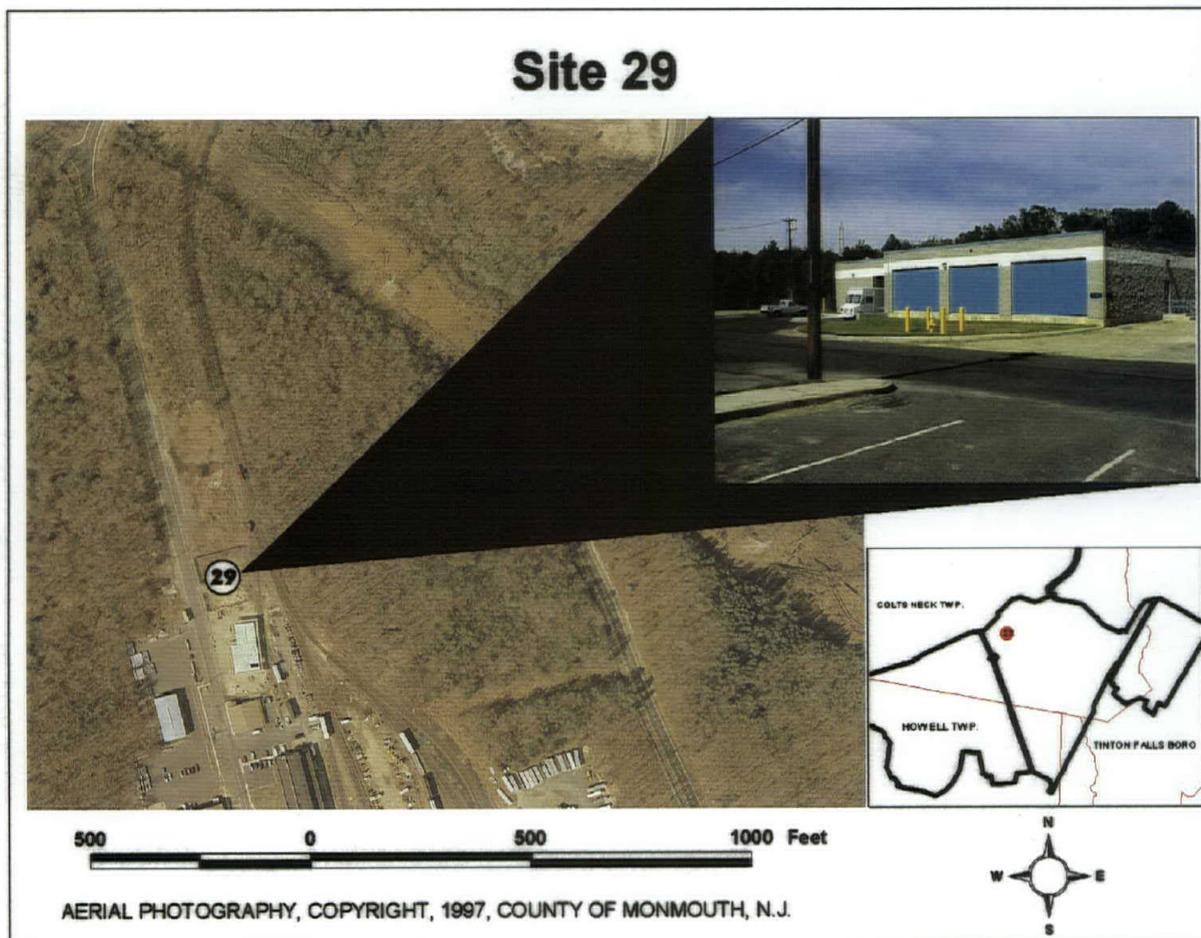
An area in the storage yard north of Building C-16 where a PCB transformer was vandalized in 1981. The area was cleaned up at that time and the excavated soil was disposed off-site. A new, permitted hazardous waste storage facility has been built on the site.

SITE STATUS

Petroleum related compounds were found in the surface soil and low levels of PCBs were found in monitoring wells during a June 1992 Site Investigation. The entire area was excavated during site preparation for the storage facility. The excavated soils were classified as non-hazardous based on post-excitation sampling. Since the existing monitoring wells were formally closed during the excavation, two new wells were installed downgradient of the site. Parameters in these wells were similar to background conditions.

Since this site is relatively close to Site 16/F, the new monitoring wells will be retained for possible use in that site's long term monitoring program.

No further action is planned for this site. A "no further action" Record of Decision (ROD) has been signed in September 1999 by the U. S. EPA and the Navy.



CLOSED PESTICIDE SHOP, BLDG. S-86

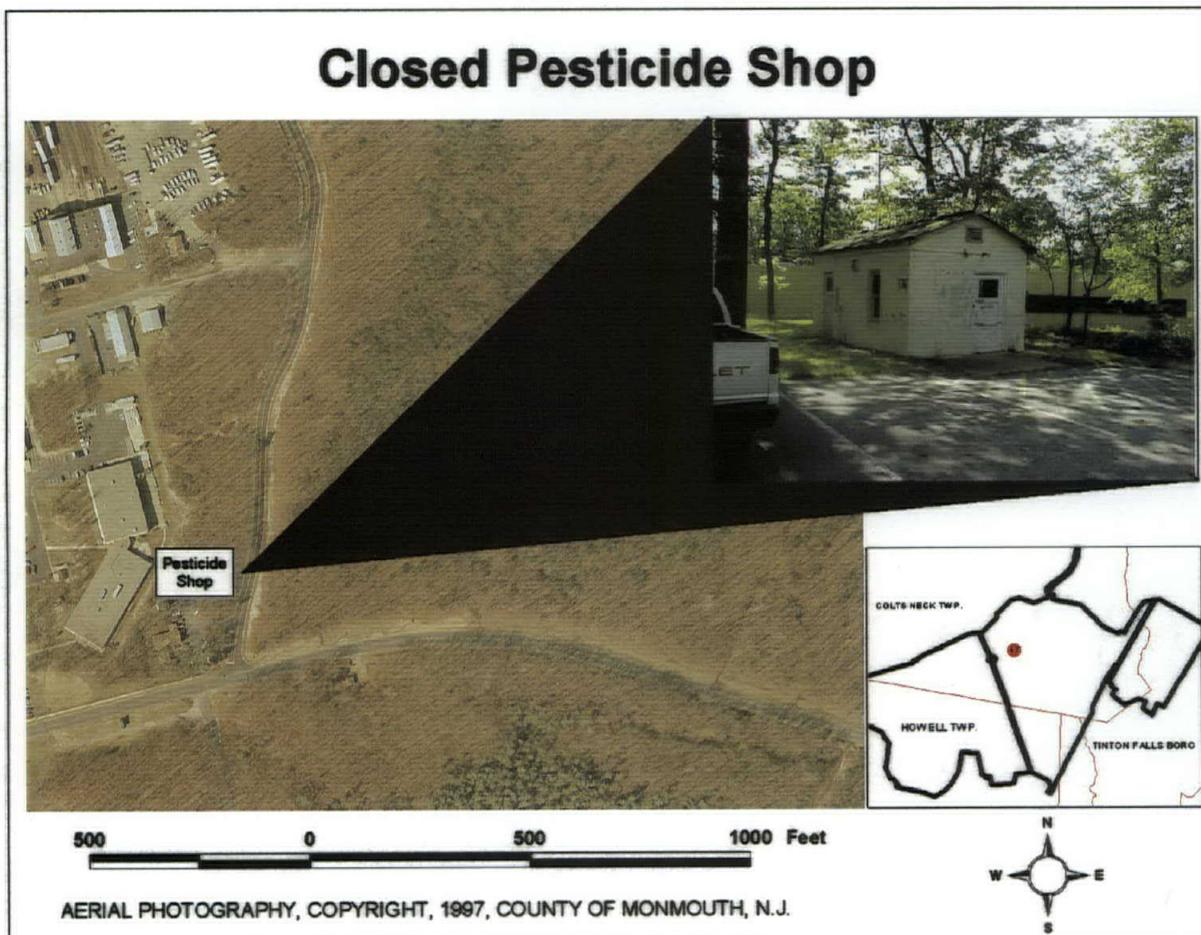
For many years, Naval Weapons Station Earle Public Works personnel had applied a variety of pesticides and herbicides across the Station. The Pesticide Shop was used basically as a storage and mixing facility through the 1980s. Subsequently, mixing and application of pesticides was performed by contractor personnel.

SITE STATUS

In 1991, all residual pesticide/herbicide product containers were removed from Bldg. S-86 and properly disposed of as hazardous waste.

Sampling of soils in the vicinity of the building uncovered the presence of high levels of different pesticide compounds such as chlordane and 4,4' DDT. Shallow groundwater testing revealed a slightly elevated reading for Endosulfan I. Further, sludge in the septic tank which had previously serviced the building has been found to contain chlordane.

By December, 1999 removal of affected soils, the septic tank and demolition of Bldg. S-86 will take place. Soils and groundwater will be subsequently tested to determine the effectiveness of the removal action.

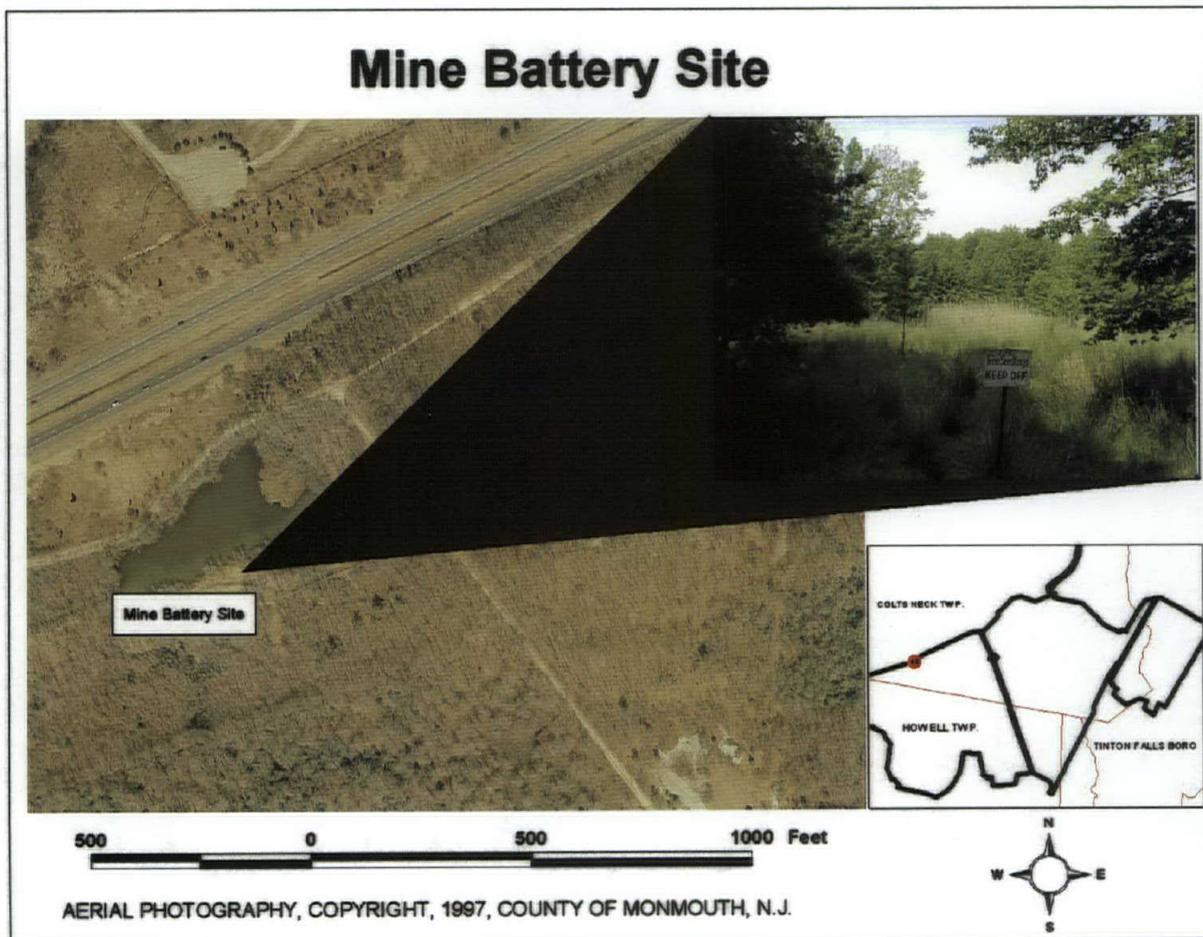


MINE BATTERY SITE AT WEST POND AREA

North and west of Bldg. S-35, west of Highway 34, is a 3-4 acre site adjacent to West Pond where the burial of mine batteries was discovered by a Station hunter. The batteries have been evaluated as being inert, and soil screening in 1998 revealed the presence of metals.

SITE STATUS

A more comprehensive environmental evaluation of this disposal site will be conducted in the Fall, 1999. The extent of disposal activity and the environmental impact to soils, groundwater and surface water will be examined.



"EPIC" STUDY SITES

In 1991, the EPA's Environmental Photographic Interpretive Center performed an aerial photographic analysis of NWS Earle and identified 17 additional sites for further investigation. After a Preliminary Assessment for these 17 sites, EPA and NJDEP agreed that no further action was needed at 14 sites. The Navy agreed to additional studies of the following 3 sites.

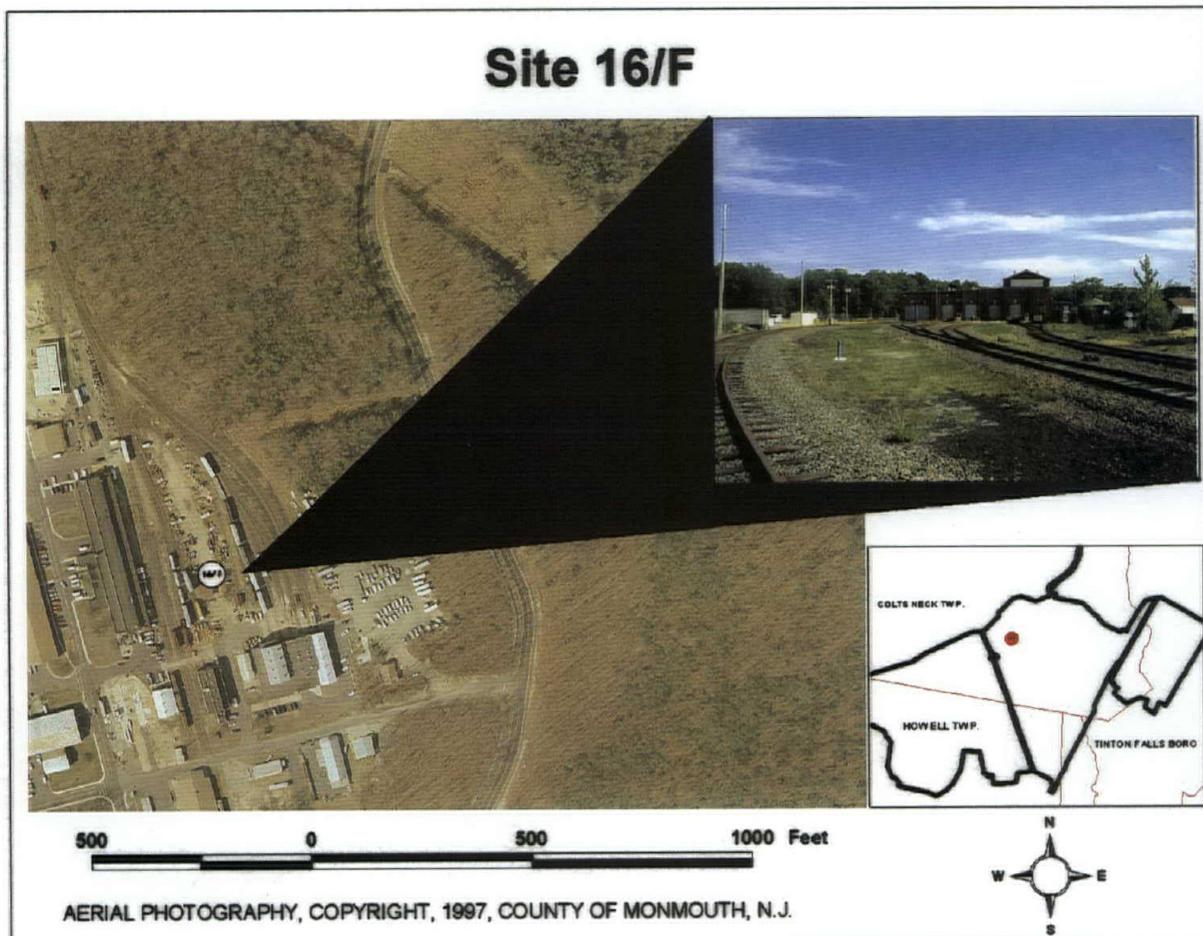
SITE F: C-50 ROUNDHOUSE AREA

SITE HISTORY

A 7.8 acre site including Buildings C-50 and C-19 as well as a heavy equipment storage yard and two railroad car storage yards. Site 16 is within this area and has been expanded to incorporate Site F.

SITE STATUS

Area-wide soil contamination at Site 16, which is within this site, warranted further investigation of the area. Actions on this site are listed under Site 16.



SITE L: MSC VAN PARKING LOT

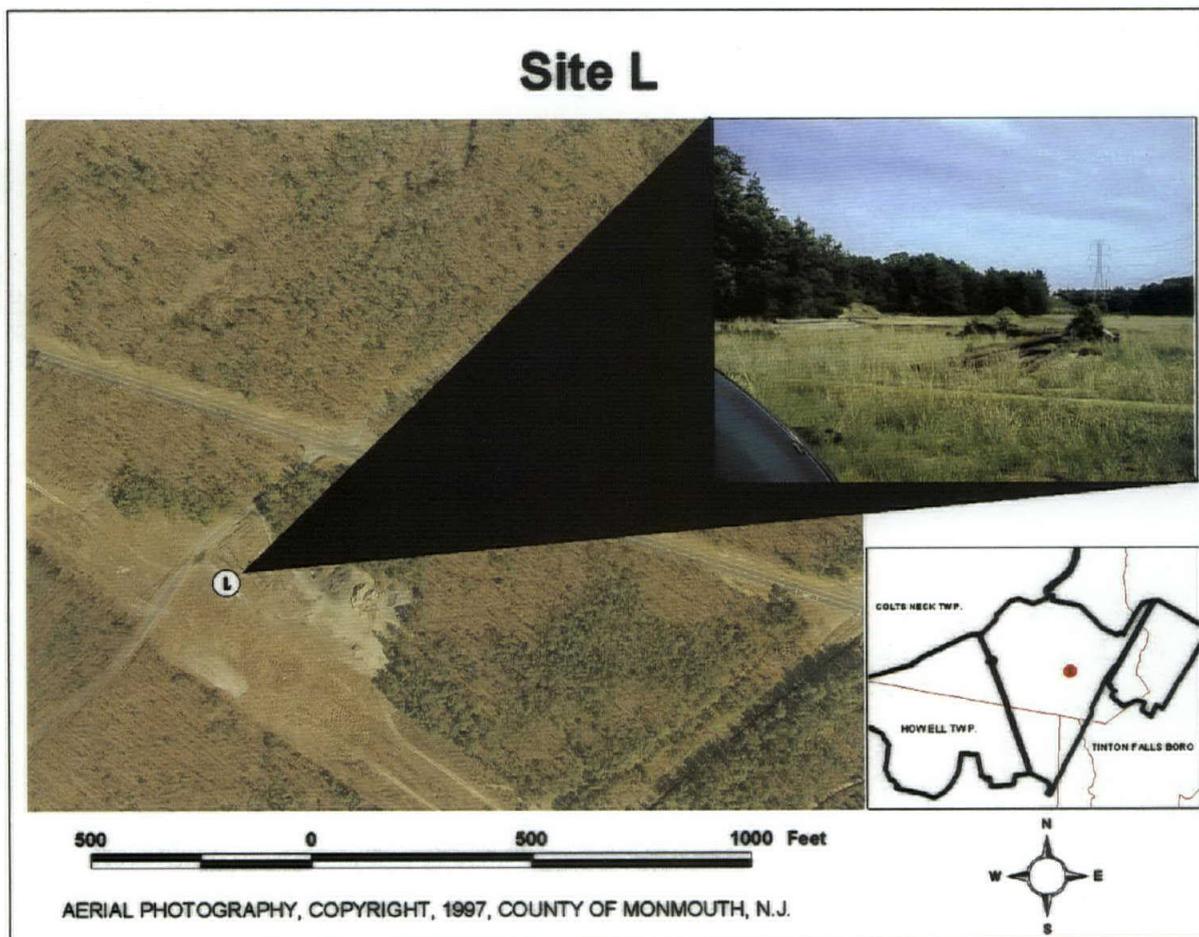
SITE HISTORY

15.7 acres along Pine Brook Road south of Asbury Avenue. Approximately 4 acres have been used for storage of telephone poles, ballast stone, ordnance containers and excessed electronic equipment. The remaining area is a powerline easement.

SITE STATUS

There is no evidence or reports of any hazardous materials operations at the site, but some areas appear to have been impacted by storage operations. Eight surface soil samples were taken in representative areas. Low levels of two organic compounds typically encountered in treated lumber were found at levels very near the New Jersey Non-Residential Direct Contact Soil Cleanup Criterion.

No further action is currently planned at this site.



SITE Q: MILITARY SEALIFT COMMAND FIRE FIGHTING SCHOOL

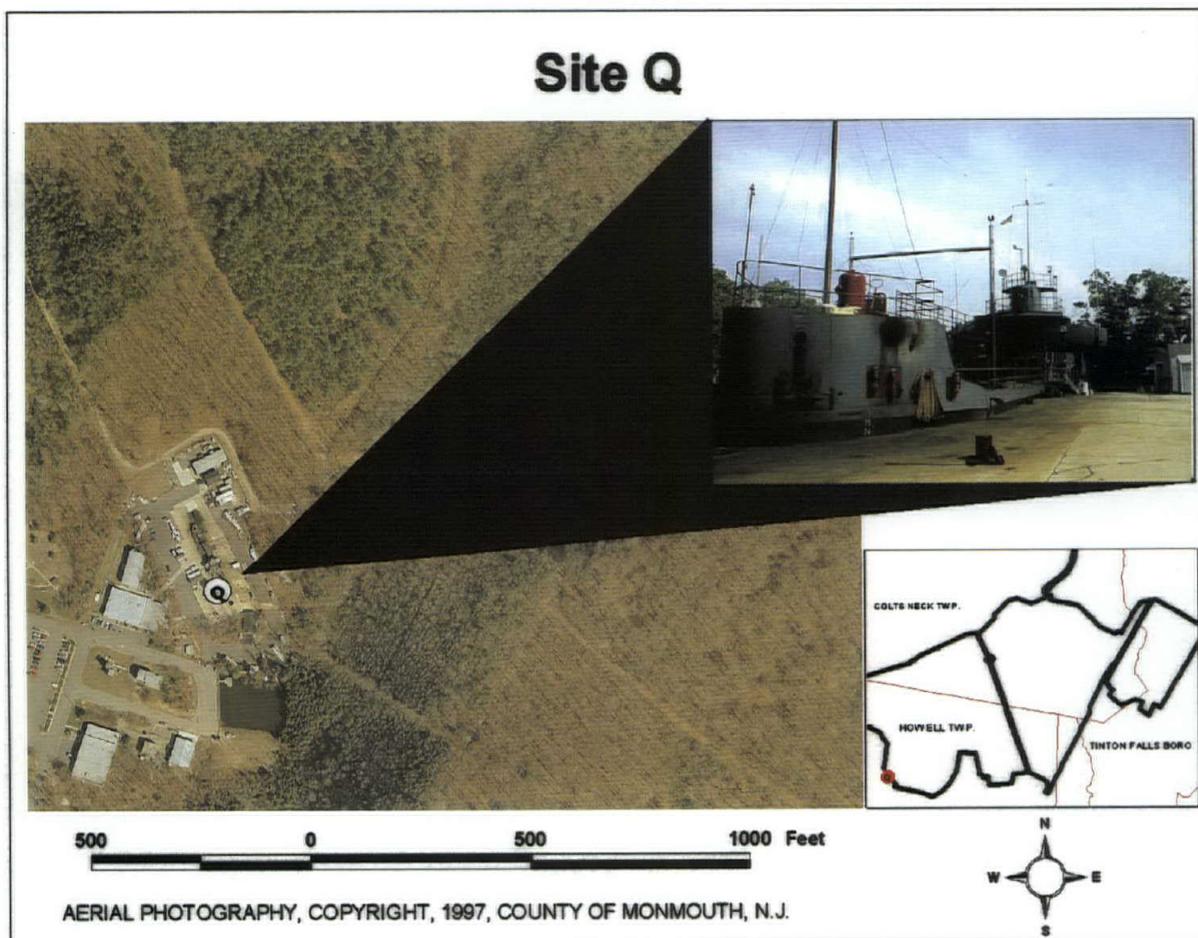
SITE HISTORY

A 5.5 acre site outside the perimeter fence, which was developed in 1975 by the Military Sealift Command as a training facility. Fire fighting training takes place on a concrete pad surrounded by a bermed, paved area. All water used for training is contained and collected for treatment. An on-site water treatment plant is permitted and inspected by New Jersey Department of Environmental Protection.

SITE STATUS

Although there is no evidence of leakage, the school has extensive underground piping leading to its water treatment facility. There were some cracks in the pavement and also some evidence that water may have flowed over the berm in one section of the containment area. Soil, sediment, and groundwater samples collected in December 1995 indicated a very minor impact from site activities. No significant threat to human or ecological receptors was detected.

No remedial action is planned at this time. Discharge monitoring of the water treatment plant will continue in accordance with the state permit. The containment system has been improved where necessary to prevent future releases.



WAYSIDE AREA

Since 1947, and as recently as 1992, the U. S. Army conducted training activities and communications research and development on 440 acres of Navy property, referred to as "the Wayside Area." The site included a number of buildings and structures, an underground network of electrical and telephone cables, potable water wells, and other communications equipment.

SITE STATUS

In 1992, the Navy contracted with Halliburton NUS to conduct an environmental assessment of the area. Subsequently, the U. S. Army removed several transformers containing PCB-dielectric fluid, as well as underground heating oil tanks. In 1999, Naval Weapons Station Earle Command elements met with U.S. Army, Fort Monmouth representatives to discuss a plan for decommissioning the Army components from the site.

Over the next several years, the environmental assessment previously undertaken will be expanded to include an examination of any impacts to groundwater of Wayside Area activities. Further, the U. S. Army, in conjunction with Navy collaboration and oversight, will take action to remove all buildings and structural assets from this parcel of Naval Weapons Station Earle.

