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NWS EARLE INSTALLATION RESTORATION PROGRAM SITE SUMMARY NWS EARLE NJ

10/1/1999

NAVFAC NORTHERN

NWS EARLE
INSTALLATION RESTORATION PROGRAM

SITE SUMMARY – OCTOBER 1999

WRITTEN BY:
John P. Kolicius
Environmental Engineer
Northern Division
Naval Facilities Engineering Command

EDITED BY:
Gregory J. Goepfert, P.E.
Environmental Engineer
Naval Weapons Station Earle

GRAPHICS BY:
Eric Helms
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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.

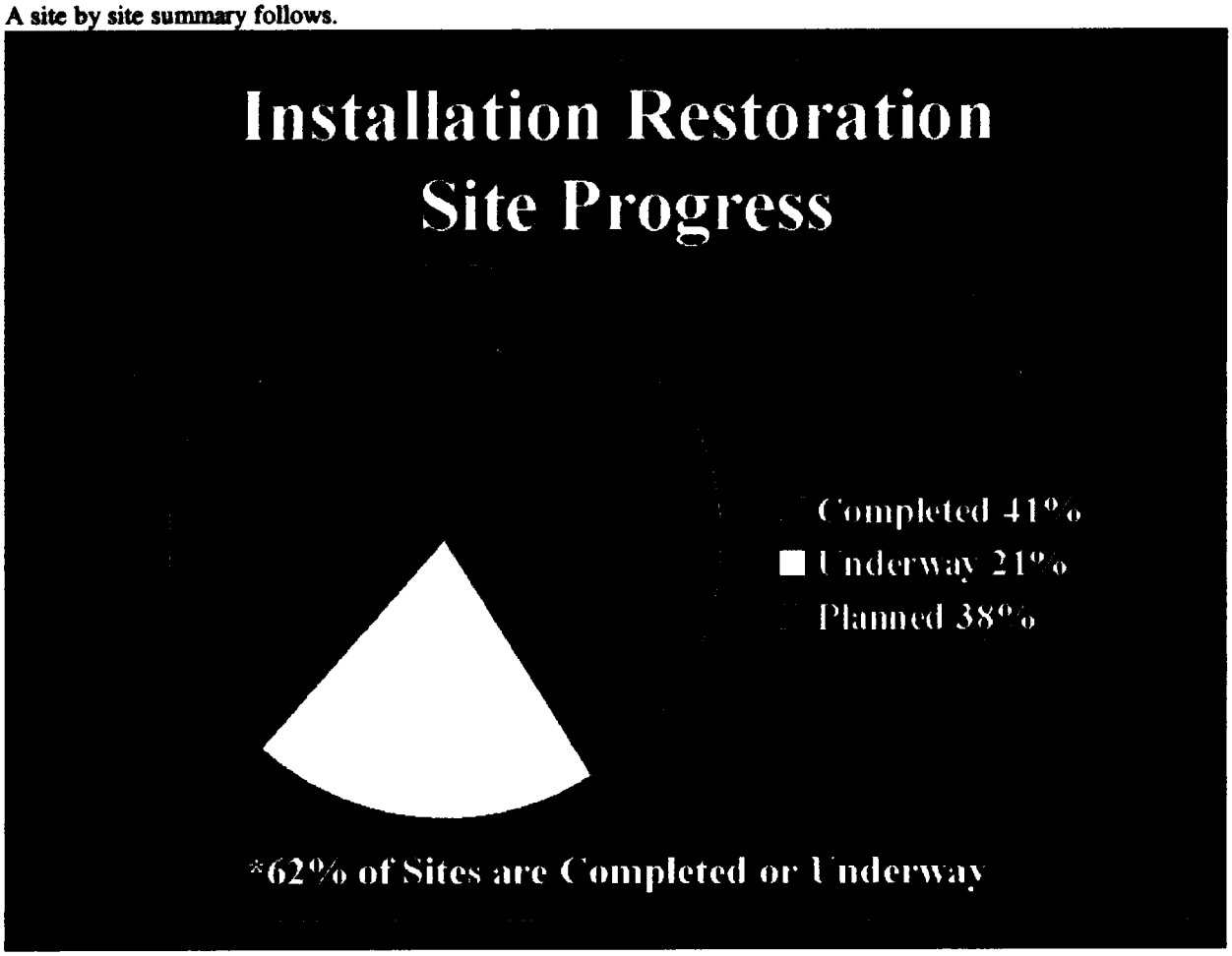
Upon being named to the NPL, the Navy agreed to conduct a Site Investigation at 16 additional sites. The remaining 2 sites from the IAS were not included because they were permitted operations under the Resource Conservation and Recovery Act (RCRA).

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.

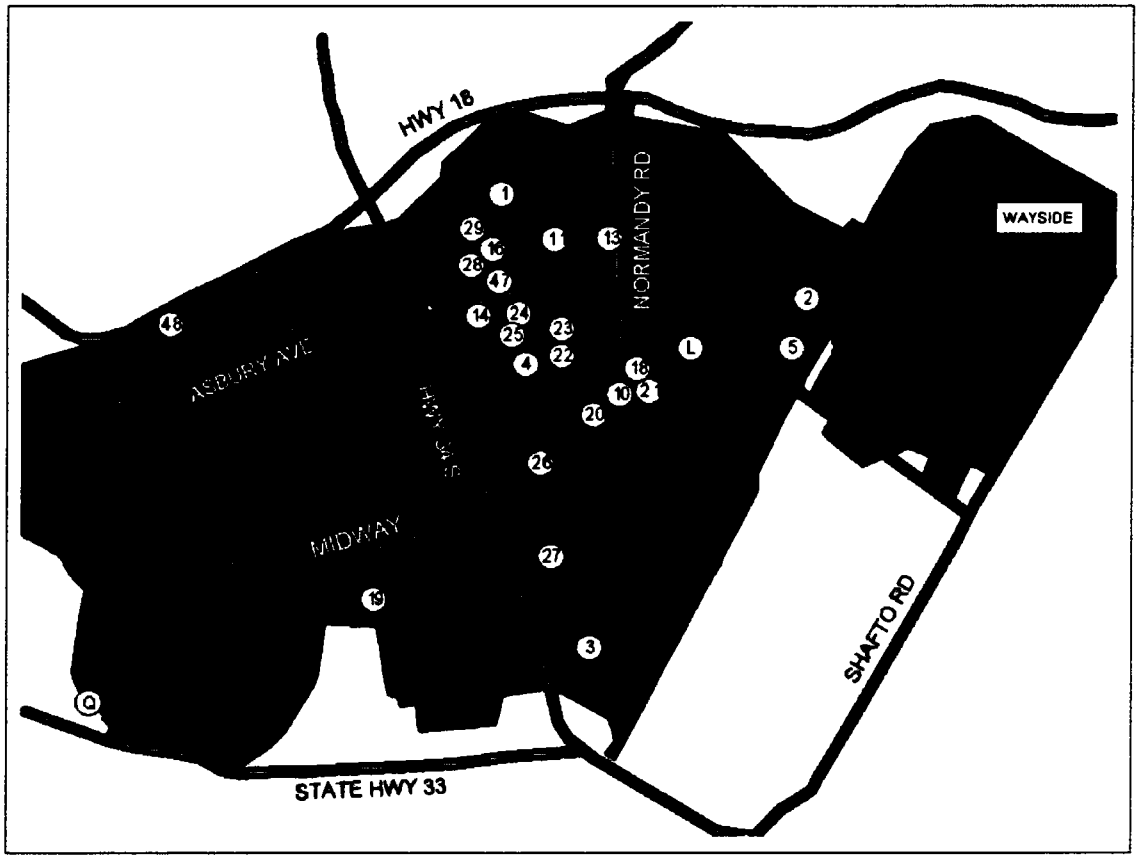
A Restoration Advisory Board (RAB) was established in February 1995. The RAB membership includes local community representatives and is co-chaired by the Monmouth County Health Officer. The RAB meets quarterly, and is open to the public.

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



1 0 1 2 3 4 5 Miles

SCALE 1:17,500

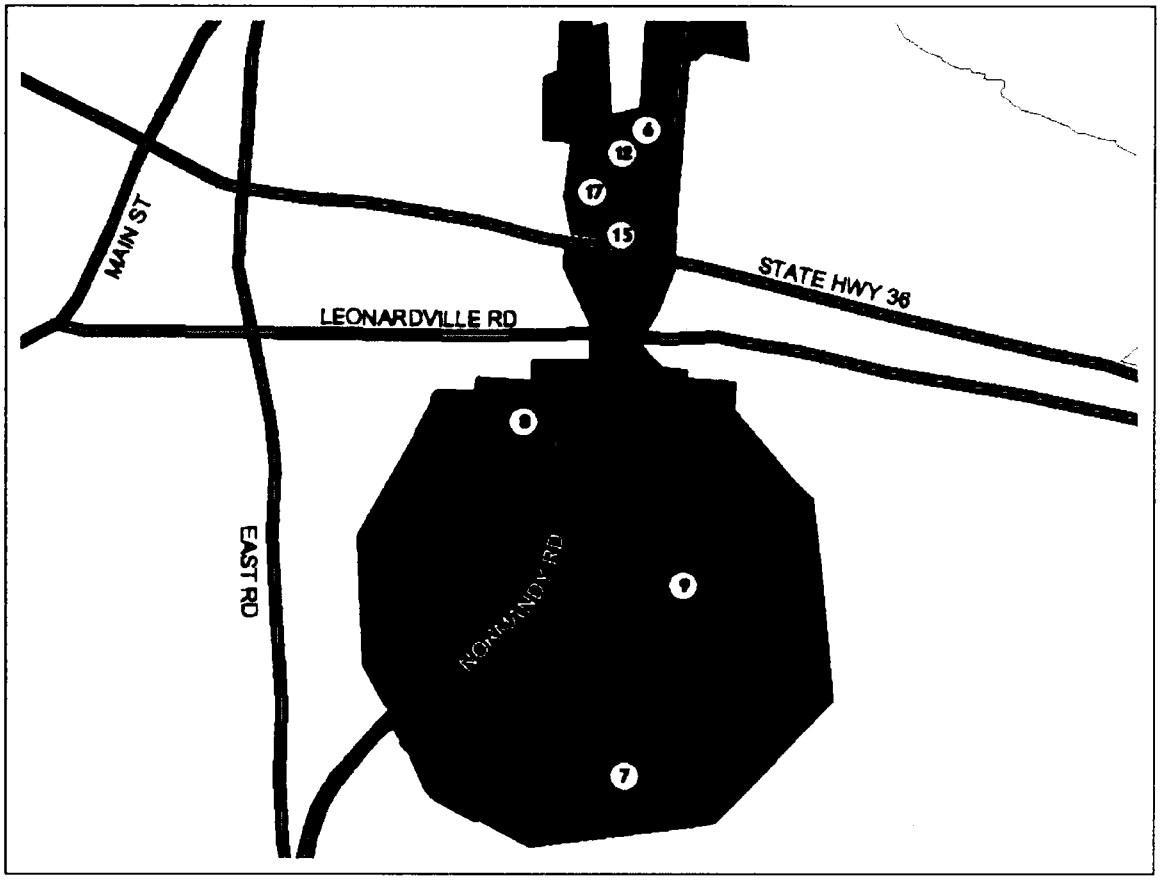
NAVAL WEAPONS STATION EARLE
COLTS NECK, N.J.

LEGEND:

- SITES
- NWS EARLE PROPERTY
- NJ ROADS

N
W E
S

Waterfront Site Overview



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SCALE 1:17,500

NAVAL WEAPONS STATION EARLE
COLTS NECK, N.J.

LEGEND:

- SITES
- NWS EARLE PROPERTY
- NJ ROADS

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SITE #1: FORMER ORDNANCE DEMOLITION RANGE

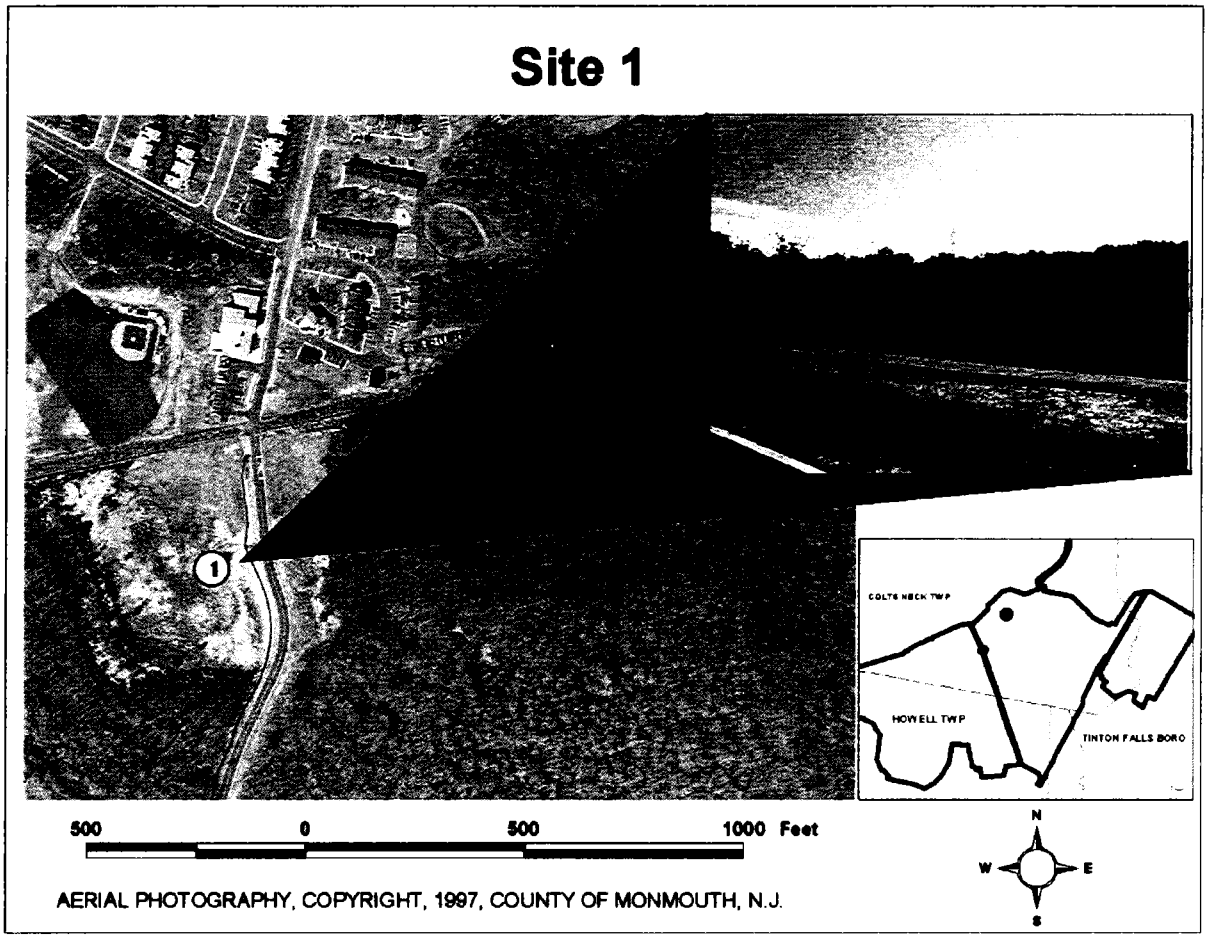
SITE HISTORY

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

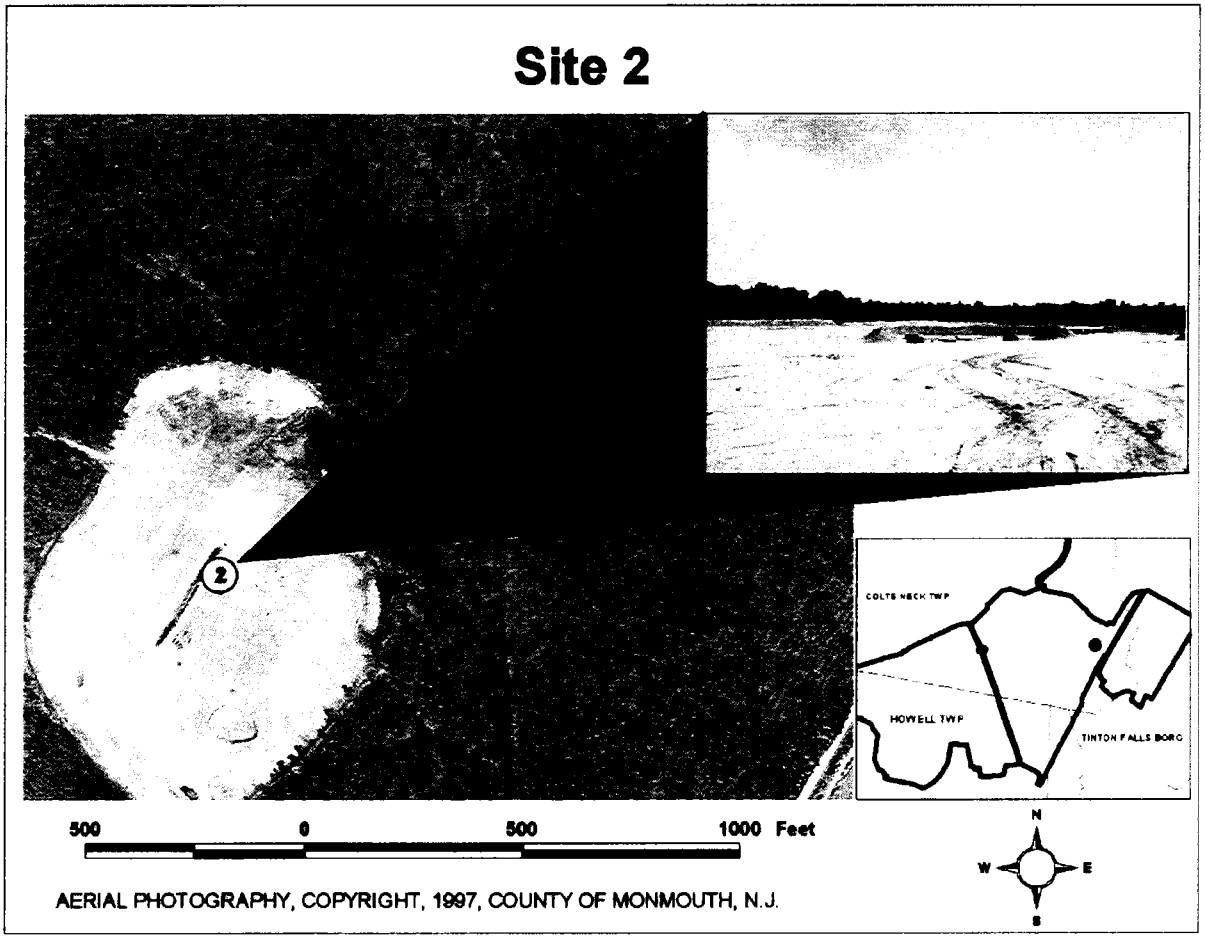
An 11 acre ordnance demolition range which has been used since 1974 and is subject to Subpart X of the Resource Conservation and Recovery Act (RCRA) as a miscellaneous hazardous waste treatment unit.

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.

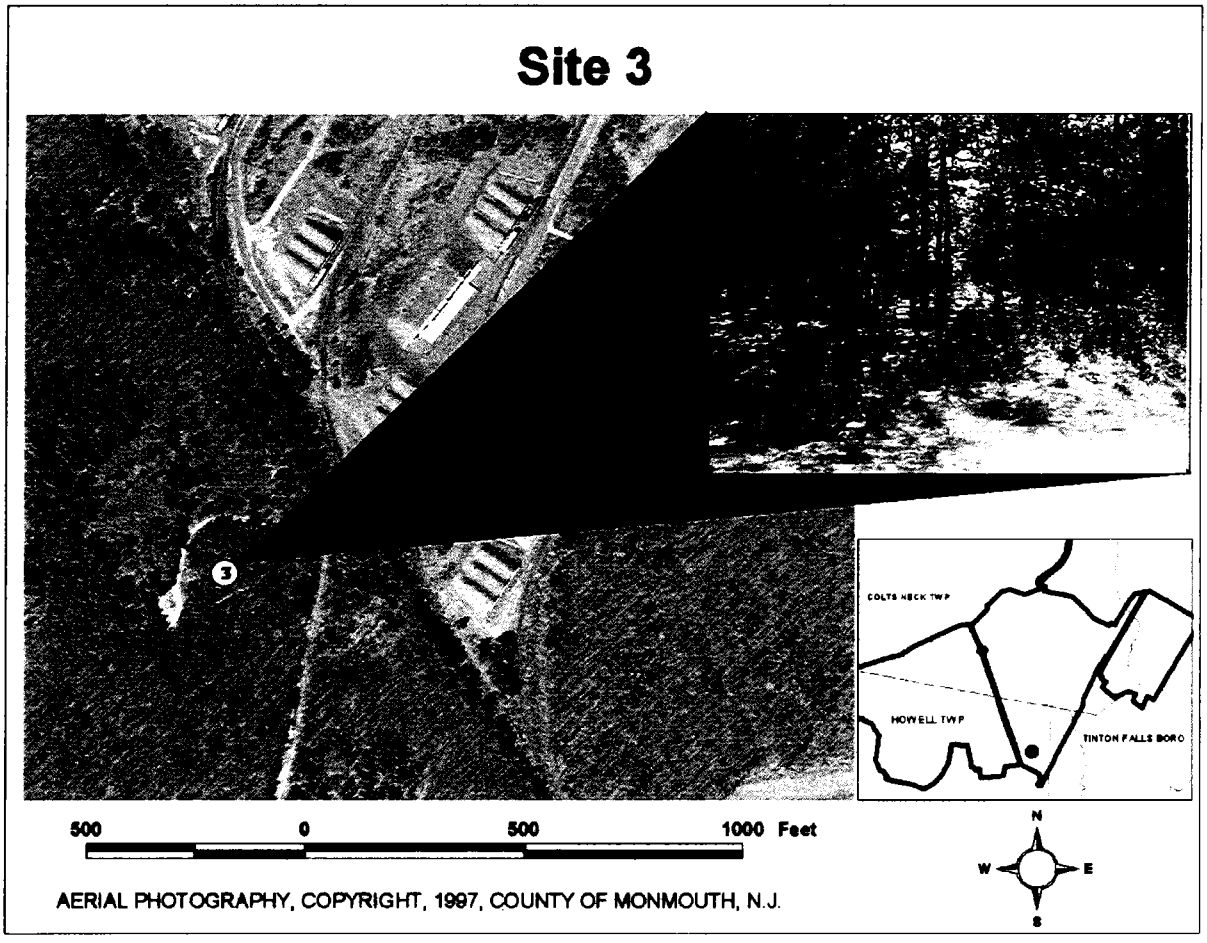
SITE STATUS

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

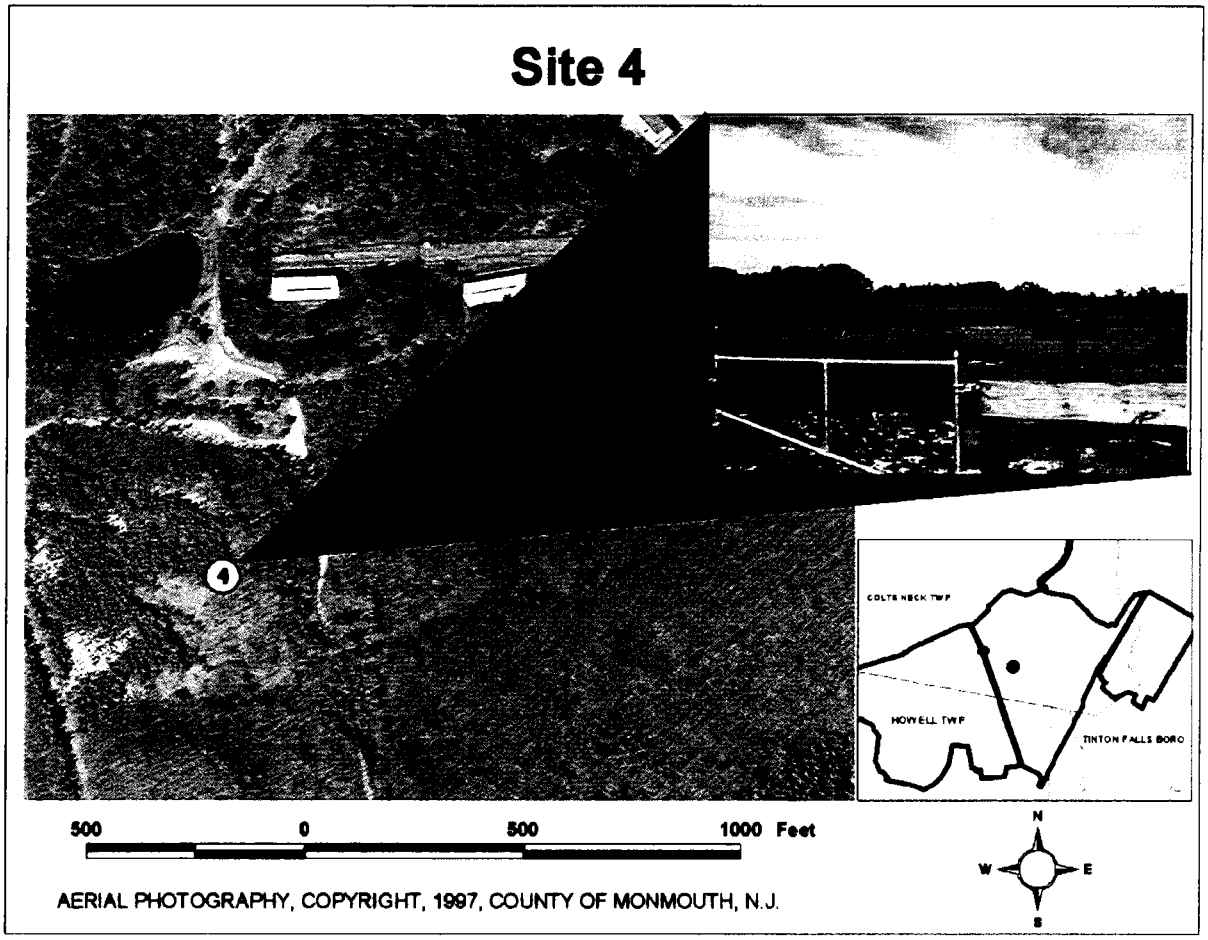
A 5 acre site east of Macassar Road which received approximately 10,200 tons of mixed domestic and industrial wastes from 1943 to 1960. Materials were placed in trenches, burned, then covered. Pine trees were planted on much of the site in the early 1980s.

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

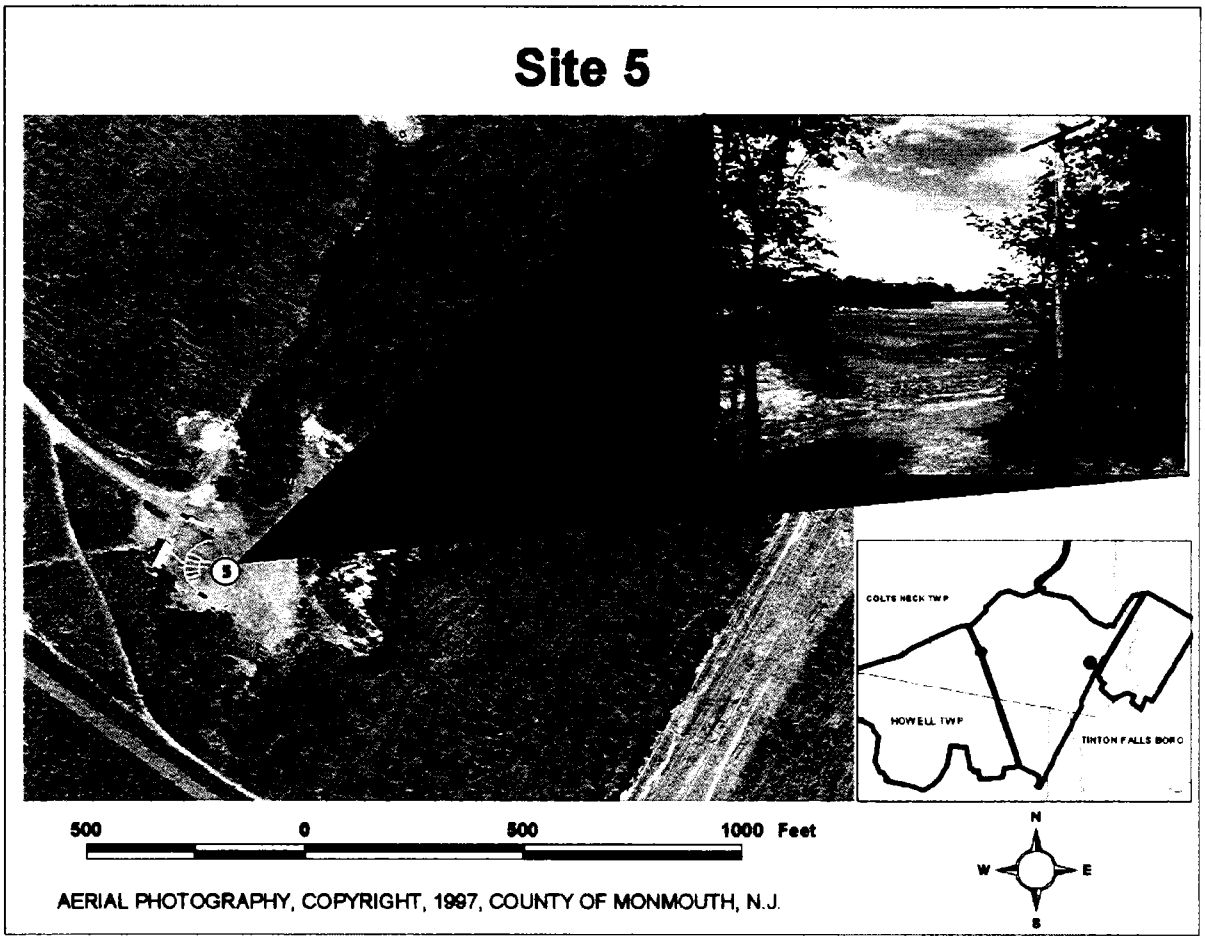
A 13 acre site where approximately 6,600 tons of mixed domestic and industrial wastes were placed in pits and covered between 1968 and 1978. A portion of the site was previously used as a skeet range by the shooter's club.

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

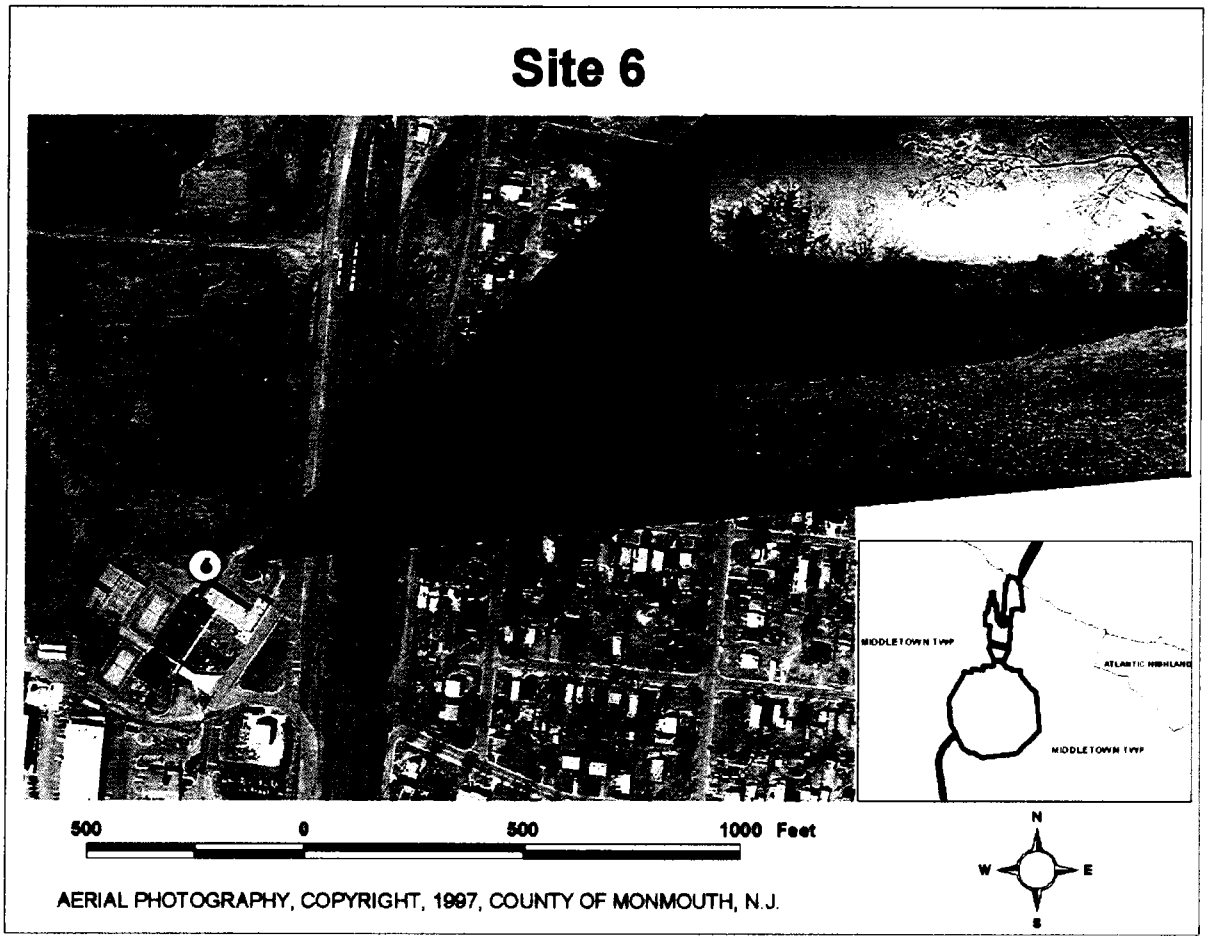
SITE HISTORY

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

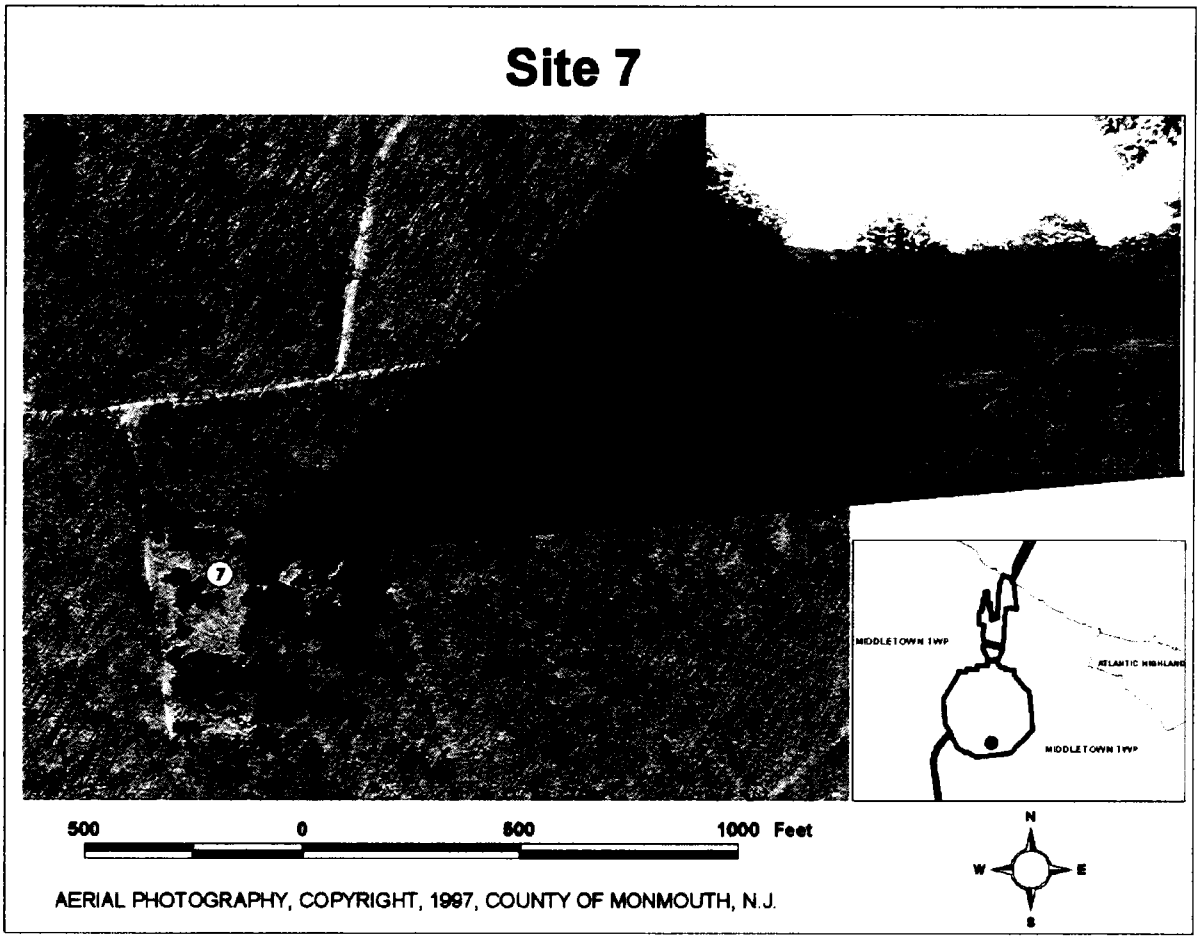
SITE HISTORY

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

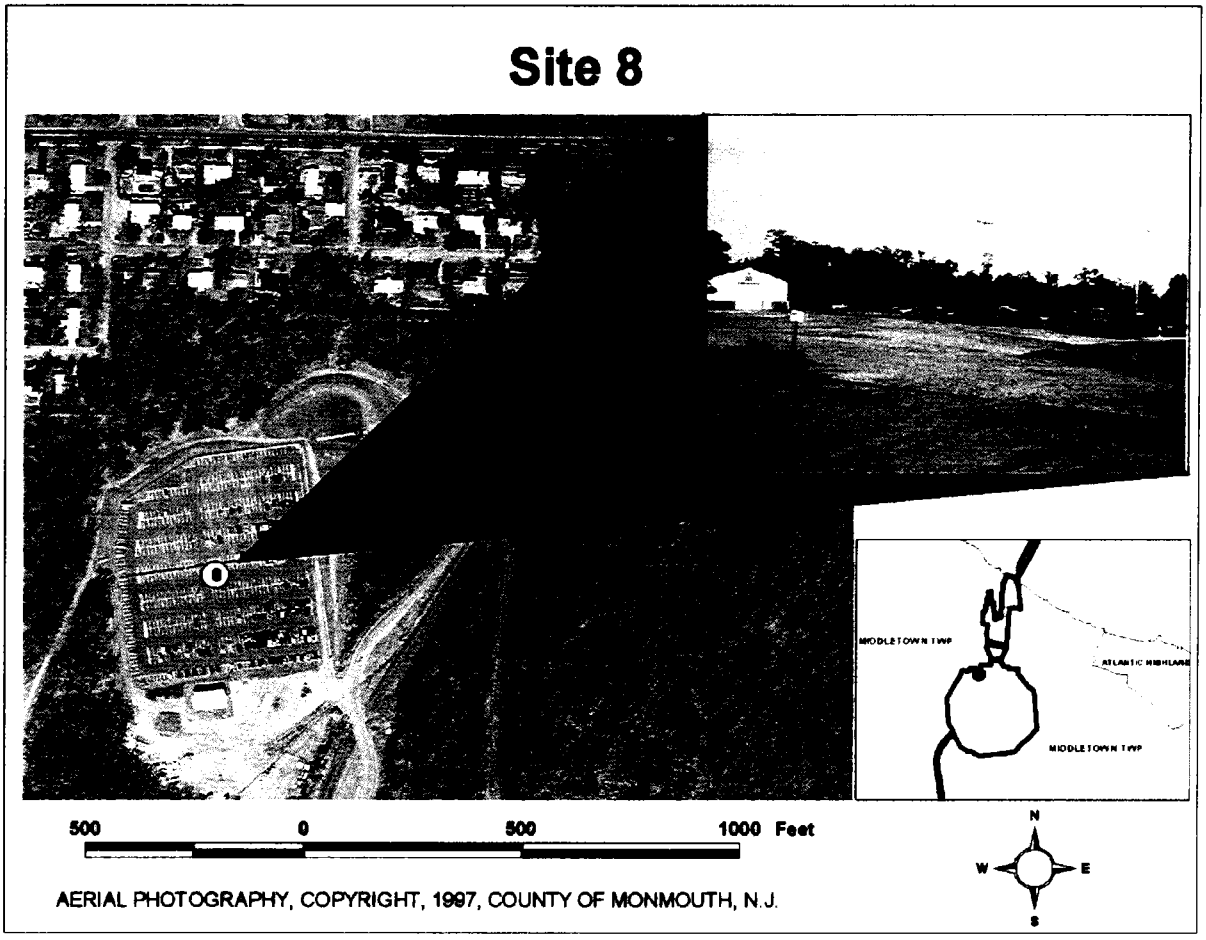
SITE HISTORY

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

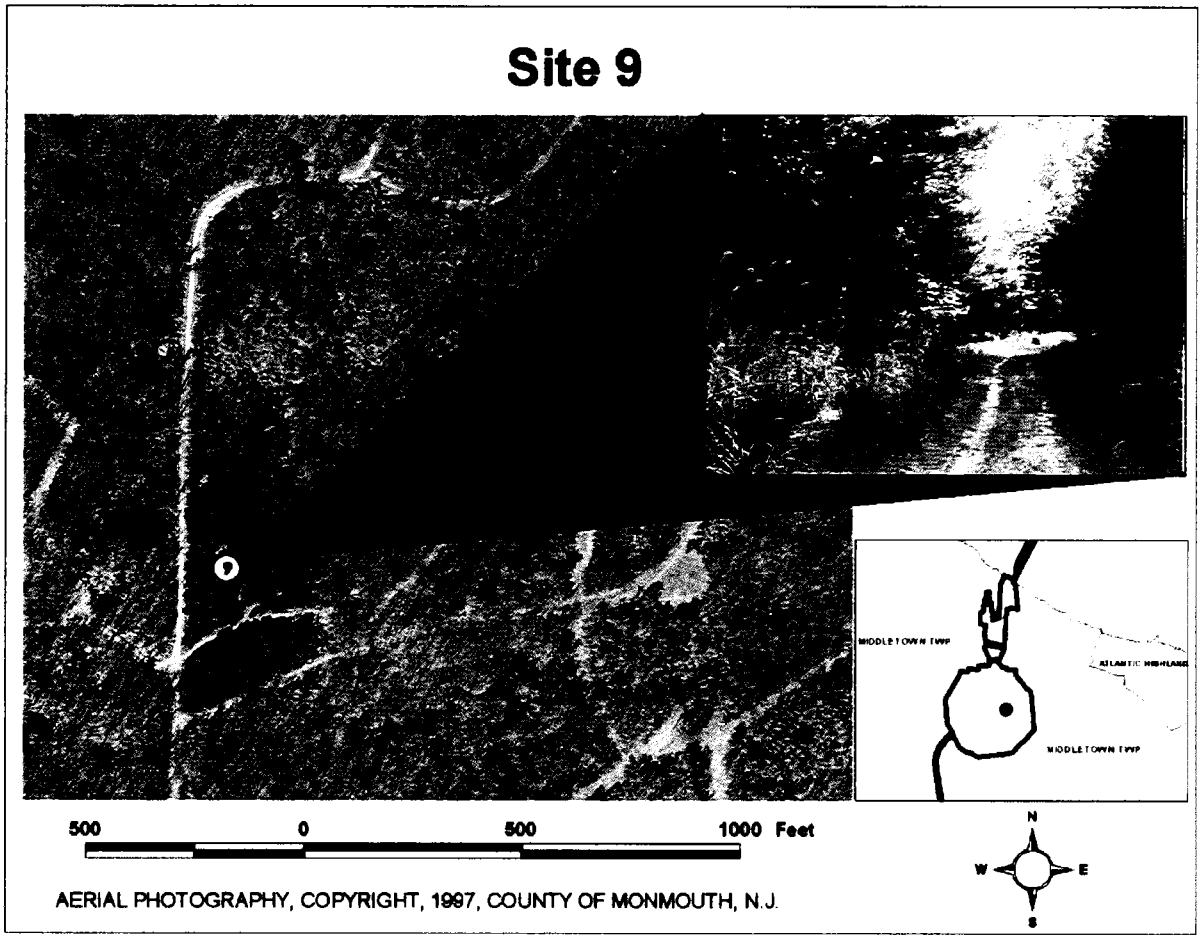
SITE HISTORY

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

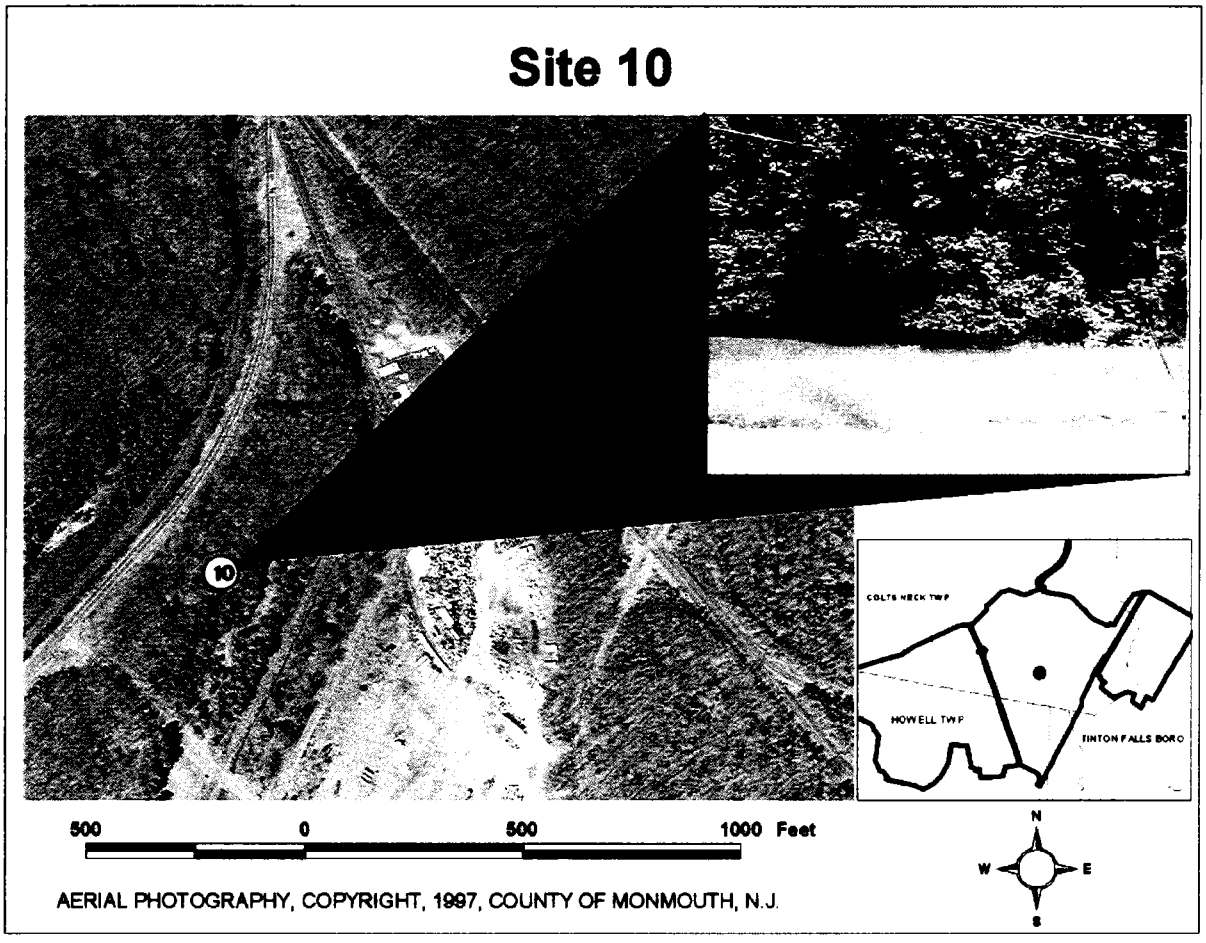
SITE HISTORY

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

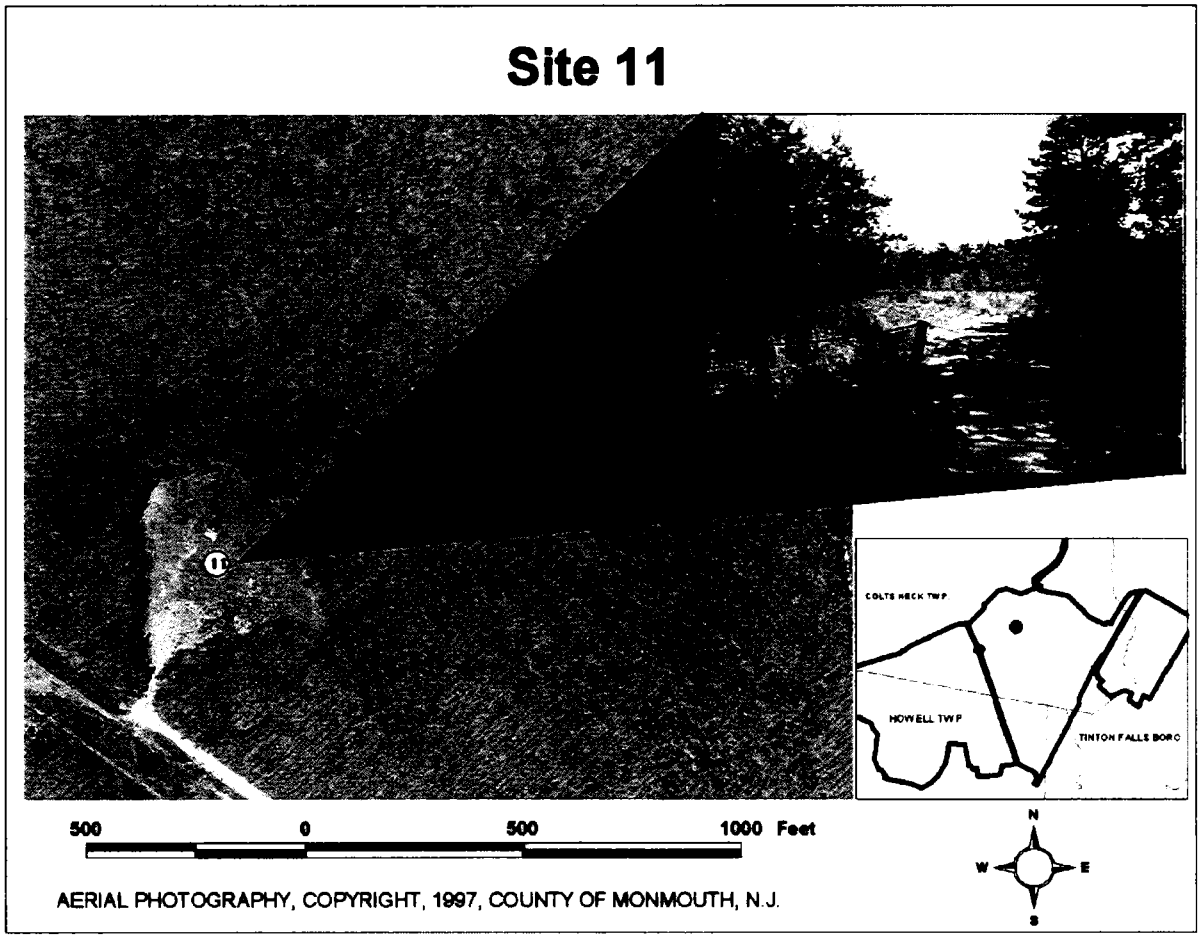
A 2 acre site at coordinates 725-579 which was used for several years by contractors for burning of obsolete ordnance. Site was also used for fire-fighting training from 1974-1977. Site is significant due to presence of Knieskern's Beaked Rush, an endangered plant species.

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

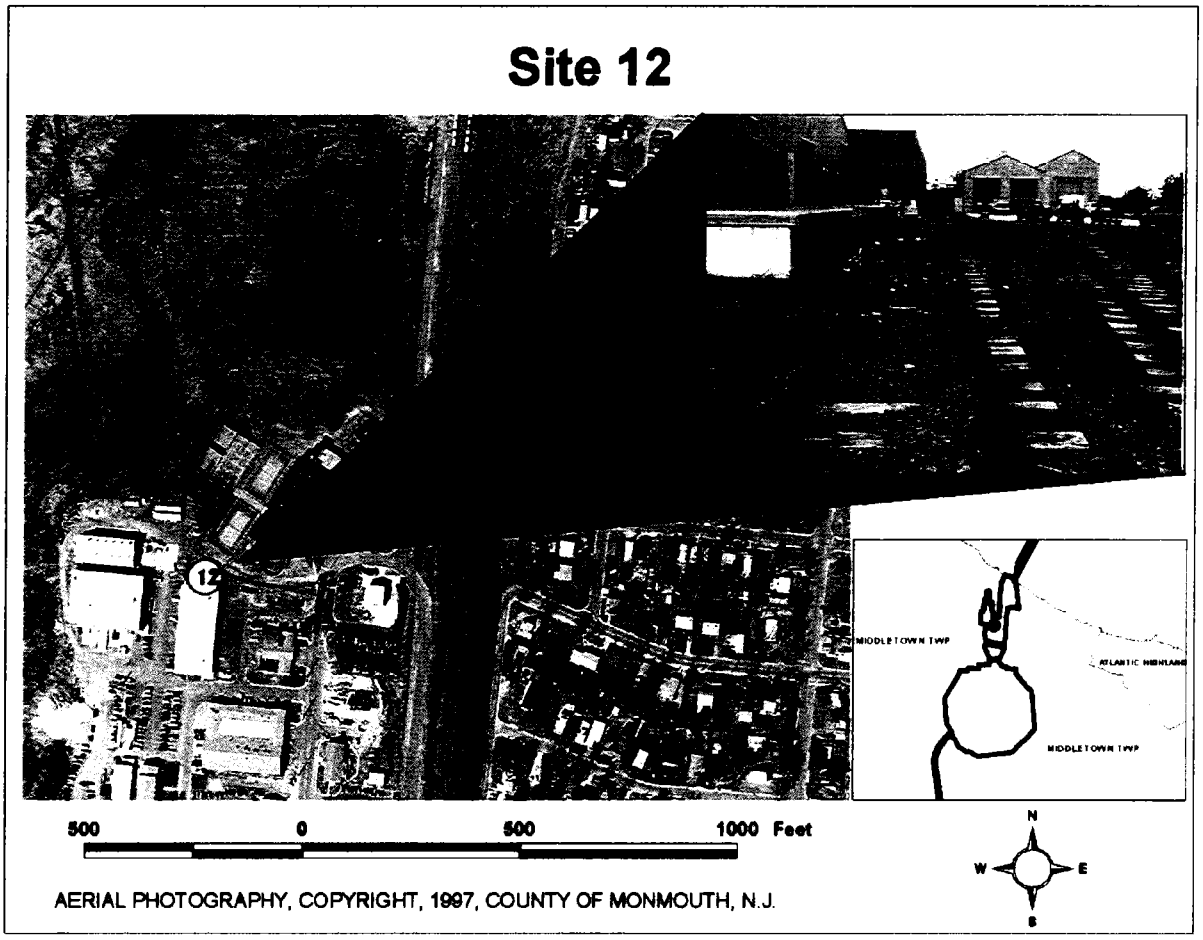
SITE HISTORY

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.

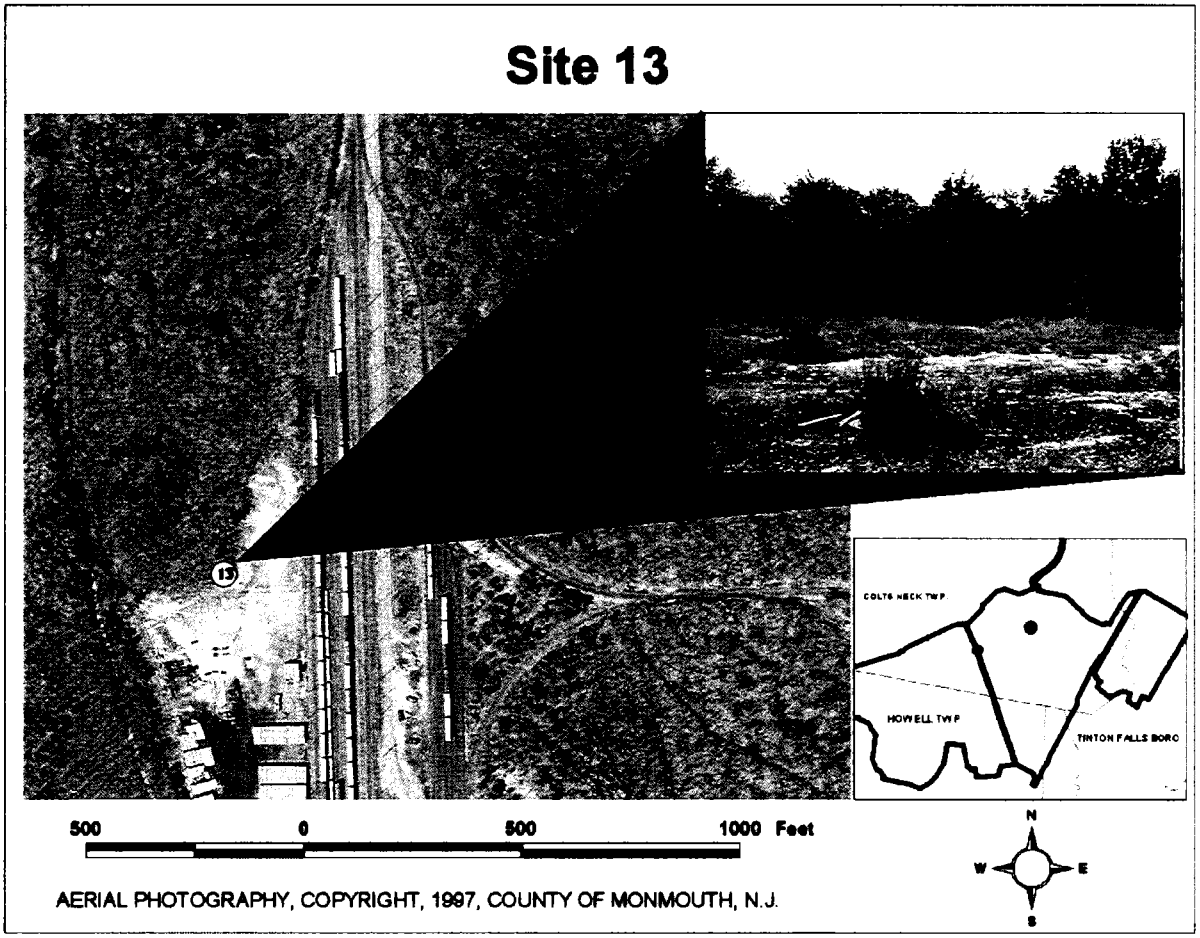
PROJECT STATUS

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

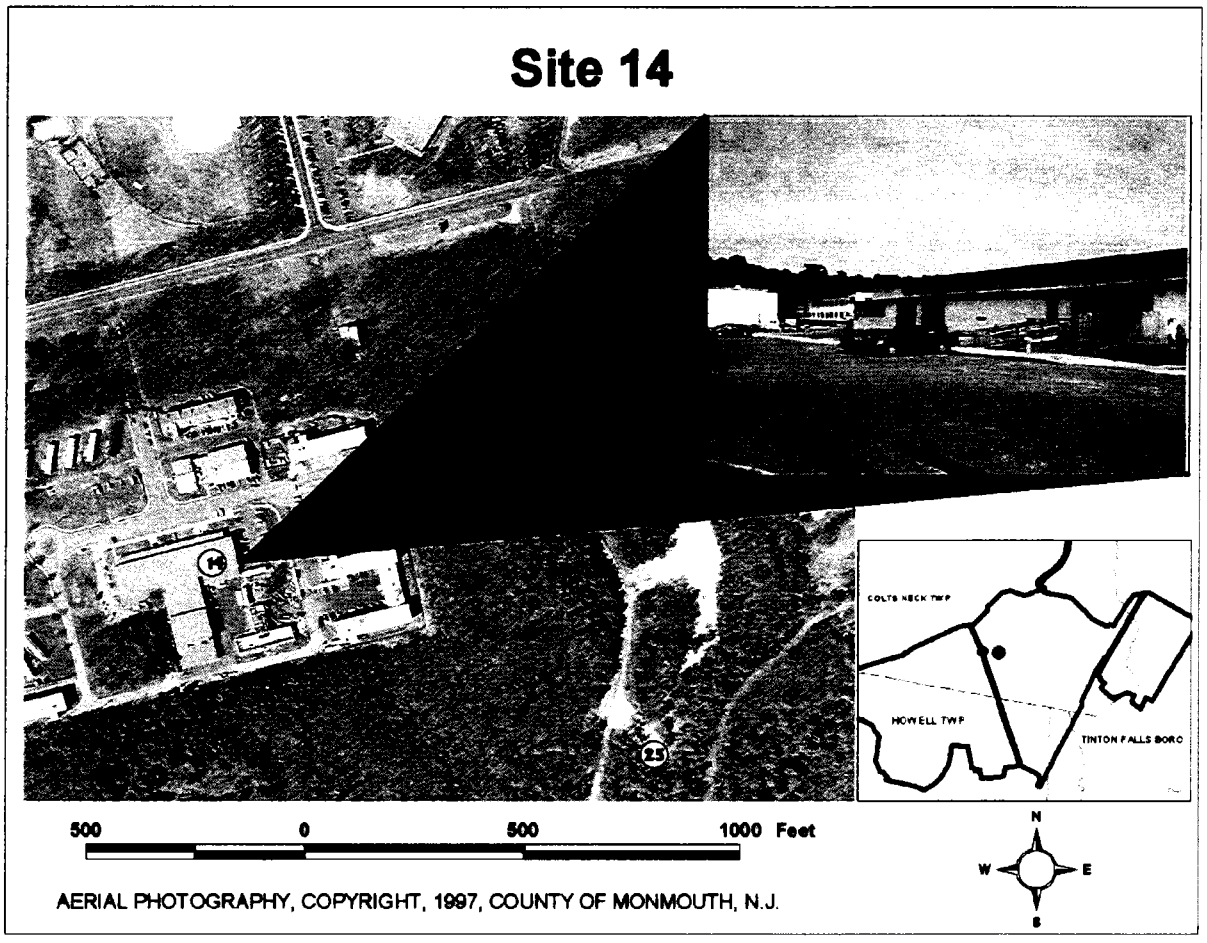
SITE HISTORY

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

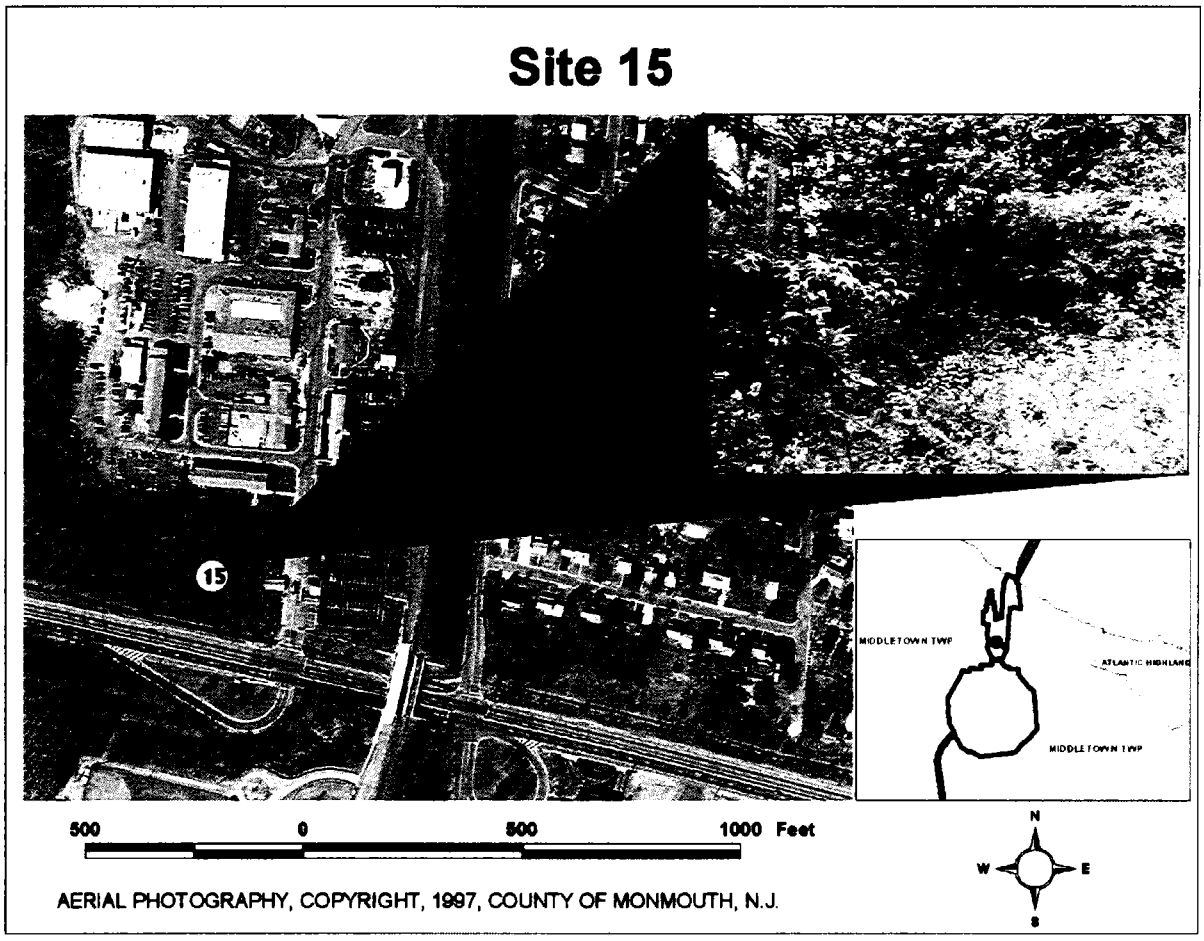
A small drainage swale adjacent to a railroad grade where an unknown quantity of oily bilge waste was disposed in the early 1970's.

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

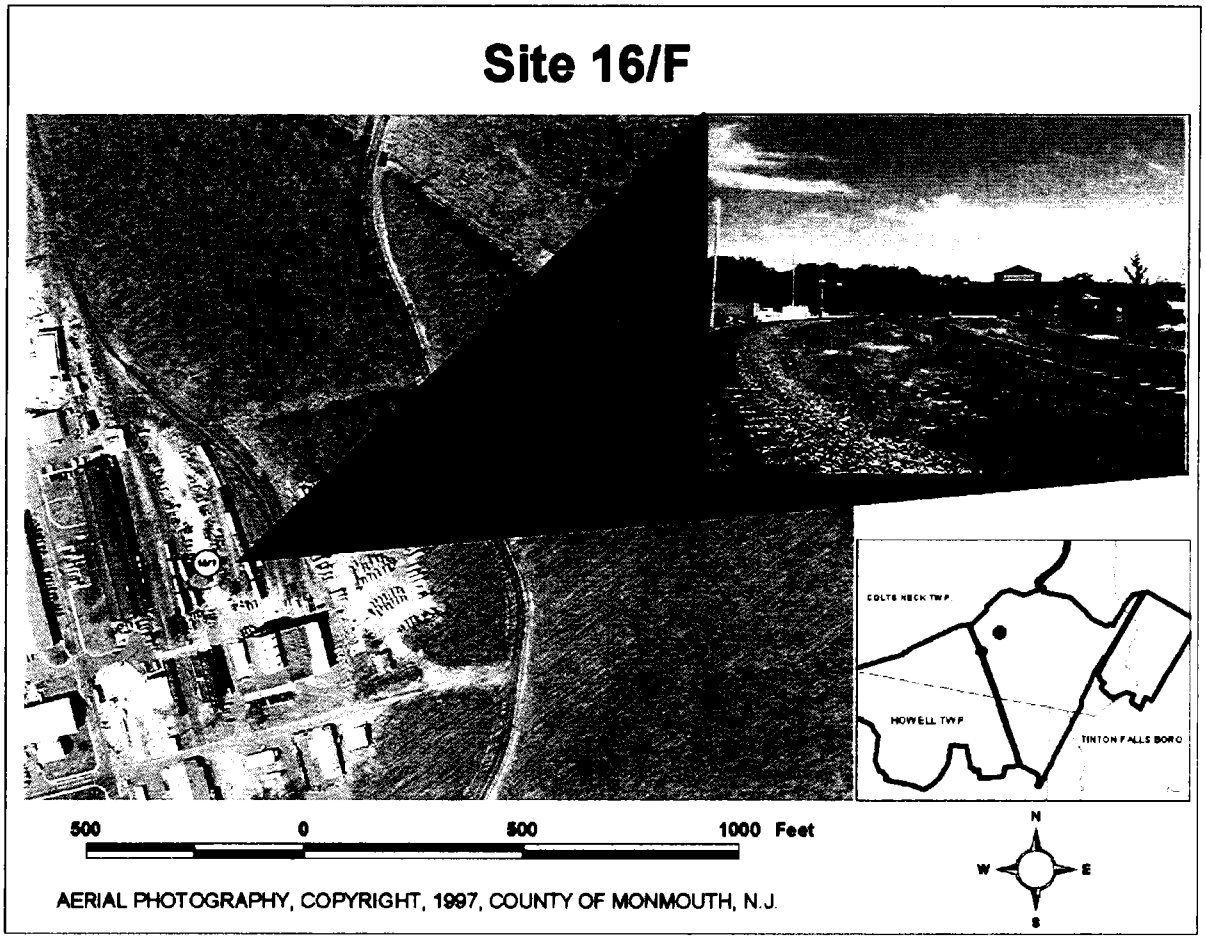
Site of an underground pipe leak in June 1977. The line was excavated at that time and it was determined at that time that about 50 gallons of fuel was lost.

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

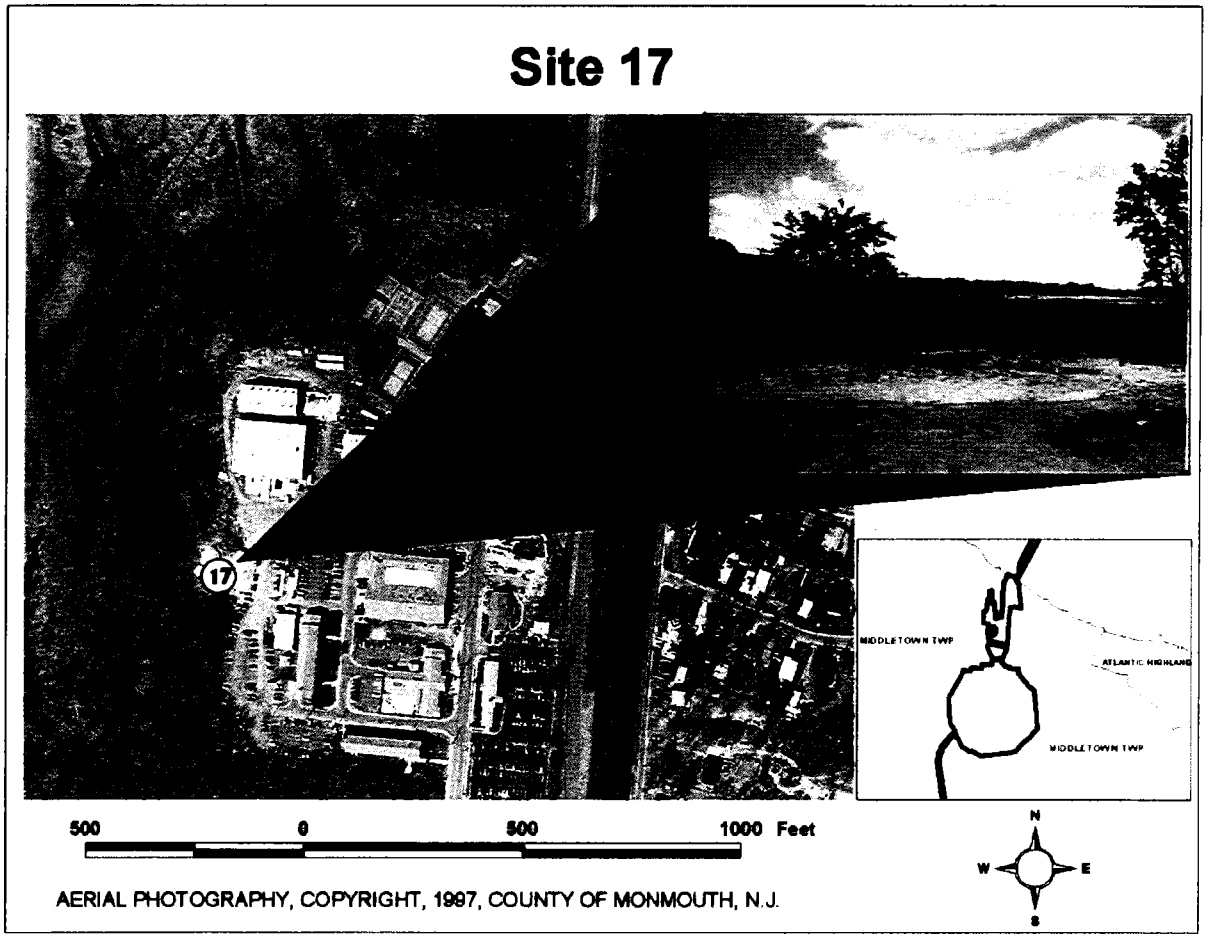
Approximately 3 acre site adjacent to a tidal marsh where assorted construction debris and forklift vehicles were disposed. The site is approximately 500 feet southwest of Site 6.

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.



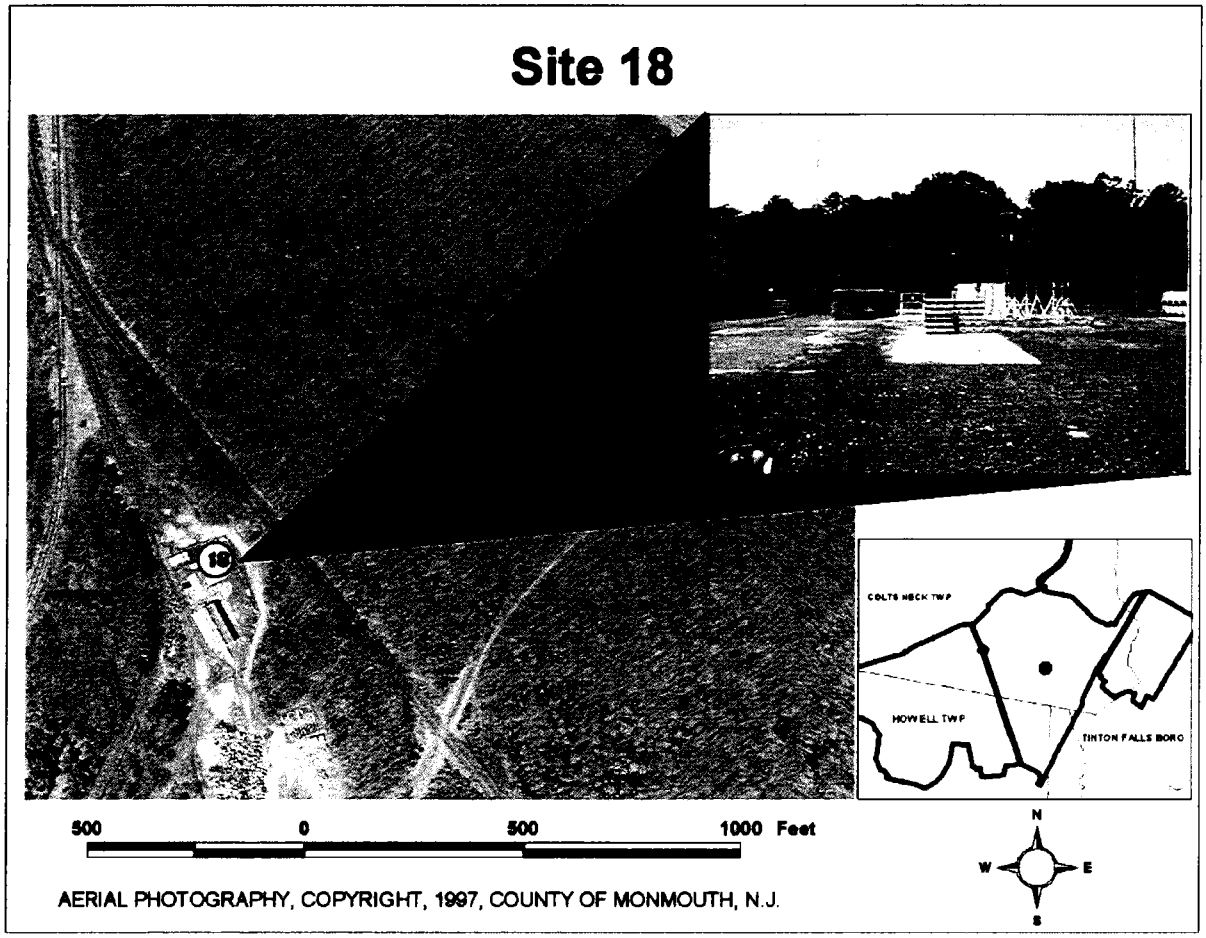
SITE #18: DEMILITARIZATION FURNACE

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

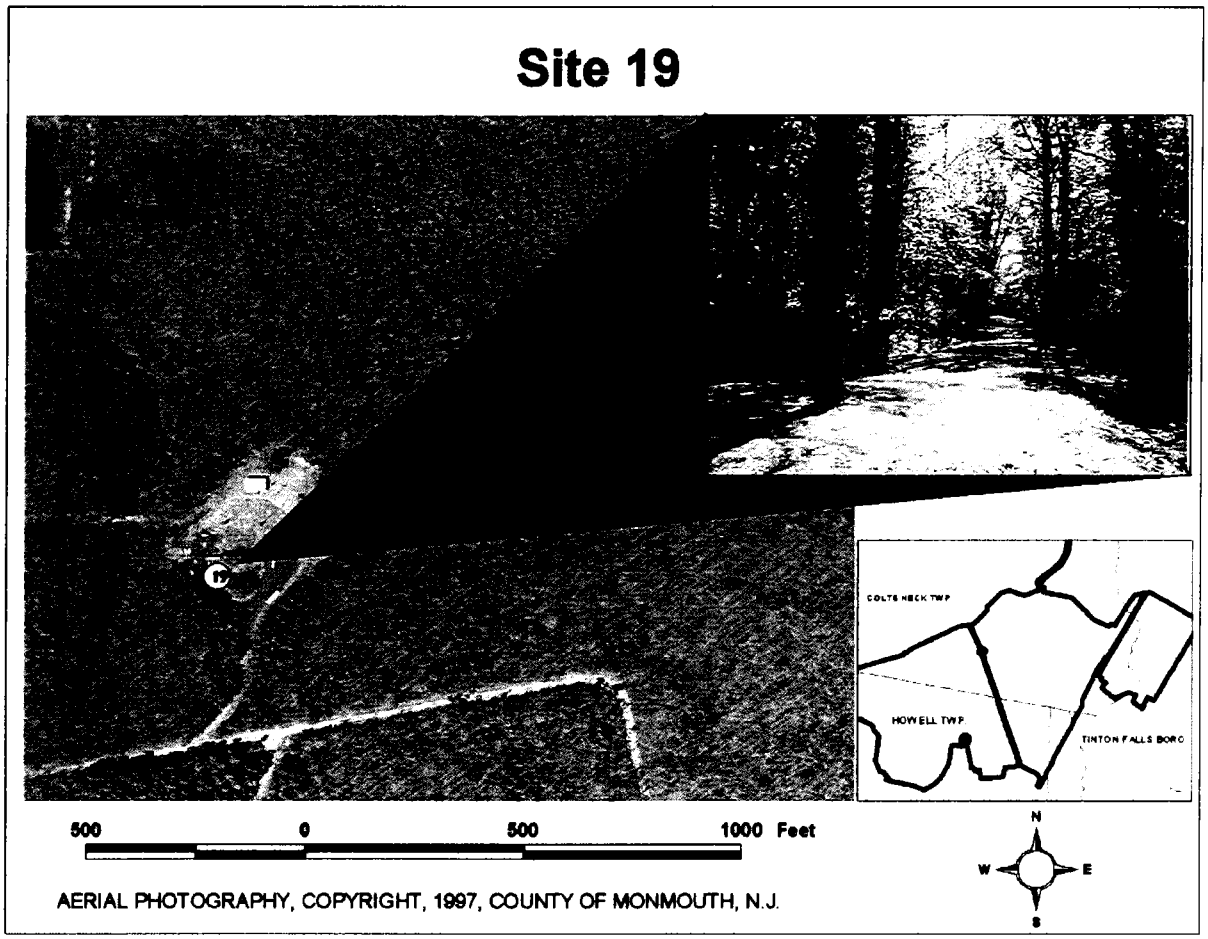
This site was used for disposal of paint chips and sludge from maintenance operations in the former Bldg. S-34. Part of the site is now used for forklift driver training.

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

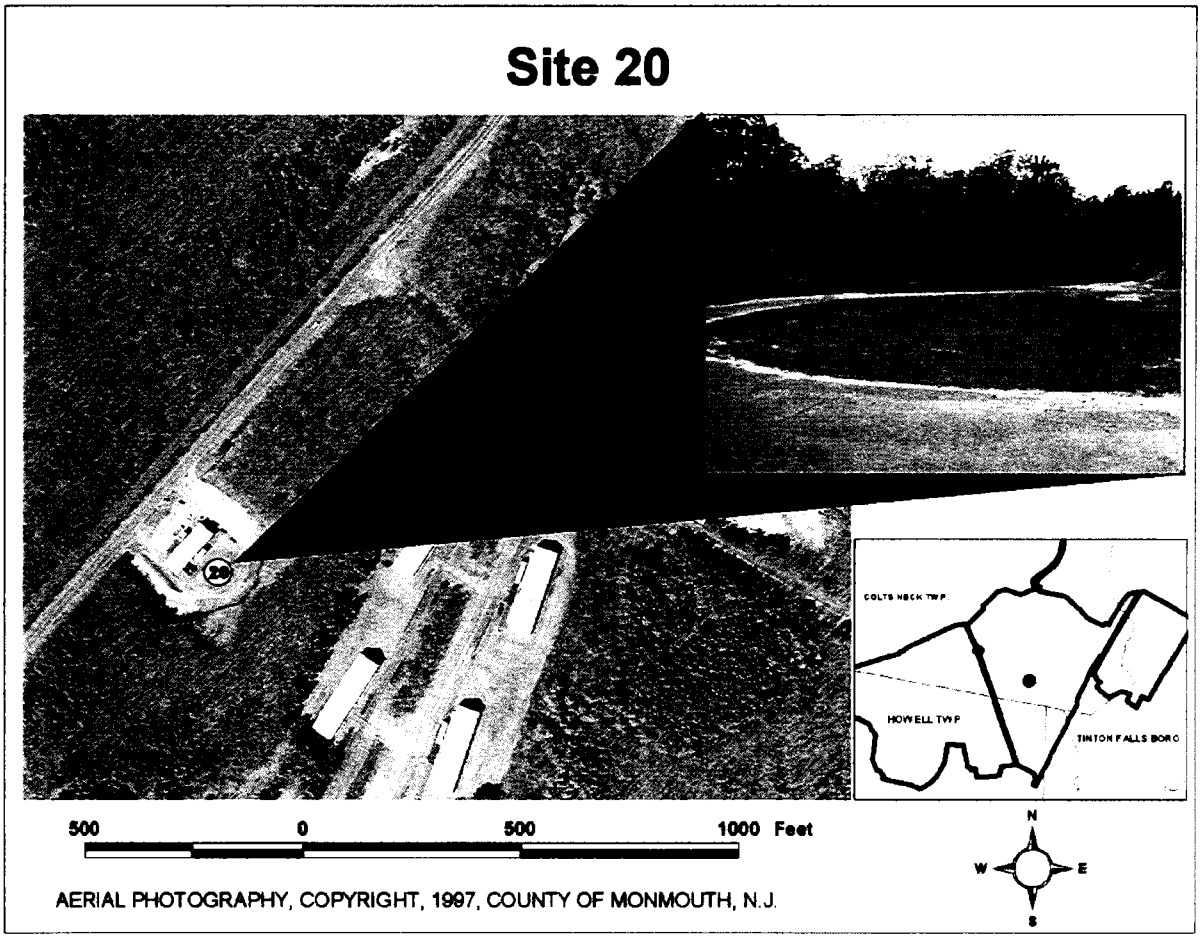
SITE HISTORY

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.



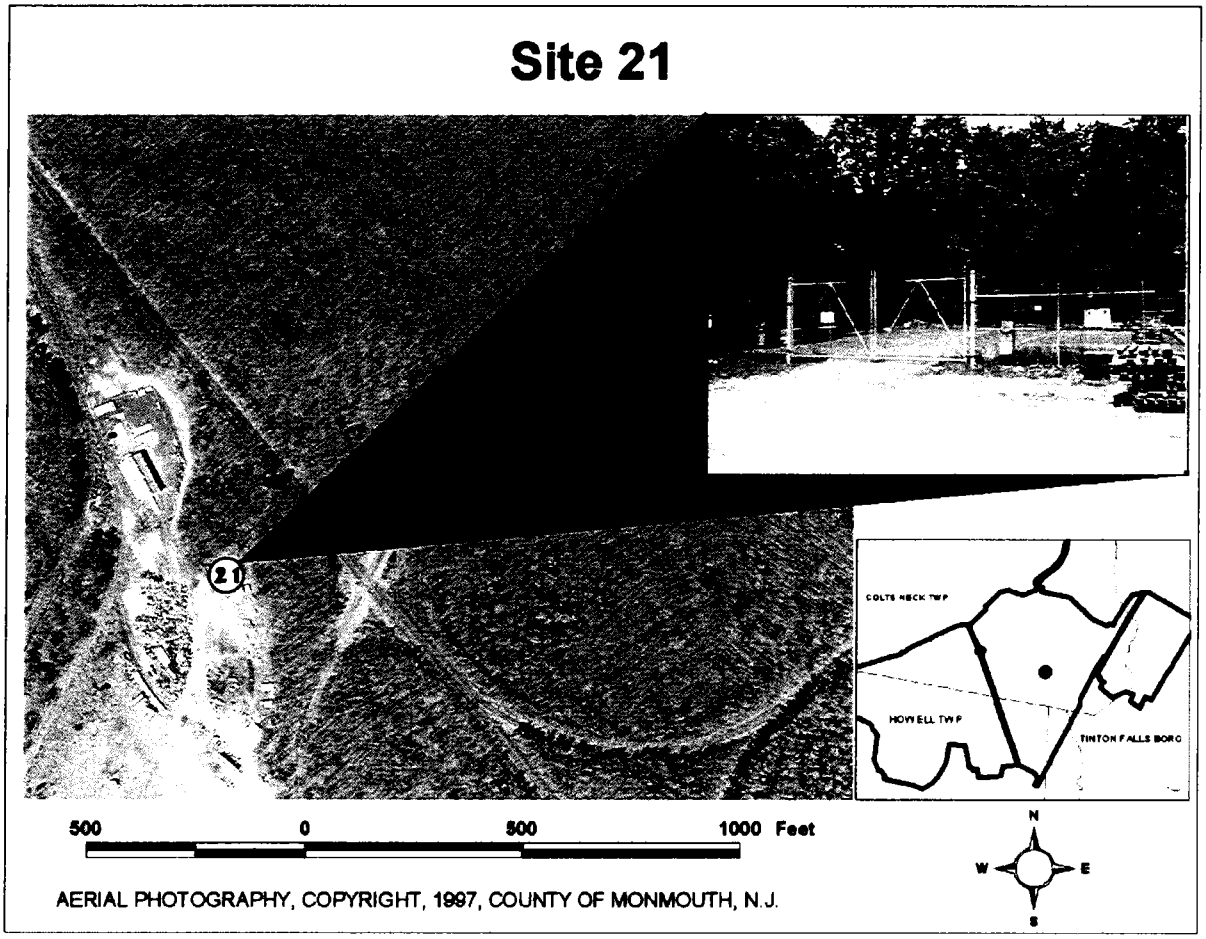
SITE #21: BAGHOUSE & CYCLONE DUST STORAGE NEAR BLDG. S-589

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

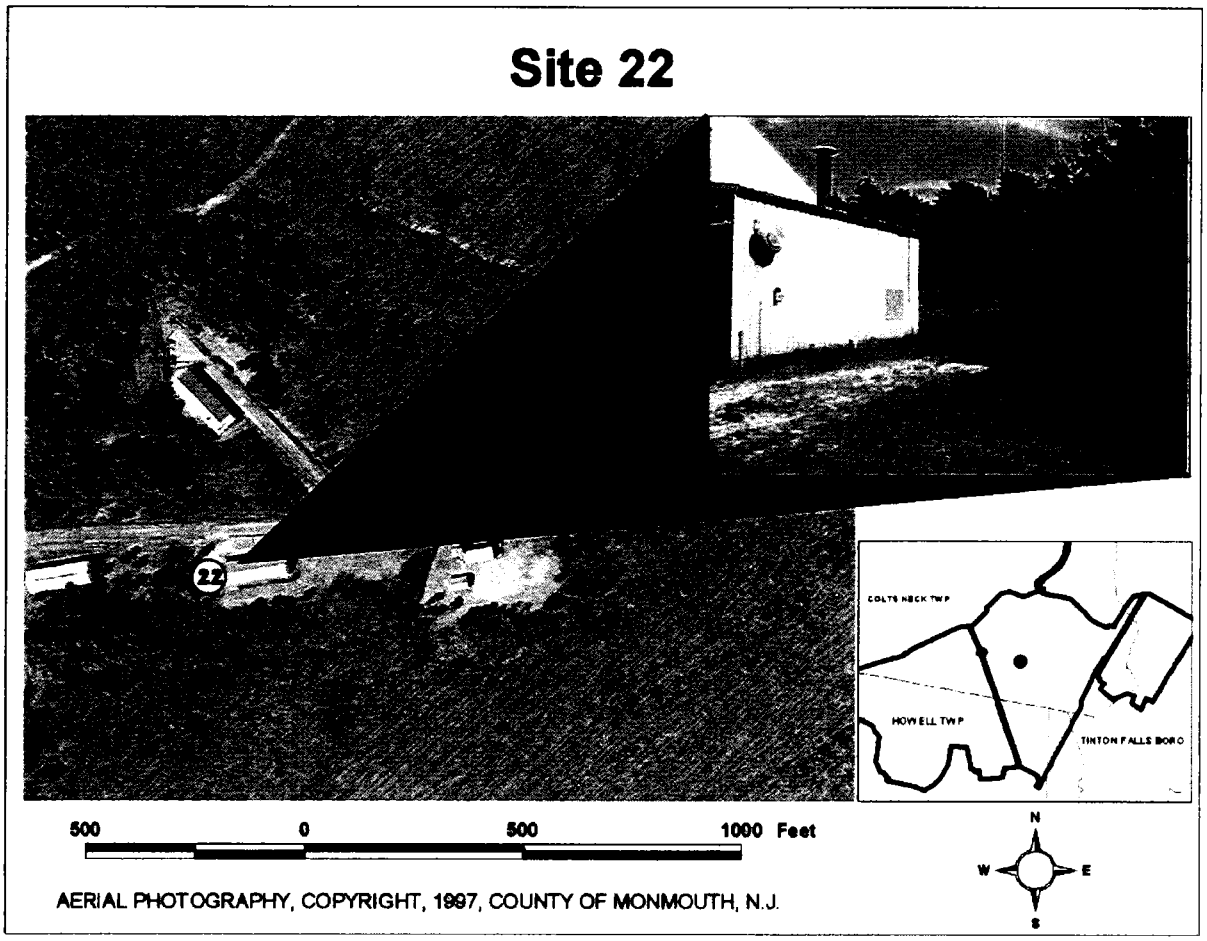
SITE HISTORY

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

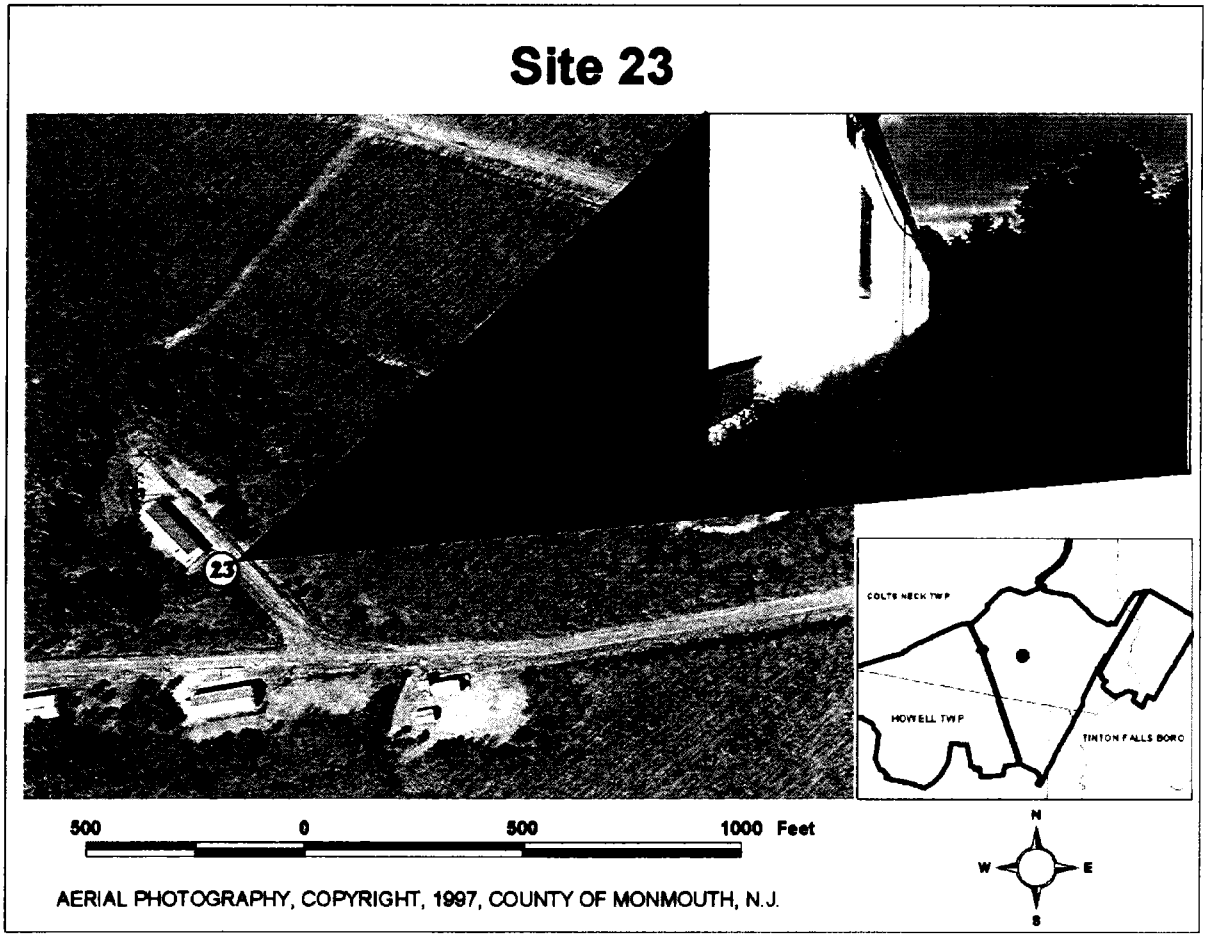
Approximately 200 square foot area of bare soil behind building with signs of paint spillage.

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

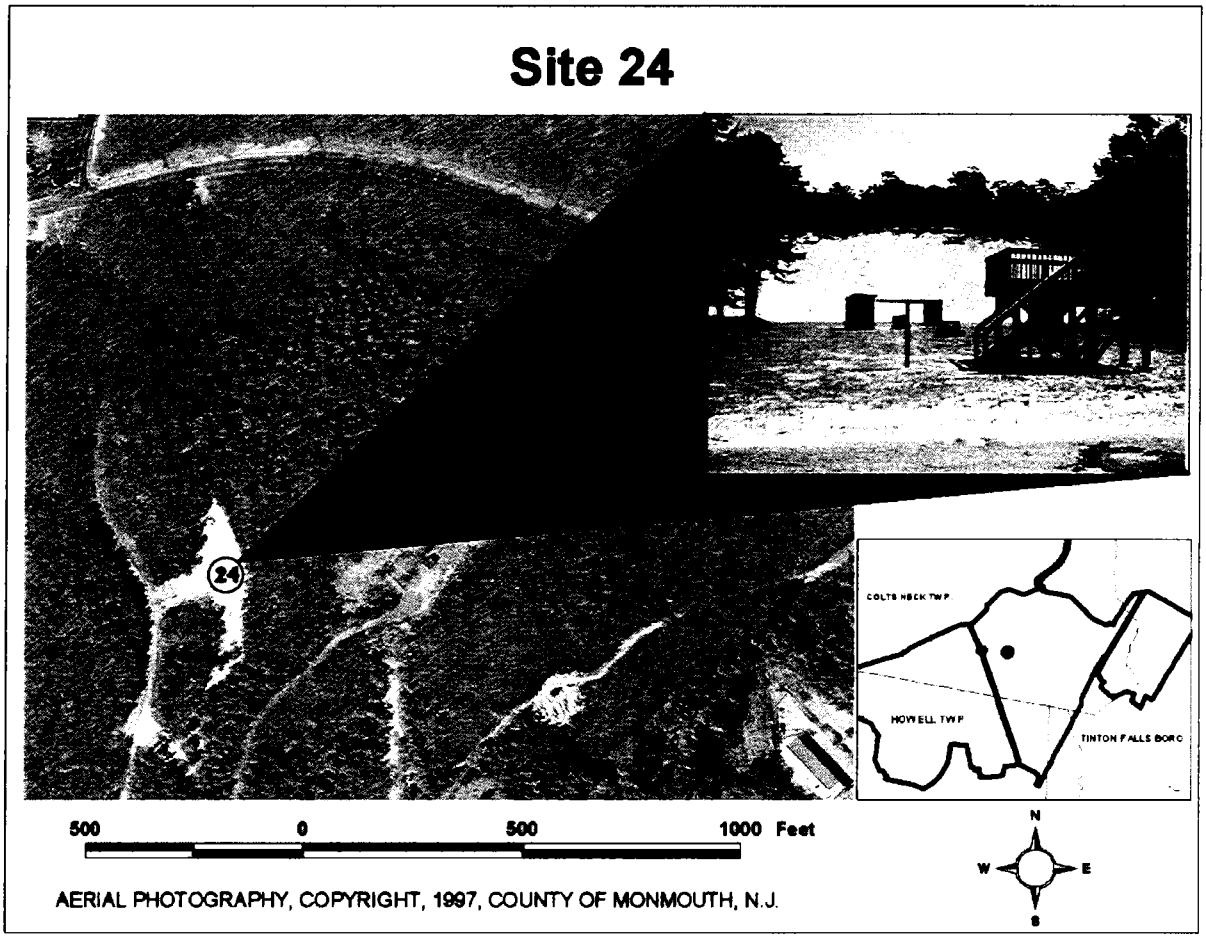
A small arms range located at coordinates 721-571 south of Esperance Road. A steeply sloping sand face forms the impact berm.

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

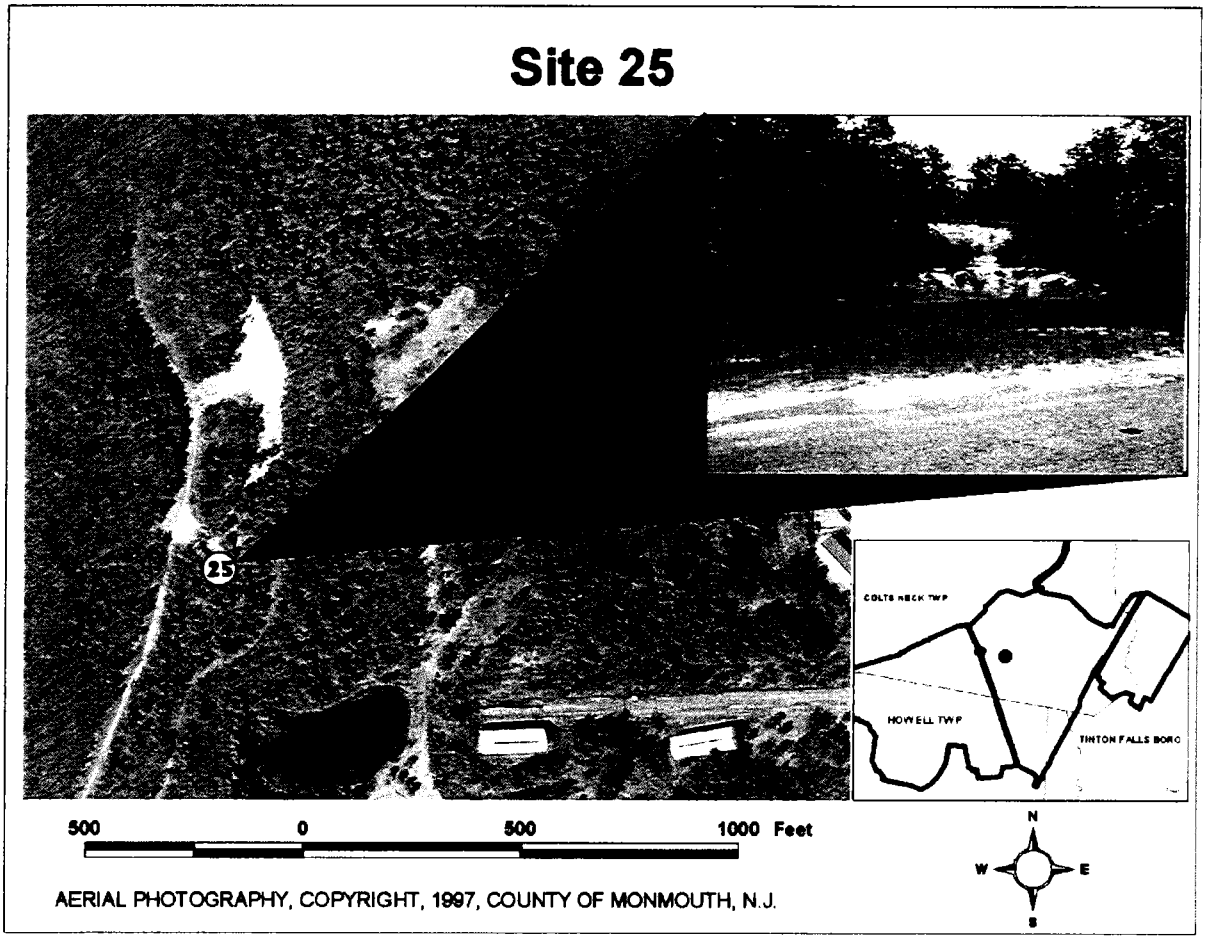
SITE HISTORY

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.

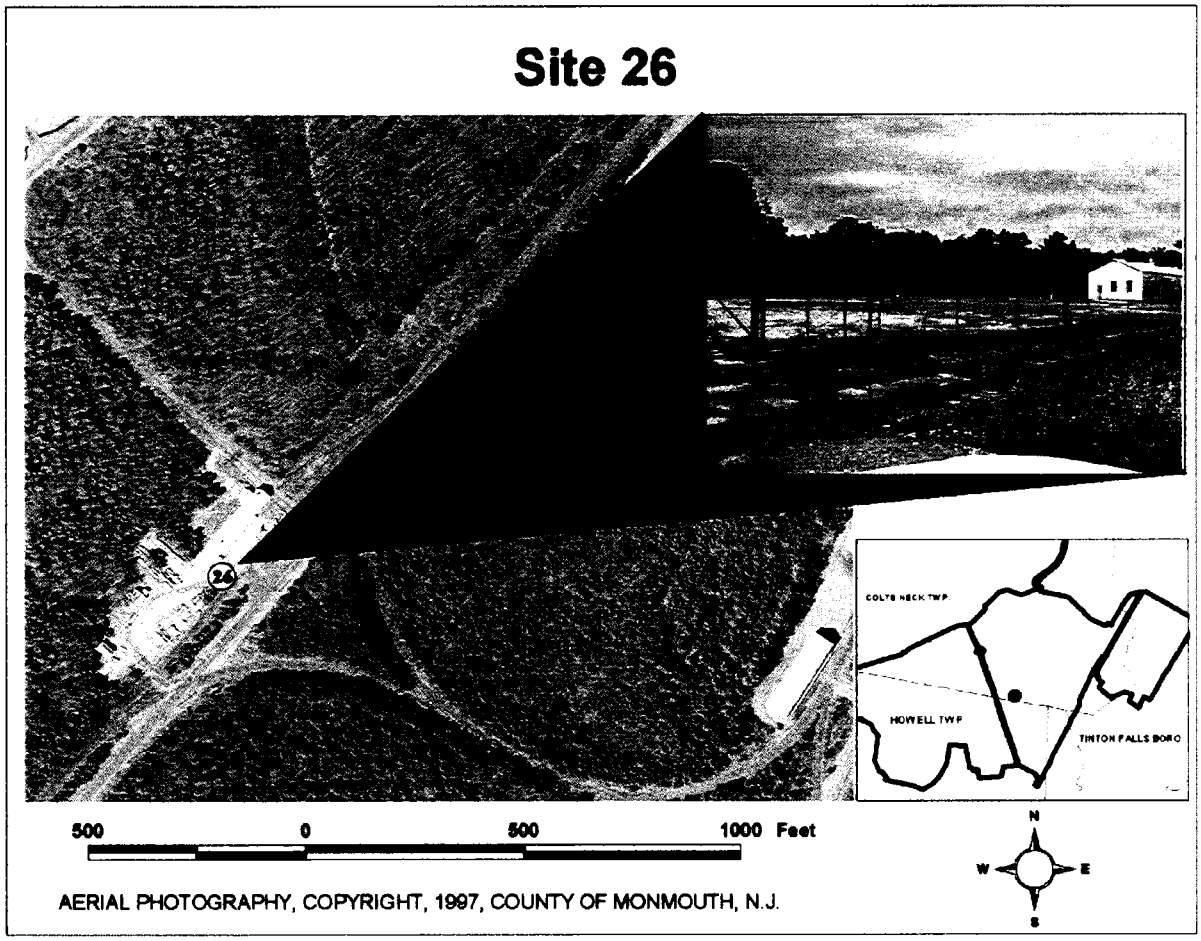
SITE STATUS

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

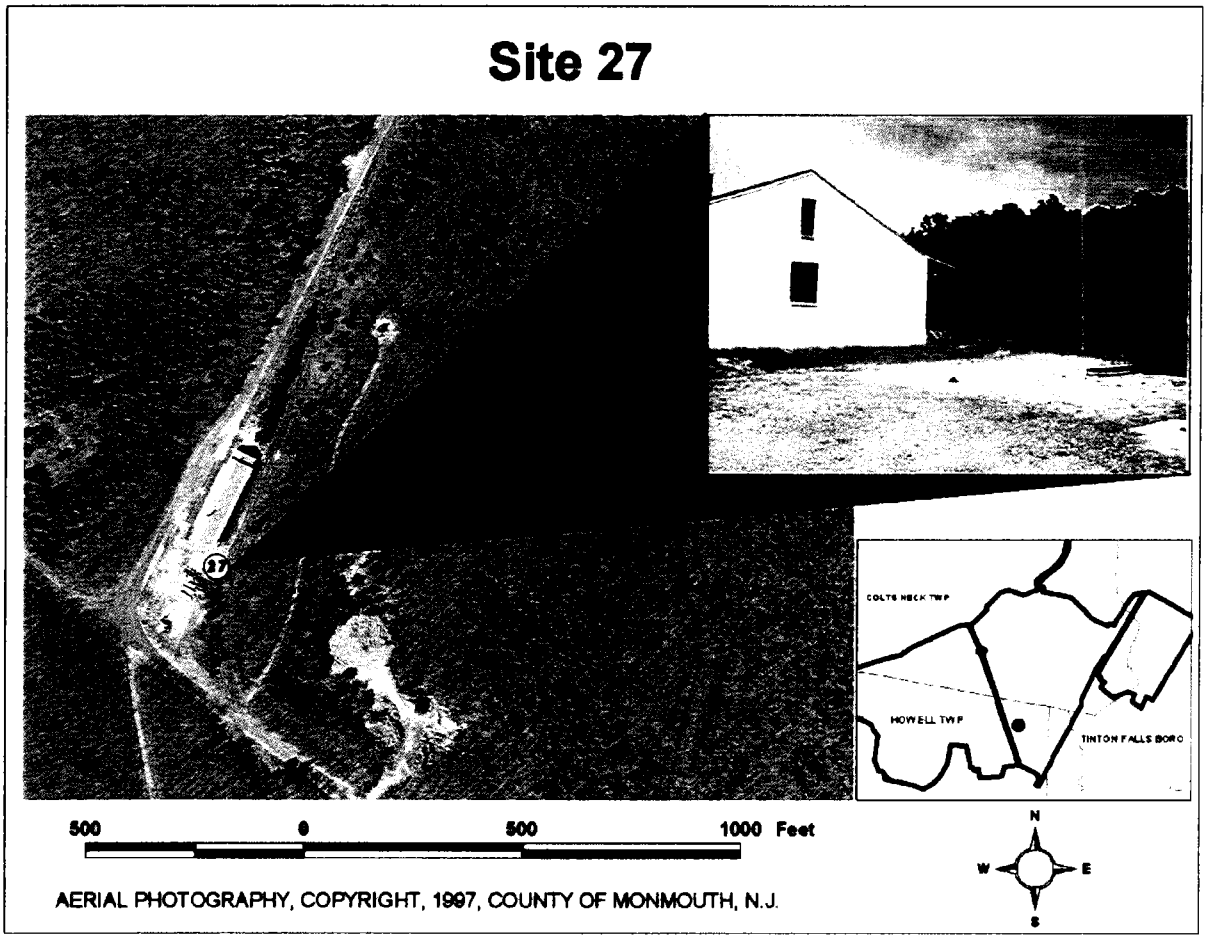
SITE HISTORY

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

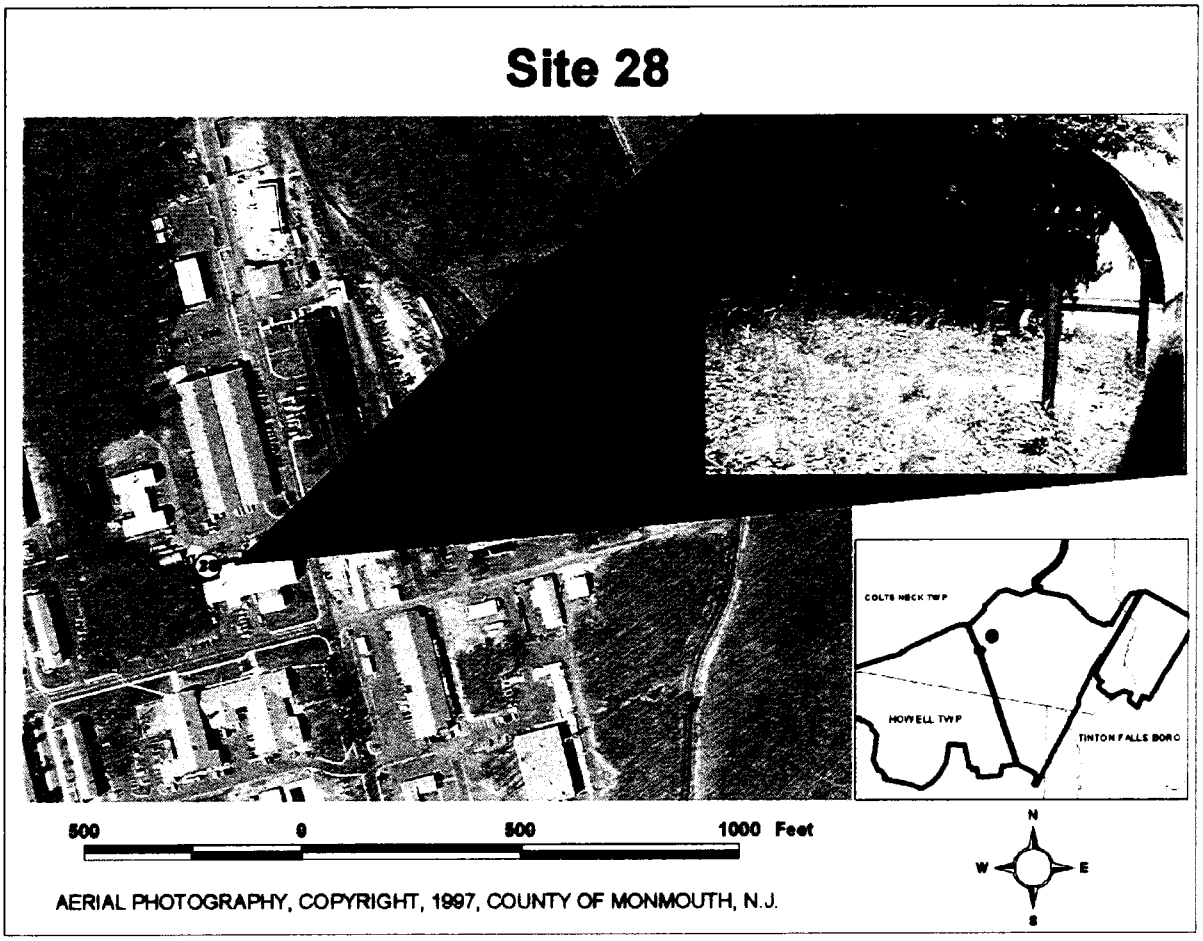
SITE HISTORY

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

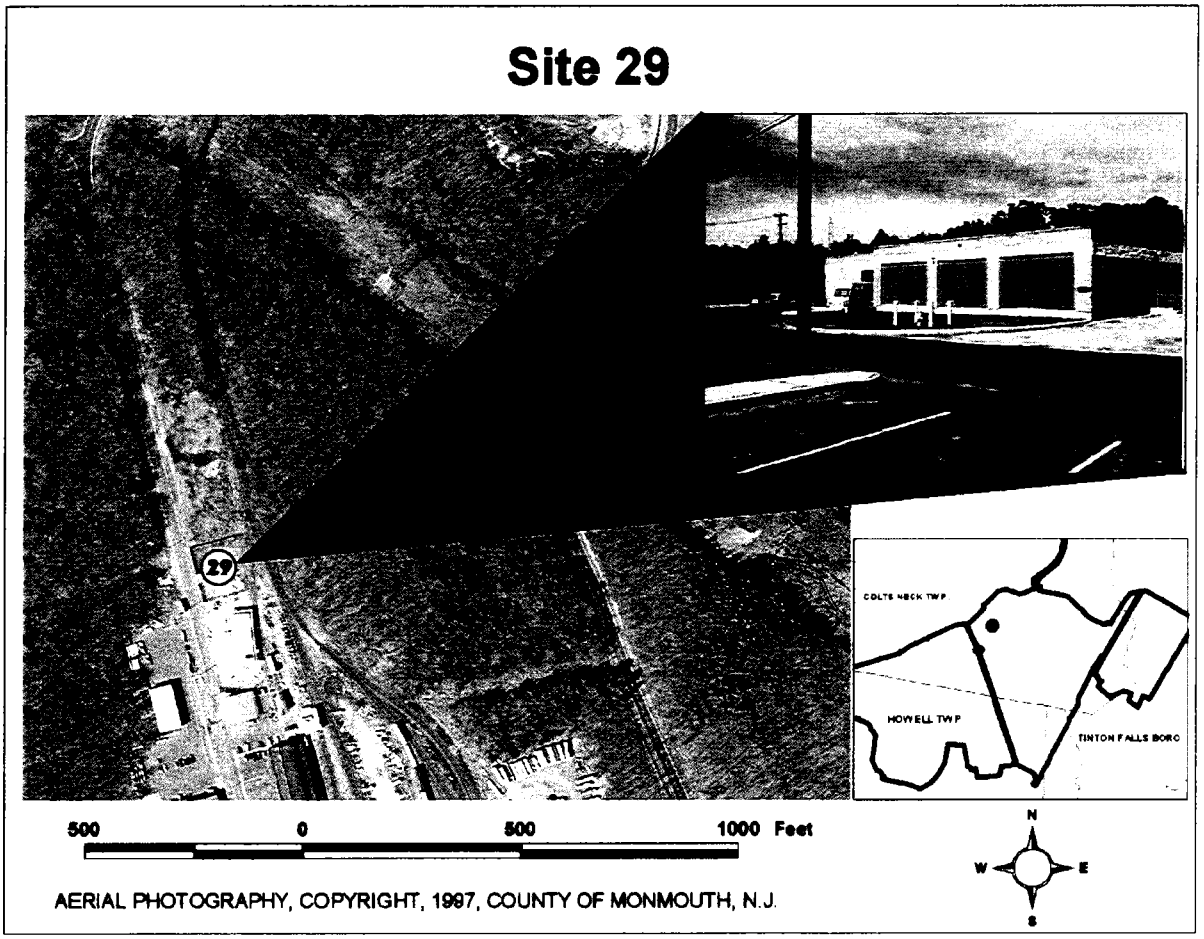
An area in the storage yard north of Building C-16 where a PCB transformer was vandalized in 1981. The area was cleaned up at that time and the excavated soil was disposed off-site. A new, permitted hazardous waste storage facility has been built on the site.

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-excavation 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

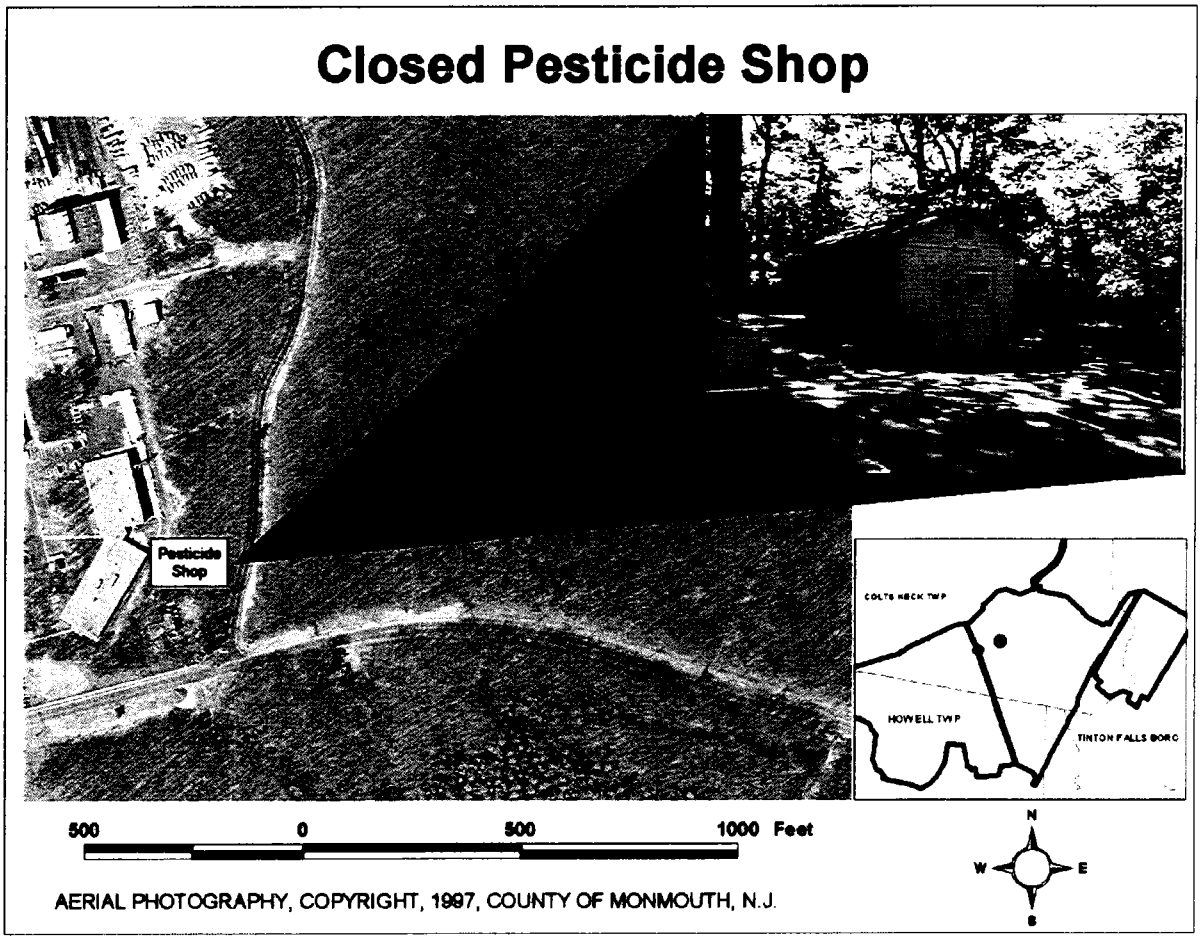
For many years, Naval Weapons Station Earle Public Works personnel had applied a variety of pesticides and herbicides across the Station. The Pesticide Shop was used basically as a storage and mixing facility through the 1980s. Subsequently, mixing and application of pesticides was performed by contractor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

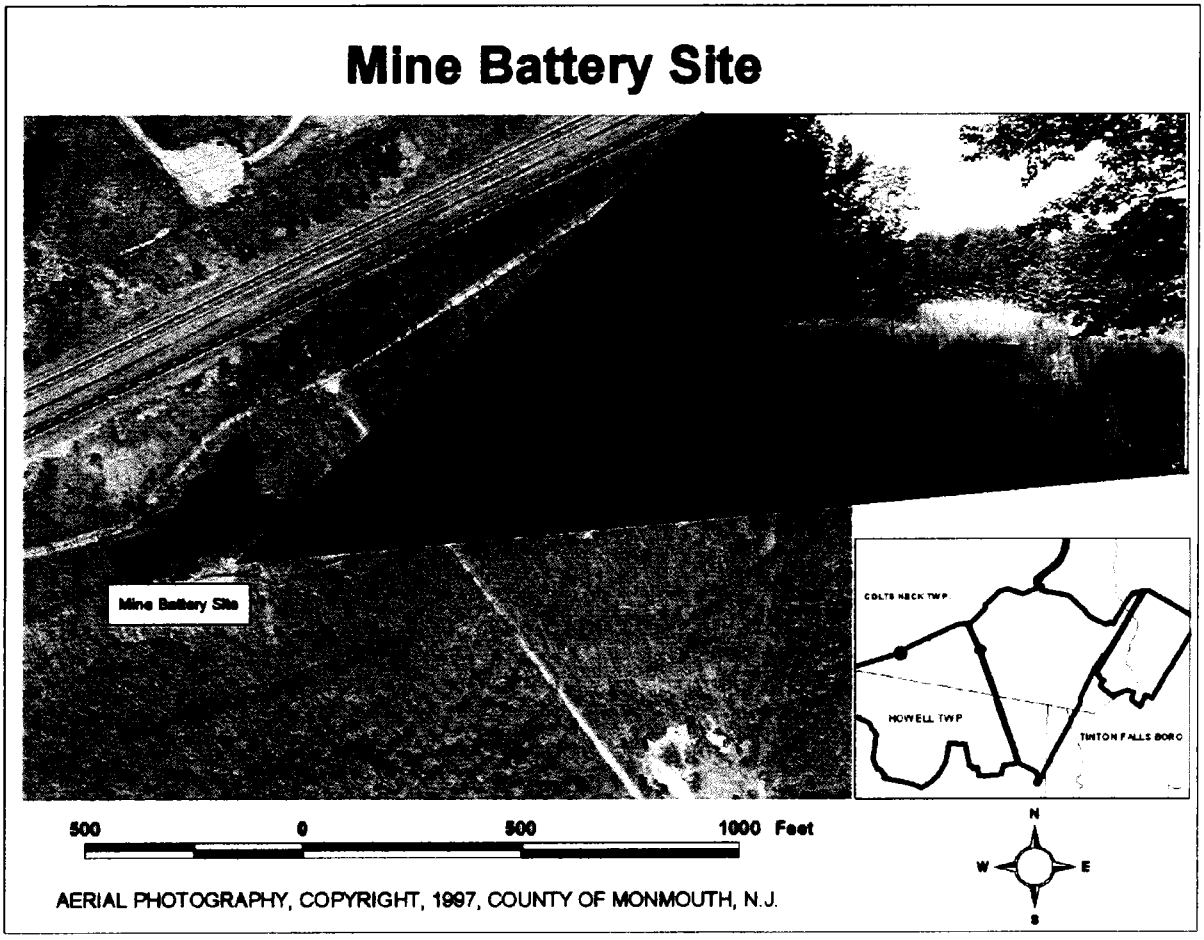


MINE BATTERY SITE AT WEST POND AREA

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.

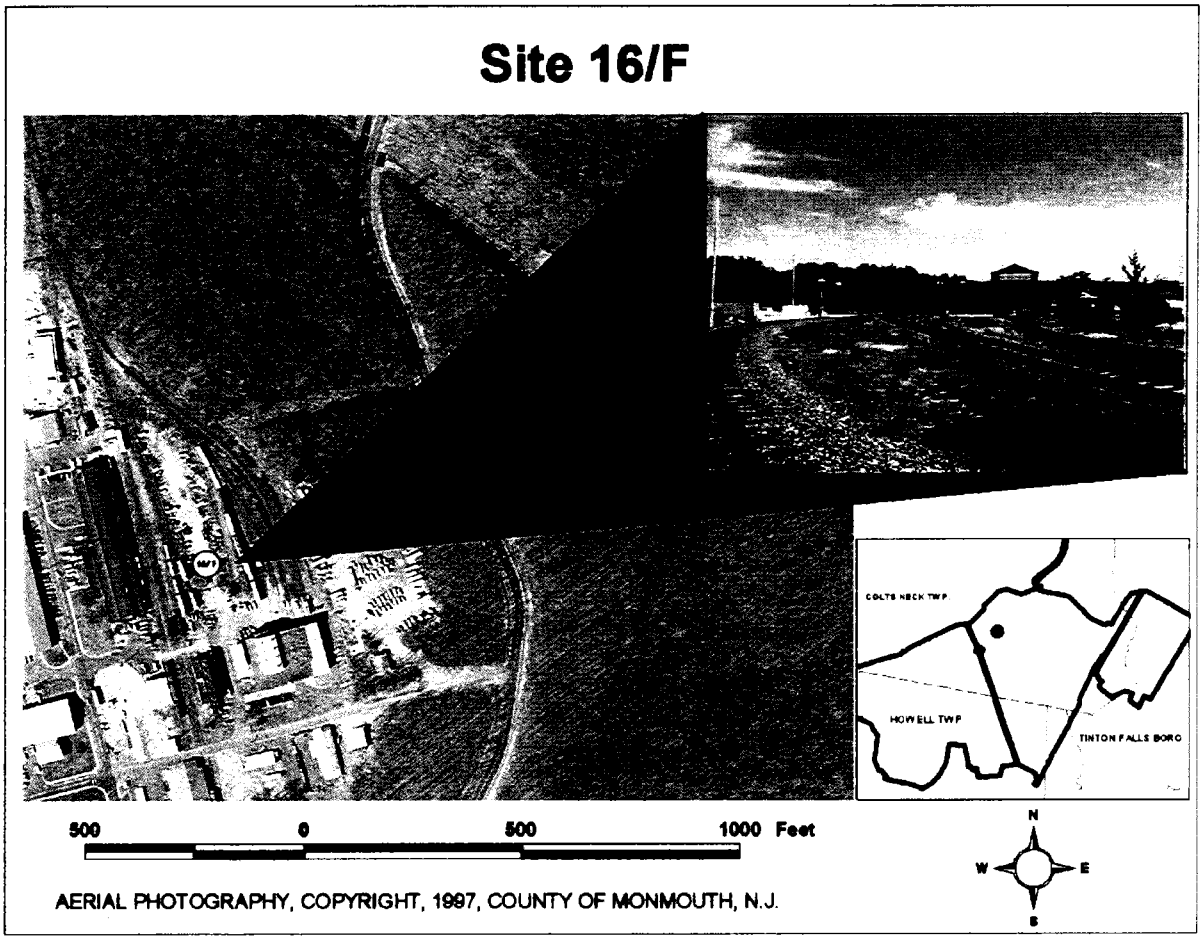
SITE F: C-50 ROUNDHOUSE AREA

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

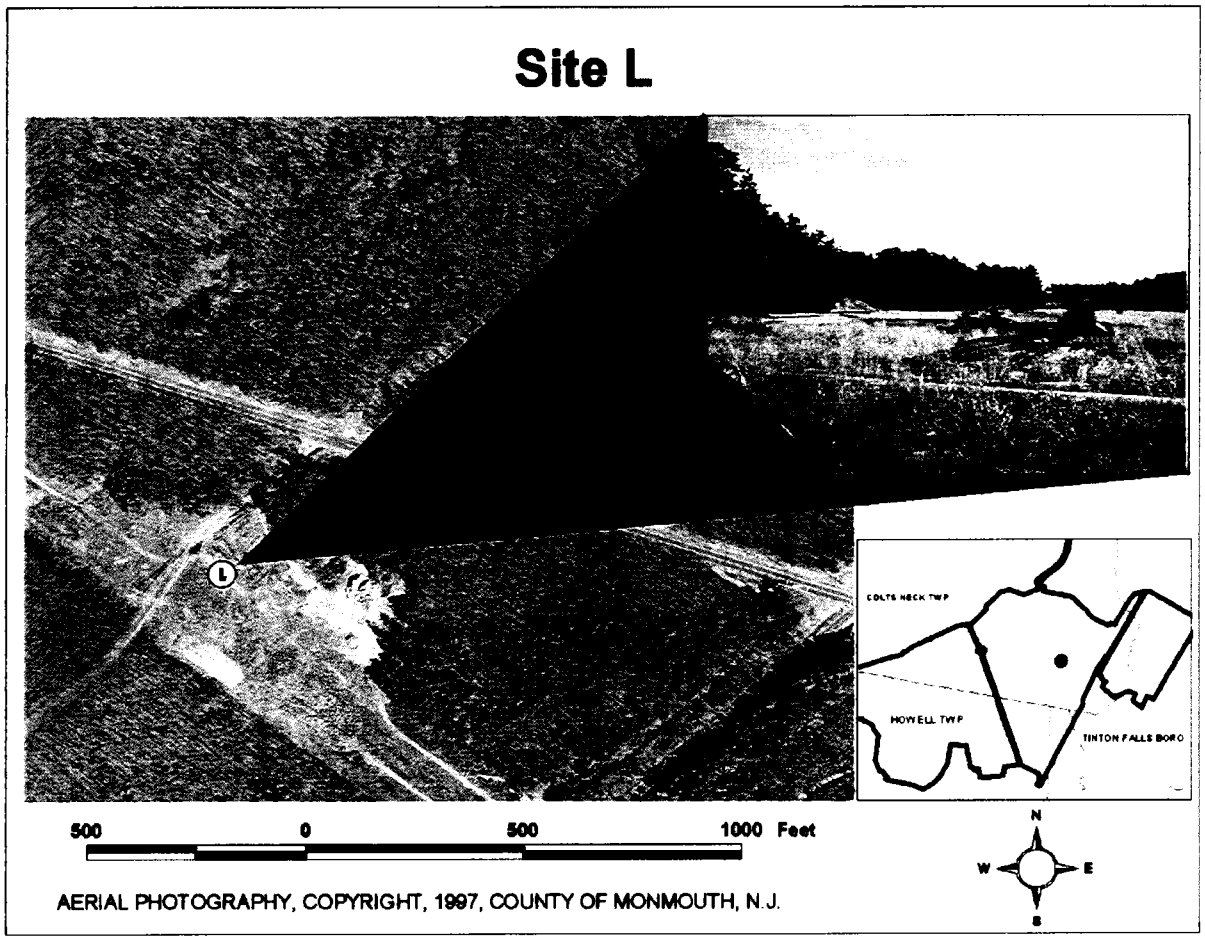
SITE HISTORY

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

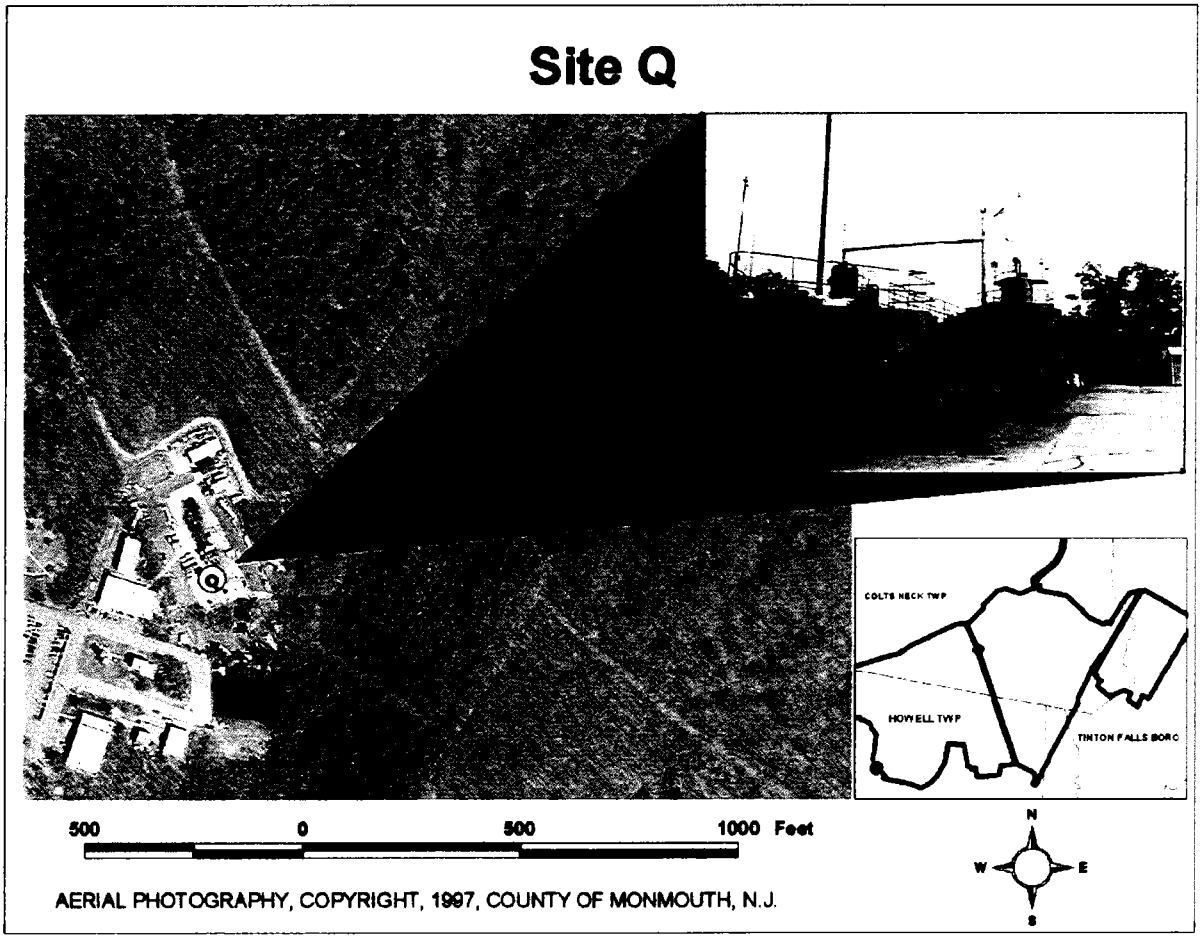
SITE HISTORY

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.