



DEPARTMENT OF THE ARMY
ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT
U.S. ARMY FORT MONMOUTH
P.O. 148
OCEANPORT, NEW JERSEY 07757

June 26, 2015

Ms. Linda Range
New Jersey Department of Environmental Protection
Case Manager
Bureau of Case Management
401 East State Street (5th Floor)
PO Box 420, Mail Code 401-05F
Trenton, NJ 08625-0028

Subject: Fort Monmouth, NJ
Main Post Phase 2 Property Category Determination

Dear Ms. Range:

The Army is in the process of preparing the required documentation to support the transfer of a portion of the Fort Monmouth Main Post known as the Phase 2 Property to the Fort Monmouth Economic Revitalization Authority (FMERA). As part of that process, the Army has determined, based on further investigation, that re-categorization of the Environmental Condition of Property (ECP) for a portion of the Main Post is necessary¹. Pursuant to 42 U.S.C. § 9620(h)(4)(B)², the Army has prepared this letter to provide the New Jersey Department of Environmental Protection (NJDEP) with a request for concurrence on the Army's determination that a certain portion of ECP Parcel 57 (hereinafter "Parcel 57") should be changed to property Category 1, as noted below. Property Category 1 is an area or parcel of real property where no release or disposal of hazardous substances or petroleum products or their derivatives has occurred (including no migration of these substances from adjacent properties). Category definitions are provided in Attachment 1. Attachment 2 – Figure 1 shows the current property category for Parcel 57 and Figure 2 shows the proposed change in category for a portion of Parcel 57.

¹ The Army has an obligation under 42 U.S.C. § 9620(h)(4)(A) to "identify real property on which no hazardous substances and no petroleum products or their derivatives were known to have been released or disposed of." Army's determination is based on an investigation of the real property to determine or discover the obviousness of a release including, a review of federal government records, recorded chain of title documents and aerial photographs and reasonably obtainable federal, state and local government records of each adjacent facility where there has been a release; a visual inspection of the real property; a physical inspection of adjacent property; and interviews with current and former employees involved in operations on the real property. See 42 U.S.C. § 9620(h)(4)(A).

² 42 U.S.C. § 9620(h)(4)(B) states that the Army's identification "is not complete until concurrence in the results of the identification is obtained . . . , in the case of real property that is not part of a facility on the National Priorities List, from the appropriate State official."

A summary of the proposed changes and supporting rationale is as follows:

ECP Parcel 57

This parcel was initially classified as Category 7 based on the former industrial usage of the property and the need to further evaluate certain areas of the parcel and the closeout of certain environmental issues. Parcel 57 was identified as a former coal storage and fuel unloading area along the former railroad in the vicinity of Buildings 800, 801 and 1007. The primary issues associated with Parcel 57 were the former coal storage area and the fuel unloading area. Subsequently, the potential for releases from these areas was evaluated and reported on in the *U.S. Army BRAC 2005 Site Investigation Report Fort Monmouth, Final July 21, 2008*. That evaluation indicated that releases in soil and groundwater were limited to the former industrial area located on the northeastern side of Lane Avenue (Attachment 1 – Figure 3 and Attachment 3 – 2008 Site Investigation Summary). A Supplemental Phase II Site Investigation is underway in this portion of Parcel 57 to characterize potential PCB contamination in surface soil attributable to historical site activities and to evaluate PAHs in surface soil in excess of regulatory criteria for the evaluation of future risk (Attachment 1 – Figure 4). *See: Final Environmental Condition of Property Supplemental Phase II Site Investigation Work Plan for Parcels 28, 38, 39, 49, 57, 61 and 69 for Remedial Investigation / Feasibility Study / Decision Documents, Rev. 0, February 2015.*

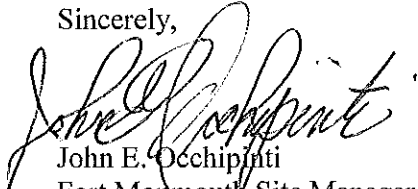
Industrial activities were not historically associated with the portion of Parcel 57 located northeast of Communications Avenue and southwest of Lane Avenue. The land was historically undeveloped. Currently, this area is comprised of four administrative/general purpose buildings, minor landscaping and parking areas. There are no existing or former aboveground storage tanks or underground storage tanks associated with these buildings or located on this portion of Parcel 57 (Attachment 1 – Figures 5 through 8).

The Category 7 area of Parcel 57 is not being contemplated for transfer to FMERA at this time and is called a “carve out area”. However, the Army has determined that the area outside of the “carve out” but inside Parcel 57 should be changed to Category 1. The basis for this request for re-categorization of a portion of Parcel 57 to Category 1 is that there were no industrial activities associated with Buildings 1000, 1003 (former), 1005 or 1010 or the land areas surrounding them. Further, there is no evidence of the release or disposal of hazardous substances, petroleum products or their derivatives including no migration of these substances from adjacent properties.

The Army requests NJDEP’s concurrence on the Category 1 designation for the specified portions of Parcel 57.

Should you require additional information, have any questions or wish to meet in person to discuss re-categorization, please contact me at 732-383-5104.

Sincerely,



John E. Occhipinti
Fort Monmouth Site Manager

cc: James Briggs, BRAC HQ
Delight Balducci, HQDA ACSIM
James Moore, COE
Joe Pearson, CALIBRE Systems

ATTACHMENT 1

ECP CATEGORY DEFINITIONS

Category 1: Areas where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas).

Category 2: Areas where only release or disposal of petroleum products has occurred.

Category 3: Areas where release, disposal and/or migration of hazardous substances has occurred but at concentrations that do not require a removal or remedial response.

Category 4: Areas where release, disposal and/or migration of hazardous substances has occurred and all removal or remedial actions to protect human health and the environment have been taken.

Category 5: Areas where a release, disposal and/or migration of hazardous substances has occurred and removal or remedial actions are underway but all required remedial actions have not yet taken place.

Category 6: Areas where a release, disposal and/or migration of hazardous substances has occurred but required actions have not yet been implemented.

Category 7: Areas that are not evaluated or require additional evaluation.

ATTACHMENT 2

FIGURES

[illegible]

ECP PARCEL CATEGORY DEFINITIONS

- Notes:
- 1) No Category 6 parcels were identified. Category 6 is defined as "areas where release, disposal, and/or migration of hazardous substances has occurred, but required actions have not yet been implemented."
 - 2) Storage tank location symbols placed in center of buildings indicate exact location information was not readily available for former tank(s) associated with that building.

BRAC PARCEL LABEL DEFINITIONS

8(2)PS

CONTAMINATION
DESCRIPTION

HS - Hazardous Substance Storage
HR - Hazardous Substance Release
PS - Petroleum Storage
PR - Petroleum Release
(P) - Possible Release or Disposal

CATEGORY NUMBER

PARCEL NUMBER



Base Realignment and Closure 2005



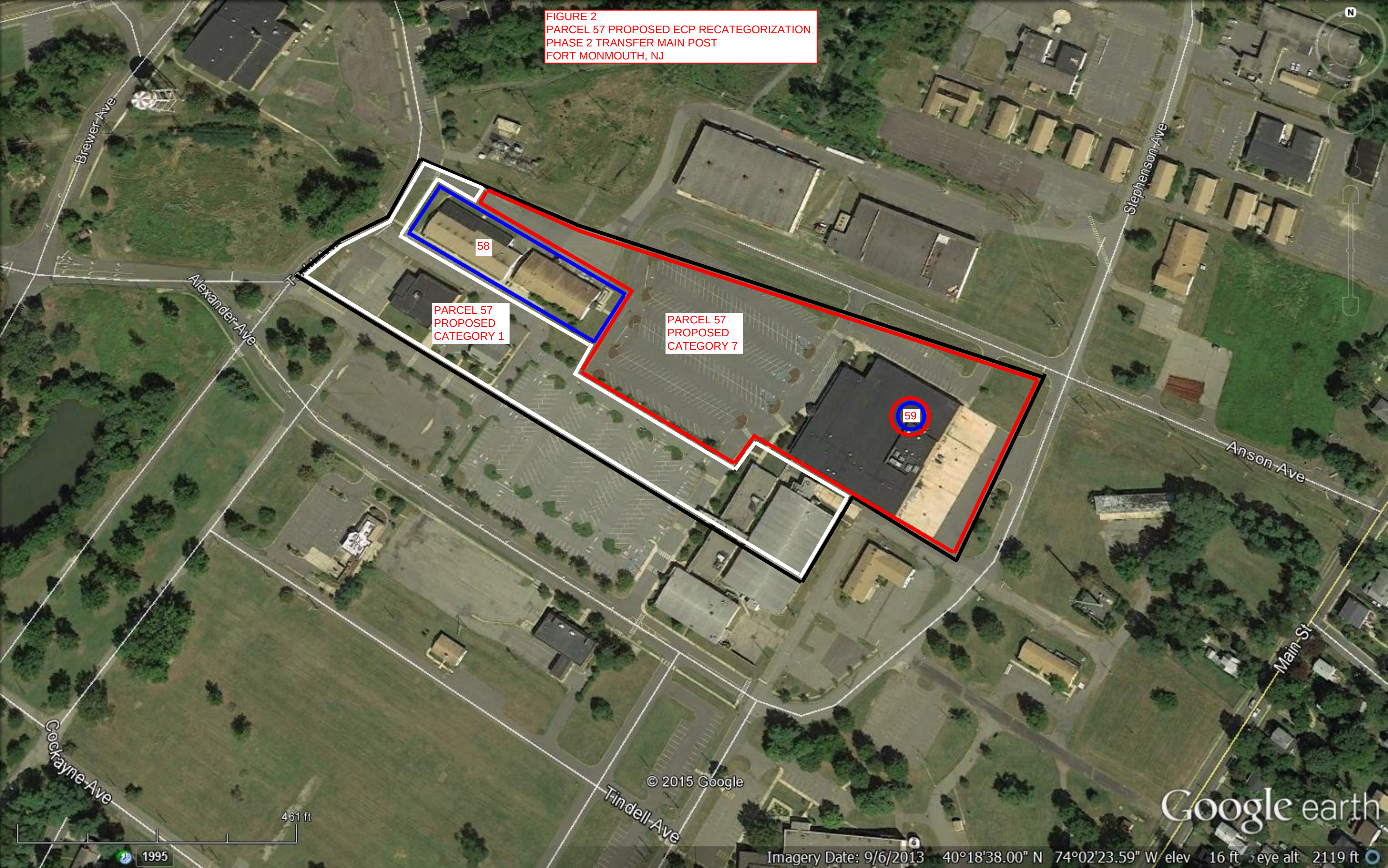
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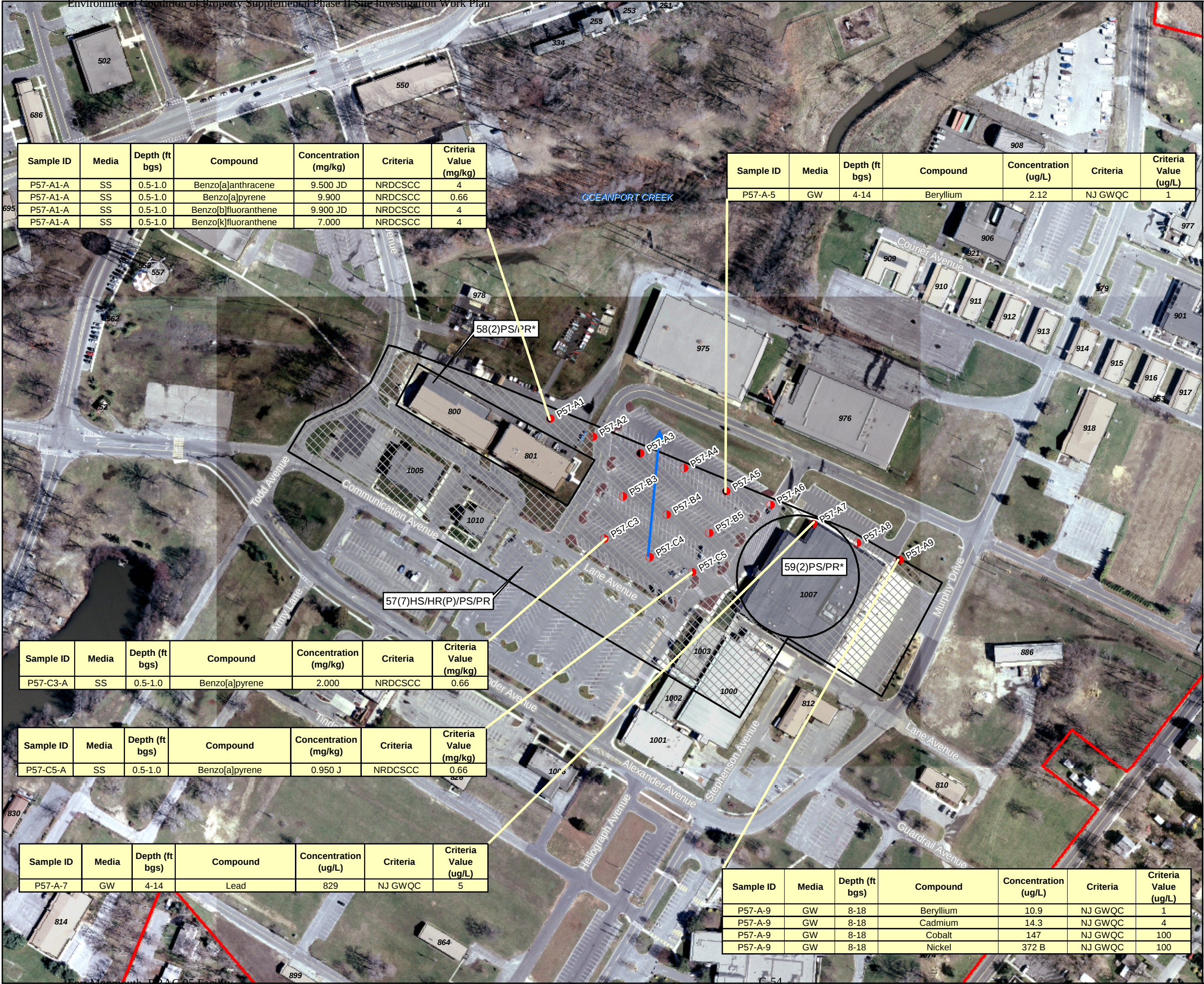


FIGURE 19
ECP PARCELS
MAIN POST
FORT MONMOUTH
NEW JERSEY

Scale:

FIGURE 2
PARCEL 57 PROPOSED ECP RECATEGORIZATION
PHASE 2 TRANSFER MAIN POST
FORT MONMOUTH, NJ





LEGEND

- Geoprobe Soil Sample Location
- Geoprobe Soil & Groundwater Sample Location
- Generalized Groundwater Flow Direction.
Direction of Generalized Groundwater Flow
derived from qualitative evaluation of surface
topography, surface water features, and
pre-existing IRP site groundwater
potentiometric maps where available.
- Building
- Installation Boundary

ECP PARCEL CATEGORY DEFINITIONS

- Areas that are not evaluated or require
additional evaluation.

* Parcel not included in Site Investigation. Information pertaining
to parcels not included in this Site Investigation is presented in
the Fort Monmouth Phase I ECP Report (January 2007).

BRAC PARCEL LABEL DEFINITIONS

- CONTAMINATION
DESCRIPTION
- CATEGORY NUMBER
- PARCEL NUMBER
- HS - Hazardous Substance Storage
- HR - Hazardous Substance Release
- PS - Petroleum Storage
- PR - Petroleum Release
- (P) - Possible Release or Disposal



SCALE:

0 100 200 400
Feet



Base Realignment and Closure 2005



Shaw Environmental, Inc.

FIGURE 3.14-1

FORT MONMOUTH ECP
SITE INVESTIGATION

PARCEL 57 SAMPLE LOCATIONS
AND CONSTITUENTS OF CONCERN

MAIN POST
FORT MONMOUTH
NEW JERSEY

February 2015

FIGURE 4

Figures

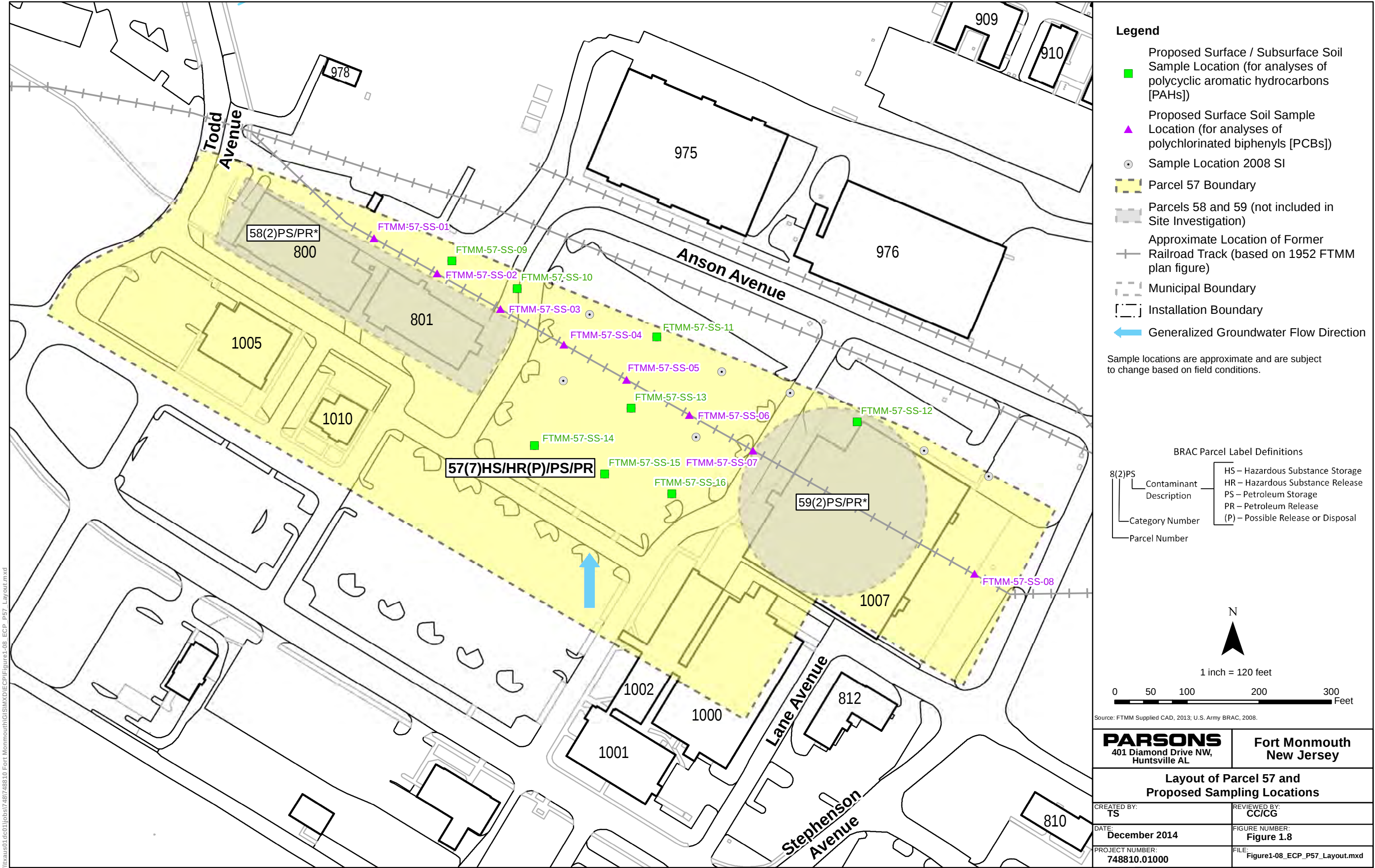


FIGURE 5

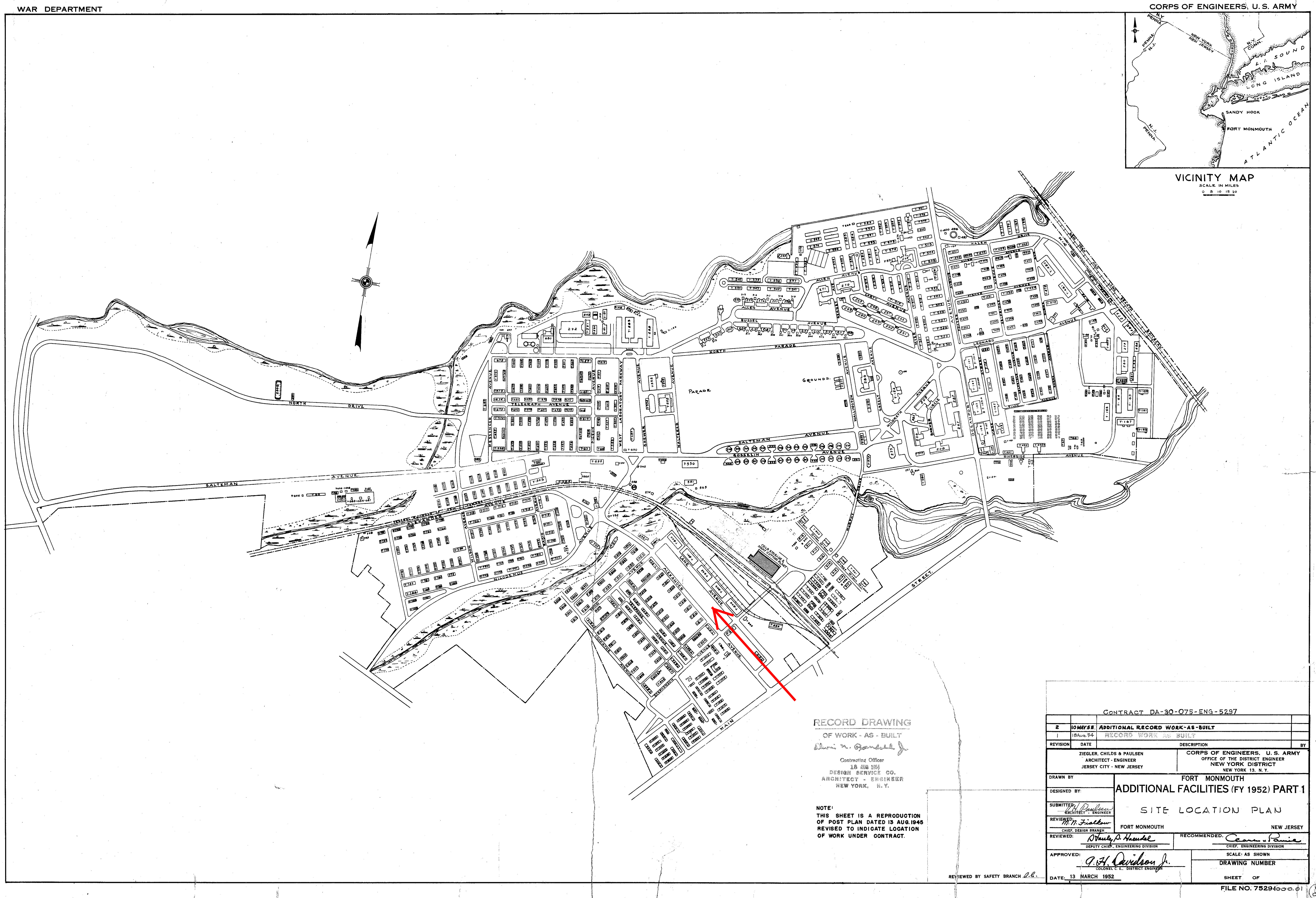


FIGURE 6

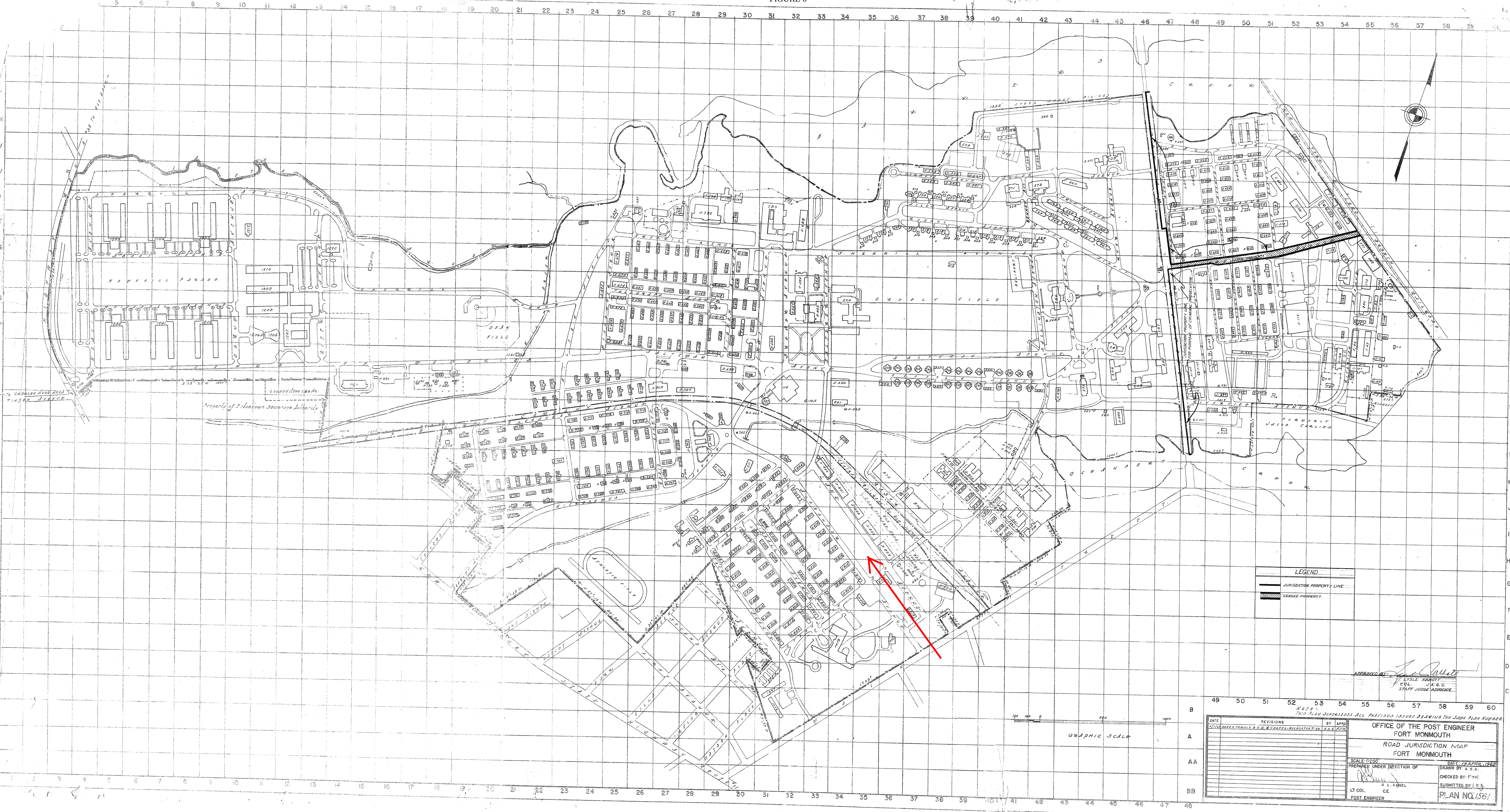


FIGURE 7

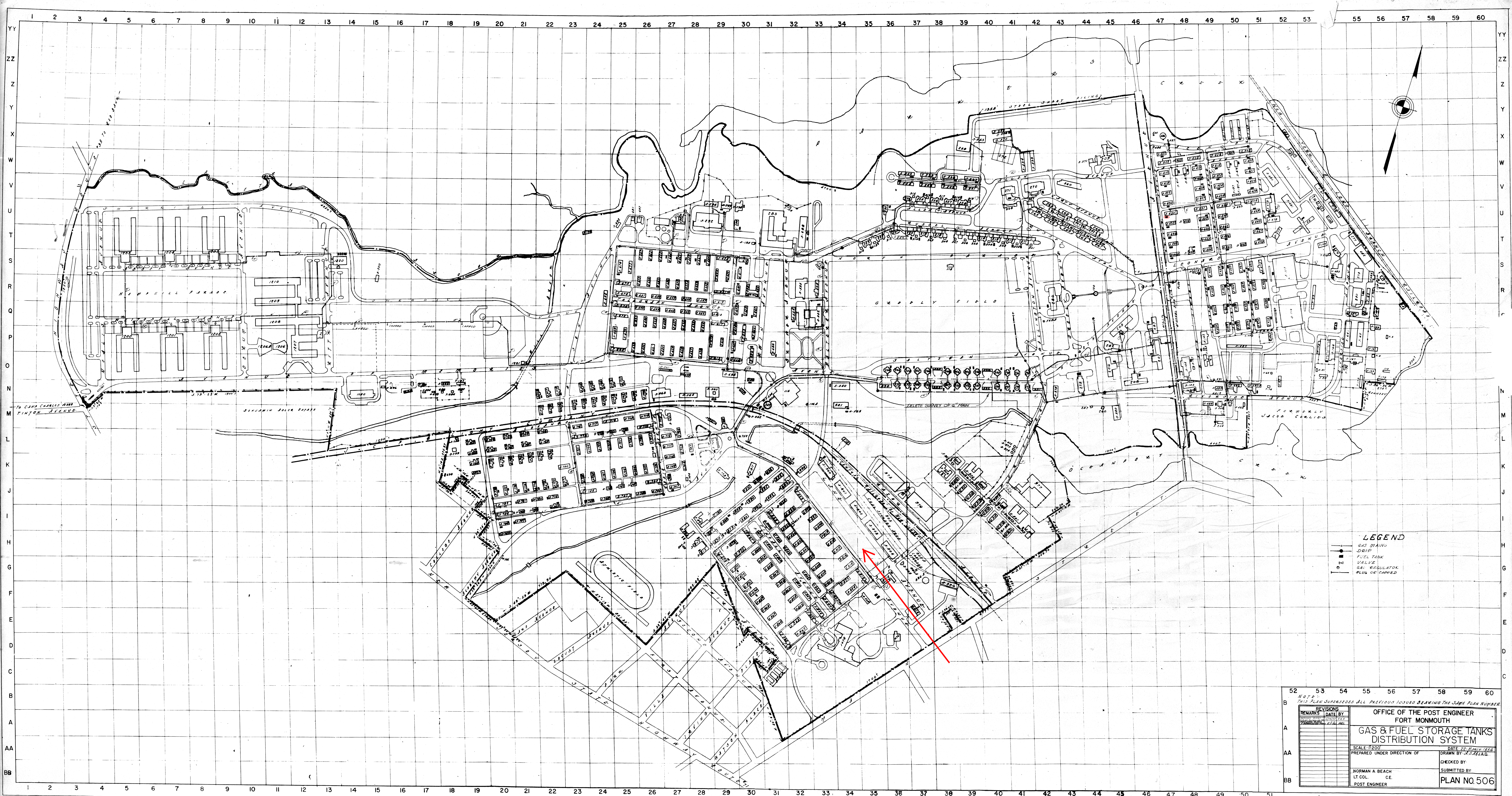
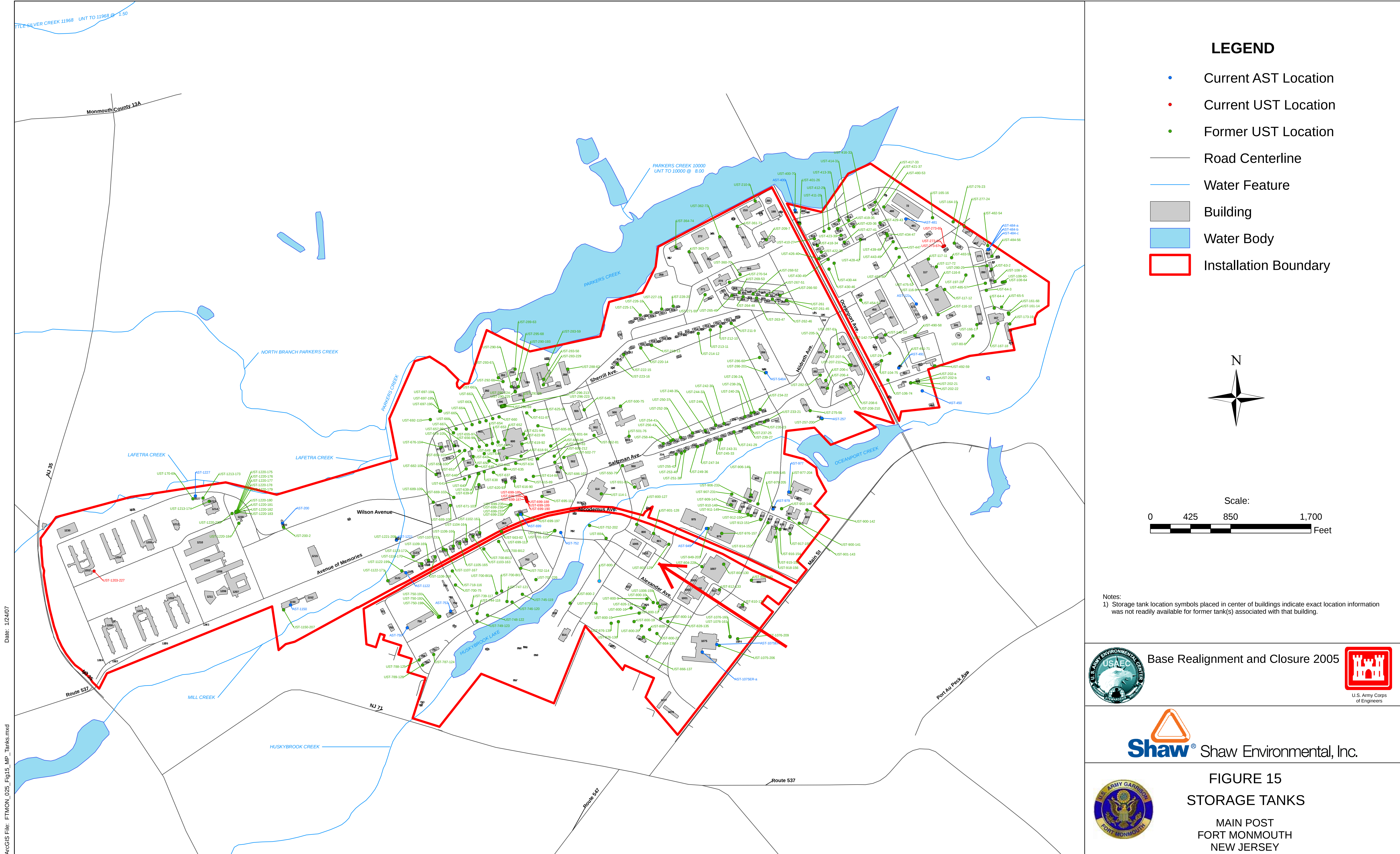


FIGURE 8



Date: 1/24/07

AcGIS File: FTMON_025_Fig15_MP_Tanks.mxd

ATTACHMENT 3

**2008 SITE INVESTIGATION REPORT INFORMATION
FOR PARCEL 57**

3.14 Parcel 57 – Former Coal Storage and Railroad Unloading – 800 Area

3.14.1 Site Description

Parcel 57 is located in the south-central portion of the MP in the area of Bldgs 1007 and 801. Historic site plans, aerial photographs, and information obtained during personnel interviews indicate a coal storage area and fuel unloading area formerly existed in the south-central portion of the MP along the former RR in the vicinity of Bldgs 1007 and 801. The potential coal storage area was identified in photographs from 1947, 1957, and 1963 (18). A geothermal well field is present north of Bldg 800. Additional information pertaining to this parcel can be found in Section 3.3, Section 5.4, Section 5.13.1, and Appendix G of the Phase I ECP (1).

3.14.2 Previous Investigations

No previous investigations have been conducted in relation to the former coal storage area.

3.14.3 Site Investigation Sampling

In order to determine the impact of historic coal and fuel unloading and storage activities in the area of the former RR, the following soil and groundwater sampling was conducted.

Geoprobe® Investigation

Soil and groundwater samples were collected in December 2007 in Parcel 57 in order to determine if any contamination exists from previous activities associated with the former coal storage area. A total of 15 surface soil samples and 18 subsurface soil samples (including three duplicate samples) were collected from 15 distinct Geoprobe® borings (**Figure 3.14-1**) on 100-ft centers. Surface soil samples for non-VO analysis were collected from the 0- to 6-inch interval bgs. For borings located in paved areas, non-VO surface soil samples were collected from the 0- to 6-inch interval directly below the pavement sub-base. Surface soil samples collected for VO analysis were collected from the 18- to 24-inch interval bgs. Subsurface soil samples were collected from the 6-inch interval directly above the water table. Field screening of the soil boring core was conducted using a PID/FID meter. No visual or olfactory evidence of soil contamination was noted.

A total of six groundwater samples (including one duplicate sample) were collected from five distinct temporary wells (**Figure 3.14.1**). Temporary wells were installed along the northern boundary of the soil boring grid in a downgradient hydrogeologic direction and were constructed of PVC and 5 to 10 ft of factory-slotted screen.

Table 3.14-1 presents a summary of all field activities, and all sample locations are provided on **Figure 3.14-1**. A summary of sampling activities, including sample IDs, collection dates, and analytical parameters, is provided in **Table 3.14-2**.

Table 3.14-1
Parcel 57 Sampling Location, Rationale and Analytical

Sample Location	Sample Media	Sample Location Rationale	Analytical Suite
57SS-A1 through 57SS-C9 (15 samples)	Surface soil	Soil samples were collected from the 0- to 6-inch bgs interval from the Geoprobe® soil boring grid (conducted on 100-ft centers) to investigate the former coal storage location. If the sample location was paved, the sample was collected from the 0- to 6-inch interval below the pavement sub-base.	TCL+30 (w/o pesticides), TAL Metals
57SB-A1 through 57SB-C9 (18 samples – includes 3 duplicate samples)	Subsurface soil	Soil samples were collected from the 6-inch interval directly above the water table (depths ranging from 3.5 to 8.0 ft bgs) from each Geoprobe® soil boring in the grid (conducted on 100-ft centers) to investigate the former coal storage location. Field screening of the entire Geoprobe® soil core was conducted using PID/FID meters.	TCL+30 (w/o pesticides), TAL Metals
57GW-A1, A3, A5, A7, A9 (6 samples – includes 1 duplicate sample)	Groundwater	Groundwater samples were collected from the specified Geoprobe® soil borings in the grid to investigate the former location of coal storage.	TCL+30 (w/o pesticides/PCBs), TAL Metals

3.14.4 Site Investigation Results

Geoprobe® Investigation Results

Surface and subsurface soil samples were analyzed for TCL+30 (without pesticides) and TAL metals. Groundwater samples were analyzed for TCL+30 (without pesticides/PCBs) and TAL metals.

Soil

As presented in **Table 3.14-3**, seven VOs, 22 B/Ns, and 19 metals were detected in Parcel 57 soil samples. All seven VOs were detected at concentrations below NJDEP NRDCSCC. Of the 17 B/Ns, four (benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, and benzo[k]fluoranthene) were detected in three surface soil samples, P57-A1-A, P57-C3-A, and P57-C5-A, at concentrations that exceeded NJDEP NRDCSCC and their respective MPBC. All 19 metals were detected at concentrations below NJDEP NRDCSCC. B/Ns are considered COCs in soil at Parcel 57.

Five soil samples contained TICs at elevated concentrations. 1,1-bis(1-methylethyl)-Hydrazine was detected at a concentration of 310 mg/kg in sample P57-A6-A and at a concentration of 330 mg/kg in the duplicate sample collected at P57-A9-C. It was not detected in sample P57-A9-C. 4-hydroxy-4-methyl 2-Pentanone was detected at concentrations of 220 mg/kg, 150 mg/kg, and 230 mg/kg in samples P57-A2-A, P57-A2-C, and P57-A4-C, respectively. Multiple semi-volatile constituents were identified in each of the five samples; however, no TCL organic constituents were identified at concentrations greater than the NRDCSCC in the five samples in which elevated TIC concentrations were identified.

Groundwater

As presented in **Table 3.14-4**, a total of five VOs (acetone, carbon disulfide, methyl ethyl ketone [2-butanone], TBA, and toluene) and one B/N (bis[2-ethylhexyl]phthalate) were detected at concentrations below the NJDEP GWQC in Parcel 57 groundwater samples.

A total of 20 metals were detected in Parcel 57 groundwater samples. Of the 20 metals detected, 11 (aluminum, arsenic, beryllium, cadmium, chromium, cobalt, iron, lead, manganese, nickel, and sodium) were detected above the respective GWQC.

Several natural and anthropogenic factors contribute to the wide range in concentrations of metals in soils, which further impact the concentration of metals in groundwater. Soils derived from glauconitic sands contain abundant aluminum, calcium, potassium, iron, magnesium, manganese, and sodium (among others), which are likely to be present at elevated concentrations in the groundwater, particularly when sediments are entrained in the collected groundwater samples. These native metals included aluminum, barium, calcium, iron, magnesium, manganese, potassium, sodium, and zinc (47). In addition, sodium concentrations can be influenced by saltwater intrusion. The non-native metals detected in groundwater samples collected from the temporary wells in Parcel 57 have been compared to the respective GWQC and MPBCs to determine COCs requiring further evaluation (**Figure 3.14-1**).

Four naturally occurring metal constituents commonly associated with the local soils/geology, aluminum, iron, manganese, and sodium were detected in Parcel 57 groundwater samples collected from temporary wells. As a result of these natural influences, aluminum, iron, manganese, and sodium are not considered COCs in groundwater.

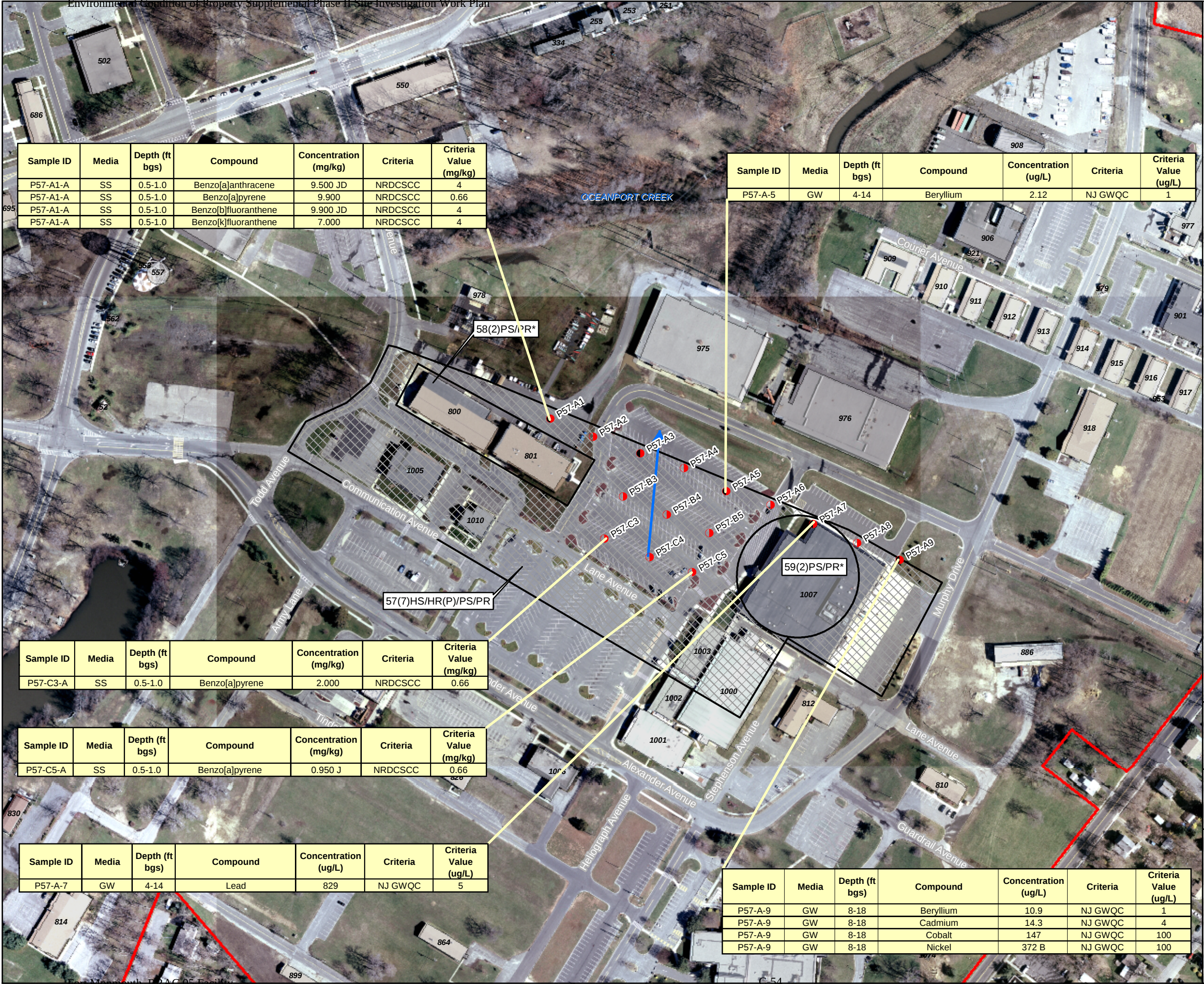
Arsenic was detected at concentrations exceeding the NJDEP GWQC of 3 µg/L in four samples, P57-A3 (5.24 µg/L), P57-A5 (3.94 µg/L), P57-A7 (4.01 µg/L), and P57-A9 (6.73 µg/L). However, these concentrations did not exceed the MPBC of 89.3 µg/L. In addition, arsenic is associated with the native glauconitic sands (48). The elevated arsenic concentrations in the native soil in turn influence the arsenic levels in groundwater. Thus, arsenic is not considered a COC in groundwater. Beryllium was detected at concentrations exceeding the NJDEP GWQC of 1 µg/L in three samples, P57-A5 (2.12 µg/L), P57-A7 (1.98 µg/L), and P57-A9 (10.9 µg/L). Two of the three

beryllium concentrations also exceeded the MPBC of 2.1 µg/L. Cadmium was detected at a concentration exceeding the NJDEP GWQC of 4 µg/L and the MPBC of 9.5 µg/L in one sample, P57-A9 (14.3 µg/L). Chromium was detected at a concentration exceeding the NJDEP GWQC of 70 µg/L in one sample, P57-A7 (105 µg/L). The chromium concentration was below the MPBC of 191 µg/L. Cobalt was detected at a concentration exceeding the NJDEP GWQC of 100 µg/L and the MPBC of 18.3 µg/L in one sample, P57-A9 (147 µg/L). Lead was detected at a concentration exceeding the NJDEP GWQC of 5 µg/L and the MPBC of 22.7 µg/L in one sample, P57-A7 (829 µg/L). Nickel was detected at a concentration exceeding the NJDEP GWQC of 100 µg/L and the MPBC of 187 µg/L in one sample P57-A-9 (372 µg/L).

3.14.5 Summary and Conclusions

Soil samples that exceeded NJDEP NRDCSCC for B/Ns were collected from the 0- to 6-inch interval below the pavement sub-base. The four B/Ns (benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, and benzo[k]fluoranthene) that were detected at concentrations above the NRDCSCC and the MPBC are considered COCs in soil.

Five common, naturally occurring metal constituents, aluminum, arsenic, iron, manganese, and sodium, were detected at concentrations greater than the NJDEP GWQC, but these native metals are attributed to the aquifer material and are not site-related. Therefore, these metals are not considered COCs. Five non-native metal constituents, beryllium, cadmium, cobalt, lead, and nickel, were detected at concentrations above the NJDEP GWQC and their respective MPBC. These five metals are considered COCs in Parcel 57 groundwater. Further evaluation of B/Ns identified in surface soil and metals in groundwater is recommended for Parcel 57. The B/N COCs identified in soil at Parcel 57 are PAHs. PAHs are contained in asphalt and are commonly detected in soil under asphalt pavement. Re-collection of samples at locations that are currently paved and/or were paved in the past will be conducted as part of the further evaluation to determine if the PAHs detected in soil are attributable to asphalt.



LEGEND

- Geoprobe Soil Sample Location
- Geoprobe Soil & Groundwater Sample Location
- Generalized Groundwater Flow Direction.
Direction of Generalized Groundwater Flow derived from qualitative evaluation of surface topography, surface water features, and pre-existing IRP site groundwater potentiometric maps where available.
- Building
- Installation Boundary

ECP PARCEL CATEGORY DEFINITIONS

- Areas that are not evaluated or require additional evaluation.

* Parcel not included in Site Investigation. Information pertaining to parcels not included in this Site Investigation is presented in the Fort Monmouth Phase I ECP Report (January 2007).

BRAC PARCEL LABEL DEFINITIONS

- CONTAMINATION DESCRIPTION
 - HS - Hazardous Substance Storage
 - HR - Hazardous Substance Release
 - PS - Petroleum Storage
 - PR - Petroleum Release
 - (P) - Possible Release or Disposal
- CATEGORY NUMBER
- PARCEL NUMBER



SCALE:

0 100 200 400 Feet



Base Realignment and Closure 2005



Shaw Environmental, Inc.

FIGURE 3.14-1

FORT MONMOUTH ECP
SITE INVESTIGATION

PARCEL 57 SAMPLE LOCATIONS
AND CONSTITUENTS OF CONCERN

MAIN POST
FORT MONMOUTH
NEW JERSEY

February 2015

Chemical			Analytical Results												
			P57-A1-A	P57-A1-B	P57-A1-C	P57-A2-A	P57-A2-B	P57-A2-C	P57-A3-A	P57-A3-B	P57-A3-C	P57-A4-A	P57-A4-B	P57-A4-C	P57-A5-A
			7052503	7052504	7052505	7051712	7051713	7051714	7052506	7052507	7052508	7052112	7052113	7052114	7052509
	Sample ID: Lab ID: Date Sampled: Depth (ft. bgs):		12/11/2007 0.5-1.0	12/11/2007 1.5-2.0	12/11/2007 7.5-8.0	12/08/2007 0.0-0.5	12/08/2007 1.5-2.0	12/08/2007 5.5-6.0	12/11/2007 0.5-1.0	12/11/2007 1.5-2.0	12/11/2007 4.0-4.5	12/10/2007 0.5-1.0	12/10/2007 1.5-2.0	12/10/2007 6.5-7.0	12/11/2007 0.5-1.0
NRDCSCC ²		IGWSCC ³	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Volatiles															
Acetone	1000	100	NT	0.260 U	0.400	NT	0.240 U	0.320 U	NT	0.420	0.300	NT	0.043 J	0.450	NT
Benzene	13	1	NT	0.260 U	0.330 U	NT	0.017 J	0.320 U	NT	0.260 U	0.250 U	NT	0.330 U	0.290 U	NT
Ethylbenzene	1000	100	NT	0.260 U	0.330 U	NT	0.023 J	0.320 U	NT	0.260 U	0.250 U	NT	0.330 U	0.290 U	NT
Toluene	1000	500	NT	0.260 U	0.330 U	NT	0.077 J	0.320 U	NT	0.260 U	0.250 U	NT	0.069 J	0.290 U	NT
Trichlorofluoromethane	NLE	NLE	NT	0.260 U	0.330 U	NT	0.240 U	0.320 U	NT	0.260 U	0.250 U	NT	0.330 U	0.290 U	NT
Vinyl Acetate	NLE	NLE	NT	0.260 U	0.330 U	NT	0.240 U	0.320 U	NT	0.260 U	0.250 U	NT	0.330 U	0.290 U	NT
Xylenes (Total)	1000	67	NT	0.780 U	0.990 U	NT	0.350 J	0.950 U	NT	0.780 U	0.750 U	NT	1.000 U	0.870 U	NT
Semi-Volatiles															
Acenaphthene	10000	100	1.200	NT	1.300 U	1.200 U	NT	1.300 U	1.200 U	NT	1.100 U	1.100 U	NT	1.100 U	0.085 J
Acenaphthylene	NLE	NLE	0.760 J	NT	1.300 U	1.200 U	NT	1.300 U	1.200 U	NT	1.100 U	0.077 J	NT	1.100 U	0.061 J
Anthracene	10000	100	5.600	NT	1.300 U	0.055 J	NT	1.300 U	1.200 U	NT	1.100 U	0.160 J	NT	1.100 U	0.180 J
Benzo[a]anthracene	4	500	9.500 JD	NT	1.300 U	0.220 J	NT	1.300 U	0.100 J	NT	1.100 U	0.310 J	NT	1.100 U	0.340 J
Benzo[a]pyrene	0.66	100	9.900	NT	1.300 U	0.210 J	NT	1.300 U	1.200 U	NT	1.100 U	0.350 J	NT	1.100 U	1.100 U
Benzo[b]fluoranthene	4	50	9.900 JD	NT	1.300 U	0.330 J	NT	1.300 U	1.200 U	NT	1.100 U	0.470 J	NT	1.100 U	0.520 J
Benzo[g,h,i]perylene	NLE	NLE	3.400	NT	1.300 U	1.200 U	NT	1.300 U	1.200 U	NT	1.100 U	1.100 U	NT	1.100 U	1.100 U
Benzo[k]fluoranthene	4	500	7.000	NT	1.300 U	0.110 J	NT	1.300 U	1.200 U	NT	1.100 U	0.160 J	NT	1.100 U	0.210 J
bis(2-Ethylhexyl)phthalate	210	100	1.100 U	NT	0.080 J	0.099 J	NT	0.052 J	1.200 U	NT	0.086 J	0.150 J	NT	1.100 U	3.200
Butyl benzyl phthalate	10000	100	1.100 U	NT	1.300 U	1.200 U	NT	1.300 U	1.200 U	NT	1.100 U	1.100 U	NT	1.100 U	1.100 U
Chrysene	40	500	10.000 JD	NT	1.300 U	0.270 J	NT	1.300 U	0.130 J	NT	1.100 U	0.390 J	NT	1.100 U	0.430 J
Dibenzofuran	NLE	NLE	1.800	NT	1.300 U	1.200 U	NT	1.300 U	1.200 U	NT	1.100 U	0.032 J	NT	1.100 U	0.061 J
Diethyl phthalate	10000	50	1.100 U	NT	0.059 JB	1.200 U	NT	1.300 U	1.200 U	NT	0.053 JB	0.160 JB	NT	1.100 U	1.100 U
Di-n-butylphthalate	10000	100	0.210 J	NT	0.990 J	2.700 B	NT	1.800 B	0.820 J	NT	1.500	0.490 JB	NT	1.400 B	1.300
Di-n-octyl phthalate	10000	100	1.100 U	NT	1.300 U	1.200 U	NT	1.300 U	1.200 U	NT	1.100 U	1.100 U	NT	1.100 U	1.100 U
Fluoranthene	10000	100	25.000 D	NT	0.058 J	0.420 J	NT	1.300 U	0.280 J	NT	1.100 U	0.680 J	NT	1.100 U	0.900 J
Fluorene	10000	100	2.200	NT	1.300 U	1.200 U	NT	1.300 U	1.200 U	NT	1.100 U	1.100 U	NT	1.100 U	1.100 U
Indeno[1,2,3-cd]pyrene	4	500	3.200	NT	1.300 U	0.082 J	NT	1.300 U	1.200 U	NT	1.100 U	1.100 U	NT	1.100 U	1.100 U
2-Methylnaphthalene	NLE	NLE	1.400	NT	1.300 U	0.075 J	NT	1.300 U	1.200 U	NT	1.100 U	1.100 U	NT	1.100 U	1.100 U
Naphthalene	4200	100	0.880 J	NT	1.300 U	0.051 J	NT	1.300 U	1.200 U	NT	1.100 U	1.100 U	NT	1.100 U	1.100 U
Phenanthrene	NLE	NLE	19.000 D	NT	1.300 U	0.200 J	NT	1.300 U	0.140 J	NT	1.100 U	0.510 J	NT	0.041 J	0.660 J
Pyrene	10000	100	22.000 D	NT	0.050 J	0.410 J	NT	1.300 U	0.300 J	NT	1.100 U	0.820 J	NT	0.034 J	1.100 J
Metals															
Aluminum	NLE	NLE	7800 B	NT	16500 B	14500 B	NT	35200 B	21700 B	NT	6490 B	14400 B	NT	11500 B	11000 B
Arsenic	20	NLE	17.8	NT	9.11	7.39	NT	11.4	12.4	NT	2.73	6.16	NT	8.12	6.05
Barium	47000	NLE	35.3 B	NT	12.2 B	49.3 B	NT	148 B	50.1 B	NT	11.3 B	42.8 B	NT	17.2 B	49.1 B
Beryllium	140	NLE	0.769	NT	0.926	0.882	NT	1.54	1.35	NT	0.271	0.527	NT	1.61	0.520
Cadmium	100	NLE	0.325	NT	0.221	0.384	NT	0.311	0.426	NT	0.112	0.468	NT	0.497	0.425
Calcium	NLE	NLE	2180 B	NT	216 B	3190 B	NT	468 B	18800 B	NT	466 B	29000 B	NT	778 B	45400 B
Chromium (Total)	NLE	NLE	58.8 B	NT	106 B	53.5 B	NT	217 B	110 B	NT	22.8 B	40.9 B	NT	122 B	31.3 B
Cobalt	NLE	NLE	1.98	NT	0.526	3.48	NT	0.832	1.79	NT	0.338 U	8.52	NT	1.30	4.80
Copper	45000	NLE	28.6 B	NT	9.40 B	17.6 B	NT	26.4 B	12.8 B	NT	3.57 B	33.1 B	NT	7.01 B	25.3 B
Iron	NLE	NLE	27900 B	NT	22800 B	24500 B	NT	35100 B	34600 B	NT	8110 B	21600 B	NT	44000 B	19700 B
Lead	800	NLE	15.9	NT	0.525	22.8	NT	3.88	11.2	NT	3.01	21.0	NT	0.351 U	29.3
Magnesium	NLE	NLE	3240 B	NT	4000 B	3790 B	NT	5900 B	5000 B	NT	832 B	5240 B	NT	5250 B	4970 B
Manganese	NLE	NLE	57.7 B	NT	42.2 B	303 B	NT	54.8 B	85.9 B	NT	19.7 B	174 B	NT	27.9 B	154 B
Mercury	270	NLE	0.100 U	NT	0.119 U	0.110 U	NT	0.122 U	0.116 U	NT	0.099 U	0.105 U	NT	0.109 U	0.113 U
Nickel (Soluble Salts)	2400	NLE	7.56	NT	4.39	10.4	NT	50.3	14.6	NT	2.76	17.6	NT	44.1	11.5
Potassium	NLE	NLE	5200 B	NT	5190 B	4290 B	NT	9540 B	7720 B	NT	1430 B	3420 B	NT	11800 B	2360 B
Sodium	NLE	NLE	42.5	NT	41.667 U	38.480 U	NT	43.926 U	42.214 U	NT	38.483 U	904	NT	37.586 U	434
Vanadium	7100	NLE	45.7	NT	60.5	49.9	NT	86.1	77.6	NT	18.1	60.4	NT	70.2	43.3
Zinc	1500	NLE	39.1	NT	46.9	61.7	NT	72.6	70.2	NT	36.5	65.0	NT	165	74.4

¹ NJDEP Residential Direct Contact Soil Cleanup Criteria per NJAC 7:26D, 1999. Beryllium, Copper and Lead criteria per NJAC 7:26D, 2008.

² NJDEP Non-Residential Direct Contact Soil Cleanup Criteria per NJAC 7:26D, 1999. Beryllium, Copper and Lead criteria per NJAC 7:26D, 2008.

³ NJDEP Impact to Groundwater Soil Cleanup Criteria per NJAC 7:26D, 1999.

DUP = Duplicate Sample.

ft. bgs = Feet below ground surface.

B = The compound was found in the associated method blank as well as in the sample.

D = Sample was diluted.

E = The compound's concentration exceeds the calibration range of the instrument for that specific analysis.

J = Mass spec and retention time data indicate the presence of a compound however the result is less than the MDL but greater than zero.

U = The compound was analyzed for but not detected.

NT = Not tested.

NLE = No limit established.

mg/kg = milligram per kilogram.

Bold = Analyte was detected.

Shaded = Concentration exceeds level of concern.
(Surface soil compared to NRDCSCC. Subsurface soil compared to IGWSCC when available, otherwise compared to NRDCSCC).

Chemical	Sample ID: Lab ID: Date Sampled: Depth (ft. bgs):		Analytical Results												
			P57-A5-B 7052510	P57-A5-C 7052511	P57-A6-A 7052115	P57-A6-B 7052116	P57-A6-C 7052117	P57-A7-A 7052512	P57-A7-B 7052513	P57-A7-C 7052514	P57-A8-A 7052118	P57-A8-B 7052119	P57-A8-C 7052120	P57-A9-A 7052515	P57-A9-B 7052516
			12/11/2007	12/11/2007	12/10/2007	12/10/2007	12/10/2007	12/11/2007	12/11/2007	12/11/2007	12/10/2007	12/10/2007	12/10/2007	12/11/2007	12/11/2007
			1.5-2.0	7.5-8.0	0.5-1.0	1.5-2.0	7.0-7.5	0.0-0.5	1.5-2.0	5.5-6.0	0.5-1.0	1.5-2.0	6.0-6.5	0.0-0.5	1.5-2.0
NRDCSCC ²		IGWSCC ³	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Volatiles															
Acetone	1000	100	0.340	0.420	NT	0.400	0.380	NT	0.610	0.340	NT	0.390	0.560	NT	0.510
Benzene	13	1	0.250 U	0.280 U	NT	0.270 U	0.260 U	NT	0.270 U	0.280 U	NT	0.260 U	0.270 U	NT	0.260 U
Ethylbenzene	1000	100	0.250 U	0.280 U	NT	0.270 U	0.260 U	NT	0.270 U	0.280 U	NT	0.260 U	0.270 U	NT	0.260 U
Toluene	1000	500	0.250 U	0.280 U	NT	0.270 U	0.260 U	NT	0.270 U	0.024 J	NT	0.260 U	0.270 U	NT	0.260 U
Trichlorofluoromethane	NLE	NLE	0.069 J	0.280 U	NT	0.270 U	0.260 U	NT	0.270 U	0.280 U	NT	0.260 U	0.270 U	NT	0.260 U
Vinyl Acetate	NLE	NLE	0.250 U	0.280 U	NT	0.270 U	0.260 U	NT	0.270 U	0.280 U	NT	0.210 J	0.270 U	NT	0.260 U
Xylenes (Total)	1000	67	0.760 U	0.840 U	NT	0.810 U	0.780 U	NT	0.820 U	0.021 J	NT	0.770 U	0.810 U	NT	0.790 U
Semi-Volatiles															
Acenaphthene	10000	100	NT	1.200 U	0.070 J	NT	1.100 U	1.100 U	NT	1.100 U	4.400 U	NT	1.100 U	1.200 U	NT
Acenaphthylene	NLE	NLE	NT	1.200 U	0.059 J	NT	1.100 U	1.100 U	NT	0.069 J	0.170 J	NT	1.100 U	1.200 U	NT
Anthracene	10000	100	NT	1.200 U	0.150 J	NT	0.030 J	0.058 J	NT	0.039 J	0.520 J	NT	1.100 U	1.200 U	NT
Benzo[a]anthracene	4	500	NT	1.200 U	0.350 J	NT	0.054 J	0.240 J	NT	0.100 J	1.100 J	NT	1.100 U	0.089 J	NT
Benzo[a]pyrene	0.66	100	NT	1.200 U	1.100 U	NT	1.100 U	0.240 J	NT	0.088 J	4.400 U	NT	1.100 U	0.080 J	NT
Benzo[b]fluoranthene	4	50	NT	1.200 U	1.100 U	NT	0.069 J	0.430 J	NT	0.072 J	4.400 U	NT	1.100 U	0.130 J	NT
Benzo[g,h,i]perylene	NLE	NLE	NT	1.200 U	1.100 U	NT	1.100 U	1.100 U	NT	1.100 U	4.400 U	NT	1.100 U	1.200 U	NT
Benzo[k]fluoranthene	4	500	NT	1.200 U	1.100 U	NT	0.039 J	0.100 J	NT	0.077 J	4.400 U	NT	1.100 U	1.200 U	NT
bis(2-Ethylhexyl)phthalate	210	100	NT	0.067 J	1.100 U	NT	0.044 J	1.900	NT	0.730 J	1.200 J	NT	0.110 J	0.180 J	NT
Butyl benzyl phthalate	10000	100	NT	1.200 U	1.100 U	NT	1.100 U	1.100 U	NT	1.100 U	4.400 U	NT	1.100 U	1.200 U	NT
Chrysene	40	500	NT	1.200 U	0.470 J	NT	0.077 J	0.320 J	NT	0.140 J	1.500 J	NT	1.100 U	0.120 J	NT
Dibenzofuran	NLE	NLE	NT	1.200 U	1.100 U	NT	1.100 U	1.100 U	NT	1.100 U	0.170 J	NT	1.100 U	1.200 U	NT
Diethyl phthalate	10000	50	NT	1.200 U	0.080 JB	NT	1.100 U	0.065 JB	NT	0.054 JB	0.250 JB	NT	1.100 U	0.046 JB	NT
Di-n-butylphthalate	10000	100	NT	0.300 J	1.100 JB	NT	0.380 JB	1.500	NT	0.810 J	2.300 JB	NT	3.800 B	0.340 J	NT
Di-n-octyl phthalate	10000	100	NT	1.200 U	1.100 U	NT	1.100 U	1.100 U	NT	1.100 U	4.400 U	NT	0.035 JB	1.200 U	NT
Fluoranthene	10000	100	NT	0.077 J	0.850 J	NT	0.130 J	0.580 J	NT	0.140 J	2.400 J	NT	0.055 J	0.170 J	NT
Fluorene	10000	100	NT	1.200 U	0.073 J	NT	1.100 U	1.100 U	NT	1.100 U	0.280 J	NT	1.100 U	1.200 U	NT
Indeno[1,2,3-cd]pyrene	4	500	NT	1.200 U	1.100 U	NT	1.100 U	1.100 U	NT	1.100 U	4.400 U	NT	1.100 U	1.200 U	NT
2-Methylnaphthalene	NLE	NLE	NT	1.200 U	0.091 J	NT	1.100 U	1.100 U	NT	1.100 U	4.400 U	NT	1.100 U	1.200 U	NT
Naphthalene	4200	100	NT	1.200 U	0.043 J	NT	1.100 U	1.100 U	NT	1.100 U	0.160 J	NT	1.100 U	1.200 U	NT
Phenanthrene	NLE	NLE	NT	0.057 J	0.670 J	NT	0.100 J	0.270 J	NT	0.050 J	2.100 J	NT	0.031 J	0.100 J	NT
Pyrene	10000	100	NT	0.074 J	1.300	NT	0.150 J	0.550 J	NT	0.210 J	4.000 J	NT	0.051 J	0.200 J	NT
Metals															
Aluminum	NLE	NLE	NT	11000 B	10600 B	NT	14300 B	10300 B	NT	6810 B	7970 B	NT	6370 B	12500 B	NT
Arsenic	20	NLE	NT	6.04	4.58	NT	13.2	8.01	NT	4.58	2.84	NT	8.05	10.3	NT
Barium	47000	NLE	NT	45.9 B	35.5 B	NT	38.6 B	34.5 B	NT	14.6 B	19.0 B	NT	5.38 B	36.2 B	NT
Beryllium	140	NLE	NT	1.02	0.346	NT	1.23	0.529	NT	0.524	0.259	NT	0.556	0.933	NT
Cadmium	100	NLE	NT	0.203	0.435	NT	0.359	0.329	NT	0.185	0.247	NT	0.0843	0.306	NT
Calcium	NLE	NLE	NT	1140 B	25000 B	NT	2040 B	9430 B	NT	762 B	14300 B	NT	439 B	1720 B	NT
Chromium	NLE	NLE	NT	61.5 B	22.9 B	NT	108 B	33.3 B	NT	41.0 B	17.1 B	NT	72.2 B	58.9 B	NT
Cobalt	NLE	NLE	NT	0.347 U	5.53	NT	1.70	1.32	NT	0.876	6.60	NT	0.337 U	1.42	NT
Copper	45000	NLE	NT	3.02 B	26.8 B	NT	11.1 B	13.0 B	NT	7.19 B	33.3 B	NT	2.90 B	16.2 B	NT
Iron	NLE	NLE	NT	23100 B	16500 B	NT	33200 B	17800 B	NT	15600 B	14300 B	NT	14100 B	27200 B	NT
Lead	800	NLE	NT	3.05	15.7	NT	7.57	29.5	NT	7.00	9.78	NT	1.65	28.9	NT
Magnesium	NLE	NLE	NT	2670 B	3790 B	NT	4330 B	2280 B	NT	1780 B	3720 B	NT	1180 B	2850 B	NT
Manganese	NLE	NLE	NT	97.6 B	118 B	NT	73.1 B	95.7 B	NT	55.9 B	140 B	NT	9.25 B	110 B	NT
Mercury	270	NLE	NT	0.101 U	0.099 U	NT	0.108 U	0.106 U	NT	0.101 U	0.104 U	NT	0.109 U	0.109 U	NT
Nickel	2400	NLE	NT	5.57	20.0	NT	10.3	6.45	NT	4.43	14.5	NT	2.27	6.97	NT
Potassium	NLE	NLE	NT	4170 B	1920 B	NT	7580 B	1970 B	NT	3110 B	1010 B	NT	2750 B	5150 B	NT
Sodium	NLE	NLE	NT	39.424 U	539	NT	41.362 U	36.479 U	NT	38.989 U	429	NT	38.358 U	38.584 U	NT
Vanadium	7100	NLE	NT	40.9	46.8	NT	63.9	37.5	NT	29.7	70.6	NT	40.6	47.0	NT
Zinc	1500	NLE	NT	80.4	70.4	NT	58.2	76.4	NT	35.8	50.4	NT	14.4	57.8	NT

¹ NJDEP Residential Direct Contact Soil Cleanup Criteria per NJAC 7:26D, 1999. Beryllium, Copper and Lead criteria per NJAC 7:26D, 2008.

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DUP = Duplicate Sample.

ft. bgs = Feet below ground surface.

B = The compound was found in the associated method blank as well as in the sample.

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J = Mass spec and retention time data indicate the presence of a compound however the result is less than the MDL but greater than zero.

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Shaded = Concentration exceeds level of concern.
(Surface soil compared to NRDCSCC. Subsurface soil compared to IGWSCC when available, otherwise compared to NRDCSCC).

Chemical	Sample ID: Lab ID: Date Sampled: Depth (ft. bgs):		Analytical Results												
			P57-A9-C	P57-A9-C DUP	P57-B3-A	P57-B3-B	P57-B3-C	P57-B4-A	P57-B4-B	P57-B4-C	P57-B5-A	P57-B5-B	P57-B5-C	P57-B5-C DUP	P57-C3-A
			7052517	7052502	7051703	7051704	7051705	7051706	7051707	7051708	7052109	7052110	7052111	7052102	7051709
			12/11/2007	12/11/2007	12/08/2007	12/08/2007	12/08/2007	12/08/2007	12/08/2007	12/08/2007	12/10/2007	12/10/2007	12/10/2007	12/10/2007	12/08/2007
NRDCSCC ²		IGWSCC ³	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Volatiles															
Acetone	1000	100	0.490	0.730	NT	0.260 U	0.330 U	NT	0.260 U	0.280 U	NT	0.270 U	0.350 U	0.280 J	NT
Benzene	13	1	0.250 U	0.290 U	NT	0.260 U	0.330 U	NT	0.260 U	0.280 U	NT	0.270 U	0.350 U	0.300 U	NT
Ethylbenzene	1000	100	0.250 U	0.290 U	NT	0.260 U	0.330 U	NT	0.260 U	0.280 U	NT	0.270 U	0.350 U	0.300 U	NT
Toluene	1000	500	0.250 U	0.290 U	NT	0.260 U	0.330 U	NT	0.260 U	0.280 U	NT	0.270 U	0.350 U	0.300 U	NT
Trichlorofluoromethane	NLE	NLE	0.250 U	0.290 U	NT	0.260 U	0.330 U	NT	0.260 U	0.280 U	NT	0.270 U	0.350 U	0.300 U	NT
Vinyl Acetate	NLE	NLE	0.250 U	0.240 J	NT	0.260 U	0.330 U	NT	0.260 U	0.280 U	NT	0.270 U	0.350 U	0.300 U	NT
Xylenes (Total)	1000	67	0.750 U	0.870 U	NT	0.790 U	0.980 U	NT	0.790 U	0.840 U	NT	0.810 U	1.060 U	0.900 U	NT
Semi-Volatiles															
Acenaphthene	10000	100	1.100 U	1.200 U	1.100 U	NT	1.200 U	0.041 J	NT	1.100 U	0.066 J	NT	1.200 U	1.200 U	0.540 J
Acenaphthylene	NLE	NLE	1.100 U	1.200 U	1.100 U	NT	1.200 U	0.071 J	NT	1.100 U	0.039 J	NT	1.200 U	1.200 U	0.097 J
Anthracene	10000	100	1.100 U	0.110 J	0.049 J	NT	1.200 U	0.200 J	NT	1.100 U	0.200 J	NT	1.200 U	1.200 U	1.200
Benzo[a]anthracene	4	500	1.100 U	0.230 J	0.210 J	NT	1.200 U	0.600 J	NT	1.100 U	0.460 J	NT	1.200 U	1.200 U	2.900
Benzo[a]pyrene	0.66	100	1.100 U	0.150 J	1.100 U	NT	1.200 U	0.480 J	NT	1.100 U	1.100 U	NT	1.200 U	1.200 U	2.000
Benzo[b]fluoranthene	4	50	1.100 U	0.220 J	1.100 U	NT	1.200 U	0.790 J	NT	1.100 U	0.520 J	NT	1.200 U	1.200 U	3.100
Benzo[g,h,i]perylene	NLE	NLE	1.100 U	0.100 J	1.100 U	NT	1.200 U	1.100 U	NT	1.100 U	1.100 U	NT	1.200 U	1.200 U	0.730 J
Benzo[k]fluoranthene	4	500	1.100 U	0.093 J	1.100 U	NT	1.200 U	0.360 J	NT	1.100 U	0.350 J	NT	1.200 U	1.200 U	1.900
bis(2-Ethylhexyl)phthalate	210	100	0.100 J	0.062 J	0.150 J	NT	1.200 U	0.130 J	NT	1.100 U	0.300 J	NT	1.200 U	0.087 J	0.220 J
Butyl benzyl phthalate	10000	100	1.100 U	1.200 U	1.100 U	NT	1.200 U	1.100 U	NT	1.100 U	0.130 J	NT	1.200 U	1.200 U	1.100 U
Chrysene	40	500	1.100 U	0.250 J	0.250 J	NT	1.200 U	0.690 J	NT	1.100 U	0.510 J	NT	1.200 U	1.200 U	3.000
Dibenzofuran	NLE	NLE	1.100 U	1.200 U	1.100 U	NT	1.200 U	0.064 J	NT	1.100 U	0.057 J	NT	1.200 U	1.200 U	0.260 J
Diethyl phthalate	10000	50	1.100 U	0.048 JB	0.043 JB	NT	1.200 U	1.100 U	NT	1.100 U	1.100 U	NT	1.200 U	0.034 JB	1.100 U
Di-n-butylphthalate	10000	100	1.100 J	1.000 J	1.600 B	NT	0.630 JB	1.700 B	NT	0.610 JB	0.760 JB	NT	0.910 JB	2.700 B	2.000 B
Di-n-octyl phthalate	10000	100	1.100 U	1.200 U	1.100 U	NT	1.200 U	1.100 U	NT	1.100 U	0.380 JB	NT	1.200 U	0.060 JB	1.100 U
Fluoranthene	10000	100	1.100 U	0.680 J	0.320 J	NT	1.200 U	1.400	NT	1.100 U	0.990 J	NT	1.200 U	1.200 U	7.500
Fluorene	10000	100	1.100 U	1.200 U	1.100 U	NT	1.200 U	0.038 J	NT	1.100 U	1.100 U	NT	1.200 U	1.200 U	0.380 J
Indeno[1,2,3-cd]pyrene	4	500	1.100 U	1.200 U	1.100 U	NT	1.200 U	0.150 J	NT	1.100 U	1.100 U	NT	1.200 U	1.200 U	0.690 J
2-Methylnaphthalene	NLE	NLE	1.100 U	1.200 U	1.100 U	NT	1.200 U	0.080 J	NT	1.100 U	1.100 U	NT	1.200 U	1.200 U	0.075 J
Naphthalene	4200	100	1.100 U	1.200 U	1.100 U	NT	1.200 U	0.065 J	NT	1.100 U	1.100 U	NT	1.200 U	1.200 U	0.120 J
Phenanthrene	NLE	NLE	1.100 U	0.510 J	0.180 J	NT	1.200 U	0.750 J	NT	1.100 U	1.000 J	NT	1.200 U	1.200 U	4.700
Pyrene	10000	100	1.100 U	0.580 J	0.500 J	NT	1.200 U	1.600	NT	1.100 U	1.600	NT	1.200 U	1.200 U	9.400
Metals															
Aluminum	NLE	NLE	5540 B	5180 B	8850 B	NT	18800 B	10600 B	NT	8020 B	9520 B	NT	19400 B	20300 B	10400 B
Arsenic	20	NLE	2.42	1.70	7.58	NT	11.0	5.89	NT	6.21	5.03	NT	7.71	9.35	2.36
Barium	47000	NLE	19.9 B	17.0 B	20.6 B	NT	33.8 B	43.6 B	NT	39.3 B	32.9 B	NT	30.5 B	32.0 B	20.9 B
Beryllium	140	NLE	0.462	0.475	1.25	NT	0.917	0.517	NT	0.516	0.540	NT	1.06	1.18	0.494
Cadmium	100	NLE	0.135	0.126	0.193	NT	0.261	0.318	NT	0.414	0.289	NT	0.317	0.534	0.163
Calcium	NLE	NLE	677 B	605 B	18300 B	NT	467 B	42600 B	NT	34300 B	34400 B	NT	607 B	598 B	292 B
Chromium	NLE	NLE	28.0 B	28.3 B	92.2 B	NT	63.6 B	39.9 B	NT	35.6 B	58.4 B	NT	127 B	135 B	46.4 B
Cobalt	NLE	NLE	0.332 U	0.333 U	1.94	NT	2.47	2.82	NT	2.93	5.07	NT	1.64	1.58	0.756
Copper	45000	NLE	2.91 B	4.17 B	8.00 B	NT	12.2 B	14.4 B	NT	29.9 B	21.0 B	NT	5.56 B	6.99 B	4.84 B
Iron	NLE	NLE	13300 B	13300 B	36000 B	NT	15300 B	15800 B	NT	17400 B	18500 B	NT	37400 B	47400 B	8230 B
Lead	800	NLE	40.7	38.0	7.69	NT	7.04	20.3	NT	51.4	15.0	NT	3.03	2.82	4.81
Magnesium	NLE	NLE	1380 B	1460 B	4560 B	NT	2600 B	3970 B	NT	4980 B	4530 B	NT	5090 B	5330 B	1500 B
Manganese	NLE	NLE	36.2 B	26.9 B	58.4 B	NT	67.6 B	120 B	NT	118 B	102 B	NT	55.2 B	54.6 B	34.8 B
Mercury	270	NLE	0.106 U	0.114 U	0.110 U	NT	0.116 U	0.102 U	NT	0.102 U	0.107 U	NT	0.114 U	0.110 U	0.160
Nickel	2400	NLE	2.35	2.49	6.29	NT	11.0	8.92	NT	8.99	9.44	NT	8.71	8.98	5.59
Potassium	NLE	NLE	2500 B	2640 B	8710 B	NT	2780 B	2710 B	NT	2560 B	3170 B	NT	8330 B	8900 B	1940 B
Sodium	NLE	NLE	37.822 U	37.867 U	37.752 U	NT	43.828 U	36.969 U	NT	39.984 U	48.6	NT	42.72 U	39.581 U	40.694 U
Vanadium	7100	NLE	19.4	18.2	51.2	NT	62.7	40.8	NT	40.0	59.1	NT	85.3	91.4	30.9
Zinc	1500	NLE	29.4	28.8	72.5	NT	57.9	50.5	NT	84.8	46.2	NT	62.6	67.0	25.2

¹ NJDEP Residential Direct Contact Soil Cleanup Criteria per NJAC 7:26D, 1999. Beryllium, Copper and Lead criteria per NJAC 7:26D, 2008.

² NJDEP Non-Residential Direct Contact Soil Cleanup Criteria per NJAC 7:26D, 1999. Beryllium, Copper and Lead criteria per NJAC 7:26D, 2008.

³ NJDEP Impact to Groundwater Soil Cleanup Criteria per NJAC 7:26D, 1999.

DUP = Duplicate Sample.

ft. bgs = Feet below ground surface.

B = The compound was found in the associated method blank as well as in the sample.

D = Sample was diluted.

E = The compound's concentration exceeds the calibration range of the instrument for that specific analysis.

J = Mass spec and retention time data indicate the presence of a compound however the result is less than the MDL but greater than zero.

U = The compound was analyzed for but not detected.

NT = Not tested.

NLE = No limit established.

mg/kg = milligram per kilogram.

Bold = Analyte was detected.

Shaded = Concentration exceeds level of concern.
(Surface soil compared to NRDCSCC. Subsurface soil compared to IGWSCC when available, otherwise compared to NRDCSCC).

Table 3.14-3
Fort Monmouth Phase II Site Investigation, Parcel 57
Summary of Analytical Parameters Detected in Soil (mg/kg)

Chemical	Sample ID: Lab ID: Date Sampled: Depth (ft. bgs):		Analytical Results								
			P57-C3-B	P57-C3-C	P57-C3-C DUP	P57-C4-A	P57-C4-B	P57-C4-C	P57-C5-A	P57-C5-B	P57-C5-C
			7051710	7051711	7051702	7052106	7052107	7052108	7052103	7052104	7052105
			12/08/2007	12/08/2007	12/08/2007	12/10/2007	12/10/2007	12/10/2007	12/10/2007	12/10/2007	12/10/2007
Chemical	Depth (ft. bgs):		1.5-2.0	6.5-7.0	6.5-7.0	0.5-1.0	1.5-2.0	6.5-7.0	0.5-1.0	1.5-2.0	7.0-7.5
	NRDCSCC ²	IGWSCC ³	Result	Result	Result	Result	Result	Result	Result	Result	Result
Volatiles											
Acetone	1000	100	0.270 U	0.260 U	0.260 U	NT	0.310 U	0.270 U	NT	0.280 J	0.320 U
Benzene	13	1	0.270 U	0.260 U	0.260 U	NT	0.310 U	0.270 U	NT	0.300 U	0.320 U
Ethylbenzene	1000	100	0.011 J	0.260 U	0.260 U	NT	0.310 U	0.270 U	NT	0.300 U	0.320 U
Toluene	1000	500	0.270 U	0.260 U	0.260 U	NT	0.310 U	0.270 U	NT	0.300 U	0.320 U
Trichlorofluoromethane	NLE	NLE	0.270 U	0.260 U	0.260 U	NT	0.310 U	0.270 U	NT	0.300 U	0.320 U
Vinyl Acetate	NLE	NLE	0.270 U	0.260 U	0.260 U	NT	0.310 U	0.270 U	NT	0.300 U	0.320 U
Xylenes (Total)	1000	67	0.810 U	0.780 U	0.780 U	NT	0.920 U	0.810 U	NT	0.990 U	0.960 U
Semi-Volatiles											
Acenaphthene	10000	100	NT	1.100 U	1.100 U	1.000 U	NT	1.100 U	0.078 J	NT	1.100 U
Acenaphthylene	NLE	NLE	NT	1.100 U	1.100 U	0.190 J	NT	1.100 U	0.100 J	NT	1.100 U
Anthracene	10000	100	NT	1.100 U	1.100 U	0.130 J	NT	1.100 U	0.430 J	NT	1.100 U
Benzo[a]anthracene	4	500	NT	0.100 J	1.100 U	0.420 J	NT	1.100 U	1.200	NT	1.100 U
Benzo[a]pyrene	0.66	100	NT	0.081 J	1.100 U	0.470 J	NT	1.100 U	0.950 J	NT	1.100 U
Benzo[b]fluoranthene	4	50	NT	0.110 J	1.100 U	0.650 J	NT	1.100 U	1.500	NT	1.100 U
Benzo[g,h,i]perylene	NLE	NLE	NT	1.100 U	1.100 U	1.000 U	NT	1.100 U	1.100 U	NT	1.100 U
Benzo[k]fluoranthene	4	500	NT	0.059 J	1.100 U	0.290 J	NT	1.100 U	0.480 J	NT	1.100 U
bis(2-Ethylhexyl)phthalate	210	100	NT	0.092 J	0.090 J	0.200 J	NT	1.100 U	1.100	NT	1.100 U
Butyl benzyl phthalate	10000	100	NT	1.100 U	1.100 U	1.000 U	NT	1.100 U	1.100 U	NT	1.100 U
Chrysene	40	500	NT	0.120 J	1.100 U	0.520 J	NT	1.100 U	1.300	NT	1.100 U
Dibenzofuran	NLE	NLE	NT	1.100 U	1.100 U	1.000 U	NT	1.100 U	0.058 J	NT	1.100 U
Diethyl phthalate	10000	50	NT	1.100 U	1.100 U	1.000 U	NT	1.100 U	1.100 U	NT	1.100 U
Di-n-butylphthalate	10000	100	NT	2.400 B	0.410 JB	0.770 JB	NT	0.570 JB	0.640 JB	NT	0.580 JB
Di-n-octyl phthalate	10000	100	NT	1.100 U	1.100 U	1.000 U	NT	1.100 U	1.100 U	NT	1.100 U
Fluoranthene	10000	100	NT	0.120 J	0.041 J	0.640 J	NT	1.100 U	2.600	NT	1.100 U
Fluorene	10000	100	NT	1.100 U	1.100 U	1.000 U	NT	1.100 U	0.110 J	NT	1.100 U
Indeno[1,2,3-cd]pyrene	4	500	NT	1.100 U	1.100 U	1.000 U	NT	1.100 U	0.330 J	NT	1.100 U
2-Methylnaphthalene	NLE	NLE	NT	1.100 U	1.100 U	1.000 U	NT	1.100 U	1.100 U	NT	1.100 U
Naphthalene	4200	100	NT	1.100 U	1.100 U	1.000 U	NT	1.100 U	1.100 U	NT	1.100 U
Phenanthrene	NLE	NLE	NT	0.033 J	1.100 U	0.260 J	NT	1.100 U	1.400	NT	1.100 U
Pyrene	10000	100	NT	0.160 J	0.041 J	1.200	NT	1.100 U	3.600	NT	1.100 U
Metals											
Aluminum	NLE	NLE	NT	11000 B	7000 B	13100 B	NT	11000 B	8990 B	NT	3580 B
Arsenic	20	NLE	NT	4.98	3.65	5.40	NT	11.4	4.64	NT	2.04
Barium	47000	NLE	NT	20.6 B	13.4 B	40.7 B	NT	15.9 B	32.7 B	NT	6.15 B
Beryllium	140	NLE	NT	0.637	0.508	0.590	NT	1.33	0.615	NT	0.326
Cadmium	100	NLE	NT	0.194	0.0962	0.362	NT	0.196	0.319	NT	0.0535
Calcium	NLE	NLE	NT	1660 B	1400 B	21100 B	NT	693 B	24100 B	NT	280 B
Chromium	NLE	NLE	NT	57.7 B	42.9 B	43.5 B	NT	96.4 B	54.5 B	NT	30.8 B
Cobalt	NLE	NLE	NT	1.11	1.43	8.68	NT	1.42	3.13	NT	0.326 U
Copper	45000	NLE	NT	8.57 B	7.79 B	29.3 B	NT	5.09 B	20.0 B	NT	3.28 B
Iron	NLE	NLE	NT	18400 B	16200 B	20100 B	NT	39500 B	19800 B	NT	8350 B
Lead	800	NLE	NT	5.10	4.66	30.1	NT	1.20	51.6	NT	1.40
Magnesium	NLE	NLE	NT	1940 B	1330 B	4740 B	NT	4300 B	3400 B	NT	871 B
Manganese	NLE	NLE	NT	52.7 B	96.2 B	127 B	NT	39.4 B	93.3 B	NT	15.3 B
Mercury	270	NLE	NT	0.100 U	0.101 U	0.098 U	NT	0.096 U	0.099 U	NT	0.099 U
Nickel	2400	NLE	NT	5.79	7.16	14.1	NT	5.97	9.05	NT	3.63
Potassium	NLE	NLE	NT	3070 B	1860 B	2760 B	NT	9520 B	2540 B	NT	1960 B
Sodium	NLE	NLE	NT	35.244 U	37.691 U	688	NT	36.431 U	40.061 U	NT	37.124 U
Vanadium	7100	NLE	NT	46.7	36.6	65.3	NT	60.0	65.3	NT	24.5
Zinc	1500	NLE	NT	39.8	43.6	53.6	NT	61.5	58.2	NT	28.0

¹ NJDEP Residential Direct Contact Soil Cleanup Criteria per NJAC 7:26D, 1999. Beryllium, Copper and Lead criteria per NJAC 7:26D, 2008.

² NJDEP Non-Residential Direct Contact Soil Cleanup Criteria per NJAC 7:26D, 1999. Beryllium, Copper and Lead criteria per NJAC 7:26D, 2008.

³ NJDEP Impact to Groundwater Soil Cleanup Criteria per NJAC 7:26D, 1999.

DUP = Duplicate Sample.

ft. bgs = Feet below ground surface.

B = The compound was found in the associated method blank as well as in the sample.

D = Sample was diluted.

E = The compound's concentration exceeds the calibration range of the instrument for that specific analysis.

J = Mass spec and retention time data indicate the presence of a compound however the result is less than the MDL but greater than zero.

U = The compound was analyzed for but not detected.

NT = Not tested.

NLE = No limit established.

mg/kg = milligram per kilogram.

Bold = Analyte was detected.

Shaded = Concentration exceeds level of concern.

(Surface soil compared to NRDCSCC. Subsurface soil compared to IGWSCC when available, otherwise compared to NRDCSCC).

Table 3.14-4
Fort Monmouth Phase II Site Investigation, Parcel 57
Summary of Analytical Parameters Detected in Groundwater (µg/L)

Chemical	Sample ID: Lab ID: Date Sampled: Screened Interval (ft. bgs):	Analytical Results					
		P57-A-1	P57-A-3	P57-A-3 DUP	P57-A-5	P57-A-7	P57-A-9
		7053104	7053105	7053103	7053106	7053107	7053108
		12/11/2007	12/11/2007	12/11/2007	12/11/2007	12/11/2007	12/11/2007
		7-12	4-9	4-9	4-14	4-14	8-18
	Quality Criteria ¹	Result	Result	Result	Result	Result	Result
Volatiles							
Acetone	6000	0.85 U	0.85 U	0.85 U	0.85 U	31.13 B	0.85 U
Carbon disulfide	700	0.44 U	0.44 U	0.44 U	0.44 U	0.28 J	0.10 J
Methyl ethyl ketone (2-Butanone)	300	0.14 U	0.14 U	0.14 U	0.14 U	4.14	0.14 U
Tertiary butyl alcohol	100	1.82 U	10.49	1.82 U	1.82 U	1.82 U	1.82 U
Toluene	600	0.23 J	0.27 U	0.27 U	1.02	0.77	0.21 J
Semi-Volatiles							
bis(2-Ethylhexyl)phthalate	3	1.28 U	1.94	1.28 U	1.28 U	1.28 U	1.28 U
Metals							
Aluminum	200	592 B	16100 B	266 B	13400 B	11000 B	43400 B
Antimony	6	0.70 U	0.70 U	0.70 U	0.70 U	1.13	0.70 U
Arsenic	3	2.70 U	5.24	2.70 U	3.94	4.01	6.73
Barium	6000	66.2	189	165	225	224	26.8
Beryllium	1	0.454	0.249	0.100 U	2.12	1.98	10.9
Cadmium	4	0.274	1.46	1.15	0.284	0.917	14.3
Calcium	NLE	3300 B	290000 B	284000 B	33200 B	63400 B	73300 B
Chromium (Total)	70	0.692 B	45.5 B	0.640 B	69.8 B	105 B	3.57 B
Cobalt	100*	3.79	1.75	0.755	9.62	10.5	147
Copper	1300	1.72	27.7	6.58	10.7	137	43.4
Iron	300	323 U	17100	323 U	138000	25200	17700
Lead	5	0.700 U	3.31	0.700 U	0.700 U	829	3.07
Magnesium	NLE	5370	14000	12900	22000	6600	37500
Manganese	50	46.4 B	62.7 B	43.5 B	502 B	765 B	2710 B
Nickel (Soluble Salts)	100	7.38 B	7.18 B	0.300 U	16.6 B	24.0 B	372 B
Potassium	NLE	2850 B	72600 B	68500 B	6720 B	2500 B	5480 B
Selenium	40	4.89 B	2.70 U	2.70 U	2.70 U	2.70 U	2.70 U
Sodium	50000	20900	3070000 E	3110000 E	156000	6790	26000
Vanadium	NLE	0.500 U	95.3	17.6	56.9	68.8	3.07
Zinc	2000	23.6	62.7	20.0	171	145	1580

¹ Higher of Practical Quantitation Limits (PQLs) & Groundwater Quality Criterion (GWQC) per NJAC 7:9-6, 2005 (* Interim GWQC).

DUP = Duplicate Sample.

ft. bgs = Feet below ground surface.

Bold = Analyte was detected.

Shaded = Concentration exceeds Quality Criteria.

µg/L = micrograms per liter.

NLE = No limit established.

B = The compound was found in the associated method blank as well as in the sample.

D = Sample was diluted.

E = The compound's concentration exceeds the calibration range of the instrument for that specific analysis.

J = Mass spec and retention time data indicate the presence of a compound however the result is less than the MDL but greater than zero.

U = The compound was analyzed for but not detected.