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NAWC TRENTON
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ACTION MEMORANDUM NON TIME CRITICAL REMOVAL ACTION INSTALLATION
RESTORATION PROGRAM SITE 1 SOIL FORMER NAWC TRENTON NJ
03/11/2015
TETRA TECH

ACTION MEMORANDUM

DATE: 11 March 2015

FROM: Willington Lin, BRAC Environmental Coordinator

SUBJECT: Non-Time Critical Removal Action
Installation Restoration Program Site 1 Soil
Former Naval Air Warfare Center - Trenton, West Trenton, New Jersey

1.0 PURPOSE

The purpose of this Action Memorandum (AM) is to document the decision by the Department of the Navy (Navy) to conduct a Non-Time Critical Removal Action (NTCRA) at Installation Restoration Program (IRP) Site 1, at the former Naval Air Warfare Center (NAWC) Trenton, in West Trenton, New Jersey (Figure 1). The purpose of the NTCRA is to mitigate the infiltration of contaminated groundwater into the storm sewer system, which subsequently discharges to surface water. Activities will include the removal of a failed storm sewer pipe and trichloroethene (TCE)-contaminated soil from Site 1 at the former NAWC. This work is being conducted under the Navy's IRP.

The previous remedial action for soil included soil excavation and removal of failed storm sewer pipes at NAWC Site 1, documented in a Remedial Action Report (Foster Wheeler, 2000). The activities being conducted under this NTCRA are consistent with this previous remedial action. This NTCRA is expected to be the final removal/remedial action for soil at NAWC Site 1.

The failed storm sewer pipe and contaminated soil are immediately adjacent to the western limit of the previous remedial action (Figure 2). This failed storm sewer pipe and contaminated soil were identified during the Navy's response to a New Jersey Department of Environmental Protection (NJDEP) letter dated May 24, 2010. The NJDEP identified the Navy's need to further evaluate and mitigate the infiltration of contaminated groundwater into the storm sewer system at the former NAWC Trenton. In response, the Navy conducted a video inspection of the storm sewer pipe, which confirmed it had failed, allowing contaminated groundwater to infiltrate the pipe. Results from soil sampling conducted beneath the storm sewer pipe also identified soil contaminated with TCE that could provide a continuing source of contamination to groundwater and surface water (Tetra Tech, NUS, 2013). Based on this information, the Navy determined that an NTCRA was necessary.

The Department of Defense (DoD) has the authority to undertake Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) response actions, including NTCRAs, under Title 42 of the United States Code (U.S.C.) Section (§) 9604, 10 U.S.C. § 2705, and federal Executive Orders 12580 and 13016. In accordance with CERCLA, an Engineering Evaluation/Cost Analysis (EE/CA) was prepared to support this AM (Tetra Tech, 2014). The EE/CA also serves as a Remedial Action Selection Report under the New Jersey Administrative Code (NJAC) 7:26E-5.2. There are no nationally significant or precedent-setting issues for this NTCRA.

The EE/CA was available for public review during a 30-day comment period starting December 4, 2014. No comments or questions regarding the EE/CA were received. The mobilization, field work, and site restoration are anticipated to occur during the summer of 2015.

2.0 NAWC TRENTON BACKGROUND

NAWC Trenton is located in West Trenton, New Jersey, approximately 5 miles north of the state capital, Trenton. The Navy acquired the property in 1951 and built Naval Air Turbine Test Station (NATTS). It was renamed NAWC Trenton in 1993, and operational closure occurred on December 15, 1998 under the Base Realignment and Closure (BRAC) Act of 1993.

A Reuse Plan for NAWC Trenton was approved on July 15, 1996. The Reuse Plan divided the facility into parcels A, B, C, and D. These individual parcels were conveyed to new recipients between 1997 and 2001.

NAWC West Trenton is not listed on the US EPA National Priorities List (NPL). In the absence of NPL listing, the Defense State Memorandum of Agreement (DSMOA) was established between the NJDEP and the Navy on April 3, 1992 to coordinate investigations and response activities to be conducted at the former NAWC Trenton.

3.0 SITE DESCRIPTION

This Section presents a general summary of the environmental conditions at Site 1. The conditions at Site 1 have been evaluated through several previous and ongoing investigations as summarized below, and as memorialized in documents contained in the Administrative Record File.

a. BACKGROUND.

Site 1, The Brine Handling Area and West End Drainage Ditch, is an area that was contaminated by TCE releases to the land surface which migrated into and was further transported via the storm water management system (storm sewer pipes and open ditches). TCE in its pure liquid form was used as a heat exchange fluid in air cooling systems at NAWC Trenton. The TCE was identified as "brine" at the NAWC, hence the Site identification as "Brine Handling Area and West End Drainage Ditch".

A summary of previous response actions at Site 1 follows:

- The Navy has conducted numerous repairs and replacement of the storm sewer system to mitigate infiltration of contaminated groundwater and off-site transport (Tetra Tech NUS, 2010).
- Approximately 15,500 cubic yards of soil was excavated to bedrock (approximately 8 to 12 feet below land surface) in 1998 (Foster Wheeler, 2000).
- The Navy signed the Decision Document for Groundwater (EA Engineering Science and Technology, 2000) that called for a) operation of a groundwater extraction and treatment system, b) long-term monitoring, and c) land use controls for the entirety of Site 1 and a majority of the NAWC Trenton facility. All three of these remedial components are in-place, and are expected to remain in-place for the foreseeable future.

- The Navy continues to monitor surface water quality on a quarterly basis as a component of the long-term monitoring program, and reports this information to NJDEP. The NJDEP issued a letter on May 24, 2010 that identified additional mitigation measures were required based on these reports.

Investigations conducted in 2012 identified a deteriorated and failed, approximate 130-foot section of corrugated metal pipe (CMP), ending at Manhole #140 as the potential pathway (Tetra Tech NUS, 2013). The failed CMP is a subset of a 300-foot section of CMP that drains north to south. The CMP was confirmed to be failed by video inspection; TCE was detected in soil around and beneath the CMP at up to 10 milligrams per Kilogram (mg/Kg); maximum concentrations of TCE were detected in soil samples immediately above bedrock at a depth of 9 to 10 feet. The soil and the failed CMP are immediately west of the area excavated previously (Foster Wheeler, 2000).

IRP Site 1 is within Reuse Plan Parcel B; which is currently owned by Nassimi N&H Realty.

b. SITE EVALUATION.

Previous evaluations of Site 1 (summarized in the table below) did not reveal this failed CMP or contaminated soil at this Site. Additional details can be found in the EE/CA and Administrative Record File.

YEAR	ACTIVITY
1986	Initial Assessment Study
1990-1994	Remedial Investigation
1998-2000	Site 1 Remedial Action/Remedial Action Report for Soil
2000	Decision Document for Groundwater
2001	Conveyance of Parcel B by public sale to Nassimi N&H Realty
2010	NJDEP Letter of Deficiency
2010	Remedial Action Report Evaluation of Groundwater Infiltration to Gold Run Stream
2013	Technical Memorandum Report of Results for the West Ditch Groundwater Infiltration Investigation
2014	EE/CA available for public review
2015	AM and NTCRA

c. RELEASE OR THREATENED RELEASE INTO THE ENVIRONMENT OF A HAZARDOUS SUBSTANCE, OR POLLUTANT OR CONTAMINANT.

The failed CMP and contaminated soil were identified as part of an investigation to identify methods to mitigate the infiltration pathway. The presence of contaminated soil and failed CMP present a potential pathway that could impact surface water. The storm sewer system of the former NAWC Trenton eventually discharges to Gold Run Stream.

d. NATIONAL PRIORITIES LIST (NPL) STATUS.

The former NAWC West Trenton is not listed on the EPA National Priorities List (NPL). In the absence of NPL listing, the DSMOA was established between the NJDEP and the Navy on April 3, 1992 to coordinate investigations and remedial response activities to be conducted at the former NAWC Trenton. During its operational period, NAWC Trenton was owned by the U.S. Government, and was operated by the Department of the Navy. Therefore, the Navy is required to take response actions pursuant to CERCLA.

4.0 *OTHER ACTIONS TO DATE*

a. PREVIOUS ACTIONS.

Previous remedial actions have been conducted to remove contaminated soil, repair deteriorated storm sewer pipes, and to construct, operate, and maintain the groundwater treatment system. In addition to this, land use controls are in-place and monitored through biennial certifications and five-year reviews. The Administrative Record File contains additional information.

b. INVESTIGATIONS AND ASSESSMENTS.

The *Technical Memorandum Report of Results for the West Ditch Groundwater Infiltration* (Tetra Tech NUS, 2013) identified the need for this NTCRA.

c. CURRENT ACTIONS.

This NTCRA will be conducted and the results presented to NJDEP for their concurrence. The Navy, in consultation with NJDEP, will determine if additional action is required to mitigate the infiltration of contaminated groundwater into the storm sewer system.

5.0 *STATE AND LOCAL AUTHORITIES ROLE*

a. STATE AND LOCAL ACTIONS TO DATE.

The Navy is the lead federal agency at NAWC Trenton pursuant to the Defense Environmental Restoration Act at 10 U.S.C §§ 2701 through 2710, CERCLA, the National Oil and Hazardous Substance Pollution Contingency Plan (NCP), and the delegation of Presidential authority under federal Executive Orders 12580 and 13016. Pursuant to 10 U.S.C. § 2705, the Navy is required to ensure that state and local officials be given timely opportunity to review and comment on the Navy's response actions. NJDEP has not undertaken any removal actions at the former NAWC Trenton; however, they provide review of documents and oversight of studies and actions conducted by the Navy.

The local community was involved in site investigations and remediation processes at NAWC West Trenton through use of Technical Review Committees, Restoration Advisory Board (RAB) meetings, press releases, Fact Sheets, and public meetings. The RAB voluntarily "adjourned" in 2000 based on their satisfaction with the Navy's progress.

Notification of availability of the EE/ CA was provided to the public in the December 4-6, 2014 Trenton Times. This AM is also available at the Ewing Branch of the Mercer County Library, and on-line at:

http://www.bracpmo.navy.mil/brac_bases/northeast/former_warfare_center_trenton

The Navy received no comments or questions on the Draft EE/CA. NJDEP has not issued any enforcement orders relevant to this NTCRA, other than the May 24, 2010 correspondence.

b. POTENTIAL FOR CONTINUED STATE AND LOCAL RESPONSE.

The NJDEP will continue to oversee the remedial and removal actions at the former NAWC Trenton.

6.0 THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Potential threats to public health, welfare or the environment posed by site contaminants, and statutory and regulatory authorities that apply to the Site 1 are discussed in this Section.

a. THREATS TO PUBLIC HEALTH OR WELFARE.

The failed CMP and contaminated soil were identified as part of an investigation to identify methods to mitigate the infiltration problem. The combination of failed CMP and the presence of contaminated soil present a pathway that could compromise surface water, human receptors, and public water supplies.

b. THREATS TO THE ENVIRONMENT.

The failed CMP and contaminated soil were identified as part of an investigation to identify ways to mitigate the infiltration pathway. The combination of failed CMP and the presence of contaminated soil and failed CMP present a potential pathway that could compromise surface water and ecological receptors.

c. REGULATORY AUTHORITIES.

NJDEP will oversee the NTCRA and any follow up action.

7.0 ENDANGERMENT DETERMINATION

Actual (or threatened) releases of pollutants and contaminants from Site 1, if not addressed by implementing the response action selected in this AM, may present an imminent and substantial endangerment to public health, or welfare, or the environment. The Navy has determined that this threat can be abated, minimized, or eliminated by undertaking this NTCRA.

8.0 PROPOSED ACTIONS AND ESTIMATED COSTS

This Section describes the proposed tasks of this NTCRA to mitigate the conditions cited in Section 6 of this AM. This Section also discusses ARARs and presents the estimated costs for the NTCRA. Additional information is presented in the EE/CA. No comments were received from the public on the EE/CA so it will be finalized and implemented as proposed.

a. PROPOSED ACTION.

The major components of this NTCRA are provided below. Details of the actions and methods to perform this NTCRA are described in the EE/CA that supports this AM. The following bullets describe the major components of this proposed action.

- *Work Plan – A Work Plan is being prepared and submitted to NJDEP. The Work Plan will describe the details of the removal, the schedule, and the confirmation sampling to be conducted.*
- *Removal Activities – The removal area consists of the CMP and soil beneath it. This area is identified in Figure 3. The excavation is expected to be approximately 130 feet long, 6 to 14 feet wide, and 6 to 10 feet deep. Approximately 660 tons of contaminated soil is expected to be removed. No soil will be reused on-site.*
- *Waste Disposal – The excavated metallic debris and soil will be removed and characterized prior to proper transport and off-site disposal.*
- *Confirmation Sampling – Confirmation samples will be collected from the side walls and bottom of the excavation. Some of the excavation is expected to take place below the water table. Results of confirmation samples will be reviewed with NJDEP to assure that remedial goals are achieved.*
- *Site Restoration – The excavation is planned to be restored as an open ditch at the same elevation as the bottom of the failed CMP. The excavated area below this elevation will be backfilled and restored.*
- *Removal Action Completion Report (RACR) that documents this NTCRA will be prepared and submitted to the NJDEP for review and concurrence.*

b. CONTRIBUTION TO REMEDIAL PERFORMANCE.

This NTCRA is expected to significantly mitigate this potential pathway for TCE in soil and groundwater to impact surface water. Reducing this potential pathway is one remedial action objective of the Decision Document for Groundwater (US Navy, 2000).

An additional benefit will be the removal of the TCE mass in soil that would otherwise be dissolved in groundwater and subsequently captured by the groundwater extraction and treatment system. If conditions are encountered after the NTCRA, or if groundwater monitoring results reveal concentrations that warrant additional action(s) at the Site, those actions will be evaluated by the Navy and NJDEP and addressed as necessary, to provide protection for human health and the environment.

This is expected to be the final soil removal action at Site 1.

c. APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS).

This NTCRA is being conducted in accordance with CERCLA, NJDEP Remediation Regulations, NJDEP Surface Water Protection Standards, and applicable regulations regarding the excavation, transportation, and disposal of hazardous materials/wastes including the Resource Conservation and Recovery Act (RCRA), and Department of Transportation requirements. ARARs have or will be attained, consistent with the (NCP), the Navy Environmental Restoration Program Manual, and US EPA NTCRA guidance. Refer to the EE/CA for a complete list of ARARs (Tetra Tech, 2014).

d. PROJECT SCHEDULE.

Pending NJDEP review of plans, the NTCRA field work is planned for the summer of 2015. A RACR is anticipated to be issued in the winter of 2015.

e. ESTIMATED COSTS.

The cost for the proposed NTCRA, as documented in the EE/CA, is approximately \$925,000. There are no long-term operations, maintenance, or monitoring costs associated with this NTCRA.

The existing groundwater extraction and treatment system will continue to operate and be maintained (O&M). Long-term monitoring (LTM) of groundwater and surface water will continue in accordance with NJDEP-approved plans. These O&M and LTM costs are not expected to change based on this RA.

9.0 EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

If the NTCRA is not conducted, contaminated groundwater could continue to infiltrate the failed CMP, and impact surface waters of Gold Run Stream. This could impact aquatic receptors or the public that could be inadvertently exposed to them over time. The contaminated soil beneath the storm sewer pipe could be a continuing source of groundwater contamination and/or surface water contamination.

10.0 OUTSTANDING POLICY ISSUES

None identified at this time.

11.0 ENFORCEMENT

The NJDEP is anticipated to remain in an oversight role for the duration of the NTCRA, and ongoing O&M and LTM activities, to ensure compliance with NJDEP regulations and CERCLA. This NTCRA was triggered by the letter issued by NJDEP on May 24, 2010.

12.0 RECOMMENDATION

This AM was developed in accordance with current NJDEP and Navy guidance documents for NTCRAs under CERCLA (Navy, 2006). This AM documents, for the Administrative Record File, the Navy's decision to undertake this NTCRA at Site 1.

The removal of the CMP and contaminated soil will reduce the potential human health and ecological risks from exposure to contaminants in surface water of Gold Run Stream. Therefore the Navy is implementing, completing, and documenting this NTCRA.

State of New Jersey Certification: *"I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, including all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."*

Approvals:



11 March 2015

Willington Lin
BRAC Environmental Coordinator
By Direction of NAVFAC BRAC PMO
SIGNED IN MY OFFICIAL
CAPACITY ONLY

Date

REFERENCES

42 U.S.C. § 9601 et seq., Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986.

Department of the Navy, 2006. *Navy Environmental Restoration Program Manual*, August.

EA Engineering Science and Technology, 2000, *Decision Document for Groundwater at the Naval Air Warfare Center, Aircraft Division, Trenton New Jersey*, February.

Foster Wheeler, 2000 *Final IRP Site 1 Remedial Action Report Naval Air Warfare Center, Trenton, New Jersey*, September.

IT Corporation, 1994, *Remedial Investigation Report Installation Restoration Program Naval Air Warfare Center Aircraft Division, Trenton New Jersey (14 Volumes)*, November.

NJDEP, 2010 Letter to R. Lewandowski, May 24.

RGH, (Rogers, Golden, and Halpern), 1986. *Initial Assessment Study: Naval Air Propulsion Center, Trenton, New Jersey*. RGH, Philadelphia, and BCM Eastern, Inc. Plymouth Meeting, Pennsylvania. Environmental Restoration Department, Naval Energy and Environmental Support Activity, Port Hueneme, California, May.

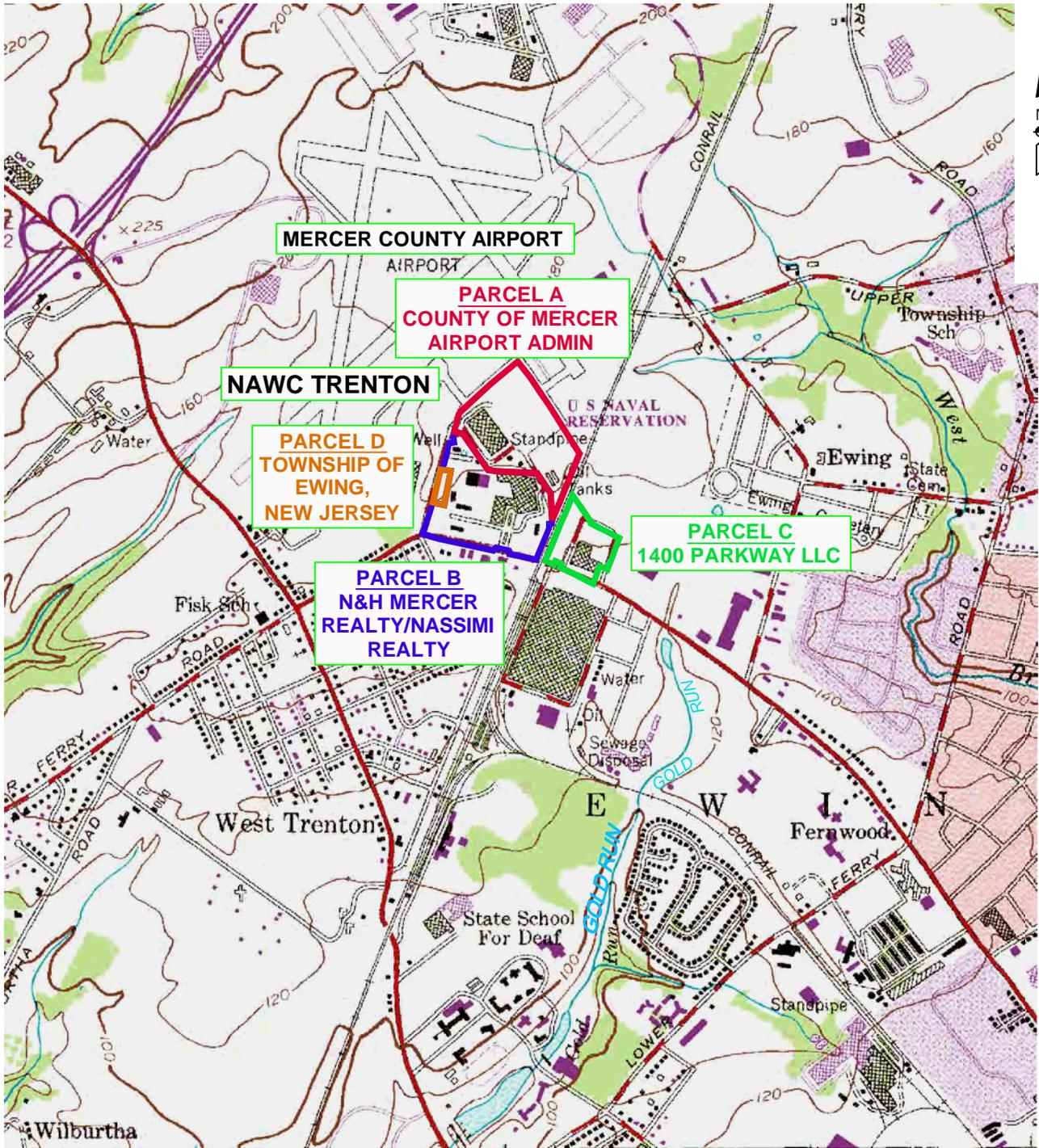
Tetra Tech (Tetra Tech, NUS.), 2010. *Remedial Action Report – Evaluation of Groundwater Infiltration to Gold Run Creek, Former NAWC Trenton, Trenton, New Jersey*, September.

Tetra Tech (Tetra Tech, NUS.), 2013. *Technical Memorandum Report of Results for the West Ditch Groundwater Infiltration Investigation Former NAWC Trenton, Trenton, New Jersey*. May.

Tetra Tech (Tetra Tech, EC), 2014 *Engineering Analysis/Cost Evaluation for Site 1 Removal Action, Former Naval Air Warfare Center Trenton, Ewing Township, New Jersey*, November.

U.S. Environmental Protection Agency (EPA), 2009. *Superfund Removal Guidance for Preparing Action Memoranda*, September.

Watermark, 2011 *Sampling and Analysis Plan, Trenton Treatment Plant, Trenton, New Jersey*, July.



SOURCE:
 BASE MAP IS A PORTION OF THE
 PENNINGTON, NJ U.S.G.S. 7.5 MINUTE
 QUADRANGLE MAP, DATED 19543,
 PHOTOREVISED IN 1981.

QUADRANGLE LOCATION

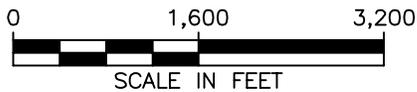


FIGURE 1

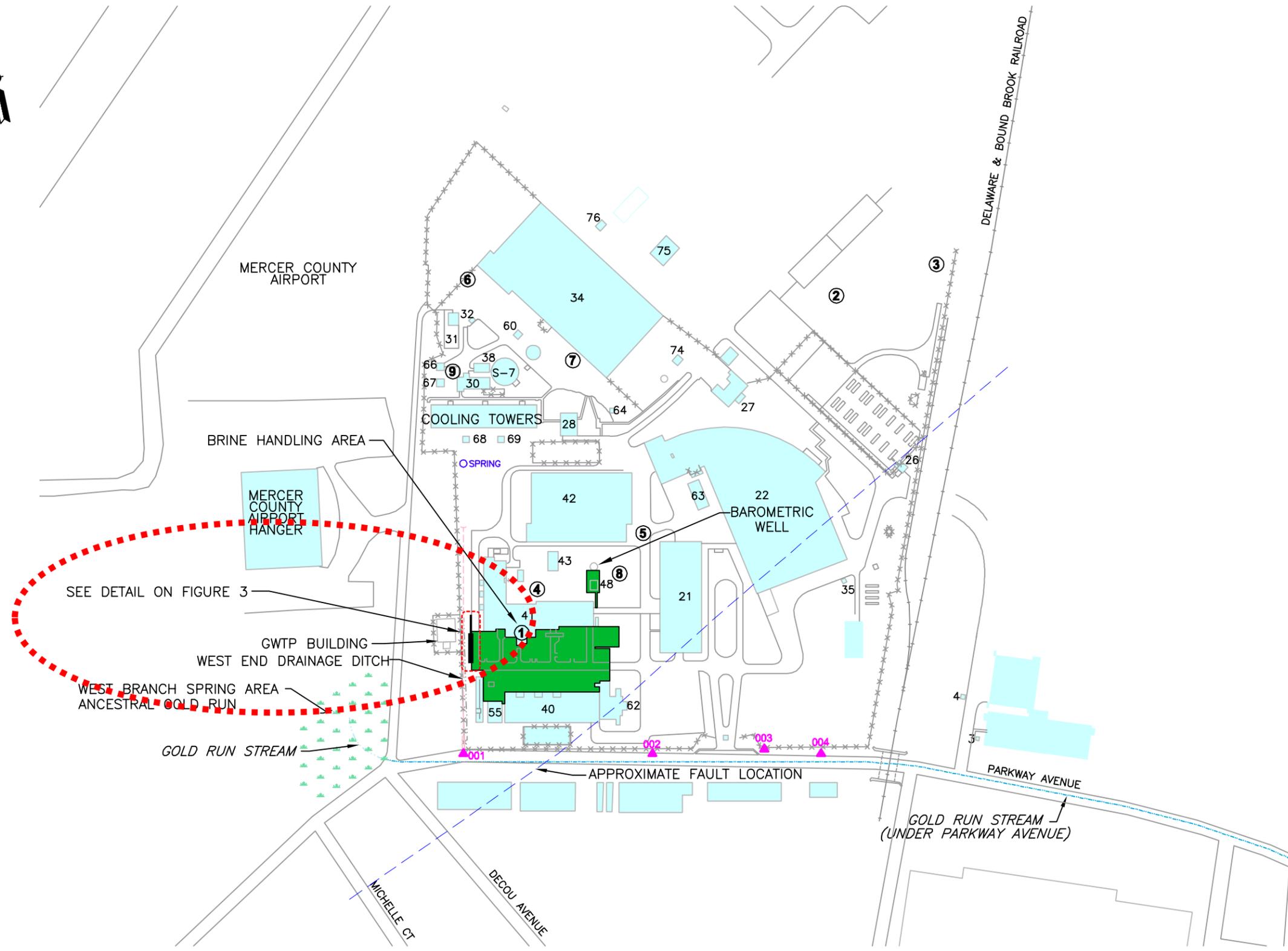
FACILITY LOCATION MAP

NAVAL AIR WARFARE CENTER
 TRENTON, NEW JERSEY

REVISION:
 AUTHOR: A.CRABTREE
 PROJECT NO:
 FILE: SEE BELOW



TETRA TECH EC, INC.

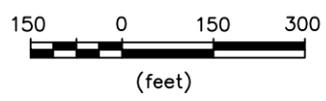


LEGEND

- ④ IR PROGRAM SITE NUMBER
- 26 BUILDING NUMBER
- ▲ OUTFALL
- ××××× APPROXIMATE FENCE LOCATION
- WETLANDS
- APPROXIMATE AREA OF SOIL REMOVAL PERFORMED IN 1998

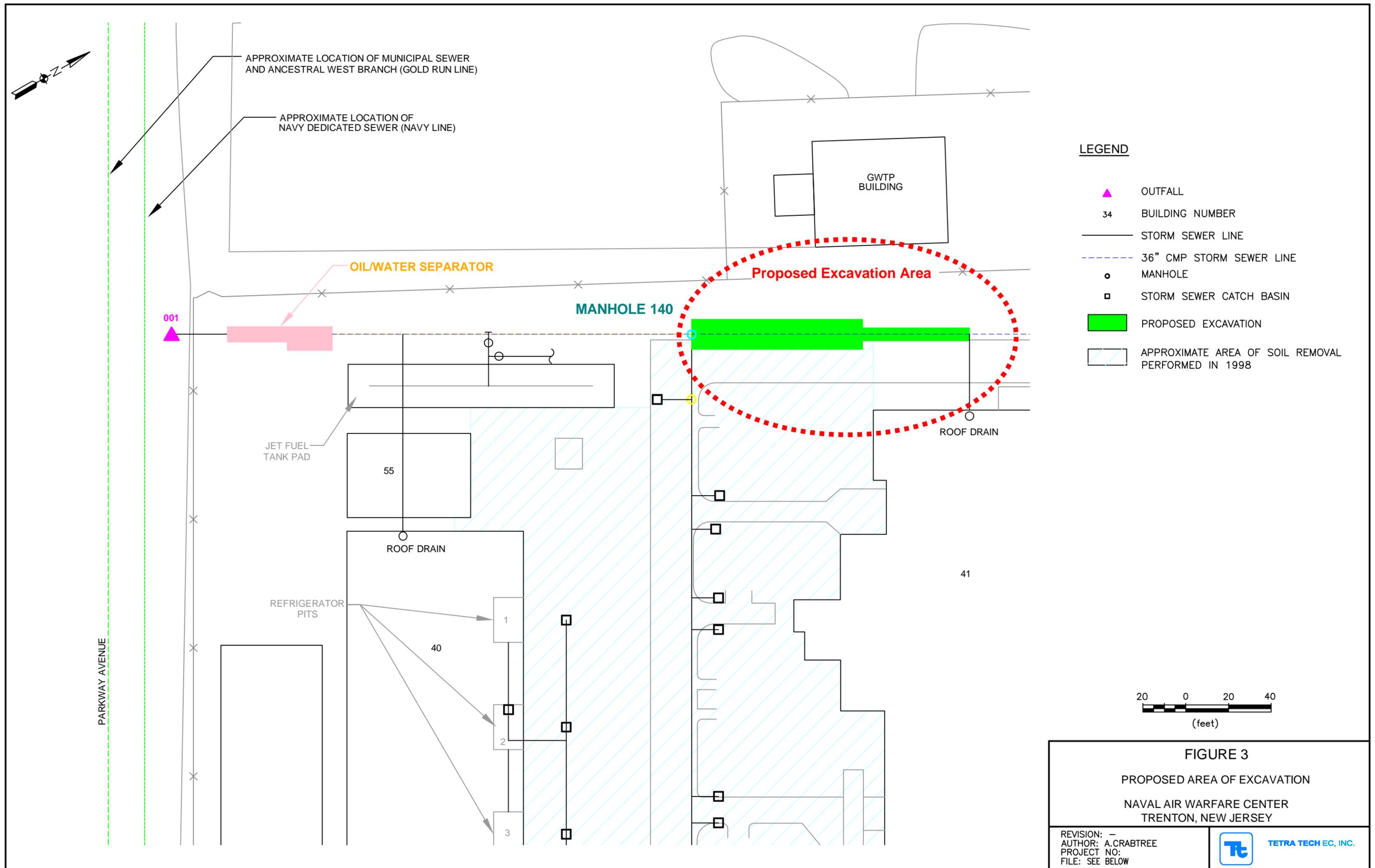
FIGURE 2
SITE MAP

NAVAL AIR WARFARE CENTER
TRENTON, NEW JERSEY



REVISION: —
AUTHOR: A.CRABTREE
PROJECT NO:
FILE: SEE BELOW





LEGEND

-  OUTFALL
-  BUILDING NUMBER
-  STORM SEWER LINE
-  36" CMP STORM SEWER LINE
-  MANHOLE
-  STORM SEWER CATCH BASIN
-  PROPOSED EXCAVATION
-  APPROXIMATE AREA OF SOIL REMOVAL PERFORMED IN 1998



FIGURE 3
PROPOSED AREA OF EXCAVATION
NAVAL AIR WARFARE CENTER
TRENTON, NEW JERSEY

REVISION: -
 AUTHOR: A. CRABTREE
 PROJECT NO:
 FILE: SEE BELOW



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