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FINAL
WORK PLAN
FOR SITE 26
SEPTIC DRAIN LINE AND TANK REMOVAL
AT
NAVAL WEAPONS STATION - EARLE
COLTS NECK, NEW JERSEY

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Appendix A: Plumbing Plan for Building GB-01

1.0 INTRODUCTION/ PROJECT OBJECTIVES

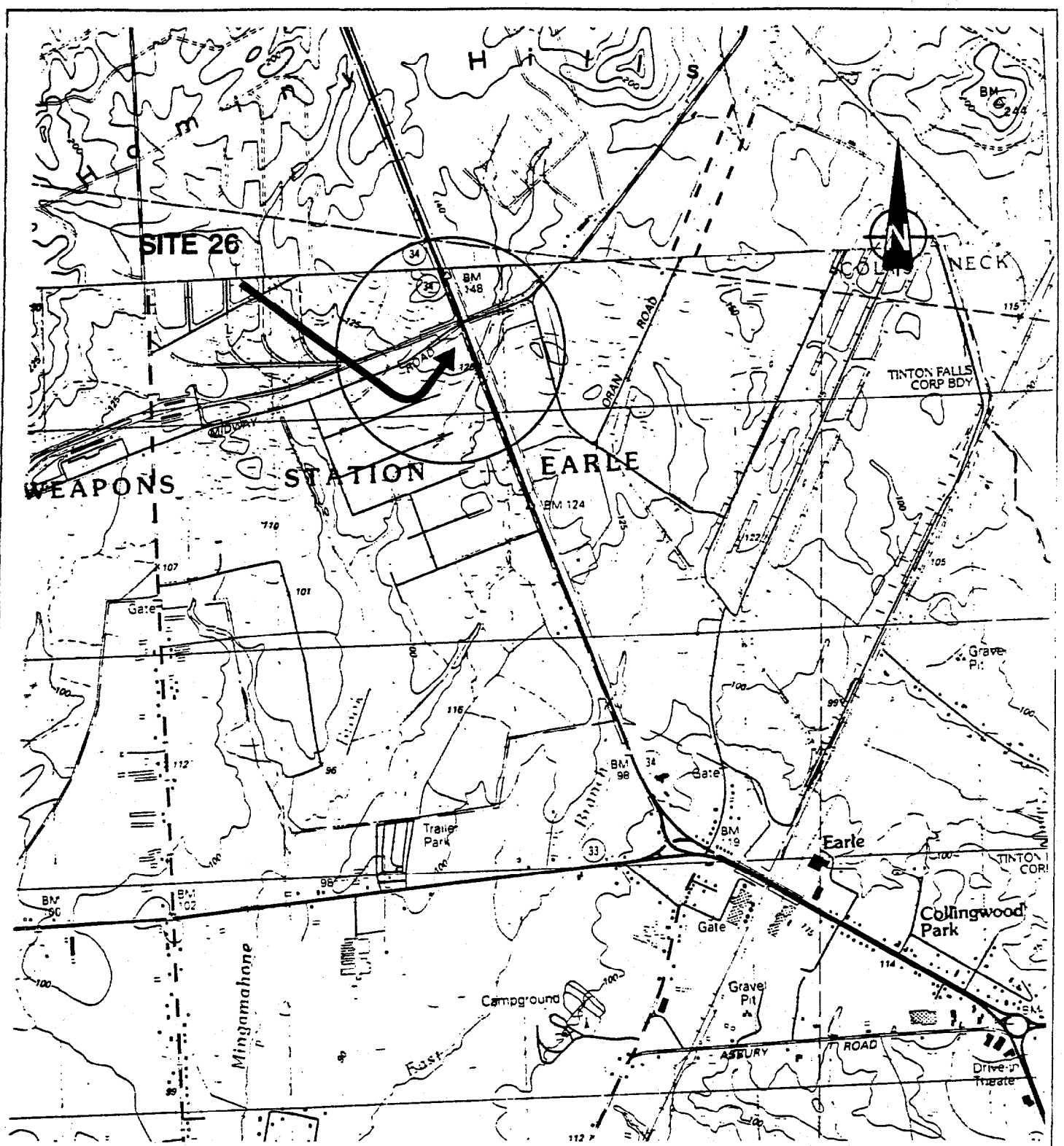
Foster Wheeler Environmental Corporation (Foster Wheeler Environmental) has been contracted by the Northern Division, Naval Facilities Engineering Command (NorthDiv) to excavate and dispose of a sanitary sewer line and tank near Site 26, Building GB-1 at the Naval Weapons Station (NWS) Earle located in Colts Neck, NJ. This Work Plan is being submitted to satisfy the pre-construction submittal requirements included in paragraph 1.2.1, Pre- and Post-Construction Documentation of the Statement of Services for Delivery Order No. 0017, Modification No. 4 under Remedial Action Contract No. N62472-94-D-0398.

Project objectives include the excavation and disposal of all concrete and piping materials associated with the septic system at Building GB-1. Potentially-hazardous sediment/sludge present in the grease trap and/or leaching tank will be containerized on-site pending subsequent laboratory analysis and off-site disposal. Composite samples from excavated concrete materials will be laboratory analyzed for waste characteristics prior to disposal. The drain from inside the building shall be plugged. The excavated area will be backfilled with clean fill, graded to match the surrounding terrain, and reseeded.

2.0 PROJECT LOCATION AND DESCRIPTION

NWS-Earle is located in east-central Monmouth County in the town of Colts Neck, New Jersey. Building GB-1 is located on the Mainside portion of the NWS-Earle facility, at the intersection of Macassar and Midway Roads. Site 26 is located north of Building GB-1. Two railway lines run from the southwest to the northeast adjacent to the southern side of Building GB-1. Refer to Figure 2.1 for the location of Building GB-1. The site is fenced and topography is relatively flat, approximately 150 feet above MSL.

The leaching system is located on the northwest side of Building GB-01. Refer to Figure 2.2 for site layout. The leaching system originates from drains inside Building GB-01 and exits through a 2 inch diameter underground galvanized pipe and on the northwest side of Building GB-01. The 2 inch pipe opens up into a 4 inch diameter pipe, which runs for approximately 10 feet prior to discharging into an in-ground concrete grease trap. The grease trap is approximately 5 feet by 3 feet and 3 feet deep. Four inch diameter pipe runs north from the grease trap 10 feet to discharge into the in-ground concrete leach tank. The leach tank is approximately 7 feet by 7 feet and 5 feet deep.



Source: U.S.G.S. 7.5 Min. Topographic Map
Marlboro & Farmingdale, NJ Quadrangles

0 .5 1 Mile

Naval Weapons Station Earle
Site 26
Colts Neck, NJ

Figure 2-1

Site Location Map

FOSTER WHEELER ENVIRONMENTAL CORPORATION

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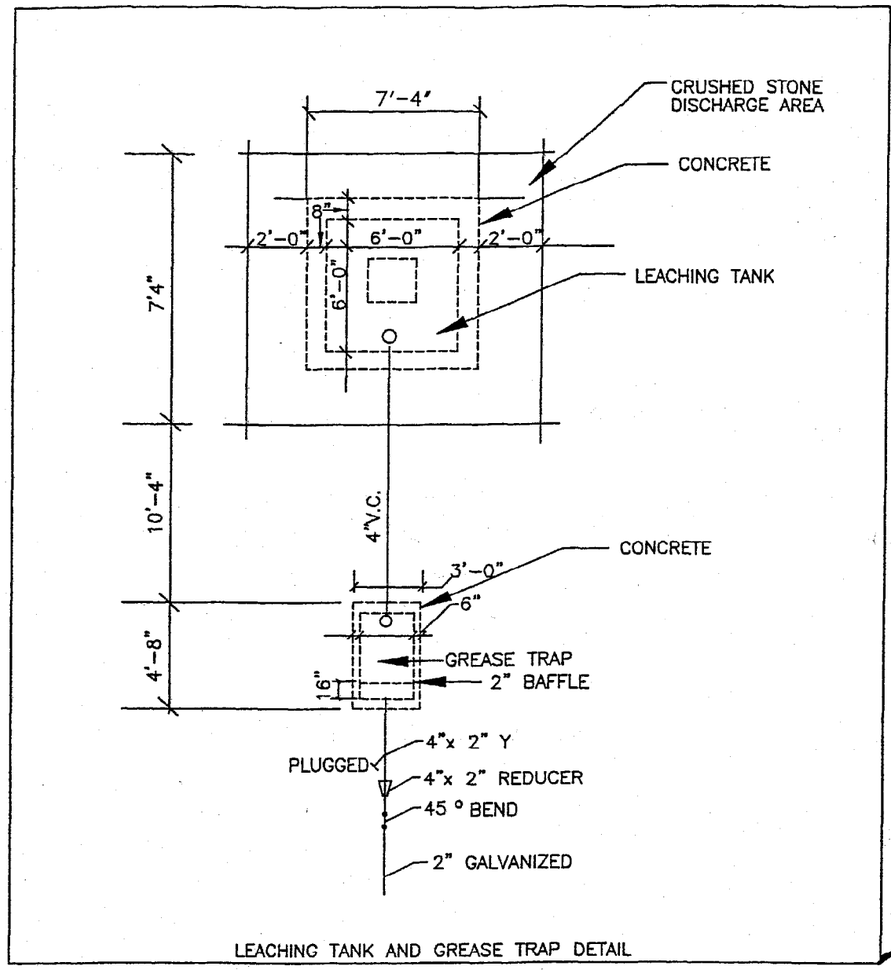
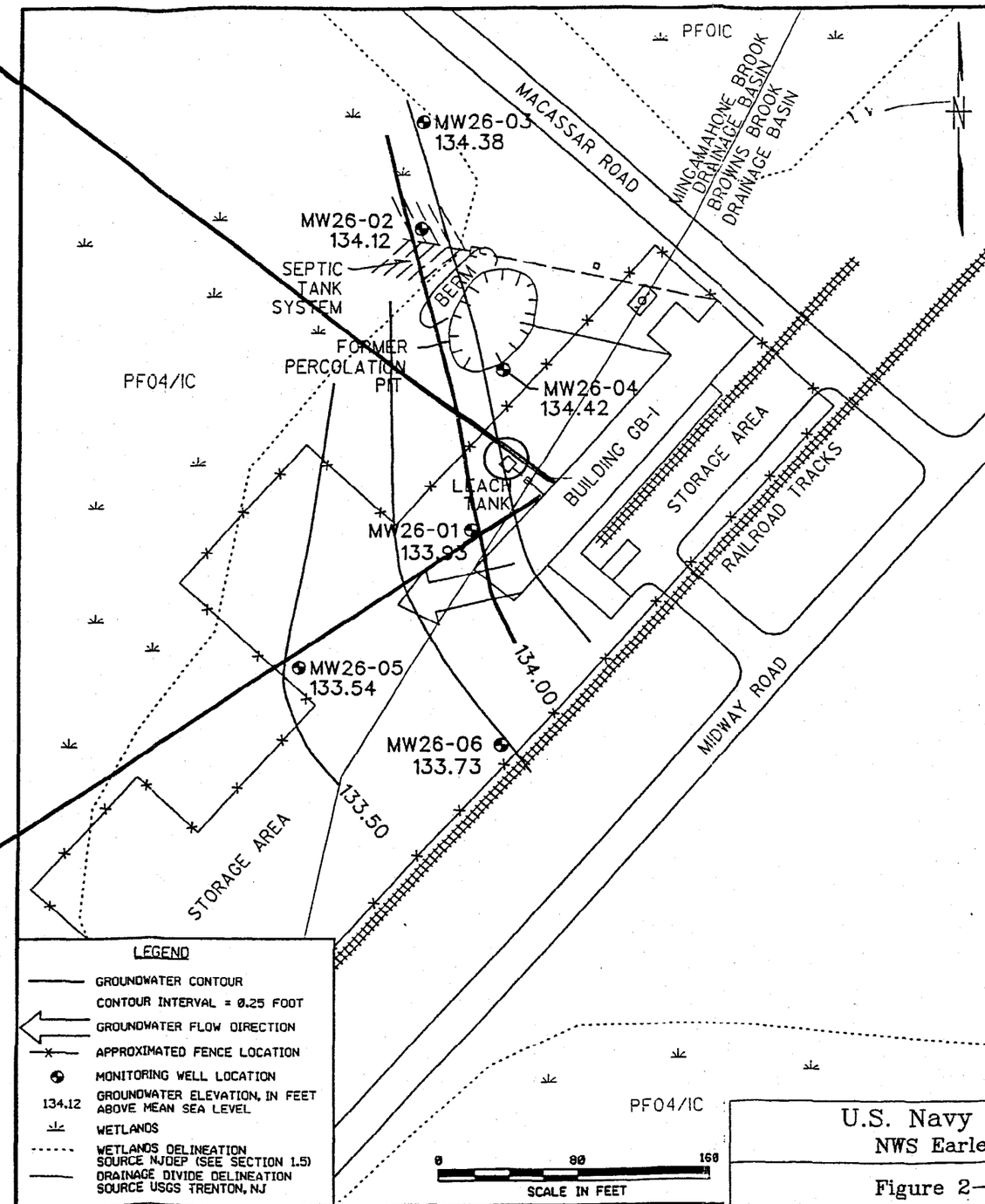


LEACHING TANK AND GREASE TRAP DETAIL



LEGEND

- GROUNDWATER CONTOUR
- CONTOUR INTERVAL = 0.25 FOOT
- GROUNDWATER FLOW DIRECTION
- APPROXIMATED FENCE LOCATION
- MONITORING WELL LOCATION
- 134.12 GROUNDWATER ELEVATION, IN FEET ABOVE MEAN SEA LEVEL
- WETLANDS
- WETLANDS DELINEATION SOURCE NJDEP (SEE SECTION 1.5)
- DRAINAGE DIVIDE DELINEATION SOURCE USGS TRENTON, NJ

U.S. Navy RAC
NWS Earle

Figure 2-2
SITE 26 LAYOUT MAP

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2.1 Previous Investigations

An Initial Assessment Study was conducted at Site 26 in 1982, a Site Inspection Study (SI) was conducted in 1986 and a Phase I Remedial Investigation (RI) was conducted in 1993. These were preliminary investigations to determine the number of hazardous substance sources, compile histories of wastehandling and disposal practices at the site, and acquire data on the types of contaminants present and potential human health and/or environmental receptors. The RI investigation included the installation and sampling of monitoring wells and collection and analysis of surface soils.

A Phase II RI was initiated in 1995 and completed in 1996 to determine the nature and extent of contamination. Activities included a soil gas survey at 68 locations, installation and sampling of groundwater monitoring wells, soil sampling, "direct push" groundwater sampling with on-site laboratory analysis, and cone penetrometer studies to delineate subsurface soil stratigraphy.

Through these investigations it was found that Building GB-1 was reportedly used for the reconditioning of munition shells and casings. Solvents were used in the reconditioning process and the spent solvents and wastewaters appear to have been discarded into drains/receptacles inside the building which drained into the leaching system on the northwestern side of the building. The wastewaters drained into the leach field and trichloroethene (TCE) and dichloroethene (1,2-DCE) were leached into the surrounding soils and groundwater.

On October 16, 1997, an attempt was made to excavate the piping and in-ground concrete grease trap and leach tank. As directed by NWS-Earle personnel, water from the in-ground grease trap and leach tank was pumped into 55-gallon drums. Foster Wheeler Environmental was directed to pump approximately one tank volume out of the leach tank, which according to site documentation was approximately 500 gallons; and, if additional groundwater comes into the tank to cease pumping. Foster Wheeler Environmental pumped a total of approximately 750 gallons of water from the grease trap and the leach tank, and placed the water in 55-gallon drums. Water continued to enter the leach tank as water was pumped out. It is possible that water from the drain field was draining back into the leach tank. No PID readings above background were detected in the breathing zone while pumping water from the leach tank.

Containerized water in the drums was sampled on October 17, 1997 for total volatile organics in order to characterize the water for disposal. Although the TCE and 1,2-DCE concentrations were below regulatory levels, the wastewaters were disposed off-site as hazardous due to the past practice of dumping solvents.

The next activity was to be the excavation of the grease trap and leach tank from the drain field. The excavation activities were conducted using a Case 580 backhoe, located upwind of the piping and leach tank. No PID readings above background were detected in the breathing zone while unearthing the grease trap. Once the concrete grease trap was exposed, the backhoe attempted to break apart the concrete in order to remove the structure from the ground. While the backhoe was moving the concrete structure, sediment/sludge in the bottom of the grease trap was disturbed, and elevated PID readings (up to 120 ppm) were detected downwind of the excavation. The Health and Safety Officer (HSO) immediately had the backhoe operator move away from the excavation, and the HSO pulled a vinyl chloride sensidyne tube downwind of the excavation. The vinyl chloride sensidyne tube registered >20 ppm of vinyl chloride. There were no PID readings on the upwind side of the excavation. Since the Activity Hazard Analysis (AHA) required Level B respiratory protection when vinyl chloride readings exceed 0.5 ppm, the job was immediately shut down and the ROICC was contacted. All equipment located upwind of the excavation was removed and the site was fenced off with barricade fence. Site 26 is located within a fenced area inside the secured Ordnance Area. Building GB-1, located inside Site 26, is not currently being used by Navy personnel.

2.2 Site Conditions

2.2.1 Surface Water and Wetlands

No wetlands exist in the vicinity of Site 26. Groundwater discharge of organic compounds to surface water is also insignificant since no wetlands or other surface waters are present near the site.

2.2.2 Groundwater

Groundwater samples were collected from monitoring wells and by direct-push groundwater sampling methods across Site 26. TCE, 1,2-DCE, and related compounds were encountered at significant concentrations in a wide plume (approximately 350 feet by 130 feet) of contaminated groundwater southwest of Building GB-1. Explosives were analyzed for but not detected in the groundwater. Subsurface soil stratigraphy studies indicate the presence of a 15-feet-thick clay layer at a depth of approximately 25 to 40 feet below Site 26. Based on vertical profile sampling, the semi-confining clay layer appears to have limited the vertical migration of TCE and related compounds. The type of contaminants detected and the configuration of the plume implicate the process leach tank as the source of groundwater contamination. Groundwater flow direction at the site is from the northeast to the southwest-west.

3.0 SCOPE OF WORK

The objectives of the this effort are to excavate and remove all concrete and piping materials associated with the septic system, which extends westward from the northwest corner of Building GB-1. Sludge/sediment materials known to be present in the sanitary sewer grease trap will be sampled and laboratory analyzed to determine the hazardous waste classification and disposed off-site. The concrete shall be classified as hazardous waste (F001) due to past operations concerning the leach tank, and disposed off-site.

3.1 TASK 1 - Project Planning/Management

Project Planning/Management activities include the preparation of pre-construction submittals, coordinating utility requirements, mobilization to the site, and providing home office support functions during the estimated period of performance. The subtasks involved in Project Planning/Management are described below.

3.1.1 Subtask 1A - Pre-Construction Submittals

Foster Wheeler Environmental will prepare and submit the following pre-construction documents to the Navy:

Work Plan
The Work Plan presents Foster Wheeler Environmental's approach to executing the project, including the site description, statement of work, procurement approach, system information, materials, engineering data, transportation and disposal data, and sampling and analytical requirements.

Health and Safety Plan (HASP)
The HASP includes Foster Wheeler Environmental's approach to providing for the health and safety of its employees during the project.

3.1.2 Subtask 1B - Mobilization

Mobilization will consist of contacting appropriate Navy personnel at NWS Earle to arrange for contractor passes and to coordinate support requirements for excavation of the sanitary sewer lines and associated sludge/sediment. A utility survey shall be conducted to determine all utility lines in the AOC. Utilities, primarily electric, shall be locked and tagged out and/or terminated at the source. Subsurface utilities shall be located by NWS-Earle Public Works personnel. A dig permit shall be obtained prior to any drilling or excavation work. Due to potential exposure to elevated levels of vinyl chloride, all excavation and sampling activities will be conducted in Level B respiratory protection. The on-site HSO may modify the PPE requirements depending on real-time monitoring results.

3.1.3 Subtask 1C - Home Office Support

Foster Wheeler Environmental's Langhorne, Pennsylvania office will provide home office support and on-site task oversight for the project. Home office support includes coordinating subcontractors, and preparation of the required progress, financial and technical reports.

3.2 TASK 2 - Permit and Report Preparation/Submission

3.2.1 Subtask 2A- Dig Permit

Foster Wheeler Environmental shall contact the NWS-Earle Public Works Department to obtain a dig permit and have all utilities marked-out prior to excavation activities.

3.2.2 Subtask 2B- Preparation of a Soil Erosion and Sediment Control Permit

Since the proposed excavation involves the disturbance of less than 5,000 square feet of land surface, a Soil Erosion and Sediment Control Permit Application is not required in accordance with N.J.S.A. 4:29-39 et seq..

3.2.3 Subtask 2C-Preparation of Post Remediation Report

Foster Wheeler Environmental shall prepare a Post Remediation Report in accordance with N.J.A.C. 7:26E-6.6. The report shall include the location and quantities of material removal, analytical results and disposal data.

3.3 TASK 3 - Collection of Waste Characterization Samples

Samples of sediment/sludge present in the sanitary sewer grease trap and leach tank will be collected while in Level B respiratory protection in order to reduce potential exposure to elevated concentrations of vinyl chloride previously detected in the breathing zone. One composite sediment/sludge sample will be collected from the grease trap and the leach tank. The sample will be analyzed for waste characterization parameters to waste classification for off-site disposal.

The waste characterization sampling is based upon the NJDEP requirements, as well as the requirements of the proposed disposal facilities. Each sample will be laboratory analyzed for Toxicity Characteristic Leaching Procedure (TCLP) volatile organics and metals. The Sampling and Analysis Plan in Section 4.0 details the analytical methods and sample frequency.

3.4 TASK 4 - Cleaning and Sealing Drains Include Building GB-01

A power washer shall be used to wash out four 3 inch diameter floor drains inside Building GB-01. Appendix A contains the Plumbing and Heating Diagram depicting the floor drains. The wash water shall be collected outside Building GB-01 at the discharge pipe on the northern side of the building. The wash water shall be pumped into drums, sampled along with water from the leach tank and properly disposed off-site. The doors of Building GB-01 shall be opened and fans placed in the doorways to aid in ventilating the building prior to conducting the floor drain washout. The engineering controls shall be used to maintain the air in the breathing zone within Level D levels. Personnel shall upgrade to Level C or Level B, based upon real-time air monitoring in accordance with the Health and Safety Plan. Once the floor drains have been washed out, temporary drain plugs shall be placed inside the floor drains. The drain plugs shall be locked with pad locks and the keys given to the ROICC office.

3.5 TASK 5 - Pumping Water from Leach Tank

The standing water inside the leach tank shall be pumped into 55 gallon drums immediately prior to the excavation of the leach tank. A two inch diameter submersible sump pump shall be used to pump the water from the tank into the drums. The water shall be analyzed and properly disposed off-site.

3.4 TASK 6 - Excavation of Sanitary Sewer Lines/Tanks

An equipment operator, two laborers, the Site Health and Safety Officer (SHSO) and the Project Superintendent (PS) shall be performing the excavation activity in Level B respiratory protection. There shall also be one standby laborer in Level B protection in case of emergency. All personnel in Level B shall be on a cascade air system except for the equipment operator, who will be equipped with his own large air supply tank in the cab of the excavator, and the emergency personnel, who will be equipped with a portable SCBA unit. A case 580 backhoe or the equivalent shall be used to excavate the grease trap, leaching tank, and associated piping from the sanitary sewer system. The sides of the excavation shall be sloped 2:1 horizontal to vertical since the excavation is expected to be approximately 4 feet deep. The drier soils on top of the sewer system can be temporarily stockpiled and used for backfill/regrading. Once the grease trap and the leach tank are above grade, a laborer shall hand excavate the sediment/sludge materials present in the grease trap and leaching tank and containerize it into 55-gallon drums, pending laboratory analysis of waste characteristics. A hammer attachment on the backhoe shall be used to break the concrete in sections no larger than 2'x2' which, along with the excavated piping materials, shall be placed in lined roll-off containers for off-site disposal. The concrete shall be wetted down prior to any destructive work to assure that, if any energetic/explosive fines are present, they are desensitized from friction impact.

The piping exiting from the western side of Building GB-01 shall be sealed in order to prevent future discharges. Bentonite shall be poured from the base of the piping excavation to one foot above the pipe and hydrated with water. After allowing the bentonite to hydrate for 24 hours, the excavation shall be backfilled.

Throughout the excavation activity, a FID meter, combustible gas indicator, and MIRAN IR meter shall be used to monitor air around the excavation and along the perimeter of the fenced site. Elevated vinyl chloride, trichloroethylene or dichloroethylene readings along the perimeter of the site shall cause a work stoppage and the ROICC will then be notified.

3.5 TASK 5 - Backfill of Excavation

The excavated area shall be backfilled and reseeded following removal of the sewer line and sediment/sludge materials. Clean fill lithologically similar to the surrounding soils, as well as the temporarily stockpiled soils, shall be used to backfill the excavation to 6 inches below grade. The top 6 inches of the excavation shall be backfilled with topsoil, and the area reseeded with local grass seed. Seeding shall be performed between March 15 and June 1 or August 15 and October 1. All disturbed areas will be graded and fertilized prior to seeding. The fertilizer shall be a 10-6-4 fertilizer containing a minimum of 10 percent nitrogen, 6 percent available phosphoric acid and 4 percent soluble potash. It shall be applied at a rate determined by laboratory test recommendations. Fertilizers and seed may be mixed together immediately before placing.

All seeded areas shall be mulched with straw. Mulch shall be spread uniformly in a continuous blanket of sufficient thickness to completely hide soil from view. Mulch may be spread before or no later than three days after seeding unless otherwise approved. Silt fences shall be left in place until the seed takes root and the erosion potential decreases.

4.0 FIELD SAMPLING AND ANALYSIS PLAN

4.1 Introduction

Foster Wheeler Environmental is submitting this Sampling and Analysis Plan (SAP) for excavation and removal of the sanitary sewer system located adjacent to Site 26-Building GB-01 at the Naval Weapons Station (NWS) Earle located in Colts Neck, NJ. The purpose of the sampling is to provide waste characterization data for sediment/sludge contained within the grease trap and leaching tank of the sewer system, as well as the concrete materials used in construction of the sewer lines/tanks. The analytical results will be used to determine the appropriate off-site disposal requirements. This work is being performed under Delivery Order No. 0017 to Navy Contract N62472-94-D-0398.

The SAP presents the procedures to be followed during excavation and sampling of the Site 26 sanitary sewer system. The SAP specifically addresses the following areas:

- Analytical Requirements
- Responsibilities of Site Personnel
- Sample Analytical Program
- Sample Packing and Shipping
- Documentation
- Field Sampling Program
- Quality Assurance/Quality Control
- Procedures for Field Changes and Corrective Actions

The Quality Assurance Project Plan (QAPP), which has been submitted as a separate document, establishes the structure of the quality assurance plan for field activities. Site-specific Standard Operating Procedures have been included (Section 4) to describe the sampling procedures. Any modifications necessary to these SOPs due to field conditions or other unforeseen situations shall be recorded in the site logbook, documented on the appropriate Change Request (CRF) by site personnel, and approved by the Senior Project Engineer/Manager (See Section 4.2).

4.2 Personnel Responsibilities

The project team will include the following personnel:

The Senior Project Engineer/Manager (SPEM) has final responsibility for the development of the SAP and management of the project team.

The Project Superintendent (PS) is responsible for assuring that proper collection, packaging, preservation, and shipping of samples is performed in accordance with the SAP. The PS is responsible for assuring all excavation activities are performed in accordance with the Work Plan. The PS is responsible for coordinating with the

subcontracted laboratory during sample analysis and for reviewing the analytical data received from the laboratory.

The Site Health and Safety Officer (SHSO) is responsible for the safety of all site personnel as detailed in the site-specific Health and Safety Plan (HASP), presented under separate cover.

The Laboratory Subcontractor is responsible for supplying all services (including labor), equipment, and material required to perform the analysis of the environmental samples. The laboratory subcontractors are responsible for following all specified methodology protocols, including quality assurance/quality control (QA/QC) requirements. In addition, the laboratory subcontractors are responsible for the proper disposal, including all associated costs, of the environmental samples upon completion of the analytical work.

4.3 Field Sampling Activities

This section addresses the field investigation activities, including:

- Sample Tracking System
- Sample Analytical Requirements
- Sample Packaging and Shipping
- Sample Documentation

4.3.1 Sample Tracking System

The objective of the sample identification system is to provide a framework for developing sample numbers that are unique to that sample and convey information regarding sample type that will enable data users to easily identify sample locations. The sample designation is established in order to integrate the data into the Navy's Geographical Information System (GIS).

The first two numbers of the sample tracking system shall refer to this site-specific location, which in our case is Building GB-01. All sediment/sludge sample identifiers shall begin with the number GB1. For example, GB1SLDG01 would refer to Building GB-1 sediment/sludge sample one. In order to identify the specific sample, the date and round shall be appended to the sample name. GB1SLDG01-97-1 would refer to Building GB-01, sediment/sludge sample number 1, taken from the first round in 1997. A "D" would be added to the sample nomenclature to indicate a duplicate sample. For the purposes of this sampling effort, the following characters shall be assigned to identify the various matrices:

SLDG = Sediment/sludge sample
DW = Decon Water
WW = Waste Waters

A cumulative sampling master log will be maintained as the field program progresses. The samples taken will be referenced to each sampling location in the site logbook.

All location information for the samples will be recorded in the field sampling logbook (Section 4.3.4).

4.3.2 Sample Analytical Requirements

Table 4-1 specifies location, number of samples, matrix, laboratory analyses, and rationale for each sample type. Specific procedures governing sample preservation are presented below.

Reagents required for sample preservation will be added to the sample containers by the laboratory prior to their shipment to the field or added in the field. In general, aqueous samples of low concentration organics (or soil samples of low or medium concentration organics) are cooled to 4°C. Medium and high hazard aqueous or high hazard soil samples are not preserved. Low concentration aqueous samples for TPH are acidified with H_2SO_4, while medium concentration and high hazard aqueous metal samples are not preserved. Soil samples for metals are not preserved.

The soil samples to be analyzed for volatile organics shall be collected and preserved in accordance to NJDEP's Methodology for the Field Extraction/Preservation of Soil Samples with Methanol for Volatile Organic Compounds.

The following subsections describe the procedures for preparing and adding chemical preservatives. In most cases, preservatives will be added to the sample bottleware by the subcontracted laboratory prior to shipment to the site.

Addition of the following acids and solvents are specified for sample preservation:

Acid/Base Acidification		Concentration	Amount for Normality
H_2SO_4 *	1:1 dilution of concentrated H_2SO_4	18N	2-5 ml
Methanol	2.5:1 volume of methanol to weight of soil ratio	--	--

*Amount of acid to add (at the specified strength) per liter of water to reduce the sample pH to less than 2, assuming that the water is initially at pH 7, and is poorly buffered and does not contain particulate matter.

These reagents should be reagent (AR) grade and should be diluted to the required concentration with double-distilled, deionized water.

The approximate volumes needed to acidify one liter of neutral water to a pH of less than 2 (or raise the pH to 12) are shown in the last column of the above table. These volumes are only approximate; if the water is more alkaline, contains inorganic or organic buffers, or contains suspended particles, more acid may be required. The final pH must be checked using narrow range pH-paper.

Sample acidification or base addition should proceed as follows:

1. Check initial pH of sample with wide range (0-14) pH paper.

2. Fill sample bottle to within 5-10 ml of final desired volume and add about 1/2 of the estimated acid or base required, stir gently and check pH with medium range pH paper (pH 0-6 or pH 7.5-14, respectively).

3. Add acid or base a few drops at a time while stirring gently. Check for final pH using narrow range (0-2.5 or 11-13, respectively) pH paper; when desired pH is reached, cap sample bottle and seal.

Never dip pH paper into the sample; apply a drop of sample to the pH paper while using the stirring rod.

TABLE 4-1
NAVAL WEAPONS STATION-EARLE
DELIVERY ORDER 0017-MODIFICATION NO. 8
SAMPLING AND ANALYSIS REQUIREMENTS

Media	*Analyses*	*Frequency*	*Quantity **	*Method*	*Rationale*
Sediment/ Sludge	RCRA Characteristics TCLP volatiles and metals	Composite sediment/sludge sample collected from the grease trap and leaching tank.	1	TCLP volatiles - EPA 8240 TCLP metals - EPA SW 846 RCRA characterization	Analytical results shall be used to classify sediment/sludge for transportation and disposal.
Decon Water and Wastewaters	TCL volatiles TAL metals RCRA characteristics	One sample from decon drums	1	TCL volatiles - EPA 8020/8240 TAL metals - EPA SW846 RCRA characterization	Analytical results shall be used to classify decon water for transportation and disposal.

* Quantities do not include quality assurance samples

4.3.3 Sample Packaging and Shipping

The objective of the sample packaging and shipping requirements are to maintain sample integrity from the time a sample is collected until it is received at the analytical laboratory. Chain-of-custody (COC) forms, sample labels, custody seals, and other sample documents will be completed to maintain sample integrity. Specific procedures for packaging and shipping of environmental samples are presented below. These procedures were obtained from the NJDEP Field Sampling Procedures Manual.

4.3.3.1 Environmental Samples

Low-concentration samples are defined as environmental samples and should be packaged for shipment as follows:

1. A sample label is attached to the sample bottle. The label should be taped over with clear packing tape to preserve legibility.

2. A picnic cooler (such as a Coleman or other sturdy cooler) is typically used as a shipping container. In preparation for shipping samples, the drain plug is taped shut from the inside and outside, and a large plastic bag is used as a liner for the cooler. Approximately 1 inch of packing material, such as asbestos-free vermiculite, perlite, or styrofoam beads, is placed in the bottom of the liner.

3. The sample bottles are placed in the lined picnic cooler. Cardboard separators, and/or additional packing material, should be placed between the bottles to prevent breakage during shipping.

4. Aqueous samples for low or medium-level analysis must be shipped cooled to 4°C with ice. No ice is used in shipping high-level aqueous samples, or soil samples, or dioxin samples. Ice is not required in shipping soil samples, but may be utilized at the option of the sampler. All cyanide samples, however, must be shipped cooled to 4°C.

5. The lined cooler is filled with packing material (such as asbestos-free vermiculite, perlite, or styrofoam beads), and the large inner liner is taped shut. Sufficient packing materials should be used to prevent sample containers from making contact during shipment.

6. The paperwork being shipped to the laboratory is placed inside a plastic bag. The base is sealed and taped to the inside of the cooler lid. A copy of the COC form should be included in the paperwork sent to the laboratory. The last block on the COC form should indicate the overnight carrier and airbill number. The airbill must be filled out before the samples are handed over to the carrier. The laboratory should

be notified if the shipper suspects that the sample contains any substance for which the laboratory personnel should take safety precautions.

7. The cooler is taped shut with strapping tape (filament-type).

8. At least two signed custody seals are placed on the cooler, one on the front and one on the back.

9. The cooler is handed over to the overnight carrier. A standard airbill is necessary for shipping environmental samples.

4.3.3.2 Hazardous Samples

Medium- and high-concentration samples are defined as hazardous and must be packaged as follows:

1. A sample label is attached to the sample bottle. The label should be taped over with clear packaging tape to preserve legibility.

2. Each sample bottle is placed in a plastic bag, and the bag is sealed. For medium-concentration water samples, each VOA vial is wrapped in a paper towel, and the two vials are placed in one bag. As much air as possible is squeezed from the bags before sealing.

3. Each bottle is placed in a separate paint can, the paint can is filled with vermiculite, and the lid is fixed to the can. The lid must be sealed with metal clips, or with filament or evidence tape; if clips are used, the manufacturer normally recommends six clips.

4. Arrows are placed on the can to indicate which end is up.

5. The outside of each can must contain the proper DOT shipping name and identification number for the sample. The information may be placed on stickers or printed legibly. A liquid sample of an uncertain nature is shipped as a flammable liquid with shipping name "FLAMMABLE LIQUID, N.O.S." and the identification number "UN1993." A solid sample of uncertain nature is shipped as a flammable solid with the shipping name "FLAMMABLE SOLID, N.O.S." and the identification number "UN1325." If the nature of the sample is known, 49 CFR 171-177 is consulted to determine the proper labeling and packaging requirements.

6. The cans are placed upright in a cooler lined with a plastic garbage-type bag, with the drain plug taped shut inside and out. Asbestos-free vermiculite, perlite, or styrofoam is placed in the bottom of the cooler. Two sizes of paint cans are used: half-gallon and gallon. The half-gallon paint cans may be stored on top of each other; however,

one-gallon cans are too high to stack. The cooler is filled with packing material and the plastic liner is taped shut.

7. The paperwork going to the laboratory is placed inside a sealable plastic bag and taped to the inside of the cooler lid. A copy of the COC form must be included in the paperwork sent to the laboratory. The sampler keeps one copy of the COC form. The laboratory should be notified if the sample is suspected of containing any substance for which laboratory personnel should take safety precautions.

8. The cooler is closed and sealed with strapping tape. At least two custody seals are placed on the outside of the cooler (one on the front and one on the back).

9. The following markings are placed on top of the cooler:

    - Proper shipping name (49 CFR 172.301)
    - DOT identification number (49 CFR 172.301)
    - Shipper's or consignee's name and address (49 CFR 172.306)
    - "This End Up" legibly written if shipment contains liquid hazardous materials (49 CFR 172.312)

10. The following labels are required on top of the cooler (49 CFR 172.406e):

    - Appropriate hazard class label (placed next to the proper shipping name)
    - "Cargo Aircraft Only" (if applicable as identified in 49 CFR 172.101)

11. Arrow symbols indicating "This Way Up" should be placed on the cooler in addition to the marking and labels described above.

12. Restricted-article airbills are used for shipment indicating the following:

    - Number of packages or number of coolers.

    - Proper shipping name. If unknown, use FLAMMABLE SOLID, N.O.S. or FLAMMABLE LIQUID, N.O.S.

    - Classification; if unknown, use flammable solid or flammable liquid.

    - Identification number; if unknown, use UN1325 (for flammable solids) or UN1993 (for flammable liquids).

    - Net quantity per package or amount of substance in each cooler.

    - Radioactive materials section (leave blank).

- Passenger or cargo aircraft (cross off the nonapplicable). Up to 25 pounds of flammable solid per cooler can be shipped on a passenger or cargo aircraft. Up to 1 quart of flammable liquid per cooler can be shipped on a passenger aircraft, and up to 10 gallons of flammable liquids per cooler can be shipped on a cargo aircraft).

- Name and title of shipper (printed).

- An emergency telephone number at which the shipper can be reached within 24-48 hours.

- Shipper's signature.

NOTE: The penalties for improper shipment of hazardous materials are severe. A fine of $25,000 and five years imprisonment can be imposed for each violation.

4.3.4 Sample Documentation

The following documentation is associated with sample collection and transfer:

- Field Logbooks
- Site Logbooks
- Master Sample Log
- Sample Label
- Chain-of-Custody Form
- Custody Seals
- Shipping Airbill.

5.0 FIELD INVESTIGATION ACTIVITIES

5.1 Standard Operating Procedures (SOPs)

Technical guidelines used in preparing this SAP were obtained primarily from the following sources:

- June 1988 Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program, NESSA 20.2-047B

- The USEPA REM III/ARCS II Program Field Technical Guidelines, prepared for the USEPA by FWENC under Contract Number 68-01-7250 (Field Technical Guidelines)

- The New Jersey Department of Environmental Protection (NJDEP) Field Sampling Procedures Manual (May 1992)

All of the aforementioned guidance documents were consulted in preparation of this SAP to ensure that the procedures presented in this SAP are consistent with each document.

5.2 Field Investigation Program

The following sections detail the field investigation program. Primary tasks of the program include Mobilization/Demobilization (Section 5.2.1), Sediment/Sludge Sampling Prior to Excavation (Section 5.2.2), Excavation/Sampling/Removal of Sanitary Sewer Components (Section 5.2.3), Backfilling and Regrading (Section 5.2.4).

5.2.1 Mobilization and Demobilization

Mobilization shall consist of contacting appropriate Navy personnel at NWS-Earle to arrange for contractor passes and to coordinate support requirements for the soil excavation and removal and the operation of the recovery system.

FWENC shall contact the NWS-Earle Public Works Department to obtain a dig permit and have all utilities marked out prior to the excavation activities.

5.2.2 Sediment/Sludge Sampling Prior to Excavation

Objectives

The objectives of collecting composite sediment/sludge samples prior to the excavation of the septic system are for waste characterization of the sediment/sludge materials for eventual transportation and disposal. Based on previous field screening results, the sediment/sludge materials shall be classified as hazardous materials based upon past operations at the site. If TCLP analytical results are below the regulatory concentrations of concern, the waste shall be classified as F001 for spent halogenated solvents.

Sampling Locations, Equipment and Procedures

Upon exposing the cover on the grease trap and leaching tank, a laborer in Level B respiratory protection will collect one sediment/sludge sample (composite from the grease trap and the leaching tank). A wide-mouthed sample bottle should be used.

Procedures for sampling are as follows:

1. Scoop sediment/sludge into the sample bottle from several locations within the grease trap and the leaching tank. This will ensure a composite sample is obtained.
2. Cap the sample bottle immediately. Wipe excess residue from the sides of the bottleware.

3. Affix labels to the sample jar(s), and complete chain-of-custody and other required sample data forms. Protect samples against extreme temperature changes and breakage by placing them in sample coolers stored in a protected area.

Sample Analysis

One composite sediment/soil sample shall be collected and analyzed for waste characteristics as described in Table 4-1. The composite sediment sample shall be collected from the grease trap and the leaching tank and laboratory analyzed for RCRA characteristics, TCLP volatile organics and metals, and TCL volatiles.

5.3 Decontamination

The objective of this section is to provide the methodology for the proper decontamination procedures to be used on chemical sampling and field analytical equipment.

In order to assure that chemical analysis results are reflective of the actual concentrations present at sampling locations, chemical sampling and field analysis equipment must be properly decontaminated prior to the field effort, during the sampling program (i.e. between sample points), and at the conclusion of the sampling program. This will minimize the potential for cross-contamination between sample points and the transfer of contamination off-site.

Prior to sampling, equipment will be decontaminated using the following procedures:

1. Potable water rinse
2. Alconox or Liquinox detergent wash
3. Scrubbing with a scrub brush may be required if the equipment is heavily contaminated with heavy or extremely viscous compounds (not anticipated).
4. Potable water rinse
5. Rinse with 10% nitric acid solution.
6. Distilled, deionized water rinse
7. Methanol rinse
8. Distilled, deionized water rinse
9. Air dry.
10. Wrap sampling equipment in aluminum foil (shiny side out).

Decontamination fluids containing nitric acid and methanol rinse solutions should be containerized separately from rinse water consisting of water and soap only.

6.0 QA/QC VERIFICATION OF FIELD SAMPLING AND PROCEDURES FOR FIELD CHANGES AND CORRECTIVE ACTION

6.1 QA/QC Field Audits

Quality assurance and quality control during the sampling program will be performed by the Foster Wheeler Environmental Project Superintendent (PS). The PS will supervise all sampling and documentation and subcontractor operations to ensure that all activities are being performed in accordance with the SAP. The PS will report all findings to the SPEM.

6.2 Field Changes and Corrective Actions

The SPEM, or his designee, is responsible for all site activities. In this role, the SPEM is required at times to adjust the field program to accommodate site-specific needs. If it becomes necessary to modify a program, the responsible sampling personnel will notify the SPEM of the anticipated changes prior to implementation. Changes will only be acted upon with the SPEM's concurrence. The SPEM will consult with the Navy Technical Representative (NTR) ahead of time for major changes, and receive his/her approval before proceeding.

The changes in the program will be documented on a Change Request Form (CRF), which will be signed by the PS and the SPEM. A typical CRF Form used to document field changes is provided as Figure 5-1. The CRFs for each change will be numbered sequentially starting with the number "01." A copy of the CRF will be attached to the file copy of the SAP. The SPEM is responsible for controlling, tracking, and implementing the identified changes.

7.0 HEALTH AND SAFETY REQUIREMENTS

The site-specific Health and Safety Plan (HASP) is provided as a separate submittal. As required by paragraph 1.2.1, Pre- and Post-Construction documentation, the HASP includes organizational information, a potential hazards assessment, protective equipment requirements, air monitoring, site controls and protective zones, medical surveillance procedures, emergency response and spill control measures, and training requirements.

Figure 5-1

Page _____ of _____

Foster Wheeler Environmental Corporation
Change Request Form

Section 1 through 4 to be filled out by Foster Wheeler, Section 5 to be filled out by Navy

PROJECT: **Navy RAC D.O.**	OFS.No. **1284-00**	Change Request Form: **CRF-** **Rev.**

To: _____ Dept. _____ Location: _____ Date: _____

Re: ☐ Drawing No. _____ Title _____

☐ Spec. No. _____ Title _____

☐ Other _____

1. DESCRIPTION (*Items involved, submit sketch if applicable*) _____

2. REASONS FOR CHANGE (*If from disposition of nonconformance report, list report number*) _____

3. RECOMMENDED DISPOSITION

☐ Technical Clarification [NTR approval required]

☐ Out of Scope [CO/COTR approval required]

☐ Cost Growth

☐ ROM Estimate (If Applicable) $ _____

☐ Schedule Impact _____

FWENC Initiator (Signature/Title):

4. FWENC Project Manager (Signature)	Date	Project Superintendent Concurrence (Signature)	Date

5. NAVY DISPOSITION

☐ Approved per recommended disposition

☐ Not approved (give reason)

☐ Approved with modification(s) [describe below]

NTR Concurrence (*Signature*)	Date	ROICC Concurrence (*Signature*)	Date
Contracting Officer Technical Representative Approval (*Signature*)		Contracting Officer Approval (*Signature*)	Date

Engineer signs and transmits to Resident Engineer with copies to:

_____	Project Manager	Others as Required	_____
_____	Project Superintendent	File:	_____
_____	Quality Control		_____

FORM: CD97#5/97201CRF

8.0 WASTE REMOVAL/REGULATORY COMPLIANCE

This section addresses how the sediment/sludge and concrete/construction materials excavated from the Site 26 sanitary sewer system will be handled.

8.1 Sediment/Sludge

The sediment/sludge materials in the grease trap and leaching tank shall be sampled and analyzed for waste characterization prior to the excavation activities. One composite sample shall be collected and analyzed for TCLP parameters and RCRA characteristics as described in Table 4-1.

8.2 Concrete/Construction Materials

Concrete and other construction materials which make up the sanitary sewer system will be excavated and placed in a lined roll-off container. The concrete shall be classified as F001 hazardous waste due to past operations involving the leach tank.

8.3 Investigation Derived Wastes

As part of the Site 26 septic system excavation, several investigation derived waste streams will be generated. These include decontamination fluids, PPE, and other miscellaneous debris. These wastes shall be collected, stored separately and tested to determine waste characteristics for purposes of waste classification and disposal facility selection. Depending upon classification, investigation derived wastes will be disposed of in accordance with NJDEP solid waste and/or Hazardous Waste Regulations.

8.4 Manifests/Shipping Papers

Foster Wheeler Environmental shall provide completed waste manifests and/or bills of lading and transport documentation to the Navy for review and signature.

8.5 Waste Transport and Disposal

Foster Wheeler Environmental shall subcontract for waste transport and disposal (T&D) services. The T&D subcontractor shall be competitively procured from firms with which Foster Wheeler Environmental has pre-placed basic ordering agreements. This assures the Navy that solid and/or hazardous wastes will be sent to an EPA and NJDEP-approved facilities. All disposal facilities transporters both hazardous and solid waste, to be used for disposal of the Navy's wastes, will be evaluated for regulatory compliance and approved for use in accordance with Foster Wheeler Regulatory Compliance Procedures.

8.6 Hazardous Waste Management

RCRA regulated hazardous wastes, if present, will be placed into appropriate DOT approved containers for disposal. Foster Wheeler Environmental will prepare Waste Profiles, Hazardous Waste Manifests, LDR Notification Forms and other shipping documentation for Navy review and signature prior to off-site disposal. Copies of certified weight tickets, TSDF signed manifests and all disposal documentation documents will be forwarded to the Navy.

If on-site storage of hazardous wastes is required, the proposed hazardous waste storage area will meet generator requirements for less than 90 day storage of hazardous waste, as per 40 CFR 262.34:

- All stored hazardous wastes will be removed from the project site for off-site disposal within 90 days of first being accumulated.

- Each container will be marked with the date on which the accumulation period begins.

- All hazardous waste storage areas will be marked with signs stating "Hazardous Waste."

- For waste containers containing free liquids, the container storage areas will have a containment system capable of collecting and holding spills, leaks and precipitation. The containment system shall have an impervious base underlying the containers which is free of leaks, gaps or cracks. The capacity will be sufficient to contain the entire volume of the largest container or 10% of the entire volume of all of the containers whichever is largest. Run on into the containment system will be prevented. Spilled or leaked waste and accumulated precipitation will be removed from the containment system in as timely a manner as necessary to prevent overflow of the containment system.

- For waste containers which do not contain free liquids, a secondary containment system will not be provided, however the storage area will be designed and operated to drain and remove liquid resulting from precipitation or the containers will be elevated and removed from contact with accumulated precipitation.

- Containers holding reactive or ignitable waste will be stored at least 50 feet (15 meters) from the property line.

- Each container of hazardous waste will be marked and labeled in accordance with US DOT requirements under 49 CFR 172.

- Hazardous Waste Containers will meet US DOT requirements under 49 CFR Parts 173, 178, and 179.

- Each container of hazardous waste of 110 gallons or less will be marked in accordance with US DOT requirements under 49 CFR 172.304 with the following:

  HAZARDOUS WASTE-FEDERAL LAW PROHIBITS IMPROPER DISPOSAL. If found, contact the nearest police or public safety authority or the Environmental Protection Agency.
  Generator Name and Address_____
  Manifest Document Number_____

- Waste will be placed in containers in good condition. If container begins to leak, the contents will be transferred from the defective container into a good container.

- The containers used will be made of or lined with a material that does not react with and is compatible with the waste.

- The containers shall remain closed during storage except when waste is added or removed from the container.

- The containers will not be opened, stored, or handled in a manner which will cause the container to leak.

- The containers will be labeled to accurately identify their contents.

- The storage area and containers will be inspected at least weekly to identify leaks and/or deterioration. Inspection reports will be documented in writing.

- Incompatible wastes will not be placed within the same container or in an unwashed container that previously held an incompatible waste or material.

- A container holding a waste that is incompatible with other wastes or materials will be segregated from the other materials or protected by means of an impermeable dike, wall, berm or other device.

- Upon project closure, all hazardous waste and hazardous waste residues will be removed from the containment system. The containment system will be decontaminated and all wastes will be disposed off-site at a permitted disposal facility.

- Appropriate hazardous training will be provided to site personnel as per 40 CFR 265.16 and 29 CFR 1910.120.

- A Contingency Plan will be developed to handle any fire, spill, or emergency and appropriate emergency response equipment (spill cleanup materials, fire protection equipment, communication devices and alarms to notify workers of an emergency are) and will be present as required under 40 CFR 265 Subparts C & D.

8.7 Solid Wastes

All non-hazardous solid wastes generated on-site will be disposed or recycled in accordance with NJ Solid Waste Regulations and Waste Flow Laws. All solid wastes will be recycled at a NJ permitted recycling facility, or disposed at a solid waste facility designated in the Monmouth County Solid Waste Management Plan. Any intended disposal at an out-of-state facility will be approved in advanced by the NJDEP, in accordance with NJ Solid Waste Flow Laws.

9.0 PROJECT MANAGEMENT

The project management team shall be responsible for all technical and administrative aspects of the remediation project.

9.1 Project Schedule

The project schedule is provided as Figure 9-1.

9.2 Project Staffing Plan

The organization chart for this project is provided in Figure 9-2. The resumes for the primary project staff are included in the Quality Control Plan.

9.3 Meetings

9.3.1 Pre-Construction Meeting

Prior to mobilization, the Project Superintendent shall conduct a pre-construction meeting in the ROICC office. The date and time of the pre-construction meeting shall be approved by the ROICC NTR.

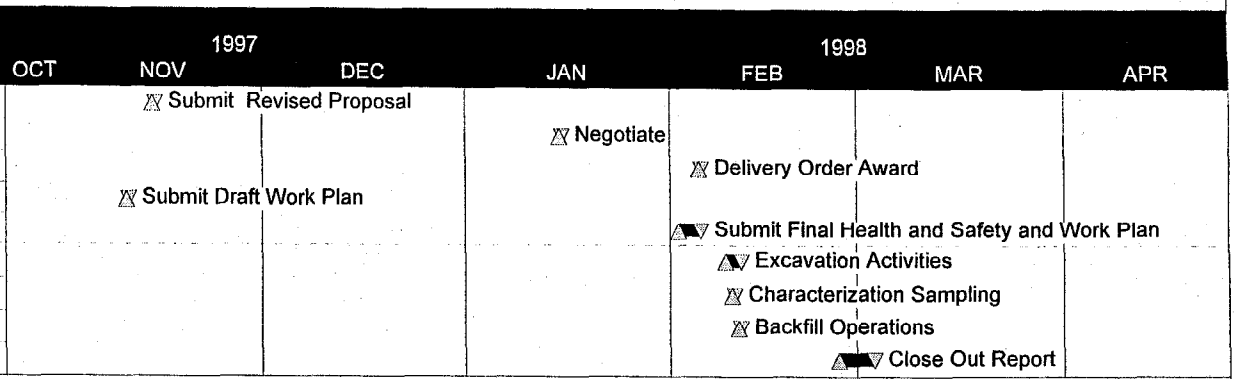
9.3.2 Daily Safety Meetings

Prior to the starting work, a daily safety meeting will be conducted by the Foster Wheeler Environmental Health and Safety Officer. All of the day's planned activities will be reviewed with particular attention focused on PPE and risk. All personnel are required to attend the meeting. Excavation of the sanitary sewer system should not require more than two days.

EXHIBIT 9-1
FOSTER WHEELER ENVIRONMENTAL
Naval Weapons Station Earle
Site 26

PROGRAM MANAGER: A. HOLCOMB

Description	Early Start	Early Finish
Submit Revised Proposal	14NOV97 A	14NOV97 A
Negotiate	15JAN98 A	15JAN98 A
Delivery Order Award	05FEB98 A	05FEB98 A
Submit Draft Work Plan	10NOV97 A	10NOV97 A
Submit Final Health and Safety and Work	02FEB98 A	05FEB98 A
Excavation Activities	09FEB98 A	11FEB98 A
Characterization Sampling	10FEB98 A	10FEB98 A
Backfill Operations	11FEB98 A	11FEB98 A
Close Out Report	26FEB98 A	03MAR98 A



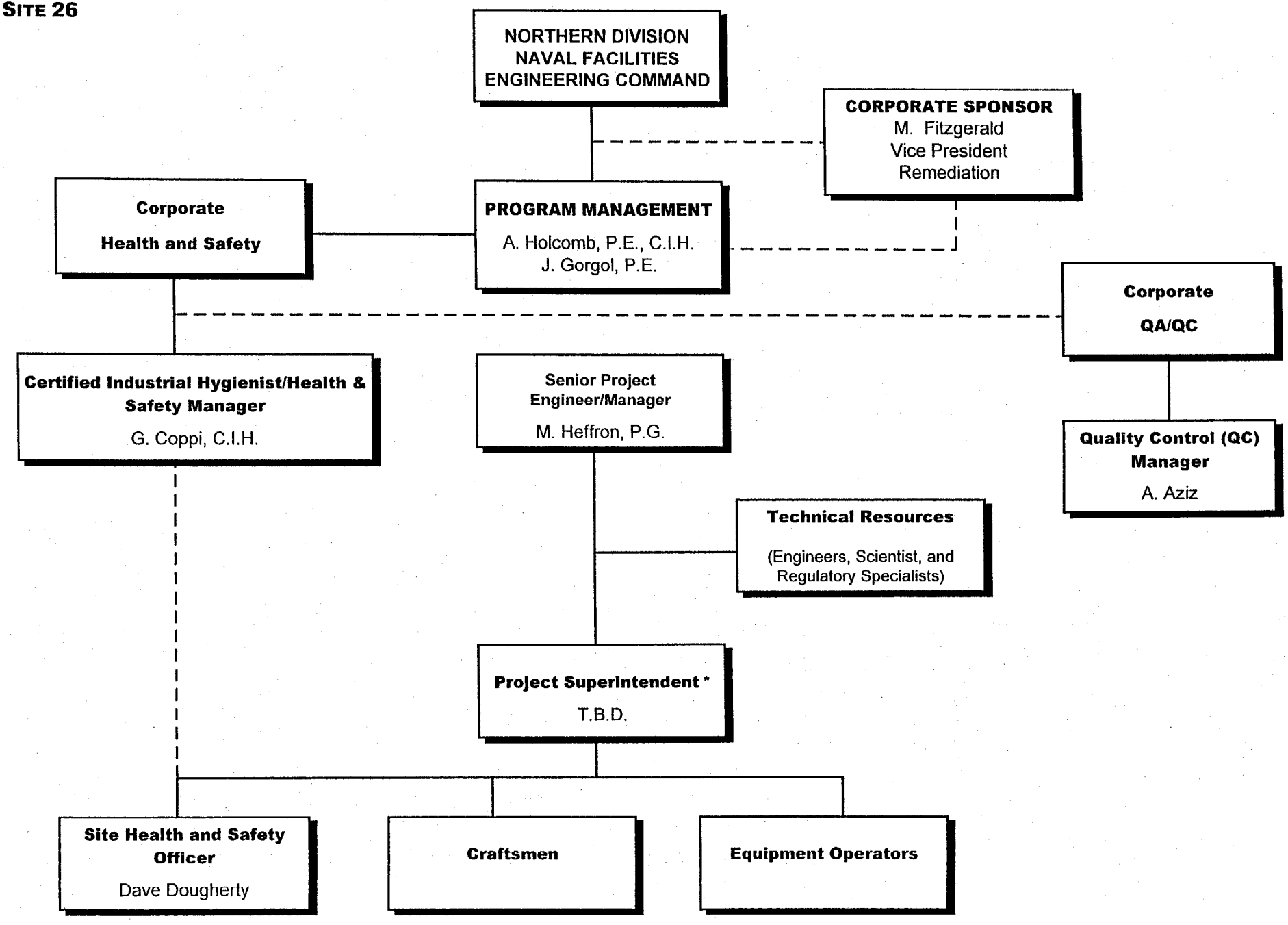
△ Early start point	—— Summary bar
▽ Early finish point	▲ Progress point
Early bar	▲ Critical point
▼ Late finish point	Summary point
Total float bar	Start milestone point
Progress bar	Finish milestone point
Critical bar	

EXHIBIT 9-1
FOSTER WHEELER ENVIRONMENTAL
Naval Weapons Station Earle

Site 26 Remediation

Date	Revision	Checked	Approved
07NOV97	0	MH	JTS
05FEB98	1	MH	

FIGURE 9-2
NAVAL WEAPONS STATION - EARLE
DELIVERY ORDER 17 - MOD 9
SITE 26



10.0 QUALITY ASSURANCE/QUALITY CONTROL

This Quality Assurance/Quality Control (QA/QC) section describes the organization, inspections, tests, procedures, and documentation necessary to produce a completed project which complies with the governing regulations and the technical statement of work.

10.1 Organization and Responsibilities

QA/QC duties are the responsibility of the Senior Project Engineer/Manager (SPEM). He will employ physical inspections, direct measurement, and confirmatory laboratory testing to verify that work is being performed in accordance with the project plans. All subcontractors will conform to and participate in the program described herein as part of a unified team.

Foster Wheeler Environmental will direct and maintain responsibility for the overall QA/QC program and will manage subcontractors in a manner to maintain project requirements. Subcontractors shall be used for drilling, laboratory analysis, and waste disposal.

10.2 Problem or Work Deficiency Meetings

If a major problem or deficiency occurs or is likely to occur, a special meeting to address related issues will be held. The meeting may be attended by the SPEM, Navy Representative(s) and others, as required. Meetings may be conducted at NWS Earle, NorthDiv, or by teleconference. The purpose of the meeting will be to define and resolve potential problems or work deficiencies in the following manner:

- Define and discuss the problem or deficiency
- Review alternative solutions, including their effects on schedule and budget
- Implement plan to resolve the problem or deficiency

10.3 Submittals

The Submittal Register is the QA/QC Plan.

The Quality Control Manager is responsible for maintaining the submittal register and reviewing and certifying that submittals are in compliance with the contract requirements. All submittals will be accompanied by a transmittal form which will identify the submittal and provide a unique tracking number.

10.4 Tests and Inspections

Foster Wheeler Environmental will perform preparatory, initial, and follow-up inspections.

10.5 Changes

If circumstances develop during the project that make it necessary or advisable to revise the Work Plan in order to accomplish project objectives, a Change Request Form (CRF) will be forwarded to the Navy for approval. Events such as a change in the site conditions or system performance may result in a CRF. Changes may be discussed with the Navy Design Manager telephonically and followed up with a CRF to avoid negative impacts on the project budget.

10.6 Documentation

Documentation of operations, record keeping, photographic evidence of work performed, and analytical results will be provided to the Navy in the Closure Report.

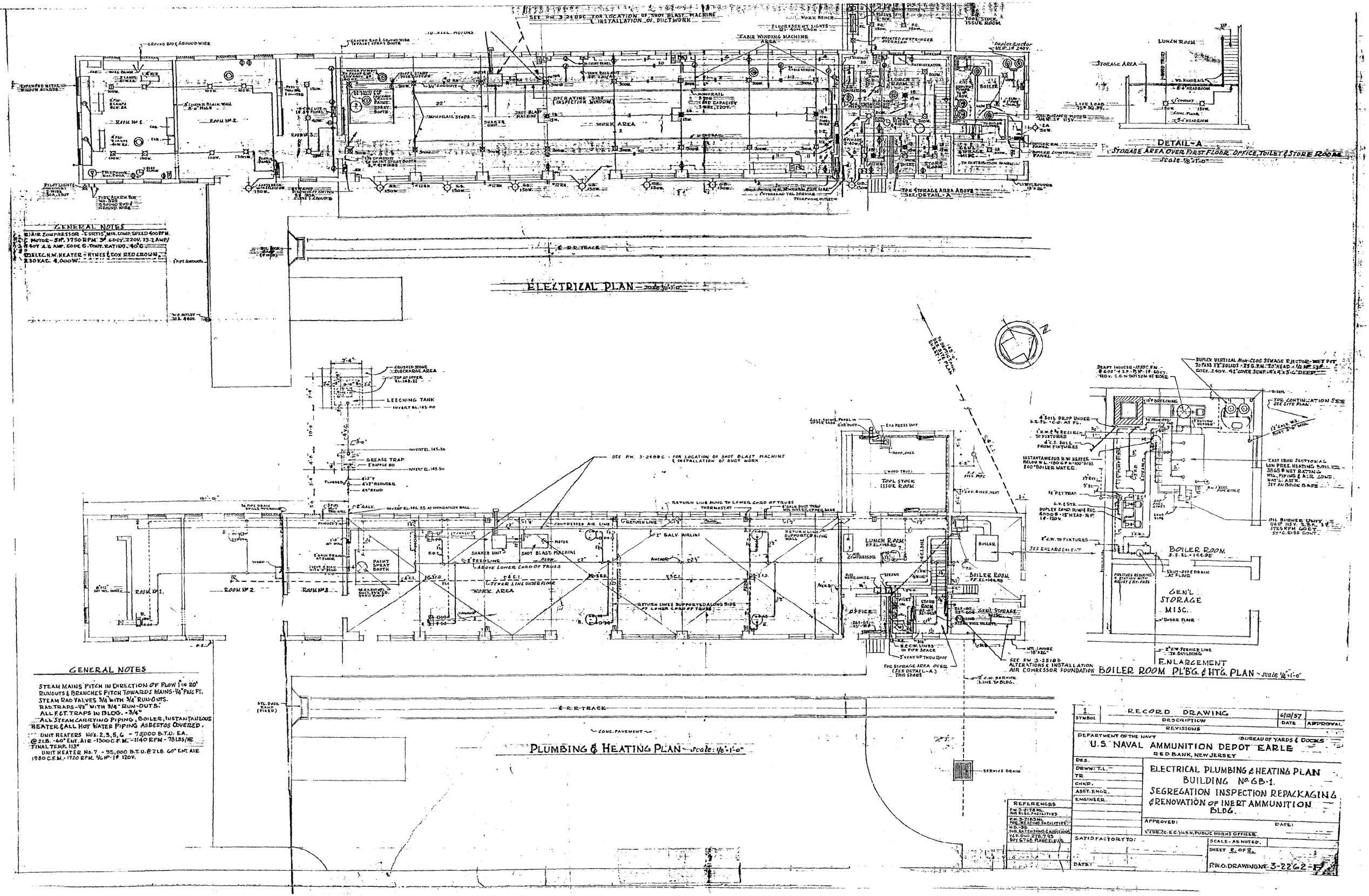
10.6.1 Operations Record Keeping

All field inspection and testing activities will be documented in a project logbook. The project logbook will be maintained in accordance with the relevant Foster Wheeler Environmental Field Technical Guidelines. The Project Manager will maintain records of quality control operations and activities for subcontractors and suppliers.

10.6.2 Photographic Documentation

Still, 35mm color photographs will be taken as needed to record work progress. At a minimum, photographs will be taken of the existing conditions before work begins, during the excavation activities, and following backfill and regrading/reseeding. Photograph location, date and description of the activity recorded will be entered in a photo documentation log. The photographs and log will be submitted with the Closure Report.

APPENDIX A


ELECTRICAL PLAN - scale 1/8"=1'-0"
DETAIL-A
STORAGE AREA OVER FIRST FLOOR, OFFICE, TOILET & STORE ROOM
Scale 1/8"=1'-0"
GENERAL NOTES
AIR COMPRESSOR - CURTIS MIR. COMP. SPEED 400 R.P.M.
MOTOR - 5 HP. 1750 RPM 3 ø 60 CY. 220V. 13.2 AMP/
440V 6.6 AMP. CODE G. CONT. RATING. 40°C
ELEC. H.W. HEATER - HYNES & COX RED BROWN
230 VAC. 4,000 W.
PLUMBING & HEATING PLAN - scale: 1/8"=1'-0"
LEECHING TANK
GREASE TRAP
PAINT SPRAY BOOTH
SHAKER UNIT
SHOT BLAST MACHINE
WORK AREA
LUNCH ROOM
BOILER
BOILER ROOM
OFFICE
TOOL STOCK ISSUE ROOM
GEN'L STORAGE MISC.
ENLARGEMENT
BOILER ROOM PL'BG. & HTG. PLAN - scale 1/4"=1'-0"
GENERAL NOTES
STEAM MAINS PITCH IN DIRECTION OF FLOW 1" IN 20'
RUNOUTS & BRANCHES PITCH TOWARDS MAINS - 1/4" PER FT.
STEAM RAD VALVES 3/4" WITH 3/4" RUN-OUTS.
RAD. TRAPS - 1/2" WITH 3/4" RUN-OUTS.
ALL F.&T. TRAPS IN BLDG. - 3/4"
ALL STEAM CARRYING PIPING, BOILER, INSTANTANEOUS HEATER & ALL HOT WATER PIPING ASBESTOS COVERED.
UNIT HEATERS No's. 2, 3, 5, 6 - 75,000 B.T.U. EA. @ 2 LB. - 60" ENT. AIR - 1300 C.F.M. - 1140 RPM - 7 AMPS/HP.
FINAL TEMP. 112°
UNIT HEATER No. 7 - 95,000 B.T.U. @ 2 LB. 60" ENT. AIR 1980 C.F.M. - 1720 RPM. 1/6 HP - 1ø 120V.
RECORD DRAWING
DESCRIPTION
DATE
APPROVAL
REVISIONS
DEPARTMENT OF THE NAVY
BUREAU OF YARDS & DOCKS
U.S. NAVAL AMMUNITION DEPOT EARLE
RED BANK, NEW JERSEY
ELECTRICAL PLUMBING & HEATING PLAN
BUILDING No. GB-1.
SEGREGATION INSPECTION REPACKAGING & RENOVATION OF INERT AMMUNITION BLDG.
REFERENCES
SCALE - AS NOTED.
SHEET 2 OF 2.
P.W.O. DRAWING No. 3-22662-F