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RAPID ASSESSMENT REPORT FOR SITE 3 BUILDING NS79 ZONE H CNC CHARLESTON SC

9/1/1999

TETRA TECH

Rev.1
09/21/99

Rapid Assessment Report For Site 3, Building NS79

Zone H
Charleston Naval Complex

North Charleston, South Carolina

Southern Division
Naval Facilities Engineering Command

Contract Number N62467-94-D-0888

Contract Task Order 0068

September 1999

Rev.1
09/21/99

RAPID ASSESSMENT REPORT
FOR
SITE 3, BUILDING NS79

ZONE H, CHARLESTON NAVAL COMPLEX
NORTH CHARLESTON, SOUTH CAROLINA

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:
Southern Division
Naval Facilities Engineering Command
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North Charleston, South Carolina 29406

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CONTRACT NUMBER N62467-94-D-0888
CONTRACT TASK ORDER 0068

SEPTEMBER 1999

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EXECUTIVE SUMMARY

Tetra Tech NUS, Inc. (TtNUS) has completed a Rapid Assessment (RA) for Site 3 which includes a closed underground storage tank (UST) and aboveground storage tank (AST) system which supplied fuel oil to Building NS79 at Charleston Naval Complex (CNC) Zone H, in North Charleston, South Carolina. The RA was performed under the direction of the South Carolina Department of Health and Environmental Control's (SCDHEC's) Rapid Assessment Plan and approval letter dated November 4, 1998.

TtNUS performed the following actions during the RA:

- Reviewed available Navy documents to identify potential sources and receptors for petroleum hydrocarbons in the vicinity, to evaluate public and private potable wells, to locate utilities line areas, to locate nearby surface water bodies, and to determine surface hydrology and drainage;
- Reviewed the previously prepared Underground Storage Tank Assessment Report for UST NS79-1 and AST NS79-2 to determine boring locations and monitoring well placements;
- Conducted site survey to identify utilities and to construct a site plan;
- Performed direct push investigation, collected soil and groundwater samples for field screening of total petroleum hydrocarbons using an organic vapor analyzer;
- Collected groundwater samples from direct push borings for mobile lab screening analysis of benzene, toluene, ethyl benzene, total xylenes (BTEX), and diesel range organics.
- Installed three temporary monitoring wells to approximately 12 feet below land surface (bls);
- Installed shallow permanent monitoring wells to approximately 12 feet and 15 bls, and a vertical delineation well to approximately 27 feet bls;
- Collected groundwater samples from the permanent monitoring wells for laboratory analysis of analyzed for BTEX, methyl tert-butyl ether (MTBE), and naphthalene using U.S. Environmental Protection Agency (USEPA) Method 8260 and PAHs using USEPA Method 8270;
- Performed groundwater natural attenuation sampling;
- Collected soil samples for laboratory analysis for BTEX and naphthalene using USEPA Method 8260, polynuclear aromatic hydrocarbons (PAHs) using USEPA Method 8270, total organic carbon (TOC) using USEPA Method 415.1, total recoverable petroleum

hydrocarbons (TRPH) using USEPA Method 9071, and grain size analysis using sieve and hydrometer methods; and

- Surveyed monitoring well and piezometer top of well casing elevations and collected depth to groundwater measurements to evaluate the groundwater flow direction.

Conclusion

No Chemicals of Concern (CoC) were detected in the onsite soils at concentrations that exceed the SCDHEC Risk Based Screening Levels (RBSLs) for a clayey-sand soil matrix. All groundwater CoCs from the March 2, 1999 sampling event were reported below laboratory detection limits and were below the RBSLs. No free product was detected in the groundwater during the RA investigation.

Recommendation

No further action is recommended for this site since concentrations of the detected CoCs were below their respective RBSLs for groundwater and soil.

CERTIFICATION PAGE

I certify that the information contained in this report and on any attachments is true, accurate, and complete to the best of my knowledge, information, and belief.

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1.0 INTRODUCTION

Site 3 is a closed underground storage tank (UST) and closed aboveground storage tank (AST) system located adjacent to Building NS 79 at the Charleston Naval Complex (CNC), Zone H in Charleston, South Carolina. This Rapid Assessment (RA) was performed by Tetra Tech NUS, Inc.'s (TtNUS's) Tallahassee, Florida, office, located at 1401 Oven Park Drive, Suite 102, Tallahassee, Florida 32312 (telephone number 850-385-9899) on behalf of the U.S. Navy Southern Division (SouthDiv) Naval Facilities Engineering Command (NAVFAC), 2155 Eagle Drive, North Charleston, South Carolina (telephone number 843-820-7307). Authorization to conduct the RA for the site was issued by NAVFAC under Contract Task Order (CTO) 0068. The RA was performed under the direction of the South Carolina Department of Health and Environmental Control's (SCDHEC's) Rapid Assessment Plan approval letter dated November 4, 1998. Fieldwork necessary to complete the RA was performed December 3-8, 1998; January 11-21; February 5-21; and March 2-3, 1999, by TtNUS.

1.1 SITE DESCRIPTION

The CNC is in the city of North Charleston, on the west bank of the Cooper River in Charleston County, South Carolina, as shown on Figure 1. This installation consists of two major areas: an undeveloped dredge materials area on the east bank of the Cooper River on Daniel Island in Berkley County, and a developed area on the west bank of the Cooper River. The developed portion of the base is on the peninsula bounded on the west by the Ashley River and on the east by the Cooper River. The site is located within the developed portion of the base as shown on Figure 2.

The area surrounding CNC is "mature urban," having long been developed with commercial, industrial, and residential land use. Commercial areas are primarily west of CNC; industrial areas are primarily to the north of the base along Shipyard Creek. A site vicinity map, which exhibits adjacent properties and structures, vicinity roads, current utilities, and vicinity surface drainage, is included as Figure 2.

Building NS79 served as a medical dispensary and dental clinic for CNC. UST NS79-1 was a 10,000-gallon steel tank and AST NS79-2 was a 500-gallon steel tank. Both of these tanks supplied fuel oil to the boiler for Building NS 79. UST NS79-1 and AST NS79-2 were located on the west side of Building NS79 at distances from the building of approximately 22 and 8 feet, respectively (Figure 3). The UST system for NS79-1 was installed in 1978 and the age of AST system NS79-2 is unknown. It is unknown when either of these systems were last in operation [Supervisor of Ship Building, Conversion and Repair, United

States Navy, Portsmouth Virginia, Environmental Detachment Charleston (SPORTENDETCHASN), 1996).

1.2 SITE HISTORY

In 1901, the U.S. Navy acquired 2,250 acres near Charleston to build a shipyard and the first naval officer was assigned duty in early 1902. Subsequently, buildings and a dry dock were constructed in the Naval Yard. The dry dock was completed in 1909 along with several other brick buildings and the main power plant, which is still in operation today. The first ship was placed in dry dock and work began on fleet vessels in 1910. World War I brought about an expansion of the yards, facilities, land area, and work force. The yard built two gunboats, several submarine chasers, and tugs in addition to performing repairs and other services to the fleet. In 1933, building activity had increased principally in construction of several Coast Guard tugs, a Coast Guard cutter, and a Navy gunboat, creating the need for more facilities and a much larger work force. In 1943 civilian work force peaked with almost 26,000 employees divided among three daily shifts. In 1956, construction began on piers, barracks, and buildings for mine warfare ships and personnel. Later in the decade, the facility became a major home port for combatant ships and submarines of the U.S. Atlantic Fleet [Ensafe/Allan & Hoshall, Inc.(E/A&H), 1996].

In 1993, major cuts in defense spending, as a result in part to the end of the cold war, caused CNC to be added to the list of bases scheduled for closure under the Defense Base Realignment and Closure Act (BRAC). BRAC regulates the closure and transition of property back to the community (E/A&H, 1996). With the scheduled closure of the base, operations were scaled back and environmental cleanup proceeded to make the property available for redevelopment after closure. As part of the environmental cleanup process, the UST and AST systems at Building NS79 were removed on October 16, 1996.

Between October 1 and October 16, 1996, UST NS79-1 and AST NS79-2 were removed, cleaned, and recycled as scrap metal. No corrosion, pitting, or holes were found in the tanks or the supply and return piping for either UST NS79-1 or AST NS79-2 at the time the fuel systems were removed. Oil-stained soils were observed at the edge of the AST foundation adjacent to a blanked drain valve. The oil stains were attributed to either mechanical joint weepage or valve packing leaks. Since the piping for the AST was completed aboveground, no excavating or sampling was performed during the removal of the AST piping. A soil sample was collected near the blanked drain valve at 18 inches below land surface (bls) during the AST removal and contained concentrations of volatile organics (ethylbenzene, total xylenes, and toluene) and naphthalene. The reported concentrations of volatile organics and naphthalene in soil samples were at levels below the Risk Based Screening Levels (RBSLs) established by the South Carolina Department of Health and Environmental Control (SPORTENDETCHASN, 1996).

During the removal of the tank and piping supply and return lines for UST NS79-1, no petroleum contamination or odors were identified in excavated soils or in soil samples collected during the tank removal. A groundwater sample collected from the bottom center of the tank excavation contained a total xylenes concentration of 2 micrograms per liter (ug/L), which is below the groundwater RBSL. Upon removal of the UST, excavated soils were returned to the tank pit excavation (SPORTENDETCHASN, 1996). Soil and groundwater sampling locations and laboratory data are provided in the Underground Storage Tank Assessment Report for UST NS79-1 and AST NS79-2 which is included in Appendix A.

1.3 RECEPTOR SURVEY RESULTS

A survey of the site vicinity was conducted by TtNUS personnel to identify potential receptors for petroleum hydrocarbon contamination. The site plan (Figure 2) depicts the public utilities located within 250 feet of the former UST NS79-1 and AST NS79-2 study area. Specific information concerning the depth of utilities below land surface is currently unavailable. However, according to facility personnel, utility lines are typically located approximately 2 to 6 feet bls (SPORTENVDETCHASN, 1999). The following utility receptors were located:

- Water utility, sanitary sewer utility: A sanitary sewer line originates on the west central side of Building NS79 and extends toward the northwest. The sanitary sewer line extending from Building NS 79 toward the northwest, is located adjacent to the south side of the concrete pad previously used by AST NS79-2, and approximately 30 feet north of UST NS79-1. Sanitary sewer lines are also located north of Dyress Avenue. A water utility extending from the south, borders the west side of Building NS79. The water utility enters Building NS 79 approximately 15 feet south of AST NS79-2 and approximately 20 feet north of UST NS79-1. The water line is located approximately 10 feet west of UST NS79-1. Water utility lines also border the north side of Dyress Avenue and the west side of Holland Street. A water utility supplies water to Building 642 located south of Building NS79.

- Electrical utility: An underground primary electrical subsurface utility is located on the south west side of Building NS79. The electrical utility is located approximately 15 feet west of UST NS79- 1 and extends toward the northeast near the concrete pad for AST NS79-2.

- Telephone utility: A telephone utility originates from Building NS79 approximately 15 feet north of UST NS79-1 and extends to the southwest.

- Storm sewer utility: A primary storm sewer utility line is located west of Building NS 79 in the facilities parking lot. This storm sewer is connected to a storm sewer line that receives rain water from drain gutter storm sewers for Building NS79. The drain gutter storm sewers are located adjacent to the north, east, and west sides of Building NS79. The storm utility lines are also present along the south side of Dress Avenue and east side of Holland Street. The nearest down gradient storm sewer lines are located approximately 40 feet west and 20 feet north of UST NS79-1. A drain gutter storm sewer line is also located approximately 8 feet east of UST NS79-1.

A survey of groundwater users within a 7-mile radius of CNC was performed for the Final RCRA Facility Investigation Report for Zone H (E/A&H, 1996). According to this report, a survey of groundwater users within a seven-mile radius of CNC was conducted by the South Carolina Water Resources Commission to ascertain the extent of any shallow groundwater usage. Results of the water use investigation revealed that no drinking water wells, which utilize the shallow aquifer, are located within a four-mile radius of CNC. Irrigation wells were not identified within 1,000 feet of the site. Numerous monitoring wells are located within 1,000 feet of the site. The nearest surface water body to UST NS79-1 is the Cooper River located approxiamtely 960 feet to the north.

There are no city, county, or state zoning ordinances as the property (CNC) is currently owned by the federal government. Information concerning zoning ordinances was obtained from the SOUTHDIV Remedial Project Manager located at 2155 Eagle Drive, North Charleston, South Carolina (telephone number 843-820-7307).

1.4 REGIONAL GEOLOGY AND HYDROGEOLOGY

CNC is located in Charleston County, South Carolina, in the Lower South Carolina Coastal Plain Physiographic Province on the Cooper River side of the Charleston Peninsula. The peninsula is formed by the confluence of the Cooper and Ashley Rivers. Topography in the area is typical of the South Carolina lower coastal plain and is characterized by having low-relief plains broken by the meandering streams and rivers, flowing toward the coast past occasional marine terrace escarpments (E/A&H, 1996).

The geology of the Charleston area is typical of the southern Atlantic Coastal Plain. Cretaceous-age and younger sediments thicken seaward and are underlain by older igneous and metamorphic basement rock. Surface exposures consist of recent or Pleistocene sands, silts, and clays of high organic content referred to as the Wando Formation (E/A&H, 1996). Underlying the Wando Formation, increasing with age, are the Oligocene-age Cooper Group and the Eocene–age Santee Limestone. The Cooper Group is comprised of the Parkers Ferry, Ashley, and Harleyville Formations. The formation of particular importance in the

Cooper Group is the Ashley Formation, which was formerly referred to as the Cooper Marl in most regional geologic literature. In more recent geologic nomenclature, the name "Cooper" has been given to a group of formations including the Ashley Formation, a pale green to olive-brown, sandy phosphoric limestone or marl, which is locally muddy and/or sandy. The Ashley Formation in the Vicinity of Charleston is encountered at a depth of approximately 30 to 70 feet bls. The top of the Ashely Formation has been reported to be associated with an erosional basin and the entire Cooper Unit, including the Ashley Formation, is indicated to be approximately 300 feet thick (E/A&H, 1996).

Groundwater occurs under water table or poorly confined conditions within the recent or Pliestocene deposits overlying the Ashley Formation of the Cooper Group. Transmissivity in the Pleistocene aquifer is generally less than 1,000 feet per day and well yields are variable, ranging from 0 to 200 gallons per minute (gpm). This groundwater contains high concentrations of iron and is commonly acidic at shallow depths (E/A&H, 1996).

The Cooper Group is hydrogeologically significant mainly because of its low permeability. In most locales, its sandy, finely granular limestone produces little or no water, but instead acts as confining material causing artesian conditions in the underlying Santee Limestone. Yields from wells in the Santee are usually less than 300 gpm (E/A&H, 1996).

2.0 ASSESSMENT INFORMATION

2.1 SITE-SPECIFIC GEOLOGY AND HYDROGEOLOGY

2.1.1 Site Geology

Eighteen direct push soil borings were advanced at Site 3 under the supervision of a TtNUS geologist between December 3, 1998, and January 11, 1999 (see Figure 3). These borings ranged in depth from 4 to 12 feet bls and provided soil samples to characterize the subsurface lithology. Six shallow monitoring wells were installed between January 19 and February 8, 1999. Five of these wells were installed to a depth of 15 feet bls and one well was completed to a depth of 12 feet bls. Grab samples were collected to describe the subsurface lithology during the installation of the shallow monitoring wells. On February 8-9, 1999 a vertical delineation well was installed; and during the drilling process lithologic samples were collected using a split-spoon sampler to characterize the subsurface lithology from 15 to 27 feet bls.

Based on lithologic descriptions from the soil borings and monitoring wells, the subsurface soils generally consists of sand, silty sand, clayey sand, and sandy clay interlayers from the surface to approximately 8 to 12 feet bls. Underlying these deposits a dark gray mucky clay was encountered to a depth of 27 feet bls. A general view of the subsurface lithology is presented in Figures 4 and 5. Boring logs are presented in Appendix B.

2.1.2 Site Hydrogeology

Six shallow water table monitoring wells and one deep vertical delineation monitoring well were installed as part of this RA investigation (see Figure 3). The shallow monitoring wells were completed at depths of 12 feet and 15 feet bls. Each shallow monitoring well was completed using 10 feet of 0.01-inch machine slotted Schedule 40 polyvinyl chloride (PVC) screen that bracketed the water table. The vertical delineation well was completed as a Type III monitoring well with 6-inch-diameter PVC surface casing grouted to a depth of 20 feet bls. After the grout for the surface casing cured for 24 hours, the borehole was advanced to a depth of 27.5 feet and a 2-inch-diameter PVC monitoring well was installed with a 5-foot, 0.01-inch machine-slotted PVC screen. Well construction logs for the RA monitoring wells are presented in Appendix B. At the completion of the well installations, a South Carolina registered professional surveyor surveyed each monitoring well location and the top of casing elevation.

Three temporary small diameter PVC piezometers, CNC03-P01, CNC03-P02, and CNC03-P03, were installed in borings CNC03-B02, CNC03-B04, and CNC03-B07, respectively. Each piezometer was constructed of 1-1/4-inch diameter Schedule 80 PVC threaded casing and well screen. The screen section of each piezometer was installed to bracket the water table. The piezometers were completed at depth of 11 to 12 feet bls, and each piezometer contained a 10-foot PVC screen section bracketing the water table. Each piezometer top of casing elevation was surveyed by a TtNUS geologist to a local reference point. The groundwater elevation data obtained from the piezometers was used in conjunction with the field screening data to aid in the placement of permanent monitoring wells.

A complete round of groundwater elevations was collected from the site monitoring wells on February 20, 1999 and March 2, 1999, and is presented in Table 1. The depth to groundwater measurements collected on these dates indicate groundwater occurs under unconfined conditions at depths of approximately 5 to 6 feet bls. Figures 6 and 7 presents the groundwater potentiometric surface for February 20, 1999 and March 2, 1999, respectively. Based on the potentiometric maps, groundwater flow is toward the northwest.

As part of the Final RFI Report for Zone H (E/A&H, 1996), a tidal influence investigation was conducted. The objective of the investigation was to provide long-term water level monitoring to determine the effects of the tidal fluctuation on wells and groundwater flow throughout Zone H. During the tidal study water levels were recorded in 19 wells throughout Zone H over a period of 4 days. Measurements were recorded every hour using data loggers. The 4-day period spanned nine high and nine low tide cycles.

Results of the tidal survey identified a maximum fluctuation in shallow monitoring wells of 1.12 feet with monitoring wells located closer to the tidal source being more influenced by tidal changes than wells on the peninsula. The heterogeneity of the aquifer material may limit or accentuate the tidal response in some wells. Tidal influence from Shipyard Creek appears to be greater than that of the Cooper River (possibly because of the quay wall along the Cooper River). The report concluded the minimal fluctuations in the groundwater levels were not expected to play a significant role in directing contaminant transport in any direction other than that determined by the natural groundwater gradient (E/A&H, 1996).

2.2 ASSESSMENT RESULTS

Eighteen soil borings were completed as part of the screening portion of the soil investigation at Site 3. Seven soil borings were completed to collect soil samples for analysis at a fixed base laboratory to confirm the Chemicals of Concern (CoC). The soil borings for screening evaluation were completed using a Direct Push Technology (DPT) rig; and samples were collected to evaluate subsurface soil vapors, soil contaminant concentration (via a mobile laboratory), and groundwater contaminant concentrations (via a

mobile laboratory). The soil samples were collected from a maximum depth of 6 feet bls. The soil and groundwater samples collected for mobile laboratory screening were analyzed for benzene, toluene, ethyl benzene, and total xylenes (BTEX), and diesel range organics.

Soil samples collected for fixed base laboratory analysis were analyzed for BTEX and naphthalene using U.S. Environmental Protection Agency (USEPA) Method 8260; and polynuclear aromatic hydrocarbons (PAHs) using USEPA Method 8270. One sample was collected for total organic carbon (TOC) analysis using USEPA Method 415.1, total recoverable petroleum hydrocarbons (TRPH) using USEPA Method 9071 and grain size analysis using sieve and hydrometer methods. The sample collection was conducted in accordance with The SCDHEC guidance document "Standard Limited Assessment" (June 1997). Lithologic logs for each soil boring are presented in Appendix B. The soil boring locations are shown on Figure 3 and the assessment results are presented in Section 2.4.1.

A comprehensive groundwater monitoring event was conducted on March 2, 1999. Groundwater sampling was conducted using a peristaltic pump and low flow, quiescent techniques. The monitoring wells were sampled in accordance with SCDHEC guidance document "South Carolina Risk-Based Corrective Action for Petroleum Releases" (January 1998). Each well was purged of three to six well volumes or until water quality parameters of pH, temperature, and conductivity stabilized. The field data sheets are included in Appendix C. A summary of the field parameter measurements is presented in Table 2. Groundwater samples were analyzed for BTEX, methyl tert-butyl ether (MTBE), and naphthalene using USEPA Method 8260 and PAHs using USEPA Method 8270. Three of the groundwater samples were also analyzed for the following natural attenuation parameters: dissolved oxygen, alkalinity, carbon dioxide, sulfide, ferrous iron, nitrite, manganese, nitrogen/nitrate, sulfate, and methane. The natural attenuation parameters are summarized in Table 3.

2.3 FIELD SCREENING ASSESSMENT

2.3.1 Soil Vapor Assessment

Eighteen soil borings were completed to evaluate soil vapor concentrations as part of the soil screening assessment at Site 3. Organic vapor analyzer (OVA) headspace measurements were recorded at 1-foot intervals to the top of the water table. Table 4 summarizes the soil vapor screening results. Figure 3 presents the soil boring locations.

Soil vapor concentrations ranged from not detected to less than 10 parts per million (ppm) in samples collected from 17 of the borings. Soil samples from one soil boring detected soil vapor concentrations at

70 ppm at a depth of 1 to 2 feet bls. The results of the soil vapor survey indicate very low levels of soil vapors are present in the former UST area.

The soil vapor assessment was used as a screening method to assist in identifying locations for collection of soil samples and groundwater monitoring wells. Soil sample and monitoring well locations were determined, in part, based on these data.

2.3.2 Soil Mobile Lab Results

Soil samples were collected at each boring for analysis by a mobile laboratory. The samples were analyzed for BTEX and diesel range organics using USEPA Method 8260. The soil samples were selected based on the soil vapor screening results with the additional criteria that the samples originate in the vadose zone above the water table. Table 5 presents a summary of the analytical data from the mobile laboratory.

As indicated in Table 5, analytical results from the soil mobile laboratory field screening reported BTEX below detection limits in all the samples. Diesel range organics were detected in samples at eight boring locations with concentrations ranging from 154.24 to 18,934.91 parts per billion (ppb). Samples from four borings detected diesel range organic concentrations ranging from 154.24 to 532.06 ppb. Diesel range organic concentrations ranging from 1,528.49 to 3,072.74 ppb were reported in samples collected from three borings.

The mobile laboratory soil analysis was used as a screening method to assist in identifying locations for collection of soil samples for fixed base laboratory analysis and locations for groundwater monitoring wells. Soil sample and monitoring well locations were determined in part based on these data.

2.3.3 Groundwater Mobile Lab Results

One groundwater sample was collected from 15 of the soil borings and analyzed in a mobile laboratory for BTEX and diesel range organics using USEPA method 8260. Table 6 presents a summary of the analytical data from the mobile laboratory.

As indicated in Table 6, BTEX were reported below detection limits in all samples. Diesel range organics in groundwater were detected at two borings at concentrations of 115.41 and 80.98 ppb.

The mobile laboratory groundwater analysis was used as a screening method to assist in identifying locations for permanent monitoring wells for the collection of groundwater samples for fixed base laboratory analysis

2.4 CHEMICALS OF CONCERN IN SOIL AND GROUNDWATER

2.4.1 Chemicals of Concern in Soil

Seven subsurface soil samples (plus one duplicate sample) were collected at Site 3 for fixed base laboratory analysis. The soil boring locations are shown on Figure 3, and Table 7 summarizes the CoCs detected in the soil samples. The RBSLs for the site was established for a clayey sand soil based on a grain size analysis completed on sample 03SLB0305 indicating a clayey sand matrix (Appendix D).

Benzene was detected in each soil sample except 03SLB0305. BTEX was detected in soil samples 03SLB0503 and 03SLB0804. Toluene and ethylbenzene concentrations were also detected in sample 03SLB1101. All soil BTEX were reported at concentrations below the RBSLs. Benzo(b)fluoranthene was the only PAH CoC detected in the soil. Benzo(b)fluoranthene was detected in samples 03SLB0305 and 03SLB1101 at concentrations below the RBSL. All other PAH CoCs were reported below laboratory detection limits and below the RBSLs. Figures 8 through 12 illustrate the areal distribution of CoCs detected in the soil samples.

2.4.2 Chemicals of Concern in Groundwater

Groundwater analytical data sheets for the March 1999 field event are presented in Appendix C. Table 8 presents the analytical results for CoCs analyzed in the groundwater samples. All groundwater CoCs were reported below laboratory method detection limits and less than the RBSLs for the March 2, 1999, sampling event. None of the CoCs were detected above method detection limits in the on-site deep monitoring well CNC03-M07.

2.5 ANALYTICAL DATA

All analytical data from the 1996 Underground Storage Tank Assessment Report for UST NS79-1 and AST NS79-2 are presented in Appendix A. Soil analytical data generated during this RA are summarized in Table 7. Groundwater analytical data generated during this RA are summarized in Table 8. The soil and groundwater analytical reports for this RA are included in Appendix D.

2.6 AQUIFER CHARACTERISTICS AND EVALUATION

Groundwater levels were measured on February 20 and March 2, 1999, to evaluate the groundwater flow direction. Water level contours plotted on Figures 6 and 7 indicate the groundwater flow direction is toward the northwest. The hydraulic gradient between monitoring wells CNC03-M02 and CNC03-M04 on March 2, 1999, was 0.0068 feet per foot.

As part of the Final RFI Report for Zone H, rising and falling head slug tests were conducted on 19 shallow monitoring wells throughout Zone H to determine the hydraulic conductivity of the surficial aquifer (E/A&H, 1996). Slug tests were conducted by instantaneously removing (rising head) or adding (falling head) a volume (slug) of water from the well and measuring the recovering water level with a data logger. The data were then used to calculate the hydraulic conductivity for the rising head test and the hydraulic conductivity for the falling head test. The average hydraulic conductivity for each well was determined by calculating the geometric mean of the rising and falling head values. Because hydraulic conductivity data are lognormally distributed, the geometric mean was determined to be the most representative measure of central tendency.

The well construction details and boring logs for each well tested during the RCRA investigation were reviewed to determine which wells were most representative of the conditions present at Site 3. To make this determination the screened interval, lithology, and proximity to the site were evaluated. Based on this evaluation, monitoring well NBCH653001 was selected as the most representative well. NBCH653001 is located accross the street from the site and is completed to a depth of approximately 13 feet with a 10-foot screened interval. The boring log indicates that the lithology consists of alternating sand, silty sand, clayey sand, and sandy clay, similar to the lithology observed at Site 3. The geometric mean of the rising and falling head conductivities for NBCH653001 was 0.631 feet per day.

Potential movement of groundwater at the site may be described in terms of transportation by natural flow system in the saturated zone, assuming groundwater flow follows Darcy's Law.

Darcy's Law may be expressed as:

$$V = \left(\frac{K}{n}\right) x\, i$$

where:

V = average velocity

K = hydraulic conductivity = 0.631 ft/day

n = effective porosity = 0.42
(from sieve results of 87.0% sand & 7.5% clay and Figure C1 in SCDHEC, 1998)

i = most recent hydraulic gradient measurement = 0.0068 ft/ft

therefore:

$$V = \left(\frac{0.631\,\text{ft/day}}{0.42}\right) x\ 0.0068\ \text{ft/ft}$$

$$V = 0.0102\ \text{ft/day}$$

In summary, the seepage velocity of the surficial aquifer was calculated to be approximately 3.7 feet per year based on a hydraulic conductivity of 0.631 feet per day, a hydraulic gradient of 0.0068 feet per foot, and a porosity of 42 percent for clayey sand. Aquifer characterization graphs are provided in Appendix E.

2.7 FATE AND TRANSPORT MODEL DESCRIPTION

No soil or groundwater concentrations exceed the SCDHEC RBSLs; therefore, evaluation of Site 3 will stop at Tier 1. Fate and transport modeling is not required for Tier 1 evaluation.

2.8 PREDICTED MIGRATION AND ATTENUATION OF CHEMICALS OF CONCERN

Since fate and transport modeling was not performed, predication and attenuation of chemicals of concern was not evaluated.

3.0 TIER 1 EVALUATION

3.1 COMPARISON OF ANALYTICAL RESULTS WITH RBSLs

Soil samples collected on January 13 and 14, 1999, were analyzed for BTEX and PAH constituents. Benzene concentrations were detected in seven soil samples ranging in concentration from 0.9585 ug/kg to 4.84 ug/kg, and total xylenes was detected in two soil samples at .993 ug/kg and 61.80 ug/kg. Toluene and ethylbenzene concentrations were each detected in three samples. Toluene ranged in concentration from 1.28 ug/kg to 2.88 ug/kg, and ethylbenzene was reported at 9.40 ug/kg, 1.13 ug/kg, and .780 ug/kg. PAH compound benzo(b)fluoranthene was detected in two soil samples at 356 ug/kg and 362 ug/kg. No CoC analyte concentration exceeded its RBSL for a clayey sand soil matrix less than 5 feet above groundwater. A comparison of soil groundwater concentrations to RBSLs is summarized in Table 7.

Groundwater samples collected on March 2 and 3, 1999 were analyzed for BTEX, MTBE, and PAH. All groundwater CoC analyte concentrations were reported below laboratory detection limits and below the SCDHEC RBSL. A comparison of the groundwater concentrations to RBSLs is summarized in Tables 7 and 8.

3.2 SITE CONCEPTUAL EXPOSURE MODEL

This section focuses on the current and future land use issues concerning the site. Figure 1 shows that the site is surrounded by the City of North Charleston and therefore is in an urban setting. The facility is a former medical dispensary and dental clinic for CNC. The facility is included in the BRAC activities; therefore, the future use of the facility is unknown.

The City of Charleston provides drinking water for CNC. A water well survey conducted as part of the Final RCRA Facility Investigation for Zone H did not reveal the presence of any shallow water supply wells within 1,000 feet of the site (E/A&H, 1996).

The CNC is located on the Cooper River with the site located approximately 960 feet from the river. Groundwater at the site flows to the northwest, toward the river.

3.3 EXPOSURE PATHWAY ANALYSIS

This section presents the receptor characterizations of the potentially exposed populations in the vicinity of the site and identifies the potentially complete exposure pathways for those receptors. SCDHEC requires that only those exposure pathways with COC concentrations exceeding Tier 1 RBSL concentrations are examined in a Tier 2 Risk-Based Corrective Action Report. Since there were no COC concentrations exceeding the RBSLs, an exposure pathway analysis is not required.

3.4 IDENTIFICATION OF DATA REQUIREMENTS

No additional data is required.

3.5 SITE-SPECIFIC TARGET LEVELS

Site-specific target levels (SSTLs) were not required because soil and groundwater concentrations did not exceed RBSLs.

3.6 RECOMMENDATIONS

Concentrations of detected CoCs were below their respective RBSLs for soil and groundwater, therefore no further action is recommended for this site.

4.0 REFERENCES

E/A&H (Ensafe/Allen & Hoshall, Inc.) 1996. Final RCRA Facility Investigation Report for Zone H, Naval Base Charleston, Charleston, South Carolina, July 5, 1996.

SCDHEC (South Carolina Department of Health and Environmental Control), 1997. Standard Limited Assessment, June 1997.

SCDHEC, 1998. South Carolina Risk-Based Corrective Action for Petroleum Releases, January 1998.

SPORTENDETCHASN (Supervisor of Ship Building, Conversion and Repair, United States Navy, Portsmouth Virginia, Environmental Detachment Charleston), 1996. Underground Storage Tank (UST) Assessment Report, Charleston Naval Base Complex, North Charleston, South Carolina, October 16, 1996.

SPORTENDETCHASN, 1999. Personal Contact between Paul Calligan TtNUS and Copes Wannamacker SPORTENDETCHASN, June 17, 1999.

TABLE 1

GROUNDWATER ELEVATIONS
SITE 3, BUILDING NS79
ZONE H, CHARLESTON NAVAL BASE COMPLEX
NORTH CHARLESTON, SOUTH CAROLINA

Well No.	Total Depth of Well (ft)	Top of Casing Elevation, ft (MSL)	Date Measured	Depth to Free Product (BTOC)	Depth to Water, ft (BTOC)	Groundwater Elevation, ft (MSL)
CNC03-M01	15	8.59	1/19/99	NM	NM	0.00
			2/6/99	ND	4.77	3.82
			2/20/99	ND	5.50	3.09
			3/2/99	ND	5.77	2.82
CNC03-M02	15	8.36	1/19/99	ND	10.82	-2.46
			2/6/99	ND	4.24	4.12
			2/20/99	ND	5.01	3.38
			3/2/99	ND	5.30	3.06
CNC03-M03	15	7.49	1/19/99	ND	7.92	-0.43
			2/6/99	ND	3.82	3.67
			2/20/99	ND	4.57	2.92
			3/2/99	ND	4.81	2.68
CNC03-M04	15	7.22	1/19/99	ND	8.01	-0.79
			2/6/99	ND	3.86	3.36
			2/20/99	ND	4.58	2.64
			3/2/99	ND	4.78	2.44
CNC03-M05	15	9.06	1/19/99	ND	9.85	-0.79
			2/6/99	ND	5.17	3.89
			2/20/99	ND	5.82	3.24
			3/2/99	ND	6.06	3.00
CNC03-M06	27	8.16	2/20/99	ND	3.10	5.06
			3/2/99 *	ND	11.02	-2.86
CNC03-M07	12	7.78	2/20/99	ND	4.99	2.79
			3/2/99	ND	5.19	2.59

TABLE 1 (CONTINUED)

GROUNDWATER ELEVATIONS
SITE 3, BUILDING NS79
ZONE H, CHARLESTON NAVAL BASE COMPLEX
NORTH CHARLESTON, SOUTH CAROLINA

Well No.	Total Depth of Well (ft)	Top of Casing Elevation, ft (LRS)	Date Measured	Depth to Free Product (BTOC)	Depth to Water, ft (BTOC)	Groundwater Elevation, ft (LRS)
CNC03-P01	12	100.00	12/5/98	ND	8.30	91.70
			12/6/98	ND	8.35	91.65
CNC03-P02	11	100.07	12/5/98	ND	8.29	91.78
			12/6/98	ND	8.30	91.77
CNC03-P03	11	100.52	12/5/98	ND	8.69	91.83
			12/6/98	ND	8.75	91.77

Notes:
MSL - Mean Sea Level
BTOC - Below Top of Casing
LSR - Local Relative Survey
ft - feet
NM - Not Measured
ND - Not Detected
* - Water level still recovering at time of measurement

TABLE 2

GROUNDWATER FIELD MEASUREMENTS
SITE 3, BUILDING NS79
ZONE H, CHARLESTON NAVAL COMPLEX
NORTH CHARLESTON, SOUTH CAROLINA

Well I.D.	Date Sampled	Purge method	Volume (gallons)	Temp. (° C)	pH	Conductivity (uMHOS/cm)	Turbidity (NTU)
CNC03-M01	3/2/99	PP	7.5	18.0	7.20	4.46	0.60
CNC03-M02	3/2/99	PP	8.0	17.9	7.07	7.94	0.93
CNC03-M03	3/2/99	PP	8.5	18.6	7.00	6.73	1.77
CNC03-M04	3/2/99	PP	8.0	17.6	7.05	5.19	0.82
CNC03-M05	3/2/99	PP	8.0	17.4	7.14	4.60	1.61
CNC03-M06	3/3/99	PP	8.0	19.9	7.65	29.10	1.0
CNC03-M07	3/2/99	PP	7.0	17.1	7.62	2.48	0.26

Notes:
(° C) - Degrees Celcius
PP - Peristaltic pump, low flow technique.
uMHOS/cm - Micro HOS per centimer
NTU - Nephelometric turbidity units

TABLE 3

GROUNDWATER NATURAL ATTENUATION FIELD MEASUREMENTS
SITE 3, BUILDING NS79
ZONE H, CHARLESTON NAVAL COMPLEX
NORTH CHARLESTON, SOUTH CAROLINA

Well I.D.	Date Sampled	Dissolved Oxygen (mg/l)	Akalinity (mg/l)	Carbon Dioxide (mg/l)	Sulfide (mg/l)	Ferrous Iron (mg/l)	Nitrite (mg/l)	Manganese (mg/l)	Nitrogen/ Nitrate (mg/l)*	Sulfate (mg/l)*	Methane (ug/l)
CNC03-M01	3/2/99	0.0	570	564	0.13	0.45	0.0	0.0	ND	48.0	6,000
CNC03-M02	3/2/99	0.0	1,550	660	0.0	3.30	0.14	13.2	ND	20.6	6,700
CNC03-M07	3/2/99	0.0	350	184	0.0	0.19	0.0	0.4	ND	38.2	1,900

Notes:

mg/l - Milligrams per liter

ug/l - Micrograms per liter

* Fixed base laboratory analysis

TABLE 4

SUMMARY OF OVA SOIL SCREENING RESULTS
SITE 3, BUILDING NS79
ZONE H, FORMER CHARLESTON NAVAL COMPLEX
NORTH CHARLESTON, SOUTH CAROLINA

Sample Location	Sample Identification	Sample Depth (feet)	Total Organic Vapor Headspace Concentration (PPM)
CNC03-B01	03SSB0101	1	4
	03SSB0102	2	4
	03SSB0103	3	3
	03SSB0104	4	2
CNC03-B02	03SSB0201	1	3
	03SSB0202	2	4
	03SSB0203	3	3
	03SSB0204	4	3
	03SSB0205	5	5
CNC03-B03	03SSB0301	1	4
	03SSB0302	2	5
	03SSB0303	3	5
	03SSB0304	4	6
	03SSB0305	5	8
CNC03-B04	03SSB0401	1	3
	03SSB0402	2	4
	03SSB0403	3	3
	03SSB0404	4	5
	03SSB0405	5	3
CNC03-B05	03SSB0501	1	ND
	03SSB0502	2	1
	03SSB0503	3	2
	03SSB0504	4	1
	03SSB0505	5	1
CNC03-B06	03SSB0601	1	2
	03SSB0602	2	1
	03SSB0603	3	ND
	03SSB0604	4	2
	03SSB0605	5	1
	03SSB0606	6	ND
CNC03-B07	03SSB0701	1	ND
	03SSB0702	2	2
	03SSB0703	3	3
	03SSB0704	4	3
	03SSB0705	5	3
CNC03-B08	03SSB0801	1	5
	03SSB0802	2	5
	03SSB0803	3	6
	03SSB0804	4	6
CNC03-B09	03SSB0901	1	5
	03SSB0902	2	6
	03SSB0903	3	3
	03SSB0904	4	4
	03SSB0905	5	3

TABLE 4 (CONTINUED)

SUMMARY OF OVA SOIL SCREENING RESULTS
SITE 3, BUILDING NS79
ZONE H, FORMER CHARLESTON NAVAL COMPLEX
NORTH CHARLESTON, SOUTH CAROLINA

Sample Location	Sample Identification	Sample Depth (feet)	Total Organic Vapor Headspace Concentration (PPM)
CNC03-B10	03SSB1001	1	70
	03SSB1002	2	70
	03SSB1004	3	7
	03SSB1005	4	6
CNC03-B11	03SSB1101	1	5
	03SSB1102	2	3
	03SSB1103	3	3
	03SSB1104	4	2
CNC03-B12	03SSB1201	1	4
	03SSB1202	2	5
	03SSB1203	3	5
	03SSB1204	4	4
	03SSB1205	5	6
CNC03-B13	03SSB1301	1	2
	03SSB1302	2	2
	03SSB1303	3	2
	03SSB1304	4	2
	03SSB1305	5	3
CNC03-B14	03SSB1401	1	6
	03SSB1402	2	4
	03SSB1403	3	ND
	03SSB1404	4	ND
CNC03-B15	03SSB1501	1	ND
	03SSB1502	2	2
	03SSB1503	3	ND
	03SSB1504	4	ND
CNC03-B16	03SSB1601	1	4
	03SSB1602	2	1
	03SSB1603	3	3
	03SSB1604	4	ND
CNC03-B17	03SSB1701	1	ND
	03SSB1702	2	ND
	03SSB1703	3	ND
	03SSB1704	4	ND
CNC03-B18	03SSB1801	1	ND
	03SSB1802	2	1
	03SSB1803	3	1
	03SSB1804	4	1

NOTES:
OVA - organic vapor analyzer equipped with a flame ionization detector
PPM - parts per million
ND- not detected

TABLE 5

SUMMARY OF MOBILE LABORATORY SCREENING RESULTS FOR SOIL
SITE 3, BUILDING NS79
ZONE H, FORMER CHARLESTON NAVAL COMPLEX
NORTH CHARLESTON, SOUTH CAROLINA

Sample Location	Sample Identification	Sample Depth (feet)	Laboratory Screening Data (PPB) [1]				
			Benzene	Toluene	Ethylbenzene	Total Xylenes	Diesel Range Organics
CNC03-B01	03SFB0102	2	<0.5	<0.5	<0.5	<1.0	<100
CNC03-B02	03SFB0205	5	<0.5	<0.5	<0.5	<1.0	154.24
CNC03-B03	03SFB0305	5	<0.5	<0.5	<0.5	<1.0	18,934.91
CNC03-B04	03SFB0404	4	<0.5	<0.5	<0.5	<1.0	<100
CNC03-B05	03SFB0503	3	<0.5	<0.5	<0.5	<1.0	<100
CNC03-B06	03SFB0604	4	<0.5	<0.5	<0.5	<1.0	<100
CNC03-B07	03SFB0705	5	<0.5	<0.5	<0.5	<1.0	<100
CNC03-B08	03SFB0804	4	<0.5	<0.5	<0.5	<1.0	<100
CNC03-B09	03SFB0902	2	<0.5	<0.5	<0.5	<1.0	<100
CNC03-B10	03SFB1002	2	<0.5	<0.5	<0.5	<1.0	3,072.74
CNC03-B11	03SFB1101	1	<0.5	<0.5	<0.5	<1.0	325.85
CNC03-B12	03SFB1205	5	<0.5	<0.5	<0.5	<1.0	188.15
CNC03-B13	03SFB1305	5	<0.5	<0.5	<0.5	<1.0	<100
CNC03-B14	03SFB1402	2	<0.5	<0.5	<0.5	<1.0	2,951.26
CNC03-B15	03SFB1502	2	<0.5	<0.5	<0.5	<1.0	532.06
CNC03-B16	03SFB1601	3	<0.5	<0.5	<0.5	<1.0	1,528.49
CNC03-B17	03SFB1703	3	<1.0	<1.0	<1.0	<1.0	<50,000
CNC03-B18	03SFB1803	3	<1.0	<1.0	<1.0	<1.0	<50,000

NOTES:

[1] Laboratory screening data were analyzed using USEPA Method 8260. Compounds not detected are reported as less than the instrument detection limit.
PPB - parts per billion

TABLE 6

SUMMARY OF MOBILE LABORATORY SCREENING RESULTS FOR GROUNDWATER
SITE 3, BUILDING NS79
ZONE H, FORMER CHARLESTON NAVAL COMPLEX
NORTH CHARLESTON, SOUTH CAROLINA

Sample Location	Sample Identification	Laboratory Screening Data (PPB) [1]				
		Benzene	Toluene	Ethylbenzene	Total Xylenes	Diesel Range Organics
CNC03-P01	03GFP0101	<0.5	<0.5	<0.5	<1.0	115.41
CNC03-P02	03GFP0201	<0.5	<0.5	<0.5	<1.0	<100
CNC03-P03	03GFP0301	<0.5	<0.5	<0.5	<1.0	<100
CNC03-B03	03GFB03	<0.5	<0.5	<0.5	<1.0	80.98
CNC03-B05	03GFB05	<0.5	<0.5	<0.5	<1.0	<100
CNC03-B06	03GFB06	<0.5	<0.5	<0.5	<1.0	<100
CNC03-B08	03GFB08	<0.5	<0.5	<0.5	<1.0	<100
CNC03-B09	03GFB09	<0.5	<0.5	<0.5	<1.0	<100
CNC03-B10	03GFB10	<0.5	<0.5	<0.5	<1.0	<100
CNC03-B11	03GFB11	<0.5	<0.5	<0.5	<1.0	<100
CNC03-B12	03GFB12	<0.5	<0.5	<0.5	<1.0	<100
CNC03-B13	03GFB13	<0.5	<0.5	<0.5	<1.0	<100
CNC03-B14	03GFB14	<0.5	<0.5	<0.5	<1.0	<100
CNC03-B15	03GFB15	<0.5	<0.5	<0.5	<1.0	<100
CNC03-B16	03GFB16	<0.5	<0.5	<0.5	<1.0	<100

NOTES:
[1] Laboratory screening data were analyzed using USEPA Method 8260. Compounds not detected are reported as less than the instrument detection limit.
PPB - parts per billion

TABLE 7

SUMMARY OF FIXED - BASE LABORATORY ANALYTICAL RESULTS FOR CHEMICALS OF CONCERN IN SOIL
SITE 3 BUILDING 79
ZONE H, CHARLESTON NAVAL COMPLEX
NORTH CHARLESTON, SOUTH CAROLINA

SOIL BORING/ SAMPLE NO.	SAMPLE DATE	Benzene (ug/kg)	Toluene (ug/kg)	Ethyl-benzene (ug/kg)	Xylenes (TOTAL) (ug/kg)	Benzo(a) anthracene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Chrysene (ug/kg)	Dibenzo(a,h) anthracene (ug/kg)	Naphthalene (ug/kg)
RBSL[1]		5	1622	1260	42471	73084	29097	231190	12998	87866	210
CNC03-B03 / 03SLB0305	14-Jan-99	ND	ND	ND	ND	ND	356 [J]	ND	ND	ND	ND
CNC03-B05 / 03SLB0503	13-Jan-99	.926 [J]	1.28 [J]	9.40	61.80	ND	ND	ND	ND	ND	ND
CNC03-B07 / 03SLB0705	13-Jan-99	1.36[J]	ND	ND	ND	ND	ND	ND	ND	ND	ND
CNC03-B08 / 03SLB0804	14-Jan-99	4.84 [J]	2.88 [J]	1.13 [J]	.993 [J]	ND	ND	ND	ND	ND	ND
CNC03-B09 / 03SLB0902	13-Jan-99	1.38 [J]	ND	ND	ND	ND	ND	ND	ND	ND	ND
CNC03-B09 / 03SLB0902D [2]	13-Jan-99	0.9585	ND	ND	ND	ND	ND	ND	ND	ND	ND
CNC03-B10 / 03SLB1002	13-Jan-99	1.15 [J]	ND	ND	ND	ND	ND	ND	ND	ND	ND
CNC03-B11 / 03SLB1101	14-Jan-99	2.20 [J]	1.78 [J]	.780 [J]	ND	ND	362 [J]	ND	ND	ND	ND
ZHRL00101 [3]	14-Jan-99	ND	.66[J]	ND	ND	ND	ND	ND	ND	ND	ND

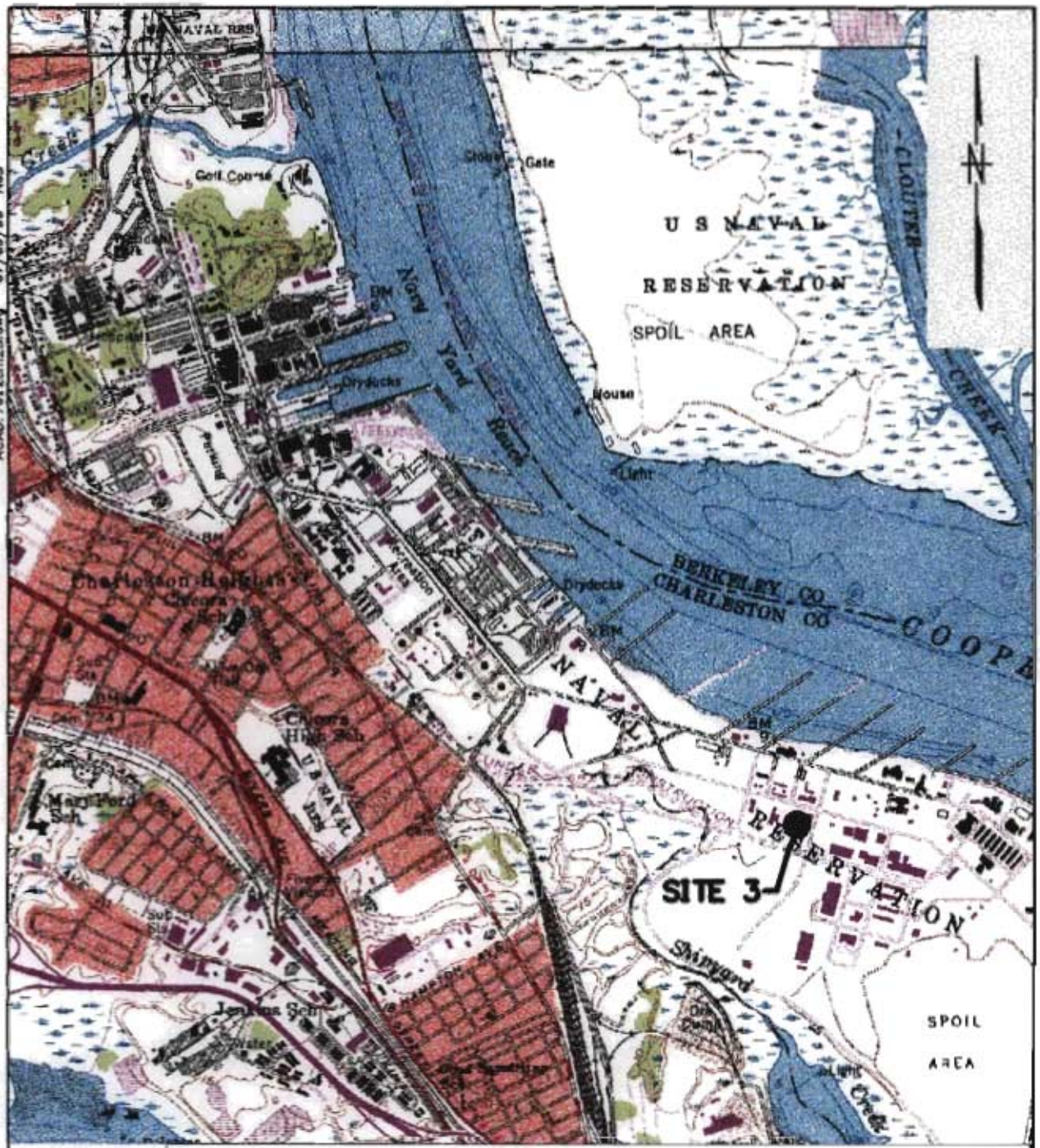
Notes:
ND - not detected
NA - not analyzed
NV - no value
ug/kg - microgram per kilogram
[J] Indicates presence of analyte at a concentration less than the reporting limit and greater than the detection limit.
[1] RBSL - South Carolina Department of Health and Environmental Control-Risk Based Screening Levels for clayey sand soils, depth to groundwater less than 5 feet.
[2] Duplicate
[3] Rinsate Blank

TABLE 8

SUMMARY OF FIXED - BASE LABORATORY ANALYTICAL RESULTS FOR CHEMICALS OF CONCERN IN GROUNDWATER
SITE 3, BUILDING NS79
ZONE H, CHARLESTON NAVAL BASE COMPLEX
NORTH CHARLESTON, SOUTH CAROLINA

MONITORING WELL / SAMPLE NO.	SAMPLE DATE	Benzene (ug/l)	Toluene (ug/l)	Ethyl-benzene (ug/l)	Xylenes (TOTAL) (ug/l)	MTBE (ug/l)	Benzo(a) anthracene (ug/l)	Benzo(a) pyrene (ug/l)	Benzo(b) fluoranthene (ug/l)	Benzo(ghi) perylene (ug/l)	Benzo(k) Fluoranthene (ug/l)	Chrysene(ug/l)	Dibenzo(a,h) anthracene (ug/l)	Naphthalene (ug/l)
RBSL [1]		5	1000	70	10000	40	10[2]	10[2]	10[2]	10[2]	10[2]	10[2]	10[2]	10[2]
CNC03-M01 / 03GLM0101	02-Mar-99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CNC03-M01 / 03GLM0101D[3]	02-Mar-99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CNC03-M02 / 03GLM0201	02-Mar-99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CNC03-M03 / 03GLM0301	02-Mar-99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CNC03-M04 / 03GLM0401	02-Mar-99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CNC03-M05 / 03GLM0501	02-Mar-99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CNC03-M06 / 03GLM0601	03-Mar-99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CNC03-M07 / 03GLM0701	02-Mar-99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ZHRL00301 [4]	03-Mar-99	ND	0.574 [J]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:
ND - not detected
NA - not analyzed
ug/l - microgram per liter
[1] RBSL - South Carolina Department of Health and Environmental Control-Risk Based Screening Levels.
[2] The Risk Based Screening Level for Individual PAH COC is 10 ug/l for PAH's.
[3] Duplicate
[4] Rinsate Blank



SOURCE: QUADRANGLE MAP SOUTH CAROLINA, REVISED 1979
QUADRANGLE MAP NORTH CHARLESTON REVISED, 1979

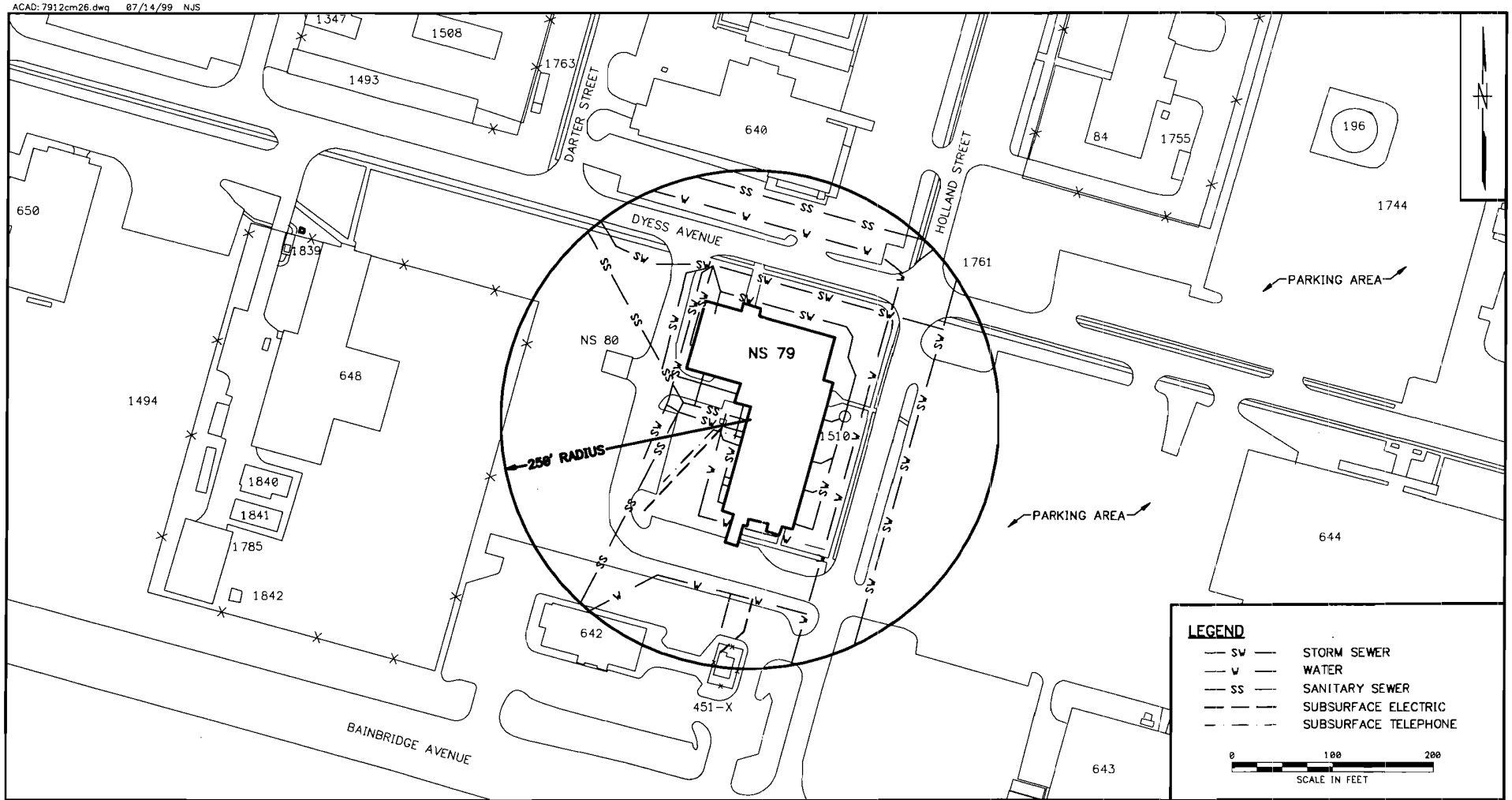
0 2000 4000
SCALE IN FEET

DRAWN BY HJP 5/18/99	DEPARTMENT OF THE NAVY	SITE LOCATION MAP SITE 3, BUILDING NS79 ZONE H, CHARLESTON NAVAL COMPLEX NORTH CHARLESTON, SOUTH CAROLINA	CONTRACT NO. 7912
CHECKED BY DATE			APPROVED BY DATE
COST/SCHED-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 1 / REV. 0

FORM CADD NO. SDIV_AV.DWG - REV 0 - 1/29/98

ACAD: 7912cm25.dwg 07/09/99 NJS

ACAD: 7912cm26.dwg 07/14/99 NJS



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

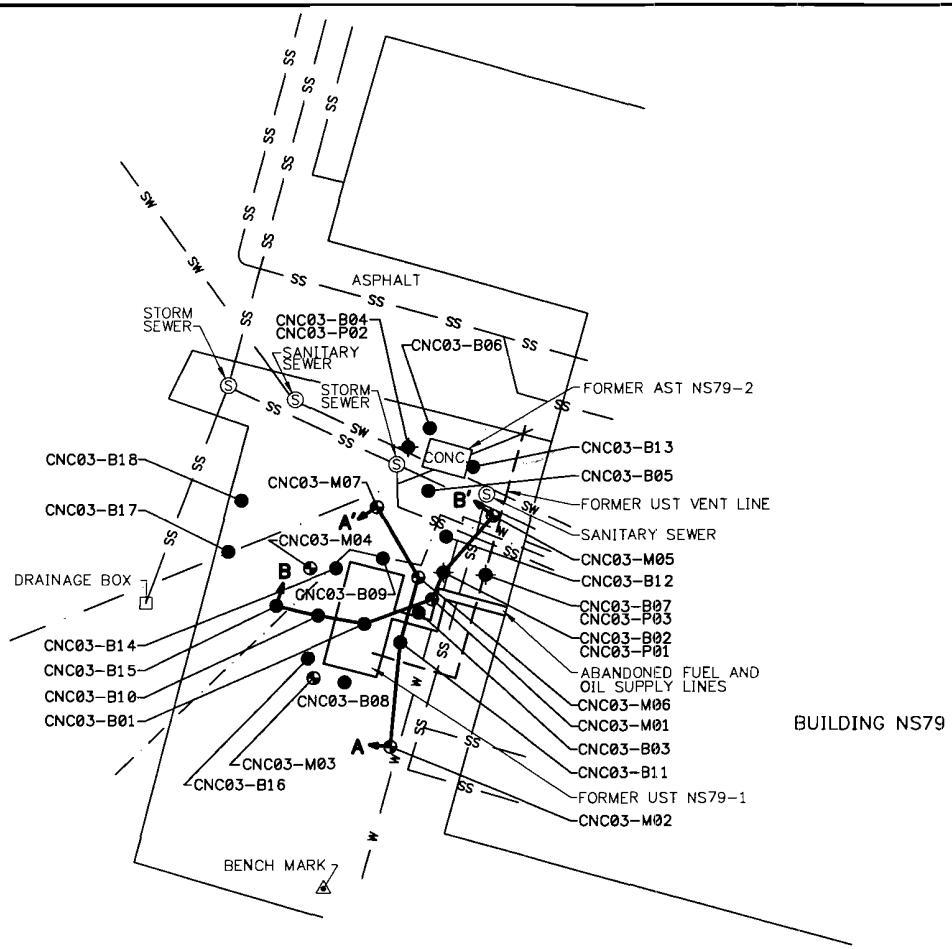
DRAWN BY KW DATE 5/24/99
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

SITE VICINITY MAP
SITE 3, BUILDING NS79
ZONE H, CHARLESTON NAVAL COMPLEX
NORTH CHARLESTON, SOUTH CAROLINA

CONTRACT NO. 7912
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 2
REV. 0

FORM CADD NO. SDIV_BH.DWG - REV 0 - 1/20/98

ACAD: 7912bm20.dwg 07/14/99 NJS



LEGEND:

- CNC03-B01 — SOIL BORING LOCATION AND DESIGNATION
- CNC03-M01 — MONITORING WELL LOCATION AND DESIGNATION
- CNC03-B02, CNC03-P01 — SOIL BORING LOCATION AND TEMPORARY PIEZOMETER LOCATION AND DESIGNATION
- A — A' GEOLOGICAL CROSS SECTION LOCATION
- SUBSURFACE TELEPHONE LINE
- SUBSURFACE ELECRICAL LINE
- (S) STORM SEWER AND SANITARY SEWER MANHOLES

0 30 60
SCALE IN FEET

SOURCE: ALL BACKGROUND INFORMATION SUPPLIED BY CHRISTENSEN-KHALIL SURVEYORS, INC., APRIL 26, 1999.

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

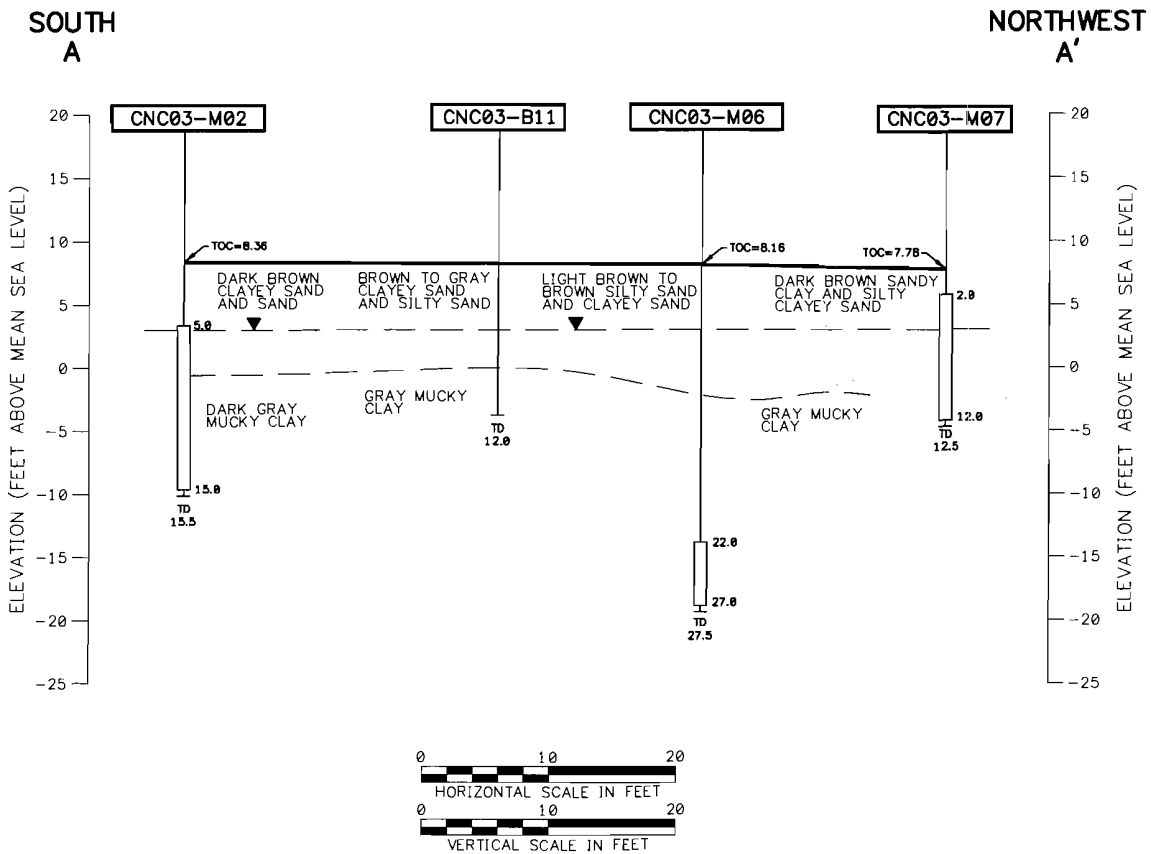
DRAWN BY DLT DATE 5/7/99
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

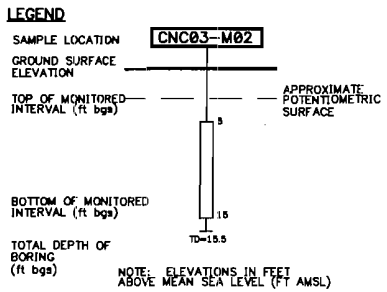
SITE MAP AND SAMPLING LOCATIONS
SITE 3, BUILDING NS79
ZONE H, CHARLESTON NAVAL COMPLEX
NORTH CHARLESTON, SOUTH CAROLINA

CONTRACT NO. 7912
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 3
REV. 0

FORM CADD NO. SOW_BH.DWG – REV D – 1/20/98

ACAD: 7912GX17.dwg 07/14/99 NJS





NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

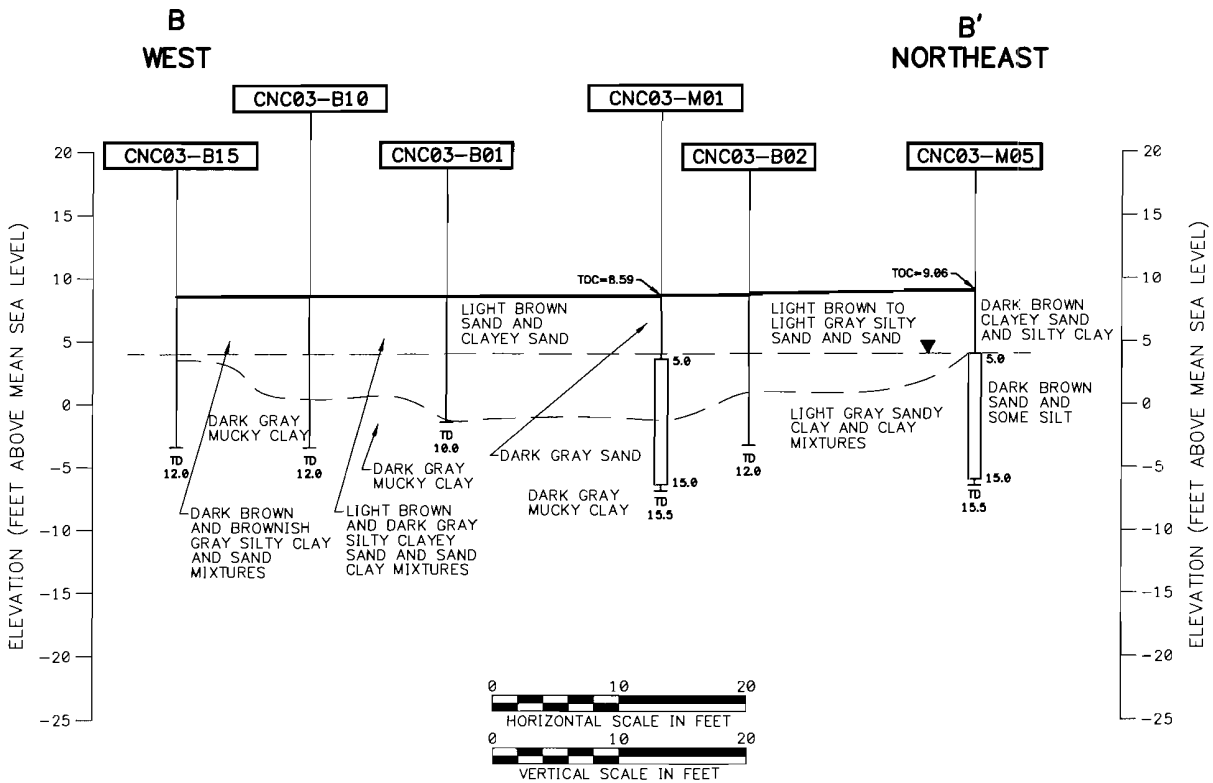
DRAWN BY MF DATE 7/8/99
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

GEOLOGIC CROSS SECTION
A-A'
SITE 3 BUILDING NS79
ZONE H CHARLESTON NAVAL COMPLEX
NORTH CHARLESTON, SOUTH CAROLINA

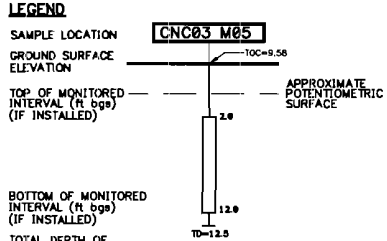
CONTRACT NO. 7912
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 4
REV. 0

FORM CADD NO. SDIV_BH.DWG - REV 0 - 1/20/98

ACAD: 7912GX18.dwg 07/14/99 NJS



LEGEND



NOTE: ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL (FT AMSL)

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

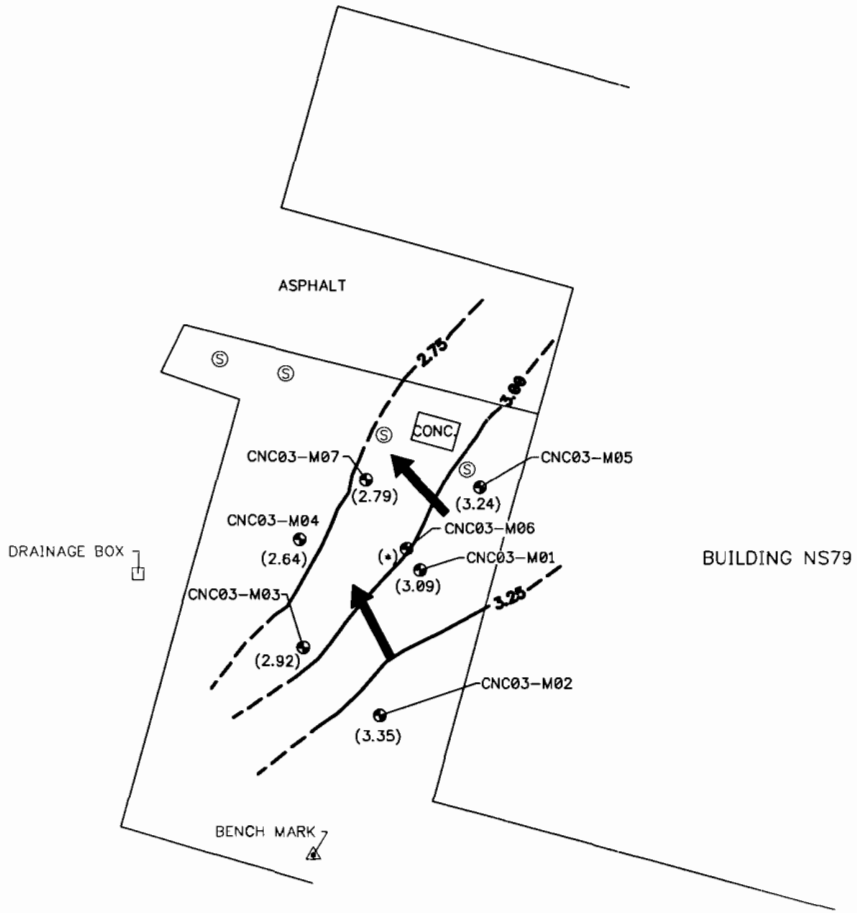
DRAWN BY MF DATE 7/8/99
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

GEOLOGIC CROSS SECTION
B--B'
SITE 3 BUILDING NS79
ZONE H CHARLESTON NAVAL COMPLEX
NORTH CHARLESTON, SOUTH CAROLINA

CONTRACT NO. 7912
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 5
REV. 0

FORM CADD NO. SDIV_BH.DWG - REV 0 - 1/20/98

ACAD:7912bm13.dwg 07/13/99 NJS



LEGEND:

- MONITORING WELL (LOCATION AND DESIGNATION) CNC03-M01
- (3.09) POTENTIOMETRIC SURFACE ELEVATION
- GROUNDWATER FLOW DIRECTION
- —3.00— GROUNDWATER POTENTIOMETRIC SURFACE CONTOUR (FT MSL) DASHED WHERE INFERRED
- (S) STORM SEWER AND SANITARY SEWER MANHOLE
- (*) VERTICAL DEPTH MONITORING WELL NOT INCLUDED IN SURFACE PLOT

0 30 60
SCALE IN FEET

SOURCE: ALL BACKGROUND INFORMATION SUPPLIED BY CHRISTENSEN-KHALIL SURVEYORS, INC., APRIL 26, 1999.

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

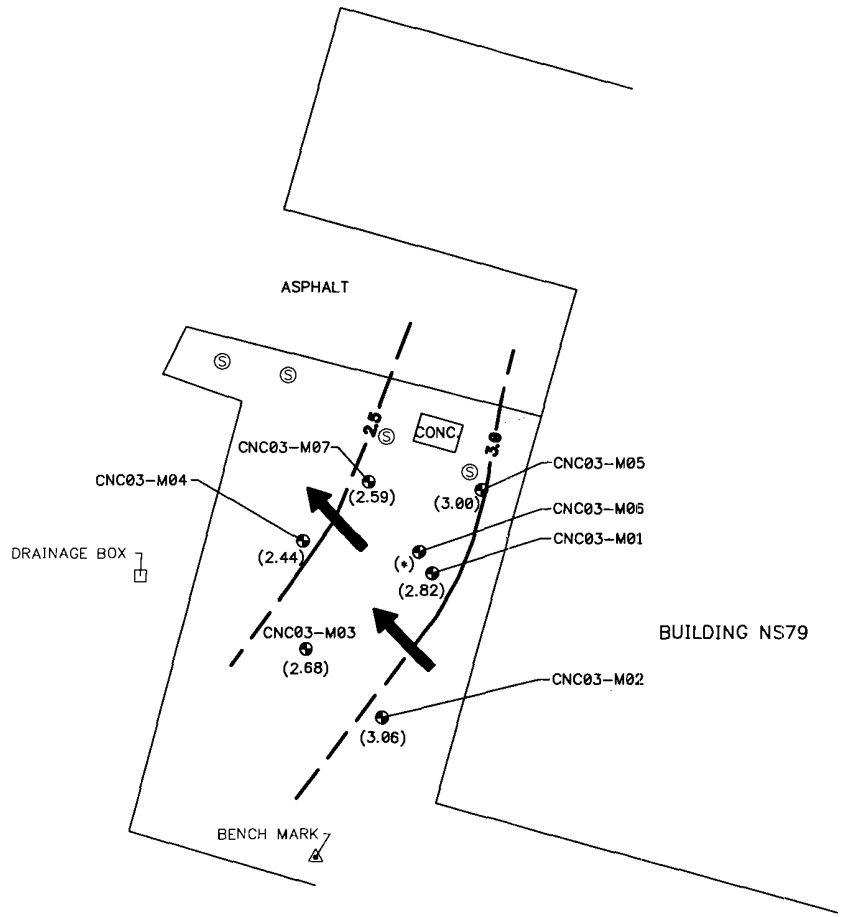
DRAWN BY DLT DATE 5/7/99
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

GROUNDWATER POTENTIOMETRIC MAP
FEBRUARY 20, 1999
SITE 3, BUILDING NS79
ZONE H, CHARLESTON NAVAL COMPLEX
NORTH CHARLESTON, SOUTH CAROLINA

CONTRACT NO. 7912
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 6
REV. 0

FORM CADD NO. SDIV_BH.DWG – REV 0 – 1/20/98

ACAD: 7912bm14.dwg 07/13/99 NJS



LEGEND:

- MONITORING WELL LOCATION AND DESIGNATION CNC09-M01
- —2.5— GROUNDWATER POTENTIOMETRIC SURFACE CONTOUR (FT MSL) DASHED WHERE INFERRED
- (3.09) POTENTIOMETRIC SURFACE ELEVATION
- GROUNDWATER FLOW DIRECTION
- (*) VERTICAL DEPTH MONITORING WELL NOT INCLUDED IN CONTOUR PLOT
- (S) STORM SEWER AND SANITARY SEWER MANHOLE

0 30 60
SCALE IN FEET

SOURCE: ALL BACKGROUND INFORMATION SUPPLIED BY CHRISTENSEN-KHALIL SURVEYORS, INC., APRIL 26, 1999.

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

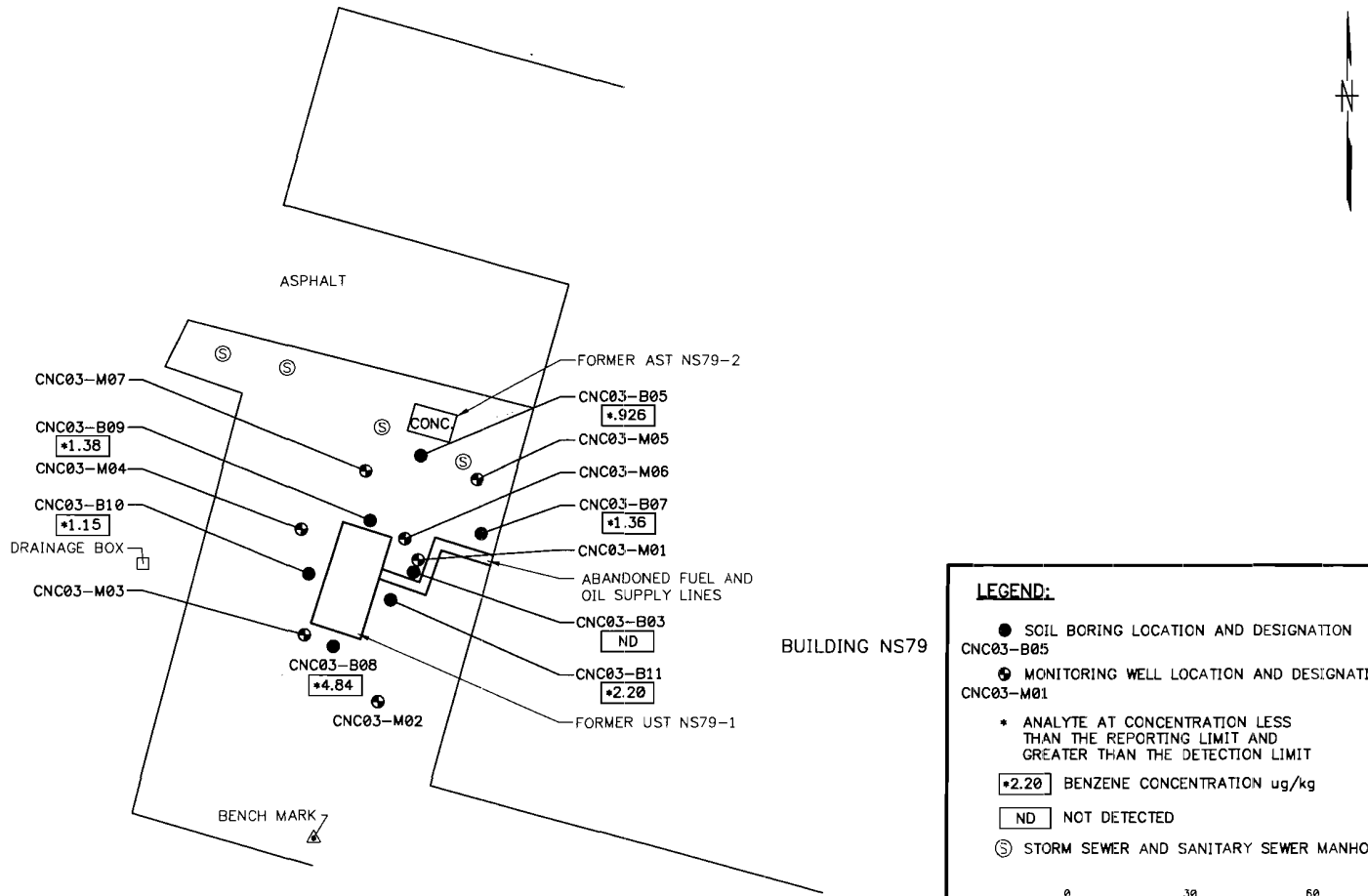
DRAWN BY DLT DATE 5/7/99
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

GROUNDWATER POTENTIOMETRIC MAP
(MARCH 2, 1999)
SITE 3, BUILDING NS79
ZONE H, CHARLESTON NAVAL COMPLEX
NORTH CHARLESTON, SOUTH CAROLINA

CONTRACT NO. 7912
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 7
REV. 0

FORM CADD NO. SDN_BH.DWG – REV 0 – 1/20/98

ACAD: 7912bm15.dwg 07/12/99 NJS



LEGEND:

- ● SOIL BORING LOCATION AND DESIGNATION CNC03-B05
- ⊕ MONITORING WELL LOCATION AND DESIGNATION CNC03-M01
- * ANALYTE AT CONCENTRATION LESS THAN THE REPORTING LIMIT AND GREATER THAN THE DETECTION LIMIT
- [*2.20] BENZENE CONCENTRATION ug/kg
- [ND] NOT DETECTED
- Ⓢ STORM SEWER AND SANITARY SEWER MANHOLES

0 30 60
SCALE IN FEET

SOURCE: ALL BACKGROUND INFORMATION SUPPLIED BY CHRISTENSEN-KHALIL SURVEYORS, INC., APRIL 26, 1999.

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

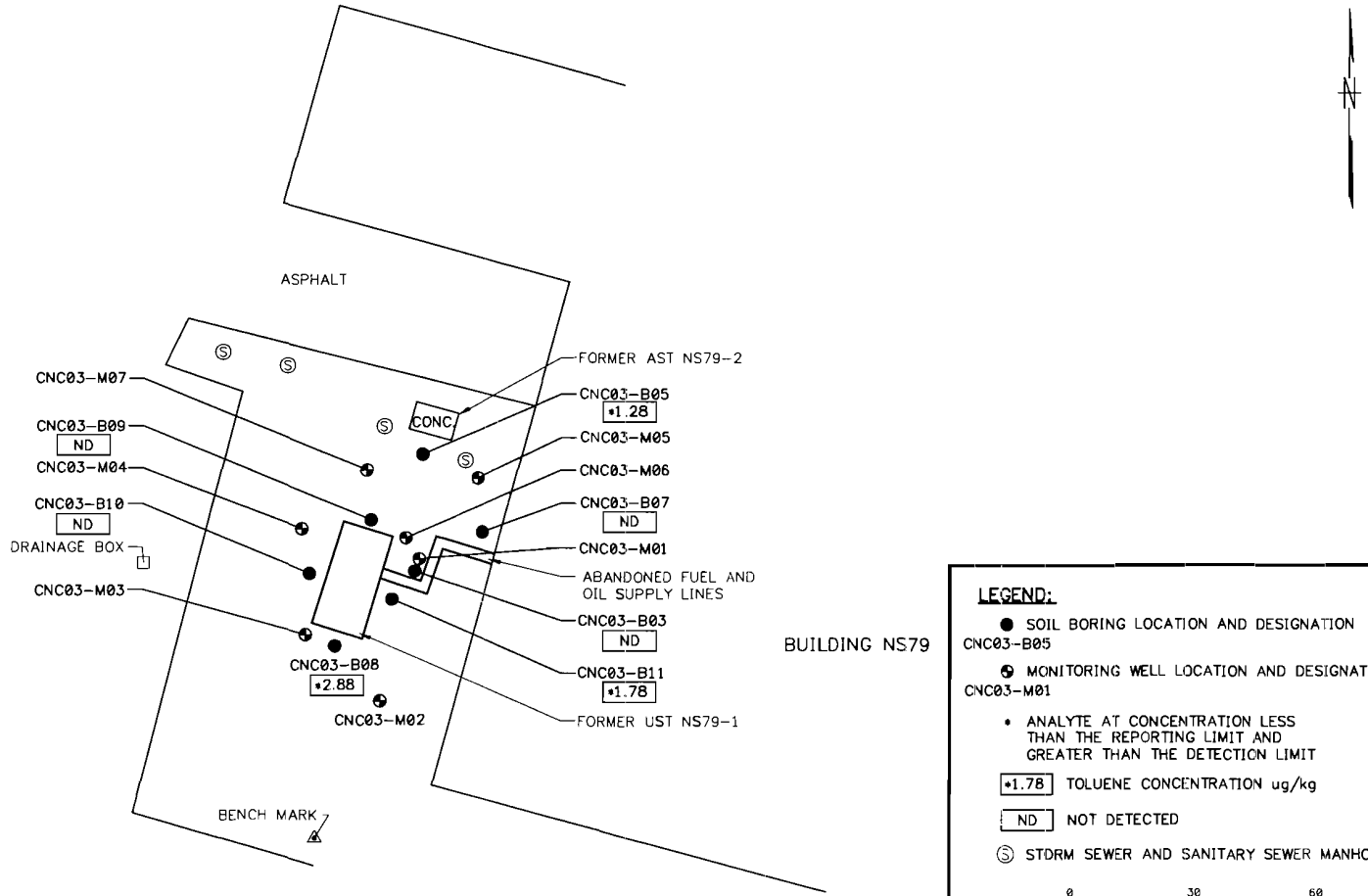
DRAWN BY DLT DATE 5/7/99
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

SOIL BENZENE CONCENTRATION MAP
(JANUARY 1999)
SITE 3, BUILDING NS79
ZONE H, CHARLESTON NAVAL COMPLEX
NORTH CHARLESTON, SOUTH CAROLINA

CONTRACT NO. 7912
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 8
REV. 0

FORM CADD NO. SDIV_BH.DWG – REV 0 – 1/20/98

ACAD: 7912bm16.dwg 07/12/99 NJS



LEGEND:

● SOIL BORING LOCATION AND DESIGNATION CNC03-B05

MONITORING WELL LOCATION AND DESIGNATION CNC03-M01

• ANALYTE AT CONCENTRATION LESS THAN THE REPORTING LIMIT AND GREATER THAN THE DETECTION LIMIT

•1.78 TOLUENE CONCENTRATION ug/kg

ND NOT DETECTED

Ⓢ STORM SEWER AND SANITARY SEWER MANHOLES

0 30 60
SCALE IN FEET

SOURCE: ALL BACKGROUND INFORMATION SUPPLIED BY CHRISTENSEN-KHALIL SURVEYORS, INC., APRIL 26, 1999.

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

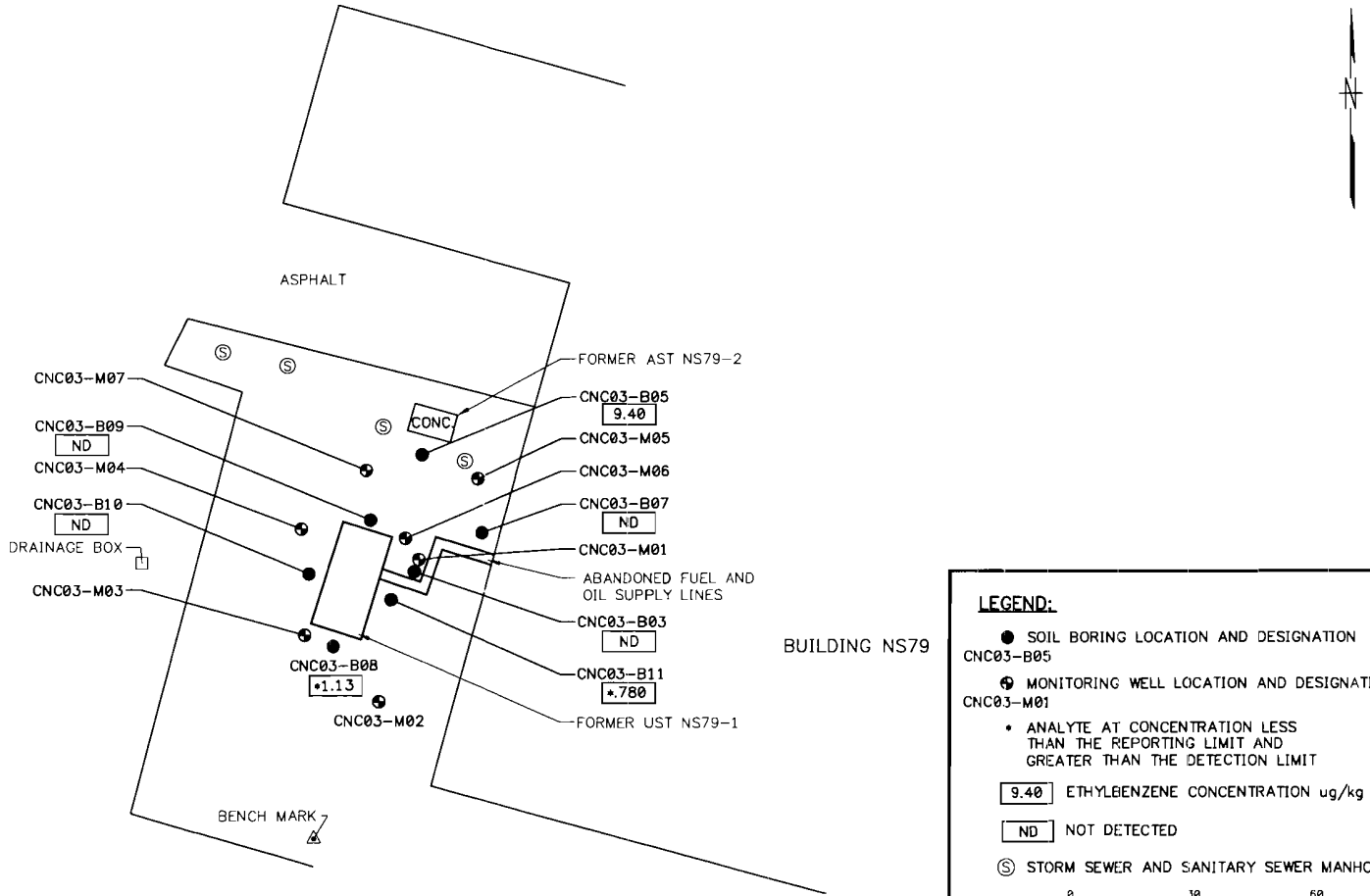
DRAWN BY DLT DATE 5/7/99
CHECKED BY DATE
COST/SCHED-AREA
SCALE: AS NOTED

SOIL TOLUENE CONCENTRATION MAP
(JANUARY 1999)
SITE 3, BUILDING NS79
ZONE H, CHARLESTON NAVAL COMPLEX
NORTH CHARLESTON, SOUTH CAROLINA

CONTRACT NO. 7912
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 9
REV. 0

FORM CADD NO. SDIV_BH.DWG – REV 0 – 1/20/98

ACAD:7912bm17.dwg 07/12/99 NJS



LEGEND:

● SOIL BORING LOCATION AND DESIGNATION CNC03-B05

⊕ MONITORING WELL LOCATION AND DESIGNATION CNC03-M01

* ANALYTE AT CONCENTRATION LESS THAN THE REPORTING LIMIT AND GREATER THAN THE DETECTION LIMIT

9.40 ETHYLBENZENE CONCENTRATION ug/kg

ND NOT DETECTED

Ⓢ STORM SEWER AND SANITARY SEWER MANHOLES

0 30 60
SCALE IN FEET

SOURCE: ALL BACKGROUND INFORMATION SUPPLIED BY CHRISTENSEN-KHALIL SURVEYORS, INC., APRIL 26, 1999.

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

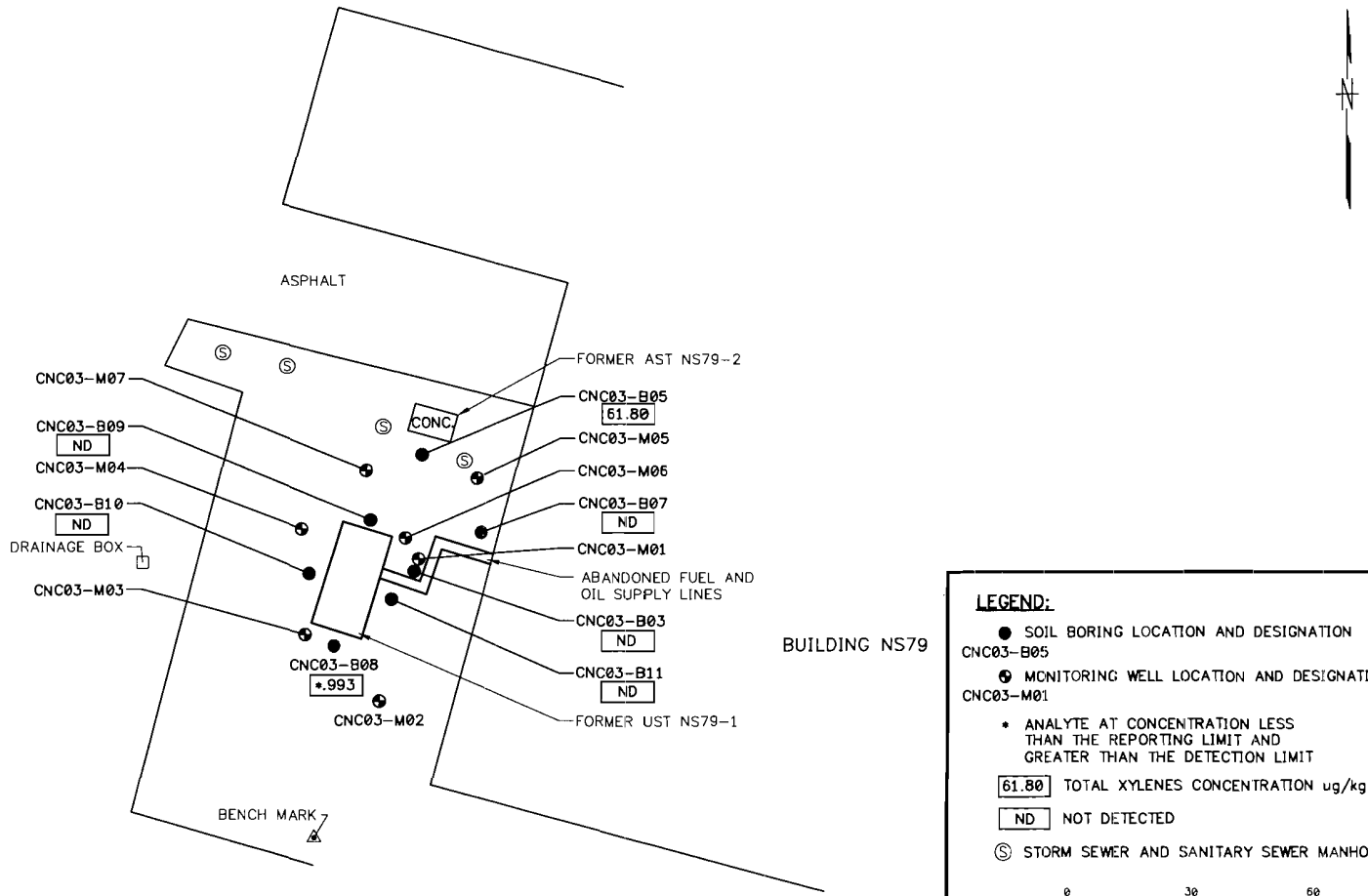
DRAWN BY DLT DATE 5/7/99
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

SOIL ETHYLBENZYNE CONCENTRATION MAP
(JANUARY 1999)
SITE 3, BUILDING NS79
ZONE H, CHARLESTON NAVAL COMPLEX
NORTH CHARLESTON, SOUTH CAROLINA

CONTRACT NO. 7912
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 10
REV. 0

FORM CADD NO. SDIV_BH.DWG – REV D – 1/20/98

ACAD: 7912bm18.dwg 07/12/99 NJS



LEGEND:

- ● SOIL BORING LOCATION AND DESIGNATION CNC03-B05
- ⊕ MONITORING WELL LOCATION AND DESIGNATION CNC03-M01
- * ANALYTE AT CONCENTRATION LESS THAN THE REPORTING LIMIT AND GREATER THAN THE DETECTION LIMIT
- 61.80 TOTAL XYLENES CONCENTRATION ug/kg
- ND NOT DETECTED
- Ⓢ STORM SEWER AND SANITARY SEWER MANHOLES

0 30 60
SCALE IN FEET

SOURCE: ALL BACKGROUND INFORMATION SUPPLIED BY CHRISTENSEN-KHALIL SURVEYORS, INC., APRIL 26, 1999.

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

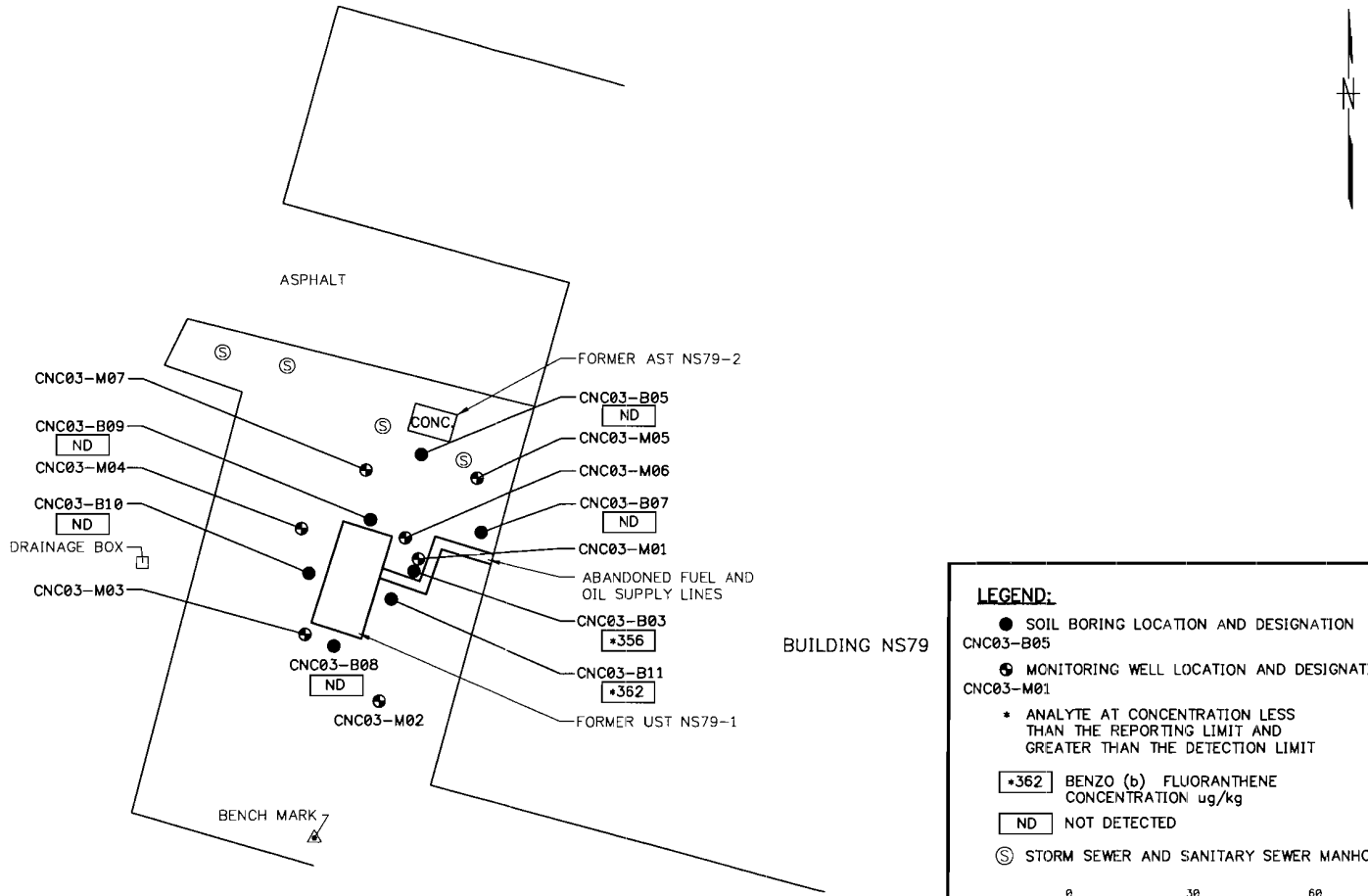
DRAWN BY DLT DATE 5/7/99
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

SOIL TOTAL XYLENES CONCENTRATION MAP
(JANUARY 1999)
SITE 3, BUILDING NS79
ZONE H, CHARLESTON NAVAL COMPLEX
NORTH CHARLESTON, SOUTH CAROLINA

CONTRACT NO. 7912
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 11
REV. 0

FORM CADD NO. SDIV_BH.DWG - REV 0 - 1/20/98

ACAD: 7912bm19.dwg 07/12/99 NJS



LEGEND:

● SOIL BORING LOCATION AND DESIGNATION CNC03-B05

⊕ MONITORING WELL LOCATION AND DESIGNATION CNC03-M01

* ANALYTE AT CONCENTRATION LESS THAN THE REPORTING LIMIT AND GREATER THAN THE DETECTION LIMIT

*362 BENZO (b) FLUORANTHENE CONCENTRATION ug/kg

ND NOT DETECTED

Ⓢ STORM SEWER AND SANITARY SEWER MANHOLES

0 30 60
SCALE IN FEET

SOURCE: ALL BACKGROUND INFORMATION SUPPLIED BY CHRISTENSEN-KHALIL SURVEYORS, INC., APRIL 26, 1999.

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY DLT DATE 5/7/99
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

SOUTHERN DIV. FACILITIES ENGINEERING COMD. DEPARTMENT OF THE NAVY

SOIL BENZO (b) FLUORANTHENE CONCENTRATION MAP
(JANUARY 1999)
SITE 3, BUILDING NS79
ZONE H, CHARLESTON NAVAL COMPLEX
NORTH CHARLESTON, SOUTH CAROLINA

CONTRACT NO. 7912
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 12
REV. 0

FORM CADD NO. SDIV_BH.DWG – REV 0 – 1/20/98

APPENDIX A

UNDERGROUND STORAGE TANK ASSESSMENT REPORT
UST NS79-1 & AST NS79-2

South Carolina Department of Health and Environmental Control (S.C.D.H.E.C.)
Underground Storage Tank (UST) Assessment Report

Date Received
State Use Only

Submit Completed Form to:
UST Regulatory Section
SCDHEC
2600 Bull Street
Columbia, South Carolina 29201
Telephone (803) 734-5331

I OWNERSHIP OF UST(S)

Agency/Owner: Southern Division, Naval Facilities Engineering Command, Caretaker Site Office

Mailing Address: P.O. Box 190010

City: N. Charleston State: SC Zip Code: 29419-9010

Area Code: 803 Telephone Number: 743-9985 Contact Person: LCDR Paul Rose

II SITE IDENTIFICATION AND LOCATION

Site I.D. #: Unregulated

Facility Name: Charleston Naval Base Complex, Building NS 79

Street Address: Dyess Avenue

City: North Charleston, 29405-2413 County: Charleston

III CLOSURE INFORMATION

Closure Started: 1 Oct 1996 Closure Completed: 16 Oct 1996

Number of USTs Closed: 1, and 1 AST

N/A	SPORTENVDETCHASN
Consultant	UST Removal Contractor

IV. CERTIFICATION (Read and Sign after completing entire submittal)

I certify that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate and complete.

LCDR Paul Rose
Name (Type or Print)

Signature

V. UST INFORMATION

	UST NS79-1	AST NS79-2	Tank 3	Tank 4
A. Product.....	Fuel oil	Fuel oil		
B. Capacity.....	10,000 gal.	500 gal.		
C. Age.....	1978	Unk.		
D. Construction Material.....	Steel	Steel		
E. Month/Year of Last Use.....	Unk.	Unk.		
F. Depth (ft.) To Base of Tank.....	g'	-		
G. Spill Prevention Equipment Y/N.....	N	N		
H. Overfill Prevention Equipment Y/N.....	N	N		
I. Method of Closure Removed/Filled.....	R	R		
J. Visible Corrosion or Pitting Y/N.....	N	N		
K. Visible Holes Y/N.....	N	N		

L. Method of disposal for any USTs removed from the ground (attach disposal manifests)

UST NS79-1 and AST NS79-2 were removed, drained, cut open at both ends, and cleaned with a steam cleaner. They were then cut up for recycling as scrap metal. (See Attachment III.)

M. Method of disposal for any liquid petroleum, sludges, or waste waters removed from the USTs (attach disposal manifests)

The residual fuel oil, waste water, and sludge were recycled.

N. If any corrosion, pitting, or holes were observed, describe the location and extent for each UST

UST NS79-1 and AST NS79-2 were in good condition and contained no corrosion, pitting, or holes.

AST NS79-2 had a blanked drain valve that showed signs of mechanical joint weepage or valve packing leaks. Oil stained soils were noted at the edge of the AST foundation adjacent to the valve. See Attachment I photo 3.

VI. PIPING INFORMATION

		UST NS79-1	AST NS79-2	Tank 3	Tank 4
A.	Construction Material.....	Steel & copper	Steel		
B.	Distance from UST to Dispenser.....	(See note 1)			
C.	Number of Dispensers.....	1	1		
D.	Type of System P/S.....	S	S		
E.	Was Piping Removed from the Ground? Y/N....	Y	Y		
F.	Visible Corrosion or Pitting Y/N.....	N	N		
G.	Visible Holes Y/N.....	N	N		
H.	Age.....	1978	Unk.		

Note 1: Both tanks provided fuel oil to building NS79's boiler.

I. If any corrosion, pitting, or holes were observed, describe the location and extent for each line.

No corrosion, pitting, or holes were found in piping for either UST NS79-1 or AST NS 79-2.

VII. BRIEF SITE DESCRIPTION AND HISTORY

Facility NS 79 was constructed in 1963 and improved in 1986. The building served as a medical dispensary and dental clinic. UST NS 79-1 and AST NS 79-2 provided fuel oil to the building's boiler.

AST NS 79-2 was located on a concrete slab foundation. The piping for the AST was completely above ground; therefore, no excavating or sampling was required.

VIII. SITE CONDITIONS

		Yes	No	Unk
A.	Were any petroleum-stained or contaminated soils found in the UST excavation, soil borings, trenches, or monitoring wells? If yes, indicate depth and location on the site map.		X	
B.	Were any petroleum odors detected in the excavation, soil borings, trenches, or monitoring wells? If yes, indicate location on site map and describe the odor (strong, mild, etc.)		X	
C.	Was water present in the UST excavation, soil borings, or trenches? If yes, how far below land surface (indicate location and depth)? Center of UST excavation, 6' below GSL	X		
D.	Did contaminated soils remain stockpiled on site after closure? If yes, indicate the stockpile location on the site map. Name of DHEC representative authorizing soil removal: _____		*X	
E.	Was a petroleum sheen or free product detected on any excavation or boring waters? If yes, indicate location and thickness on the site map.		X	

* All excavated soil from UST NS79-1 was returned to the tank pit.

IX. SAMPLE INFORMATION

S.C.D.H.E.C. Lab Certification Number 10120

Sample #	Location	Sample Type (Soil/Water)	Depth*	Date/Time of Collection	Collected By	OVA#
SPORT 0193-1	North end of slab.	Soil	18"	2 Oct 96 1500	R. Adkins	Not Taken
SPORT 0193-2	Eastern side of slab.	Soil	18"	2 Oct 96 1500	R. Adkins	Not Taken
SPORT 0198-1	Center of excavation	Water	6'	8 Oct 96 1115	B. Murray	Not Taken
SPORT 0198-2	South end of excavation.	Soil	6'	8 Oct 96 1130	B. Murray	Not Taken
SPORT 0198-3	North end of excavation.	Soil	6'	8 Oct 96 1143	B. Murray	Not Taken
SPORT 0203-1	Dirt pile.	Soil	-	10 Oct 96 1020	B. Murray	Not Taken
SPORT 0203-2	Dirt pile.	Soil	-	10 Oct 96 1030	B. Murray	Not Taken
SPORT 0203-3	Dirt pile.	Soil	-	10 Oct 96 1045	B. Murray	Not Taken
SPORT 0203-4	Dirt pile.	Soil	-	10 Oct 96 1105	B. Murray	Not Taken
SPORT 0203-5	Dirt pile.	Soil	-	10 Oct 96 1114	B. Murray	Not Taken
SPORT 0203-6	Supply & return pipe run excavation.	Soil	4'	10 Oct 96 1129	B. Murray	Not Taken
SPORT 0203-7	Supply & return pipe run excavation.	Soil	4'	10 Oct 96 1143	B. Murray	Not Taken
SPORT 0203-8	Tank level indicator pipe run excavation.	Soil	2'	10 Oct 96 1159	B. Murray	Not Taken
SPORT 0203-9	Tank level indicator pipe run excavation.	Soil	2'	10 Oct 96 1215	B. Murray	Not Taken

* = Depth Below the Surrounding Land Surface

X. SAMPLING METHODOLOGY

Provide a detailed description of the methods used to collect and store (preserve) the samples.

After the removal of UST NS79-1 and AST NS79-2 soil and ground water samples were taken. Sampling was performed in accordance with SC DHEC R.61-92 Part 280 and SC DHEC UST Assessment Guidelines.

The samples are identified as follows:

	Detachment Charleston		General Engineering Labs
Soil Sample	AST 79-1	=	SPORT -0193-1
Soil Sample	AST 79-2	=	SPORT -0193-2
Ground Water Sample	UST NS79-1	=	SPORT -0198-1
Soil Sample	UST NS79-2	=	SPORT -0198-2
Soil Sample	UST NS79-3	=	SPORT -0198-3
Soil Sample	UST NS79-4	=	SPORT -0203-1
Soil Sample	UST NS79-5	=	SPORT -0203-2
Soil Sample	UST NS79-6	=	SPORT -0203-3
Soil Sample	UST NS79-7	=	SPORT -0203-4
Soil Sample	UST NS79-8	=	SPORT -0203-5
Soil Sample	UST NS79-9	=	SPORT -0203-6
Soil Sample	UST NS79-10	=	SPORT -0203-7
Soil Sample	UST NS79-11	=	SPORT -0203-8
Soil Sample	UST NS79-12	=	SPORT -0203-9

Sample jars were prepared by the testing laboratory. The grab method was utilized to fill the sample containers leaving as little head space as possible and immediately capped. Soil samples were extracted at the tank ends just above the ground water level. UST piping soil samples were taken under the piping at the mechanical connections. Ground water samples were taken from the bottom center of the excavation.

The samples were marked, logged, and immediately placed in sample coolers packed with ice to maintain an approximate temperature of 4° C. Tools were thoroughly cleaned and decontaminated with organic-free soap and water after each sample.

The samples remained in the custody of SPORTENVDETCHASN until they were transferred to General Engineering Laboratories for analysis as documented in the attached Chain-of-Custody Record.

XI. RECEPTORS

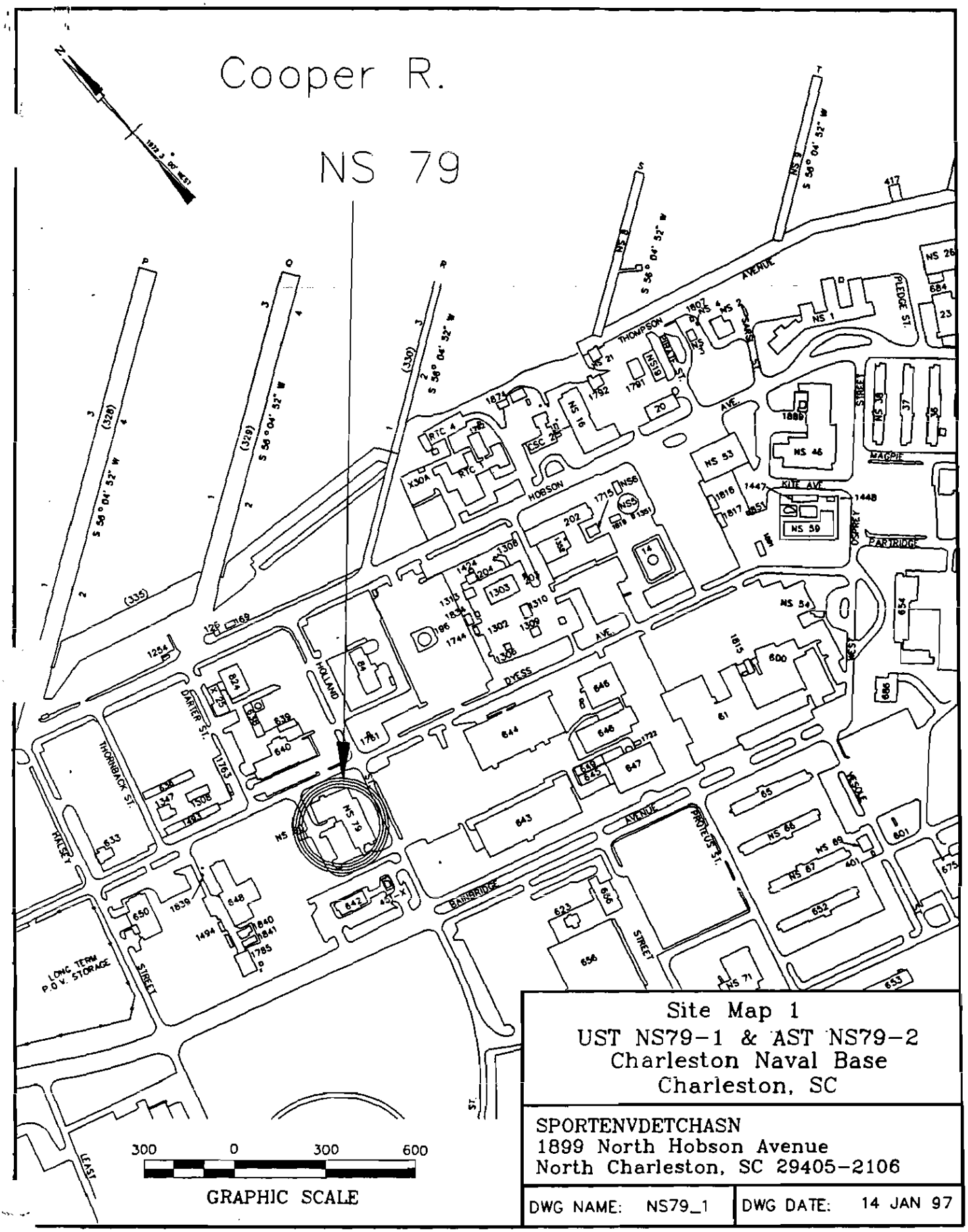
		Yes	No
A.	Are there any lakes, ponds, streams, or wetlands located within 1000 feet of the UST system? [*Cooper R. 961] If yes, indicate type of receptor, distance, and direction on site map.	*X	
B.	Are there any public, private, or irrigation water supply wells within 1000 feet of the UST system? If yes, indicate type of well, distance, and direction on site map.		X
C.	Are there any underground structures (e.g., basements) located within 100 feet of the UST system? If yes, indicate the type of structure, distance, and direction on site map.		X
D.	Are there any underground utilities (e.g., telephone, electricity, gas, water, sewer, storm drain) located within 100 feet of the UST system that could potentially come in contact with the contamination? [*Storm drain] If yes, indicate the type of utility, distance, and direction on the site map.	*X	
E.	Has contaminated soil been identified at a depth of less than 3 feet below land surface in an area that is not capped by asphalt or concrete? If yes, indicate the area of contaminated soil on the site map.		X

Attachment I

SITE MAP

You must supply a scaled site map. It should include all buildings, road names, utilities, tank and pump island locations, sample locations, extent of excavation, and any other pertinent information.

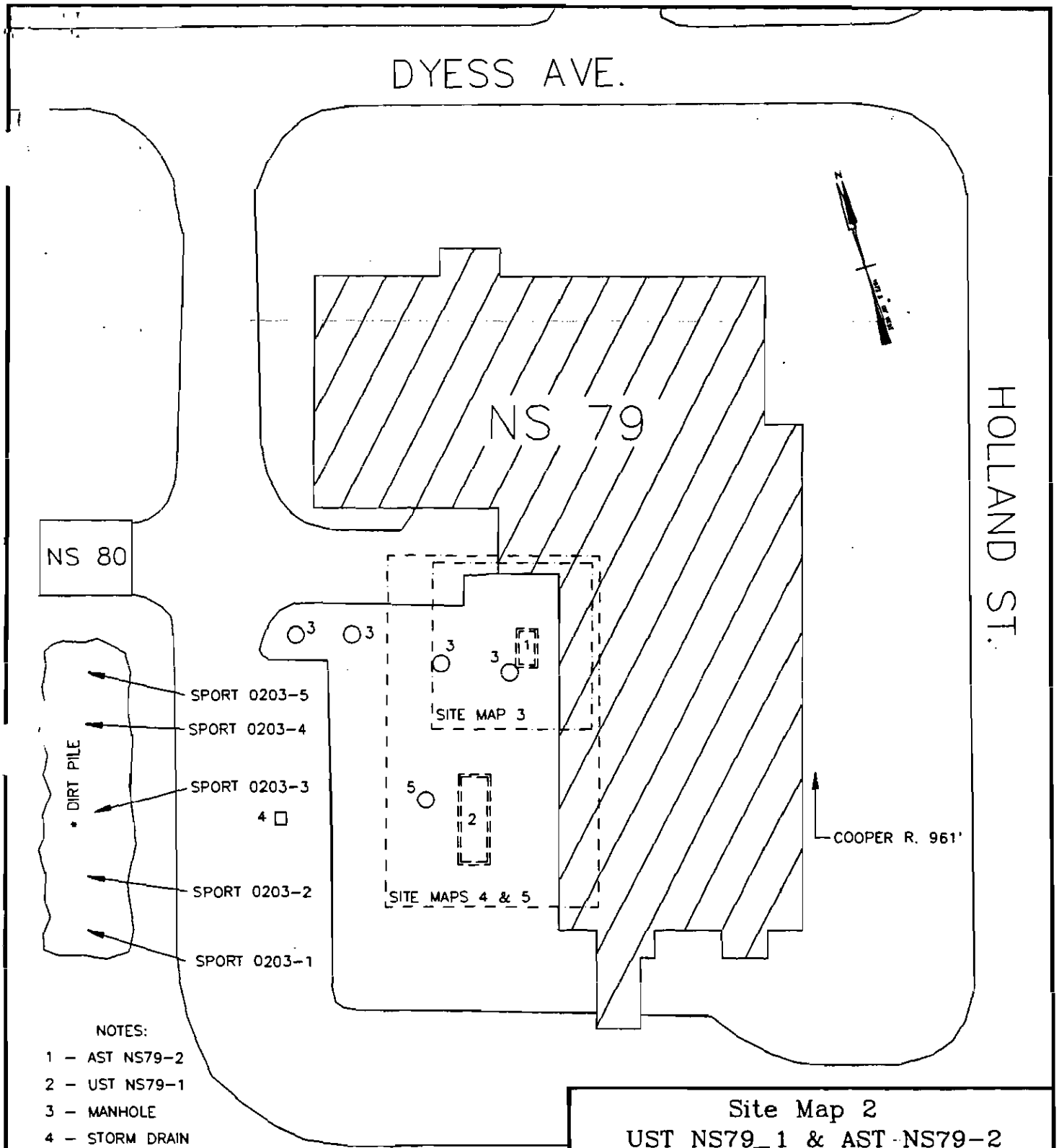
Site Maps 1, 2, 3, 4, and 5
Photographs 1, 2, and 3



Site Map 1
UST NS79-1 & AST NS79-2
Charleston Naval Base
Charleston, SC

SPORTENVDETCHASN
1899 North Hobson Avenue
North Charleston, SC 29405-2106

DWG NAME: NS79_1	DWG DATE: 14 JAN 97



NOTES:

1 – AST NS79-2
2 – UST NS79-1
3 – MANHOLE
4 – STORM DRAIN
5 – TREE

* ALL DIRT PILE SAMPLES WERE SOIL SAMPLES.

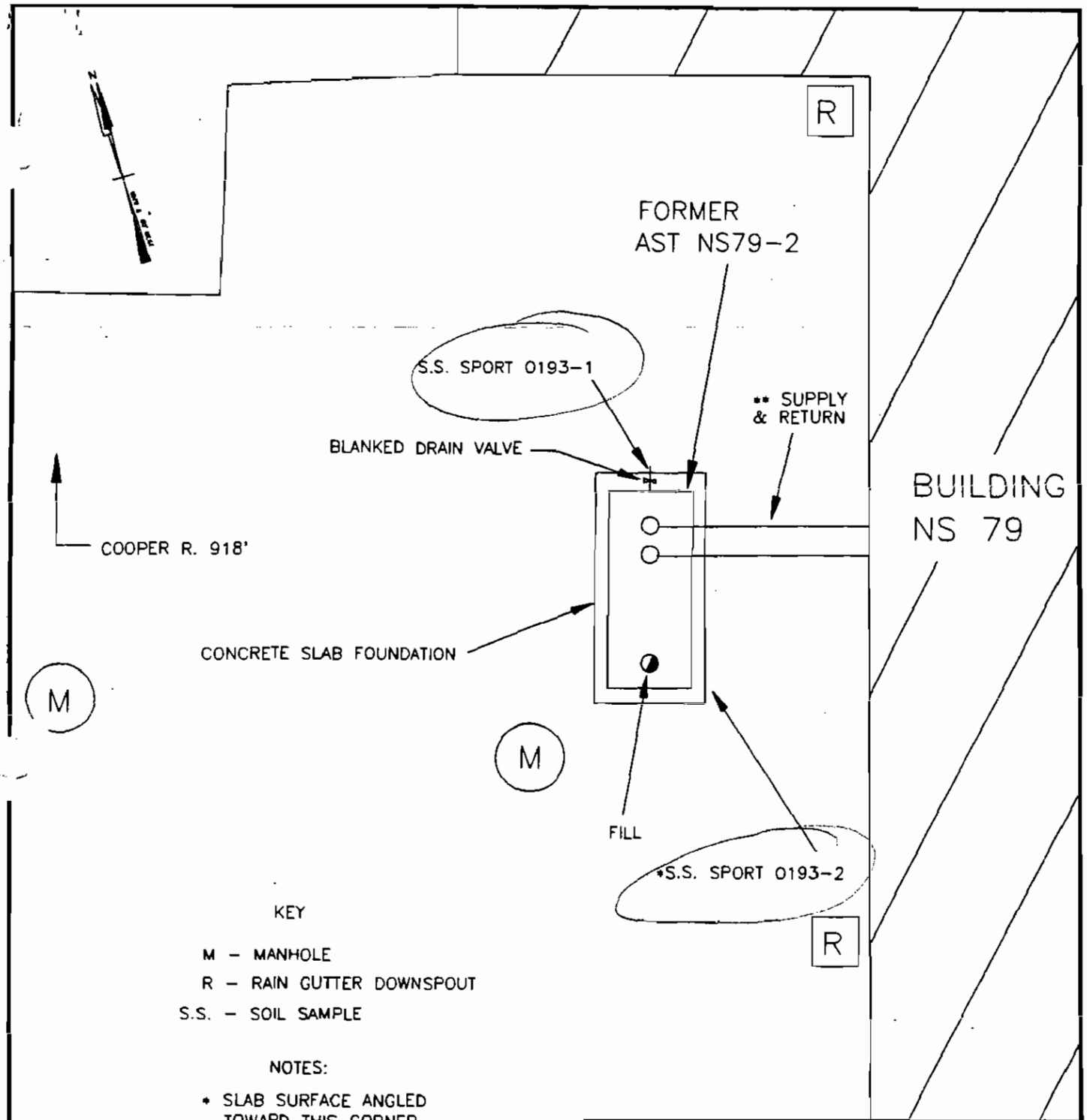
30 0 30

GRAPHIC SCALE

Site Map 2
UST NS79_1 & AST NS79-2
Charleston Naval Base
Charleston, SC

SPORTENVDETCHASN
1899 North Hobson Avenue
North Charleston, SC 29405-2106

DWG NAME: NS79_2 | DWG DATE: 17 JAN 97



KEY

M – MANHOLE

R – RAIN GUTTER DOWNSPOUT

S.S. – SOIL SAMPLE

NOTES:

* SLAB SURFACE ANGLED TOWARD THIS CORNER.

** ALL AST PIPING WAS ABOVE GROUND

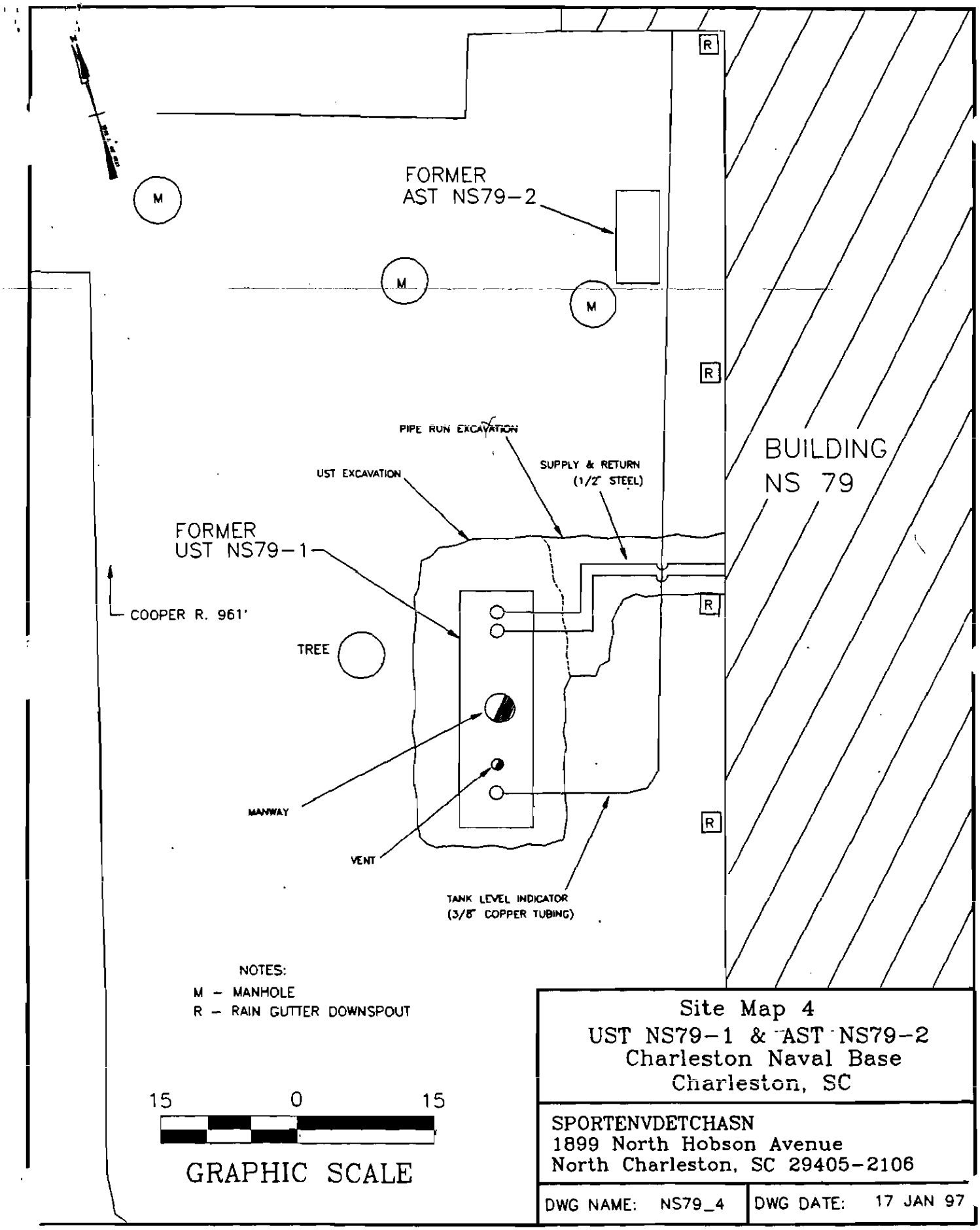
6 0 6

GRAPHIC SCALE

Site Map 3
AST NS79-2
Charleston Naval Base
Charleston, SC

SPORTENVDETCHASN
1899 North Hobson Avenue
North Charleston, SC 29405-2106

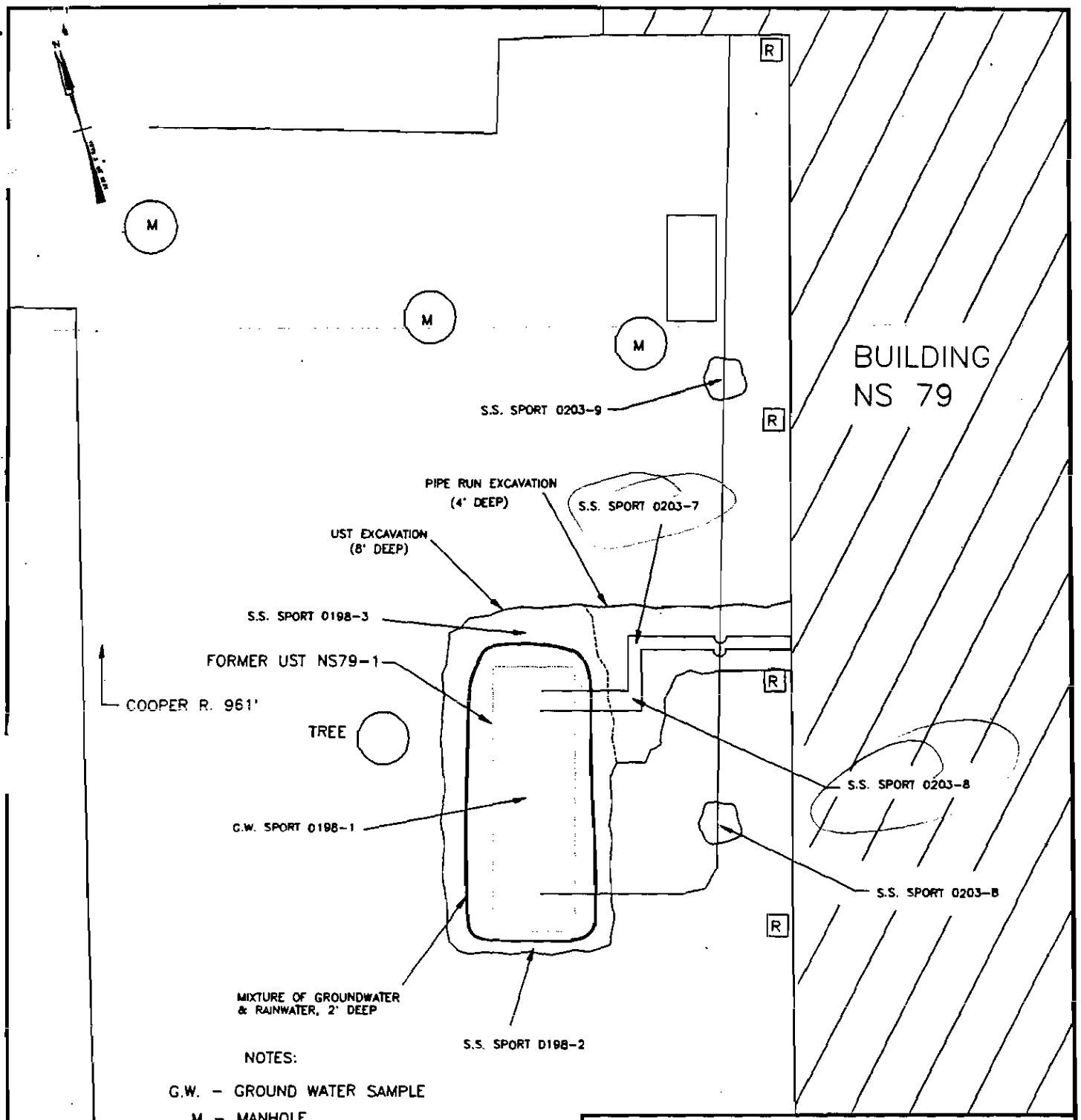
DWG NAME: NS79_3 | DWG DATE: 24 JAN 97



Site Map 4
UST NS79-1 & AST NS79-2
Charleston Naval Base
Charleston, SC

SPORTENVDETCHASN
1899 North Hobson Avenue
North Charleston, SC 29405-2106

DWG NAME: NS79_4 | DWG DATE: 17 JAN 97



NOTES:

G.W. - GROUND WATER SAMPLE
M - MANHOLE
R - RAIN GUTTER DOWNSPOUT
S.S. - SOIL SAMPLE

15 0 15

GRAPHIC SCALE

Site Map 5
UST NS79-1 & AST NS79-2
Charleston Naval Base
Charleston, SC

SPORTENVDETCHASN
1899 North Hobson Avenue
North Charleston, SC 29405-2106

DWG NAME: NS79_5	DWG DATE: 17 JAN 97

UST NS79-1

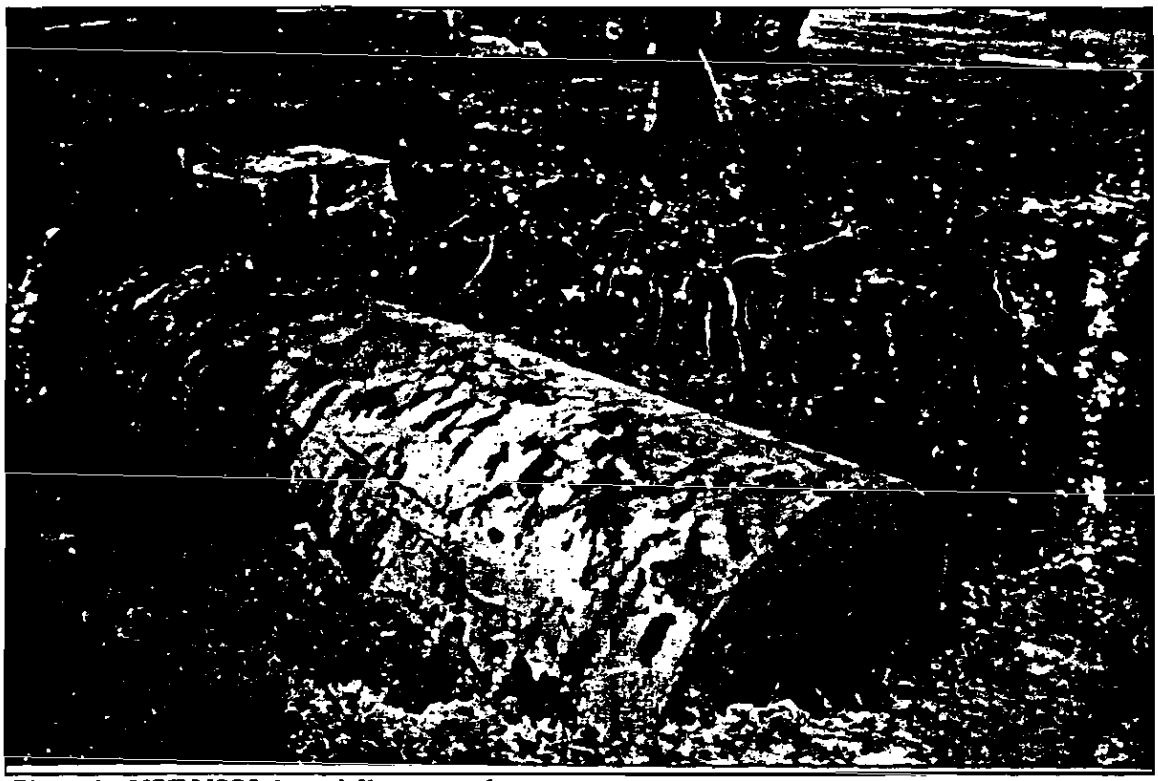


Photo 1: UST NS79-1 partially exposed.

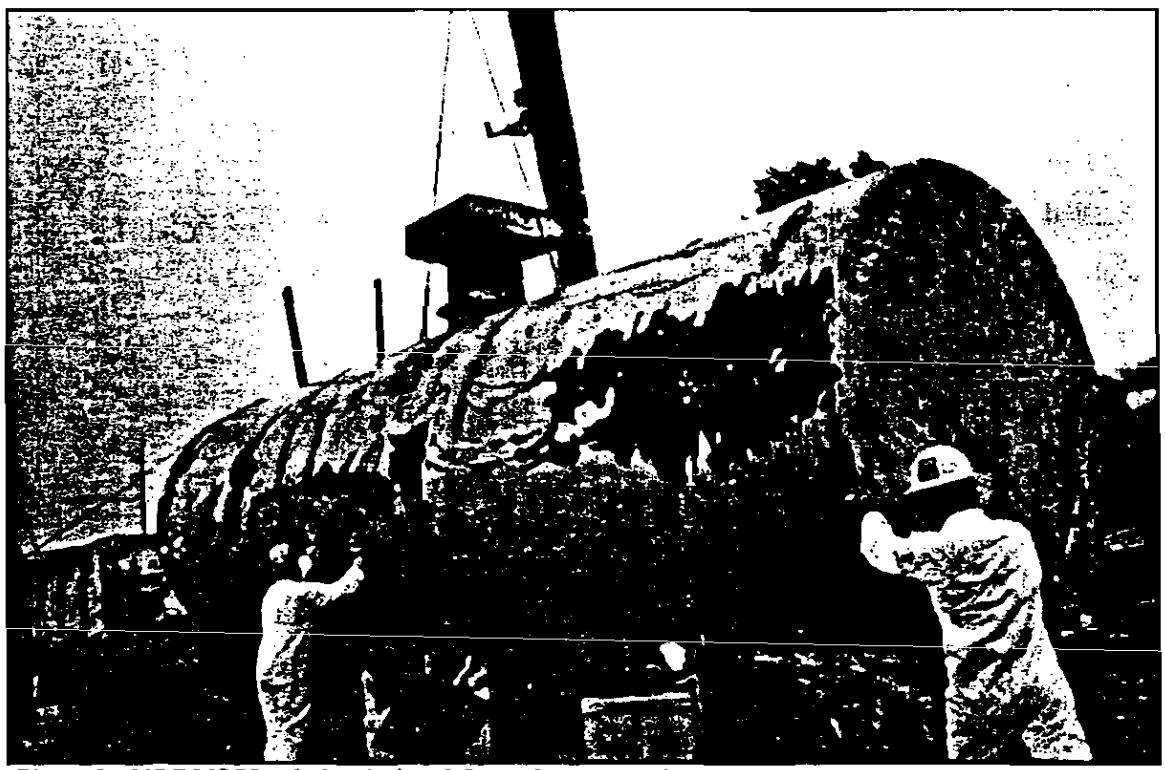


Photo 2: UST NS79-1 being hoisted from the excavation.

AST NS79-2

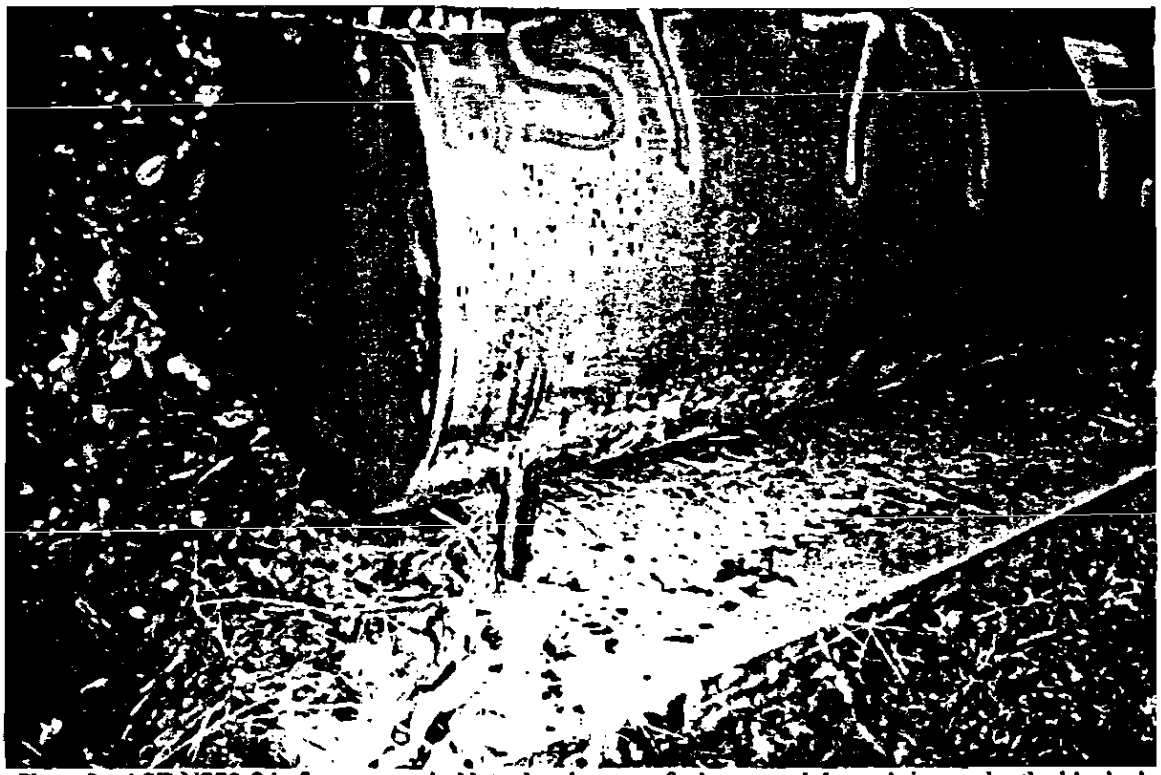


Photo 3: AST NS79-2 before removal. Note the absence of a berm, and the staining under the blanked drain valve near the end of the tank (location of soil sample SPORT 0193-1).

Attachment II

ANALYTICAL RESULTS

You must submit the laboratory report and chain-of-custody form for the samples. These samples must be analyzed by a South Carolina certified laboratory.

Certified Analytical Results
Chain-of-Custody

B2B
NS 79
ASF

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	SPL
FL	E87156/87284	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 Report Date: October 18, 1996

Sample ID : SPORT0195-1
Lab ID : 9610113-01
Matrix : Soil
Date Collected : 10/02/96
Date Received : 10/03/96
Priority : Routine
Collector : Client

Parameter	Qualifier	Result	D.L.	R.L.	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	0.00	5.00	10.0	ug/kg	5.0	JGS2	10/09/96	1949	92006	1
Ethylbenzene		16.9	5.00	10.0	ug/kg	5.0					
Toluene	J	7.70	5.00	10.0	ug/kg	5.0					
Xylenes (TOTAL)		139	5.00	10.0	ug/kg	5.0					
Naphthalene		130	5.00	10.0	ug/kg	5.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 16 items											
Acenaphthene	U	0.00	1630	3250	ug/kg	10.	WAM	10/16/96	0008	91965	2
Acenaphthylene	U	0.00	1630	3250	ug/kg	10.					
Anthracene	U	0.00	1630	3250	ug/kg	10.					
Benzo(a)anthracene	U	0.00	1630	3250	ug/kg	10.					
Benzo(a)pyrene	U	0.00	1630	3250	ug/kg	10.					
Benzo(b)fluoranthene	U	0.00	1630	3250	ug/kg	10.					
Benzo(ghi)perylene	U	0.00	1630	3250	ug/kg	10.					
Benzo(k)fluoranthene	U	0.00	1630	3250	ug/kg	10.					
Chrysene	U	0.00	1630	3250	ug/kg	10.					
Dibenzo(a,h)anthracene	U	0.00	1630	3250	ug/kg	10.					
Fluoranthene	U	0.00	1630	3250	ug/kg	10.					
Fluorene	U	0.00	1630	3250	ug/kg	10.					
Indeno(1,2,3-c,d)pyrene	U	0.00	1630	3250	ug/kg	10.					
Naphthalene	U	0.00	1630	3250	ug/kg	10.					
Phenanthrene	U	0.00	1630	3250	ug/kg	10.					
Pyrene	U	0.00	1630	3250	ug/kg	10.					

The following prep procedures were performed:
GC/MS Base/Neutral Compounds

DDT 10/09/96 2330 91965 3

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9610113-01

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Laboratory Certifications

STATE	[illegible]	[illegible]
FL	E87156/87204	E87472/87458
NC	250	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hess

Project Description: SUPSHIP-Portsmouth Detachment

Sample ID : SPORT0193-1

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M

Comments:
A dilution was required for Volatile Organics due to a high concentration of hydrocarbons. A dilution was required for Extractable Organics due to matrix interference.

As a result, the detection limits are elevated.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	104.	(30.0 - 115.)
Nitrobenzene-d5	M610	0.00*	(23.0 - 120.)
p-Terphenyl-d14	M610	0.00*	(37.3 - 128.)
Bromofluorobenzene	BTEX-8260	106.	(59.7 - 159.)
Dibromofluoromethane	BTEX-8260	116.	(74.0 - 128.)
Toluene-d8	BTEX-8260	114.	(53.4 - 163.)
Bromofluorobenzene	NAP-8260	106.	(59.7 - 159.)
Dibromofluoromethane	NAP-8260	116.	(74.0 - 128.)
Toluene-d8	NAP-8260	114.	(53.4 - 163.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 3550

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87451
NC	233	
SC	10120	10582
TN	02894	02904

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hess

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196

Report Date: October 18, 1996

Sample ID : SPORT0193-1

M = Method

Method Description

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager. Karen Blakeney at (803) 769-7386.

Karen Blakeney

Reviewed By

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Laboratory Certifications

STATE	GEL	[illegible]
FL	[illegible]	[illegible]
NC	233	
SC	10120	10012
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hines

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 | Report Date: October 18, 1996 |

Sample ID	: SPORT0193-2
Lab ID	: 9610113-02
Matrix	: Soil
Date Collected	: 10/02/96
Date Received	: 10/03/96
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	0.00	1.00	2.00	ug/kg	1.0	JGS2	10/11/96	1235	92006	1
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.430	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
Naphthalene	U	0.00	1.00	2.00	ug/kg	1.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 16 items											
Acenaphthene	U	0.00	1640	3280	ug/kg	10.	WAM	10/16/96	0044	91965	2
Acenaphthylene	U	0.00	1640	3280	ug/kg	10.					
Anthracene	U	0.00	1640	3280	ug/kg	10.					
Benzo(a)anthracene	U	0.00	1640	3280	ug/kg	10.					
Benzo(a)pyrene	U	0.00	1640	3280	ug/kg	10.					
Benzo(b)fluoranthene	U	0.00	1640	3280	ug/kg	10.					
Benzo(ghi)perylene	U	0.00	1640	3280	ug/kg	10.					
Benzo(k)fluoranthene	U	0.00	1640	3280	ug/kg	10.					
Chrysene	U	0.00	1640	3280	ug/kg	10.					
Dibenzo(a,h)anthracene	U	0.00	1640	3280	ug/kg	10.					
Fluoranthene	U	0.00	1640	3280	ug/kg	10.					
Fluorene	U	0.00	1640	3280	ug/kg	10.					
Indeno(1,2,3-c,d)pyrene	U	0.00	1640	3280	ug/kg	10.					
Naphthalene	U	0.00	1640	3280	ug/kg	10.					
Phenanthrene	U	0.00	1640	3280	ug/kg	10.					
Pyrene	U	0.00	1640	3280	ug/kg	10.					

The following prep procedures were performed:
GC/MS Base/Neutral Compounds — DDT 10/09/96 2330 91965 3

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87453
NC	233	
SC	10120	10512
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 | Report Date: October 18, 1996 |

Sample ID : SPORT0193-2

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyze Date	Time	Batch	M

Comments:
A dilution was required for Extractable Organics due to matrix interference. As a result, the detection limits are elevated.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	0.00*	(30.0 - 115.)
Nitrobenzene-d5	M610	0.00*	(23.0 - 120.)
p-Terphenyl-d14	M610	0.00*	(37.3 - 128.)
Bromofluorobenzene	BTEX-8260	114.	(59.7 - 159.)
Dibromofluoromethane	BTEX-8260	80.4	(74.0 - 128.)
Toluene-d8	BTEX-8260	110.	(53.4 - 163.)
Bromofluorobenzene	NAP-8260	114.	(59.7 - 159.)
Dibromofluoromethane	NAP-8260	80.4	(74.0 - 128.)
Toluene-d8	NAP-8260	110.	(53.4 - 163.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 3550

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

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STATE	CHL	MPI
FL	E87156/87204	E87472/87458
NC	230	
SC	10120	10002
TN	02934	02934

Client:	Supervisor of Ship Building & Conversion SUPSHIP-Portsmouth Detachment-Env. 1899 North Hobson Ave. North Charleston, South Carolina 29405-2106
Contact:	Mr. Bill Hines
Project Description:	SUPSHIP-Portsmouth Detachment

cc: NPWC00196 Report Date: October 18, 1996

Sample ID : SPORT0193-2

M = Method	Method-Description

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Karen Blakeney at (803) 769-7386.

Karen Blakeney

Reviewed By

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Laboratory Certifications

STATE	GEL	[illegible]
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10532
TN	02806	02806

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hines

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 Report Date: October 17, 1996

Sample ID	: SPORT0198-1
Lab ID	: 9610181-01
Matrix	: GroundH2O
Date Collected	: 10/08/96
Date Received	: 10/08/96
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	0.00	1.00	2.00	ug/l	1.0	RMB	10/09/96	1746	91989	1
Ethylbenzene	U	0.630	1.00	2.00	ug/l	1.0					
Toluene	U	0.850	1.00	2.00	ug/l	1.0					
Xylenes (TOTAL)	J	2.00	1.00	4.00	ug/l	1.0					
Methyl Tert Butyl Ether	U	0.00	1.00	2.00	ug/l	1.0					
Naphthalene	U	0.00	1.00	2.00	ug/l	1.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 16 items											
Acenaphthene	U	1.30	5.00	10.0	ug/l	1.0	JCB	10/15/96	1901	92135	2
Acenaphthylene	U	0.00	5.00	10.0	ug/l	1.0					
Anthracene	U	0.00	5.00	10.0	ug/l	1.0					
Benzo(a)anthracene	U	0.00	5.00	10.0	ug/l	1.0					
Benzo(a)pyrene	U	0.00	5.00	10.0	ug/l	1.0					
Benzo(b)fluoranthene	U	0.00	5.00	10.0	ug/l	1.0					
Benzo(ghi)perylene	U	0.00	5.00	10.0	ug/l	1.0					
Benzo(k)fluoranthene	U	0.00	5.00	10.0	ug/l	1.0					
Chrysene	U	0.00	5.00	10.0	ug/l	1.0					
Dibenzo(a,h)anthracene	U	0.00	5.00	10.0	ug/l	1.0					
Fluoranthene	U	0.00	5.00	10.0	ug/l	1.0					
Fluorene	U	0.00	5.00	10.0	ug/l	1.0					
Indeno(1,2,3-c,d)pyrene	U	0.00	5.00	10.0	ug/l	1.0					
Naphthalene	U	0.00	5.00	10.0	ug/l	1.0					
Phenanthrene	U	0.00	5.00	10.0	ug/l	1.0					
Pyrene	U	0.00	5.00	10.0	ug/l	1.0					

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Laboratory Certifications

STATE	GEL	[illegible]
FL	E87156/87294	E87472/[illegible]
NC	233	
SC	10120	10982
TN	02936	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

== NPWC00196 Report Date: October 17, 1996

Sample ID : SPORT0198-1

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
The following prep procedures were performed:											
GC/MS Base/Neutral Compounds							DDT	10/11/96	1730	92135	3

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	72.0	(43.0 - 108.)
Nitrobenzene-d5	M610	74.6	(35.0 - 111.)
p-Terphenyl-d14	M610	64.0	(33.0 - 125.)
Bromofluorobenzene	BTEX-8260	92.4	(80.0 - 128.)
Dibromofluoromethane	BTEX-8260	106.	(67.7 - 135.)
Toluene-d8	BTEX-8260	92.4	(76.8 - 122.)
Bromofluorobenzene	MTBE-8260	92.4	(80.0 - 128.)
Dibromofluoromethane	MTBE-8260	106.	(67.7 - 135.)
Toluene-d8	MTBE-8260	92.4	(76.8 - 122.)
Bromofluorobenzene	NAP-8260	92.4	(80.0 - 128.)
Dibromofluoromethane	NAP-8260	106.	(67.7 - 135.)
Toluene-d8	NAP-8260	92.4	(76.8 - 122.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 3510

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

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Laboratory Certifications

STATE	GEL	ERT
FL	E87156/87294	E87472/87458
NC	220	
SC	10120	10032
TN	02804	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hess

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 | Report Date: October 17, 1996 |

Sample ID	: SPORT0198-1
M = Method	Method-Description

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Karen Blakeney at (803) 769-7386.

Karen Blakeney
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GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	CERT.	EPA
FL	E87136/87204	E87472/87433
NC	233	
SC	10120	10002
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196

Report Date: October 18, 1996

Sample ID	: SPORT0198-2
Lab ID	: 9610181-02
Matrix	: Soil
Date Collected	: 10/08/96
Date Received	: 10/08/96
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	0.00	1.00	2.00	ug/kg	1.0	XGS2	10/09/96	2051	92006	1
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
Naphthalene	U	0.00	1.00	2.00	ug/kg	1.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 16 items											
Acenaphthene	U	0.00	166	331	ug/kg	1.0	WAM	10/16/96	0119	91965	2
Acenaphthylene	U	0.00	166	331	ug/kg	1.0					
Anthracene	U	0.00	166	331	ug/kg	1.0					
Benzo(a)anthracene	U	0.00	166	331	ug/kg	1.0					
Benzo(a)pyrene	U	0.00	166	331	ug/kg	1.0					
Benzo(b)fluoranthene	U	0.00	166	331	ug/kg	1.0					
Benzo(ghi)perylene	U	0.00	166	331	ug/kg	1.0					
Benzo(k)fluoranthene	U	0.00	166	331	ug/kg	1.0					
Chrysene	U	0.00	166	331	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	0.00	166	331	ug/kg	1.0					
Fluoranthene	U	0.00	166	331	ug/kg	1.0					
Fluorene	U	0.00	166	331	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	U	0.00	166	331	ug/kg	1.0					
Naphthalene	U	0.00	166	331	ug/kg	1.0					
Phenanthrene	U	0.00	166	331	ug/kg	1.0					
Pyrene	U	0.00	166	331	ug/kg	1.0					

The following prep procedures were performed:
GC/MS Base/Neutral Compounds

DDT 10/09/96 2330 91965 3

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87256	E87472/87-458
NC	233	
SC	10120	10582
TN	02936	02936

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Eqv.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hines

Project Description: SUPSHIP-Portsmouth Detachment

cc: NFWC00196 | Report Date: October 18, 1996 |

Sample ID : SPORT0198-2

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	71.6	(30.0 - 115.)
Nitrobenzene-d5	M610	72.2	(23.0 - 120.)
p-Terphenyl-d14	M610	90.2	(37.3 - 128.)
Bromofluorobenzene	BTEX-8260	98.9	(59.7 - 159.)
Dibromofluoromethane	BTEX-8260	111.	(74.0 - 128.)
Toluene-d8	BTEX-8260	104.	(53.4 - 163.)
Bromofluorobenzene	NAP-8260	98.9	(59.7 - 159.)
Dibromofluoromethane	NAP-8260	111.	(74.0 - 128.)
Toluene-d8	NAP-8260	104.	(53.4 - 163.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 3550

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Karen Blakeney at (803) 769-7386.

Karen Blakeney
Reviewed By

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Laboratory Certifications

STATE	CERT.	EXP.
FL	E87156/87294	E87472/87464
NC	233	
SC	10120	10002
TN	02974	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 Report Date: October 18, 1996

Sample ID : SPORT0198-3
Lab ID : 9610181-03
Matrix : Soil
Date Collected : 10/08/96
Date Received : 10/08/96
Priority : Routine
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	0.00	1.00	2.00	ug/kg	1.0	IAC	10/11/96	1305	92006	1
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.440	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
Naphthalene	U	0.00	1.00	2.00	ug/kg	1.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 16 items											
Acenaphthene	U	0.00	166	331	ug/kg	1.0	WAM	10/16/96	0155	91965	2
Acenaphthylene	U	0.00	166	331	ug/kg	1.0					
Anthracene	U	0.00	166	331	ug/kg	1.0					
Benzo(a)anthracene	U	0.00	166	331	ug/kg	1.0					
Benzo(a)pyrene	U	0.00	166	331	ug/kg	1.0					
Benzo(b)fluoranthene	U	0.00	166	331	ug/kg	1.0					
Benzo(ghi)perylene	U	0.00	166	331	ug/kg	1.0					
Benzo(k)fluoranthene	U	0.00	166	331	ug/kg	1.0					
Chrysene	U	0.00	166	331	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	0.00	166	331	ug/kg	1.0					
Fluoranthene	U	0.00	166	331	ug/kg	1.0					
Fluorene	U	0.00	166	331	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	U	0.00	166	331	ug/kg	1.0					
Naphthalene	U	0.00	166	331	ug/kg	1.0					
Phenanthrene	U	0.00	166	331	ug/kg	1.0					
Pyrene	U	0.00	166	331	ug/kg	1.0					

The following prep procedures were performed:
GC/MS Base/Neutral Compounds DDT 10/09/96 2330 91965 3

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Laboratory Certifications

STATE	GEL	EPA
FL	E87156/87294	E87472/87498
NC	220	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 | Report Date: October 18, 1996 |

Sample ID : SPORT0198-3

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	46.9	(30.0 - 115.)
Nitrobenzene-d5	M610	45.1	(23.0 - 120.)
p-Terphenyl-d14	M610	75.2	(37.3 - 128.)
Bromofluorobenzene	BTEX-8260	97.2	(59.7 - 159.)
Dibromofluoromethane	BTEX-8260	83.2	(74.0 - 128.)
Toluene-d8	BTEX-8260	100.	(53.4 - 163.)
Bromofluorobenzene	NAP-8260	97.2	(59.7 - 159.)
Dibromofluoromethane	NAP-8260	83.2	(74.0 - 128.)
Toluene-d8	NAP-8260	100.	(53.4 - 163.)

M = Method	Method-Description
M1	EPA 8260
M2	EPA 8270
M3	EPA 3550

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* Indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Karen Blakeney at (803) 769-7388.

Karen Blakeney
Reviewed By

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87438
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

oc: NPWC00196 Report Date: October 21, 1996

Sample ID : SPORT0203-1
Lab ID : 9610265-01
Matrix : Soil
Date Collected : 10/10/96
Date Received : 10/10/96
Priority : Routine
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	0.00	1.00	2.00	ug/kg	1.0	JAC	10/16/96	1715	92243	1
Ethylbenzene	U	0.110	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
Naphthalene	U	0.00	1.00	2.00	ug/kg	1.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 16 items											
Acenaphthene	U	0.00	163	330	ug/kg	1.0	WAM	10/14/96	2307	92134	2
Acenaphthylene	U	0.00	163	330	ug/kg	1.0					
Anthracene	U	0.00	163	330	ug/kg	1.0					
Benzo(a)anthracene	U	0.00	163	330	ug/kg	1.0					
Benzo(a)pyrene	U	0.00	163	330	ug/kg	1.0					
Benzo(b)fluoranthene	U	0.00	163	330	ug/kg	1.0					
Benzo(ghi)perylene	U	0.00	163	330	ug/kg	1.0					
Benzo(k)fluoranthene	U	0.00	163	330	ug/kg	1.0					
Chrysene	U	0.00	163	330	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	0.00	163	330	ug/kg	1.0					
Fluoranthene	U	0.00	163	330	ug/kg	1.0					
Fluorene	U	0.00	163	330	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	U	0.00	163	330	ug/kg	1.0					
Naphthalene	U	0.00	163	330	ug/kg	1.0					
Phenanthrene	U	0.00	163	330	ug/kg	1.0					
Pyrene	U	0.00	163	330	ug/kg	1.0					

The following prep procedures were performed:
GC/MS Base/Neutral Compounds DDT 10/12/96 1130 92134 3

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87284	E87472/87455
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 Report Date: October 21, 1996

Sample ID : SPORT0203-1

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M

Comments:
Volatile Organics contained matrix interferences.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	67.9	(30.0 - 115.)
Nitrobenzene-d5	M610	65.5	(23.0 - 120.)
p-Terphenyl-d14	M610	98.8	(37.3 - 128.)
Bromofluorobenzene	BTEX-8260	119.	(59.7 - 159.)
Dibromofluoromethane	BTEX-8260	91.2	(74.0 - 128.)
Toluene-d8	BTEX-8260	116.	(53.4 - 163.)
Bromofluorobenzene	NAP-8260	119.	(59.7 - 159.)
Dibromofluoromethane	NAP-8260	91.2	(74.0 - 128.)
Toluene-d8	NAP-8260	116.	(53.4 - 163.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 3550

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

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Laboratory Certifications

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FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 | Report Date: October 21, 1996 |

Sample ID	: SPORT0203-1
M = Method	Method-Description

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Karen Blakeney at (803) 769-7386.

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87254	E87472/87456
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hebron Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 Report Date: October 21, 1996

Sample ID	: SPORT0203-2
Lab ID	: 9610265-02
Matrix	: Soil
Date Collected	: 10/10/96
Date Received	: 10/10/96
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	0.00	1.00	2.00	ug/kg	1.0	JAC	10/17/96	1011	92243	1
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.300	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
Naphthalene	U	0.00	1.00	2.00	ug/kg	1.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 16 items											
Acenaphthene	U	0.00	162	330	ug/kg	1.0	WAM	10/14/96	2339	92134	2
Acenaphthylene	U	0.00	162	330	ug/kg	1.0					
Anthracene	U	0.00	162	330	ug/kg	1.0					
Benzo(a)anthracene	U	0.00	162	330	ug/kg	1.0					
Benzo(a)pyrene	U	0.00	162	330	ug/kg	1.0					
Benzo(b)fluoranthene	U	0.00	162	330	ug/kg	1.0					
Benzo(ghi)perylene	U	0.00	162	330	ug/kg	1.0					
Benzo(k)fluoranthene	U	0.00	162	330	ug/kg	1.0					
Chrysene	U	0.00	162	330	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	0.00	162	330	ug/kg	1.0					
Fluoranthene	U	0.00	162	330	ug/kg	1.0					
Fluorene	U	0.00	162	330	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	U	0.00	162	330	ug/kg	1.0					
Naphthalene	U	0.00	162	330	ug/kg	1.0					
Phenanthrene	U	0.00	162	330	ug/kg	1.0					
Pyrene	U	0.00	162	330	ug/kg	1.0					

The following prep procedures were performed:
GC/MS Base/Neutral Compounds DDT 10/12/96 1130 92134 3

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87451
NC	253	
SC	10120	10532
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 Report Date: October 21, 1996

Sample ID : SPORT0203-2

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	68.9	(30.0 - 115.)
Nitrobenzene-d5	M610	67.5	(23.0 - 120.)
p-Terphenyl-d14	M610	98.1	(37.3 - 128.)
Bromofluorobenzene	BTEX-8260	105.	(59.7 - 159.)
Dibromofluoromethane	BTEX-8260	88.8	(74.0 - 128.)
Toluene-d8	BTEX-8260	108.	(53.4 - 163.)
Bromofluorobenzene	NAP-8260	105.	(59.7 - 159.)
Dibromofluoromethane	NAP-8260	88.8	(74.0 - 128.)
Toluene-d8	NAP-8260	108.	(53.4 - 163.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 3550

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* Indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Karen Blakeney at (803) 769-7386.

Karen Blakeney
Reviewed By

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GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPA
FL	E87156/87294	E87472/87455
NC	220	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 | Report Date: October 21, 1996 |

Sample ID : SPORTU203-3
Lab ID : 9610265-03
Matrix : Soil
Date Collected : 10/10/96
Date Received : 10/10/96
Priority : Routine
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	0.00	1.00	2.00	ug/kg	1.0	JAC	10/16/96	1817	92243	1
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
Naphthalene	U	0.00	1.00	2.00	ug/kg	1.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 16 items											
Acenaphthene	U	0.00	162	330	ug/kg	1.0	WAM	10/15/96	0012	92134	2
Acenaphthylene	U	0.00	162	330	ug/kg	1.0					
Anthracene	U	0.00	162	330	ug/kg	1.0					
Benzo(a)anthracene	U	0.00	162	330	ug/kg	1.0					
Benzo(a)pyrene	U	0.00	162	330	ug/kg	1.0					
Benzo(b)fluoranthene	U	0.00	162	330	ug/kg	1.0					
Benzo(ghi)perylene	U	0.00	162	330	ug/kg	1.0					
Benzo(k)fluoranthene	U	0.00	162	330	ug/kg	1.0					
Chrysene	U	0.00	162	330	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	0.00	162	330	ug/kg	1.0					
Fluoranthene	U	0.00	162	330	ug/kg	1.0					
Fluorene	U	0.00	162	330	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	U	0.00	162	330	ug/kg	1.0					
Naphthalene	U	0.00	162	330	ug/kg	1.0					
Phenanthrene	U	0.00	162	330	ug/kg	1.0					
Pyrene	U	0.00	162	330	ug/kg	1.0					

The following prep procedures were performed:
GC/MS Base/Neutral Compounds DDT 10/12/96 1130 92134 3

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10592
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 | Report Date: October 21, 1996 |

Sample ID : SPORT0203-3

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	70.4	(30.0 - 115.)
Nitrobenzene-d5	M610	72.0	(23.0 - 120.)
p-Terphenyl-d14	M610	105.	(37.3 - 128.)
Bromofluorobenzene	BTEX-8260	103.	(59.7 - 159.)
Dibromofluoromethane	BTEX-8260	84.8	(74.0 - 128.)
Toluene-d8	BTEX-8260	103.	(53.4 - 163.)
Bromofluorobenzene	NAP-8260	103.	(59.7 - 159.)
Dibromofluoromethane	NAP-8260	84.8	(74.0 - 128.)
Toluene-d8	NAP-8260	103.	(53.4 - 163.)

M = Method	Method Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 3550

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J Indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* Indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Karen Blakeney at (803) 769-7386.

Karen Blakeney
Reviewed By

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Laboratory Certifications

STATE	GEL	EPI
FL	E871[illegible]	E87[illegible]
NC	233	
SC	10120	10542
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 | Report Date: October 21, 1996 |

Sample ID	: SPORT0203-4
Lab ID	: 9610265-04
Matrix	: Soil
Date Collected	: 10/10/96
Date Received	: 10/10/96
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	0.00	1.00	2.00	ug/kg	1.0	JAC	10/16/96	1847	92243	1
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
Naphthalene	U	0.00	1.00	2.00	ug/kg	1.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 16 items											
Acenaphthene	U	0.00	1660	3310	ug/kg	10.	WAM	10/15/96	0045	92134	2
Acenaphthylene	U	0.00	1660	3310	ug/kg	10.					
Anthracene	U	0.00	1660	3310	ug/kg	10.					
Benzo(a)anthracene	U	0.00	1660	3310	ug/kg	10.					
Benzo(a)pyrene	U	0.00	1660	3310	ug/kg	10.					
Benzo(b)fluoranthene	U	0.00	1660	3310	ug/kg	10.					
Benzo(ghi)perylene	U	0.00	1660	3310	ug/kg	10.					
Benzo(k)fluoranthene	U	0.00	1660	3310	ug/kg	10.					
Chrysene	U	0.00	1660	3310	ug/kg	10.					
Dibenzo(a,h)anthracene	U	0.00	1660	3310	ug/kg	10.					
Fluoranthene	U	0.00	1660	3310	ug/kg	10.					
Fluorene	U	0.00	1660	3310	ug/kg	10.					
Indeno(1,2,3-c,d)pyrene	U	0.00	1660	3310	ug/kg	10.					
Naphthalene	U	0.00	1660	3310	ug/kg	10.					
Phenanthrene	U	0.00	1660	3310	ug/kg	10.					
Pyrene	U	0.00	1660	3310	ug/kg	10.					

The following prep procedures were performed:
GC/MS Base/Neutral Compounds

DDT 10/12/96 1130 92134 3

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87455
NC	233	
SC	10120	10002
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

ce: NFWC00196 | Report Date: October 21, 1996 |

Sample ID : SPORT0203-4

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst Date	Time	Batch	M

Comments:
Volatile Organics contained matrix interferences.

A dilution was required for Extractable Organics due to matrix interference. As a result, the detection limits are elevated.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	82.2	(30.0 - 115.)
Nitrobenzene-d5	M610	50.1	(23.0 - 120.)
p-Terphenyl-d14	M610	108.	(37.3 - 128.)
Bromofluorobenzene	BTEX-8260	115.	(59.7 - 159.)
Dibromofluoromethane	BTEX-8260	86.4	(74.0 - 128.)
Toluene-d8	BTEX-8260	111.	(53.4 - 163.)
Bromofluorobenzene	NAP-8260	115.	(59.7 - 159.)
Dibromofluoromethane	NAP-8260	86.4	(74.0 - 128.)
Toluene-d8	NAP-8260	111.	(53.4 - 163.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 3550

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

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Laboratory Certifications

STATE	GEL	EPA
FL	E871 56/97894	E874723/73458
[illegible]	333	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 Report Date: October 21, 1996

Sample ID : SPORT0203-4

M = Method Method-Description

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Karen Blakeney at (803) 769-7386.

Karen Blakeney
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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 Report Date: October 21, 1996

Sample ID	: SPORT0203-5
Lab ID	: 9610265-05
Matrix	: Soil
Date Collected	: 10/10/96
Date Received	: 10/10/96
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	0.00	1.00	2.00	ug/kg	1.0	JAC	10/16/96	1918	92243	1
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
Naphthalene	U	0.00	1.00	2.00	ug/kg	1.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 16 items											
Acenaphthene	U	0.00	164	330	ug/kg	1.0	WAM	10/15/96	0118	92134	2
Acenaphthylene	U	0.00	164	330	ug/kg	1.0					
Anthracene	U	0.00	164	330	ug/kg	1.0					
Benzo(a)anthracene	U	0.00	164	330	ug/kg	1.0					
Benzo(a)pyrene	U	0.00	164	330	ug/kg	1.0					
Benzo(b)fluoranthene	U	0.00	164	330	ug/kg	1.0					
Benzo(ghi)perylene	U	0.00	164	330	ug/kg	1.0					
Benzo(k)fluoranthene	U	0.00	164	330	ug/kg	1.0					
Chrysene	U	0.00	164	330	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	0.00	164	330	ug/kg	1.0					
Fluoranthene	U	0.00	164	330	ug/kg	1.0					
Fluorene	U	0.00	164	330	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	U	0.00	164	330	ug/kg	1.0					
Naphthalene	U	0.00	164	330	ug/kg	1.0					
Phenanthrene	U	0.00	164	330	ug/kg	1.0					
Pyrene	U	0.00	164	330	ug/kg	1.0					

The following prep procedures were performed:
GC/MS Base/Neutral Compounds DDT 10/12/96 1130 92134 3

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Laboratory Certifications

STATE	GEL	EPA
FL	E87154/87284	E87472/87456
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 | Report Date: October 21, 1996 |

Sample ID : SPORT0203-5

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M

Comments:
Volatile Organics contained matrix interferences.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	66.2	(30.0 - 115.)
Nitrobenzene-d5	M610	69.4	(23.0 - 120.)
p-Terphenyl-d14	M610	89.8	(37.3 - 128.)
Bromofluorobenzene	BTEX-8260	106.	(59.7 - 159.)
Dibromofluoromethane	BTEX-8260	76.8	(74.0 - 128.)
Toluene-d8	BTEX-8260	105.	(53.4 - 163.)
Bromofluorobenzene	NAP-8260	106.	(59.7 - 159.)
Dibromofluoromethane	NAP-8260	76.8	(74.0 - 128.)
Toluene-d8	NAP-8260	105.	(53.4 - 163.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 3550

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10512
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 | Report Date: October 21, 1996 |

Sample ID	: SPORT0203-5
M = Method	Method-Description

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Karen Blakeney at (803) 769-7386.

Karen Blakeney
Reviewed By

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Laboratory Certifications

STATE	GEL	EPA
FL	E87156/87294	E87472/87488
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

oc: NPWC00196 | Report Date: October 21, 1996 |

Sample ID	: SPORT0203-6
Lab ID	: 9610265-06
Matrix	: Soil
Date Collected	: 10/10/96
Date Received	: 10/10/96
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	0.00	1.00	2.00	ug/kg	1.0	JAC	10/17/96	1143	92243	1
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.740	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
Naphthalene	U	0.00	1.00	2.00	ug/kg	1.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 16 items											
Acenaphthene	U	0.00	1650	3290	ug/kg	10.	WAM	10/15/96	1646	92134	2
Acenaphthylene	U	0.00	1650	3290	ug/kg	10.					
Anthracene	U	0.00	1650	3290	ug/kg	10.					
Benzo(a)anthracene	U	0.00	1650	3290	ug/kg	10.					
Benzo(a)pyrene	U	0.00	1650	3290	ug/kg	10.					
Benzo(b)fluoranthene	U	0.00	1650	3290	ug/kg	10.					
Benzo(ghi)perylene	U	0.00	1650	3290	ug/kg	10.					
Benzo(k)fluoranthene	U	0.00	1650	3290	ug/kg	10.					
Chrysene	U	0.00	1650	3290	ug/kg	10.					
Dibenzo(a,h)anthracene	U	0.00	1650	3290	ug/kg	10.					
Fluoranthene	U	0.00	1650	3290	ug/kg	10.					
Fluorene	U	0.00	1650	3290	ug/kg	10.					
Indeno(1,2,3-c,d)pyrene	U	0.00	1650	3290	ug/kg	10.					
Naphthalene	U	0.00	1650	3290	ug/kg	10.					
Phenanthrene	U	0.00	1650	3290	ug/kg	10.					
Pyrene	U	0.00	1650	3290	ug/kg	10.					

The following prep procedures were performed:
GC/MS Base/Neutral Compounds

DDT 10/12/96 1130 92134 3

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Laboratory Certifications

STATE	ORL	EPI
FL	E87136/87294	E87472/87451
NC	223	
SC	10120	10512
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 Report Date: October 21, 1996

Sample ID : SPORT0203-6

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M

Comments:
Volatile Organics contained matrix interferences.

A dilution was required for Extractable Organics due to matrix interference. As a result, the detection limits are elevated.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	77.8	(30.0 - 115.)
Nitrobenzene-d5	M610	51.9	(23.0 - 120.)
p-Terphenyl-d14	M610	102.	(37.3 - 128.)
Bromofluorobenzene	BTEX-8260	113.	(59.7 - 159.)
Dibromofluoromethane	BTEX-8260	90.4	(74.0 - 128.)
Toluene-d8	BTEX-8260	110.	(53.4 - 163.)
Bromofluorobenzene	NAP-8260	113.	(59.7 - 159.)
Dibromofluoromethane	NAP-8260	90.4	(74.0 - 128.)
Toluene-d8	NAP-8260	110.	(53.4 - 163.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 3550

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	223	
SC	10120	10642
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 | Report Date: October 21, 1996 |

Sample ID : SPORT0203-6

M = Method | Method-Description

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Karen Blakeney at (803) 769-7386.

Karen Blakeney
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Laboratory Certifications

STATE	OEL	EPI
FL	E87156/87294	E87472/87455
NC	233	
SC	10120	10982
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 Report Date: October 21, 1996

Sample ID	: SPORT0203-7
Lab ID	: 9610265-07
Matrix	: Soil
Date Collected	: 10/10/96
Date Received	: 10/10/96
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	0.00	1.00	2.00	ug/kg	1.0	JGS2	10/16/96	2127	92378	1
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
Naphthalene	U	0.00	1.00	2.00	ug/kg	1.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 16 items											
Acenaphthene	U	0.00	1630	3250	ug/kg	10.	WAM	10/15/96	1718	92134	2
Acenaphthylene	U	0.00	1630	3250	ug/kg	10.					
Anthracene	U	0.00	1630	3250	ug/kg	10.					
Benzo(a)anthracene	U	0.00	1630	3250	ug/kg	10.					
Benzo(a)pyrene	U	0.00	1630	3250	ug/kg	10.					
Benzo(b)fluoranthene	U	0.00	1630	3250	ug/kg	10.					
Benzo(ghi)perylene	U	0.00	1630	3250	ug/kg	10.					
Benzo(k)fluoranthene	U	0.00	1630	3250	ug/kg	10.					
Chrysene	U	0.00	1630	3250	ug/kg	10.					
Dibenzo(a,h)anthracene	U	0.00	1630	3250	ug/kg	10.					
Fluoranthene	U	0.00	1630	3250	ug/kg	10.					
Fluorene	U	0.00	1630	3250	ug/kg	10.					
Indeno(1,2,3-c,d)pyrene	U	0.00	1630	3250	ug/kg	10.					
Naphthalene	U	0.00	1630	3250	ug/kg	10.					
Phenanthrene	U	0.00	1630	3250	ug/kg	10.					
Pyrene	U	0.00	1630	3250	ug/kg	10.					

The following prep procedures were performed:
GC/MS Base/Neutral Compounds DDT 10/12/96 1130 92134 3

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87488
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 Report Date: October 21, 1996

Sample ID : SPORT0203-7

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M

Comments:
A dilution was required for Extractable Organics due to matrix interference. As a result, the detection limits are elevated.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	66.2	(30.0 - 115.)
Nitrobenzene-d5	M610	50.1	(23.0 - 120.)
p-Terphenyl-d14	M610	96.3	(37.3 - 128.)
Bromofluorobenzene	BTEX-8260	125.	(59.7 - 159.)
Dibromofluoromethane	BTEX-8260	94.6	(74.0 - 128.)
Toluene-d8	BTEX-8260	120.	(53.4 - 163.)
Bromofluorobenzene	NAP-8260	125.	(59.7 - 159.)
Dibromofluoromethane	NAP-8260	94.6	(74.0 - 128.)
Toluene-d8	NAP-8260	120.	(53.4 - 163.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 3550

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

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Laboratory Certifications

STATE	GEL	EPA
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10982
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 Report Date: October 21, 1996

Sample ID : SPORT0203-7

M = Method	Method-Description

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Karen Blakeney at (803) 769-7386.

Karen Blakeney

Reviewed By

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Laboratory Certifications

STATE	CHL	EPI
FL	E87156/87294	E87472/87458
NC	230	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 | Report Date: October 21, 1996 |

Sample ID	: SPORT0203-8
Lab ID	: 9610265-08
Matrix	: Soil
Date Collected	: 10/10/96
Date Received	: 10/10/96
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	0.00	1.00	2.00	ug/kg	1.0	JGS2	10/16/96	2157	92378	1
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
Naphthalene	U	0.00	1.00	2.00	ug/kg	1.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 16 items											
Acenaphthene	U	0.00	163	330	ug/kg	1.0	WAM	10/15/96	1749	92134	2
Acenaphthylene	U	0.00	163	330	ug/kg	1.0					
Anthracene	U	0.00	163	330	ug/kg	1.0					
Benzo(a)anthracene	U	0.00	163	330	ug/kg	1.0					
Benzo(a)pyrene	U	0.00	163	330	ug/kg	1.0					
Benzo(b)fluoranthene	U	0.00	163	330	ug/kg	1.0					
Benzo(ghi)perylene	U	0.00	163	330	ug/kg	1.0					
Benzo(k)fluoranthene	U	0.00	163	330	ug/kg	1.0					
Chrysene	U	0.00	163	330	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	0.00	163	330	ug/kg	1.0					
Fluoranthene	U	0.00	163	330	ug/kg	1.0					
Fluorene	U	0.00	163	330	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	U	0.00	163	330	ug/kg	1.0					
Naphthalene	U	0.00	163	330	ug/kg	1.0					
Phenanthrene	U	0.00	163	330	ug/kg	1.0					
Pyrene	U	0.00	163	330	ug/kg	1.0					

The following prep procedures were performed:
GC/MS Base/Neutral Compounds — DDT 10/12/96 1130 92134 3

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87498
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 | Report Date: October 21, 1996 |

Sample ID : SPORT0203-8

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	62.1	(30.0 - 115.)
Nitrobenzene-d5	M610	67.1	(23.0 - 120.)
p-Terphenyl-d14	M610	94.9	(37.3 - 128.)
Bromofluorobenzene	BTEX-8260	136.	(59.7 - 159.)
Dibromofluoromethane	BTEX-8260	97.3	(74.0 - 128.)
Toluene-d8	BTEX-8260	122.	(53.4 - 163.)
Bromofluorobenzene	NAP-8260	136.	(59.7 - 159.)
Dibromofluoromethane	NAP-8260	97.3	(74.0 - 128.)
Toluene-d8	NAP-8260	122.	(53.4 - 163.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 3550

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
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* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

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Karen Blakeney
Reviewed By

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87451
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196

Report Date: October 21, 1996

Sample ID	: SPORT0203-9
Lab ID	: 9610265-09
Matrix	: Soil
Date Collected	: 10/10/96
Date Received	: 10/10/96
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	0.00	1.00	2.00	ug/kg	1.0	JGS2	10/16/96	2228	92378	1
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
Naphthalene	U	0.00	1.00	2.00	ug/kg	1.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 16 items											
Acenaphthene	U	0.00	164	330	ug/kg	1.0	WAM	10/15/96	1821	92134	2
Acenaphthylene	U	0.00	164	330	ug/kg	1.0					
Anthracene	U	0.00	164	330	ug/kg	1.0					
Benzo(a)anthracene	U	0.00	164	330	ug/kg	1.0					
Benzo(a)pyrene	U	0.00	164	330	ug/kg	1.0					
Benzo(b)fluoranthene	U	0.00	164	330	ug/kg	1.0					
Benzo(ghi)perylene	U	0.00	164	330	ug/kg	1.0					
Benzo(k)fluoranthene	U	0.00	164	330	ug/kg	1.0					
Chrysene	U	0.00	164	330	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	0.00	164	330	ug/kg	1.0					
Fluoranthene	U	0.00	164	330	ug/kg	1.0					
Fluorene	U	0.00	164	330	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	U	0.00	164	330	ug/kg	1.0					
Naphthalene	U	0.00	164	330	ug/kg	1.0					
Phenanthrene	U	0.00	164	330	ug/kg	1.0					
Pyrene	U	0.00	164	330	ug/kg	1.0					

The following prep procedures were performed:
GC/MS Base/Neutral Compounds

DDT 10/12/96 1130 92134 3

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STATE	GEL	EPI
FL	E87156/87294	E87472/87451
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 Report Date: October 21, 1996

Sample ID : SPORT0203-9

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	69.9	(30.0 - 115.)
Nitrobenzene-d5	M610	73.7	(23.0 - 120.)
p-Terphenyl-d14	M610	90.9	(37.3 - 128.)
Bromofluorobenzene	BTEX-8260	134.	(59.7 - 159.)
Dibromofluoromethane	BTEX-8260	101.	(74.0 - 128.)
Toluene-d8	BTEX-8260	118.	(53.4 - 163.)
Bromofluorobenzene	NAP-8260	134.	(59.7 - 159.)
Dibromofluoromethane	NAP-8260	101.	(74.0 - 128.)
Toluene-d8	NAP-8260	118.	(53.4 - 163.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 3550

Notes:
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Karen Blakeney
Reviewed By

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KF 3

CHAIN OF CUSTODY RECORD

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Page 1 of 1

9610113

Client Name/Facility Name: SPORTENV DETCHASN

Collected by/Company: R AVKINS SPORTENV DETCHASN

Use F or P in the boxes to indicate whether sample was filtered and/or preserved

CCL 23552

	SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# OF CONTAINERS	pH, conductivity	TOC/DOC	TOX	Chloride, Fluoride, Sulfide	Nitrite/Nitrate	VOC - Specify Method required	METALS - specify	Pesticide	Herbicide	Total Phenol	Acid Extractables	B/N Extractables	PCB's	Cyanide	Coliform - specify type	BTEX + MADB	PAH	Remarks	
-01	SPORTO193-1	10/2/96	1500		X		X	2																X	X	AST-79-1 SOIL	.1
-02	SPORTO193-2	10/2/96	1500		X		X	2																X	X	AST-79-2 SOIL	.1
-03	SPORTO193-3	10/2/96	1500				X	3																X		AST-79 VOA TRIP BLANK	.2
-04	SPORTO193-4	10/2/96	1500				X	1																X		AST-79 VOA SOIL Blank	.3

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
[signature]	10/2/96	1500	[signature]	[signature]	10/3/96	1540	[signature]
[signature]	10-3-96	1605	[signature]				

Relinquished by:	Date:	Time:	Received for lab by:	Date:	Time:	Remarks:
[signature]	10-3-96	1605	[signature]	10-3-96	1605	Temp 90C

White = [illegible] collector Yellow = file Pink = with report

WOC 00196

CHAIN OF CUSTODY RECORD

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Charleston, South Carolina 29414
P.O. Box 30712
Charleston, South Carolina 29417
(803) 556-8171

Page 1 of 1 9610181

Client Name/Facility Name: SPORTENVDETCHASN

Collected by/Company: SPORTENVDETCHASN

SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods

Use F or P in the boxes to indicate whether sample was filtered and/or preserved

CCL 23623

	SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# OF CONTAINERS	pH, conductivity	TOC/DOC	TOX	Chloride, Fluoride, Sulfide	Nitrite/Nitrate	VOC - Specify Method required	METALS - specify	Pesticide	Herbicide	Total Phenol	Acid Extractables	B/N Extractables	BTEX + MTBE/NAPTHALENE	Cyanide	Coliform - specify type	PAH	BTEX + NAPTHALENE + MTBE	Remarks	
-01	SPORTØ198-1	10/8/96	1115				X	5 4 WR#																X	X	UST NS-79 GW	.1
-02	SPORTØ198-2	10/8/96	1130				X	2													X			X		UST NS-79-1 Soil	.2
-03	SPORTØ198-3	10/8/96	1145				X	2													X			X		UST NS-79-2 Soil	.2
-04	SPORTØ198-4	10/8/96	11ØØ				X	1																	X	UST NS-79 Soil TRIP BLANK	.3
-05	SPORTØ198-5	10/8/96	11ØØ				X	3																	X	UST NS-79 VOA TRIP BLANK	.4

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
[signature]	10/8/96	1330	W.R. Hiers, Jr.	W.R. Hiers Jr.	10/8/96	1346	[signature]
Relinquished by: [signature]	Date: 10/8/96	Time: 14:31	Received by lab by: [signature]	Date: 10-8-96	Time: 1451	Remarks:	

White = file collector Yellow = file Pink = with report

NPWC00196

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P.O. Box 30712
Charleston, South Carolina 29417
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CHAIN OF CUSTODY RECORD

Page 1 of 1

9610265 KBB

Client Name/Facility Name: SPORTSENVDETCHASN

Collected by/Company: SPORTSENVDETCHASN

SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods

Use F or P in the boxes to indicate whether sample was filtered and/or preserved

CCL 23678

	SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# OF CONTAINERS	pH, conductivity	TOC/DOC	TOX	Chloride, Fluoride, Sulfide	Nitrite/Nitrate	VOC - Specify Method required	METALS - specify	Pesticide	Herbicide	Total Phenol	Acid Extractables	B/N Extractables	PCB's	Cyanide	Coliform - specify type	BTEX + NAPTHALENE	PAH	Remarks	
-01	SPORT02 03-1	10/10/96	1020		X		X	2																X	X	UST NS-79-4 Soil	.1
-02	SPORT02 03-2	10/10/96	1030		X		X	2																X	X	UST NS 79-5 Soil	.1
-03	SPORT02 03-3	10/10/96	1045		X		X	2																X	X	UST NS 79-6 Soil	.1
-04	SPORT02 03-4	10/10/96	1105		X		X	2																X	X	UST NS 79-7 Soil	.1
-05	SPORT02 03-5	10/10/96	1114		X		X	2																X	X	UST NS 79-8 Soil	.1
-06	SPORT02 03-6	10/10/96	1129		X		X	2																X	X	UST NS 79-9 Soil	.1
-07	SPORT02 03-7	10/10/96	1143		X		X	2																X	X	UST NS 79-10 Soil	.1
-08	SPORT02 03-8	10/10/96	1159		X		X	2																X	X	UST NS 79-11 Soil	.1
-09	SPORT02 03-9	10/10/96	1215		X		X	2																X	X	UST NS 79-12 Soil	.1
-10	SPORT02 03-10	10/9/96	0930				X	3																X		UST NS 79 VOA Trip Blank	.2
-11	SPORT02 03-11	10/9/96	0930		X		X	1																X		UST NS 79 Soil Trip Blank	.3

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
[signature]	10/10/96	1306	W.R. Hiers Jr.	W.R. Hiers Jr.	10/10/96	1427	[signature]
[signature]	10/10/96	1415	Received by lab by: Dionne Francis 10/10/96	Date:	Time:	Remarks: temp 14°C	

Whi ple collector Yellow = file Pink = with report

Attachment III

Certificate of Disposal (tank)

AST Certificate of Disposal

CONTRACTOR

Supervisor of Shipbuilding, Conversion and Repair, USN
Portsmouth, VA
Environmental Detachment Charleston
1899 North Hobson Avenue
North Charleston 29405-2106

Telephone (803) 743-6482

TANK ID & LOCATION

AST NS79-1, Charleston Naval Base, Dyess Ave., N. Charleston, SC

DISPOSAL LOCATION

Bldg. 1601 Tank Cleaning
& Disposal Area
Charleston Naval Complex

TYPE OF TANK	SIZE (GAL)
Fuel oil	500 gal.

CLEANING/DISPOSAL METHOD

The tank was cut open on both ends, cleaned with a steam cleaner, cut into sections, and disposed of as recyclable scrap metal.

DISPOSAL CERTIFICATION

I certify that the above tank has been properly cleaned and disposed of as recyclable scrap metal.

Sidney C. Ladson 11-7-97

Sidney C. Ladson (Name) (Date)

UST Certificate of Disposal

CONTRACTOR

Supervisor of Shipbuilding, Conversion and Repair, USN
Portsmouth, VA
Environmental Detachment Charleston
1899 North Hobson Avenue
North Charleston 29405-2106

Telephone (803) 743-6482

TANK ID & LOCATION

UST NS79-2, Charleston Naval Base, Dyess Ave., N. Charleston, SC.

DISPOSAL LOCATION

Bldg. 1601 Tank Cleaning
& Disposal Area
Charleston Naval Complex

TYPE OF TANK	SIZE (GAL)
Fuel oil	10,000 gal.

CLEANING/DISPOSAL METHOD

The tank was cut open on both ends, cleaned with a steam cleaner, cut into sections, and disposed of as recyclable scrap metal.

DISPOSAL CERTIFICATION

I certify that the above tank has been properly cleaned and disposed of as recyclable scrap metal.

Sidney C. Ladson / 1-7-97

Sidney C. Ladson (Name) (Date)

APPENDIX B

GEOLOGIC BORING LOGS

BASE: Charleston Naval Complex, Zone H	**SITE ID:** 03	**PROJECT NO.** 7921
BORING ID: CNC03-B01	**WELL ID:**	**PIEZOMETER ID:**
CONTRACTOR: Catlin	**COMPLETION DATE:** 12/03/98	**LOGGED BY:** P.J. Jackson
METHOD: Powerprobe	**DIAMETER:** 3" OD	**TOTAL DEPTH:** 10ft bls
TOC ELEVATION: ft MSL	**SCREEN INTERVAL:** ft bls	**DEPTH TO ∇** ft bls

DEPTH FT.	LAB SAMPLE ID.	SAMPLE	RECOVERY	CORRECTED HEADSPACE (ppm)	LITHILOGIC DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOW COUNTS	WELL DATA
				4	SAND: some silt and clay, very fine- to fine-grained, soft, dry, light brown to brown.		SP		
	03SFB0102			4			SC		
				3	CLAYEY SAND: ~20% clay, some silt, very fine- to fine-grained, soft, dry, light brown to brown.				
				2	CLAYEY SAND: as above with concrete rubble and pebbles throughout.				
5									
					No Recovery				
10					Met refusal at 10'bls. End of Boring				
15									

BASE: Charleston Naval Complex, Zone H	**SITE ID:** 03	**PROJECT NO.** 7921
BORING ID: CNC03-B02	**WELL ID:**	**PIEZOMETER ID:** CNC03-P01
CONTRACTOR: Catlin	**COMPLETION DATE:** 12/03/98	**LOGGED BY:** P.J. Jackson
METHOD: Powerprobe	**DIAMETER:** 1.25" ID	**TOTAL DEPTH:** 12ft bls
TOC ELEVATION: 100.00 ft MSL	**SCREEN INTERVAL:** 2 - 12ft bls	**DEPTH TO ∇** 8.29 ft bls

DEPTH FT.	LAB SAMPLE ID.	SAMPLE	RECOVERY	CORRECTED HEADSPACE (ppm)	LITHILOGIC DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOW COUNTS	WELL DATA
				3	SILTY SAND: ~20% silt, trace clay, very fine- to fine-grained, non- cohesive, soft, dry, very dark gray.		SM		
				4	SILTY SAND: some silt and clay, soft, very fine-grained, dry, non- cohesive, light brown.				
				3	SAND: medium-grained, well sorted, sub-angular, soft, dry, light gray.		SP		
				3					
5	03SFB0205			5	SAND: some silt and clay, fine-grained, moderately sorted, soft, damp to wet, light brown.				
	∇				SANDY CLAY: mixed layers of clay muck and sandy clay; soft, saturated , very dark gray.		CL		
10									
					SAND: medium-grained, trace coarse, well sorted, sub-angular, soft, saturated, very light gray.		SP		
					End of Boring				
15									

Tetra Tech NUS

BASE: Charleston Naval Complex, Zone H	**SITE ID:** 03	**PROJECT NO.** 7921
BORING ID: CNC03-B03	**WELL ID:**	**PIEZOMETER ID:**
CONTRACTOR: Catlin	**COMPLETION DATE:** 12/03/98	**LOGGED BY:** P.J. Jackson
METHOD: Powerprobe	**DIAMETER:** 3" OD	**TOTAL DEPTH:** 12ft bls
TOC ELEVATION: ft MSL	**SCREEN INTERVAL:** ft bls	**DEPTH TO ∇** 6 ft bls

DEPTH FT.	LAB SAMPLE ID.	SAMPLE	RECOVERY	CORRECTED HEADSPACE (ppm)	LITHILOGIC DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOW COUNTS	WELL DATA
				4	SAND: some silt, very fine- to coarse-grained, soft, dry, brown.		SW		
				5					
				5	SAND: some silt and clay, very fine- to medium-grained, trace coarse, soft, dry, light brown to dark brown.				
				6			SP		
5	03SFB0305			8	SAND: medium- to coarse-grained, trace fine-grained and clay, moderate sort, soft, dry to damp, sub-rounded, brownish-orange and light gray.				
	∇								
					CLAY: sticky, soft, muck, numerous 1-inch thick coarse-grained sand layers, wet, black.		OL		
					SAND: coarse-grained, trace medium-grained, well sorted, soft, saturated, mostly silica, light grayish tan.		SP		
10									
					CLAY: soft, muck, sticky, non-plastic, saturated, very dark gray.		OL		
					End of Boring				
15									

Tetra Tech NUS

BASE: Charleston Naval Complex, Zone H	**SITE ID:** 03	**PROJECT NO.** 7921
BORING ID: CNC03-B04	**WELL ID:**	**PIEZOMETER ID:** CNC03-P02
CONTRACTOR: Catlin	**COMPLETION DATE:** 12/03/98	**LOGGED BY:** P.J. Jackson
METHOD: Powerprobe	**DIAMETER:** 1.25" ID	**TOTAL DEPTH:** 12ft bls
TOC ELEVATION: 100.07 ft MSL	**SCREEN INTERVAL:** 1 – 11ft bls	**DEPTH TO ∇** 8.20 ft bls

DEPTH FT.	LAB SAMPLE ID.	SAMPLE	RECOVERY	CORRECTED HEADSPACE (ppm)	LITHILOGIC DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOW COUNTS	WELL DATA
				3	CLAYEY SAND: ~35 clay, very fine- to medium-grained sand, trace coarse-grained sand, shell fragments, moderately cohesive, soft, dry, dark brown.		SC		
				4	SILTY CLAY: ~20% silt, some very fine-grained sand, soft, moderately plastic, dry, dark brown.		CL		
				3	SAND: very fine-grained, trace silt, well sorted, soft, dry, light brown.		SP		
	03SFB0404			5					
5				3					
					SAND: fine-grained grading to medium-grained with depth, some shells, soft, trace silt, dry to saturated, light brown becoming very dark gray.				
	∇								
					CLAY: soft, muck, lots of shells, some wood fragments, scattered 1- to 2-inch layers of fine-grained sand, saturated, black.		OL		
10									
					End of Boring				
15									

Tetra Tech NUS

BASE: Charleston Naval Complex, Zone H	**SITE ID:** 03	**PROJECT NO.** 7921
BORING ID: CNC03-B05	**WELL ID:**	**PIEZOMETER ID:**
CONTRACTOR: Catlin	**COMPLETION DATE:** 12/04/98	**LOGGED BY:** P.J. Jackson
METHOD: Powerprobe	**DIAMETER:** 3" OD	**TOTAL DEPTH:** 12ft bls
TOC ELEVATION: ft MSL	**SCREEN INTERVAL:** ft bls	**DEPTH TO ∇** 6 ft bls

DEPTH FT.	LAB SAMPLE ID.	SAMPLE	RECOVERY	CORRECTED HEADSPACE (ppm)	LITHILOGIC DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOW COUNTS	WELL DATA
				<1	CLAYEY SAND: silt, clay, very fine- to coarse-grained, soft, moderately cohesive, dry, very dark brown.		SC		
				1	CLAYEY SAND: ~40% clay, lots of shell material, very fine- to medium- grained, soft, cohesive, dry brown.				
	03SFB0503			2	SAND: some clay, very fine- to fine-grained, loose, non-cohesive, dry, light gray to brown.				
				1			SP		
5				1					
	∇				SAND: medium-grained, some fine-grained, moderate sort, non-cohesive, loose, dry to wet, one 1-inch clay layer at 7-feet bls, light brown to very dark gray.				
							OL		
10					CLAY: soft, muck, organic, lots of shell and plant material, non- plastic, black.				
					End of Boring				
15									

Tetra Tech NUS

BASE: Charleston Naval Complex, Zone H	**SITE ID:** 03	**PROJECT NO.** 7921
BORING ID: CNC03-B06	**WELL ID:**	**PIEZOMETER ID:**
CONTRACTOR: Catlin	**COMPLETION DATE:** 12/04/98	**LOGGED BY:** P.J. Jackson
METHOD: Powerprobe	**DIAMETER:** 3" OD	**TOTAL DEPTH:** 12ft bls
TOC ELEVATION: ft MSL	**SCREEN INTERVAL:** ft bls	**DEPTH TO ∇** ~6 ft bls

DEPTH FT.	LAB SAMPLE ID.	SAMPLE	RECOVERY	CORRECTED HEADSPACE (ppm)	LITHILOGIC DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOW COUNTS	WELL DATA
				2	SILTY SAND: ~30% silt, very fine- to fine-grained, soft, lots of roots, unconsolidated, dry, brown.		SM		
				1	CLAYEY SAND: ~30 to 40% clay, fine- to medium-grained, trace coarse- grained, trace shell fragments, brown.		SC		
				<1					
	03SFB0604			2	CLAYEY, SILTY SAND: ~20% clay, ~20% silt, fine-grained, trace medium- grained, slightly cohesive, dry, brown.		SM		
5				1	SAND: fine-grained, trace medium-grained, trace clay and silt, moderate sort, non-cohesive, damp, light grayish brown.		SP		
				<1	CLAYEY SAND: ~15% clay and silt, fine-grained, trace very fine- and medium-grained, damp, loose, grayish brown.		SC		
					End of Boring				
10									
15									

Tetra Tech NUS

BASE: Charleston Naval Complex, Zone H	**SITE ID:** 03	**PROJECT NO.** 7921
BORING ID: CNC03-B07	**WELL ID:**	**PIEZOMETER ID:** CNC03-P03
CONTRACTOR: Catlin	**COMPLETION DATE:** 12/04/98	**LOGGED BY:** P.J. Jackson
METHOD: Powerprobe	**DIAMETER:** 1.25" ID	**TOTAL DEPTH:** 12ft bls
TOC ELEVATION: 100.52 ft MSL	**SCREEN INTERVAL:** 1 – 11ft bls	**DEPTH TO ∇** 8.67 ft bls

DEPTH FT.	LAB SAMPLE ID.	SAMPLE	RECOVERY	CORRECTED HEADSPACE (ppm)	LITHILOGIC DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOW COUNTS	WELL DATA
				<1	SILTY SAND: ~20% silt, very fine- to fine-grained, soft, dry, unconsolidated, brown.		SM		
				<1	SILTY SAND: ~20% silt, some clay, very fine- to fine-grained, soft, unconsolidated, dry, brown.				
				<1	SILTY CLAY: ~30% silt, trace fine-grained sand, non-plastic, dry, moderately cohesive, dark gray.		CL		
				<1	SAND: medium-grained, trace coarse- and fine-grained, lots of shell fragments, poor sort, dry to damp, light brown.		SW		
5	03SFB0705			<1					
					SAND: fine-grained, trace medium-grained, one 0.5-inch layer of clay, wet, very dark gray.		SP		
	∇				CLAY: silty, muck, saturated, non-plastic, layers of shell material, several 1-inch sand layers with fine-grained sand throughout, very dark gray.		OL		
10									
					End of Boring				
15									

Tetra Tech NUS

BASE: Charleston Naval Complex, Zone H	**SITE ID:** 03	**PROJECT NO.** 7921
BORING ID: CNC03-B08	**WELL ID:**	**PIEZOMETER ID:**
CONTRACTOR: Catlin	**COMPLETION DATE:** 12/04/98	**LOGGED BY:** P.J. Jackson
METHOD: Powerprobe	**DIAMETER:** 3" OD	**TOTAL DEPTH:** 12ft bls
TOC ELEVATION: ft MSL	**SCREEN INTERVAL:** ft bls	**DEPTH TO ∇** 5 ft bls

DEPTH FT.	LAB SAMPLE ID.	SAMPLE	RECOVERY	CORRECTED HEADSPACE (ppm)	LITHOLOGIC DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOW COUNTS	WELL DATA
				5	SANDY CLAY: silty, very fine- to fine-grained, non-plastic, dry, moderately cohesive, dark brown.		CL		
				5					
				6	SAND: fine-grained, well sorted, trace shells, dry, light gray.		SP		
	03SFB0804			6					
5 ∇									
					SAND: fine-grained, trace silt, shell material, several 0.5- to 1.0-inch clay layers, wet, very dark gray.				
							OL		
10					CLAY: some very fine-grained sand, silty, muck, lots of shells, saturated, soft, very dark gray.				
					End of Boring				
15									

Tetra Tech NUS

BASE: Charleston Naval Complex, Zone H	**SITE ID:** 03	**PROJECT NO.** 7921
BORING ID: CNC03-B09	**WELL ID:**	**PIEZOMETER ID:**
CONTRACTOR: Catlin	**COMPLETION DATE:** 12/04/98	**LOGGED BY:** P.J. Jackson
METHOD: Powerprobe	**DIAMETER:** 3" OD	**TOTAL DEPTH:** 12ft bls
TOC ELEVATION: ft MSL	**SCREEN INTERVAL:** ft bls	**DEPTH TO ∇** 6 ft bls

DEPTH FT.	LAB SAMPLE ID.	SAMPLE	RECOVERY	CORRECTED HEADSPACE (ppm)	LITHOLOGIC DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOW COUNTS	WELL DATA
					SILTY SAND: ~25% silt, very fine-grained, dry, soft, brown.		SM		
				5			SC		
	03SFB0902			6	CLAYEY SAND: ~20 to 25% clay - increasing with depth, fine-grained, trace medium-grained, trace shell fragments, dry, brown.				
				3	SILTY CLAY: ~20% silt, some very fine-grained sand, non-plastic, dry, dark brown.		CL		
				4	SAND: fine-grained, well sorted, dry, light gray.		SP		
5				3					
	∇				SAND: fine-grained, trace medium-grained, some shell fragments, dry to saturated, well sorted, light brown to gray.				
					CLAY: muck, silty, saturated, several 0.5-inch layers of fine-grained sand, very dark gray.		OL		
10									
					End of Boring				
15									

Tetra Tech NUS

BASE: Charleston Naval Complex, Zone H	**SITE ID:** 03	**PROJECT NO.** 7921
BORING ID: CNC03-B10	**WELL ID:**	**PIEZOMETER ID:**
CONTRACTOR: Catlin	**COMPLETION DATE:** 12/04/98	**LOGGED BY:** P.J. Jackson
METHOD: Powerprobe	**DIAMETER:** 3" OD	**TOTAL DEPTH:** 12ft bls
TOC ELEVATION: ft MSL	**SCREEN INTERVAL:** ft bls	**DEPTH TO ∇** 6 ft bls

DEPTH FT.	LAB SAMPLE ID.	SAMPLE	RECOVERY	CORRECTED HEADSPACE (ppm)	LITHILOGIC DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOW COUNTS	WELL DATA
					SILTY, CLAYEY SAND: even mix, very fine-grained sand, dry, soft, unconsolidated, brown.		ML		
				70			CL		
	03SFB1002			70	SILTY CLAY: ~30 to 35% silt, some very fine-grained sand, non-plastic , dry, very dark gray.				
				7					
				6			SM		
5									
	∇				SILTY SAND: silty, fine-grained, saturated at 6-feet bls, two 4-inch clay-muck layers, soft, very dark gray.				
							OL		
10					CLAY: muck, saturated, roots, plant material, shells, organic, silty, very dark gray.				
					End of Boring				
15									

Tetra Tech NUS

BASE: Charleston Naval Complex, Zone H	**SITE ID:** 03	**PROJECT NO.** 7921
BORING ID: CNC03-B11	**WELL ID:**	**PIEZOMETER ID:**
CONTRACTOR: Catlin	**COMPLETION DATE:** 12/04/98	**LOGGED BY:** P.J. Jackson
METHOD: Powerprobe	**DIAMETER:** 3" OD	**TOTAL DEPTH:** 12ft bls
TOC ELEVATION: ft MSL	**SCREEN INTERVAL:** ft bls	**DEPTH TO ∇** 6 ft bls

DEPTH FT.	LAB SAMPLE ID.	SAMPLE	RECOVERY	CORRECTED HEADSPACE (ppm)	LITHOLOGIC DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOW COUNTS	WELL DATA
	03SFB1101			5	SILTY SAND: ~30% silt, very fine-grained, dry, soft, unconsolidated, brown.		SM		
				3			SC		
				3	CLAYEY SAND: ~20% clay, silty, very fine- to fine-grained, trace medium-grained, trace shells, dry, brown.				
				2	SILTY GRAVEL: gravel, sand, and silt mixture, gravel is chert.		GM		
5							SM		
	∇				SILTY SAND: silty, two 1-inch clay lenses, fine-grained, trace medium-grained, saturated, dark gray.				
					CLAYEY SAND: very fine-grained, ~20% clay, wet, soft, gray.		SC		
10					CLAY: muck, silty, non-plastic, shells, 0.1-cm fine-grained sand lenses, saturated, very dark gray.		OL		
					End of Boring				
15									

Tetra Tech NUS

BASE: Charleston Naval Complex, Zone H	**SITE ID:** 03	**PROJECT NO.** 7921
BORING ID: CNC03-B12	**WELL ID:**	**PIEZOMETER ID:**
CONTRACTOR: Catlin	**COMPLETION DATE:** 12/04/98	**LOGGED BY:** P.J. Jackson
METHOD: Powerprobe	**DIAMETER:** 3" OD	**TOTAL DEPTH:** 12ft bls
TOC ELEVATION: ft MSL	**SCREEN INTERVAL:** ft bls	**DEPTH TO ∇** 6 ft bls

DEPTH FT.	LAB SAMPLE ID.	SAMPLE	RECOVERY	CORRECTED HEADSPACE (ppm)	LITHOLOGIC DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOW COUNTS	WELL DATA
				4	SILTY CLAYEY SAND: ~35% silt and clay, very fine- to medium-grained, dry, soft, unconsolidated, trace shell fragments, brown.		ML		
				5					
				5	CLAYEY SAND: ~25% clay, silty, fine- to medium-grained, trace coarse- grained, shell fragments, dry, unconsolidated, brown.		SC		
				4			SP		
5	03SFB1205			6					
	∇				SAND: fine-grained, trace medium- and coarse-grained, loose, moderate sort, wet at 6-feet bls, light brown to dark gray.				
					CLAY: muck, silty, non-plastic, interbedded with 1- to 2-inch layers of fine-grained sand, black.		OL		
10					CLAY: muck, silty, shells, saturated, non-plastic, very dark gray.				
					End of Boring				
15									

Tetra Tech NUS

BASE: Charleston Naval Complex, Zone H	**SITE ID:** 03	**PROJECT NO.** 7921
BORING ID: CNC03-B13	**WELL ID:**	**PIEZOMETER ID:**
CONTRACTOR: Catlin	**COMPLETION DATE:** 12/04/98	**LOGGED BY:** P.J. Jackson
METHOD: Powerprobe	**DIAMETER:** 3" OD	**TOTAL DEPTH:** 8ft bls
TOC ELEVATION: ft MSL	**SCREEN INTERVAL:** ft bls	**DEPTH TO ∇** 5 ft bls

DEPTH FT.	LAB SAMPLE ID.	SAMPLE	RECOVERY	CORRECTED HEADSPACE (ppm)	LITHILOGIC DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOW COUNTS	WELL DATA
				2	SILTY SAND: some clay, ~20% silt, very fine- to fine-grained, trace shells, dry, unconsolidated, brown.		SM		
				2					
				2	SAND: fine-grained, trace silt, well sorted, dry, loose, light gray and brown.		SP		
				2					
5	03SFB1305			3	SAND: as above but coarsening with depth, wet at 5-feet bls.				
					SILTY SAND: silty, lots of shells, 1-inch layers of clay-muck, saturated, very dark gray.		SM		
					End of Boring				
10									
15									

Tetra Tech NUS

BASE: Charleston Naval Complex, Zone H	**SITE ID:** 03	**PROJECT NO.** 7921
BORING ID: CNC03-B14	**WELL ID:**	**PIEZOMETER ID:**
CONTRACTOR: Catlin	**COMPLETION DATE:** 12/07/98	**LOGGED BY:** P.J. Jackson
METHOD: Powerprobe	**DIAMETER:** 3" OD	**TOTAL DEPTH:** 12ft bls
TOC ELEVATION: ft MSL	**SCREEN INTERVAL:** ft bls	**DEPTH TO ∇** 5 ft bls

DEPTH FT.	LAB SAMPLE ID.	SAMPLE	RECOVERY	CORRECTED HEADSPACE (ppm)	LITHILOGIC DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOW COUNTS	WELL DATA
							CL		
				6	SILTY CLAY: ~30 to 40% silt, some very fine-grained sand, non-plastic , hard, dry, brown.				
	03SFB1402			4					
				<1	SAND: fine-grained, some very fine-grained, some silt, loose, dry to damp, pale brownish gray.		SP		
				<1	SAND: silty, very fine- to fine-grained, trace medium-grained, layers of shell material, damp to wet, loose, light brown to dark gray.		SM		
5	∇								
					CLAY: muck, very soft, non-plastic, organic, silty, plant material, trace shells, saturated, dark gray.		OL		
10									
					End of Boring				
15									

Tetra Tech NUS

BASE: Charleston Naval Complex, Zone H	**SITE ID:** 03	**PROJECT NO.** 7921
BORING ID: CNC03-B15	**WELL ID:**	**PIEZOMETER ID:**
CONTRACTOR: Catlin	**COMPLETION DATE:** 12/07/98	**LOGGED BY:** P.J. Jackson
METHOD: Powerprobe	**DIAMETER:** 3" OD	**TOTAL DEPTH:** 12ft bls
TOC ELEVATION: ft MSL	**SCREEN INTERVAL:** ft bls	**DEPTH TO ∇** 5 ft bls

DEPTH FT.	LAB SAMPLE ID.	SAMPLE	RECOVERY	CORRECTED HEADSPACE (ppm)	LITHILOGIC DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOW COUNTS	WELL DATA
				<1	SILTY CLAY: ~30 to 40% silt, some very fine-grained sand, non-plastic , hard, dry, brown.		CL		
	03SFB1502			2					
				<1	SAND: fine-grained, trace silt and medium-grained, some shells, loose, damp, pale brownish gray.		SP		
				<1	SAND: as above with one 2-inch black clay-muck layer.				
5 ∇									
					CLAY: muck, very soft, non-plastic, organic, silty, one 4-inch layer of very fine-grained well sorted sand, dark gray.		OL		
					CLAY: muck, very soft, non-plastic, organic, silty, saturated, one 6-inch layer of silty sand at 11.5-feet bls, dark gray.				
10									
					End of Boring				
15									

Tetra Tech NUS

BASE: Charleston Naval Complex, Zone H	**SITE ID:** 03	**PROJECT NO.** 7921
BORING ID: CNC03-B16	**WELL ID:**	**PIEZOMETER ID:**
CONTRACTOR: Catlin	**COMPLETION DATE:** 12/07/98	**LOGGED BY:** P.J. Jackson
METHOD: Powerprobe	**DIAMETER:** 3" OD	**TOTAL DEPTH:** 12ft bls
TOC ELEVATION: ft MSL	**SCREEN INTERVAL:** ft bls	**DEPTH TO ∇** 5 ft bls

DEPTH FT.	LAB SAMPLE ID.	SAMPLE	RECOVERY	CORRECTED HEADSPACE (ppm)	LITHILOGIC DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOW COUNTS	WELL DATA
	03SFB1601			4	SILTY CLAY: ~35% silt, some very fine-grained sand, non-plastic, hard, dry, dark brown.		CL		
				1					
				3	SAND: fine-grained, trace medium-grained, some shells, loose, damp, pale brownish gray.		SP		
				<1	SAND: as above with lots of shells.				
5	∇								
					CLAY: muck, very soft, non-plastic, organic, silty, saturated, lots of pland material, very fine-grained sand layers in bottom 6-inches, very dark gray.		OL		
10									
					End of Boring				
15									

Tetra Tech NUS

SOUTHNAVFAC

LOG OF BORING CN603-B17

OJECT NO: CTO 0068 / 7912	PROJECT NAME: SITE 3, BUILDING NS 79
PROJECT LOCATION: CHARLESTON NAVAL COMPLEX "H"	DATE DRILLED: 1-11-99
DRILLING COMPANY: Catlin	SURFACE ELEVATION: Feet —
DRILLING METHOD: Power Probe / Hand Auger	BORING DIAMETER: Inches 3
DRILLING RIG: Power Probe	GEOLOGIST: Pam Jackson

DEPTH feet	SAMPLE NUMBER	BLOWS/FT.	PID (ppm) Sample	B. Zone	Borehole	Drill B. Z.	GRAPHIC LOG	USCS/RQD	GEOLOGIC DESCRIPTION Density/Consistency, Hardness, Color	WELL DIAGRAM
	*	Hand Auger						CL	Orange to Brown fine Sandy Clay, damp. (mottled red at 2 to 3 ft)	
5		E.O.B	—					CL	Yellowish Orange fine Sandy Clay with trace of silt, saturated at 3.5 ft	
10									Field Screening Out	
									* collect Sample 035FB1703	
20										
25										
30										
35										
40										

JCE NUMBER

SOUTHNAVFAC

LOG OF BORING CWC03-B18

PROJECT NO: CTO 0068 / 7912
PROJECT NAME: SITE 3, BUILDING NS79
PROJECT LOCATION: CHARLESTON NAVAL COMPLEX Zone H
DATE DRILLED: 1-11-99
DRILLING COMPANY: Catlin
SURFACE ELEVATION: Feet —
DRILLING METHOD: Power Probe / Hand Auger
BORING DIAMETER: Inches 3
DRILLING RIG: Power Probe
GEOLOGIST: Pam Jackson

DEPTH feet	SAMPLE NUMBER	BLOWS/FT.	PID (ppm) Sample	B. Zone	Borehole	Drill B. Z.	GRAPHIC LOG	USCS/RQD	GEOLOGIC DESCRIPTION Density/Consistency, Hardness, Color	WELL DIAGRAM
*	E	Hand Auger 0.B	—	—				CL	Orange to Brown fine Sandy clay, mottled, damp	
5								CL	Orange to Light Brown fine Sandy clay, damp	
10					At 3 to 4		bls →	SP	Sand, Gray, very fine to fine sand, trace of silt, (Saturated at 3 to 4 'Ft)	
15									Field Screening Data	
20									* 03SFB1803	
25										
30										
35										
40										

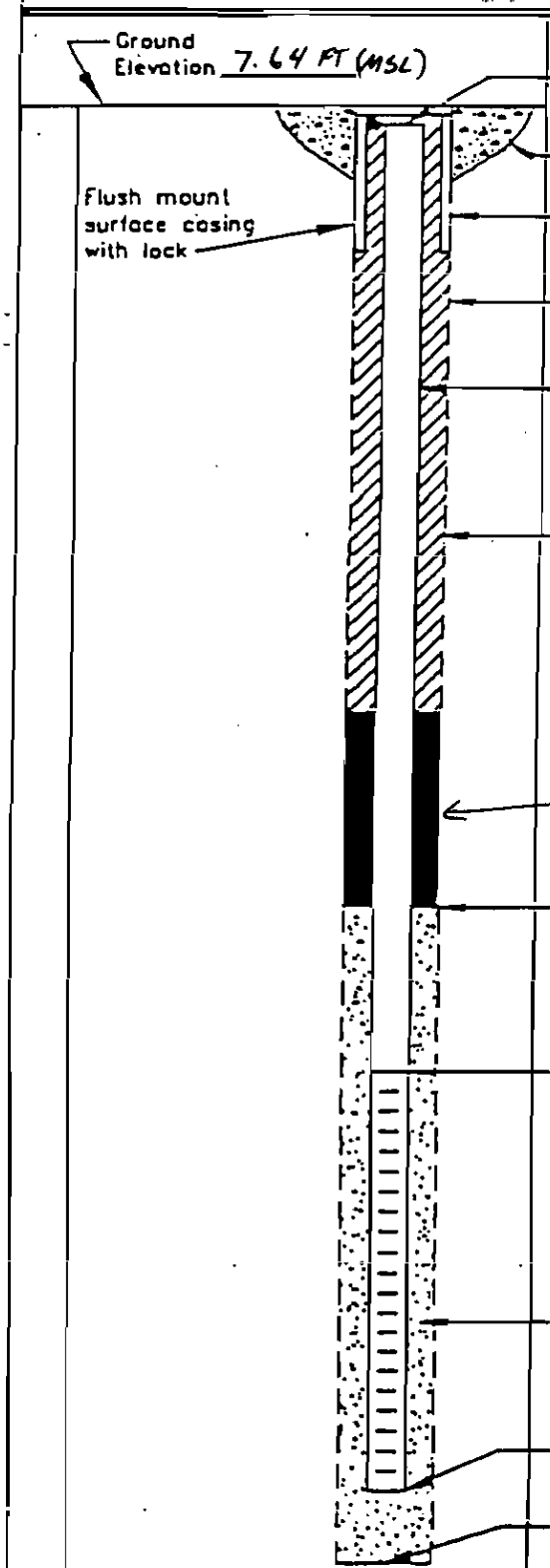
FILE NUMBER

MONITORING WELL SHEET

PROJECT CNC Zone H
PROJECT NO. CTO 0068/7912
ELEVATION T.O.C. 7.49 FT (MSL)
FIELD GEOLOGIST Gerald Goode

LOCATION Site 3, Building NS79
BORING CNC03-MO3
DATE 1-19-99

DRILLER Custom Drilling
DRILLING METHOD Hollow Stem Auger
DEVELOPMENT METHOD Over Pumping



ELEVATION TOP OF RISER: 7.49 FT (MSL)

TYPE OF SURFACE SEAL: CONCRETE MIX

TYPE OF PROTECTIVE CASING: STEEL MANHOLE

I.D. OF PROTECTIVE CASING: NA

DIAMETER OF HOLE: 8-INCHES

TYPE OF RISER PIPE: SCH. 40 PVC

RISER PIPE I.D.: 2-INCHES

TYPE OF BACKFILL/SEAL: PORTLAND TYPE I CEMENT

30/65 STANDARD SILICA SAND SEAL 3.5 FT/BLS

DEPTH/ELEVATION TOP OF SAND: 4 FT / BLS

DEPTH/ELEVATION TOP OF SCREEN: 5 FT / BLS

TYPE OF SCREEN: SCH. 40 PVC

SLOT SIZE x LENGTH: 0.010-INCH x 10 FT

TYPE OF SAND PACK: 20/30 STANDARD SILICA SAND

DIAMETER OF HOLE IN BEDROCK: NA

DEPTH/ELEVATION BOTTOM OF SCREEN: 15 FT / BLS

DEPTH/ELEVATION BOTTOM OF SAND: 15.5 FT / BLS

DEPTH/ELEVATION BOTTOM OF HOLE: 15.5 FT / BLS

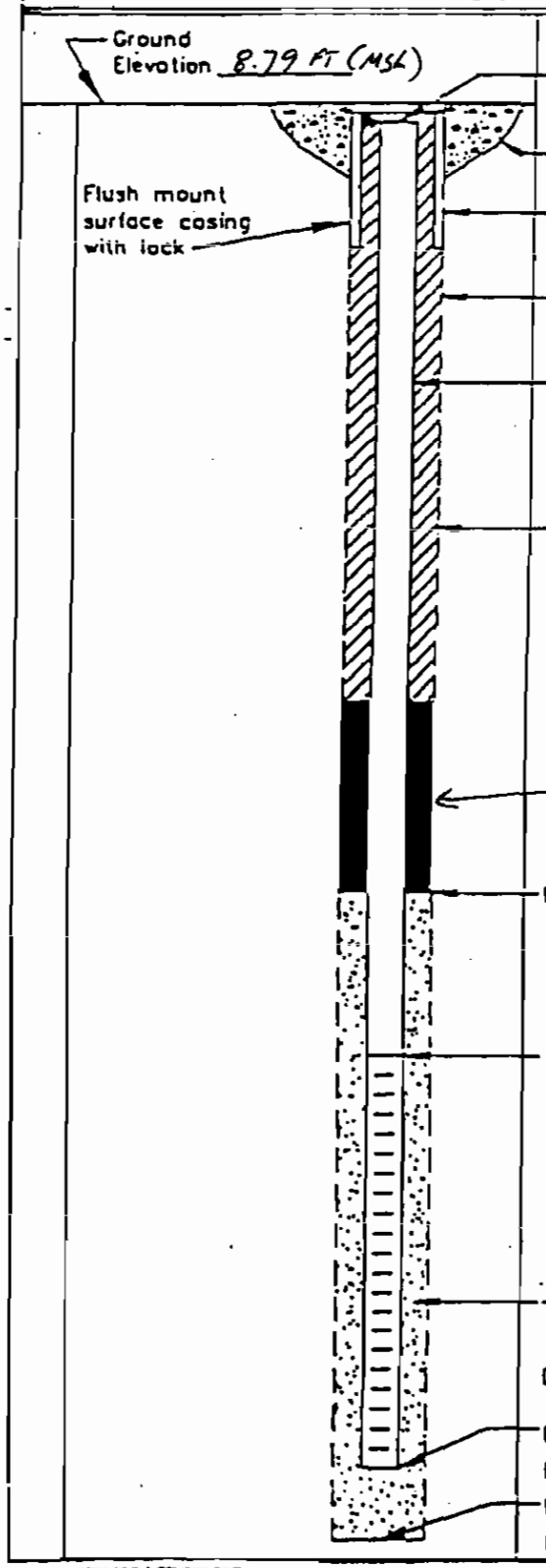
BACKFILL MATERIAL BELOW SAND: 12.5' BLS

MONITORING WELL SHEET

PROJECT CNC Zone 4
PROJECT NO. CTO 0068/7912
ELEVATION TOC 8.59 FT (MSL)
FIELD GEOLOGIST Gerald Goode

LOCATION Site 3, Building NS79
BORING CNC03-MO1
DATE 1-19-99

DRILLER Custom Drilling
DRILLING METHOD Hollow Stem Auger
DEVELOPMENT METHOD Over pumping



ELEVATION TOP OF RISER: 8.59 FT (MSL)

TYPE OF SURFACE SEAL: CONCRETE MIX

TYPE OF PROTECTIVE CASING: STEEL MANHOLE

I.D. OF PROTECTIVE CASING: NA

DIAMETER OF HOLE: 8-INCHES

TYPE OF RISER PIPE: SCH. 40 PVC

RISER PIPE I.D.: 2-INCHES

TYPE OF BACKFILL/SEAL: PORTLAND TYPE I CEMENT

30/65 STANDARD SILICA SAND SEAL 3.5 FT / BLS

DEPTH/ELEVATION TOP OF SAND: 4 FT / BLS

DEPTH/ELEVATION TOP OF SCREEN: 5 FT / BLS

TYPE OF SCREEN: SCH. 40 PVC

SLOT SIZE x LENGTH: 0.010-INCH x 10 FT

TYPE OF SAND PACK: 20/30 STANDARD SILICA SAND

DIAMETER OF HOLE IN BEDROCK: NA

DEPTH/ELEVATION BOTTOM OF SCREEN: 15 FT / BLS

DEPTH/ELEVATION BOTTOM OF SAND: 15.5 FT / BLS

DEPTH/ELEVATION BOTTOM OF HOLE: 15.5 FT / BLS

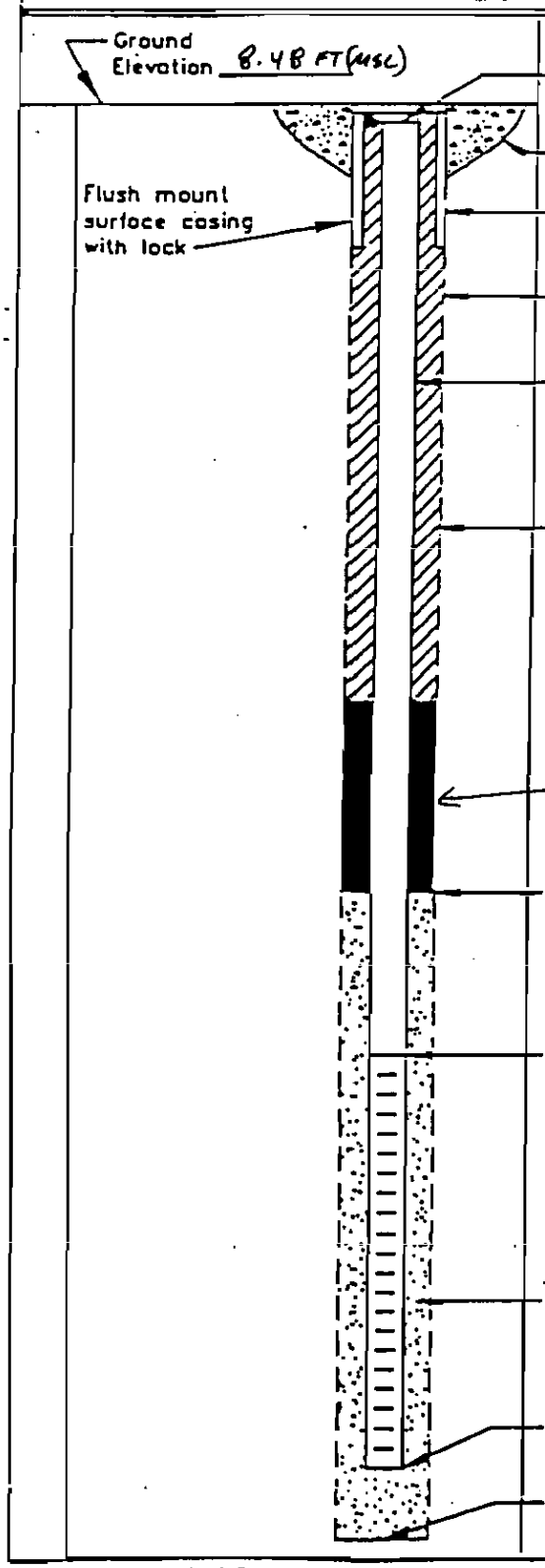
BACKFILL MATERIAL BELOW SAND: 15.5' BLS

MONITORING WELL SHEET

PROJECT CWC Zone H
PROJECT NO. CTO 0068/7912
ELEVATION T.O.C 8.39 FT MSL
FIELD GEOLOGIST Gerald Goode

LOCATION Site 3, Building NS79
BORING CWC03-MW3
DATE 1-19-99

DRILLER Custom Drilling
DRILLING METHOD Hollow Stem Auger
DEVELOPMENT METHOD Over pumping



ELEVATION TOP OF RISER: 8.39 FT (MSL)

TYPE OF SURFACE SEAL: CONCRETE MIX

TYPE OF PROTECTIVE CASING: STEEL MANHOLE

I.D. OF PROTECTIVE CASING: NA

DIAMETER OF HOLE: 8-INCHES

TYPE OF RISER PIPE: SCH. 40 PVC

RISER PIPE I.D.: 2-INCHES

TYPE OF BACKFILL/SEAL: PORTLAND TYPE I CEMENT

30/65 STANDARD SILICA SAND SEAL 3.5 FT/BLS

DEPTH/ELEVATION TOP OF SAND: 4FT / BLS

DEPTH/ELEVATION TOP OF SCREEN: 5FT / BLS

TYPE OF SCREEN: SCH. 40 PVC

SLOT SIZE x LENGTH: 0.010-INCH x 10 FT

TYPE OF SAND PACK: 20/30 STANDARD SILICA SAND

DIAMETER OF HOLE IN BEDROCK: NA

DEPTH/ELEVATION BOTTOM OF SCREEN: 15FT / BLS

DEPTH/ELEVATION BOTTOM OF SAND: 15.5FT / BLS

DEPTH/ELEVATION BOTTOM OF HOLE: 15.5FT / BLS

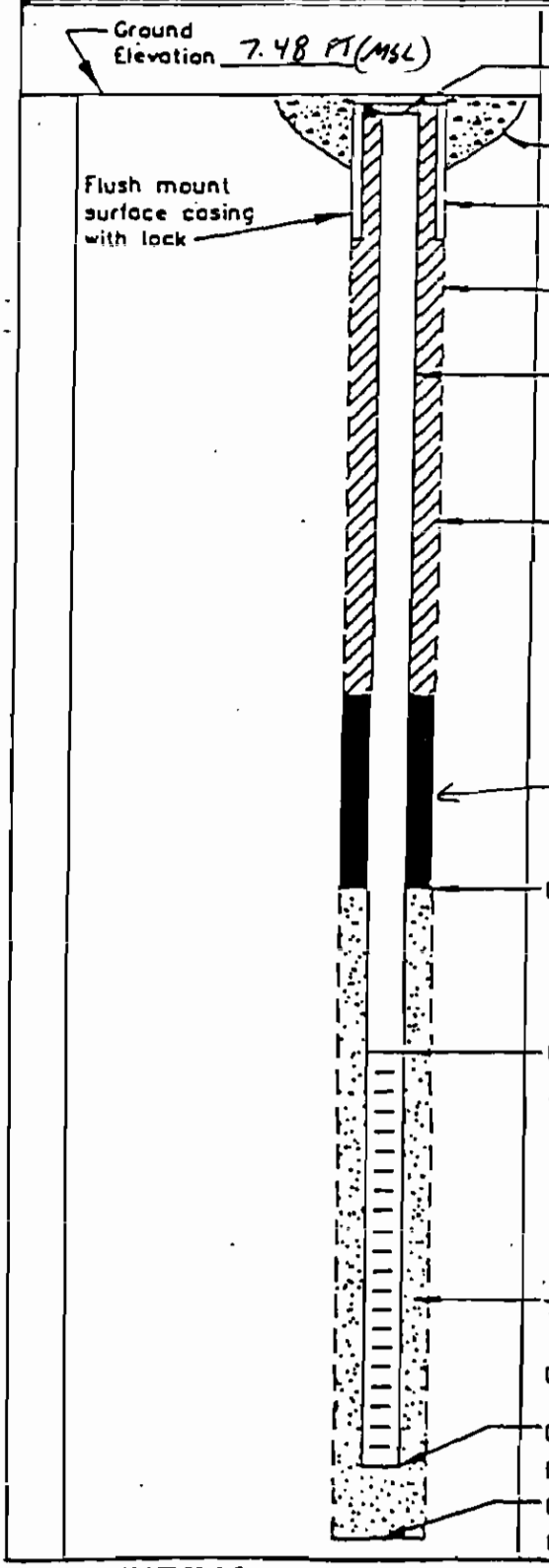
BACKFILL MATERIAL BELOW SAND: 15.5' BLS

MONITORING WELL SHEET

PROJECT CWC Zone 4
PROJECT NO. CTO 0068/7912
ELEVATION T.O.C 7.22 FT (MSL)
FIELD GEOLOGIST Gerald Goode

LOCATION Site 3, Building NS 79
BORING CWC03-MW4
DATE 1-19-99

DRILLER Custom Drilling
DRILLING METHOD Hollow Stem Auger
DEVELOPMENT METHOD Over Pumping



ELEVATION TOP OF RISER: 7.22 FT (MSL)

TYPE OF SURFACE SEAL: CONCRETE MIX

TYPE OF PROTECTIVE CASING: STEEL MANHOLE

I.D. OF PROTECTIVE CASING: NA

DIAMETER OF HOLE: 8-INCHES

TYPE OF RISER PIPE: SCH. 40 PVC

RISER PIPE I.D.: 2-INCHES

TYPE OF BACKFILL/SEAL: PORTLAND TYPE I CEMENT

30/65 STANDARD SILICA SAND SEAL 3.5 FT/BLS

DEPTH/ELEVATION TOP OF SAND: 4 FT / BLS

DEPTH/ELEVATION TOP OF SCREEN: 5 FT / BLS

TYPE OF SCREEN: SCH. 40 PVC

SLOT SIZE x LENGTH: 0.010-INCH x 10 FT

TYPE OF SAND PACK: 20/30 STANDARD SILICA SAND

DIAMETER OF HOLE IN BEDROCK: NA

DEPTH/ELEVATION BOTTOM OF SCREEN: 15 FT / BLS

DEPTH/ELEVATION BOTTOM OF SAND: 15.5 FT / BLS

DEPTH/ELEVATION BOTTOM OF HOLE: 15.5 FT / BLS

BACKFILL MATERIAL BELOW SAND: 15.5' BLS

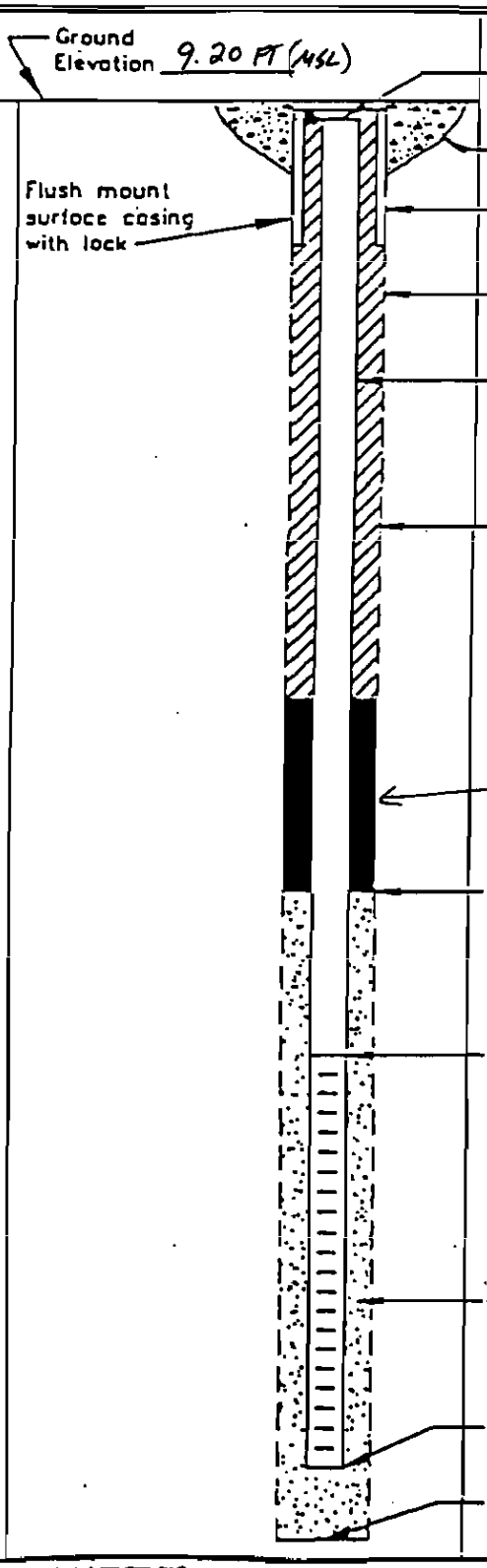
NOTE: L:\70\DCO\CWC001.DWG

MONITORING WELL SHEET

PROJECT CWL Zone H
PROJECT NO. CTO 0068/7912
ELEVATION T.O.C. 9.06 FT (MSL)
FIELD GEOLOGIST Gerald Goode

LOCATION Site 3, Building NS79
BORING CWC03-M05
DATE 1-19-99

DRILLER Custom Drilling
DRILLING METHOD Hollow Stem Auger
DEVELOPMENT METHOD Over pumping



ELEVATION TOP OF RISER: 9.06 FT (MSL)

TYPE OF SURFACE SEAL: CONCRETE MIX

TYPE OF PROTECTIVE CASING: STEEL MANHOLE

I.D. OF PROTECTIVE CASING: NA

DIAMETER OF HOLE: 8-INCHES

TYPE OF RISER PIPE: SCH. 40 PVC

RISER PIPE I.D.: 2-INCHES

TYPE OF BACKFILL/SEAL: PORTLAND TYPE I CEMENT

30/65 STANDARD SILICA SAND SEAL 3.5 FT/BLS

DEPTH/ELEVATION TOP OF SAND: 4 FT / BLS

DEPTH/ELEVATION TOP OF SCREEN: 5 FT / BLS

TYPE OF SCREEN: SCH. 40 PVC

SLOT SIZE x LENGTH: 0.010-INCH x 10 FT

TYPE OF SAND PACK: 20/30 STANDARD SILICA SAND

DIAMETER OF HOLE IN BEDROCK: NA

DEPTH/ELEVATION BOTTOM OF SCREEN: 15 FT / BLS

DEPTH/ELEVATION BOTTOM OF SAND: 15.5 FT / BLS

DEPTH/ELEVATION BOTTOM OF HOLE: 15.5 FT / BLS

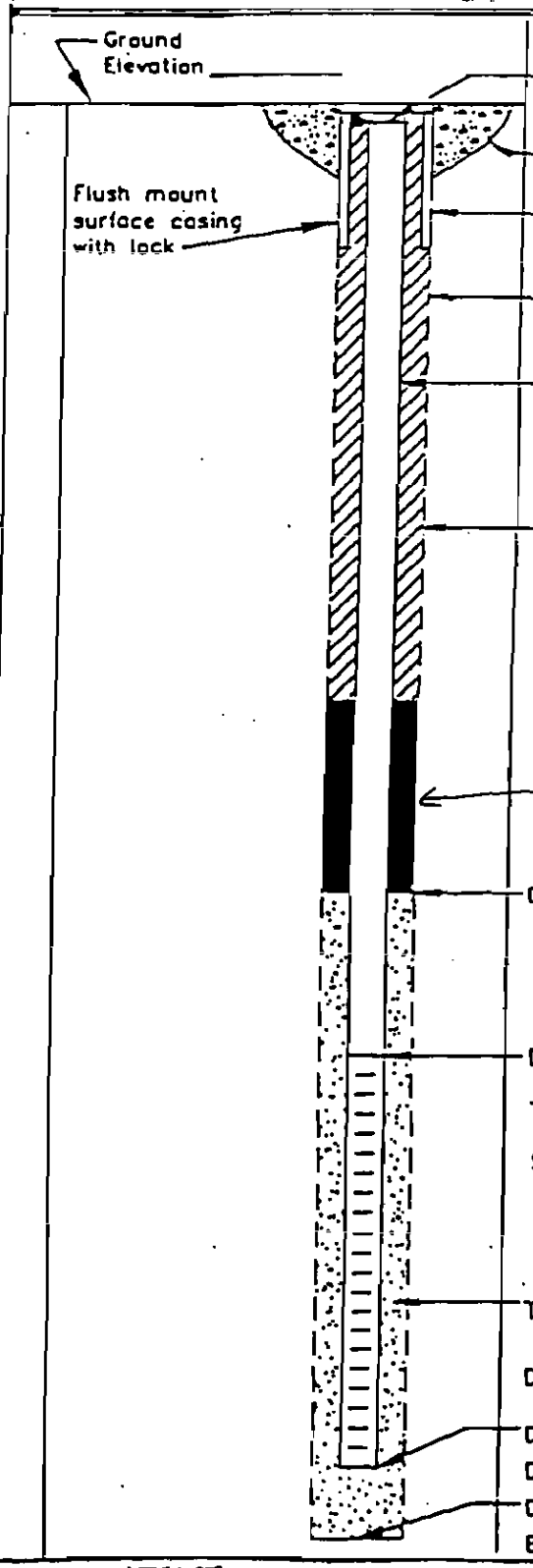
BACKFILL MATERIAL BELOW SAND: 15.5' BLS

MONITORING WELL SHEET

PROJECT CNC Zone 4
PROJECT NO. CTO 0068/7912
ELEVATION T.O.C 7.78 FT (MSL)
FIELD GEOLOGIST Pam Jackson

LOCATION Site 3, Building NS 77
BORING CNC03-MO
DATE 2-8-99

DRILLER Custom Drilling
DRILLING METHOD Hollow Stem Auger
DEVELOPMENT METHOD Over pumping



ELEVATION TOP OF RISER: 7.78 FT (MSL)

TYPE OF SURFACE SEAL: CONCRETE MIX

TYPE OF PROTECTIVE CASING: STEEL MANHOLE

I.D. OF PROTECTIVE CASING: NA

DIAMETER OF HOLE: 8-INCHES

TYPE OF RISER PIPE: SCH. 40 PVC

RISER PIPE I.D.: 2-INCHES

TYPE OF BACKFILL/SEAL: PORTLAND TYPE I CEMENT

30/65 STANDARD SILICA SAND SEAL

DEPTH/ELEVATION TOP OF SAND: 1 FT / BLS

DEPTH/ELEVATION TOP OF SCREEN: 2 FT / BLS

TYPE OF SCREEN: SCH. 40 PVC

SLOT SIZE x LENGTH: 0.010-INCH x 10 FT

TYPE OF SAND PACK: 20/30 STANDARD SILICA SAND

DIAMETER OF HOLE IN BEDROCK: NA

DEPTH/ELEVATION BOTTOM OF SCREEN: 12 FT / BLS

DEPTH/ELEVATION BOTTOM OF SAND: 12.5 FT / BLS

DEPTH/ELEVATION BOTTOM OF HOLE: 12.5 FT / BLS

BACKFILL MATERIAL BELOW SAND: 12.5' BLS

BORING NO.: _____

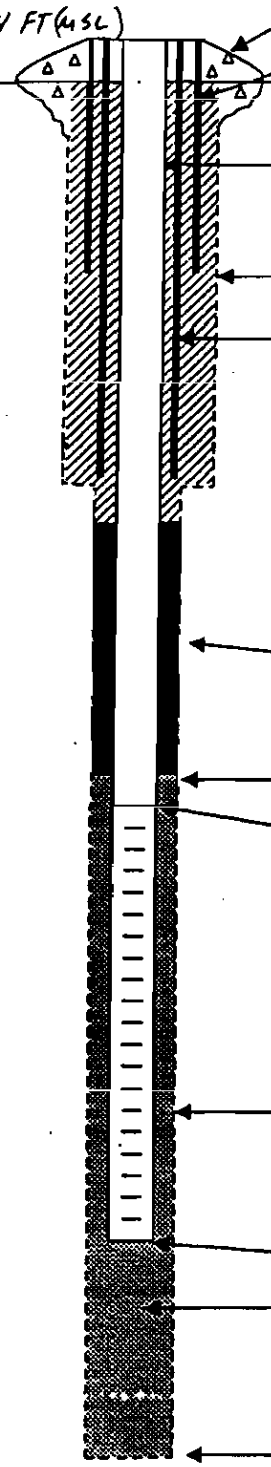
MONITORING WELL SHEET

PROJECT CNC Zone H
PROJECT NO. CTO 0068/7912
ELEVATION T.O.C. 8.16 FT (MSL)
FIELD GEOLOGIST Pam Jackson

LOCATION Site 3, Building NS79
BORING CNC03-M06
DATE 2-9-99

DRILLER Custom Drilling
DRILLING METHOD Hollow Stem Auger 5 7/8" Tri Cone
DEVELOPMENT METHOD Over Pumping

GROUND ELEVATION 8.44 FT (MSL)



TYPE OF SURFACE SEAL: (CONCRETE MIX)

I.D. OF SURFACE CASING: 8-INCH WELL
TYPE OF SURFACE CASING: VAULT WITH STEEL MANHOLE COVER

RISER PIPE I.D. 2 INCHES
TYPE OF RISER PIPE: SCH 40 PVC

BOREHOLE DIAMETER: 10-INCHES

PERM. CASING I.D. SCH 40 PVC 6-INCH DIA.
TYPE OF CASING & BACKFILL: PORTLAND TYPE I CEMENT

ELEVATION / DEPTH BOTTOM OF CASING: 20 FT / BLS

ELEVATION / DEPTH TOP OF SEAL: 19 FT / BLS
TYPE OF SEAL: 1-FOOT BENTONITE PELLET SEAL SET 19 TO 20 FT BLS

DEPTH TOP OF SAND PACK: 20 FT/BLS

ELEVATION/DEPTH TOP OF SCREEN: 22 FT / BLS
TYPE OF SCREEN: SCH 40 PVC 0.010-SLOT

TYPE OF SAND PACK: 20/30 STANDARD SILICA SAND

BOREHOLE DIA. BELOW CASING: 6-INCHES

ELEVATION / DEPTH BOTTOM OF SCREEN: 27 FT / BLS

ELEVATION / DEPTH BOTTOM OF SAND PACK: 27.5 FT/BLS
TYPE OF BACKFILL BELOW OBSERVATION WELL: 20/30 STANDARD SILICA SAND

ELEVATION / DEPTH OF HOLE: 27.5 FT/BLS

APPENDIX C

FIELD SAMPLING DATA SHEETS

SAMPLE LOG SHEET
NATURAL ATTENUTAION PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: Site 3
Project No.: 7912
Sampled By: P. Jackson

Sample ID No.: 03GSM0101
Sample Location: CUC03-M01
Duplicate: ☐

SAMPLING DATA:

Date: 3-2-99	Color (Visual)	pH (SU)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (Meter, mg/l)	Sal. (%)	
Time:								
Method: ✓ Peristaltic pump								

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:

Equipment: HACH Digital Titrator OX-DT

Analysis Time: 1610

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	1-5 mg/L	200 ml	0.200 N	0.01
☐	2-10 mg/L	100 ml	0.200 N	0.02

Titration Count	Multiplier	Concentration
	x 0.01	= 0
	x 0.02	=

Notes: No O_2 indicated during 1st Step.

Alkalinity:

Equipment: HACH Digital Titrator AL-DT

Analysis Time: 1740

Range Used:	Range	Sample Vol.	Cartridge	Multiplier	Titration Count	Multiplier	Concentration
☐	10-40 mg/L	100 ml	0.1600 N	0.1	&	x 0.1	=
☐	40-160 mg/L	25 ml	0.1600 N	0.4	&	x 0.4	=
☐	100-400 mg/L	100 ml	1.600 N	1.0	&	x 1.0	=
☐	200-800 mg/L	50 ml	1.600 N	2.0	&	x 2.0	=
☐	500-2000 mg/L	20 ml	1.600 N	5.0	&	x 5.0	=
☑	1000-4000 mg/L	10 ml	1.600 N	10.0	0 & 57	x 10.0	= 570

Relationship	Hydroxide	Carbonate	Bicarbonate
Concentration	0 mg/L	0 mg/L	570 mg/L

Notes:

Standard Additions: ☐ Titrant Molarity: 1.6 Digits Required: 1st.:____ 2nd.:____ 3rd.:____

Carbon Dioxide:

Equipment: HACH Digital Titrator CA-DT

Analysis Time: 1810

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	10-50 mg/L	200 ml	0.3636 N	0.1
☐	20-100 mg/L	100 ml	0.3636 N	0.2
☐	100-400 mg/L	200 ml	3.636 N	1.0
☑	200-1000 mg/L	100 ml	3.636 N	2.0

Titration Count		Concentration
	x 0.1	=
	x 0.2	=
	x 1.0	=
282	x 2.0	= 564

Notes:

Standard Additions: ☐ Titrant Molarity:____ Digits Required: 0.1ml:____ 0.2ml:____ 0.3ml:____

GROUNDWATER SAMPLE LOG SHEET
NATURAL ATTENUTAION PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: CNC Site 3
Project No.: 7912
Sampled By: P. Jackson

Sample ID No.: 03GSM0101
Sample Location: CNC03-M01
Duplicate: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Sulfide:

Equipment: (HACH DR-890 Colorimeter) HS-C Color Chart — Analysis Time: 1840
Program No.:
Concentration: 0.13 mg/L — Filtered: ☑
Notes:

Ferrous Iron:

Equipment: HACH DR-890 Colorimeter IR-18C Color Wheel — Analysis Time: 1940
Program No.:
Concentration: 0.45 mg/L — Filtered: ☐
Notes:

Nitrite:

Equipment: HACH DR-890 Colorimeter — Analysis Time: 1925
Program No.:
Concentration: 0 mg/L — Filtered ☑
~~Reagent Blank Correction~~: ☑
Standard Solution: ☐ Results:
Notes:

~~Nitrate:~~

Equipment: ~~HACH DR-890 Colorimeter~~ — Analysis Time:
Program No.:
Concentration: mg/L
Nitrite Interference Treatment: ☐
Standard Solution: ☐ Results: Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml:____ 0.2ml:____ 0.3ml:____
Notes:

2003
Manganese 0.0 mg/L

SAMPLE LOG SHEET
NATURAL ATTENUTAION PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: Site 3
Project No.: 7912
Sampled By: P. Jackson

Sample ID No.: 03GSM02D1
Sample Location: CNC03-M02
Duplicate: ☐

SAMPLING DATA:

Date: 3-2-99	Color	pH	S.C.	Temp.	Turbidity	DO	Sal.	
Time:	(Visual)	(SU)	(mS/cm)	(°C)	(NTU)	(Meter, mg/l)	(%)	
Method: Peristaltic pump								

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:

Equipment: HACH Digital Titrator OX-DT

Analysis Time: 1635

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	1-5 mg/L	200 ml	0.200 N	0.01
☐	2-10 mg/L	100 ml	0.200 N	0.02

Titration Count	Multiplier	Concentration
_____	x 0.01	= 0
_____	x 0.02	=

Notes: 1st step only

Alkalinity:

Equipment: HACH Digital Titrator AL-DT

Analysis Time: 1750

Range Used:	Range	Sample Vol.	Cartridge	Multiplier	Titration Count	Multiplier	Concentration
☐	10-40 mg/L	100 ml	0.1600 N	0.1	_____ & _____	x 0.1	=
☐	40-160 mg/L	25 ml	0.1600 N	0.4	_____ & _____	x 0.4	=
☐	100-400 mg/L	100 ml	1.600 N	1.0	_____ & _____	x 1.0	=
☐	200-800 mg/L	50 ml	1.600 N	2.0	_____ & _____	x 2.0	=
☐	500-2000 mg/L	20 ml	1.600 N	5.0	_____ & _____	x 5.0	=
☑	1000-4000 mg/L	10 ml	1.600 N	10.0	0 & 155	x 10.0	= 1550

Relationship	Hydroxide	Carbonate	Bicarbonate
Concentration	0 mg/L	0 mg/L	1550 mg/L

Notes:

Standard Additions: ☐ Titrant Molarity: 1.6 Digits Required: 1st.:_____ 2nd.:_____ 3rd.:_____

Carbon Dioxide:

Equipment: HACH Digital Titrator CA-DT

Analysis Time: 1820

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	10-50 mg/L	200 ml	0.3636 N	0.1
☐	20-100 mg/L	100 ml	0.3636 N	0.2
☐	100-400 mg/L	200 ml	3.636 N	1.0
☑	200-1000 mg/L	100 ml	3.636 N	2.0

Titration Count		Concentration
_____	x 0.1	=
_____	x 0.2	=
_____	x 1.0	=
330	x 2.0	= 660

Notes:

Standard Additions: ☐ Titrant Molarity:_____ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____

GROUNDWATER SAMPLE LOG SHEET
NATURAL ATTENUTAION PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: CNC Site 3
Project No.: 7912
Sampled By: P. Jackson

Sample ID No.: 03GSM02Q1
Sample Location: CNC03-M02
Duplicate: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Sulfide:

Equipment: HACH DR-890 Colorimeter HS-C Color Chart
Analysis Time: 1905
Program No.:
Concentration: 0 mg/L
Filtered: ☒
Notes: NO SULFIDE INDICATED by reagents

Ferrous Iron:

Equipment: HACH DR-890 Colorimeter IR-18C Color Wheel
Analysis Time: 1950
Program No.:
Concentration: 3.30 mg/L
Filtered: ☐
Notes:

Nitrite:

Equipment: HACH DR-890 Colorimeter
Analysis Time: 1930
Program No.:
Concentration: 0.14 mg/L
Filtered
~~Reagent Blank Correction:~~ ☒
Standard Solution: ☐ Results:
Notes:

~~**Nitrate:**~~

~~Equipment: HACH DR-890 Colorimeter~~
~~Analysis Time:~~
~~Program No.:~~
~~Concentration: mg/L~~
~~Nitrite Interference Treatment:~~ ☐
~~Standard Solution:~~ ☐ ~~Results:~~
~~Reagent Blank Correction:~~ ☐
~~Standard Additions:~~ ☐ ~~Digits Required: 0.1ml: 0.2ml: 0.3ml:~~
~~Notes:~~

2020
Manganese 13.2 mg/L

SAMPLE LOG SHEET
NATURAL ATTENUTAION PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: Site 3
Project No.: 7912
Sampled By: P. Jackson

Sample ID No.: 03GSM0701
Sample Location: CNC03-M07
Duplicate: ☐

SAMPLING DATA:

Date: 3-2-99	Color (Visual)	pH (SU)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (Meter, mg/l)	Sal. (%)	
Time:								
Method: Peristaltic pump								

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:

Equipment: HACH Digital Titrator OX-DT

Analysis Time: 1630

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	1-5 mg/L	200 ml	0.200 N	0.01
☐	2-10 mg/L	100 ml	0.200 N	0.02

Titration Count	Multiplier	Concentration
	x 0.01	= 0
	x 0.02	=

Notes: 1st step only

Alkalinity:

Equipment: HACH Digital Titrator AL-DT

Analysis Time: 1745

Range Used:	Range	Sample Vol.	Cartridge	Multiplier	Titration Count	Multiplier	Concentration
☐	10-40 mg/L	100 ml	0.1600 N	0.1	&	x 0.1	=
☐	40-160 mg/L	25 ml	0.1600 N	0.4	&	x 0.4	=
☐	100-400 mg/L	100 ml	1.600 N	1.0	&	x 1.0	=
☐	200-800 mg/L	50 ml	1.600 N	2.0	&	x 2.0	=
☐	500-2000 mg/L	20 ml	1.600 N	5.0	&	x 5.0	=
☐	1000-4000 mg/L	10 ml	1.600 N	10.0	0 & 35	x 10.0	= 350

Relationship	Hydroxide	Carbonate	Bicarbonate
Concentration	0 mg/L	0 mg/L	350 mg/L

Notes:

Standard Additions: ☐ Titrant Molarity:_____ Digits Required: 1st.:_____ 2nd.:_____ 3rd.:_____

Carbon Dioxide:

Equipment: HACH Digital Titrator CA-DT

Analysis Time: 1815

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	10-50 mg/L	200 ml	0.3636 N	0.1
☐	20-100 mg/L	100 ml	0.3636 N	0.2
☐	100-400 mg/L	200 ml	3.636 N	1.0
☑	200-1000 mg/L	100 ml	3.636 N	2.0

Titration Count		Concentration
	x 0.1	=
	x 0.2	=
	x 1.0	=
92	x 2.0	= 184

Notes:

Standard Additions: ☐ Titrant Molarity:_____ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____

GROUNDWATER SAMPLE LOG SHEET
NATURAL ATTENUTAION PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: CNC Site 3
Project No.: 7912
Sampled By: P. Jackson

Sample ID No.: 03GSM0701
Sample Location: CNC03-M07
Duplicate: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Sulfide:

Equipment: HACH DR-890 Colorimeter HS-C Color Chart Analysis Time: 1900

Program No.:

Concentration: 0 mg/L Filtered: ☒

Notes: No sulfide indicated by reagents

Ferrous Iron:

Equipment: HACH DR-890 Colorimeter IR-18C Color Wheel Analysis Time: 1945

Program No.:

Concentration: 0.19 mg/L Filtered: ☐

Notes:

Nitrite:

Equipment: HACH DR-890 Colorimeter Analysis Time: 1928

Program No.:

Concentration: 0 mg/L Filtered ~~Reagent Blank Correction:~~ ☒

Standard Solution: ☐ Results:

Notes:

Nitrate:

Equipment: HACH DR-890 Colorimeter Analysis Time:

Program No.:

Concentration: mg/L

Nitrite Interference Treatment: ☐

Standard Solution: ☐ Results: Reagent Blank Correction: ☐

Standard Additions: ☐ Digits Required: 0.1ml:____ 0.2ml:____ 0.3ml:____

Notes:

2005

Manganese 0.4 mgL

3-2-99 Site 3 (138)

WEATHER: sunny, warm, breezy
PERSONNEL: P. Jackson
G. Goode
PURPOSE: ① Collect water level measurements
② Calculate purge volumes
③ Starting purging wells if we have sufficient time

1300 Arrive on site. Opening drums and placing them on pallets.
1305 Opening all 7 site wells.

TIME	LOCATION	DTW	TD	Comments
1326	CNC03-M01	5.77	14.95	
1310	CNC03-M02	5.30	14.80	
1315	CNC03-M03	4.81	15.00	
1320	CNC03-~~M04~~ M05	6.06	14.92	
1317	CNC03-~~M05~~ M04	4.78	14.90	
1323	CNC03-M06	11.02*	27.70	*Still recovering
1319	CNC03-M07	5.19	11.90	

1330 Calculating well volumes/purge volumes.

Well #	1 Vol	3 Vol	5 Vol	(gallons)
M01	1.5	4.5	7.5	
M02	1.5	4.5	7.5	
M03	1.7	5.1	8.5	
M04	1.6	4.8	8.0	
M05	1.4	4.2	7.0	

(139) 3-2-99 Site 3

Well #	1 Vol	3 Vol	5 Vol (gall.
M06	1.		
M07	1.10	3.3	5.5

1325 Decided to purge all site wells except M06 (deep well), which has not recovered to a static water level

PURGE TABLE

Time	Location	Rate	Total Volume Removed
~~1450~~ 13:50	CNC03-M05	0.5L/min	8 gal. (15
14:00	CNC03-M07	0.5L/min	7 gal. (15
14:22	CNC03-M03	0.5L/min	8.5 gal (15.
14:25	CNC03-M02	0.5L/min	8 gal (154
1430	CNC03-M04	0.5L/min	8 gal
1445	CNC03-M01	0.5L/min	7.5 gal (15

Time	Location	Cond	Temp	pH	Turbid
1450	M05 (6 gal)	4.16 mS/cm	17.9°	7.03	1.66
1453	M07 (6 gal)	2.44	17.5°	7.49	0.36
1455	M04 (5 gal)	4.76	17.8°	7.02	5.16
1500	M05 (8 gal)	4.60	17.4°	7.14	1.61
1502	M03 (5 gal)	7.34	18.8°	6.92	0.40
1505	M07 (7 gal)	2.48	17.1°	7.62	0.26
1507	M02 (4 gal)	8.84 mS	18.2°	6.93	0.74
1511	M01 (4 gal)	4.88	18.0°	7.14	3.32
1516	M04 (3 gal)	5.21	17.5°	7.00	1.75

3-2-99 Site 3 (140)

TIME	WELL ID	Purge	Temp.	pH	Cond	Turb
1520	MW03	7 gal.	18.4°	6.98	6.50 mS/cm	1.97
1524	MW02	5 gal	17.8°	7.08	5.49	0.77
1526	MW01	5 gal	17.9°	7.15	4.55	1.03
1530	MW04	8 gal	17.6°	7.05	5.19	0.82
1532	MW03	8.5 gal	18.6°	7.00	6.73	1.77
1542	MW02	8 gal	17.9°	7.07	7.94	0.93
1545	MW01	7.5 gal	18.0°	7.20	4.46	0.60

1550 Completed purging 6 of the 7 site wells.
1555 Will collect Natural attenuation from MW01. See data sheet.
2020 Completed natural attenuation
2035 MW06 still recovering. Water at 6.11 ft.
2040 Started SAMPLING for BTEX, MTBE, Naphthalene and PAHs.

SAMPLING ID TABLE

TIME	LOCATION	SAMPLE ID	DUP?
2045	CNC03-MW01	03GLMW0101 (D)	yes
2055	CNC03-MW02	03GLMW0201	NO
2058	CNC03-MW03	03GLMW0301	NO
2104	CNC03-MW04	03GLMW0401	NO
2108	CNC03-MW05	03GLMW0501	NO
2100	CNC03-MW07	03GLMW0701	NO

2120 Left site for day.

[illegible]

(XII) 3-3-99 Site 3

WEATHER: mostly cloudy, v. windy, warm

PERSONNEL: R. Jackson
G. Goode

PURPOSE: Purge and sample CWC03-MO6.

8:10 - Arrive at site CWC03.

8:18 - Perform decontamination of tape water level indicator. (Rinse unit with distilled water.)

Collect water level measurement from CWC03-MO6.

Time	Location	DTW	TD	Comments
8:10	CWC03-MO6	4.21	27.7'	-
10:00	CWC03-MO6	25.95	-	-
10:35	CWC03-MO6	26.75	-	soft black grey muck/grout purged from well intermittently. well considered dry.

Purge Volume Calculation CWC03-MO6 2in well

well #	1 vol	3 vol	5 vol
CWC03-MO6	3.7 gal	11.1 gal	18.5 gal

8:33 Begin purging well CWC03-MO6 using silicon + teflon tubing with peristaltic pump. (low-flow)

3-3-99 Site 3 (146)

Purge Table CWCO3-MO6

Time	~~Cond~~	Rate	Total Volume Removed
8:42		.5 L/min	2 gal
8:50		.5 L/min	4 gal
9:10		.25 L/min	6 gal
9:60		Intermittent flow	7.5
10:35		Intermittent	8 gal

Field Measurements CWCO3-MO6

Time	Cond. mS/cm	Temp °C	pH	Turbidity NTU
8:42	26.9	20.0	7.23	1.0
8:50	22.3	20.0	7.79	1.0
9:13	29.1	19.9	7.65	1.0

- Installed two new locks at CWCO3-MO6 and CWCO3-MO7. All wells locked.
  All drums except CWCO3-MO6 have lids installed and contents (% full marked on drums).
- Purge water from CWCO3-MO6 placed in drum.

1325 Arrive/Return to Site 3 to check on recovery progress of CWCO3-MO6

1326 Water level at 19.72 feet btoc. Unfortunately, severe weather is moving in and we need to collect sample now.

1340 Collected [03GLMO6OI] from CWCO3-MO6.

1350 Left site for day

APPENDIX D

SOIL AND GROUNDWATER LABORATORY ANALYTICAL DATA

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 01, 1999

Sample ID : 03SLB0902
Lab ID : 9901346-14
Matrix : Soil
Date Collected : 01/13/99
Date Received : 01/13/99
Priority : Routine
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX/NAP/MTBE - 6 items											
BENZENE	J	1.38	0.545	5.00	ug/kg	1.0	RMB	01/15/99	2031	139880	1
ETHYLBENZENE	U	ND	0.327	5.00	ug/kg	1.0					
TERT-BUTYL METHYL ETHER		ND	0.194	6.05	ug/kg	1.0					
NAPHTHALENE	U	ND	0.738	5.00	ug/kg	1.0					
TOLUENE	U	ND	1.14	5.00	ug/kg	1.0					
XYLENES, TOTAL	U	ND	0.303	5.00	ug/kg	1.0					
Organic Prep											
EVAPORATIVE LOSS @ 105 C		14.0	1.00	1.00	wt%	1.0	GJ	01/15/99	1605	139911	2
Extractable Organics											
Polyaromatic Hydrocarbon Compounds - 15 items											
ACENAPHTHENE	U	ND	186	388	ug/kg	1.0	TSD	01/21/99	2052	139859	3
ACENAPHTHYLENE	U	ND	171	388	ug/kg	1.0					
ANTHRACENE	U	ND	102	388	ug/kg	1.0					
BENZO(A)ANTHRACENE	U	ND	79.5	388	ug/kg	1.0					
BENZO(A)PYRENE	U	ND	83.4	388	ug/kg	1.0					
BENZO(B)FLUORANTHENE	U	ND	165	388	ug/kg	1.0					
BENZO(G,H,I)PERYLENE	U	ND	94.7	388	ug/kg	1.0					
BENZO(K)FLUORANTHENE	U	ND	154	388	ug/kg	1.0					
CHRYSENE	U	ND	63.6	388	ug/kg	1.0					
DIBENZ(A,H) ANTHRACENE	U	ND	96.6	388	ug/kg	1.0					
FLUORANTHENE	U	ND	76.0	388	ug/kg	1.0					
FLUORENE	U	ND	133	388	ug/kg	1.0					
INDENO(1,2,3-CD)PYRENE	U	ND	93.5	388	ug/kg	1.0					
PHENANTHRENE	U	ND	69.8	388	ug/kg	1.0					
PYRENE	U	ND	83.8	388	ug/kg	1.0					

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STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 01, 1999

Sample ID : 03SLB0902

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M

The following prep procedures were performed:

Volatiles 8260 High Level	RMB	01/15/99		139880	4
GC/MS Base/Neutral Compounds	AEJ	01/15/99	2130	139859	2

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610-TETR	61.0	(30.0 - 115.)
Nitrobenzene-d5	M610-TETR	59.0	(23.0 - 120.)
p-Terphenyl-d14	M610-TETR	97.6	(37.3 - 128.)
Bromofluorobenzene	BTEX/NAP/MTBE-8260B	103.	(53.5 - 154.)
Dibromofluoromethane	BTEX/NAP/MTBE-8260B	105.	(65.4 - 136.)
Toluene-d8	BTEX/NAP/MTBE-8260B	84.6	(72.1 - 137.)

M = Method	Method-Description
M 1	SW846 8260B
M 2	EPA 3550
M 3	EPA 8270C
M 4	EPA 5035

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

Data reported in mass/mass units is reported as 'dry weight'.

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SC	10120	10582
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Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 01, 1999

Sample ID : 03SLB0902

M = Method	Method-Description

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at (843) 769-7391.

Valerie S Davis

Reviewed By

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NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 01, 1999

Sample ID : 03SLB0902D
Lab ID : 9901346-15
Matrix : Soil
Date Collected : 01/13/99
Date Received : 01/13/99
Priority : Routine
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX/NAP/MTBE - 6 items											
BENZENE	J	0.958	0.549	5.00	ug/kg	1.0	RMB	01/16/99	1614	139880	1
ETHYLBENZENE	U	ND	0.329	5.00	ug/kg	1.0					
TERT-BUTYL METHYL ETHER		ND	0.195	6.10	ug/kg	1.0					
NAPHTHALENE	U	ND	0.744	5.00	ug/kg	1.0					
TOLUENE	U	ND	1.15	5.00	ug/kg	1.0					
XYLENES, TOTAL	U	ND	0.305	5.00	ug/kg	1.0					
Organic Prep											
EVAPORATIVE LOSS @ 105 C		17.0	1.00	1.00	wt%	1.0	GJ	01/15/99	1605	139911	2
Extractable Organics											
Polyaromatic Hydrocarbon Compounds - 15 items											
ACENAPHTHENE	U	ND	193	402	ug/kg	1.0	TSD	01/21/99	2124	139859	3
ACENAPHTHYLENE	U	ND	177	402	ug/kg	1.0					
ANTHRACENE	U	ND	106	402	ug/kg	1.0					
BENZO(A)ANTHRACENE	U	ND	82.4	402	ug/kg	1.0					
BENZO(A)PYRENE	U	ND	86.4	402	ug/kg	1.0					
BENZO(B)FLUORANTHENE	U	ND	171	402	ug/kg	1.0					
BENZO(G,H,I)PERYLENE	U	ND	98.1	402	ug/kg	1.0					
BENZO(K)FLUORANTHENE	U	ND	159	402	ug/kg	1.0					
CHRYSENE	U	ND	65.9	402	ug/kg	1.0					
DIBENZ(A,H) ANTHRACENE	U	ND	100	402	ug/kg	1.0					
FLUORANTHENE	U	ND	78.8	402	ug/kg	1.0					
FLUORENE	U	ND	138	402	ug/kg	1.0					
INDENO(1,2,3-CD)PYRENE	U	ND	96.9	402	ug/kg	1.0					
PHENANTHRENE	U	ND	72.4	402	ug/kg	1.0					
PYRENE	U	ND	86.8	402	ug/kg	1.0					

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NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 01, 1999

Sample ID : 03SLB0902D

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
The following prep procedures were performed:											
Volatiles 8260 High Level							RMB	01/15/99		139880	4
GC/MS Base/Neutral Compounds							AEJ	01/15/99	2130	139859	2

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610-TETR	59.5	(30.0 - 115.)
Nitrobenzene-d5	M610-TETR	58.5	(23.0 - 120.)
p-Terphenyl-d14	M610-TETR	94.0	(37.3 - 128.)
Bromofluorobenzene	BTEX/NAP/MTBE-8260B	96.7	(53.5 - 154.)
Dibromofluoromethane	BTEX/NAP/MTBE-8260B	82.9	(68.4 - 136.)
Toluene-d8	BTEX/NAP/MTBE-8260B	80.5	(72.1 - 137.)

M = Method	Method-Description
M 1	SW846 8260B
M 2	EPA 3550
M 3	EPA 8270C
M 4	EPA 5035

Notes:
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* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

Data reported in mass/mass units is reported as 'dry weight'.

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NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 01, 1999

Sample ID : 03SLB0902D

M = Method	Method-Description

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Valerie S Davis

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NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 01, 1999

Sample ID	: 03SLB0705
Lab ID	: 9901346-16
Matrix	: Soil
Date Collected	: 01/13/99
Date Received	: 01/13/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX/NAP/MTBE - 6 items											
BENZENE	J	1.36	0.531	5.00	ug/kg	1.0	RMB	01/16/99	1649	139880	1
ETHYLBENZENE	U	ND	0.319	5.00	ug/kg	1.0					
TERT-BUTYL METHYL ETHER	U	ND	0.189	5.90	ug/kg	1.0					
NAPHTHALENE	U	ND	0.720	5.00	ug/kg	1.0					
TOLUENE	U	ND	1.11	5.00	ug/kg	1.0					
XYLENES, TOTAL	U	ND	0.295	5.00	ug/kg	1.0					
Organic Prep											
EVAPORATIVE LOSS @ 105 C		7.00	1.00	1.00	wt%	1.0	GJ	01/15/99	1605	139911	2
Extractable Organics											
Polyaromatic Hydrocarbon Compounds - 15 items											
ACENAPHTHENE	U	ND	172	358	ug/kg	1.0	TSD	01/21/99	2156	139859	3
ACENAPHTHYLENE	U	ND	158	358	ug/kg	1.0					
ANTHRACENE	U	ND	94.2	358	ug/kg	1.0					
BENZO(A)ANTHRACENE	U	ND	73.4	358	ug/kg	1.0					
BENZO(A)PYRENE	U	ND	77.0	358	ug/kg	1.0					
BENZO(B)FLUORANTHENE	U	ND	153	358	ug/kg	1.0					
BENZO(G,H,I)PERYLENE	U	ND	87.4	358	ug/kg	1.0					
BENZO(K)FLUORANTHENE	U	ND	142	358	ug/kg	1.0					
CHRYSENE	U	ND	58.7	358	ug/kg	1.0					
DIBENZ(A,H) ANTHRACENE	U	ND	89.1	358	ug/kg	1.0					
FLUORANTHENE	U	ND	70.2	358	ug/kg	1.0					
FLUORENE	U	ND	123	358	ug/kg	1.0					
INDENO(1,2,3-CD)PYRENE	U	ND	86.3	358	ug/kg	1.0					
PHENANTHRENE	U	ND	64.4	358	ug/kg	1.0					
PYRENE	U	ND	77.3	358	ug/kg	1.0					

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STATE	GEL	EPI
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NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 01, 1999

Sample ID : 03SLB0705

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
The following prep procedures were performed:											
Volatiles 8260 High Level							RMB	01/15/99		139880	4
GC/MS Base/Neutral Compounds							AEJ	01/15/99	2130	139859	2

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610-TETR	59.7	(30.0 - 115.)
Nitrobenzene-d5	M610-TETR	56.2	(23.0 - 120.)
p-Terphenyl-d14	M610-TETR	98.9	(37.3 - 128.)
Bromofluorobenzene	BTEX/NAP/MTBE-8260B	93.8	(53.5 - 154.)
Bromofluorobenzene	BTEX/NAP/MTBE-8260B	93.8	(53.5 - 154.)
Dibromofluoromethane	BTEX/NAP/MTBE-8260B	79.2	(63.4 - 136.)
Dibromofluoromethane	BTEX/NAP/MTBE-8260B	79.2	(63.4 - 136.)
Toluene-d8	BTEX/NAP/MTBE-8260B	77.2	(72.1 - 137.)
Toluene-d8	BTEX/NAP/MTBE-8260B	77.2	(72.1 - 137.)

M = Method	Method-Description
M 1	SW846 8260B
M 2	EPA 3550
M 3	EPA 8270C
M 4	EPA 5035

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

Data reported in mass/mass units is reported as 'dry weight'.

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 01, 1999

Sample ID : 03SLB0705

M = Method **Method-Description**

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at (843) 769-7391..

Valerie S Davis

Reviewed By

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STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 01, 1999

Sample ID : 03SLB0503
Lab ID : 9901346-17
Matrix : Soil
Date Collected : 01/13/99
Date Received : 01/13/99
Priority : Routine
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX/NAP/MTBE - 6 items											
BENZENE	J	0.926	0.558	5.00	ug/kg	1.0	RMB	01/16/99	1724	139880	1
ETHYLBENZENE		9.40	0.335	5.00	ug/kg	1.0					
TERT-BUTYL METHYL ETHER		ND	0.198	6.20	ug/kg	1.0					
NAPHTHALENE	U	ND	0.756	5.00	ug/kg	1.0					
TOLUENE	J	1.28	1.17	5.00	ug/kg	1.0					
XYLENES, TOTAL		61.8	0.310	5.00	ug/kg	1.0					
Organic Prep											
EVAPORATIVE LOSS @ 105 C		22.0	1.00	1.00	wt%	1.0	GJ	01/15/99	1605	139911	2
Extractable Organics											
Polyaromatic Hydrocarbon Compounds - 15 items											
ACENAPHTHENE	U	ND	205	427	ug/kg	1.0	TSD	01/21/99	2229	139859	3
ACENAPHTHYLENE	U	ND	188	427	ug/kg	1.0					
ANTHRACENE	U	ND	112	427	ug/kg	1.0					
BENZO(A)ANTHRACENE	U	ND	87.5	427	ug/kg	1.0					
BENZO(A)PYRENE	U	ND	91.8	427	ug/kg	1.0					
BENZO(B)FLUORANTHENE	U	ND	182	427	ug/kg	1.0					
BENZO(G,H,I)PERYLENE	U	ND	104	427	ug/kg	1.0					
BENZO(K)FLUORANTHENE	U	ND	169	427	ug/kg	1.0					
CHRYSENE	U	ND	70.0	427	ug/kg	1.0					
DIBENZ(A,H) ANTHRACENE	U	ND	106	427	ug/kg	1.0					
FLUORANTHENE	U	ND	83.7	427	ug/kg	1.0					
FLUORENE	U	ND	146	427	ug/kg	1.0					
INDENO(1,2,3-CD)PYRENE	U	ND	103	427	ug/kg	1.0					
PHENANTHRENE	U	ND	76.9	427	ug/kg	1.0					
PYRENE	U	ND	92.2	427	ug/kg	1.0					
General Chemistry											
Total Organic Carbon		12700	43.1	100	mg/kg	1.0	LS	01/28/99	1511	140209	4

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NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 01, 1999

Sample ID : 03SLB0503

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
The following prep procedures were performed:											
Volatiles 8260 High Level							RMB	01/15/99		139880	5
GC/MS Base/Neutral Compounds							AEJ	01/15/99	2130	139859	2

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610-TETR	64.8	(30.0 - 115.)
itrobenzene-d5	M610-TETR	63.5	(23.0 - 120.)
p-Terphenyl-d14	M610-TETR	111.	(37.3 - 128.)
Bromofluorobenzene	BTEX/NAP/MTBE-8260B	102.	(53.5 - 154.)
Dibromofluoromethane	BTEX/NAP/MTBE-8260B	80.1	(68.4 - 136.)
Toluene-d8	BTEX/NAP/MTBE-8260B	79.1	(72.1 - 137.)

M = Method	Method-Description
M 1	SW846 8260B
M 2	EPA 3550
M 3	EPA 8270C
M 4	EPA 415.1 Modified
M 5	EPA 5035

Notes:
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J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

Data reported in mass/mass units is reported as 'dry weight'.

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 01, 1999

Sample ID : 03SLB0503

M = Method **Method-Description**

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at (843) 769-7391.

Valerie S Davis

Reviewed By

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9901346-17

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 01, 1999

Sample ID	: 03SLB1002
Lab ID	: 9901346-18
Matrix	: Soil
Date Collected	: 01/13/99
Date Received	: 01/13/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX/NAP/MTBE - 6 items											
BENZENE	J	1.15	0.851	5.00	ug/kg	1.0	RMB	01/16/99	1758	139880	1
ETHYLBENZENE	U	ND	0.510	5.00	ug/kg	1.0					
TERT-BUTYL METHYL ETHER		ND	0.302	9.45	ug/kg	1.0					
NAPHTHALENE	U	ND	1.15	5.00	ug/kg	1.0					
TOLUENE	U	ND	1.78	5.00	ug/kg	1.0					
XYLENES, TOTAL	U	ND	0.473	5.00	ug/kg	1.0					
Organic Prep											
EVAPORATIVE LOSS @ 105 C		37.0	1.00	1.00	wt%	1.0	GJ	01/15/99	1605	139911	2
Extractable Organics											
Polyaromatic Hydrocarbon Compounds - 15 items											
ACENAPHTHENE	U	ND	254	529	ug/kg	1.0	TSD	01/22/99	1708	139859	3
ACENAPHTHYLENE	U	ND	233	529	ug/kg	1.0					
ANTHRACENE	U	ND	139	529	ug/kg	1.0					
BENZO(A)ANTHRACENE	U	ND	108	529	ug/kg	1.0					
BENZO(A)PYRENE	U	ND	114	529	ug/kg	1.0					
BENZO(B)FLUORANTHENE	U	ND	225	529	ug/kg	1.0					
BENZO(G,H,I)PERYLENE	U	ND	129	529	ug/kg	1.0					
BENZO(K)FLUORANTHENE	U	ND	209	529	ug/kg	1.0					
CHRYSENE	U	ND	86.8	529	ug/kg	1.0					
DIBENZ(A,H) ANTHRACENE	U	ND	132	529	ug/kg	1.0					
FLUORANTHENE	U	ND	104	529	ug/kg	1.0					
FLUORENE	U	ND	181	529	ug/kg	1.0					
INDENO(1,2,3-CD)PYRENE	U	ND	127	529	ug/kg	1.0					
PHENANTHRENE	U	ND	95.2	529	ug/kg	1.0					
PYRENE	U	ND	114	529	ug/kg	1.0					

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 01, 1999

Sample ID : 03SLB1002

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M

The following prep procedures were performed:

Volatiles 8260 High Level	RMB	01/15/99		139880	4
GC/MS Base/Neutral Compounds	AEJ	01/15/99	2130	139859	2

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610-TETR	52.2	(30.0 - 115.)
Nitrobenzene-d5	M610-TETR	46.9	(23.0 - 120.)
p-Terphenyl-d14	M610-TETR	94.2	(37.3 - 128.)
Bromofluorobenzene	BTEX/NAP/MTBE-8260B	104.	(53.5 - 154.)
Dibromofluoromethane	BTEX/NAP/MTBE-8260B	82.6	(65.4 - 136.)
Toluene-d8	BTEX/NAP/MTBE-8260B	82.5	(72.1 - 137.)

M = Method	Method-Description
M 1	SW846 8260B
M 2	EPA 3550
M 3	EPA 8270C
M 4	EPA 5035

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

Data reported in mass/mass units is reported as 'dry weight'.

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GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client:	Tetra Tech NUS, Inc. 794 South Military Trail Deerfield Beach, Florida 33442
Contact:	Mr. Arnold Lamb
Project Description:	CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 01, 1999

Sample ID : 03SLB1002

M = Method	Method-Description

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at (843) 769-7391.

Valerie R Davis

Reviewed By

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QC SUMMARY REPORT

QC Summary Report

Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Lab. Sample ID: 9901346% Report Date: May 17, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Volatile Organics													
QC575794	BLANK	139880											
Benzene						0.00	ug/kg					RMB 01/14/99	1245
Ethylbenzene						0.00	ug/kg						
Naphthalene						0.00	ug/kg						
Toluene						0.00	ug/kg						
Xylenes (TOTAL)						0.00	ug/kg						
*Bromofluorobenzene							ug/kg		90.1	(53.5 - 154.)			
*Dibromofluoromethane							ug/kg		92.1	(63.4 - 136.)			
*Toluene-d8							ug/kg		80.4	(72.1 - 137.)			
Methyl Tert Butyl Ether						0.00	ug/kg						
QC575801	BLANK	139880											
Benzene						0.00	ug/kg					RMB 01/15/99	1458
Ethylbenzene						0.00	ug/kg						
Naphthalene						0.00	ug/kg						
Toluene						0.00	ug/kg						
Xylenes (TOTAL)						0.00	ug/kg						
*Bromofluorobenzene							ug/kg		87.7	(53.5 - 154.)			
*Dibromofluoromethane							ug/kg		95.5	(63.4 - 136.)			
*Toluene-d8							ug/kg		79.8	(72.1 - 137.)			
Methyl Tert Butyl Ether						0.00	ug/kg						
QC575968	BLANK	139932											
Benzene						0.00	ug/l					RMB 01/16/99	1540
Ethylbenzene						0.00	ug/l						
Naphthalene						0.00	ug/l						
Toluene						0.00	ug/l						
Xylenes (TOTAL)						0.00	ug/l						
*Bromofluorobenzene							ug/l		92.1	(60.2 - 139.)			
*Dibromofluoromethane							ug/l		79.3	(70.6 - 152.)			
*Toluene-d8							ug/l		79.6	(68.4 - 135.)			
Ethylbenzene						0.00	ug/l						
Methyl Tert Butyl Ether						0.00	ug/l						
QC575978	BLANK	139880											
Benzene						0.00	ug/kg						
Ethylbenzene						0.00	ug/kg						
Naphthalene						0.00	ug/kg						
Toluene						0.00	ug/kg						
Xylenes (TOTAL)						0.00	ug/kg						
*Bromofluorobenzene							ug/kg		92.1	(53.5 - 154.)			
*Dibromofluoromethane							ug/kg		79.3	(63.4 - 136.)			

QC Summary Report

Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Lab. Sample ID: 9901346% Report Date: May 17, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
*Toluene-d8							ug/kg		79.6	(72.1 - 137.)	RMB	01/16/99	1540
Methyl Tert Butyl Ether						0.00	ug/kg						
QC576177	BLANK	139880											
Benzene						0.00	ug/kg				RMB	01/18/99	1132
Ethylbenzene						0.00	ug/kg						
Naphthalene						0.00	ug/kg						
Toluene						0.775	ug/kg						
Xylenes (TOTAL)						0.00	ug/kg						
*Bromofluorobenzene							ug/kg		99.9	(53.5 - 154.)			
*Dibromofluoromethane							ug/kg		85.3	(63.4 - 136.)			
*Toluene-d8							ug/kg		83.8	(72.1 - 137.)			
Methyl Tert Butyl Ether						0.00	ug/kg						
QC576179	BLANK	139932											
Benzene						0.00	ug/l						
Ethylbenzene						0.00	ug/l						
Naphthalene						0.00	ug/l						
Toluene						0.775	ug/l						
Xylenes (TOTAL)						0.00	ug/l						
*Bromofluorobenzene							ug/l		99.9	(60.2 - 139.)			
*Dibromofluoromethane							ug/l		85.3	(70.6 - 152.)			
*Toluene-d8							ug/l		83.8	(68.4 - 135.)			
Ethylbenzene						0.00	ug/l						
Methyl Tert Butyl Ether						0.00	ug/l						
QC576509	BLANK	139932											
Benzene						0.00	ug/l				RMB	01/19/99	1129
Ethylbenzene						0.00	ug/l						
Naphthalene						0.00	ug/l						
Toluene						0.00	ug/l						
Xylenes (TOTAL)						0.00	ug/l						
*Bromofluorobenzene							ug/l		88.0	(60.2 - 139.)			
*Dibromofluoromethane							ug/l		99.3	(70.6 - 152.)			
*Toluene-d8							ug/l		91.7	(68.4 - 135.)			
Ethylbenzene						0.00	ug/l						
Methyl Tert Butyl Ether						0.00	ug/l						
QC577380	BLANK	139932											
Benzene						0.00	ug/l				RMB	01/19/99	2241
Ethylbenzene						0.00	ug/l						
Naphthalene						0.00	ug/l						
Toluene						0.677	ug/l						
Xylenes (TOTAL)						0.00	ug/l						

QC Summary Report

Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Lab. Sample ID: 9901346% Report Date: May 17, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
*Bromofluorobenzene							ug/l		83.9	(60.2 - 139.)	RMB	01/19/99	2241
*Dibromofluoromethane							ug/l		94.3	(70.6 - 152.)			
*Toluene-d8							ug/l		87.2	(68.4 - 135.)			
Ethylbenzene						0.00	ug/l						
Methyl Tert Butyl Ether						0.00	ug/l						
QC575504	9901346-03DUP	139880											
Benzene				0.00		0.00	ug/kg	0.00			RMB	01/14/99	1657
Ethylbenzene				0.00		0.00	ug/kg	0.00					
Methyl Tert Butyl Ether				0.00		0.00	ug/kg	0.00					
Naphthalene				0.00		0.00	ug/kg	0.00					
Toluene				0.00		0.00	ug/kg	0.00					
Xylenes (TOTAL)				0.00		0.00	ug/kg	0.00					
*Bromofluorobenzene			48.7			57.8	ug/kg		97.4				
*Dibromofluoromethane			48.7			55.2	ug/kg		92.9				
*Toluene-d8			48.7			48.0	ug/kg		80.8				
Ethylbenzene				0.00		0.00	ug/kg	0.00					
Methyl Tert Butyl Ether				0.00		0.00	ug/kg	0.00					
Xylenes (TOTAL)				0.00		0.00	ug/kg	0.00					
QC575795	LCS	139880											
Benzene			50			60.0	ug/kg		120	(64.0 - 126.)	RMB	01/14/99	1151
Ethylbenzene			50			48.4	ug/kg		96.8	(-)			
Naphthalene			50			42.8	ug/kg		85.6	(-)			
Toluene			50			51.1	ug/kg		102	(70.4 - 130.)			
Xylenes (TOTAL)			150			150	ug/kg		100	(-)			
*Bromofluorobenzene			50			45.9	ug/kg		91.7	(53.5 - 154.)			
*Dibromofluoromethane			50			46.3	ug/kg		92.6	(63.4 - 136.)			
*Toluene-d8			50			41.6	ug/kg		83.2	(72.1 - 137.)			
QC575802	LCS	139880											
Benzene			50			61.4	ug/kg		123	(64.0 - 126.)	RMB	01/15/99	1424
Ethylbenzene			50			47.1	ug/kg		94.2	(-)			
Naphthalene			50			41.9	ug/kg		83.9	(-)			
Toluene			50			49.1	ug/kg		98.2	(70.4 - 130.)			
Xylenes (TOTAL)			150			145	ug/kg		96.6	(-)			
*Bromofluorobenzene			50			45.0	ug/kg		89.9	(53.5 - 154.)			
*Dibromofluoromethane			50			46.0	ug/kg		91.9	(63.4 - 136.)			
*Toluene-d8			50			39.9	ug/kg		79.9	(72.1 - 137.)			
QC575969	LCS	139932											
1,1-Dichloroethylene			50			46.8	ug/l		93.6	(68.0 - 127.)	RMB	01/16/99	1415
Benzene			50			44.5	ug/l		89.0	(74.0 - 129.)			
Chlorobenzene			50			42.9	ug/l		85.8	(82.0 - 115.)			

QC Summary Report

Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Lab. Sample ID: 9901346% Report Date: May 17, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Ethylbenzene			(nom_conc = 0)			41.1	ug/l				RMB	01/16/99	1415
Naphthalene			(nom_conc = 0)			0.00	ug/l						
Toluene			50			43.2	ug/l		86.3	(76.8 - 119.)			
Trichloroethylene			50			41.1	ug/l		82.2	(74.6 - 131.)			
Xylenes (TOTAL)			(nom_conc = 0)			0.00	ug/l						
*Bromofluorobenzene			50			46.0	ug/l		92.0	(60.2 - 139.)			
*Dibromofluoromethane			50			39.9	ug/l		79.7	(70.6 - 152.)			
*Toluene-d8			50			39.6	ug/l		79.2	(68.4 - 135.)			
QC575979	LCS	139880											
Benzene			50			44.5	ug/kg		89.0	(64.0 - 126.)			
Ethylbenzene			50			41.1	ug/kg		82.2	(-)			
Naphthalene			50			40.0	ug/kg		79.9	(-)			
Toluene			50			43.2	ug/kg		86.3	(70.4 - 130.)			
Xylenes (TOTAL)			150			127	ug/kg		84.6	(-)			
*Bromofluorobenzene			50			46.0	ug/kg		92.0	(53.5 - 154.)			
*Dibromofluoromethane			50			39.9	ug/kg		79.7	(63.4 - 136.)			
*Toluene-d8			50			39.6	ug/kg		79.2	(72.1 - 137.)			
QC576178	LCS	139880											
Benzene			50			53.0	ug/kg		106	(64.0 - 126.)	RMB	01/18/99	1034
Ethylbenzene			50			48.3	ug/kg		96.6	(-)			
Naphthalene			50			42.8	ug/kg		85.5	(-)			
Toluene			50			50.9	ug/kg		102	(70.4 - 130.)			
Xylenes (TOTAL)			150			146	ug/kg		97.4	(-)			
*Bromofluorobenzene			50			48.7	ug/kg		97.3	(53.5 - 154.)			
*Dibromofluoromethane			50			40.5	ug/kg		81.0	(63.4 - 136.)			
*Toluene-d8			50			40.6	ug/kg		81.2	(72.1 - 137.)			
QC576180	LCS	139932											
1,1-Dichloroethylene			50			55.2	ug/l		110	(68.0 - 127.)			
Benzene			50			53.0	ug/l		106	(74.0 - 129.)			
Chlorobenzene			50			49.4	ug/l		98.9	(82.0 - 115.)			
Ethylbenzene			(nom_conc = 0)			48.3	ug/l						
Naphthalene			(nom_conc = 0)			0.00	ug/l						
Toluene			50			50.9	ug/l		102	(76.8 - 119.)			
Trichloroethylene			50			49.7	ug/l		99.5	(74.6 - 131.)			
Xylenes (TOTAL)			(nom_conc = 0)			0.00	ug/l						
*Bromofluorobenzene			50			48.7	ug/l		97.3	(60.2 - 139.)			
*Dibromofluoromethane			50			40.5	ug/l		81.0	(70.6 - 152.)			
*Toluene-d8			50			40.6	ug/l		81.2	(68.4 - 135.)			
QC576510	LCS	139932											
1,1-Dichloroethylene			50			57.2	ug/l		114	(68.0 - 127.)	RMB	01/19/99	1036

QC Summary Report

Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Lab. Sample ID: 9901346% Report Date: May 17, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Benzene			50			54.5	ug/l		109	(74.0 - 129.)	RMB	01/19/99	1038
Chlorobenzene			50			50.0	ug/l		100	(82.0 - 115.)			
Ethylbenzene			(nom_conc = 0)			48.7	ug/l						
Naphthalene			(nom_conc = 0)			0.00	ug/l						
Toluene			50			51.3	ug/l		103	(76.8 - 119.)			
Trichloroethylene			50			51.0	ug/l		102	(74.6 - 131.)			
Xylenes (TOTAL)			(nom_conc = 0)			0.00	ug/l						
*Bromofluorobenzene			50			43.6	ug/l		87.2	(60.2 - 139.)			
*Dibromofluoromethane			50			49.1	ug/l		98.3	(70.6 - 152.)			
*Toluene-d8			50			45.5	ug/l		91.0	(68.4 - 135.)			
QC577381	LCS	139932											
1,1-Dichloroethylene			50			47.3	ug/l		94.6	(68.0 - 127.)	RMB	01/19/99	2057
Benzene			50			47.2	ug/l		94.5	(74.0 - 129.)			
Chlorobenzene			50			43.8	ug/l		87.6	(82.0 - 115.)			
Ethylbenzene			(nom_conc = 0)			41.3	ug/l						
Naphthalene			(nom_conc = 0)			0.00	ug/l						
Toluene			50			44.6	ug/l		89.2	(76.8 - 119.)			
Trichloroethylene			50			43.9	ug/l		87.9	(74.6 - 131.)			
Xylenes (TOTAL)			(nom_conc = 0)			0.00	ug/l						
*Bromofluorobenzene			50			42.3	ug/l		84.6	(60.2 - 139.)			
*Dibromofluoromethane			50			48.0	ug/l		96.0	(70.6 - 152.)			
*Toluene-d8			50			43.8	ug/l		87.5	(68.4 - 135.)			
QC575503	9901346-02PS	139880											
Benzene			50	0.00		61.2	ug/kg		106	(62.2 - 131.)	RMB	01/14/99	2028
Ethylbenzene			50	0.00		46.5	ug/kg		80.4	(-)			
Naphthalene			50	0.00		13.1	ug/kg		22.6	(-)			
Toluene			50	0.00		52.0	ug/kg		89.9	(67.0 - 143.)			
Xylenes (TOTAL)			150	0.00		137	ug/kg		78.9	(-)			
*Bromofluorobenzene			47.4			63.8	ug/kg		110	(53.5 - 154.)			
*Dibromofluoromethane			47.4			54.9	ug/kg		95.0	(63.4 - 136.)			
*Toluene-d8			47.4			50.1	ug/kg		86.7	(72.1 - 137.)			

* represent a surrogate.

QC Summary Report

Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Lab. Sample ID: 9901346% Report Date: May 17, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Extractable Organics													
QC575410	BLANK	139778											
Acenaphthene						0.00	ug/kg				GWL	01/21/99	1246
Pyrene						0.00	ug/kg						
*2-Fluorobiphenyl							ug/kg		55.8	(30.0 - 115.)			
*Nitrobenzene-d5							ug/kg		44.0	(23.0 - 120.)			
*p-Terphenyl-d14							ug/kg		64.8	(37.3 - 128.)			
Acenaphthylene						0.00	ug/kg						
Anthracene						0.00	ug/kg						
Benzo(a)anthracene						0.00	ug/kg						
Benzo(a)pyrene						0.00	ug/kg						
Benzo(b)fluoranthene						0.00	ug/kg						
Benzo(ghi)perylene						0.00	ug/kg						
Benzo(k)fluoranthene						0.00	ug/kg						
Chrysene						0.00	ug/kg						
Dibenzo(a,h)anthracene						0.00	ug/kg						
Fluoranthene						0.00	ug/kg						
Fluorene						0.00	ug/kg						
Indeno(1,2,3-c,d)pyrene						0.00	ug/kg						
Phenanthrene						0.00	ug/kg						
QC575715	BLANK	139859											
Acenaphthene						0.00	ug/kg				TSD	01/21/99	1535
Pyrene						0.00	ug/kg						
*2-Fluorobiphenyl							ug/kg		65.6	(30.0 - 115.)			
*Nitrobenzene-d5							ug/kg		61.3	(23.0 - 120.)			
*p-Terphenyl-d14							ug/kg		90.8	(37.3 - 128.)			
Acenaphthylene						0.00	ug/kg						
Anthracene						0.00	ug/kg						
Benzo(a)anthracene						0.00	ug/kg						
Benzo(a)pyrene						0.00	ug/kg						
Benzo(b)fluoranthene						0.00	ug/kg						
Benzo(ghi)perylene						0.00	ug/kg						
Benzo(k)fluoranthene						0.00	ug/kg						
Chrysene						0.00	ug/kg						
Dibenzo(a,h)anthracene						0.00	ug/kg						
Fluoranthene						0.00	ug/kg						
Fluorene						0.00	ug/kg						
Indeno(1,2,3-c,d)pyrene						0.00	ug/kg						
Phenanthrene						0.00	ug/kg						
QC575411	LCS	139778											

QC Summary Report

Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Lab. Sample ID: 9901346% Report Date: May 17, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
1,2,4-Trichlorobenzene			1670			1210	ug/kg		72.3	(49.0 - 117.)	GWL	01/21/99	1319
1,4-Dichlorobenzene			1670			1010	ug/kg		60.7	(48.0 - 105.)	GWL	01/21/99	1319
2,4-Dinitrotoluene			1670			1310	ug/kg		78.7	(51.0 - 120.)			
2-Chlorophenol			3330			1850	ug/kg		55.6	(51.0 - 96.0)			
4-Nitrophenol			3330			2770	ug/kg		83.2	(37.0 - 113.)			
4-chloro-3-methyl phenol			3330			2030	ug/kg		61.1	(56.0 - 109.)			
Acenaphthene			1670			1110	ug/kg		66.3	(55.0 - 116.)			
N-Nitrosodipropylamine			1670			919	ug/kg		55.0	(38.0 - 134.)			
Pentachlorophenol			3330			2330	ug/kg		69.9	(37.0 - 134.)			
Phenol			3330			1600	ug/kg		48.2	(29.0 - 103.)			
Pyrene			1670			1380	ug/kg		82.6	(61.0 - 115.)			
*2,4,6-Tribromophenol			3330			2090	ug/kg		62.8	(40.3 - 122.)			
*2-Fluorobiphenyl			1670			1120	ug/kg		66.7	(30.0 - 115.)			
*2-Fluorophenol			3330			1580	ug/kg		47.3	(25.0 - 121.)			
*Nitrobenzene-d5			1670			986	ug/kg		59.0	(23.0 - 120.)			
*Phenol-d6			3330			1740	ug/kg		52.1	(24.0 - 113.)			
*p-Terphenyl-d14			1670			1310	ug/kg		78.3	(37.3 - 128.)			
QC575716	LCS	139859											
Acenaphthene			1670			1210	ug/kg		72.3	(55.3 - 116.)	TSD	01/21/99	1607
Pyrene			1670			1420	ug/kg		85.0	(60.6 - 115.)			
*2-Fluorobiphenyl			1670			1160	ug/kg		69.6	(30.0 - 115.)			
*Nitrobenzene-d5			1670			1100	ug/kg		65.8	(23.0 - 120.)			
*p-Terphenyl-d14			1670			1370	ug/kg		81.9	(37.3 - 128.)			
QC575412	9901346-01MS	139778											
Acenaphthene			22700	0.00		27300	ug/kg		98.6	(47.0 - 139.)	GWL	01/19/99	1853
Pyrene			22700	0.00		25300	ug/kg		91.4	(52.0 - 115.)			
*2-Fluorobiphenyl			22700			26800	ug/kg		96.9	(30.0 - 115.)			
*Nitrobenzene-d5			22700			15300	ug/kg		55.1	(23.0 - 120.)			
*p-Terphenyl-d14			22700			28100	ug/kg		101	(37.3 - 128.)			
QC575717	9901346-07MS	139859											
Acenaphthene			1670	0.00		0.00	ug/kg		0.00**	(47.0 - 139.)	TSD	01/21/99	1638
Pyrene			1670	0.00		2800	ug/kg		133**	(52.0 - 115.)			
*2-Fluorobiphenyl			1670			0.00	ug/kg		0.00**	(30.0 - 115.)			
*Nitrobenzene-d5			1670			0.00	ug/kg		0.00**	(23.0 - 120.)			
*p-Terphenyl-d14			1670			0.00	ug/kg		0.00**	(37.3 - 128.)			
QC575413	9901346-01MSD	139778											
Acenaphthene			22700	0.00		27800	ug/kg	1.96	101	(0.00 - 19.0)	GWL	01/19/99	1926
Pyrene			22700	0.00		25000	ug/kg	1.39	90.2	(0.00 - 36.0)			
*2-Fluorobiphenyl			22700			26700	ug/kg		96.4	(30.0 - 115.)			
*Nitrobenzene-d5			22700			14800	ug/kg		53.4	(23.0 - 120.)			

QC Summary Report

Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Lab. Sample ID: 9901346% Report Date: May 17, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
*p-Terphenyl-d14			22700			28200	ug/kg		102	(37.3 - 128.)	GWL	01/19/99	1926
QC575718 9901346-07MSD		139859											
Acenaphthene			1670	0.00		0.00	ug/kg	0.00	0.00	(0.00 - 19.0)	TSD	01/21/99	1709
Pyrene			1670	0.00		2520	ug/kg	10.7	119	(0.00 - 36.0)			
*2-Fluorobiphenyl			1670			0.00	ug/kg		0.00**	(30.0 - 115.)			
*Nitrobenzene-d5			1670			0.00	ug/kg		0.00**	(23.0 - 120.)			
*p-Terphenyl-d14			1670			0.00	ug/kg		0.00**	(37.3 - 128.)			

* represent a surrogate.

QC Summary Report

Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Lab. Sample ID: 9901346% Report Date: May 17, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
General Chemistry													
QC578952	BLANK	140704											
Total Rec. Petro. Hydrocarbons						0.00	mg/kg				AAT	01/27/99	1000
QC578953	LCS	140704											
Total Rec. Petro. Hydrocarbons			27400			27600	mg/kg		101	(70.0 - 116.)			
QC578954	9901346-08MS	140704											
Total Rec. Petro. Hydrocarbons			35100	18.8		34900	mg/kg		99.2	(70.0 - 130.)			
QC578955	9901346-08MSD	140704											
Total Rec. Petro. Hydrocarbons			35000	18.8		33100	mg/kg	4.96	94.4	(0.00 - 30.0)			
QC575595	BLANK	139822											
Evaporative Loss @ 105 C						0.00	wt%				GJ	01/14/99	1535
QC575904	BLANK	139911											
Evaporative Loss @ 105 C						0.00	wt%				GJ	01/15/99	1605
C575593	9901346-05DUP	139822											
Evaporative Loss @ 105 C				10.0		10.0	wt%	0.00			GJ	01/14/99	1535
QC575902	9901346-18DUP	139911											
Evaporative Loss @ 105 C				37.0		36.0	wt%	2.74			GJ	01/15/99	1605
QC577021	BLANK	140209											
Total Organic Carbon						2.90	mg/kg				LS	01/29/99	0914
QC577026	LCS	140209											
Total Organic Carbon			3750			3860	mg/kg		103	(88.0 - 130.)	LS	01/28/99	1326
QC577022	9901346-12PS	140209											
Total Organic Carbon			10700	41100		110000	mg/kg		81.0	(73.0 - 129.)	LS	01/28/99	1621
QC577023	9901346-12PSD	140209											
Total Organic Carbon			8000	41100		86900	mg/kg	12.1	71.7	(0.00 - 30.0)	LS	01/28/99	1630

Notes:
The qualifiers in this report are defined as follows:
J indicates presence of analyte < RL (Report Limit)
U indicates presence of analyte < DL (Detect Limit)

n/a indicates that spike recovery limits do not apply when
sample concentration exceeds spike conc by a factor of 4 or more

CHAIN OF CUSTODY

CHAIN OF CUSTODY RECORD

9901346 ?

PROJECT NO: 7912

SITE NAME: CNC Zone H

SAMPLERS (SIGNATURE): [illegible]

STATION NO	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	BCL/MBS	EAH	TPH	TOC	GRAIN SIZE		REMARKS
	1-12	1250	✓		05SLB03 03	9	✓	✓	✓		✓		
		1110	✓		05SLB05 03	4	✓	✓					
		1500	✓		05SLB04 03	4	✓	✓					
		1550	✓		05SLB09 03	4	✓	✓					
		1630	✓		05SLB13 02	1				✓			
	1/12/99	1100	✓		CNCFL0001	3	✓						Trip Blank

RELINQUISHED BY (SIGNATURE)	DATE / TIME	RECEIVED BY (SIGNATURE)	RELINQUISHED BY (SIGNATURE)	DATE / TIME	RECEIVED BY (SIGNATURE)
[illegible]	1/12/99 [illegible]				
RELINQUISHED BY (SIGNATURE)	DATE / TIME	RECEIVED BY (SIGNATURE)	RELINQUISHED BY (SIGNATURE)	DATE / TIME	RECEIVED BY (SIGNATURE)
RELINQUISHED BY (SIGNATURE)	DATE / TIME	RECEIVED FOR LABORATORY BY (SIGNATURE): [illegible]	DATE / TIME: 1/13/99 [illegible]	REMARKS: Standard turnaround	

General Engineering Laboratories, Inc.
2040 Savage Road
Charleston, South Carolina 29407
P.O. Box 30712
Charleston, South Carolina 29417
(803) 556-8171

CHAIN OF CUSTODY RECORD

9901348 / 9901405

Client Name/Facility Name: Tetra Tech NUS / CNC

Collected by/Company: James R. Nill / Tetra Tech NUS

SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods

	SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# OF CONTAINERS	pH, conductivity	TOC/TOX	TOX	Chloride, Fluoride, Sulfide	Nitrite/Nitrate	VOC - Specify Method required	METALS - specify	Pesticide	Herbicide	Total Phenol	Acid Extractables	B/N Extractables	PAH	TPH	Coliform - specify type	GrainSize	TO	Remarks
07	Ø5SLBØ7Ø3	1-13-99	0755		X		X	4						X							X					BTEX/MTBE
08	Ø9SLBØ1Ø3		0905		X		X	9						X							X	X		X		
09	Ø9SLBØ2Ø3		0940		X		X	4						X							X					
10	Ø9SLBØ3Ø3		1015		X		X	4						X							X					
11	Ø9SLBØ4Ø3		1038		X		X	4						X							X					
12	Ø9SLBØ9Ø3		1058		X		X	1		X																
13	Ø9SLBØ5Ø1		1115		X		X	4						X							X					
14	Ø3SLBØ9Ø2		1430											X							X					
15	Ø3SLBØ9Ø2D		1430											X							X					Dupe
16	Ø3SLBØ7Ø5		1510											X							X					
17	Ø3SLBØ5Ø3		1540							X				X							X					
18	~~Ø3SLBØ5~~ JRB																									
19	Ø3SLB1ØØ2		1615											X							X					

Use P or F in the boxes to indicate whether sample was filtered and/or preserved

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:

Relinquished by:	Date:	Time:	Received by lab by:	Date:	Time:	Remarks:
[signature]	1-13-99	1713	Patricia [signature]	1/13/99	17:05	

White = sample collector Yellow = file Pink = with report

General Engineering Laboratory
2040 Savage Road
Charleston, South Carolina 29407
P.O. Box 30712
Charleston, South Carolina 29417
(803) 556-8171

CHAIN OF CUSTODY RECORD

Client Name/Facility Name: Tetra Tech NUS / CNC

Collected by/Company: James R Hill / Tetra Tech NUS

SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods

Use F or P in the boxes to indicate whether sample was filtered and/or preserved

SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# OF CONTAINERS	pH, conductivity	TOC/DOC	TOX	Chloride, Fluoride, Sulfide	Nitrite/Nitrate	VOC - Specify Method required	METALS - specify	Pesticide	Herbicide	Total Phenol	Acid Extractables	B/N Extractables	PCB's	Cyanide	Coliform - specify type			Remarks
19 ZHTL0029	11-24-98	1120											X												BTEX/MTBE

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:

Relinquished by:	Date:	Time:	Received by lab by:	Date:	Time:	Remarks:
James R Hill	1-13-99	1713	Patricia Glover	1/13/99	17:05	

White = sample collector Yellow = file Pink = with report

COOLER RECEIPT CHECKLIST

FEDERAL SAMPLE RECEIPT REVIEW

Client TETR Received by [illegible] Date 1/12/99

GEL COOLER___ GEL POLY COOLER___ CLIENT COOLER___ OTHER___

SAMPLE REVIEW CRITERIA	YES	NO	COMMENTS/QUALIFIERS
1. Were shipping containers received intact and sealed? Call project Manager if No	✓		
2. Was the Shipment screened following the radiochemistry survey procedure (EPI SOP S-007)?	✓		
Were the survey results negative? Call Project Manager if No	✓		
Are any of the samples identified by the client as radioactive? If yes, did client provide RAD activity?		✓	
3. Were chain of custody documents included?	✓		
4. Were chain of custody documents completed properly ? (Ink, signed, match containers)	✓		
5. Did all samples container arrive intact? (sealed , unbroken)? Call Project Manager if No	✓		
6. Were all sample containers properly labeled?	✓		
7. Were proper sample containers received?	✓		
8. Preserved samples checked for proper pH?	—		Soil
9. Were samples preserved properly? If no, list samples & tests	—		
10. Shipping container temperature checked?	✓		
11. Was shipping container temperature within specifications (4+2C) If no, Call Project Manager	✓		4°C
12. Were samples received within holding time? if No, Call Project Manager	✓		
13. Were VOA vials free of headspace?	—		
14. ARCOC# IF REQUIRED	—		
15. SDG# IF REQUIRED	✓		CT068

REVIEW [signature] DATE 1/12/99 SA - SEALS ATTACHED NSA - NO SEALS ATTACHED

INDUSTRIAL SAMPLE RECEIPT REVIEW

Client TEJR Received by [illegible] Date 1/13/99

GEL COOLER___ GEL POLY COOLER___ CLIENT COOLER___ OTHER___

SAMPLE REVIEW CRITERIA	YES	NO	COMMENTS/QUALIFIERS
1. Were shipping containers received intact and sealed? Call project Manager if No	✓		
2. Is the shipment identified as RADIOACTIVE and/or from a DOE site or subcontainer (see list in EPI SOP S-007)?	✓		
If YES, was the shipment screened following the radiochemistry survey procedure (EPI SOP S-007)?	✓		
Were the survey results negative? Call Project Manager if No.		✓	
3. Were chain of custody documents included?	✓		
4. Were chain of custody documents completed properly ? (Ink, signed, match containers)	✓		
5. Did all samples container arrive intact? (sealed , unbroken)? Call Project Manager if No	✓		
6. Were all sample containers properly labeled?	✓		
7. Were proper sample containers received?	✓		
8. Preserved samples checked for proper pH?	—		SOR
9. Were samples preserved properly? If no, list samples & tests	—		
10. Shipping container temperature checked?	✓		
11. Was shipping container temperature within specifications (4+2C) If no, Call Project Manager	✓		4°C
12. Were samples received within holding time? if No, Call Project Manager	✓		
13. Were VOA vials free of headspace?	—		

REVIEW [illegible] DATE 1/13/99 SA - SEALS ATTACHED NSA - NO SEALS ATTACHED

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Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 04, 1999

Sample ID : 03SLB0305
Lab ID : 9901447-01
Matrix : Soil
Date Collected : 01/14/99
Date Received : 01/14/99
Priority : Routine
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX/NAP/MTBE - 6 items											
BENZENE	U	ND	0.540	5.00	ug/kg	1.0	SLG	01/21/99	1237	140144	1
ETHYLBENZENE	U	ND	0.324	5.00	ug/kg	1.0					
TERT-BUTYL METHYL ETHER		ND	0.192	6.00	ug/kg	1.0					
NAPHTHALENE	U	ND	0.732	5.00	ug/kg	1.0					
TOLUENE	U	ND	1.13	5.00	ug/kg	1.0					
XYLENES, TOTAL	U	ND	0.300	5.00	ug/kg	1.0					
Organic Prep											
EVAPORATIVE LOSS @ 105 C		16.0	1.00	1.00	wt%	1.0	GJ	01/15/99	1635	139912	2
Extractable Organics											
Polyaromatic Hydrocarbon Compounds - 15 items											
ACENAPHTHENE	U	ND	191	397	ug/kg	1.0	JCB	01/21/99	1620	139909	3
ACENAPHTHYLENE	U	ND	175	397	ug/kg	1.0					
ANTHRACENE	U	ND	104	397	ug/kg	1.0					
BENZO(A)ANTHRACENE	U	ND	81.4	397	ug/kg	1.0					
BENZO(A)PYRENE	U	ND	85.4	397	ug/kg	1.0					
BENZO(B)FLUORANTHENE	J	356	169	397	ug/kg	1.0					
BENZO(G,H,I)PERYLENE	U	ND	96.9	397	ug/kg	1.0					
BENZO(K)FLUORANTHENE	U	ND	157	397	ug/kg	1.0					
CHRYSENE	U	ND	65.1	397	ug/kg	1.0					
DIBENZ(A,H) ANTHRACENE	U	ND	98.9	397	ug/kg	1.0					
FLUORANTHENE	U	ND	77.8	397	ug/kg	1.0					
FLUORENE	U	ND	136	397	ug/kg	1.0					
INDENO(1,2,3-CD)PYRENE	U	ND	95.7	397	ug/kg	1.0					
PHENANTHRENE	U	ND	71.5	397	ug/kg	1.0					
PYRENE	U	ND	85.8	397	ug/kg	1.0					
General Chemistry											
Total Rec. Petro. Hydrocarbons		405	59.5	119	mg/kg	1.0	AAT	02/01/99	2015	141255	4

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9901447-01

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 04, 1999

Sample ID : 03SLB0305

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M

The following prep procedures were performed:

Volatiles 8260 High Level	SLG	01/22/99	1220	140144	5
GC/MS Base/Neutral Compounds	RDH	01/18/99	1250	139909	2

Surrogate Recovery	Test	Percent %	Acceptable Limits
2-Fluorobiphenyl	M610-TETR	80.2	(44.7 - 110.)
Nitrobenzene-d5	M610-TETR	67.2	(42.4 - 107.)
p-Terphenyl-d14	M610-TETR	104.	(45.5 - 104.)
Bromofluorobenzene	BTEX/NAP/MTBE-8260B	148.	(53.5 - 154.)
Dibromofluoromethane	BTEX/NAP/MTBE-8260B	113.	(63.4 - 136.)
Toluene-d8	BTEX/NAP/MTBE-8260B	123.	(72.1 - 137.)

M = Method	Method-Description
M 1	SW846 8260B
M 2	EPA 3550
M 3	EPA 8270C
M 4	SW846 9071A
M 5	EPA 5035

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

Data reported in mass/mass units is reported as 'dry weight'.

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client:	Tetra Tech NUS, Inc. 794 South Military Trail Deerfield Beach, Florida 33442
Contact:	Mr. Arnold Lamb
Project Description:	CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 04, 1999

Sample ID : 03SLB0305

M = Method	Method-Description

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at (843) 769-7391.

Valerie L Davis

Reviewed By

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9901447-01

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GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 04, 1999

Sample ID	: 03SLB0804
Lab ID	: 9901447-02
Matrix	: Soil
Date Collected	: 01/14/99
Date Received	: 01/14/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX/NAP/MTBE - 6 items											
BENZENE	J	4.84	0.567	5.00	ug/kg	1.0	SLG	01/19/99	1921	140144	1
ETHYLBENZENE	J	1.13	0.340	5.00	ug/kg	1.0					
TERT-BUTYL METHYL ETHER		ND	0.202	6.30	ug/kg	1.0					
NAPHTHALENE	U	ND	0.769	5.00	ug/kg	1.0					
TOLUENE	J	2.88	1.18	5.00	ug/kg	1.0					
XYLENES, TOTAL	J	0.993	0.315	5.00	ug/kg	1.0					
Organic Prep											
EVAPORATIVE LOSS @ 105 C		15.0	1.00	1.00	wt%	1.0	GJ	01/15/99	1635	139912	2
Extractable Organics											
Polyaromatic Hydrocarbon Compounds - 15 items											
ACENAPHTHENE	U	ND	188	392	ug/kg	1.0	JCB	01/21/99	1654	139909	3
ACENAPHTHYLENE	U	ND	173	392	ug/kg	1.0					
ANTHRACENE	U	ND	103	392	ug/kg	1.0					
BENZO(A)ANTHRACENE	U	ND	80.4	392	ug/kg	1.0					
BENZO(A)PYRENE	U	ND	84.3	392	ug/kg	1.0					
BENZO(B)FLUORANTHENE	U	ND	167	392	ug/kg	1.0					
BENZO(G,H,I)PERYLENE	U	ND	95.6	392	ug/kg	1.0					
BENZO(K)FLUORANTHENE	U	ND	155	392	ug/kg	1.0					
CHRYSENE	U	ND	64.3	392	ug/kg	1.0					
DIBENZ(A,H) ANTHRACENE	U	ND	97.6	392	ug/kg	1.0					
FLUORANTHENE	U	ND	76.8	392	ug/kg	1.0					
FLUORENE	U	ND	134	392	ug/kg	1.0					
INDENO(1,2,3-CD)PYRENE	U	ND	94.5	392	ug/kg	1.0					
PHENANTHRENE	U	ND	70.6	392	ug/kg	1.0					
PYRENE	U	ND	84.7	392	ug/kg	1.0					

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STATE	GEL	EPI
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NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 04, 1999

Sample ID : 03SLB0804

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M

The following prep procedures were performed:

Volatiles 8260 High Level	SLG	01/22/99	1220	140144	4
GC/MS Base/Neutral Compounds	RDH	01/18/99	1250	139909	2

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610-TETR	69.0	(44.7 - 110.)
Nitrobenzene-d5	M610-TETR	62.2	(42.4 - 107.)
p-Terphenyl-d14	M610-TETR	94.8	(45.5 - 104.)
Bromofluorobenzene	BTEX/NAP/MTBE-8260B	117.	(53.5 - 154.)
Dibromofluoromethane	BTEX/NAP/MTBE-8260B	110.	(63.4 - 136.)
Toluene-d8	BTEX/NAP/MTBE-8260B	117.	(72.1 - 137.)

M = Method	Method-Description
M 1	SW846 8260B
M 2	EPA 3550
M 3	EPA 8270C
M 4	EPA 5035

Notes:
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ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

Data reported in mass/mass units is reported as 'dry weight'.

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Client:	Tetra Tech NUS, Inc. 794 South Military Trail Deerfield Beach, Florida 33442
Contact:	Mr. Arnold Lamb
Project Description:	CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 04, 1999

Sample ID : 03SLB0804

M = Method	Method-Description

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at (843) 769-7391.

Valerie L Davis

Reviewed By

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FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 04, 1999

Sample ID	: 03SLB1101
Lab ID	: 9901447-03
Matrix	: Soil
Date Collected	: 01/14/99
Date Received	: 01/14/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX/NAP/MTBE - 6 items											
BENZENE	J	2.20	0.540	5.00	ug/kg	1.0	SLG	01/21/99	1305	140144	1
ETHYLBENZENE	J	0.780	0.324	5.00	ug/kg	1.0					
TERT-BUTYL METHYL ETHER		ND	0.192	6.00	ug/kg	1.0					
NAPHTHALENE	U	ND	0.732	5.00	ug/kg	1.0					
TOLUENE	J	1.78	1.13	5.00	ug/kg	1.0					
XYLENES, TOTAL	U	ND	0.300	5.00	ug/kg	1.0					
Organic Prep											
EVAPORATIVE LOSS @ 105 C		15.0	1.00	1.00	wt%	1.0	GJ	01/15/99	1635	139912	2
Extractable Organics											
Polyaromatic Hydrocarbon Compounds - 15 items											
ACENAPHTHENE	U	ND	188	392	ug/kg	1.0	JCB	01/21/99	1727	139909	3
ACENAPHTHYLENE	U	ND	173	392	ug/kg	1.0					
ANTHRACENE	U	ND	103	392	ug/kg	1.0					
BENZO(A)ANTHRACENE	U	ND	80.4	392	ug/kg	1.0					
BENZO(A)PYRENE	U	ND	84.3	392	ug/kg	1.0					
BENZO(B)FLUORANTHENE	J	362	167	392	ug/kg	1.0					
BENZO(G,H,I)PERYLENE	U	ND	95.6	392	ug/kg	1.0					
BENZO(K)FLUORANTHENE	U	ND	155	392	ug/kg	1.0					
CHRYSENE	U	ND	64.3	392	ug/kg	1.0					
DIBENZ(A,H) ANTHRACENE	U	ND	97.6	392	ug/kg	1.0					
FLUORANTHENE	U	ND	76.8	392	ug/kg	1.0					
FLUORENE	U	ND	134	392	ug/kg	1.0					
INDENO(1,2,3-CD)PYRENE	U	ND	94.5	392	ug/kg	1.0					
PHENANTHRENE	U	ND	70.6	392	ug/kg	1.0					
PYRENE	U	ND	84.7	392	ug/kg	1.0					

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NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 04, 1999

Sample ID : 03SLB1101

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M

The following prep procedures were performed:

Volatiles 8260 High Level	SLG	01/22/99	1220	140144	4
GC/MS Base/Neutral Compounds	RDH	01/18/99	1250	139909	2

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610-TETR	71.5	(44.7 - 110.)
Nitrobenzene-d5	M610-TETR	61.6	(42.4 - 107.)
p-Terphenyl-d14	M610-TETR	91.7	(45.5 - 104.)
Bromofluorobenzene	BTEX/NAP/MTBE-8260B	124.	(53.5 - 154.)
Dibromofluoromethane	BTEX/NAP/MTBE-8260B	107.	(63.4 - 136.)
Toluene-d8	BTEX/NAP/MTBE-8260B	117.	(72.1 - 137.)

M = Method	Method-Description
M 1	SW846 8260B
M 2	EPA 3550
M 3	EPA 8270C
M 4	EPA 5035

Notes:
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* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

Data reported in mass/mass units is reported as 'dry weight'.

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Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 04, 1999

Sample ID : 03SLB1101

M = Method	Method-Description

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Valerie A Davis

Reviewed By

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NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 04, 1999

Sample ID	: ZHTL00301
Lab ID	: 9901446-02
Matrix	: Water
Date Collected	: 01/14/99
Date Received	: 01/14/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX/NAP/MTBE - 6 items											
BENZENE	U	ND	0.300	5.00	ug/l	1.0	SLG	01/19/99	1728	140142	1
ETHYLBENZENE	U	ND	0.300	5.00	ug/l	1.0					
TERT-BUTYL METHYL ETHER		ND	3.60	5.00	ug/l	1.0					
NAPHTHALENE	U	ND	0.600	5.00	ug/l	1.0					
TOLUENE	U	ND	0.500	5.00	ug/l	1.0					
XYLENES, TOTAL	U	ND	1.10	5.00	ug/l	1.0					

Surrogate Recovery	Test	Percent %	Acceptable Limits
Bromofluorobenzene	BTEX/NAP/MTBE-8260B	113.	(60.2 - 139.)
Dibromofluoromethane	BTEX/NAP/MTBE-8260B	105.	(70.6 - 152.)
Toluene-d8	BTEX/NAP/MTBE-8260B	116.	(68.4 - 135.)

M = Method	Method-Description
M 1	SW846 8260B

Notes:
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J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
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STATE	GEL	EPI
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NC	233	
SC	10120	10582
TN	02934	02934

Client:	Tetra Tech NUS, Inc. 794 South Military Trail Deerfield Beach, Florida 33442
Contact:	Mr. Arnold Lamb
Project Description:	CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 04, 1999

Sample ID : ZHTL00301

M = Method	Method-Description

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at (843) 769-7391.

Valerie D Davis

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STATE	GEL	EPI
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NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 04, 1999

Sample ID : ZHFL00101
Lab ID : 9901446-03
Matrix : Water
Date Collected : 01/14/99
Date Received : 01/14/99
Priority : Routine
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX/NAP/MTBE - 6 items											
BENZENE	U	ND	0.300	5.00	ug/l	1.0	SLG	01/19/99	1756	140142	1
ETHYLBENZENE	U	ND	0.300	5.00	ug/l	1.0					
TERT-BUTYL METHYL ETHER		ND	3.60	5.00	ug/l	1.0					
NAPHTHALENE	U	ND	0.600	5.00	ug/l	1.0					
TOLUENE	J	0.660	0.500	5.00	ug/l	1.0					
XYLENES, TOTAL	U	ND	1.10	5.00	ug/l	1.0					

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	BTEX/NAP/MTBE-8260B	114.	(60.2 - 139.)
Dibromofluoromethane	BTEX/NAP/MTBE-8260B	107.	(70.6 - 152.)
Toluene-d8	BTEX/NAP/MTBE-8260B	115.	(68.4 - 135.)

M = Method	Method-Description
M 1	SW846 8260B

Notes:
The qualifiers in this report are defined as follows:
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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client:	Tetra Tech NUS, Inc. 794 South Military Trail Deerfield Beach, Florida 33442
Contact:	Mr. Arnold Lamb
Project Description:	CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: February 04, 1999

Sample ID : ZHFL00101

M = Method	Method-Description

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at (843) 769-7391.

Valerie Davis

Reviewed By

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GEOTECHNICAL ANALYSIS

GEOTECHNICAL SPREADSHEET

Project Number:	tetr00498	Depth:	UNKNOWN
Sample Number:	9901447-01	Tested By:	M. Yates
Boring Number:	NA	Date:	1/30/99
Location:	NA		

GRAIN-SIZE ANALYSIS

HYGROSCOPIC MOISTURE CONTENT DETERMINATION

weight of total air dried sample=	89.95
weight of container + air-dried soil=	33
weight of container + oven-dried soil=	27.91
weight of container=	7.34
weight of water=	5.09
weight of oven-dried soil=	20.57
weight of air-dried soil=	25.66
hygroscopic moisture correction factor=	0.80
weight of oven-dried sample for hydro. anal.=	71.96

SIEVE ANALYSIS

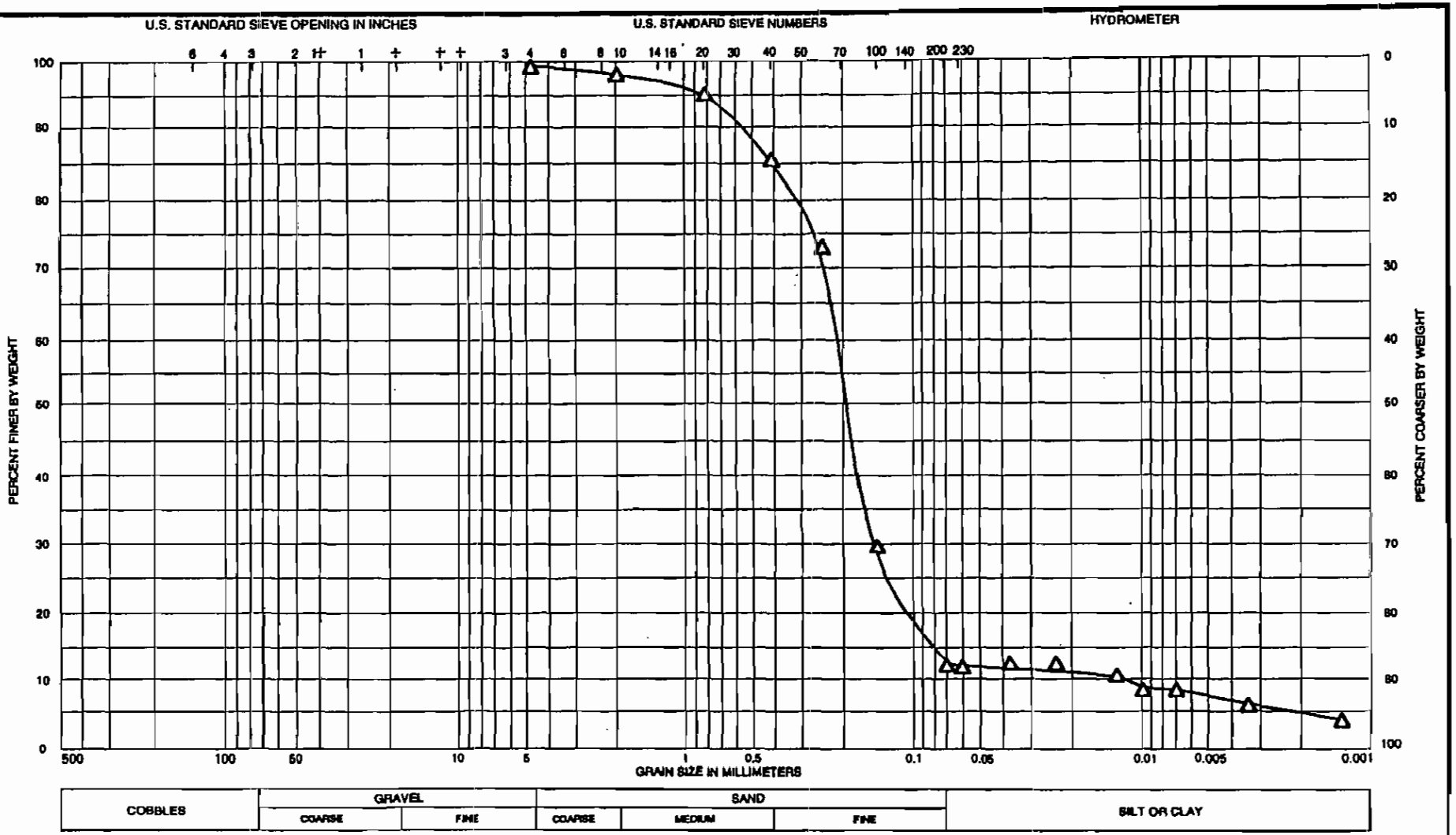
weight of oven-dried sample= 71.96

Sieve #	Weight Ret.	Weight Passed	% Passing
4	0.35	71.61	99.5
10	0.71	70.90	98.5
20	2.43	68.47	95.2
40	7.11	61.36	85.3
60	8.52	52.84	73.4
100	31.43	21.41	29.8
200	12.44	8.97	12.5
230	0.17	8.80	12.2
pan	0.04	8.76	12.2

HYDROMETER ANALYSIS

weight	71.96
SG	2.45

TIME	ACTUAL READING	TEMP.	COMPOSITE CORRECTION	R	LENGTH	K	DIAMETER	P
2	1.009	21	0.00350	1.00550	13.9	0.01438	.03794	12.9
5	1.009	21	0.00350	1.00550	13.9	0.01438	.02399	12.9
15	1.008	21	0.00350	1.00450	14.2	0.01438	.01398	10.6
30	1.007	21	0.00350	1.00350	14.5	0.01438	.00998	8.2
60	1.007	21	0.00350	1.00350	14.5	0.01438	.00706	8.2
250	1.006	21	0.00350	1.00250	14.7	0.01438	.00349	5.9
1440	1.005	22	0.00325	1.00175	15.0	0.01421	.00145	4.1



Sample No.	Specific Gravity	Classification	Nat w %	LL	PL	PI
9901447-01	---	SC	---			
		% GRAVEL = 0.5				
		% SAND = 87.0				
		% SILT = 5.0				
		% CLAY = 7.5				

GRADATION CURVES

GENERAL ENGINEERING
A Division of General Engineering Laboratories, Inc.

Project: tetr00498
Area: Tetra Tech NUS, Inc.
Boring No.
Date: January 30, 1999

QC SUMMARY REPORT

QC Summary Report

Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Lab. Sample ID: 9901447% Report Date: February 04, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Volatile Organics													
QC576791	BLANK	140144											
Benzene						0.00	ug/kg				SLG	01/19/99	1316
Ethylbenzene						0.00	ug/kg						
Naphthalene						1.19	ug/kg						
Toluene						0.00	ug/kg						
Xylenes (TOTAL)						0.00	ug/kg						
*Bromofluorobenzene							ug/kg		111	(53.5 - 154.)			
*Dibromofluoromethane							ug/kg		104	(63.4 - 136.)			
*Toluene-d8							ug/kg		114	(72.1 - 137.)			
Methyl Tert Butyl Ether						0.00	ug/kg						
QC577110	BLANK	140144											
Benzene						0.00	ug/kg				SLG	01/20/99	1159
Ethylbenzene						0.00	ug/kg						
Naphthalene						0.00	ug/kg						
Toluene						0.00	ug/kg						
Xylenes (TOTAL)						0.00	ug/kg						
*Bromofluorobenzene							ug/kg		114	(53.5 - 154.)			
*Dibromofluoromethane							ug/kg		108	(63.4 - 136.)			
*Toluene-d8							ug/kg		116	(72.1 - 137.)			
Methyl Tert Butyl Ether						0.00	ug/kg						
QC577510	BLANK	140144											
Benzene						0.00	ug/kg				SLG	01/21/99	1155
Ethylbenzene						0.00	ug/kg						
Naphthalene						0.00	ug/kg						
Toluene						0.00	ug/kg						
Xylenes (TOTAL)						0.00	ug/kg						
*Bromofluorobenzene							ug/kg		115	(53.5 - 154.)			
*Dibromofluoromethane							ug/kg		113	(63.4 - 136.)			
*Toluene-d8							ug/kg		117	(72.1 - 137.)			
Methyl Tert Butyl Ether						0.00	ug/kg						
QC576792	LCS	140144											
Benzene			50			40.6	ug/kg		81.3	(64.0 - 126.)	SLG	01/19/99	1248
Ethylbenzene			50			39.3	ug/kg		78.5	(-)			
Naphthalene			50			46.5	ug/kg		92.9	(-)			
Toluene			50			42.2	ug/kg		84.4	(70.4 - 130.)			
Xylenes (TOTAL)			150			124	ug/kg		82.5	(-)			
*Bromofluorobenzene			50			55.1	ug/kg		110	(53.5 - 154.)			
*Dibromofluoromethane			50			55.7	ug/kg		111	(63.4 - 136.)			
*Toluene-d8			50			56.9	ug/kg		114	(72.1 - 137.)			

QC Summary Report

Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Lab. Sample ID: 9901447% Report Date: February 04, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
QC577111	LCS	140144											
Benzene			50			45.0	ug/kg		89.9	(64.0 - 126.)	SLG	01/20/99	1131
Ethylbenzene			50			43.1	ug/kg		86.1	(-)			
Naphthalene			50			47.7	ug/kg		95.4	(-)			
Toluene			50			43.9	ug/kg		87.7	(70.4 - 130.)			
Xylenes (TOTAL)			150			135	ug/kg		89.6	(-)			
*Bromofluorobenzene			50			54.8	ug/kg		110	(53.5 - 154.)			
*Dibromofluoromethane			50			57.0	ug/kg		114	(63.4 - 136.)			
*Toluene-d8			50			56.3	ug/kg		113	(72.1 - 137.)			
QC577511	LCS	140144											
Benzene			50			46.0	ug/kg		91.9	(64.0 - 126.)	SLG	01/21/99	1124
Ethylbenzene			50			44.6	ug/kg		89.3	(-)			
Naphthalene			50			53.5	ug/kg		107	(-)			
Toluene			50			46.0	ug/kg		91.9	(70.4 - 130.)			
Xylenes (TOTAL)			150			140	ug/kg		93.0	(-)			
*Bromofluorobenzene			50			55.6	ug/kg		111	(53.5 - 154.)			
*Dibromofluoromethane			50			58.8	ug/kg		118	(63.4 - 136.)			
*Toluene-d8			50			57.6	ug/kg		115	(72.1 - 137.)			
QC576793	9901447-07PS	140144											
Benzene			50	0.00		64.2	ug/kg		78.5	(62.2 - 131.)	SLG	01/21/99	1531
Ethylbenzene			50	1.64		59.2	ug/kg		70.4	(-)			
Naphthalene			50	0.00		0.00	ug/kg		0.00	(-)			
Toluene			50	0.00		58.8	ug/kg		71.9	(67.0 - 143.)			
Xylenes (TOTAL)			150	0.00		181	ug/kg		73.7	(-)			
*Bromofluorobenzene			54			88.2	ug/kg		108	(53.5 - 154.)			
*Dibromofluoromethane			54			89.9	ug/kg		110	(63.4 - 136.)			
*Toluene-d8			54			96.2	ug/kg		118	(72.1 - 137.)			
QC576794	9901447-07PSD	140144											
Benzene			50	0.00		63.3	ug/kg	4.20	81.9	(0.00 - 30.4)	SLG	01/21/99	1559
Ethylbenzene			50	1.64		73.0	ug/kg	27.2	92.5	(-)			
Naphthalene			50	0.00		0.00	ug/kg	0.00	0.00	(-)			
Toluene			50	0.00		67.8	ug/kg	19.8	87.8	(0.00 - 20.1)			
Xylenes (TOTAL)			150	0.00		189	ug/kg	9.75	81.3	(-)			
*Bromofluorobenzene			51			206	ug/kg		267**	(53.5 - 154.)			
*Dibromofluoromethane			51			89.7	ug/kg		116	(63.4 - 136.)			
*Toluene-d8			51			111	ug/kg		144**	(72.1 - 137.)			

* represent a surrogate.

QC Summary Report

Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Lab. Sample ID: 9901447% Report Date: February 04, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Organic Prep													
QC575907	BLANK	139912											
Evaporative Loss @ 105 C						0.00	wt%				GJ	01/15/99	1635
QC575905	9901447-07DUP	139912											
Evaporative Loss @ 105 C				34.0		34.0	wt%	0.00					

* represent a surrogate.

QC Summary Report

Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Lab. Sample ID: 9901447% Report Date: February 04, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Extractable Organics													
QC575894	BLANK	139909											
Acenaphthene						0.00	ug/kg				JCB	01/22/99	1550
Pyrene						0.00	ug/kg						
*2-Fluorobiphenyl							ug/kg		61.7	(44.7 - 110.)			
*Nitrobenzene-d5							ug/kg		56.6	(42.4 - 107.)			
*p-Terphenyl-d14							ug/kg		83.0	(45.5 - 104.)			
Acenaphthylene						0.00	ug/kg						
Anthracene						0.00	ug/kg						
Benzo(a)anthracene						0.00	ug/kg						
Benzo(a)pyrene						0.00	ug/kg						
Benzo(b)fluoranthene						0.00	ug/kg						
Benzo(ghi)perylene						0.00	ug/kg						
Benzo(k)fluoranthene						0.00	ug/kg						
Chrysene						0.00	ug/kg						
Dibenzo(a,h)anthracene						0.00	ug/kg						
Fluoranthene						0.00	ug/kg						
Fluorene						0.00	ug/kg						
Indeno(1,2,3-c,d)pyrene						0.00	ug/kg						
Phenanthrene						0.00	ug/kg						
QC575895	LCS	139909											
Acenaphthene			1670			1370	ug/kg		82.2	(-)	JCB	01/21/99	1407
Pyrene			1670			1460	ug/kg		87.3	(-)			
*2-Fluorobiphenyl			1670			1140	ug/kg		68.1	(44.7 - 110.)			
*Nitrobenzene-d5			1670			948	ug/kg		56.8	(42.4 - 107.)			
*p-Terphenyl-d14			1670			1380	ug/kg		82.9	(45.5 - 104.)			
QC575896	9901447-07MS	139909											
Acenaphthene			1670	0.00		4650	ug/kg		184**	(54.9 - 105.)	JCB	01/21/99	1440
Pyrene			1670	0.00		114	ug/kg		4.51**	(57.2 - 123.)			
*2-Fluorobiphenyl			1670			4060	ug/kg		160**	(44.7 - 110.)			
*Nitrobenzene-d5			1670			1840	ug/kg		72.6	(42.4 - 107.)			
*p-Terphenyl-d14			1670			2850	ug/kg		112**	(45.5 - 104.)			
QC575897	9901447-07MSD	139909											
Acenaphthene			1670	0.00		4310	ug/kg	7.40	171	(0.00 - 18.9)	JCB	01/21/99	1513
Pyrene			1670	0.00		3750	ug/kg	188**	148	(0.00 - 21.4)			
*2-Fluorobiphenyl			1670			2730	ug/kg		108	(44.7 - 110.)			
*Nitrobenzene-d5			1670			2020	ug/kg		79.9	(42.4 - 107.)			
*p-Terphenyl-d14			1670			2950	ug/kg		117**	(45.5 - 104.)			

represent a surrogate.

QC Summary Report

Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Lab. Sample ID: 9901447% Report Date: February 04, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
General Chemistry													
QC581076	BLANK	141255											
Total Rec. Petro. Hydrocarbons						0.00	mg/kg				AAT	02/01/99	2015
QC581077	LCS	141255											
Total Rec. Petro. Hydrocarbons			51600			43100	mg/kg		83.5	(70.0 - 116.)			
QC581078	9901447-07MS	141255											
Total Rec. Petro. Hydrocarbons			80100	5560		78900	mg/kg		91.5	(70.0 - 130.)			
QC577021	BLANK	140209											
Total Organic Carbon						2.90	mg/kg				LS	01/29/99	0914
QC577026	LCS	140209											
Total Organic Carbon			3750			3860	mg/kg		103	(88.0 - 130.)	LS	01/28/99	1326
QC577024	9901447-15PS	140209											
Total Organic Carbon			8890	93200		189000	mg/kg		116	(73.0 - 129.)	LS	01/28/99	1659
QC577025	9901447-15PSD	140209											
Total Organic Carbon			8890	93200		173000	mg/kg	17.8	96.8	(0.00 - 30.0)	LS	01/28/99	1706

Notes:
The qualifiers in this report are defined as follows:
J indicates presence of analyte < RL (Report Limit)
U indicates presence of analyte < DL (Detect Limit)

n/a indicates that spike recovery limits do not apply when
sample concentration exceeds spike conc by a factor of 4 or more

CHAIN OF CUSTODY

General Engineering Laboratories, Inc.
2040 Savage Road
Charleston, South Carolina 29407
P.O. Box 30712
Charleston, South Carolina 29417
(803) 556-8171

CHAIN OF CUSTODY RECORD

9901446?

Client Name/Facility Name: Tetra Tech NUS / CNC

Collected by/Company: James R. Hill / TT NUS

SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods

Use P or F in the boxes to indicate whether sample was filtered and/or preserved

	SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# OF CONTAINERS	pH, conductivity	TOC/DOC	Grain Size	Chloride, Fluoride, Sulfide	Nitrite/Nitrate	VOC - Specify Method Required	METALS - specify	Pesticide	Herbicide	Total Phenol	Acid Extractables	B/N Extractables	PCB's	Cyanide	Coliform - specify type	PAH	TPH	Remarks	
-01	ZHRL00101	1-14-99	0715				✓	8	✓ 1/16/99	✓				3										2	2		.1
-02	ZHTL00301	—	—				✓	3						3													.2
-03	ZHFL00101	1-14-99	0700				✓	3						3													↓
9901446 01	03SLB0305	"	0830		✓	✓		8			3			3										1	1		.3
-02	03SLB0804	"	0900		✓	✓		4						3										1			.2
-03	03SLB1101	"	0925		✓	✓		4						3										1			
-04	04SLB2104	"	1110		✓	✓		4						3										1			
-05	04SLB2004	"	1135		✓	✓		4						3										1			↓
-06	04SLB0404	"	1330		✓	✓		8			3			3										1	1		.1
-07	04SLB0404D	"	1330		✓	✓		5						3										1	1	duplicate	.3
-08	04SLB0404M	"	1330		✓	✓		5						3										1	1	matrix spike	
-09	04SLB0404S	"	1330		✓	✓		5						3										1	1	matrix spike dup.	↓
-10	04SLB2203	"	1440		✓	✓		4						3										1			.2

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:

Relinquished by:	Date:	Time:	Received by lab by:	Date:	Time:	Remarks:
[signature]	1-14-99	1716	[signature]	1/14/99	17:15	BTEX/MTBE = VOC, standard turnaround

White = sample collector Yellow = file Pink = with report

General Engineering Laboratories, Inc.
2040 Savage Road
Charleston, South Ca a 29407
P.O. Box 30712
Charleston, South Carolina 29417
(803) 556-8171

CHAIN OF CUSTODY RECORD

Client Name/Facility Name: TENUS / CNC Zone H

Collected by/Company: TENUS / James R. Hill

SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods

Use F or P in the boxes to indicate whether sample was filtered and/or preserved

	SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# OF CONTAINERS	pH, conductivity	TOC/[illegible]	TOX	Chloride, Fluoride, Sulfide	Nitrite/Nitrate	VOC - Specify Method required	METALS - specify	Pesticide	Herbicide	Total Phenol	Acid Extractables	B/N Extractables	PCB's	Cyanide	Coliform - specify type	TPH	TPH	Remarks
04 990144	ZHTZ00401	1-15	—	✓			✓	3						3												trip blank
-01	04SLB1504	1-15	0740		✓	✓		4						3										1		
-02	04SLB1104	1-15	0803		✓	✓		4						3										1		
-03	04SLB1904	1-15	0840		✓	✓		4						3										1		
-04	04SLB0204	1-15	0910		✓	✓		4						3										1		
-15	04SLB3404D	1-15	0945		✓	✓		1		1																
-16	04SLB3404	1-15	0945		✓	✓		1		1																

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:

Relinquished by:	Date:	Time:	Received by lab by:	Date:	Time:	Remarks:
James R. Hill	1-15-99	1111	[illegible]	1/15/99	1111	BTEX/MTBE = VOC, standard turnaround

White = sample collector Yellow = file Pink = with report

372.
37.2
.4

FEDERAL SAMPLE RECEIPT REVIEW

Client TETR Received by [illegible] Date 1/14/99

GEL COOLER ✓ GEL POLY COOLER ___ CLIENT COOLER ___ OTHER ___

SAMPLE REVIEW CRITERIA	YES	NO	COMMENTS/QUALIFIERS
1. Were shipping containers received intact and sealed? Call project Manager if No	✓		
2. Was the Shipment screened following the radiochemistry survey procedure (EPI SOP S-007)?	✓		
Were the survey results negative? Call Project Manager if No	✓		
Are any of the samples identified by the client as radioactive? If yes, did client provide RAD activity?		✓	
3. Were chain of custody documents included?	✓		
4. Were chain of custody documents completed properly ? (Ink, signed, match containers)	✓		
5. Did all samples container arrive intact? (sealed , unbroken)? Call Project Manager if No	✓		
6. Were all sample containers properly labeled?	✓		
7. Were proper sample containers received?	✓		
8. Preserved samples checked for proper pH?	—		
9. Were samples preserved properly? If no, list samples & tests	—		
10. Shipping container temperature checked?	✓		
11. Was shipping container temperature within specifications (4+2C) If no, Call Project Manager	✓		4°C
12. **Were samples received within holding time?** if No, Call Project Manager	✓		
13. **Were VOA vials free of headspace?**	✓		
14. **ARCOC# IF REQUIRED**	—		
15. SDG# IF REQUIRED	✓		CT068B, CT068BW

REVIEW [illegible] DATE 1/14/99 SA - SEALS ATTACHED NSA - NO SEALS ATTACHED

COOLER RECEIPT CHECKLIST

FEDERAL SAMPLE RECEIPT REVIEW

Client JEIR Received by [illegible] Date 1/15/99

GEL COOLER ✓ GEL POLY COOLER ___ CLIENT COOLER ___ OTHER ___

SAMPLE REVIEW CRITERIA	YES	NO	COMMENTS/QUALIFIERS
1. Were shipping containers received intact and sealed? Call project Manager if No	✓		
2. Was the Shipment screened following the radiochemistry survey procedure (EPI SOP S-007)?	✓		
Were the survey results negative? Call Project Manager if No	✓		
Are any of the samples identified by the client as radioactive? If yes, did client provide RAD activity?		✓	
3. Were chain of custody documents included?	✓		
4. Were chain of custody documents completed properly ? (Ink, signed, match containers)	✓		
5. Did all samples container arrive intact? (sealed , unbroken)? Call Project Manager if No	✓		
6. Were all sample containers properly labeled?	✓		
7. Were proper sample containers received?	✓		
8. Preserved samples checked for proper pH?	—		
9. Were samples preserved properly? If no, list samples & tests	—		
10. Shipping container temperature checked?	✓		4°C
11. Was shipping container temperature within specifications (4+2C) If no, Call Project Manager	✓		
12. **Were samples received within holding time?** if No, Call Project Manager	✓		
13. **Were VOA vials free of headspace?**	✓		
14. **ARCOC# IF REQUIRED**	—		
15. SDG# IF REQUIRED	✓		CT068B, CT068B

REVIEW [illegible] DATE 1/15/99 SA - SEALS ATTACHED NSA - NO SEALS ATTACHED

Certificate of Analysis

Quanterra Incorporated
5307 Industrial Oaks Boulevard, Suite 160
Austin, Texas 78735

512 891-6684 Direct
512 892-6652 Fax

Quanterra

ANALYTICAL REPORT

PROJECT NO. CTO-068

CNC-ZONE H UST

Lot #: I9C040163

VALERIE DAVIS

General Engineer Laboratory

QUANTERRA INCORPORATED

Sandra L. Green
Project Manager

March 13, 1999

Case Narrative

I9C040163

General

The data package includes the following sections:

Certificate of Analysis Cover Page
Analytical Methods Summary
Sample Summary
QC Data Association Summary
QC Summary
Sample Data
Standards Data
Raw QC Data
Miscellaneous

Under the QC Summary, the calculations for Henry's law are included for each analytical run.

No surrogates are run under this method therefore, no Form 2 is included in the package.

Samples

Each sample which received a dilution has two runs included within the data package.

This lot had pH >2 for acid preserved samples –001 and –002. The samples were run within 7 days of sampling.

ANALYTICAL METHODS SUMMARY

I9C040163

PARAMETER	ANALYTICAL METHOD
Dissolved Gasses in Water	RSK SOP-175

References:

RSK Sample Prep and Calculations for Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibration Technique, RSKSOP-175, REV. 0, 8/11/94, USEPA Research Lab

SAMPLE SUMMARY

I9C040163

WO #	SAMPLE#	CLIENT SAMPLE ID	DATE	TIME
CRAVJ	001	03GLM0101	03/02/99	20:45
CRAX0	002	03GLM0201	03/02/99	20:55
CRAX2	003	03GLM0701	03/02/99	21:00

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

QC DATA ASSOCIATION SUMMARY

I9C040163

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	RSK SOP-175		9069344	9069130
002	WATER	RSK SOP-175		9069344	9069130
003	WATER	RSK SOP-175		9069344	9069130

I9C040163

General Engineering Laboratories, Inc.
2040 Savage Road
Charleston, South Carolina 29407
P.O. Box 30712
Charleston, South Carolina 29417
(803) 556-8171

CHAIN OF CUSTODY RECORD

Page_____ of _____

Client Name/Facility Name: General Engineering Labs

Collected by/Company: Tech Tech

SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods

Use F or P in the boxes to indicate whether sample was filtered and/or preserved

SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# OF CONTAINERS	pH, conductivity	TOC/DOC	TOX	Chloride, Fluoride, Sulfide	Nitrite/Nitrate	VOC - Specify Method required	METALS - specify	Pesticide	Herbicide	Total Phenol	Acid Extractables	B/N Extractables	PCB's	Cyanide	Coliform - specify type	Methane RSK 175		Remarks
[illegible]	3/2/99	2045	✓				3																3		3 oc CKK 3/4/99
[illegible]	3/2/99	2055	✓				3																3		
[illegible]	3/2/99	2100	✓				3																3		
																									Analyze for
																									Dissolved Methane
																									by Method RSK 175
																									Provide CoC Like
																									Package (Navy)
																									and EDD
																									TAT = 15 working Days

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
[signature]	3/3/99	1600	[signature]				

Relinquished by:	Date:	Time:	Received by lab by:	Date:	Time:	Remarks:
				3/4/99	9:20 AM	

White = sa . collector Yellow = file Pink = with report

Quanterra
Environmental
Services

SAMPLE DATA

GENERAL ENGINEER LABORATORY

Lab Name:QUANTERRA

SDG Number: GEL001

Matrix: (soil/water) WATER
Method: RSK SOP-175
Dissolved Gasses in Water

Lab Sample ID:I9C040163 001

Sample WT/Vol: 43 / ML
Work Order: CRAVJ101
Dilution factor: 1
Moisture %:NA

Date Received: 03/04/99
Date Extracted:03/09/99
Date Analyzed: 03/09/99

QC Batch: 9069344

Client Sample Id: 03GLM0101

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
74-82-8	Methane	430	B E

GENERAL ENGINEER LABORATORY

Lab Name:QUANTERRA

SDG Number: GEL001

Matrix: (soil/water) WATER
Method: RSK SOP-175
Dissolved Gasses in Water

Lab Sample ID:I9C040163 001

Sample WT/Vol: 43 / mL
Work Order: CRAVJ201
Dilution factor: 100
Moisture %:NA

Date Received: 03/04/99
Date Extracted:03/09/99
Date Analyzed: 03/09/99

QC Batch: 9069344

Client Sample Id: 03GLM0101 -RE 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
74-82-8	Methane	6000	B D

GENERAL ENGINEER LABORATORY

Lab Name:QUANTERRA

SDG Number: GEL001

Matrix: (soil/water) WATER
Method: RSK SOP-175
Dissolved Gasses in Water

Lab Sample ID:I9C040163 002

Sample WT/Vol: 43 / ML
Work Order: CRAX0101
Dilution factor: 1
Moisture %:NA

Date Received: 03/04/99
Date Extracted:03/09/99
Date Analyzed: 03/09/99

QC Batch: 9069344

Client Sample Id: 03GLMO201

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
74-82-8	Methane	400	B E

GENERAL ENGINEER LABORATORY

Lab Name:QUANTERRA

SDG Number: GEL001

Matrix: (soil/water) WATER
Method: RSK SOP-175
Dissolved Gasses in Water

Lab Sample ID:I9C040163 002

Sample WT/Vol: 43 / mL
Work Order: CRAX0201
Dilution factor: 100
Moisture %:NA

Date Received: 03/04/99
Date Extracted:03/09/99
Date Analyzed: 03/09/99

QC Batch: 9069344

Client Sample Id: 03GLM0201 -RE 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
74-82-8	Methane	6700	B D

GENERAL ENGINEER LABORATORY

Lab Name:QUANTERRA

SDG Number: GEL001

Matrix: (soil/water) WATER
Method: RSK SOP-175
Dissolved Gasses in Water

Lab Sample ID:I9C040163 003

Sample WT/Vol: 43 / mL
Work Order: CRAX2101
Dilution factor: 1
Moisture %:NA

Date Received: 03/04/99
Date Extracted:03/09/99
Date Analyzed: 03/09/99

QC Batch: 9069344

Client Sample Id: 03GLM0701

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
74-82-8	Methane	360	B E

GENERAL ENGINEER LABORATORY

Lab Name:QUANTERRA

SDG Number: GEL001

Matrix: (soil/water) WATER
Method: RSK SOP-175
Dissolved Gasses in Water

Lab Sample ID:I9C040163 003

Sample WT/Vol: 43 / mL
Work Order: CRAX2201
Dilution factor: 50
Moisture %:NA

Date Received: 03/04/99
Date Extracted:03/09/99
Date Analyzed: 03/09/99

QC Batch: 9069344

Client Sample Id: 03GLM0701 -RE 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
74-82-8	Methane	1900	B D

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID : 03GLM0101
Lab ID : 9903158-02
Matrix : Water
Date Collected : 03/02/99
Date Received : 03/03/99
Priority : Routine
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
TERT-BUTYL METHYL ETHER		ND	3.60	5.00	ug/l	1.0	MAP	03/12/99	2326	144511	1
NAPHTHALENE	U	ND	0.600	5.00	ug/l	1.0	MAP	03/12/99	2326	144511	2
Priority Pollutant Volatiles - 32 items											
1,1,1-TRICHLOROETHANE	U	ND	0.200	1.00	ug/l	1.0	MAP	03/12/99	2326	144511	1
1,1,2,2-TETRACHLOROETHANE		ND	0.500	1.00	ug/l	1.0					
1,1,2-TRICHLOROETHANE	U	ND	0.400	1.00	ug/l	1.0					
1,1-DICHLOROETHANE	U	ND	0.400	1.00	ug/l	1.0					
1,1-DICHLOROETHENE	U	ND	0.700	1.00	ug/l	1.0					
1,2-DICHLOROBENZENE	U	ND	0.400	1.00	ug/l	1.0					
1,2-DICHLOROETHANE	U	ND	0.200	1.00	ug/l	1.0					
1,2-DICHLOROPROPANE	U	ND	0.200	1.00	ug/l	1.0					
TRANS-1,2-DICHLOROETHENE		ND	0.700	1.00	ug/l	1.0					
1,3-DICHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
1,4-DICHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
BENZENE	U	ND	0.300	5.00	ug/l	1.0					
BROMOFORM	U	ND	0.400	1.00	ug/l	1.0					
CARBON TETRACHLORIDE	U	ND	0.200	1.00	ug/l	1.0					
CHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
CHLORODIBROMOMETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROFORM	U	ND	0.700	1.00	ug/l	1.0					
BROMODICHLOROMETHANE	U	ND	0.400	1.00	ug/l	1.0					
DICHLORODIFLUOROMETHANE		ND	1.20	5.00	ug/l	1.0					
ETHYLBENZENE	U	ND	0.300	5.00	ug/l	1.0					
BROMOMETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROMETHANE	U	ND	0.200	1.00	ug/l	1.0					
METHYLENE CHLORIDE	U	ND	1.20	5.00	ug/l	1.0					
TETRACHLOROETHYLENE	U	ND	0.700	1.00	ug/l	1.0					

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID : 03GLM0101

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
TOLUENE	U	ND	0.500	5.00	ug/l	1.0					
TRICHLOROETHYLENE (TCE)	U	ND	0.600	1.00	ug/l	1.0	MAP	03/12/99	2326	144511	1
TRICHLOROFLUOROMETHANE		ND	1.70	5.00	ug/l	1.0					
VINYL CHLORIDE	U	ND	0.400	1.00	ug/l	1.0					
XYLENES, TOTAL	U	ND	1.10	5.00	ug/l	1.0					
CIS-1,3-DICHLOROPROPENE	U	ND	0.300	1.00	ug/l	1.0					
TRANS-1,3-DICHLOROPROPENE		ND	0.300	1.00	ug/l	1.0					
Extractable Organics											
Polyaromatic Hydrocarbon Compounds - 15 items											
ACENAPHTHENE	J	2.81	2.16	10.0	ug/l	1.0	TSD	03/06/99	1805	143771	3
ACENAPHTHYLENE	U	ND	1.27	10.0	ug/l	1.0					
ANTHRACENE	U	ND	2.25	10.0	ug/l	1.0					
BENZO(A)ANTHRACENE	U	ND	2.74	10.0	ug/l	1.0					
BENZO(A)PYRENE	U	ND	1.96	10.0	ug/l	1.0					
BENZO(B)FLUORANTHENE	U	ND	4.61	10.0	ug/l	1.0					
BENZO(G,H,I)PERYLENE	U	ND	2.45	10.0	ug/l	1.0					
BENZO(K)FLUORANTHENE	U	ND	2.55	10.0	ug/l	1.0					
CHRYSENE	U	ND	2.16	10.0	ug/l	1.0					
DIBENZ(A,H) ANTHRACENE	U	ND	2.16	10.0	ug/l	1.0					
FLUORANTHENE	U	ND	3.04	10.0	ug/l	1.0					
FLUORENE	U	ND	2.06	10.0	ug/l	1.0					
INDENO(1,2,3-CD)PYRENE	U	ND	3.33	10.0	ug/l	1.0					
PHENANTHRENE	U	ND	1.76	10.0	ug/l	1.0					
PYRENE	U	ND	2.45	10.0	ug/l	1.0					
General Chemistry											
NITROGEN, NITRATE	U	ND	0.0127	0.0500	mg/l	1.0	RWS	03/03/99	1941	143745	4
SULFATE (AS SO4)		48.0	0.0380	0.200	mg/l	1.0					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds	AEJ	03/04/99	1600	143771	5

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID : 03GLM0101

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610-TETR	57.7	(41.2 - 107.)
Nitrobenzene-d5	M610-TETR	52.4	(35.3 - 108.)
p-Terphenyl-d14	M610-TETR	53.7	(36.6 - 110.)
Bromofluorobenzene	MTBE-8260B	79.3	(60.2 - 139.)
Dibromofluoromethane	MTBE-8260B	78.3	(70.6 - 152.)
Toluene-d8	MTBE-8260B	82.7	(68.4 - 135.)
Bromofluorobenzene	NAP-8260B	79.3	(60.2 - 139.)
Dibromofluoromethane	NAP-8260B	78.3	(70.6 - 152.)
Toluene-d8	NAP-8260B	82.7	(68.4 - 135.)
Bromofluorobenzene	PP VOA-TETR	79.3	(60.2 - 139.)
Dibromofluoromethane	PP VOA-TETR	78.3	(70.6 - 152.)
Toluene-d8	PP VOA-TETR	82.7	(68.4 - 135.)

M = Method	Method-Description
M 1	EPA 8260B
M 2	EPA 8260
M 3	SW846 8270C
M 4	EPA 300.0
M 5	EPA 3510

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client:	Tetra Tech NUS, Inc. 794 South Military Trail Deerfield Beach, Florida 33442
Contact:	Mr. Arnold Lamb
Project Description:	CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID : 03GLM0101

M = Method	Method-Description

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at (843) 769-7391.

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GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID	: 03GLM0201
Lab ID	: 9903158-03
Matrix	: Water
Date Collected	: 03/02/99
Date Received	: 03/03/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
TERT-BUTYL METHYL ETHER		ND	3.60	5.00	ug/l	1.0	MAP	03/12/99	2357	144511	1
NAPHTHALENE	U	ND	0.600	5.00	ug/l	1.0	MAP	03/12/99	2357	144511	2
Priority Pollutant Volatiles - 32 items											
1,1,1-TRICHLOROETHANE	U	ND	0.200	1.00	ug/l	1.0	MAP	03/12/99	2357	144511	1
1,1,2,2-TETRACHLOROETHANE		ND	0.500	1.00	ug/l	1.0					
1,1,2-TRICHLOROETHANE	U	ND	0.400	1.00	ug/l	1.0					
1,1-DICHLOROETHANE	U	ND	0.400	1.00	ug/l	1.0					
1,1-DICHLOROETHENE	U	ND	0.700	1.00	ug/l	1.0					
1,2-DICHLOROBENZENE	U	ND	0.400	1.00	ug/l	1.0					
1,2-DICHLOROETHANE	U	ND	0.200	1.00	ug/l	1.0					
1,2-DICHLOROPROPANE	U	ND	0.200	1.00	ug/l	1.0					
TRANS-1,2-DICHLOROETHENE		ND	0.700	1.00	ug/l	1.0					
1,3-DICHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
1,4-DICHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
BENZENE	U	ND	0.300	5.00	ug/l	1.0					
BROMOFORM	U	ND	0.400	1.00	ug/l	1.0					
CARBON TETRACHLORIDE	U	ND	0.200	1.00	ug/l	1.0					
CHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
CHLORODIBROMOMETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROFORM	U	ND	0.700	1.00	ug/l	1.0					
BROMODICHLOROMETHANE	U	ND	0.400	1.00	ug/l	1.0					
DICHLORODIFLUOROMETHANE		ND	1.20	5.00	ug/l	1.0					
ETHYLBENZENE	U	ND	0.300	5.00	ug/l	1.0					
BROMOMETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROMETHANE	U	ND	0.200	1.00	ug/l	1.0					
METHYLENE CHLORIDE	U	ND	1.20	5.00	ug/l	1.0					
TETRACHLOROETHYLENE	U	ND	0.700	1.00	ug/l	1.0					

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID : 03GLM0201

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
TOLUENE	U	ND	0.500	5.00	ug/l	1.0					
TRICHLOROETHYLENE (TCE)	U	ND	0.600	1.00	ug/l	1.0	MAP	03/12/99	2357	144511	1
TRICHLOROFLUOROMETHANE		ND	1.70	5.00	ug/l	1.0					
VINYL CHLORIDE	U	ND	0.400	1.00	ug/l	1.0					
XYLENES, TOTAL	U	ND	1.10	5.00	ug/l	1.0					
CIS-1,3-DICHLOROPROPENE	U	ND	0.300	1.00	ug/l	1.0					
TRANS-1,3-DICHLOROPROPENE		ND	0.300	1.00	ug/l	1.0					
Extractable Organics											
Polyaromatic Hydrocarbon Compounds - 15 items											
ACENAPHTHENE	U	ND	2.18	10.0	ug/l	1.0	TSD	03/06/99	1835	143771	3
ACENAPHTHYLENE	U	ND	1.29	10.0	ug/l	1.0					
ANTHRACENE	U	ND	2.28	10.0	ug/l	1.0					
BENZO(A)ANTHRACENE	U	ND	2.77	10.0	ug/l	1.0					
BENZO(A)PYRENE	U	ND	1.98	10.0	ug/l	1.0					
BENZO(B)FLUORANTHENE	U	ND	4.65	10.0	ug/l	1.0					
BENZO(G,H,I)PERYLENE	U	ND	2.48	10.0	ug/l	1.0					
BENZO(K)FLUORANTHENE	U	ND	2.57	10.0	ug/l	1.0					
CHRYSENE	U	ND	2.18	10.0	ug/l	1.0					
DIBENZ(A,H) ANTHRACENE	U	ND	2.18	10.0	ug/l	1.0					
FLUORANTHENE	U	ND	3.07	10.0	ug/l	1.0					
FLUORENE	U	ND	2.08	10.0	ug/l	1.0					
INDENO(1,2,3-CD)PYRENE	U	ND	3.37	10.0	ug/l	1.0					
PHENANTHRENE	U	ND	1.78	10.0	ug/l	1.0					
PYRENE	U	ND	2.48	10.0	ug/l	1.0					
General Chemistry											
NITROGEN, NITRATE	U	ND	0.0127	0.0500	mg/l	1.0	RWS	03/03/99	2040	143745	4
SULFATE (AS SO4)		20.6	0.0380	0.200	mg/l	1.0					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds	AEJ	03/04/99	1600	143771	5

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID : 03GLM0201

Surrogate Recovery	Test	Percent %	Acceptable Limits
2-Fluorobiphenyl	M610-TETR	59.6	(41.2 - 107.)
Nitrobenzene-d5	M610-TETR	53.3	(35.3 - 108.)
p-Terphenyl-d14	M610-TETR	45.6	(36.6 - 110.)
Bromofluorobenzene	MTBE-8260B	78.7	(60.2 - 139.)
Dibromofluoromethane	MTBE-8260B	77.3	(70.6 - 152.)
Toluene-d8	MTBE-8260B	81.7	(68.4 - 135.)
Bromofluorobenzene	NAP-8260B	78.7	(60.2 - 139.)
Dibromofluoromethane	NAP-8260B	77.3	(70.6 - 152.)
Toluene-d8	NAP-8260B	81.7	(68.4 - 135.)
Bromofluorobenzene	PP VOA-TETR	78.7	(60.2 - 139.)
Dibromofluoromethane	PP VOA-TETR	77.3	(70.6 - 152.)
Toluene-d8	PP VOA-TETR	81.7	(68.4 - 135.)

M = Method	Method-Description
M 1	EPA 8260B
M 2	EPA 8260
M 3	SW846 8270C
M 4	EPA 300.0
M 5	EPA 3510

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID : 03GLM0201

M = Method **Method-Description**

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at (843) 769-7391.

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID	: 03GLM0301
Lab ID	: 9903158-04
Matrix	: Water
Date Collected	: 03/02/99
Date Received	: 03/03/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
TERT-BUTYL METHYL ETHER		ND	3.60	5.00	ug/l	1.0	MAP	03/13/99	0027	144511	1
NAPHTHALENE	U	ND	0.600	5.00	ug/l	1.0	MAP	03/13/99	0027	144511	2
Priority Pollutant Volatiles - 32 items											
1,1,1-TRICHLOROETHANE	U	ND	0.200	1.00	ug/l	1.0	MAP	03/13/99	0027	144511	1
1,1,2,2-TETRACHLOROETHANE		ND	0.500	1.00	ug/l	1.0					
1,1,2-TRICHLOROETHANE	U	ND	0.400	1.00	ug/l	1.0					
1,1-DICHLOROETHANE	U	ND	0.400	1.00	ug/l	1.0					
1,1-DICHLOROETHENE	U	ND	0.700	1.00	ug/l	1.0					
1,2-DICHLOROBENZENE	U	ND	0.400	1.00	ug/l	1.0					
1,2-DICHLOROETHANE	U	ND	0.200	1.00	ug/l	1.0					
1,2-DICHLOROPROPANE	U	ND	0.200	1.00	ug/l	1.0					
TRANS-1,2-DICHLOROETHENE		ND	0.700	1.00	ug/l	1.0					
1,3-DICHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
1,4-DICHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
BENZENE	U	ND	0.300	5.00	ug/l	1.0					
BROMOFORM	U	ND	0.400	1.00	ug/l	1.0					
CARBON TETRACHLORIDE	U	ND	0.200	1.00	ug/l	1.0					
CHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
CHLORODIBROMOMETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROFORM	U	ND	0.700	1.00	ug/l	1.0					
BROMODICHLOROMETHANE	U	ND	0.400	1.00	ug/l	1.0					
DICHLORODIFLUOROMETHANE		ND	1.20	5.00	ug/l	1.0					
ETHYLBENZENE	U	ND	0.300	5.00	ug/l	1.0					
BROMOMETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROMETHANE	U	ND	0.200	1.00	ug/l	1.0					
METHYLENE CHLORIDE	U	ND	1.20	5.00	ug/l	1.0					
TETRACHLOROETHYLENE	U	ND	0.700	1.00	ug/l	1.0					

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID : 03GLM0301

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
TOLUENE	U	ND	0.500	5.00	ug/l	1.0					
TRICHLOROETHYLENE (TCE)	U	ND	0.600	1.00	ug/l	1.0	MAP	03/13/99	0027	144511	1
TRICHLOROFLUOROMETHANE		ND	1.70	5.00	ug/l	1.0					
VINYL CHLORIDE	U	ND	0.400	1.00	ug/l	1.0					
XYLENES, TOTAL	U	ND	1.10	5.00	ug/l	1.0					
CIS-1,3-DICHLOROPROPENE	U	ND	0.300	1.00	ug/l	1.0					
TRANS-1,3-DICHLOROPROPENE		ND	0.300	1.00	ug/l	1.0					
Extractable Organics											
Polyaromatic Hydrocarbon Compounds - 15 items											
ACENAPHTHENE	U	ND	2.18	10.0	ug/l	1.0	TSD	03/06/99	1906	143771	3
ACENAPHTHYLENE	U	ND	1.29	10.0	ug/l	1.0					
ANTHRACENE	U	ND	2.28	10.0	ug/l	1.0					
BENZO(A)ANTHRACENE	U	ND	2.77	10.0	ug/l	1.0					
BENZO(A)PYRENE	U	ND	1.98	10.0	ug/l	1.0					
BENZO(B)FLUORANTHENE	U	ND	4.65	10.0	ug/l	1.0					
BENZO(G,H,I)PERYLENE	U	ND	2.48	10.0	ug/l	1.0					
BENZO(K)FLUORANTHENE	U	ND	2.57	10.0	ug/l	1.0					
CHRYSENE	U	ND	2.18	10.0	ug/l	1.0					
DIBENZ(A,H) ANTHRACENE	U	ND	2.18	10.0	ug/l	1.0					
FLUORANTHENE	U	ND	3.07	10.0	ug/l	1.0					
FLUORENE	U	ND	2.08	10.0	ug/l	1.0					
INDENO(1,2,3-CD)PYRENE	U	ND	3.37	10.0	ug/l	1.0					
PHENANTHRENE	U	ND	1.78	10.0	ug/l	1.0					
PYRENE	U	ND	2.48	10.0	ug/l	1.0					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds AEJ 03/04/99 1600 143771 4

Surrogate Recovery	Test	Percent %	Acceptable Limits
2-Fluorobiphenyl	M610-TETR	60.5	(41.2 - 107.)
Nitrobenzene-d5	M610-TETR	55.1	(35.3 - 108.)
p-Terphenyl-d14	M610-TETR	56.1	(36.6 - 110.)

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STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID : 03GLM0301

Surrogate Recovery	Test	Percent %	Acceptable Limits
Bromofluorobenzene	MTBE-8260B	81.8	(60.2 - 139.)
Dibromofluoromethane	MTBE-8260B	78.2	(70.6 - 152.)
Toluene-d8	MTBE-8260B	83.8	(68.4 - 135.)
Bromofluorobenzene	NAP-8260B	81.8	(60.2 - 139.)
Dibromofluoromethane	NAP-8260B	78.2	(70.6 - 152.)
Toluene-d8	NAP-8260B	83.8	(68.4 - 135.)
Bromofluorobenzene	PP VOA-TETR	81.8	(60.2 - 139.)
Dibromofluoromethane	PP VOA-TETR	78.2	(70.6 - 152.)
Toluene-d8	PP VOA-TETR	83.8	(68.4 - 135.)

M = Method	Method-Description
M 1	EPA 8260B
M 2	EPA 8260
M 3	SW846 8270C
M 4	EPA 3510

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed
in accordance with General Engineering Laboratories
standard operating procedures. Please direct
any questions to your Project Manager, Valerie Davis at (843) 769-7391.

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STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID	: 03GLM0401
Lab ID	: 9903158-05
Matrix	: Water
Date Collected	: 03/02/99
Date Received	: 03/03/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
TERT-BUTYL METHYL ETHER		ND	3.60	5.00	ug/l	1.0	MAP	03/13/99	0058	144511	1
NAPHTHALENE	U	ND	0.600	5.00	ug/l	1.0	MAP	03/13/99	0058	144511	2
Priority Pollutant Volatiles - 32 items											
1,1,1-TRICHLOROETHANE	U	ND	0.200	1.00	ug/l	1.0	MAP	03/13/99	0058	144511	1
1,1,2,2-TETRACHLOROETHANE		ND	0.500	1.00	ug/l	1.0					
1,1,2-TRICHLOROETHANE	U	ND	0.400	1.00	ug/l	1.0					
1,1-DICHLOROETHANE	U	ND	0.400	1.00	ug/l	1.0					
1,1-DICHLOROETHENE	U	ND	0.700	1.00	ug/l	1.0					
1,2-DICHLOROBENZENE	U	ND	0.400	1.00	ug/l	1.0					
1,2-DICHLOROETHANE	U	ND	0.200	1.00	ug/l	1.0					
1,2-DICHLOROPROPANE	U	ND	0.200	1.00	ug/l	1.0					
TRANS-1,2-DICHLOROETHENE		ND	0.700	1.00	ug/l	1.0					
1,3-DICHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
1,4-DICHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
BENZENE	U	ND	0.300	5.00	ug/l	1.0					
BROMOFORM	U	ND	0.400	1.00	ug/l	1.0					
CARBON TETRACHLORIDE	U	ND	0.200	1.00	ug/l	1.0					
CHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
CHLORODIBROMOMETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROFORM	U	ND	0.700	1.00	ug/l	1.0					
BROMODICHLOROMETHANE	U	ND	0.400	1.00	ug/l	1.0					
DICHLORODIFLUOROMETHANE		ND	1.20	5.00	ug/l	1.0					
ETHYLBENZENE	U	ND	0.300	5.00	ug/l	1.0					
BROMOMETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROMETHANE	U	ND	0.200	1.00	ug/l	1.0					
METHYLENE CHLORIDE	U	ND	1.20	5.00	ug/l	1.0					
TETRACHLOROETHYLENE	U	ND	0.700	1.00	ug/l	1.0					

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NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID : 03GLM0401

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
TOLUENE	U	ND	0.500	5.00	ug/l	1.0					
TRICHLOROETHYLENE (TCE)		ND	0.600	1.00	ug/l	1.0	MAP	03/13/99	0058	144511	1
TRICHLOROFLUOROMETHANE		ND	1.70	5.00	ug/l	1.0					
VINYL CHLORIDE	U	ND	0.400	1.00	ug/l	1.0					
XYLENES, TOTAL	U	ND	1.10	5.00	ug/l	1.0					
CIS-1,3-DICHLOROPROPENE	U	ND	0.300	1.00	ug/l	1.0					
TRANS-1,3-DICHLOROPROPENE		ND	0.300	1.00	ug/l	1.0					
Extractable Organics											
Polyaromatic Hydrocarbon Compounds - 15 items											
ACENAPHTHENE	U	ND	2.20	10.0	ug/l	1.0	TSD	03/06/99	1937	143771	3
ACENAPHTHYLENE	U	ND	1.30	10.0	ug/l	1.0					
ANTHRACENE	U	ND	2.30	10.0	ug/l	1.0					
BENZO(A)ANTHRACENE	U	ND	2.80	10.0	ug/l	1.0					
BENZO(A)PYRENE	U	ND	2.00	10.0	ug/l	1.0					
BENZO(B)FLUORANTHENE	U	ND	4.70	10.0	ug/l	1.0					
BENZO(G,H,I)PERYLENE	U	ND	2.50	10.0	ug/l	1.0					
BENZO(K)FLUORANTHENE	U	ND	2.60	10.0	ug/l	1.0					
CHRYSENE	U	ND	2.20	10.0	ug/l	1.0					
DIBENZ(A,H) ANTHRACENE	U	ND	2.20	10.0	ug/l	1.0					
FLUORANTHENE	U	ND	3.10	10.0	ug/l	1.0					
FLUORENE	U	ND	2.10	10.0	ug/l	1.0					
INDENO(1,2,3-CD)PYRENE	U	ND	3.40	10.0	ug/l	1.0					
PHENANTHRENE	U	ND	1.80	10.0	ug/l	1.0					
PYRENE	U	ND	2.50	10.0	ug/l	1.0					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds	AEJ	03/04/99	1600	143771 4

Surrogate Recovery	Test	Percent %	Acceptable Limits
2-Fluorobiphenyl	M610-TETR	60.8	(41.2 - 107.)
Nitrobenzene-d5	M610-TETR	54.8	(35.3 - 108.)
p-Terphenyl-d14	M610-TETR	53.9	(36.6 - 110.)

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STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID : 03GLM0401

Surrogate Recovery	Test	Percent %	Acceptable Limits
Bromofluorobenzene	MTBE-8260B	79.0	(60.2 - 139.)
Dibromofluoromethane	MTBE-8260B	77.4	(70.6 - 152.)
Toluene-d8	MTBE-8260B	81.9	(68.4 - 135.)
Bromofluorobenzene	NAP-8260B	79.0	(60.2 - 139.)
Dibromofluoromethane	NAP-8260B	77.4	(70.6 - 152.)
Toluene-d8	NAP-8260B	81.9	(68.4 - 135.)
Bromofluorobenzene	PP VOA-TETR	79.0	(60.2 - 139.)
Dibromofluoromethane	PP VOA-TETR	77.4	(70.6 - 152.)
Toluene-d8	PP VOA-TETR	81.9	(68.4 - 135.)

M = Method	Method-Description
M 1	EPA 8260B
M 2	EPA 8260
M 3	SW846 8270C
M 4	EPA 3510

Notes:
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SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID : 03GLM0501
Lab ID : 9903158-06
Matrix : Water
Date Collected : 03/02/99
Date Received : 03/03/99
Priority : Routine
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
TERT-BUTYL METHYL ETHER		ND	3.60	5.00	ug/l	1.0	MAP	03/13/99	0129	144511	1
NAPHTHALENE	U	ND	0.600	5.00	ug/l	1.0	MAP	03/13/99	0129	144511	2
Priority Pollutant Volatiles - 32 items											
1,1,1-TRICHLOROETHANE	U	ND	0.200	1.00	ug/l	1.0	MAP	03/13/99	0129	144511	1
1,1,2,2-TETRACHLOROETHANE		ND	0.500	1.00	ug/l	1.0					
1,1,2-TRICHLOROETHANE	U	ND	0.400	1.00	ug/l	1.0					
1,1-DICHLOROETHANE	U	ND	0.400	1.00	ug/l	1.0					
1,1-DICHLOROETHENE	U	ND	0.700	1.00	ug/l	1.0					
1,2-DICHLOROBENZENE	U	ND	0.400	1.00	ug/l	1.0					
1,2-DICHLOROETHANE	U	ND	0.200	1.00	ug/l	1.0					
1,2-DICHLOROPROPANE	U	ND	0.200	1.00	ug/l	1.0					
TRANS-1,2-DICHLOROETHENE		ND	0.700	1.00	ug/l	1.0					
1,3-DICHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
1,4-DICHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
BENZENE	U	ND	0.300	5.00	ug/l	1.0					
BROMOFORM	U	ND	0.400	1.00	ug/l	1.0					
CARBON TETRACHLORIDE	U	ND	0.200	1.00	ug/l	1.0					
CHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
CHLORODIBROMOMETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROFORM	U	ND	0.700	1.00	ug/l	1.0					
BROMODICHLOROMETHANE	U	ND	0.400	1.00	ug/l	1.0					
DICHLORODIFLUOROMETHANE		ND	1.20	5.00	ug/l	1.0					
ETHYLBENZENE	U	ND	0.300	5.00	ug/l	1.0					
BROMOMETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROMETHANE	U	ND	0.200	1.00	ug/l	1.0					
METHYLENE CHLORIDE	U	ND	1.20	5.00	ug/l	1.0					
TETRACHLOROETHYLENE	U	ND	0.700	1.00	ug/l	1.0					

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FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID : 03GLM0501

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
TOLUENE	U	ND	0.500	5.00	ug/l	1.0					
TRICHLOROETHYLENE (TCE)	U	ND	0.600	1.00	ug/l	1.0	MAP	03/13/99	0129	144511	1
TRICHLOROFLUOROMETHANE		ND	1.70	5.00	ug/l	1.0					
VINYL CHLORIDE	U	ND	0.400	1.00	ug/l	1.0					
XYLENES, TOTAL	U	ND	1.10	5.00	ug/l	1.0					
CIS-1,3-DICHLOROPROPENE	U	ND	0.300	1.00	ug/l	1.0					
TRANS-1,3-DICHLOROPROPENE		ND	0.300	1.00	ug/l	1.0					
Extractable Organics											
Polyaromatic Hydrocarbon Compounds - 15 items											
ACENAPHTHENE	J	5.60	2.20	10.0	ug/l	1.0	TSD	03/06/99	2007	143771	3
ACENAPHTHYLENE	U	ND	1.30	10.0	ug/l	1.0					
ANTHRACENE	U	ND	2.30	10.0	ug/l	1.0					
BENZO(A)ANTHRACENE	U	ND	2.80	10.0	ug/l	1.0					
BENZO(A)PYRENE	U	ND	2.00	10.0	ug/l	1.0					
BENZO(B)FLUORANTHENE	U	ND	4.70	10.0	ug/l	1.0					
BENZO(G,H,I)PERYLENE	U	ND	2.50	10.0	ug/l	1.0					
BENZO(K)FLUORANTHENE	U	ND	2.60	10.0	ug/l	1.0					
CHRYSENE	U	ND	2.20	10.0	ug/l	1.0					
DIBENZ(A,H) ANTHRACENE	U	ND	2.20	10.0	ug/l	1.0					
FLUORANTHENE	U	ND	3.10	10.0	ug/l	1.0					
FLUORENE	U	ND	2.10	10.0	ug/l	1.0					
INDENO(1,2,3-CD)PYRENE	U	ND	3.40	10.0	ug/l	1.0					
PHENANTHRENE	U	ND	1.80	10.0	ug/l	1.0					
PYRENE	U	ND	2.50	10.0	ug/l	1.0					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds AEJ 03/04/99 1600 143771 4

Surrogate Recovery	Test	Percent %	Acceptable Limits
2-Fluorobiphenyl	M610-TETR	70.9	(41.2 - 107.)
Nitrobenzene-d5	M610-TETR	61.9	(35.3 - 108.)
p-Terphenyl-d14	M610-TETR	60.3	(36.6 - 110.)

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STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID : 03GLM0501

Surrogate Recovery	Test	Percent %	Acceptable Limits
Bromofluorobenzene	MTBE-8260B	80.0	(60.2 - 139.)
Dibromofluoromethane	MTBE-8260B	78.5	(70.6 - 152.)
Toluene-d8	MTBE-8260B	82.3	(68.4 - 135.)
Bromofluorobenzene	NAP-8260B	80.0	(60.2 - 139.)
Dibromofluoromethane	NAP-8260B	78.5	(70.6 - 152.)
Toluene-d8	NAP-8260B	82.3	(68.4 - 135.)
Bromofluorobenzene	PP VOA-TETR	80.0	(60.2 - 139.)
Dibromofluoromethane	PP VOA-TETR	78.5	(70.6 - 152.)
Toluene-d8	PP VOA-TETR	82.3	(68.4 - 135.)

M = Method	Method-Description
M 1	EPA 8260B
M 2	EPA 8260
M 3	SW846 8270C
M 4	EPA 3510

Notes:
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J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

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STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID : 03GLM0601
Lab ID : 9903158-07
Matrix : Water
Date Collected : 03/03/99
Date Received : 03/03/99
Priority : Routine
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
TERT-BUTYL METHYL ETHER		ND	3.60	5.00	ug/l	1.0	MAP	03/13/99	0200	144511	1
NAPHTHALENE	U	ND	0.600	5.00	ug/l	1.0	MAP	03/13/99	0200	144511	2
Priority Pollutant Volatiles - 32 items											
1,1,1-TRICHLOROETHANE	U	ND	0.200	1.00	ug/l	1.0	MAP	03/13/99	0200	144511	1
1,1,2,2-TETRACHLOROETHANE		ND	0.500	1.00	ug/l	1.0					
1,1,2-TRICHLOROETHANE	U	ND	0.400	1.00	ug/l	1.0					
1,1-DICHLOROETHANE	U	ND	0.400	1.00	ug/l	1.0					
1,1-DICHLOROETHENE	U	ND	0.700	1.00	ug/l	1.0					
1,2-DICHLOROBENZENE	U	ND	0.400	1.00	ug/l	1.0					
1,2-DICHLOROETHANE	U	ND	0.200	1.00	ug/l	1.0					
1,2-DICHLOROPROPANE	U	ND	0.200	1.00	ug/l	1.0					
TRANS-1,2-DICHLOROETHENE		ND	0.700	1.00	ug/l	1.0					
1,3-DICHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
1,4-DICHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
BENZENE	U	ND	0.300	5.00	ug/l	1.0					
BROMOFORM	U	ND	0.400	1.00	ug/l	1.0					
CARBON TETRACHLORIDE	U	ND	0.200	1.00	ug/l	1.0					
CHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
CHLORODIBROMOMETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROFORM	U	ND	0.700	1.00	ug/l	1.0					
BROMODICHLOROMETHANE	U	ND	0.400	1.00	ug/l	1.0					
DICHLORODIFLUOROMETHANE		ND	1.20	5.00	ug/l	1.0					
ETHYLBENZENE	U	ND	0.300	5.00	ug/l	1.0					
BROMOMETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROMETHANE	U	ND	0.200	1.00	ug/l	1.0					
METHYLENE CHLORIDE	U	ND	1.20	5.00	ug/l	1.0					
TETRACHLOROETHYLENE	U	ND	0.700	1.00	ug/l	1.0					

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID : 03GLM0601

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
TOLUENE	U	ND	0.500	5.00	ug/l	1.0					
TRICHLOROETHYLENE (TCE)	U	ND	0.600	1.00	ug/l	1.0	MAP	03/13/99	0200	144511	1
TRICHLOROFLUOROMETHANE		ND	1.70	5.00	ug/l	1.0					
VINYL CHLORIDE	U	ND	0.400	1.00	ug/l	1.0					
XYLENES, TOTAL	U	ND	1.10	5.00	ug/l	1.0					
CIS-1,3-DICHLOROPROPENE	U	ND	0.300	1.00	ug/l	1.0					
TRANS-1,3-DICHLOROPROPENE		ND	0.300	1.00	ug/l	1.0					
Extractable Organics											
Polyaromatic Hydrocarbon Compounds - 15 items											
ACENAPHTHENE	U	ND	2.68	12.2	ug/l	1.0	TSD	03/10/99	1941	144202	3
ACENAPHTHYLENE	U	ND	1.59	12.2	ug/l	1.0					
ANTHRACENE	U	ND	2.81	12.2	ug/l	1.0					
BENZO(A)ANTHRACENE	U	ND	3.42	12.2	ug/l	1.0					
BENZO(A)PYRENE	U	ND	2.44	12.2	ug/l	1.0					
BENZO(B)FLUORANTHENE	U	ND	5.73	12.2	ug/l	1.0					
BENZO(G,H,I)PERYLENE	U	ND	3.05	12.2	ug/l	1.0					
BENZO(K)FLUORANTHENE	U	ND	3.17	12.2	ug/l	1.0					
CHRYSENE	U	ND	2.68	12.2	ug/l	1.0					
DIBENZ(A,H) ANTHRACENE	U	ND	2.68	12.2	ug/l	1.0					
FLUORANTHENE	U	ND	3.78	12.2	ug/l	1.0					
FLUORENE	U	ND	2.56	12.2	ug/l	1.0					
INDENO(1,2,3-CD)PYRENE	U	ND	4.15	12.2	ug/l	1.0					
PHENANTHRENE	U	ND	2.20	12.2	ug/l	1.0					
PYRENE	U	ND	3.05	12.2	ug/l	1.0					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds AEJ 03/09/99 1700 144202 4

Surrogate Recovery	Test	Percent %	Acceptable Limits
2-Fluorobiphenyl	M610-TETR	40.8*	(41.2 - 107.)
Nitrobenzene-d5	M610-TETR	38.6	(35.3 - 108.)
p-Terphenyl-d14	M610-TETR	38.2	(36.6 - 110.)

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID : 03GLM0601

Surrogate Recovery	Test	Percent %	Acceptable Limits
Bromofluorobenzene	MTBE-8260B	78.6	(60.2 - 139.)
Dibromofluoromethane	MTBE-8260B	77.4	(70.6 - 152.)
Toluene-d8	MTBE-8260B	80.6	(68.4 - 135.)
Bromofluorobenzene	NAP-8260B	78.6	(60.2 - 139.)
Dibromofluoromethane	NAP-8260B	77.4	(70.6 - 152.)
Toluene-d8	NAP-8260B	80.6	(68.4 - 135.)
Bromofluorobenzene	PP VOA-TETR	78.6	(60.2 - 139.)
Dibromofluoromethane	PP VOA-TETR	77.4	(70.6 - 152.)
Toluene-d8	PP VOA-TETR	80.6	(68.4 - 135.)

M = Method	Method-Description
M 1	EPA 8260B
M 2	EPA 8260
M 3	SW846 8270C
M 4	EPA 3510

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at (843) 769-7391.

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STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID	: 03GLM0701
Lab ID	: 9903158-08
Matrix	: Water
Date Collected	: 03/02/99
Date Received	: 03/03/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
TERT-BUTYL METHYL ETHER		ND	3.60	5.00	ug/l	1.0	MAP	03/13/99	0231	144511	1
NAPHTHALENE	U	ND	0.600	5.00	ug/l	1.0	MAP	03/13/99	0231	144511	2
Priority Pollutant Volatiles - 32 items											
1,1,1-TRICHLOROETHANE	U	ND	0.200	1.00	ug/l	1.0	MAP	03/13/99	0231	144511	1
1,1,2,2-TETRACHLOROETHANE		ND	0.500	1.00	ug/l	1.0					
1,1,2-TRICHLOROETHANE	U	ND	0.400	1.00	ug/l	1.0					
1,1-DICHLOROETHANE	U	ND	0.400	1.00	ug/l	1.0					
1,1-DICHLOROETHENE	U	ND	0.700	1.00	ug/l	1.0					
1,2-DICHLOROBENZENE	U	ND	0.400	1.00	ug/l	1.0					
1,2-DICHLOROETHANE	U	ND	0.200	1.00	ug/l	1.0					
1,2-DICHLOROPROPANE	U	ND	0.200	1.00	ug/l	1.0					
TRANS-1,2-DICHLOROETHENE		ND	0.700	1.00	ug/l	1.0					
1,3-DICHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
1,4-DICHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
BENZENE	U	ND	0.300	5.00	ug/l	1.0					
BROMOFORM	U	ND	0.400	1.00	ug/l	1.0					
CARBON TETRACHLORIDE	U	ND	0.200	1.00	ug/l	1.0					
CHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
CHLORODIBROMOMETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROFORM	U	ND	0.700	1.00	ug/l	1.0					
BROMODICHLOROMETHANE	U	ND	0.400	1.00	ug/l	1.0					
DICHLORODIFLUOROMETHANE		ND	1.20	5.00	ug/l	1.0					
ETHYLBENZENE	U	ND	0.300	5.00	ug/l	1.0					
BROMOMETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROMETHANE	U	ND	0.200	1.00	ug/l	1.0					
METHYLENE CHLORIDE	U	ND	1.20	5.00	ug/l	1.0					
TETRACHLOROETHYLENE	U	ND	0.700	1.00	ug/l	1.0					

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FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID : 03GLM0701

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
TOLUENE	U	ND	0.500	5.00	ug/l	1.0					
TRICHLOROETHYLENE (TCE)	U	ND	0.600	1.00	ug/l	1.0	MAP	03/13/99	0231	144511	1
TRICHLOROFLUOROMETHANE		ND	1.70	5.00	ug/l	1.0					
VINYL CHLORIDE	U	ND	0.400	1.00	ug/l	1.0					
XYLENES, TOTAL	U	ND	1.10	5.00	ug/l	1.0					
CIS-1,3-DICHLOROPROPENE	U	ND	0.300	1.00	ug/l	1.0					
TRANS-1,3-DICHLOROPROPENE		ND	0.300	1.00	ug/l	1.0					
Extractable Organics											
Polyaromatic Hydrocarbon Compounds - 15 items											
ACENAPHTHENE	U	ND	2.20	10.0	ug/l	1.0	TSD	03/06/99	2109	143771	3
ACENAPHTHYLENE	U	ND	1.30	10.0	ug/l	1.0					
ANTHRACENE	U	ND	2.30	10.0	ug/l	1.0					
BENZO(A)ANTHRACENE	U	ND	2.80	10.0	ug/l	1.0					
BENZO(A)PYRENE	U	ND	2.00	10.0	ug/l	1.0					
BENZO(B)FLUORANTHENE	U	ND	4.70	10.0	ug/l	1.0					
BENZO(G,H,I)PERYLENE	U	ND	2.50	10.0	ug/l	1.0					
BENZO(K)FLUORANTHENE	U	ND	2.60	10.0	ug/l	1.0					
CHRYSENE	U	ND	2.20	10.0	ug/l	1.0					
DIBENZ(A,H) ANTHRACENE	U	ND	2.20	10.0	ug/l	1.0					
FLUORANTHENE	U	ND	3.10	10.0	ug/l	1.0					
FLUORENE	U	ND	2.10	10.0	ug/l	1.0					
INDENO(1,2,3-CD)PYRENE	U	ND	3.40	10.0	ug/l	1.0					
PHENANTHRENE	U	ND	1.80	10.0	ug/l	1.0					
PYRENE	U	ND	2.50	10.0	ug/l	1.0					
General Chemistry											
NITROGEN, NITRATE	U	ND	0.0127	0.0500	mg/l	1.0	RWS	03/03/99	2054	143745	4
SULFATE (AS SO4)		38.2	0.0380	0.200	mg/l	1.0					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds	AEJ	03/04/99	1600	143771	5

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STATE	GEL	EPI
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NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID : 03GLM0701

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610-TETR	69.5	(41.2 - 107.)
Nitrobenzene-d5	M610-TETR	59.1	(35.3 - 108.)
p-Terphenyl-d14	M610-TETR	53.5	(36.6 - 110.)
Bromofluorobenzene	MTBE-8260B	79.0	(60.2 - 139.)
Dibromofluoromethane	MTBE-8260B	78.3	(70.6 - 152.)
Toluene-d8	MTBE-8260B	82.3	(68.4 - 135.)
Bromofluorobenzene	NAP-8260B	79.0	(60.2 - 139.)
Dibromofluoromethane	NAP-8260B	78.3	(70.6 - 152.)
Toluene-d8	NAP-8260B	82.3	(68.4 - 135.)
Bromofluorobenzene	PP VOA-TETR	79.0	(60.2 - 139.)
Dibromofluoromethane	PP VOA-TETR	78.3	(70.6 - 152.)
Toluene-d8	PP VOA-TETR	82.3	(68.4 - 135.)

M = Method	Method-Description
M 1	EPA 8260B
M 2	EPA 8260
M 3	SW846 8270C
M 4	EPA 300.0
M 5	EPA 3510

Notes:
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* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

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NC	233	
SC	10120	10582
TN	02934	02934

Client:	Tetra Tech NUS, Inc. 794 South Military Trail Deerfield Beach, Florida 33442
Contact:	Mr. Arnold Lamb
Project Description:	CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID : 03GLM0701

M = Method	Method-Description

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at (843) 769-7391.

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STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID	: 03GLM0101D
Lab ID	: 9903158-09
Matrix	: Water
Date Collected	: 03/02/99
Date Received	: 03/03/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
TERT-BUTYL METHYL ETHER		ND	3.60	5.00	ug/l	1.0	MAP	03/13/99	0301	144511	1
NAPHTHALENE	U	ND	0.600	5.00	ug/l	1.0	MAP	03/13/99	0301	144511	2
Priority Pollutant Volatiles - 32 items											
1,1,1-TRICHLOROETHANE	U	ND	0.200	1.00	ug/l	1.0	MAP	03/13/99	0301	144511	1
1,1,2,2-TETRACHLOROETHANE		ND	0.500	1.00	ug/l	1.0					
1,1,2-TRICHLOROETHANE	U	ND	0.400	1.00	ug/l	1.0					
1,1-DICHLOROETHANE	U	ND	0.400	1.00	ug/l	1.0					
1,1-DICHLOROETHENE	U	ND	0.700	1.00	ug/l	1.0					
1,2-DICHLOROBENZENE	U	ND	0.400	1.00	ug/l	1.0					
1,2-DICHLOROETHANE	U	ND	0.200	1.00	ug/l	1.0					
1,2-DICHLOROPROPANE	U	ND	0.200	1.00	ug/l	1.0					
TRANS-1,2-DICHLOROETHENE		ND	0.700	1.00	ug/l	1.0					
1,3-DICHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
1,4-DICHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
BENZENE	U	ND	0.300	5.00	ug/l	1.0					
BROMOFORM	U	ND	0.400	1.00	ug/l	1.0					
CARBON TETRACHLORIDE	U	ND	0.200	1.00	ug/l	1.0					
CHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
CHLORODIBROMOMETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROFORM	U	ND	0.700	1.00	ug/l	1.0					
BROMODICHLOROMETHANE	U	ND	0.400	1.00	ug/l	1.0					
DICHLORODIFLUOROMETHANE		ND	1.20	5.00	ug/l	1.0					
ETHYLBENZENE	U	ND	0.300	5.00	ug/l	1.0					
BROMOMETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROMETHANE	U	ND	0.200	1.00	ug/l	1.0					
METHYLENE CHLORIDE	U	ND	1.20	5.00	ug/l	1.0					
TETRACHLOROETHYLENE	U	ND	0.700	1.00	ug/l	1.0					

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STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID : 03GLM0101D

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
TOLUENE	U	ND	0.500	5.00	ug/l	1.0					
TRICHLOROETHYLENE (TCE)	U	ND	0.600	1.00	ug/l	1.0	MAP	03/13/99	0301	144511	1
TRICHLOROFLUOROMETHANE		ND	1.70	5.00	ug/l	1.0					
VINYL CHLORIDE	U	ND	0.400	1.00	ug/l	1.0					
XYLENES, TOTAL	U	ND	1.10	5.00	ug/l	1.0					
CIS-1,3-DICHLOROPROPENE	U	ND	0.300	1.00	ug/l	1.0					
TRANS-1,3-DICHLOROPROPENE		ND	0.300	1.00	ug/l	1.0					
Extractable Organics											
Polyaromatic Hydrocarbon Compounds - 15 items											
ACENAPHTHENE	J	4.18	2.18	10.0	ug/l	1.0	TSD	03/06/99	2140	143771	3
ACENAPHTHYLENE	U	ND	1.29	10.0	ug/l	1.0					
ANTHRACENE	U	ND	2.28	10.0	ug/l	1.0					
BENZO(A)ANTHRACENE	U	ND	2.77	10.0	ug/l	1.0					
BENZO(A)PYRENE	U	ND	1.98	10.0	ug/l	1.0					
BENZO(B)FLUORANTHENE	U	ND	4.65	10.0	ug/l	1.0					
BENZO(G,H,I)PERYLENE	U	ND	2.48	10.0	ug/l	1.0					
BENZO(K)FLUORANTHENE	U	ND	2.57	10.0	ug/l	1.0					
CHRYSENE	U	ND	2.18	10.0	ug/l	1.0					
DIBENZ(A,H) ANTHRACENE	U	ND	2.18	10.0	ug/l	1.0					
FLUORANTHENE	U	ND	3.07	10.0	ug/l	1.0					
FLUORENE	U	ND	2.08	10.0	ug/l	1.0					
INDENO(1,2,3-CD)PYRENE	U	ND	3.37	10.0	ug/l	1.0					
PHENANTHRENE	U	ND	1.78	10.0	ug/l	1.0					
PYRENE	U	ND	2.48	10.0	ug/l	1.0					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds AEJ 03/04/99 1600 143771 4

Surrogate Recovery	Test	Percent %	Acceptable Limits
2-Fluorobiphenyl	M610-TETR	62.9	(41.2 - 107.)
Nitrobenzene-d5	M610-TETR	55.0	(35.3 - 108.)
p-Terphenyl-d14	M610-TETR	54.8	(36.6 - 110.)

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STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID : 03GLM0101D

Surrogate Recovery	Test	Percent %	Acceptable Limits
Bromofluorobenzene	MTBE-8260B	79.0	(60.2 - 139.)
Dibromofluoromethane	MTBE-8260B	77.8	(70.6 - 152.)
Toluene-d8	MTBE-8260B	83.2	(68.4 - 135.)
Bromofluorobenzene	NAP-8260B	79.0	(60.2 - 139.)
Dibromofluoromethane	NAP-8260B	77.8	(70.6 - 152.)
Toluene-d8	NAP-8260B	83.2	(68.4 - 135.)
Bromofluorobenzene	PP VOA-TETR	79.0	(60.2 - 139.)
Dibromofluoromethane	PP VOA-TETR	77.8	(70.6 - 152.)
Toluene-d8	PP VOA-TETR	83.2	(68.4 - 135.)

M = Method	Method-Description
M 1	EPA 8260B
M 2	EPA 8260
M 3	SW846 8270C
M 4	EPA 3510

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
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STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID	: ZHRL00301
Lab ID	: 9903158-10
Matrix	: Water
Date Collected	: 03/03/99
Date Received	: 03/03/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
TERT-BUTYL METHYL ETHER		ND	3.60	5.00	ug/l	1.0	MAP	03/13/99	0332	144511	1
NAPHTHALENE	U	ND	0.600	5.00	ug/l	1.0	MAP	03/13/99	0332	144511	2
Priority Pollutant Volatiles - 32 items											
1,1,1-TRICHLOROETHANE	U	ND	0.200	1.00	ug/l	1.0	MAP	03/13/99	0332	144511	1
1,1,2,2-TETRACHLOROETHANE		ND	0.500	1.00	ug/l	1.0					
1,1,2-TRICHLOROETHANE	U	ND	0.400	1.00	ug/l	1.0					
1,1-DICHLOROETHANE	U	ND	0.400	1.00	ug/l	1.0					
1,1-DICHLOROETHENE	U	ND	0.700	1.00	ug/l	1.0					
1,2-DICHLOROBENZENE	U	ND	0.400	1.00	ug/l	1.0					
1,2-DICHLOROETHANE	U	ND	0.200	1.00	ug/l	1.0					
1,2-DICHLOROPROPANE	U	ND	0.200	1.00	ug/l	1.0					
TRANS-1,2-DICHLOROETHENE		ND	0.700	1.00	ug/l	1.0					
1,3-DICHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
1,4-DICHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
BENZENE	U	ND	0.300	5.00	ug/l	1.0					
BROMOFORM	U	ND	0.400	1.00	ug/l	1.0					
CARBON TETRACHLORIDE	U	ND	0.200	1.00	ug/l	1.0					
CHLOROBENZENE	U	ND	0.300	1.00	ug/l	1.0					
CHLORODIBROMOMETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROFORM		1.07	0.700	1.00	ug/l	1.0					
BROMODICHLOROMETHANE	U	ND	0.400	1.00	ug/l	1.0					
DICHLORODIFLUOROMETHANE		ND	1.20	5.00	ug/l	1.0					
ETHYLBENZENE	U	ND	0.300	5.00	ug/l	1.0					
BROMOMETHANE	U	ND	0.300	1.00	ug/l	1.0					
CHLOROMETHANE	U	ND	0.200	1.00	ug/l	1.0					
METHYLENE CHLORIDE	U	ND	1.20	5.00	ug/l	1.0					
TETRACHLOROETHYLENE	U	ND	0.700	1.00	ug/l	1.0					

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID : ZHRL00301

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
TOLUENE	J	0.574	0.500	5.00	ug/l	1.0					
TRICHLOROETHYLENE (TCE)	U	ND	0.600	1.00	ug/l	1.0	MAP	03/13/99	0332	144511	1
TRICHLOROFLUOROMETHANE		ND	1.70	5.00	ug/l	1.0					
VINYL CHLORIDE	U	ND	0.400	1.00	ug/l	1.0					
XYLENES, TOTAL	U	ND	1.10	5.00	ug/l	1.0					
CIS-1,3-DICHLOROPROPENE	U	ND	0.300	1.00	ug/l	1.0					
TRANS-1,3-DICHLOROPROPENE		ND	0.300	1.00	ug/l	1.0					
Extractable Organics											
Polyaromatic Hydrocarbon Compounds - 15 items											
ACENAPHTHENE	U	ND	2.42	11.0	ug/l	1.0	TSD	03/06/99	2211	143771	3
ACENAPHTHYLENE	U	ND	1.43	11.0	ug/l	1.0					
ANTHRACENE	U	ND	2.53	11.0	ug/l	1.0					
BENZO(A)ANTHRACENE	U	ND	3.08	11.0	ug/l	1.0					
BENZO(A)PYRENE	U	ND	2.20	11.0	ug/l	1.0					
BENZO(B)FLUORANTHENE	U	ND	5.17	11.0	ug/l	1.0					
BENZO(G,H,I)PERYLENE	U	ND	2.75	11.0	ug/l	1.0					
BENZO(K)FLUORANTHENE	U	ND	2.86	11.0	ug/l	1.0					
CHRYSENE	U	ND	2.42	11.0	ug/l	1.0					
DIBENZ(A,H) ANTHRACENE	U	ND	2.42	11.0	ug/l	1.0					
FLUORANTHENE	U	ND	3.41	11.0	ug/l	1.0					
FLUORENE	U	ND	2.31	11.0	ug/l	1.0					
INDENO(1,2,3-CD)PYRENE	U	ND	3.74	11.0	ug/l	1.0					
PHENANTHRENE	U	ND	1.98	11.0	ug/l	1.0					
PYRENE	U	ND	2.75	11.0	ug/l	1.0					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds AEJ 03/04/99 1600 143771 4

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610-TETR	64.2	(41.2 - 107.)
Nitrobenzene-d5	M610-TETR	52.8	(35.3 - 108.)
p-Terphenyl-d14	M610-TETR	74.1	(36.6 - 110.)

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STATE	GEL	EPI
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SC	10120	10582
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Client: Tetra Tech NUS, Inc.
794 South Military Trail
Deerfield Beach, Florida 33442
Contact: Mr. Arnold Lamb
Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Report Date: March 23, 1999

Sample ID : ZHRL00301

Surrogate Recovery	Test	Percent %	Acceptable Limits
Bromofluorobenzene	MTBE-8260B	81.4	(60.2 - 139.)
Dibromofluoromethane	MTBE-8260B	79.4	(70.6 - 152.)
Toluene-d8	MTBE-8260B	84.6	(68.4 - 135.)
Bromofluorobenzene	NAP-8260B	81.4	(60.2 - 139.)
Dibromofluoromethane	NAP-8260B	79.4	(70.6 - 152.)
Toluene-d8	NAP-8260B	84.6	(68.4 - 135.)
Bromofluorobenzene	PP VOA-TETR	81.4	(60.2 - 139.)
Dibromofluoromethane	PP VOA-TETR	79.4	(70.6 - 152.)
Toluene-d8	PP VOA-TETR	84.6	(68.4 - 135.)

M = Method	Method-Description
M 1	EPA 8260B
M 2	EPA 8260
M 3	SW846 8270C
M 4	EPA 3510

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at (843) 769-7391.

Reviewed By

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9903158-10

QC SUMMARY REPORT

QC Summary Report

Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Lab. Sample ID: 9903158% Report Date: March 23, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Volatile Organics													
QC593557	BLANK	144511											
1,1-Dichloroethylene						0.00	ug/l				MAP	03/12/99	2153
Benzene						0.00	ug/l						
Chlorobenzene						0.00	ug/l						
Toluene						0.00	ug/l						
Trichloroethylene						0.00	ug/l						
*Bromofluorobenzene							ug/l		83.1	(60.2 - 139.)			
*Dibromofluoromethane							ug/l		77.6	(70.6 - 152.)			
*Toluene-d8							ug/l		84.6	(68.4 - 135.)			
1,1,1-Trichloroethane						0.00	ug/l						
1,1,2,2-Tetrachloroethane						0.00	ug/l						
1,1,2-Trichloroethane						0.00	ug/l						
1,1-Dichloroethane						0.00	ug/l						
1,2-Dichlorobenzene						0.00	ug/l						
1,2-Dichloroethane						0.00	ug/l						
1,2-Dichloropropane						0.00	ug/l						
1,2-trans-Dichloroethylene						0.00	ug/l						
1,3-Dichlorobenzene						0.00	ug/l						
1,4-Dichlorobenzene						0.00	ug/l						
Bromoform						0.00	ug/l						
Carbon Tetrachloride						0.00	ug/l						
Chlorodibromomethane						0.00	ug/l						
Chloroethane						0.00	ug/l						
Chloroform						0.00	ug/l						
Dichlorobromomethane						0.00	ug/l						
Dichlorodifluoromethane						0.00	ug/l						
Ethylbenzene						0.00	ug/l						
Methyl Bromide						0.00	ug/l						
Methyl Chloride						0.00	ug/l						
Methyl Tert Butyl Ether						0.00	ug/l						
Methylene Chloride						0.00	ug/l						
Naphthalene						0.00	ug/l						
Tetrachloroethylene						0.00	ug/l						
Trichlorofluoromethane						0.00	ug/l						
Vinyl chloride						0.00	ug/l						
Xylenes (TOTAL)						0.00	ug/l						
cis-1,3-Dichloropropylene						0.00	ug/l						
trans-1,3-Dichloropropylene						0.00	ug/l						
QC593558	LCS	144511											

QC Summary Report

Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Lab. Sample ID: 9903158% Report Date: March 23, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
1,1-Dichloroethylene			50			48.5	ug/l		97.0	(68.0 - 127.)	MAP	03/12/99	2051
Benzene			50			47.3	ug/l		94.6	(74.0 - 129.)	MAP	03/12/99	2051
Chlorobenzene			50			49.0	ug/l		97.9	(82.0 - 115.)			
Toluene			50			48.8	ug/l		97.5	(76.8 - 119.)			
Trichloroethylene			50			46.1	ug/l		92.3	(74.6 - 131.)			
*Bromofluorobenzene			50			43.6	ug/l		87.2	(60.2 - 139.)			
*Dibromofluoromethane			50			40.1	ug/l		80.1	(70.6 - 152.)			
*Toluene-d8			50			42.4	ug/l		84.9	(68.4 - 135.)			
QC593559	9903158-02PS	144511											
1,1-Dichloroethylene			50	0.00		42.7	ug/l		85.4	(59.2 - 141.)	MAP	03/13/99	0403
Benzene			50	0.00		39.4	ug/l		78.8	(63.3 - 134.)			
Chlorobenzene			50	0.00		39.1	ug/l		78.1	(77.8 - 125.)			
Toluene			50	0.00		39.9	ug/l		79.7	(71.6 - 125.)			
Trichloroethylene			50	0.00		35.5	ug/l		71.0	(65.5 - 130.)			
*Bromofluorobenzene			50			42.0	ug/l		84.0	(60.2 - 139.)			
*Dibromofluoromethane			50			38.3	ug/l		76.6	(70.6 - 152.)			
*Toluene-d8			50			41.2	ug/l		82.4	(68.4 - 135.)			
QC593560	9903158-02PSD	144511											
1,1-Dichloroethylene			50	0.00		44.0	ug/l	3.08	88.1	(0.00 - 25.1)	MAP	03/13/99	0423
Benzene			50	0.00		40.3	ug/l	2.23	80.6	(0.00 - 31.1)			
Chlorobenzene			50	0.00		39.7	ug/l	1.56	79.4	(0.00 - 22.7)			
Toluene			50	0.00		40.6	ug/l	1.73	81.1	(0.00 - 22.8)			
Trichloroethylene			50	0.00		36.0	ug/l	1.32	71.9	(0.00 - 36.9)			
*Bromofluorobenzene			50			42.5	ug/l		85.0	(60.2 - 139.)			
*Dibromofluoromethane			50			38.1	ug/l		76.2	(70.6 - 152.)			
*Toluene-d8			50			40.9	ug/l		81.7	(68.4 - 135.)			

* represent a surrogate.

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QC Summary Report

Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Lab. Sample ID: 9903158% Report Date: March 23, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Extractable Organics													
QC590842	BLANK	143771											
Acenaphthene						0.00	ug/l				TSD	03/06/99	1533
Pyrene						0.00	ug/l						
*2-Fluorobiphenyl							ug/l		68.2	(41.2 - 107.)			
*Nitrobenzene-d5							ug/l		61.8	(35.3 - 108.)			
*p-Terphenyl-d14							ug/l		71.1	(36.6 - 110.)			
Acenaphthylene						0.00	ug/l						
Anthracene						0.00	ug/l						
Benzo(a)anthracene						0.00	ug/l						
Benzo(a)pyrene						0.00	ug/l						
Benzo(b)fluoranthene						0.00	ug/l						
Benzo(ghi)perylene						0.00	ug/l						
Benzo(k)fluoranthene						0.00	ug/l						
Chrysene						0.00	ug/l						
Dibenzo(a,h)anthracene						0.00	ug/l						
Fluoranthene						0.00	ug/l						
Fluorene						0.00	ug/l						
Indeno(1,2,3-c,d)pyrene						0.00	ug/l						
Phenanthrene						0.00	ug/l						
QC592400	BLANK	144202											
Acenaphthene						0.00	ug/l				TSD	03/10/99	1635
Pyrene						0.00	ug/l						
*2-Fluorobiphenyl							ug/l		63.4	(41.2 - 107.)			
*Nitrobenzene-d5							ug/l		60.5	(35.3 - 108.)			
*p-Terphenyl-d14							ug/l		68.5	(36.6 - 110.)			
Acenaphthylene						0.00	ug/l						
Anthracene						0.00	ug/l						
Benzo(a)anthracene						0.00	ug/l						
Benzo(a)pyrene						0.00	ug/l						
Benzo(b)fluoranthene						0.00	ug/l						
Benzo(ghi)perylene						0.00	ug/l						
Benzo(k)fluoranthene						0.00	ug/l						
Chrysene						0.00	ug/l						
Dibenzo(a,h)anthracene						0.00	ug/l						
Fluoranthene						0.00	ug/l						
Fluorene						0.00	ug/l						
Indeno(1,2,3-c,d)pyrene						0.00	ug/l						
Phenanthrene						0.00	ug/l						
QC590843	LCS	143771											

QC Summary Report

Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Lab. Sample ID: 9903158% Report Date: March 23, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
Acenaphthene			50			41.0	ug/l		82.0	(63.1 - 96.7)	TSD	03/06/99	1603
Pyrene			50			38.2	ug/l		76.4	(45.4 - 109.)	TSD	03/06/99	1603
*2-Fluorobiphenyl			50			39.7	ug/l		79.3	(41.2 - 107.)			
*Nitrobenzene-d5			50			37.1	ug/l		74.1	(35.3 - 108.)			
*p-Terphenyl-d14			50			39.0	ug/l		78.0	(36.6 - 110.)			
QC592401	LCS	144202											
Acenaphthene			50			35.6	ug/l		71.2	(63.1 - 96.7)	TSD	03/10/99	1705
Pyrene			50			35.2	ug/l		70.4	(45.4 - 109.)			
*2-Fluorobiphenyl			50			33.1	ug/l		66.3	(41.2 - 107.)			
*Nitrobenzene-d5			50			32.4	ug/l		64.9	(35.3 - 108.)			
*p-Terphenyl-d14			50			36.0	ug/l		71.9	(36.6 - 110.)			
QC590844	LCS DUP	143771											
Acenaphthene			50			40.2	ug/l	1.99	80.4	(0.00 - 30.0)	TSD	03/06/99	1634
Pyrene			50			37.7	ug/l	1.49	75.3	(0.00 - 30.0)			
*2-Fluorobiphenyl			50			39.0	ug/l		78.0	(41.2 - 107.)			
*Nitrobenzene-d5			50			36.6	ug/l		73.1	(35.3 - 108.)			
*p-Terphenyl-d14			50			37.6	ug/l		75.3	(36.6 - 110.)			
QC592402	LCS DUP	144202											
Acenaphthene			50			41.0	ug/l	14.0	82.0	(0.00 - 30.0)	TSD	03/10/99	1736
Pyrene			50			38.5	ug/l	8.92	76.9	(0.00 - 30.0)			
*2-Fluorobiphenyl			50			39.0	ug/l		77.9	(41.2 - 107.)			
*Nitrobenzene-d5			50			37.5	ug/l		75.1	(35.3 - 108.)			
*p-Terphenyl-d14			50			39.0	ug/l		77.9	(36.6 - 110.)			
QC590845	9903158-02MS	143771											
Acenaphthene			50	2.81		29.2	ug/l		52.7**	(56.4 - 106.)	TSD	03/06/99	1704
Pyrene			50	0.00		28.8	ug/l		57.5	(52.6 - 125.)			
*2-Fluorobiphenyl			50			27.8	ug/l		55.6	(41.2 - 107.)			
*Nitrobenzene-d5			50			24.3	ug/l		48.5	(35.3 - 108.)			
*p-Terphenyl-d14			50			27.6	ug/l		55.1	(36.6 - 110.)			
QC590846	9903158-02MSD	143771											
Acenaphthene			50	2.81		33.2	ug/l	14.2	60.8	(0.00 - 19.2)	TSD	03/06/99	1735
Pyrene			50	0.00		31.0	ug/l	7.41	61.9	(0.00 - 21.9)			
*2-Fluorobiphenyl			50			29.6	ug/l		59.1	(41.2 - 107.)			
*Nitrobenzene-d5			50			26.8	ug/l		53.5	(35.3 - 108.)			
*p-Terphenyl-d14			50			27.5	ug/l		54.9	(36.6 - 110.)			
QC592401	LCS	144202											
1,2,4-Trichlorobenzene			50			0.00	ug/l		0.00**	(45.7 - 97.7)	TSD	03/10/99	1705
1,4-Dichlorobenzene			50			0.00	ug/l		0.00**	(34.6 - 96.9)			
2,4-Dinitrotoluene			50			0.00	ug/l		0.00**	(58.5 - 111.)			
2-Chlorophenol			100			0.00	ug/l		0.00**	(36.9 - 94.1)			

QC Summary Report

Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Lab. Sample ID: 9903158% Report Date: March 23, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
4-Nitrophenol			100			0.00	ug/l		0.00**	(2.66 - 55.6)	TSD	03/10/99	1705
4-chloro-3-methyl phenol			100			0.00	ug/l		0.00**	(17.3 - 126.)			
Acenaphthene			50			35.6	ug/l		71.2	(63.1 - 96.7)			
N-Nitrosodipropylamine			50			0.00	ug/l		0.00**	(59.2 - 114.)			
Pentachlorophenol			100			0.00	ug/l		0.00**	(49.8 - 120.)			
Phenol			100			0.00	ug/l		0.00**	(1.30 - 70.1)			
Pyrene			50			35.2	ug/l		70.4	(45.4 - 109.)			
*2-Fluorobiphenyl			50			33.1	ug/l		66.3	(41.2 - 107.)			
*Nitrobenzene-d5			50			32.4	ug/l		64.9	(35.3 - 108.)			
*p-Terphenyl-d14			50			36.0	ug/l		71.9	(36.6 - 110.)			
QC592402	LCS DUP	144202											
1,2,4-Trichlorobenzene			50			0.00	ug/l	0.00	0.00	(0.00 - 30.0)	TSD	03/10/99	1736
1,4-Dichlorobenzene			50			0.00	ug/l	0.00	0.00	(0.00 - 30.0)			
2,4-Dinitrotoluene			50			0.00	ug/l	0.00	0.00	(0.00 - 30.0)			
2-Chlorophenol			100			0.00	ug/l	0.00	0.00	(0.00 - 30.0)			
4-Nitrophenol			100			0.00	ug/l	0.00	0.00	(0.00 - 30.0)			
4-chloro-3-methyl phenol			100			0.00	ug/l	0.00	0.00	(0.00 - 30.0)			
Acenaphthene			50			41.0	ug/l	14.0	82.0	(0.00 - 30.0)			
N-Nitrosodipropylamine			50			0.00	ug/l	0.00	0.00	(0.00 - 30.0)			
Pentachlorophenol			100			0.00	ug/l	0.00	0.00	(0.00 - 30.0)			
Phenol			100			0.00	ug/l	0.00	0.00	(0.00 - 30.0)			
Pyrene			50			38.5	ug/l	8.92	76.9	(0.00 - 30.0)			
*2-Fluorobiphenyl			50			39.0	ug/l		77.9	(41.2 - 107.)			
*Nitrobenzene-d5			50			37.5	ug/l		75.1	(35.3 - 108.)			
*p-Terphenyl-d14			50			39.0	ug/l		77.9	(36.6 - 110.)			

* represent a surrogate.

QC Summary Report

Project Description: CNC- Zone H UST (CTO68)

cc: TETR00498 Lab. Sample ID: 9903158% Report Date: March 23, 1999

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
General Chemistry													
QC590712	BLANK	143745											
Nitrogen, Nitrate						0.00	mg/l				RWS	03/03/99	2027
Sulfate as SO4						0.00	mg/l						
QC590711	LCS	143745											
Nitrogen, Nitrate			5			4.74	mg/l		94.7	(90.0 - 110.)	RWS	03/03/99	2014
Sulfate as SO4			20			18.9	mg/l		94.2	(90.0 - 110.)			
QC590709	9903158-08PS	143745											
Nitrogen, Nitrate			5	0.00		4.53	mg/l		90.5	(80.0 - 120.)	RWS	03/03/99	2107
Sulfate as SO4			20	38.2		55.2	mg/l		84.8	(80.0 - 120.)			
QC590710	9903158-08PSD	143745											
Nitrogen, Nitrate			5	0.00		4.55	mg/l	0.397	90.9	(0.00 - 20.0)	RWS	03/03/99	2121
Sulfate as SO4			20	38.2		55.6	mg/l	2.38	86.8	(0.00 - 20.0)			

Notes:
The qualifiers in this report are defined as follows:
J indicates presence of analyte < RL (Report Limit)
U indicates presence of analyte < DL (Detect Limit)

n/a indicates that spike recovery limits do not apply when
sample concentration exceeds spike conc by a factor of 4 or more

CHAIN OF CUSTODY

General Engineering Laboratories, Inc.
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Charleston, South Carolina 29417
(803) 556-8171

CHAIN OF CUSTODY RECORD

9903158%

Client Name/Facility Name: TENUS / CNC Zone H

Collected by/Company: P. Jackson / TENUS

SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods

Use F or P in the boxes to indicate whether sample was filtered and/or preserved

	SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# OF CONTAINERS	pH, conductivity	TOC/DOC	PAH	Chloride, Fluoride, Sulfide	Nitrite/Nitrate	VOC - Specify Method required	METALS - specify	Pesticide	Herbicide	Total Phenol	Acid Extractables	B/N Extractables	PCB's	Cyanide	Coliform - specify type	Anions	Methane	Remarks
-01	ZHTL01~~3~~01 (2 VOA 3/4/99)	—	—	✓			✓				Ø			3												TRIP BLANK
-02	03GLM01Ø1	3-2	2045	✓			✓				2			3										1	3	
-03	03GLM02Ø1	3-2	2055	✓			✓				2			3										1	3	
-04	03GLM03Ø1	3-2	2058	✓			✓				2			3												
-05	03GLM04Ø1	3-2	2104	✓			✓				2			3												
-06	03GLM05Ø1	3-2	2108	✓			✓				2			3												
-07	03GLM06Ø1	3-3	1340	✓			✓				2			3												
-08	03GLM07Ø1	3-2	2100	✓			✓				2			3										1	3	
-09	03GLM01Ø1D	3-2	2045	✓			✓				2			3												
-10	ZHRL00301	3-3	0900	✓			✓				2			3												RINSATE

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
[signature] / Tenus	3-3-99	1410	[signature]				

Relinquished by:	Date:	Time:	Received by lab by:	Date:	Time:	Remarks:
[signature]			[signature]	3/3/99	1410	VOC Preserved. VOC = 8260 w/Naphthalene & MTBE PAH = 8270 Anions = Nitrate & Sulfate

White = sample collector Yellow = file Pink = with report

3870
.1
.2
.3
.2
.3

COOLER RECEIPT CHECKLIST

FEDERAL SAMPLE RECEIPT REVIEW

Client TETR Received by [illegible] Date 3/3/99

GEL COOLER ✓ GEL POLY COOLER ___ CLIENT COOLER ___ OTHER ___

SAMPLE REVIEW CRITERIA	YES	NO	COMMENTS/QUALIFIERS
1. Were shipping containers received intact and sealed? Call project Manager if No	✓		
2. Was the Shipment screened following the radiochemistry survey procedure (EPI SOP S-007)?	✓		
Were the survey results negative? Call Project Manager if No	✓		
Are any of the samples identified by the client as radioactive? If yes, did client provide RAD activity?		✓	
3. Were chain of custody documents included?	✓		
4. Were chain of custody documents completed properly ? (Ink, signed, match containers)	✓		
5. Did all samples container arrive intact? (sealed , unbroken)? Call Project Manager if No	✓		
6. Were all sample containers properly labeled?	✓		Trip blank label discrepancy COC - ZHRL00301 Container ZHRL00201
7. Were proper sample containers received?	✓		
8. Preserved samples checked for proper pH?	—	—	
9. Were samples preserved properly? If no, list samples & tests	—	—	
10. Shipping container temperature checked?	✓		
11. Was shipping container temperature within specifications (4+2C) If no, Call Project Manager	✓		4°C
12. Were samples received within holding time? if No, Call Project Manager	✓		
13. Were VOA vials free of headspace?	✓		
14. ARCOC# IF REQUIRED	—	—	
15. SDG# IF REQUIRED	✓		CTOLS W/A

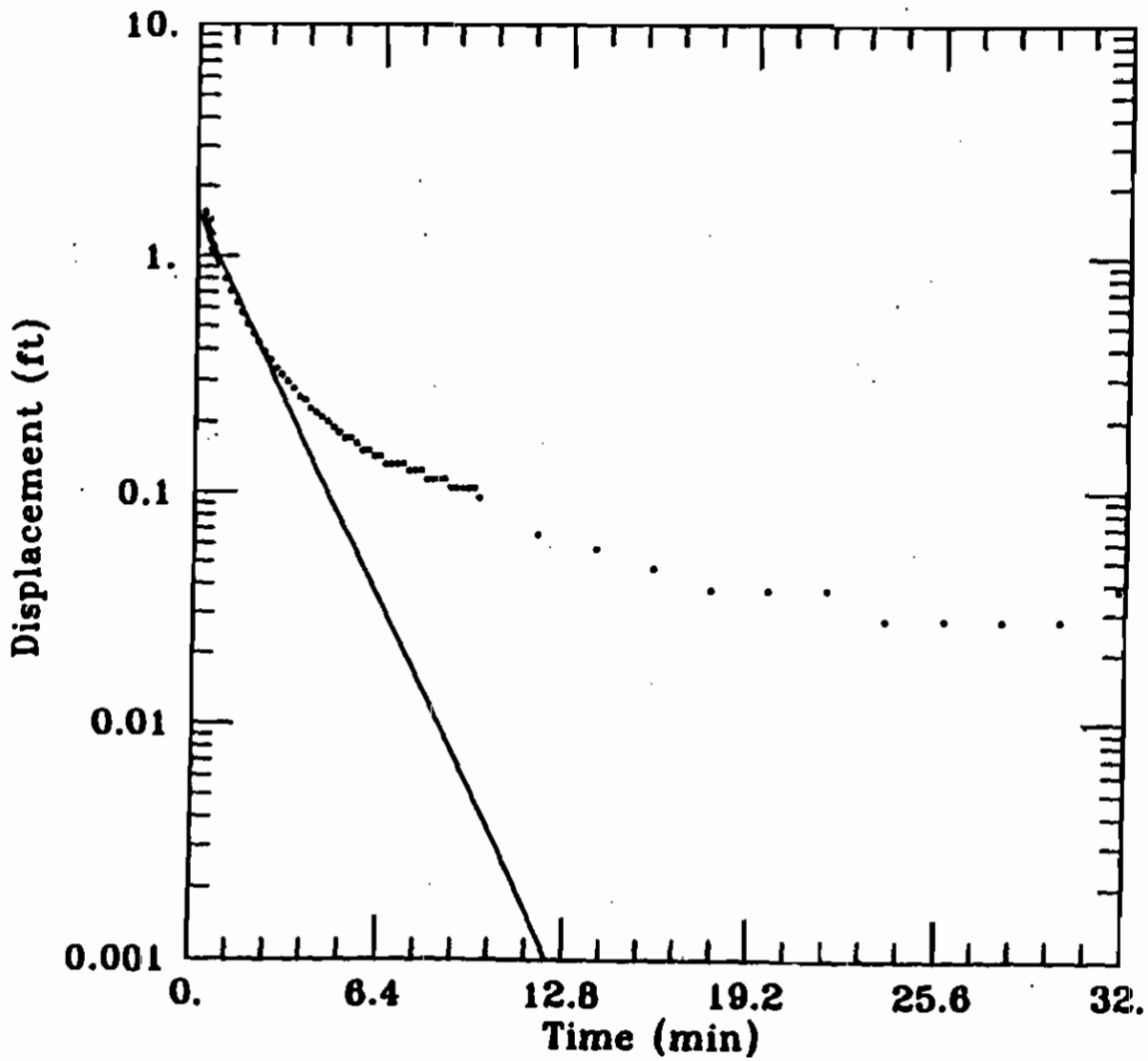
REVIEW [signature] DATE 3/3/99 SA - SEALS ATTACHED NSA - NO SEALS ATTACHED

APPENDIX E

AQUIFER CHARACTERIZATION GRAPHS

Client: **CLEAN**	Company: **E/A&H**
Location: **NAS CHARLESTON**	Project: **2908-08450**

NBCH653001 Falling Head Slug Test



DATA SET:
65301FAL.AQT
01/12/95

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

TEST DATA:
H0 = 3. ft
rc = 0.08333 ft
rw = 0.333 ft
L = 10. ft
b = 12. ft
H = 10.5 ft

PARAMETER ESTIMATES:
K = 0.0004942 ft/min
y0 = 1.547 ft

AQTESOLV