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THIRD CONTAMINATION ASSESSMENT REPORT ADDENDUM FOR SITE 607NE NAS
PENSACOLA FL
5/1/1995
ABB ENVIRONMENTAL

**THIRD CONTAMINATION ASSESSMENT REPORT ADDENDUM
SITE 607NE, NAVAL AVIATION DEPOT**

**NAVAL AIR STATION PENSACOLA
PENSACOLA, FLORIDA**

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May 1995



FOREWORD

Subtitle I of the Hazardous and Solid Waste Amendments (HSWA) of 1984 to the Solid Waste Disposal Act (SWDA) of 1965 established a national regulatory program for managing underground storage tanks (USTs) containing hazardous materials, especially petroleum products. Hazardous wastes stored in USTs were already regulated under the Resource Conservation and Recovery Act (RCRA) of 1976, which is also an amendment to SWDA. Subtitle I requires that the U.S. Environmental Protection Agency (USEPA) promulgate UST regulations. The program was designed to be administered by the individual States, who were allowed to develop more stringent standards, but not less stringent standards. Local governments were permitted to establish regulatory programs and standards that are more stringent, but not less stringent, than either State or Federal regulations. The USEPA UST regulations are found in the Code of Federal Regulations (CFR), Title 40, Part 280 (40 CFR 280) (*Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks*) and Title 40 CFR 281 (*Approval of State Underground Storage Tank Programs*). Title 40 CFR 280 was revised and published on September 23, 1988, and became effective December 22, 1988.

The Navy's UST program policy is to comply with all Federal, State, and local regulations pertaining to USTs. This report was prepared to satisfy the requirements of Chapter 17-770, Florida Administrative Code (FAC) (*State Underground Petroleum Environmental Response*), regulations on petroleum contamination in Florida's environment as a result of spills or leaking tanks or piping.

Questions regarding this report should be addressed to the Environmental Coordinator, Naval Aviation Depot (NADEP) Pensacola, Pensacola, Florida, at 904-452-3900 or to Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGC), Code 18410, at DSN 563-0613 or 803-743-0651.

ACKNOWLEDGMENTS

In preparing this report, The Underground Storage Tank Section of the Comprehensive Long-Term Environmental Action, Navy (CLEAN) Group at ABB Environmental Services (ABB-ES), Inc., commends the support, assistance, and cooperation provided by the personnel of the Naval Aviation Depot (NADEP) Pensacola, Florida, and Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM).

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GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
AVGAS	aviation gasoline
bls	below land surface
BEI	Bechtel Environmental, Inc.
CA	contamination assessment
CAR	contamination assessment report
CFR	Code of Federal Regulations
CLEAN	Comprehensive Long-Term Environmental Action, Navy
CTO	Contract Task Order Number
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FID	flame ionization detector
GC	gas chromatograph
HSWA	Hazardous and Solid Waste Amendments
IRA	Initial Remedial Action
MCL	maximum contaminant level
msl	mean sea level
NA	not analyzed
NADEP	Naval Aviation Depot
NAS	Naval Air Station
ND	not detected
NFA	No Further Action
NFAP	No Further Action Proposal
OVA	organic vapor analyzer
PAH	polynuclear aromatic hydrocarbons
ppb	parts per billion
ppm	parts per million
PVC	polyvinyl chloride
RCRA	Resource Conservation and Recovery Act
SOUTHNAVFACENGGCOM	Southern Division, Naval Facilities Engineering Command
SWDA	Solid Waste Disposal Act
TIGs	tentatively identified compounds
TPH	total petroleum hydrocarbons
TRPH	total recoverable petroleum hydrocarbons
USEPA	U.S. Environmental Protection Agency
UST	underground storage tank
VOA	volatile organic aromatics
VOCs	volatile organic compounds

1.0 INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), was contracted by Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) to perform a contamination assessment (CA) and submit a contamination assessment report (CAR) for Site 607NE at the Naval Aviation Depot (NADEP), Naval Air Station (NAS), Pensacola, Florida. A CAR was submitted to the Florida Department of Environmental Protection (FDEP) in June 1992 (ABB-ES, 1992). At the request of FDEP, additional soil and groundwater samples were collected at the site and analyzed. The supplemental data were reported in a CAR addendum and submitted to FDEP in March 1993 (ABB-ES, 1993). Upon review of the CAR Addendum, FDEP requested additional soil and groundwater samples from site soil boring locations and monitoring wells. The requested data were collected and a second CAR Addendum was submitted to FDEP in July 1994. Upon review of this CAR Addendum, FDEP requested that excessively contaminated soil be removed (remediated) from the site and a final supplemental investigation be performed. This report is the third addendum to the original CAR, and presents the findings and conclusions of the third supplemental assessment. This third CAR Addendum incorporates the findings and conclusions of the third supplemental assessment in addition to the findings and conclusions of the CAR and the first two CAR addenda.

2.0 SITE BACKGROUND

2.1 SITE DESCRIPTION. Building 607 is located on the north side of Saufley Street along the south perimeter of Chevalier Field (Figure 2-1). Building 607 is used as a helicopter flight test facility, and primary site activities include final preparation of helicopters before test flights. Site 607NE is located along the northeast side of Building 607 and is the former location of two underground storage tanks (USTs) used to store waste oil and used aviation (jet) fuel. The aviation gasoline (AVGAS) pipeline and an associated 500-gallon lubrication oil UST (Site 10) were also present at the site until removal in the later part of 1994 and early 1995.

The waste oil USTs were located approximately 30 feet northwest of the northeast corner of Building 607 (Figure 2-2). The area in the immediate vicinity of the waste oil USTs is covered by 6-inch-thick concrete; however, areas along the north and east perimeter of Building 607 are covered with grass. The lubrication oil UST was located in the grassy area approximately 10 feet south of the waste oil USTs. The AVGAS pipeline ran east to west between the two former UST locations. The ground surface at the site is flat, and elevations are approximately 8 to 9 feet above mean sea level (msl).

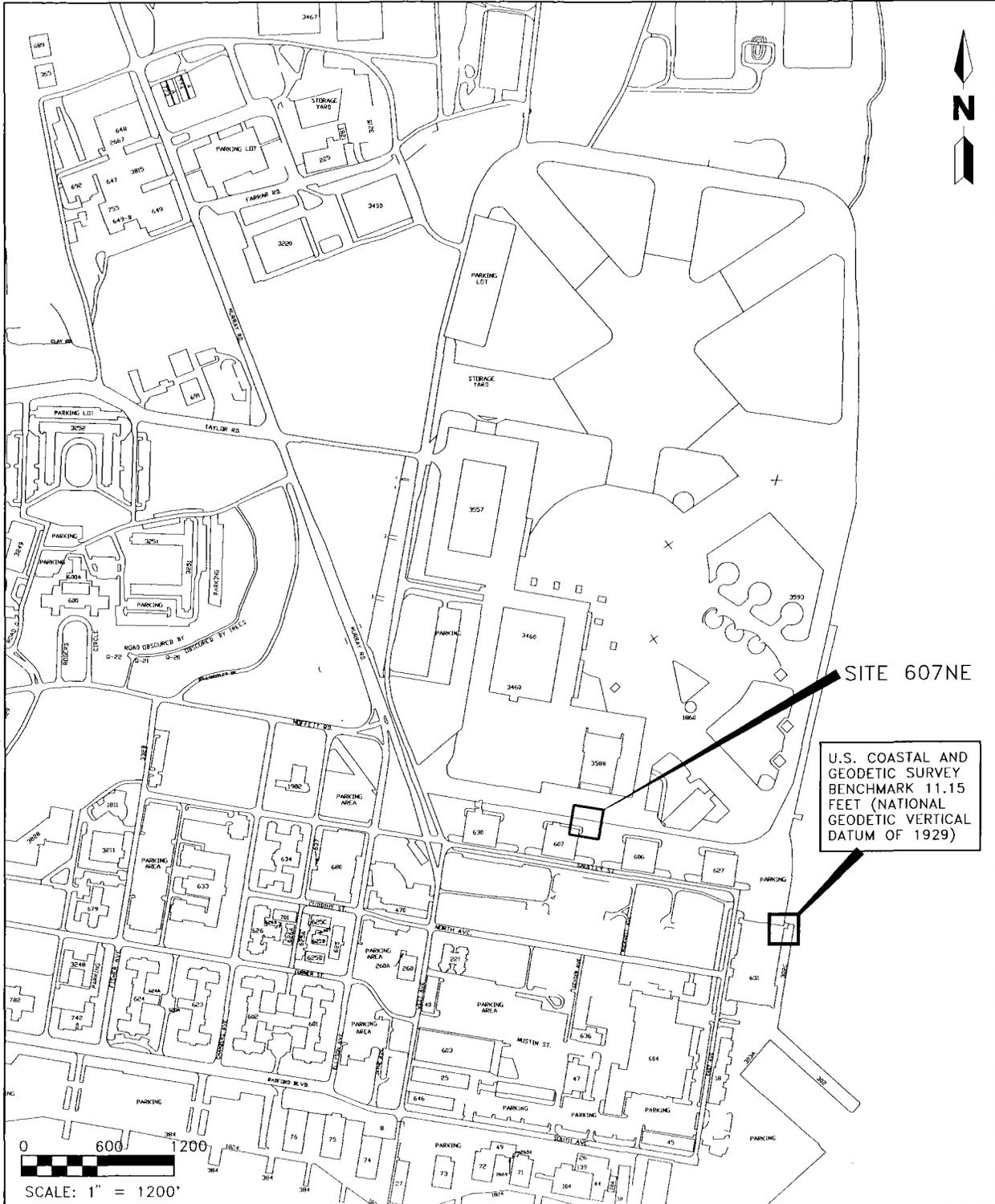
Numerous underground utilities are present near the former UST locations. An electric line, a 20-inch diameter sewer line, and an air line are located in the grassy area north of Building 607. These lines are oriented in an east to west direction and extend under the concrete area east of the building. The air line is connected to aboveground piping near the northeast corner of the building.

An east to west oriented stormwater line is located approximately 5 feet south of the former waste oil USTs. This line connects with a north to south oriented stormwater line located approximately 20 feet east of the former UST locations. A north to south oriented water line is located approximately 7 feet east of the north to south stormwater line and connects to a fire hydrant in the grassy area on the east side of the building.

A concrete safety shower pad is located at the northeast corner of the building. Another concrete pad is located approximately 12 feet south of the former waste oil USTs and is used to house connections from the electric line.

Underground reinforced concreted areas were encountered beneath the grassy area near the northeast corner of the building. The depth to concrete ranges from 1 to 5 feet below land surface (bls).

2.2 SITE HISTORY. The waste oil USTs were removed from the site during a tank removal and installation program conducted by the Navy in 1990. A 500-gallon replacement UST was installed at the same location in 1990 and was removed in May 1994. Excessively petroleum-contaminated soil was detected during the 1990 tank removal activities; therefore, a CA was conducted to assess the extent of excessively contaminated soil and groundwater contamination (ABB-ES, 1992).

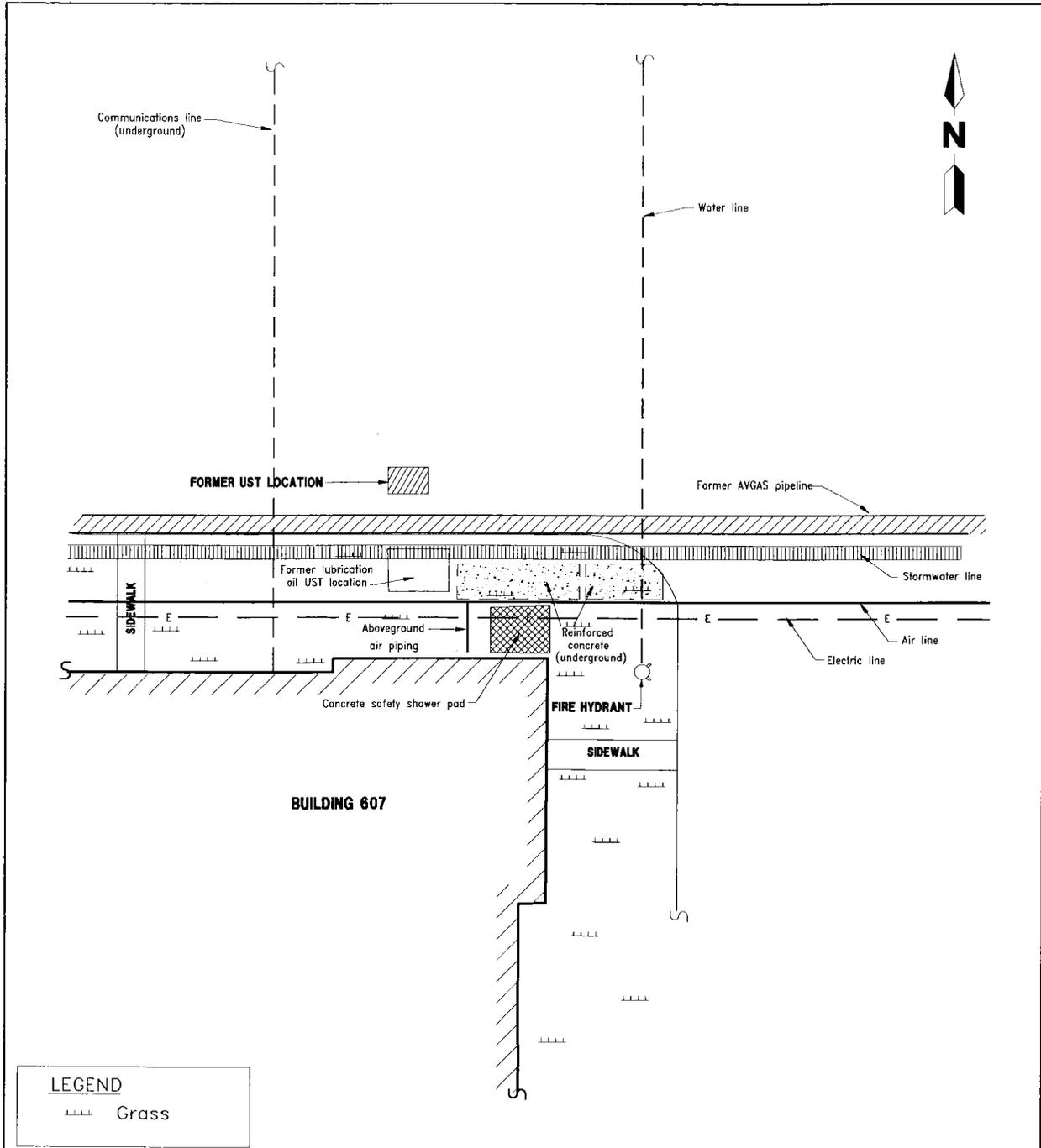


**2-1
SITE LOCATION MAP**



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LEGEND
 --- Grass

NOTES:
 UST Underground storage tank
 AVGAS Aviation gasoline

0 10 20
 SCALE: 1" = 20'

**FIGURE 2-2
 SITE PLAN AND UTILITY MAP**



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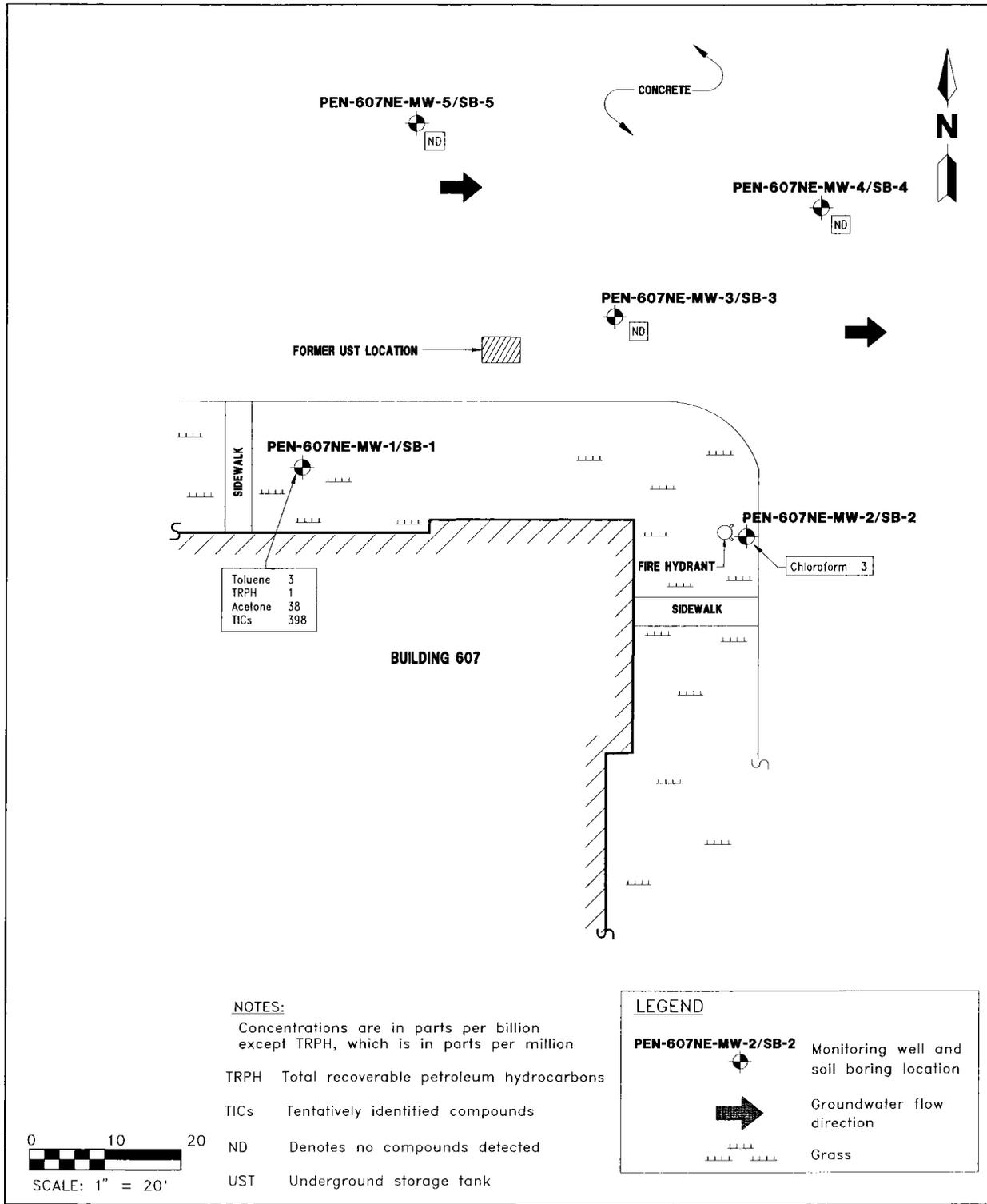
2.2.1 Initial Assessment The initial CA was conducted from January through March 1992. Five soil borings (SB1 through SB5) were advanced at the site. Monitoring wells PEN-607NE-MW1 through PEN-607NE-MW5 were installed in soil borings SB1 through SB5, respectively (Figure 2-3). Soil borings and monitoring wells were not advanced in the area south of the former waste oil UST locations because of the density of underground utilities and the presence of aboveground concrete pads.

Soil samples were collected from each soil boring and analyzed for volatile organic compounds (VOCs) by organic vapor analyzer (OVA) headspace techniques, and for arsenic, cadmium, chromium, and lead by an analytical laboratory. Groundwater samples were collected from monitoring wells in February 1992 and were analyzed for used oil constituents, as outlined in Chapter 62-770, Florida Administrative Code (FAC). The results of the 1992 CA are summarized below.

- Soil encountered at the site is typically very fine-grained to fine-grained quartz sand.
- Groundwater was encountered approximately 4 feet to 6 feet bls under water table conditions and is part of the surficial zone of the sand-and-gravel aquifer (Roaza and others, 1991). This zone is classified as a G-II groundwater source. The groundwater flow direction varied from east to southeast.
- VOCs in soil were not detected by OVA headspace techniques. Lead and arsenic were detected in soil, but at concentrations below FDEP (1994) standards for clean soil.
- Total recoverable petroleum hydrocarbons (TRPH), toluene, and acetone were detected in the groundwater sample from upgradient monitoring well PEN-607NE-MW1. Chloroform was detected in the sample from downgradient monitoring well PEN-607NE-MW2 (Figure 2-3). TRPH and toluene concentrations were below State target levels (Chapter 62-770, FAC). Acetone and chloroform concentrations were below State groundwater guidance concentrations (FDER, 1989). Sixteen tentatively identified compounds (TICs) were also detected in sample PEN-607NE-MW1. Many of the TICs appear to be perfumes or cleansing agents, and their presence in groundwater may have resulted from dumping mop water in the grassy area near monitoring well PEN-607NE-MW1 (ABB-ES, 1992).
- No groundwater contaminants were detected in samples PEN-607NE-MW3 through PEN-607NE-MW5.

Because of low levels of soil and groundwater contamination, a No Further Action Proposal (NFAP) was submitted in the CAR.

2.2.2 First Supplemental Soil Assessment Upon review of the CAR, FDER requested documentation regarding initial remedial action (IRA) activities performed during the tank removal and installation program. Because much of the IRA information was not available, and because it was subsequently discovered that petroleum-contaminated soil had been returned to the UST excavation during IRA activities, FDEP requested that a supplemental soil assessment be conducted around the former waste oil USTs.



**FIGURE 2-3
 GROUNDWATER CONTAMINATION DISTRIBUTION MAP,
 FEBRUARY 1992**



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The first supplemental soil assessment was conducted in January 1993. Three additional soil borings (SB6 through SB8) were advanced around the perimeter of the former waste oil UST location. Soil samples were collected from each boring and analyzed by OVA headspace techniques and laboratory analysis for VOCs and TRPH, respectively.

VOCs were not detected in any soil samples. TRPH concentrations in samples SB6, SB7, and SB8 were 12 parts per million (ppm), 13 ppm, and 18 ppm, respectively (Figure 2-4). TRPH concentrations from soil samples SB6 through SB8 slightly exceeded the State target level of 10 ppm for clean soil, but were below the State mandatory cleanup level of 50 ppm (FDEP, 1992). An NFAP was submitted in a CAR Addendum because of the relatively low TRPH soil concentrations near the UST and because groundwater analyses from the initial CA (ABB-ES, 1992) indicated minimal groundwater contamination near the waste oil USTs (ABB-ES, 1993).

2.2.3 Second Supplemental Assessment After review of the CAR Addendum, FDEP requested that a second supplemental assessment be conducted to address additional concerns. The second supplemental assessment was conducted concurrently with and subsequent to the removal of the replacement 500-gallon waste oil UST at Site 607NE in May 1994. The findings and conclusions of the second supplemental assessment are summarized below.

- Excessively contaminated soil was identified during replacement UST closure activities by OVA headspace analyses. Contaminated soil was removed from the site and transported to a landfill for disposal. Contaminated soil was replaced with clean fill material.
- Post-closure analyses of confirmatory soil samples indicated VOCs and metals concentrations in soil were less than State clean soil standards; however, TRPH concentrations exceeded State clean soil standards (see Figure 2-5). Total petroleum hydrocarbon (TPH) fingerprint analytical results indicated that TRPH concentrations in the soil samples were not related to a discharge from the former UST. Asphalt was suspected as the most likely source of TRPH in the soil samples.
- One temporary monitoring well and three additional permanent monitoring wells (PEN-607NE-MW6, PEN-607NE-MW7, and PEN-607NE-MW8) were installed to assess the extent of groundwater contamination near the UST area (see Figure 2-6). Groundwater samples were collected from all site monitoring wells and analyzed for TRPH, arsenic, cadmium, chromium, lead, and volatile compounds using USEPA methods 418.1, 239.2, 200.7, and 206.2.
- Benzene concentrations in site groundwater samples ranged from less than 1 part per billion (ppb) to 3.6 ppb. Benzene contamination appeared to be restricted to the former UST area and the area immediately downgradient of the UST (see Figure 2-6).
- Cadmium, chromium, and lead concentrations in unfiltered groundwater samples exceeded State MCLs. Metals concentrations in a non-turbid, unfiltered groundwater sample collected from monitoring well PEN-607NE-MW6 at the former UST location were below State MCLs. Metals were not detected in filtered groundwater samples. Metals detected in the groundwater samples, therefore, are associated with suspended sediments.

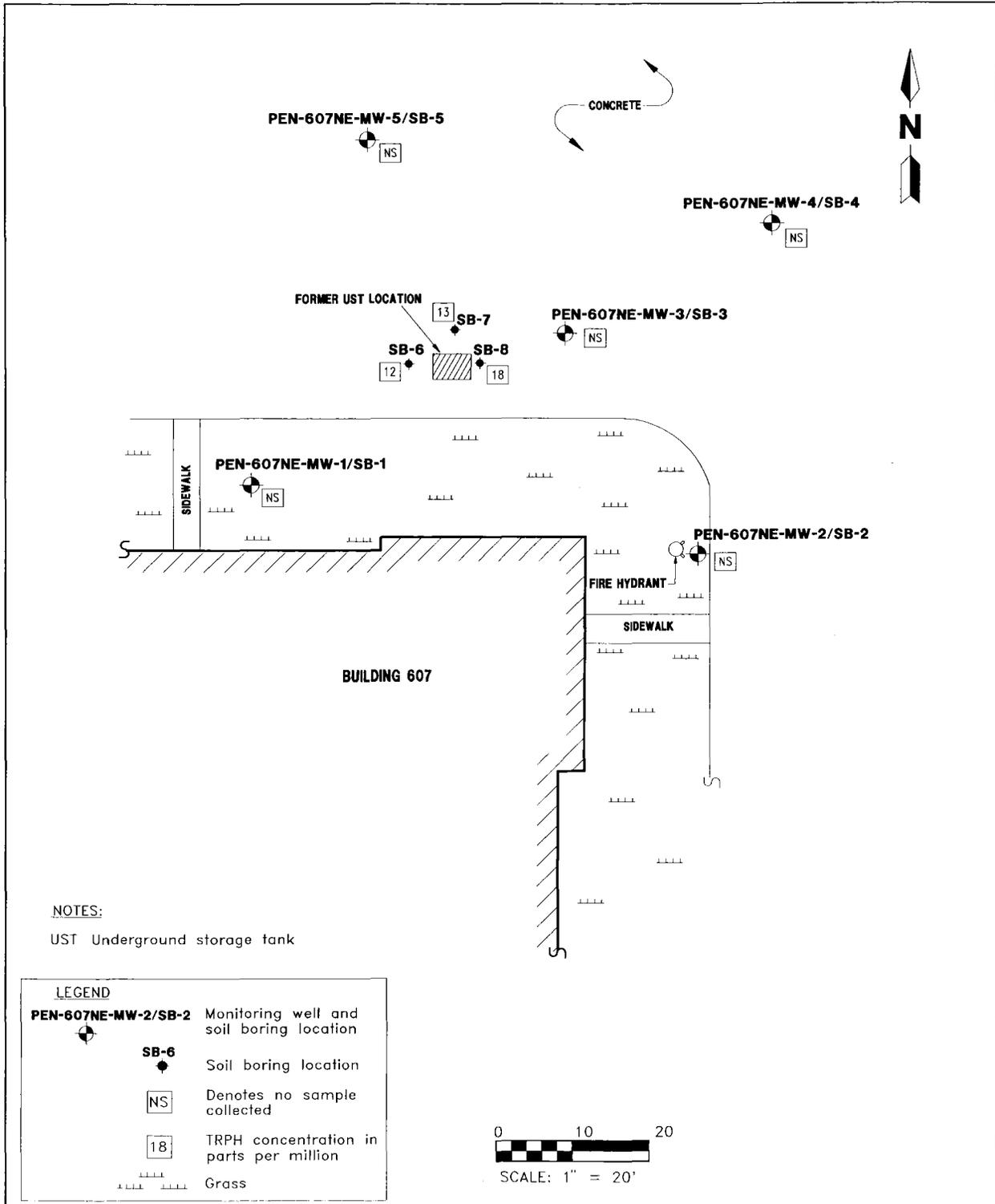


FIGURE 2-4
TOTAL RECOVERABLE PETROLEUM
HYDROCARBONS (TRPH) IN SOIL,
JANUARY 1993



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- Tentatively identified compounds (TICs) commonly associated with petroleum products were detected in the groundwater sample from temporary well TW-1 at low concentrations.

There are no potable wells in the vicinity of Site 607NE; therefore, the State target level of 50 ppb for benzene was applied. TRPH detected in soil samples was attributed to asphalt, and groundwater contaminant concentrations did not exceed State target levels or applied standards; therefore, an NFAP was requested for Site 607NE in the second CAR Addendum.

2.2.4 Florida Department of Environmental Protection (FDEP) Request for a Third Supplemental Assessment After reviewing the CAR Addendum, FDEP requested that a third supplemental assessment be conducted to address additional concerns about possible soil contamination at Site 607NE (see Appendix A, FDEP Correspondence, FDEP memorandum from David M. Clowes to Eric Nuzie, dated August 24, 1994). FDEP requested that the following be performed:

- removal of TRPH-contaminated soil,
- collection of confirmatory soil samples for analyses of TRPH, and
- installation of a replacement monitoring well near the former location of PEN-607NE-MW7, and collection of one groundwater sample for analyses of TRPH, lead, and polynuclear aromatic hydrocarbons (PAH).

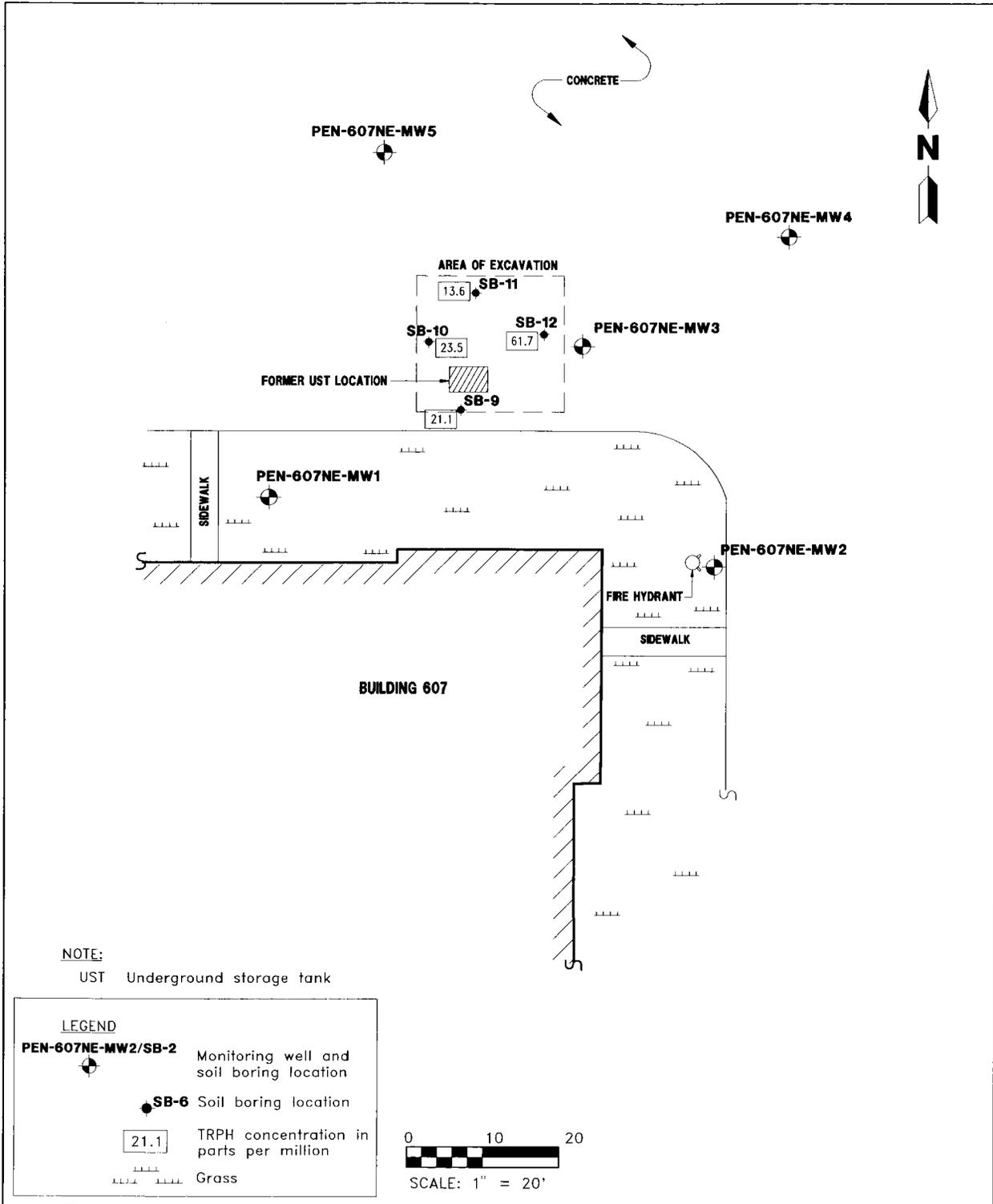


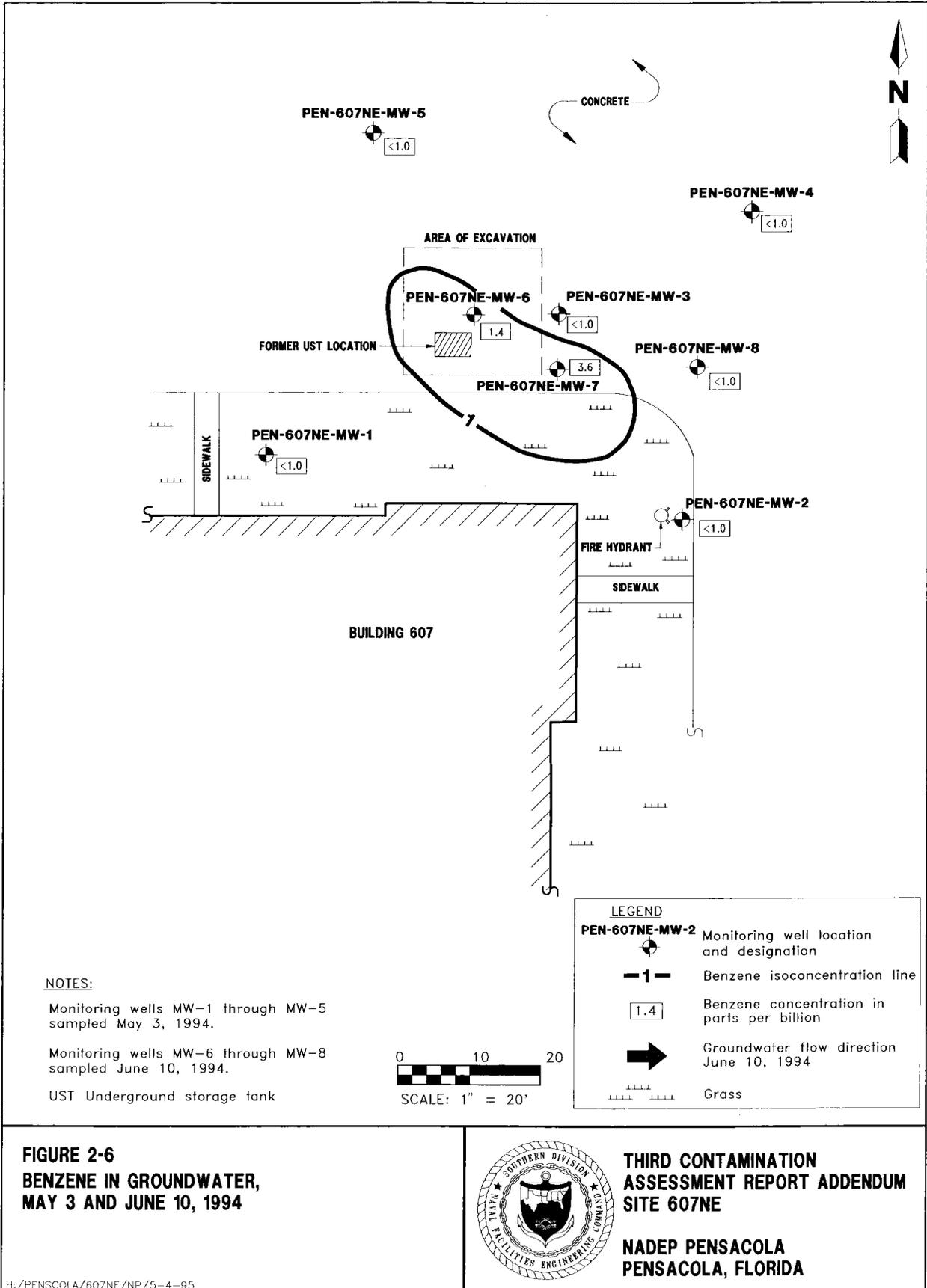
FIGURE 2-5
CONFIRMATORY SOIL BORINGS SB-9 THROUGH SB-12
AND CORRESPONDING TOTAL RECOVERABLE
PETROLEUM HYDROCARBON (TRPH)
CONCENTRATIONS IN SOIL

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3.0 THIRD SUPPLEMENTAL ASSESSMENT

The second supplemental assessment was conducted concurrently with and subsequent to initial soil remedial activities performed under the Base Realignment and Closure Initiative. The third supplemental assessment activities were performed from March through April 1995. Supplemental assessment activities included the following:

- removal of excessively contaminated soil around soil boring SB12,
- confirmatory soil assessment around the excavation, and
- monitoring well replacement and limited groundwater assessment.

3.1 SOIL REMEDIATION AND ASSESSMENT ACTIVITIES.

3.1.1 Excessively Contaminated Soil Removal and Disposal At FDEP's request contaminated soil identified during the second supplemental assessment was removed from the site on March 12, 1995. Soil was removed from an area approximately 27 by 55 feet to the depth of the water table (see Figure 3-1). The water table was encountered at 5 feet bls. All existing wells were properly abandoned prior to excavation.

Excavated soil was monitored by OVA headspace techniques, which did not indicate the presence of excessively contaminated soil. Approximately 175 cubic yards of contaminated soil were removed from the excavation. The excavation was returned to grade with clean fill material that consisted primarily of orange to red sandy clay.

Soil removal and disposal were performed by Bechtel Environmental, Inc. (BEI). Contaminated soil was stockpiled on the base removed for thermal treatment by BEI in May 1995.

3.1.2 Confirmatory Soil Sampling and Analyses After soil removal activities, four confirmatory soil borings (SB14 through SB17) were advanced by hand auger along each side of the excavation. For each boring, a soil sample was collected at 2.5 feet bls. One duplicate sample and one equipment blank were also collected. OVA headspace analyses, TRPH analyses, and TPH analyses were performed on each sample. Soil samples were sent packed on ice via overnight courier to Quanterra Environmental in Tampa, Florida.

3.1.3 Soil Assessment Results OVA headspace and laboratory analyses of the confirmatory soil samples are summarized in Table 3-1 and presented on Figure 3-2. TRPH and TPH laboratory analytical reports are presented in Appendix B, Soil Sample Analytical Data.

No discoloration or odor was observed in any soil sample. OVA headspace concentrations varied from less than 1 ppm to 1 ppm; corresponding TRPH concentrations were slightly higher, varying from less than 5.2 ppm to 16.1 ppm. Soil contaminant concentrations were below the State clean-up level of 50 ppm for TRPH (Chapter 62-775, FAC). TRPH concentrations were below method detection limits.

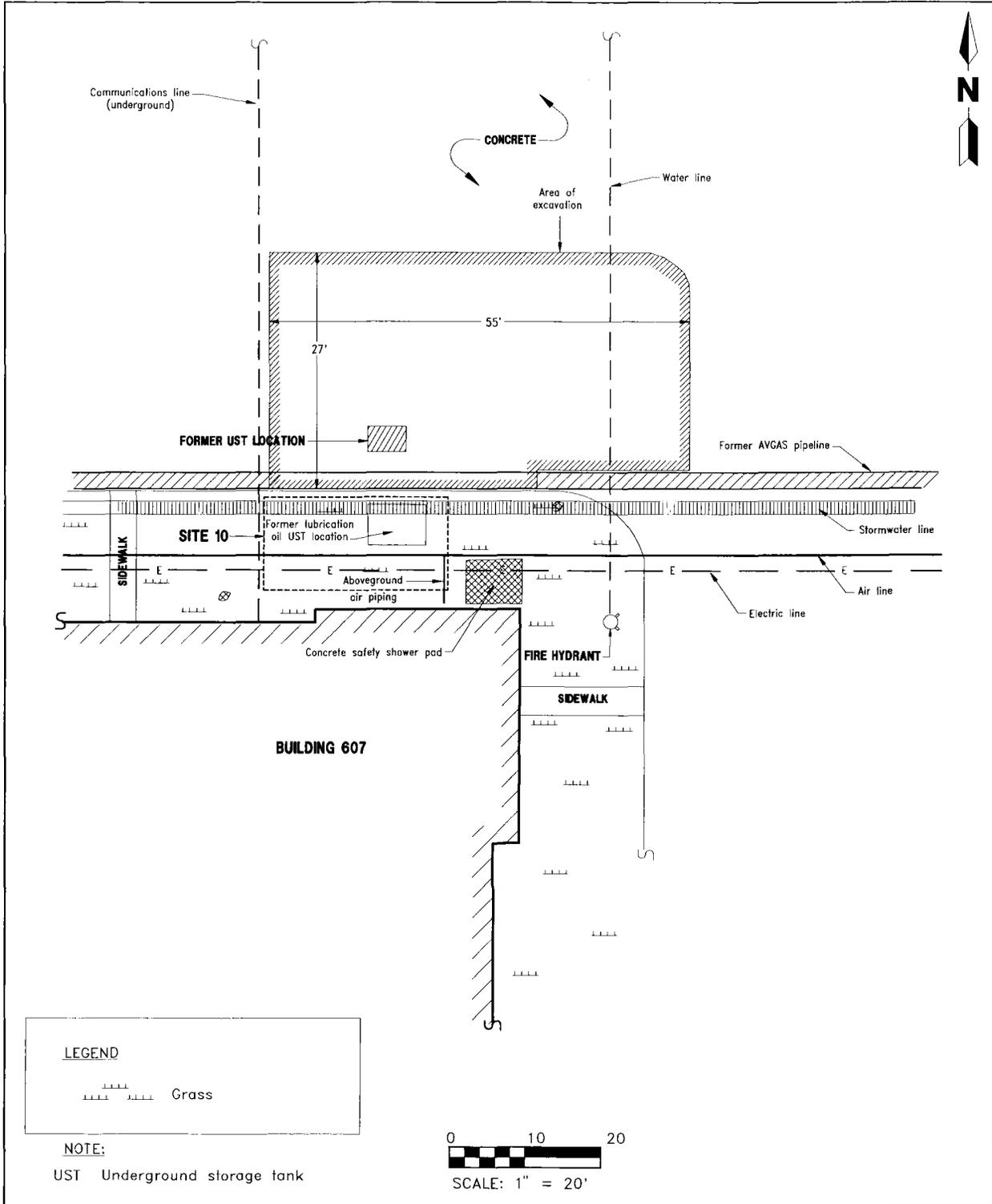


FIGURE 3-1
AREAL EXTENT OF SOIL REMOVAL, MAY 1995



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**Table 3-1
Confirmatory Soil Sampling Results,
March 1995**

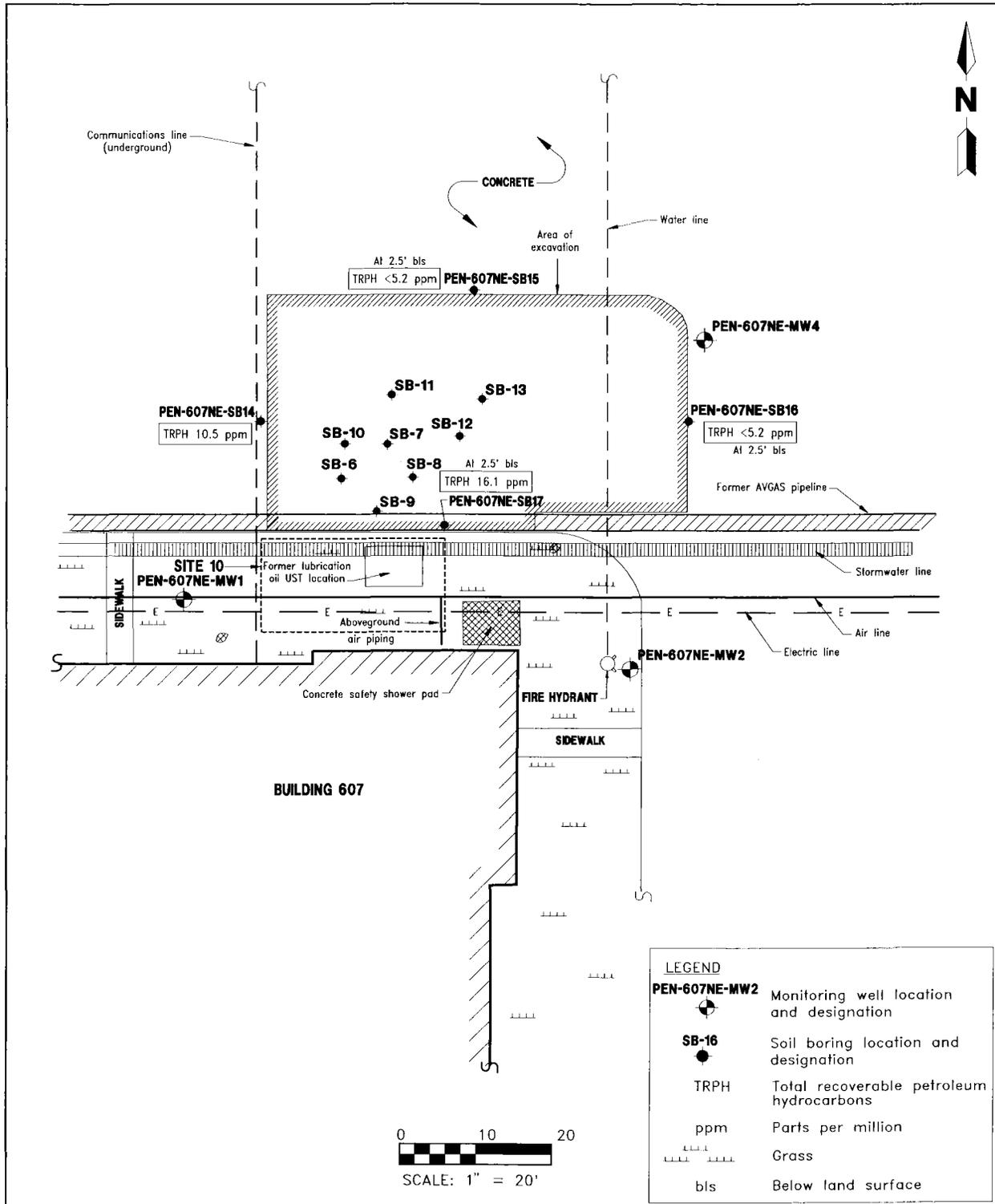
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Soil Sample Designation	Organic Vapor Analysis	Total Recoverable Petroleum Hydrocarbons	Total Petroleum Hydrocarbons
PEN-607NE-SB14	<1	10.5	<10
PEN-607NE-DUP ¹	<1	<5.2	NA
PEN-607NE-SB15	<1	<5.2	<10
PEN-607NE-SB16	<1	<5.2	<10
PEN-607NE-SB17	1	16.1	<10
PEN-607NE-EB ²	NA	<1.0	NA

¹The duplicate sample, PEN-607NE-DUP, was collected from the same location as PEN-607NE-SB14.

²PEN-607NE-EB is the equipment blank for this soil sampling event.

Notes: Concentrations reported in parts per million.
NA = not analyzed.



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3.2 GROUNDWATER ASSESSMENT.

3.2.1 Replacement Monitoring Well Installation Site monitoring wells PEN-607NE-MW3, PEN-607NE-MW6, PEN-607NE-MW7, and PEN-607NE-MW8 were properly abandoned prior to soil removal. Abandonment was accomplished by either complete removal or filling the monitoring well with Portland Type I cement.

After contaminated soil had been removed, monitoring well PEN-607NE-MW7 (the downgradient well) was replaced with PEN-607NE-MW7R. See Figure 3-3 for the replacement well location. PEN-607NE-MW7R was installed to a depth of 12 feet bls. It is constructed of 2-inch diameter schedule 40 PVC, 10 feet of 0.010-inch slotted screen, and 2 feet of casing. A 10.5-foot 20/35 silica sand filter pack was installed around the screen and completed with 1 foot of 30/65 silica sand seal. The remaining annulus was grouted to the surface. The monitoring well was completed with a flush 2-foot by 2-foot concrete pad and 8-inch steel vault. The monitoring well is equipped with a locking, expandable cap and a corrosion resistant brass lock.

3.2.2 Groundwater Sampling Results On March 22, 1995, PEN-607NE-MW7R was sampled for volatile organic aromatics (VOA), polynuclear aromatic hydrocarbons (PAH), TRPH, and lead. The groundwater sample was preserved and packed on ice prior to shipment via overnight courier to Quanterra Environmental in Tampa, Florida. Laboratory data sheets are provided in Appendix C.

Lead was the only compound detected during the laboratory analyses. The lead concentration detected in PEN-607NE-MW7R was 12 ppb which is less than the Florida drinking water standard of 15 ppb for lead (Chapter 62-550, FAC).

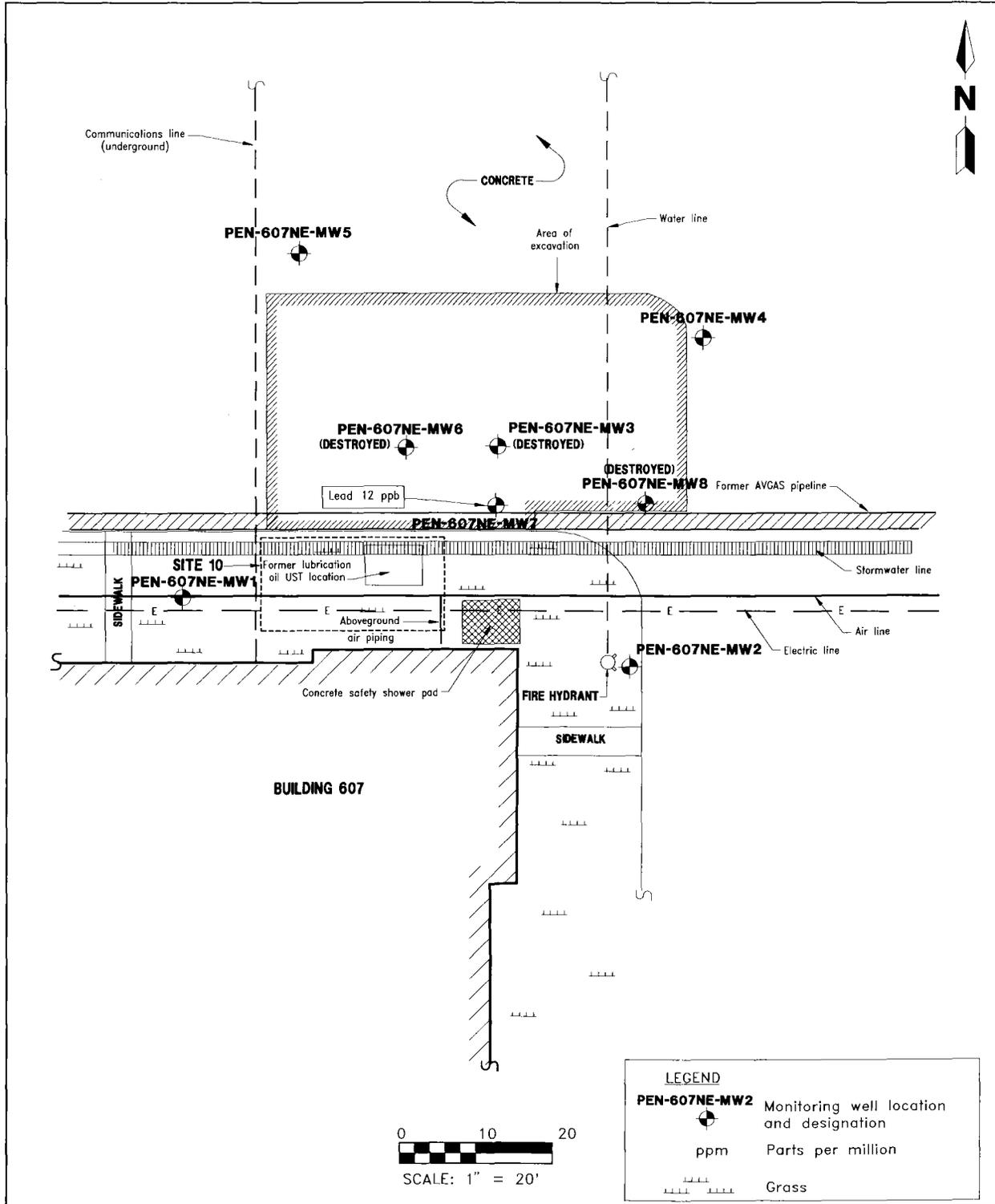


FIGURE 3-3
GROUNDWATER ANALYTICAL RESULTS
FOR PEN-607NE-MW7R, MAY 1995



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4.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

4.1 SUMMARY. Based on the results of the third supplemental assessment and the previous investigative results (ABB-ES, 1992; 1993; 1994), the following is a summary of conditions observed at the site.

- Soil at Site 607NE consists primarily of very pale orange, very fine- to fine-grained quartz sand.
- Groundwater was encountered from approximately 4 feet to 6 feet bls. The groundwater flow direction varies from east to southeast.
- There are no potable wells within 0.25 mile of the site.
- Excessively contaminated soil identified during tank removal operations and by the second supplemental soil investigation has been removed from the site. Contaminant concentrations detected in confirmatory soil samples were below State target levels. Contaminated soil was replaced with clean fill material.
- Lead (12 ppb) was the only contaminant detected in the groundwater sample collected from PEN-607NE-MW7R.

4.2 CONCLUSIONS. The following conclusions are based on the findings of the CA and existing site conditions.

- Excessively contaminated soil from Site 607NE as defined in Chapters 62-770 and 62-775, FAC, has been removed.
- Groundwater contaminant concentrations at Site 607NE are below State No Further Action target levels.

4.3 RECOMMENDATIONS. Because contaminated soil has been removed and remediated, and groundwater contaminant concentrations do not exceed State target levels or applied standards, a No Further Action Proposal (NFAP) is requested for Site 607NE.

5.0 PROFESSIONAL REVIEW CERTIFICATION

The CA contained in this report was prepared using sound hydrogeologic principles and judgment. This CA is based on the geologic investigation and associated information detailed in the text and appended to this report. If conditions are determined to exist that differ from those described, the undersigned geologist should be notified to evaluate the effects of any additional information on the assessment described in this report. This Third CAR Addendum was developed for the waste oil tank located at Site 607NE at the Naval Aviation Depot, Naval Air Station in Pensacola, Florida, and should not be construed to apply to any other site.

Michael J. Williams
Professional Geologist
P.G. No. 344

Date

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APPENDIX A
FDEP CORRESPONDENCE

Florida Department of
Environmental Protection**Memorandum**

TO: Eric S. Nuzie, Federal Facilities Coordinator
Bureau of Waste Cleanup

THROUGH: James J. Crane, P.G. Administrator *JJC*
Technical Review Section

Tim J. Bahr, P.G. Supervisor *TJB*
Technical Review Section

FROM: David M. Clowes, Remedial Project Manager *DMC*
Technical Review Section

DATE: August 24, 1994

SUBJECT: Second Contamination Assessment Report (CAR) Addendum
Report for Site 607NE, Naval Air Station Pensacola.

I have reviewed the above stated document dated July 1994 (received July 28, 1994) submitted for this site. The following comments should be addressed:

1. From the findings of the CAR and Addendums, the source of the low level soil and groundwater contamination appears indeterminable. The contamination could have emanated from redistributed contaminated soil from tank removals, the asphalt, or possibly even from past AVGAS pipeline leaks. Thus, soil contamination should be considered genuine until proven otherwise, so a No Further Action Plan is not acceptable at this time.
2. Due to the presence of benzene, TRPH and metals in groundwater, soil samples from borings at SB-9 through SB-12 should be sampled for the used oil parameters, in accordance with Rule 17-770.600(8) F.A.C. However, if BRAC construction (see comment at end) prevents further analysis before construction, the soil contamination around SB-12 should be removed prior to construction, because the soil is contaminated with TRPHs.
3. After removal of the replacement tank and contaminated soil, post-closure soil samples collected during the installation of monitoring wells MW-7 and MW-8 contained contaminated soil (TRPH over 50 ppm). Additionally, groundwater analysis using Methods 602 and 418.1, and for metals, detected TRPH contamination from these wells. For sites contaminated with petroleum from the Kerosene or Mixed Product Analytical Group, groundwater should also be analyzed for PAHs, in accordance with Rule 17-770.600(8). Thus, MW-7 and MW-8 should be sampled for EPA Method 610 analysis. However, if BRAC construction (see comment at end) prevents further groundwater analysis before construction, the soil contamination around



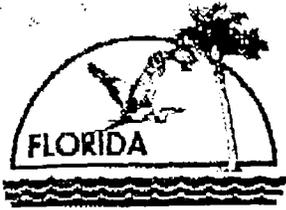
MEMORANDUM
Eric S. Nuzie
August 24, 1994
Page Two

these wells (with proper abandonment of monitoring wells if necessary) should be removed prior to construction.

4. Since the turbid groundwater samples had levels of metals above MCLs, and the "non-turbid" sample from MW-6 was below MCLs, the remaining wells should also be resampled in order to decrease turbidity. Note, I recommend that groundwater samples not be filtered to decrease turbidity. To decrease turbidity, I recommend that the wells be resampled using Quiescent Sampling (low flow purging using a peristaltic pump with a flow rate of about one liter per minute and waiting up to a maximum of six hours to sample at a low flow rate using a peristaltic pump). Turbidity measurements (using a turbidity meter) should be taken in conjunction with the metals sampling.
4. Was temporary monitoring well TW-1 converted into permanent monitoring well MW-6?

This site will probably be affected by BRAC construction at Chevalier Field, scheduled to commence in December 1994. In order not to postpone the construction schedule, the Tier I Pensacola Team has determined that at sites affected by BRAC, the assessment of soil contamination and removal of hot spots should be performed before construction. However, groundwater assessment and remediation can be postponed ~~til~~ after construction.





Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

October 20, 1994

Mr. Luis Vazquez
Code 1843
Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
P.O. Box 190010
North Charleston, South Carolina 29419-9010

RE: Response to Comments for CAR Addendum for Site 3557S
and CAR Addendum for Site ~~677NE~~, NAS Pensacola.
601NE

Dear Mr. Vazquez:

I have completed the technical review of the above stated documents dated October 17, 1994 (received October 17, 1994). The following comments incorporate the decisions made at the meeting on October 18, 1994. The following comments should be incorporated into the meeting minutes:

Site 3557S

Comment 1: To confirm if the composition of the sub-base material under the asphalt is causing the high TRPH reading at soil borings SB-42 and SB-43, a soil sample should be collected from the site of the highest reading (SB-42). This sample should be collected at the most stained interval between the surface and the groundwater, and analyzed for the used oil parameters in accordance with 17-770.600(8), F.A.C. Note, the sampling should be completed prior to BRAC construction at this site.

Comment 2: To determine if soil contamination at SB-42 is impacting the groundwater, a monitoring well should be installed at SB-42 and analyzed for used oil parameters in accordance with 17-770.600(8), F.A.C.

Comment 3: Monitoring MW-6 should be resampled for lead using Quiescent Sampling.

Post-It™ brand fax transmittal memo 7671		# of pages ▶ 2
To MARK DIBLIN	From L. A. VAZQUEZ	
Co. PBB	Co. NAVY	
Dept.	Phone # 803 743 0613	
Fax # 904 656 3386	Fax #	

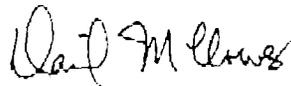
"Protect, Conserve and Enjoy"

Mr. Luis Vazquez
October 20, 1994
Page 2

Site 607NE

Comments 1, 2, 3 and 4: Once contaminated soil has been removed at the site of the UST (SB-12) and the area of the AVGAS line (MW-7, MW-8, etc.), and properly disposed of, confirmatory soil samples should be collected and a replacement monitoring well should be installed near the current location of MW-7. MW-7 should be properly abandoned prior to BRAC construction. A groundwater sample should be collected from the replacement well and analyzed for EPA Methods 610, 418.1 and 239.2 using Quiescent Sampling. The CAR Addendum to be submitted with the results of the confirmatory soil sampling and groundwater analysis, should also include the details of the excavation and method of soil disposal/remediation. Note, contaminated soil removal and confirmatory sampling should be completed prior to BRAC construction at this site.

Sincerely,



David M. Clowes
Remedial Project Manager

/dmc

cc: Ron Joyner, NAS Pensacola
Allison Humphris, EPA Region 4
Tom Moody, FDEP Northwest District
John Mitchell, FDEP Natural Resource Trustee
Mark Diblin, ABB, Tallahassee

TJB



JJC



ESN



APPENDIX B
SOIL SAMPLE ANALYTICAL DATA

Quanterra Incorporated
5910 Breckenridge Parkway, Suite H
Tampa, Florida 33610

813 621-0784 Telephone
813 623-6021 Fax

ANALYTICAL REPORT

PROJECT NO. 7527.45

NADEP PENSACOLA SITE 607NE

KAREN HARTNETT

ABB ENVIRONMENTAL SERVICES

QUANTERRA INCORPORATED

Certification Numbers: E84059, HRS84297

FDEP CompQAP: 870270G


Joanne Anderson
Project Manager

March 20, 1995

EXECUTIVE SUMMARY - Detection Highlights

B5C030075

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>
PEN-607NE-SB14				
Petroleum Hydrocarbons, Total Recoverable	10.5	5.2	mg/kg	SW846 9073
Solids, Total (TS)	96.7	1.0	%	MCAWW 160.3
PEN-607NE-SB15				
Solids, Total (TS)	96.0	1.0	%	MCAWW 160.3
PEN-607NE-SB16				
Solids, Total (TS)	95.6	1.0	%	MCAWW 160.3
PEN-607NE-SB17				
Petroleum Hydrocarbons, Total Recoverable	16.1	5.2	mg/kg	SW846 9073
Solids, Total (TS)	96.6	1.0	%	MCAWW 160.3
PEN-607NE-DUP				
Solids, Total (TS)	96.5	1.0	%	MCAWW 160.3

ANALYTICAL METHODS SUMMARY

<u>Parameters</u>	<u>Methods</u>
Hydrocarbon	ASTM D3328
Fingerprinting	
Petroleum Hydrocarbons	MCAWW 418.1
Total Recoverable	
Petroleum Hydrocarbons, Total Recoverable	SW846 9073
Solids, Total (TS)	MCAWW 160.3 MODIFIED

References:

- ASTM 1987 Annual Book Of ASTM Standards.
- MCAWW Methods for Chemical Analysis of Water and Wastes, EMSL:
 Cincinnati, OH: March 1983 and subsequent revisions
- SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical
 Methods", Third Edition, September, 1986 and subsequent
 revisions

SAMPLE SUMMARY

The analytical results of the samples listed below are presented on the following pages.

<u>WO #</u>	<u>LABORATORY ID</u>	<u>SAMPLE IDENTIFICATION</u>
A35CX	B5C030075-001	PEN-607NE-SB14
A35D0	B5C030075-002	PEN-607NE-SB15
A35D1	B5C030075-003	PEN-607NE-SB16
A35D2	B5C030075-004	PEN-607NE-SB17
A35D3	B5C030075-005	PEN-607NE-DUP
A35D5	B5C030075-006	PEN-607NE-EB

ABB ENVIRONMENTAL SERVICES

PEN-607NE-SB14

WO #: A35CX103
LAB #: B5C030075-001
MATRIX: SOLID

DATE SAMPLED: 3/02/95
DATE RECEIVED: 3/03/95

----- GC Semi-Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (mg/kg)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Total Petroleum Hydrocarbons	ND	10	ASTM D3328	03/07-03/14/95	5066080

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
o-Terphenyl	72	(50 - 150)

NOTE: DRY WEIGHT
ND NOT DETECTED AT THE STATED REPORTING LIMIT

ABB ENVIRONMENTAL SERVICES

PEN-607NE-SB14

WO #: A35CX
LAB #: B5C030075-001
MATRIX: SOLID

DATE SAMPLED: 3/02/95
DATE RECEIVED: 3/03/95

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Petroleum Hydrocarbons, Total Recoverable	10.5	5.2	mg/kg	SW846 9073	3/09- 3/10/95	5068068
Solids, Total (TS)	96.7	1.0	%	MCAWW 160.3 M	3/06/95	5065105

NOTE: AS RECEIVED

ABB ENVIRONMENTAL SERVICES

PEN-607NE-SB15

WO #: A35D0103
LAB #: B5C030075-002
MATRIX: SOLID

DATE SAMPLED: 3/02/95
DATE RECEIVED: 3/03/95

----- GC Semi-Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (mg/kg)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Total Petroleum Hydrocarbons	ND	10	ASTM D3328	03/07-03/14/95	5066080

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
o-Terphenyl	68	(50 - 150)

NOTE: DRY WEIGHT
ND NOT DETECTED AT THE STATED REPORTING LIMIT

ABB ENVIRONMENTAL SERVICES

PEN-607NE-SB15

WO #: A35D0
LAB #: B5C030075-002
MATRIX: SOLID

DATE SAMPLED: 3/02/95
DATE RECEIVED: 3/03/95

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Petroleum Hydrocarbons, Total Recoverable	ND	5.2	mg/kg	SW846 9073	3/09- 3/10/95	5068068
Solids, Total (TS)	96.0	1.0	%	MCAWW 160.3 M	3/06/95	5065105

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

ABB ENVIRONMENTAL SERVICES

PEN-607NE-SB16

WO #: A35D1103
LAB #: B5C030075-003
MATRIX: SOLID

DATE SAMPLED: 3/02/95
DATE RECEIVED: 3/03/95

----- GC Semi-Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (mg/kg)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Total Petroleum Hydrocarbons	ND	10	ASTM D3328	03/07-03/14/95	5066080

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
o-Terphenyl	62	(50 - 150)

NOTE: DRY WEIGHT
ND NOT DETECTED AT THE STATED REPORTING LIMIT

ABB ENVIRONMENTAL SERVICES

PEN-607NE-SB16

WO #: A35D1
LAB #: B5C030075-003
MATRIX: SOLID

DATE SAMPLED: 3/02/95
DATE RECEIVED: 3/03/95

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		<u>METHOD</u>	<u>PREPARATION -</u>	<u>QC</u>
		<u>LIMIT</u>	<u>UNIT</u>		<u>ANALYSIS DATE</u>	<u>BATCH</u>
Petroleum Hydrocarbons, Total Recoverable	ND	5.2	mg/kg	SW846 9073	3/14/95	5073128
Solids, Total (TS)	95.6	1.0	%	MCAWW 160.3 M	3/06/95	5065105

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT

ABB ENVIRONMENTAL SERVICES

PEN-607NE-SB17

WO #: A35D2103
LAB #: B5C030075-004
MATRIX: SOLID

DATE SAMPLED: 3/02/95
DATE RECEIVED: 3/03/95

----- GC Semi-Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (mg/kg)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Total Petroleum Hydrocarbons	ND	10	ASTM D3328	03/07-03/15/95	5066080

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
o-Terphenyl	74	(50 - 150)

NOTE: DRY WEIGHT
ND NOT DETECTED AT THE STATED REPORTING LIMIT

ABB ENVIRONMENTAL SERVICES

PEN-607NE-SB17

WO #: A35D2
LAB #: B5C030075-004
MATRIX: SOLID

DATE SAMPLED: 3/02/95
DATE RECEIVED: 3/03/95

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		<u>METHOD</u>	<u>PREPARATION -</u>		<u>QC</u>
		<u>LIMIT</u>	<u>UNIT</u>		<u>ANALYSIS</u>	<u>DATE</u>	
Petroleum Hydrocarbons, Total Recoverable	16.1	5.2	mg/kg	SW846 9073	3/14/95		5073128
Solids, Total (TS)	96.6	1.0	%	MCAWW 160.3 M	3/06/95		5065105

NOTE: AS RECEIVED

ABB ENVIRONMENTAL SERVICES

PEN-607NE-DUP

WO #: A35D3
LAB #: B5C030075-005
MATRIX: SOLID

DATE SAMPLED: 3/02/95
DATE RECEIVED: 3/03/95

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Petroleum Hydrocarbons, Total Recoverable	ND	5.2	mg/kg	SW846 9073	3/14/95	5073128
Solids, Total (TS)	96.5	1.0	%	MCAWW 160.3 M	3/06/95	5065105

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT

ABB ENVIRONMENTAL SERVICES

PEN-607NE-EB

WO #: A35D5
LAB #: B5C030075-006
MATRIX: WATER

DATE SAMPLED: 3/02/95
DATE RECEIVED: 3/03/95

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Petroleum Hydrocarbons Total Recoverable	ND	1.0	mg/L	MCAWW 418.1	3/09/95	5068155

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT

INTRA-LAB BLANK REPORT

LAB #: B5C070000-080

----- GC Semi-Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (mg/kg)	<u>REPORTING</u> <u>LIMIT</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Total Petroleum Hydrocarbons	ND	10	3/07- 3/15/95	5066080

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
o-Terphenyl	66	(50 - 150)

NOTE:

ND (NONE DETECTED)

INTRA-LAB BLANK REPORT

LAB #: B5C090000-068

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Petroleum Hydrocarbons,	ND	5.0	mg/kg	3/09- 3/10/95	5068068
Petroleum Hydrocarbons,	ND	5.0	mg/kg	3/14/95	5073128
Petroleum Hydrocarbons	ND	1.0	mg/L	3/09/95	5068155

NOTE:

ND (NONE DETECTED)

CHECK SAMPLE REPORT

QC BATCH: 5066080
LAB #: B5C070000-080 C

PREPARATION DATE: 3/07/95
DATE ANALYZED: 3/15/95

----- GC Semi-Volatiles -----

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
Fuel Oil #2	40	(22-138)

CHECK SAMPLE REPORT

LAB #: B5C030075

----- INORGANIC ANALYTICAL REPORT -----

<u>COMPOUND</u>	<u>SPIKE PERCENT RECOVERY</u>	<u>LIMITS</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>Q/C BATCH</u>
Petroleum Hydrocarbons, Total Recoverable	83	(65-114)	3/09- 3/10/95	5068068
Petroleum Hydrocarbons, Total Recoverable	82	(65-114)	3/14/95	5073128
Petroleum Hydrocarbons Total Recoverable	93	(73-122)	3/09/95	5068155

SAMPLE - SAMPLE DUP

WO #: A35D3

LAB #: B5C030075-005
MATRIX: SOLID

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>			<u>RPD</u> <u>LIMIT</u>	<u>EXTRACTION /</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
	<u>SMP</u>	<u>DUP</u>	<u>RPD</u>			
Solids, Total (TS)	96.5	97.0	0.5	(0-20)	3/06/95	5065105

MATRIX SPIKE REPORT

QC BATCH: 5066080
LAB #: B5C030075-001 S
MATRIX: SOLID

WO #: A35CX
PREPARATION DATE: 3/07/95
DATE ANALYZED: 3/14/95

----- GC Semi-Volatiles -----

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
Fuel Oil #2	32	34	(22-138)	6.3	(0-66)

MATRIX SPIKE REPORT

Lot #: B5C030075

----- INORGANIC ANALYTICAL REPORT -----

<u>COMPOUND</u>	<u>RECOVERY PERCENT</u>		<u>Q/C LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>Q/C BATCH</u>
	<u>MS</u>	<u>MSD</u>					
Lab# B5C030075- 2 Matrix: SOLID							
Petroleum Hydrocarbons,	86	89	(50-140)	3.4	30	3/09- 3/10/95	5068068
Total Recoverable							
Lab# B5C030075- 3 Matrix: SOLID							
Petroleum Hydrocarbons,	89	87	(50-140)	2.2	30	3/14/95	5073128
Total Recoverable							

Quanterra Environmental Services, Tampa
Sample Shipper Evaluation and Receipt Form

Client: ABB

Project Name/Number: NAEP Pensacola

Samples Received by: Carol McHulley
Signature

Date Received: 3/3/95

Sample Evaluation Form by: Carol McHulley
Signature

Type of shipping containers samples received in:

Quanterra cooler: X Client cooler: _____

Quanterra shipper _____ Box _____ Other _____

Any "NO" responses or discrepancies should be explained in the "Comments" section.

	Yes	No
1) Were custody seals on shipping container(s) intact?	<u>X</u>	_____
2) Were custody papers properly included with samples?	<u>X</u>	_____
3) Were custody papers properly filled out (ink, signed, match labels)?	<u>X</u>	_____
4) Did all bottles arrive in good condition (unbroken)?	<u>X</u>	_____
5) Were all bottle labels complete (sample no., date, signed, analysis preservatives)?	<u>X</u>	_____
6) Were correct bottles used for the tests indicated?	<u>X</u>	_____
7) Were proper sample preservation techniques indicated?	<u>X</u>	_____
8) Were samples received within adequate holding times?	<u>X</u>	_____
9) Were all VOA bottles checked for the presence of air bubbles? (If air bubbles were found, indicate in comment section)	<u>N/A</u>	_____
10) Were samples in direct contact with wet ice? NOTE TEMPERATURE BELOW	<u>X</u>	_____
11) Were samples accepted into the laboratory? (If "No", see comments)	<u>X</u>	_____

Cooler # _____ Temp 2 C

Cooler # _____ Temp. _____ C

Comments: _____

Interlaboratory Chain of Custody

BRECKENRIDGE PKWY., STE. H
TAMPA, FL 33610
PHONE (813) 621-0784 FAX (813) 623-6021



76866

CLIENT CODE _____
QUOTE / SAR NUMBER _____
Chain-of Custody Record

PROJ. NO.		PROJECT NAME/LOCATION				NO. OF CONTAINERS	PARAMETER				REMARKS
7527.45		Site 607NE, NADEP PENSA COLA					TRPH	TPH			
SAMPLERS: (Signature)						NO. OF CONTAINERS	PARAMETER				REMARKS
STA. NO.	DATE	TIME	COMP.	GRAB.	STATION LOCATION		TRPH	TPH			
	3-2-95	1040	X		PEN-607NE-SB14	1	✓	✓			
		1320	X		PEN-607NE-SB15	1	✓	✓			
		1500	X		PEN-607NE-SB16	1	✓	✓			
		1110	X		PEN-607NE-SB17	1	✓	✓			
			X		PEN-607NE-DUP	1	✓				
	3-2-95	1225		X	PEN-607NE-EB	1	✓			H ₂ O preserved w/ HCL	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	3/3/95	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
<i>[Signature]</i>	2-3-95 1600	Carol McHulley				
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)		Date / Time	Remarks	
					STANDARD TURNAROUND	

Distribution Original Accompanies Shipment. Copy returned with Report.

FEDEX # 2103144212

APPENDIX C

GROUNDWATER SAMPLE ANALYTICAL DATA

Quanterra Incorporated
5910 Breckenridge Parkway, Suite H
Tampa, Florida 33610

813 621-0784 Telephone
813 623-6021 Fax

ANALYTICAL REPORT

PROJECT NO. 7527.34

AVGAS PIPELINE AREA NADEP PENS

KAREN HARTNETT

ABB ENVIRONMENTAL SERVICES

QUANTERRA INCORPORATED

Certification Numbers: E84059, HRS84297

FDEP CompQAP: 870270G


Joanne Anderson
Project Manager

April 5, 1995

EXECUTIVE SUMMARY - Detection Highlights

B5C230057

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>
04G00101				
Lead	6.0	5.0	ug/L	MCAWW 200.7
10G00101				
Lead	17.9	5.0	ug/L	MCAWW 200.7
PEN-607NE-MW7R				
Lead	12.0	5.0	ug/L	MCAWW 200.7

ANALYTICAL METHODS SUMMARY

<u>Parameters</u>	<u>Methods</u>
Volatile Organics	USEPA 601
Volatile Organics	USEPA 602
Volatile Organics	USEPA 624
Semivolatile Organics	USEPA 625
Polynuclear Aromatic Hydrocarbons	USEPA 610
Cadmium	MCAWW 200.7
Chromium	MCAWW 200.7
Petroleum Hydrocarbons Total Recoverable	MCAWW 418.1
Arsenic	MCAWW 200.7
Lead	MCAWW 200.7

References:

- MCAWW Methods for Chemical Analysis of Water and Wastes, EMSL:
Cincinnati, OH: March 1983 and subsequent revisions
- USEPA Methods for Organic Chemical Analysis of Municipal and
Industrial Wastewater, 40CFR, Part 136, Appendix A,
October 26, 1984 and subsequent revisions

SAMPLE SUMMARY

The analytical results of the samples listed below are presented on the following pages.

<u>WO #</u>	<u>LABORATORY ID</u>	<u>SAMPLE IDENTIFICATION</u>
A3J08	B5C230057-001	04G00101
A3J0C	B5C230057-002	10G00101
A3J0E	B5C230057-003	PEN-607NE-MW7R
A3J0F	B5C230057-004	TRIP BLANK



ABB ENVIRONMENTAL SERVICES

04G00101

WO #: A3J08
LAB #: B5C230057-001
MATRIX: WATER

DATE SAMPLED: 3/21/95
DATE RECEIVED: 3/23/95

----- REQUESTED METALS -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Cadmium	ND	5.0	ug/L	MCAWW 200.7	3/24/95	5083043
Chromium	ND	50.0	ug/L	MCAWW 200.7	3/24/95	5083043
Arsenic	ND	5.0	ug/L	MCAWW 200.7	3/24/95	5083043
Lead	6.0	5.0	ug/L	MCAWW 200.7	3/24/95	5083043

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

ABB ENVIRONMENTAL SERVICES

10G00101

WO #: A3J0C106
LAB #: B5C230057-002
MATRIX: WATER

DATE SAMPLED: 3/22/95
DATE RECEIVED: 3/23/95

----- GC/MS Volatiles -----					
<u>PARAMETER</u>	1 OF 2		<u>METHOD</u>	<u>EXTRACTION- ANALYSIS DATE</u>	<u>QC BATCH</u>
	<u>RESULT (ug/L)</u>	<u>REPORTING LIMIT</u>			
Acrolein	ND	10	USEPA 624	03/28-03/29/95	5088142
Acrylonitrile	ND	10	USEPA 624	03/28-03/29/95	5088142
Benzene	ND	1.0	USEPA 624	03/28-03/29/95	5088142
Bromodichloromethane	ND	1.0	USEPA 624	03/28-03/29/95	5088142
Bromoform	ND	1.0	USEPA 624	03/28-03/29/95	5088142
Bromomethane	ND	1.0	USEPA 624	03/28-03/29/95	5088142
Carbon tetrachloride	ND	1.0	USEPA 624	03/28-03/29/95	5088142
Chlorobenzene	ND	1.0	USEPA 624	03/28-03/29/95	5088142
Dibromochloromethane	ND	1.0	USEPA 624	03/28-03/29/95	5088142
Chloroethane	ND	1.0	USEPA 624	03/28-03/29/95	5088142
2-Chloroethyl vinyl ether	ND	1.0	USEPA 624	03/28-03/29/95	5088142
Chloroform	ND	1.0	USEPA 624	03/28-03/29/95	5088142
Chloromethane	ND	1.0	USEPA 624	03/28-03/29/95	5088142
1,2-Dichlorobenzene	ND	1.0	USEPA 624	03/28-03/29/95	5088142
1,3-Dichlorobenzene	ND	1.0	USEPA 624	03/28-03/29/95	5088142
1,4-Dichlorobenzene	ND	1.0	USEPA 624	03/28-03/29/95	5088142
1,1-Dichloroethane	ND	1.0	USEPA 624	03/28-03/29/95	5088142
1,2-Dichloroethane	ND	1.0	USEPA 624	03/28-03/29/95	5088142
1,1-Dichloroethene	ND	1.0	USEPA 624	03/28-03/29/95	5088142
cis-1,2-Dichloroethene	ND	1.0	USEPA 624	03/28-03/29/95	5088142
trans-1,2-Dichloroethene	ND	1.0	USEPA 624	03/28-03/29/95	5088142
1,2-Dichloropropane	ND	1.0	USEPA 624	03/28-03/29/95	5088142
cis-1,3-Dichloropropene	ND	1.0	USEPA 624	03/28-03/29/95	5088142
<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>			
1,2-Dichloroethane-d4	100	(78 - 130)			
Toluene-d8	101	(90 - 109)			
Bromofluorobenzene	98	(81 - 117)			

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

ABB ENVIRONMENTAL SERVICES

10G00101

WO #: A3J0C106
LAB #: B5C230057-002
MATRIX: WATER

DATE SAMPLED: 3/22/95
DATE RECEIVED: 3/23/95

----- GC/MS Volatiles -----

2 OF 2

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
trans-1,3-Dichloropropene	ND	1.0	USEPA 624	03/28-03/29/95	5088142
Ethylbenzene	ND	1.0	USEPA 624	03/28-03/29/95	5088142
Trichlorofluoromethane	ND	1.0	USEPA 624	03/28-03/29/95	5088142
Methylene chloride	ND	1.0	USEPA 624	03/28-03/29/95	5088142
1,1,2,2-Tetrachloroethane	ND	1.0	USEPA 624	03/28-03/29/95	5088142
Tetrachloroethene	ND	1.0	USEPA 624	03/28-03/29/95	5088142
Toluene	ND	1.0	USEPA 624	03/28-03/29/95	5088142
1,1,1-Trichloroethane	ND	1.0	USEPA 624	03/28-03/29/95	5088142
1,1,2-Trichloroethane	ND	1.0	USEPA 624	03/28-03/29/95	5088142
Trichloroethene	ND	1.0	USEPA 624	03/28-03/29/95	5088142
Vinyl chloride	ND	1.0	USEPA 624	03/28-03/29/95	5088142
Xylenes, Total	ND	1.0	USEPA 624	03/28-03/29/95	5088142

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
1,2-Dichloroethane-d4	100	(78 - 130)
Toluene-d8	101	(90 - 109)
Bromofluorobenzene	98	(81 - 117)

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT

ABB ENVIRONMENTAL SERVICES

10G00101

WO #: A3J0C107
LAB #: B5C230057-002
MATRIX: WATER

DATE SAMPLED: 3/22/95
DATE RECEIVED: 3/23/95

----- GC/MS Semi-Volatiles -----

1 OF 3

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Acenaphthene	ND	10	USEPA 625	03/27-04/03/95	5086096
Acenaphthylene	ND	10	USEPA 625	03/27-04/03/95	5086096
Anthracene	ND	10	USEPA 625	03/27-04/03/95	5086096
Benzidine	ND	50	USEPA 625	03/27-04/03/95	5086096
Benzo(a) anthracene	ND	10	USEPA 625	03/27-04/03/95	5086096
Benzo(b) fluoranthene	ND	10	USEPA 625	03/27-04/03/95	5086096
Benzo(k) fluoranthene	ND	10	USEPA 625	03/27-04/03/95	5086096
Benzo(g,h,i) perylene	ND	10	USEPA 625	03/27-04/03/95	5086096
Benzo(a) pyrene	ND	10	USEPA 625	03/27-04/03/95	5086096
bis(2-Chloroethoxy)methane	ND	10	USEPA 625	03/27-04/03/95	5086096
bis(2-Chloroethyl) ether	ND	10	USEPA 625	03/27-04/03/95	5086096
bis(2-Chloroisopropyl) ether	ND	10	USEPA 625	03/27-04/03/95	5086096
bis(2-Ethylhexyl) phthalate	ND	10	USEPA 625	03/27-04/03/95	5086096
4-Bromophenyl phenyl ether	ND	10	USEPA 625	03/27-04/03/95	5086096
Butyl benzyl phthalate	ND	10	USEPA 625	03/27-04/03/95	5086096
4-Chloro-3-methylphenol	ND	10	USEPA 625	03/27-04/03/95	5086096
2-Chloronaphthalene	ND	10	USEPA 625	03/27-04/03/95	5086096
2-Chlorophenol	ND	10	USEPA 625	03/27-04/03/95	5086096
4-Chlorophenyl phenyl ether	ND	10	USEPA 625	03/27-04/03/95	5086096
Chrysene	ND	10	USEPA 625	03/27-04/03/95	5086096
Dibenz(a,h) anthracene	ND	10	USEPA 625	03/27-04/03/95	5086096
Di-n-butyl phthalate	ND	10	USEPA 625	03/27-04/03/95	5086096
1,2-Dichlorobenzene	ND	10	USEPA 625	03/27-04/03/95	5086096
<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>			
Nitrobenzene-d5	75	(26 - 131)			
2-Fluorobiphenyl	76	(27 - 119)			
Terphenyl-d14	63	(10 - 165)			
2-Fluorophenol	54	(10 - 116)			
Phenol-d5	67	(10 - 175)			
2,4,6-Tribromophenol	62	(10 - 155)			

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT

ABB ENVIRONMENTAL SERVICES

10G00101

WO #: A3J0C107
LAB #: B5C230057-002
MATRIX: WATER

DATE SAMPLED: 3/22/95
DATE RECEIVED: 3/23/95

- - - - - GC/MS Semi-Volatiles - - - - -

2 OF 3

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
1,3-Dichlorobenzene	ND	10	USEPA 625	03/27-04/03/95	5086096
1,4-Dichlorobenzene	ND	10	USEPA 625	03/27-04/03/95	5086096
3,3'-Dichlorobenzidine	ND	50	USEPA 625	03/27-04/03/95	5086096
2,4-Dichlorophenol	ND	10	USEPA 625	03/27-04/03/95	5086096
Diethyl phthalate	ND	10	USEPA 625	03/27-04/03/95	5086096
2,4-Dimethylphenol	ND	10	USEPA 625	03/27-04/03/95	5086096
Dimethyl phthalate	ND	10	USEPA 625	03/27-04/03/95	5086096
Di-n-octyl phthalate	ND	10	USEPA 625	03/27-04/03/95	5086096
4,6-Dinitro- 2-methylphenol	ND	50	USEPA 625	03/27-04/03/95	5086096
2,4-Dinitrophenol	ND	50	USEPA 625	03/27-04/03/95	5086096
2,4-Dinitrotoluene	ND	10	USEPA 625	03/27-04/03/95	5086096
2,6-Dinitrotoluene	ND	10	USEPA 625	03/27-04/03/95	5086096
1,2-Diphenylhydrazine	ND	10	USEPA 625	03/27-04/03/95	5086096
Fluoranthene	ND	10	USEPA 625	03/27-04/03/95	5086096
Fluorene	ND	10	USEPA 625	03/27-04/03/95	5086096
Hexachlorobenzene	ND	10	USEPA 625	03/27-04/03/95	5086096
Hexachlorobutadiene	ND	10	USEPA 625	03/27-04/03/95	5086096
Hexachlorocyclopentadiene	ND	10	USEPA 625	03/27-04/03/95	5086096
Hexachloroethane	ND	10	USEPA 625	03/27-04/03/95	5086096
Indeno(1,2,3-cd)pyrene	ND	10	USEPA 625	03/27-04/03/95	5086096
Isophorone	ND	10	USEPA 625	03/27-04/03/95	5086096
Naphthalene	ND	10	USEPA 625	03/27-04/03/95	5086096
Nitrobenzene	ND	10	USEPA 625	03/27-04/03/95	5086096
<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>			
Nitrobenzene-d5	75	(26 - 131)			
2-Fluorobiphenyl	76	(27 - 119)			
Terphenyl-d14	63	(10 - 165)			
2-Fluorophenol	54	(10 - 116)			
Phenol-d5	67	(10 - 175)			
2,4,6-Tribromophenol	62	(10 - 155)			

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT

ABB ENVIRONMENTAL SERVICES

10G00101

WO #: A3J0C107
LAB #: B5C230057-002
MATRIX: WATER

DATE SAMPLED: 3/22/95
DATE RECEIVED: 3/23/95

- - - - - GC/MS Semi-Volatiles - - - - -

3 OF 3

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
2-Nitrophenol	ND	10	USEPA 625	03/27-04/03/95	5086096
4-Nitrophenol	ND	50	USEPA 625	03/27-04/03/95	5086096
N-Nitrosodimethylamine	ND	10	USEPA 625	03/27-04/03/95	5086096
N-Nitrosodi-n-propylamine	ND	10	USEPA 625	03/27-04/03/95	5086096
N-Nitrosodiphenylamine	ND	10	USEPA 625	03/27-04/03/95	5086096
Pentachlorophenol	ND	50	USEPA 625	03/27-04/03/95	5086096
Phenanthrene	ND	10	USEPA 625	03/27-04/03/95	5086096
Phenol	ND	10	USEPA 625	03/27-04/03/95	5086096
Pyrene	ND	10	USEPA 625	03/27-04/03/95	5086096
1,2,4-Trichlorobenzene	ND	10	USEPA 625	03/27-04/03/95	5086096
2,4,6-Trichlorophenol	ND	10	USEPA 625	03/27-04/03/95	5086096

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
Nitrobenzene-d5	75	(26 - 131)
2-Fluorobiphenyl	76	(27 - 119)
Terphenyl-d14	63	(10 - 165)
2-Fluorophenol	54	(10 - 116)
Phenol-d5	67	(10 - 175)
2,4,6-Tribromophenol	62	(10 - 155)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT



ABB ENVIRONMENTAL SERVICES

10G00101

WO #: A3J0C
LAB #: B5C230057-002
MATRIX: WATER

DATE SAMPLED: 3/22/95
DATE RECEIVED: 3/23/95

----- REQUESTED METALS -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Cadmium	ND	5.0	ug/L	MCAWW 200.7	3/24/95	5083043
Chromium	ND	50.0	ug/L	MCAWW 200.7	3/24/95	5083043
Arsenic	ND	5.0	ug/L	MCAWW 200.7	3/24/95	5083043
Lead	17.9	5.0	ug/L	MCAWW 200.7	3/24/95	5083043

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT



ABB ENVIRONMENTAL SERVICES

10G00101

WO #: A3J0C
LAB #: B5C230057-002
MATRIX: WATER

DATE SAMPLED: 3/22/95
DATE RECEIVED: 3/23/95

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Petroleum Hydrocarbons Total Recoverable	ND	1.0	mg/L	MCAWW 418.1	3/30- 3/31/95	5089079

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT

ABB ENVIRONMENTAL SERVICES

PEN-607NE-MW7R

WO #: A3J0E103
LAB #: B5C230057-003
MATRIX: WATER

DATE SAMPLED: 3/22/95
DATE RECEIVED: 3/23/95

----- GC Volatiles -----					
1 OF 2					
<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Bromodichloromethane	ND	1.0	USEPA 601	03/29/95	5089074
Bromoform	ND	1.0	USEPA 601	03/29/95	5089074
Bromomethane	ND	1.0	USEPA 601	03/29/95	5089074
Carbon tetrachloride	ND	1.0	USEPA 601	03/29/95	5089074
Chlorobenzene	ND	1.0	USEPA 601	03/29/95	5089074
Dibromochloromethane	ND	1.0	USEPA 601	03/29/95	5089074
Chloroethane	ND	1.0	USEPA 601	03/29/95	5089074
2-Chloroethyl vinyl ether	ND	1.0	USEPA 601	03/29/95	5089074
Chloroform	ND	1.0	USEPA 601	03/29/95	5089074
Chloromethane	ND	1.0	USEPA 601	03/29/95	5089074
1,2-Dichlorobenzene	ND	1.0	USEPA 601	03/29/95	5089074
1,3-Dichlorobenzene	ND	1.0	USEPA 601	03/29/95	5089074
1,4-Dichlorobenzene	ND	1.0	USEPA 601	03/29/95	5089074
Dichlorodifluoromethane	ND	1.0	USEPA 601	03/29/95	5089074
1,1-Dichloroethane	ND	1.0	USEPA 601	03/29/95	5089074
1,2-Dichloroethane	ND	1.0	USEPA 601	03/29/95	5089074
1,1-Dichloroethene	ND	1.0	USEPA 601	03/29/95	5089074
cis-1,2-Dichloroethene	ND	1.0	USEPA 601	03/29/95	5089074
trans-1,2-Dichloroethene	ND	1.0	USEPA 601	03/29/95	5089074
1,2-Dichloropropane	ND	1.0	USEPA 601	03/29/95	5089074
cis-1,3-Dichloropropene	ND	1.0	USEPA 601	03/29/95	5089074
trans-1,3-Dichloropropene	ND	1.0	USEPA 601	03/29/95	5089074
Trichlorofluoromethane	ND	1.0	USEPA 601	03/29/95	5089074
<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>			
Bromochloromethane	94	(78 - 122)			

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT

ABB ENVIRONMENTAL SERVICES

PEN-607NE-MW7R

WO #: A3J0E103
LAB #: B5C230057-003
MATRIX: WATER

DATE SAMPLED: 3/22/95
DATE RECEIVED: 3/23/95

----- GC Volatiles -----
2 OF 2

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Methylene chloride	ND	1.0	USEPA 601	03/29/95	5089074
1,1,2,2-Tetrachloroethane	ND	1.0	USEPA 601	03/29/95	5089074
Tetrachloroethene	ND	1.0	USEPA 601	03/29/95	5089074
1,1,1-Trichloroethane	ND	1.0	USEPA 601	03/29/95	5089074
1,1,2-Trichloroethane	ND	1.0	USEPA 601	03/29/95	5089074
Trichloroethene	ND	1.0	USEPA 601	03/29/95	5089074
Vinyl chloride	ND	1.0	USEPA 601	03/29/95	5089074

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
Bromochloromethane	94	(78 - 122)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

ABB ENVIRONMENTAL SERVICES

PEN-607NE-MW7R

WO #: A3J0E104
LAB #: B5C230057-003
MATRIX: WATER

DATE SAMPLED: 3/22/95
DATE RECEIVED: 3/23/95

----- GC Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Benzene	ND	1.0	USEPA 602	03/29/95	5089076
Chlorobenzene	ND	1.0	USEPA 602	03/29/95	5089076
1,2-Dichlorobenzene	ND	1.0	USEPA 602	03/29/95	5089076
1,3-Dichlorobenzene	ND	1.0	USEPA 602	03/29/95	5089076
1,4-Dichlorobenzene	ND	1.0	USEPA 602	03/29/95	5089076
Ethylbenzene	ND	1.0	USEPA 602	03/29/95	5089076
Toluene	ND	1.0	USEPA 602	03/29/95	5089076
Xylenes, Total	ND	1.0	USEPA 602	03/29/95	5089076
Methyl tert-butyl ether	ND	1.0	USEPA 602	03/29/95	5089076

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
Trifluorotoluene	101	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

ABB ENVIRONMENTAL SERVICES

PEN-607NE-MW7R

WO #: A3J0E102
 LAB #: B5C230057-003
 MATRIX: WATER

DATE SAMPLED: 3/22/95
 DATE RECEIVED: 3/23/95

----- GC Semi-Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Acenaphthene	ND	2.0	USEPA 610	03/27-03/29/95	5086094
Acenaphthylene	ND	2.0	USEPA 610	03/27-03/29/95	5086094
Anthracene	ND	2.0	USEPA 610	03/27-03/29/95	5086094
Benzo(a) anthracene	ND	0.10	USEPA 610	03/27-03/29/95	5086094
Benzo(b) fluoranthene	ND	0.10	USEPA 610	03/27-03/29/95	5086094
Benzo(k) fluoranthene	ND	0.15	USEPA 610	03/27-03/29/95	5086094
Benzo(g,h,i) perylene	ND	0.10	USEPA 610	03/27-03/29/95	5086094
Benzo(a) pyrene	ND	0.10	USEPA 610	03/27-03/29/95	5086094
Chrysene	ND	0.10	USEPA 610	03/27-03/29/95	5086094
Fluoranthene	ND	0.20	USEPA 610	03/27-03/29/95	5086094
Fluorene	ND	2.0	USEPA 610	03/27-03/29/95	5086094
Indeno(1,2,3-cd) pyrene	ND	0.10	USEPA 610	03/27-03/29/95	5086094
2-Methylnaphthalene	ND	2.0	USEPA 610	03/27-03/29/95	5086094
Naphthalene	ND	2.0	USEPA 610	03/27-03/29/95	5086094
Phenanthrene	ND	2.0	USEPA 610	03/27-03/29/95	5086094
Pyrene	ND	0.20	USEPA 610	03/27-03/29/95	5086094
Dibenzo(a,h) anthracene	ND	0.10	USEPA 610	03/27-03/29/95	5086094
1-Methylnaphthalene	ND	2.0	USEPA 610	03/27-03/29/95	5086094

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
Carbazole	91	(30 - 130)

NOTE: AS RECEIVED
 ND NOT DETECTED AT THE STATED REPORTING LIMIT



ABB ENVIRONMENTAL SERVICES

PEN-607NE-MW7R

WO #: A3J0E
LAB #: B5C230057-003
MATRIX: WATER

DATE SAMPLED: 3/22/95
DATE RECEIVED: 3/23/95

----- REQUESTED METALS -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Lead	12.0	5.0	ug/L	MCAWW 200.7	3/24/95	5083043

NOTE: AS RECEIVED



ABB ENVIRONMENTAL SERVICES

PEN-607NE-MW7R

WO #: A3J0E
LAB #: B5C230057-003
MATRIX: WATER

DATE SAMPLED: 3/22/95
DATE RECEIVED: 3/23/95

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Petroleum Hydrocarbons Total Recoverable	ND	1.0	mg/L	MCAWW 418.1	3/30- 3/31/95	5089079

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

ABB ENVIRONMENTAL SERVICES

TRIP BLANK

WO #: A3J0F101
LAB #: B5C230057-004
MATRIX: WATER

DATE SAMPLED: 3/21/95
DATE RECEIVED: 3/23/95

<u>PARAMETER</u>	GC Volatiles		<u>METHOD</u>	<u>EXTRACTION- ANALYSIS DATE</u>	<u>QC BATCH</u>
	1 OF	2			
	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>			
Bromodichloromethane	ND	1.0	USEPA 601	03/29/95	5089074
Bromoform	ND	1.0	USEPA 601	03/29/95	5089074
Bromomethane	ND	1.0	USEPA 601	03/29/95	5089074
Carbon tetrachloride	ND	1.0	USEPA 601	03/29/95	5089074
Chlorobenzene	ND	1.0	USEPA 601	03/29/95	5089074
Dibromochloromethane	ND	1.0	USEPA 601	03/29/95	5089074
Chloroethane	ND	1.0	USEPA 601	03/29/95	5089074
2-Chloroethyl vinyl ether	ND	1.0	USEPA 601	03/29/95	5089074
Chloroform	ND	1.0	USEPA 601	03/29/95	5089074
Chloromethane	ND	1.0	USEPA 601	03/29/95	5089074
1,2-Dichlorobenzene	ND	1.0	USEPA 601	03/29/95	5089074
1,3-Dichlorobenzene	ND	1.0	USEPA 601	03/29/95	5089074
1,4-Dichlorobenzene	ND	1.0	USEPA 601	03/29/95	5089074
Dichlorodifluoromethane	ND	1.0	USEPA 601	03/29/95	5089074
1,1-Dichloroethane	ND	1.0	USEPA 601	03/29/95	5089074
1,2-Dichloroethane	ND	1.0	USEPA 601	03/29/95	5089074
1,1-Dichloroethene	ND	1.0	USEPA 601	03/29/95	5089074
cis-1,2-Dichloroethene	ND	1.0	USEPA 601	03/29/95	5089074
trans-1,2-Dichloroethene	ND	1.0	USEPA 601	03/29/95	5089074
1,2-Dichloropropane	ND	1.0	USEPA 601	03/29/95	5089074
cis-1,3-Dichloropropene	ND	1.0	USEPA 601	03/29/95	5089074
trans-1,3-Dichloropropene	ND	1.0	USEPA 601	03/29/95	5089074
Trichlorofluoromethane	ND	1.0	USEPA 601	03/29/95	5089074
<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>			
Bromochloromethane	103	(78 - 122)			

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT

ABB ENVIRONMENTAL SERVICES

TRIP BLANK

WO #: A3J0F101
LAB #: B5C230057-004
MATRIX: WATER

DATE SAMPLED: 3/21/95
DATE RECEIVED: 3/23/95

----- GC Volatiles -----
2 OF 2

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Methylene chloride	ND	1.0	USEPA 601	03/29/95	5089074
1,1,2,2-Tetrachloroethane	ND	1.0	USEPA 601	03/29/95	5089074
Tetrachloroethene	ND	1.0	USEPA 601	03/29/95	5089074
1,1,1-Trichloroethane	ND	1.0	USEPA 601	03/29/95	5089074
1,1,2-Trichloroethane	ND	1.0	USEPA 601	03/29/95	5089074
Trichloroethene	ND	1.0	USEPA 601	03/29/95	5089074
Vinyl chloride	ND	1.0	USEPA 601	03/29/95	5089074

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
Bromochloromethane	103	(78 - 122)

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT

ABB ENVIRONMENTAL SERVICES

TRIP BLANK

WO #: A3J0F102
LAB #: B5C230057-004
MATRIX: WATER

DATE SAMPLED: 3/21/95
DATE RECEIVED: 3/23/95

----- GC Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Benzene	ND	1.0	USEPA 602	03/29/95	5089076
Chlorobenzene	ND	1.0	USEPA 602	03/29/95	5089076
1,2-Dichlorobenzene	ND	1.0	USEPA 602	03/29/95	5089076
1,3-Dichlorobenzene	ND	1.0	USEPA 602	03/29/95	5089076
1,4-Dichlorobenzene	ND	1.0	USEPA 602	03/29/95	5089076
Ethylbenzene	ND	1.0	USEPA 602	03/29/95	5089076
Toluene	ND	1.0	USEPA 602	03/29/95	5089076
Xylenes, Total	ND	1.0	USEPA 602	03/29/95	5089076
Methyl tert-butyl ether	ND	1.0	USEPA 602	03/29/95	5089076

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
Trifluorotoluene	99	(73 - 131)

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT

QUALITY CONTROL SECTION

- **Quality Control Summary**
- **Laboratory Blanks**
- **Laboratory Control Sample**
- **Matrix Spike/Matrix Spike Duplicate Results**
- **Sample Custody Documentation**

INTRA-LAB BLANK REPORT

LAB #: B5C290000-142

----- GC/MS Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Acrolein	ND	10	3/28/95	5088142
Bromodichloromethane	ND	1.0	3/28/95	5088142
Bromoform	ND	1.0	3/28/95	5088142
Bromomethane	ND	1.0	3/28/95	5088142
Dibromochloromethane	ND	1.0	3/28/95	5088142
Chloroethane	ND	1.0	3/28/95	5088142
2-Chloroethyl vinyl ether	ND	1.0	3/28/95	5088142
Chloromethane	ND	1.0	3/28/95	5088142
1,2-Dichlorobenzene	ND	1.0	3/28/95	5088142
1,3-Dichlorobenzene	ND	1.0	3/28/95	5088142
1,4-Dichlorobenzene	ND	1.0	3/28/95	5088142
1,1-Dichloroethane	ND	1.0	3/28/95	5088142
cis-1,2-Dichloroethene	ND	1.0	3/28/95	5088142
trans-1,2-Dichloroethene	ND	1.0	3/28/95	5088142
1,2-Dichloropropane	ND	1.0	3/28/95	5088142
cis-1,3-Dichloropropene	ND	1.0	3/28/95	5088142
trans-1,3-Dichloropropene	ND	1.0	3/28/95	5088142
Ethylbenzene	ND	1.0	3/28/95	5088142
Trichlorofluoromethane	ND	1.0	3/28/95	5088142
Xylenes, Total	ND	1.0	3/28/95	5088142
Acrylonitrile	ND	10	3/28/95	5088142
Benzene	ND	1.0	3/28/95	5088142
Carbon tetrachloride	ND	1.0	3/28/95	5088142
Chlorobenzene	ND	1.0	3/28/95	5088142
Chloroform	ND	1.0	3/28/95	5088142
<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>		
1,2-Dichloroethane-d4	101	(78 - 130)		
Toluene-d8	102	(90 - 109)		
Bromofluorobenzene	100	(81 - 117)		

NOTE:

ND (NONE DETECTED)

INTRA-LAB BLANK REPORT

LAB #: B5C290000-142

- - - - - GC/MS Volatiles - - - - -

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
1,2-Dichloroethane	ND	1.0	3/28/95	5088142
1,1-Dichloroethene	ND	1.0	3/28/95	5088142
Methylene chloride	ND	1.0	3/28/95	5088142
1,1,2,2-Tetrachloroethane	ND	1.0	3/28/95	5088142
Tetrachloroethene	ND	1.0	3/28/95	5088142
Toluene	ND	1.0	3/28/95	5088142
1,1,1-Trichloroethane	ND	1.0	3/28/95	5088142
1,1,2-Trichloroethane	ND	1.0	3/28/95	5088142
Trichloroethene	ND	1.0	3/28/95	5088142
Vinyl chloride	ND	1.0	3/28/95	5088142

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
1,2-Dichloroethane-d4	101	(78 - 130)
Toluene-d8	102	(90 - 109)
Bromofluorobenzene	100	(81 - 117)

NOTE:

ND (NONE DETECTED)

INTRA-LAB BLANK REPORT

LAB #: B5C300000-074

----- GC Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Bromodichloromethane	ND	1.0	3/29/95	5089074
Bromoform	ND	1.0	3/29/95	5089074
Bromomethane	ND	1.0	3/29/95	5089074
Carbon tetrachloride	ND	1.0	3/29/95	5089074
Chlorobenzene	ND	1.0	3/29/95	5089074
Dibromochloromethane	ND	1.0	3/29/95	5089074
Chloroethane	ND	1.0	3/29/95	5089074
2-Chloroethyl vinyl ether	ND	1.0	3/29/95	5089074
Chloroform	ND	1.0	3/29/95	5089074
Chloromethane	ND	1.0	3/29/95	5089074
1,2-Dichlorobenzene	ND	1.0	3/29/95	5089074
1,3-Dichlorobenzene	ND	1.0	3/29/95	5089074
1,4-Dichlorobenzene	ND	1.0	3/29/95	5089074
Dichlorodifluoromethane	ND	1.0	3/29/95	5089074
1,1-Dichloroethane	ND	1.0	3/29/95	5089074
1,2-Dichloroethane	ND	1.0	3/29/95	5089074
1,1-Dichloroethene	ND	1.0	3/29/95	5089074
cis-1,2-Dichloroethene	ND	1.0	3/29/95	5089074
trans-1,2-Dichloroethene	ND	1.0	3/29/95	5089074
1,2-Dichloropropane	ND	1.0	3/29/95	5089074
cis-1,3-Dichloropropene	ND	1.0	3/29/95	5089074
trans-1,3-Dichloropropene	ND	1.0	3/29/95	5089074
Trichlorofluoromethane	ND	1.0	3/29/95	5089074
Methylene chloride	ND	1.0	3/29/95	5089074
1,1,2,2-Tetrachloroethane	ND	1.0	3/29/95	5089074
<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>		
Bromochloromethane	99	(78 - 122)		

NOTE:

ND (NONE DETECTED)

INTRA-LAB BLANK REPORT

LAB #: B5C300000-074

----- GC Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Tetrachloroethene	ND	1.0	3/29/95	5089074
1,1,1-Trichloroethane	ND	1.0	3/29/95	5089074
1,1,2-Trichloroethane	ND	1.0	3/29/95	5089074
Trichloroethene	ND	1.0	3/29/95	5089074
Vinyl chloride	ND	1.0	3/29/95	5089074

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
Bromochloromethane	99	(78 - 122)

NOTE:

ND (NONE DETECTED)

INTRA-LAB BLANK REPORT

LAB #: B5C300000-076

----- GC Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Benzene	ND	1.0	3/29/95	5089076
Chlorobenzene	ND	1.0	3/29/95	5089076
1,2-Dichlorobenzene	ND	1.0	3/29/95	5089076
1,3-Dichlorobenzene	ND	1.0	3/29/95	5089076
1,4-Dichlorobenzene	ND	1.0	3/29/95	5089076
Ethylbenzene	ND	1.0	3/29/95	5089076
Toluene	ND	1.0	3/29/95	5089076
Xylenes, Total	ND	1.0	3/29/95	5089076
Methyl tert-butyl ether	ND	1.0	3/29/95	5089076

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
Trifluorotoluene	101	(73 - 131)

NOTE:

ND (NONE DETECTED)

INTRA-LAB BLANK REPORT

LAB #: B5C270000-094

----- GC Semi-Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Acenaphthene	ND	2.0	3/27- 3/29/95	5086094
Acenaphthylene	ND	2.0	3/27- 3/29/95	5086094
Anthracene	ND	2.0	3/27- 3/29/95	5086094
Benzo (a) anthracene	ND	0.10	3/27- 3/29/95	5086094
Benzo (b) fluoranthene	ND	0.10	3/27- 3/29/95	5086094
Benzo (k) fluoranthene	ND	0.15	3/27- 3/29/95	5086094
Benzo (g, h, i) perylene	ND	0.10	3/27- 3/29/95	5086094
Benzo (a) pyrene	ND	0.10	3/27- 3/29/95	5086094
Chrysene	ND	0.10	3/27- 3/29/95	5086094
Fluoranthene	ND	0.20	3/27- 3/29/95	5086094
Fluorene	ND	2.0	3/27- 3/29/95	5086094
Indeno (1, 2, 3-cd) pyrene	ND	0.10	3/27- 3/29/95	5086094
2-Methylnaphthalene	ND	2.0	3/27- 3/29/95	5086094
Naphthalene	ND	2.0	3/27- 3/29/95	5086094
Phenanthrene	ND	2.0	3/27- 3/29/95	5086094
Pyrene	ND	0.20	3/27- 3/29/95	5086094
Dibenzo (a, h) anthracene	ND	0.10	3/27- 3/29/95	5086094
1-Methylnaphthalene	ND	2.0	3/27- 3/29/95	5086094

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
Carbazole	77	(30 - 130)

NOTE:

ND (NONE DETECTED)

INTRA-LAB BLANK REPORT

LAB #: B5C270000-096

----- GC/MS Semi-Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Acenaphthene	ND	10	3/27- 4/03/95	5086096
Acenaphthylene	ND	10	3/27- 4/03/95	5086096
Anthracene	ND	10	3/27- 4/03/95	5086096
Benzidine	ND	50	3/27- 4/03/95	5086096
Benzo(a) anthracene	ND	10	3/27- 4/03/95	5086096
Benzo(b) fluoranthene	ND	10	3/27- 4/03/95	5086096
Benzo(k) fluoranthene	ND	10	3/27- 4/03/95	5086096
Benzo(g,h,i) perylene	ND	10	3/27- 4/03/95	5086096
Benzo(a) pyrene	ND	10	3/27- 4/03/95	5086096
bis(2-Chloroethoxy)methane	ND	10	3/27- 4/03/95	5086096
bis(2-Chloroethyl) ether	ND	10	3/27- 4/03/95	5086096
bis(2-Chloroisopropyl) ether	ND	10	3/27- 4/03/95	5086096
bis(2-Ethylhexyl)phthalate	ND	10	3/27- 4/03/95	5086096
4-Bromophenyl phenyl ether	ND	10	3/27- 4/03/95	5086096
Butyl benzyl phthalate	ND	10	3/27- 4/03/95	5086096
4-Chloro-3-methylphenol	ND	10	3/27- 4/03/95	5086096
2-Chloronaphthalene	ND	10	3/27- 4/03/95	5086096
2-Chlorophenol	ND	10	3/27- 4/03/95	5086096
4-Chlorophenyl phenyl ether	ND	10	3/27- 4/03/95	5086096
Chrysene	ND	10	3/27- 4/03/95	5086096
Dibenz(a,h) anthracene	ND	10	3/27- 4/03/95	5086096
Di-n-butyl phthalate	ND	10	3/27- 4/03/95	5086096
1,2-Dichlorobenzene	ND	10	3/27- 4/03/95	5086096
1,3-Dichlorobenzene	ND	10	3/27- 4/03/95	5086096
1,4-Dichlorobenzene	ND	10	3/27- 4/03/95	5086096
<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>		
Nitrobenzene-d5	61	(26 - 131)		
2-Fluorobiphenyl	56	(27 - 119)		
Terphenyl-d14	71	(10 - 165)		
2-Fluorophenol	80	(10 - 116)		
Phenol-d5	80	(10 - 175)		
2,4,6-Tribromophenol	76	(10 - 155)		

NOTE:

ND (NONE DETECTED)

INTRA-LAB BLANK REPORT

LAB #: B5C270000-096

----- GC/MS Semi-Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
3,3'-Dichlorobenzidine	ND	50	3/27- 4/03/95	5086096
2,4-Dichlorophenol	ND	10	3/27- 4/03/95	5086096
Diethyl phthalate	ND	10	3/27- 4/03/95	5086096
Dimethyl phthalate	ND	10	3/27- 4/03/95	5086096
Di-n-octyl phthalate	ND	10	3/27- 4/03/95	5086096
4,6-Dinitro- 2-methylphenol	ND	50	3/27- 4/03/95	5086096
2,4-Dinitrophenol	ND	50	3/27- 4/03/95	5086096
2,4-Dinitrotoluene	ND	10	3/27- 4/03/95	5086096
2,6-Dinitrotoluene	ND	10	3/27- 4/03/95	5086096
1,2-Diphenylhydrazine	ND	10	3/27- 4/03/95	5086096
Fluoranthene	ND	10	3/27- 4/03/95	5086096
Fluorene	ND	10	3/27- 4/03/95	5086096
Hexachlorobenzene	ND	10	3/27- 4/03/95	5086096
Hexachlorobutadiene	ND	10	3/27- 4/03/95	5086096
Hexachlorocyclopentadiene	ND	10	3/27- 4/03/95	5086096
Hexachloroethane	ND	10	3/27- 4/03/95	5086096
Indeno (1,2,3-cd) pyrene	ND	10	3/27- 4/03/95	5086096
Isophorone	ND	10	3/27- 4/03/95	5086096
Naphthalene	ND	10	3/27- 4/03/95	5086096
Nitrobenzene	ND	10	3/27- 4/03/95	5086096
2-Nitrophenol	ND	10	3/27- 4/03/95	5086096
4-Nitrophenol	ND	50	3/27- 4/03/95	5086096
N-Nitrosodimethylamine	ND	10	3/27- 4/03/95	5086096
N-Nitrosodi-n-propylamine	ND	10	3/27- 4/03/95	5086096
<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>		
Nitrobenzene-d5	61	(26 - 131)		
2-Fluorobiphenyl	56	(27 - 119)		
Terphenyl-d14	71	(10 - 165)		
2-Fluorophenol	80	(10 - 116)		
Phenol-d5	80	(10 - 175)		
2,4,6-Tribromophenol	76	(10 - 155)		

NOTE:

ND (NONE DETECTED)

INTRA-LAB BLANK REPORT

LAB #: B5C270000-096

----- GC/MS Semi-Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
N-Nitrosodiphenylamine	ND	10	3/27- 4/03/95	5086096
Pentachlorophenol	ND	50	3/27- 4/03/95	5086096
Phenanthrene	ND	10	3/27- 4/03/95	5086096
Phenol	ND	10	3/27- 4/03/95	5086096
Pyrene	ND	10	3/27- 4/03/95	5086096
1,2,4-Trichlorobenzene	ND	10	3/27- 4/03/95	5086096
2,4,6-Trichlorophenol	ND	10	3/27- 4/03/95	5086096
2,4-Dimethylphenol	ND	10	3/27- 4/03/95	5086096

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
Nitrobenzene-d5	61	(26 - 131)
2-Fluorobiphenyl	56	(27 - 119)
Terphenyl-d14	71	(10 - 165)
2-Fluorophenol	80	(10 - 116)
Phenol-d5	80	(10 - 175)
2,4,6-Tribromophenol	76	(10 - 155)

NOTE:

ND (NONE DETECTED)

INTRA-LAB BLANK REPORT

LAB #: B5C230057

----- METALS -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>
		BATCH: 5083043			
Arsenic	ND	5.0	ug/L	MCAWW 200.7	3/24/95
Cadmium	ND	5.0	ug/L	MCAWW 200.7	3/24/95
Chromium	ND	50.0	ug/L	MCAWW 200.7	3/24/95
Lead	ND	5.0	ug/L	MCAWW 200.7	3/24/95

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

INTRA-LAB BLANK REPORT

LAB #: B5C300000-079

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Petroleum Hydrocarbons	ND	1.0	mg/L	3/30- 3/31/95	5089079

NOTE:

ND (NONE DETECTED)

LCS - DCS REPORT

QC BATCH: 5088142
LAB #: B5C290000-142 C

WO #:
PREPARATION DATE: 3/28/95
DATE ANALYZED: 3/28/95

----- GC/MS Volatiles -----

COMPOUND	LCS	DCS	Q/C	RPD	RPD
	PERCENT RECOVERY	PERCENT RECOVERY			
1,1-Dichloroethene	102	102	(66-120)	0.020	41
Benzene	111	110	(76-119)	1.3	19
Trichloroethene	110	111	(75-119)	0.89	18
Toluene	112	113	(76-119)	0.48	18
Chlorobenzene	114	115	(80-121)	1.5	19

LCS - DCS REPORT

QC BATCH: 5089074
LAB #: B5C300000-074 C

WO #:
PREPARATION DATE: 3/30/95
DATE ANALYZED: 3/30/95

----- GC Volatiles -----

COMPOUND	LCS PERCENT RECOVERY	DCS PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMITS
1,1-Dichloroethene	102	100	(62-128)	1.7	42
Trichloroethene	103	103	(70-133)	0.77	30
Chlorobenzene	96	96	(75-123)	0.050	23

LCS - DCS REPORT

QC BATCH: 5089076
LAB #: B5C300000-076 C

WO #:
PREPARATION DATE: 3/30/95
DATE ANALYZED: 3/30/95

----- GC Volatiles -----

COMPOUND	LCS PERCENT RECOVERY	DCS PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMITS
Benzene	102	103	(81-122)	1.4	21
Toluene	101	105	(81-123)	3.6	19
Chlorobenzene	98	102	(75-121)	3.6	23

CHECK SAMPLE REPORT

QC BATCH: 5086094
LAB #: B5C270000-094 CPREPARATION DATE: 3/27/95
DATE ANALYZED: 3/29/95

----- GC Semi-Volatiles -----

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
Naphthalene	53	(10-122)
1-Methylnaphthalene	50	(30-130)
Acenaphthene	54	(10-124)
Fluorene	50	(10-142)
Pyrene	86	(10-140)
Chrysene	100	(10-199)

CHECK SAMPLE REPORT

QC BATCH: 5086096
LAB #: B5C270000-096 CPREPARATION DATE: 3/27/95
DATE ANALYZED: 4/03/95

----- GC/MS Semi-Volatiles -----

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
Phenol	68	(10-113)
2-Chlorophenol	72	(17-108)
1,4-Dichlorobenzene	63	(24-133)
N-Nitrosodi-n-propylamine	76	(12-139)
1,2,4-Trichlorobenzene	69	(27-119)
4-Chloro-3-methylphenol	79	(17-120)
Acenaphthene	80	(24-127)
4-Nitrophenol	75	(10-138)
2,4-Dinitrotoluene	85	(15-138)
Pentachlorophenol	87	(10-145)
Pyrene	86	(20-137)

CHECK SAMPLE REPORT

LAB #: B5C230057

----- METALS -----

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS	PREPARATION - ANALYSIS DATE
	BATCH:5083043		
Arsenic	102	(80-120)	3/24/95
Cadmium	100	(83-117)	3/24/95
Chromium	100	(89-117)	3/24/95
Lead	106	(80-120)	3/24/95

CHECK SAMPLE REPORT

LAB #: B5C230057

----- INORGANIC ANALYTICAL REPORT -----

<u>COMPOUND</u>	<u>SPIKE PERCENT RECOVERY</u>	<u>LIMITS</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>Q/C BATCH</u>
Petroleum Hydrocarbons Total Recoverable	78	(73-122)	3/30- 3/31/95	5089079

MATRIX SPIKE REPORT

QC BATCH: 5086094
LAB #: B5C230057-003 S
MATRIX: WATER

WO #: A3J0E
PREPARATION DATE: 3/27/95
DATE ANALYZED: 3/29/95

----- GC Semi-Volatiles -----

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
Naphthalene	44	37	(10-122)	18	(0-50)
1-Methylnaphthalene	44	33	(30-130)	27	(0-30)
Acenaphthene	46	35	(10-124)	27	(0-50)
Fluorene	42	29	(10-142)	37	(0-50)
Pyrene	80	111	(10-140)	33	(0-50)
Chrysene	93	97	(10-199)	3.9	(0-50)

Quanterra Environmental Services, Tampa
 Sample Shipper Evaluation and Receipt Form

7527.34

Client: ABB.

Project Name/Number: AVGAS PIPELINE-NADEP

Samples Received by: Rb Cord
 Signature

Date Received: 3/23/95

Sample Evaluation Form by: Rb Cord
 Signature

Type of shipping containers samples received in:

Quanterra cooler: X Client cooler: _____

Quanterra shipper _____ Box _____ Other _____

Any "NO" responses or discrepancies should be explained in the "Comments" section.

	Yes	No
1) Were custody seals on shipping container(s) intact?	<u>X</u>	_____
2) Were custody papers properly included with samples?	<u>X</u>	_____
3) Were custody papers properly filled out (ink, signed, match labels)?	<u>✓</u>	_____
4) Did all bottles arrive in good condition (unbroken)?	<u>✓</u>	_____
5) Were all bottle labels complete (sample no., date, signed, analysis preservatives)?	<u>X</u>	_____
6) Were correct bottles used for the tests indicated?	<u>X</u>	_____
7) Were proper sample preservation techniques indicated?	<u>✓</u>	_____
8) Were samples received within adequate holding times?	<u>X</u>	_____
9) Were all VOA bottles checked for the presence of air bubbles? (If air bubbles were found, indicate in comment section)	<u>X</u>	_____
10) Were samples in direct contact with wet ice? NOTE TEMPERATURE BELOW	<u>X</u>	_____
11) Were samples accepted into the laboratory? (If "No", see comments)	<u>X</u>	_____

Cooler # _____ Temp 2° C

Cooler # _____ Temp. _____ C

Comments: RCUD 1xLT TOTAL MTRLS FOR 04606101 1/2 FULL

Interlaboratory Chain of Custody

UNIVERSITY MICRO FILMS
BRECKENRIDGE PKWY., STE. H
TAMPA, FL 33610
PHONE (813) 621-0784 FAX (813) 623-6021



76868

CLIENT CODE _____
QUOTE / SAR NUMBER _____
Chain-of Custody Record

PROJ. NO.		PROJECT NAME/LOCATION				NO. OF CONTAINERS	PARAMETER							REMARKS
7527.34		AVGAS PIPELINE AREA, NADEP					600/602	624	625	610	TRPH	LEAD	Tot. Metals	
STA. NO.	DATE	TIME	COMP	GRAB.	STATION LOCATION									
	3-21	0730		✓	04600101	1								
	3-22	0930		✓	10600101	7	3	2	1		1			
	3-22	0924		✓	PEN-607NE-MWZR	7	3		2	1	1			
				✓	TRIP BLANK	3	3							
				✓	Temp blank	2								

Relinquished by: (Signature) <i>[Signature]</i>	Date / Time 3-22-95 1400	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature) <i>[Signature]</i>	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) <i>[Signature]</i>	Date / Time 3/23/95 1100	Remarks STANDARD TURNAROUND	

Distribution Original Accompanies Shipment. Copy returned with Report.