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PRELIMINARY CONTAMINATION ASSESSMENT REPORT FOR BUILDING 200 MAIN BASE

NTC ORLANDO FL

10/1/1996

ABB ENVIRONMENTAL

PRELIMINARY CONTAMINATION ASSESSMENT REPORT

BUILDING 200
MAIN BASE

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Unit Identification Code: N65928

Contract No.: N62467-89-D-0317/107

Prepared by:

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October 1996

CERTIFICATION OF TECHNICAL
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/107 are complete and accurate and comply with all requirements of this contract.

DATE: October 14, 1996

NAME AND TITLE OF CERTIFYING OFFICIAL: John Kaiser
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Manuel Alonso, P.G.
Project Technical Lead

(DFAR 252.227-7036)

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Building 200, Main Base
Naval Training Center
Orlando, Florida

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Building 200, Main Base
Naval Training Center
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GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
bls	below land surface
FAC	Florida Administrative Code
$\mu g/\ell$	micrograms per liter
PAH	polynuclear aromatic hydrocarbons
OVA	organic vapor analyzer
TCAR	Tank Closure Assessment Report
UST	underground storage tank

1.0 INTRODUCTION

Building 200 (former Firefighting Training School) is located within the Recruit Training Center area in the west-central portion of the Naval Training Center, Main Base, in Orange County, Florida. Figure 1 shows the site location and a map of the surrounding area.

In March 1995, a Tank Closure Assessment Report (TCAR) was completed by International Technology Corporation addressing the removal of three underground storage tanks (USTs) and two oil-water separators from the site. A copy of the TCAR in enclosed in Appendix A. According to the TCAR, evidence of petroleum impact to groundwater was discovered at a former 500-gallon gasoline UST location and a former 500-gallon oil-water separator location. A 10,000-gallon UST containing heating fuel was located immediately north of the gasoline UST and was removed at the same time. Assessment activities conducted in the area of the former oil-water separators will be presented in an Oil-Water Separator Assessment Report for Building 200. This report summarizes ABB Environmental Services, Inc.'s (ABB-ES's), findings while conducting a contamination assessment in the area of the former 500-gallon gasoline UST and the former 10,000-gallon heating fuel UST.

2.0 SOIL ASSESSMENT

In order to determine if petroleum-impacted soil exists at the site, 5 hand auger borings were advanced using a 3.25-inch inside diameter stainless steel hand-bucket auger on September 4, 1996. Figure 2 shows the locations of the hand auger borings. The borings were completed into the water table, which was encountered at approximately 4 feet bls.

A total of 10 soil samples were collected from the five hand auger borings. The soil samples were collected at 1 to 3 feet and 3 to 5 feet bls. Headspace organic vapor concentrations were measured for all soil samples by placing the soil sample in a 16-ounce glass jar and using a calibrated organic vapor analyzer (OVA), Foxboro 128 equipped with a flame ionization detector following procedures outlined in Section 62-770, Florida Administrative Code (FAC). Carbon filters are utilized to differentiate total hydrocarbon response from naturally occurring methane gas. Filtered and unfiltered readings are obtained from a single jar. All sampling and analysis is performed in accordance with ABB-ES's Florida Department of Environmental Protection-approved Comprehensive Quality Assurance Plan. A summary of the OVA screening results is presented in Table 1.

3.0 GROUNDWATER ASSESSMENT

One shallow monitoring well (MW-1) was installed at the site on July 11, 1996, at the location where the temporary monitoring well was installed for the TCAR. The location of the monitoring well is shown on Figure 2, Site Plan. The well was installed using 6.25-inch hollow stem augers to a depth of approximately 12 feet below land surface (bls). The well was constructed with 10 feet of 2-inch-diameter 0.010-inch slotted well screen coupled to 2 feet of 2-inch schedule 40 solid polyvinyl chloride casing. This assembly is placed in the borehole so that the screen interval is located at a depth that encompasses seasonal water table fluctuations. The annular space between the screen and the borehole is filled

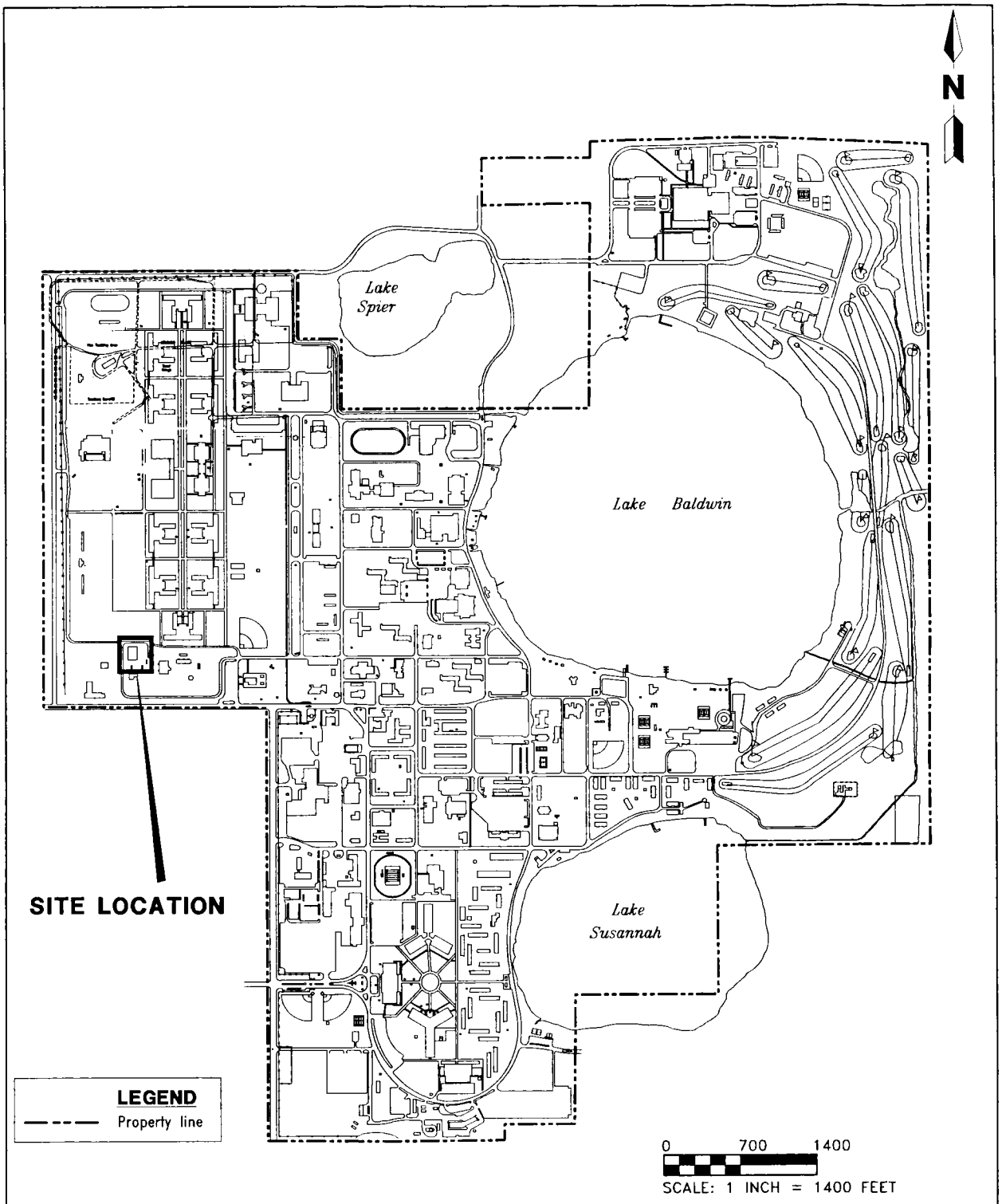

FIGURE 1
SITE VICINITY MAP

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PRELIMINARY CONTAMINATION ASSESSMENT REPORT
BUILDING 200

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

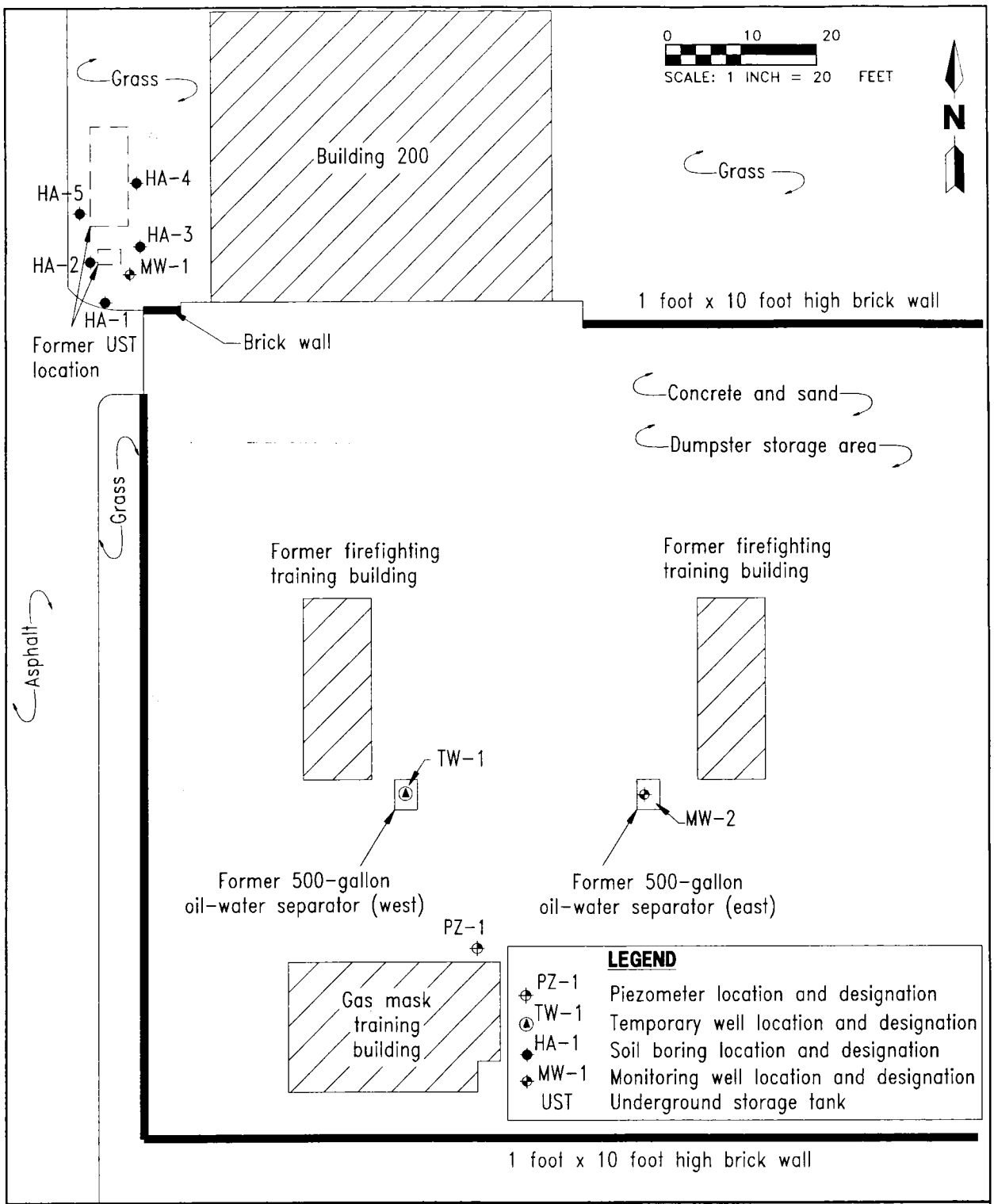

FIGURE 2
SITE PLAN

PRELIMINARY CONTAMINATION ASSESSMENT REPORT
BUILDING 200

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

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with 20/30-grade silica sand to 1 foot above the screened interval. A 0.5-foot fine sand (30/65-grade) seal is placed on top of the filter pack. The remaining annular space is sealed to grade with neat cement grout mixture. The well completion log provided by the drilling subcontractor is presented in Appendix B.

Groundwater samples were collected from monitoring well MW-1 on July 18, 1996. The samples were packed on ice and transported to Quality Analytical Laboratories, Inc., in Montgomery, Alabama, for analysis. Due to the presence of the heating fuel UST next to the gasoline UST, the groundwater samples were analyzed for the kerosene analytical group, which includes the following U.S. Environmental Protection Agency Methods: 504 (ethylene dibromide), 601 (volatile halocarbons), 602 (volatile organic aromatics), 610 (polynuclear aromatic hydrocarbons), 239.2 (lead), and 418.1 (total recoverable petroleum hydrocarbons).

4.0 CONCLUSIONS

No petroleum-impacted soil was encountered during this assessment. Groundwater samples were collected from monitoring well MW-1 on July 18, 1996. Laboratory analytical results indicate that dissolved petroleum contamination above Chapter 62-770, FAC, target cleanup levels was not detected in the monitoring well; however, several polynuclear aromatic hydrocarbons compounds (PAHs), including total naphthalene, 5 micrograms per liter ($\mu g/\ell$); acenaphthene, 14 $\mu g/\ell$; fluorene, 112 $\mu g/\ell$; phenanthrene, 28 $\mu g/\ell$; anthracene, 5 $\mu g/\ell$; and fluoranthene, 3 $\mu g/\ell$, were present at levels above the laboratory standard detection limit. The presence of the PAHs could be attributed to the close proximity of the 10,000-gallon heating fuel UST. The laboratory analytical reports are included in Appendix C.

5.0 RECOMMENDATIONS

Based upon the soil and groundwater assessment results, ABB-ES recommends no further assessment for this site.

Table 1
Summary of Organic Vapor Analyses,
September 4, 1996

Preliminary Contamination Assessment Report
Building 200, Main Base
Naval Training Center
Orlando, Florida

Soil Boring Designation	Sample Depth (feet bls)	Unfiltered (ppm)	Filtered (ppm)	Total Hydrocarbons (ppm)	Physical Observations
HA-1	1 - 3	<1	<1	<1	No staining, no petroleum odor.
	[1]1 - 5	48	12	12	No staining, no petroleum odor.
HA-2	1 - 3	<1	<1	<1	No staining, no petroleum odor.
	1 - 5	16	6	6	No staining, no petroleum odor.
HA-3	1 - 3	<1	<1	<1	No staining, no petroleum odor.
	1 - 5	<1	<1	<1	No staining, no petroleum odor.
HA-4	1 - 3	<1	<1	<1	No staining, no petroleum odor.
	1 - 5	<1	<1	<1	No staining, no petroleum odor.
HA-5	1 - 3	<1	<1	<1	No staining, no petroleum odor.
	1 - 5	<1	<1	<1	No staining, no petroleum odor.

[1] Water table encountered at approximately 4 feet below land surface.

Notes: bls = below land surface.
ppm = parts per million.
<1 = nondetectable limit for organic vapor analyzer.

APPENDIX A

TANK CLOSURE ASSESSMENT REPORT, MARCH 1995

Rec'd By ROICC 4-19-95

Tank Closure Report

RTC Fire Fighting School
Naval Training Center
Orlando, Florida

Prepared for

Management & Business Associates

4275 Aurora Street
Suite F
Coral Gables, Florida 33146

Prepared by

IT Corporation

6958 Aloma Avenue
Winter Park, Florida 32792

March 1995

INTERNATIONAL
TECHNOLOGY
CORPORATION

TANK CLOSURE REPORT
RTC FIRE FIGHTING SCHOOL
NAVAL TRAINING CENTER
ORLANDO, FLORIDA

FDEP FACILITIES
#488841262, #488521506

IT CORPORATION PROJECT NO. 761491

ORL/2-95/761491/TankCloRpt.TXT

This report was prepared on behalf of Management & Business Associates for the US Navy by IT Corporation, Winter Park, Florida.

Prepared By:

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Date: 3/15/95

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Date: 3/15/95

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Appendix C - Laboratory Analyses Results and Chain-of-Custody

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1.0 INTRODUCTION & BACKGROUND

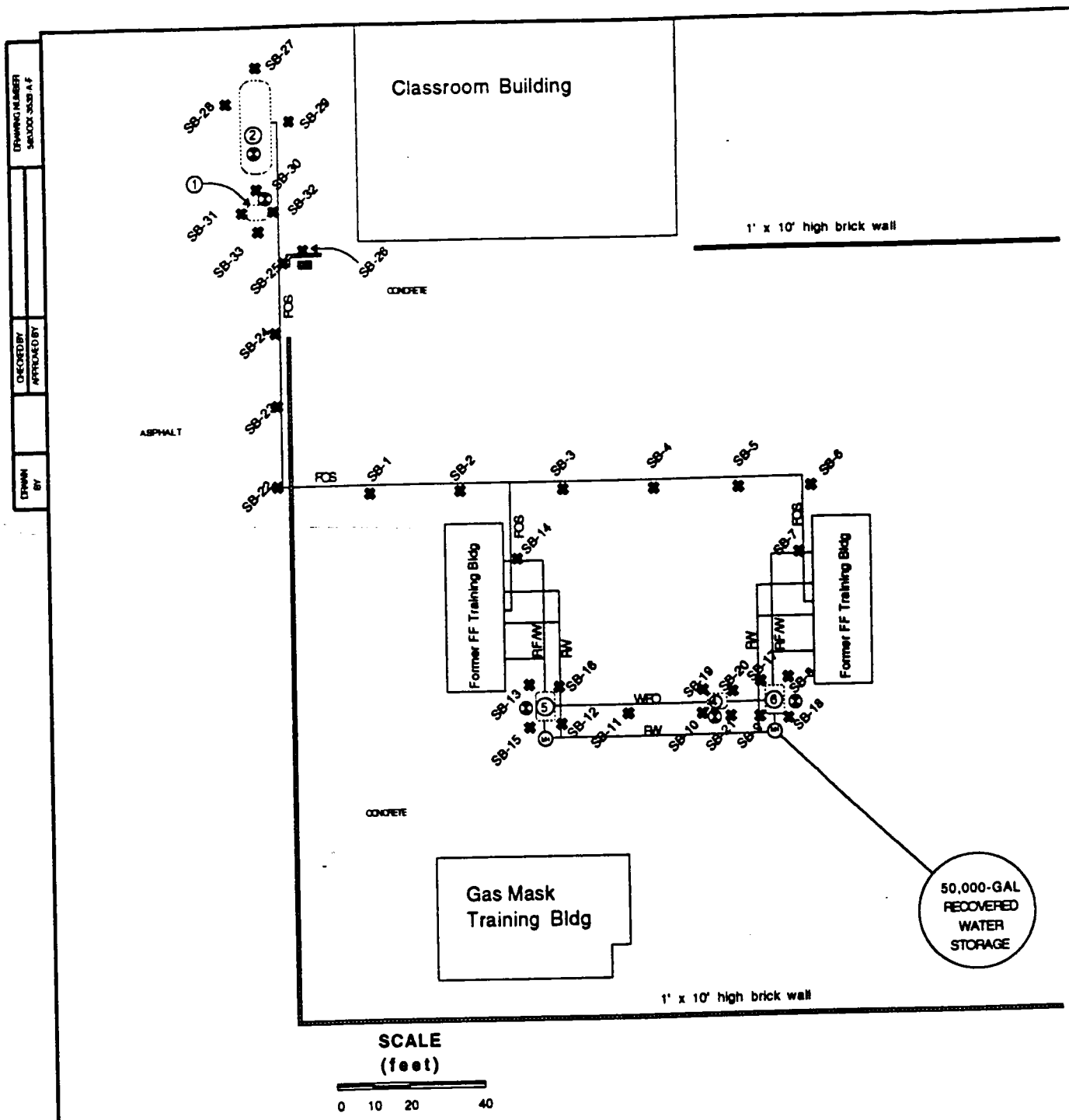
The following report is to document the removal and closure of five underground storage tanks formerly located at the Recruit Training Command Fire Fighting School at the Naval Training Center in Orlando, Florida. The tanks at the facility have been listed under two identification numbers, 488841262 and 488521506, by the Florida Department of Environmental Protection (FDEP). The removal and closure were performed in accordance with FDEP Pollutant Storage Tank Closure Assessment Requirements to comply with Chapters 17-761 and 17-762 of the Florida Administrative Code (FAC). The FDEP Closure Assessment Form has been completed and copies are included in Appendix A

1.1 Facility Layout and Description

The Fire Fighting School incorporated one 10,000-gallon underground storage tank (UST) for fuel oil, two 500-gallon oil/water separators, one 280-gallon UST for collection of waste fuel oil from the oil/water separators, and one 500-gallon UST for storage of vehicular fuel gasoline.

Fuel oil was pumped to either one of two fire fighting training buildings where it was ignited in burners to simulate an uncontrolled fire. Students used standard firefighting equipment to extinguish the fire. Waste fluids from the process (fuel oil mixed with the firefighting water) were discharged to the oil/water separator corresponding to the training building being used. Both oil/water separators then drained the fuel oil layer to the 280-gallon UST, which was located between the separators. The layout of the facility can be seen in the Assessment Activities Map, which has been included with this report as Figure 1-1.

All transfer lines were placed approximately 2 feet below land surface, with the exception of the lines that drained the oil/water separators to the 280-gallon waste fuel oil tank. These lines were sloped towards the waste fuel oil tank at a depth of approximately 3-4 feet.



LEGEND

⬚	UNDERGROUND STORAGE TANK
✖	SOIL BORING
⊕	TEMPORARY MONITOR WELL
FOS	FUEL OIL SUPPLY
RW	RECOVERY WATER
WFO	WASTE FUEL OIL
MH	MANHOLE
RF/W	RECOVERY FUEL/WATER MIXTURE
FF	FIRE FIGHTING

TANKS

1	500-GAL GASOLINE
2	10,000-GAL FUEL OIL
4	280-GAL WASTE FUEL OIL
5	500-GAL O/W SEPARATOR (WEST)
6	500-GAL O/W SEPARATOR (EAST)

Figure 1-1
Assessment Activities Map

FIRE FIGHTING SCHOOL
NAVAL TRAINING CENTER
ORLANDO, FLORIDA

INTERNATIONAL TECHNOLOGY CORPORATION

2.0 TANK REMOVAL & ASSESSMENT ACTIVITIES

2.1 Tank and Line Removal

The oil/water separators and waste oil tank were removed on January 23, 1995, and the 10,000-gallon tank was removed on January 24, 1995. Each had been pumped out prior to removal. The 500-gallon gasoline tank was removed on January 27, 1995.

Fuel oil feed lines were removed during the week of January 9-13, 1995. Discharge lines from the oil/water separators were removed on January 25, 1995.

2.2 Soil Assessment Activities

To assess the soil quality around the lines, underground storage tanks (UST), and O/W separators, a series of soil borings were conducted on January 23, 24 and 27, 1995. A total of thirty-three soil borings were completed at various locations on-site. Borings 1 through 25 correspond to the lines, the O/W separators and the waste fuel oil UST. Borings 26 through 33 correspond to the 10,000-gallon fuel oil UST, the gasoline UST, and the site of the pump island for the gasoline tank. It should be noted that since the 10,000-gallon tank and the 500-gallon gasoline tank were in such close proximity (approximately 8 feet apart), one boring served both the south side of the 10,000-gallon tank and the north side of the 500-gallon tank. Additionally, one sample was collected off the bottom of each O/W separator upon removal to satisfy the requirement that a boring be placed underneath the tank. The fuel oil, waste fuel oil, and gasoline UST had been placed at a depth such that the bottom of the tank came into contact with the groundwater, therefore analysis of soil beneath these tanks was not appropriate.

Soil samples were obtained to determine, through organic vapor analysis, the extent of hydrocarbons adsorbed to vadose zone soils. The extent of the affected area was determined by collecting samples at the various locations and vertically at regular intervals from the surface to the groundwater or to a depth where no contaminated soil was encountered, as per FDEP tank closure regulations. The borings were installed by hand augering, with a stainless steel augering device with collection bucket, into the subsurface. The samples were analyzed for organic vapors with a portable Photoionization Detector (PID) according to the headspace method and procedures outlined in Chapter 17-770, FAC. Soil boring locations are shown on Figure 1-1. Headspace method analyses were performed by half-filling 16-ounce mason jars with the sample soil and

covering the jars with aluminum foil and lids. The samples were left to stand for approximately five minutes, out of direct sunlight, to allow vapors to volatilize into the headspace of each jar. Headspace vapors were analyzed using a Photovac MicroTIP, Model HL-200, PID. Readings were obtained upon inserting the PID probe through a hole punctured in the foil. The sample was analyzed and the peak reading was recorded. Table 2-1 shows results obtained. The PID instrument was calibrated in the field, prior to the sampling event, using a 100 parts per million (ppm) concentration isobutylene gas. Correlation plots relating the equivalent responses between the Photovac MicroTIP (PID) and the FID-OVA are included in Appendix B.

2.3 Temporary Well Installation

No compliance wells existed on site at the time of the tank removal. To evaluate groundwater in the vicinity for the possible presence of dissolved hydrocarbons, five temporary shallow monitoring wells were installed. Each well corresponded with an individual UST or O/W separator by being installed in the pit of the appropriate excavation. Well #2 (10,000-gallon UST), well #4 (280-gallon waste fuel oil), and wells #5 and #6 (westernmost and easternmost oil/water separators, respectively) were installed January 24, 1995. Well #1 (500-gallon gasoline UST) was installed January 27, 1995.

The wells were installed following tank removal with the assistance of the backhoe operator onsite for tank removal. Each pit asociated with the respective tank was further excavated until approximately 1-2 feet beneath the groundwater table, then the well was placed into the excavation and the excavation was backfilled to the surface. These shallow wells were constructed with 10 feet of two-inch diameter Schedule 40 PVC 0.010-inch slot screen to a depth of approximately 9 to 10 feet.

2.4 Groundwater Sampling and Analysis

Groundwater samples were collected from the five temporary monitoring wells following IT Corporation's Standard Operating Procedures (SOP) and Comprehensive Quality Assurance Plan (CQAP #870467G). Representative samples collected on January 27, 1995 were analyzed for volatile aromatic hydrocarbons by EPA Method 602 and polynuclear aromatic hydrocarbons by EPA Method 610.

To ensure the acquisition of samples representative of the local groundwater, each monitoring well was purged of three to five well volumes of standing water prior to sampling. The samples were collected with dedicated, disposable Teflon bailers and transferred to the appropriate laboratory-

supplied vials. The samples were packed in ice and picked up by personnel from VOC Analytical Laboratories, Inc., a Florida-certified laboratory, following a chain-of-custody protocol. The laboratory data, including the chain-of-custody forms, are included in Appendix C.

3.0 ASSESSMENT RESULTS

3.1 Soil Vapor Survey Results

Field screening of on-site soils was accomplished using the headspace method with PID analysis to quantify organic vapors. Results ranged from ND to 55 ppm (PID) during installation of the soil borings associated with the UST, O/W separators, and lines. The results are summarized in Table 3-1.

The PHOTOVAC MicroTip HL-200 PID was used to analyze soil headspace for this project. The limit defining 'excessively contaminated' soils stated in the FDEP document "Guidelines for Assessment and Remediation of Petroleum Contaminated Soils" (FDEP, 1989) is a 500 ppm (FID-OVA) headspace reading in the vicinity of the gasoline storage tank, and 50 (FID-OVA) ppm headspace reading in the vicinity of the other tanks, which were all used only for the fuel oil (kerosene) product. Correlation graphs relating MicroTIP PID responses to FID-OVA responses, included in Appendix B, show that the equivalent reading for the 500 ppm action limit in the gasoline area is approximately a 200 ppm reading on the MicroTIP PID, and the equivalent reading of the 50 ppm in the fuel oil area is approximately 110 ppm on a PID. The Vadose Plume Map included as Figure 3-1 shows that no soils can be classified as 'excessively contaminated' (>500 ppm-FID), pursuant to the above referenced FDEP document, as indicated by the headspace analysis performed around the tanks and lines.

3.2 Groundwater Sampling Results

The results from the sampling of the temporary monitor wells on January 27, 1995 indicated detection of BTEX constituents in the groundwater in the vicinity of the 500-gallon gasoline tank and the easternmost oil/water separator. Also, several of the constituents of the polynuclear aromatic hydrocarbons series were detected in relatively low concentrations in groundwater in the vicinity of the 10,000-gallon fuel oil UST and both oil/water separators. However, the laboratory analysis indicated that the concentrations of dissolved contaminants were above State target levels only in the groundwater around the gasoline tank and the easternmost oil/water separator. Specifically, concentrations of benzene (indicated to be 180 parts per billion [ppb]) and total BTEX (indicated to be 964 ppb) exceeded these target levels (1 ppb benzene, 50 ppb BTEX) in groundwater around the gasoline tank, and concentrations of total naphthalenes (indicated to be 176.5 ppb) exceeded the target level (100 ppb) in the groundwater next to the east oil/water separator.

Table 3-1
Total Volatile Organic Compound Results
(Soil Vapor Analysis)
RTC Fire Fighting School
Naval Training Center
Orlando, Florida
FDEP Facility #488841262, #488521506
(PID response with FID equivalent in parenthesis, both ppm)

		DEPTH			
Boring #	Location*	2-3'	4-5'	6-7'	Date Obtained
SB-1	FOS	-	6 (1.5)	-	1/23/95
SB-2	FOS	-	20 (5)	-	1/23/95
SB-3	FOS		6 (1.5)	-	1/23/95
SB-4	FOS	-	11 (2.8)	-	1/23/95
SB-5	FOS	-	23 (5.8)	-	1/23/95
SB-6	FOS	-	3 (0.8)	-	1/23/95
SB-7	FOS	-	4 (1)	-	1/23/95
SB-8	FOS/OWe	55 (15)	12 (3)	-	1/23/95
SB-9	FOS/OWe	2 (0.5)	2 (0.5)	-	1/23/95
SB-10	WFO	2 (0.5)	2 (0.5)	-	1/23/95
SB-11	WFO/RW	-	9 (2.3)	-	1/23/95
SB-12	FOS/OWw	1 (0.3)	25 (6.3)	-	1/23/95
SB-13	FOS/OWw	34 (8.5)	40 (10)	-	1/23/95
SB-14	FOS	-	7 (1.8)	-	1/23/95
SB-15	FOS/OWw	1 (0.3)	9 (2.3)	-	1/23/95
SB-16	FOS/OWw	23 (5.8)	50 (12.5)	-	1/23/95
SB-17	FOS/OWe	8 (2)	50 (12.5)	-	1/23/95
SB-18	FOS/OWe	1 (0.3)	1 (0.3)	-	1/23/95
SB-19	WFO	4 (1)	3 (0.8)	-	1/23/95
SB-20	WFO	2 (0.5)	3 (0.8)	-	1/23/95
SB-21	WFO	3 (0.8)	26 (6.5)	-	1/23/95
SB-22	FOS	-	ND (ND)	-	1/24/95
SB-23	FOS	-	ND (ND)	-	1/24/95
SB-24	FOS	-	ND (ND)	-	1/24/95
SB-25	FOS	-	ND (ND)	-	1/27/95
SB-26	Disp	ND (ND)	ND (ND)	-	1/27/95

*Boring done in vicinity of system feature according to following abbreviations:

FOS	Fuel Oil Supply Lines
OWe	Oil /Water Separator, easternmost
OWw	Oil /Water Separator,westernmost
Disp	Location of former gasoline dispenser
WFO	Waste Fuel Oil 280-gal tank
WFO/RW	Waste Fuel Oil line and recovered water line from O/W separators

Table 3-1
Total Volatile Organic Compound Results
(Soil Vapor Analysis)
RTC Fire Fighting School
Naval Training Center
Orlando, Florida
FDEP Facility #488841262, #488521506

		DEPTH			
Boring #	Location*	2-3'	4-5'	6-7'	Date Obtained
SS-T#51 bottom	OWw	-	-	17 (4.3)	1/23/95
SS-T#6 bottom	OWe	-	-	32 (8)	1/23/95
SB-27	FOUST	-	1.0 (0.3)	1.0 (0.3)	1/24/95
SB-28	FOUST	-	1.0 (0.3)	1.0 (0.3)	1/24/95
SB-29	FOUST	-	1.0 (0.3)	1.0 (0.3)	1/24/95
SB-30	FOUST/GUST	-	ND (ND)	13 (3.3)	1/24/95
SB-31	GUST-	-	0.5 (1.0)	ND (ND)	1/27/95
SB-32	GUST	-	1.0 (2.0)	ND (ND)	1/27/95
SB-33	GUST	-	ND (ND)	0.1 (0.2)	1/27/95

1 SS-T #5 and SB-T#6 are soil samples off bottom of oil/water separators

*Boring done in vicinity of system feature according to following abbreviations:

OWe	Oil /Water Separator, easternmost
OWw	Oil /Water Separator,westernmost
FOUST	10,000-gal fuel oil UST
GUST	500-gal gasoline UST

The results of the groundwater sample analyses performed during the assessment are summarized in Table 3-2. Copies of the laboratory data, including the chain-of-custody forms, are included in Appendix C.

Table 3-2
Total Volatile Organic Compound Results
(Groundwater Analysis)
RTC Fire Fighting School
Naval Training Center
Orlando, Florida
FDEP Facility #488841262, #488521506
1/27/1995

(All concentrations are in µg/L)

Well@	Benzene	Toluene	Ethyl benzene	Total Xylenes	Total BTEX	Total Naphthalenes	Acenaphthylene
Tank#1	180	390	85	309	964	3.45	BDL
Tank#2	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Tank#4	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Tank#5	BDL	BDL	BDL	BDL	BDL	3.08	BDL
Tank#6	BDL	BDL	2	15.6	17.6	176.5	6.39
QA-1	BDL	BDL	BDL	BDL	BDL	6.59	BDL

Well@	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	
Tank#1	3.38	BDL	BDL	6.78	BDL	BDL	
Tank#2	4.38	5.26	4.23	12.2	5.65	3.64	
Tank#4	BDL	BDL	BDL	BDL	BDL	BDL	
Tank#5	BDL	BDL	BDL	BDL	BDL	BDL	
Tank#6	7.4	13.4	BDL	19.7	BDL	2.94	
QA-1	4.29	5.31	3.87	9.83	4.58	2.75	

BDL denotes concentration Below Detection Limits
QA-1 represents quality assurance sample (duplicate of Tank #2)

Tank #1	500-gallon gasoline tank
Tank #2	10,000-gallon fuel oil tank
Tank #4	280-gallon waste fuel oil tank
Tank #5	500-gallon westernmost oil/water separator
Tank #6	500-gallon easternmost oil/water separator

Note: 1993 Florida Groundwater Guidance Concentrations are as follows:

Acenapthylene	50 ug/L
Acenapthene	20 ug/L
Fluorene	1400 ug/L
Phenanthrene	50 ug/L
Anthracene	10,500 ug/L
Fluoranthene	1400 ug/L
Pyrene	1,050 ug/L

4.0 QUALITY ASSURANCE

IT Corporation's Comprehensive Quality Assurance Plan #870467G is on file with the FDEP and is in compliance with FDEP's "Guidelines for Preparing Quality Assurance Plans" (DER-QA-001/85). Orlando Laboratories, Inc.'s Generic QAP #860106G is also on file with the FDEP.

All samples were analyzed within the applicable holding times. Results of the analysis of the duplicate field blank were appropriately consistent with those of UST #2.

5.0 RECOMMENDATIONS

The findings of this tank closure, in particular the analytical results of the groundwater samples, indicate that concentrations of constituents detected by EPA Analytical Methods 602 and 610 are present in the groundwater. Furthermore, the concentrations indicated by laboratory analysis are in excess of the target levels outlined in Chapter 17-770 of the FAC. IT Corporation recommends that further contamination assessment be performed at the facility.

6.0 REFERENCES

Florida Department of Environmental Protection, *Groundwater Concentration Guidelines* Booklet, Tallahassee, (1993)

APPENDIX A

FDEP
CLOSURE ASSESSMENT FORM

DER Form # 17-761.900(6)
Form Title Closure Assessment Form
Effective Date December 10 1990
DER Application No. _____
(Filled in by DER)

Florida Department of Environmental Regulation
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Closure Assessment Form

Owners of storage tank systems that are replacing, removing or closing in place storage tanks shall use this form to demonstrate that a storage system closure assesment was performed in accordance with Rule 17-761 or 17-762, Florida Administrative Code. Eligible Early Detection Incentive (EDI) and Reimbursement Program sites do not have to perform a closure assessment.

Please Print or Type
Complete All Applicable Blanks

1. Date: 15 MARCH 1995
2. DER Facility ID Number: 488841262, 488521506 3. County: ORANGE
4. Facility Name: RECRUIT TRAINING COMMAND FIRE FIGHTING SCHOOL
5. Facility Owner: U.S. NAVY - NAVAL TRAINING CENTER ORLANDO
6. Facility Address: PERIMETER ROAD, RECRUIT TRAINING COMMAND, NTC, ORLANDO, FLORIDA
7. Mailing Address: COMMANDER (CODE 010), PUBLIC WORKS 1350 GRACE HOPPER AVE., ORLANDO, FLORIDA 32813 - 5405
8. Telephone Number: (407) 646 - 4663 9. Facility Operator: COMMANDER, PUBLIC WORKS
10. Are the Storage Tank(s): **(Circle one or both)** A. Aboveground or (B. Underground)
11. Type of Product(s) Stored: _____
12. Were the Tank(s): **(Circle one)** A. Replaced (B. Removed) C. Closed in Place D. Upgraded (aboveground tanks only)
13. Number of Tanks Closed: THREE 14. Age of Tanks: _____

Facility Assessment Information

Yes	No	Not Applicable	
	X		1. Is the facility participating in the Florida Petroleum Liability Insurance and Restoration Program (FPLIRP)?
			2. Was a Discharge Reporting Form submitted to the Department? If yes, When: _____ Where: _____
X			3. Is the depth to ground water less than 20 feet?
	X		4. Are monitoring wells present around the storage system? If yes, specify type: ☐ Water monitoring ☐ Vapor monitoring
	X		5. Is there free product present in the monitoring wells or within the excavation?
	X		6. Were the petroleum hydrocarbon vapor levels in the soils greater than 500 parts per million for gasoline? Specify sample type: ☐ Vapor Monitoring wells ☐ Soil sample(s)
	X		7. Were the petroleum hydrocarbon vapor levels in the soils greater than 50 parts per million for diesel/kerosene? Specify sample type: ☐ Vapor Monitoring wells ☐ Soil sample(s)
X			8. Were the analytical laboratory results of the ground water sample(s) greater than the allowable state target levels (See target levels on reverse side of this form and supply laboratory data sheets)
		X	9. If a used oil storage system, did a visual inspection detect any discolored soil indicating a release?
			10. Are any potable wells located within ¼ of a mile radius of the facility?
X			11. Is there a surface water body within ¼ mile radius of the site? If yes, indicate distance: 1000 ft SW

DER Form # 17-761.900(6)
Form Title Closure Assessment Form
Effective Date December 10, 1990
DER Application No. _____ Filled in by DER

12. A detailed drawing or sketch of the facility that includes the storage system location, monitoring wells, buildings, storm drains, sample location and dispenser locations must accompany this form.
13. If a facility has a pollutant storage tank system that has both gasoline and kerosene/diesel stored on site, both EPA Method 602 and EPA Method 610 must be performed on the ground water samples obtained.
14. Amount of soils removed and receipt of proper disposal.
15. If yes is answered to any one of questions 5-9, a Discharge Reporting Form 17-761.900(1) indicating a suspected release shall be submitted to the Department within one working day.
16. A copy of this form and any attachments must be submitted to the Department's district office in your area and to the locally administered program office under contract with the Department within 60 days of completion of tank removal or filling a tank with an inert material.

Signature of Owner — Date

R. Shane Cox — 3/15/95

Signature of Person Performing Assessment — Date

Project Engineer II, I.T. Corporation

Title of Person Performing Assessment

State Ground Water Target Levels That Affect A Pollutant Storage Tank System Closure Assessment

State ground water target levels are as follows:

1. For gasoline (EPA Method 602):
   a. Benzene — 1 ug/l
   b. Total VOA — 50 ug/l
      - Benzene
      - Toluene
      - Total Xylenes
      - Ethylbenzene
   c. Methyl Test-Butyl Ether (MTBE) — 50 ug/l

2. For kerosene/diesel (EPA Method 610):
   a. Polynuclear Aromatic Hydrocarbons (PAHS) (Best achievable detection limit, 10 ug/l maximum)

APPENDIX B

CORRELATION PLOTS
PHOTOIONIZATION DETECTOR
VS.
OVA w/FLAME IONIZATION DETECTOR

PHOTOVAC
incorporated

PHOTOVAC INTERNATIONAL INCORPORATED
25-B Jefryn Blvd West Deer Park New York 11729
Telephone (516) 254-4199 Fax 516 254-4284

CORRELATION OF PID RESPONSE TO FID RESPONSE

(As specified in Chapter 17-770 of the Florida Administrative Code entitled "Petroleum Contamination Site Cleanup Criteria".)

PHOTOVAC
MicroTIP MP-100
MicroTIP HL-200
TIP I
TIP II

RECEIVED
MAR 0 2 1992

September 1991

Introduction

Florida Department of Environmental Regulation (FDER) for Total VOC measurement in petroleum contaminated soils indicates the use of a flame ionization detector (FID) calibrated with Methane. (As specified in Chapter 17-770 of the Florida Administrative Code entitled "Petroleum Contamination Site Cleanup Criteria".)

The Photovac photoionization detector (PID) calibrated with Isobutylene has been approved for use in this application. Instruments which can be used are MicroTIP Models MP-100/HL-200 and TIP I/II. In order to relate one detector type to the other, correlation curves of response of both PID and FID to Unleaded Gasoline, Kerosene, and Diesel have been generated.

Calibration (Zero and Span)

Calibration should be performed daily, or more frequently if sampling in areas of high concentrations or in conditions of varying temperature. Allow at least 5 minutes for the instrument to warm up. When calibrating either MicroTIP (MP-100/HL-200) or TIP (I/II) in the field, fill a gas sampling bag of at least 1.6 Liters in volume with 100 PPM Isobutylene. The Zero point of both instruments is set using Ultra Zero air or clean background air.

1) MicroTIP (MP-100/HL-200)

A) Zero

- Attach a gas sampling bag containing Ultra Zero air (clean background air is usually sufficient) to the instrument and press the CAL key, then ENTER. The display will read "Calibrating now, please wait".

B) Span

- When the display requests Span Gas concentration, press 1-0-0 and then ENTER. The ENTER key must be pressed within approximately 10 seconds, prompting the displayed message "Calibrating now, please wait", or MicroTIP will quit the CAL function prematurely, even though the calibration procedure is not complete. Attach the 100 PPM Isobutylene bag to the instrument, wait 5 seconds, then press ENTER. When the "Ready" message is displayed, MicroTIP is calibrated.

2) TIP (I/II)

A) Zero

- Set Span and Zero controls to a setting of 5.

- Introduce Ultra Zero Air contained in a gas sampling bag (or clean background air) to the instrument. Using the tuning wand (Photovac Part No. 600406-01) adjust the coarse zero screw to read 0.0 on the display (coarse zero screw is located on the probe end of the instrument, just below detector cap, opposite display).

B) Span

- Attach the gas sampling bag containing 100 PPM Isobutylene to the TIP and use the Span control to adjust the displayed value to 100.0.

- Disconnect the bag and allow the display to stabilize while measuring clean air once again. Use the fine Zero control (front of instrument) to readjust the displayed value to 0.0.

- The Span and Zero settings are iterative, so more than one adjustment of each may be necessary.

Use of the Correlation Curves

Table 1 shows equivalency values recommended by the FDER for each PID instrument and each fuel type at the threshold concentrations.

Although FDER requires correlative readings at 50 and 500 PPM, Figures 1-5 show correlation graphs which will enable the user to obtain, by extrapolation, correlative readings at intermediate concentrations for the two types of detector.

From Figure 1, readings equivalent to 50 PPM and 500 PPM FID for Unleaded Gasoline vapor may be taken to be 29 and 199, respectively (for MicroTIP). From Table 1, FDER has rounded off these values to 30 and 200.

From Figure 2, readings equivalent to 50 PPM and 500 PPM FID for Kerosene vapor may be taken to be 103 and 471 respectively (for TIP). From Table 1, FDER has rounded off the lower value to 100.

From Figure 3, readings equivalent to 50 PPM and 500 PPM FID for Kerosene vapor may be taken to be 111 and 544, respectively (for MicroTIP). From Table 1, FDER has rounded off the lower value to 110.

From Figure 4, readings equivalent to 50 PPM and 500 PPM FID for Diesel vapor may be taken to be 53 and 324, respectively (for TIP). From Table 1, FDER has rounded off the lower value to 55.

From Figure 5, readings equivalent to 50 PPM and 500 PPM FID for Diesel vapor may be taken to be 57 and 356, respectively (for MicroTIP). From Table 1, FDER has rounded off the lower value to 55.

TIP vs. FID response to Gasoline vapor was addressed in a previous study. Figure 6 shows the difference in response between Leaded and Unleaded Gasoline vapor for TIP. Readings equivalent to 50 and 500 PPM FID for Unleaded Gasoline vapor may be taken to be 29 and 227, respectively. Readings equivalent to 50 and 500 PPM FID for Leaded Gasoline vapor may be taken to be 33 and 257, respectively. From Table 1, FDER has rounded off the values for both types of gasoline to 35 and 250.

Each correlation curve is precise to within ± 20% over a concentration range 10-500 PPM.

NOTE:

The responses of the PID in both MicroTIP and TIP will depend upon cleanliness of the lamp window, as well as the age of the lamp. It is important, therefore, to ensure that the window of the lamp is cleaned regularly to remove any accumulated deposit from extensive moitoring applications. The cleaning should be performed using a cotton swab moistened with spectroscopic grade Methanol, and the Methanol allowed to dry from the window, before the lamp is replaced into the detector housing.

Table 1

PHOTOVAC MICROTIP AND TIP
PID-FID EQUIVALENCY CORRELATION VALUES *

Photovac MicroTIP

FUEL TYPE	50 PPM (FID)	500 PPM (FID)
UNLEADED GASOLINE	30	200
KEROSENE	110	**
DIESEL	55	**

Photovac TIP

FUEL TYPE	50 PPM (FID)	500 PPM (FID)
UNLEADED GASOLINE	35	250
LEADED GASOLINE	35	250
KEROSENE	100	**
DIESEL	55	**

* ALL READINGS ARE IN PPM AS ISOBUTYLENE

** IRRELEVANT - ANY READING OVER 50 PPM (FID) IS CONSIDERED EXCESSIVELY CONTAMINATED.

Florida Department of Environmental Regulation
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400
Bob Martinez, Governor
Dale Twachmann, Secretary
John Shearer, Assistant Secretary

November 30, 1989

Mark Collins, Ph.D
Photovac Incorporated
741 Park Avenue
Huntington, NY 11743

Re: Photovac TIP vs. FID-OVA Correlation Study

Dear Dr. Collins,

The last part of your study, correlation under high relative humidity conditions, has been reviewed and successfully completes the study. Please revise your technical bulletin on this subject as appropriate to clearly define the calibration and zeroing procedures required. Readings equivalent to 50 ppm and 500 ppm FID-OVA may be taken to be 35 ppm and 250 ppm respectively. These are conservative values and will ensure that excessive soil contamination is adequately delineated. Thank you for your efforts in this matter.

Sincerely,

John K. Gentry

John K. Gentry, P.E.
Division of Waste Management

PHOTOVAC
incorporated

PHOTOVAC INTERNATIONAL INCORPORATED
741 Park Avenue, Huntington, New York 11743
Telephone (516) 351-5809 · Fax (516) 549-8031

December 19, 1989

Mr. Dan Bingham
Bingham Environmental Technology
P.O. Box 878
New Port Richey, FL 34656

Re: Photovac TIP vs. FID-OVA Correlation Study

Dear Dan:

I am pleased to inform you that the above study has been reviewed by Florida Department of Environmental Regulation (FDER). In a letter dated November 30, 1989 from Mr. John Gentry of the Division of Waste Management at the FDER, he stated, "The last part of your study, correlation under high relative humidity conditions, has been reviewed and successfully completes the study".

The FDER recommends that "Readings equivalent to 50 ppm and 500 ppm FID-OVA may be taken to be 35 ppm and 250 ppm respectively. These are conservative values and will ensure that excessive soil contamination is adequately delineated". John Gentry is referring to correlations for Unleaded and Leaded gasoline vapors provided in Figure 1 and Figure 2 respectively (see attachments). Data used for these graphs were obtained using two (2) FID-OVA instruments and three (3) TIP instruments. The TIPs were zeroed using Ultra zero air and spanned with 100 PPM Isobutylene while each of the OVAs were spanned with 500 PPM Methane.

Later studies, in the last part of this project using Benzene vapor, indicated that when the TIPs are spanned against humid air, the response is enhanced. The recommendation is that the TIP or MicroTIP can be zeroed with humid air in a clean environment and calibrated with 100 PPM Isobutylene. Nevertheless, the FDER recommendations, as indicated in the above paragraph, should still apply.

Please call me if you require any further technical assistance.

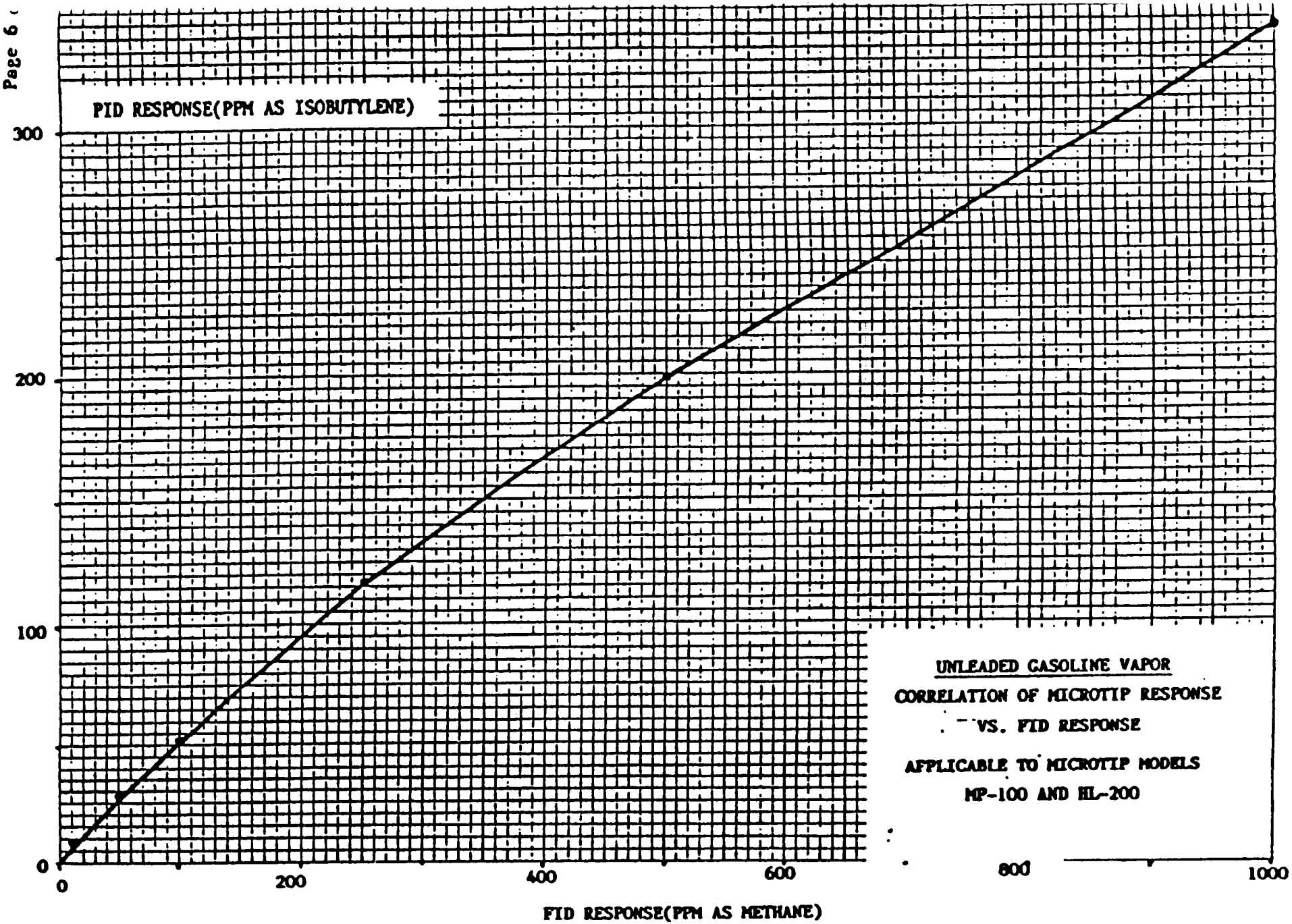
Sincerely,

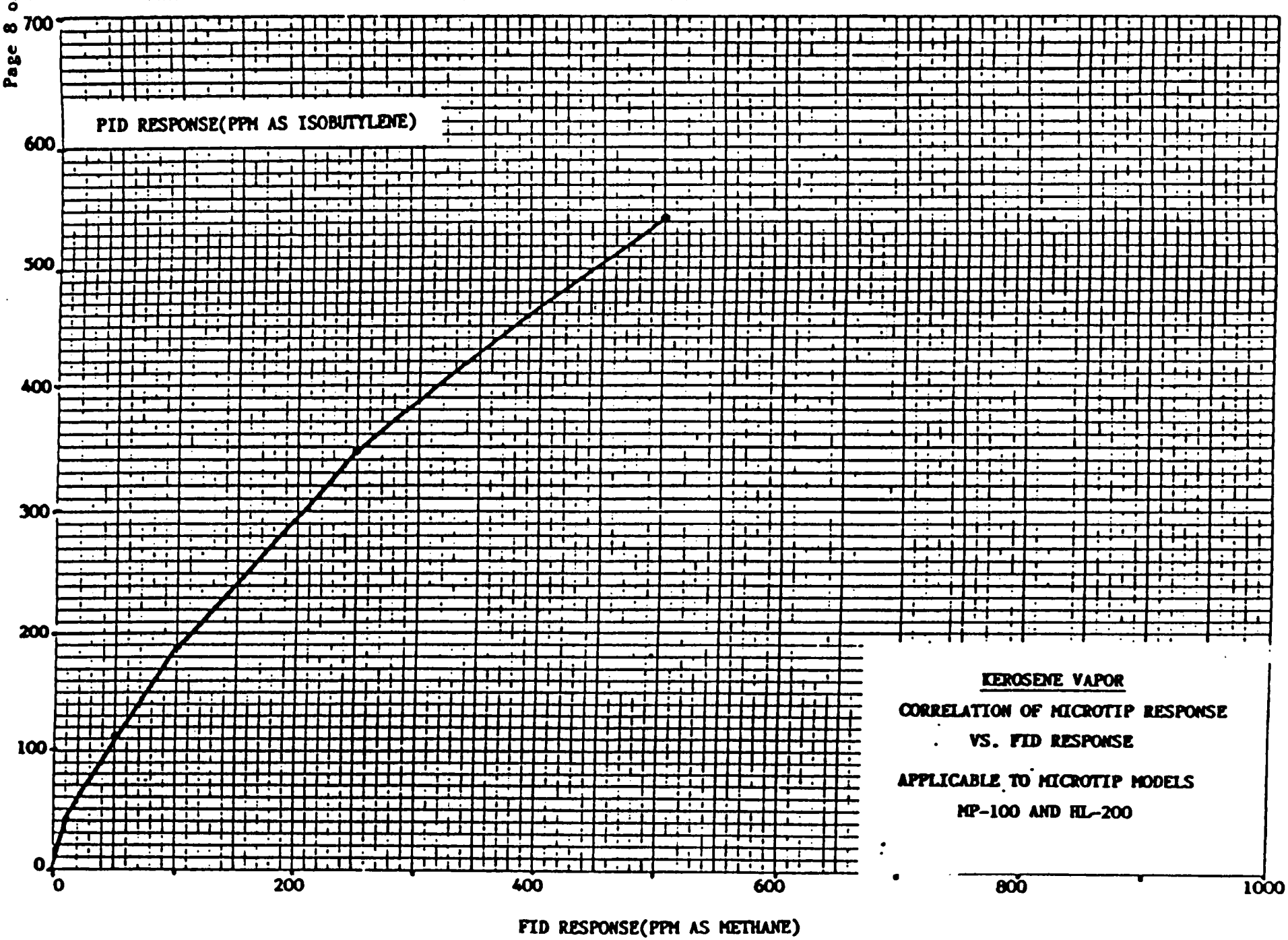
Mark Collins
Manager
Technical Services/Applications Department

MC:ds

Attachment

cc: Ronald L. Stingley


PID RESPONSE(PPM AS ISOBUTYLENE)
300
200
100
0
0
200
400
600
800
1000
FID RESPONSE(PPM AS METHANE)
UNLEADED GASOLINE VAPOR
CORRELATION OF MICROTIP RESPONSE
VS. FID RESPONSE
APPLICABLE TO MICROTIP MODELS
MP-100 AND HL-200



KEROSENE VAPOR

CORRELATION OF MICROTIP RESPONSE

VS. FID RESPONSE

APPLICABLE TO MICROTIP MODELS

MP-100 AND HL-200

46 0862

APPENDIX C

LABORATORY ANALYSIS RESULTS AND CHAIN-OF-CUSTODY RECORDS

Our Quality Control Is Your Quality Assurance

ient #: 753
idress: Management & Business Assoc.
4275 Aurora Street, Suite F
Coral Gables, FL 33146

Page: 1
Date: 02/01/95
Log #: 18305-01

Attn: Shane Cox

mple Description Management & Business Assoc.
Firefighter Training
Orlando Naval Training Center
Groundwater Analysis

Label: Tank #1
Date Sampled: 01/27/95
Date Received: 01/28/95
Collected By: CLIENT

arameter	Results	Units	Method	Detection Limit	Extr. Date	Analysis Date	Analyst
A 602 Compounds	.	ug/l	5030/8021		01/28/95	01/28/95	FY
nzene	180	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
lorobenzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
luene	390	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
hyl benzene	85.0	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
tal xylenes	309	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
TBE	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
,2-Dichlorobenzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
,3-Dichlorobenzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
,4-Dichlorobenzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
otal BTEX	964	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
ilution Factor	1	ug/l	5030/8021	.	01/28/95	01/28/95	FY
AH Compounds In Water	.	ug/l	3510/8270		01/30/95	01/31/95	EG
aphthalene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
-Methylnaphthalene	3.45	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
-Methylnaphthalene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
cenaphthylene	BDL	ug/l	3510/8270	2.50	01/30/95	01/31/95	EG
cenaphthene	3.38	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
luorene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
henanthrene	BDL	ug/l	3510/8270	3.50	01/30/95	01/31/95	EG
nthracene	6.78	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
luoranthene	BDL	ug/l	3510/8270	2.50	01/30/95	01/31/95	EG
yrene	BDL	ug/l	3510/8270	2.00	01/30/95	01/31/95	EG
enzo(a)anthracene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
hrysene	BDL	ug/l	3510/8270	2.50	01/30/95	01/31/95	EG

ient #: 753
ldress: Management & Business Assoc.
4275 Aurora Street, Suite F
Coral Gables, FL 33146

Page: 2
Date: 02/01/95
Log #: 18305-01

Attn: Shane Cox

mple Description Management & Business Assoc.
Firefighter Training
Orlando Naval Training Center
Groundwater Analysis

Label: Tank #1
Date Sampled: 01/27/95
Date Received: 01/28/95
Collected By: CLIENT

rameter	Results	Units	Method	Detection Limit	Extr. Date	Analysis Date	Analyst
nzo(b)fluoranthene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
nzo(k)fluoranthene	BDL	ug/l	3510/8270	2.50	01/30/95	01/31/95	EG
nzo(a)pyrene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
benzo(a,h)anthracene	BDL	ug/l	3510/8270	7.00	01/30/95	01/31/95	EG
eno(1,2,3-cd)pyrene	BDL	ug/l	3510/8270	8.00	01/30/95	01/31/95	EG
nzo(ghi)perylene	BDL	ug/l	3510/8270	4.00	01/30/95	01/31/95	EG
lution Factor	1	ug/l	3510/8270	.	01/30/95	01/31/95	EG

L = Below Detection Limits
These compounds are Screened Only, with an estimated detection limit.
l Analyses were performed using EPA, ASTM, USGS, or Standard Methods

AP # 900376G
S # E86240, 86356
B HRS# 86122, 86109, E86048
DEM ID# 40720, 40850
CERT #96031
Cert #444
ennessee Lab #02985
nnecticut Lab Approval # PH-0122

Respectfully Submitted,

Edward Dabrea

Edward Dabrea
Laboratory Director

18305-01

lient #: 753
ddress: Management & Business Assoc.
4275 Aurora Street, Suite F
Coral Gables, FL 33146

Page: 1
Date: 02/01/95
Log #: 18305-02

Attn: Shane Cox

ample Description Management & Business Assoc.
Firefighter Training
Orlando Naval Training Center
Groundwater Analysis

Label: Tank #2
Date Sampled: 01/27/95
Date Received: 01/28/95
Collected By: CLIENT

arameter	Results	Units	Method	Detection Limit	Extr. Date	Analysis Date	Analyst
A 602 Compounds	.	ug/l	5030/8021		01/28/95	01/28/95	FY
nzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
lorobenzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
luene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
hyl benzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
tal xylenes	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
BE	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
,2-Dichlorobenzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
,3-Dichlorobenzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
,4-Dichlorobenzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
tal BTEX	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
ilution Factor	1	ug/l	5030/8021	.	01/28/95	01/28/95	FY
AH Compounds In Water	.	ug/l	3510/8270		01/30/95	01/31/95	EG
aphthalene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
-Methylnaphthalene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
-Methylnaphthalene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
enaphthylene	BDL	ug/l	3510/8270	2.50	01/30/95	01/31/95	EG
enaphthene	4.38	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
luorene	5.26	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
henanthrene	4.23	ug/l	3510/8270	3.50	01/30/95	01/31/95	EG
nthracene	12.2	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
luoranthene	5.65	ug/l	3510/8270	2.50	01/30/95	01/31/95	EG
yrene	3.64	ug/l	3510/8270	2.00	01/30/95	01/31/95	EG
enzo(a)anthracene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
hrysene	BDL	ug/l	3510/8270	2.50	01/30/95	01/31/95	EG

Client #: 753
Address: Management & Business Assoc.
4275 Aurora Street, Suite F
Coral Gables, FL 33146

Page: 2
Date: 02/01/95
Log #: 18305-02

Attn: Shane Cox

Sample Description Management & Business Assoc.
Firefighter Training
Orlando Naval Training Center
Groundwater Analysis

Label: Tank #2
Date Sampled: 01/27/95
Date Received: 01/28/95
Collected By: CLIENT

Parameter	Results	Units	Method	Detection Limit	Extr. Date	Analysis Date	Analyst
Benzo(b)fluoranthene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
Benzo(k)fluoranthene	BDL	ug/l	3510/8270	2.50	01/30/95	01/31/95	EG
Benzo(a)pyrene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
Dibenzo(a,h)anthracene	BDL	ug/l	3510/8270	7.00	01/30/95	01/31/95	EG
Indeno(1,2,3-cd)pyrene	BDL	ug/l	3510/8270	8.00	01/30/95	01/31/95	EG
Benzo(ghi)perylene	BDL	ug/l	3510/8270	4.00	01/30/95	01/31/95	EG
Dilution Factor	1	ug/l	3510/8270	.	01/30/95	01/31/95	EG

BDL = Below Detection Limits
* These compounds are Screened Only, with an estimated detection limit.
All Analyses were performed using EPA, ASTM, USGS, or Standard Methods

QAP # 900376G
HRS # E86240, 86356
SUB HRS# 86122, 86109, E86048
ADEM ID# 40720, 40850
SC CERT #96031
NC Cert #444
Tennessee Lab #02985
Connecticut Lab Approval # PH-0122

Respectfully Submitted,

Edward Dabrea
Laboratory Director

18305-02

lient #: 753
ddress: Management & Business Assoc.
4275 Aurora Street, Suite F
Coral Gables, FL 33146

Page: 1
Date: 02/01/95
Log #: 18305-03

Attn: Shane Cox

ample Description Management & Business Assoc.
Firefighter Training
Orlando Naval Training Center
Groundwater Analysis

Label: Tank #4
Date Sampled: 01/27/95
Date Received: 01/28/95
Collected By: CLIENT

arameter	Results	Units	Method	Detection Limit	Extr. Date	Analysis Date	Analyst
PA 602 Compounds	.	ug/l	5030/8021		01/28/95	01/28/95	FY
enzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
lorobenzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
oluene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
thyl benzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
otal xylenes	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
TBE	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
,2-Dichlorobenzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
,3-Dichlorobenzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
,4-Dichlorobenzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
otal BTEX	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
ilution Factor	1	ug/l	5030/8021	.	01/28/95	01/28/95	FY
AH Compounds In Water	.	ug/l	3510/8270		01/30/95	01/31/95	EG
aphthalene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
-Methylnaphthalene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
-Methylnaphthalene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
cenaphthylene	BDL	ug/l	3510/8270	2.50	01/30/95	01/31/95	EG
cenaphthene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
luorene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
henanthrene	BDL	ug/l	3510/8270	3.50	01/30/95	01/31/95	EG
nthracene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
luoranthene	BDL	ug/l	3510/8270	2.50	01/30/95	01/31/95	EG
yrene	BDL	ug/l	3510/8270	2.00	01/30/95	01/31/95	EG
enzo(a)anthracene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
hrysene	BDL	ug/l	3510/8270	2.50	01/30/95	01/31/95	EG

lient #: 753
ddress: Management & Business Assoc.
4275 Aurora Street, Suite F
Coral Gables, FL 33146

Page: 2
Date: 02/01/95
Log #: 18305-03

Attn: Shane Cox

ample Description Management & Business Assoc.
Firefighter Training
Orlando Naval Training Center
Groundwater Analysis

Label: Tank #4
Date Sampled: 01/27/95
Date Received: 01/28/95
Collected By: CLIENT

rameter	Results	Units	Method	Detection Limit	Extr. Date	Analysis Date	Analyst
nzo(b)fluoranthene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
zo(k)fluoranthene	BDL	ug/l	3510/8270	2.50	01/30/95	01/31/95	EG
nzo(a)pyrene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
benzo(a,h)anthracene	BDL	ug/l	3510/8270	7.00	01/30/95	01/31/95	EG
eno(1,2,3-cd)pyrene	BDL	ug/l	3510/8270	8.00	01/30/95	01/31/95	EG
nzo(ghi)perylene	BDL	ug/l	3510/8270	4.00	01/30/95	01/31/95	EG
ilution Factor	1	ug/l	3510/8270	.	01/30/95	01/31/95	EG

DL = Below Detection Limits
These compounds are Screened Only, with an estimated detection limit.
l Analyses were performed using EPA, ASTM, USGS, or Standard Methods

P # 900376G
S # E86240, 86356
UB HRS# 86122, 86109, E86048
EM ID# 40720, 40850
CERT #96031
IC Cert #444
nnessee Lab #02985
nnecticut Lab Approval # PH-0122

Respectfully Submitted,

Edward Dabrea

Edward Dabrea
Laboratory Director

18305-03

Client #: 753
Address: Management & Business Assoc.
4275 Aurora Street, Suite F
Coral Gables, FL 33146

Page: 1
Date: 02/01/95
Log #: 18305-04

Attn: Shane Cox

Sample Description Management & Business Assoc.
Firefighter Training
Orlando Naval Training Center
Groundwater Analysis

Label: Tank #5
Date Sampled: 01/27/95
Date Received: 01/28/95
Collected By: CLIENT

Parameter	Results	Units	Method	Detection Limit	Extr. Date	Analysis Date	Analyst
EPA 602 Compounds	.	ug/l	5030/8021		01/28/95	01/28/95	FY
Benzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
Chlorobenzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
Toluene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
Ethyl benzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
Total xylenes	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
MTBE	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
1,2-Dichlorobenzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
1,3-Dichlorobenzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
1,4-Dichlorobenzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
Total BTEX	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
Dilution Factor	1	ug/l	5030/8021	.	01/28/95	01/28/95	FY
PAH Compounds In Water	.	ug/l	3510/8270		01/30/95	01/31/95	EG
Naphthalene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
2-Methylnaphthalene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
1-Methylnaphthalene	3.08	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
Acenaphthylene	BDL	ug/l	3510/8270	2.50	01/30/95	01/31/95	EG
Acenaphthene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
Fluorene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
Phenanthrene	BDL	ug/l	3510/8270	3.50	01/30/95	01/31/95	EG
Anthracene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
Fluoranthene	BDL	ug/l	3510/8270	2.50	01/30/95	01/31/95	EG
Pyrene	BDL	ug/l	3510/8270	2.00	01/30/95	01/31/95	EG
Benzo(a)anthracene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
Chrysene	BDL	ug/l	3510/8270	2.50	01/30/95	01/31/95	EG

ent #: 753
lress: Management & Business Assoc.
4275 Aurora Street, Suite F
Coral Gables, FL 33146

Page: 2
Date: 02/01/95
Log #: 18305-04

Attn: Shane Cox

ple Description Management & Business Assoc.
Firefighter Training
Orlando Naval Training Center
Groundwater Analysis

Label: Tank #5
Date Sampled: 01/27/95
Date Received: 01/28/95
Collected By: CLIENT

ameter	Results	Units	Method	Detection Limit	Extr. Date	Analysis Date	Analyst
zo(b)fluoranthene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
o(k)fluoranthene	BDL	ug/l	3510/8270	2.50	01/30/95	01/31/95	EG
o(a)pyrene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
enzo(a,h)anthracene	BDL	ug/l	3510/8270	7.00	01/30/95	01/31/95	EG
no(1,2,3-cd)pyrene	BDL	ug/l	3510/8270	8.00	01/30/95	01/31/95	EG
o(ghi)perylene	BDL	ug/l	3510/8270	4.00	01/30/95	01/31/95	EG
ution Factor	1	ug/l	3510/8270	.	01/30/95	01/31/95	EG

= Below Detection Limits
These compounds are Screened Only, with an estimated detection limit.
Analyses were performed using EPA, ASTM, USGS, or Standard Methods

P # 900376G
E86240, 86356
HRS# 86122, 86109, E86048
EM ID# 40720, 40850
CERT #96031
Cert #444
nnessee Lab #02985
necticut Lab Approval # PH-0122

Respectfully Submitted,

Edward Dabrea

Edward Dabrea
Laboratory Director

18305-04

Client #: 753
Address: Management & Business Assoc.
4275 Aurora Street, Suite F
Coral Gables, FL 33146

Page: 1
Date: 02/01/95
Log #: 18305-05

Attn: Shane Cox

Sample Description Management & Business Assoc.
Firefighter Training
Orlando Naval Training Center
Groundwater Analysis

Label: Tank #6
Date Sampled: 01/27/95
Date Received: 01/28/95
Collected By: CLIENT

Parameter	Results	Units	Method	Detection Limit	Extr. Date	Analysis Date	Analyst
EPA 602 Compounds	.	ug/l	5030/8021		01/28/95	01/28/95	FY
Benzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
Chlorobenzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
Toluene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
Ethyl benzene	2.0	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
Total xylenes	15.6	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
MTBE	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
1,2-Dichlorobenzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
1,3-Dichlorobenzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
1,4-Dichlorobenzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
Total BTEX	17.6	ug/l	5030/8021	.	01/28/95	01/28/95	FY
Dilution Factor	1	ug/l	5030/8021		01/28/95	01/28/95	FY
PAH Compounds In Water	.	ug/l	3510/8270		01/30/95	01/31/95	EG
Naphthalene	31.6	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
2-Methylnaphthalene	78.7	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
1-Methylnaphthalene	66.2	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
Acenaphthylene	6.39	ug/l	3510/8270	2.50	01/30/95	01/31/95	EG
Acenaphthene	7.40	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
Fluorene	13.4	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
Phenanthrene	BDL	ug/l	3510/8270	3.50	01/30/95	01/31/95	EG
Anthracene	19.7	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
Fluoranthene	BDL	ug/l	3510/8270	2.50	01/30/95	01/31/95	EG
Pyrene	2.94	ug/l	3510/8270	2.00	01/30/95	01/31/95	EG
Benzo(a)anthracene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
Chrysene	BDL	ug/l	3510/8270	2.50	01/30/95	01/31/95	EG

lient #: 753
idress: Management & Business Assoc.
4275 Aurora Street, Suite F
Coral Gables, FL 33146

Attn: Shane Cox

Page: 2
Date: 02/01/95
Log #: 18305-05

ample Description Management & Business Assoc.
Firefighter Training
Orlando Naval Training Center
Groundwater Analysis

Label: Tank #6
Date Sampled: 01/27/95
Date Received: 01/28/95
Collected By: CLIENT

Parameter	Results	Units	Method	Detection Limit	Extr. Date	Analysis Date	Analyst
enzo(b)fluoranthene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
enzo(k)fluoranthene	BDL	ug/l	3510/8270	2.50	01/30/95	01/31/95	EG
enzo(a)pyrene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
ibenzo(a,h)anthracene	BDL	ug/l	3510/8270	7.00	01/30/95	01/31/95	EG
Indeno(1,2,3-cd)pyrene	BDL	ug/l	3510/8270	8.00	01/30/95	01/31/95	EG
enzo(ghi)perylene	BDL	ug/l	3510/8270	4.00	01/30/95	01/31/95	EG
ilution Factor	1			.	01/30/95	01/31/95	EG

DL = Below Detection Limits
, These compounds are Screened Only, with an estimated detection limit.
All Analyses were performed using EPA, ASTM, USGS, or Standard Methods

Respectfully Submitted,

Edward Dabrea
Laboratory Director

DAP # 900376G
HRS # E86240, 86356
SUB HRS# 86122, 86109, E86048
ADEM ID# 40720, 40850
SC CERT #96031
NC Cert #444
Tennessee Lab #02985
Connecticut Lab Approval # PH-0122

18305-05

Client #: 753
Address: Management & Business Assoc.
4275 Aurora Street, Suite F
Coral Gables, FL 33146

Page: 1
Date: 02/01/95
Log #: 18305-06

Attn: Shane Cox

Sample Description Management & Business Assoc.
Firefighter Training
Orlando Naval Training Center
Groundwater Analysis

Label: QA-1
Date Sampled: 01/27/95
Date Received: 01/28/95
Collected By: CLIENT

Parameter	Results	Units	Method	Detection Limit	Extr. Date	Analysis Date	Analyst
EPA 602 Compounds	.	ug/l	5030/8021		01/28/95	01/28/95	FY
Benzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
Chlorobenzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
Toluene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
Ethyl benzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
Total xylenes	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
MTBE	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
1,2-Dichlorobenzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
1,3-Dichlorobenzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
1,4-Dichlorobenzene	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
Total BTEX	BDL	ug/l	5030/8021	1.0	01/28/95	01/28/95	FY
Dilution Factor	1	ug/l	5030/8021	.	01/28/95	01/28/95	FY
PAH Compounds In Water	.	ug/l	3510/8270		01/30/95	01/31/95	EG
Naphthalene	6.59	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
2-Methylnaphthalene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
1-Methylnaphthalene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
Acenaphthylene	BDL	ug/l	3510/8270	2.50	01/30/95	01/31/95	EG
Acenaphthene	4.29	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
Fluorene	5.31	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
Phenanthrene	3.87	ug/l	3510/8270	3.50	01/30/95	01/31/95	EG
Anthracene	9.83	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
Fluoranthene	4.58	ug/l	3510/8270	2.50	01/30/95	01/31/95	EG
Pyrene	2.75	ug/l	3510/8270	2.00	01/30/95	01/31/95	EG
Benzo(a)anthracene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
Chrysene	BDL	ug/l	3510/8270	2.50	01/30/95	01/31/95	EG

ent #: 753
ress: Management & Business Assoc.
4275 Aurora Street, Suite F
Coral Gables, FL 33146

Page: 2
Date: 02/01/95
Log #: 18305-06

Attn: Shane Cox

le Description Management & Business Assoc.
Firefighter Training
Orlando Naval Training Center
Groundwater Analysis

Label: QA-1
Date Sampled: 01/27/95
Date Received: 01/28/95
Collected By: CLIENT

ameter	Results	Units	Method	Detection Limit	Extr. Date	Analysis Date	Analyst
)(b)fluoranthene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
o(k)fluoranthene	BDL	ug/l	3510/8270	2.50	01/30/95	01/31/95	EG
)(a)pyrene	BDL	ug/l	3510/8270	3.00	01/30/95	01/31/95	EG
zo(a,h)anthracene	BDL	ug/l	3510/8270	7.00	01/30/95	01/31/95	EG
no(1,2,3-cd)pyrene	BDL	ug/l	3510/8270	8.00	01/30/95	01/31/95	EG
)(ghi)perylene	BDL	ug/l	3510/8270	4.00	01/30/95	01/31/95	EG
ion Factor	1	ug/l	3510/8270	.	01/30/95	01/31/95	EG

= Below Detection Limits
ese compounds are Screened Only, with an estimated detection limit.
Analyses were performed using EPA, ASTM, USGS, or Standard Methods

900376G
E86240, 86356
HRS# 86122, 86109, E86048
.. ID# 40720, 40850
CERT #96031
ert #444
nessee Lab #02985
necticut Lab Approval # PH-0122

Respectfully Submitted,

Edward Dabrea

Edward Dabrea
Laboratory Director

18305-06

BAR CODE

VOC ANALYTICAL LABORATORIES, INC.

877 N.W. 61 Street, Suite 202 • Ft. Lauderdale, FL 33309

(305) 938-8823 • FAX (305) 938-9558

LAB USE ONLY

Client: Management & Business ~~I.T. Corp~~ Associates

Project Location: Orlando Naval Training Center

Project Name or Number: Fire Fighter Training

Laboratory Analysis

ITEM NUMBER	SAMPLE LABEL	DATE	TIME	GROUND WATER	WASTE WATER	SOIL	OTHER (SPECIFY)	NUMBER OF CONTAINERS	PARAMETER / PRES TYPE: EPA 602 HCl	EPA 610 —	COMMENTS
1	Tank #1	1/27/95	1420	✓				4	✓	✓	[illegible]
2	Tank #2	↓	1330	✓				4	✓	✓	[illegible]
3	Tank #4		1135	✓				4	✓	✓	[illegible]
4	Tank #5		1120	✓				4	✓	✓	[illegible]
5	Tank #6		1155	✓				4	✓	✓	[illegible]
6	QA-1	↓	1335								
7											
8											
9											
0											

QC REPORT? ✓ Yes ____ No

SAMPLER SIGNATURE: [illegible]

REPORT TO: Shane Cox, I.T. Corp.

FAX #: 407 679 8280

REMARKS:

Item Number	Transfers Relinquished by:	Date	Time	Accepted by:	Date	Time
1-5	[illegible]	1-27-95	0800			
	[illegible]	1/27/95	14:20	[illegible]	1/27/[illegible]	[illegible]

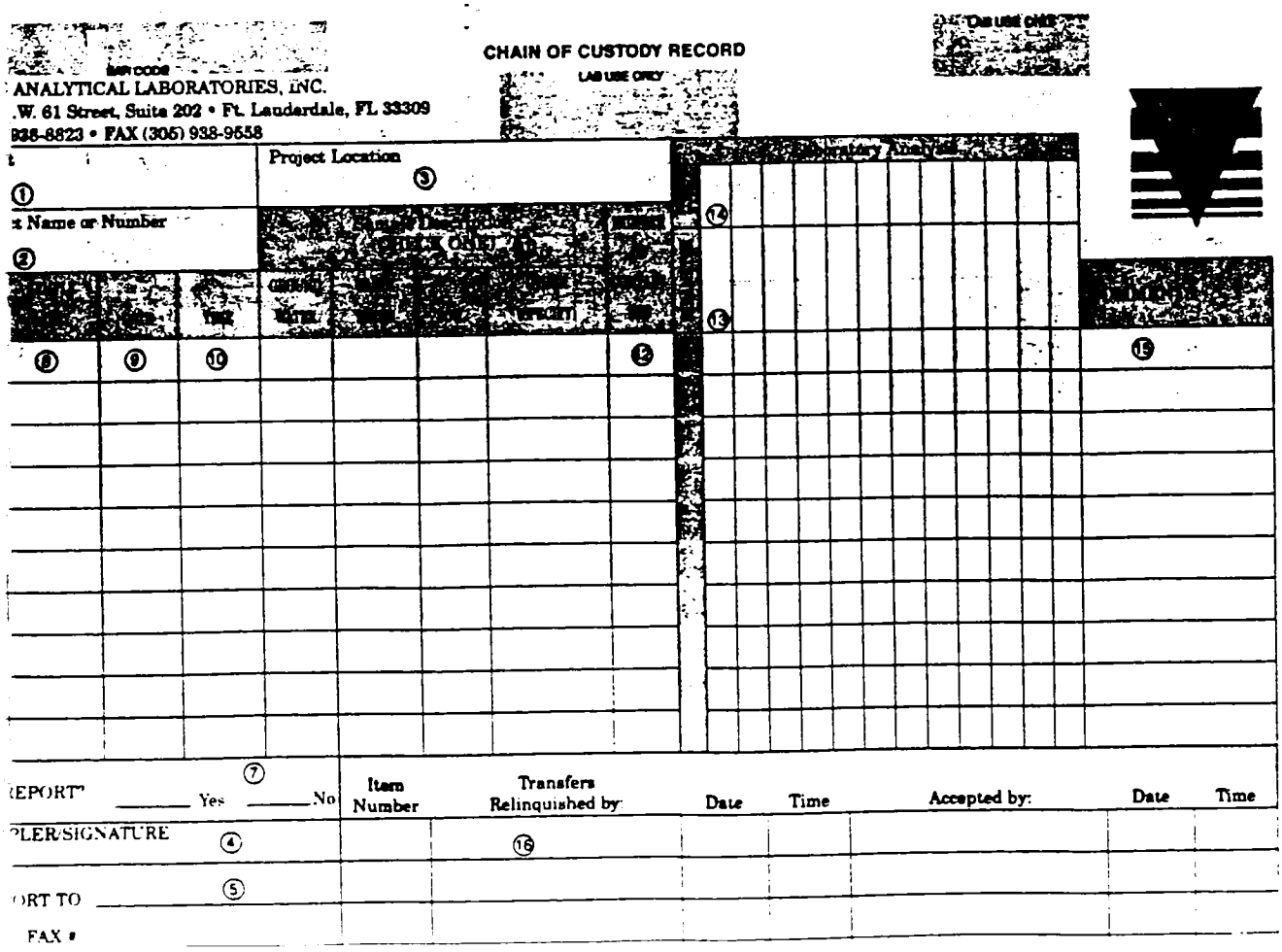
VOC Analytical Laboratories, Inc.
877 N.W. 61 Street, Suite 202
Ft. Lauderdale, FL 33309
Phone: (305) 938-8823
Fax: - (305) 938-9558

INSTRUCTIONS FOR COMPLETING CHAIN OF CUSTODY FORM

(Please use care in completing this form. An incomplete COC could jeopardize your quoted TAT.)

Print name of client.
Indicate name or number of project.
Insert project location (i.e. street, county).
Sampler: Print name & sign.
Indicate name & FAX # of project manager.
Insert any remarks.
Indicate if QC report is required.
List sample labels here (i.e. MW, SB, etc.).

⑨ Indicate date the sample was taken.
⑩ Indicate time the sample was taken.
⑪ Indicate matrix of sample.
⑫ Indicate number of containers for each sample.
⑬ List parameter to be analyzed.
⑭ List preservative used in sample container.
⑮ Comment on any sample on corresponding line.
⑯ EACH person releasing samples must sign and date the COC here.



APPENDIX B

WELL COMPLETION REPORT

WELL COMPLETION LOG

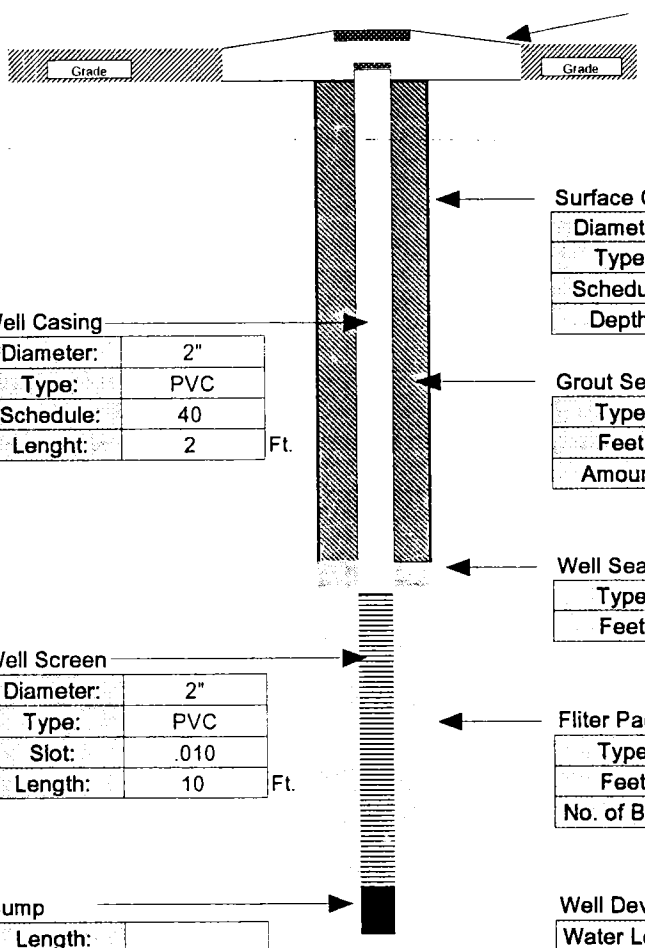
Water Mgmt. Dist.: St. Johns
Permit Number:

Work Order: 6042
Type of Well: Monitor
Well Number: Idg. 200 MW1
Method Used: 6¼ HSA
Borehole Dia. 10"

Site Information:
Name: NTC
Address: Main Base
C,S,Z: Orlando, Florida
S/T/R:

Client / Consultant Information
Consultant: ABB Environmental Services
Field Rep: Scott Donelick

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
2"	PVC	12	10	2	0.5	9/50lb	20/30	Fine Sand
40 ←	Schedule	Slot Size: →	.010		1	← Feet →	10.5	0.5



Surface Completion
Flush Bolt Down

Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	2"
Type:	PVC
Schedule:	40
Lenght:	2 Ft.

Grout Seal

Type:	II Portland
Feet:	1
Amount:	0.5 Bags

Well Seal

Type:	Fine Sand
Feet:	0.5

Well Screen

Diameter:	2"
Type:	PVC
Slot:	.010
Length:	10 Ft.

Fliter Pack

Type:	20/30
Feet:	10.5
No. of Bags:	9/50lb

Sump

Length:	

Well Development

Water Level:	4'		
Method:	Centrifugal		
Start: →	Cloudy	Finish: →	Clear
Time:	45 Minutes		
GPM:	2		

Contractor Information

Contractor #:	2633
Completion:	07/11/96
Driller:	Todd Flick
Lead Hand:	Robert Detweiler
3rd Man:	Brian Burgess
Drill Rig:	CME-55

Company: Groundwater Protection, Inc.
Address: 4315 S.W. 34th Street
C,S,Z: Orlando, Florida 32811
Phone/FAX: (407) 426-7885 / (407) 426-7586

APPENDIX C

GROUNDWATER LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY RECORDS

----- BUILDING NUMBER 200 ----
NTC ORLANDO FLORIDA MAIN BASE

Lab Sample Number:	MB420001				MB420002				MB420008			
Site	200				200				200			
Locator	000RB101/RB-1				064GM101/200 MW-1				TRIPBLANK/TRIPBLANK			
Collect Date:	18-JUL-96				18-JUL-96				18-JUL-96			
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
EDB												
Ethylene dibromide	.02	U	ug/l	.02	.02	U	ug/l	.02	-			
EPA 601/602												
Chloromethane	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
Bromomethane	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
Dichlorodifluoromethane	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
Vinyl chloride	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
Chloroethane	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
Methylene chloride	5	U	ug/l	5	5	U	ug/l	5	5	U	ug/l	5
Trichlorofluoromethane	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
1,1-Dichloroethene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
1,1-Dichloroethane	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
trans-1,2-Dichloroethene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
Chloroform	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
1,2-Dichloroethane	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
1,1,1-Trichloroethane	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
Carbon tetrachloride	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
Bromodichloromethane	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
1,2-Dichloropropane	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
cis-1,3-Dichloropropene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
Trichloroethene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
Dibromochloromethane	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
1,1,2-Trichloroethane	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
trans-1,3-Dichloropropene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
Bromoform	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
1,1,2,2-Tetrachloroethane	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
Tetrachloroethene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
Chlorobenzene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
1,3-Dichlorobenzene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
1,2-Dichlorobenzene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
1,4-Dichlorobenzene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
Methyl tert-butyl ether	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
Benzene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
Toluene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
Chlorobenzene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
Ethylbenzene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
Xylenes (total)	-				-				-			
o-Xylene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
m,p-Xylene	2	U	ug/l	2	2	U	ug/l	2	2	U	ug/l	2
LEAD												
Lead	3	U	ug/l	3	19.8		ug/l	3	-			
PNA COMPDS												
Naphthalene	2	U	ug/l	2	3		ug/l	2	-			
2-Methylnaphthalene	2	U	ug/l	2	2		ug/l	2	-			
1-Methylnaphthalene	2	U	ug/l	2	2	U	ug/l	2	-			
Acenaphthylene	2	U	ug/l	2	2	U	ug/l	2	-			
Acenaphthene	2	U	ug/l	2	14		ug/l	2	-			
Fluorene	2	U	ug/l	2	12		ug/l	2	-			

----- BUILDING NUMBER 200 ----
NTC ORLANDO FLORIDA MAIN BASE

Lab Sample Number:	MB420001				MB420002				MB420008			
Site	200				200				200			
Locator	000RB101/RB-1				064GM101/200 MW-1				TRIPBLANK/TRIPBLANK			
Collect Date:	18-JUL-96				18-JUL-96				18-JUL-96			
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
Phenanthrene	2	U	ug/l	2	28		ug/l	2	-			
Anthracene	2	U	ug/l	2	5		ug/l	2	-			
Fluoranthene	2	U	ug/l	2	3		ug/l	2	-			
Pyrene	2	U	ug/l	2	2	U	ug/l	2	-			
Benzo (a) anthracene	2	U	ug/l	2	2	U	ug/l	2	-			
Chrysene	2	U	ug/l	2	2	U	ug/l	2	-			
Benzo (b) fluoranthene	2	U	ug/l	2	2	U	ug/l	2	-			
Benzo (k) fluoranthene	2	U	ug/l	2	2	U	ug/l	2	-			
Benzo (a) pyrene	2	U	ug/l	2	2	U	ug/l	2	-			
Indeno (1,2,3-cd) pyrene	2	U	ug/l	2	2	U	ug/l	2	-			
Dibenzo (a,h) anthracene	2	U	ug/l	2	2	U	ug/l	2	-			
Benzo (g,h,i) perylene	2	U	ug/l	2	2	U	ug/l	2	-			
TOTAL PETROLEUM HYDROCARBON												
Total petroleum hydrocarbon	.05	U	mg/l	.05	.6		mg/l	.05	-			

----- BUILDING NUMBER 200 ---- HITS TABLE --------
NTC ORLANDO FLORIDA MAIN BASE

Lab Sample Number:	MB420001				MB420002				MB420008			
Site	200				200				200			
Locator	000RB101/RB-1				064GM101/200 MW-1				TRIPBLANK/TRIPBLANK			
Collect Date:	18-JUL-96				18-JUL-96				18-JUL-96			
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
LEAD												
Lead	-	U	ug/l	3	19.8		ug/l	3	-			
PNA COMPDS												
Naphthalene	-	U	ug/l	2	3		ug/l	2	-			
2-Methylnaphthalene	-	U	ug/l	2	2		ug/l	2	-			
Acenaphthene	-	U	ug/l	2	14		ug/l	2	-			
Fluorene	-	U	ug/l	2	12		ug/l	2	-			
Phenanthrene	-	U	ug/l	2	28		ug/l	2	-			
Anthracene	-	U	ug/l	2	5		ug/l	2	-			
Fluoranthene	-	U	ug/l	2	3		ug/l	2	-			
TOTAL PETROLEUM HYDROCARBON												
Total petroleum hydrocarbon	-	U	mg/l	.05	.6		mg/l	.05	-			

QUALITY ANALYTICAL LABORATORIES, INC.

CHAIN OF CUSTODY RECORD AND AGREEMENT TO PERFORM SERVICES

Project #: 8519-51

Purchase Order #:

Project Name: NTC ORLANDO

Company Name: ABB Environmental Services

Project Manager or Contact & Phone #: J. Kaiser 407-895-8845

Report Copy to: Manuel Alonso

Requested Completion Date: 8-3-96

Site ID: NTC Orlando

Sample Disposal: Dispose ☒ Return ☐

☐ **LGN** One Innovation Drive, Suite C, Alachua, FL 32615-9586, (904) 462-3050 FAX (904) 462-1670

☐ **LRD** 5090 Caterpillar Road, Redding, CA 96003-1412, (916) 244-5227 FAX (916) 244-4109

☒ **LMG** 2567 Fairlane Drive, Montgomery, AL 36116-1622, (205) 271-2440 FAX (205) 271-3428

☐ **LKW** Canviro Analytical Laboratories, Inc. 50 Bathurst, Unit 12, Waterloo, Ontario, Canada N2V 2C5, (519) 747-2575 FAX (519) 747-3806

THIS AREA FOR LAB USE ONLY

Lab #: MB420 | Page | of

Client Service | Price Source: A P Q S

Acct Code: ABB | Test Group

Project Code: ABB UST | Ack. Gen.: 527

LIMS Ver | Login | Mult.

COC Review: BS

Sampling Date (M/D)	Time	Type: COMP	Type: GRAB	Matrix: WATER	Matrix: SOIL	CLIENT SAMPLE ID (9 CHARACTERS)	QC ID (3 CHAR)	# OF CONTAINERS	EPA 602 + MTBE	EPA 601	EPA 610	EPA 239.2 (Pb)	EPA 418.1 (TPH)	SO4 (EDB)	SAMPLE REMARKS	LAB 1 ID	LAB 2 ID
7-18	1040		X	X		000RB101		12	3	3	2	1	1	2	RB-1	01	
	1117					064GM101		12	3	3	2	1	1	2	200 MW-1	02	
	1152					021GM101		9	3	3		1		2	109 MW-1	03	
	1212					021GM201		9	3	3		1		2	109 MW-2	04	
	1240					042GM201		12	3	3	2	1	1	2	2040 MW-2	05	
	1301					042GM301		12	3	3	2	1	1	2	2040 MW-3	06	
	1348					042GM101		12	3	3	2	1	1	2	2040 MW-1	07	
—	—		X	X		TRIP BLANK		3	3	3					TRIP BLANK	08	

Sampled By & Time (Please sign and print name): [signature] (FQL) — Date/Time: 7-18-96 1900

Relinquished By (Please sign and print name): [signature] (SCOTT DONELICK) — Date/Time: 7-18-96 1700

Received By (Please sign and print name): [signature] — Date/Time: 7/19/96 0930

Relinquished By (Please sign and print name) — Date/Time

Received By (Please sign and print name) — Date/Time

Relinquished By (Please sign and print name) — Date/Time

Received By (Please sign and print name) — Date/Time

Shipped Via: UPS Fed-Ex Other

Shipping #: 969938631

HAZWRAP/NESSA: Y N

EDATA: Y N

QC LEVEL 1 2 3 OTHER

pH | Ice

Custody Seal | Temp

Batch Remarks:

000066