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Petroleum Cleanup Section

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CONTAMINATION ASSESSMENT REPORT (CAR)

HOWCO ENVIRONMENTAL SERVICES, INC. FACILITY
843 43RD STREET SOUTH
ST. PETERSBURG, FLORIDA

APRIL, 1996

HOWCO ENVIRONMENTAL SERVICES, INC.
CONTAMINATION ASSESSMENT REPORT
843 43RD STREET SOUTH, ST. PETERSBURG, FLORIDA
APRIL, 1996

Prepared by:

FLORIDA GROUNDWATER SERVICES, INC.
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EXECUTIVE SUMMARY

Prior to 1975, the property was undeveloped. From 1975 to the late 1980's A & E Services operated on the site and accepted used oils, stored in drums and tanks, and sold it for road construction. Used oil operations were limited to the eastern half of the site until about 1990-1991.

From 1980 through 1989, several businesses not associated with the used oil storage or recycling operations, operated on the western portion of the property. These businesses included Gary Ford Asphalt Paving, Mike Brown Grading and Excavating, Charlie Hennton Landscaping (and Pruitt & Sons Landscaping) and A & E Services. The specific location of each operation is presented on Figure 7A. Each of these operations included a number of petroleum storage systems which were removed prior to 1989.

Preliminary soil investigations were conducted by ERM-South, Inc. (ERM) at the site in August 1991. The purpose of their investigations was to identify areas of petroleum-contaminated soil samples from selected locations using backhoe test pits and hand auger borings. In February, 1992, ERM completed a Preliminary Contamination Assessment (PCA) of the facility to evaluate the presence of excessively petroleum contaminated soil on-site. Groundwater quality and flow direction assessments were not included in the PCA.

FGS was retained by HOWCO in 1992. In August, 1992, FGS prepared a CAP and an associated QAPP for the subject property. The CAP was prepared in accordance with the requirements of a Consent Order between FDEP and HOWCO dated June 19, 1992 and Rule 62-770, FAC. Upon approval of the CAP and QAPP, FGS subsequently initiated Contamination Assessment (CA) activities.

The results of soil OVA screening from all borings, laboratory analysis of soil from selected borings, and analytical results of groundwater samples identified seven apparent source areas (Area 1 through Area 7) associated with former locations of abandoned petroleum ASTs, USTs, and existing petroleum product processing areas. Five of the seven source areas have been found to be eligible for the Abandoned Tank Restoration Program (ATRP). The ATRP-eligible areas are identified as the Charlie Hennton Landscaping property, the Gary Ford Asphalt Paving property, the Mike Brown Grading and Excavations property and two A & E Services areas. The remaining two source areas are ATRP-eligibility pending. The locations of the five ATRP eligible sites are presented in Figure 7A. The areas not yet determined to be eligible are identified as Areas 6 and 7 on Figure 7B.

Results of the soil and groundwater investigations conducted in each of the 7 areas have concluded that petroleum impacts have been detected on the subject site. These results indicate that additional groundwater quality assessment is warranted in 3 of the 7 areas. These areas include the former Charlie Hennton Landscaping property (ATRP-eligible), Mike Brown Grading and Excavation (ATRP-eligible), and former A & E Services - 9th

Avenue South (ATRP-eligible). Additional soil and groundwater quality assessment is warranted in two ATRP eligible areas; former Gary Ford Asphalt and Paving and former A & E Services - 43rd Street South Vehicle Fuel Dispenser Area. No additional assessment work was concluded to be warranted in the two areas which have their ATRP-eligibility pending (southwest of Tank Farm West) and the south end of Tank Farm West (Areas 7 and 6, respectively). The results detected have been found to be consistent with the types of petroleum product storage systems which were historically in operation.

SECTION 1.0
INTRODUCTION

1.1 Site Location and Description

The HOWCO Environmental Services, Inc. (HOWCO) site is located at 843 43rd Street South, in an industrialized area of the City of St. Petersburg, Florida, approximately 3/4 mile west of U.S. 19 in Section 27, Range 31 South, Range 16 East (Figure 1). The site is at an approximate elevation of 35 feet above mean sea level (MSL) and slopes gently to the north-northeast. The site currently operates as an oil reclamation facility and industrial wastewater treatment plant. HOWCO accepts non-hazardous petroleum-contaminated soils, petroleum impacted sludges, and liquids for processing on site. Oil recovered from treatment processes is recycled and reused. Wastewater recovered from the petroleum product recycling process is treated on-site and tested prior to discharge to the City of St. Petersburg's Wastewater Treatment Plant. Adjacent properties include the General Roofing warehouse and yard to the north of the site, an automotive repair yard and a fuel oil company located to the northeast of the site and other light industrial properties located to the west and south. Residential properties are located to the south of the site across 9th Avenue South.

1.2 Project Background Information

ERM-South, Inc. (ERM) performed an environmental audit and preliminary contamination assessment of the facility in 1991. The report is included in Appendix

B. Florida Groundwater Services, Inc. (FGS) was retained by HOWCO in 1992 to formulate and implement a Contamination Assessment Plan (CAP) and an associated Quality Assurance Project Plan (QAPP) for the subject site. The CAP was prepared in accordance with the requirements set forth in Exhibit III of the Consent Order (CO) entered into between the Florida Department of Environmental Regulation (FDER) and HOWCO Environmental Services, Inc. dated June 19, 1992 and the requirements of Rule 62-770, Florida Administrative Code. A copy of the Consent Order is provided in Appendix A.

1.3 Site History

The site history is derived from the ERM preliminary assessment and supplemental investigations performed by HOWCO and FGS. The site history can be summarized as follows:

Prior to 1975, the property was undeveloped. Pre-1975, the aerial photographs show the property was covered with grass, trees and bare soil. Some petroleum product storage activities, trucks, and paving equipment are evident in the 1975 aerial photograph. Used oil operations on the property were limited to the eastern half of the site until about 1990-1991. From 1975 to the late 1980's, A & E Services operated on the site, and the facility accepted used oils, stored in drums and tanks, and sold it for road construction. In 1976 (approximately), the A & E facility

consisted of receiving tanks 29-32 and delivery tanks 21-24 (See Figure 13A). The West Tank Farm was expanded over the years by the addition of various tanks.

From 1980 through 1989, the western half of the site was operated by a number of businesses not associated with the used oil storage or recycling operations including Gary Ford Asphalt Paving, Mike Brown Grading and Excavating, Charlie Hennton Landscaping (and Pruitt & Sons Landscaping) and A & E Services (Figure 13A). Based on review of aerial photographs, city directories, property tax documents and correspondence with on-site personnel, the former businesses operated on the property from approximately 1980 to 1989. The specific location of each operation is presented on Figure 7A. Each of these operations included a number of petroleum storage systems, all of which were removed prior to 1989. The size, location and content of each petroleum storage system is approximate, based on aerial photographs and conversations with personnel on-site during the relevant time period.

Tanks 5-7 were added in Area 7 (See Figure 7B) in approximately 1978. Tanks 6-7 were used to separate recyclable oil from oil/water mixtures. Tank #6 was used for separation. Free oil collected from the separator tank gravity flowed from Tank #6 into Tank #5. Based on the limited storage capacity in Tank #5, the used oil would on occasion be pumped into Tank #7 for temporary storage. Used oil reclaimed from Tanks #5, #6 and #7 was pumped back into the plant for recycling.

In approximately 1980, a used oil cooker and associated tanks 10-13 were installed in Area 4 (See Figure 7B) with associated piping connecting the storage systems with the Tank Farm West. In addition, Tanks 40-48, 39 and 49 were installed in the area of the East Tank Farm (Figure 13A).

In approximately 1985, a wash rack was installed in the southeast portion of the site, on the west side of the existing parking area, and the used oil cooker and associated tanks were removed from Area 4. A new cooker was installed in the West Tank Farm at that time.

In approximately 1986, the balance of the West Tank Farm was retrofitted with a concrete slab, and the Eastern Tank Farm, shown on Figure 13A (tanks 40-48, inclusive), was removed and replaced with the current wastewater treatment plant (WWTP) as shown in Figures 2 and 13B (the pre-1989 site configuration). In the late 1980's to early 1990-1991, the wash rack was relocated from the southeast corner of the property to its present location (Figure 2), with integral sump and containment. All wash water is captured, pumped to the plant, and recycled in the plant.

In 1991-1992, a 6 inch thick concrete slab with an integral storm water collection system, collection sump and concrete containment walls was added in the southwestern portion of the property for the purpose of processing petroleum

contaminated sludge. Concrete containment curbs were installed on the concrete loading slabs, around the East and West Tank Farm areas (replacing asphalt berms) and around the wastewater treatment plant. A soil berm was also constructed in the north part of the facility between the northern property boundary and the plant area.

The facility was partially paved with asphalt in the late 1980's (1988-1989). In the early 1990's, a concrete swale, storm water inlet grate and storm water containment vault were installed to direct and collect non-contact storm water to the western portion of the site. The vault connects to a oil water separator and discharges to the local storm water collection system. Off-site discharge is controlled by a manually operated valve. In 1994, the balance of the facility was paved over in its entirety. Since installation of the system, non-contact storm water collects in the area of the grate until inspection confirms that no sheen is present, at which time waters are discharged to the storm sewer. Unless needed for makeup water in the plant or a sheen is present, waters are pumped to the plant for processing.

Preliminary soil investigations were conducted by ERM at the site in August 1991. The purpose of their investigations were to identify areas of petroleum-contaminated soil samples from selected locations using backhoe test pits and hand auger borings. In February, 1992, ERM completed a Preliminary Contamination Assessment (PCA) of the facility to evaluate the magnitude and extent of the identified excessively contaminated soil areas. Groundwater quality and flow direction assessments were

not included in the PCA. Based on the results (visual observations and OVA readings) of the twenty-seven test pit excavations and up to forty soil auger borings, ERM estimated the total volume of excessively contaminated soil to be 3,035 cubic yards (4249 tons). ERM's complete report dated June, 1992, is contained in the PCAR provided in Appendix B.

FGS was retained by HOWCO in 1992. In August, 1992, FGS prepared a CAP and an associated QAPP for the subject property. The CAP was prepared in accordance with the requirements of a Consent Order between FDEP and HOWCO dated June 19, 1992 and Rule 62-770, FAC. Upon approval of the CAP and QAPP, FGS subsequently initiated this Contamination Assessment (CA).

1.4 Objectives

The objectives of the FGS contamination assessment were to:

- Assess the hydrogeologic characteristics of the site;
- Assess the magnitude of any impacts to the soil and groundwater;
- Assess the horizontal and vertical extent of soil and groundwater quality impacts, if any, associated with the source areas; and
- Assess whether remedial actions are necessary.

If you have questions regarding this or the pollution liability insurance program, please contact William E. Truman, Petroleum Insurance Administrator at 904/488-0876.

Sincerely,

John M. Ruddell, Director
Division of Waste Management

JMR/awp

cc: Nancy Evans - Southwest Florida District Office

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to §120.52 Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Andrea W. Poole 4/05/94
Clerk Date

1.5 Scope of Work

The Scope of Work for this contamination assessment included the following:

- Review of site investigation reports prepared by others;
- Review of available literature discussing the geologic and hydrologic characteristics of the area;
- Excavation of 59 soil borings to depths ranging between 10 and 47 feet BLS;
- Collection of soil samples for headspace analysis using an organic vapor analyzer/flame ionization detector (OVA/FID) pursuant to Rule 62-770.200 (2), Florida Administrative Code (FAC);
- Laboratory analysis of soil samples collected from selected soil borings for EPA Methods 8010, 8020, 8080, 8100, 9073, and 9 Total Metals;
- Installation of thirteen shallow (approximately 17 to 18 feet BLS) and two deep (approximately 46 feet BLS) monitoring wells;
- Lithologic description of soil samples collected during drilling operations and soil boring installations;
- Measurement of water levels and subsequent evaluation of groundwater flow directions and hydraulic gradient;
- Laboratory analysis of groundwater samples collected from monitoring wells for the Kerosene Analytical Group (KAG) parameters plus EPA Method 604 and 6 Total Metals per Rule 62-770.600 (8), FAC criteria and the approved CAP and QAPP;
- Aquifer characteristic tests to assess on-site aquifer permeability, transmissivity, and groundwater velocity values; and
- Review of available information from the Southwest Florida Water Management District (SWFWMD) regarding potable and irrigation water supply wells in the vicinity of the site and a field reconnaissance survey to identify potable domestic or public supply wells located in the vicinity of the site.

SECTION 2.0
FIELD INVESTIGATION

FGS site investigation activities concentrated on characterizing the hydrogeologic conditions at the site and assessing the horizontal and vertical extent of petroleum related impacts to both the soil and groundwater. Each of FGS' site activities is described below. The results of these activities are discussed in Section 4.0. FGS' site investigation activities focused on the former storage tank locations (source areas) and potential source areas identified by FGS personnel during an on-site visual inspection. Data collected by ERM during their PCA was used for the preparation of ATRP applications. Supplemental work conducted by FGS which confirmed contamination was used to acquire eligibility. For the purpose of this assessment, the site has been divided into five ATRP-eligible areas and two areas which are the subject of a facility-wide ATRP application which is pending. The ATRP-eligible areas are identified as the Charlie Hennton Landscaping property, the Gary Ford Asphalt Paving property, the Mike Brown Grading and Excavations property and two A&E Services areas. These areas are identified on Figure 7A. The areas not yet determined to be eligible are identified as Areas 6 and 7 on Figure 7B.

2.1 Soil Quality Assessment

On October 10, 1994 and November 1 through 3, 1995, FGS personnel conducted a soil quality assessment to evaluate the horizontal and vertical extent of petroleum related hydrocarbon impacts to the soil above the water table. The results of these OVA/FID field screenings are discussed in Section 4.0 and presented in Tables 1A and 1B, respectively. The soil-gas survey was conducted in accordance with the

FDEP's May, 1994, document "*Guidelines for Assessment and Remediation of Petroleum-Contaminated Soils*" which states that soil contaminated with diesel/mixed fuel product which emits an OVA/FID reading greater than 50 parts per million (ppm) is considered "excessively contaminated," and soil contaminated with gasoline fuel product which emits an OVA/FID reading greater than 500 ppm is considered "excessively contaminated', and soils with OVA/FID readings as low as 10 ppm could be considered "contaminated" in accordance with Rule 62-770.200(2) FAC. Soil samples collected from borings excavated in the vicinity of the used oil tank, cooker tank or oil/water separator areas were visually inspected for soil quality impacts.

In accordance with Rule 62-770.200(2) FAC, each soil sample was placed in a 16-ounce glass mason jar and the headspace above the soil sample was screened for total organic vapors using an OVA/FID. The two-foot interval from each boring which appeared to be the most contaminated was collected for chemical analysis at PC&B Laboratories (PC&B) of Oviedo, Florida, a Florida DHRS licensed laboratory.

A total of 12 soil borings (B-1A through B-12A) were excavated by FGS personnel on October 10, 1994. The location of these soil borings are shown in Figure 3A. Drilling services were provided by Huss Drilling, Inc., a Florida licensed drilling contractor. One sample from each boring excavated at six suspected source areas was analyzed for an extended list of parameters including EPA Methods 8010, 8020, 8080, 9073, RCRA metals, and nickel. Samples collected from the six remaining

borings were collected for analysis by EPA Method 9073 and nickel as specified in the CAP. Soil sampling was performed in accordance with the site-specific QAPP, approved August 31, 1994, as well as FGS' FDEP-approved CompQAP (#890395).

Additional borings B-1 through B-46 and DB-1 were excavated on November 1 through 3, 1995, in the vicinity of locations of former above ground storage tanks (ASTs) and underground storage tanks (USTs) that were abandoned (removed) according to DER rules prior to 1989. The locations of these soil borings are presented on Figure 3B. Drilling services were provided by Custom Drilling Services, Inc., of Lakeland, Florida, a Florida licensed drilling contractor. A threshold of 500 ppm was used to characterize the soil at the location of AST #1 which historically stored gasoline. A threshold of 50 ppm was used at all other former tank areas where used oil, diesel or both diesel and gasoline were historically stored. Soil samples were collected at 2 foot depth intervals to approximately 1.0 foot above the static water table. At the time of the field activities, groundwater was encountered at approximately 5 to 9 feet BLS depending on the location. Soil samples were also collected during the installation of all monitoring wells at 2-foot intervals to the water table to describe the shallow lithology and conduct field screening to evaluate the presence of petroleum impacted soil. Each soil boring was excavated using a truck-mounted solid-stem auger drill rig to an approximate depth of 8 feet BLS, except soil boring DB-1. Deep soil boring DB-1 was excavated to a depth of 46 feet to characterize the lithology for the purpose of setting surface casing for the vertical

extent wells. The results of these OVA/FID field screenings are discussed in Section 4.0 and presented in Table 1B.

Soil samples were collected from fifteen of the forty-six soil borings for analytical testing in accordance with the FDEP-approved supplemental scope of work dated June 23, 1995. The two-foot interval from each boring which appeared to be the most contaminated was collected by FGS personnel for chemical analysis by PC&B. Soil samples collected from soil borings B-8, B-10, B-13, B-15, B-27, B-28, B-29, B-30, and B-37 were first analyzed by EPA Methods 8010 and 8020 by HOWCO's on-site laboratory. Soil samples collected from soil borings B-21 through B-26, B-31, B-33 through B-36, B-39, B-40, and B-44 were first analyzed by EPA Method 7420 (total lead) by HOWCO's on-site laboratory. These soil analyses were performed to confirm the presence or absence of soil quality impacts in accordance with the approved scope of work. Samples were not analyzed by EPA Method 8100 by HOWCO's laboratory as stated in the FDEP approved supplemental scope of work because HOWCO's laboratory was not able to perform these analyses in the necessary timeframes. Subsequently, soil samples collected from soil borings B-27 through B-30 were analyzed by PC & B by EPA Methods 8010, 8020, 8100 and for total lead. Soil samples collected from soil borings B-21, B-22, B-23, B-24, B-25, B-31, B-33, B-34, B-35, B-39, and B-40 were analyzed by EPA Method 8100 and for total lead. A trip blank, which was shipped with the samples to the laboratory, was analyzed for volatile compounds by EPA Methods 8010 and 8020. A lithologic log,

based on the field examination of soil samples collected from the soil borings was compiled for each boring (Appendix C).

2.2 Preliminary Groundwater Flow Evaluation

Prior to installing the permanent groundwater monitoring wells, FGS utilized existing monitoring wells installed by ERM (EMW-1 and EMW-2), and installed three temporary piezometers (P-1, P-2, and P-3) to establish the direction of groundwater flow and hydraulic gradient across the site. FGS subsequently surveyed the ERM wells and the newly installed piezometers and collected water level data to construct a preliminary groundwater elevation contour map. This information facilitated the proper placement of permanent monitoring wells hydraulically upgradient and downgradient of the properly closed ASTs, USTs, and existing petroleum processing locations. The preliminary groundwater flow direction was evaluated to be toward the southeast and is depicted on Figures 4 and 5 and summarized in Tables 3A and 3C.

2.3 Groundwater Monitoring Well Installation

On March 13 and October 25 through 27, 1995, an FGS hydrogeologist supervised the installation of thirteen shallow monitoring wells (MW-1 through MW-13) to depths of approximately 17 to 18 feet BLS. Two deep monitoring wells (MW-6D and MW-7D) were installed to approximately 46 feet BLS. The wells were installed to evaluate the extent and magnitude of potential groundwater quality impacts

associated with the abandoned ASTs, USTs, and oil recovery processes. The location of each well is presented on Figure 6. Monitoring wells were installed in the vicinity of former locations of above ground and underground storage tanks. Specifically, monitoring well MW-9 and MW-1 were installed as source and downgradient wells, respectively, for the former ASTs located on the former Charlie Hennton Landscaping property. Monitoring wells MW-2, MW-4, and MW-10 were installed to provide source and plume delineation groundwater quality data, respectively, for the abandoned USTs at the former Gary Ford Asphalt Paving Co. property. Monitoring wells MW-5 and MW-11 were installed to assess groundwater quality in the vicinity of the HOWCO Tank Farm West. Monitoring wells MW-7 and MW-3 were installed as source and downgradient wells, respectively, for the former ASTs on the former A & E Services 9th Avenue property. Monitor well MW-8 was installed as the source well for the former AST at the former Mike Brown Grading and Excavations property. Monitoring well MW-6 was installed as a source well for the former ASTs at the former A & E Services 43rd Street South property. Deep monitoring wells MW-6D and MW-7D were installed at their respective source areas to evaluate the vertical extent of groundwater quality impacts. Monitoring wells MW-12 and MW-13 were installed as downgradient wells at the northeastern and southeastern corners, respectively, of the property boundaries.

The thirteen shallow surficial aquifer monitoring wells were constructed of 2-inch diameter, Schedule 40, flush-jointed PVC, with a 10-foot 0.010-inch screened section

and 7.0 to 8.34 feet of blank riser. A 20/30-grade silica sand filter pack was placed within the annular space between the borehole and the well screen to a minimum of 1 foot above the screen. A minimum one-foot thick 30/65-grade fine sand seal was placed on top of the filter pack. Cement grout was placed on top of the sand seal to ensure that surface infiltration would not preferentially flow down the borehole. The shallow monitoring wells were sealed with locking, expandable caps and enclosed within flush-mounted manholes. The manholes were installed approximately one inch above grade, with a sloped 2-foot square by 4-inch thick crowned concrete pad to prevent surface water run-off from preferentially entering the manholes. Monitoring wells MW-1 through MW-6 were installed by Huss Drilling, Inc. and all other wells were installed by Custom Drilling, Inc. Well construction details are presented in Appendix D and summarized in Table 2.

The deep, vertical extent wells, MW-6D and MW-7D, were installed with a 40-foot length of 6-inch inner diameter Schedule 40 PVC surface casing, cemented in place using Portland Type I cement and potable water mixed (neat cement) according to SWFWMD specifications. The depth of the surface casing was determined based on the lithology observed in DB-1. The 6-inch diameter surface casing was installed to reduce the potential for vertical migration of contaminants during installation of the 2-inch diameter well. The 2-inch diameter well screen and casing was installed within the surface casing and constructed of a 5-foot 0.010-inch machine slotted screened section attached to a 41-foot section of solid PVC riser. A 20/30-grade silica sand

filter pack was poured through a tremie pipe in the annular space between the borehole wall and PVC well screen to approximately 1.0 foot above the screen. An approximately two-foot thick 30/65-grade bentonite seal was placed on top of the filter pack. Neat cement was added to land surface. MW-6D and MW-7D were completed at the surface as previously described. Complete monitoring well construction details are provided in Appendix D.

The monitoring wells were developed using a centrifugal pump to ensure an adequate hydraulic connection between the filter pack and surrounding formation and to facilitate the removal of very fine sand and silt. Fluids generated during well development were treated on-site at the facility's wastewater treatment plant. Top-of-casing elevations were surveyed by FGS personnel prior to sampling of the monitoring wells. All downhole equipment, including the well construction materials, was properly decontaminated in accordance with FGS' CompQAP (No. 890395) prior to use.

A lithologic log, based on the field examination of soil samples collected from the monitoring wells, was compiled for each well (Appendix C). The logs include lithologic descriptions and other pertinent information. The results are presented in Section 3.1 of this report.

2.4 Groundwater Sampling and Analysis

On March 15, 1995, FGS personnel collected groundwater samples from monitoring wells MW-1 through MW-6. In accordance with FGS' CompQAP, a field duplicate sample of MW-5 (MW-51), an equipment blank (EQ-315), and rinse blank (RB-315) were collected during the sampling event. The laboratory was instructed to hold rinse blank RB-315 until analytical results of the remaining samples could be evaluated by FGS. A trip blank was also provided during the sampling event for transportation with the samples to the laboratory.

On November 8, 1995, FGS personnel collected groundwater samples from newly installed monitoring wells MW-6D through MW-13. In accordance with FGS' CompQAP, a field duplicate of samples from MW-7 (MW-30), an equipment blank (MW-31), and a rinse blank (MW-32) were collected during the sampling event. The laboratory was instructed to hold field blank MW-32 until analytical results of the remaining samples could be evaluated by FGS. A trip blank was also provided during the sampling event for transportation with the samples to the laboratory.

All groundwater samples were stored on wet ice for transportation to a State-certified laboratory to be analyzed for the KAG parameters, additional total and dissolved metals (Arsenic, Chromium Mercury, Nickel, and Selenium) and phenolic compounds (EPA Method 604). The March 15, 1995, sampling events included an analysis for turbidity. The KAG parameters include purgeable aromatic halocarbons (EPA Method 601); purgeable aromatic hydrocarbons and Methyl Tert-Butyl Ether

(MTBE) (EPA Method 602); 1,2-Dibromoethane (EDB) (EPA Method 504.1); polynuclear aromatic hydrocarbons (PAHs) (EPA Method 610); total recoverable petroleum hydrocarbons (TRPH) (EPA Method 418.1) and total lead (EPA Method 239.2). The laboratory data sheets and chain-of-custody records are included in Appendix E. The summarized groundwater quality results for all wells are presented in Tables 4A and 4B. All groundwater samples were collected in accordance with FGS' CompQAP.

2.5 Aquifer Characterization Testing

2.5.1 Groundwater Flow Direction

Following each monitoring well installation event, the newly installed piezometers and monitoring wells were surveyed by FGS personnel to an assumed datum [35.00 feet mean sea level (MSL)]. Due to the length of time of ongoing site activities, top of casing (TOC) elevations were updated at the intervals shown in Tables 3A through 3E. The water level at each monitoring well was measured to the nearest 0.01 ft using an electronic water level indicator. The monitoring well locations are shown on Figure 6. Groundwater elevations were used to construct groundwater contour maps for assessing the direction and hydraulic gradient of groundwater flow across the site. Tables 3A through 3E are summaries of groundwater level elevations measured on September 27, 1993, September 9, 1994, October 18, 1994, and March 15, April 14, May 30, and November 8, 1995. The results of the

groundwater elevation measurements and hydraulic gradients are discussed in Section 4.9.1.

2.5.2 Hydraulic Conductivity

A series of aquifer tests ("slug out" tests) were performed in five surficial aquifer monitoring wells (MW-6, MW-6D, MW-7, MW-7D, and MW-8) by FGS personnel on February 9, 1996. The slug tests were performed according to the following procedures:

- The water level in each well was instantaneously lowered by extracting a known volume using a decontaminated, variable-length stainless steel bailer.
- As the water level returned to equilibrium or a static condition, the rate of change in water level was monitored and recorded using a pressure transducer and computerized data logger (the transducer was inserted to the bottom of the well prior to slug removal and connected to the date logger, which records both time and pressure head above the transducer at selected time intervals);
- Pressure readings were automatically converted to water level height above the transducer.

Upon completion of the "slug out" testing, the data were reduced and used to calculate the hydraulic conductivity of the sediments in the upper portion of the surficial aquifer using analytical methods developed by Bouwer and Rice (1976) and Bouwer (1989). The results of the slug tests are discussed in Section 4.9.2.

2.5.3 Transmissivity

The transmissivity (T) of the surficial aquifer was calculated using the equation T=Kb, where K is the average hydraulic conductivity (obtained from the slug test results) and b is the saturated thickness of the surficial aquifer underlying the site. According to the reported literature, the saturated thickness of the surficial aquifer underlying the site is approximately 60 feet.

2.5.4 Groundwater Flow Velocity

The horizontal groundwater velocity was calculated using Darcy's equation

$$V = K/n * dh/dl$$

(Freeze and Cherry, 1979). The horizontal hydraulic conductivity (K) used in these calculations was an average of the slug test results conducted in wells screened in the surficial aquifer. The effective porosity for the aquifer (n) was estimated to be 0.3 based on the grain size of the surficial sands (Freeze & Cherry, 1979). The horizontal hydraulic gradient (dh/dl) used in the calculations was the average gradient calculated using the shallow water table monitoring wells.

2.6 Potable Well Inventory

The SWFWMD was contacted for information concerning the locations of private and public potable supply wells within a quarter and half-mile radius of the site, respectively. In addition, a field reconnaissance survey was conducted by FGS personnel to locate adjacent domestic or public supply potable wells not listed on the

permit records provided by the SWFWMD. The results of the survey are discussed in Section 4.10.

SECTION 3.0
GEOLOGY AND HYDROGEOLOGY

3.1 Regional Geology and Hydrogeology

According to Heath and Smith (1954), Ryder (1985), Causseaux (1985), Gilboy (1985), SWFWMD (1988), and Scott (1988), Pinellas County is located on a peninsula separating Tampa Bay from the Gulf of Mexico and is characterized by gently sloping Pleistocene marine terraces overlying the carbonate Florida Platform. The county is divided into hilly uplands dominated by the Pinellas Ridge in the north central portion, and flat uplands and level lowlands in the southern and coastal areas of Pinellas County. The site is located on the Penholoway Terrace in southern Pinellas County. The Soil Survey of Pinellas County (Vanatta, 1972) indicates that the site is located in an area mapped as "Urban Land". This land type consists of original soil that has been modified through cutting, grading, and shaping or has been altered for urban development.

The surficial aquifer ranges in thickness from less than 20 feet in the north central portion of the county, to 90 feet in the southern portion of Pinellas County. The thickness of the surficial aquifer at the site is approximately 60 feet (Causseaux, 1985). The surficial aquifer is separated from the underlying Upper Floridan aquifer by the Hawthorn Group. Low permeability units within the Hawthorn Group act as a confining layer for the Upper Floridan aquifer and the thickness of the confining layer ranges from less than 25 feet in the north to approximately 100 feet in southern

Pinellas County. The thickness of the confining beds in the vicinity of the site is approximately 100 feet (SWFWMD, 1988).

The Hawthorn Group has a diverse lithology, consisting of quartz sand, phosphorite, clay, marl, dolosilt, dolostone, and limestone, reflecting the variety of depositional environments which occurred during the Miocene Epoch (Gilboy, 1985 and Scott, 1988). Small grains of black and brownish phosphate, and angular fragments of chert are irregularly distributed throughout the group (Heath and Smith, 1954).

SWFWMD (1988) reports that the transmissivity of the surficial aquifer ranges from approximately 300 ft^2/day for the fine-grained, well-sorted sands to several thousand ft^2/day for the shelly sands. This corresponds to a hydraulic conductivity of 6 to 12 feet per day. The specific yield for the surficial aquifer is reported to range from less than 0.1 to 0.3 and averages approximately 0.2. According to SWFWMD (1988), this aquifer is classified as a G-II aquifer and has limited use as a supplemental or alternative source of water for public, industrial, or agricultural supply. Water from the surficial aquifer in Pinellas County is presently used for rural and domestic use, livestock supply, lawn irrigation, and for heating and air conditioning.

SWFWMD (1988) reports from an average of five aquifer tests that transmissivity values range from 33,422 ft^2/day to 1,203,209 ft^2/day in the upper Floridan aquifer and storativity ranges from 2×10^{-4} to 8×10^{-3} in the upper Floridan aquifer. The

thickness of the Floridan ranges from less than 1,000 feet in northern Pinellas County to more than 1,200 feet in the south (SWFWMD, 1988). The most productive zones of the upper Floridan aquifer are in the Tampa Member and Suwannee Limestone (Hickey, 1982). The Tampa Member of the Arcadia Formation (Hawthorn Group)(Scott, 1988) is of Early Miocene age and consists mainly of hard, sandy, fossiliferous limestone. It is approximately 150 feet thick in central Pinellas County (Heath, 1954).

SWFWMD (1988) reports total dissolved solid concentrations from the Floridan aquifer in central Pinellas County to range from 1,336 mg/L to 5,990 mg/L, which would indicate a G-II aquifer classification. However, the Florida Primary Drinking Water Standard for total dissolved solids is 250 mg/L. Therefore, water from the Floridan aquifer in central Pinellas County is expected to be non-potable. Mineralization of groundwater generally increases with depth and toward the coast. SWFWMD (1988) reports that the lower Floridan contains no potable water in southern Pinellas County.

Groundwater use from the upper Floridan aquifer in Pinellas County is limited due to the small amount of good quality water available and the sensitivity of the aquifer to saltwater encroachment. Only ten percent of the total Pinellas County public water supply is withdrawn from within Pinellas County. The remainder is imported from adjacent counties (Stieglitz, 1988). SWFWMD (1988) reports that water

produced from the upper Floridan aquifer in Pinellas County is used for municipal supply, agricultural and industrial uses are minor.

3.2 Site-Specific Geology and Hydrogeology

The lithology beneath the site was characterized by collecting soil samples from the soil borings and monitoring wells. Three basic lithologic units were identified beneath this site. A site-specific geologic cross-section is presented on Figure 6A. Unit 1 is a light tan, fine-grained, slightly silty quartz sand and was encountered from approximately 0 to 4.0 feet BLS. Unit 2 is a brown to dark brown to black, silty to very silty, fine to medium-grained quartz sand which was encountered from approximately 4.0 to 35.0 feet BLS. The medium-grained sand fractions encountered were minor. Unit 3 is a dark brown, very fine to fine-grained, discontinuous, brittle clay that was encountered from 35.0 to 36.0 feet BLS in boring DB-1. Unit 2 appears to continue beneath the discontinuous Unit 3 from approximately 36.0 to 46.0 feet BLS. Soils encountered on-site are consistent with the lithologies described in the published literature for unconsolidated deposits of the surficial aquifer of southern Pinellas County. Lithologic logs for the soil borings and monitor wells are included in Appendix C.

SECTION 4.0
RESULTS

4.1 Introduction

The results of soil OVA screening from all borings, laboratory analysis of soil from selected borings, and analytical results of groundwater samples identified seven source areas (Area 1 through Area 7) associated with former locations of abandoned ASTs, USTs, and existing petroleum product processing areas. Five of the seven source areas have been found to be eligible for the Abandoned Tank Restoration Program (ATRP). The balance of the site, including the remaining two source areas are subject to a pending ATRP application. The locations of the five ATRP eligible sites are presented in Figure 7A. The locations of the seven source areas are shown in Figure 7B. Copies of the ATRP applications for the five approved sites are included in Appendix F. Two of the sites (relating to A&E Services historical operations) are included under one eligibility letter. The results of soil and groundwater analysis and OVA field screening for each of the ATRP eligible sites are discussed separately below. The horizontal and vertical extent of petroleum impacts in the unsaturated zone were evaluated as described in Section 2.1 of this report.

All petroleum-impacted soil cuttings from the soil boring and monitoring well locations were containerized into Florida Department of Transportation (FDOT) approved 55-gallon drums for subsequent disposal by HOWCO at Geologic Recovery

Systems in Mulberry, Florida. The results of a composite soil sample indicated that the cuttings had been impacted by petroleum products and met the applicable Rule 62-775 criteria for disposal. The analytical results are included in Appendix E. Disposal manifests will be forwarded under separate cover.

Monitoring wells MW-1 through MW-13, MW-6D and MW-7D were sampled by FGS in accordance with procedures outlined in FGS' FDEP-approved CompQAP (#890395). The samples were properly preserved, cooled, and transported to a State-certified analytical laboratory (PC&B Laboratories, Inc. in Oviedo, Florida) for chemical analysis. The summary of groundwater results are presented in Tables 4A (3/15/95) and 4B (11/8/95).

The results of quality control (QC) duplicate sample MW-30 (Table 4B) are comparable to the results of MW-7 indicating precision in field sampling technique and laboratory procedures employed during analytical testing. However, results from QC duplicate samples MW-51 and MW-5 (Table 4A) are different by more than 5% for several parameters. This difference may be attributed to high turbidity resulting in the failure to achieve a true duplicate sample from MW-5. No KAG parameters were detected in the QC equipment blanks EQ-315 and MW-31. No EPA 601 or 602 parameters were detected in the trip blanks for the March or November, 1995, sampling events. Complete analytical laboratory reports are contained in Appendix E.

4.2 Area 1--Former Charlie Hennton Landscaping

4.2.1 Soil Quality Assessment

Total petroleum hydrocarbon vapor concentrations for the headspace above the soil samples collected from soil boring B-2A on October 10, 1994, are presented in Table 1A. The results of OVA screenings from the installation of monitoring wells MW-1 and MW-9 and borings B-10, B-11, B-12, B-44, B45, and B-46, collected in March, October, and November, 1995, are presented in Table 1B.

The results of the OVA/FID headspace analysis of soil samples collected from soil borings and monitor wells in Area 1 indicate that "excessively contaminated" soil (petroleum hydrocarbon vapor concentrations greater than 500 ppm, for gasoline product sources, as defined in Rule 62-770.200(2), FAC) was not identified. This source area is proximal to the former location of AST #1, which historically contained gasoline.

Results of soil analytical testing for the October 10, 1994, sampling event indicate that the soil sample B-2A, collected in Area 1, did not exceed its corresponding clean soil criteria pursuant to Rule 62-775.400, FAC for total volatile organic aromatics (total VOAs), total recoverable petroleum hydrocarbons (TRPH), and total metals (Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Silver, and Nickel). Therefore, the extent of soil

quality impacts has been delineated. Analytical results from the October 10, 1994, soil quality evaluation are summarized in Table 5A.

4.2.2 Groundwater Quality Assessment

Monitoring well MW-1 was sampled on March 15, 1995. Monitoring well MW-9 was sampled on November 8, 1995. The monitoring well locations are shown on Figure 6. The groundwater samples were analyzed for the constituents of the Rule 62-770.600(8)(b), (FAC), KAG parameters, additional total and dissolved metals (Arsenic, Chromium, Mercury, Nickel, and Selenium), and phenolic compounds (EPA Method 604). In addition, a field duplicate and equipment blank were collected and analyzed for the same parameters. A trip blank was also provided during the sampling event and analyzed by EPA Methods 601 and 602 by the laboratory.

The analytical results of the groundwater samples indicate that dissolved phase groundwater contamination above State regulatory standards and/or target levels was detected in the vicinity of the former gasoline AST in Area 1. Selected groundwater results are presented in Tables 4A and 4B. During the initial March, 1995, sampling event, MTBE was detected above the State regulatory standard of 50.0 micrograms per liter (μg/L) in monitoring well MW-1 at a concentration of 1140.0 μg/L. All other tested parameters were below laboratory method detection limits (BDL). During the November,

1995, sampling of MW-9, EPA Method 602 compounds benzene (10.8 μg/L) and total volatile organic aromatics [(VOA's) 72.4 μg/L] were detected above their respective State regulatory standard of 1 μg/L and 50 μg/L. Total VOAs are reported as the sum of benzene, toluene, ethylbenzene, and total xylene concentrations. The inorganic metals analysis detected total lead in MW-9 at a concentration of 90 μg/L, which is above the State cleanup target level of 50.0 μg/L. However, based on the silt content and turbidity present in the groundwater, it is likely that the elevated total lead concentration is a naturally occurring, inherent property of the on-site groundwater. EPA Method 601 compounds DCE (19.4 μg/L) and vinyl chloride (12.5 μg/L) were detected above their corresponding Florida primary drinking water standards (FPDWS) of 7 μg/L and 1 μg/L, respectively.

The results of the groundwater samples collected from downgradient monitoring well MW-1 indicate that the leading edge of dissolved phase petroleum groundwater contamination is migrating to the south. The results of the groundwater samples collected from the source well MW-9 indicate that minor solvent and petroleum groundwater contamination exists in the vicinity of the former location of AST #1. The results further indicate that the petroleum impacts (MTBE) are likely due to gasoline formerly stored in the AST. Solvent impacts are likely due to impacts associated with the former paving company operations in the vicinity. Within this time period (pre-1989),

raw materials used in paving operations likely included used oils, solvents and petroleum products from a variety of unknown sources. These results are consistent with the type of historical operations conducted in this area.

Based on the soil and groundwater quality results for this area, additional groundwater quality assessment is warranted. The extent of the soil quality impacts has been delineated.

4.3 Area 2--Former Gary Ford Paving

4.3.1 Soil Quality Assessment

Total petroleum hydrocarbon vapor concentrations for the headspace above the soil samples collected from soil boring B-4A collected on October 10, 1994, are presented in Table 1A. The results of OVA screenings from the installation of monitoring wells MW-2 and MW-10 and borings B-13 through B-16, B42, and B-43 collected in March, October, and November, 1995, are presented in Table 1B.

The results of the OVA/FID headspace analysis and laboratory analysis of soil samples collected from soil borings and monitor wells in Area 2 indicate that "excessively contaminated" soil (petroleum hydrocarbon vapor concentrations greater than 50 ppm, for mixed product sources, as defined in Rule 62-770.200(2), FAC) was identified. Soil borings B-13 through B-15, B-42, and

B-43 exhibited corrected OVA readings greater than 50 ppm at 4 feet BLS. Soil borings B-14 and B-43 also exhibited corrected OVA readings greater than 50 ppm at 2 feet BLS. The soil boring associated with installation of MW-10 exhibited corrected OVA readings greater than 50 ppm at 4 to 6 feet BLS. However, analysis by HOWCO's on-site laboratory by EPA Methods 8010 and 8020 indicate soil borings B-13 and B-15 are below detection limits. The approximate extent of "excessively contaminated" soil has been adequately delineated for this area and is depicted on Figure 8. Based on OVA and laboratory analysis, approximately 402 tons of "excessively contaminated" soil (>50 ppm) exists in Area 2. This source area is proximal to the former location of USTs #2 and #3 which historically contained gasoline and diesel fuel, respectively.

Results of soil analytical testing for the October 10, 1994, sampling event indicate that total recoverable petroleum hydrocarbon (TRPH) was detected in B-4A at a concentration of 263 milligrams per kilogram (mg/kg) which exceeds the State clean soil criteria of 10 mg/kg. These results are consistent with the petroleum products stored in this area.

4.3.2 Groundwater Quality Assessment

Monitoring well MW-2 was sampled on March 15, 1995. Monitoring well MW-10 was sampled on November 8, 1995. The monitoring well locations are

shown on Figure 6. The wells were analyzed for the constituents of the Rule 62-770.600(8)(b), (FAC), KAG parameters, additional total and dissolved metals (Arsenic, Chromium Mercury, Nickel, and Selenium), and phenolic compounds (EPA Method 604).

The analytical results of the groundwater samples indicate that dissolved phase groundwater contamination above State regulatory standards and/or target levels was detected in the vicinity of the former USTs in Area 2. A summary of the groundwater results is presented in Tables 4A and 4B. During the March and November, 1995, sampling events, benzene concentrations above the State regulatory standard were detected in MW-2 (3.8 μg/L) and MW-10 (5.4 μg/L). Total VOA concentrations were detected above the State regulatory standard in MW-2 (215.7 μg/L) and MW-10 (137.2 μg/L). MTBE was detected above the State regulatory standard in MW-2 (250 μg/L). The inorganic metals analysis detected total lead concentrations above the State cleanup target level in MW-2 (1100 μg/L) and MW-10 (1500 μg/L). The dissolved lead concentration for MW-2 was 9.5 μg/L. A dissolved lead sample was not collected for MW-10. DCE was detected above the FPDWS in MW-2 (23.7 μg/L). Tetrachloroethene was detected above its corresponding FPDWS in MW-2 (5.1 μg/L) and MW-10 (10.4 μg/L). The vinyl chloride concentration reported in MW-2 (28.9 μg/L) is above its corresponding FPDWS.

Based on a comparison of the total and dissolved metals analytical results, it appears that a significant portion of the total metals concentrations are associated with turbidity (Table 4A). For most parameters, the dissolved metal sample result was significantly lower than the corresponding total metal result. The results of the groundwater samples collected from monitoring wells MW-2 and MW-10 indicate that minor solvent and petroleum groundwater contamination exists in the vicinity of the former location of USTs #2 and #3. The results further indicate that the petroleum impacts are due to the former petroleum products stored in this area. Solvent impacts are likely due to impacts associated with the former paving company operations in the vicinity. These results are consistent with the historical operations conducted and petroleum products stored in this area.

Based on these results, it is likely that supplemental soil and groundwater assessment activities are warranted.

4.4 Area 3--Former Mike Brown Grading and Excavation

4.4.1 Soil Quality Assessment

Total petroleum hydrocarbon vapor concentrations for the headspace above the soil samples collected from soil borings B-6A and B-7A collected on October 10, 1994, are presented in Table 1A. The results of OVA screenings from the installation of monitoring well MW-8 and borings B-1 through B-9,

and DB-1, collected in October and November, 1995, are presented in Table 1B.

The results of the OVA/FID headspace analysis of soil samples collected from soil borings and monitor wells in Area 3 indicate that "excessively contaminated" soil (petroleum hydrocarbon vapor concentrations greater than 50 ppm, for diesel product sources, as defined in Rule 62-770.200(2), FAC) was identified. Borings B-1, B-3 through B-5, B-7, and DB-1 exhibited corrected OVA readings greater than 50 ppm at 2 to 6 feet BLS. Soil boring B-8 exhibited corrected OVA readings greater than 50 ppm at 4 to 6 feet BLS. However, analysis by HOWCO's on-site laboratory by EPA Methods 8010 and 8020 indicate soil boring B-8 is below detection limits. The soil boring associated with the installation of MW-8 exhibited corrected OVA readings greater than 50 ppm at 2 to 4 feet BLS. Soil boring B-2 exhibited corrected OVA readings greater than 50 ppm at 2 and 6 feet BLS. The soil borings for B-6A, B-7A, and B-9 also exhibited corrected OVA readings greater than 50 ppm at 6, 8, and 6 feet BLS, respectively. The approximate extent of "excessively contaminated" soil has been delineated and is depicted on Figure 8. Based on the OVA headspace results and laboratory analysis, approximately 929 tons of "excessively contaminated" soil exists in Area 3.

Results of soil analytical testing for the October 10, 1994, sampling event indicate that TRPH was detected in soil borings B-6A and B-7A at concentrations which exceed the State clean soil criteria of 10 mg/kg. TRPH was detected in B-6A and B-7A at 177 mg/kg and 12.4 mg/kg, respectively. This source area is proximal to the former location of AST #4 which historically contained diesel fuel. These results are consistent with the petroleum product formally stored in this area.

4.4.2 Groundwater Quality Assessment

Monitoring well MW-8 was sampled on November 8, 1995. The monitoring well location is shown on Figure 6. MW-8 was analyzed for the constituents of the Rule 62-770.600(8)(b), (FAC), KAG parameters, additional total and dissolved metals (Arsenic, Chromium Mercury, Nickel, and Selenium) and phenolic compounds (EPA Method 604).

The analytical results of the groundwater samples indicate that dissolved phase groundwater contamination above State regulatory standards and/or target levels was detected in the vicinity of the former diesel AST in Area 3. A summary of the groundwater results is presented in Tables 4A and 4B.

During the November, 1995, sampling event, a benzene concentration above the State regulatory standard was detected in MW-8 (10.9 μg/L). MTBE was

detected above the State regulatory standard in MW-8 (192 µg/L). The inorganic metals analysis detected a total lead concentration above the State cleanup target level in MW-8 (90 µg/L). Vinyl chloride was detected above its corresponding FPDWS in MW-8 (16.9 µg/L).

Based on a comparison of total and dissolved metals analytical results, it appears that a significant portion of the total metals concentrations are associated with turbidity. For most parameters, the dissolved metal sample result was significantly lower than the corresponding total metal result. The results of the groundwater samples collected from monitoring well MW-8 indicate that the petroleum groundwater contamination is likely attributed to petroleum products stored upgradient in Area 2 (ATRP eligible). The results further indicate that the solvent impacts are likely due to impacts associated with ATRP-eligible Area 4 (used oil processing area, described below) and possible impacts from upgradient Gary Ford Paving Company operations in Area #2.

Based on these results, the extent of soil quality impacts has been adequately delineated. Further assessment of the extent of off-site groundwater quality impacts is likely warranted.

4.5 Area 4--Former A & E Services 9th Avenue South

4.5.1 Soil Quality Assessment

Total petroleum hydrocarbon vapor concentrations for the headspace above the soil samples collected from soil boring B-8A collected on October 10, 1994, are presented in Table 1A. The results of OVA screenings from the installation of monitoring wells MW-3, MW-7, MW-7D, and borings B-27 through B-30, and B-41, collected in March, October, and November, 1995, are presented in Table 1B.

Although the OVA screening of the soil samples collected in Area 4 suggest the presence of "excessively contaminated" soil (petroleum hydrocarbon vapor concentrations greater than 50 ppm, for diesel product sources, as defined in Rule 62-770.200(2), FAC), the elevated OVA results appear to be attributed to high levels of organics in the soil. Soil analytical testing for the October 10, 1994, and November 2 through 3, 1995, sampling events confirm that none of the soil samples collected in Area 4 (B8A, and B27-B30) exceeded the clean soil criteria pursuant to Rule 62-775.400, FAC. Therefore, the extent of soil quality impacts has been delineated. Analytical results from the October 10, 1994, and November 2 through 3, 1995, soil quality evaluation are summarized in Tables 5A and 5B, respectively. This source area is proximal to the former location of ASTs #8 through #13 which historically contained

used oil and mixed fuels in connection with the former used oil processing operation.

4.5.2 Groundwater Quality Assessment

Monitoring well MW-3 was sampled on March 15, 1995. Monitoring wells MW-7 and MW-7D were sampled on November 8, 1995. The monitoring well locations are shown on Figure 6. The wells were analyzed for the constituents of the Rule 62-770.600(8)(b), (FAC), KAG parameters, additional total and dissolved metals (Arsenic, Chromium Mercury, Nickel, and Selenium) and phenolic compounds (EPA Method 604).

The analytical results of the groundwater samples indicate that dissolved phase groundwater contamination above State regulatory standards and/or target levels was detected in the vicinity of the former ASTs in Area 4. A summary of the groundwater results is presented in Tables 4A and 4B. During the March and November, 1995, sampling events, benzene concentrations above the State regulatory standard were detected in monitoring wells MW-3 (4.2 μg/L) and MW-7 (2.2 μg/L). MTBE was detected above the State regulatory standard in MW-3 (223 μg/L) and MW-7 (184 μg/L). The inorganic metals analysis detected total arsenic (51 μg/L) and total chromium (190 μg/L) in MW-7D at concentrations above the corresponding FPDWS of 50 μg/L and 100 μg/L, respectively. A total lead concentration

above the State cleanup target level was detected in MW-7D (940 µg/L). Dissolved lead samples were not collected. A DCE concentration above the FPDWS was detected in MW-3 (21.0 µg/L). Tetrachloroethene was detected above its corresponding FPDWS in MW-7 (4.3 µg/L). Vinyl chloride concentrations were detected above their corresponding FPDWS in monitoring wells MW-3 (86.5 µg/L) and MW-7 (6.7 µg/L).

Based on a comparison of total and dissolved metals analytical results, it appears that a significant portion of the total metals concentrations are associated with turbidity (Table 4A). For most parameters, the dissolved metal sample results were significantly lower than the corresponding total metal results. The results of the groundwater samples collected from monitoring wells MW-3, MW-7, and MW-7D indicate that minor solvent and petroleum groundwater contamination exists in the vicinity of the former location of ASTs #8 through #13. The petroleum contamination is likely due to the fuels formerly stored in this area and/or impacts (MTBE) migrating from Area 2. The solvent impacts are likely due to impacts from the former used oil ASTs processing area.

Based on these results, additional and/or supplemental groundwater quality assessment activities are likely warranted in this area.

4.6 Area 5--Former A & E Services 43rd St. S. Vehicle Fuel Dispenser Area

4.6.1 Soil Quality Assessment

Total petroleum hydrocarbon vapor concentrations for the headspace above the soil samples collected from soil boring B-12A collected on October 10, 1994, are presented in Table 1A. The results of OVA screenings from the installation of monitoring wells MW-6, MW-6D, and borings B-17 through B-20 collected in March, October, and November, 1995, are presented in Table 1B.

The results of the OVA/FID headspace analysis of soil samples collected from soil borings and monitor wells in Area 5 indicate that "excessively contaminated" soil (petroleum hydrocarbon vapor concentrations greater than 50 ppm, for mixed product sources, as defined in Rule 62-770.200(2), FAC) was identified. Soil borings B-12A, B-19, and B-20 exhibited corrected OVA readings greater than 50 ppm at 2 through 8 feet BLS. The soil borings for monitoring wells MW-6 and MW-6D exhibited corrected OVA readings greater than 50 ppm at 4 through 8 feet BLS. The approximate extent of "excessively contaminated" soil is depicted on Figure 8. Based on OVA headspace analyses and laboratory analytical results, approximately 705 tons of "excessively contaminated" soil exists on-site in Area 5.

Results of soil analytical testing for the October 10, 1994, sampling event indicate that total VOAs were detected in soil boring B-12A (62,600 μg/kg) at a concentration which exceeds the State clean soil criteria of 100 μg/kg. This source area is proximal to the former location of ASTs #14 and #15 which historically contained diesel and leaded gasoline fuels, respectively. Analytical results from the October 10, 1994, soil quality evaluation are summarized in Table 5A. Based on these results, the extent of on-site soil quality impacts has been adequately delineated.

4.6.2 Groundwater Quality Assessment

Monitoring well MW-6 was sampled on March 15, 1995. Monitoring well MW-6D was sampled on November 8, 1995. The monitoring well locations are shown on Figure 6. The wells were analyzed for the constituents of the Rule 62-770.600(8)(b), FAC, KAG parameters, additional total and dissolved metals (Arsenic, Chromium Mercury, Nickel, and Selenium) and phenolic compounds (EPA Method 604).

The analytical results of the groundwater samples indicate that dissolved phase groundwater contamination above State regulatory standards and/or target levels was detected in the vicinity of the former ASTs in Area 5. Groundwater analytical results are presented in Tables 4A and 4B. During the October, 1994, and November, 1995, sampling events, benzene was

detected in monitoring wells MW-6 (13,100 μg/L) and MW-6D (9.1 μg/L) above the State regulatory standard. Total VOA's were detected above the State regulatory standard in MW-6 (99,240 μg/L) and MW-6D (359.9 μg/L). A total naphthalenes concentration exceeding the State regulatory standard was reported in MW-6 (416 μg/L). A TRPH concentration above the State regulatory limit was detected in MW-6 (11.0 mg/L). EPA Method 601 compounds were not detected in MW-6, consequently, an EPA Method 601 analysis was not performed on samples collected from MW-6D. Metals were not detected above State regulatory standards in MW-6, therefore, metals were not analyzed for in MW-6D. The results of the groundwater samples collected from monitoring wells MW-6 and MW-6D indicate that dissolved phase petroleum groundwater contamination exists in the vicinity of the former location of ASTs #14 and #15 (diesel and leaded gasoline, respectively). These results are consistent with the former fuel products stored in this area.

Based on these results, additional soil and groundwater assessment activities are warranted to delineate the extent of off-site impacts.

4.7 Area 6--South End of Tank Farm West (ATRP Facility-wide Application Pending)

4.7.1 Soil Quality Assessment

This is the area of connection of the former A&E used oil processing area (Area #4) and the former A&E Oil Tank Farm West. As shown in Figure 13A, Area #4 was connected to the former tank farm area through an underground pipeline. The pipeline was removed concurrent with the removal of oil processing Area #4.

Total petroleum hydrocarbon vapor concentrations for the headspace above the soil samples collected from soil boring B-11A collected on October 10, 1994, are presented in Table 1A. The results of OVA screenings from the installation of monitoring wells MW-5, MW-11, and soil borings B-31 through B-34, B-36, B-37, B-39, and B-40 collected in March, October, and November, 1995, are presented in Table 1B.

The results of the OVA/FID headspace analysis of soil samples collected from soil borings and monitor wells in Area 6 indicate that "excessively contaminated" soil (petroleum hydrocarbon vapor concentrations greater than 50 ppm, for mixed product sources, as defined in Rule 62-770.200(2), FAC) was identified. Soil borings B-11A, B-32, and B-37 exhibited corrected OVA readings greater than 50 ppm at 2 through 4 feet BLS. Soil boring B-40 exhibited corrected OVA readings greater than 50 ppm at 4 through 6 feet

BLS. Soil boring B-31 exhibited corrected OVA readings greater than 50 ppm at 4 feet BLS. The soil borings for monitoring well MW-5 and MW-11 exhibited corrected OVA readings greater than 50 ppm at 6 feet BLS and 2 through 6 feet BLS, respectively.

Results of soil analytical testing for the October 10, 1994, and November 2 through 3, 1995, sampling events indicate that TRPH was detected in soil boring B-11A (8,370 mg/kg) and B-31 (25 mg/kg) at a concentration which exceeds the State clean soil criteria of 10 mg/kg. A total lead concentration exceeding the State cleanup soil criteria of 108 mg/kg was detected in soil boring B-11A (820 mg/kg). Results of the OVA screening combined with the soil analytical results indicate that the approximate extent of "excessively contaminated" soil has been delineated and is depicted on Figure 8. Approximately 1302 tons of "excessively contaminated" soil exists in Area 6. Analytical results from the October 10, 1994, and November 2 through 3, 1995, soil quality evaluations are summarized in Tables 5A and 5B. The results indicate that impacts in this area are likely due to historical used oil processing activities in this area and/or the pipeline which connected the Tank Farm West to Area #4 prior to its removal.

4.7.2 Groundwater Quality Assessment

Monitoring well MW-5 was sampled on March 15, 1995. Monitoring well MW-11 was sampled on November 8, 1995. The monitoring well locations are shown on Figure 6. MW-5 and MW-11 were analyzed for the constituents of the Rule 62-770.600(8)(b), FAC, KAG parameters, additional total and dissolved metals (Arsenic, Chromium Mercury, Nickel, and Selenium) and phenolic compounds (EPA Method 604).

The analytical results of the groundwater samples indicate that dissolved phase groundwater contamination above State regulatory standards and/or target levels was detected in the vicinity of the southern portion of Tank Farm "West" in Area 6. Selected groundwater analytical results are presented in Tables 4A and 4B. During the March 15, and November 8, 1995, sampling events, benzene concentrations above the State regulatory standard were detected in MW-5 (56.0 μg/L) and MW-11 (16.4 μg/L). Total VOA's were detected above the State regulatory standard in MW-5 (56.0 μg/L). MTBE was detected above the State regulatory standard in MW-5 (1,004.0 μg/L) and MW-11 (149 μg/L). A total naphthalenes concentration exceeding the State regulatory standard was detected in MW-5 (130.0 μg/L). The inorganic metals analysis detected total (2,800 μg/L) and dissolved (1900.0 μg/L) lead concentrations above the State cleanup target level in MW-5. A total

chromium concentration exceeding the FPDWS was detected in MW-5 (330.0 μg/L). The dissolved chromium concentration was 68.0 μg/L.

Based on a comparison of total and dissolved metals analytical results, it appears that a significant portion of the total metals concentrations are associated with turbidity (Table 4A). For most parameters, the dissolved metal sample results were significantly lower than the corresponding total metal results. The results of the groundwater samples collected from monitoring wells MW-5 and MW-11 indicate that the results are likely attributable to historical used oil processing activities and/or the failed former underground pipeline connecting Area 4 to the former A & E Oil Tank Farm West (Figure 9B). Based on these results, the extent of soil and groundwater quality impacts has been adequately delineated.

4.8 Area 7--Southwest of Tank Farm West (Facility-wide ATRP Application Pending)

4.8.1 Soil Quality Assessment

Total petroleum hydrocarbon vapor concentrations for the headspace above the soil samples collected from soil boring B-5A collected on October 10, 1994, are presented in Table 1A. The results of OVA screenings from the installation of monitoring well MW-4, and soil borings B-21 through B-26 collected in March and November, 1995, are presented in Table 1B.

The results of the OVA/FID headspace analysis of soil samples collected from soil borings and monitor wells in Area 7 indicate that "excessively contaminated" soil (petroleum hydrocarbon vapor concentrations greater than 50 ppm, for mixed product sources, as defined in Rule 62-770.200(2), FAC) was identified. Soil borings B-21, B-23, and B-26 exhibited corrected OVA readings greater than 50 ppm at 2 through 4 feet BLS. Soil boring B-22 exhibited corrected OVA readings greater than 50 ppm at 2 feet BLS.

Results of soil analytical testing for the October 10, 1994, and November 2 through 3, 1995, sampling events indicate that TRPH concentrations exceeding the State cleanup soil criteria were reported in soil boring B-5A (85,900 mg/kg) and B-22 (78 mg/kg). Chrysene, Fluoranthene, and Pyrene were detected in the soil sample collected from B-21 at concentrations of 1450 μg/kg, 330 μg/kg, and 1650 μg/kg, respectively. These concentrations are below the Selected Soil Cleanup Goals of Revised Rule 62-770, FAC. Total lead was detected in soil boring B-5A at a concentration of 1080 mg/kg, exceeding the State clean soil criteria. Results of the OVA screening combined with soil analytical results indicate that the approximate extent of "excessively contaminated" soil has been delineated and is depicted on Figure 8. Approximately 1093 tons of "excessively contaminated" soil exists in Area 7. This source area is proximal to the former locations of storage tanks #5, #6, and #7. Analytical results from the October 10, 1994, and November 2

through 3, 1995, soil quality evaluations are summarized in Tables 5A and 5B. These results are consistent with the used oil/petroleum products stored in this vicinity.

4.8.2 Groundwater Quality Assessment

Monitoring well MW-4 was sampled on March 15, 1995. The monitoring well location is shown on Figure 6. MW-4 was analyzed for the constituents of the Rule 62-770.600(8)(b), FAC, KAG parameters, additional total and dissolved metals (Arsenic, Chromium Mercury, Nickel, and Selenium) and phenolic compounds (EPA Method 604).

The analytical results of the groundwater samples indicate that dissolved phase groundwater contamination above State regulatory standards and/or target levels was detected in the vicinity of the southwestern corner of the HOWCO Tank Farm West in Area 7. A summary of the groundwater results is presented in Table 4A. During the March 15, 1995, sampling event, only inorganic metals analysis of total and dissolved lead were detected in MW-4 at concentrations of 4300.0 μg/L and 90.0 μg/L, respectively, which are above the State cleanup target level of 50.0 μg/L.

Based on a comparison of total and dissolved metals analytical results, it appears that a significant portion of the total metals concentrations are

associated with turbidity. For most parameters, the dissolved metal sample results were significantly lower than the corresponding total metal results. The results of the groundwater samples collected from monitoring well MW-4 indicate that dissolved phase heavy metal groundwater contamination exists in the vicinity of Area 7, Tanks #5-7, in the southwest corner of the former Tank Farm West. These results are consistent with the used oil/petroleum products stored in this vicinity. The results further indicate that the groundwater quality impacts are limited to lead in this area and additional groundwater quality assessment is warranted, however, based on these results additional soil assessment is not warranted.

4.9 Aquifer Characterization

4.9.1 Groundwater Flow Direction

Regional groundwater flow is to the southeast as shown on Figures 4 and 5. More comprehensive water level measurements collected from site wells on March 15, May 30, and November 8, 1995, indicate that the groundwater in the surficial aquifer is impacted by a slight groundwater mound in the vicinity of the storm water inlet grate. Groundwater elevation contour maps are provided for the September, 1993 (Figure 4), October, 1994 (Figure 5), and March (Figure 10), April (Figure 11), and November, 1995 (Figure 12) measuring events. The groundwater mound located in the vicinity of well MW-4 is likely caused by stormwater runoff which ponds in this area before

it is discharged to the stormwater system or routed to the plant as process water. This area has historically been unpaved until less than one year ago. The localized, small groundwater high located in the vicinity of MW-6 on Figure 11 is likely due to an anomalous data point, and is not present on Figure 12.

Average hydraulic gradients of 0.044, 0.031, and 0.044 ft/ft were calculated for the March 15, April 14, and November 8, 1995, measuring events, respectively. Water levels fluctuated approximately 2.99 feet over this monitoring period (Tables 3D and 3E), during which the groundwater flow direction and hydraulic gradient have remained relatively consistent.

4.9.2 Hydraulic Conductivity

The average hydraulic conductivity of groundwater saturated surficial sediments beneath the site was estimated from "slug-out" test data collected on February 9, 1996, and analyzed using the Bouwer and Rice (1976) and Bouwer (1989) methods. The results of each "slug-out" test are included in Appendix G. The average hydraulic conductivity for each slug test location is as follows:

- Monitoring Well MW-6: 2.6×10^{-3} ft/min or 3.8 ft/day
- Monitoring Well MW-6D: 1.1×10^{-3} ft/min or 1.6 ft/day
- Monitoring Well MW-7: 1.6×10^{-3} ft/min or 2.3 ft/day

- Monitoring Well MW-7D: 1.8×10^{-4} ft/min or 0.26 ft/day
- Monitoring Well MW-8: 4.5×10^{-3} ft/min or 6.5 ft/day

The average hydraulic conductivity values estimated from the "slug-out" test data for MW-6, MW-6D, MW-7, MW-7D and MW-8 are within the range expected for the shallow lithologies identified in the field. Expected values for a silty, fine to medium-grained sand range from 3 to 65 feet/day (Bouwer, 1978). The average of the hydraulic conductivity values for MW-6, MW-6D, MW-7, MW-7D and MW-8 was evaluated to be 2.9 ft/day.

4.9.3 Transmissivity

The transmissivity (T) of the surficial aquifer was calculated using the formula $T = Kb$, where "K" represents the average hydraulic conductivity (2.9 feet/day) and "b" represents the thickness of the surficial aquifer. Based upon the lithologic logs presented in Appendix B and the reported literature, the saturated thickness of the aquifer underlying the site is interpreted to be approximately 60 feet. The transmissivity is therefore calculated to be approximately 174 $feet^2$/day.

4.9.4 Groundwater Flow Velocity

The average horizontal groundwater velocity, v_x, was calculated using the average hydraulic conductivity value of 2.9 ft/day and Darcy's equation (v_x =

K/n_e * dh/dl; Fetter, 1994). An estimated effective porosity of 0.3 was used to calculate the flow velocity. The average horizontal hydraulic gradient (dh/dl) of 0.04 ft/ft used in the calculations was the average of the gradient for the four sampling events using the shallow wells. The average linear velocity was calculated to be 0.39 ft/day or 142 ft/year.

4.10 Potable Well Inventory

A review of the SWFWMD well permit listing revealed one irrigation well located within the quarter-mile radius for domestic private wells. This well is located approximately 1300 feet to the northwest of the subject site. No public supply water wells were listed within the half-mile radius for public supply wells. The field reconnaissance survey which was conducted to locate any water wells not on the SWFWMD list did not reveal any unpermitted wells in the site vicinity. Therefore, no potable wells are likely to be impacted.

SECTION 5.0
CONCLUSIONS

The following conclusions for each of the 7 source areas are described below. In a number of areas, supplemental soil and/or groundwater assessment is warranted. For those areas that are in the ATRP, such additional activities need to be coordinated with the assignment of a priority ranking score or a determination of work pre-authorization by the FDEP.

Area 1 - Former Charlie Hennton Landscaping (ATRP Eligible)

No "excessively contaminated" soil was identified. Petroleum and incidental solvent impacts were detected in the groundwater. The results indicate that the petroleum impacts are likely due to gasoline formerly stored in the AST in this area and the solvent impacts are likely due to former paving operations in the vicinity. Additional groundwater quality assessment is warranted, however, additional activities will not be conducted until a priority ranking score has been assigned by the FDEP.

Area 2 - Former Gary Ford Paving (ATRP Eligible)

"Excessively contaminated" soil has been identified and consists of approximately 402 tons. Petroleum and incidental solvent impacts were detected in the groundwater. The results indicate that the petroleum impacts are due to the former diesel and gasoline UST's in this area. The solvent impacts are likely due to former paving operations. Supplemental soil and groundwater assessment is warranted.

Area 3 - Former Mike Brown Grading and Excavation (ATRP Eligible)

"Excessively contaminated" soil consisting of approximately 929 tons has been identified and delineated. Petroleum and incidental solvent impacts were detected in the groundwater. The results indicate that the petroleum impacts are likely due to the diesel AST and gasoline UST located upgradient in Area 2. The solvent impacts are likely due to impacts associated with Area 4 (used oil processing area) and Area 2. Additional groundwater quality assessment is warranted.

Area 4 - Former A & E Services 9th Avenue South (ATRP Eligible)

No "excessively contaminated" soil was identified. Petroleum and incidental solvent impacts were detected in the groundwater. The results indicate that the petroleum impacts are likely due to the fuels stored in this area (AST's #8 - 13). The solvent impacts are likely due to former operations associated with the used oil AST's processing area. Additional groundwater quality assessment is warranted.

Area 5 - Former A & E Services - 43rd Street South Vehicle Fuel Dispenser Area (ATRP Eligible)

"Excessively contaminated" soil consisting of approximately 705 tons has been identified and delineated. Petroleum impacts were detected in the groundwater, likely due to the former diesel and leaded gasoline AST's stored in this area. Additional soil and groundwater assessment activities are warranted to delineate the extent of possible off-site impacts.

Area 6 - South End of Tank Farm West (ATRP Facility-wide Application Pending)

Approximately 1302 tons of "excessively contaminated" soil has been identified and delineated. Petroleum impacts were detected in the groundwater. These impacts are likely due to historical used oil processing activities and/or the failed former underground pipeline connecting Area 4 to the former A & E Oil Tank Farm West. Based on these results, the extent of soil and groundwater quality impacts has been adequately delineated.

Area 7 - Southwest of Tank Farm West (ATRP Facility-wide Application Pending)

Approximately 1093 tons of "excessively contaminated" soil has been identified and delineated. Minor heavy metal (lead) contamination was detected in the groundwater, likely due to the used oil/petroleum products stored in this vicinity. Based on these results, the extent of soil and groundwater quality impacts has been adequately delineated.

Based on the results of this contamination assessment, the following conclusions can be made regarding the hydrogeology and extent of petroleum impacts at the subject site.

- The facility is underlain by unconsolidated, fine to medium-grained, slightly silty to very silty sands which extend to the top of the confining units of the Hawthorn Group at approximately 60 feet BLS. A discontinuous thin clay layer exists at approximately 35 to 36 feet BLS. These surficial sediments are representative of undifferentiated Pleistocene terrace deposits.

- Local groundwater flow at the site follows a regional trend to the southeast. A slight groundwater mound is present within the vicinity of monitoring well MW-4. This is likely caused by stormwater which ponds in this vicinity of the site before being discharged to the stormwater system.

- Based on the results of the OVA/FID field screening activities and analytical results of soil sampling activities, "excessively contaminated" soil (petroleum hydrocarbon vapor concentrations greater than 50 ppm, for mixed product sources as defined in Rule 62-770.200(2), FAC) was identified in soil samples collected from source areas 2, 3, 5, 6, and 7. No "excessively contaminated" soil was identified in Areas 1 or 4. A total of approximately 4431 tons of "excessively contaminated" soil exists on-site.

- The groundwater quality assessment indicates that petroleum related hydrocarbon impacts are present in the surficial aquifer which exceed the State regulatory standards. Groundwater contamination above State standards exists in each of the seven source areas. The results detected are consistent with the former petroleum storage systems present on-site and historical operations.

- The average hydraulic conductivity was evaluated to be 2.9 ft/day. The transmissivity of the surficial aquifer was evaluated to be 174 $feet^2$/day. The average groundwater flow velocity was evaluated to be 0.39 ft/day or 142 ft/year.

- One private irrigation well exists within a one-quarter mile radius of the site. The private irrigation well is approximately 1300 feet northwest of the site. No public supply water wells are located within a one-half mile radius of the site. Therefore, no potable wells are likely to be impacted.

SECTION 6.0
RECOMMENDATIONS

Based on the results of the Contamination Assessment, the two areas which are currently ATRP-eligible pending (Areas 6 and 7) have been delineated. Further assessment of the ATRP-eligible areas should be delayed until either the ATRP-eligible areas have been assigned a priority ranking score by the FDEP or such additional work is pre-authorized by the Department.

SECTION 7.0
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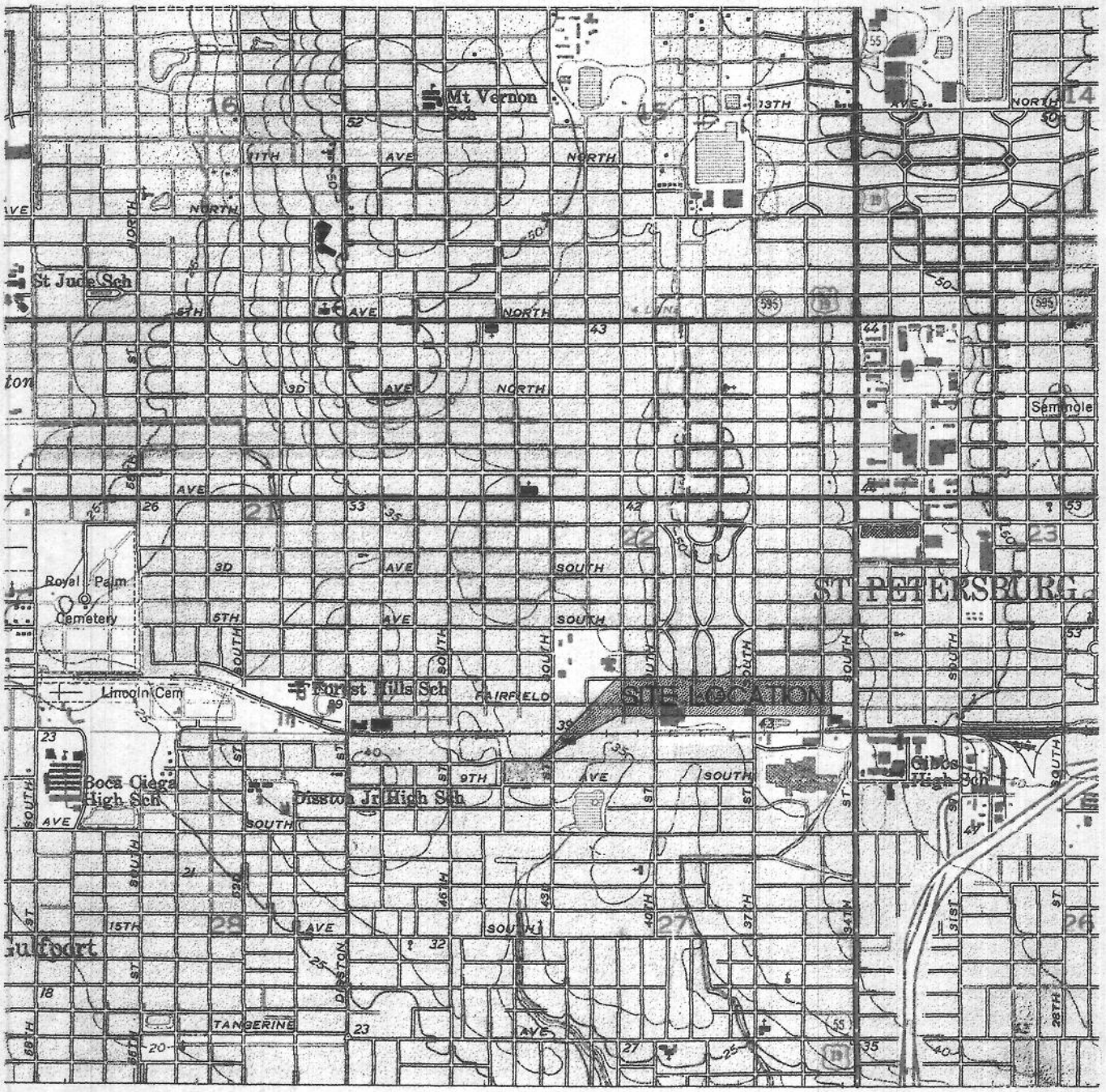
FIGURE 1
SITE LOCATION MAP
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA



SECTION: 27
TOWNSHIP: 31 S.
RANGE: 16 E.

Scale: 1" = 2000'

SOURCE: USGS QUADRANGLE MAP OF ST. PETERSBURG, FL, 1956; PHOTOREVISED 1987.

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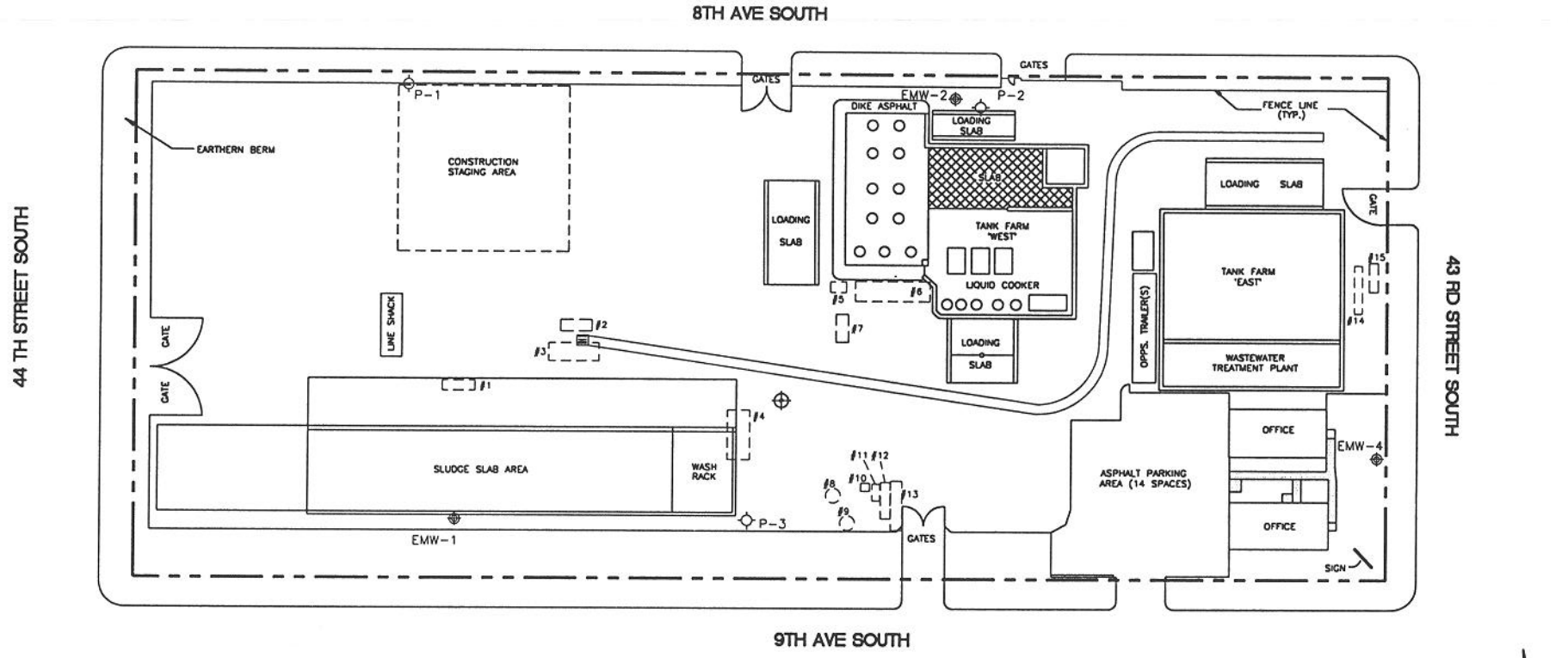
INC.

FIGURE 2
SITE LAYOUT MAP
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA



TANK CALLOUTS/ CAPACITY IN GALLONS	
#1 - 1,000 AGST GASOLINE	#9 - 10,000 STG. TANK
#2 - 2,000 UGST GASOLINE	#10 - 1,000 #2 FUEL TANK
#3 - 6,000 UGST DIESEL	#11 - 4,000 COOKER TANK
#4 - 2,000 AGST DIESEL	#12 - 9,000 TANKER TRAILER
#5 - 3,000 OIL TRAP	#13 - 20,000 USED OIL TANK
#6 - 5,500 OIL WATER SEP.	#14 - 5,000 #2 DIESEL
#7 - 1,000 STG. TANK	#15 - 3,000 LEADED GASOLINE
#8 - 8,000 STG. TANK	

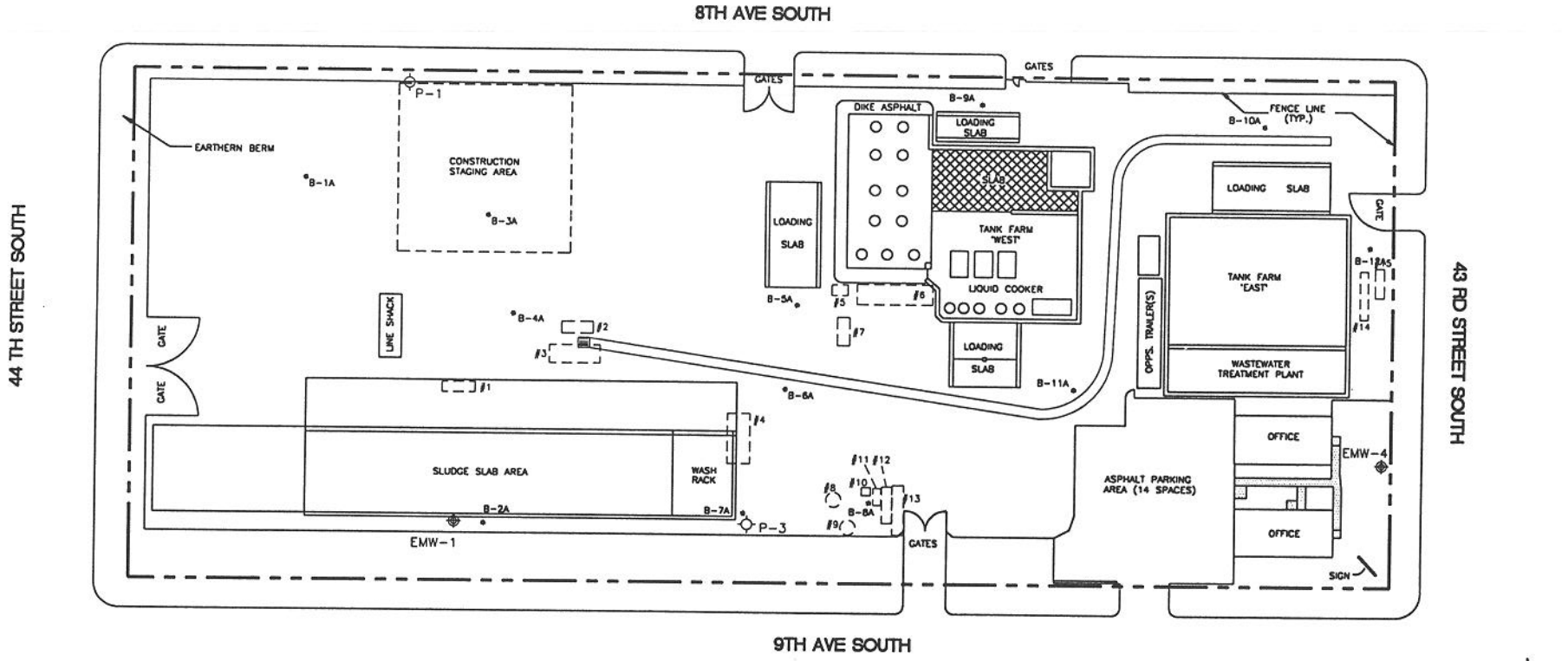
LEGEND

- EXISTING MONITORING WELL INSTALLED BY OTHERS
- PIEZOMETER LOCATION
- CONCRETE DRAINAGE SWALE AND DRAIN
- PROPERTY BOUNDARY LINE
- FORMER STORAGE TANK LOCATION

NOTE: LOCATIONS OF FORMER TANKS ARE APPROXIMATE.

APPROXIMATE Scale: 1" = 80'

FIGURE 3A
SOIL BORING LOCATION MAP (OCTOBER 10, 1994)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA



TANK CALLOUTS/ CAPACITY IN GALLONS	
#1 - 1,000 AGST GASOLINE	#9 - 10,000 STG. TANK
#2 - 2,000 UGST GASOLINE	#10 - 1,000 #2 FUEL TANK
#3 - 6,000 UGST DIESEL	#11 - 4,000 COOKER TANK
#4 - 2,000 AGST DIESEL	#12 - 9,000 TANKER TRAILER
#5 - 3,000 OIL TRAP	#13 - 20,000 USED OIL TANK
#6 - 5,500 OIL WATER SEP.	#14 - 5,000 #2 DIESEL
#7 - 1,000 STG. TANK	#15 - 3,000 LEADED GASOLINE
#8 - 8,000 STG. TANK	

LEGEND

- EXISTING MONITORING WELL INSTALLED BY OTHERS
- PIEZOMETER LOCATION
- CONCRETE DRAINAGE SWALE AND DRAIN
- SOIL BORING LOCATION
- PROPERTY BOUNDARY LINE
- FORMER STORAGE TANK LOCATION

NOTE: LOCATIONS OF FORMER TANKS ARE APPROXIMATE.

APPROXIMATE Scale: 1" = 80'

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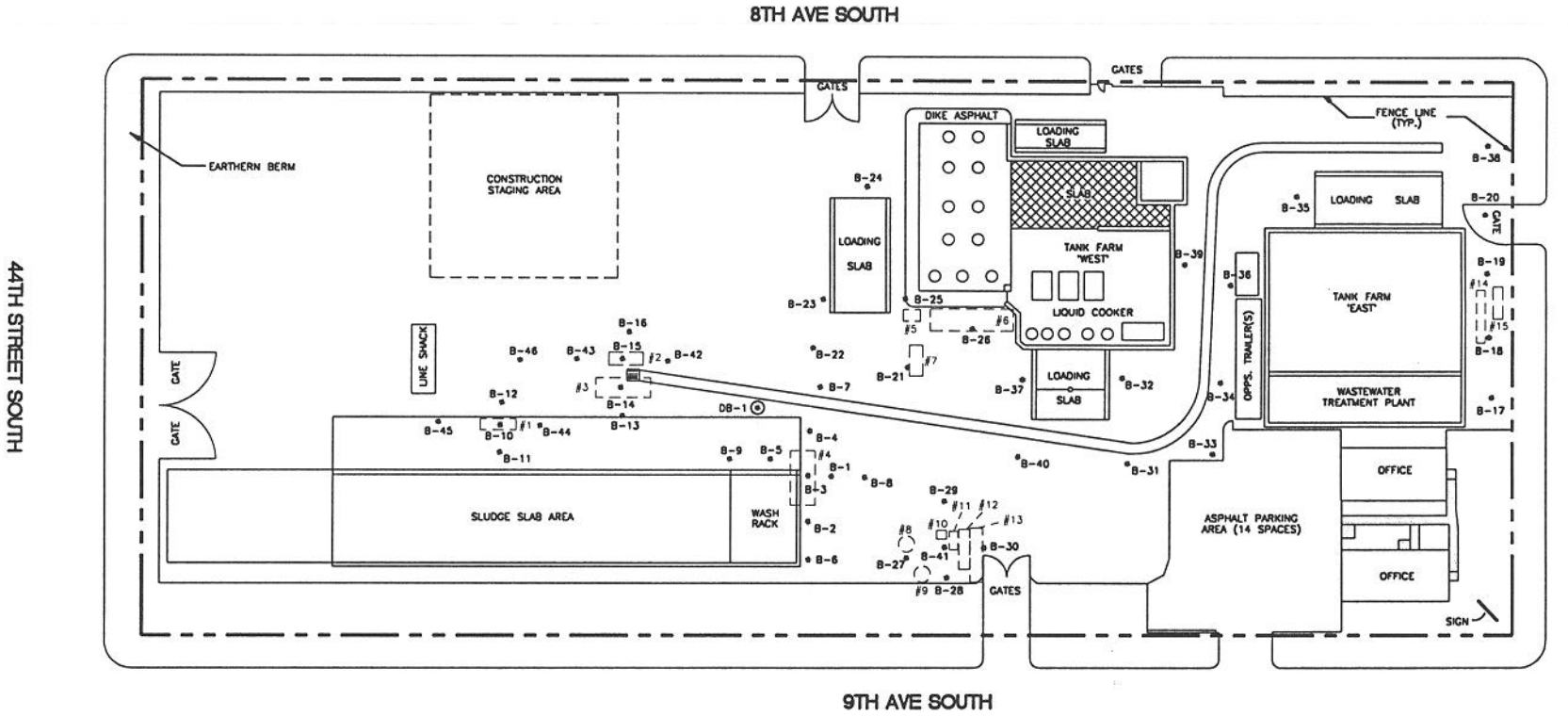
FIGURE 3B
SOIL BORING LOCATION MAP (NOVEMBER 1, 2 and 3, 1995)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA



TANK CALLOUTS/ CAPACITY IN GALLONS	
#1 - 1,000 AGST GASOLINE	#9 - 10,000 STG. TANK
#2 - 2,000 UGST GASOLINE	#10 - 1,000 #2 FUEL TANK
#3 - 6,000 UGST DIESEL	#11 - 4,000 COOKER TANK
#4 - 2,000 AGST DIESEL	#12 - 9,000 TANKER TRAILER
#5 - 3,000 OIL TRAP	#13 - 20,000 USED OIL TANK
#6 - 5,500 OIL WATER SEP.	#14 - 5,000 #2 DIESEL
#7 - 1,000 STG. TANK	#15 - 3,000 LEADED GASOLINE
#8 - 8,000 STG. TANK	

LEGEND

- PROPERTY BOUNDARY LINE
- SOIL BORING LOCATION
- DEEP SOIL BORING LOCATION
- CONCRETE DRAINAGE SWALE AND DRAIN
- FORMER STORAGE TANK LOCATION

NOTE: LOCATIONS OF FORMER TANKS ARE APPROXIMATE.

APPROXIMATE Scale: 1"=80'

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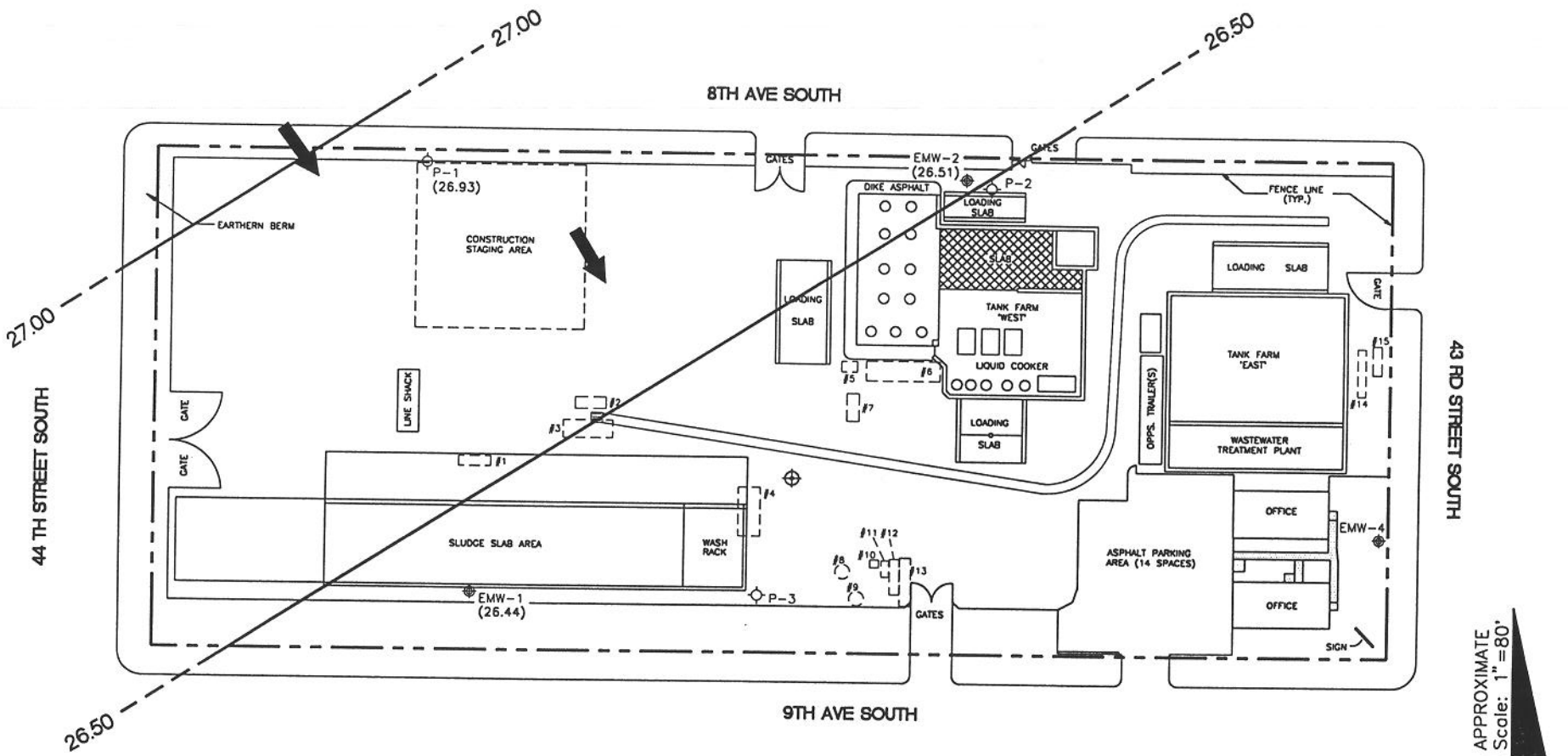
FIGURE 4
GROUNDWATER ELEVATION CONTOUR MAP (9-27-93)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA



TANK CALLOUTS/ CAPACITY IN GALLONS	
#1 - 1,000 AGST GASOLINE	#9 - 10,000 STG. TANK
#2 - 2,000 UGST GASOLINE	#10 - 1,000 #2 FUEL TANK
#3 - 6,000 UGST DIESEL	#11 - 4,000 COOKER TANK
#4 - 2,000 AGST DIESEL	#12 - 9,000 TANKER TRAILER
#5 - 3,000 OIL TRAP	#13 - 20,000 USED OIL TANK
#6 - 5,500 OIL WATER SEP.	#14 - 5,000 #2 DIESEL
#7 - 1,000 STG. TANK	#15 - 3,000 LEADED GASOLINE
#8 - 8,000 STG. TANK	

LEGEND

- EXISTING MONITORING WELL INSTALLED BY OTHERS
- PIEZOMETER LOCATION
- CONCRETE DRAINAGE SWALE AND DRAIN
- 26.5 GROUNDWATER ELEVATION CONTOUR
- PROPERTY BOUNDARY LINE
- FORMER STORAGE TANK LOCATION
- NOTE: LOCATIONS OF FORMER TANKS ARE APPROXIMATE
- (26.51) GROUNDWATER ELEVATION (FEET ABOVE MSL)
- GROUNDWATER FLOW DIRECTION

NOTE:
EMW-3 AND EMW-4 WERE NOT USED IN SURVEY DUE TO A WELL OBSTRUCTION.

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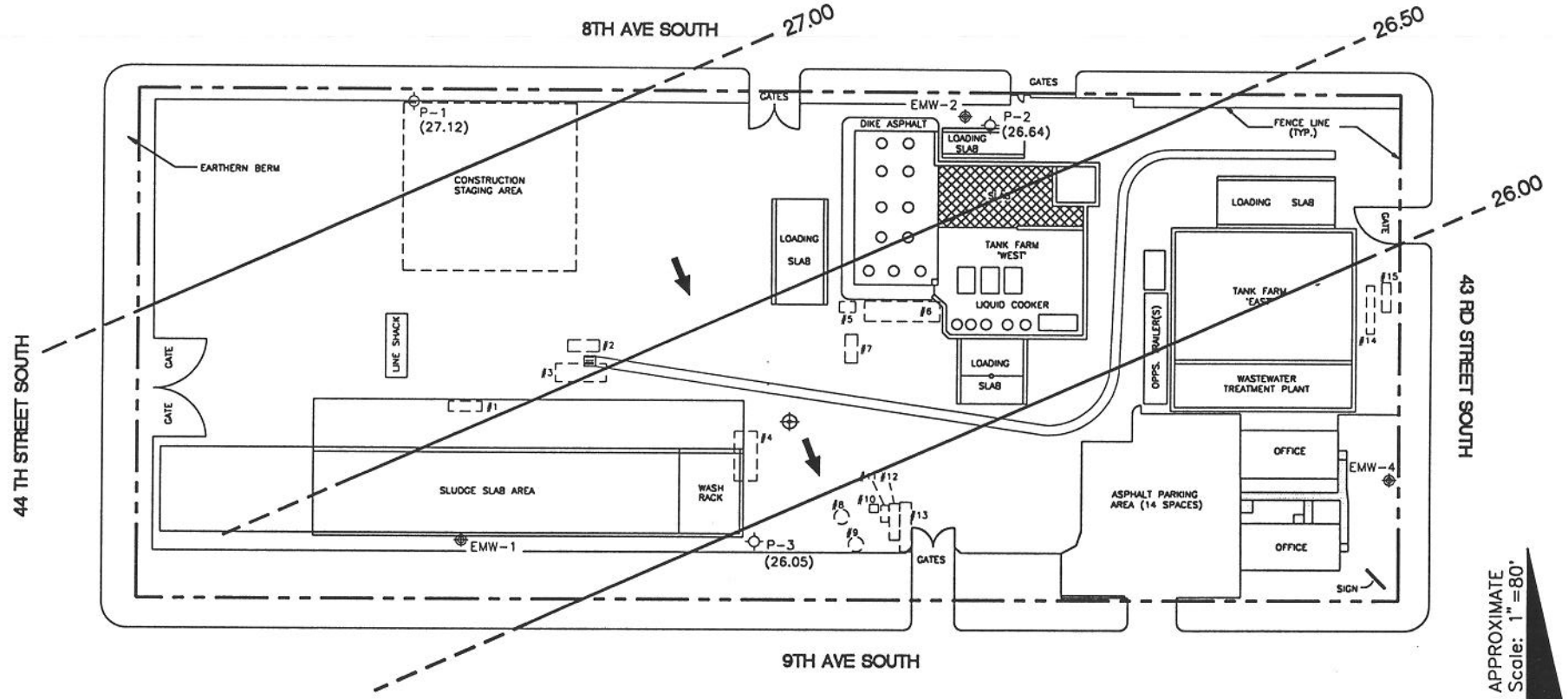
FIGURE 5
GROUNDWATER ELEVATION CONTOUR MAP (10-18-94)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA



TANK CALLOUTS/ CAPACITY IN GALLONS	
#1 - 1,000 AGST GASOLINE	#9 - 10,000 STG. TANK
#2 - 2,000 UGST GASOLINE	#10 - 1,000 #2 FUEL TANK
#3 - 6,000 UGST DIESEL	#11 - 4,000 COOKER TANK
#4 - 2,000 AGST DIESEL	#12 - 9,000 TANKER TRAILER
#5 - 3,000 OIL TRAP	#13 - 20,000 USED OIL TANK
#6 - 5,500 OIL WATER SEP.	#14 - 5,000 #2 DIESEL
#7 - 1,000 STG. TANK	#15 - 3,000 LEADED GASOLINE
#8 - 8,000 STG. TANK	

LEGEND

- EXISTING MONITORING WELL INSTALLED BY OTHERS
- PIEZOMETER LOCATION
- CONCRETE DRAINAGE SWALE AND DRAIN
- 26.5 GROUNDWATER ELEVATION CONTOUR
- PROPERTY BOUNDARY LINE
- FORMER STORAGE TANK LOCATION
- NOTE: LOCATIONS OF FORMER TANKS ARE APPROXIMATE
- (26.12) GROUNDWATER ELEVATION (FEET ABOVE MSL)
- GROUNDWATER FLOW DIRECTION

NOTE:
EMW-3 AND EMW-4 WERE NOT USED IN SURVEY DUE TO A WELL OBSTRUCTION.

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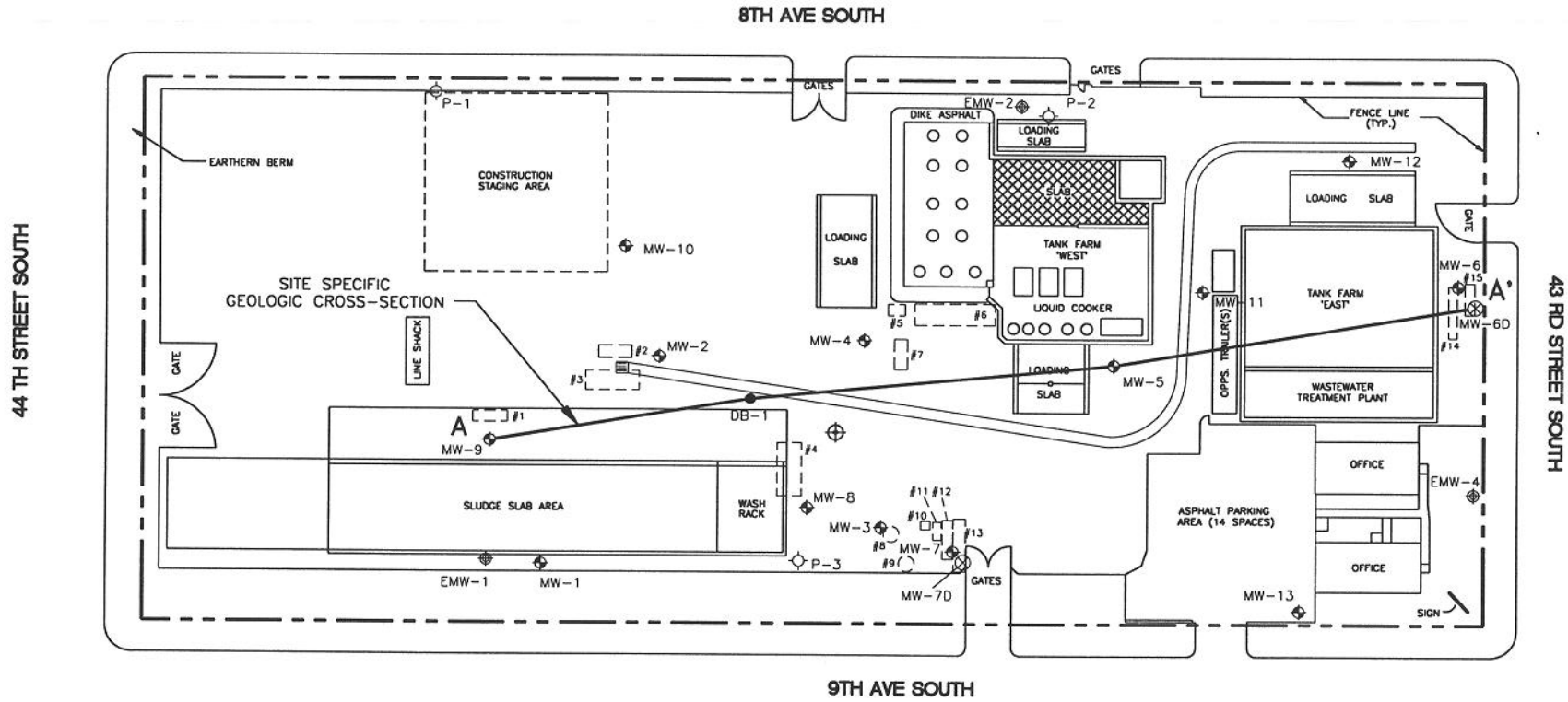
FIGURE 6
MONITORING WELL LOCATION MAP
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA



TANK CALLOUTS/ CAPACITY IN GALLONS	
#1 - 1,000 AGST GASOLINE	#9 - 10,000 STG. TANK
#2 - 2,000 UGST GASOLINE	#10 - 1,000 #2 FUEL TANK
#3 - 6,000 UGST DIESEL	#11 - 4,000 COOKER TANK
#4 - 2,000 AGST DIESEL	#12 - 9,000 TANKER TRAILER
#5 - 3,000 OIL TRAP	#13 - 20,000 USED OIL TANK
#6 - 5,500 OIL WATER SEP.	#14 - 5,000 #2 DIESEL
#7 - 1,000 STG. TANK	#15 - 3,000 LEADED GASOLINE
#8 - 8,000 STG. TANK	

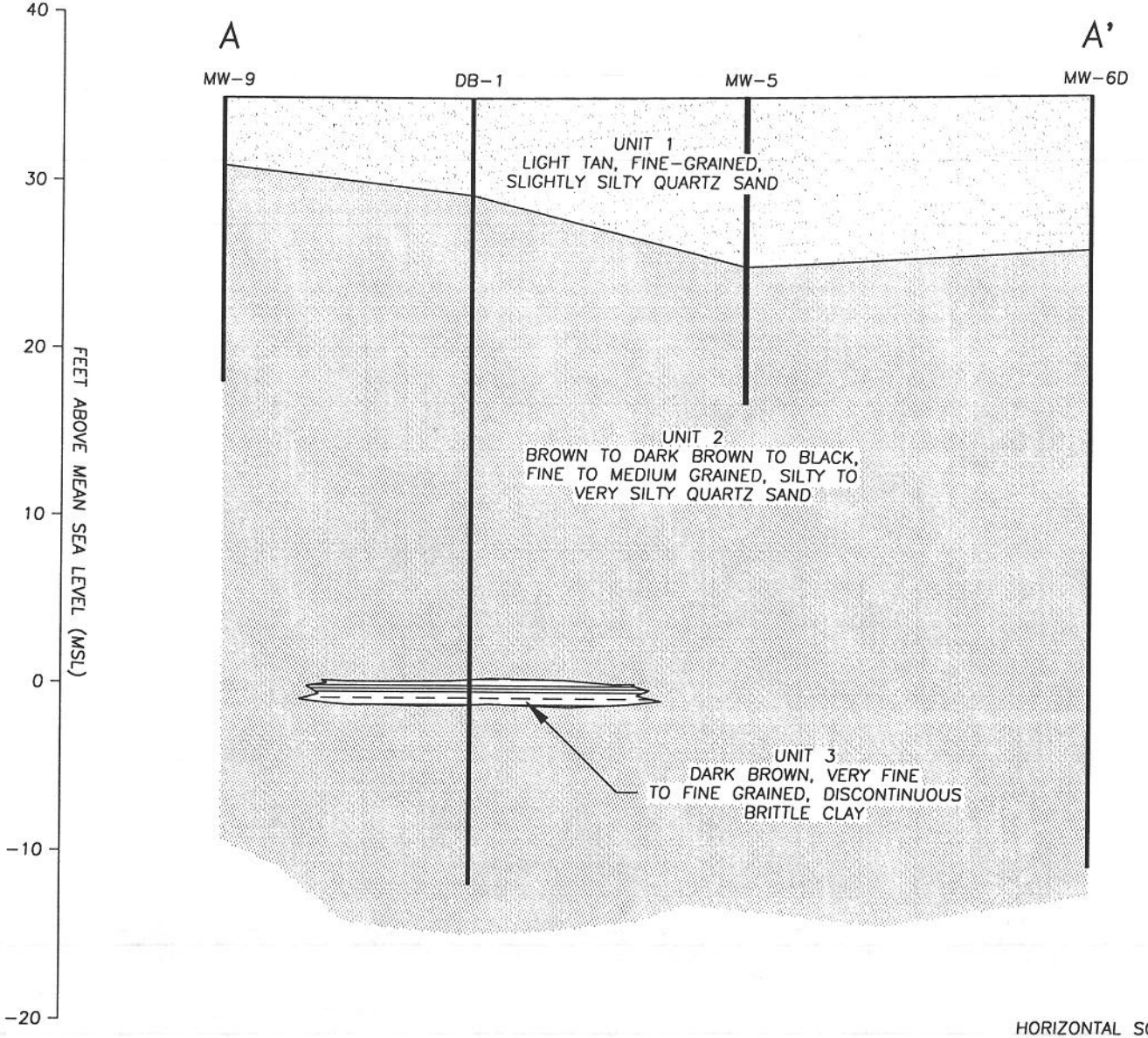
LEGEND

- EXISTING MONITORING WELL INSTALLED BY OTHERS
- MONITORING WELL INSTALLED BY FGS, INC.
- PIEZOMETER LOCATION
- DEEP WELL LOCATION
- DEEP BORING LOCATION
- PROPERTY BOUNDARY LINE
- FORMER STORAGE TANK LOCATION
- NOTE: LOCATIONS OF FORMER TANKS ARE APPROXIMATE
- CONCRETE DRAINAGE SWALE AND DRAIN

APPROXIMATE Scale: 1" =80'

FGS INC.

FIGURE 6A
SITE SPECIFIC GEOLOGIC CROSS-SECTION
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA



HORIZONTAL SCALE: 1"=80'
VERTICAL SCALE: 1"=10'

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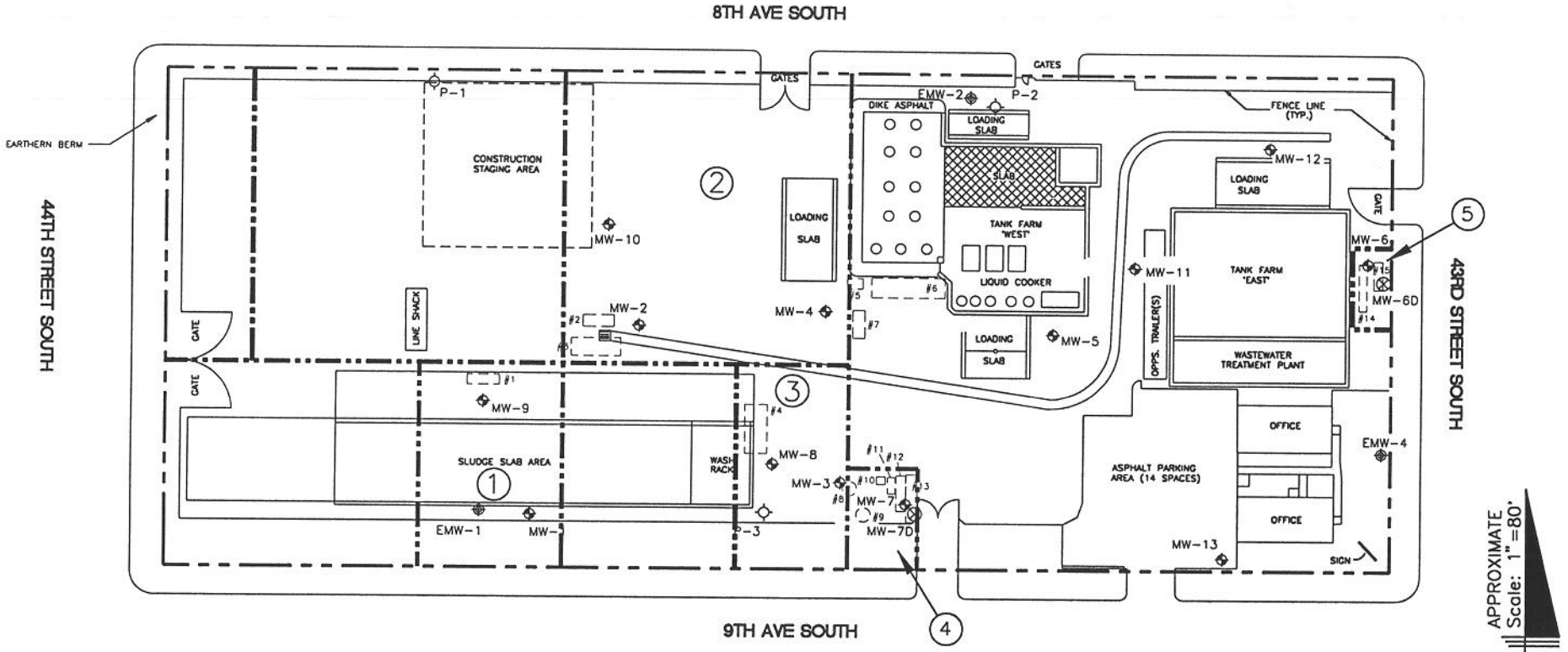
FIGURE 7A
ATRP ELIGIBLE FACILITY LOCATIONS
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA



TANK CALLOUTS/ CAPACITY IN GALLONS	
#1 - 1,000 AGST GASOLINE	#9 - 10,000 STG. TANK
#2 - 2,000 UGST GASOLINE	#10 - 1,000 #2 FUEL TANK
#3 - 6,000 UGST DIESEL	#11 - 4,000 COOKER TANK
#4 - 2,000 AGST DIESEL	#12 - 9,000 TANKER TRAILER
#5 - 3,000 OIL TRAP	#13 - 20,000 USED OIL TANK
#6 - 5,500 OIL WATER SEP.	#14 - 5,000 #2 DIESEL
#7 - 1,000 STG. TANK	#15 - 3,000 LEADED GASOLINE
#8 - 8,000 STG. TANK	

LEGEND

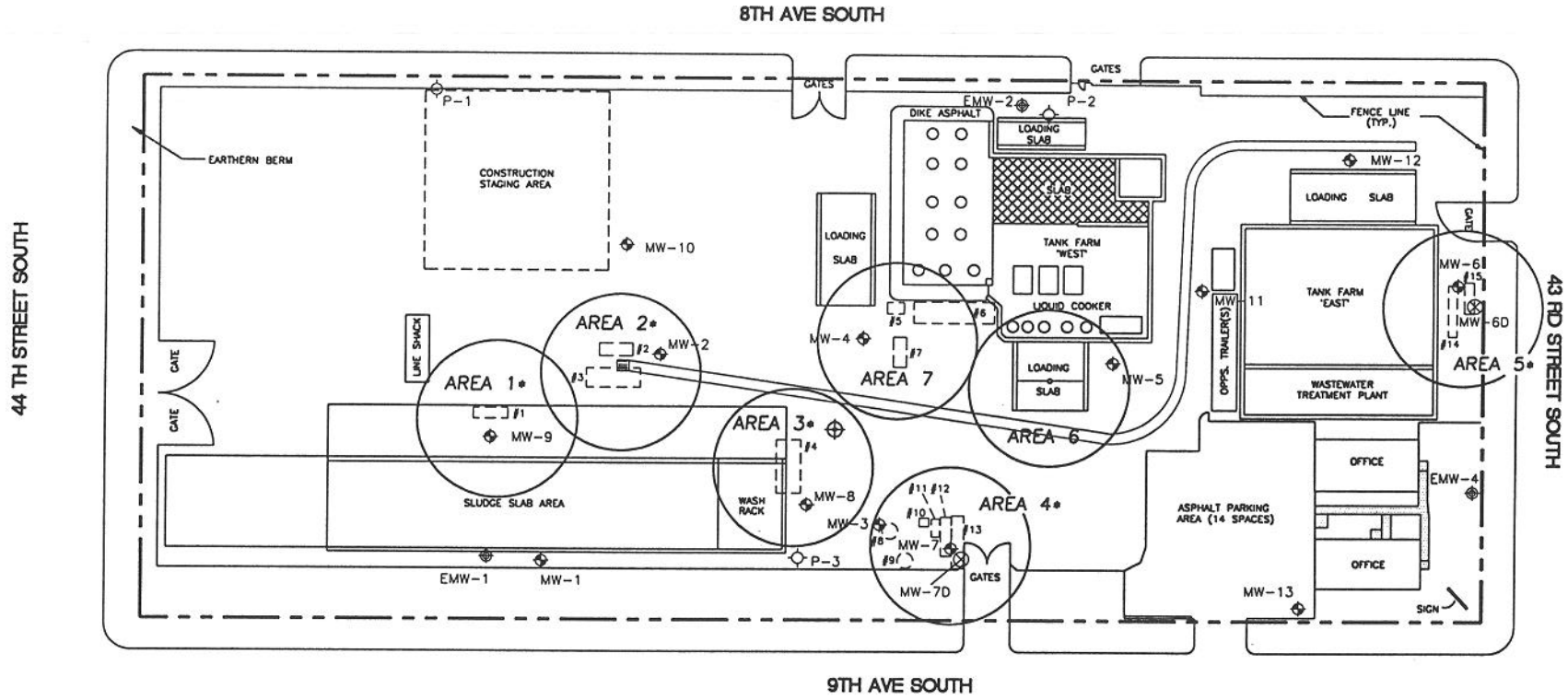
- EXISTING MONITORING WELL INSTALLED BY OTHERS
- MONITORING WELL INSTALLED BY FGS, INC.
- PIEZOMETER LOCATION
- DEEP WELL LOCATION
- PARCEL BOUNDARIES
- (2) PARCEL NUMBERS
- PROPERTY BOUNDARY LINE
- FORMER STORAGE TANK LOCATION
- CONCRETE DRAINAGE SWALE AND DRAIN

NOTE: LOCATIONS OF FORMER TANKS ARE APPROXIMATE.

PARCEL IDENTIFICATION:	
1	CHARLIE HENNTON LANDSCAPING
2	GARY FORD PAVING COMPANY
3	MIKE BROWN EXCAVATION
*4	A & E ROAD OILING SERVICES
*5	A & E ROAD OILING SERVICES

* PARCELS 4 & 5 ARE PART OF ONE ATRP APPLICATION

FIGURE 7B
IDENTIFIED SOURCE AREAS
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA



TANK CALLOUTS/ CAPACITY IN GALLONS	
#1 - 1,000 AGST GASOLINE	#9 - 10,000 STG. TANK
#2 - 2,000 UGST GASOLINE	#10 - 1,000 #2 FUEL TANK
#3 - 6,000 UGST DIESEL	#11 - 4,000 COOKER TANK
#4 - 2,000 AGST DIESEL	#12 - 9,000 TANKER TRAILER
#5 - 3,000 OIL TRAP	#13 - 20,000 USED OIL TANK
#6 - 5,500 OIL WATER SEP.	#14 - 5,000 #2 DIESEL
#7 - 1,000 STG. TANK	#15 - 3,000 LEADED GASOLINE
#8 - 8,000 STG. TANK	

LEGEND

- EXISTING MONITORING WELL INSTALLED BY OTHERS
- MONITORING WELL INSTALLED BY FGS,INC.
- PIEZOMETER LOCATION
- DEEP WELL LOCATION
- ATRP ELIGIBLE
- PROPERTY BOUNDARY LINE
- FORMER STORAGE TANK LOCATION

NOTE: LOCATIONS OF FORMER TANKS ARE APPROXIMATE

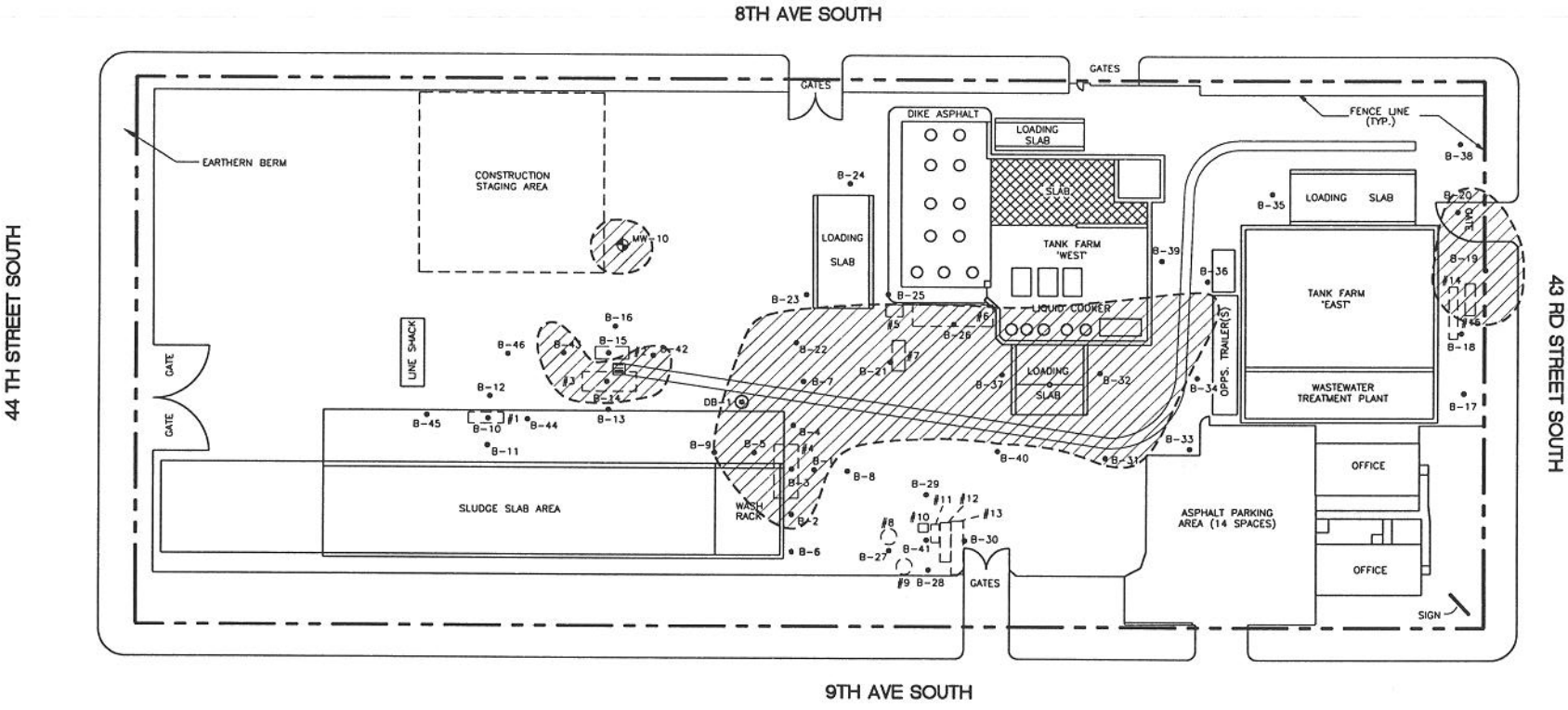
CONCRETE DRAINAGE SWALE AND DRAIN

APPROXIMATE Scale: 1"=80'

G94-216.82\SOURCES 03-28-96 DS

FGS INC.

FIGURE 8
APPROXIMATE EXTENT OF EXCESSIVELY CONTAMINATED SOIL
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA



TANK CALLOUTS/ CAPACITY IN GALLONS	
#1 – 1,000 AGST GASOLINE	#9 – 10,000 STG. TANK
#2 – 2,000 UGST GASOLINE	#10 – 1,000 #2 FUEL TANK
#3 – 6,000 UGST DIESEL	#11 – 4,000 COOKER TANK
#4 – 2,000 AGST DIESEL	#12 – 9,000 TANKER TRAILER
#5 – 3,000 OIL TRAP	#13 – 20,000 USED OIL TANK
#6 – 5,500 OIL WATER SEP.	#14 – 5,000 #2 DIESEL
#7 – 1,000 STG. TANK	#15 – 3,000 LEADED GASOLINE
#8 – 8,000 STG. TANK	

LEGEND

- PROPERTY BOUNDARY LINE
- SOIL BORING LOCATION
- DEEP SOIL BORING LOCATION
- APPROXIMATE EXTENT OF EXCESSIVELY CONTAMINATED SOIL (>50 ppm MIXED PRODUCT)
- MONITORING WELL LOCATION
- FORMER STORAGE TANK LOCATION
- NOTE: LOCATIONS OF FORMER TANKS ARE APPROXIMATE
- CONCRETE DRAINAGE SWALE AND DRAIN

APPROXIMATE Scale: 1" = 80'

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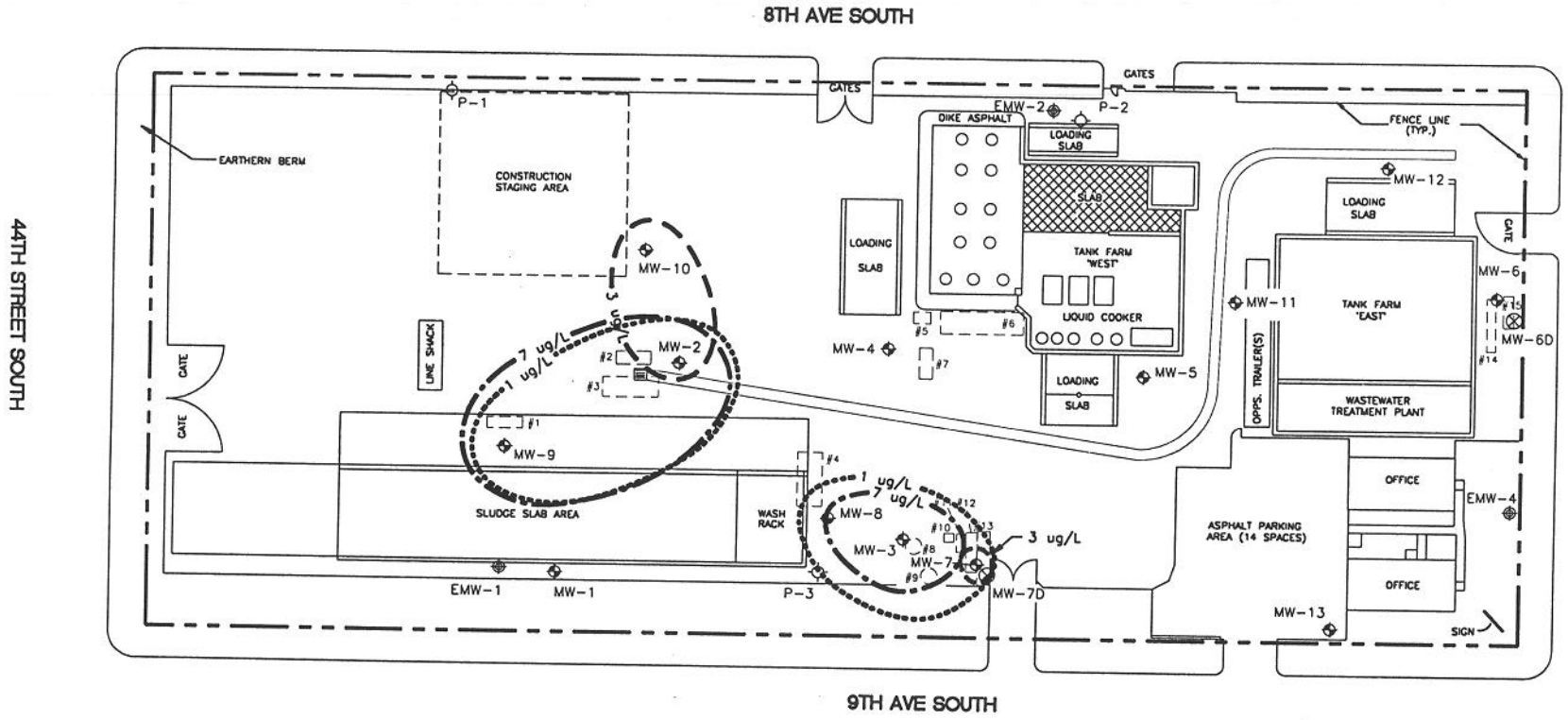
FIGURE 9A
GROUNDWATER QUALITY SUMMARY MAP (PCE, 1,1-DCE, and VINYL CHLORIDE)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA



TANK CALLOUTS/ CAPACITY IN GALLONS	
#1 - 1,000 AGST GASOLINE	#9 - 10,000 STG. TANK
#2 - 2,000 UGST GASOLINE	#10 - 1,000 #2 FUEL TANK
#3 - 6,000 UGST DIESEL	#11 - 4,000 COOKER TANK
#4 - 2,000 AGST DIESEL	#12 - 9,000 TANKER TRAILER
#5 - 3,000 OIL TRAP	#13 - 20,000 USED OIL TANK
#6 - 5,500 OIL WATER SEP.	#14 - 5,000 #2 DIESEL
#7 - 1,000 STG. TANK	#15 - 3,000 LEADED GASOLINE
#8 - 8,000 STG. TANK	

LEGEND

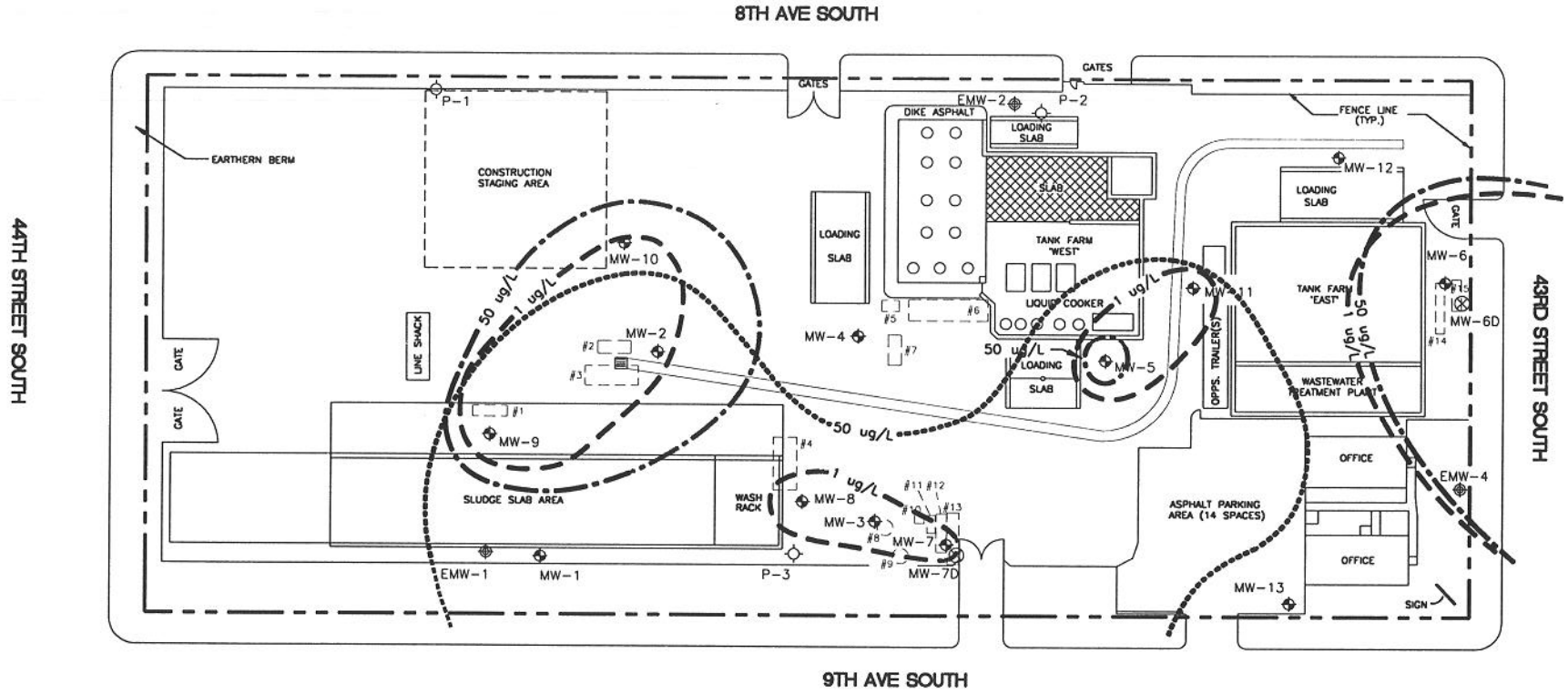
- EXISTING MONITORING WELL INSTALLED BY OTHERS
- MONITORING WELL INSTALLED BY FGS, INC.
- PIEZOMETER LOCATION
- DEEP WELL LOCATION
- CONCRETE DRAINAGE SWALE AND DRAIN
- PROPERTY BOUNDARY LINE
- FORMER STORAGE TANK LOCATION
- PCE
- 1,1-DCE
- VINYL CHLORIDE

APPROXIMATE Scale: 1"=80'

NOTE: LOCATIONS OF FORMER TANKS ARE APPROXIMATE.

FGS INC.

FIGURE 9B
GROUNDWATER QUALITY SUMMARY MAP (BENZENE, TOTAL VOA's, and MTBE)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA



TANK CALLOUTS/ CAPACITY IN GALLONS	
#1 – 1,000 AGST GASOLINE	#9 – 10,000 STG. TANK
#2 – 2,000 UGST GASOLINE	#10 – 1,000 #2 FUEL TANK
#3 – 6,000 UGST DIESEL	#11 – 4,000 COOKER TANK
#4 – 2,000 AGST DIESEL	#12 – 9,000 TANKER TRAILER
#5 – 3,000 OIL TRAP	#13 – 20,000 USED OIL TANK
#6 – 5,500 OIL WATER SEP.	#14 – 5,000 #2 DIESEL
#7 – 1,000 STG. TANK	#15 – 3,000 LEADED GASOLINE
#8 – 8,000 STG. TANK	

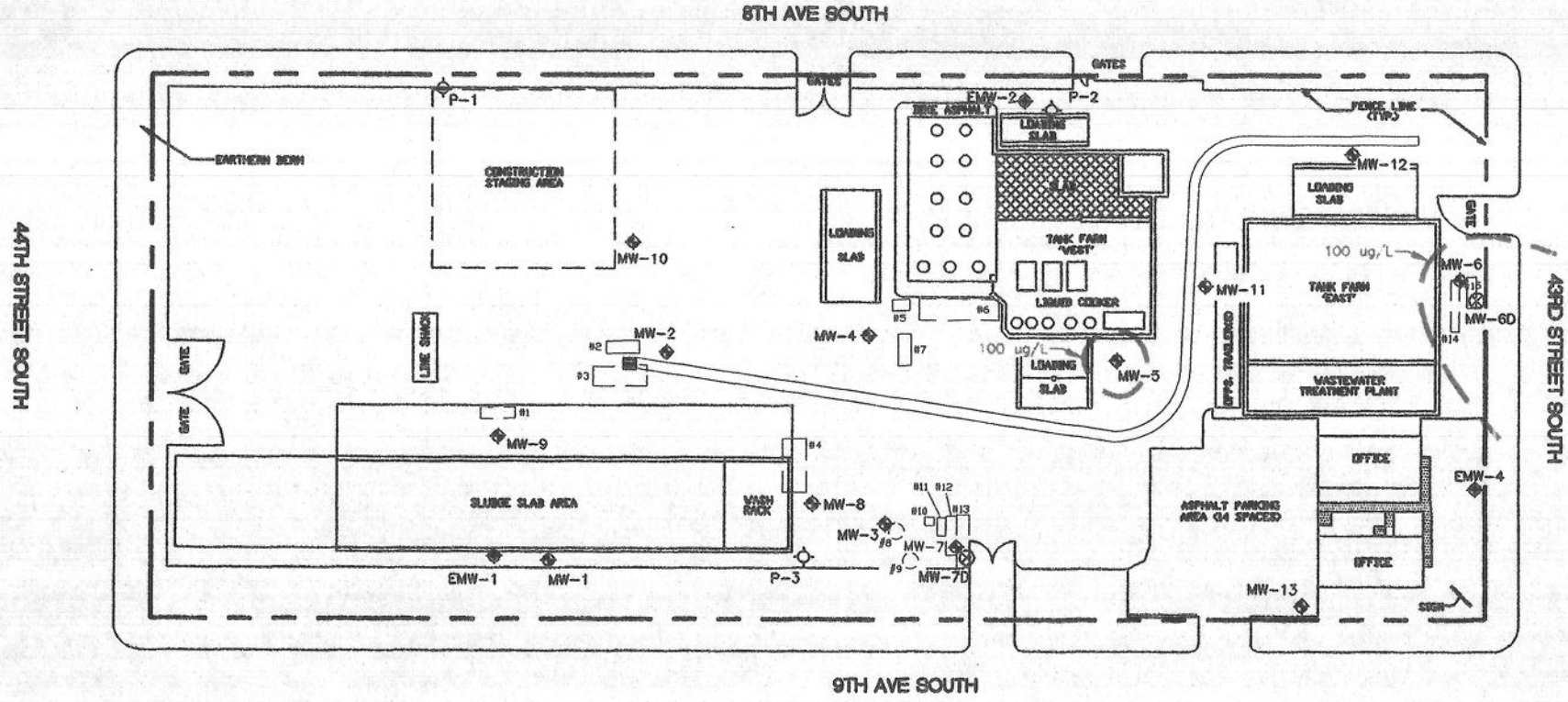
LEGEND

- EXISTING MONITORING WELL INSTALLED BY OTHERS
- MONITORING WELL INSTALLED BY FGS, INC.
- PIEZOMETER LOCATION
- DEEP WELL LOCATION
- CONCRETE DRAINAGE SWALE AND DRAIN
- PROPERTY BOUNDARY LINE
- FORMER STORAGE TANK LOCATION
- BENZENE
- TOTAL VOA's
- MTBE

APPROXIMATE Scale: 1" =80'

NOTE: LOCATIONS OF FORMER TANKS ARE APPROXIMATE.

FIGURE 9C
GROUNDWATER QUALITY SUMMARY MAP (TOTAL NAPHTHALENE)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA



TANK CALLOUTS/ CAPACITY IN GALLONS	
#1 – 1,000 AGST GASOLINE	#9 – 10,000 STG. TANK
#2 – 2,000 UGST GASOLINE	#10 – 1,000 #2 FUEL TANK
#3 – 6,000 UGST DIESEL	#11 – 4,000 COOKER TANK
#4 – 2,000 AGST DIESEL	#12 – 9,000 TANKER TRAILER
#5 – 3,000 OIL TRAP	#13 – 20,000 USED OIL TANK
#6 – 5,500 OIL WATER SEP.	#14 – 5,000 #2 DIESEL
#7 – 1,000 STG. TANK	#15 – 3,000 LEADED GASOLINE
#8 – 8,000 STG. TANK	

LEGEND

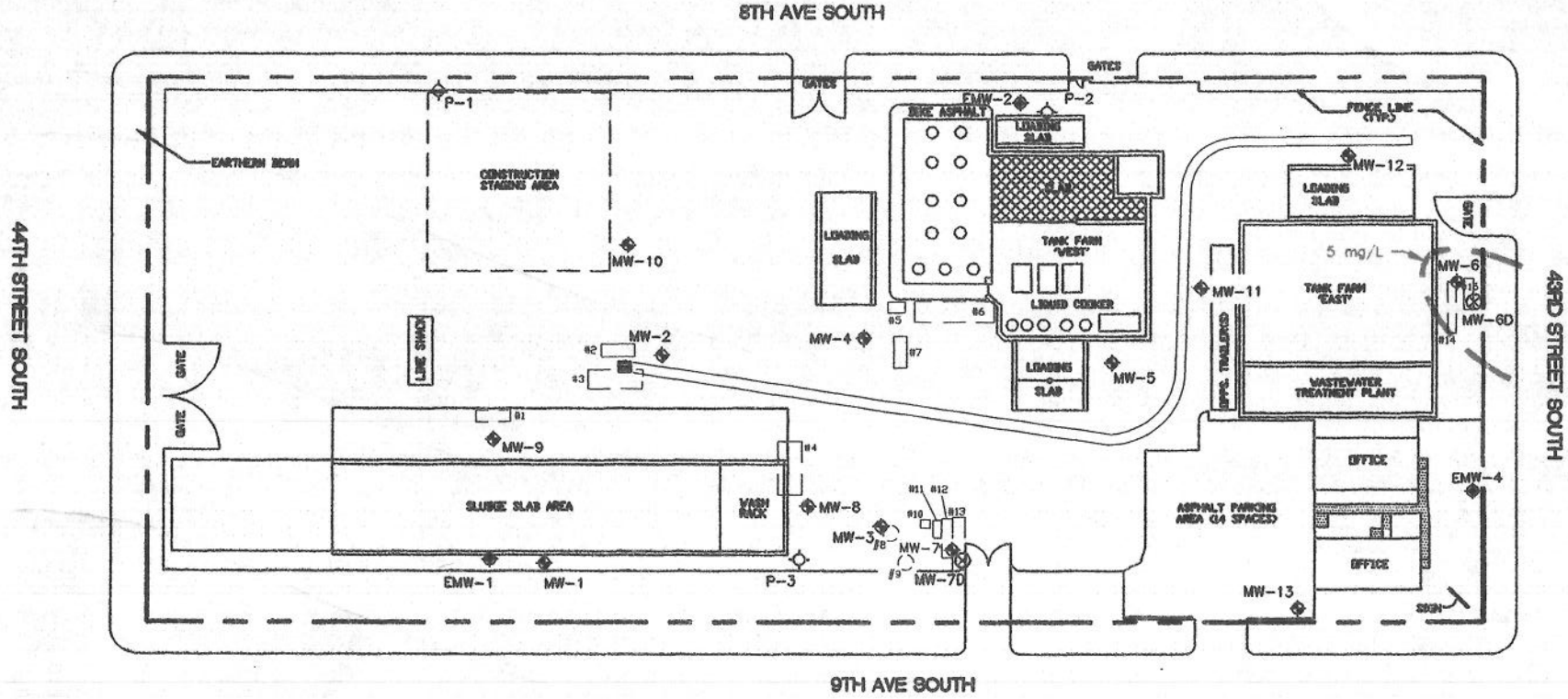
- EXISTING MONITORING WELL INSTALLED BY OTHERS
- MONITORING WELL INSTALLED BY FGS, INC.
- PIEZOMETER LOCATION
- DEEP WELL LOCATION
- CONCRETE DRAINAGE SWALE AND DRAIN
- PROPERTY BOUNDARY LINE
- FORMER STORAGE TANK LOCATION
- TOTAL NAPHTHALENE

NOTE: LOCATIONS OF FORMER TANKS ARE APPROXIMATE.

APPROXIMATE Scale: 1" = 80'

FGS INC.

FIGURE 9D
GROUNDWATER QUALITY SUMMARY MAP (TRPH)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA



TANK CALLOUTS/ CAPACITY IN GALLONS	
#1 – 1,000 AGST GASOLINE	#9 – 10,000 STG. TANK
#2 – 2,000 UGST GASOLINE	#10 – 1,000 #2 FUEL TANK
#3 – 6,000 UGST DIESEL	#11 – 4,000 COOKER TANK
#4 – 2,000 AGST DIESEL	#12 – 9,000 TANKER TRAILER
#5 – 3,000 OIL TRAP	#13 – 20,000 USED OIL TANK
#6 – 5,500 OIL WATER SEP.	#14 – 5,000 #2 DIESEL
#7 – 1,000 STG. TANK	#15 – 3,000 LEADED GASOLINE
#8 – 8,000 STG. TANK	

LEGEND

- EXISTING MONITORING WELL INSTALLED BY OTHERS
- MONITORING WELL INSTALLED BY FGS, INC.
- PIEZOMETER LOCATION
- DEEP WELL LOCATION
- CONCRETE DRAINAGE SWALE AND DRAIN
- PROPERTY BOUNDARY LINE
- FORMER STORAGE TANK LOCATION
- TRPH (mg/L)

APPROXIMATE Scale: 1" = 80'

NOTE: LOCATIONS OF FORMER TANKS ARE APPROXIMATE.

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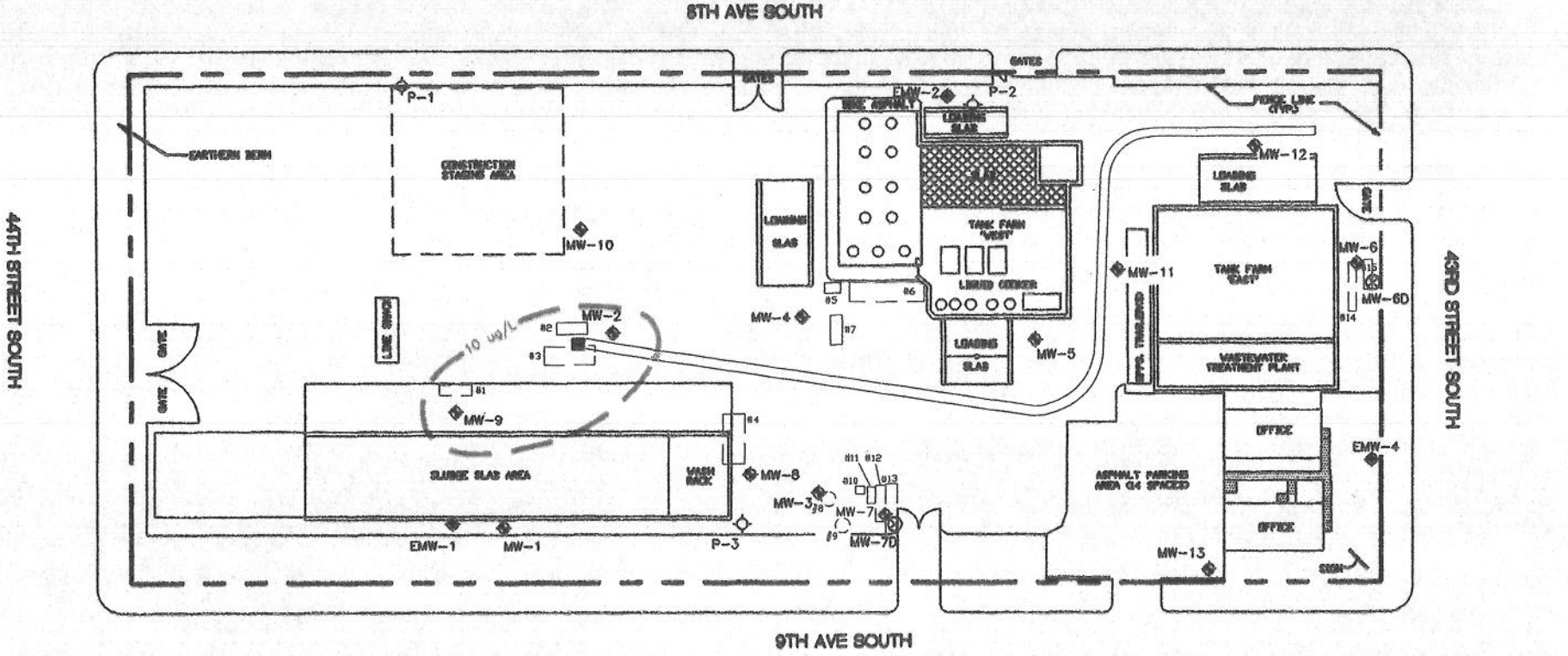
FGS INC.

FIGURE 9E
GROUNDWATER QUALITY SUMMARY MAP (PHENOL)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA



TANK CALLOUTS/ CAPACITY IN GALLONS	
#1 - 1,000 AGST GASOLINE	#9 - 10,000 STG. TANK
#2 - 2,000 UGST GASOLINE	#10 - 1,000 #2 FUEL TANK
#3 - 6,000 UGST DIESEL	#11 - 4,000 COOKER TANK
#4 - 2,000 AGST DIESEL	#12 - 9,000 TANKER TRAILER
#5 - 3,000 OIL TRAP	#13 - 20,000 USED OIL TANK
#6 - 5,500 OIL WATER SEP.	#14 - 5,000 #2 DIESEL
#7 - 1,000 STG. TANK	#15 - 3,000 LEADED GASOLINE
#8 - 8,000 STG. TANK	

LEGEND

- EXISTING MONITORING WELL INSTALLED BY OTHERS
- MONITORING WELL INSTALLED BY FGS, INC.
- PIEZOMETER LOCATION
- DEEP WELL LOCATION
- CONCRETE DRAINAGE SWALE AND DRAIN
- PROPERTY BOUNDARY LINE
- FORMER STORAGE TANK LOCATION
- PHENOL

APPROXIMATE Scale: 1" =80'

NOTE: LOCATIONS OF FORMER TANKS ARE APPROXIMATE.

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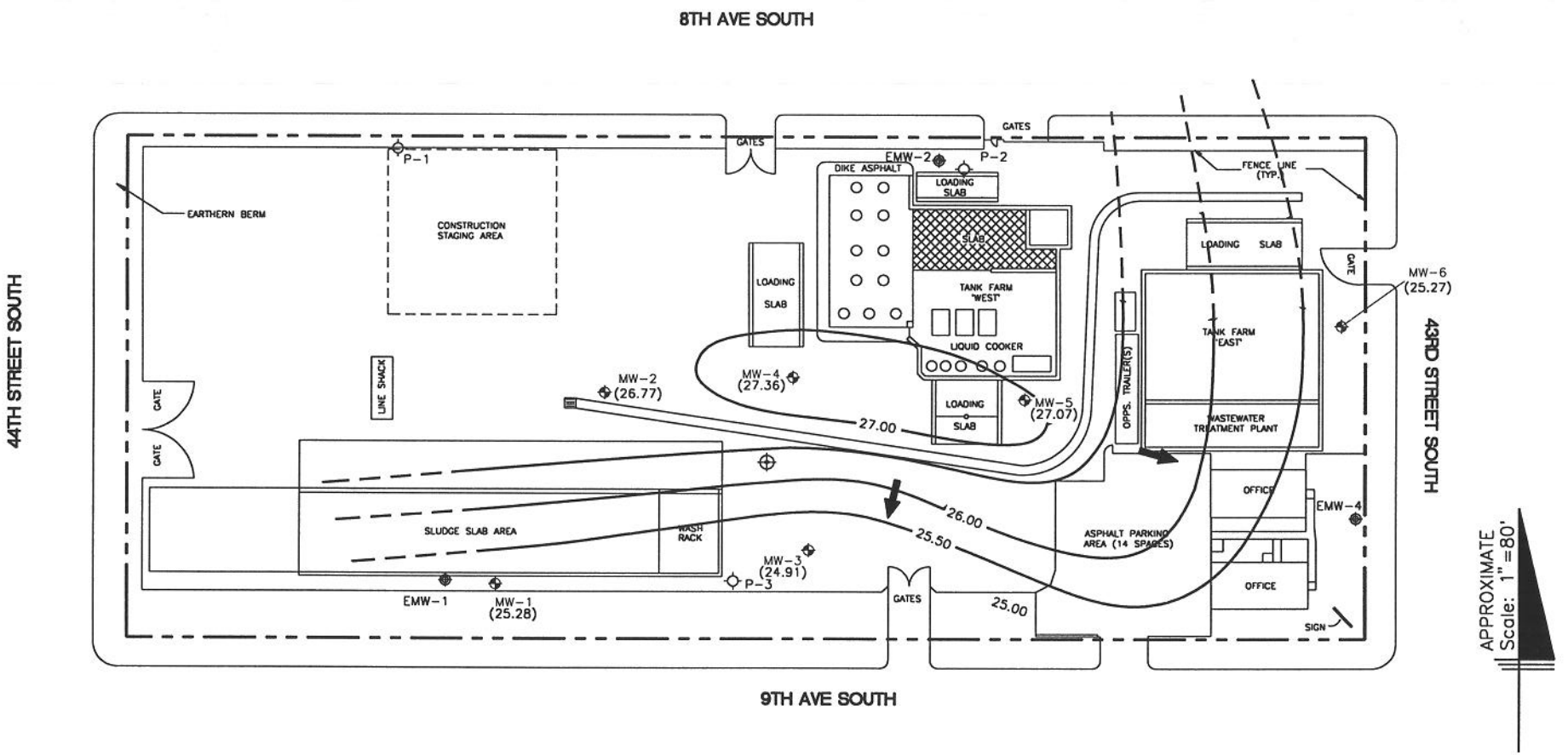
INC.

FIGURE 10
GROUNDWATER ELEVATION CONTOUR MAP (3-15-95)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA

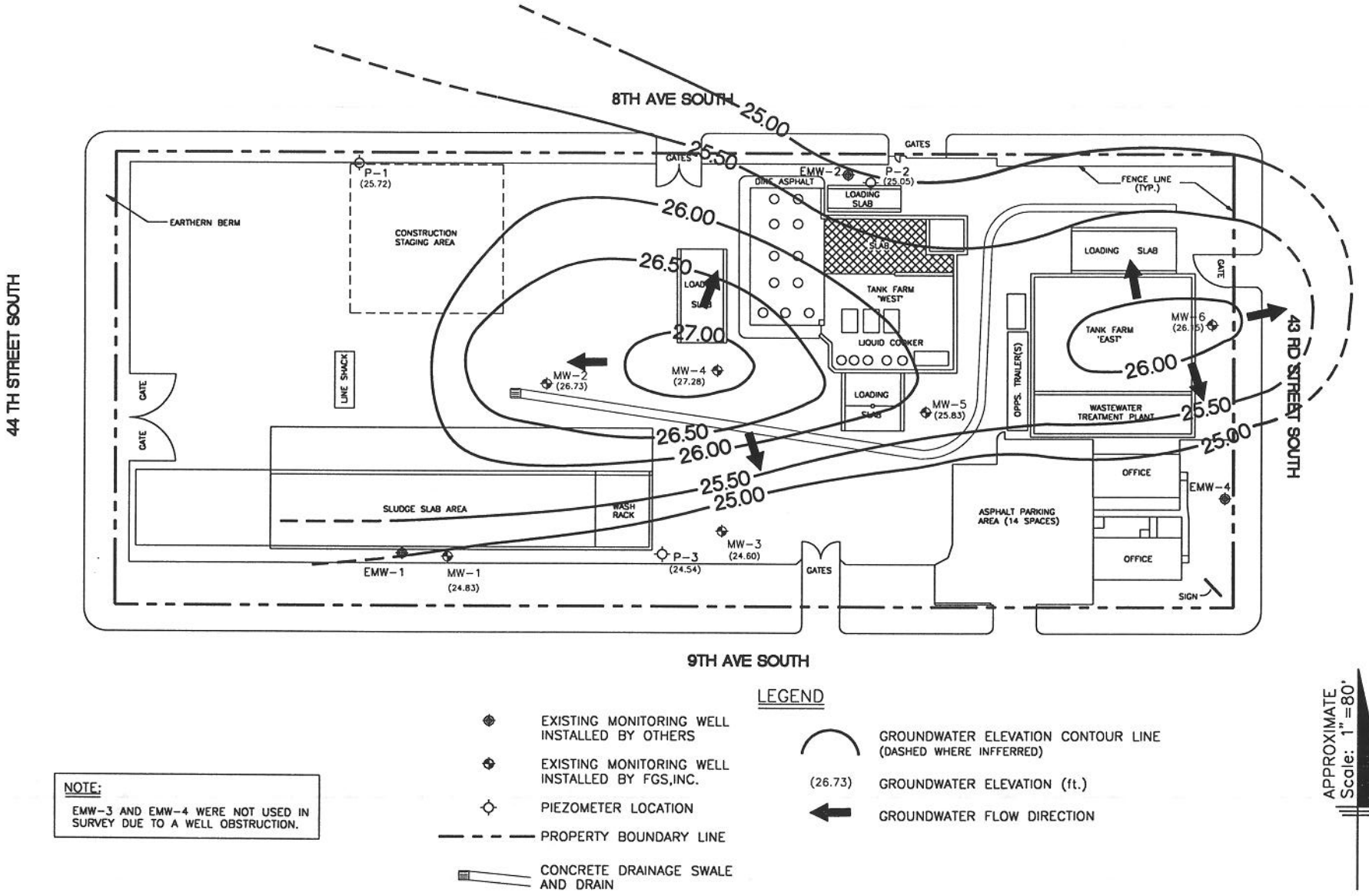


LEGEND

- EXISTING MONITORING WELL INSTALLED BY OTHERS
- EXISTING MONITORING WELL INSTALLED BY FGS,INC.
- PIEZOMETER LOCATION
- CONCRETE DRAINAGE SWALE AND DRAIN
- PROPERTY BOUNDARY LINE
- (24.91) GROUNDWATER ELEVATION (FT.)
- GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER FLOW DIRECTION

NOTE:
EMW-3 AND EMW-4 WERE NOT USED IN SURVEY DUE TO A WELL OBSTRUCTION.

FIGURE 11
GROUNDWATER ELEVATION CONTOUR MAP (APRIL 14, 1995)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA



LEGEND

- EXISTING MONITORING WELL INSTALLED BY OTHERS
- EXISTING MONITORING WELL INSTALLED BY FGS,INC.
- PIEZOMETER LOCATION
- PROPERTY BOUNDARY LINE
- CONCRETE DRAINAGE SWALE AND DRAIN
- GROUNDWATER ELEVATION CONTOUR LINE (DASHED WHERE INFFERRED)
- (26.73) GROUNDWATER ELEVATION (ft.)
- GROUNDWATER FLOW DIRECTION

NOTE:
EMW-3 AND EMW-4 WERE NOT USED IN SURVEY DUE TO A WELL OBSTRUCTION.

APPROXIMATE Scale: 1" = 80'

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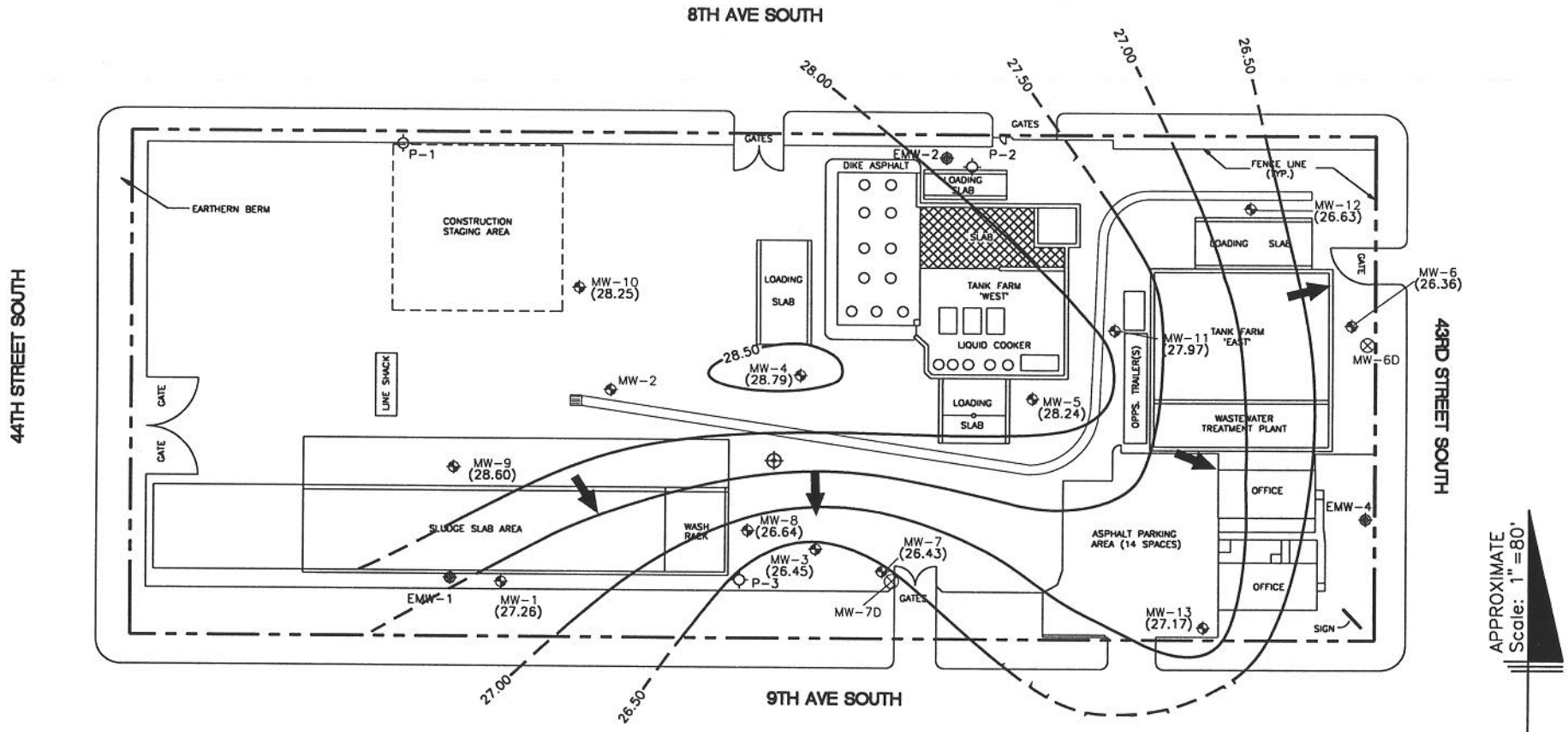
INC.

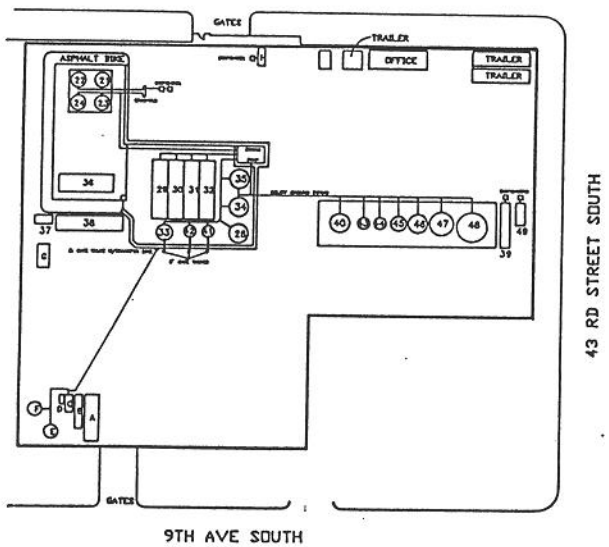
FIGURE 12
GROUNDWATER ELEVATION CONTOUR MAP (11-8-95)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA



LEGEND

- EXISTING MONITORING WELL INSTALLED BY OTHERS
- EXISTING MONITORING WELL INSTALLED BY FGS,INC.
- PIEZOMETER LOCATION
- DEEP WELL LOCATION
- PROPERTY BOUNDARY LINE
- (27.17) GROUNDWATER ELEVATION (FT.)
- GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER FLOW DIRECTION
- CONCRETE DRAINAGE SWALE AND DRAIN

Scale: 1" = 60'

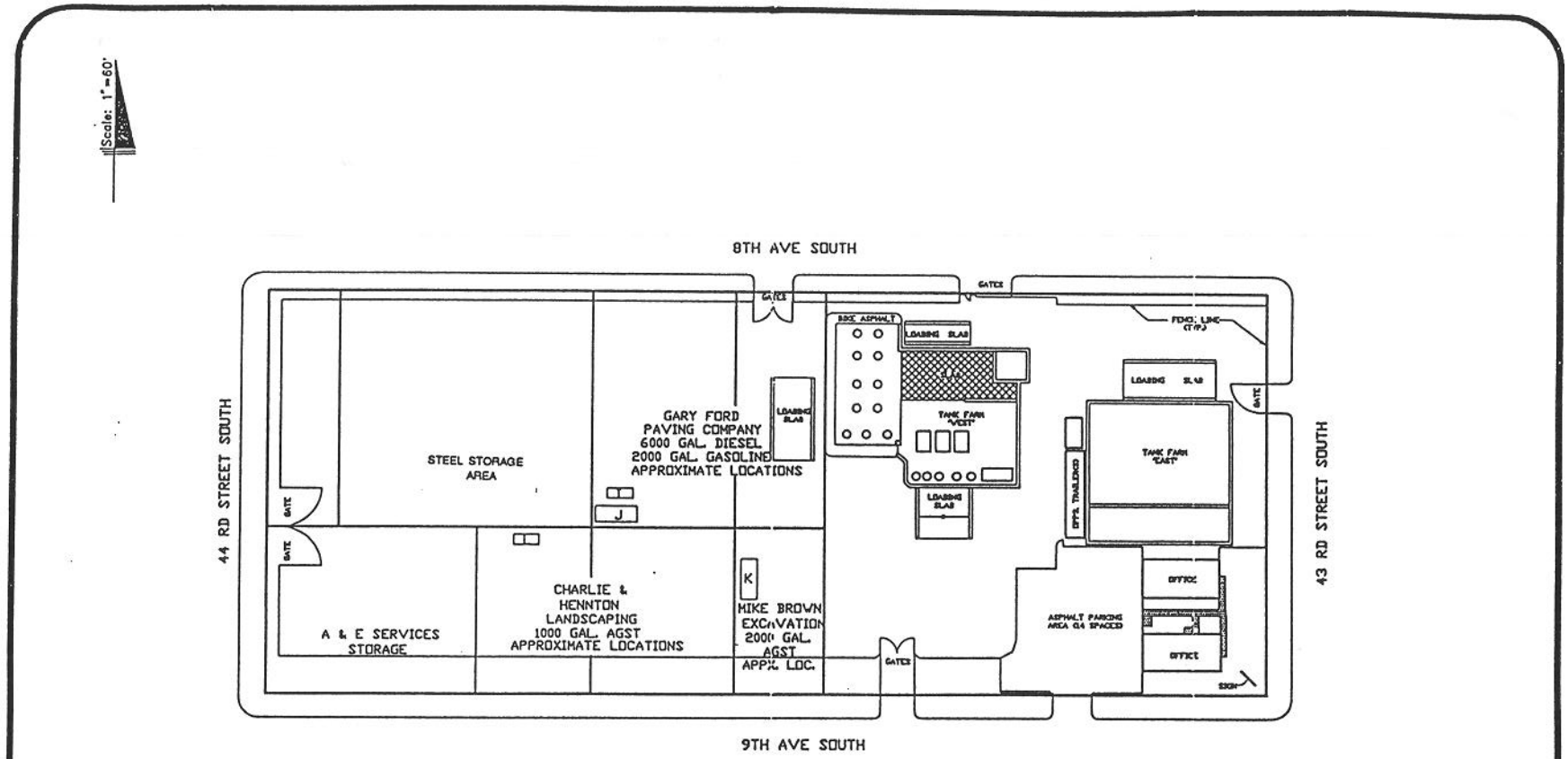


TANK CALLOUTS/CAPACITY IN GALLONS	
A - 20,000 USED OIL TANK	G - 1,000 STG. TANK
B - 9,000 TANKER TRAILER	H - 1,000 AGST #2 DIESEL
C - 4,000 COOKER TANK	I - 2,000 AGST GASOLINE
D - 1,000 #2FUEL TANK	J - 6,000 AGST DIESEL
E - 10,000 STG. TANK	K - 2,000 AGST DIESEL
F - 8,000 STG. TANK	L - 1,000 AGST GASOLINE
#21 - 30,000	#37 - 3,000 OIL TRAP
#22 - 30,000	#38 - 5,500 OIL WATER SEP.
#23 - 30,000	#39 - 5,000 #2 DIESEL
#24 - 30,000	#40 - 20,000
#28 - 10,000	#41 - 10,000
#29 - 3,750	#42 - 10,000
#30 - 3,750	#43 - 6,000
#31 - 3,750	#44 - 6,000
#32 - 3,750	#45 - 8,000
#33 - 6,000	#46 - 18,500 #2 FUEL OIL
#34 - 5,000 CONE BOT.	#47 - 18,500
#35 - 5,000 CONE BOT.	#48 - 30,000
#36 - 18,000 WATER EVAP. UST	#49 - 3,000 LEADED GASOLINE
BOLD TYPE INDICATES REMOVED TANKS	

FRS FLORIDA REMEDIATION SERVICES, INC.

308 SOUTH BOULEVARD TAMPA, FLORIDA 33606 (813)-254-8202
CONTAMINATED SOIL TREATMENT/GROUNDWATER REMEDIATION/TANK MANAGEMENT AND REMOVAL

HOWCO ENVIRONMENTAL
PRE-1983 CONFIGURATION



FLORIDA REMEDIATION SERVICES, INC.

HOWCO ENVIRONMENTAL
PRE 1989 CONFIGURATION

308 SOUTH BOULEVARD TAMPA, FLORIDA 33606 (813)-254-8202
CONTAMINATED SOIL TREATMENT/GROUNDWATER REMEDIATION/TANK MANAGEMENT AND REMOVAL

TABLE 1A
SUMMARY OF OVA/FID FIELD SCREENING RESULTS
HOWCO ENVIRONMENTAL SERVICES, INC. (OCTOBER 10, 1994)
ST. PETERSBURG, FLORIDA
(Page 1 of 2)

Sample	Date 1994	Depth (FBLS)	OVA/FID Screening Results[1] (ppm)			Comment
			Total Hydrocarbons (Unfiltered)	C_1 to C_3 Hydrocarbons (Filtered)	Non-ORGANIC Hydrocarbons (> C4)	
B-1A	10/10/94	2	BDL	NR	BDL	EARTHY ODOR
		4	BDL	NR	BDL	EARTHY ODOR
		6	70	55	15	ACRID ODOR
B-2A	10/10/94	2	BDL	NR	BDL	EARTHY ODOR
		4	2.0	BDL	2.0	EARTHY ODOR
		6	BDL	NR	BDL	EARTHY ODOR
		8	BDL	NR	BDL	EARTHY ODOR
B-3A	10/10/94	2	65	25	40	EARTHY ODOR
		4	25	15	10	EARTHY ODOR
		6	650	250	400	SLIGHT SULFUR ODOR
B-4A	10/10/94	2	80	45	35	SLIGHT PETROLEUM ODOR
B-5A	10/10/94	2	35	7	28	SEPTIC/PETROLEUM ODOR
		4	25	13	12	SEPTIC/PETROLEUM ODOR
		6	20	BDL	20	SULFUR ODOR
B-6A	10/10/94	2	110	145	-35	SLIGHT PETROLEUM ODOR
		4	300	300	0	SLIGHT PETROLEUM ODOR
		6	175	75	100	STRONG SULFUR ODOR
B-7A	10/10/94	2	4.0	BDL	4.0	EARTHY ODOR
		4	BDL	NR	BDL	EARTHY ODOR
		6	75	30	45	EARTHY ODOR
		8	150	90	60	EARTHY ODOR
B-8A	10/10/94	2	BDL	NR	BDL	EARTHY ODOR
		4	35	BDL	35	EARTHY ODOR
		6	70	90	-20	ORGANIC ODOR
		8	95	45	50	ORGANIC ODOR

(1) "Total hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading ("filtered") is the measurement of methane, ethane and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the "Total" and "Filtered" readings.

BDL: Below Detection Limit
FBLS: Feet Below Land Surface
NR: No Reading
--: Not Analyzed

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TABLE 1A (Continued)
SUMMARY OF OVA/FID FIELD SCREENING RESULTS (OCTOBER 10, 1994)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA
(Page 2 of 2)

Sample	Date 1994	Depth (FBLS)	OVA/FID Screening Results[1] (ppm)			Comment
			Total Hydrocarbons (Unfiltered)	C_1 to C_3 Hydrocarbons (Filtered)	Non-ORGANIC Hydrocarbons (>C4)	
B-9A	10/10/94	2	BDL	NR	BDL	EARTHY ODOR
		4	BDL	NR	BDL	EARTHY ODOR
		6	BDL	NR	BDL	EARTHY ODOR
		8	BDL	NR	BDL	EARTHY ODOR
B-10A	10/10/94	2	BDL	NR	BDL	EARTHY ODOR
		4	BDL	NR	BDL	EARTHY ODOR
		6	BDL	NR	BDL	EARTHY ODOR
		8	3.0	BDL	3.0	EARTHY ODOR
B-11A	10/10/94	2	50	BDL	50	OILY ODOR
		4	150	BDL	150	OILY ODOR
B-12A	10/10/94	2	1250	70	1180	STRONG PETROLEUM ODOR
		4	4000	190	3810	STRONG PETROLEUM ODOR
		6	5000	80	4920	STRONG PETROLEUM ODOR
		8	>100,000 FO	--	>100,000	STRONG PETROLEUM ODOR

(1) "Total hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading ("filtered") is the measurement of methane, ethane and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the "Total" and "Filtered" readings.

BDL: Below Detection Limit
FBLS: Feet Below Land Surface
NR: No Reading
--: Not Analyzed

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TABLE 1B
SUMMARY OF OVA/FID FIELD SCREENING RESULTS
HOWCO ENVIRONMENTAL SERVICES, INC. (MARCH-NOVEMBER, 1995)
ST. PETERSBURG, FLORIDA
(Page 1 of 7)

Sample	Date 1995	Depth (FBLS)	OVA/FID Screening Results[1] (ppm)			Comment
			Total Hydrocarbons (Unfiltered)	C_1 to C_3 Hydrocarbons (Filtered)	Non-ORGANIC Hydrocarbons (>C4)	
B-1	11/1/95	2	700	250	450	SLIGHT PETROLEUM ODOR
		4	500	450	50	SLIGHT PETROLEUM ODOR
		6	750	500	250	SLIGHT PETROLEUM ODOR
B-2	11/1/95	2	250	100	150	SLIGHT PETROLEUM ODOR
		4	275	300	-25	NO ODOR
		6	350	210	140	SLIGHT PETROLEUM ODOR
B-3	11/1/95	2	300	140	160	PETROLEUM ODOR
		4	850	375	475	PETROLEUM ODOR
		6	1400	600	800	PETROLEUM ODOR
B-4	11/1/95	2	325	100	225	PETROLEUM ODOR
		4	1600	750	850	PETROLEUM ODOR
		6	1300	900	400	PETROLEUM ODOR
B-5	11/1/95	2	450	95	355	PETROLEUM ODOR
		4	650	350	300	PETROLEUM ODOR
		6	1500	650	850	PETROLEUM ODOR
B-6	11/1/95	2	20	10	10	NO ODOR
		4	70	85	-15	ORGANIC ODOR
		6	650	900	-250	ORGANIC ODOR
B-7	11/1/95	2	160	110	50	SLIGHT PETROLEUM ODOR
		4	300	210	90	SLIGHT PETROLEUM ODOR
		6	600	350	250	SLIGHT PETROLEUM ODOR
B-8	11/1/95	2	140	160	-20	ORGANIC ODOR
		4	750	700	50	SLIGHT PETROLEUM ODOR
		6	2500	1600	900	ORGANIC ODOR

(1) "Total hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading ("filtered") is the measurement of methane, ethane and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the "Total" and "Filtered" readings.

BDL: Below Detection Limit
FBLS: Feet Below Land Surface
NR: No Reading
--: Not Analyzed

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TABLE 1B (Continued)
SUMMARY OF OVA/FID FIELD SCREENING RESULTS
HOWCO ENVIRONMENTAL SERVICES, INC. (MARCH-NOVEMBER, 1995)
ST. PETERSBURG, FLORIDA
(Page 2 of 7)

Sample	Date 1995	Depth (FBLS)	OVA/FID Screening Results[1] (ppm)			Comment
			Total Hydrocarbons (Unfiltered)	C_1 to C_3 Hydrocarbons (Filtered)	Non-ORGANIC Hydrocarbons (>C4)	
B-9	11/1/95	2	85	40	45	EARTHY ODOR
		4	75	45	30	EARTHY ODOR
		6	300	250	50	EARTHY ODOR
B-10	11/1/95	2	50	30	20	ORGANIC ODOR
		4	20	10	10	ORGANIC ODOR
B-11	11/1/95	2	300	45	255	ORGANIC ODOR
		4	100	50	50	ORGANIC ODOR
B-12	1/11/95	2	100	60	40	ORGANIC ODOR
		4	70	70	0	ORGANIC ODOR
B-13	1/11/95	2	45	25	20	ORGANIC ODOR
		4	2000	1200	800	VERY SLIGHT PETROLEUM & ORGANIC ODOR
B-14	11/1/95	2	200	120	80	PETROLEUM ODOR
		4	850	800	50	SLIGHT PETROLEUM ODOR
B-15	11/1/95	2	90	70	20	EARTHY ODOR
		4	950	850	100	EARTHY ODOR
B-16	11/1/95	2	45	40	5	EARTHY ODOR
		4	200	210	-10	EARTHY ODOR
B-17	11/1/95	2	14	NR	14	EARTHY ODOR
		4	7	NR	7	EARTHY ODOR
		6	8	NR	8	EARTHY ODOR
		8	10	NR	10	EARTHY ODOR
B-18	11/1/95	2	BDL	NR	BDL	EARTHY ODOR
		4	BDL	NR	BDL	EARTHY ODOR
		6	BDL	NR	BDL	EARTHY ODOR
		8	2	NR	2	EARTHY ODOR

(1) "Total hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading ("filtered") is the measurement of methane, ethane and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the "Total" and "Filtered" readings.

BDL: Below Detection Limit
FBLS: Feet Below Land Surface
NR: No Reading
--: Not Analyzed

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TABLE 1B (Continued)
SUMMARY OF OVA/FID FIELD SCREENING RESULTS
HOWCO ENVIRONMENTAL SERVICES, INC. (MARCH-NOVEMBER, 1995)
ST. PETERSBURG, FLORIDA
(Page 3 of 7)

Sample	Date 1995	Depth (FBLS)	OVA/FID Screening Results[1] (ppm)			Comment
			Total Hydrocarbons (Unfiltered)	C_1 to C_3 Hydrocarbons (Filtered)	Non-ORGANIC Hydrocarbons (>C4)	
B-19	11/1/95	2	600	50	550	PETROLEUM ODOR
		4	950	25	925	PETROLEUM ODOR
		6	>100,000	20	>99,980	SLIGHT PETROLEUM ODOR
		8	>100,000	250	>99,750	SLIGHT PETROLEUM ODOR
B-20	11/1/95	2	450	70	380	PETROLEUM ODOR
		4	275	60	215	PETROLEUM ODOR
		6	200	20	180	PETROLEUM ODOR
		8	225	70	155	PETROLEUM ODOR
B-21	11/2/95	2	1000	450	550	ORGANIC ODOR
		4	700	350	350	ORGANIC ODOR
B-22	11/2/95	2	700	360	340	ORGANIC ODOR
		4	140	100	40	ORGANIC ODOR
B-23	11/2/95	2	120	60	60	ORGANIC ODOR
		4	210	120	90	ORGANIC ODOR
B-24	11/2/95	2	BDL	NR	BDL	ORGANIC ODOR
		4	BDL	NR	BDL	ORGANIC ODOR
B-25	11/2/95	2	7	NR	7	ORGANIC ODOR
		4	BDL	NR	BDL	ORGANIC ODOR
B-26	11/2/95	2	550	225	325	PETROLEUM ODOR
		4	200	70	130	PETROLEUM ODOR
B-27	11/2/95	2	55	15	40	ORGANIC ODOR
		4	300	170	130	ORGANIC ODOR
		6	1600	1100	500	ORGANIC ODOR
B-28	11/2/95	2	BDL	NR	BDL	ORGANIC ODOR
		4	35	20	15	ORGANIC ODOR
		6	600	300	300	ORGANIC ODOR - MOIST

(1) "Total hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading ("filtered") is the measurement of methane, ethane and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the "Total" and "Filtered" readings.

BDL: Below Detection Limit
FBLS: Feet Below Land Surface
NR: No Reading
--: Not Analyzed

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TABLE 1B (Continued)
SUMMARY OF OVA/FID FIELD SCREENING RESULTS
HOWCO ENVIRONMENTAL SERVICES, INC. (MARCH-NOVEMBER, 1995)
ST. PETERSBURG, FLORIDA
(Page 4 of 7)

Sample	Date 1995	Depth (FBLS)	OVA/FID Screening Results[1] (ppm)			Comment
			Total Hydrocarbons (Unfiltered)	C_1 to C_3 Hydrocarbons (Filtered)	Non-ORGANIC Hydrocarbons (>C4)	
B-29	11/2/95	2	100	50	50	ORGANIC ODOR
		4	375	200	175	ORGANIC ODOR
		6	425	300	125	ORGANIC ODOR
B-30	11/2/95	2	7	NR	7	ORGANIC ODOR
		4	40	16	24	ORGANIC ODOR
		6	170	95	75	ORGANIC ODOR
B-31	11/2/95	2	100	65	35	ORGANIC ODOR
		4	600	350	250	SLIGHT PETROLEUM ODOR
B-32	11/2/95	2	500	100	400	PETROLEUM ODOR
		4	700	650	50	ORGANIC ODOR
B-33	11/2/95	2	BDL	NR	BDL	NO ODOR
		4	BDL	NR	BDL	NO ODOR
B-34	11/2/95	2	10	5	5	ORGANIC ODOR
		4	25	10	15	ORGANIC ODOR
B-35	11/2/95	2	BDL	NR	BDL	EARTHY ODOR
		4	BDL	NR	BDL	EARTHY ODOR
		6	BDL	NR	BDL	EARTHY ODOR
B-36	11/2/95	2	16	BDL	16	ORGANIC ODOR
		4	25	BDL	25	ORGANIC ODOR
B-37	11/2/95	2	1200	80	1120	SLIGHT PETROLEUM ODOR
		4	350	100	250	ORGANIC ODOR
B-38	11/3/95	2	BDL	NR	BDL	EARTHY ODOR
		4	BDL	NR	BDL	EARTHY ODOR
		6	BDL	NR	BDL	EARTHY ODOR
B-39	11/3/95	2	36	15	21	EARTHY ODOR
		4	32	7	25	EARTHY ODOR

(1) "Total hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading ("filtered") is the measurement of methane, ethane and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the "Total" and "Filtered" readings.

BDL: Below Detection Limit
FBLS: Feet Below Land Surface
NR: No Reading
--: Not Analyzed

TABLE 1B (Continued)
SUMMARY OF OVA/FID FIELD SCREENING RESULTS
HOWCO ENVIRONMENTAL SERVICES, INC. (MARCH-NOVEMBER, 1995)
ST. PETERSBURG, FLORIDA
(Page 5 of 7)

Sample	Date 1995	Depth (FBLS)	OVA/FID Screening Results (ppm)			Comment
			Total Hydrocarbons (Unfiltered)	C_1 to C_3 Hydrocarbons (Filtered)	Non-ORGANIC Hydrocarbons (>C4)	
B-40	11/3/95	2	220	330	-110	ORGANIC ODOR
		4	600	400	200	ORGANIC ODOR
		6	>1000	500	≥500	ORGANIC ODOR
B-41	11/3/95	2	10	NR	10	ORGANIC ODOR
		4	60	20	40	ORGANIC ODOR
		6	860	600	260	ORGANIC ODOR
B-42	11/3/95	2	200	170	30	ORGANIC ODOR
		4	>1000	800	≥200	ORGANIC ODOR
B-43	11/3/95	2	540	160	380	ORGANIC ODOR
		4	980	540	440	ORGANIC ODOR
B-44	11/3/95	2	140	40	100	ORGANIC ODOR
		4	440	280	160	ORGANIC ODOR
B-45	11/3/95	2	10	NR	10	ORGANIC ODOR
		4	10	NR	10	ORGANIC ODOR
		6	>1000	>1000	UNKNOWN	ORGANIC ODOR
B-46	11/3/95	2	200	180	20	ORGANIC ODOR
		4	400	540	-140	ORGANIC ODOR
DB-1	10/24/95	2	700	225	475	PETROLEUM ODOR
		4	1000	275	725	PETROLEUM ODOR
		6	180	80	100	PETROLEUM ODOR
MW-1	3/13/95	2	4.0	BDL	4.0	EARTHY ODOR
		4	BDL	NR	BDL	EARTHY ODOR
		6	5.0	BDL	5.0	EARTHY ODOR
		8	8.0	BDL	8.0	EARTHY ODOR

(1) "Total hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading ("filtered") is the measurement of methane, ethane and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the "Total" and "Filtered" readings.

BDL: Below Detection Limit
FBLS: Feet Below Land Surface
NR: No Reading
--: Not Analyzed

TABLE 1B (Continued)
SUMMARY OF OVA/FID FIELD SCREENING RESULTS
HOWCO ENVIRONMENTAL SERVICES, INC. (MARCH-NOVEMBER, 1995)
ST. PETERSBURG, FLORIDA
(Page 6 of 7)

Sample	Date 1995	Depth (FBLS)	OVA/FID Screening Results[1] (ppm)			Comment
			Total Hydrocarbons (Unfiltered)	C_1 to C_3 Hydrocarbons (Filtered)	Non-ORGANIC Hydrocarbons (> C4)	
MW-2	3/13/95	2	10	13	-3	SLIGHT PETROLEUM ODOR/ORGANIC
		4	72	84	-12	SLIGHT PETROLEUM ODOR/ORGANIC
		6	90	97	-7	SLIGHT PETROLEUM ODOR/ORGANIC
MW-3	3/13/95	2	4.0	BDL	4.0	EARTHY ODOR
		4	8.0	BDL	8.0	EARTHY ODOR
		6	25	BDL	25	EARTHY ODOR
		8	600	87	513	STRONG PETROLEUM ODOR
MW-4	3/13/95	2	1.4	BDL	1.4	EARTHY ODOR
		4	1.2	BDL	1.2	EARTHY ODOR
		6	5.0	BDL	5.0	EARTHY ODOR
MW-5	3/13/95	2	280	260	20	SLIGHT PETROLEUM ODOR
		4	210	510	-300	ORGANIC ODOR
		6	310	110	200	SLIGHT PETROLEUM ODOR
MW-6	3/13/95	2	BDL	NR	BDL	EARTHY ODOR
		4	>1000	700	>300	STRONG PETROLEUM ODOR
		6	>1000	20	>980	STRONG PETROLEUM ODOR
		8	>1000	62	>938	STRONG PETROLEUM ODOR
MW-6D	10/27/95	2	BDL	NR	BDL	EARTHY ODOR
		4	>1000	BDL	>1000	STRONG PETROLEUM ODOR
		6	>1000	12	>988	STRONG PETROLEUM ODOR
		8	>1000	BDL	>1000	STRONG PETROLEUM ODOR
MW-7	10/25/95	2	BDL	NR	BDL	EARTHY ODOR
		4	BDL	NR	BDL	EARTHY ODOR
		6	22	25	-3	EARTHY ODOR

(1) "Total hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading ("filtered") is the measurement of methane, ethane and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the "Total" and "Filtered" readings.

BDL: Below Detection Limit
FBLS: Feet Below Land Surface
NR: No Reading
--: Not Analyzed

TABLE 1B (Continued)
SUMMARY OF OVA/FID FIELD SCREENING RESULTS
HOWCO ENVIRONMENTAL SERVICES, INC. (MARCH-NOVEMBER, 1995)
ST. PETERSBURG, FLORIDA
(Page 7 of 7)

Sample	Date 1995	Depth (FBLS)	OVA/FID Screening Results[1] (ppm)			Comment
			Total Hydrocarbons (Unfiltered)	C_1 to C_3 Hydrocarbons (Filtered)	Non-ORGANIC Hydrocarbons (>C4)	
MW-7D	10/25/95	2	BDL	NR	BDL	EARTHY ODOR
		4	BDL	NR	BDL	EARTHY ODOR
		6	10	BDL	10	EARTHY ODOR
MW-8	10/26/95	2	580	500	80	PETROLEUM ODOR
		4	660	380	280	PETROLEUM ODOR
		6	64	62	2	PETROLEUM ODOR
MW-9	10/27/95	2	440	190	250	SLIGHT PETROLEUM ODOR
		4	640	140	500	SLIGHT PETROLEUM ODOR
MW-10	10/26/95	2	110	80	30	SLIGHT PETROLEUM ODOR
		4	110	40	70	SLIGHT PETROLEUM ODOR
		6	390	200	190	PETROLEUM ODOR
MW-11	10/26/95	2	>1000	630	>370	STRONG PETROLEUM ODOR
		4	200	81	119	PETROLEUM ODOR
		6	440	21	419	PETROLEUM ODOR
MW-12	10/25/95	2	BDL	NR	BDL	EARTHY ODOR
		4	BDL	NR	BDL	EARTHY ODOR
		6	BDL	NR	BDL	EARTHY ODOR
MW-13	10/27/95	2	BDL	NR	BDL	EARTHY ODOR
		4	BDL	NR	BDL	EARTHY ODOR
		6	BDL	NR	BDL	EARTHY ODOR

(1) "Total hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading ("filtered") is the measurement of methane, ethane and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the "Total" and "Filtered" readings.

BDL: Below Detection Limit
FBLS: Feet Below Land Surface
NR: No Reading
--: Not Analyzed

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TABLE 2
WELL CONSTRUCTION SUMMARY
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA

Well No.	Date Drilled	Installation Method	Total Well Depth (Feet)	Top of Screen (FBLS)	Bottom of Screen (FBLS)	Screen Length (Feet)	Well Diameter (Inches)	Slot Size (Inches)	Elev., Top of Screen (FAMSL)	Elev., Bottom of Screen (FAMSL)	Elev., Top of Casing (MP: FAMSL)
MW-1	3/13/95	HSA	17.89	7.39	17.39	10.0	2.0	.010	27.47	17.47	34.86
MW-2	3/13/95	HSA	15.12	4.62	14.62	10.0	2.0	.010	28.96	18.96	33.58
MW-3	3/13/95	HSA	17.32	6.82	16.82	10.0	2.0	.010	27.86	17.86	34.68
MW-4	3/13/95	HSA	14.61	4.11	14.11	10.0	2.0	.010	30.37	20.37	34.48
MW-5	3/13/95	HSA	18.21	7.71	17.71	10.0	2.0	.010	26.59	16.59	34.30
MW-6	3/13/95	HSA	18.34	7.84	17.84	10.0	2.0	.010	27.60	17.60	35.44
MW-6D	10/27/95	HSA/MR	46.00	36.00	46.00	5.0	2.0	.010	-0.56	-10.56	35.44
MW-7	10/25/95	HSA	17.00	6.50	16.50	10.0	2.0	.010	28.38	18.38	34.88
MW-7D	10/25/95	HSA/MR	46.00	36.00	46.00	5.0	2.0	.010	-1.04	-11.04	34.96
MW-8	10/26/95	HSA	17.00	6.50	16.50	10.0	2.0	.010	27.94	17.94	34.44
MW-9	10/27/95	HSA	17.00	6.50	16.50	10.0	2.0	.010	28.27	18.27	34.77
MW-10	10/26/95	HSA	17.00	6.50	16.50	10.0	2.0	.010	28.09	18.09	34.59
MW-11	10/26/95	HSA	17.00	6.50	16.50	10.0	2.0	.010	27.91	17.91	34.41
MW-12	10/25/95	HSA	17.00	6.50	16.50	10.0	2.0	.010	28.31	18.31	34.81
MW-13	10/27/95	HSA	17.00	6.50	16.50	10.0	2.0	.010	27.09	17.09	33.59

NOTES:

FBLS Feet Below Land Surface
FAMSL Feet Above Mean Sea Level
HSA Hollow Stem Auger
MR Mud Rotary

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TABLE 3A
GROUNDWATER ELEVATION SURVEY (9/27/93)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA

LOCATION	TOP OF CASING ELEVATION (FAMSL) (9/27/93)	9/27/93	
		DEPTH TO WATER	GROUNDWATER ELEVATION
EMW-1	35.00	8.56	26.44
EMW-2	35.54	9.03	26.51
PZ-1	34.61	7.68	26.93

FAMSL Feet Above Mean Sea Level

TABLE 3B
GROUNDWATER ELEVATION SURVEY (9/9/94)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA

LOCATION	TOP OF CASING ELEVATION (FAMSL) (9/9/94)	9/9/94	
		DEPTH TO WATER	GROUNDWATER ELEVATION
EMW-1	35.00	9.57	25.43
EMW-2	35.53	NR	-
PZ-1	34.19	7.66	26.53

FAMSL Feet Above Mean Sea Level
NR Not Read

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TABLE 3C
GROUNDWATER ELEVATION SURVEY (10/18/94)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA

LOCATION	TOP OF CASING ELEVATION (FAMSL) (10/18/94)	10/18/94	
		DEPTH TO WATER	GROUNDWATER ELEVATION
EMW-2	35.54	NR	-
PZ-1	34.19	7.07	27.12
PZ-2	36.50	9.86	26.64
PZ-3	35.91	9.86	26.05

FAMSL Feet Above Mean Sea Level
NR Not Read

TABLE 3D
GROUNDWATER ELEVATION SURVEY (3/15/94 and 4/14/95)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA

LOCATION	TOP OF CASING ELEVATION (FAMSL) (3/20/95)	3/15/95		4/14/95	
		DEPTH TO WATER	GROUNDWATER ELEVATION	DEPTH TO WATER	GROUNDWATER ELEVATION
MW-1	34.86	9.58	25.28	10.03	24.83
MW-2	33.58	6.81	26.77	6.85	26.73
MW-3	34.70	9.79	24.91	10.10	24.60
MW-4	34.52	7.16	27.36	7.24	27.28
MW-5	34.36	7.29	27.07	8.53	25.83
MW-6	35.49	10.22	25.27	9.34	26.15
PZ-1	34.22	NR	-	8.50	25.72
PZ-2	36.53	NR	-	11.48	25.05
PZ-3	35.94	NR	-	11.40	24.54

FAMSL Feet Above Mean Sea Level
NR Not Read

TABLE 3E
GROUNDWATER ELEVATION SURVEY (5/3/95 and 11/8/95)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA

LOCATION	TOP OF CASING ELEVATION (FAMSL) (5-3-95/11-8-95*)	5/31/95		11/8/95	
		DEPTH TO WATER	GROUNDWATER ELEVATION	DEPTH TO WATER	GROUNDWATER ELEVATION
MW-1	34.86	10.59	24.27	7.60	27.26
MW-2	33.58	7.13	26.45	NR	-
MW-3	34.68	10.75	23.93	8.23	26.45
MW-4	34.48	7.49	26.99	5.69	28.79
MW-5	34.30	9.20	25.10	6.06	28.24
MW-6	35.44	11.05	24.39	9.08	26.36
PZ-1	34.20	9.23	24.97	NR	-
PZ-2	36.59	12.03	24.56	NR	-
PZ-3	35.93	12.11	23.82	NR	-
MW-6D	35.44*	NI	-	9.25	26.19
MW-7	34.88*	NI	-	8.45	26.43
MW-7D	34.96*	NI	-	8.52	26.44
MW-8	34.44*	NI	-	7.80	26.64
MW-9	34.77*	NI	-	6.17	28.60
MW-10	34.59*	NI	-	6.34	28.25
MW-11	34.41*	NI	-	6.44	27.97
MW-12	34.81*	NI	-	8.18	26.63
MW-13	33.59*	NI	-	6.42	27.17

FAMSL Feet Above Mean Sea Level NI Not Installed
NR Not Read

TABLE 4A
SUMMARY OF GROUNDWATER QUALITY RESULTS (MARCH 15, 1995)
ORGANIC PARAMETERS
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA

Targeted Compound	State Limit (µg/L)	Method Detection Limit (µg/L)	MW-1 3/15/95	MW-2 3/15/95	MW-3 3/15/95	MW-4 3/15/95	MW-5 3/15/95	MW-51 3/15/95	MW-6 3/15/95	EQ-315 3/15/95	Trip Blank 3/15/95
EPA Method 601 (µg/L)											
1,1-Dichloroethane	700[c]	1.0	BDL	15.7	52.9	BDL	BDL	BDL	BDL	BDL	BDL
1,1-Dichloroethene	7.0[a]	1.0	BDL	23.7	21.0	BDL	BDL	BDL	BDL	BDL	BDL
Tetrachloroethene	3.0[a]	1.0	BDL	5.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Trichloroethene	3.0[a]	1.0	BDL	2.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Vinyl Chloride	1.0[a]	1.0	BDL	28.9	86.5	BDL	BDL	BDL	BDL	BDL	BDL
EPA Method 602 (µg/L)											
Benzene	1.0[b]	1.0	BDL	3.8	4.2	BDL	56.0	75.0	13,100.0	BDL	BDL
Toluene	1,000[a]	1.0	BDL	117.0	6.8	5.7	BDL	31.0	55,600.0	BDL	BDL
Ethylbenzene	700[a]	1.0	BDL	33.6	7.6	1.1	BDL	28.0	4,900.0	BDL	BDL
Total Xylenes	10,000[a]	1.0	BDL	61.3	22.7	9.0	BDL	68.0	25,640.0	BDL	BDL
Total VOAs	50.0[b]	--	BDL	215.7	41.3	15.8	56.0	202.0	99,240.0	BDL	BDL
MTBE	50.0[b]	1.0	1140.0	250.0	223.0	9.4	1,004.0	1040.0	BDL	BDL	BDL

Total Xylenes — Sum of concentrations of m-,o-, and p-xylenes
Total VOAs — Sum of concentrations of benzene, ethylbenzene, toluene, and total xylenes.
MTBE — Methyl Tert Butyl Ether
BDL — Below Detection Limit

EQ-315 is an equipment blank
MW-51 is a duplicate sample of MW-5
NA — Not Analyzed

Footnotes defining 1994 Florida Groundwater Guidance Concentrations
(a) Florida Primary Drinking Water Standard (Florida Administrative Code 62-550.310-320)
(b) Florida Administrative Code 62-770.730 target levels for groundwater remediation.
(c) Florida Department of Environmental Protection Report, June 1994: Groundwater Guidance Concentrations

TABLE 4A (Cont.)
SUMMARY OF GROUNDWATER QUALITY RESULTS (MARCH 15, 1995)
INORGANIC PARAMETERS
HOWCO ENVIROMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA

Targeted Compound	State Limit (µg/L)	Method Detection Limit (µg/L)	MW-1 3/15/95	MW-2 3/15/95	MW-3 3/15/95	MW-4 3/15/95	MW-5 3/15/95	MW-51 3/15/95	MW-6 3/15/95	EQ-315 3/15/95	Trip Blank 3/15/95
EPA Method 504 (µg/L)											
Ethylene Dibromide (EDB)	0.02[b]	0.01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA
EPA Method 418.1 (mg/L)											
Total Petroleum Hydrocarbons	5.0[b]	1.0	BDL	BDL	BDL	BDL	2.0	2.8	11.0	BDL	NA
EPA Method 604 (µg/L)											
2,4-Dimethylphenol	400.0[c]	5.0	BDL	BDL	BDL	17.0	64.0	90.0	65.0	BDL	NA
Phenol	10.0[c]	5.0	BDL	32.0	BDL	BDL	BDL	BDL	BDL	BDL	NA
4-Chloro-3-Methylphenol	3000.0[c]	5.0	BDL	BDL	BDL	BDL	BDL	BDL	30.0	BDL	NA
EPA Method 610 (µg/L)											
Naphthalene	6.8[c]	5.0	BDL	30.0	BDL	BDL	90.0	70.0	240.0	BDL	NA
1-Methyl naphthalene	--	5.0	BDL	19.0	BDL	BDL	11.0	8.0	54.0	BDL	NA
2-Methyl naphthalene	--	5.0	BDL	37.0	BDL	BDL	29.0	28.0	122.0	BDL	NA
Total Naphthalenes	100.0[b]	--	BDL	86.0	BDL	BDL	130.0	106.0	416.0	BDL	NA

Total Xylenes — Sum of concentrations of m-,o-, and p-xylenes
Total VOAs — Sum of concentrations of benzene, ethylbenzene, toluene, and total xylenes.
MTBE — Methyl Tert Butyl Ether
BDL — Below Detection Limit

EQ-315 is an equipment blank
MW-51 is a duplicate sample of MW-5
NA — Not Analyzed

Footnotes defining 1994 Florida Groundwater Guidance Concentrations
(a) Florida Primary Drinking Water Standard (Florida Administrative Code 62-550.310-320)
(b) Florida Administrative Code 62-770.730 target levels for groundwater remediation.
(c) Florida Department of Environmental Protection Report, June 1994: Groundwater Guidance Concentrations

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TABLE 4A (Cont.)
SUMMARY OF GROUNDWATER QUALITY RESULTS (MARCH 15, 1995)
INORGANIC PARAMETERS
HOWCO ENVIROMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA

Targeted Compound		State Limit (µg/L)	Method Detection Limit (µg/L)	MW-1 3/15/95	MW-2 3/15/95	MW-3 3/15/95	MW-4 3/15/95	MW-5 3/15/95	MW-51 3/15/95	MW-6 3/15/95	EQ-315 3/15/95	Trip Blank 3/15/95
Metals (µg/L)												
Arsenic	Total	50.0[a]	10.0	BDL	BDL	BDL	BDL	36.0	BDL	BDL	BDL	NA
	Dissolved	50.0[a]	10.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA
Chromium	Total	100.0[a]	10.0	BDL	92.0	24.0	36.0	330.0	150.0	28.0	BDL	NA
	Dissolved	100.0[a]	10.0	BDL	12.0	BDL	BDL	68.0	BDL	12.0	BDL	NA
Lead	Total	50.0[b]	3.0	BDL	1,100.0	18.0	4,300.0	2,800.0	1,100.0	19.0	BDL	NA
	Dissolved	50.0[b]	3.0	BDL	9.5	BDL	90.0	1,900.0	180.0	14.0	BDL	NA
Mercury	Total	2.0[a]	0.2	BDL	1.6	0.4	0.8	0.6	0.4	0.6	BDL	NA
	Dissolved	2.0[a]	0.2	BDL	BDL	BDL	BDL	0.4	BDL	BDL	BDL	NA
Nickel	Total	100.0[a]	10.0	BDL	BDL	10	10	67.0	53.0	16.0	BDL	NA
	Dissolved	100.0[a]	10.0	BDL	BDL	BDL	BDL	47.0	45.0	BDL	BDL	NA
Selenium	Total	50.0[a]	5.0	BDL	11.0	BDL	BDL	12.0	BDL	5.0	BDL	NA
	Dissolved	50.0[a]	5.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA

Total Xylenes — Sum of concentrations of m-,o-, and p-xylenes
Total VOAs — Sum of concentrations of benzene, ethylbenzene, toluene, and total xylenes.
MTBE — Methyl Tert Butyl Ether
BDL — Below Detection Limit

EQ-315 is an equipment blank
MW-51 is a duplicate sample of MW-5
NA — Not Analyzed

Footnotes defining 1994 Florida Groundwater Guidance Concentrations
(a) Florida Primary Drinking Water Standard (Florida Administrative Code 62-550.310-320)
(b) Florida Administrative Code 62-770.730 target levels for groundwater remediation.
(c) Florida Department of Environmental Protection Report, June 1994: Groundwater Guidance Concentrations

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TABLE 4A (Cont.)
SUMMARY OF GROUNDWATER QUALITY RESULTS (MARCH 15, 1995)
INORGANIC PARAMETERS
HOWCO ENVIROMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA
(Page 4 of 4)

Targeted Compound	State Limit (µg/L)	Method Detection Limit (µg/L)	MW-1 3/15/95	MW-2 3/15/95	MW-3 3/15/95	MW-4 3/15/95	MW-5 3/15/95	MW-51 3/15/95	MW-6 3/15/95	EQ-315 3/15/95	Trip Blank 3/15/95
EPA Method 180.1 (NTU)											
Turbidity	1.0[a]	--	470.0	485.0	480.0	485.0	250.0	NA	470.0	NA	NA

Total Xylenes — Sum of concentrations of m-,o-, and p-xylenes
Total VOAs — Sum of concentrations of benzene, ethylbenzene, toluene, and total xylenes.
MTBE — Methyl Tert Butyl Ether
BDL — Below Detection Limit

EQ-315 is an equipment blank
MW-51 is a duplicate sample of MW-5
NA — Not Analyzed

Footnotes defining 1994 Florida Groundwater Guidance Concentrations
(a) Florida Primary Drinking Water Standard (Florida Administrative Code 62-550.310-320)
(b) Florida Administrative Code 62-770.730 target levels for groundwater remediation.
(c) Florida Department of Environmental Protection Report, June 1994: Groundwater Guidance Concentrations

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TABLE 4B
SUMMARY OF GROUNDWATER QUALITY RESULTS (NOVEMBER 8, 1995)
ORGANIC PARAMETERS
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA

Targeted Compound	State Limit (µg/L)	Method Detection Limit (µg/L)	MW-6D 11/8/95	MW-7 11/8/95	MW-30 11/8/95	MW-7D 11/8/95	MW-8 11/8/95	MW-9 11/8/95	MW-10 11/8/95	MW-11 11/8/95	MW-12 11/8/95	MW-13 11/8/95	MW-31 11/8/95	TRIP BLANK
EPA Method 601 (µg/L)														
1,1-Dichloroethane	700[c]	1.0	NA	19.6	15.6	7.7	18.9	67.7	13.6	BDL	BDL	BDL	BDL	BDL
1,1-Dichloroethene	7.0[a]	1.0	NA	5.3	5.4	5.1	3.3	19.4	BDL	BDL	BDL	BDL	BDL	BDL
Tetrachloroethene	3.0[a]	1.0	NA	4.3	4.7	BDL	BDL	BDL	10.4	BDL	BDL	BDL	BDL	BDL
Trichloroethene	3.0[a]	1.0	NA	BDL	BDL	BDL	BDL	BDL	1.5	BDL	BDL	BDL	BDL	BDL
Vinyl Chloride	1.0[a]	1.0	NA	6.7	8.4	BDL	16.9	12.5	BDL	BDL	BDL	BDL	BDL	BDL
EPA Method 602 (µg/L)														
Benzene	1.0[b]	1.0	9.1	2.2	2.6	BDL	10.9	10.8	5.4	16.4	BDL	BDL	BDL	BDL
Toluene	1,000[a]	1.0	39.5	BDL	BDL	17.8	2.7	49.0	7.2	BDL	BDL	BDL	BDL	BDL
Ethylbenzene	700[a]	1.0	37.6	BDL	BDL	BDL	2.1	4.9	22.0	2.1	BDL	BDL	BDL	BDL
Total Xylenes	10,000[a]	1.0	273.7	3.8	4.1	4.8	7.2	7.7	102.6	1.2	BDL	BDL	BDL	BDL
Total VOAs	50.0[b]	--	359.9	6.0	6.7	22.6	22.9	72.4	137.2	19.7	BDL	BDL	BDL	BDL
MTBE	50.0[b]	5.0	BDL	184	166	16.3	192	84.3	18.8	149	BDL	BDL	BDL	BDL

Total Xylenes	Sum of concentrations of m-,o-, and p-xylenes
Total VOAs	Sum of concentrations of benzene, ethylbenzene, toluene, and total xylenes.
MTBE	Methyl Tert Butyl Ether
BDL	Below Detection Limit
NA	Not Analyzed

MW-31 is an equipment blank
MW-30 is a duplicate sample of MW-7

Footnotes defining 1994 Florida Groundwater Guidance Concentrations

(a) Florida Primary Drinking Water Standard (Florida Administrative Code 62-550.310-320)
(b) Florida Administrative Code 62-770.730 target levels for groundwater remediation.
(c) Florida Department of Environmental Protection Report, June 1994: Groundwater Guidance Concentrations

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TABLE 4B (Cont.)
SUMMARY OF GROUNDWATER QUALITY RESULTS (NOVEMBER 8, 1995)
ORGANIC PARAMETERS
HOWCO ENVIROMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA

Targeted Compound	State Limit (µg/L)	Method Detection Limit (µg/L)	MW-6D 11/8/95	MW-7 11/8/95	MW-30 11/8/95	MW-7D 11/8/95	MW-8 11/8/95	MW-9 11/8/95	MW-10 11/8/95	MW-11 11/8/95	MW-12 11/8/95	MW-13 11/8/95	MW-31 11/8/95	TRIP BLANK
EPA Method 504 (µg/L)														
Ethylene Dibromide (EDB)	0.02[b]	0.01	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
EPA Method 418.1 (mg/L)														
Total Petroleum Hydrocarbons	5.0[b]	1.0	BDL	BDL	1.2	3.1	BDL	1.4	1.4	4.5	BDL	BDL	BDL	NA
EPA Method 604 (µg/L)														
2,4-Dimethylphenol	400.0[c]	5.0	NA	BDL	BDL	BDL	BDL	BDL	50	BDL	BDL	BDL	BDL	NA
Phenol	10.0[c]	5.0	NA	BDL	BDL	184	BDL	18	BDL	BDL	BDL	BDL	BDL	NA
2-Methylphenol	350.0[c]	5.0	NA	BDL	BDL	160	BDL	179	101	BDL	BDL	BDL	BDL	NA
EPA Method 610 (µg/L)														
Naphthalene	6.8[c]	5.0	6	BDL	BDL	17	BDL	11	36	BDL	BDL	BDL	BDL	NA
1-Methyl naphthalene	--	5.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA
2-Methyl naphthalene	--	5.0	BDL	BDL	BDL	BDL	BDL	BDL	11	BDL	BDL	BDL	BDL	NA
Total Naphthalenes	100.0[b]	--	6	BDL	BDL	17	BDL	11	47	BDL	BDL	BDL	BDL	NA

Total Xylenes	Sum of concentrations of m-,o-, and p-xylenes
Total VOAs	Sum of concentrations of benzene, ethylbenzene, toluene, and total xylenes.
MTBE	Methyl Tert Butyl Ether
BDL	Below Detection Limit
NA	Not Analyzed

MW-31 is an equipment blank
MW-30 is a duplicate sample of MW-7

Footnotes defining 1994 Florida Groundwater Guidance Concentrations
(a) Florida Primary Drinking Water Standard (Florida Administrative Code 62-550.310-320)
(b) Florida Administrative Code 62-770.730 target levels for groundwater remediation.
(c) Florida Department of Environmental Protection Report, June 1994: Groundwater Guidance Concentrations

TABLE 4B (Continued)
SUMMARY OF GROUNDWATER QUALITY RESULTS (NOVEMBER 8, 1995)
INORGANIC PARAMETERS
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA

Targeted Compound	State Limit (µg/L)	Method Detection Limit (µg/L)	MW-6D 11/8/95	MW-7 11/8/95	MW-30 11/8/95	MW-7D 11/8/95	MW-8 11/8/95	MW-9 11/8/95	MW-10 11/8/95	MW-11 11/8/95	MW-12 11/8/95	MW-13 11/8/95	MW-31 11/8/95	TRIP BLANK
Metals (µg/L)														
Arsenic Total	50.0[a]	10.0	NA	BDL	BDL	51	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA
Chromium Total	100.0[a]	5.0	NA	17	14	190	10	6	44	9	29	15	BDL	NA
Lead Total	50.0[b]	3.0	NA	10	8	940	5	90	1500	27	18	15	BDL	NA
Mercury Total	2.0[a]	0.2	NA	BDL	0.3	BDL	BDL	BDL	1.0	BDL	BDL	0.3	BDL	NA
Nickel Total	100.0[a]	5.0	NA	9	9	79	6	15	7	11	BDL	6	BDL	NA
Selenium Total	50.0[a]	5.0	NA	BDL	BDL	32	BDL	BDL	BDL	BDL	6	BDL	BDL	NA

Total Xylenes	Sum of concentrations of m-,o-, and p-xylenes
Total VOAs	Sum of concentrations of benzene, ethylbenzene, toluene, and total xylenes.
MTBE	Methyl Tert Butyl Ether
BDL	Below Detection Limit
NA	Not Analyzed

MW-31 is an equipment blank
MW-30 is a duplicate sample of MW-7

Footnotes defining 1994 Florida Groundwater Guidance Concentrations

(a) Florida Primary Drinking Water Standard (Florida Administrative Code 62-550.310-320)
(b) Florida Administrative Code 62-770.730 target levels for groundwater remediation.
(c) Florida Department of Environmental Protection Report, June 1994: Groundwater Guidance Concentrations

TABLE 5A
SUMMARY OF SOIL QUALITY RESULTS (OCTOBER 10, 1994)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA

Targeted Compound	State Limit	Method Detection Limit	B-1A 8.0'	B-2A 7.0'	B-3A` 6.0'	B-4A 2.0'	B-5A 2.0'	B-6A 6.0'	B-7A 8.0'	B-8A 9.0'	B-9A 9.0'	B-10A 8.0'	B-11A 2.0'	B-12A 4.0'	B-12D 4.0	EQB-1010	TRIP BLANK
EPA Methods 8010/8020 (µg/kg)																	
Benzene	--	20	NA	BDL	NA	BDL	BDL	NA	BDL	NA	NA	NA	BDL	BDL	BDL	BDL	BDL
Toluene	--	20	NA	BDL	NA	BDL	BDL	NA	BDL	NA	NA	NA	BDL	BDL	BDL	BDL	BDL
Ethylbenzene	--	20	NA	BDL	NA	BDL	BDL	NA	BDL	NA	NA	NA	BDL	20,700	16,800	BDL	BDL
Xylenes	--	20	NA	BDL	NA	BDL	BDL	NA	BDL	NA	NA	NA	BDL	41,900	32,100	BDL	BDL
Total VOA	100[a]	--	--	--	--	--	--	--	--	--	--	--	--	62,600	48,900	--	--
MTBE	--	100	NA	BDL	NA	BDL	BDL	NA	BDL	NA	NA	NA	BDL	BDL	BDL	--	--
All Others	--	20	NA	BDL	NA	BDL	BDL	NA	BDL	NA	NA	NA	BDL	BDL	BDL	BDL	BDL
EPA Method 8080 (µg/kg)																	
All Compounds		(c)	NA	BDL	NA	BDL	BDL	NA	BDL	NA	NA	NA	BDL	BDL	BDL	BDL	NA
Total Metals (mg/kg)[c]																	
Arsenic	10[a]	1	NA	BDL	NA	BDL	BDL	NA	BDL	NA	NA	NA	BDL	BDL	BDL	BDL	NA
Barium	4940[a]	20	NA	BDL	NA	BDL	BDL	NA	BDL	NA	NA	NA	BDL	BDL	BDL	BDL	NA
Cadmium	37[a]	0.5	NA	BDL	NA	BDL	BDL	NA	BDL	NA	NA	NA	BDL	BDL	BDL	BDL	NA
Chromium	50[a]	1	NA	4.9	NA	BDL	BDL	NA	7.7	NA	NA	NA	BDLL	1.4	1.1	BDL	NA
Lead	108[a]	5.0	NA	5.0	NA	5.0	1080	NA	2.3	NA	NA	NA	820	64	82	BDL	NA
Mercury	23[a]	0.1	NA	BDL	NA	BDL	BDL	NA	BDL	N	NA	NA	BDL	BDL	BDL	BDL	NA
Selenium	389[a]	0.5	NA	BDL	NA	BDL	BDL	NA	BDL	NA	NA	NA	BDL	BDL	BDL	BDL	NA
Silver	353[a]	1	NA	BDL	NA	BDL	BDL	NA	BDL	NA	NA	NA	BDL	BDL	BDL	BDL	NA
Nickel	--	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA
EPA Method 9073 (mg/kg)																	
Total Petroleum Hydrocarbons	10[a]	10	223	BDL	29.1	263	85,900	177	12.4	BDL	20.8	33.2	8370	9800	6200	BDL	NA

(a) Florida Administrative Code 62-775.400 (1&2)
(b) Refer to laboratory report for EPA Method for individual parameters
(c) Refer to laboratory report for method detection limits for individual parameters

B-12D is a duplicate sample of B-12A
EQB-1010 is an equipment blank

BDL Below Detection Limit
NA Not Analyzed

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TABLE 5B
SUMMARY OF SOIL QUALITY RESULTS (NOVEMBER 2-3, 1995)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA

Targeted Compound	State Limit	Method Detection Limit	B-21 2.0'	B-22 2.0'	B-23 2.0'	B-24 2.0'	B-25 2.0'	B-27 6.0'	B-28 6.0'	B-29 4.0'	B-30 6.0'	B-31 4.0'	B-33 6.0'	B-34 6.0'	B-35 4.0'	B-39 6.0'	B-40 6.0'	TRIP BLANK
EPA Methods 8010/8020 (μg/kg)																		
Benzene	--	5	NA	NA	NA	NA	NA	BDL	BDL	BDL	BDL	NA	NA	NA	NA	NA	NA	BDL
Toluene	--	5	NA	NA	NA	NA	NA	BDL	BDL	BDL	BDL	NA	NA	NA	NA	NA	NA	BDL
Ethylbenzene	--	5	NA	NA	NA	NA	NA	BDL	BDL	5	BDL	NA	NA	NA	NA	NA	NA	BDL
Xylenes	--	5	NA	NA	NA	NA	NA	BDL	BDL	17	BDL	NA	NA	NA	NA	NA	NA	BDL
Total VOA	100[a]	--	NA	NA	NA	NA	NA	BDL	BDL	22	BDL	NA	NA	NA	NA	NA	NA	BDL
MTBE	--	5	NA	NA	NA	NA	NA	BDL	BDL	BDL	BDL	NA	NA	NA	NA	NA	NA	BDL
All Others	--	5	NA	NA	NA	NA	NA	BDL	BDL	BDL	BDL	NA	NA	NA	NA	NA	NA	BDL
EPA Method 8100 (μg/kg)																		
Chrysene	140,000[d]	160	1450	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA
Fluoranthene	2,900,000[d]	160	330	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA
Pyrene	2,200,000[d]	160	1650	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA
EPA Method 9073 (mg/kg)																		
Total Petroleum Hydrocarbons	10[a]	10	NA	78	NA	NA	NA	NA	NA	NA	NA	25	NA	NA	NA	NA	NA	NA
EPA Method 6010A (mg/kg)																		
Total Lead	108[a]	0.3	4.8	0.5	2.3	0.4	2.1	3.4	2.9	1.3	2.5	1.7	2.1	60.0	0.3	1.0	3.4	NA

(a) Florida Administrative Code 62-775.400 (1&2)
(b) Refer to laboratory report for EPA Method for individual parameters
(c) Refer to laboratory report for method detection limits for individual parameters
(d) Table 1 Selected Soil Cleanup Goals. Revised Rule 62-770, FAC, September 1995

BDL Below Detection Limit
NA Not Analyzed

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APPENDIX A

FDER CONSENT ORDER

Consent Order
Copy

Florida Department of Environmental Regulation

Southwest District • 4520 Oak Fair Boulevard • Tampa, Florida 33610-7347
Lawton Chiles, Governor 813-620-6100 Carol M. Browner, Secretary

JUN 22 RECD

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

June 19, 1992

Mr. Tim Hagen
HOWCO Environmental Sevices, Inc.
843 43rd Street South
St Petersburg, Florida 33711

Dear Mr. Hagen:

re: OGC Case 91-1176
FLD 152 764 767
Pinellas County

Attached is your copy of the executed Consent Order regarding violations noted in the Department's April 12, 1990 inspection at your facility. Under the Consent Order the following actions must be completed:

1. Payment of 12 payments of $833.33 each by the first of the month, beginning July 1, 1992
2. Submittal of a Contamination Assessment Plan by August 19. 1992.
3. Maintenance of the records required under Paragraph 20 of this Order effective immediately.

If you have any questions, please call me at 620-6100 ext 383.

Sincerely,

Elizabeth Knauss
Environmental Specialist III

cc: David Schwartz, OGC
Don Trussell, BWP&R
Alan Farmer USEPA, Region IV
Laurel Lockett Carlton, Fields
Joyce Gibbs, Pinellas County

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION	:	IN THE OFFICE OF THE SOUTHWEST DISTRICT
Complainant,	:	
vs.	:	OGC CASE NO. 91-1176
HOWCO ENVIRONMENTAL SERVICES, INC.	:	
Respondent.	:	

CONSENT ORDER

This Consent Order is entered into between the State of Florida Department of Environmental Regulation ("Department") and HOWCO Environmental Services, Inc., ("Respondent") to reach settlement of certain matters at issue between the Department and Respondent.

For the purposes of this Order, the Department finds the following:

1. The Department is the administrative agency of the State of Florida charged with the responsibility to protect Florida's air and water resources and to administer and enforce the Florida Resource Recovery and Management Act, Chapter 403, Florida Statutes, and the rules and regulations promulgated thereunder in Florida Administrative Code ("F.A.C.") Chapter 17.

2. Respondent is a Florida corporation conducting business in Florida and is a person within the meaning of Sections 403.703(4) and 403.031(5), Florida Statutes.

3. Respondent owns and operates a business that recycles used oil, petroleum contaminated waste water ("gassy water"), and sludge containing oil, waste water, dirt and other debris ("oily sludge") located at 843 43rd Street South, St. Petersburg, Florida, 33711.

4. The Respondent obtains the used oil from off-site generators or owners of regulated and unregulated underground storage tanks ("USTs"), terminal facilities, automotive crank cases, tank bottoms, oil tankers or vessels and abandoned or pulled USTs. The used oil is recycled by Respondent and sold to third parties (primarily asphalt plants) who then burn the used oil for energy recovery.

5. Respondent obtains the "gassy water" primarily from petroleum USTs located at service stations, pulled or abandoned USTs, and "draw" or "bilge" water from oil tankers, vessels, terminal facilities or above-ground tanks.

6. The source of "oily sludge" is primarily oil/water separators which are incorporated into the surface water

management systems for gasoline service stations and the parking lots of large terminal facilities.

7. The gassy water and the oily sludge are brought to Respondent's facility to be recycled by separating the oil, water and dirt. The water is treated at Respondent's water pretreatment plant and the oil is blended with other recycled oil and sold as fuel to asphalt plants. The water and oil are decanted from the mixture, leaving the dirt behind. The oily sludge is processed by removal of the oil and water as described above. Respondent has tested the dirt remaining from the sludge treated by this process and the filter cake from the water treatment plant on a number of occasions and has determined that the filter cake and the remaining dirt did not exhibit the toxicity characteristic per 40 C.F.R. 261.24.

8. On March 13, 1991, representatives of the United States Environmental Protection Agency ("EPA") collected representative samples of dirt remaining from the processing of oily sludge which had been stored in roll-offs at the facility. EPA tested the samples utilizing the EPA's "Toxic Characteristic Leaching Procedure" ('TCLP') and by letter to Respondent dated August 8, 1991, acknowledged that the sampled dirt was not hazardous.

9. Respondent's facility includes three main processes: a water treatment plant, oil plant, and a sludge plant. Although

different, each process comprises similar procedural phases: initial approval of material for treatment (including testing and transportation, plant processing and final testing. The Department's view of the nature of Respondent's operations is described in a Hazardous Waste Inspection report dated April 12, 1990, a copy of the "Process Description" portion of which is attached and incorporated as Exhibit I.

10. The Department conducted a compliance inspection of the Respondent's facility on April 12, 1990 (the "Inspection"), and as a result of matters identified in the Inspection, the Department issued a Warning Notice to the Respondent on September 21, 1990 ("Warning Notice"). The Respondent met with representatives of the Department on October 16, 1990, and October 25, 1990, to discuss the Warning Notice and to present various documents to the Department in support of the Respondent's position at that time.

11. Respondent has advised the Department that it has never operated or intended to operate a Transfer Facility, and that Respondent filed a Transfer Facility Notification Form in June 1989 at the request of the Department due to the unusual set of circumstances described in detail in its November 14, 1990 letter to the Department.

12. The Department recognizes that Respondent requires certified waste profiles from its clients before waste water can be accepted for treatment, and that certain clients may manifest their materials as hazardous waste although the materials may be exempt from hazardous waste regulations. Respondent may treat, store or recycle exempt materials without complying with the requirements for hazardous waste treatment, storage or disposal facilities.

13. In June 1989, Respondent accepted a 2,230 gallon shipment of material from General Components that, when analyzed by Respondent's in-house laboratory, was determined to deviate from its waste profile, exhibiting hazardous characteristics. Respondent immediately contacted the Department's representatives by telephone on June 2, 1989 and in a confirming letter on June 9, 1989 regarding proper resolution of this incident. At that time it was determined that the materials should be shipped from Respondent's facility to a Rollins' TSD facility, since the material was already in tanks at Respondent's facility. In addition, the Department notified Respondent that only transporters who have notified as transfer facilities may store hazardous waste more than 24 hours. Consequently, the Department sent Respondent a transfer facility notification form, which Respondent completed and submitted to the Department June 26, 1989. However, it was not Respondent's intention to engage in activities which would place it within the scope of the

definition of a transfer facility and Respondent did not routinely act as a transfer facility during this time. On March 5, 1992, Respondent submitted a Request for Status Change Form to the Department deleting its status as a Transfer Facility effective June 26, 1989.

14. Commencing in 1987, Respondent entered into a contract whereby it treated certain non-hazardous liquids in its waste water treatment facility. A by-product of this process was a "listed" hazardous waste (F006). This waste was disposed of appropriately with Manifests and Annual Reports provided to the Department. Respondent's contract and its treatment of the subject waste stream ended in June, 1989. Respondent was not a generator of hazardous waste after June 30, 1989.

15. As a result of the Inspection, and the factual matters described above, the Department has alleged that the Respondent has violated rules regarding hazardous waste management contained in F.A.C. Chapter 17-730 as set forth in the "Summary of Violations" of Exhibit II. As the result of these violations summarized in Exhibit II, the Department issued Respondent a Notice of Violation ("NOV") on August 6, 1991.

16. Solely for purposes of this Consent Order, the Respondent consents to, and agrees not to contest, Department jurisdiction to issue this Consent Order. Respondent consents to

jurisdiction for purposes of entry and enforcement of this Consent Order by the Department; provided, however, Respondent does not admit, accept, concede or acknowledge, the determinations, allegations, findings of fact and conclusions of law made by the Department in this Consent Order, and specifically reserves the right to contest any determinations, allegations, findings, and conclusions in any proceeding regarding the Respondent, or regarding the facility, other than actions brought by the Department to enforce this Consent Order. Furthermore, Respondent does not admit liability under any statutory or common law for the matters specified in this Consent Order. Notwithstanding the foregoing, Respondent agrees to be bound by all of the terms and conditions of this Consent Order.

17. The parties are entering into this Consent Order to enable the measures described in or authorized by this Consent Order to be implemented without resort to litigation which could delay such implementation. Neither this Consent Order nor any actions taken hereunder shall be admissible as evidence at any administrative or judicial proceeding, except for proceedings initiated pursuant to the terms of this Consent Order to enforce its terms and conditions.

18. The parties have met and discussed this matter and, as a result of these discussions, the issues raised herein have been resolved.

THEREFORE, having reached resolution of the matter pursuant to Florida Administrative Code Rule 17-103.110(3), the Respondent and Department mutually agree and it is, ORDERED:

19. The Department acknowledges that Respondent is currently operating as a hazardous waste transporter and exempt recycling and treatment facility. Respondent shall forthwith comply with all Department rules regarding hazardous waste management including without limitation the provisions of 40 CFR 263 and F.A.C. Rule 17-730.

20. Respondent acknowledges its responsibility to review the waste profiles of all incoming shipments transported under a hazardous waste manifest. Respondent shall require the generators of such shipments to certify on the waste profile whether the shipment includes of any of the following:

A. Used oil
B. Virgin or off specification unused petroleum fuels
C. Virgin or off specification unused petroleum products
D. Wastewater contaminated with used oil
E. Wastewater contaminated with virgin or off specification unused petroleum fuels
F. Wastewater contaminated with virgin or off specification unused petroleum products
G. Solids or sludges contaminated with used oil
H. Solids or sludges contaminated with virgin or off specification unused petroleum fuels
I. Solids or sludges contaminated with virgin or off specification unused petroleum products
J. Petroleum contaminated media or debris subject to corrective action regulations under 40 CFR Part 280
K. Used oil containing hazardous waste from a conditionally exempt small quantity generator subject to the requirements of 40 CFR 261.5
L. Household waste
M. Other hazardous wastes

N. Other materials

Respondent shall not treat, store or dispose of any exempt manifested shipment of waste without documenting which exemptions are applicable to the waste. Respondent shall comply with the regulations applicable to treatment, storage and disposal facilities per F.A.C. Rule 17-730.200(5) if non-exempt manifested wastes are treated, stored or disposed of at the facility.

21. Respondent shall implement corrective actions as set forth in the document entitled "Corrective Actions for Ground Water Contamination Cases" attached hereto as Exhibit III, within the time frames set forth therein. Compliance with this document shall constitute compliance with the closure requirements for transfer facilities under F.A.C. Rule 17-730.171(2)(b). Nothing in this paragraph shall prohibit Respondent from complying with any applicable corrective action provisions under Chapter 17-770, F.A.C.

22. Nothing in this Consent Order shall prohibit Respondent from instituting any action at the facility or during transportation that is necessary to abate any discharges of pollutants.

23. Respondent shall not permit discharges from its facility to the ground and/or surface waters of the State where such discharges are reasonably likely to cause a violation of

water quality and minimum criteria and standards as set forth in FAC Chapter 17-3.

24. Respondent shall pay the Department $10,000 in civil penalties in settlement of the matters addressed in this Consent Order, which shall be payable in twelve equal monthly installments of $833.33 each, payable on or before the 1st day of each month, commencing on the 1st day of the month following receipt by Respondent of a fully executed copy of this Consent Order. All payments shall be made by cashier's check or money order. The instrument shall be made payable to the Department of Environmental Regulation and shall include thereon the OGC number assigned to this Order and the notation "Pollution Recovery Fund". The payment shall be sent via certified mail to the Administrator, Division of Waste Management, Department of Environmental Regulation, 4520 Oak Fair Boulevard, Tampa, Florida, 33610-7347.

25. Respondent agrees to pay the Department stipulated penalties in the amount of $100 per day for each and every day Respondent fails to timely comply with any of the requirements of this Order. A separate stipulated penalty shall be assessed for each violation of this Order. Within thirty days of written demand from the Department, Respondent shall make payment of the appropriate stipulated penalties to "The Department of Environmental Regulation" by cashiers check or money order and

shall include there the OGC number assigned to this Order and the notation "Pollution Recovery Fund". Payment shall be sent via certified mail to the Administrator, Division of Waste Management, Department of Environmental Regulation, 4520 Oak Fair Boulevard, Tampa, Florida, 33610-7347. The Department may make demands for payment at any time after violations occur. Nothing in this paragraph shall prevent the Department from filing suit to specifically enforce the terms of this Consent Order.

26. Respondent waives its right to an administrative hearing concerning the terms of this Consent Order pursuant to Section 120.57, Florida Statutes except as provided in Paragraphs 16 above and 27 below. Respondent acknowledges its right to appeal the terms of this Consent Order pursuant to Section 120.68, Florida Statutes, but waives that right upon signing this Consent Order. Notwithstanding the foregoing, Respondent reserves its right to an administrative hearing as outlined in paragraph 27 of this Consent Order, and the right to appeal the results of such a hearing on any final agency action by the Department.

27. With regard to any determination made by the Department regarding Respondent's responses made pursuant to this Consent Order, Respondent may file a Petition for Formal or Informal Administrative Hearing Proceeding, if Respondent objects to the

Department's determination, pursuant to Section 120.57, Florida Statutes, and Chapter 17-103 and 28-5, Florida Administrative Code. Respondent shall have the burden of establishing the inappropriateness of the Department's determination. The Petition must conform with the requirements of Florida Administrative Code Rule 28-5.021, and must be received by the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida, 32399-2400, within 14 days after receipt of notice from the Department of any determination Respondent wishes to challenge. Failure to file a Petition within this time period shall constitute a waiver by Respondent of its right to request an administrative proceeding under Section 120.57, Florida Statutes. The Department's determination, upon expiration of the 14-day time period if no petition is filed, or the Final Order as a result of the filing of a petition, shall be incorporated by reference into this Consent Order and made a part of it. All other aspects of this Consent Order shall remain in full force and effect at all times. If Respondent seeks an administrative proceeding pursuant to this paragraph, the Department may file suit against Respondent in lieu of or in addition to holding the administrative proceeding to obtain judicial resolution of all the issues unresolved at the time of the request for administrative proceeding, but, in any such suit, the Department agrees that the Respondent shall be entitled to raise all defenses to Department judicial action which would be available

to Respondent, notwithstanding the fact that those defenses may be involved in any ongoing administrative proceeding.

28. Respondent shall publish the following notice in a newspaper of general circulation in Pinellas County, Florida. The notice shall be published one time only within 21 days after execution of the Consent Order by the Department. Proof of Publication shall be provided to the Department within 14 days of publication.

State of Florida Department of Environmental Regulation
Notice of Proposed Agency Action

The Department of Environmental Regulation gives notice of agency action of entering into a Consent Order with HOWCO Environmental Services, Inc. pursuant to Rule 17-103.110(3), Florida Administrative Code. The Consent Order addresses remedial activities in the vicinity of 843 43rd Street, South, St. Petersburg, Florida. The Consent Order is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at the Department of Environmental Regulation, Southwest District, 4520 Oak Fair Boulevard, Tampa, Florida 33610-7347.

Persons whose substantial interests are affected by this Consent Order have a right to petition for an administrative determination (hearing) on the proposed action. The petition must contain the information set forth below, and must be filed (received) at the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida, 32399-2400, within twenty-one (21) days of receipt of this notice. A copy of the Petition must also be mailed at the time of filing to the District Office named above at the address indicated. Failure to file a petition within the twenty-one (21) days constitutes a waiver of any right such person has to an administrative determination (hearing) pursuant to Section 120.57 Florida Statutes.

The petition shall contain the following information: (a) the name, address, and telephone number of each petitioner; the Department's identification number and the County in

which the subject matter or activity is located; (b) a statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designated to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the subject agency (proposed) action have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 21 days of receipt of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed.

* * * * * * * * * *

A party who is adversely affected by this Final Order is entitled to Judicial Review pursuant to Section 120.68, F.S. Review proceedings are governed by the Florida Rules of Appellate Procedure. Such proceedings are commenced by filing one copy of a Notice of Appeal with the Agency Clerk of the Division of Administrative Hearings and a second copy, accompanied by filing fees prescribed by law, with the District Court of Appeal, First District, or with the District Court of Appeal in the Appellate District where the party resides. The Notice of Appeal must be filed within 30 days of rendition of the Order to be reviewed.

29. If any event occurs which causes delay or the reasonable likelihood of delay in the achievement of the requirements of this Consent Order, the Respondent shall have the

burden of proving that the delay was or will be caused by circumstances beyond the reasonable control of the Respondent which could not have been overcome by due diligence. Upon occurrence of the event, Respondent shall promptly notify the Department orally and shall, within 7 calendar days of oral notification of the Department, notify the Department in writing of the anticipated length and cause of the delay, and the time table by which Respondent intends to implement these measures. If the parties can agree that the delay or anticipated delay has been or will be caused by circumstances beyond the reasonable control of the Respondent, the time for performance hereunder shall be extended for a period equal to the delay resulting from such circumstances, unless circumstances warrant more time in the opinion of the Department. Such agreement shall be confirmed by a letter from the Department, to Respondent, accepting or, if necessary, modifying the extension request. The Respondent shall adopt all reasonable measures to avoid or minimize delay. Failure of the Respondent to comply with the notice requirements of this paragraph shall render this paragraph void and constitute a waiver of the right to request a waiver of the requirements of this Consent Order. Increased costs of performance of the terms of this Consent Order shall not be considered circumstances beyond the control of the Respondent. In the event that the Department and Respondent cannot agree that any delay in the achievement of the requirements of this Consent Order, including failure to submit any report or document, has been or will be

caused by circumstances beyond a reasonable control of the Respondent, either the Department or Respondent may seek an administrative hearing or a judicial determination of the issue pursuant to the provisions in Paragraph 31 of this Consent Order.

30. The Department, for and in consideration of the complete and timely performance by Respondent of the obligation agreed to in this Consent Order, hereby waives its right to seek judicial imposition of damages or civil penalties for alleged violations outlined in this Consent Order.

31. Nothing herein shall be construed to limit the authority of the Department to undertake any action against any settling Respondent in response to, or to recover the costs of responding to conditions at or from the site that require Department action to abate an imminent hazard to the public health, welfare or the environment if:

A. The conditions were previously unknown to or undetailed by the Department;

B. The conditions result from the implementation of the requirements of this Consent Order;

C. Other previously unknown facts arise or are discovered after the entry of this Consent Order.

32. The Respondent shall provide within a reasonable time at its expense a permanent safe drinking water supply meeting all drinking water standards set forth in Florida Administrative Code Chapter 17-550 to replace any potable water well that is shown by

chemical and hydrogeologic analyses to be contaminated by the Respondent's operations.

33. Entry of this Consent Order does not relieve Respondent of the need to comply with applicable federal, state or local laws, regulations or ordinances.

34. The terms and conditions set forth in the Consent Order may be enforced in a court of competent jurisdiction pursuant to Section 120.69 and 403.121, Florida Statutes. Failure to comply with the terms of this Consent Order shall constitute a violation of Section 403.161(1)(b), Florida Statutes.

35. Respondent is fully aware that a violation of the terms of this Consent Order may subject Respondent to judicial imposition of damages, civil penalties of up to $50,000 per offense and criminal penalties.

36. Respondent shall allow authorized representatives of the Department access to the property and plant at reasonable times for purposes of determining compliance with this Order and the rules and regulations of the Department.

37. The Department hereby expressly reserves the right to initiate appropriate legal action to prevent or prohibit the future violation of applicable statutes, or the rules promulgated

thereunder not covered by the terms of this Consent Order. Respondent reserves all rights it might have under law in the event the Department chooses to exercise any right reserved pursuant to this paragraph, and the Department acknowledges that, by execution of this Consent Order, the Respondent has not waived any right it may otherwise have in such proceeding to challenge the validity or enforceability of the standards and criteria alleged to be applicable to the affected soils or waters that are the subject of this Consent Order.

38. No modifications of the terms of this Consent Order shall be effective until reduced to writing and executed by the Respondent and the Department.

39. Any notice, request, demand, approval, consent, report, plan or data to be submitted which may be required from or allowed to be made to the other party shall be in writing and shall be delivered in person or mailed to the other party by United States mail, Federal Express or any other expedited mail delivery service, at the following address:

To Department:
Waste Program Administrator
Waste Cleanup Section
Southwest District,
State of Florida Department
of Environmental Regulation
4520 Oak Fair Boulevard
Tampa, Florida 33610-7347

To Respondent:

Mr. Timothy Hagan
Howco Environmental Services, Ltd.
843 43rd Street South
St. Petersburg, Florida 33711

With copy to:

Laurel E. Lockett, Esquire
Carlton, Fields, Ward, Emmanuel,
Smith & Cutler, & Cutler, P.A.
One Harbour Place
P. O. Box 3239
Tampa, Florida 33602

40. This Consent Order is final agency action of the Department pursuant to Section 120.69, Florida Statutes, and Florida Administrative Code Rule 17-103.110(3), and it is final and effective on the date filed with the Clerk of the Department unless a Petition for Administrative Hearing is filed in accordance with Chapter 120, Florida Statutes. Upon the timely filing of a petition, this Consent Order will not be effective until further order of the Department.

41. The provisions of this Consent Order will be deemed fulfilled upon Respondent's receipt of written notice from the Department that Respondent has demonstrated, to the reasonable satisfaction of the Department, that all of the terms of this Consent Order have been completed. The Department will provide such written notice following receipt of Respondent's petition or letter claiming that all activities called for under this Consent Order have been completed, or the Department will advise

Respondent, in response to such claim, of any deficiencies which the Department believes remain.

42. The provision of this Consent Order shall apply to and be binding upon the parties, their officers, their directors, agents, servants, employees, successors, and assigns and all persons, firms and corporations in active concert or participation with them.

FOR THE RESPONDENT:
HOWCO ENVIRONMENTAL SERVICES, INC.

By: Tim Hagan Pres.
Timothy Hagan, as its President

Date: 6-11-92

DONE AND ORDERED this 15 day of June, 1992, in Hillsborough County, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Richard D. Garrity, Ph.D.
Deputy Assistant Secretary
Southwest District
4520 Oak Fair Boulevard
Tampa, Florida 33610-7347

FILING AND ACKNOWLEDGMENT
FILED, on this date, pursuant to §120.52 Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Anna Black
CLERK

June 19, 1992
Date

Document 0002754.01

HOWCO Environmental Services, Inc.
FLD 152 764 767

8) PROCESS DESCRIPTION:

HOWCO Inc. is an environmental service company involved in site remediation, used-oil processing and marketing, industrial waste processing and emergency spill response service.

HOWCO notified the Department as a hazardous waste transporter and transfer facility, handling mainly EP toxic sludge from UST tank removals, halogen contaminated waste oil and emergency cleanups for their customers. HOWCO also acts as broker for waste transport.

The inspected facility at 843 - 43rd Street South, St. Petersburg, Florida, operates three main processes. These include a water treatment plant process, oil plant process and a sludge plant process. Each process is different and is divided into four separate areas, initial approval of material for treatment, including testing and transportation, plant processing and final testing. A complete description of the facility process is attached as Enclosure #1.

Samples were taken from three locations at the facility. Soil samples from a dirt pile on the ground near the sludge treatment area contained toluene and xylene. Samples taken from a rolloff waste container and from soil on the ground in the vicinity of the facility wash rack contained petroleum hydrocarbons.

The facility has four monitoring wells on site. Only two wells could be located. One well had apparently been covered by an asphalt berm which had recently been constructed. A second well appeared to have been destroyed in this construction. The two remaining wells were both unlocked. The Department attempted to sample both these wells. One was dry and the other held only a few inches of turbid groundwater. All of these wells should be properly abandoned per Chapter 17-28 FAC with new wells installed for a Preliminary Contamination Assessment of groundwater quality.

Although the facility has a contract with a local company to inspect and maintain fire fighting equipment, two fire extinguishers were observed without any record of being inspected. Additionally, a rear security gate was open with no apparent activity on-going in the area by facility vehicles or personnel.

HOWCO has previously accepted electroplating wastewater for treatment, as long as the wastewater was not characteristically hazardous per 40 CFR 261 Subpart C. HOWCO stated that resultant sludge was managed as F006 hazardous waste and shipped to a permitted facility within 90 days of generation.

8) PROCESS DESCRIPTION: (Cont'd)

Mr. Church, facility operations manager, indicated that although present operations provide for waste from the sludge press to be dried on the concrete area adjacent to the sludge press, this was not allowed when the facility processed F006 hazardous waste. The facility no longer processes F006 waste from treating electro plating wastewater. The last shipment of F006 sludge was on 6/30/89 generated by treating wastewater received from General Components, Inc. Mr. Church stated that the F006 waste was removed from the press and stored in special stainless steel containers. No documentation exists for inspection of this waste.The containers were not on-site. Howco did not have a copy of a manifest for the shipment of this waste on-site.

There was evidence of oil spills to the ground at numerous locations throughout the facility. Waste petroleum sludge stored in rolloff containers was observed leaking to the soil. Fifty-five gallon containers were observed throughout the facility. Some containers appeared to have been used to store paint or paint products in the past.

The facility manager said all the drums contained non-hazardous oil, sludge or water destined for treatment at the facility. No complete hazardous waste determination records exist for these containers. The new toxicity leaching procedures will become effective in September 1990 and should be used to establish the non-hazardous nature of materials in the 55-gallon containers if they are managed after the effective date of the rule change.

As a transfer facility and generator of F006 sludge HOWCO is required to comply with generator requirements for training and emergency planning. A records review indicated violations in the facility contingency plan and training records as well as manifest discrepancies. No emergency coordinator had been designated since the previous coordinator left. The facility emergency equipment had not been properly inspected and documented. Training records violations included the absence of training records for an employee with over 6 months on the payroll. Although management had been on the job less than 6 months and had not yet been trained in hazardous waste, these persons were responsible for managing hazardous waste operations at the facility.

The facility had no written closure plan or designated impervious storage pad for vehicles storing hazardous waste at the transfer facility.

Copies of manifests were not maintained at the facility and in one case, HOWCO signed a manifest as generator rather than requiring a representative of the generator to sign.

HOWCO Environmental Services, Inc.
FLD 152 764 767

9) SUMMARY OF VIOLATIONS: (Cont'd)

40 CFR 265.174	Facility failed to inspect areas where containers are stored, at lest weekly for leaks or deterioration caused by corrosion or other factors.
*40 268.7(a)(6)	Faility failed to keep copies of all land disposal restriction notices to designated treatment storage or disposal facilities.
17-730.171(2)(b) FAC	Facility failed to have a written closure plan.
17-730.171(2)(d) FAC	Facility failed to store hazardous waste on a man-made surface capable of preventing spills or release to the ground.
403.087 Florida Statutes	Facility is discharging stormwater contaminated by petroleum drippage to the groundwater and to the storm sewer system without a permit.

Inspected: Norton Craig
Norton Craig
Environmental Specialist II

Approved: Elizabeth Knauss
Elizabeth Knauss
Environmental Supervisor II

Date: 9/20/98

CORRECTIVE ACTIONS FOR GROUND WATER CONTAMINATION CASES

1. Within 60 days of the effective date of the Order incorporating these contamination assessment actions, Respondent shall submit to the Department a detailed written Contamination Assessment Plan ("CAP"). If the Respondent has conducted a Preliminary Contamination Assessment, the Respondent shall submit to the Department a detailed written CAP within 60 days of receipt of notice from the Department that a CAP is required. The purpose of the CAP shall be to propose methods for collection of information necessary to meet the objectives of the contamination assessment.

A. The objectives of the Contamination Assessment shall be to:

(1) Establish the areal and vertical extent of soil, sediment, surface water and ground water contamination;

(2) Determine or confirm the contaminant source(s); mechanisms of contaminant transport; rate and direction of contaminant movement in the air, soils, surface water and ground water; and rate and direction of ground water flow;

(3) Provide a complete characterization of the contamination plume(s);

(4) Determine whether interim remedial measures are necessary to abate any imminent hazard.

(5) Determine the amount of product lost, and the time period over which it was lost (if applicable);

(6) If leaking storage tanks may be the source of

the contamination, determine the structural integrity of all aboveground and underground storage systems (including integral piping) which exist at the site (if applicable);

(7) Establish the vertical and horizontal extent of free product (if applicable);

(8) Describe pertinent geologic and hydrogeologic characteristics of affected and potentially affected hydrogeologic zones; and

(9) Describe geologic and hydrogeologic characteristics of the site which influence migration and transport of contaminants; and

(10) Provide a site history including description of facility operations, as applicable.

B. The CAP shall specify tasks, which are necessary to achieve the objectives described in subparagraph 1.A. above. The CAP shall include a reasonable time schedule for completing each task. The tasks may include, but are not limited to the following:

(1) Use of piezometers or wells to determine the horizontal and vertical directions of the ground water flow;

(2) Use of electromagnetic conductivity (EM) and other geophysical methods or vapor analyzers to trace extent of ground water contamination;

(3) Use of fracture trace analysis to discover linear zones in which discrete flow could take place;

(4) Use of well points or monitoring wells to sample ground water in affected areas and to determine the vertical and horizontal extent of the ground water plume;

(5) Sampling of public and private wells;

(6) Sampling of surface water and sediments;

(7) Sampling of air for airborne contaminants;

(8) Analysis of soils and drum and tank residues for hazardous waste determination and contaminant characterization.

(9) Use of geophysical equipment such as vapor analyzers, magnetometers, ground penetrating radar, or metal detectors to detect tanks, lines, etc.;

(10) Determination of the horizontal and vertical extent of soil contamination;

(11) Use of soil and well borings to determine pertinent site-specific geologic and hydrogeologic characteristics of affected and potentially affected hydrogeologic zones such as aquifers, confining beds, and unsaturated zones; and

(12) Use of geophysical methods, pump tests and slug tests to determine geologic and hydrogeologic characteristics of affected and potentially affected hydrogeologic zones.

C. The CAP shall provide detailed information as to how proposed tasks are to be carried out. The CAP shall include, as applicable, the following information:

(1) Proposed sampling locations and rationale for their placement;

(2) A description of methods and equipment to be used to identify and quantify soil or sediment contamination;

(3) A description of water sampling methods;

(4) Parameters to be analyzed for, analytical methods to be used, and detection limits of these methods;

(5) Proposed piezometer and well construction details including methods and materials, well installation depths and screened intervals, well development procedures;

(6) A description of methods proposed to determine aquifer properties (e.g., pump tests, slug tests, permeability tests, computer modeling);

(7) A description of geophysical methods proposed for the project;

(8) Details of any other assessment methodology proposed for the site;

(9) A description of any survey to identify and sample public or private wells which are or may be affected by the contaminant plume;

(10) A description of the regional geology and hydrogeology of the area surrounding the site;

(11) A description of site features (both natural and man-made) pertinent to the assessment;

(12) A description of methods and equipment to be used to determine the site specific geology and hydrogeology; and

(13) Details, including disposal or treatment methods, of any immediate remedial actions proposed for the site such as product recovery, soil removal or treatment.

D. The CAP shall contain as a separate document a Quality Assurance Project Plan ("QAPP"), which shall apply to all sampling and analysis required by this Consent Order. The QAPP shall be prepared in accordance with the requirements set forth in

the document titled "DER Guidelines for Preparing Quality Assurance Plans, DER-QA-001/85, January 30, 1986." A copy of the document is available upon request from the Department. A QAPP is required for all persons collecting or analyzing samples. The Department reserves the right to reject all results generated by Respondent prior to QAPP approval or which are not in accordance with the Department approved QAPP.

2. The Department shall review the CAP and provide the Respondent with a written response to the proposal. Any action taken by Respondent with regard to the implementation of the CAP prior to the Respondent receiving written notification from the Department that the CAP has been approved shall be at Respondent's risk.

3. In the event that additional information is necessary for the Department to evaluate the CAP, the Department shall make a written request to the Respondent for the information, and within 20 days from receipt of said request, Respondent shall provide all requested information in writing to the Department unless the requested information requires additional field work in which case the Respondent shall submit to the Department within 14 days of receipt of said request, a written schedule for completing the field work needed to provide the requested information.

4. In the event that the Department determines that the CAP submitted by Respondent does not adequately address the objectives of the Contamination Assessment as set forth in subparagraph 1.A. above, the Department will notify the Respondent in writing of the CAP's deficiencies. Respondent shall then have 30 days from the

Department's notification to submit a modified CAP addressing the deficiencies noted by the Department.

5. If the Department determines upon review of the resubmitted CAP that the CAP still does not adequately address the objectives of the CAP as set forth in subparagraph 1.A. above, the Department, at its option, may choose either to:

A. Draft specific modifications to the CAP and notify Respondent in writing that the Department's modification shall be incorporated in the CAP; or

B. Notify Respondent in writing that Respondent has failed to comply with paragraph four above, in which case the Department may do any or all of the following: take legal action to enforce compliance with the Order, file suit to recover damages and civil penalties, or complete the corrective actions outlined herein and recover the costs of completion from Respondent.

6. Once a CAP and QAPP have been approved by the Department, they shall become effective and made a part of this Order and shall be implemented within ten days of the Department's written notification to Respondent that the CAP and QAPP have been approved. The CAP shall incorporate all required modifications to the proposed CAP identified by the Department. Within 10 working days of completion of the CAP tasks, Respondent shall provide written notice to the Department that the CAP tasks have been completed.

7. Within 45 days of completion of the tasks in the CAP, Respondent shall submit a written Contamination Assessment Report ("CAR") to the Department. The CAR shall:

A. Summarize all tasks which were implemented pursuant

to the CAP; and

B. Specify results and conclusions regarding the Contamination Assessment objectives outlined in subparagraph 1.A.

8. The Department shall review the CAR and determine whether it has adequately met the objectives specified in subparagraph 1.A. In the event that additional information is necessary to evaluate the CAR, the Department shall make a written request to the Respondent for the information. Within 20 days of receipt of said request, Respondent shall provide all requested information unless the requested information requires additional field work in which case the Respondent shall submit, within 14 days of said request, to the Department a reasonable written schedule for completing the field work needed to provide the requested information. The Department shall provide written approval of the CAR once all of the CAP objectives and tasks have been satisfactorily completed.

9. The Department, at its option, may determine from review of the CAR and other relevant information, the Site Rehabilitation Levels (SRLs) to which the contamination shall be remediated or may require the Respondent to implement the risk assessment process to develop such SRLs for the site. The SRLs for water as determined by the Department shall be based on Chapter 17-3, F.A.C. standards and the Department's numerical interpretation of the Chapter 17-3, F.A.C. minimum criteria. The Department may also require that a risk assessment be completed to define SRLs for soils or sediments that are sufficiently contaminated to present a risk to the public health, the environment or the public

welfare. If the Department does choose to provide SRLs to the Respondent and does not choose to require a risk assessment and the Respondent agrees to remediate the site to those SRLs, the Respondent shall implement the Feasibility Study, if required by the Department as set forth in paragraph 13, or submit the Remedial Action Plan (RAP) as set forth in paragraph 18.

10. After completion and Department approval of the CAR, the Respondent shall prepare and submit to the Department a Risk Assessment/Justification (RAJ) if the Department requires the task, or if the Respondent wishes to develop SRLs other than those determined by the Department or if the Respondent intends to justify a no-action proposal for the site. The RAJ which includes a risk assessment and a detailed justification of any alternative SRLs or no action proposal shall be submitted within (90) days from receipt of the Department's written approval of the CAR and determination of the SRLs for the site, or within (90) days of the Department's written approval of the CAR and notice that a RAJ is required, or within (90) days of the Department's written approval of the CAR. Unless otherwise approved by the Department, the subject document shall address the following task elements, divided into the following five major headings:

A. Exposure Assessment - The purpose of the Exposure Assessment is to identify routes by which receptors may be exposed to contaminants and to determine contaminant levels to which receptors may be exposed. The Exposure Assessment should:

(1) Identify the contaminants found at the site and their concentrations as well as their extent and locations;

(2) Identify possible transport pathways;

(3) Identify potential exposure routes.

(4) Identify potential receptors for each exposure route; and

(5) Estimate or calculate expected contaminant levels to which actual or potential receptors may be exposed.

B. Toxicity Assessment - The purpose of the Toxicity Assessment is to define the applicable human health and environmental criteria for contaminants found at the site. The criteria should be defined for all potential exposure routes identified in the Exposure Assessment. DER standards shall be the criteria for constituents and exposure routes to which the standards apply. Criteria for constituents and exposure routes for which specific DER standards are not established shall be based upon criteria such as Recommended Maximum Contaminant Levels (RMCLs), Maximum Contaminant Levels, Average Daily Intake values (ADIs), Unit Cancer Risk values (UCRs), organoleptic threshold levels, Ambient Water Quality Criteria for Protection of Human Health and for Protection of Aquatic Life, and other relevant criteria as applicable. If there are no appropriate criteria available for the contaminants and exposure routes of concern, or the criteria are in an inappropriate format, the Respondent shall develop the criteria using equations and current scientific literature acceptable to toxicological experts. Criteria for the following exposure routes shall be defined or developed as applicable:

(1) Potable water exposure route - develop criteria

for ingestion, dermal contact, inhalation of vapors and mists, utilizing applicable health criteria such as Recommended Maximum Contaminant Levesl (RMCLs), Maximum Contaminant levels, Average Daily Intake values (ADIs), Unit Cancer Risk values (UCRs), organoleptic threshold levels, and other relevant criteria as applicable.

(2) Non-potable domestic water usage exposure route - develop criteria for dermal contact, inhalation of vapors and mists, ingestion of food crops irrigated with such water, lawn watering, ingestion by pets and livestock, and other related exposure.

(3) Soil exposure route - develop criteria for ingestion, dermal contact, inhalation, ingestion by humans or animals of food crops grown in contaminated soils.

(4) Non-potable surface water exposure - develop criteria for prevention of adverse effects on human health (e.g. dermal contact effects on humans utilizing the resource for recreational purposes) or the environment (e.g. toxic effects of the contaminants on aquatic or marine biota, bio-accumulative effects in the food chain, other adverse effects that may affect the designated use of the resource as well as the associated biota).

(5) Air exposure route - develop criteria for exposure to the contaminants in their unaffected state.

C. Risk Characterization - The purpose of the Risk Characterization is to utilize the results of the Exposure Assessment and the Toxicity Assessment to characterize cumulative

risks to the affected population and the environment from contaminants found at the site. Based on contaminant levels presently found at the site, a risk and impact evaluation will be performed which considers, but is not limited to:

(1) Risks to human health and safety from the contamination including;

(a) carcinogenic risk, and

(b) non-carcinogenic risk.

(2) Effects on the public welfare of exposure to the contamination which may include but not be limited to adverse affects on actually and potentially used water resources.

(3) Environmental risks in areas which are or will be ultimately affected by the contamination including;

(a) other aquifers,

(b) surface waters

(c) wetlands,

(d) sensitive wildlife habitats, and

(e) sensitive areas including, but not limited to, National Parks, National Wildlife Refuges, National Forests, State Parks, State Recreation Areas, State Preserves.

D. Justification for alternative Site Rehabilitation Levels (SRLs) or no action proposal - The purpose of this section is to provide justification on a case-by-case basis for a no action proposal or for alternative SRLs that vary from Chapter 17-3, F.A.C. standards and minimum criteria or from any SRLs determined by the Department at which remedial action shall be deemed completed. Factors to be evaluated shall be, at a minimum:

(1) The present and future uses of the affected aquifer and adjacent surface waters with particular consideration of the probability that the contamination is substantially affecting or will migrate to and substantially affect a public or private source of potable water;

(2) Potential for futher degradation of the affected aquifer or degradation of other connected aquifers,

(3) The technical feasibility of achieving the SRLs based on a review of reasonably available technology;

(4) Individual site characteristics, including natural rehabilitative processes; and

(5) The results of the risk assessment.

Applicable contaminant transport models must be employed to document that human health and environment risks from alternative and less stringent SRLs are acceptable.

11. The Department shall review the Risk Assessment/Justification document and determine whether it has adequately addressed the risk assessment task elements. The Department shall review the justification section and determine whether the Department approves or disapproves of the alternative SRLs or the no action proposal.

12. In the event that additional information is necessary to evaluate any portion of the Risk Assessment/Justification document, the Department shall make a written request and Respondent shall provide all requested information within 20 days of receipt of said request. If the Department does not approve the no action proposal or the alternative SRLs, the Respondent

shall use the SRLs as determined by the Department. If the Department and Respondent agree to the remediation levels, either the SRLs determined by the Department or the alternative SRLS, the Respondent shall implement the Feasibility Study, if required by the Department as set forth in paragraph 13, or submit the Remedial Action Plan (RAP) as set forth in paragraph 18.

13. The Department shall also determine from review of the CAR and other relevant information whether the Respondent should prepare and submit a Feasibility Study (FS) to the Department. The FS will be required in complex cases to evaluate technologies and remedial alternatives, particularly if multiple contaminant classes are represented or multiple media are contaminated. The purpose of the FS is to evaluate remedial technologies and remedial alternatives in order to identify the most environmentally sound and effective remedial action to achieve clean up of the site to SRLs or alternative SRLs (if approved). The FS shall be completed within 60 days of written notice that a FS is required, unless the Respondent plans to submit a RAJ pursuant to paragraph 10. The FS shall include the following tasks:

(A) Identify and review pertinent treatment, containment, removal and disposal technologies;

(B) Screen technologies to determine the most appropriate technologies;

(C) Review and select potential remedial alternatives using the following criteria:

(1) long and short term environmental effects;

(2) implementability;

(3) capital costs;

(4) operation and maintenance costs;

(5) operation and maintenance requirements;

(6) reliability;

(7) feasibility;

(8) time required to achieve clean-up; and

(9) potential legal barriers to implementation of any of the alternatives;

(D) Identify the need for and conduct pilot tests or bench tests to evaluate alternatives, if necessary;

(E) Select the most appropriate remedial alternative;

(F) Develop soil cleanup criteria such that the contaminated soils will not produce a leachate which contains contaminants in excess of the SRLs or alternative SRLs (if approved).

14. Within 45 days of completing the FS, Respondent shall submit an FS Report to the Department. The FS Report shall:

A. Summarize all FS task results; and

B. Propose a conceptual remedial action plan based on the selection process carried out in the FS.

15. The Department shall review the FS Report for adequacy and shall determine whether the Department agrees with the proposed remedial action. In the event that additional information is necessary to evaluate the FS report, the Department shall make a written request and Respondent shall provide all

requested information within 20 days from receipt of said request.

16. If the Department does not approve of the proposed remedial action, the Department will notify the Respondent in writing of the determination. The Respondent shall then have 20 days from the Department's notification to resubmit a proposed alternate remedial action.

17. If the Department determines upon review of the resubmitted remedial action proposal that it does not agree with the proposal, the Department at its option, may choose to either:

A. Choose a remedial action alternative for the Respondent to carry out; or

B. Notify the Respondent that Respondent has failed to comply with paragraph 16 above, in which case the Department may do any or all of the following: take legal action to enforce compliance with the Order, file suit to recover damages and civil penalties, or complete the corrective actions outlined herein and recover the costs of completion from Respondent.

18. Within 45 days of receipt of written notice from the Department, Respondent shall submit to the Department a detailed Remedial Action Plan ("RAP"). The RAP shall be signed and sealed by a registered professsional engineer in accordance with Chapter 471, Florida Statutes. The objective of the remedial action shall be to achieve the clean up of the contaminated areas to the SRLs or the approved alternative SRLs. The RAP shall include:

A. Rationale for the remedial action proposed which shall include at a minimum:

(1) Results from any pilot studies or bench tests;

(2) Evaluation results for the proposed remedial alternative based on the following criteria:

a. long and short term environmental impacts;

b. implementability, which may include, but not be limited to, ease of construction, site access, and necessity for permits;

c. operation and maintenance requirements;

d. reliability;

e. feasibility; and

f. costs.

(3) Soil cleanup criteria such that the contaminated soils will not produce a leachate which contains contaminants in excess of State Water Quality Standards or minimum criteria established in 17-3, F.A.C.

Subparagraph A requirements can be omitted if a Feasibility Study was required and approved by the Department.

B. Design and construction details and specifications for the remedial alternative selected;

C. Operational details of the remedial action including the disposition of any effluent, expected contaminant concentrations in the effluent, an effluent sampling schedule if treated ground water is being discharged to ground water or to surface waters, and the expected concentrations and quantities of any contaminants discharged into the air as a result of remedial action;

D. A separate QAPP document;

E. Details of the treatment or disposition of any

contaminated soils or sediments;

F. Proposed methodology including post remedial action ground water monitoring as applicable for evaluation of the site status after the remedial action is complete to verify accomplishment of the objective of the RAP; and

G. Schedule for the completion of the remedial action.

19. The Department shall review the proposed RAP and provide Respondent with a written response to the proposal. Respondent shall not implement the RAP until Respondent receives written notification from the Department that the RAP has been approved.

20. In the event that additional information is necessary for the Department to evaluate the RAP, the Department shall make a written request to Respondent for the information, and Respondent shall provide all requested information in writing to the Department within 20 days from receipt of said request unless the requested information requires additional field work in which case the Respondent shall submit in writing to the Department a reasonable schedule for completing the field work needed to provide the requested information.

21. In the event that the Department determines that the RAP submitted by the Respondent does not adequately address the objectives set forth in paragraph 18, the Department will notify the Respondent in writing of the RAP's deficiencies. The Respondent shall then have 20 days from the Department's notification to submit a modified RAP addressing the deficiencies noted by the Department.

22. If the Department determines upon review of the resubmitted RAP that the RAP still does not adequately address the objectives of the RAP, the Department, at its option, may choose to either:

A. Draft specific modifications to the RAP and notify the Respondent in writing that the Department's modifications shall be incorporated in the RAP; or

B. Notify the Respondent that Respondent has failed to comply with the paragraph 21 above, in which case the Department may do any or all of the following: take legal action to enforce compliance with the Order, file suit to recover damages and civil penalties, or complete the corrective actions outlined herein and recover the costs of completion from Respondent.

23. Once a RAP has been approved by the Department, it shall become effective and made a part of this Order and shall be implemented within ten days from receipt of the Department's notification to the Respondent that the RAP has been approved. The RAP shall incorporate all required modifications to the proposed RAP identified by the Department.

24. Following termination of remedial action (clean up of the Oontaminated area to the SRLs or the approved alternative SRLs), designated monitoring wells shall be sampled on a schedule determined by the Department.

25. Following completion of the remedial action and post-remedial action monitoring, the Respondent shall submit a Site Rehabilitation Completion Report (SRCR) to the Department for approval. The SRCR shall be signed and sealed by a registered

Professional Engineer in accordance with Chapter 471, F.S., unless "no further action" or "monitoring-only" was proposed and was approved by the Department. The SRCR shall contain a demonstration, with supporting documentation, that site cleanup objectives have been achieved.

26. Within sixty (60) days of receipt of the SRCR, the Department shall approve the SRCR or make a determination that the SRCR does not contain sufficient information to support the demonstration that cleanup objectives have been achieved.

27. If the Department determines that the SRCR is not adequate based upon information provided, the Department will notify the Respondent in writing. Site rehabilitation activities shall not be deemed completed until such time as the Department provides the Respondent with written notice that the SRCR is approved.

28. On the first working day of each month, after beginning implementation of a CAP or RAP, Respondent shall submit written progress reports to the Department. These progress reports shall describe the status of each required CAP and RAP task. The reports shall be submitted until planned tasks have been completed to the satisfaction of the Department.

29. Respondent shall provide written notification to the Department at least ten days prior to installing monitoring or recovery wells, and shall allow Department personnel the opportunity to observe the location and installation of the wells. All necessary approvals must be obtained from the water management district before Respondent installs the wells.

30. Respondent shall provide written notification to the Department at least ten days prior to any sampling, and shall allow Department personnel the opportunity to observe sampling or to take split samples. Raw data shall be exchanged between the Respondent and the Department as soon as the data is available.

31. The Respondent is required to comply with all applicable local, state and federal regulations and to obtain any necessary approvals from local, state and federal authorities in carrying out these corrective actions.

32. If any event occurs which causes delay or the reasonable likelihood of delay in the achievement of the requirements of these Corrective Actions, Respondent shall have the burden of proving that the delay was or will be caused by circumstances beyond the reasonable control of Respondent, and could not have been or can not be overcome by due diligence. Upon occurrence of the event Respondent shall promptly notify the Department orally and shall, within seven calendar days, notify the Department in writing of the anticipated length and cause of delay, the measures taken or to be taken to prevent or minimize the delay, and the time table by which Respondent intends to implement these measures. If the parties can agree that the delay or anticipated delay has been or will be caused by circumstances beyond the reasonable control of Respondent, the time for performance hereunder shall be extended for a period equal to the delay resulting from such circumstances. Such agreement shall be confirmed by letter from the Department accepting or if necessary

modifying the extension request. Respondent shall adopt all reasonable measures necessary to avoid or minimize delay. Failure of Respondent to comply with the notice requirements of this paragraph shall constitute a waiver of Respondent's right to request an extension of time to complete the requirements of these Corrective Actions. Increased costs of performance of any of the activities set forth in these Corrective Actions or changed economic circumstances shall not be considered circumstances beyond the control of Respondent.

33. Respondent shall immediately notify the Department of any problems encountered by Respondent which require modification of any task in the approved CAP or RAP, and obtain Department approval prior to implementing any such modified tasks.

34. Should the Department conclude that clean up of the contaminated area to SRLs or approved alternative SRLs, is not feasible; or should Respondent not completely implement the RAP as approved by the Department; the Department may seek restitution from Respondent for environmental damages resulting from pollution as a result of Respondent's actions. Within 20 days of receipt of Department written notification of its intent to seek said restitution, Respondent may pay the amount of the damages or may, if it so chooses, initiate negotiations with the Department regarding the monetary terms of restitution to the state. Respondent is aware that should a negotiated sum or other compensation for environmental damages not be agreed to by the Department and Respondent within 20 days of receipt of Department

written notification of its intent to seek restitution, the Department may institute appropriate action, either administrative, through a Notice of Violation, or judicial, in a court of competent jurisdiction through a civil complaint, to recover Department assessed environmental damages pursuant to Section 403.141, Florida Statutes.

APPENDIX B

PRELIMINARY CONTAMINATION ASSESSMENT REPORT (JUNE, 1992)
PREPARED BY ERM-SOUTH

PRELIMINARY CONTAMINATION ASSESSMENT REPORT HOWCO ENVIRONMENTAL SERVICES, INC.

JUNE 1992

Jonathan E. Hull 6-23-92

Jonathan E. Hull, P.G. No. 658
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APPENDICES

SECTION 1.0

INTRODUCTION

SECTION 1.0
INTRODUCTION

1.1 SITE LOCATION AND FACILITY DESCRIPTION

HOWCO Environmental Services, Inc. is an oil reclamation facility located in St. Petersburg, Florida. The site location and layout are shown in Figures 1-1 and 1-2, respectively. HOWCO accepts different types of non-hazardous petroleum-contaminated soils, sludges, and liquids which are directed through an oil recovery recycling process. All oil recovered from the process is recycled and reused. Table 1-1 summarizes the 11 main waste streams accepted by HOWCO.

Once material is received at the plant, it goes to one of three locations: soil and solids go to the soil processing area; oily liquids go to the liquid cooker; and petroleum-contaminated water goes to the onsite wastewater treatment plant. These areas are shown in Figure 1-2 along with the locations of processed soil, tankers containing liquids and sludges waiting to be processed, and the drum accumulation center (material waiting for processing).

The liquid cooker uses heat and emulsifiers to help separate oil from the water. The oil product is sold to permitted burn facilities, and the water is directed to the onsite wastewater treatment plant where it is processed and tested for chemical oxygen demand, pH, and phenols prior to being released to the St. Petersburg Wastewater Treatment Plant.

Stormwater is collected in a centrally located concrete swale as shown on Figure 1-2. Stormwater which collects in the swale flows to the east for treatment in the onsite waste water treatment plant (WWTP). Stormwater is treated with wastewater generated during the recycling procedure, processed, tested for compliance with applicable requirements, and then discharged to the St. Petersburg Wastewater Treatment Facility.

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Figure 1-2
Site Layout
Howco Facility
St. Petersburg, Florida

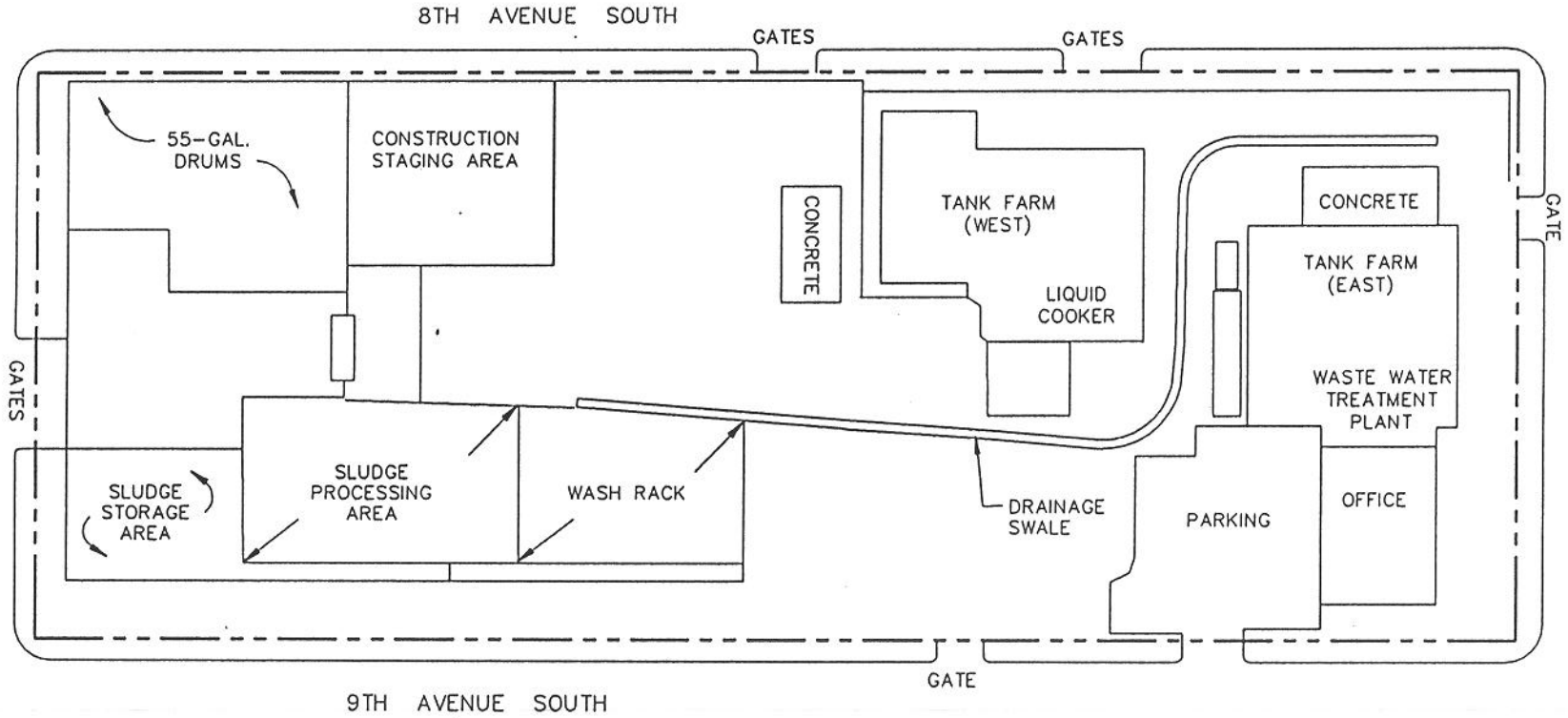

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TABLE 1-1

WASTE STREAMS* ACCEPTED BY HOWCO
ST. PETERSBURG, FLORIDA
MARCH 1991

1. Oil/water separators--sludge and liquid.
2. Water removed from USTs and terminals.
3. Used oil.
4. Soil cuttings from UST removals/excavations/assessments.
5. Used ethylene glycol (not recycled by HOWCO).
6. Stormwater from terminals.
7. Ground water from recovery wells.
8. Tank cleanings--any petroleum tank.
9. Ship bilges--limited to petroleum and petroleum contaminated water.
10. Water from an aluminum refinisher.
11. Citrus sludge.

* All waste streams accepted by HOWCO are non-hazardous, except for D018 petroleum-contaminated water which is processed through the onsite wastewater treatment plant.

1.2 SITE BACKGROUND AND HISTORY

Operational/Environmental Audit

At HOWCO's request, ERM performed an operational/environmental audit of the facility during August-December 1991. Specific tasks accomplished included:

- Reviewing historical aerial photographs to identify past site activities and land uses having potentially adverse environmental impacts;
- Interviewing former owners and longstanding company employees to identify historical used-oil handling practices/procedures;
- Reviewing of title documents to identify past owners who may have been engaged in industrial activities using potentially hazardous materials;
- Reviewing the storage and handling of waste and materials, employee training procedures, and environmental compliance documentation;
- Performing a facility walk-through on August 23, 1991 to identify practices and procedures the facility has initiated in order to minimize the potential for environmental impacts; and
- Contacting federal and state regulatory agencies to determine environmental concerns and review correspondence.

Aerial Photograph/Personnel Interviews

The following descriptive history of site development and operations is based on aerial photographs and interviews with existing and former HOWCO personnel. Copies of aerial photographs for the facility were obtained from the Pinellas County Department

of Transportation for the years 1951, 1957, 1961, 1965, 1967, 1968, 1971, 1973, 1975, 1977, 1979, 1984, 1987, and 1990. A chronological review of the aerials was performed and integrated with supplemental commentary by facility personnel.

The site was purchased by Mr. Art Hagan in 1973. Until approximately 1975, no active site use or development occurred. Until 1975, as shown on aerial photos, the site was covered with grass, trees, and bare soil. Some petroleum storage product activities, trucks, and paving equipment appeared in 1975. Until around 1977, the facility accepted used oils, stored in drums and tanks, and sold it for road construction. Until approximately 1977, the City of St. Petersburg dumped street sweepings on the northwestern portion of the property.

The facility was expanded in 1980 to process more oil. In 1986, the existing tanks and oil cooker were retrofitted with concrete slabs, and the water treatment plant was added. In 1988, the wash rack was moved from the current parking lot to its present location, additional concrete slabs were added, and sludge handling began. During this same time period, a concrete containment structure was built in the southern portion of the site for a wash rack, and sludge processing areas. A soil berm was constructed in the north part of the site.

Mr. Tim Hagan purchased the site in 1989.

Title Search

A title search on the property was performed August 20, 1991 by the Tampa Bay Branch of Attorneys' Title Insurance Fund, Inc., Orlando, Florida. A chain of warranty deeds dating back to August 30, 1940 provide no recognizable names of individuals associated with industrial activities or hazardous materials other than Mr. Art Hagan or HOWCO.

Regulatory Agency Concerns

The Florida Department of Environmental Regulation (FDER) conducted an inspection of the facility in April 1990 and issued a warning notice (WN90-0033HW52SWD) to HOWCO on April 12, 1990, alleging violations concerning manifest recordkeeping, entry control to the facility, inadequate training records, inadequate inspection records, etc. HOWCO responded to the notice, and subsequent correspondence and telephone conversations with FDER indicate that the agency has no violations against HOWCO, but will continue to negotiate a settlement for past violations. A consent order has been submitted to FDER by HOWCO for review and comment. These alleged past violations are based primarily on alleged non-compliance with RCRA regulations that HOWCO does not believe apply to used oil recyclers. HOWCO agreed to perform a preliminary contamination assessment in conjunction with FDER's inspection of the facility.

Based on the results of the operational/environmental audit, ERM recommended corrective measures and a strategy to identify areas of petroleum-impacted soil at the site. The strategy included collecting soil samples from selected locations using backhoe test pits and hand-augered borings for field screening. These locations, designated Areas 1 through 9, are shown on Figure 1-3.

EPA Sampling and Analysis

On March 13, 1991, representatives from the U.S. Environmental Protection Agency (EPA) Region IV collected samples of certain materials stored in rolloff bins on the site. The rolloff bins contained a mixture of dirt remaining from the processing of oil/water emulsion, primarily from oil/water separators and filter press cake from the wastewater treatment plant. Historically, these materials have been tested and disposed.

Samples of material were reportedly collected by EPA personnel from five of the approximately 8 feet by 20 feet by 4 feet deep rolloff bins located in the storage area. The samples were collected at depths of approximately 18 inches, 24 inches, and also

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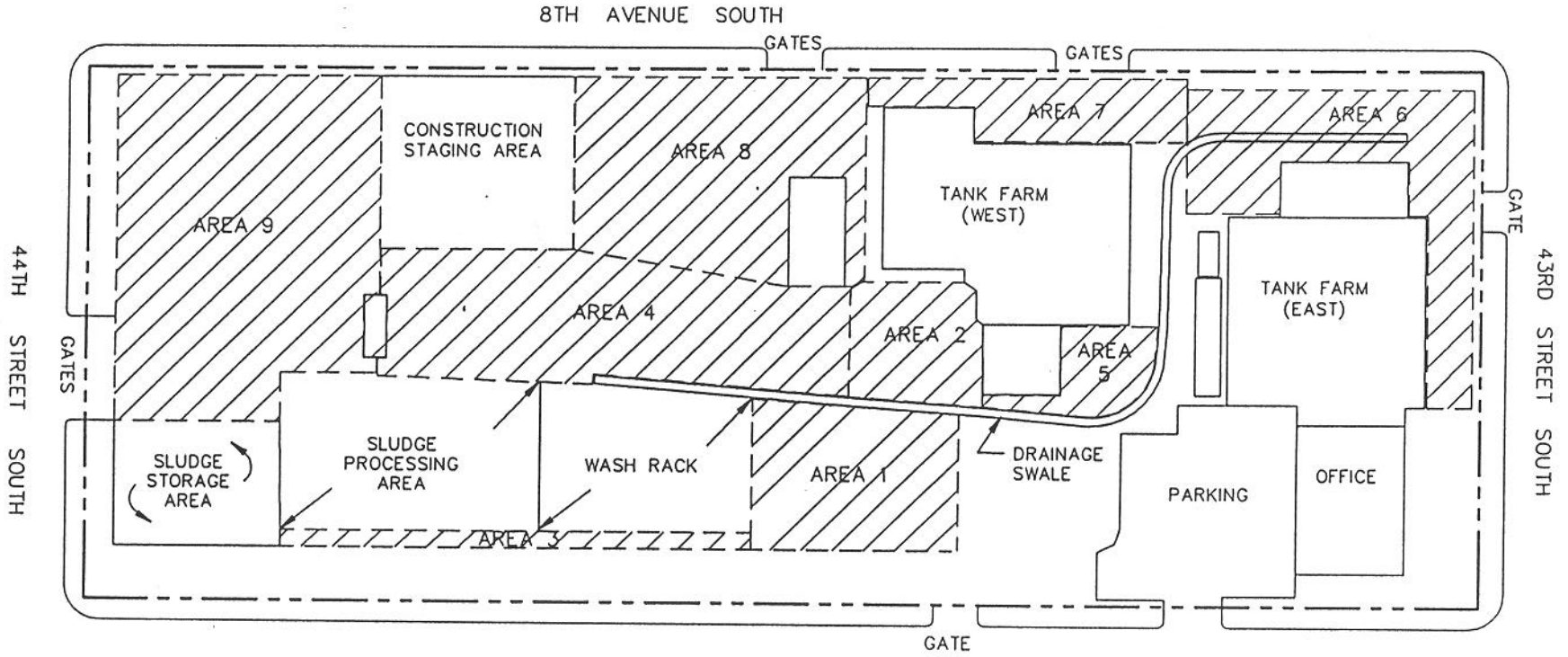
Figure 1-3
Areas Identified for Soil Assessment
Howco Facility
St. Petersburg, Florida



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from the bottom of the bins, and analyzed for Toxicity Characteristic Leaching Procedure (TCLP) metals and volatile organic compounds by the EPA laboratory in Athens, Georgia.

Analytical results indicate that TCLP standards were not exceeded. EPA has not pursued the matter any further.

1.3 PRELIMINARY CONTAMINATION ASSESSMENT OBJECTIVES

As described in Section 1.2, HOWCO agreed to conduct a preliminary contamination assessment at the facility. The objectives of this preliminary contamination assessment were to:

- Identify petroleum-impacted soils, if any;
- Assess the areal and vertical extent of excessively contaminated soils as defined in Chapter 17-770 FAC, if any;
- Assess the necessity for initial remedial actions; and
- Evaluate the feasibility of soil remediation using thermal treatment.

Ground water quality and ground water flow direction assessments were not conducted during the preliminary contamination assessment. The areal and vertical extent of ground water quality impacts, if any, and the direction of ground water flow will be assessed during a contamination assessment to be completed in April 1992. Proposed monitoring well locations for the contamination assessment are provided in Section 5.0 of this report.

SECTION 2.0

SITE INVESTIGATION

SECTION 2.0
SITE INVESTIGATION

Based on the results of the operational audit at the facility described in Section 1.2, ERM personnel conducted soil sampling to identify areas of petroleum-impacted soil, assess the extent of excessively-contaminated soil, assess the need for initial remedial action (IRA), and assess the feasibility of remediating soil using thermal treatment. Assessment activities were conducted in Areas 1 through 9 on August 15, 1991, August 26, 1991, October 9 and 10, 1991, and November 16, 1991 as shown on Figure 2-1, and December 18-20, 1991 as shown on Figure 2-2. The assessment activities completed on these dates are described in detail below.

2.1 AUGUST 15, 1991 ACTIVITIES

On August 15, 1991, two areas at the site were investigated: Areas 1 and 2. In each area (Figure 2-1), soil was examined for staining and odor, and then screened using an Organic Vapor Analyzer (OVA) with a Flame Ionization Detector (FID) to identify petroleum-impacted soil and to define the limits of excessively-contaminated soil as defined in Chapter 17-770.200(2), Florida Administrative Code (FAC).

In Area 1, eight test pits were excavated using a backhoe to identify the vertical and horizontal extent of excessively-contaminated soil. As each hole was excavated, ERM personnel examined the soil for obvious signs of staining or odor. If staining or a petroleum-like odor was detected, the excavation was advanced until the vertical extent of the staining and odor was identified.

Soil samples were then collected from the bottom of the excavation and screened using the OVA to determine the organic vapor concentration in the soil. If OVA values exceeded 50 parts per million (ppm) (the assumed lower limit for excessively-contaminated soil), the excavation was advanced vertically in one-foot intervals, and

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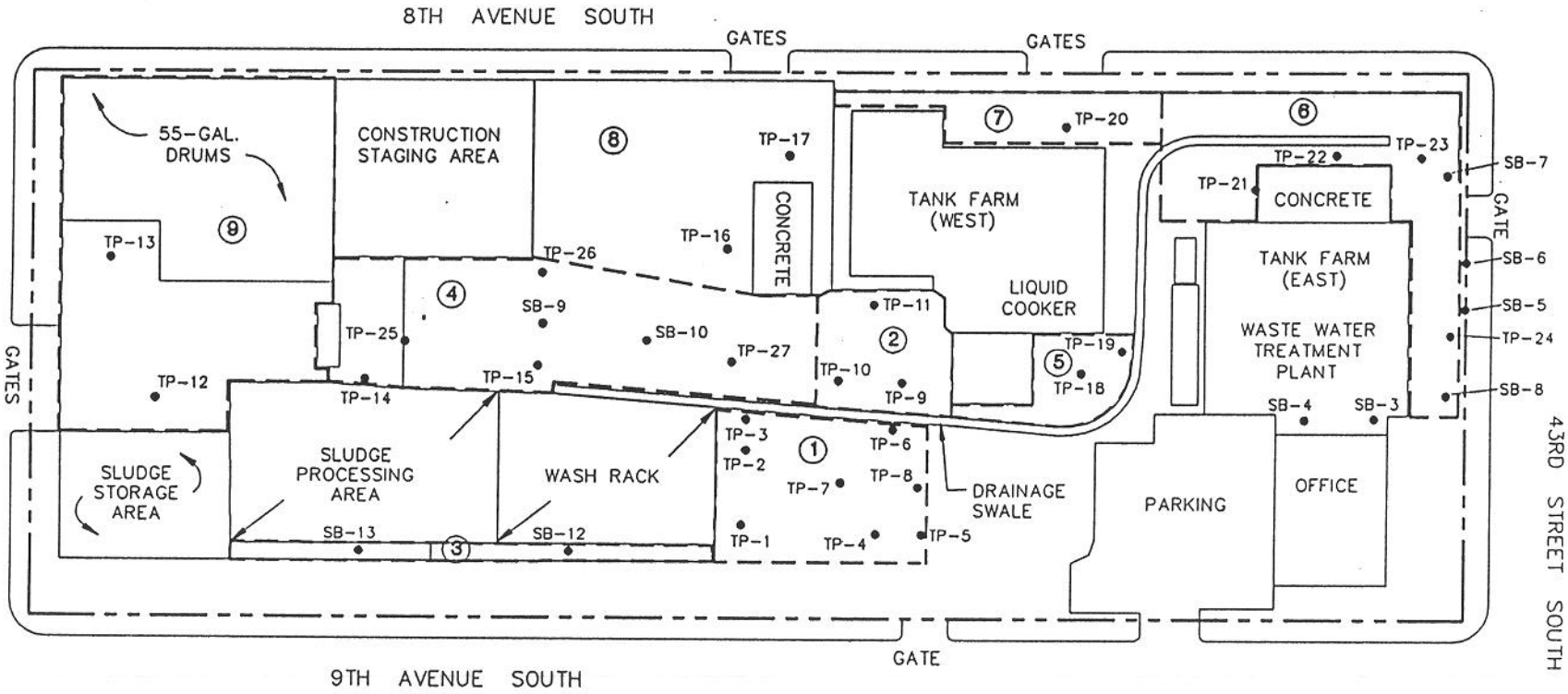
Figure 2-1
Boring And Test Pit Locations
August 1991, October 1991 and November 1991
Howco Facility
St. Petersburg, Florida



LEGEND

TP TEST PIT
SB SOIL BORING (HAND AUGER)

N

0 50
FEET

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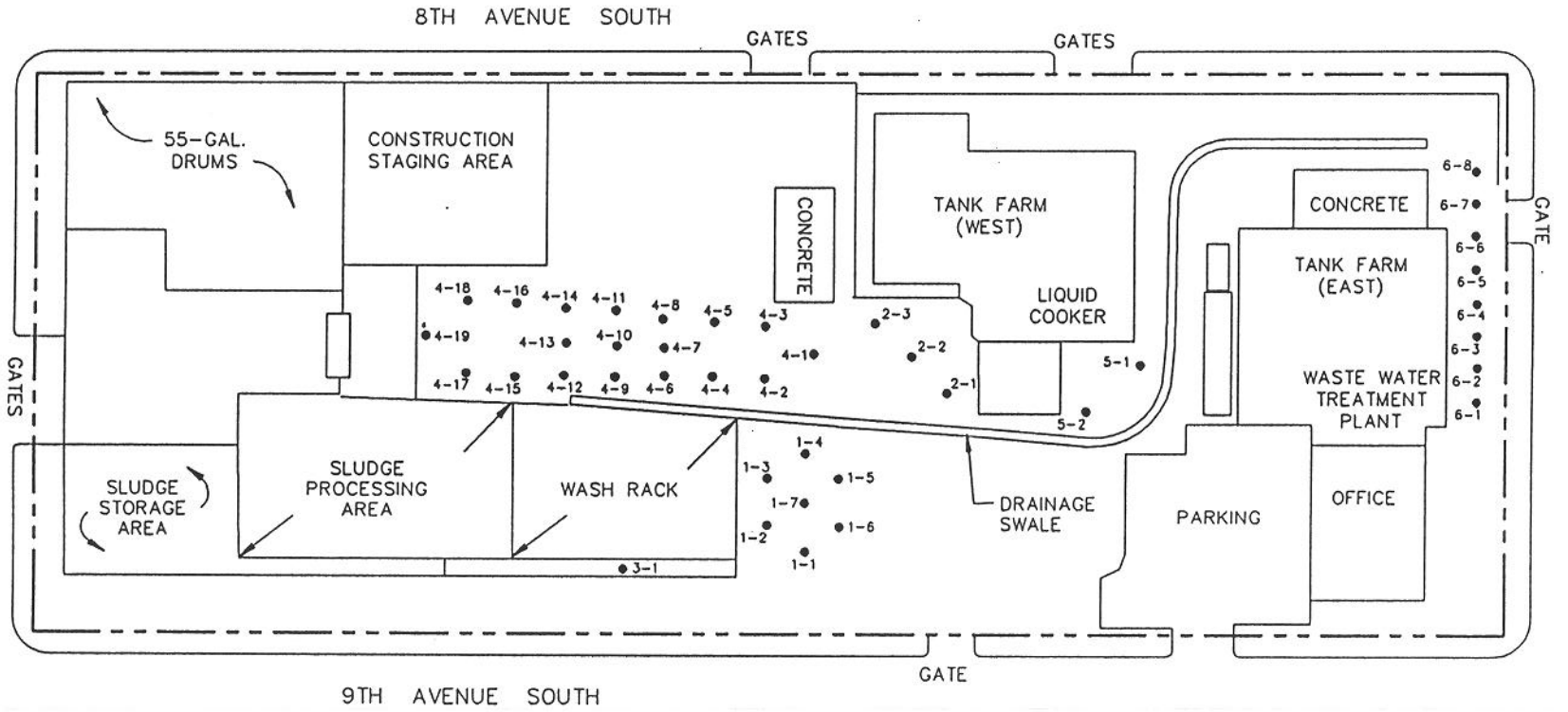
Figure 2-2
Soil Boring Locations - December 1991
Howco Facility
St. Petersburg, Florida



LEGEND

- SOIL BORING

N

0 50

FEET

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samples screened using the OVA, until the extent of excessively-contaminated soil was identified.

If no odor or staining was identified in an excavation, a soil sample was collected near ground surface for OVA screening. If the sample contained organic vapor concentrations above 50 ppm, the hole was advanced until the extent of excessively-contaminated soil was identified as described above. If organic vapor concentrations were less than 50 ppm, the excavation was considered to be outside the areal limits of excessively-contaminated soil. Appendix A contains a diagram of Area 1 showing the locations of backhoe test pits excavated on August 15, 1991, and a description of the material identified in each test pit. The results of the assessment of Area 1 are discussed in Section 3.0.

In Area 2, three backhoe test pits were excavated. The extent of excessively-contaminated soil was identified using the procedures described for Area 1. Appendix A contains a diagram of Area 2 showing the location of the backhoe test pits excavated on August 15, 1991. The results of the assessment of Area 2 are discussed in Section 3.0.

2.2 AUGUST 26, 1991 ACTIVITIES

Based on the results of the August 15, 1991 activities, thermal treatment was considered as a potential remedial alternative for excessively-contaminated soil. On August 26, 1991, ERM personnel collected one soil sample from Area 1 and one sample from Area 2 for laboratory analysis of the constituents listed in Chapter 17-775; 410 FAC. The two samples were composited into a single sample, placed in sample bottles, and submitted to Savannah Laboratories and Environmental Services, Inc. (SL) in Savannah, Georgia for analysis. The samples were analyzed for polychlorinated biphenyls (PCBs) using EPA Method 8080, Total Recoverable Petroleum Hydrocarbons (TRPH) using EPA Method 418.1, purgeable aromatics using EPA Method 8020, purgeable halocarbons

using EPA Method 8010, total halogens, and eight metals using TCLP procedures. On October 15, 1991, SL was instructed to analyze a remaining portion of the composite sample for total metals (total of eight metals). The results of the analyses are presented in Section 3.0.

2.3 OCTOBER 9 AND 10, 1991 ACTIVITIES

Seven additional areas (Areas 3 through 9) were investigated at the site (Figure 2-1) on October 9 and 10, 1991, according to the methods described for Areas 1 and 2. During October activities, soil samples were collected from 16 backhoe test pits and during excavation of 10 borings using a hand auger. A total of 41 samples were collected for screening using an OVA during the two days of field investigation activities. The purpose of the investigation was assess the horizontal and vertical extent of petroleum-impacted and excessively-contaminated soil in areas 3 through 9.

2.4 NOVEMBER 16, 1991 ACTIVITIES

Two additional soil samples were collected from Areas 1 and 2, composited into one sample, and analyzed for total lead to confirm the results of the October 1991 samples. The results are presented in Section 3.0.

2.5 DECEMBER 18 - 20, 1991 ACTIVITIES

Based on the lead concentrations detected in samples collected during October and November, 1991, additional soil samples were collected for analysis. On December 18 through 20, 1991, 120 soil samples were collected from 40 locations at the site (Figure 2-1). The samples were collected from 3 depths at each of the 40 locations in accordance with the FDER QA Standard Operating Procedures Manual for Soil Thermal Treatment Facilities, dated November 1991. A breakdown of the sample numbers and depths, and resulting composite designations are included in Appendix B. The 120 samples were composited into 10 samples (COMP-1 through COMP-10) according to the

manual and submitted for analysis of total lead. The calculation used to estimate the number of composite samples needed is also included in Appendix B. Based on the results of the total lead analyses, samples with lead concentrations below 77 mg/kg (COMP-1, COMP-2, COMP-3, and COMP-4) were analyzed for TRPH using EPA Method 418.1, purgeable aromatics and purgeable halocarbons using EPA Methods 8020 and 8010, respectively. Two composite samples containing lead concentrations above 77 mg/kg, COMP-7 and COMP-10, were also analyzed for TRPH, purgeable aromatics, and purgeable halocarbons, so that data would be available to evaluate alternative treatment methods for soil containing lead above permitted levels for thermal treatment facilities. The results of the analyses are presented in Section 3.0.

SECTION 3.0

INVESTIGATION RESULTS

SECTION 3.0
INVESTIGATION RESULTS

As described in Section 2.0, investigations were conducted at the site on August 15, 1991, August 26, 1991, October 9 and 10, 1991, November 16, 1991, and December 18 through 20, 1991, to identify areas of impacted soil, assess the extent of excessively-contaminated soil, assess the need for initial remedial action (IRA), and assess the feasibility of remediating soil using thermal treatment. The results of the investigations are presented in this section.

3.1 AUGUST 15, 1991 INVESTIGATION RESULTS

A shell material was observed over much of Area 1 from ground surface to approximately 1.5 feet bgs. The top six inches was observed to be stained in isolated areas. The shell material in all of Area 1 from six inches to approximately 1.5 feet bgs was observed to be stained and had a petroleum-like odor, indicating shell layers may have been laid at different times. Below the shell material, a grey sandy soil was observed to a depth of approximately 5.5 feet bgs. In test pits S-1, S-2, S-4, and S-7 (see the sketch for Area 1 in Appendix A), the grey sandy soil was stained and had a petroleum-like odor. Appendix C contains a cross-section through Area 1 showing the features identified and OVA readings detected in test pits S-1, S-7, and S-8.

Three test pits were excavated in Area 2. The same shell material identified in Area 1 was present over Area 2. The shell material in all three test pits was stained; therefore, the horizontal extent of excessively-contaminated soil is assumed to cover the area from Area 4 to Area 5, and from the concrete swale bordering Area 2, to the bermed area to the north.

Based on the information obtained during the investigation on August 15, 1991, the volume of excessively-contaminated soil (soil with an OVA concentration of 50 ppm or

greater) in Areas 1 and 2 was calculated to be approximately 574 cubic yards (cy) and 255 cy, respectively.

3.2 AUGUST 26, 1991 INVESTIGATION RESULTS

On August 26, 1991, soil samples were collected from Areas 1 and 2. The samples were composited and submitted to SL for analysis of the parameters described in Section 2.0 to assess the feasibility of remediating soil using thermal treatment. The laboratory report is presented in Appendix D and the detected parameters are listed in Table 3-1.

A portion of the sample was reanalyzed to determine the total concentrations of eight metals. The results are presented in Table 3-2. The sample contained lead at a concentration of 170 mg/kg, which exceeds the posttreatment standard (clean soil) for soil as listed in Chapter 17-775.400(4), FAC. Since the concentrations of metals are not reduced during thermal treatment, the posttreatment standard for metals would likely be exceeded if the pretreatment concentration is higher than the posttreatment standard.

3.3 OCTOBER 9 AND 10, 1991 INVESTIGATION RESULTS

On October 9 and 10, 1991, 41 soil samples were collected from 16 test pits and 10 hand-augered soil borings in Areas 3 through 9. The samples were screened using the OVA. OVA results are presented in Table 3-3.

Based on the information obtained during the investigation on October 9 and 10, 1991, excessively-contaminated soil was not detected in Areas 7 through 9. The volume of excessively-contaminated soil (soil with an OVA concentration of 50 ppm or greater) in Areas 3, 4, 5, and 6, was calculated and is listed below.

- Area 3 - 46 cy
- Area 4 - 1435 cy
- Area 5 - 133 cy
- Area 6 - 593 cy

TABLE 3-1

ANALYTICAL RESULTS
SOIL SAMPLES COLLECTED FROM AREAS 1 AND 2 - AUGUST 1991
HOWCO
ST. PETERSBURG, FLORIDA

PARAMETERS	UNITS	CONCENTRATION
Barium* (TCLP)	mg/l	0.097/0.085
Lead* (TCLP)	mg/l	0.45/0.41
Ethylbenzene	µg/l,dw	110
Toluene	µg/l,dw	19
Trichloroethene	µg/l,dw	9.8
Xylene	µg/l,dw	160
TRPH	mg/kg,dw	15,000
Total halogens	mg/l,dw	820

Note:

* = First result is corrected, second is analytical for matrix spike.

dw = Dry weight

TABLE 3-2

TOTAL METALS RESULTS
SOIL SAMPLES COLLECTED FROM AREAS 1 AND 2 - AUGUST 1991
HOWCO
ST. PETERSBURG, FLORIDA

PARAMETER	UNIT	CONCENTRATION	17-775.410(4), FAC STANDARD
Arsenic	mg/kg	<1.0	55
Barium	mg/kg	4.9	2750
Cadmium	mg/kg	<0.50	55
Chromium	mg/kg	2.4	275
Lead	mg/kg	170	77
Mercury	mg/kg	0.026	17
Selenium	mg/kg	<1.0	165
Silver	mg/kg	<1.0	165

mg/kg = milligrams per kilogram

TABLE 3-3

ORGANIC VAPOR CONCENTRATIONS
OCTOBER 9 AND 10, 1991
HOWCO
ST. PETERSBURG, FLORIDA

Boring/Depth	Organic Vapor Concentration (PPM)			Comment
	Unfiltered	Filtered	Difference	
TP-1, 3'	0	0	0	No odor
TP-2, 3'	30	0	30	Slight odor
TP-3, 2'	30	0	30	Slight odor
TP-3, 4'	80	55	25	Slight odor
TP-4, 2'	60	40	20	Slight odor
TP-4, 4'	200	72	128	Strong odor
TP-5, 1.5'	0	0	0	No odor
TP-5, 5'	2	0	0	No odor
TP-6, 2'	0	0	0	No odor
TP-6, 6'	0	0	0	No odor
SB-1, 1.5'	650	400	250	Strong odor
SB-1, 3'	2	0	2	No odor
SB-2, 2'	0.2	0	0.2	No odor
SB-2, 4'	0.2	0	0.2	No odor
SB-3, 2'	0	0	0	No odor
SB-3, 3'	0	0	0	No odor
SB-4, 1'	0	0	0	No odor
SB-4, 3'	0	0	0	No odor
TP-7, 2'	110	35	75	Slight odor
TP-7, 4'	45	25	20	Slight odor
TP-9, 1'	1.2	0	1.2	No odor
TP-9, 3'	1.8	0	1.8	No odor

TABLE 3-3 (Continued)

ORGANIC VAPOR CONCENTRATIONS
OCTOBER 9 AND 10, 1991
HOWCO
ST. PETERSBURG, FLORIDA

Boring/Depth	Organic Vapor Concentration (PPM)			Comment
	Unfiltered	Filtered	Difference	
TP-10, 1'	0	0	0	No odor
TP-10, 3'	0	0	0	No odor
TP-11, 1'	0	0	0	No odor
TP-11, 3'	0	0	0	No odor
TP-12, 1'	0	0	0	No odor
TP-12, 3'	0	0	0	No odor
TP-13, 1.5'	510	50	460	Strong odor
TP-13, 5'	600	150	450	Strong odor
SB-5, 3'	950	70	8	Strong odor
SB-5, 7'	>1,000	80	>1,000	Strong odor
SB-6, 7'	>1,000	80	>1,000	Strong odor
SB-7, 3'	0	0	0	No odor
SB-8, 3'	0	0	0	No odor
SB-9, 4'	380	160	220	Strong odor
SB-9, 6'	180	60	120	Slight odor
TP-14, 3'	7	4	3	No odor
TP-15, 3'	20	3	17	No odor
SB-10, 3'	380	160	220	No odor
TP-16, 2'	150	55	95	Slight odor

The total volume of excessively-contaminated soil in Areas 1 through 6 at the site is, therefore, estimated to be 3,035 cy, as shown on Figure 3-1. Assuming 110 pounds per cubic foot of soil the total weight of soil to be remediated is approximately 4510 tons.

3.4 NOVEMBER 16, 1991 INVESTIGATION RESULTS

Two soil samples were collected from Areas 1 and 2, composited into one sample and analyzed for total lead to confirm the concentration detected in the sample collected in August, 1991 (170 mg/kg). The result of the analyses indicates the soil sample contained total lead at a concentration of 15 mg/kg which is less than the permitted maximum concentration for thermal treatment units.

3.5 DECEMBER 18 - 20, 1991 INVESTIGATION RESULTS

To sort out the conflicting lead data obtained during August and November, 1991, ten composite samples, COMP-1 through COMP-10, were collected from the site at the locations shown on Figure 2-2, for analysis of total lead. The total lead result for each sample is listed below.

■ COMP-1	15.2 mg/kg	■ COMP-6	456 mg/kg
■ COMP-2	3.22 mg/kg	■ COMP-7	367 mg/kg
■ COMP-3	10.8 mg/kg	■ COMP-8	549 mg/kg
■ COMP-4	14.6 mg/kg	■ COMP-9	489 mg/kg
■ COMP-5	405 mg/kg	■ COMP-10	549 mg/kg

Samples COMP-1, COMP-2, COMP-3, COMP-4, COMP-7, and COMP-10 were then analyzed for TRPH, purgeable aromatics, and purgeable halocarbons. The laboratory report for these analyses is included in Appendix D.

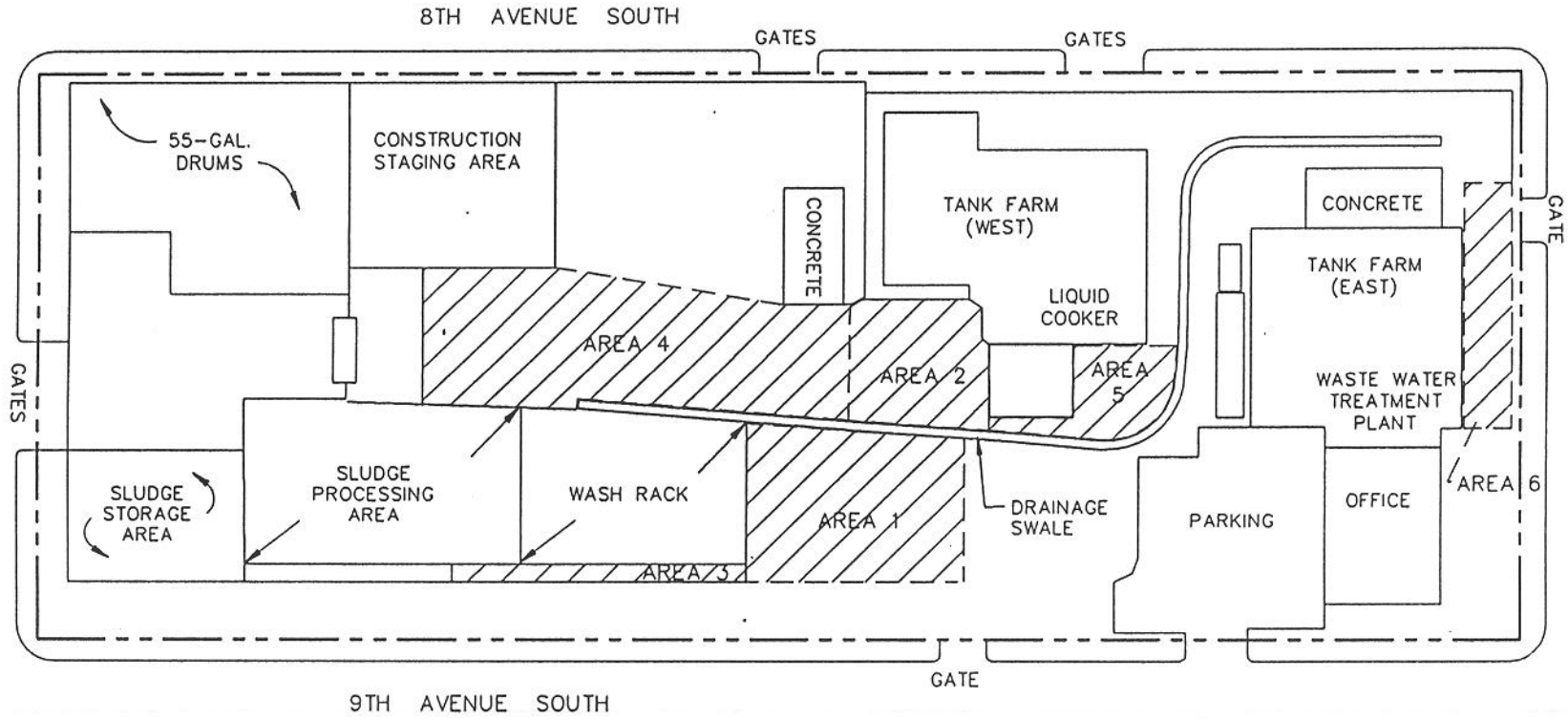
Since metals concentrations are not reduced during thermal treatment, thermal treatment units are permitted to treat soil containing lead at concentrations less than the post-

treatment standard of 77 mg/kg. Only soil samples COMP-1 through COMP-4 met the lead criteria for thermal treatment. COMP-1 through COMP-4 were collected from Areas 1, 3, and 6, which are estimated as having a total of 1213 cubic yards of excessively-contaminated soil.

Only soil samples COMP-1 through COMP-4 met the lead criteria for thermal treatment. COMP-1 through COMP-4 were collected from Areas 1, 3, and 6, which are estimated as having a total of 1213 cubic yards of excessively-contaminated soil.

14412.03/44103ECS/021392-2

Figure 3-1
Excessively Contaminated Soil
Howco Facility
St. Petersburg, Florida



LEGEND

EXCESSIVELY CONTAMINATED SOIL

N

0 50

FEET

The ERM Group

SECTION 4.0
CONCLUSIONS

4.1 OPERATION AUDIT

The results of the August 23, 1991 operational audit conducted by ERM indicate the facility was in compliance with waste oil regulations established in 40 CFR 266, Part E. With few exceptions, ERM found engineering controls, entry controls, and the general and emergency management practices at the facility to be adequate. In addition, HOWCO was in compliance with the training and most recordkeeping requirements of RCRA and the Occupational Safety and Health Administration (OSHA). ERM recommended revisions to the documentation procedures to bring HOWCO into compliance with these regulations. HOWCO is currently operating an exempt oil recycling facility under FDER and EPA regulations. However, EPA's final rule regarding used oil regulation may affect HOWCO's status under RCRA. ERM also recommended operational changes to the facility to improve stormwater and wastewater handling procedures.

4.2 EPA SAMPLING AND ANALYSIS

On March 13, 1991, representatives from USEPA Region IV collected samples of filter press sludge and dirt from the oil/dirt emulsion recycling process from roll-off bins located onsite.

Samples of filter press material were reportedly collected by EPA personnel from five of the approximately 8 feet by 20 feet by 4 feet deep rolloff bins located in the storage area. The samples were collected at depths of approximately 18 inches, 24 inches, and also from the bottom of the bins, and analyzed for TCLP metals and volatile organic compounds by the EPA laboratory in Athens, Georgia.

Analytical results indicate that TCLP standards were not exceeded. Each of the samples contained nine to ten organic compounds; however, the TCLP for organics was not completed because the analytical scans were reportedly too low. EPA has not pursued the matter any further.

4.3 PRELIMINARY CONTAMINATION ASSESSMENT

The results of the preliminary contamination assessment indicate that Area 1 through 6 at the site contain excessively-contaminated soil (Figure 3-1). The total volume of excessively-contaminated soil from Areas 1 through 6 at the site is estimated to be 3,035 cy. Assuming 110 pounds per cubic foot of soil, approximately 4510 tons could be remediated during IRA; however, FDER typically limits soil IRA to 1500 cy.

The preburn soil analyses conducted at the site in October, November, and December 1991, indicate the petroleum-impacted soil may contain isolated areas with total lead levels above 17-775, FAC maximum permitted levels for thermal treatment. COMP-1 through COMP-4 were collected from Areas 1, 3, and 6, and contained total lead concentrations below permitted maximum limits. The total volume of excessively-contaminated soil in Areas 1, 3, and 6 are estimated at 1,213 cy.

4.4 GROUND WATER

Ground water quality and the ground water flow direction were not assessed during the preliminary contamination assessment. These parameters will be evaluated during the contamination assessment.

SECTION 5.0

RECOMMENDATIONS

SECTION 5.0
RECOMMENDATIONS

Based on the results of the preliminary contamination assessment at HOWCO presented in this PCAR, ERM has prepared the following recommendations.

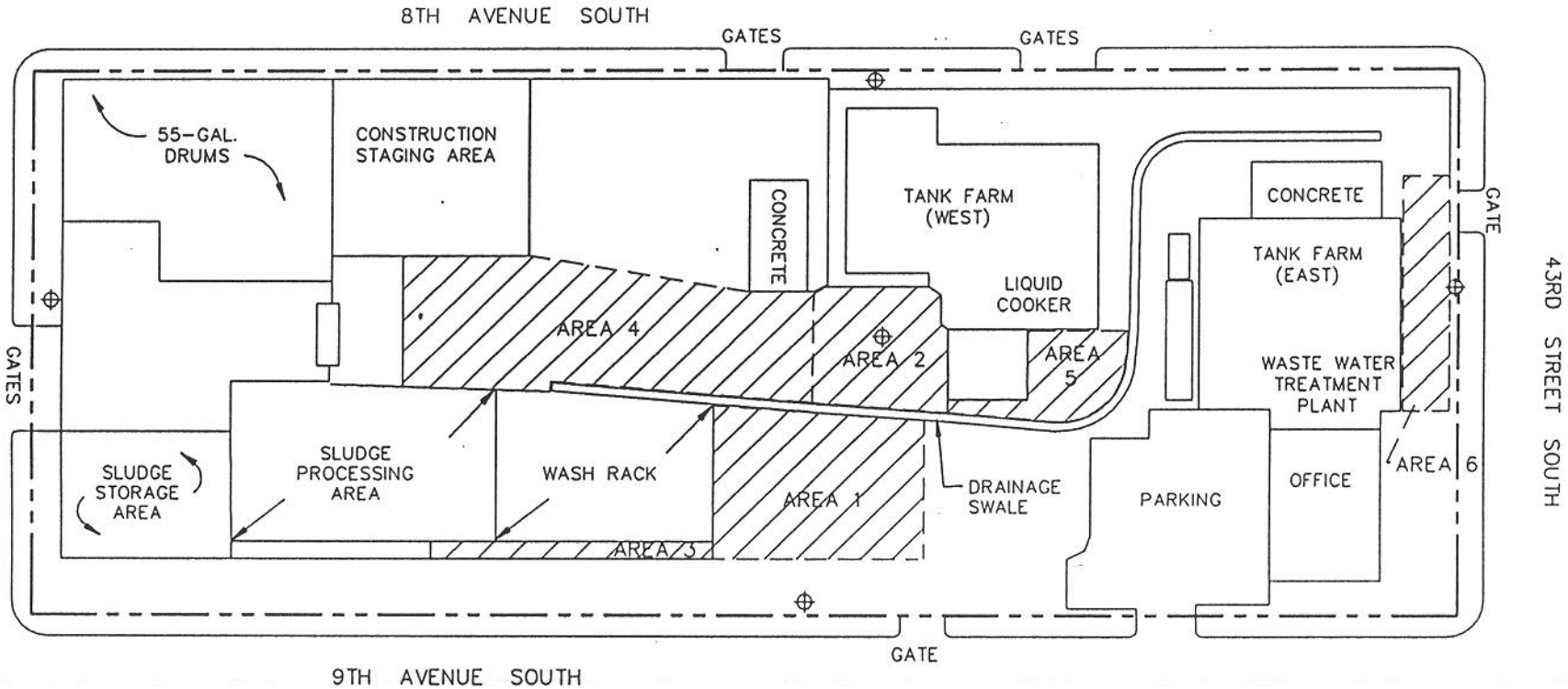
- Evaluate IRA alternatives for the approximately 3,035 cy of excessively-contaminated soil identified during the soil assessment. Options considered should include thermal treatment, both onsite and offsite; stabilization/solidification; bioremediation; and soil washing.

- Treat excessively-contaminated soil to reduce the concentration of petroleum constituents released to ground water.

- Complete a contamination assessment (CA) at the site. The CA will be conducted in accordance with the Consent Order executed by HOWCO and FDER.

14412.03/44103PMW/021292-1

Figure 5-1
Proposed Monitoring Well Locations
Howco Facility
St. Petersburg, Florida



LEGEND

⊕ PROPOSED MONITORING WELL

▨ EXCESSIVELY CONTAMINATED SOIL

N

0 50

FEET

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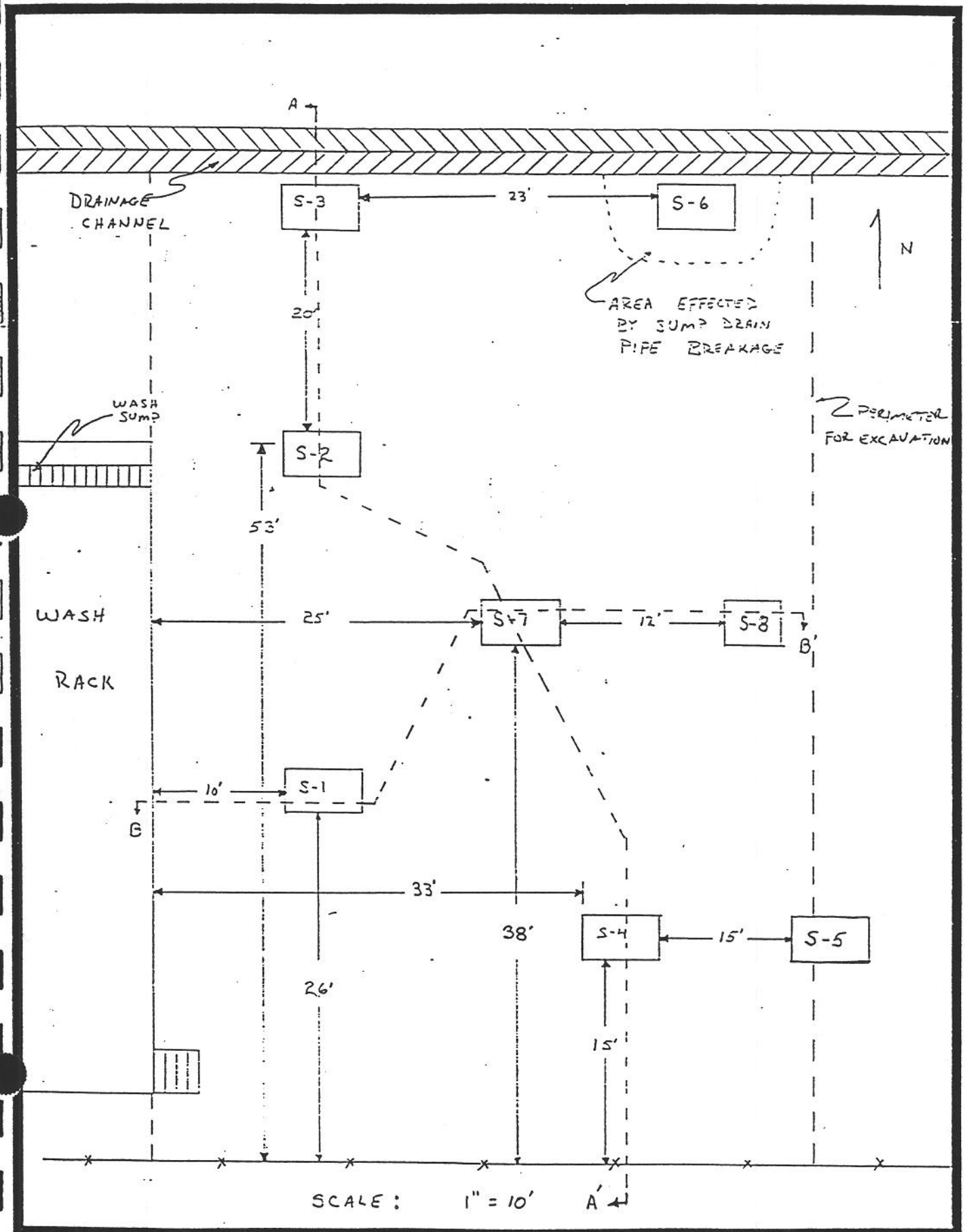
APPENDIX A

TEST PIT LOCATION MAP
AREAS 1 AND 2

ERM-South, Inc.
Environmental Resources Management

Project Howco | W.O. No. 14412.03 | Sheet 1 of 7
Subject Site Map of Area 1 (Former Asphalt Cooker Area) | By MSH | Date 8/16/91 | Chkd by | Date



DETAILED DESCRIPTION OF TEST PITS IN AREA 1

Test Pit S-1

S-1 was constructed to a depth of 3.5 feet. The material from 6 inches to 1.5 feet was a dark brown stained shell material with a strong petroleum odor and from 1.5 feet to 3.0 feet a light brown stained grey sandy soil with a slight petroleum odor. Two soil samples were collected at 2.0 feet and 3.5 feet and analyzed with an OVA/FID. The OVA readings were 90 PPM and zero PPM, respectively.

Test Pit S-2

S-2 was constructed to a depth of 4.0 feet. The material from 6 inches to 2.0 feet was a dark brown stained shell material with a strong petroleum odor and from 2.0 feet to 3.5 feet a light brown stained grey sandy soil with a slight petroleum odor. A soil sample was collected at 4.0 feet and analyzed with an OVA/FID. The OVA reading was 28 PPM.

Test Pit S-3

S-3 was constructed to a depth of 4.0 feet. The material from 6 inches to 1.5 feet was a dark brown stained shell material with a slight petroleum odor and from 1.5 feet to 4.0 feet a grey sandy soil with a slight petroleum odor and no apparent staining. Two soil samples were collected at 1.0 and 2.0 feet and analyzed with an OVA/FID. The OVA readings were 190 PPM and 41 PPM, respectively.

Test Pit S-4

S-4 was constructed to a depth of 4.0 feet. The material from 6 inches to 2.0 feet was a dark brown stained shell material with a strong petroleum odor and from 1.5 feet to 4.0 feet a grey sandy soil with a slight petroleum odor and no apparent staining. A soil sample was collected at 2.0 feet and analyzed with an OVA/FID. The OVA reading was 41 PPM.

Test Pit S-5

S-5 was constructed to a depth of 2.0 feet. The material from 6 inches to 1.5 feet was a dark brown stained shell material with a strong petroleum odor and from 1.5 feet to 2.0 feet a grey sandy soil with a slight petroleum odor and no apparent staining. A soil sample was collected at 2.0 feet and analyzed with an OVA/FID. The OVA reading was 32 PPM.

Test Pit S-6

During the construction of S-6 a drain line from the wash rack sump was severed. Approximately 65 to 70 gallons of oily water was discharged into the test pit. A sample from this area was not collected. Within fifteen minutes a vacuum truck was present and removed the oily water from the test pit.

Test Pit S-7

S-7 was constructed to a depth of 5.5 feet. The material from 6 inches to 1.5 feet was a dark brown stained shell material with a strong petroleum odor, from 1.5 feet to 4.5 feet a grey sandy soil with a strong petroleum odor and heavy staining and from 4.5 feet to 5.5 feet a dark brown silty material. A soil sample was collected at 5.5 feet and was analyzed with an OVA/FID. The OVA reading was 250 PPM.

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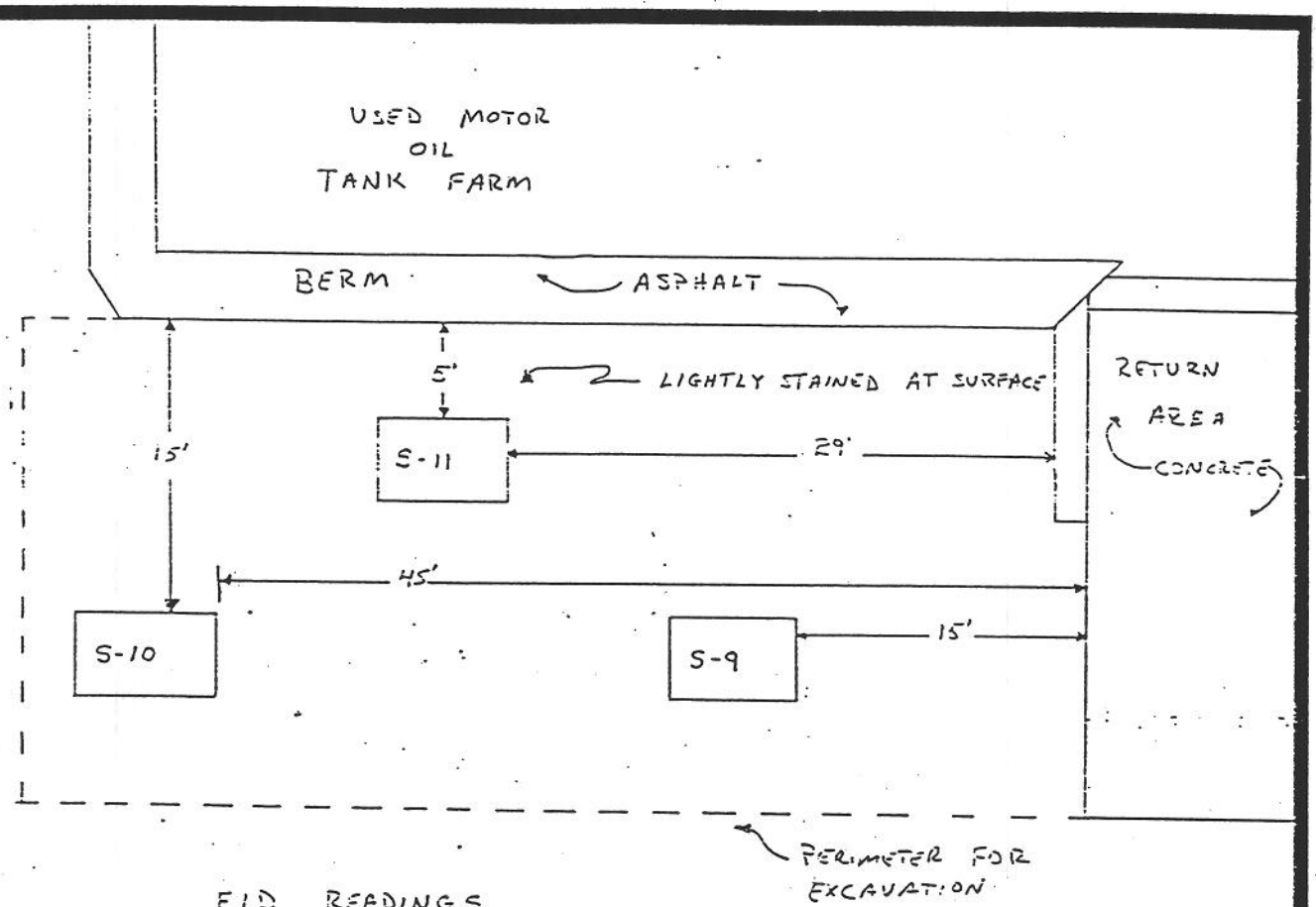
Project Howco W.O. No. 1401253 Sheet 2 of 7
Subject Site Map Area 2 By MSH Date 8/16/91
Chkd by Date



FID READINGS

LOCATION	PPM	COMMENT
S-9, @ 5'	24	TAKEN BELOW STAINED AREA
S-10 @ 7'	(1) UNK	STRONG PETROLEUM ODOR
S-11 @ 4'	14	TAKEN FROM SOIL DIRECTLY BELOW STAINED AREA
S-9 @ 3'	140	SLIGHT ODOR
S-10 @ 4.5'	150	STRONG ODOR
S-11 @ 2'	100	STRONG ODOR

NOTE: (1) GREATER THAN 1000 PPM ON FILTERED AND UNFILTERED READINGS WITH OVA/FID

APPENDIX B

COMPOSITE SOIL SAMPLING DESIGNATIONS FOR DECEMBER 1991 SAMPLES

ERM-South, Inc.
Environmental Resources Management

Project Howco W.O. No. 14412.0 Sheet ____ of ____
Subject ____ By ____ Date ____
Chkd by ____ Date ____

			# of COMPOSITE SAMPLES	# OF LOCATIONS	# OF SUBSAMPLES
AREA 1 :	574 (18.9%)	CY		7	21
AREA 2 :	255 (8.4%)	CY		3	9
AREA 3 :	46 (1.5%)	CY		1	3
AREA 4 :	1435 (47.3%)	CY		19	57
AREA 5 :	133 (4.4%)	CY		2	6
AREA 6 :	593 (19.5%)	CY		8	24
	3036	CY	10	40	120

MUST COLLECT 6 SAMPLES FOR THE FIRST 1500 CY AND ONE SAMPLE FOR EACH ADDITIONAL 500 CY

∴ NEED TO COLLECT 6 + 4 = 10 COMPOSITE SAMPLES FOR 3036 CY

EACH COMPOSITE SAMPLE IS COMPRISED OF 12 SUBSAMPLES OBTAINED FROM 3 DEPTHS AT 4 LOCATIONS

ERM-South, Inc.
Environmental Resources Management

Project _____ W.O. No. _____ Sheet _____ of _____
Subject _____ By _____ Date _____
_____ Chkd by _____ Date _____

AREA 1 SAMPLE COLLECTION:

7 TOTAL LOCATIONS IN AREA 1

SUB-SAMPLE NO.	DEPTH (ft)	COMP #	DATE COLLECTED
1-1 a	1.0	COMP-1	12/18/91
1-1 b	1.5		
1-1 c	2.0		
1-2 a	1.0		
1-2 b	2.0		
1-2 c	3.0		
1-3 a	1.0		
1-3 b	2.0		
1-3 c	3.0		
1-4 a	1.0	COMP-2	12/18/91
1-4 b	3.0		
1-4 c	5.0		
1-5 a	1.0		
1-5 b	2.0		
1-5 c	3.0		
1-6 a	1.0		
1-6 b	2.0		
1-6 c	3.0		
1-7 a	1.0		
1-7 b	4.0		
1-7 c	7.0		

AREA 3 SAMPLE COLLECTION:

1 LOCATION IN AREA 3

SUB-SAMPLE NO.	DEPTH (ft)	COMP #	DATE COLLECTED
3-1 a	1.0	COMP-1	12/18/91
3-1 b	1.5		
3-1 c	2.0		

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Environmental Resources Management

Project _____ W.O. No. _____ Sheet _____ of _____
Subject _____ By _____ Date _____
_____ Chkd by _____ Date _____

AREA 6 SAMPLE COLLECTION:

8 LOCATIONS IN AREA 6

SUB-SAMPLE NO.	DEPTH (ft)	COMP #	DATE COLLECTED
6-1 a	2.0	COMP-3	12/18/91
6-1 b	4.0		
6-1 c	6.0		
6-2 a	2.0		
6-2 b	4.0		
6-2 c	6.0		
6-3 a	2.0		
6-3 b	4.0		
6-3 c	6.0		
6-4 a	2.0		
6-4 b	4.0		
6-4 c	6.0		
6-5 a	2.0	COMP-4	12/19/91
6-5 b	4.0		
6-5 c	6.0		
6-6 a	2.0		
6-6 b	4.0		
6-6 c	6.0		
6-7 a	2.0		
6-7 b	4.0		
6-7 c	6.0		
6-8 a	2.0		
6-8 b	4.0		
6-8 c	6.0		

AREA 2 SAMPLE COLLECTION:

3 LOCATIONS IN AREA 2

SUB-SAMPLE NO.	DEPTH (ft)	COMP #	DATE COLLECTED
2-1 a	1.0	COMP-5	12/19/91
2-1 b	3.0		
2-1 c	5.0		
2-2 a	1.0		
2-2 b	3.0		
2-2 c	5.0		
2-3 a	1.0	COMP-6	12/19/91
2-3 b	3.0		
2-3 c	5.0		

AREA 5 SAMPLE COLLECTION:

2 LOCATIONS IN AREA 5

SUB-SAMPLE NO.	DEPTH (ft.)	COMP #	DATE COLLECTED
5-1 a	1.0	COMP-5	12/19/91
5-1 b	1.5		
5-1 c	2.0		
5-2 a	1.0		
5-2 b	1.5		
5-2 c	2.0		

ERM-South, Inc.
Environmental Resources Management

Project _____ W.O. No. _____ Sheet _____ of _____
Subject _____ By _____ Date _____
Chkd by _____ Date _____

AREA 4 SAMPLE COLLECTION:

19 LOCATIONS IN AREA 4

SUB SAMPLE NO.	DEPTH (ft)	COMP #	DATE COLLECTED
4-1 a	1.0	COMP-6	12/19/91
4-1 b	1.5		
4-1 c	2.0		
4-2 a	1.0		
4-2 b	1.5		
4-2 c	2.0		
4-3 a	1.0		
4-3 b	1.5		
4-3 c	2.0		
4-4 a	1.0	COMP-7	12/19/91
4-4 b	1.5		
4-4 c	2.0		
4-5 a	1.0		
4-5 b	1.5		
4-5 c	2.0		
4-6 a	1.0		
4-6 b	2.0		
4-6 c	3.0		
4-7 a	1.0		
4-7 b	2.0		
4-7 c	3.0		
4-8 a	1.0	COMP-8	12/20/91
4-8 b	2.0		
4-8 c	3.0		
4-9 a	1.0		
4-9 b	3.0		
4-9 c	5.0		
4-10 a	1.0		
4-10 b	3.0		
4-10 c	5.0		

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Environmental Resources Management

Project _____ W.O. No. _____ Sheet _____ of _____
Subject _____ By _____ Date _____
_____ Chkd by _____ Date _____

AREA 4 SAMPLE COLLECTION (CONT.):

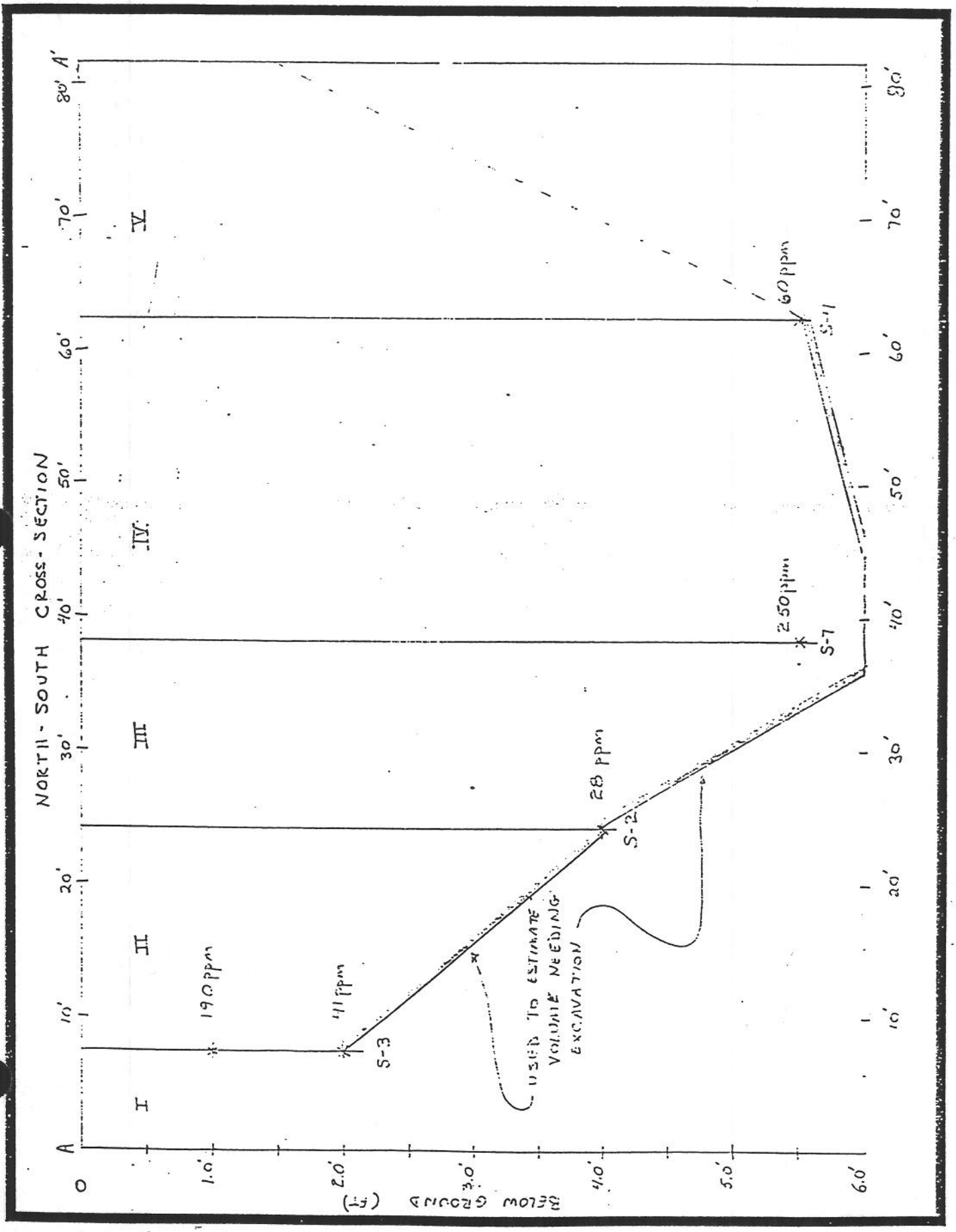
SUB-SAMPLE NO.	DEPTH (ft.)	COMP #	DATE COLLECTED
4-11 a	1.0	COMP-8	12/20/91
4-11 b	3.0		
4-11 c	5.0		
4-12 a	2.0	COMP-9	12/20/91
4-12 b	4.0		
4-12 c	6.0		
4-13 a	2.0		
4-13 b	4.0		
4-13 c	6.0		
4-14 a	2.0		
4-14 b	4.0		
4-14 c	6.0		
4-15 a	1.0		
4-15 b	3.0		
4-15 c	5.0		
4-16 a	1.0	COMP-10	12/20/91
4-16 b	3.0		
4-16 c	5.0		
4-17 a	1.0		
4-17 b	2.0		
4-17 c	3.0		
4-18 a	1.0		
4-18 b	2.0		
4-18 c	3.0		
4-19 a	1.0		
4-19 b	2.0		
4-19 c	3.0		

APPENDIX C

CROSS SECTION OF AREA 1

ERM-South, Inc.
Environmental Resources Management

Project Hyco | W.O. No. 1401.03 | Sheet 3 of 7
Subject North-South Cross-Section A-A' | By MSH | Date 8/16/01 | Chkd by | Date



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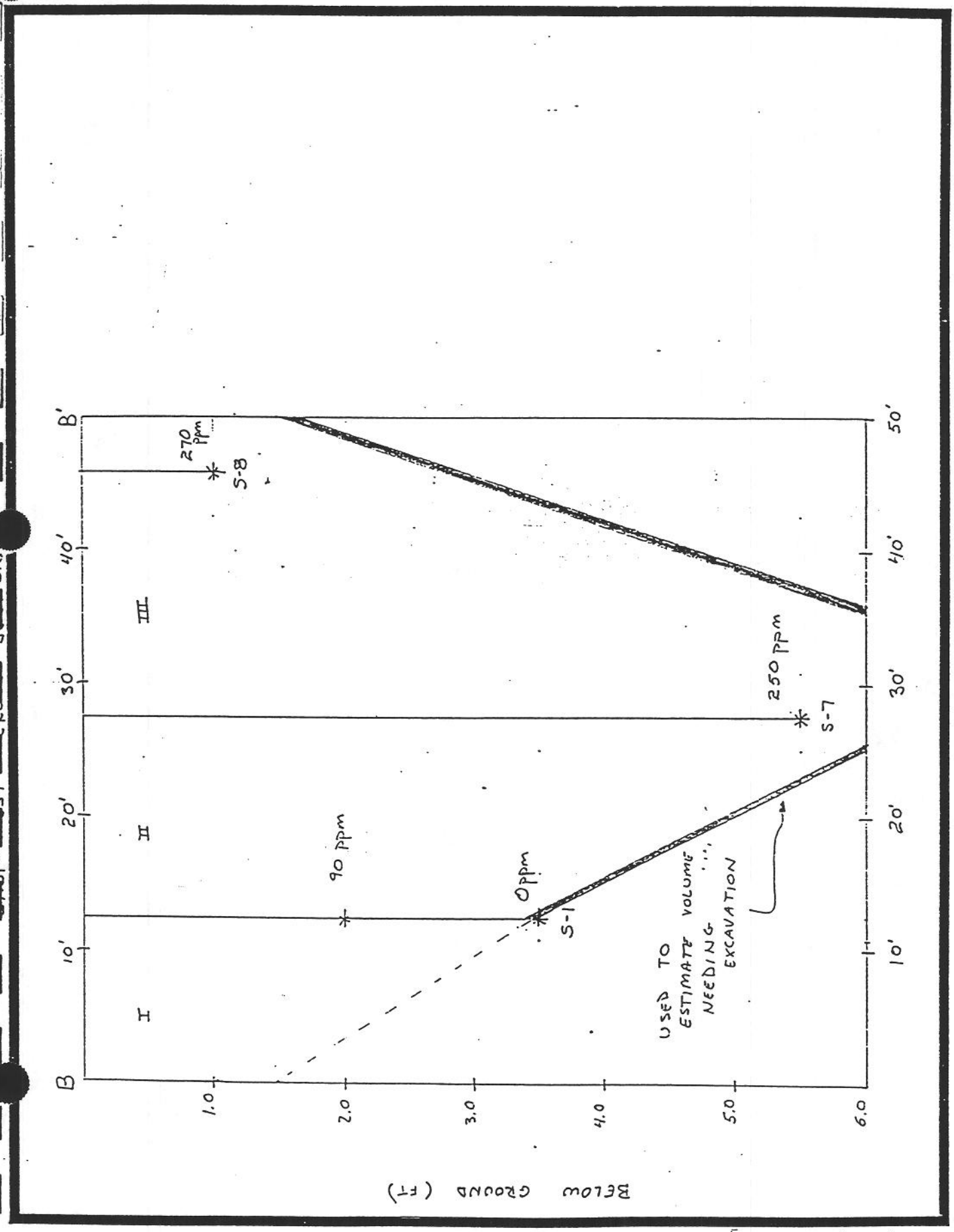
Project Howco W.O. No. 14412.03 Sheet 4 of 7
Subject East-West Cross-Section B-B' By MSH Date 8/16/91
Chkd by Date



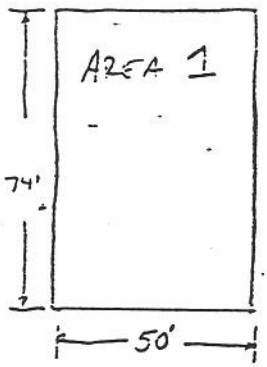
ERM-South, Inc.
Environmental Resources Management

Project HOWCO W.O. No. 14412.03 Sheet 5 of 7
Subject AREA 1 VOLUME CALCULATION By MSH Date 8/17/91
Chkd by Date

OBJECTIVE: DETERMINE THE VOLUME OF SOIL NEEDED TO BE EXCAVATED FROM AREA 1.

ASSUMPTIONS:
1) CROSS-SECTION (N-S and E-W) WILL be AVERAGED TO DETERMINE VOLUME FOR EXCAVATION
2) ONLY AREAS OBSERVED ARE CALCULATED IN TOTAL VOLUME (74' x 50').

TOTAL AREA FOR EXCAVATION (AREA 1)



FROM FIGURE 3 CROSS-SECTIONAL AREA

ASSUMPTION: CROSS-SECTION IS THE AVERAGE AREA OF CONTAMINATED SOIL OVER AREA 1

N-S CROSS-SECTION AREA:

$$\text{AREA}_{I} = (7.5\text{ ft})\left(\frac{2+1.5\text{ ft}}{2}\right) = 13.13\text{ ft}^2$$

$$\text{AREA}_{II} = (17\text{ ft})\left(\frac{2+4\text{ ft}}{2}\right) = 51\text{ ft}^2$$

$$\text{AREA}_{III} = (14\text{ ft})\left(\frac{4+6\text{ ft}}{2}\right) = 70\text{ ft}^2$$

$$\text{AREA}_{IV} = (24\text{ ft})\left(\frac{6+5.5\text{ ft}}{2}\right) = 138\text{ ft}^2$$

$$\text{AREA}_{V} = (19\text{ ft})\left(\frac{5.5+1.5\text{ ft}}{2}\right) = 66.5\text{ ft}^2$$

ROMAN NUMERALS CORRESPOND TO AREAS IN Figure 3

TOTAL X-SECT = 338.63 ft^2.

ERM-South, Inc.
Environmental Resources Management

Project HOWCO W.O. No. 14412.03 Sheet 6 of 7
Subject AREA 1 Volume Calc. (cont.) By MSH Date 8/17/91
Chkd by Date

THE N-S CROSS-SECTION IS THE AREA EFFECTED ACROSS A LENGTH OF 50 ft.

Volume of soil: (using N-S X-section)

$(338.62\ ft^2)(50\ ft) = 16{,}931.5\ ft^3$

$\text{VOL.} = \frac{16{,}931.5\ ft^3 \mid C.Y.}{\mid 27\ ft^3} = 627\ C.Y.$

E-W CROSS-SECTION AREA: (Figure 4)

$\text{AREA I} = (13\ ft)\left(\frac{1.5+3.5}{2}\ ft\right) = 32.5\ ft^2$

$\text{AREA II} = (15\ ft)\left(\frac{3.5+6}{2}\ ft\right) = 71.25\ ft^2$

$\text{AREA III} = (23\ ft)\left(\frac{6.0+4.5}{2}\ ft\right) = 86.25\ ft^2$

ROMAN NUMERALS correspond TO AREAS IN Figure 4

TOTAL X-SECT = 190 ft^2

THE E-W CROSS-SECTION IS THE AREA EFFECTED ACROSS A LENGTH OF 74 feet

Volume of soil: (using E-W X-section)

$(190\ ft^2)(74\ ft) = 14060\ ft^3$

$\text{VOL.} = \frac{14060\ ft^3 \mid C.Y.}{\mid 27\ ft^3} = 521\ C.Y.$

CONCLUSION: $\text{AVE} = \frac{521+627}{2} = 574\ C.Y.$

Approximately 574 CY of soil needs to be removed

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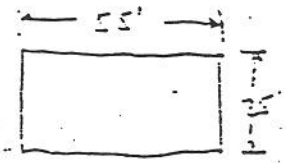
Environmental Resources Management

Project HOWCO W.O. No. 1412.03 Sheet 7 of 7
Subject AREA 2 VOLUME CALCULATION By MKL Date 2/17/97
Chkd by Date

OBJECTIVE: DETERMINE VOLUME OF SOIL NEEDED TO BE EXCAVATED FROM AREA 2.

ASSUMPTION: 1) DEPTH = 5.0 FEET OVER ALL OF AREA 2 (AVERAGE OF 5.0 FEET, ISOLATED AREAS MAY BE SHALLOWER)
2) ONLY AREAS OBSERVED ARE CALCULATED IN TOTAL VOLUME (55' x 25')

TOTAL AREA FOR EXCAVATION (AREA 2)



$$\text{VOLUME} = \underset{L}{(55\text{ ft})}\underset{W}{(25\text{ ft})}\underset{D}{(5\text{ ft})} = 6875\ \text{ft}^3$$

$$= \frac{6875\ \text{ft}^3 \mid \text{C.Y.}}{\mid 27\ \text{ft}^3} = 255\ \text{C.Y.}$$

CONCLUSION: APPROXIMATELY 255 C.Y. OF SOIL NEED EXCAVATION. ONLY AREAS OBSERVED ARE IN TOTAL CALCULATION.

APPENDIX D

LABORATORY REPORTS

fill
14412.03

September 16, 1991

Project No. 14412.03

MEMORANDUM

To: Project File, 14112.03

Copy: Paul Gruber
Robin Fornino
Sri Rao

From: Michael S. Helfrich MSH

RE: Laboratory Results from Composite Soil Samples Collected at HOWCO Oil Recovery Plant, St. Petersburg, Florida

---

On August 26, 1991, I travelled to HOWCO in St. Petersburg to collect a composite soil sample of two areas previously identified as petroleum contaminated (Field Memorandum dated August 16, 1991). The samples were collected and sent to Savannah Laboratories for analysis of PCB, TRPH,TCLP-RCRA metals, EPA Methods 8010 and 8020, and total halogens. The laboratory results were received September 11, 1991. The follow were detected:

Petroleum Hydrocarbons	15,000	mg/kg, dw
*Barium (TCLP)	0.097/0.085	mg/l
*Lead (TCLP)	0.45/0.41	mg/l
Ethylbenzene	110	ug/l, dw
Toluene	19	ug/l, dw
Trichloroethene	9.8	ug/l, dw
Xylene	160	ug/l, dw
Total halogens	820	mg/l, dw

Note:

* = First result is corrected, second is analytical for matrix spike.
dw = dry weight

Enclosed

Chain of Custody
Laboratory Results
Field Notes

RECD SEP 11 1991

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

712 Benjamin Road • Suite 100 • Tampa, FL 33634 • (813) 885-7427 • Fax (813) 885-7049

LOG NO: B1-34070

Received: 27 AUG 91

Mr. Mike Helfrich
ERM-South Inc.
9501 Princess Palm Avenue
Tampa, FL 33619

Project: 14412.03

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	SAMPLED BY
34070-1	Composite Soil (corrected/analytical)	Client

PARAMETER	34070-1
PCB in soil	
PCB-1016, mg/kg dw	<80
PCB-1221, mg/kg dw	<80
PCB-1232, mg/kg dw	<80
PCB-1242, mg/kg dw	<80
PCB-1248, mg/kg dw	<80
PCB-1254, mg/kg dw	<80
PCB-1260, mg/kg dw	<80
Petroleum Hydrocarbons , mg/kg dw	15000
Metals in TCLP	
Arsenic (TCLP), mg/l	<0.20
Barium (TCLP), mg/l	0.097/.085
Cadmium (TCLP), mg/l	<0.010
Chromium (TCLP), mg/l	<0.050
Lead (TCLP), mg/l	0.45/0.41
Selenium (TCLP), mg/l	<0.20
Silver (TCLP), mg/l	<0.010
Mercury (TCLP), mg/l	<0.020

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7312 Benjamin Road • Suite 100 • Tampa, FL 33634 • (813) 885-7427 • Fax (813) 885-7049

LOG NO: B1-34070

Received: 27 AUG 91

Mr. Mike Helfrich
ERM-South Inc.
9501 Princess Palm Avenue
Tampa, FL 33619

Project: 14412.03

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	SAMPLED BY
34070-1	Composite Soil (corrected/analytical)	Client

PARAMETER	34070-1
Volatile Organics	
Benzyl chloride, ug/kg dw	<5.6
Bromobenzene, ug/kg dw	<5.6
Bromodichloromethane, ug/kg dw	<5.6
Benzene, ug/kg dw	<5.6
Bromoform, ug/kg dw	<28
Bromomethane, ug/kg dw	<5.6
Carbon tetrachloride, ug/kg dw	<5.6
Chlorobenzene, ug/kg dw	<5.6
Chloroethane, ug/kg dw	<5.6
Chloroform, ug/kg dw	<5.6
1-Chlorohexane, ug/kg dw	<5.6
2-Chloroethylvinyl ether, ug/kg dw	<56
Chloromethane, ug/kg dw	<5.6
Chlorotoluene, ug/kg dw	<5.6
Dibromochloromethane, ug/kg dw	<5.6
Dibromomethane, ug/kg dw	<5.6
1,2-Dichlorobenzene, ug/kg dw	<5.6
1,3-Dichlorobenzene, ug/kg dw	<5.6
1,4-Dichlorobenzene, ug/kg dw	<5.6
Dichlorodifluoromethane, ug/kg dw	<5.6
1,1-Dichloroethane, ug/kg dw	<5.6
1,2-Dichloroethane, ug/kg dw	<5.6
1,1-Dichloroethene, ug/kg dw	<5.6

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& ENVIRONMENTAL SERVICES, INC.

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LOG NO: B1-34070

Received: 27 AUG 91

Mr. Mike Helfrich
ERM-South Inc.
9501 Princess Palm Avenue
Tampa, FL 33619

Project: 14412.03

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	SAMPLED BY
34070-1	Composite Soil (corrected/analytical)	Client

PARAMETER	34070-1
1,2-Dichloropropane, ug/kg dw	<5.6
1,3-Dichloropropylene, ug/kg dw	<5.6
Ethylbenzene, ug/kg dw	110
Methylene chloride, ug/kg dw	<5.6
1,1,2,2-Tetrachloroethane, ug/kg dw	<5.6
1,1,1,2-Tetrachloroethane, ug/kg dw	<5.6
Tetrachloroethene, ug/kg dw	<5.6
Toluene, ug/kg dw	19
1,1,1-Trichloroethane, ug/kg dw	<5.6
1,1,2-Trichloroethane, ug/kg dw	<5.6
Trichloroethene, ug/kg dw	9.8
Trichlorofluoromethane, ug/kg dw	<5.6
1,2,3-Trichloropropane, ug/kg dw	<5.6
Vinyl Chloride, ug/kg dw	<5.6
Xylenes, ug/kg dw	160
Total halogens, mg/kg dw	820
Percent Solids, %	93 %

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& ENVIRONMENTAL SERVICES, INC.

12 Benjamin Road • Suite 100 • Tampa, FL 33634 • (813) 885-7427 • Fax (813) 885-7049

LOG NO: B1-34070

Received: 27 AUG 91

Mr. Mike Helfrich
ERM-South Inc.
9501 Princess Palm Avenue
Tampa, FL 33619

Project: 14412.03

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	SAMPLED BY
34070-2	Composite Soil Matrix Spike	Client

PARAMETER	34070-2
Metals in TCLP	
Arsenic (TCLP), %	102 %
Barium (TCLP), %	88 %
Cadmium (TCLP), %	103 %
Chromium (TCLP), %	98 %
Lead (TCLP), %	92 %
Selenium (TCLP), %	104 %
Silver (TCLP), %	110 %
Mercury (TCLP), %	87 %

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& ENVIRONMENTAL SERVICES, INC.

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LOG NO: B1-34070

Received: 27 AUG 91

Mr. Mike Helfrich
ERM-South Inc.
9501 Princess Palm Avenue
Tampa, FL 33619

Project: 14412.03

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID	SAMPLED BY
34070-3	Method Blank	Client
34070-4	Accuracy (% Recovery)	
34070-5	Precision (% RPD)	

PARAMETER	34070-3	34070-4	34070-5
PCB in soil			
PCB-1016, mg/kg dw	<80	---	---
PCB-1221, mg/kg dw	<80	---	---
PCB-1232, mg/kg dw	<80	---	---
PCB-1242, mg/kg dw	<80	---	---
PCB-1248, mg/kg dw	<80	86 %	0 %
PCB-1254, mg/kg dw	<80	---	---
PCB-1260, mg/kg dw	<80	---	---
Petroleum Hydrocarbons , mg/kg dw	<10	90 %	1.2 %

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LOG NO: B1-34070

Received: 27 AUG 91

Mr. Mike Helfrich
ERM-South Inc.
9501 Princess Palm Avenue
Tampa, FL 33619

Project: 14412.03

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID	SAMPLED BY
34070-3	Method Blank	Client
34070-4	Accuracy (% Recovery)	
34070-5	Precision (% RPD)	

PARAMETER	34070-3	34070-4	34070-5
Volatile Organics			
Benzyl chloride, ug/kg dw	<5.0	---	---
Bromobenzene, ug/kg dw	<5.0	---	---
Bromodichloromethane, ug/kg dw	<5.0	---	---
Benzene, ug/kg dw	<5.0	105 %	1.9 %
Bromoform, ug/kg dw	<25	---	---
Bromomethane, ug/kg dw	<5.0	---	---
Carbon tetrachloride, ug/kg dw	<5.0	---	---
Chlorobenzene, ug/kg dw	<5.0	97 %	6.2 %
Chloroethane, ug/kg dw	<5.0	---	---
Chloroform, ug/kg dw	<5.0	---	---
1-Chlorohexane, ug/kg dw	<5.0	---	---
2-Chloroethylvinyl ether, ug/kg dw	<50	---	---
Chloromethane, ug/kg dw	<5.0	---	---
Chlorotoluene, ug/kg dw	<5.0	---	---
Dibromochloromethane, ug/kg dw	<5.0	---	---
Dibromomethane, ug/kg dw	<5.0	---	---
1,2-Dichlorobenzene, ug/kg dw	<5.0	---	---
1,3-Dichlorobenzene, ug/kg dw	<5.0	---	---
1,4-Dichlorobenzene, ug/kg dw	<5.0	---	---
Dichlorodifluoromethane, ug/kg dw	<5.0	---	---
1,1-Dichloroethane, ug/kg dw	<5.0	---	---

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LOG NO: B1-34070

Received: 27 AUG 91

Mr. Mike Helfrich
ERM-South Inc.
9501 Princess Palm Avenue
Tampa, FL 33619

Project: 14412.03

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID	SAMPLED BY
34070-3	Method Blank	Client
34070-4	Accuracy (% Recovery)	
34070-5	Precision (% RPD)	

PARAMETER	34070-3	34070-4	34070-5
1,2-Dichloroethane, ug/kg dw	<5.0	---	---
1,1-Dichloroethene, ug/kg dw	<5.0	115 %	21 %
1,2-Dichloropropane, ug/kg dw	<5.0	---	---
1,3-Dichloropropylene, ug/kg dw	<5.0	---	---
Ethylbenzene, ug/kg dw	<5.0	---	---
Methylene chloride, ug/kg dw	<5.0	---	---
1,1,2,2-Tetrachloroethane, ug/kg dw	<5.0	---	---
1,1,1,2-Tetrachloroethane, ug/kg dw	<5.0	---	---
Tetrachloroethene, ug/kg dw	<5.0	---	---
Toluene, ug/kg dw	<5.0	105 %	3.8 %
1,1,1-Trichloroethane, ug/kg dw	<5.0	---	---
1,1,2-Trichloroethane, ug/kg dw	<5.0	---	---
Trichloroethene, ug/kg dw	<5.0	115 %	17 %
Trichlorofluoromethane, ug/kg dw	<5.0	---	---
1,2,3-Trichloropropane, ug/kg dw	<5.0	---	---
Vinyl Chloride, ug/kg dw	<5.0	---	---
Xylenes, ug/kg dw	<5.0	---	---
Total halogens, mg/kg	<100	114 %	2.6 %

Method: EPA SW-846
HRS Certification #'s:81291,87279,E81005,E87052

Kathy Sheffield

Kathy Sheffield

SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

RECD OCT 29 1991

12 Benjamin Road • Suite 100 • Tampa, FL 33634 • (813) 885-7427 • Fax (813) 885-7049

LOG NO: B1-35621

Received: 16 OCT 91

Mr. Mike Helfrich
ERM-South Inc.
9501 Princess Palm Avenue
Tampa, FL 33619

Project: 14412.03

REPORT OF RESULTS

G NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	SAMPLED BY
35621-1	Composite Soil	Client

PARAMETER	35621-1
Arsenic, mg/kg dw	<1.0
Barium, mg/kg dw	4.9
Cadmium, mg/kg dw	<0.50
Chromium, mg/kg dw	2.4
Lead, mg/kg dw	170
Mercury, mg/kg dw	0.026
Selenium, mg/kg dw	<1.0
Silver, mg/kg dw	<1.0
Percent Solids, %	93 %

SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

7 Benjamin Road • Suite 100 • Tampa, FL 33634 • (813) 885-7427 • Fax (813) 885-7049

LOG NO: B1-35740

Received: 18 NOV 91

Mr. Michael Helfrich
ERM-South Inc.
9501 Princess Palm Avenue
Tampa, FL 33619

Project: 14412.03
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION	SOLID OR SEMISOLID SAMPLES	DATE SAMPLED
35740-1	Comp		11-16-91

PARAMETER	35740-1				
Lead, mg/kg dw	15				
Percent Solids, %	87 %				

ENVIROPACT, INC.

11300 43rd Street North
Clearwater, Florida 34622-4900
(813) 573-9663 Fax No. (813) 572-4915

RECD DEC 31 1991

14412.05

ERM_00045295
Attn: MICHAEL HELFRICH

ERM
9501 PRINCESS PALM AVE. #100
TAMPA, FLORIDA 33619

24 Dec 1991
Report T1-12-138-01
LAB ID. 84271,E84060

Sample Description:
CLEARWATER, FLORIDA
PROJECT NUMBER: 14412.05

SAMPLE ID.: COMP - 1
COLLECTED: 12/18/91
RECEIVED: 12/20/91
COLLECTED BY: YOUR REP

Parameter	Result	Units	Method	Det. Limit	Extracted	Analyzed	Analyst
Lead, Total	15.2	mg/kg	3050/7420	2.0		12/23/91	KB

**** BDL INDICATES ANALYTE IS BELOW DETECTABLE LEVELS
ALL ANALYSIS PERFORMED BY EPA, ASTM, OR STANDARD METHODS

Steven L. Walton, Laboratory Manager

ENVIROPACT

ERM_00045295
Attn: MICHAEL HELFRICH

ERM
9501 PRINCESS PALM AVE. #100
TAMPA, FLORIDA 33619

24 Dec 1991
Report T1-12-138-02
LAB ID. 84271,E84060

Sample Description:
CLEARWATER, FLORIDA
PROJECT NUMBER: 14412.05

SAMPLE ID.: COMP - 2
COLLECTED: 12/18/91
RECEIVED: 12/20/91
COLLECTED BY: YOUR REP

Parameter	Result	Units	Method	Det. Limit	Extracted	Analyzed	Analyst
Lead, Total	3.22	mg/kg	3050/7420	2.0		12/23/91	KB

**** BDL INDICATES ANALYTE IS BELOW DETECTABLE LEVELS
ALL ANALYSIS PERFORMED BY EPA, ASTM, OR STANDARD METHODS

Steven L. Walton, Laboratory Manager

ERM_00045295
Attn: MICHAEL HELFRICH

ERM
9501 PRINCESS PALM AVE. #100
TAMPA, FLORIDA 33619

24 Dec 1991
Report T1-12-138-03
LAB ID. 84271,E84060

Sample Description:
CLEARWATER, FLORIDA
PROJECT NUMBER: 14412.05

SAMPLE ID.: COMP - 3
COLLECTED: 12/18/91
RECEIVED: 12/20/91
COLLECTED BY: YOUR REP

Parameter	Result	Units	Method	Det. Limit	Extracted	Analyzed	Analyst
Lead, Total	10.8	mg/kg	3050/7420	2.0		12/23/91	KB

**** BDL INDICATES ANALYTE IS BELOW DETECTABLE LEVELS
ALL ANALYSIS PERFORMED BY EPA, ASTM, OR STANDARD METHODS

Steven L. Walton, Laboratory Manager

ERM_00045295
Attn: MICHAEL HELFRICH

ERM
9501 PRINCESS PALM AVE. #100
TAMPA, FLORIDA 33619

24 Dec 1991
Report T1-12-138-04
LAB ID. 84271,E84060

Sample Description:
CLEARWATER, FLORIDA
PROJECT NUMBER: 14412.05

SAMPLE ID.: COMP - 4
COLLECTED: 12/19/91
RECEIVED: 12/20/91
COLLECTED BY: YOUR REP

Parameter	Result	Units	Method	Det. Limit	Extracted	Analyzed	Analyst
Lead, Total	14.6	mg/kg	3050/7420	2.0		12/23/91	KB

**** BDL INDICATES ANALYTE IS BELOW DETECTABLE LEVELS
ALL ANALYSIS PERFORMED BY EPA, ASTM, OR STANDARD METHODS

Steven L. Walton, Laboratory Manager

ERM_00045295
Attn: MICHAEL HELFRICH

ERM
9501 PRINCESS PALM AVE. #100
TAMPA, FLORIDA 33619

24 Dec 1991
Report T1-12-138-05
LAB ID. 84271,E84060

Sample Description:
CLEARWATER, FLORIDA
PROJECT NUMBER: 14412.05

SAMPLE ID.: COMP - 5
COLLECTED: 12/19/91
RECEIVED: 12/20/91
COLLECTED BY: YOUR REP

Parameter	Result	Units	Method	Det. Limit	Extracted	Analyzed	Analyst
Lead, Total	405	mg/kg	3050/7420	2.0		12/23/91	KB

**** BDL INDICATES ANALYTE IS BELOW DETECTABLE LEVELS
ALL ANALYSIS PERFORMED BY EPA, ASTM, OR STANDARD METHODS

Steven L. Walton, Laboratory Manager

ERM_00045295
Attn: MICHAEL HELFRICH

ERM
9501 PRINCESS PALM AVE. #100
TAMPA, FLORIDA 33619

24 Dec 1991
Report T1-12-138-06
LAB ID. 84271,E84060

Sample Description:
CLEARWATER, FLORIDA
PROJECT NUMBER: 14412.05

SAMPLE ID.: COMP - 6
COLLECTED: 12/19/91
RECEIVED: 12/20/91
COLLECTED BY: YOUR REP

Parameter	Result	Units	Method	Det. Limit	Extracted	Analyzed	Analyst
Lead, Total	456	mg/kg	3050/7420	2.0		12/23/91	KB

**** BDL INDICATES ANALYTE IS BELOW DETECTABLE LEVELS
ALL ANALYSIS PERFORMED BY EPA, ASTM, OR STANDARD METHODS

Steven L. Walton, Laboratory Manager

ERM_00045295
Attn: MICHAEL HELFRICH

ERM
9501 PRINCESS PALM AVE. #100
TAMPA, FLORIDA 33619

24 Dec 1991
Report T1-12-138-07
LAB ID. 84271,E84060

Sample Description:
CLEARWATER,. FLORIDA
PROJECT NUMBER: 14412.05

SAMPLE ID.: COMP - 7
COLLECTED: 12/19/91
RECEIVED: 12/20/91
COLLECTED BY: YOUR REP

Parameter	Result	Units	Method	Det. Limit	Extracted	Analyzed	Analyst
Lead, Total	367	mg/kg	3050/7420	2.0		12/23/91	KB

**** BDL INDICATES ANALYTE IS BELOW DETECTABLE LEVELS
ALL ANALYSIS PERFORMED BY EPA, ASTM, OR STANDARD METHODS

Steven L. Walton, Laboratory Manager

ERM_00045295
Attn: MICHAEL HELFRICH

ERM
9501 PRINCESS PALM AVE. #100
TAMPA, FLORIDA 33619

24 Dec 1991
Report T1-12-138-08
LAB ID. 84271,E84060

Sample Description:
CLEARWATER, FLORIDA
PROJECT NUMBER: 14412.05

SAMPLE ID.: COMP - 8
COLLECTED: 12/20/91
RECEIVED: 12/20/91
COLLECTED BY: YOUR REP

Parameter	Result	Units	Method	Det. Limit	Extracted	Analyzed	Analyst
Lead, Total	549	mg/kg	3050/7420	2.0		12/23/91	KB

**** BDL INDICATES ANALYTE IS BELOW DETECTABLE LEVELS
ALL ANALYSIS PERFORMED BY EPA, ASTM, OR STANDARD METHODS

Steven L. Walton, Laboratory Manager

_00045295
Attn: MICHAEL HELFRICH

ERM
9501 PRINCESS PALM AVE. #100
TAMPA, FLORIDA 33619

24 Dec 1991
Report T1-12-138-09
LAB ID. 84271,E84060

Sample Description:
CLEARWATER, FLORIDA
PROJECT NUMBER: 14412.05

SAMPLE ID.: COMP - 9
COLLECTED: 12/20/91
RECEIVED: 12/20/91
COLLECTED BY: YOUR REP

Parameter	Result	Units	Method	Det. Limit	Extracted	Analyzed	Analyst
Lead, Total	489	mg/kg	3050/7420	2.0		12/23/91	KB

**** BDL INDICATES ANALYTE IS BELOW DETECTABLE LEVELS
ALL ANALYSIS PERFORMED BY EPA, ASTM, OR STANDARD METHODS

Steven L. Walton, Laboratory Manager

ERM_00045295
Attn: MICHAEL HELFRICH

ERM
9501 PRINCESS PALM AVE. #100
TAMPA, FLORIDA 33619

24 Dec 1991
Report T1-12-138-10
LAB ID. 84271,E84060

Sample Description:
CLEARWATER, FLORIDA
PROJECT NUMBER: 14412.05

SAMPLE ID.: COMP - 10
COLLECTED: 12/20/91
RECEIVED: 12/20/91
COLLECTED BY: YOUR REP

Parameter	Result	Units	Method	Det. Limit	Extracted	Analyzed	Analyst
Lead, Total	549	mg/kg	3050/7420	2.0		12/23/91	KB

**** BDL INDICATES ANALYTE IS BELOW DETECTABLE LEVELS
ALL ANALYSIS PERFORMED BY EPA, ASTM, OR STANDARD METHODS

Steven L. Walton, Laboratory Manager

APPENDIX C

LITHOLOGIC LOGS

BORING LOG I

BORING NO. B-1A

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Car	**DATE & TIME BEGAN/FINISHED:**	10/10/94
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	10 feet BLS
CLIENT NAME:	HOWCO Environmental Services	**SURFACE ELEVATION:**	≈+35 feet MSL
GEOLOGIST:	Tony Countryman	**DRILLING METHOD:**	Hand Auger/Hollow Stem Auger
DRILLING CONTRACTOR:	Huss Drilling	**GROUNDWATER DEPTH:**	9.0 feet BLS

GEOLOGICAL DESCRIPTION			TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	USCS Symbol	Sample Depth (Ft)	Total Hydro-carbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_3)
0-1	Asphalt at surface to 1.0 feet					
1-2.5	Light gray, fine-grained sand, poorly sorted	SP	2	BDL	NR	BDL
2.5-4.5	Light brown, fine-grained sand, poorly sorted, trace organics; trace clay at 4.0 feet	SP	4	BDL	NR	BDL
4.5-6	Orange/brown, fine-grained sand silty sand, hard pan, dry	SM	6	70	55	15
6-10	Rust brown, fine-grained sand, poorly sorted, hard pan; sweet odor; wet at 9.0 feet BLS. Blow Counts: 6-8: 21/25/37/30 8-10: 22/25/22/22	SP	8 10	500 800	100 500	400 300

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

Blow count value is measured in 6-inch increments over a 2-foot interval.

USCS Unified Soil Classification System
-- Not Analyzed
NR No Reading
BDL Below Detection Limits
BLS Below Land Surface

BORING LOG I

BORING NO. B-2A

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Car	**DATE & TIME BEGAN/FINISHED:**	10/10/94 @ 1340
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	10 feet BLS
CLIENT NAME:	HOWCO Environmental Services	**SURFACE ELEVATION:**	≈+35 feet MSL
GEOLOGIST:	Tony Countryman	**DRILLING METHOD:**	Hand Auger/Hollow Stem Auger
DRILLING CONTRACTOR:	Huss Drilling	**GROUNDWATER DEPTH:**	Water table @ 8.5 feet

GEOLOGICAL DESCRIPTION			TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	USCS Symbol	Sample Depth (Ft)	Total Hydro-carbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0-2.5	Tan-brown, fine-grained silty sand with slight amount of shell fragments; earthy odor	SM	2.0	BDL	NR	BDL
2.5-5	Light gray-brown, fine-grained sand with trace organics; earthy odor	SP	4.0	2	NR	2
5-10	Dark brown, fine-grained silty sand; earthy/organic odor	SM	6.0 8.0 10.0	1 BDL BDL	NR NR NR	1 BDL BDL
	Water table at 8.5 feet					

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

Blow count value is measured in 6-inch increments over a 2-foot interval.

USCS Unified Soil Classification System
-- Not Analyzed
NR No Reading
BDL Below Detection Limits
BLS Below Land Surface

BORING LOG I

BORING NO. B-3A

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Car	DATE & TIME BEGAN/FINISHED:	10/10/94 @ 1615
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	8 feet BLS
CLIENT NAME:	HOWCO Environmental Services	SURFACE ELEVATION:	≈+35 feet MSL
GEOLOGIST:	Tony Countryman	DRILLING METHOD:	Hand Auger/Hollow Stem Auger
DRILLING CONTRACTOR:	Huss Drilling	GROUNDWATER DEPTH:	8 feet

GEOLOGICAL DESCRIPTION			TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	USCS Symbol	Sample Depth (Ft)	Total Hydro-carbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_3)
0-.5	Asphalt at surface; dark gray, fine-grained silty sand, some slag	SM				
.5-3	Light gray, fine-grained sand	SP	2.0	65	25	40
3-5	Light brown, fine-grained sand with trace organics	SP	4.0	25	15	10
5-8	Dark brown, fine-grained silty sand with organics	SM	6.0 8.0	650 200	250 200	400 BDL
	Water table @ 8.0 feet					

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

Blow count value is measured in 6-inch increments over a 2-foot interval.

USCS Unified Soil Classification System
-- Not Analyzed
NR No Reading
BDL Below Detection Limits
BLS Below Land Surface

BORING LOG I

BORING NO. B-4A

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Car	**DATE & TIME BEGAN/FINISHED:**	10/10/94 @ 1525
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	6 feet BLS
CLIENT NAME:	HOWCO Environmental Services	**SURFACE ELEVATION:**	≈+35 feet MSL
GEOLOGIST:	Tony Countryman	**DRILLING METHOD:**	Hand Auger/Hollow Stem Auger
DRILLING CONTRACTOR:	Huss Drilling	**GROUNDWATER DEPTH:**	≈ 4.5 feet

GEOLOGICAL DESCRIPTION			TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	USCS Symbol	Sample Depth (Ft)	Total Hydro-carbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0-1	Asphalt at surface; gray, fine-grained silty sand	SM				
1-2.5	Light gray, fine-grained silty sand; slight petroleum odor	SM	2.0	80	45	35
2.5-4.5	Light brown, fine-grained sand with trace organics; wet	SP	4.0	375	195	180
4.5-6	Dark brown, fine-grained silty sand with organics; wet	SM	6.0 8.0	1400 200	600 200	800 BDL

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

Blow count value is measured in 6-inch increments over a 2-foot interval.

USCS	Unified Soil Classification System
--	Not Analyzed
NR	No Reading
BDL	Below Detection Limits
BLS	Below Land Surface

BORING LOG I

BORING NO. B-5A

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Car	**DATE & TIME BEGAN/FINISHED:**	10/10/94 @ 1508
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	10 feet BLS
CLIENT NAME:	HOWCO Environmental Services	**SURFACE ELEVATION:**	≈+35 feet MSL
GEOLOGIST:	Tony Countryman	**DRILLING METHOD:**	Hand Auger/Hollow Stem Auger
DRILLING CONTRACTOR:	Huss Drilling	**GROUNDWATER DEPTH:**	≈ 7 feet

GEOLOGICAL DESCRIPTION			TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	USCS Symbol	Sample Depth (Ft)	Total Hydro-carbons	C_1 to C_4 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0-.5	Asphalt at surface; dark gray sandy gravel; slag and shell with fine-grained silt and sand; oily odor	GM				
.5-2.5	Brown, fine-grained silty sand; septic odor	SM	2.0	35	7	28
2.5-7	Light brown, fine-grained sand with trace organics; wet	SP	4.0 6.0	25 20	13 BDL	12 20
7-10	Light gray, fine-grained sand with trace organics; wet Blow Counts: 6-8': 2/1/1/2 8-10': 1/1/1/2	SP	8.0 10.0	70 120	40 100	30 20

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

Blow count value is measured in 6-inch increments over a 2-foot interval.

USCS Unified Soil Classification System
-- Not Analyzed
NR No Reading
BDL Below Detection Limits
BLS Below Land Surface

BORING LOG I

BORING NO. B-6A

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Car	**DATE & TIME BEGAN/FINISHED:**	10/10/94 @ 1315
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	10 feet BLS
CLIENT NAME:	HOWCO Environmental Services	**SURFACE ELEVATION:**	≈+35 feet MSL
GEOLOGIST:	Tony Countryman	**DRILLING METHOD:**	Hand Auger/Hollow Stem Auger
DRILLING CONTRACTOR:	Huss Drilling	**GROUNDWATER DEPTH:**	≈ 9 feet

GEOLOGICAL DESCRIPTION			TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	USCS Symbol	Sample Depth (Ft)	Total Hydro-carbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_3)
0-.5	Asphalt at surface; dark gray to tan sandy gravel with shell and limerock fragments; slight petroleum odor	GM				
.5-4	Light gray, fine-grained sand; slight petroleum and organic odors	SP	2.0	110	145	-35
4-4.5	Light brown, fine-grained sand with trace organics; strong sulfur odor	SP	4.0	300	300	0
4.5-10	Dark brown, fine-grained silty sand, moist; strong sulfur and organic odors Blow Counts: 6-8': 12/16/18/19 8-10': 12/16/17/18	SM	6.0 8.0 10.0	175 250 700	75 205 475	100 45 225
	Water table @ ≈ 9.0 feet					

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

Blow count value is measured in 6-inch increments over a 2-foot interval.

USCS	Unified Soil Classification System
--	Not Analyzed
NR	No Reading
BDL	Below Detection Limits
BLS	Below Land Surface

BORING LOG I

BORING NO. B-7A

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO CAR	**DATE & TIME BEGAN/FINISHED:**	10/10/94 @ 1315
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	10 feet BLS
CLIENT NAME:	HOWCO Environmental Services	**SURFACE ELEVATION:**	≈+35 feet MSL
GEOLOGIST:	Tony Countryman	**DRILLING METHOD:**	Hand Auger/Hollow Stem Auger
DRILLING CONTRACTOR:	Huss Drilling	**GROUNDWATER DEPTH:**	≈ 9 feet

GEOLOGICAL DESCRIPTION			TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	**Materials Description Notes/Observations**	**USCS Symbol**	**Sample Depth (Ft)**	**Total Hydro-carbons**	**C_1 to C_3 (Filtered)**	**Non-Methane Hydrocarbons (>C_4)**
0-2	Asphalt at surface; sandy gravel, dark gray to brown fine-grained, silty sand with shell fragments; asphalt at 1.0 feet	GM				
2-5	Light gray, fine-grained silty sand; earthy odor	SP	2.0 4.0	4 BDL	NR NR	4 BDL
5-7	Dark brown, fine-grained silty sand, organic, moist	SM	6.0	75	30	45
7-7.5	Tan, fine-grained sand	SP				
7.5-10	Dark brown, fine-grained silty sand, moist at 10.0 feet BLS; strong organic odor Blow Counts: 6-8': 3/4/5/7 8-10': 10/10/9/11	SM	8.0 10.0	150 900	90 400	60 500

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

Blow count value is measured in 6-inch increments over a 2-foot interval.

USCS Unified Soil Classification System
– Not Analyzed
NR No Reading
BDL Below Detection Limits
BLS Below Land Surface

BORING LOG I

BORING NO. B-8A

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO CAR	**DATE & TIME BEGAN/FINISHED:**	10/10/94 @ 0930
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	10 feet BLS
CLIENT NAME:	HOWCO Environmental Services	**SURFACE ELEVATION:**	≈+35 feet MSL
GEOLOGIST:	Tony Countryman	**DRILLING METHOD:**	Hand Auger/Hollow Stem Auger
DRILLING CONTRACTOR:	Huss Drilling	**GROUNDWATER DEPTH:**	≈ 9 feet

GEOLOGICAL DESCRIPTION			TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	**Materials Description Notes/Observations**	**USCS Symbol**	**Sample Depth (Ft)**	**Total Hydro-carbons**	**C_1 to C_3 (Filtered)**	**Non-Methane Hydrocarbons (>C_4)**
0-1	Asphalt at surface; dark gray-tan silty sand; no odor	SM				
1-4.5	Light gray, fine-grained silty sand; no odor	SP	2.0 4.0	BDL 35	NR BDL	BDL 35
4.5-9.5	Dark brown, fine-grained silty sand, organics	SM	6.0 8.0	70 95	90 45	-20 50
9.5-9.8	Light gray sand; organic odor	SP				
9.8-10	Dark brown, fine-grained silty sand with organics; organic odor Blow Counts: 4-6': 5/7/7/8 6-8': 7/11/19/17 8-10': 12/18/20/18	SM	10.0	175	70	105

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

Blow count value is measured in 6-inch increments over a 2-foot interval.

USCS Unified Soil Classification System
-- Not Analyzed
NR No Reading
BDL Below Detection Limits
BLS Below Land Surface

TC/ljn/94-216.B8

BORING LOG I

BORING NO. B-9A

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO CAR	**DATE & TIME BEGAN/FINISHED:**	10/10/94 @ 1216
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	10 feet BLS
CLIENT NAME:	HOWCO Environmental Services	**SURFACE ELEVATION:**	≈+35 feet MSL
GEOLOGIST:	Tony Countryman	**DRILLING METHOD:**	Hand Auger/Hollow Stem Auger
DRILLING CONTRACTOR:	Huss Drilling	**GROUNDWATER DEPTH:**	≈ 10.0 feet

GEOLOGICAL DESCRIPTION			TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	USCS Symbol	Sample Depth (Ft)	Total Hydro-Carbons	C_1 to C_3 (Filtered)	Non-Methane HydroCarbons (>C_4)
0-1	Sandy gravel with gray/brown fine-grained sand and shells; earthy odor	GM				
1-2	Light gray, fine-grained sand; earthy odor	SP	2.0	BDL	NR	BDL
2-6	White, fine-grained sand; earthy odor	SP	4.0	BDL	NR	BDL
6-7.5	Light gray, fine-grained sand; earthy odor	SP	6.0	BDL	NR	BDL
7.5-10	Dark brown, fine-grained silty sand with organics; earthy odor; water table at 10.0 feet BLS Blow Counts: 6-8: 3/4/7/15 8-10: 10/20/20/15	SP	8.0 10.0	BDL 10	NR 7	BDL 3

NOTES:

(1) "Total" hydroCARbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

Blow count value is measured in 6-inch increments over a 2-foot interval.

USCS Unified Soil Classification System
– Not Analyzed
NR No Reading
BDL Below Detection Limits
BLS Below Land Surface

BORING LOG I

BORING NO. B-10A

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO CAR	**DATE & TIME BEGAN/FINISHED:**	10/10/94 @ 1130
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	10 feet BLS
CLIENT NAME:	HOWCO Environmental Services	**SURFACE ELEVATION:**	≈+35 feet MSL
GEOLOGIST:	Tony Countryman	**DRILLING METHOD:**	Hand Auger/Hollow Stem Auger
DRILLING CONTRACTOR:	Huss Drilling	**GROUNDWATER DEPTH:**	≈ 9.0 feet

GEOLOGICAL DESCRIPTION			TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	**Materials Description Notes/Observations**	**USCS Symbol**	**Sample Depth (Ft)**	**Total Hydro-carbons**	**C_1 to C_3 (Filtered)**	**Non-Methane Hydrocarbons (>C_4)**
0-1.5	Asphalt at surface, limerock fill					
1.5-2	Light gray, fine-grained sand; earthy odor	SP	2.0	BDL	NR	BDL
2-6	White, fine-grained sand; earthy odor	SP	4.0	BDL	NR	BDL
6-7.5	Light gray, fine-grained sand; earthy odor	SP	6.0	BDL	NR	BDL
7.5-10	Dark gray, fine-grained, silty sand; earthy odor; water table at 9.0 feet BLS Blow Counts: 6-8: 3/4/5/5 8-10: 5/7/8/11	SM	10.0	11	BDL	11

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

Blow count value is measured in 6-inch increments over a 2-foot interval.

USCS Unified Soil Classification System
-- Not Analyzed
NR No Reading
BDL Below Detection Limits
BLS Below Land Surface

BORING LOG I

BORING NO. B-11A

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO CAR	**DATE & TIME BEGAN/FINISHED:**	10/10/94 @ 1245
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	10 feet BLS
CLIENT NAME:	HOWCO Environmental Services	**SURFACE ELEVATION:**	≈+35 feet MSL
GEOLOGIST:	Tony Countryman	**DRILLING METHOD:**	Hand Auger/Hollow Stem Auger
DRILLING CONTRACTOR:	Huss Drilling	**GROUNDWATER DEPTH:**	≈ 6.0 feet

GEOLOGICAL DESCRIPTION			TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	USCS Symbol	Sample Depth (Ft)	Total Hydro-carbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0-4	Asphalt at surface; gray, fine-grained silty sand; petroleum odor	SM	2.0	50	BDL	50
4-4.5	Light gray, fine-grained sand	SP	4.0	150	BDL	150
4.5-5	Tan, fine-grained sand	SP				
5-9.5	Light gray to tan, fine-grained sand, wet; unidentified odor at 6.0 feet	SP	6.0 8.0	350 (wet) 500 (wet)	BDL 100	300 400
9.5-10	Dark brown, fine-grained silty sand, wet; water table at 6.0 feet BLS Blow Counts: 6-8: 3/2/2/2 8-10: 4/11/18/20	SM	10.0	800 (wet)	370	430

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

Blow count value is measured in 6-inch increments over a 2-foot interval.

USCS Unified Soil Classification System
– Not Analyzed
NR No Reading
BDL Below Detection Limits
BLS Below Land Surface

BORING LOG I

BORING NO. B-12A

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO CAR	**DATE & TIME BEGAN/FINISHED:**	10/10/94 @ 1010
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	10 feet BLS
CLIENT NAME:	HOWCO Environmental Services	**SURFACE ELEVATION:**	≈+35 feet MSL
GEOLOGIST:	Tony Countryman	**DRILLING METHOD:**	Hand Auger/Hollow Stem Auger
DRILLING CONTRACTOR:	Huss Drilling	**GROUNDWATER DEPTH:**	≈ 9.5 feet

GEOLOGICAL DESCRIPTION			TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	**Materials Description Notes/Observations**	**USCS Symbol**	**Sample Depth (Ft)**	**Total Hydro-carbons**	**C_1 to C_3 (Filtered)**	**Non-Methane Hydrocarbons (>C_4)**
0-4.5	Gray, fine-grained silty sand with petroleum staining; strong petroleum odor	SM	2.0 4.0	1250 4000	70 190	1180 3810
4.5-7	White, fine-grained sand, petroleum odor	SP	6.0	5000	80	4920
7-8	Light gray, fine-grained sand; petroleum odor	SP				
8-9	Light gray to brown, fine-grained silty sand; petroleum odor	SM	8.0	>100,000	FLAME OUT	
9-10	Dark brown, fine-grained silty sand with organics; petroleum odor; wet at 9.5 feet BLS Blow Counts: 6-8: 5/5/5/4 8-10: 4/5/6/7	SM	10.0	>100,000	FLAME OUT	

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

Blow count value is measured in 6-inch increments over a 2-foot interval.

USCS Unified Soil Classification System
– Not Analyzed
NR No Reading
BDL Below Detection Limits
BLS Below Land Surface

BORING LOG I

BORING NO. B-1

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	**DATE & TIME BEGAN/FINISHED:**	11/1/95
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	**SURFACE ELEVATION:**	--
GEOLOGIST:	Tom Ferguson	**DRILLING METHOD:**	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	**GROUNDWATER DEPTH:**	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0-3.0	Asphalt at surface, tan to brown, loose, medium to fine grained, slightly silty sand, slight petroleum odor.	2	700	250	450
3.0-10.0	Dark brown, loose, medium to fine grained, silty sand, slight petroleum odor. Moist at 8 feet, wet at 10 feet.	4 6 8 10	500 750 1400 1300	450 500 1100 300	50 250 300 1000

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-2

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	**DATE & TIME BEGAN/FINISHED:**	11/1/95
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	**SURFACE ELEVATION:**	--
GEOLOGIST:	Tom Ferguson	**DRILLING METHOD:**	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	**GROUNDWATER DEPTH:**	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0-3.0	Tan to brown, loose, medium to fine grained, slightly silty sand, slight petroleum odor at 2.0 feet BLS.	2	250	100	150
3.0-10.0	Dark brown, loose, medium to fine grained, silty sand. No odor at 4.0 feet, slight petroleum odor at 6.0 and 10.0 and petroleum odor at 8.0 feet.	4 6 8 10	275 350 1600 200	300 210 500 160	-25 140 1100 40

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-3

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	**DATE & TIME BEGAN/FINISHED:**	11/1/95
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	**SURFACE ELEVATION:**	--
GEOLOGIST:	Tom Ferguson	**DRILLING METHOD:**	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	**GROUNDWATER DEPTH:**	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0-3.0	Asphalt at surface, tan to brown, loose, medium to fine grained, slightly silty sand, slight petroleum odor.	2	300	140	160
3.0-10.0	Dark brown, loose, medium to fine grained, silty sand, slight petroleum odor. Moist at 8 feet, wet at 10 feet.	4 6 8 10	850 1400 1200 800	375 600 375 350	475 800 825 450

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-4

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	**DATE & TIME BEGAN/FINISHED:**	11/1/95
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	**SURFACE ELEVATION:**	--
GEOLOGIST:	Tom Ferguson	**DRILLING METHOD:**	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	**GROUNDWATER DEPTH:**	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0-3.0	Asphalt at surface, tan to brown, loose, medium to fine grained, slightly silty sand, slight petroleum odor.	2	325	100	225
3.0-10.0	Dark brown, loose, medium to fine grained, silty sand, slight petroleum odor. Moist at 8 feet, wet at 10 feet.	4 6 8 10	1600 1300 1400 550	750 900 900 300	850 400 500 250

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO.B-5

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	**DATE & TIME BEGAN/FINISHED:**	11/1/95
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	**SURFACE ELEVATION:**	--
GEOLOGIST:	Tom Ferguson	**DRILLING METHOD:**	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	**GROUNDWATER DEPTH:**	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0-.5	Concrete	2	450	95	355
.5 - 3.0	Tan to brown, loose, medium to fine, slightly silty sand, slight petroleum odor.				
3.0 - 10.0	Dark brown, loose, medium to fine grained, silty sand, slight petroleum odor at 4 and 6 feet, no odor at 8 feet, petroleum odor at 10 feet, moist at 8 feet and wet at 10 feet.	4 6 8 10	650 1500 850 2400	350 650 850 900	300 850 0 1500

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-6

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	**DATE & TIME BEGAN/FINISHED:**	11/1/95
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	**SURFACE ELEVATION:**	--
GEOLOGIST:	Tom Ferguson	**DRILLING METHOD:**	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	**GROUNDWATER DEPTH:**	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0-3.0	Asphalt at surface, tan to brown, loose, medium to fine grained, slightly silty sand, no odor at 2 feet.	2 4	20 70	10 85	10 -15
3.0-10.0	Dark brown, loose, medium to fine grained, silty sand, organic odor at 4, 6 and 10 feet, slight petroleum odor at 8 feet, moist at 8 feet, wet at 10 feet.	6 8 10	650 600 370	900 300 475	-250 300 -100

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-7

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/1/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_3)
0-3.0	Asphalt at surface, tan to brown, loose, medium to fine grained, slightly silty sand, petroleum odor.	2 4	160 300	110 210	50 90
3.0-10.0	Dark brown, loose, medium to fine grained, silty sand, slight petroleum odor from 4 to 8 feet, organic odor at 10 feet.	6 8 10	600 800 140	350 675 300	250 125 -160

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

Reprint

lrm/G94-216.B7

BORING LOG I

BORING NO.B-8

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	**DATE & TIME BEGAN/FINISHED:**	11/1/95
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	**SURFACE ELEVATION:**	--
GEOLOGIST:	Tom Ferguson	**DRILLING METHOD:**	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	**GROUNDWATER DEPTH:**	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	**Materials Description Notes/Observations**	**Sample Depth (Ft)**	**Total Hydrocarbons**	**C_1 to C_3 (Filtered)**	**Non-Methane Hydrocarbons (>C_4)**
0-3.0	Asphalt at surface, tan to brown, loose, medium to fine grained, slightly silty sand, organic odor at 2 feet.	2 4	140 750	160 700	-20 50
3.0-10.0	Dark brown, loose, medium to fine grained, silty sand, slight petroleum odor at 4 feet, organic-petroleum odor at 6 feet, organic odor at 8 feet and organic-slight petroleum odor at 10 feet.	6 8 10	2500 4000 1600	1600 4000 700	900 0 900

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-9

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	**DATE & TIME BEGAN/FINISHED:**	11/1/95
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	**SURFACE ELEVATION:**	--
GEOLOGIST:	Tom Ferguson	**DRILLING METHOD:**	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	**GROUNDWATER DEPTH:**	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0-3.0	Asphalt at surface, tan to brown, loose, medium to fine grained, slightly silty sand, earthy odor.	2 4	85 75	40 45	45 30
3.0-10.0	Dark brown, loose, medium to fine grained, silty sand, earthy odor.	6 8 10	300 500 250	250 475 225	50 25 25

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO.B-10

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	**DATE & TIME BEGAN/FINISHED:**	11/1/95
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	**SURFACE ELEVATION:**	--
GEOLOGIST:	Tom Ferguson	**DRILLING METHOD:**	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	**GROUNDWATER DEPTH:**	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	**Materials Description Notes/Observations**	**Sample Depth (Ft)**	**Total Hydrocarbons**	**C_1 to C_3 (Filtered)**	**Non-Methane Hydrocarbons (>C_4)**
0-3.0	Asphalt at surface, tan to brown, loose, medium to fine grained, slightly silty sand, organic odor at 2 feet.	2 4	50 20	30 10	20 10
3.0-10.0	Dark brown, loose, medium to fine grained, silty sand, strong organic odor at 6 and 8 feet. No petroleum odors.	6 8 10	3500 >100,000 1400	2000 6000 1200	1500 >94,000 200

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-11

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	**DATE & TIME BEGAN/FINISHED:**	11/1/95
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	**SURFACE ELEVATION:**	--
GEOLOGIST:	Tom Ferguson	**DRILLING METHOD:**	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	**GROUNDWATER DEPTH:**	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0-.5	Concrete - Surface area very oily.	2	300	45	255
.5-3.0	Tan to brown, loose, medium to fine grained, slightly silty sand. Organic odor.				
3.0-10.0	Dark brown, loose, medium to fine grained silty sand, organic odor.	4 6 8 10	100 2000 6000 1000	50 3500 2500 900	50 -1500 3500 100

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO.B-12

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	**DATE & TIME BEGAN/FINISHED:**	11/1/95
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	**SURFACE ELEVATION:**	--
GEOLOGIST:	Tom Ferguson	**DRILLING METHOD:**	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	**GROUNDWATER DEPTH:**	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0-.5	Concrete				
.5-6.0	Tan to brown, loose, medium to fine grained, slightly silty sand. Organic odor.	2 4 6	100 70 400	60 70 450	40 0 -50
6.0-10.0	Dark brown, loose, medium to fine grained, very silty sand, organic odor at 4, 6 and 10 feet. Organic and slight petroleum odor at 8 feet.	8 10	1600 300	900 650	700 -350

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-13

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	**DATE & TIME BEGAN/FINISHED:**	11/1/95
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	**SURFACE ELEVATION:**	--
GEOLOGIST:	Tom Ferguson	**DRILLING METHOD:**	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	**GROUNDWATER DEPTH:**	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0-.5	Concrete				
.5-6.0	Tan to brown, loose, medium to fine grained, slightly silty sand, organic and very slight petroleum odor at 4 feet.	2 4	45 2000	25 1200	20 800
6.0-10.0	Dark brown, loose, medium to fine grained, very silty sand, organic odor from 6 to 10 feet. Most at 6 and 8 feet, wet at 10 feet.	6 8 10	3000 2000 350	2250 1600 300	750 400 50

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-14

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/1/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_3)
0-.5	Concrete				
.5-6.0	Tan to brown, loose, medium to fine grained, slightly silty sand, petroleum odor at 2 feet. Slight petroleum odor at 4 feet.	2 4	200 850	120 800	80 50
6.0-10.0	Dark brown, loose, medium to fine grained, very silty sand, organic odor from 6 to 10 feet. Wet from 6 to 10 feet.	6 8 10	2750 750 325	1000 400 350	1750 350 -25

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-15

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/1/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0-.5	Concrete				
.5-6.0	Tan to brown, loose, medium to fine grained, slightly silty sand, earthy odor at 2 and 4 feet.	2 4	90 950	70 850	20 100
6.0-10.0	Dark brown, loose, medium to fine grained, very silty sand, organic odor from 6 to 10 feet. Moist at 6 feet, wet at 8 and 10 feet.	6 8 10	700 400 200	550 160 250	150 240 -50

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-16

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/1/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0-.5	Concrete				
.5-6.0	Tan to brown, loose, medium to fine grained, slightly silty sand, earthy odor at 2 and 4 feet.	2 4	45 200	40 210	5 -10
6.0-10.0	Dark brown, loose, medium to fine grained, very silty sand, earthy odor at 6 feet, slight petroleum odor and organic odor at 8 and 10 feet. Moist at 6 feet, wet at 8 to 10 feet.	6 8 10	500 400 140	700 300 90	-200 100 50

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-17

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/1/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0-8.0	Asphalt at surface, tan, loose, medium to fine grained, slightly silty sand. Earthy odor.	2 4 6	14 7 8	NR NR NR	14 7 8
8.0-10.0	Dark brown, loose, medium to fine grained, silty sand, earthy odor.	8 10	10 5	NR NR	10 5

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-18

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/1/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0-8.0	Asphalt at surface, tan, loose, medium to fine grained, slightly silty sand. Earthy odor.	2 4 6	BDL BDL BDL	NR NR NR	BDL BDL BDL
8.0-10.0	Dark brown, loose, medium to fine grained, silty sand, earthy odor.	8 10	2 2	NR NR	2 2

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-19

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/1/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0-8.0	Asphalt at surface, tan, loose, medium to fine grained, slightly silty sand, petroleum odor at 2 and 4 feet, strong petroleum odor at 6 and 8 feet.	2 4 6	600 950 >100,000	50 25 20	550 925 >99,980
8.0-10.0	Dark brown, loose, medium to fine grained, silty sand, strong petroleum odor at 10 feet.	8 10	>100,000 FO >100,000	250 100	>99,750 >99,900

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-20

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/1/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_3)
0-8.0	Asphalt at surface, tan, loose, medium to fine grained, slightly silty sand, petroleum odor from 2 to 8 feet.	2 4 6	450 275 200	70 60 20	380 215 180
8.0-10.0	Dark brown, loose, medium to fine grained, silty sand, petroleum odor at 10 feet.	8 10	225 70	70 20	155 50

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-21

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/2/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 4.0	Asphalt at surface. Tan to brown, loose, medium to fine grained, slightly silty sand, organic odor.	2 4	>1,000 FO 700	450 350	550 350
4.0 - 10.0	Dark brown, loose, medium to fine grained, silty sand, organic odor.	6 8 10	3750 4000 1400	1200 1600 750	2550 2400 650

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO.B-22

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	**DATE & TIME BEGAN/FINISHED:**	11/2/95
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	**SURFACE ELEVATION:**	--
GEOLOGIST:	Tom Ferguson	**DRILLING METHOD:**	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	**GROUNDWATER DEPTH:**	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 4.0	Asphalt at surface. Tan to brown, loose, medium to fine grained, slightly silty sand, organic odor.	2 4	700 140	360 100	340 40
4.0 - 10.0	Dark brown, loose, medium to fine grained, silty sand, organic odor.	6 8 10	350 120 260	225 150 210	125 -30 50

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO.B-23

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/2/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 4.0	Asphalt at surface. Tan to brown, loose, medium to fine grained, slightly silty sand, organic odor.	2 4	120 210	60 120	60 90
4.0 - 10.0	Dark brown, loose, medium to fine grained, silty sand, organic odor.	6 8 10	1400 180 190	650 130 130	750 50 60

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-24

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/2/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 4.0	Asphalt at surface. Tan to brown, loose, medium to fine grained, slightly silty sand, organic odor.	2 4	BDL BDL	NR NR	BDL BDL
4.0 - 10.0	Dark brown, loose, medium to fine grained, silty sand, organic odor.	6 8 10	20 250 2000	15 140 600	5 110 1400

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-25

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/2/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 4.0	Asphalt at surface. Tan to brown, loose, medium to fine grained, slightly silty sand, organic odor.	2 4	7 BDL	NR NR	7 BDL
4.0 - 10.0	Dark brown, loose, medium to fine grained, silty sand, organic odor.	6 8 10	10 140 300	NR 140 350	10 0 -50

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO.B-26

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/2/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_3)
0 - 4.0	Asphalt at surface. Tan to brown, loose, medium to fine grained, slightly silty sand, petroleum odor.	2 4	550 200	225 70	225 130
4.0 - 10.0	Dark brown, loose, medium to fine grained, silty sand, petroleum odor.	6 8 10	500 850 425	300 425 400	200 425 25

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-27

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/2/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 4.0	Asphalt at surface. Tan to brown, loose, medium to fine grained, slightly silty sand, organic odor.	2 4	55 300	15 170	40 130
4.0 - 10.0	Dark brown, loose, medium to fine grained, silty sand, organic odor.	6 8 10	1600 1600 700	1100 900 750	500 700 -50

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-28

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/2/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 4.0	Asphalt at surface. Tan to brown, loose, medium to fine grained, slightly silty sand, organic odor.	2 4	BDL 35	NR 20	BDL 15
4.0 - 10.0	Dark brown, loose, medium to fine grained, silty sand, organic odor.	6 8 10	600 400 100	300 400 300	300 0 -200

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-29

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/2/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 4.0	Asphalt at surface. Tan to brown, loose, medium to fine grained, slightly silty sand, organic odor.	2 4	100 325	50 200	50 175
4.0 - 10.0	Dark brown, loose, medium to fine grained, silty sand, organic odor.	6 8 10	425 750 180	300 450 350	125 300 -170

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-30

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/2/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 4.0	Asphalt at surface. Tan to brown, loose, medium to fine grained, slightly silty sand, organic odor.	2 4	7 40	NR 16	7 24
4.0 - 10.0	Dark brown, loose, medium to fine grained, silty sand, organic odor.	6 8 10	170 160 70	95 130 40	75 30 30

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-31

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/2/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 4.0	Asphalt at surface. Tan to brown, loose, medium to fine grained, slightly silty sand, organic odor at 2 ft, slight petroleum odor at 4 ft.	2 4	100 600	65 350	35 250
4.0 - 10.0	Dark brown, loose, medium to fine grained, silty sand, slight petroleum odor at 6 ft, organic odor at 8 and 10 ft.	6 8 10	500 90 250	325 50 100	175 40 150

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-32

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/2/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 4.0	Asphalt at surface. Tan to brown, loose, medium to fine grained, slightly silty sand, petroleum odor at 2 ft, organic odor at 4 ft.	2 4	500 700	100 650	400 50
4.0 - 10.0	Dark brown, loose, medium to fine grained, silty sand, petroleum odor.	6 8 10	3000 2250 2250	1500 900 900	1500 1350 1350

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-33

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/2/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 4.0	Asphalt at surface. Tan to brown, loose, medium to fine grained, slightly silty sand.	2 4	BDL BDL	NR NR	BDL BDL
4.0 - 10.0	Dark brown, loose, medium to fine grained, silty sand, organic odor.	6 8 10	400 2000 1100	150 1500 500	250 500 600

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-34

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/2/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 4.0	Asphalt at surface. Tan to brown, loose, medium to fine grained, slightly silty sand, organic odor.	2 4	10 25	5 10	5 15
4.0 - 10.0	Dark brown, loose, medium to fine grained, silty sand, organic odor.	6 8 10	275 200 400	190 250 350	85 -50 50

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-35

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/2/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 4.0	Asphalt at surface. Tan to brown, loose, medium to fine grained, slightly silty sand, earthy odor.	2 4	BDL BDL	NR NR	BDL BDL
4.0 - 10.0	Dark brown, loose, medium to fine grained, silty sand, earthy odor.	6 8 10	BDL 20 10	NR NR NR	BDL 20 10

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-36

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/2/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 4.0	Asphalt at surface. Tan to brown, loose, medium to fine grained, slightly silty sand, organic odor.	2 4	16 25	BDL BDL	16 25
4.0 - 10.0	Dark brown, loose, medium to fine grained, silty sand, slight petroleum odor at 6 ft, organic odor at 8 and 10 ft.	6 8 10	700 550 180	400 525 200	300 25 -20

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-37

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/2/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 4.0	Asphalt at surface. Tan to brown, loose, medium to fine grained, slightly silty sand, slight petroleum odor at 2 ft and organic odor at 4 ft.	2 4	1200 350	80 100	1120 250
4.0 - 10.0	Dark brown, loose, medium to fine grained, silty sand, organic odor	6 8 10	1200 2000 2500	800 800 1400	400 1200 1100

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-38

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/3/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 4.0	Asphalt at surface. Tan to brown, loose, medium to fine grained, slightly silty sand, earthy odor	2 4	BDL BDL	NR NR	BDL BDL
4.0 - 10.0	Dark brown, loose, medium to fine grained, very silty sand, earthy odor	6 8 10	BDL 5 5	NR NR NR	BDL 5 5

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO.B-39

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	**DATE & TIME BEGAN/FINISHED:**	11/3/95
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	**SURFACE ELEVATION:**	--
GEOLOGIST:	Tom Ferguson	**DRILLING METHOD:**	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	**GROUNDWATER DEPTH:**	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 4.0	Asphalt at surface. Tan to brown, loose, medium to fine grained, slightly silty sand, earthy odor	2 4	36 32	15 7	21 25
4.0 - 10.0	Dark brown, loose, medium to fine grained, very silty sand, earthy odor	6 8 10	610 780 >1000	570 900 >1000	40 -120 Unknown

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-40

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/3/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 4.0	Asphalt at surface. Tan to brown, loose, medium to fine grained, slightly silty sand, organic odor	2 4	220 600	330 400	-110 200
4.0 - 10.0	Dark brown, loose, medium to fine grained, very silty sand, organic odor	6 8 10	>1000 940 470	500 800 340	>500 140 130

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-41

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/3/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 4.0	Asphalt at surface. Tan to brown, loose, medium to fine grained, slightly silty sand, organic odor	2 4	10 60	NR 20	10 40
4.0 - 10.0	Dark brown, loose, medium to fine grained, very silty sand, organic odor	6 8 10	860 >1000 >1000	600 720 >1000	260 >380 Unknown

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-42

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/3/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 4.0	Asphalt at surface. Tan to brown, loose, medium to fine grained, slightly silty sand, organic odor	2 4	200 >1000	170 800	30 >200
4.0 - 10.0	Dark brown, loose, medium to fine grained, very silty sand, organic odor	6 8 10	>1000 540 280	>1000 440 220	Unknown 100 60

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-43

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/3/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 4.0	Asphalt at surface. Tan to brown, loose, medium to fine grained, slightly silty sand, petroleum odor at 2 ft, organic odor at 4 ft.	2 4	540 980	160 540	380 440
4.0 - 10.0	Dark brown, loose, medium to fine grained, very silty sand, petroleum odor at 6 ft organic odor at 8 and 10 ft.	6 8 10	830 200 220	660 180 250	170 20 -30

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-44

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/3/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 4.0	Asphalt at surface. Tan to brown, loose, medium to fine grained, slightly silty sand, organic odor	2 4	140 440	40 280	100 160
4.0 - 10.0	Dark brown, loose, medium to fine grained, very silty sand, organic odor	6 8 10	>1000 >1000 470	>1000 >1000 210	Unknown Unknown 260

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-45

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/3/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 4.0	Asphalt at surface. Tan to brown, loose, medium to fine grained, slightly silty sand, organic odor	2 4	10 10	NR NR	10 10
4.0 - 10.0	Dark brown, loose, medium to fine grained, very silty sand, organic odor	6 8 10	>1000 >1000 >1000	>1000 >1000 >1000	Unknown Unknown Unknown

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG I

BORING NO. B-46

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	11/3/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	10 Feet BLS
CLIENT NAME:	HOWCO Environmental Services, Inc.	SURFACE ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Solid Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 Feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	Sample Depth (Ft)	Total Hydrocarbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 4.0	Asphalt at surface. Tan to brown, loose, medium to fine grained, slightly silty sand, organic odor	2 4	200 400	180 540	20 -140
4.0 - 10.0	Dark brown, loose, medium to fine grained, very silty sand, organic odor	6 8 10	950 800 230	>1000 730 200	-50 70 30

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level
NR No Reading
FO Flame Out

BORING LOG III

WELL NO. DB-1

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	Howco Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	10/24/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	47 feet BLS
CLIENT NAME:	Howco Environmental Services, Inc.	TOP OF CASING ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Split Spoon
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Feet)	Materials Description Notes/Observations	Sample Depth (Feet)	Total Hydro-carbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 3.0	Asphalt at surface Dark Brown, very silty, clayey sand	2 4	700 1000	225 275	475 725
3.0 - 5.5	White-tan, medium grained, well sorted sand	6	180	80	100
5.5 - 9.0	Black, very dense, peaty soil with organics and strong petroleum odors	8	1,200	210	990
9.0 - 16.0	Dark gray, medium dense, slightly silty sand with petroleum odors	10	450	220	230
16.0 - 20.0	Dark brown-black, fine to medium grained, very silty sand with strong petroleum odors	12	600	500	100
20.0 - 35.0	Brown-dark brown, medium to fine grained, silty sand				
35.0 - 36.0	Dark brown, soft grained, very brittle clay				
36.0 - 39.0	Dark brown, loose medium to fine grained, silty sand.				
39.0 - 47.0	Light brown, medium to fine grained, silty sand.				

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

-- Not Analyzed
NR No Reading
BDL Below Detection Limits
MSL Mean Sea Level

BORING LOG I

BORING NO. MW-1

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO CAP Implementation	**DATE & TIME BEGAN/FINISHED:**	3/13/95
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	18 feet BLS
CLIENT NAME:	HOWCO Environmental Services	**SURFACE ELEVATION:**	≈+34.83 feet MSL
GEOLOGIST:	Tom Ferguson	**DRILLING METHOD:**	Hollow Stem Auger
DRILLING CONTRACTOR:	Huss Drilling, Inc.	**GROUNDWATER DEPTH:**	≈ 10 feet BLS

GEOLOGICAL DESCRIPTION			TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	**Materials Description Notes/Observations**	**USCS Symbol**	**Sample Depth (Ft)**	**Total Hydro-Carbons**	**C_1 to C_3 (Filtered)**	**Non-Methane Hydrocarbons (>C_4)**
0-2	Limerock and shell fragments		2	4	BDL	4
2-6	Light gray, loose, medium to fine-grained slightly silty sand	SM	4	BDL	NR	BDL
6-8	Light tan to brown, loose, medium to fine-grained slightly silty sand	SM	6	5	BDL	5
8-18	Dark brown to black, loose, medium to fine-grained silty sand; wet at ≈ 10 feet BLS	SM	8 10 12	8 10 BDL	BDL BDL NR	8 10 BDL

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

USCS Unified Soil Classification System
NR No Reading
BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level

BORING LOG I

BORING NO. MW-2

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO CAP Implementation	**DATE & TIME BEGAN/FINISHED:**	3/13/95
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	15 feet BLS
CLIENT NAME:	HOWCO Environmental Services	**SURFACE ELEVATION:**	≈+33.55 feet MSL
GEOLOGIST:	Tom Ferguson	**DRILLING METHOD:**	Hollow Stem Auger
DRILLING CONTRACTOR:	Huss Drilling, Inc.	**GROUNDWATER DEPTH:**	≈ 7 feet BLS

GEOLOGICAL DESCRIPTION			TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	USCS Symbol	Sample Depth (Ft)	Total Hydro-Carbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0-.33	Limerock base					
.33-1	Dark brown, loose, medium to fine-grained silty sand					
1-3	Light tan, well-washed medium to fine-grained sand	SM	2	10	13	-3
3-4	Gray to white, medium to fine-grained slightly silty loose sand	SM				
4-6	Gray to tan, medium to fine-grained slightly silty loose sand SPT - 4-6: 6-3-6-6	SM	4	72	84	-12
6-15	Brown to black, medium to fine-grained silty sand; wet at ≈ 7 feet BLS SPT - 6-8: 4-3-2-6 8-10: 7-17-22-14 10-12: 6-15-16-23 12-14: 15-16-22-24	SM	6 8	90 600	97 940	-7 -340

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

USCS Unified Soil Classification System
NR No Reading
BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level

BORING LOG I

BORING NO. MW-3

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO CAP Implementation	**DATE & TIME BEGAN/FINISHED:**	3/13/95
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	17 feet BLS
CLIENT NAME:	HOWCO Environmental Services	**SURFACE ELEVATION:**	≈+34.67 feet MSL
GEOLOGIST:	Tom Ferguson	**DRILLING METHOD:**	Hollow Stem Auger
DRILLING CONTRACTOR:	Huss Drilling, Inc.	**GROUNDWATER DEPTH:**	≈ 10 feet BLS

GEOLOGICAL DESCRIPTION			TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	USCS Symbol	Sample Depth (Ft)	Total Hydro-Carbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0-1	Asphalt and limerock					
1-6	Light gray to tan, loose, medium to fine-grained slightly silty sand	SM	2 4	4 8	BDL BDL	4 8
6-8	Light tan to brown, loose, medium to fine-grained slightly silty sand	SM	6	25	BDL	25
8-17	Dark brown to black loose, medium to fine-grained silty sand; wet at≈ 10 feet BLS	SM	8 10	600 200	87 130	513 70

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

USCS Unified Soil Classification System
NR No Reading
BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level

BORING LOG I

BORING NO. MW-4

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO CAP Implementation	**DATE & TIME BEGAN/FINISHED:**	3/13/95
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	16 feet BLS
CLIENT NAME:	HOWCO Environmental Services	**SURFACE ELEVATION:**	≈+33.49 feet MSL
GEOLOGIST:	Tom Ferguson	**DRILLING METHOD:**	Hollow Stem Auger
DRILLING CONTRACTOR:	Huss Drilling, Inc.	**GROUNDWATER DEPTH:**	≈ 8 feet BLS

GEOLOGICAL DESCRIPTION			TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	USCS Symbol	Sample Depth (Ft)	Total Hydro-Carbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0-.33	Limerock base					
.33-6	Light tan to gray, loose, medium to fine-grained slightly silty sand; visual impacts at 4'feet BLS	SM	2 4	1.4 1.2	BDL BDL	1.4 1.2
6-8	Light tan to brown, loose, fine to medium-grained slightly silty sand	SM	6	5.0	BDL	5.0
8-16	Dark brown, loose, fine to medium-grained silty sand; wet at 8 feet BLS	SM	8 10	20 260	12 66	8.0 194

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

USCS Unified Soil Classification System
NR No Reading
BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level

BORING LOG I

BORING NO. MW-5

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO CAP Implementation	DATE & TIME BEGAN/FINISHED:	3/13/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	18 feet BLS
CLIENT NAME:	HOWCO Environmental Services	SURFACE ELEVATION:	≈+34.33 feet MSL
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Hollow Stem Auger
DRILLING CONTRACTOR:	Huss Drilling, Inc.	GROUNDWATER DEPTH:	≈ 8 feet BLS

GEOLOGICAL DESCRIPTION			TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	USCS Symbol	Sample Depth (Ft)	Total Hydro-Carbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0-1	Asphalt and limerock base					
1-8	Light tan to gray, loose, fine to medium-grained slightly silty sand	SM	2 4 6	280 210 310	260 510 110	20 -300 200
8-10	Light tan to brown, loose, fine to medium-grained silty sand; wet at ≈ 8 feet BLS	SM	8	60	32	28
10-18	Dark brown, loose, fine to medium-grained silty sand	SM				

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

USCS Unified Soil Classification System
NR No Reading
BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level

BORING LOG I

BORING NO. MW-6

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	HOWCO CAP Implementation	**DATE & TIME BEGAN/FINISHED:**	3/13/95
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	18 feet BLS
CLIENT NAME:	HOWCO Environmental Services	**SURFACE ELEVATION:**	≈+35.46 feet MSL
GEOLOGIST:	Tom Ferguson	**DRILLING METHOD:**	Hollow Stem Auger
DRILLING CONTRACTOR:	Huss Drilling, Inc.	**GROUNDWATER DEPTH:**	≈ 11 feet BLS

GEOLOGICAL DESCRIPTION			TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Ft)	Materials Description Notes/Observations	USCS Symbol	Sample Depth (Ft)	Total Hydro-Carbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0-.33	Asphalt and limerock base					
.33-2	Gray to white, loose, medium to fine-grained slightly silty sand	SM				
2-4	Gray, loose, medium to fine-grained slightly silty sand	SM	2	BDL	NR	BDL
4-6	Dark gray to black, loose, fine to medium-grained slightly silty sand	SM	4	>1000	70	>930
6-8	Gray to white, loose, medium to fine-grained slightly silty sand	SM	6	>1000	20	>920
8-18	Brown, loose, medium to fine-grained silty sand; wet at 11 feet BLS		8 10 12	>1000 >1000 >1000	62 23 47	>938 >977 >953

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

USCS Unified Soil Classification System
NR No Reading
BDL Below Detection Limits
BLS Below Land Surface
MSL Mean Sea Level

BORING LOG III WELL NO. MW-6D

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	Howco Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	10/25-26/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	46 feet BLS
CLIENT NAME:	Howco Environmental Services, Inc.	TOP OF CASING ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Split Spoon/Mud Rotary
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Feet)	Materials Description Notes/Observations	Sample Depth (Feet)	Total Hydro-carbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 0.5	Asphalt	2	BDL	NR	BDL
0.5 - 9.0	Tan-brown, loose, medium to fine grained, slight silty sand	4 6 8	>1000 >1000 >1000	BDL 12 BDL	>1000 >988 >1000
9.0 - 46.0	Dark brown to light brown, loose, medium to fine grained, silty sand	10 20 25 30 35 40	>1000 590 670 330 900 230	20 24 21 8 10 10	>980 566 649 322 890 220

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

-- Not Analyzed
NR No Reading
BDL Below Detection Limits
MSL Mean Sea Level

BORING LOG III

WELL NO. MW-7

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	Howco Environmental Services, Inc.	**DATE & TIME BEGAN/FINISHED:**	10/25/95
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	17 feet BLS
CLIENT NAME:	Howco Environmental Services, Inc.	**TOP OF CASING ELEVATION:**	--
GEOLOGIST:	Tom Ferguson	**DRILLING METHOD:**	Hollow Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	**GROUNDWATER DEPTH:**	~10 feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Feet)	Materials Description Notes/Observations	Sample Depth (Feet)	Total Hydro-carbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 0.5	Asphalt				
0.5 - 2.5	Dark gray, poorly sorted, shelly sand	2	BDL	NR	BDL
2.5 - 4.0	Tan, medium to fine grained, loose sand	4	BDL	NR	BDL
4.0 - 17.0	Dark brown, medium to fine grained, loose, silty sand	6 8 10	22 50 85	25 25 42	-3 25 43

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

-- Not Analyzed
NR No Reading
BDL Below Detection Limits
MSL Mean Sea Level

BORING LOG III WELL NO. MW-7D

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	Howco Environmental Services, Inc.	**DATE & TIME BEGAN/FINISHED:**	10/25-26/95
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	46 feet BLS
CLIENT NAME:	Howco Environmental Services, Inc.	**TOP OF CASING ELEVATION:**	--
GEOLOGIST:	Tom Ferguson	**DRILLING METHOD:**	Split Spoon/Mud Rotary
DRILLING CONTRACTOR:	Custom Drilling, Inc.	**GROUNDWATER DEPTH:**	~10 feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Feet)	Materials Description Notes/Observations	Sample Depth (Feet)	Total Hydro-carbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 0.5	Asphalt				
0.5 - 3.0	Dark gray, poorly sorted, shelly sand	2	BDL	NR	BDL
3.0 - 6.0	White, clean, well sorted sand	4 6	BDL 10	NR NR	BDL 10
6.0 - 35.0	Brown, medium to fine grained, loose, silty sand	8 10 20 25 30	18 40 1000 900 1200	8 28 500 800 2500	10 12 500 100 -1300
35.0 - 46.0	Light brown, loose, medium to fine grained, silty sand	35 40	800 500	900 500	-100 0

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

-- Not Analyzed
NR No Reading
BDL Below Detection Limits
MSL Mean Sea Level

BORING LOG III

WELL NO. MW-8

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	Howco Environmental Services, Inc.	**DATE & TIME BEGAN/FINISHED:**	10/26/95
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	17 feet BLS
CLIENT NAME:	Howco Environmental Services, Inc.	**TOP OF CASING ELEVATION:**	--
GEOLOGIST:	Tom Ferguson	**DRILLING METHOD:**	Hollow Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	**GROUNDWATER DEPTH:**	~10 feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Feet)	Materials Description Notes/Observations	Sample Depth (Feet)	Total Hydro-carbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 0.5	Asphalt				
0.5 - 5.0	Light brown, fine to medium grained, silty sand	2 4	580 660	500 380	80 180
5.0 - 17.0	Dark brown, fine to medium grained, very silty sand	6 8 10	64 62 35	62 48 44	2 14 -9

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

-- Not Analyzed
NR No Reading
BDL Below Detection Limits
MSL Mean Sea Level

BORING LOG III

WELL NO. MW-9

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	Howco Environmental Services, Inc.	**DATE & TIME BEGAN/FINISHED:**	10/27/95
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	17 feet BLS
CLIENT NAME:	Howco Environmental Services, Inc.	**TOP OF CASING ELEVATION:**	--
GEOLOGIST:	Tom Ferguson	**DRILLING METHOD:**	Hollow Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	**GROUNDWATER DEPTH:**	~10 feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Feet)	Materials Description Notes/Observations	Sample Depth (Feet)	Total Hydro-carbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 0.5	Concrete with plastic lining	2	440	190	260
0.5 - 3.0	Dark gray, medium to dense grained, poorly sorted, shelly sand				
3.0 - 4.0	Tan to light brown, loose, slightly silty, medium to fine grained sand	4	640	140	500
4.0 - 17.0	Dark brown, loose, medium to fine grained, silty sand	6 8 10	100 350 40	30 250 20	70 100 20

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

-- Not Analyzed
NR No Reading
BDL Below Detection Limits
MSL Mean Sea Level

BORING LOG III

WELL NO. MW-10

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	Howco Environmental Services, Inc.	**DATE & TIME BEGAN/FINISHED:**	10/26/95
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	17 feet BLS
CLIENT NAME:	Howco Environmental Services, Inc.	**TOP OF CASING ELEVATION:**	--
GEOLOGIST:	Jim Dozier	**DRILLING METHOD:**	Hollow Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	**GROUNDWATER DEPTH:**	~10 feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Feet)	Materials Description Notes/Observations	Sample Depth (Feet)	Total Hydro-carbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_3)
0 - 0.25	Asphalt				
0.25 - 0.75	Light brown, shelly, silty sand				
0.75 - 1.0	Asphalt				
1.0 - 5.0	Light gray, fine grained, silty sand	2 4	110 110	80 40	30 70
5.0 - 6.0	Tan, fine grained, silty sand	6	390	200	190
6.0 - 17.0	Dark brown, fine to medium grained, very silty sand	8 10	350 210	290 210	60 0

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

-- Not Analyzed
NR No Reading
BDL Below Detection Limits
MSL Mean Sea Level

BORING LOG III

WELL NO. MW-11

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	Howco Environmental Services, Inc.	**DATE & TIME BEGAN/FINISHED:**	10/26/95
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	17 feet BLS
CLIENT NAME:	Howco Environmental Services, Inc.	**TOP OF CASING ELEVATION:**	--
GEOLOGIST:	Tom Ferguson	**DRILLING METHOD:**	Hollow Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	**GROUNDWATER DEPTH:**	~10 feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Feet)	Materials Description Notes/Observations	Sample Depth (Feet)	Total Hydro-carbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 0.5	Asphalt				
0.5 - 3.0	Tan, medium to fine grained, loose, slightly silty sand	2	>1000	630	>370
3.0 - 6.0	Gray, medium to fine grained, loose, slight silty sand	4	200	81	119
6.0 - 17.0	Dark brown, loose, medium to fine grained, silty sand	6 8 10	440 220 250	210 89 180	230 131 70

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

-- Not Analyzed
NR No Reading
BDL Below Detection Limits
MSL Mean Sea Level

BORING LOG III

WELL NO. MW-12

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	Howco Environmental Services, Inc.	DATE & TIME BEGAN/FINISHED:	10/25/95
LOCATION:	St. Petersburg, Florida	TOTAL DEPTH:	17 feet BLS
CLIENT NAME:	Howco Environmental Services, Inc.	TOP OF CASING ELEVATION:	--
GEOLOGIST:	Tom Ferguson	DRILLING METHOD:	Hollow Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	GROUNDWATER DEPTH:	~10 feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Feet)	Materials Description Notes/Observations	Sample Depth (Feet)	Total Hydro-carbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 0.5	Asphalt				
0.5 - 2.0	Gray, poorly sorted, shelly sand	2	BDL	NR	BDL
2.0 - 6.0	White, clean, loose, medium to fine grained sand	4	BDL	NR	BDL
6.0 - 17.0	Dark brown, medium to fine grained, loose, silty sand	6 8 10	BDL BDL BDL	NR NR NR	BDL BDL BDL

NOTES:

(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

-- Not Analyzed
NR No Reading
BDL Below Detection Limits
MSL Mean Sea Level

BORING LOG III

WELL NO. MW-13

FGS PROJECT NO.: G94-216.82

PROJECT NAME:	Howco Environmental Services, Inc.	**DATE & TIME BEGAN/FINISHED:**	10/27/95
LOCATION:	St. Petersburg, Florida	**TOTAL DEPTH:**	17 feet BLS
CLIENT NAME:	Howco Environmental Services, Inc.	**TOP OF CASING ELEVATION:**	--
GEOLOGIST:	Tom Ferguson	**DRILLING METHOD:**	Hollow Stem Auger
DRILLING CONTRACTOR:	Custom Drilling, Inc.	**GROUNDWATER DEPTH:**	~10 feet BLS

GEOLOGICAL DESCRIPTION		TOTAL PETROLEUM HYDROCARBON VAPOR CONCENTRATION (PPM)			
Depth (Feet)	Materials Description Notes/Observations	Sample Depth (Feet)	Total Hydro-carbons	C_1 to C_3 (Filtered)	Non-Methane Hydrocarbons (>C_4)
0 - 0.5	Asphalt				
0.5 - 5.0	White, clean, medium to fine grained sand	2 4	BDL BDL	NR NR	BDL BDL
5.0 - 17.0	Dark brown, loose, medium to fine grained, very silty sand	6 8 10	BDL BDL 3	NR NR NR	BDL BDL 3

NOTES:

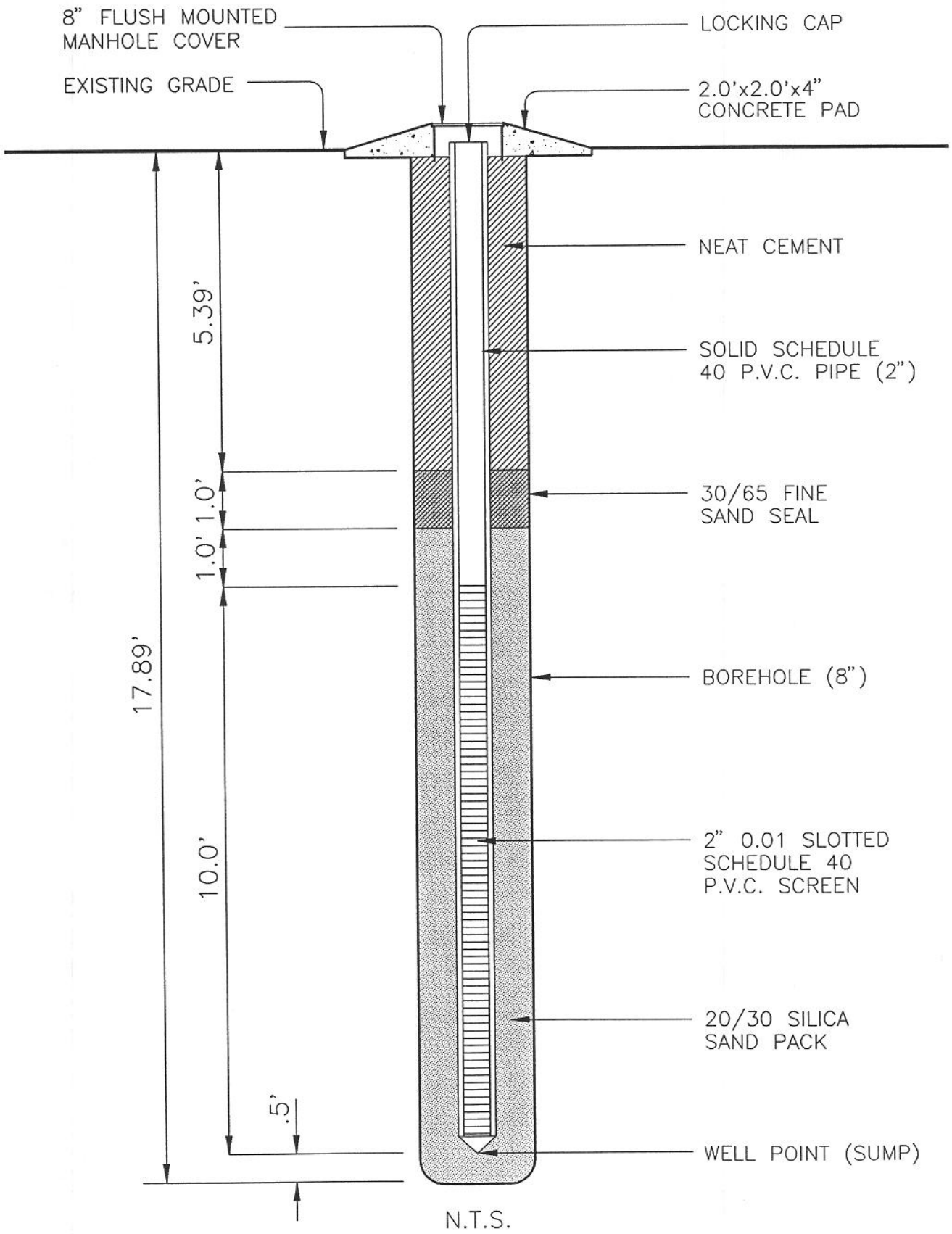
(1) "Total" hydrocarbons reading is the measurement of total organic vapors. C_1 to C_3 hydrocarbons reading is the measurement of methane, ethane, and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the two readings.

-- Not Analyzed
NR No Reading
BDL Below Detection Limits
MSL Mean Sea Level

APPENDIX D

MONITORING WELL CONSTRUCTION DETAILS

MONITORING WELL CONSTRUCTION DETAIL (MW-1)
HOWCO FACILITY
ST. PETERSBURG, FLORIDA

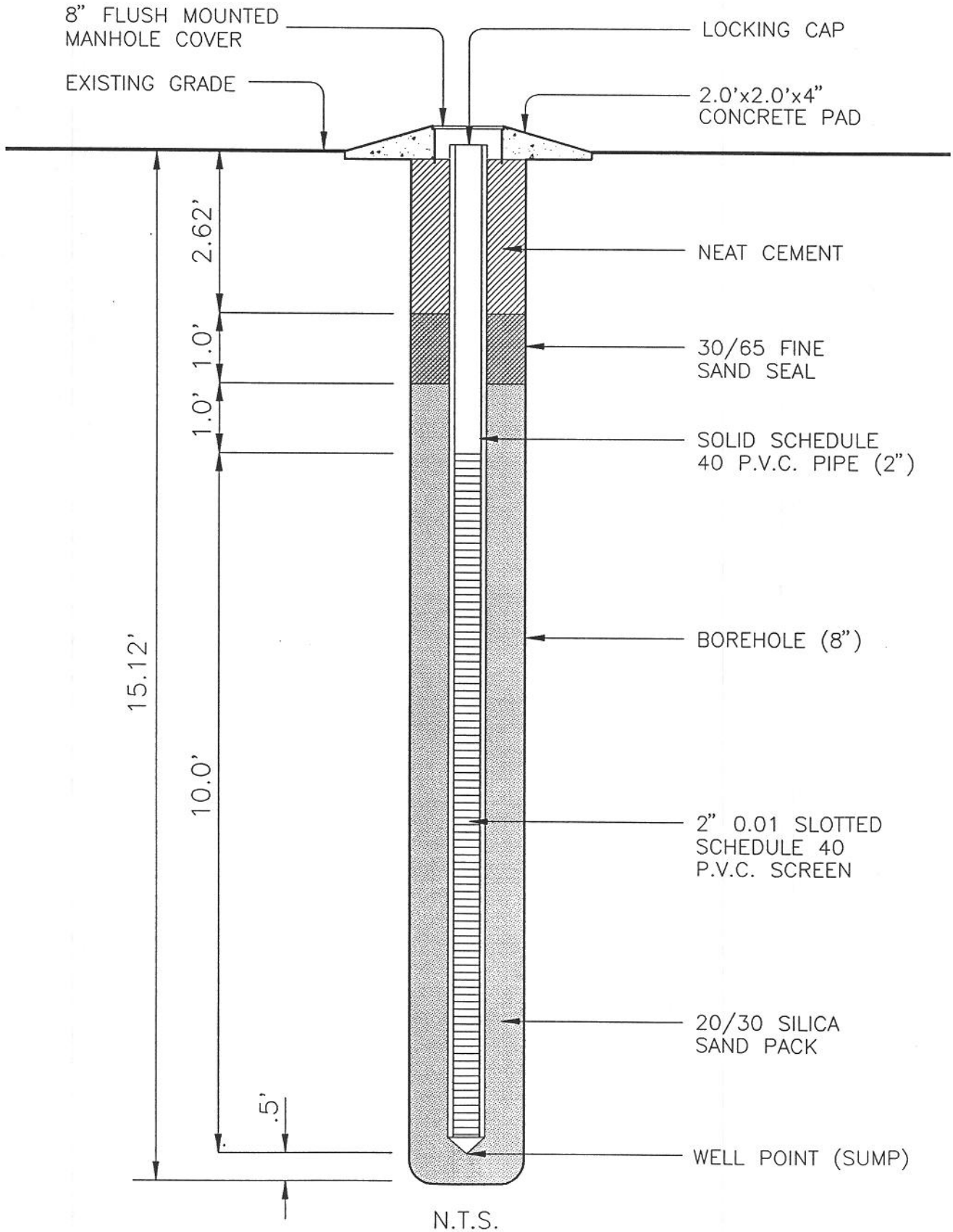


N.T.S.

G94-216.82/216MW1/CAR/3-29-95/G.H.

FTGS INC.

MONITORING WELL CONSTRUCTION DETAIL (MW-2)
HOWCO FACILITY
ST. PETERSBURG, FLORIDA



G94-216.82/216MW2/CAR/3-29-95/G.H.

FTS INC.

MONITORING WELL CONSTRUCTION DETAIL (MW-3)
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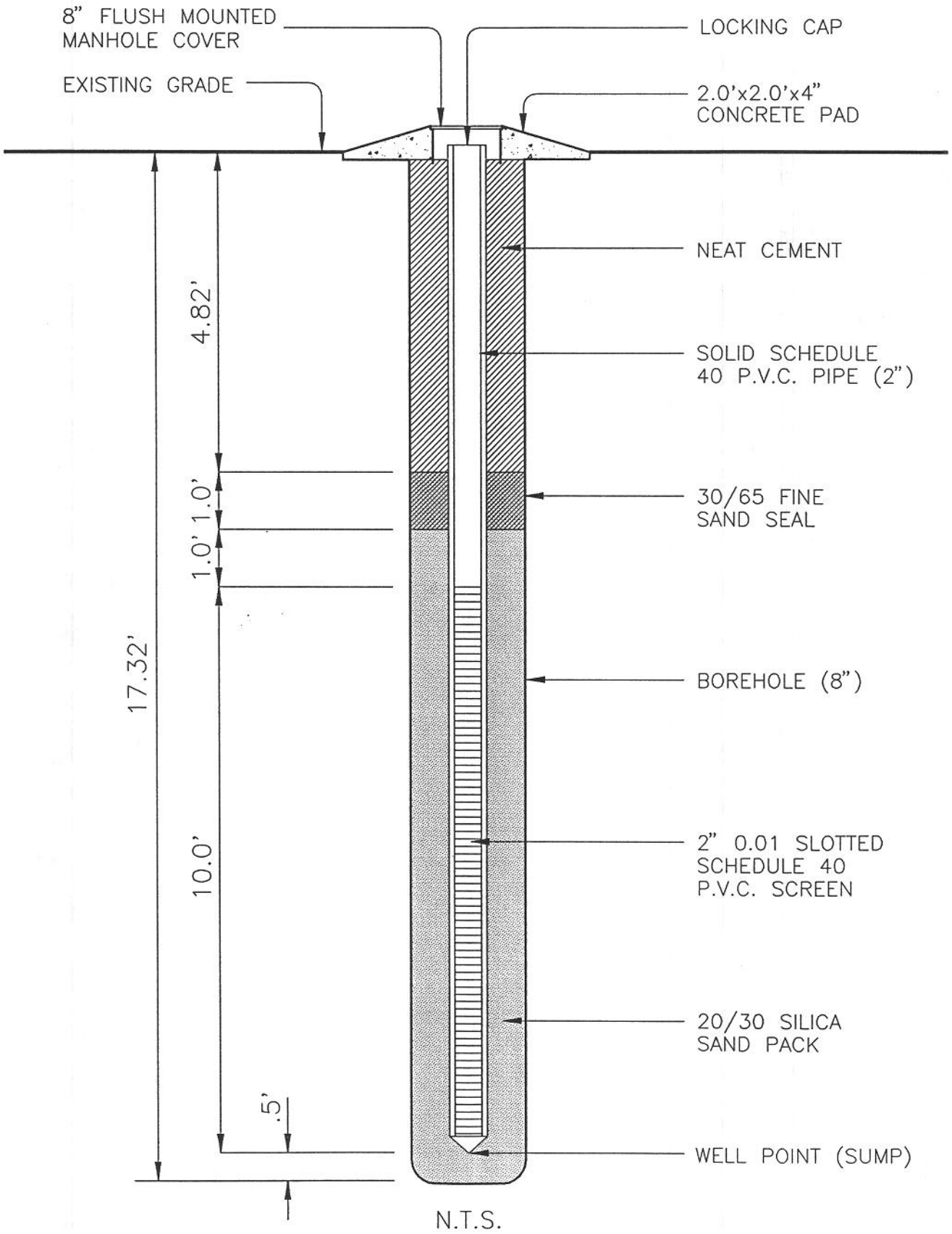
ST. PETERSBURG, FLORIDA



G94-216.82/216MW3/CAR/3-29-95/G.H.

INC.

MONITORING WELL CONSTRUCTION DETAIL (MW-4)
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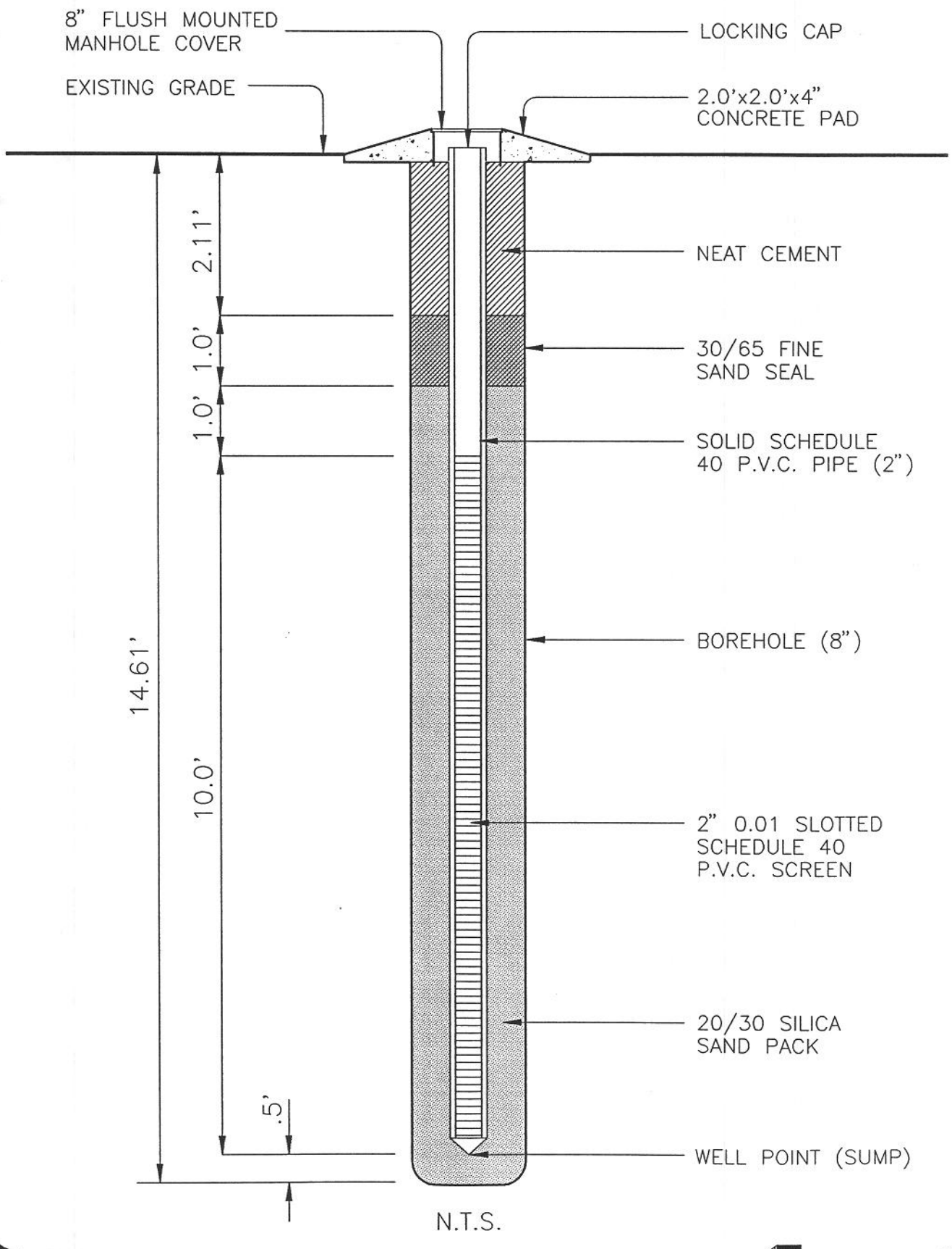
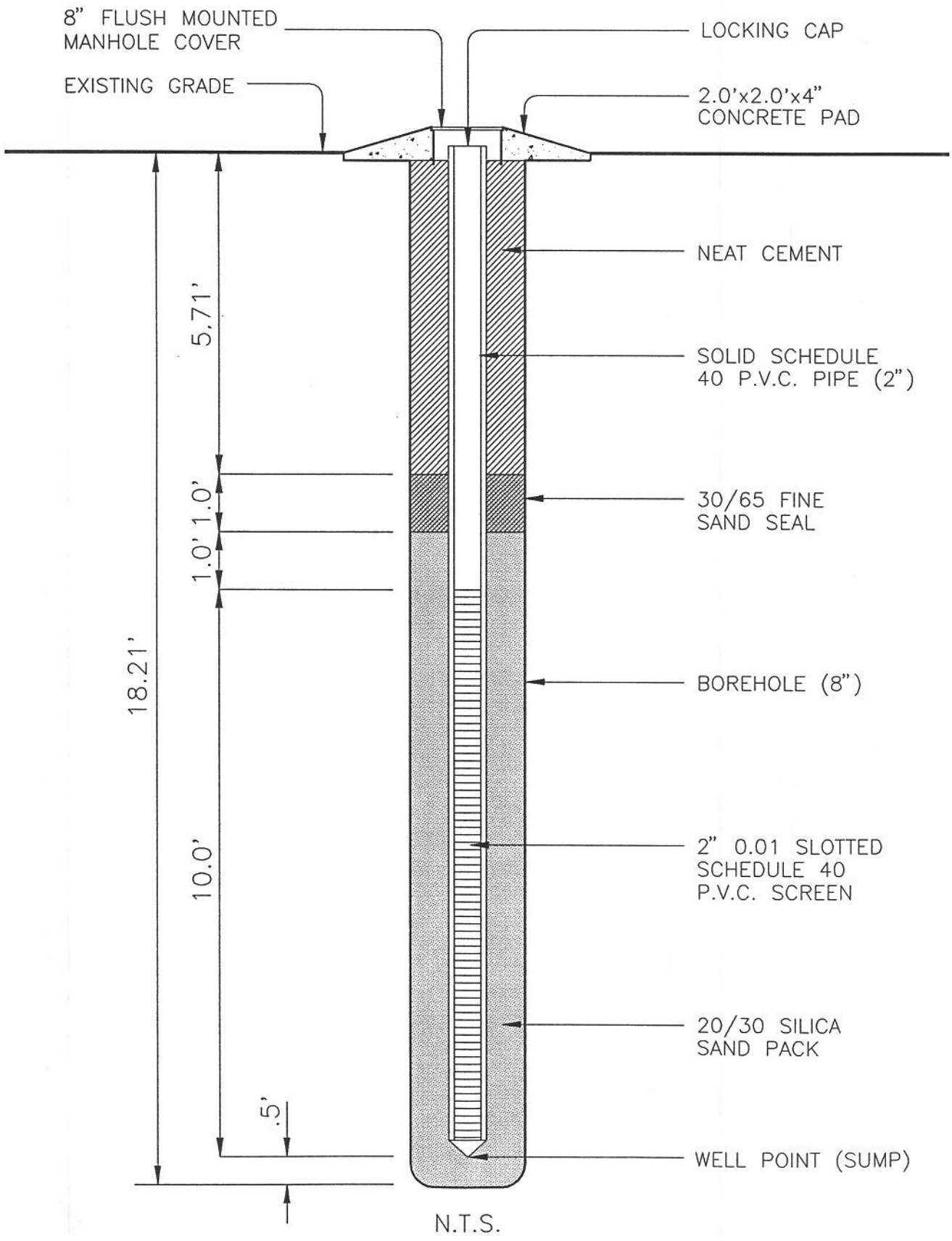
ST. PETERSBURG, FLORIDA



G94-216.82/216MW4/CAR/3-29-95/G.H.

FGS INC.

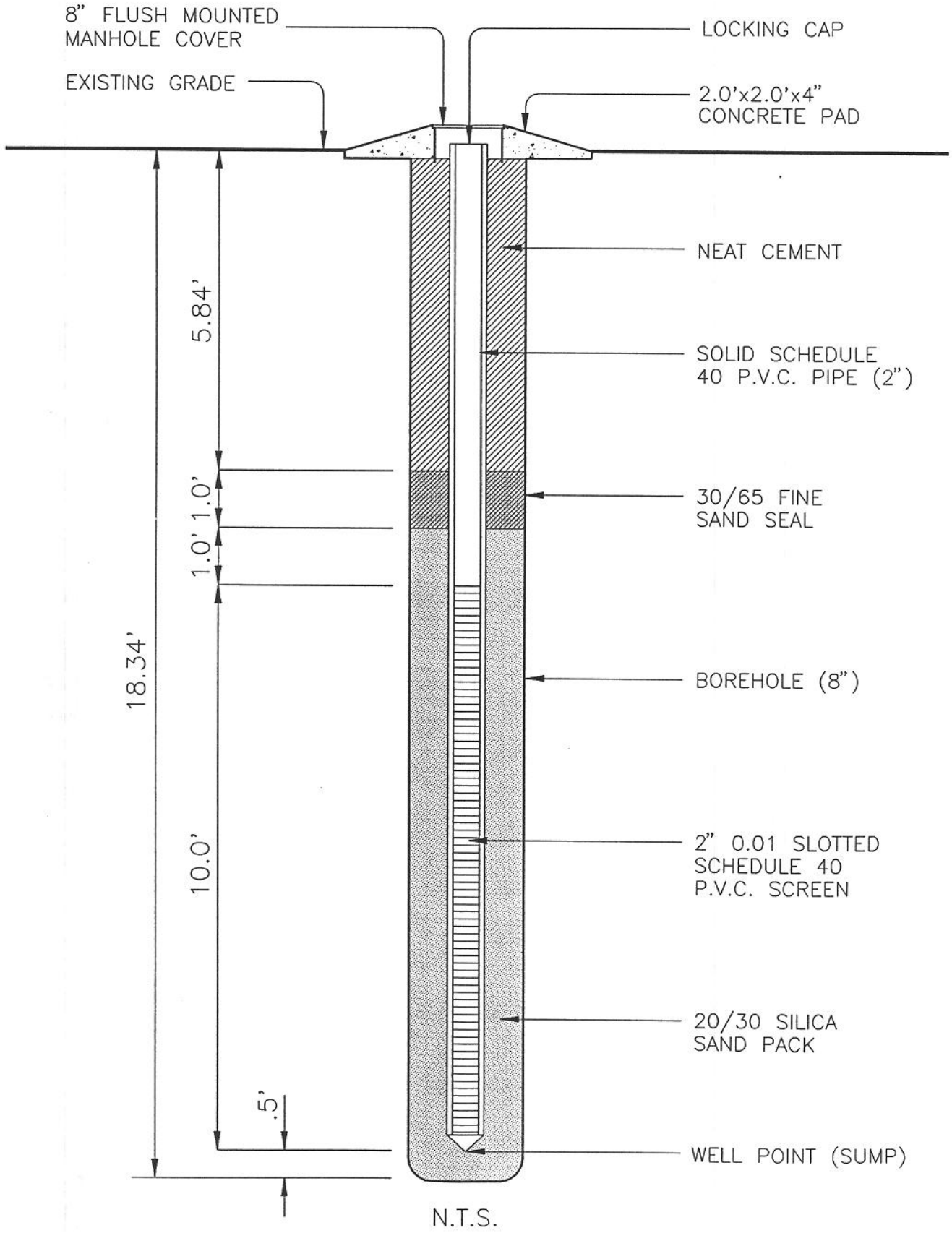
MONITORING WELL CONSTRUCTION DETAIL (MW-5)
HOWCO FACILITY
ST. PETERSBURG, FLORIDA



G94-216.82/216MW5/CAR/3-29-95/G.H.

GGS INC.

MONITORING WELL CONSTRUCTION DETAIL (MW-6)
HOWCO FACILITY
ST. PETERSBURG, FLORIDA

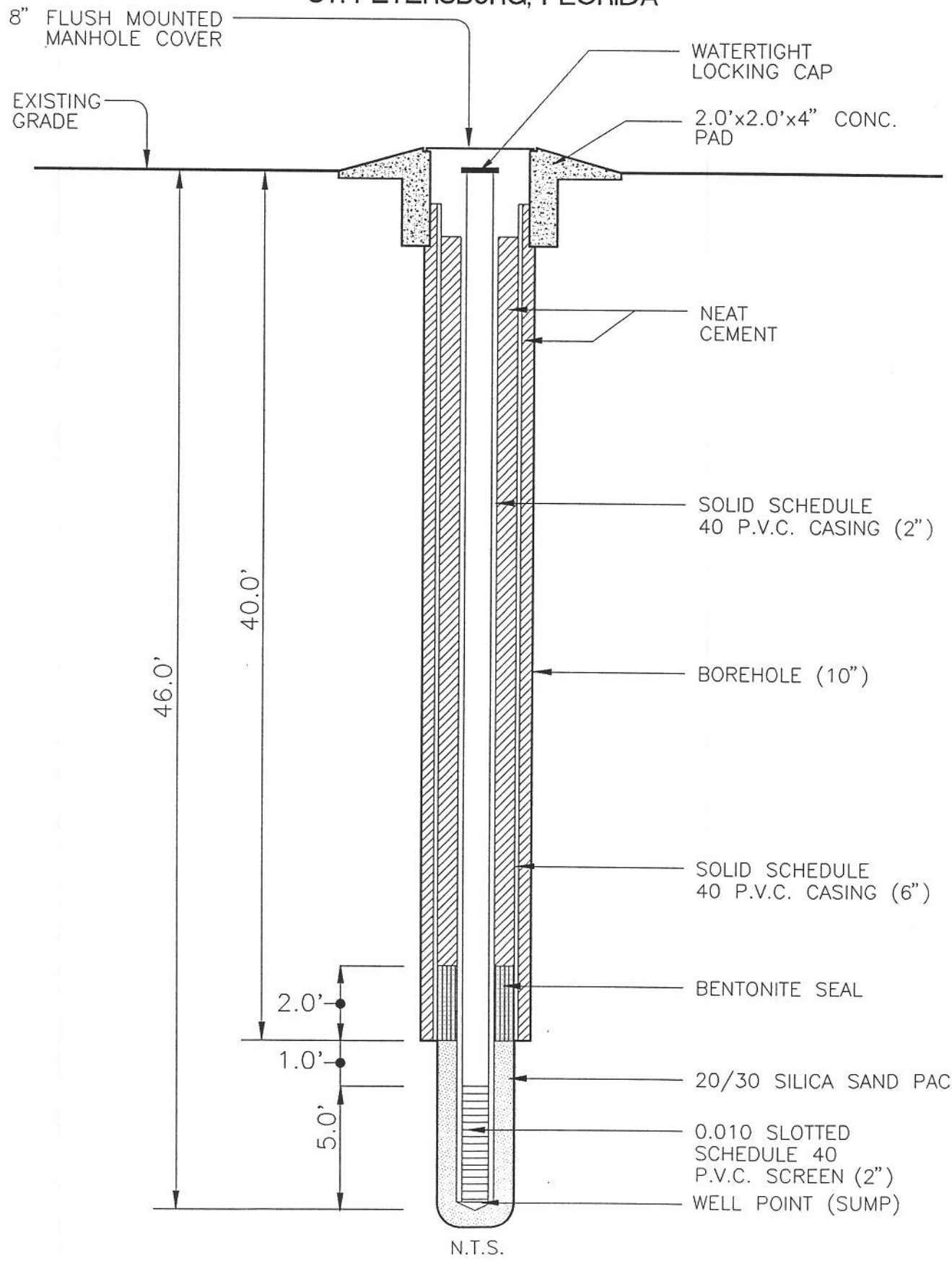


N.T.S.

G94-216.82/216MW6/CAR/3-29-95/G.H.

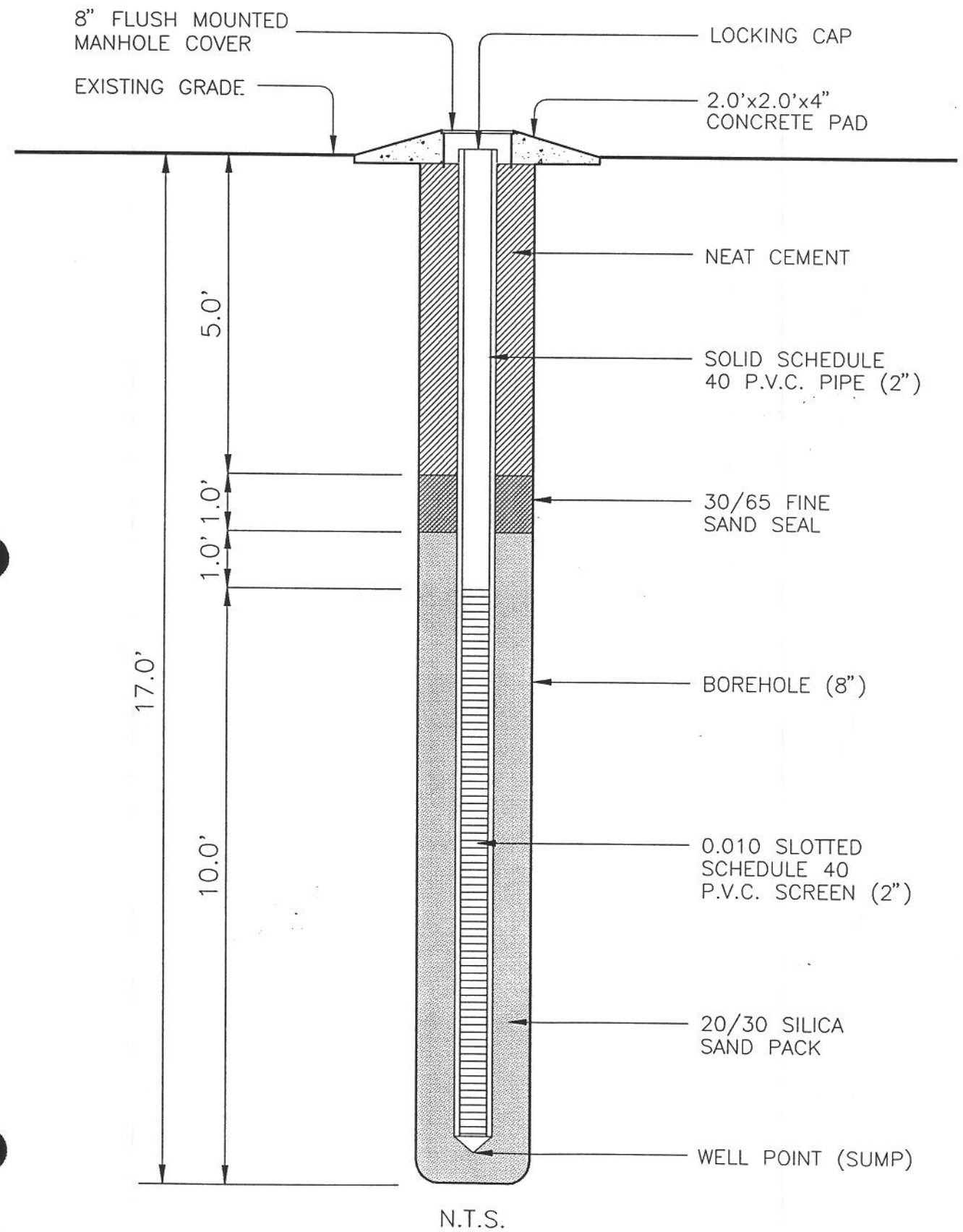
FGS INC.

DEEP MONITORING WELL CONSTRUCTION DETAIL (DW-6D)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA



FGS INC.

MONITORING WELL CONSTRUCTION DETAIL (MW-7)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA

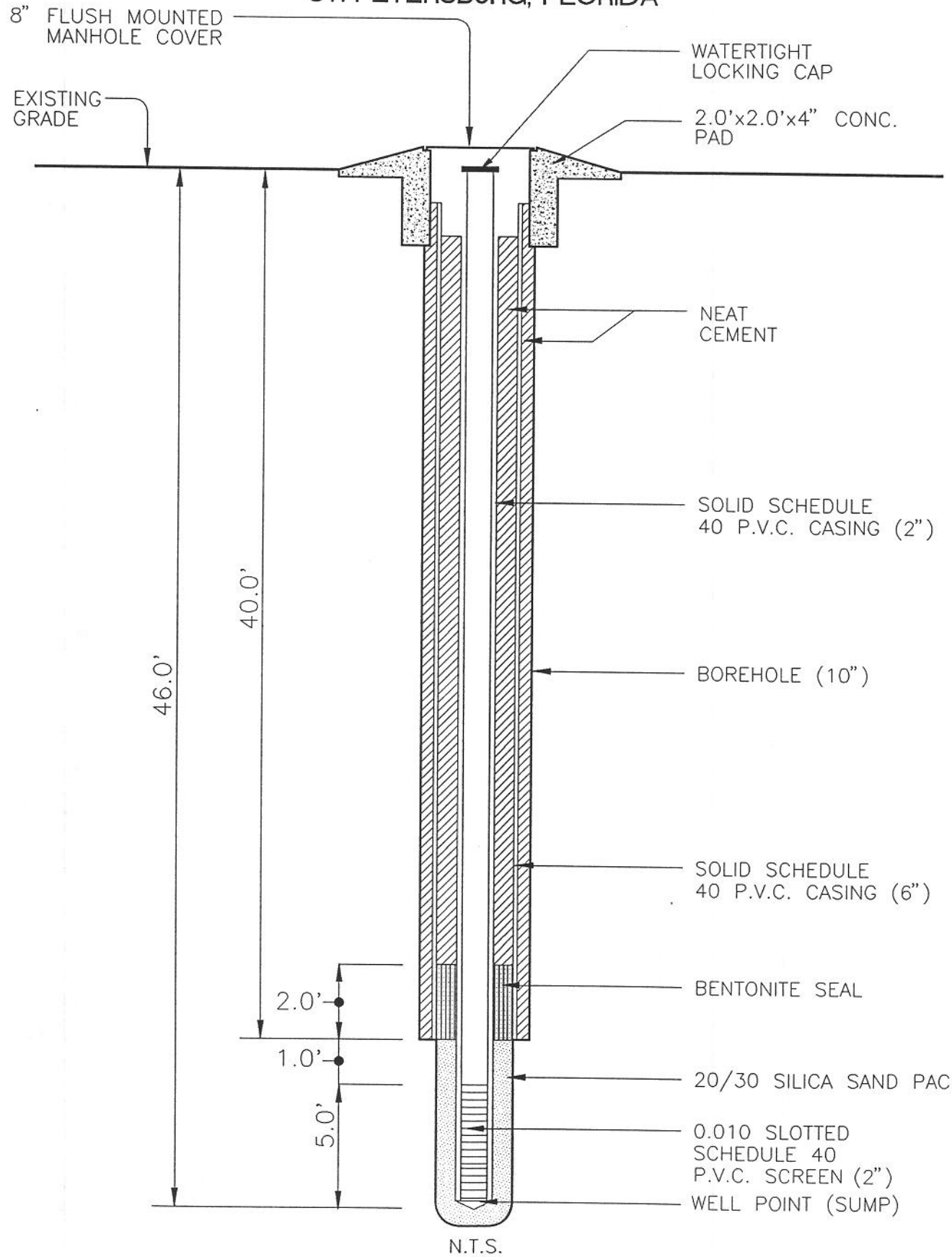


N.T.S.

G94-216.82/216MW1/CAR/3-29-95/G.H.

FGS INC.

DEEP MONITORING WELL CONSTRUCTION DETAIL (DW-7D)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA

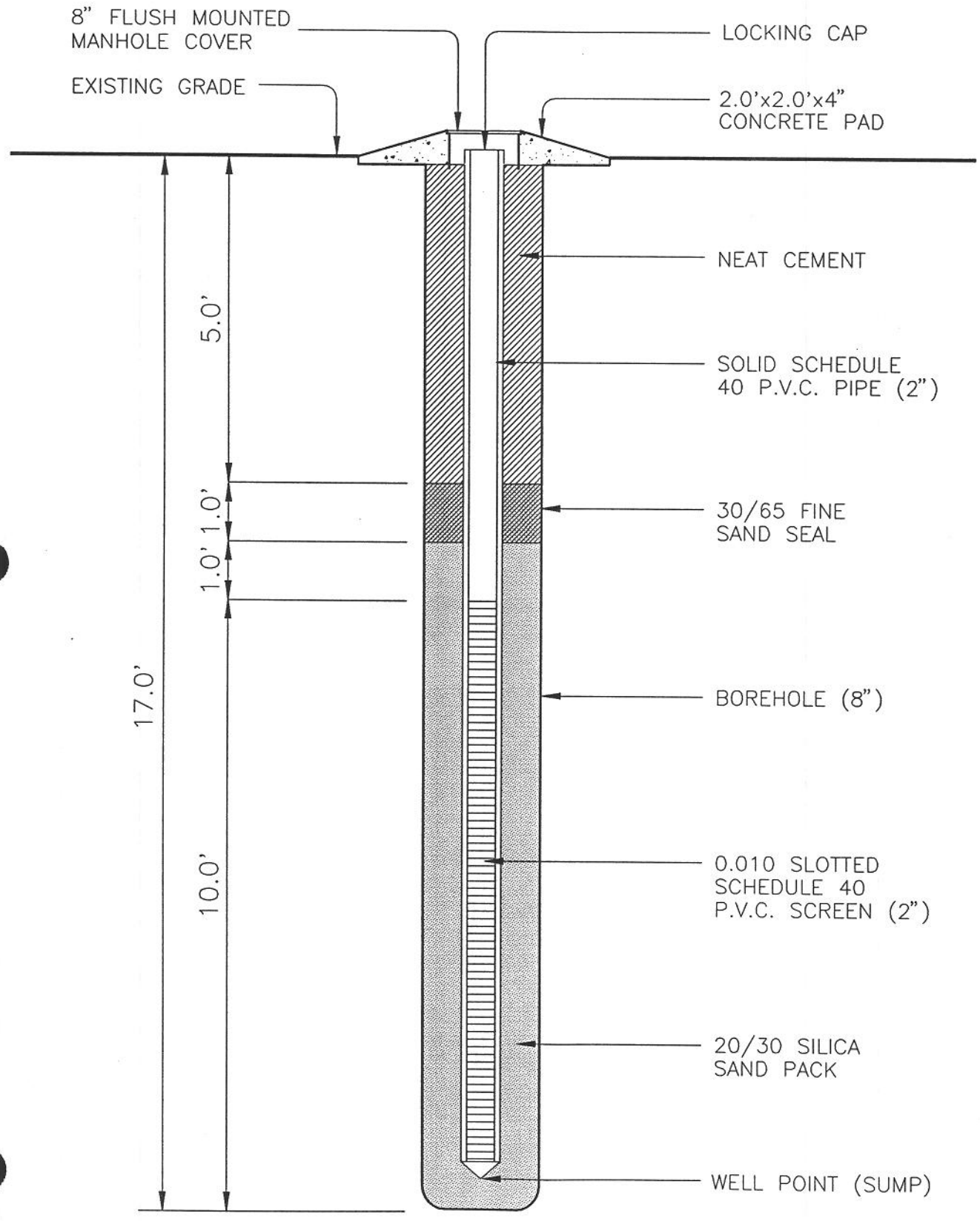


N.T.S.

G94-216.82/DW7DDET 01-02-96 DS

INC.

MONITORING WELL CONSTRUCTION DETAIL (MW-8)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA

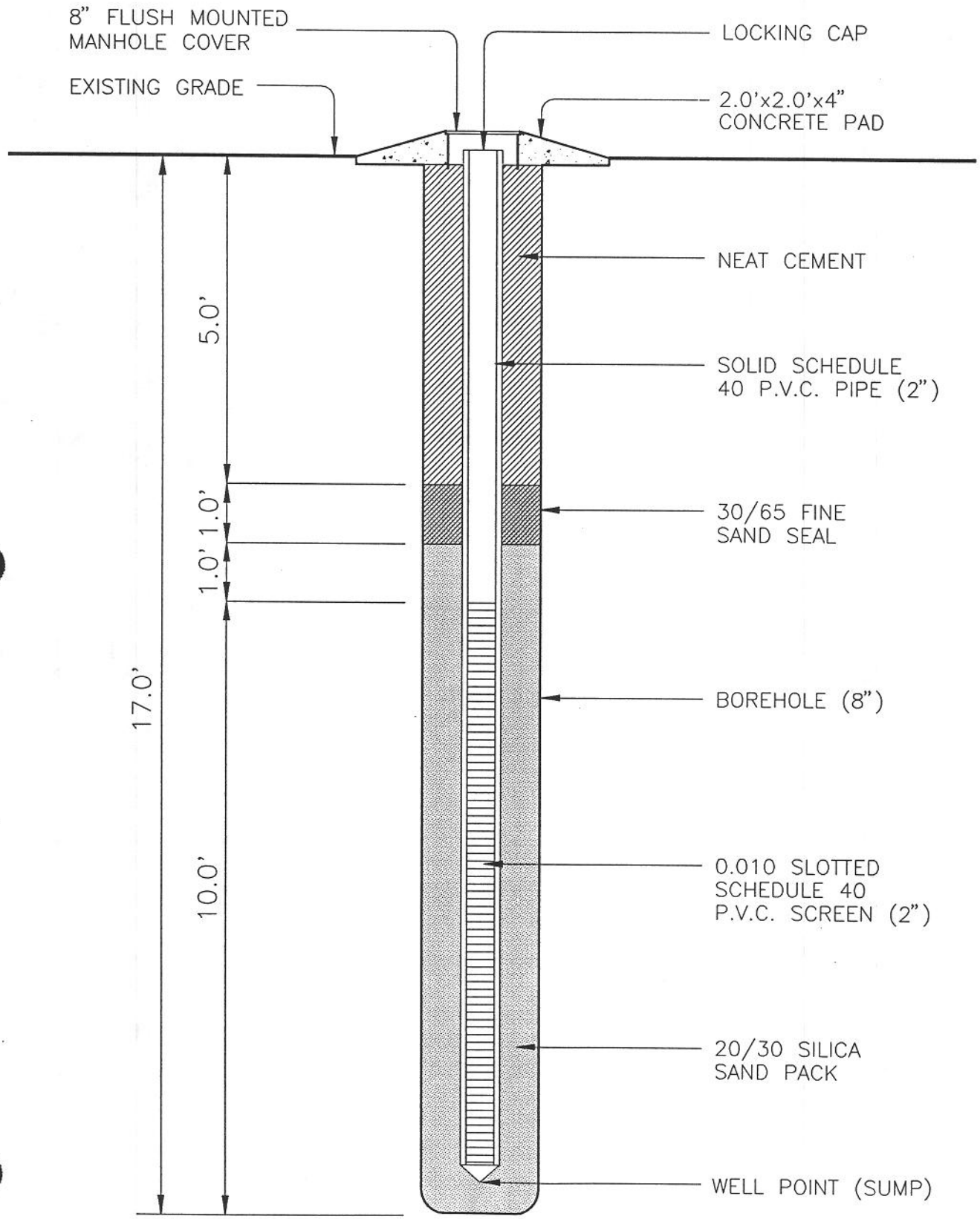


N.T.S.

G94-216.82/216MW1/CAR/3-29--95/G.H.

FGS INC.

MONITORING WELL CONSTRUCTION DETAIL (MW-9)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA

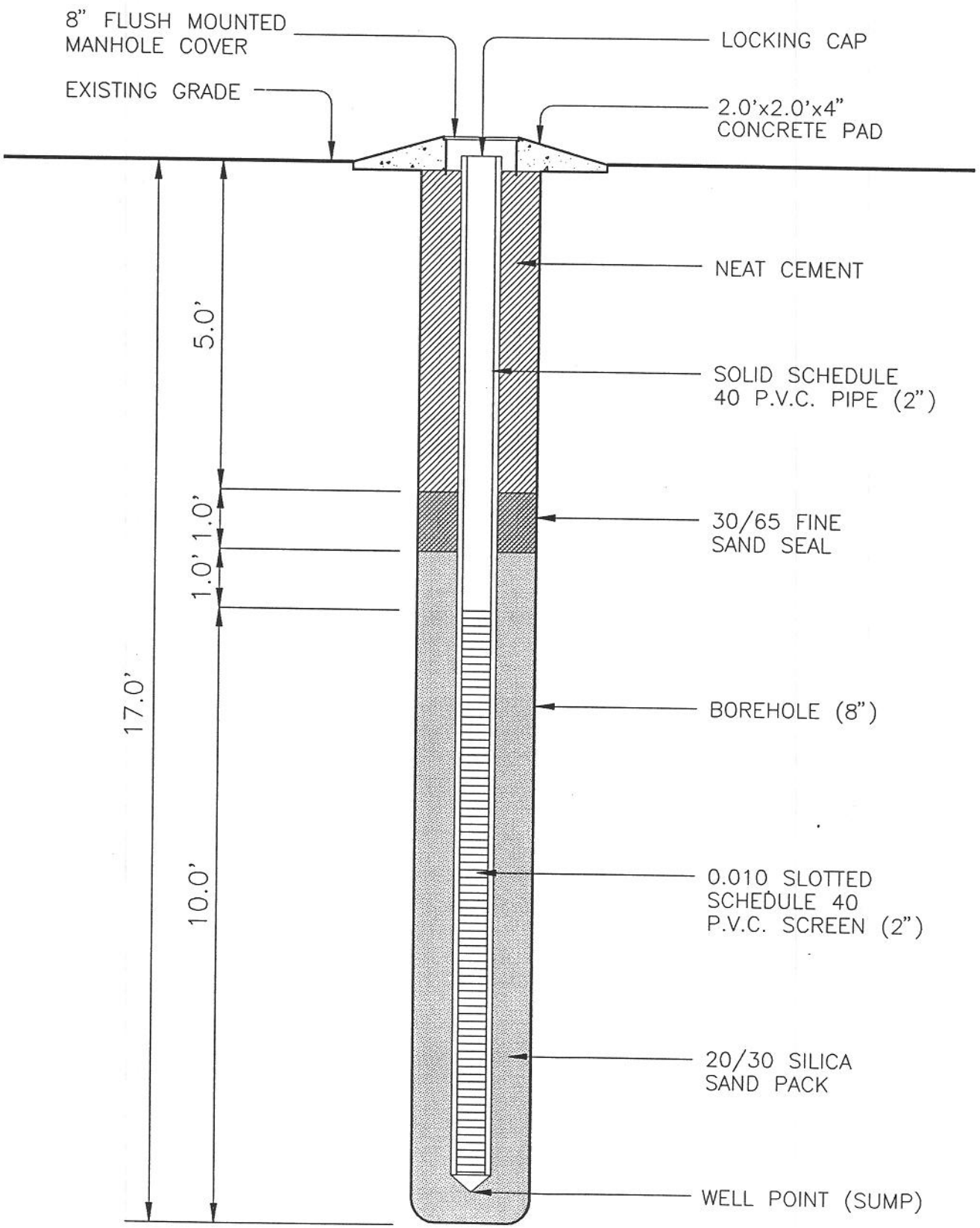


N.T.S.

G94-216.82/216MW1/CAR/3-29-95/G.H.

FGS INC.

MONITORING WELL CONSTRUCTION DETAIL (MW-10)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA

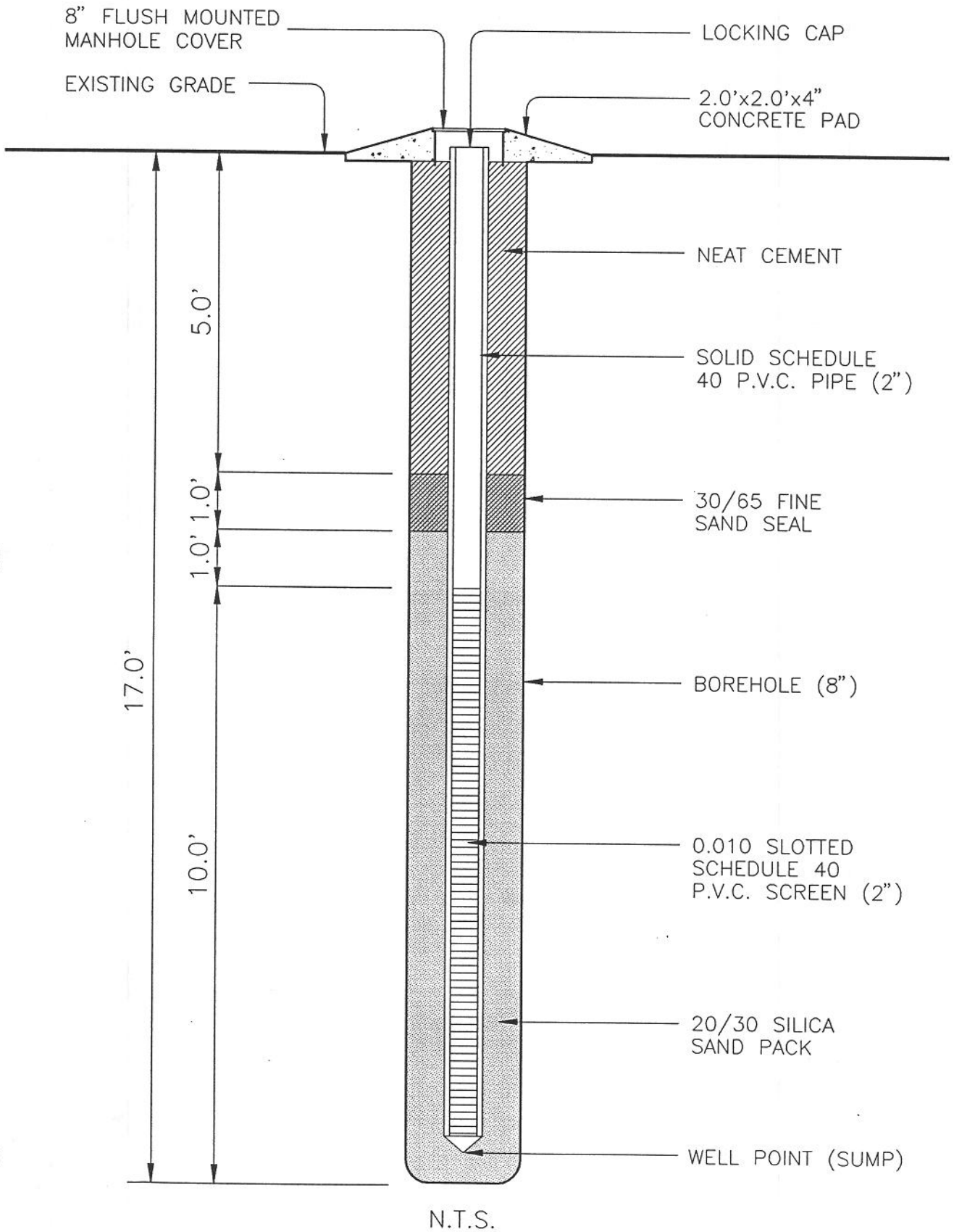


N.T.S.

G94-216.82/216MW1/CAR/3-29-95/G.H.

FTS INC.

MONITORING WELL CONSTRUCTION DETAIL (MW-11)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA

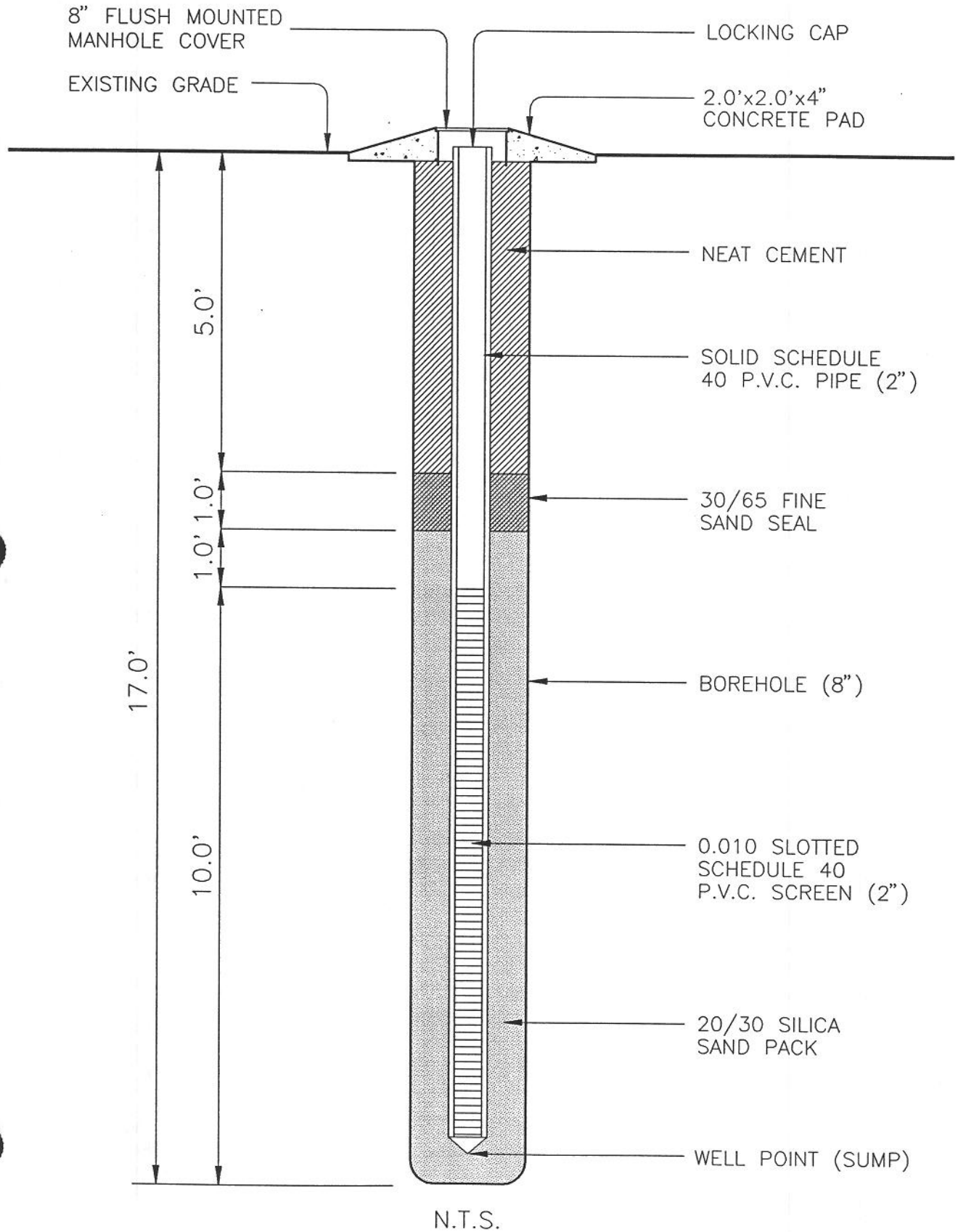


N.T.S.

G94-216.82/216MW1/CAR/3-29-95/G.H.

INC.

MONITORING WELL CONSTRUCTION DETAIL (MW-12)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA

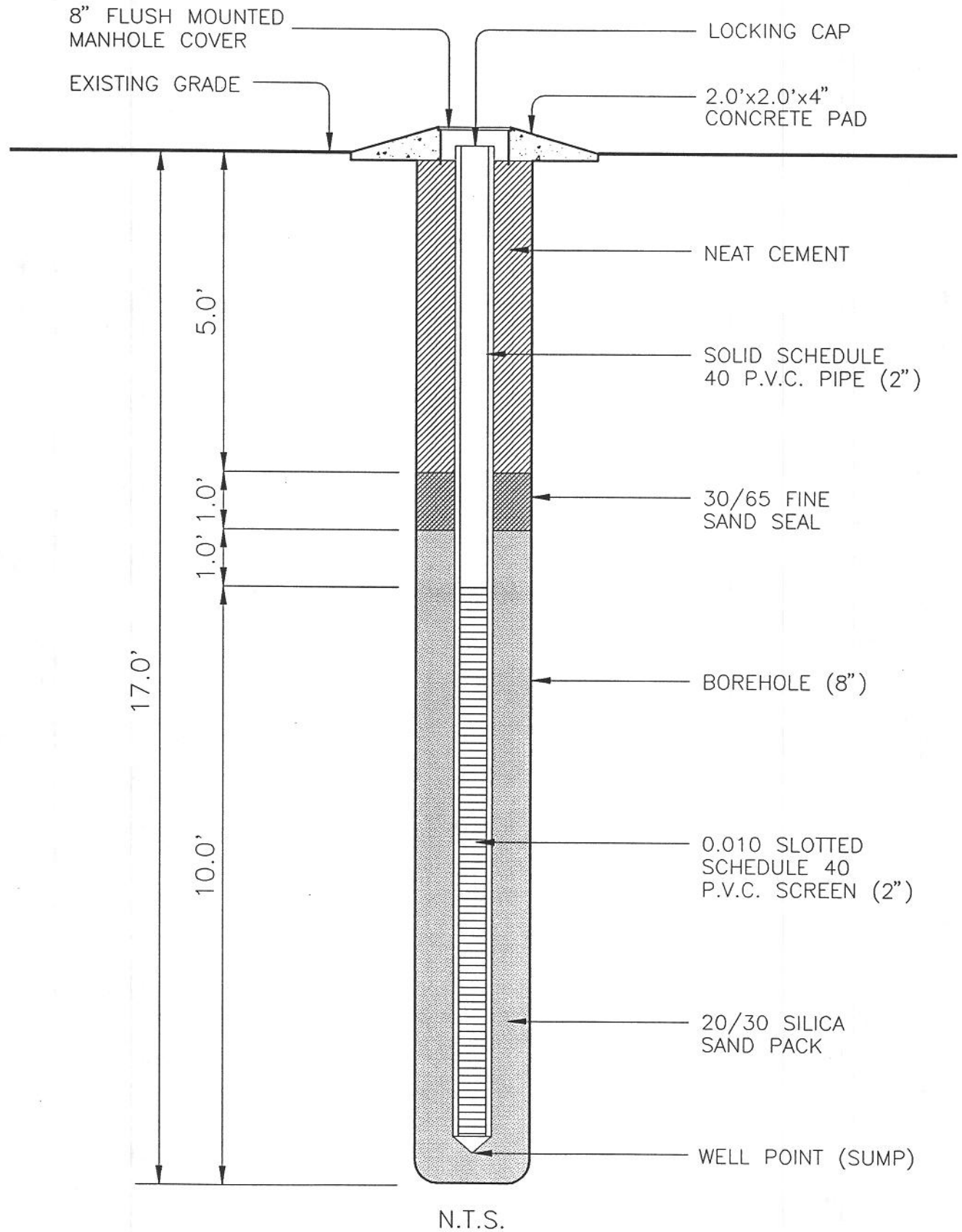


N.T.S.

G94-216.82/216MW1/CAR/3-29-95/G.H.

FGS INC.

MONITORING WELL CONSTRUCTION DETAIL (MW-13)
HOWCO ENVIRONMENTAL SERVICES, INC.
ST. PETERSBURG, FLORIDA



N.T.S.

G94-216.82/216MW1/CAR/3-29-95/G.H.

FGS INC.

APPENDIX E

LABORATORY ANALYTICAL REPORTS

PC&B Environmental Laboratories, Inc.
210 Park Road, Oviedo, Florida 32765
Phone: 407-359-7194 Fax: 407-359-7197

October 19, 1994

Andrew Long
FGS, INC.
111 South Armenia Avenue
Tampa, FL 33609

Dear Mr. Long:

Enclosed are the results of the analysis of your samples received October 12, 1994.

Our laboratory is certified by the Florida DHRS (Lab #E83239) and operates under an FDER approved Comprehensive Quality Assurance Plan (#900134G). All data were determined in accordance with published procedures (EPA-600/4-79-020), Methods for Chemical Analysis of Water and Wastes, Revised March 1983 and/or Standard Methods for the Examination of Water and Wastewater 17th Edition 1989 and/or Test Methods for Evaluating Solid Waste (EPA-SW-846, Revised November 1989), unless stated otherwise in our CompQAPP under method modifications.

If you have any questions, please do not hesitate to give me a call.

Sincerely,

Declan Cowley
Laboratory Director

PC&B Environmental Laboratories, Inc.

210 Park Road, Oviedo, Florida 32765
Phone: 407-359-7194 Fax: 407-359-7197

October 19, 1994

CLIENT: FGS, INC.
111 South Armenia Avenue
Tampa, Fl 33609

CONTACT: Andrew Long
813-874-8204

PROJECT NAME: HOWCO
PROJECT NUMBER: G94-216.82

REFERENCE: Work Order Number 9410091

Lab Sample Number	Matrix	Client ID	Date/Time Sampled	
9410091-01	Soil	B-8/9'	10-10-94	1045
9410091-02	Soil	B-12/4'	10-10-94	1135
9410091-03	Soil	B-12D/4'	10-10-94	1135
9410091-04	Water	EQB-1010	10-10-94	1125
9410091-05	Soil	B-10/8'	10-10-94	1150
9410091-06	Soil	B-9/9'	10-10-94	1237
9410091-07	Soil	B-11/2'	10-10-94	1315
9410091-08	Soil	B-7/8'	10-10-94	1415
9410091-09	Soil	B-2/7'	10-10-94	1428
9410091-10	Soil	B-6/6'	10-10-94	1508
9410091-11	Soil	B-5/2'	10-10-94	1550
9410091-12	Soil	B-4/2'	10-10-94	1610
9410091-13	Soil	B-3/6'	10-10-94	1628
9410091-14	Soil	B-1/8'	10-10-94	1750
9410091-15	Water	RB-1010	10-10-94	1800
9410091-16	Water	Trip Blank	NA	NA

Parameters

8 Preburn Analysis
EPA 8010/8020 Volatile Organics
EPA 9073 TRPH
RCRA Metals (8)
6 EPA 9073 TRPH
14 EPA 7520 Nickel
8 EPA 8080 Pesticide/PCBs

Declan Cowley
Laboratory Director

PC&B Environmental Laboratories, Inc.
210 Park Road
Oviedo Fl 32765
PHONE : 407-359-7194

VOLATILE ORGANICS

CLIENT NAME : FGS, INC.
PROJECT NAME : HOWCO
PROJECT NUMBER : G94.216.82
DATE RECEIVED : 10-12-94
PROTOCOL : EPA 624 MODIFIED

Lab Reference Number	9410091-2	9410091-3	9410091-4	9410091-7	9410091-8	9410091-9
Client Sample ID	B-12/4'	B-12D/4'	EQB-1010	B-11/2'	B-7/8'	B-2/7'
Date Sampled	10-10-94	10-10-94	10-10-94	10-10-94	10-10-94	10-10-94
Date Extracted	10-12-94	10-12-94	N/A	10-12-94	10-12-94	10-12-94
Date Analyzed	10-12-94	10-12-94	10-12-94	10-12-94	10-12-94	10-12-94
Confirmed	GCMS	GCMS	GCMS	GCMS	GCMS	GCMS
Matrix	SOIL	SOIL	WATER	SOIL	SOIL	SOIL
Chloromethane	500 U	100 U	1.0 U	20 U	20 U	20 U
Bromomethane	500 U	100 U	1.0 U	20 U	20 U	20 U
Dichlorodifluoromethane	500 U	100 U	1.0 U	20 U	20 U	20 U
Vinyl Chloride	500 U	100 U	1.0 U	20 U	20 U	20 U
Chloroethane	500 U	100 U	1.0 U	20 U	20 U	20 U
Methylene Chloride	500 U	100 U	1.0 U	20 U	20 U	20 U
Trichlorofluoromethane	500 U	100 U	1.0 U	20 U	20 U	20 U
1,1-Dichloroethene	500 U	100 U	1.0 U	20 U	20 U	20 U
1,1-Dichloroethane	500 U	100 U	1.0 U	20 U	20 U	20 U
trans-1,2-Dichloroethene	500 U	100 U	1.0 U	20 U	20 U	20 U
Chloroform	500 U	100 U	1.0 U	20 U	20 U	20 U
1,2-Dichloroethane	500 U	100 U	1.0 U	20 U	20 U	20 U
1,1,1-Trichloroethane	500 U	100 U	1.0 U	20 U	20 U	20 U
Carbon Tetrachloride	500 U	100 U	1.0 U	20 U	20 U	20 U
Bromodichloromethane	500 U	100 U	1.0 U	20 U	20 U	20 U
1,2-Dichloropropane	500 U	100 U	1.0 U	20 U	20 U	20 U
Benzene	500 U	260	1.0 U	20 U	20 U	20 U
Trichloroethene	500 U	100 U	1.0 U	20 U	20 U	20 U
Dibromochloromethane	500 U	100 U	1.0 U	20 U	20 U	20 U
1,1,2-Trichloroethane	500 U	100 U	1.0 U	20 U	20 U	20 U
cis-1,3-Dichloropropene	500 U	100 U	1.0 U	20 U	20 U	20 U
2-Chloroethylvinyl ether	500 U	100 U	1.0 U	20 U	20 U	20 U
Bromoform	500 U	100 U	1.0 U	20 U	20 U	20 U
1,1,2,2-Tetrachloroethane	500 U	100 U	1.0 U	20 U	20 U	20 U
Tetrachloroethene	500 U	100 U	1.0 U	20 U	20 U	20 U
Toluene	500 U	100 U	1.0 U	20 U	20 U	20 U
Chlorobenzene	500 U	100 U	1.0 U	20 U	20 U	20 U
Ethylbenzene	20700	16800	1.0 U	20 U	20 U	20 U
1,3-Dichlorobenzene	500 U	100 U	1.0 U	20 U	20 U	20 U
1,2-Dichlorobenzene	500 U	100 U	1.0 U	20 U	20 U	20 U
1,4-Dichlorobenzene	500 U	100 U	1.0 U	20 U	20 U	20 U
meta & para Xylenes	41900	32100	1.0 U	20 U	20 U	20 U
ortho Xylene	500 U	100 U	1.0 U	20 U	20 U	20 U
Styrene	500 U	100 U	1.0 U	20 U	20 U	20 U
MTBE	2500 U	500 U	5.0 U	100 U	100 U	100 U
Result Units	ug/kg	ug/kg	ug/l	ug/kg	ug/kg	ug/kg
% Moisture	NA	NA	NA	NA	NA	NA
Dilution Factor	500	100	1	20	20	20

Soil results reported on a dry weight basis for those samples for which moisture values were available.
U = indicates the compound was analysed for, but not detected at the specified value.

CompQAP #900134G/E83239/83353

REVIEWED BY : _____

PC&B Environmental Laboratories, Inc.
210 Park Road
Oviedo Fl 32765
PHONE : 407-359-7194

VOLATILE ORGANICS

CLIENT NAME : FGS, INC.
PROJECT NAME : HOWCO
PROJECT NUMBER : G94.216.82
DATE RECEIVED : 10-12-94
PROTOCOL : EPA 624 MODIFIED

Lab Reference Number	9410091-11	9410091-12	9410091-16
Client Sample ID	B-5/2'	B-4/2'	TRIP BLANK
Date Sampled	10-10-94	10-10-94	10-10-94
Date Extracted	10-12-94	10-12-94	N/A
Date Analyzed	10-12-94	10-12-94	10-12-94
Confirmed	GCMS	GCMS	GCMS
Matrix	SOIL	SOIL	WATER
Chloromethane	20 U	20 U	1.0 U
Bromomethane	20 U	20 U	1.0 U
Dichlorodifluoromethane	20 U	20 U	1.0 U
Vinyl Chloride	20 U	20 U	1.0 U
Chloroethane	20 U	20 U	1.0 U
Methylene Chloride	20 U	20 U	1.0 U
Trichlorofluoromethane	20 U	20 U	1.0 U
1,1-Dichloroethene	20 U	20 U	1.0 U
1,1-Dichloroethane	20 U	20 U	1.0 U
trans-1,2-Dichloroethene	20 U	20 U	1.0 U
Chloroform	20 U	20 U	1.0 U
1,2-Dichloroethane	20 U	20 U	1.0 U
1,1,1-Trichloroethane	20 U	20 U	1.0 U
Carbon Tetrachloride	20 U	20 U	1.0 U
Bromodichloromethane	20 U	20 U	1.0 U
1,2-Dichloropropane	20 U	20 U	1.0 U
Benzene	20 U	20 U	1.0 U
Trichloroethene	20 U	20 U	1.0 U
[illegible]ibromochloromethane	20 U	20 U	1.0 U
[illegible],1,2-Trichloroethane	20 U	20 U	1.0 U
cis-1,3-Dichloropropene	20 U	20 U	1.0 U
2-Chloroethylvinyl ether	20 U	20 U	1.0 U
Bromoform	20 U	20 U	1.0 U
1,1,2,2-Tetrachloroethane	20 U	20 U	1.0 U
Tetrachloroethene	20 U	20 U	1.0 U
Toluene	20 U	20 U	1.0 U
Chlorobenzene	20 U	20 U	1.0 U
Ethylbenzene	20 U	20 U	1.0 U
1,3-Dichlorobenzene	20 U	20 U	1.0 U
1,2-Dichlorobenzene	20 U	20 U	1.0 U
1,4-Dichlorobenzene	20 U	20 U	1.0 U
meta & para Xylenes	20 U	20 U	1.0 U
ortho Xylene	20 U	20 U	1.0 U
Styrene	20 U	20 U	1.0 U
MTBE	100 U	100 U	5.0 U
Result Units	ug/kg	ug/kg	ug/l
% Moisture	NA	NA	NA
Dilution Factor	20	20	1

[illegible]oil results reported on a dry weight basis for those samples for which moisture values were available.
U = indicates the compound was analysed for, but not detected at the specified value.

CompQAP #900134G/E83239/83353

REVIEWED BY : _____

PC&B Environmental Laboratories, Inc.

VOLATILE ORGANICS

MATRIX SPIKE RESULTS

MATRIX : WATER

LAB SAMPLE # : 9410083-2
ANALYSIS DATE : 10-12-94

COMPOUND	AMOUNT SPIKED	SAMPLE RESULT	MS RESULT	MS % RECOVERY	MSD RESULT	MSD% RECOVERY	RPD
1,1-Dichloroethene	50.0	0.0	53.0	106	51.0	102	4
Trichloroethene	50.0	0.0	51.0	102	51.0	102	0
Benzene	50.0	0.0	56.0	112	53.0	106	6
Toluene	50.0	0.0	43.0	86	46.0	92	7
Chlorobenzene	50.0	0.0	52.0	104	52.0	104	0

COMMENTS :

MATRIX SPIKE QUALITY CONTROL LIMITS

	WATER			SOIL		
	LOWER	UPPER	RPD	LOWER	UPPER	RPD
1,1-Dichloroethene	61	145	14	59	172	22
Trichloroethene	71	120	14	62	137	24
Benzene	76	127	11	66	142	21
Toluene	76	125	13	59	139	21
Chlorobenzene	75	130	13	60	133	21

PC&B Environmental Laboratories, Inc.
210 Park Road
Oviedo Fl 32765
PHONE : 407-359-7194

PESTICIDE/PCB'S

CLIENT NAME : FGS, INC.
PROJECT NAME : HOWCO
PROJECT NUMBER : G94-216.82
DATE RECEIVED : 10-12-94
PROTOCOL : EPA 8080

Lab Reference Number	9410091-2	9410091-3	9410091-4	9410091-7	9410091-8	9410091-9
Client Sample ID	B-12/4'	B-12D/4'	EQB-1010	B-11/2'	B-7'/8'	B-2'/7'
Date Sampled	10-10-94	10-10-94	10-10-94	10-10-94	10-10-94	10-10-94
Date Extracted	10-12-94	10-12-94	10-12-94	10-12-94	10-12-94	10-12-94
Date Analyzed	10-13-94	10-13-94	10-13-94	10-13-94	10-13-94	10-13-94
Confirmed	NO	NO	NO	NO	NO	NO
Matrix	SOIL	SOIL	WATER	SOIL	SOIL	SOIL
alpha-BHC	80 U	80 U	.05 U	8 U	8 U	8 U
beta-BHC	80 U	80 U	.05 U	8 U	8 U	8 U
delta-BHC	80 U	80 U	.05 U	8 U	8 U	8 U
gamma-BHC (Lindane)	80 U	80 U	.05 U	8 U	8 U	8 U
Heptachlor	80 U	80 U	.05 U	8 U	8 U	8 U
Aldrin	80 U	80 U	.05 U	8 U	8 U	8 U
Heptachlor epoxide	80 U	80 U	.05 U	8 U	8 U	8 U
Endosulfan I	80 U	80 U	.05 U	8 U	8 U	8 U
Dieldrin	160 U	160 U	.1 U	16 U	16 U	16 U
4,4'-DDE	160 U	160 U	.1 U	16 U	16 U	16 U
Endrin	160 U	160 U	.1 U	16 U	16 U	16 U
Endosulfan II	160 U	160 U	.1 U	16 U	16 U	16 U
4,4'-DDD	160 U	160 U	.1 U	16 U	16 U	16 U
Endosulfan sulfate	160 U	160 U	.1 U	16 U	16 U	16 U
4,4'-DDT	160 U	160 U	.1 U	16 U	16 U	16 U
Methoxychlor	800 U	800 U	.5 U	80 U	80 U	80 U
Endrin ketone	160 U	160 U	.1 U	16 U	16 U	16 U
alpha-Chlordane	800 U	800 U	.5 U	80 U	80 U	80 U
gamma-Chlordane	800 U	800 U	.5 U	80 U	80 U	80 U
Toxaphene	1600 U	1600 U	1 U	160 U	160 U	160 U
Aroclor-1016	800 U	800 U	.5 U	80 U	80 U	80 U
Aroclor-1221	800 U	800 U	.5 U	80 U	80 U	80 U
Aroclor-1232	800 U	800 U	.5 U	80 U	80 U	80 U
Aroclor-1242	800 U	800 U	.5 U	80 U	80 U	80 U
Aroclor-1248	800 U	800 U	.5 U	80 U	80 U	80 U
Aroclor-1254	1600 U	1600 U	1 U	160 U	160 U	160 U
Aroclor-1260	1600 U	1600 U	1 U	160 U	160 U	160 U

Result Units	ug/kg	ug/kg	ug/l	ug/kg	ug/kg	ug/kg
% Moisture	NA	NA	NA	NA	NA	NA
Dilution Factor	10	10	1	1	1	1

Soil results reported on a dry weight basis for those samples for which moisture values were available.
U = indicates the compound was analysed for, but not detected at the specified value.

CompQAP #900134G/E83239/83353

REVIEWED BY : _____

PC&B Environmental Laboratories, Inc.
210 Park Road
Oviedo Fl 32765
PHONE : 407-359-7194

PESTICIDE/PCB'S

CLIENT NAME : FGS, INC.
PROJECT NAME : HOWCO
PROJECT NUMBER : G94-216.82
DATE RECEIVED : 10-12-94
PROTOCOL : EPA 8080

Lab Reference Number	9410091-11	9410091-12
Client Sample ID	B-5/2'	B-4/2'
Date Sampled	10-10-94	10-10-94
Date Extracted	10-12-94	10-12-94
Date Analyzed	10-13-94	10-13-94
Confirmed	NO	NO
Matrix	SOIL	SOIL
alpha-BHC	8 U	8 U
beta-BHC	8 U	8 U
delta-BHC	8 U	8 U
gamma-BHC (Lindane)	8 U	8 U
Heptachlor	8 U	8 U
Aldrin	8 U	8 U
Heptachlor epoxide	8 U	8 U
Endosulfan I	8 U	8 U
Dieldrin	16 U	16 U
4,4'-DDE	16 U	16 U
Endrin	16 U	16 U
Endosulfan II	16 U	16 U
4,4'-DDD	16 U	16 U
Endosulfan sulfate	16 U	16 U
4,4'-DDT	16 U	16 U
Methoxychlor	80 U	80 U
Endrin ketone	16 U	16 U
alpha-Chlordane	80 U	80 U
gamma-Chlordane	80 U	80 U
Toxaphene	160 U	160 U
Aroclor-1016	80 U	80 U
Aroclor-1221	80 U	80 U
Aroclor-1232	80 U	80 U
Aroclor-1242	80 U	80 U
Aroclor-1248	80 U	80 U
Aroclor-1254	160 U	160 U
Aroclor-1260	160 U	160 U

Result Units	ug/kg	ug/kg
% Moisture	NA	NA
Dilution Factor	1	1

Soil results reported on a dry weight basis for those samples for which moisture values were available.
U = indicates the compound was analysed for, but not detected at the specified value.

CompQAP #900134G/E83239/83353

REVIEWED BY : _____

PC&B Environmental Laboratories, Inc.

PESTICIDE/PCB'S

MATRIX SPIKE RESULTS

MATRIX : SOIL/SEDIMENT/SOLIDS **LAB SAMPLE # : 9410031-1**
ANALYSIS DATE : 10-13-94

COMPOUND	AMOUNT SPIKED	SAMPLE RESULT	MS RESULT	MS % RECOVERY
gamma-BHC (Lindane)	0.100	0.000	0.107	107
Heptachlor epoxide	0.100	0.000	0.112	112
4,4'-DDE	0.100	0.000	0.122	122
Endrin	0.100	0.000	0.090	90

COMMENTS :

MATRIX SPIKE QUALITY CONTROL LIMITS

	WATER			SOIL		
	LOWER	UPPER	RPD	LOWER	UPPER	RPD
gamma-BHC (Lindane)	79	109	5	62	102	22
Heptachlor epoxide	77	113	6	69	109	25
4,4'-DDE	22	132	24	65	105	28
Endrin	57	117	11	69	109	24

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PHONE : 407-359-7194

INORGANICS ANALYSIS

CLIENT NAME : FGS, INC.
PROJECT NAME : HOWCO
PROJECT NUMBER : G94-216.82
DATE RECEIVED : 10-12-94

Lab Reference Number		9410091-2	9410091-3	9410091-7	9410091-8	9410091-9	9410091-11
Client Sample ID		B/12/4'	B-12D/4'	B-11/2'	B-7/8'	B-2/7'	B-5/2'
Date Sampled		10-10-94	10-10-94	10-10-94	10-10-94	10-10-94	10-10-94
Matrix		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
7060 Arsenic	mg/kg	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
7081 Barium	mg/kg	20 U	20 U	20 U	20 U	20 U	20 U
7131 Cadmium	mg/kg	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
7191 Chromium	mg/kg	1.4	1.1	1.0 U	7.7	4.9	1.0 U
7421 Lead	mg/kg	64.0	82.0	820.0	2.3	5.0	1080.0
7471 Mercury	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
7740 Selenium	mg/kg	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
7761 Silver	mg/kg	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
7520 Nickel	mg/kg	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
9073 TRPH	mg/kg	9800	6200	8370	12.4	10.0 U	85900

U = indicates the analyte was tested for, but was undetected to the specified value.

CompQAP #900134G/E83239/83353

REVIEWED BY :

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210 Park Road
Oviedo Fl 32765
PHONE : 407-359-7194

INORGANICS ANALYSIS

CLIENT NAME : FGS, INC.
PROJECT NAME : HOWCO
PROJECT NUMBER : G94-216.82
DATE RECEIVED : 10-12-94

Lab Reference Number		9410091-12
Client Sample ID		B-4/2'
Date Sampled		10-10-94
Matrix		SOIL
7060 Arsenic	mg/kg	1.0 U
7081 Barium	mg/kg	20 U
7131 Cadmium	mg/kg	0.5 U
7191 Chromium	mg/kg	1.0 U
7421 Lead	mg/kg	5.0
7471 Mercury	mg/kg	0.1 U
7740 Selenium	mg/kg	0.5 U
7761 Silver	mg/kg	1.0 U
7520 Nickel	mg/kg	1.00 U
9073 TRPH	mg/kg	263

U = indicates the analyte was tested for, but was undetected to the specified value.

CompQAP #900134G/E83239/83353

REVIEWED BY :

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210 Park Road
Oviedo Fl 32765
PHONE : 407-359-7194

INORGANICS ANALYSIS

CLIENT NAME : FGS, INC.
PROJECT NAME : HOWCO
PROJECT NUMBER : G94-216.82
DATE RECEIVED : 10-12-94

Lab Reference Number		9410091-1	9410091-5	9410091-6	9410091-10	9410091-13	9410091-14
Client Sample ID		B-8/9'	B-10/8'	B-9/9'	B-6/6'	B-3/6'	B-1/8'
Date Sampled		10-10-94	10-10-94	10-10-94	10-10-94	10-10-94	10-10-94
Matrix		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
7520 Nickel	mg/kg	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
9073 TRPH	mg/kg	10.0 U	33.2	20.8	177	29.1	223

U = indicates the analyte was tested for, but was undetected to the specified value.

CompQAP #900134G/E83239/83353

REVIEWED BY : _____

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210 Park Road
Oviedo Fl 32765
PHONE : 407-359-7194

INORGANICS ANALYSIS

CLIENT NAME : FGS, INC.
PROJECT NAME : HOWCO
PROJECT NUMBER : G94-216.82
DATE RECEIVED : 10-12-94

Lab Reference Number		9410091-4
Client Sample ID		EQB-1010
Date Sampled		10-10-94
Matrix		WATER
206.2 Arsenic	ug/l	10 U
208.2 Barium	ug/l	200 U
213.2 Cadmium	ug/l	5.0 U
218.2 Chromium	ug/l	10 U
239.2 Lead	ug/l	3.0 U
245.1 Mercury	ug/l	0.2 U
270.2 Selenium	ug/l	5.0 U
272.2 Silver	ug/l	10 U
249.2 Nickel	ug/l	10.00 U
418.1 TRPH	mg/l	1.0 U

U = indicates the analyte was tested for, but was undetected to the specified value.

CompQAP #900134G/E83239/83353

REVIEWED BY : _____

PC&B Environmental Laboratories, Inc.

INORGANICS

MATRIX SPIKE RESULTS

MATRIX : WATER
ANALYSIS DATE : 10-18-94

LAB SAMPLE # : 9410091-7

PARAMETER	AMOUNT SPIKED	SAMPLE RESULT	MS RESULT	MS % RECOVERY
Nickel	50.0	0	41	82

COMMENTS :

MATRIX SPIKE QUALITY CONTROL LIMITS

	WATER			SOIL		
	LOWER	UPPER	RPD	LOWER	UPPER	RPD
Nickel	75	120	15	70	130	20

PC&B Environmental Laboratories, Inc.

INORGANICS

MATRIX SPIKE RESULTS

MATRIX : SOIL/SEDIMENT/SOLIDS **LAB SAMPLE # : 9410091-7**
ANALYSIS DATE : 10-14-94

PARAMETER	AMOUNT SPIKED	SAMPLE RESULT	MS RESULT	MS % RECOVERY
Arsenic	2.50	0.0	2.3	92
Barium	25.00	0	21	84
Cadmium	2.50	0.0	2.4	96
Chromium	5.00	0.0	4.3	86
Lead	2.50	816.0	818.0	80
Selenium	2.50	0.0	2.1	84
Silver	2.50	0.0	1.9	76

COMMENTS :

MATRIX SPIKE QUALITY CONTROL LIMITS

	WATER			SOIL		
	LOWER	UPPER	RPD	LOWER	UPPER	RPD
Arsenic	58	148	15	56	128	13
Barium	76	112	6	65	155	15
Cadmium	72	114	7	56	128	15
Chromium	68	122	9	62	146	18
Lead	75	135	10	57	141	14
Selenium	75	120	7	70	122	9
Silver	59	125	12	75	123	9

9410091

PC&B Laboratories, Inc.

210 Park Road, Oviedo, Fl 32765
407-359-7194 (FAX) 407-359-7197

Chain of Custody

Work Order: № 03346

Date: 10/10/94 Page 2 of 2

COMPANY: FGS, Inc
ADDRESS: 111 S. Armenia Ave
Tampa, FL 33609
SAMPLED BY: Tony Cantygman
SIGN: Roger A. Cantygman II PHONE NO: 813-874-8204

#	SAMPLE ID	DATE/TIME	MATRIX	9073 (TPH) Ni (16 total)	8021, 8080 RCRA (8) Total	418.1 (TRPH) 8 RCRA metals +Ni (Total)	8010, 8020	8080	NUMBER OF CONTAINERS
14	1 B-1 / 8'	10/10/94 1750	SOIL	✓					1
15	2 RB-1010	" 1800	water			✓	✓	✓	5
16	3 Trip Blank						✓	✓	
	4								
	5								
	6								
	7								
	8								
	9								
	10								
	11								
	12								
	13								

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1: Roger A. Cantygman II	10/11/94 0700	1: Sandra Pazan	10-12-94 10:40
2:		2:	
3:		3:	

SPECIAL INSTRUCTIONS/COMMENTS:
Hold RB-1010 until authorized by P.M.

PROJECT INFORMATION

PROJECT NAME: HOWCO
PROJECT #: G94-216.82
SITE ADDRESS: St. Pete, FL
PROJECT MANAGER: Andy Long
INVOICE TO: (IF DIFFERENT FROM ABOVE)

SAMPLE RECEIPT

Total No. of Containers	6
Chain of Custody Seals	
Rec'd Good Condition/Cold	
PO#:	
SHIPPED VIA	

9410091

PC&B Laboratories, Inc.

210 Park Road, Oviedo, Fl 32765
407-359-7194 (FAX) 407-359-7197

Chain of Custody

Work Order: Nº 03874

Date: 10/10/94 Page 1 of 2

COMPANY FGS, Inc
ADDRESS 111 S. Armenia Ave
Tampa, FL 33609
SAMPLED BY Tony Courtryman
SIGN Roger A Courtryman PHONE NO: 874-8204

#	SAMPLE ID.	DATE/TIME	MATRIX	8015 (TPH) & Ni (Total)	8021, 8010, RCRA(8) Total	418.1 (TRPH) & RCRA metals + Ni (Total)	8010, 8020	8080	NUMBER OF CONTAINERS
1	B-8/9'	10/10/94 1045	SOIL	✓	✓				1
2	B-12/4'	1135	"	✓	✓				2
3	B-12D/4'	1135	"	✓	✓				2
4	EQB-1010	1125	water			✓	✓	✓	5
5	B-10/8'	1150	SOIL	✓					1
6	B-9/9'	1237	"	✓					1
7	B-11/2'	1315	"	✓	✓				2
8	B-7/8'	1415	"	✓	✓				2
9	B-2/7'	1428	"	✓	✓				2
10	B-6/6'	1508	"	✓					1
11	B-5/2'	1550	"	✓	✓				2
12	B-4/2'	1610	"	✓	✓				2
13	B-3/6'	1628	"	✓					1

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1: Brenda Pagan	10-7-94	1:	
2: Roger A. Courtryman II	10/11/94 0700	2: Brenda Pagan	10-12-94 10:40
3:		3:	

SPECIAL INSTRUCTIONS/COMMENTS:

PROJECT INFORMATION

PROJECT NAME: HOWCO
PROJECT #: G94-216.82
SITE ADDRESS: St Pete. FL
PROJECT MANAGER: Andy Long
INVOICE TO:
(IF DIFFERENT FROM ABOVE)

SAMPLE RECEIPT

Total No. of Containers: 24
Chain of Custody Seals:
Rec'd Good Condition/Cold:
PO#:
SHIPPED VIA:

PC&B Environmental Laboratories, Inc.
210 Park Road, Oviedo, Florida 32765
Phone: 407-359-7194 Fax: 407-359-7197

NOV - 3 1994

November 1, 1994

Andrew Long
FGS, INC.
111 South Armenia Avenue
Tampa, FL 33609

Dear Mr. Long:

Enclosed are the results of the analysis of your samples received October 12, 1994.

Our laboratory is certified by the Florida DHRS (Lab #E83239) and operates under an FDER approved Comprehensive Quality Assurance Plan (#900134G). All data were determined in accordance with published procedures (EPA-600/4-79-020), Methods for Chemical Analysis of Water and Wastes, Revised March 1983 and/or Standard Methods for the Examination of Water and Wastewater 17th Edition 1989 and/or Test Methods for Evaluating Solid Waste (EPA-SW-846, Revised November 1989), unless stated otherwise in our CompQAPP under method modifications.

If you have any questions, please do not hesitate to give me a call.

Sincerely,

Declan Cowley
Laboratory Director

PC&B Environmental Laboratories, Inc.
210 Park Road, Oviedo, Florida 32765
Phone: 407-359-7194 Fax: 407-359-7197

NOV - 3 1994

November 1, 1994

CLIENT: FGS, INC.
111 South Armenia Avenue
Tampa, Fl 33609

CONTACT: Andrew Long
813-874-8204

PROJECT NAME: HOWCO
PROJECT NUMBER: G94-216.82

REFERENCE: Work Order Number 9410091A

Lab Sample Number	Matrix	Client ID	Date/Time Sampled	
9410091-07	Soil	B-11/2'	10-10-94	1315
9410091-11	Soil	B-5/2'	10-10-94	1550

Parameters

2 EPA 1311 TCLP Lead

Declan Cowley
Laboratory Director

PC&B Environmental Laboratories, Inc.
210 Park Road
Oviedo Fl 32765
PHONE : 407-359-7194

INORGANICS ANALYSIS

CLIENT NAME : FGS, INC.
PROJECT NAME : HOWCO
PROJECT NUMBER : G94-216.82
DATE RECEIVED : 10-12-94

Lab Reference Number		9410091-7	9410091-11
Client Sample ID		B-11/2'	B-5/2'
Date Sampled		10-10-94	10-10-94
Matrix		LEACHATE	LEACHATE
7421 TCLP Lead	ug/l	19100.0	7100.0

U = indicates the analyte was tested for, but was undetected to the specified value.

CompQAP #900134G/E83239/83353

REVIEWED BY : _____

PC&B Environmental Laboratories, Inc.

INORGANICS

MATRIX SPIKE RESULTS

MATRIX : WATER **LAB SAMPLE # : 9410225-7**
ANALYSIS DATE : 10-28-94

PARAMETER	AMOUNT SPIKED	SAMPLE RESULT	MS RESULT	MS % RECOVERY
Lead	25.0	39.0	68.0	116

COMMENTS :

MATRIX SPIKE QUALITY CONTROL LIMITS

	WATER			SOIL		
	LOWER	UPPER	RPD	LOWER	UPPER	RPD
Lead	75	135	10	57	141	14

PC&B Environmental Laboratories, Inc.

210 Park Road, Oviedo, Florida 32765
Phone: 407-359-7194 Fax: 407-359-7197

11-16-1995

Maura Clark
FGS, Inc.
111 South Armenia Avenue
Tampa, FL 33609-

Dear Maura Clark:

Enclosed are the results of the analysis of your samples received 11/08/1995.

Our laboratory is certified by the Florida DHRS (Lab #E83239) and operates under an FDEP approved Comprehensive Quality Assurance Plan (#900134G). All data were determined in accordance with published procedures (EPA-600/4-79-020), Methods for Chemical Analysis of Water and Wastes, Revised March 1983 and/or Standard Methods for the examination of Water and Wastewater, 17th Edition 1989 and/or Test Methods for Evaluating Solid Waste (EPA-SW-846, Revised July 1992), unless stated otherwise in our CompQapp under method modifications.

If you have any questions, please do not hesitate to give me a call.

Sincerely,

Declan Cowley
Laboratory Director

PC&B Environmental Laboratories, Inc.

210 Park Road, Oviedo, Florida 32765
Phone: 407-359-7194 Fax: 407-359-7197

Client : FGS, Inc.
111 South Armenia Avenue
Tampa, FL 33609-

Contact : Maura Clark
Phone : (813) 874-8204

Laboratory Reference Number : 95110054

Project Name : Howco
Project Number : G94-216.82

Laboratory ID	Matrix	Client ID	Status	Date/Time Sampled
95110054-1	Soil	B-39 @ 6'	RUN	11/03/1995 12:06
95110054-2	Soil	B-34 @ 6'	RUN	11/02/1995 11:47
95110054-3	Soil	B-31 @ 4'	RUN	11/02/1995 11:02
95110054-4	Soil	B-35 @ 4'	RUN	11/02/1995 12:00
95110054-5	Soil	B-33 @ 6'	RUN	11/02/1995 11:25
95110054-6	Soil	B-28 @ 6'	RUN	11/02/1995 10:02
95110054-7	Soil	B-27 @ 6'	RUN	11/02/1995 09:30
95110054-8	Soil	B-29 @ 4'	RUN	11/02/1995 10:08
95110054-9	Soil	B-30 @ 6'	RUN	11/02/1995 10:15
95110054-10	Soil	B-24 @ 2'	RUN	11/02/1995 07:47
95110054-11	Soil	B-22 @ 2'	RUN	11/02/1995 07:30
95110054-12	Soil	B-40 @ 6'	RUN	11/03/1995 10:45
95110054-13	Soil	B-25 @ 2'	RUN	11/02/1995 08:01
95110054-14	Soil	B-23 @ 2'	RUN	11/02/1995 07:40
95110054-15	Soil	B-21 @ 2'	RUN	11/02/1995 07:24
95110054-16	Water	TRIP	RUN	11/02/1995

Number	Parameter	Description
4	Group Test	EPA 8010/8020 Volatile Organics
15	EPA 8100	Polynuclear Aromatic Hydrocarbons
15	EPA 6010A	Lead by ICAP
2	EPA 9073	TRPH by IR

PC&B Environmental Laboratories, Inc.
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Halogenated Volatile Organics

CLIENT NAME: FGS, Inc.
PROJECT NAME: Howco
PROJECT NUMBER: G94-216.82
DATE RECEIVED: 11/08/1995
ANALYTICAL PROTOCOL: EPA 8010

Lab Reference Number	95110054-6	95110054-7	95110054-8	95110054-9
Client Sample ID	B-28 @ 6'	B-27 @ 6'	B-29 @ 4'	B-30 @ 6'
Date Sampled	11/02/1995	11/02/1995	11/02/1995	11/02/1995
Date Extracted	11/08/1995	11/08/1995	11/10/1995	11/10/1995
Date Analyzed	11/08/1995	11/08/1995	11/10/1995	11/10/1995
Sample Matrix (as Received)	Soil	Soil	Soil	Soil
Dilution Factor	1	1	1	1
Result Units	ug/kg	ug/kg	ug/kg	ug/kg
Bromobenzene	5 U	5 U	5 U	5 U
Bromodichloromethane	5 U	5 U	5 U	5 U
Bromoform	5 U	5 U	5 U	5 U
Bromomethane	5 U	5 U	5 U	5 U
Carbon tetrachloride	5 U	5 U	5 U	5 U
Chlorobenzene	5 U	5 U	5 U	5 U
Chloroethane	5 U	5 U	5 U	5 U
2-Chloroethyl vinyl ether	5 U	5 U	5 U	5 U
Chloroform	5 U	5 U	5 U	5 U
Chloromethane	5 U	5 U	5 U	5 U
Dibromochloromethane	5 U	5 U	5 U	5 U
Dibromomethane	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	5 U	5 U	5 U	5 U
1,3-Dichlorobenzene	5 U	5 U	5 U	5 U
1,4-Dichlorobenzene	5 U	5 U	5 U	5 U
1,1-Dichloroethane	5 U	5 U	5 U	5 U
Dichlorodifluoromethane	5 U	5 U	5 U	5 U
1,2-Dichloroethane	5 U	5 U	5 U	5 U
1,1-Dichloroethene	5 U	5 U	5 U	5 U
trans-1,2-Dichloroethene	5 U	5 U	5 U	5 U
1,2-Dichloropropane	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	5 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	5 U	5 U	5 U	5 U
Methylene chloride	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	5 U	5 U	5 U	5 U
1,1,1,2-Tetrachloroethane	5 U	5 U	5 U	5 U
Tetrachloroethene	5 U	5 U	5 U	5 U
1,1,1-Trichloroethane	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	5 U	5 U	5 U	5 U
Trichloroethene	5 U	5 U	5 U	5 U
Trichlorofluoromethane	5 U	5 U	5 U	5 U
1,2,3-Trichloropropane	5 U	5 U	5 U	5 U
Vinyl chloride	5 U	5 U	5 U	5 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

Reviewed by : _____

PC&B Environmental Laboratories, Inc.
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Aromatic Volatile Organics

CLIENT NAME: FGS, Inc.
PROJECT NAME: Howco
PROJECT NUMBER: G94-216.82
DATE RECEIVED: 11/08/1995
ANALYTICAL PROTOCOL: EPA 8020

Lab Reference Number	95110054-6	95110054-7	95110054-8	95110054-9
Client Sample ID	B-28 @ 6'	B-27 @ 6'	B-29 @ 4'	B-30 @ 6'
Date Sampled	11/02/1995	11/02/1995	11/02/1995	11/02/1995
Date Extracted	11/08/1995	11/08/1995	11/10/1995	11/10/1995
Date Analyzed	11/08/1995	11/08/1995	11/10/1995	11/10/1995
Sample Matrix (as Received)	Soil	Soil	Soil	Soil
Dilution Factor	1	1	1	1
Result Units	ug/kg	ug/kg	ug/kg	ug/kg
Benzene	5 U	5 U	5 U	5 U
Chlorobenzene	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	5 U	5 U	5 U	5 U
1,3-Dichlorobenzene	5 U	5 U	5 U	5 U
1,4-Dichlorobenzene	5 U	5 U	5 U	5 U
Ethylbenzene	5 U	5 U	5	5 U
MTBE	5 U	5 U	5 U	5 U
Toluene	5 U	5 U	5 U	5 U
Xylenes, Total	5 U	5 U	17	5 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

Reviewed by : _____

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Halogenated Volatile Organics

CLIENT NAME: FGS, Inc.
PROJECT NAME: Howco
PROJECT NUMBER: G94-216.82
DATE RECEIVED: 11/08/1995
ANALYTICAL PROTOCOL: EPA 601

Lab Reference Number	95110054-16
Client Sample ID	TRIP
Date Sampled	11/02/1995
Date Extracted	11/08/1995
Date Analyzed	11/08/1995
Sample Matrix (as Received)	Water
Dilution Factor	1
Result Units	ug/l
Bromobenzene	1.0 U
Bromodichloromethane	1.0 U
Bromoform	1.0 U
Bromomethane	1.0 U
Carbon tetrachloride	1.0 U
Chlorobenzene	1.0 U
Chloroethane	1.0 U
2-Chloroethyl vinyl ether	1.0 U
Chloroform	1.0 U
Chloromethane	1.0 U
Dibromochloromethane	1.0 U
Dibromomethane	1.0 U
1,2-Dichlorobenzene	1.0 U
1,3-Dichlorobenzene	1.0 U
1,4-Dichlorobenzene	1.0 U
1,1-Dichloroethane	1.0 U
Dichlorodifluoromethane	1.0 U
1,2-Dichloroethane	1.0 U
1,1-Dichloroethene	1.0 U
trans-1,2-Dichloroethene	1.0 U
1,2-Dichloropropane	1.0 U
cis-1,3-Dichloropropene	1.0 U
trans-1,3-Dichloropropene	1.0 U
Methylene chloride	1.0 U
1,1,2,2-Tetrachloroethane	1.0 U
1,1,1,2-Tetrachloroethane	1.0 U
Tetrachloroethene	1.0 U
1,1,1-Trichloroethane	1.0 U
1,1,2-Trichloroethane	1.0 U
Trichloroethene	1.0 U
Trichlorofluoromethane	1.0 U
1,2,3-Trichloropropane	1.0 U
Vinyl chloride	1.0 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

Reviewed by : 

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Aromatic Volatile Organics

CLIENT NAME: FGS, Inc.
PROJECT NAME: Howco
PROJECT NUMBER: G94-216.82
DATE RECEIVED: 11/08/1995
ANALYTICAL PROTOCOL: EPA 602

Lab Reference Number	95110054-16
Client Sample ID	TRIP
Date Sampled	11/02/1995
Date Extracted	11/08/1995
Date Analyzed	11/08/1995
Sample Matrix (as Received)	Water
Dilution Factor	1
Result Units	ug/l
Benzene	1.0 U
Chlorobenzene	1.0 U
1,2-Dichlorobenzene	1.0 U
1,3-Dichlorobenzene	1.0 U
1,4-Dichlorobenzene	1.0 U
Ethylbenzene	1.0 U
MTBE	5.0 U
Toluene	1.0 U
m & p-Xylenes	1.0 U
o-Xylene	1.0 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

Reviewed by : 

Quality Control Report for Spike Analysis

Aromatic Volatile Organics

Matrix: Soil
Lab Sample ID: 9511055-14
Spike Units: ug/kg

Analysis Date: 11/10/1995
Preparation Date: 11/10/1995
Analyst: NM

Analyte	Spike Amount	Sample Result	Spike Result	Percent Recovery		Lower Control Limit	Upper Control Limit
Benzene	50	0	60	120		51	164
Ethylbenzene	50	0	51	102		59	120
MTBE	50	0	65	130	*	147	180
Toluene	50	0	56	112		59	141
Xylenes, Total	150	0	161	107		75	119

PC&B Environmental Laboratories, Inc.
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Polynuclear Aromatic Hydrocarb

CLIENT NAME: FGS, Inc.
PROJECT NAME: Howco
PROJECT NUMBER: G94-216.82
DATE RECEIVED: 11/08/1995
ANALYTICAL PROTOCOL: EPA 8100

Lab Reference Number	95110054-1	95110054-2	95110054-3	95110054-4	95110054-5
Client Sample ID	B-39 @ 6'	B-34 @ 6'	B-31 @ 4'	B-35 @ 4'	B-33 @ 6'
Date Sampled	11/03/1995	11/02/1995	11/02/1995	11/02/1995	11/02/1995
Date Extracted	11/09/1995	11/09/1995	11/09/1995	11/09/1995	11/09/1995
Date Analyzed	11/09/1995	11/09/1995	11/09/1995	11/09/1995	11/09/1995
Sample Matrix (as Received)	Soil	Soil	Soil	Soil	Soil
Dilution Factor	1	1	1	1	1
Result Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Acenaphthene	160 U	160 U	160 U	160 U	160 U
Acenaphthylene	160 U	160 U	160 U	160 U	160 U
Anthracene	160 U	160 U	160 U	160 U	160 U
Benzo(a)anthracene	160 U	160 U	160 U	160 U	160 U
Benzo(a)pyrene	160 U	160 U	160 U	160 U	160 U
Benzo(b)fluoranthene	160 U	160 U	160 U	160 U	160 U
Benzo(ghi)perylene	160 U	160 U	160 U	160 U	160 U
Benzo(k)fluoranthene	160 U	160 U	160 U	160 U	160 U
Chrysene	160 U	160 U	160 U	160 U	160 U
Dibenzo(ah)anthracene	160 U	160 U	160 U	160 U	160 U
Fluoranthene	160 U	160 U	160 U	160 U	160 U
Fluorene	160 U	160 U	160 U	160 U	160 U
Indeno(123-cd)pyrene	160 U	160 U	160 U	160 U	160 U
Naphthalene	160 U	160 U	160 U	160 U	160 U
1-Methyl naphthalene	160 U	160 U	160 U	160 U	160 U
2-Methyl naphthalene	160 U	160 U	160 U	160 U	160 U
Phenanthrene	160 U	160 U	160 U	160 U	160 U
Pyrene	160 U	160 U	160 U	160 U	160 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

FDEP CompQAPP # 900134G - FHRS Certification # E83239/83353

Reviewed by : _____

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Oviedo, FL 32765
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FAX: 359-7197

Polynuclear Aromatic Hydrocarb

CLIENT NAME: FGS, Inc.
PROJECT NAME: Howco
PROJECT NUMBER: G94-216.82
DATE RECEIVED: 11/08/1995
ANALYTICAL PROTOCOL: EPA 8100

Lab Reference Number	95110054-6	95110054-7	95110054-8	95110054-9	95110054-10
Client Sample ID	B-28 @ 6'	B-27 @ 6'	B-29 @ 4'	B-30 @ 6'	B-24 @ 2'
Date Sampled	11/02/1995	11/02/1995	11/02/1995	11/02/1995	11/02/1995
Date Extracted	11/09/1995	11/09/1995	11/09/1995	11/09/1995	11/09/1995
Date Analyzed	11/09/1995	11/09/1995	11/09/1995	11/09/1995	11/09/1995
Sample Matrix (as Received)	Soil	Soil	Soil	Soil	Soil
Dilution Factor	1	1	1	1	1
Result Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Acenaphthene	160 U	160 U	160 U	160 U	160 U
Acenaphthylene	160 U	160 U	160 U	160 U	160 U
Anthracene	160 U	160 U	160 U	160 U	160 U
Benzo(a)anthracene	160 U	160 U	160 U	160 U	160 U
Benzo(a)pyrene	160 U	160 U	160 U	160 U	160 U
Benzo(b)fluoranthene	160 U	160 U	160 U	160 U	160 U
Benzo(ghi)perylene	160 U	160 U	160 U	160 U	160 U
Benzo(k)fluoranthene	160 U	160 U	160 U	160 U	160 U
Chrysene	160 U	160 U	160 U	160 U	160 U
Dibenzo(ah)anthracene	160 U	160 U	160 U	160 U	160 U
Fluoranthene	160 U	160 U	160 U	160 U	160 U
Fluorene	160 U	160 U	160 U	160 U	160 U
Indeno(123-cd)pyrene	160 U	160 U	160 U	160 U	160 U
Naphthalene	160 U	160 U	160 U	160 U	160 U
1-Methyl naphthalene	160 U	160 U	160 U	160 U	160 U
2-Methyl naphthalene	160 U	160 U	160 U	160 U	160 U
Phenanthrene	160 U	160 U	160 U	160 U	160 U
Pyrene	160 U	160 U	160 U	160 U	160 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

FDEP CompQAPP # 900134G - FHRS Certification # E83239/83353

Reviewed by : _____

PC&B Environmental Laboratories, Inc.
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Polynuclear Aromatic Hydrocarb

CLIENT NAME: FGS, Inc.
PROJECT NAME: Howco
PROJECT NUMBER: G94-216.82
DATE RECEIVED: 11/08/1995
ANALYTICAL PROTOCOL: EPA 8100

Lab Reference Number	95110054-11	95110054-12	95110054-13	95110054-14	95110054-15
Client Sample ID	B-22 @ 2'	B-40 @ 6'	B-25 @ 2'	B-23 @ 2'	B-21 @ 2'
Date Sampled	11/02/1995	11/03/1995	11/02/1995	11/02/1995	11/02/1995
Date Extracted	11/09/1995	11/09/1995	11/09/1995	11/09/1995	11/09/1995
Date Analyzed	11/09/1995	11/09/1995	11/09/1995	11/09/1995	11/09/1995
Sample Matrix (as Received)	Soil	Soil	Soil	Soil	Soil
Dilution Factor	1	1	1	1	2
Result Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Acenaphthene	160 U	160 U	160 U	160 U	320 U
Acenaphthylene	160 U	160 U	160 U	160 U	320 U
Anthracene	160 U	160 U	160 U	160 U	320 U
Benzo(a)anthracene	160 U	160 U	160 U	160 U	320 U
Benzo(a)pyrene	160 U	160 U	160 U	160 U	320 U
Benzo(b)fluoranthene	160 U	160 U	160 U	160 U	320 U
Benzo(ghi)perylene	160 U	160 U	160 U	160 U	320 U
Benzo(k)fluoranthene	160 U	160 U	160 U	160 U	320 U
Chrysene	160 U	160 U	160 U	160 U	1450
Dibenzo(ah)anthracene	160 U	160 U	160 U	160 U	320 U
Fluoranthene	160 U	160 U	160 U	160 U	330
Fluorene	160 U	160 U	160 U	160 U	320 U
Indeno(123-cd)pyrene	160 U	160 U	160 U	160 U	320 U
Naphthalene	160 U	160 U	160 U	160 U	320 U
1-Methyl naphthalene	160 U	160 U	160 U	160 U	320 U
2-Methyl naphthalene	160 U	160 U	160 U	160 U	320 U
Phenanthrene	160 U	160 U	160 U	160 U	320 U
Pyrene	160 U	160 U	160 U	160 U	1650

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

FDEP CompQAPP # 900134G - FHRS Certification # E83239/83353

Reviewed by : _____

Quality Control Report for Spike Analysis

Polynuclear Aromatic Hydrocarbons

Matrix: Soil
Lab Sample ID: 9511054-3
Spike Units: ug/kg

Analysis Date: 11/09/1995
Preparation Date: 11/09/1995
Analyst: ELA

Analyte	Spike Amount	Sample Result	Spike Result	Percent Recovery	Lower Control Limit	Upper Control Limit
Acenaphthene	50	0	41	82	30	118
Acenaphthylene	50	0	45	90	31	120
Anthracene	50	0	45	90	41	127
Benzo(a)anthracene	50	0	48	96	30	135
Benzo(a)pyrene	50	0	43	86	32	129
Benzo(b)fluoranthene	50	0	44	88	32	136
Benzo(ghi)perylene	50	0	42	84	37	131
Benzo(k)fluoranthene	50	0	44	88	32	135
Chrysene	50	0	44	88	51	112
Dibenzo(ah)anthracene	50	0	47	94	43	125
Fluoranthene	50	0	46	92	41	126
Fluorene	50	0	45	90	32	129
Indeno(123-cd)pyrene	50	0	46	92	43	125
Naphthalene	50	0	41	82	10	130
Phenanthrene	50	0	46	92	42	130
Pyrene	50	0	48	96	36	140

PC&B Environmental Laboratories, Inc.
210 Park Road
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PHONE: 407-359-7194

Report of Analysis

CLIENT NAME: FGS, Inc.
PROJECT NAME: Howco
PROJECT NUMBER: G94-216.82
DATE RECEIVED: 11/08/1995

Lab Reference Number			95110054-1	95110054-2	95110054-3	95110054-4	95110054-5
Client Sample ID			B-39 @ 6'	B-34 @ 6'	B-31 @ 4'	B-35 @ 4'	B-33 @ 6'
Date Sampled			11/03/1995	11/02/1995	11/02/1995	11/02/1995	11/02/1995
Sample Matrix (as Received)			Soil	Soil	Soil	Soil	Soil
EPA 6010A	Lead, Total	mg/kg	1.0	60.0	1.7	0.3	2.1

U = Undetected. The value preceeding the 'U' is the MDL for the analyte.

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Report of Analysis

CLIENT NAME: FGS, Inc.
PROJECT NAME: Howco
PROJECT NUMBER: G94-216.82
DATE RECEIVED: 11/08/1995

Lab Reference Number			95110054-6	95110054-7	95110054-8	95110054-9	95110054-10
Client Sample ID			B-28 @ 6'	B-27 @ 6'	B-29 @ 4'	B-30 @ 6'	B-24 @ 2'
Date Sampled			11/02/1995	11/02/1995	11/02/1995	11/02/1995	11/02/1995
Sample Matrix (as Received)			Soil	Soil	Soil	Soil	Soil
EPA 6010A	Lead, Total	mg/kg	2.9	3.4	1.3	2.5	0.4

U = Undetected. The value preceeding the 'U' is the MDL for the analyte.

FDEP CompQAPP # 900134G - FHRS Certification # E83239/83353

Reviewed by : _____

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Report of Analysis

CLIENT NAME: FGS, Inc.
PROJECT NAME: Howco
PROJECT NUMBER: G94-216.82
DATE RECEIVED: 11/08/1995

Lab Reference Number			95110054-11	95110054-12	95110054-13	95110054-14	95110054-15
Client Sample ID			B-22 @ 2'	B-40 @ 6'	B-25 @ 2'	B-23 @ 2'	B-21 @ 2'
Date Sampled			11/02/1995	11/03/1995	11/02/1995	11/02/1995	11/02/1995
Sample Matrix (as Received)			Soil	Soil	Soil	Soil	Soil
EPA 6010A	Lead, Total	mg/kg	0.5	3.4	2.1	2.3	4.8

U = Undetected. The value preceeding the 'U' is the MDL for the analyte.

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Reviewed by : _____

PC&B Environmental Laboratories, Inc.
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Oviedo, FL 32765
PHONE: 407-359-7194

Report of Analysis

CLIENT NAME: FGS, Inc.
PROJECT NAME: Howco
PROJECT NUMBER: G94-216.82
DATE RECEIVED: 11/08/1995

Lab Reference Number			95110054-3	95110054-11	
Client Sample ID			B-31 @ 4'	B-22 @ 2'	
Date Sampled			11/02/1995	11/02/1995	
Sample Matrix (as Received)			Soil	Soil	
EPA 9073	TRPH	mg/kg	25	78	

NR = Analysis not Requested.
U = Undetected. The value preceeding the 'U' is the MDL for the analyte.

FDEP CompQAPP # 900134G - FHRS Certification # E83239/83353

Reviewed by : _____

Quality Control Report for Spike Analysis

INORGANICS

Matrix: Soil

Analysis Date:

Lab Sample ID:

Analyte	Spike Amount	Sample Result	Spike Result	Percent Recovery	Lower Control Limit	Upper Control Limit
TRPH	250 mg/kg	25	272	99	78	118
Lead, Total	10.0 mg/kg	0.3	9.4	91	54	115

9511054

PC&B Laboratories, Inc.

210 Park Road, Oviedo, Fl 32765
407-359-7194 (FAX) 407-359-7197

Chain of Custody

Work Order: № 03124

Date: 11-6-95 Page 1 of 2

COMPANY FGS, INC.
ADDRESS 111. S. ARMENIA AVE
TAMPA, FL, 33609
SAMPLED BY TOM FERGUSON
SIGN Tom Ferguson PHONE NO: 813-874-8204

#	SAMPLE ID.	DATE/TIME	MATRIX	8010/8020	8100	LEAD	NUMBER OF CONTAINERS
1	B-39 @ 6'	11-3-95 @ 1206	SOIL		X	X	1
2	B-34 @ 6'	11-2-95 @ 1147			X	X	1
3	B-31 @ 4'	11-2-95 @ 1102			X	X	1
4	B-35 @ 4'	11-2-95 @ 1200			X	X	1
5	B-33 @ 6'	11-2-95 @ 1125			X	X	1
6	B-28 @ 6'	11-2-95 @ 1002		X	X	X	1
7	B-27 @ 6'	11-2-95 @ 0930		X	X	X	1
8	B-29 @ 4'	11-2-95 @ 1008		X	X	X	1
9	B-30 @ 6'	11-2-95 @ 1015		X	X	X	1
10	B-24 @ 2'	11-2-95 @ 0747			X	X	1
11	B-22 @ 2'	11-2-95 @ 0730			X	X	1
12	B-40 @ 6'	11-3-95 @ 1045			X	X	1
13	B-25 @ 2'	11-2-95 @ 0801			X	X	1

ANALYSIS REQUEST

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1: Tom Ferguson	11-7-95	1:	11-8-95 8:30
2:		2:	
3:		3:	

PROJECT INFORMATION

PROJECT NAME: HOVCO
PROJECT #: 494-216.82
SITE ADDRESS: ST. PETE, FL
PROJECT MANAGER: MAUKA CLARK
INVOICE TO: (IF DIFFERENT FROM ABOVE)

SAMPLE RECEIPT

Total No. of Containers	
Chain of Custody Seals	
Rec'd Good Condition/Cold	
PO#:	
SHIPPED VIA: SKAMPERS	

SPECIAL INSTRUCTIONS/COMMENTS:
Please note digestion time for 8100's. Expires 11/9 ?

9511054

PC&B Laboratories, Inc.

210 Park Road, Oviedo, Fl 32765
407-359-7194 (FAX) 407-359-7197

Chain of Custody

Work Order: № 03129

Date: 11-6-95 Page 2 of 2

COMPANY FGS, INC.
ADDRESS 111 S. ARMENIA AVE.
TAMPA, FL 33609
SAMPLED BY Tom Forbush
SIGN Tom Forbush PHONE NO: 813-874-8204

#	SAMPLE ID.	DATE/TIME	MATRIX	8100	LEAD	8010/8020												NUMBER OF CONTAINERS
14 1	B-23 @ 2'	11-2-95 @ 0740	SOIL	X	X													1
15 2	B-21 @ 2'	11-2-95 @ 0724	↓	X	X													1
16 3	TRIP		DI			X												1
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		
13																		

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1: Tom Forbush	11-7-95	1:	11-8-95 8:00
2:		2:	
3:		3:	

SPECIAL INSTRUCTIONS/COMMENTS:

PROJECT INFORMATION

PROJECT NAME: Howco
PROJECT #: 694-216.82
SITE ADDRESS: ST. PETE, FL
PROJECT MANAGER: MAURA CLARK
INVOICE TO:
(IF DIFFERENT FROM ABOVE)

SAMPLE RECEIPT

Total No. of Containers	16
Chain of Custody Seals	
Rec'd Good Condition/Cold	
PO#:	
SHIPPED VIA	Skamons

PC&B Environmental Laboratories, Inc.

210 Park Road, Oviedo, Florida 32765
Phone: 407-359-7194 Fax: 407-359-7197

03-24-1995

REC'D MAR 28 1995

Andrew Long
FGS, Inc.
111 South Armenia Avenue
Tampa, FL 33609-

Dear Andrew Long:

Enclosed are the results of the analysis of your samples received 03/16/1995.

Our laboratory is certified by the Florida DHRS (Lab #E83239) and operates under an FDEP approved Comprehensive Quality Assurance Plan (#900134G). All data were determined in accordance with published procedures (EPA-600/4-79-020), Methods for Chemical Analysis of Water and Wastes, Revised March 1983 and/or Standard Methods for the examination of Water and Wastewater, 17th Edition 1989 and/or Test Methods for Evaluating Solid Waste (EPA-SW-846, Revised July 1992), unless stated otherwise in our CompQapp under method modifications.

If you have any questions, please do not hesitate to give me a call.

Sincerely,

Declan Cowley
Laboratory Director

PC&B Environmental Laboratories, Inc.

210 Park Road, Oviedo, Florida 32765
Phone: 407-359-7194 Fax: 407-359-7197

Client : FGS, Inc.
111 South Armenia Avenue
Tampa, FL 33609-

Contact : Andrew Long
Phone : (813) 874-8204

Laboratory Reference Number : 95030169

Project Name : Howco Facility
Project Number : G94-216.82

Laboratory ID	Matrix	Client ID	Status	Date/Time Sampled
95030169-1	Water	MW-1	RUN	03/15/1995 15:42
95030169-2	Water	MW-2	RUN	03/15/1995 16:05
95030169-3	Water	MW-3	RUN	03/15/1995 16:27
95030169-4	Water	MW-4	RUN	03/15/1995 17:46
95030169-5	Water	MW-5	RUN	03/15/1995 17:17
95030169-6	Water	MW-6	RUN	03/15/1995 16:53
95030169-7	Water	MW-51	RUN	03/15/1995 17:17
95030169-8	Water	EQ-315	RUN	03/15/1995
95030169-9	Water	RB-315	ON HOLD	03/15/1995
95030169-10	Water	TRIP BLANK	RUN	03/15/1995

Number	Parameter	Description
8	Group Test	EPA 601/602 Volatile Organics
8	Group Test	RCRA 8 Metals in Water
8	EPA 604	Chlorinated Phenols
8	EPA 504	EDB/DBCP
8	EPA 610	Polynuclear Aromatic Hydrocarbons
8	EPA 206.2	Arsenic (Filtered) by GFAA
8	EPA 208.2	Barium (Filtered) by GFAA
8	EPA 213.2	Cadmium (Filtered) by GFAA
8	EPA 218.2	Chromium (Filtered) by GFAA
8	EPA 239.2	Lead (Filtered) by GFAA
8	EPA 245.1	Mercury (Filtered) by Cold Vapor AA
8	EPA 249.2	Nickel (Filtered) by GFAA
8	EPA 249.2	Nickel (Total) by GFAA
8	EPA 270.2	Selenium (Filtered) by GFAA
8	EPA 272.2	Silver (Filtered) by GFAA
8	EPA 418.1	TRPH by IR
6	EPA 180.1	Turbidity

PC&B Environmental Laboratories, Inc.
210 Park Road
Oviedo, FL 32765
PHONE: 407-359-7194
FAX: 359-7197

Halogenated Volatile Organics

CLIENT NAME: FGS, Inc.
PROJECT NAME: Howco Facility
PROJECT NUMBER: G94-216.82
DATE RECEIVED: 03/16/1995
ANALYTICAL PROTOCOL: EPA 601

Lab Reference Number	95030169-1	95030169-2	95030169-3	95030169-4	95030169-5
Client Sample ID	MW-1	MW-2	MW-3	MW-4	MW-5
Date Sampled	03/15/1995	03/15/1995	03/15/1995	03/15/1995	03/15/1995
Date Extracted	03/21/1995	03/21/1995	03/21/1995	03/21/1995	03/20/1995
Date Analyzed	03/21/1995	03/21/1995	03/21/1995	03/21/1995	03/20/1995
Matrix	Water	Water	Water	Water	Water
Dilution Factor	10	1	1	1	20
Result Units	ug/l	ug/l	ug/l	ug/l	ug/l
Bromobenzene	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
Bromodichloromethane	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
Bromoform	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
Bromomethane	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
Carbon tetrachloride	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
Chlorobenzene	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
Chloroethane	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
2-Chloroethyl vinyl ether	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
Chloroform	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
Chloromethane	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
Dibromochloromethane	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
Dibromomethane	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
1,2-Dichlorobenzene	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
1,3-Dichlorobenzene	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
1,4-Dichlorobenzene	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
1,1-Dichloroethane	10.0 U	15.7	52.9	1.0 U	20.0 U
Dichlorodifluoromethane	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
1,2-Dichloroethane	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
1,1-Dichloroethene	10.0 U	23.7	21.0	1.0 U	20.0 U
trans-1,2-Dichloroethene	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
1,2-Dichloropropane	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
cis-1,3-Dichloropropene	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
trans-1,3-Dichloropropene	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
Methylene chloride	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
1,1,2,2-Tetrachloroethane	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
1,1,1,2-Tetrachloroethane	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
Tetrachloroethene	10.0 U	5.1	1.0 U	1.0 U	20.0 U
1,1,1-Trichloroethane	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
1,1,2-Trichloroethane	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
Trichloroethene	10.0 U	2.3	1.0 U	1.0 U	20.0 U
Trichlorofluoromethane	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
1,2,3-Trichloropropane	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
Vinyl chloride	10.0 U	28.9	86.5	1.0 U	20.0 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

Reviewed by : 

PC&B Environmental Laboratories, Inc.
210 Park Road
Oviedo, FL 32765
PHONE: 407-359-7194
FAX: 359-7197

Halogenated Volatile Organics

CLIENT NAME: FGS, Inc.
PROJECT NAME: Howco Facility
PROJECT NUMBER: G94-216.82
DATE RECEIVED: 03/16/1995
ANALYTICAL PROTOCOL: EPA 601

Lab Reference Number	95030169-6	95030169-7	95030169-8	95030169-10
Client Sample ID	MW-6	MW-51	EQ-315	TRIP BLANK
Date Sampled	03/15/1995	03/15/1995	03/15/1995	03/15/1995
Date Extracted	03/21/1995	03/21/1995	03/20/1995	03/20/1995
Date Analyzed	03/21/1995	03/21/1995	03/20/1995	03/20/1995
Matrix	Water	Water	Water	Water
Dilution Factor	200	10	1	1
Result Units	ug/l	ug/l	ug/l	ug/l
Bromobenzene	200.0 U	10.0 U	1.0 U	1.0 U
Bromodichloromethane	200.0 U	10.0 U	1.0 U	1.0 U
Bromoform	200.0 U	10.0 U	1.0 U	1.0 U
Bromomethane	200.0 U	10.0 U	1.0 U	1.0 U
Carbon tetrachloride	200.0 U	10.0 U	1.0 U	1.0 U
Chlorobenzene	200.0 U	10.0 U	1.0 U	1.0 U
Chloroethane	200.0 U	10.0 U	1.0 U	1.0 U
2-Chloroethyl vinyl ether	200.0 U	10.0 U	1.0 U	1.0 U
Chloroform	200.0 U	10.0 U	1.0 U	1.0 U
Chloromethane	200.0 U	10.0 U	1.0 U	1.0 U
Dibromochloromethane	200.0 U	10.0 U	1.0 U	1.0 U
Dibromomethane	200.0 U	10.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	200.0 U	10.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	200.0 U	10.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	200.0 U	10.0 U	1.0 U	1.0 U
1,1-Dichloroethane	200.0 U	10.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	200.0 U	10.0 U	1.0 U	1.0 U
1,2-Dichloroethane	200.0 U	10.0 U	1.0 U	1.0 U
1,1-Dichloroethene	200.0 U	10.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	200.0 U	10.0 U	1.0 U	1.0 U
1,2-Dichloropropane	200.0 U	10.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	200.0 U	10.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	200.0 U	10.0 U	1.0 U	1.0 U
Methylene chloride	200.0 U	10.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	200.0 U	10.0 U	1.0 U	1.0 U
1,1,1,2-Tetrachloroethane	200.0 U	10.0 U	1.0 U	1.0 U
Tetrachloroethene	200.0 U	10.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	200.0 U	10.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	200.0 U	10.0 U	1.0 U	1.0 U
Trichloroethene	200.0 U	10.0 U	1.0 U	1.0 U
Trichlorofluoromethane	200.0 U	10.0 U	1.0 U	1.0 U
1,2,3-Trichloropropane	200.0 U	10.0 U	1.0 U	1.0 U
Vinyl chloride	200.0 U	10.0 U	1.0 U	1.0 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

Reviewed by : 

PC&B Environmental Laboratories, Inc.
210 Park Road
Oviedo, FL 32765
PHONE: 407-359-7194
FAX: 359-7197

Aromatic Volatile Organics

CLIENT NAME: FGS, Inc.
PROJECT NAME: Howco Facility
PROJECT NUMBER: G94-216.82
DATE RECEIVED: 03/16/1995
ANALYTICAL PROTOCOL: EPA 602

Lab Reference Number	95030169-1	95030169-2	95030169-3	95030169-4	95030169-5
Client Sample ID	MW-1	MW-2	MW-3	MW-4	MW-5
Date Sampled	03/15/1995	03/15/1995	03/15/1995	03/15/1995	03/15/1995
Date Extracted	03/21/1995	03/21/1995	03/21/1995	03/21/1995	03/20/1995
Date Analyzed	03/21/1995	03/21/1995	03/21/1995	03/21/1995	03/20/1995
Matrix	Water	Water	Water	Water	Water
Dilution Factor	10	1	1	1	20
Result Units	ug/l	ug/l	ug/l	ug/l	ug/l
Benzene	10.0 U	3.8	4.2	1.0 U	56.0
Chlorobenzene	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
1,2-Dichlorobenzene	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
1,3-Dichlorobenzene	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
1,4-Dichlorobenzene	10.0 U	1.0 U	1.0 U	1.0 U	20.0 U
Ethylbenzene	10.0 U	33.6	7.6	1.1	20.0 U
MTBE	1140.0	250.0	223.0	9.4	1004.0
Toluene	10.0 U	117.0	6.8	5.7	20.0 U
m & p-Xylenes	10.0 U	44.1	10.4	6.2	20.0 U
o-Xylene	10.0 U	17.2	12.3	2.8	20.0 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

Reviewed by :

PC&B Environmental Laboratories, Inc.
210 Park Road
Oviedo, FL 32765
PHONE: 407-359-7194
FAX: 359-7197

Aromatic Volatile Organics

CLIENT NAME: FGS, Inc.
PROJECT NAME: Howco Facility
PROJECT NUMBER: G94-216.82
DATE RECEIVED: 03/16/1995
ANALYTICAL PROTOCOL: EPA 602

Lab Reference Number	95030169-6	95030169-7	95030169-8	95030169-10
Client Sample ID	MW-6	MW-51	EQ-315	TRIP BLANK
Date Sampled	03/15/1995	03/15/1995	03/15/1995	03/15/1995
Date Extracted	03/21/1995	03/21/1995	03/20/1995	03/20/1995
Date Analyzed	03/21/1995	03/21/1995	03/20/1995	03/20/1995
Matrix	Water	Water	Water	Water
Dilution Factor	200	10	1	1
Result Units	ug/l	ug/l	ug/l	ug/l
Benzene	13100.0	75.0	1.0 U	1.0 U
Chlorobenzene	200.0 U	10.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	200.0 U	10.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	200.0 U	10.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	200.0 U	10.0 U	1.0 U	1.0 U
Ethylbenzene	4900.0	28.0	1.0 U	1.0 U
MTBE	1000.0 U	1040.0	5.0 U	5.0 U
Toluene	55600.0	31.0	1.0 U	1.0 U
m & p-Xylenes	17000.0	36.0	1.0 U	1.0 U
o-Xylene	8640.0	32.0	1.0 U	1.0 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

Reviewed by : _____

PC&B Environmental Laboratories, Inc.

VOLATILE ORGANICS

MATRIX SPIKE RESULTS

MATRIX : WATER

LAB SAMPLE # : 9503182-16
ANALYSIS DATE : 03-21-95

COMPOUND	AMOUNT SPIKED	SAMPLE RESULT	MS RESULT	MS % RECOVERY	MSD RESULT	MSD% RECOVERY	RPD
1,1-Dichloroethene	50.0	0.0	53.0	106	53.0	106	0
Trichloroethene	50.0	0.0	52.0	104	50.0	100	4
Benzene	50.0	0.0	55.0	110	56.0	112	2
Toluene	50.0	0.0	55.0	110	53.0	106	4
Chlorobenzene	50.0	0.0	58.0	116	57.0	114	2

COMMENTS :

MATRIX SPIKE QUALITY CONTROL LIMITS

	WATER			SOIL		
	LOWER	UPPER	RPD	LOWER	UPPER	RPD
1,1-Dichloroethene	61	145	14	59	172	22
Trichloroethene	71	120	14	62	137	24
Benzene	76	127	11	66	142	21
Toluene	76	125	13	59	139	21
Chlorobenzene	75	130	13	60	133	21

PC&B Environmental Laboratories, Inc.
210 Park Road
Oviedo, FL 32765
PHONE: 407-359-7194
FAX: 359-7197

Polynuclear Aromatic Hydrocarb

CLIENT NAME: FGS, Inc.
PROJECT NAME: Howco Facility
PROJECT NUMBER: G94-216.82
DATE RECEIVED: 03/16/1995
ANALYTICAL PROTOCOL: EPA 610

Lab Reference Number	95030169-1	95030169-2	95030169-3	95030169-4	95030169-5
Client Sample ID	MW-1	MW-2	MW-3	MW-4	MW-5
Date Sampled	03/15/1995	03/15/1995	03/15/1995	03/15/1995	03/15/1995
Date Extracted	03/17/1995	03/17/1995	03/17/1995	03/17/1995	03/17/1995
Date Analyzed	03/17/1995	03/17/1995	03/17/1995	03/17/1995	03/17/1995
Matrix	Water	Water	Water	Water	Water
Dilution Factor	1	1	1	1	1
Result Units	ug/l	ug/l	ug/l	ug/l	ug/l
Acenaphthene	5 U	5 U	5 U	5 U	5 U
Acenaphthylene	5 U	5 U	5 U	5 U	5 U
Anthracene	5 U	5 U	5 U	5 U	5 U
Benzo(a)anthracene	5 U	5 U	5 U	5 U	5 U
Benzo(a)pyrene	5 U	5 U	5 U	5 U	5 U
Benzo(b)fluoranthene	5 U	5 U	5 U	5 U	5 U
Benzo(ghi)perylene	5 U	5 U	5 U	5 U	5 U
Benzo(k)fluoranthene	5 U	5 U	5 U	5 U	5 U
Chrysene	5 U	5 U	5 U	5 U	5 U
Dibenzo(ah)anthracene	5 U	5 U	5 U	5 U	5 U
Fluoranthene	5 U	5 U	5 U	5 U	5 U
Fluorene	5 U	5 U	5 U	5 U	5 U
Indeno(123-cd)pyrene	5 U	5 U	5 U	5 U	5 U
Naphthalene	5 U	30	5 U	5 U	90
1-Methyl naphthalene	5 U	19	5 U	5 U	11
2-Methyl naphthalene	5 U	37	5 U	5 U	29
Phenanthrene	5 U	5 U	5 U	5 U	5 U
Pyrene	5 U	5 U	5 U	5 U	5 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

Reviewed by :

PC&B Environmental Laboratories, Inc.
210 Park Road
Oviedo, FL 32765
PHONE: 407-359-7194
FAX: 359-7197

Polynuclear Aromatic Hydrocarb

CLIENT NAME: FGS, Inc.
PROJECT NAME: Howco Facility
PROJECT NUMBER: G94-216.82
DATE RECEIVED: 03/16/1995
ANALYTICAL PROTOCOL: EPA 610

Lab Reference Number	95030169-6	95030169-7	95030169-8
Client Sample ID	MW-6	MW-51	EQ-315
Date Sampled	03/15/1995	03/15/1995	03/15/1995
Date Extracted	03/17/1995	03/17/1995	03/17/1995
Date Analyzed	03/17/1995	03/17/1995	03/17/1995
Matrix	Water	Water	Water
Dilution Factor	2	1	1
Result Units	ug/l	ug/l	ug/l
Acenaphthene	10 U	5 U	5 U
Acenaphthylene	10 U	5 U	5 U
Anthracene	10 U	5 U	5 U
Benzo(a)anthracene	10 U	5 U	5 U
Benzo(a)pyrene	10 U	5 U	5 U
Benzo(b)fluoranthene	10 U	5 U	5 U
Benzo(ghi)perylene	10 U	5 U	5 U
Benzo(k)fluoranthene	10 U	5 U	5 U
Chrysene	10 U	5 U	5 U
Dibenzo(ah)anthracene	10 U	5 U	5 U
Fluoranthene	10 U	5 U	5 U
Fluorene	10 U	5 U	5 U
Indeno(123-cd)pyrene	10 U	5 U	5 U
Naphthalene	240	70	5 U
1-Methyl naphthalene	54	8	5 U
2-Methyl naphthalene	122	28	5 U
Phenanthrene	10 U	5 U	5 U
Pyrene	10 U	5 U	5 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

Reviewed by : _____

PC&B Environmental Laboratories, Inc.

POLYNUCLEAR AROMATICS

MATRIX SPIKE RESULTS

MATRIX : WATER **LAB SAMPLE # : 9503017-8**
ANALYSIS DATE : 03-17-95

COMPOUND	AMOUNT SPIKED	SAMPLE RESULT	MS RESULT	MS % RECOVERY
Naphthalene	50.0	0.0	40.0	80
Acenaphthylene	50.0	0.0	41.0	82
Acenaphthene	50.0	0.0	45.0	90
Fluorene	50.0	0.0	43.0	86
Phenanthrene	50.0	0.0	40.0	80
Anthracene	50.0	0.0	36.0	72
Fluoranthene	50.0	0.0	48.0	96
Pyrene	50.0	0.0	47.0	94
Benzo(a)anthracene	50.0	0.0	39.0	78
Chrysene	50.0	0.0	47.0	94
Benzo(b)fluoranthene	50.0	0.0	45.0	90
Benzo(k)fluoranthene	50.0	0.0	45.0	90
Benzo(a)pyrene	50.0	0.0	44.0	88
Indeno(1,2,3-cd)pyrene	50.0	0.0	42.0	84
Dibenz(a,h)anthracene	50.0	0.0	41.0	82
Benzo(g,h,i)perylene	50.0	0.0	37.0	74

COMMENTS :

MATRIX SPIKE QUALITY CONTROL LIMITS

	WATER			SOIL		
	LOWER	UPPER	RPD	LOWER	UPPER	RPD
Naphthalene	33	123	18	46	100	12
Acenaphthylene	43	127	16	50	86	18
Acenaphthene	44	128	17	47	97	9
Fluorene	45	135	17	17	131	24
Phenanthrene	47	129	19	49	97	12
Anthracene	42	138	18	51	87	9
Fluoranthene	45	135	17	49	91	10
Pyrene	23	155	27	30	120	20
Benzo(a)anthracene	31	131	24	43	103	14
Chrysene	26	152	23	18	142	27
Benzo(b)fluoranthene	10	142	30	36	102	15
Benzo(k)fluoranthene	15	147	27	29	101	20
Benzo(a)pyrene	18	138	28	39	99	15
Indeno(1,2,3-cd)pyrene	7	139	32	51	87	9
Dibenz(a,h)anthracene	21	153	26	49	87	9
Benzo(g,h,i)perylene	17	149	40	57	79	16

PC&B Environmental Laboratories, Inc.
210 Park Road
Oviedo, FL 32765
PHONE: 407-359-7194
FAX: 359-7197

Chlorinated Phenols

CLIENT NAME: FGS, Inc.
PROJECT NAME: Howco Facility
PROJECT NUMBER: G94-216.82
DATE RECEIVED: 03/16/1995
ANALYTICAL PROTOCOL: EPA 604

Lab Reference Number	95030169-1	95030169-2	95030169-3	95030169-4	95030169-5
Client Sample ID	MW-1	MW-2	MW-3	MW-4	MW-5
Date Sampled	03/15/1995	03/15/1995	03/15/1995	03/15/1995	03/15/1995
Date Extracted	03/17/1995	03/17/1995	03/17/1995	03/17/1995	03/17/1995
Date Analyzed	03/20/1995	03/20/1995	03/20/1995	03/20/1995	03/20/1995
Matrix	Water	Water	Water	Water	Water
Dilution Factor	1	2	1	1	2
Result Units	ug/l	ug/l	ug/l	ug/l	ug/l
4-Chloro-3-methylphenol	5 U	10 U	5 U	5 U	10 U
2-Chlorophenol	5 U	10 U	5 U	5 U	10 U
2-Cyclohexyl-4,6-dinitrophenol	5 U	10 U	5 U	5 U	10 U
2,4-Dichlorophenol	5 U	10 U	5 U	5 U	10 U
2,4-Dimethylphenol	5 U	10 U	5 U	17	64
4,6-Dinitro-2-methylphenol	5 U	10 U	5 U	5 U	10 U
2,4-Dinitrophenol	5 U	10 U	5 U	5 U	10 U
2,6-Dichlorophenol	5 U	10 U	5 U	5 U	10 U
Dinoseb	5 U	10 U	5 U	5 U	10 U
1-Methyl phenol	5 U	10 U	5 U	5 U	10 U
2-Methyl phenol	5 U	10 U	5 U	5 U	10 U
3-Methyl phenol	5 U	10 U	5 U	5 U	10 U
2-Nitrophenol	5 U	10 U	5 U	5 U	10 U
4-Nitrophenol	5 U	10 U	5 U	5 U	10 U
Pentachlorophenol	5 U	10 U	5 U	5 U	10 U
Phenol	5 U	32	5 U	5 U	10 U
2,4,6-Trichlorophenol	5 U	10 U	5 U	5 U	10 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

Reviewed by : _____

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Chlorinated Phenols

CLIENT NAME: FGS, Inc.
PROJECT NAME: Howco Facility
PROJECT NUMBER: G94-216.82
DATE RECEIVED: 03/16/1995
ANALYTICAL PROTOCOL: EPA 604

Lab Reference Number	95030169-6	95030169-7	95030169-8
Client Sample ID	MW-6	MW-51	EQ-315
Date Sampled	03/15/1995	03/15/1995	03/15/1995
Date Extracted	03/17/1995	03/17/1995	03/17/1995
Date Analyzed	03/20/1995	03/20/1995	03/20/1995
Matrix	Water	Water	Water
Dilution Factor	5	5	1
Result Units	ug/l	ug/l	ug/l
4-Chloro-3-methylphenol	30	25 U	5 U
2-Chlorophenol	25 U	25 U	5 U
2-Cyclohexyl-4,6-dinitrophenol	25 U	25 U	5 U
2,4-Dichlorophenol	25 U	25 U	5 U
2,4-Dimethylphenol	65	90	5 U
4,6-Dinitro-2-methylphenol	25 U	25 U	5 U
2,4-Dinitrophenol	25 U	25 U	5 U
2,6-Dichlorophenol	25 U	25 U	5 U
Dinoseb	25 U	25 U	5 U
1-Methyl phenol	25 U	25 U	5 U
2-Methyl phenol	25 U	25 U	5 U
3-Methyl phenol	25 U	25 U	5 U
2-Nitrophenol	25 U	25 U	5 U
4-Nitrophenol	25 U	25 U	5 U
Pentachlorophenol	25 U	25 U	5 U
Phenol	25 U	25 U	5 U
2,4,6-Trichlorophenol	25 U	25 U	5 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

Reviewed by : 

PC&B Environmental Laboratories, Inc.

PHENOLS

MATRIX SPIKE RESULTS

MATRIX : WATER **LAB SAMPLE # : 9503169-4**
ANALYSIS DATE : 03-20-95

COMPOUND	AMOUNT SPIKED	SAMPLE RESULT	MS RESULT	MS % RECOVERY
Phenol	50.0	0.0	14.0	28
2-Chlorophenol	50.0	0.0	36.0	72
2,4-Dichlorophenol	50.0	0.0	27.0	54
4-Chloro-3-methylphenol	50.0	0.0	47.0	94
2,4,6-Trichlorophenol	50.0	0.0	48.0	96
4,6-Dinitro-2-methylphenol	50.0	0.0	35.0	70
Pentachlorophenol	50.0	0.0	39.0	78

COMMENTS :

MATRIX SPIKE QUALITY CONTROL LIMITS

	WATER			SOIL		
	LOWER	UPPER	RPD	LOWER	UPPER	RPD
Phenol	25	125	25	10	135	35
2-Chlorophenol	40	130	18	25	120	25
2,4-Dichlorophenol	40	125	18	25	120	25
4-Chloro-3-methylphenol	40	120	18	25	120	25
2,4,6-Trichlorophenol	30	122	18	20	130	25
4,6-Dinitro-2-methylphenol	25	115	18	20	120	25
Pentachlorophenol	20	130	18	10	130	25

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EDB/DBCP

CLIENT NAME: FGS, Inc.
PROJECT NAME: Howco Facility
PROJECT NUMBER: G94-216.82
DATE RECEIVED: 03/16/1995
ANALYTICAL PROTOCOL: EPA 504

Lab Reference Number	95030169-1	95030169-2	95030169-3	95030169-4	95030169-5
Client Sample ID	MW-1	MW-2	MW-3	MW-4	MW-5
Date Sampled	03/15/1995	03/15/1995	03/15/1995	03/15/1995	03/15/1995
Date Extracted	03/22/1995	03/22/1995	03/22/1995	03/22/1995	03/22/1995
Date Analyzed	03/22/1995	03/22/1995	03/22/1995	03/22/1995	03/22/1995
Matrix	Water	Water	Water	Water	Water
Dilution Factor	1	1	1	1	1
Result Units	ug/l	ug/l	ug/l	ug/l	ug/l
Ethylene dibromide (EDB)	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
1,2-Dibromo-3-chloropropane	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

Reviewed by :

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EDB/DBCP

CLIENT NAME: FGS, Inc.
PROJECT NAME: Howco Facility
PROJECT NUMBER: G94-216.82
DATE RECEIVED: 03/16/1995
ANALYTICAL PROTOCOL: EPA 504

Lab Reference Number	95030169-6	95030169-7	95030169-8
Client Sample ID	MW-6	MW-51	EQ-315
Date Sampled	03/15/1995	03/15/1995	03/15/1995
Date Extracted	03/22/1995	03/22/1995	03/22/1995
Date Analyzed	03/22/1995	03/22/1995	03/22/1995
Matrix	Water	Water	Water
Dilution Factor	1	1	1
Result Units	ug/l	ug/l	ug/l
Ethylene dibromide (EDB)	0.02 U	0.02 U	0.02 U
1,2-Dibromo-3-chloropropane	0.1 U	0.1 U	0.1 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

Reviewed by :

PC&B Environmental Laboratories, Inc.

EDB/DBCP

MATRIX SPIKE RESULTS

MATRIX : WATER **LAB SAMPLE # : 9503169-3**
ANALYSIS DATE : 03-22-95

COMPOUND	AMOUNT SPIKED	SAMPLE RESULT	MS RESULT	MS % RECOVERY
EDB	2.00	0.00	2.02	101
DBCP	2.00	0.00	1.94	97

COMMENTS :

MATRIX SPIKE QUALITY CONTROL LIMITS

	WATER			SOIL		
	LOWER	UPPER	RPD	LOWER	UPPER	RPD
EDB	57	137	17	50	140	20
DBCP	66	130	14	60	130	20

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Inorganic Analysis

CLIENT NAME: FGS, Inc.
PROJECT NAME: Howco Facility
PROJECT NUMBER: G94-216.82
DATE RECEIVED: 03/16/1995

Lab Reference Number			95030169-1	95030169-2	95030169-3	95030169-4	95030169-5
Client Sample ID			MW-1	MW-2	MW-3	MW-4	MW-5
Date Sampled			03/15/1995	03/15/1995	03/15/1995	03/15/1995	03/15/1995
Matrix			Water	Water	Water	Water	Water
EPA 206.2	Arsenic, Filtered	ug/l	10 U	10 U	10 U	10 U	10 U
EPA 206.2	Arsenic, Total	ug/l	10 U	10 U	10 U	10 U	36
EPA 208.2	Barium, Filtered	ug/l	200 U	200 U	200 U	200 U	200 U
EPA 208.2	Barium, Total	ug/l	200 U	200 U	200 U	200 U	200 U
EPA 213.2	Cadmium, Filtered	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
EPA 213.2	Cadmium, Total	ug/l	5 U	5 U	5 U	5 U	5 U
EPA 218.2	Chromium, Filtered	ug/l	10 U	12	10 U	10 U	68
EPA 218.2	Chromium, Total	ug/l	10 U	92	24	36	330
EPA 239.2	Lead, Filtered	ug/l	3.0 U	9.5	3.0 U	90.0	1900.0
EPA 239.2	Lead, Total	ug/l	3.0 U	1100.0	18.0	4300.0	2800.0
EPA 245.1	Mercury, Filtered	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.4
EPA 245.1	Mercury, Total	ug/l	0.2 U	1.6	0.4	0.8	0.6
EPA 249.2	Nickel	ug/l	10 U	10 U	10 U	10 U	47
EPA 249.2	Nickel, Total	ug/l	10 U	10 U	10	10	67
EPA 270.2	Selenium, Filtered	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
EPA 270.2	Selenium, Total	ug/l	5 U	11	5 U	5 U	12
EPA 272.2	Silver, Filtered	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
EPA 272.2	Silver, Total	ug/l	5 U	5 U	5 U	5 U	5 U
EPA 418.1	TRPH	mg/l	1.0 U	1.0 U	1.0 U	1.0 U	2.0
EPA 180.1	Turbidity	NTU	470.0	485.0	480.0	485.0	250.0

U = Undetected. The value preceeding the 'U' is the MDL for the analyte.

Reviewed by : 

PC&B Environmental Laboratories, Inc.
210 Park Road
Oviedo, FL 32765
PHONE: 407-359-7194

Inorganic Analysis

CLIENT NAME: FGS, Inc.
PROJECT NAME: Howco Facility
PROJECT NUMBER: G94-216.82
DATE RECEIVED: 03/16/1995

Lab Reference Number			95030169-6	95030169-7	95030169-8
Client Sample ID			MW-6	MW-51	EQ-315
Date Sampled			03/15/1995	03/15/1995	03/15/1995
Matrix			Water	Water	Water
EPA 206.2	Arsenic, Filtered	ug/l	10 U	10 U	10 U
EPA 206.2	Arsenic, Total	ug/l	10 U	10 U	10 U
EPA 208.2	Barium, Filtered	ug/l	200 U	200 U	200 U
EPA 208.2	Barium, Total	ug/l	200 U	200 U	200 U
EPA 213.2	Cadmium, Filtered	ug/l	5.0 U	5.0 U	5.0 U
EPA 213.2	Cadmium, Total	ug/l	5 U	5 U	5 U
EPA 218.2	Chromium, Filtered	ug/l	12	10 U	10 U
EPA 218.2	Chromium, Total	ug/l	28	150	10 U
EPA 239.2	Lead, Filtered	ug/l	14.0	180.0	3.0 U
EPA 239.2	Lead, Total	ug/l	19.0	1100.0	3.0 U
EPA 245.1	Mercury, Filtered	ug/l	0.2 U	0.2 U	0.2 U
EPA 245.1	Mercury, Total	ug/l	0.6	0.4	0.2 U
EPA 249.2	Nickel	ug/l	10 U	45	10 U
EPA 249.2	Nickel, Total	ug/l	16	53	10 U
EPA 270.2	Selenium, Filtered	ug/l	5.0 U	5.0 U	5.0 U
EPA 270.2	Selenium, Total	ug/l	5	5 U	5 U
EPA 272.2	Silver, Filtered	ug/l	5.0 U	5.0 U	5.0 U
EPA 272.2	Silver, Total	ug/l	5 U	5 U	5 U
EPA 418.1	TRPH	mg/l	11.0	2.8	1.0 U
EPA 180.1	Turbidity	NTU	470.0	NR	NR

NR = Analysis not Requested.
U = Undetected. The value preceeding the 'U' is the MDL for the analyte.

Reviewed by : 

PC&B Environmental Laboratories, Inc.

INORGANICS

MATRIX SPIKE RESULTS

MATRIX : WATER **LAB SAMPLE # : 9503169-1**
ANALYSIS DATE : 03-20-95

PARAMETER	AMOUNT SPIKED	SAMPLE RESULT	MS RESULT	MS % RECOVERY
Antimony	25.0	0.0	22	88
Arsenic	25.0	0.0	25	100
Barium	250	0.0	222	89
Cadmium	25.0	0.0	24	96
Chromium	50.0	0.0	54	108
Copper	50.0	0.0	55	110
Lead	25.0	0.0	28	112
Mercury	1.0	0.0	1.1	106
Nickel	50.0	0.0	59	118
Selenium	25.0	0.0	20	80
Silver	25.0	0.0	25	100
Iron	25.0	961	1006	90
Zinc	200.0	0.0	183	92
Manganese	25.0	16	44	112

COMMENTS :

MATRIX SPIKE QUALITY CONTROL LIMITS

	WATER			SOIL		
	LOWER	UPPER	RPD	LOWER	UPPER	RPD
Antimony	75	120	15	70	130	20
Arsenic	58	148	15	56	128	20
Barium	75	120	15	70	130	20
Cadmium	72	120	15	56	130	15
Chromium	68	120	15	62	146	20
Copper	75	120	15	70	130	20
Lead	75	135	15	57	141	20
Mercury	80	120	15	70	130	20
Nickel	75	120	15	70	130	20
Selenium	75	120	15	70	130	20
Silver	59	125	15	70	130	20
Iron	75	120	15	70	130	20
Zinc	75	120	15	70	130	20
Manganese	75	120	20	70	130	20

9503169.

PC&B Laboratories, Inc.

210 Park Road, Oviedo, Fl 32765
407-359-7194 (FAX) 407-359-7197

Chain of Custody

Work Order: _____

Date: 3-15-95 Page 1 of 1

COMPANY FGS, INC.
ADDRESS 111 S. ARMENIA AVE
TAMPA, FL 33609
SAMPLED BY Tom FERGUSON
SIGN Tom Ferguson PHONE NO: 813-874-8204

ANALYSIS REQUEST

#	SAMPLE ID.	DATE/TIME	MATRIX	601/602	504	604	610	418.1	RCRA 8 (TOTAL METALS + Nickel)	(DISSOLVED)	TURB. DITY	NUMBER OF CONTAINERS
1	MW-1	3-15-95 @ 1542	GW	X	X	X	X	X	X	X	X	10
2	MW-2	1605		2	2							10
3	MW-3	1627		2	2							10
4	MW-4	1746		2	2							10
5	MW-5	1717		2	2							10
6	MW-6	1653		2	2							10
7	MW-51	1717		2	2							9
8	EQ-315			2								9
9	RB-315			X	X	X	X	X	X			8
10	TRIP		D1	X								1
11												
12												
13												

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1: Brenda Pagan	3-15-95	1: Tom Ferguson	3-15-95
2: Tom Ferguson	3-15-95	2: Nancy Moore	16:10 3/16/95
3:		3:	

SPECIAL INSTRUCTIONS/COMMENTS:
STANDARD TAT
HOLD RB-315 UNTIL CONTACTED BY P.M.

PROJECT INFORMATION
PROJECT NAME: HOWCO FACILITY
PROJECT #: G94-216.82
SITE ADDRESS: ST. PETE, FL
PROJECT MANAGER: ANDY LONG

SAMPLE RECEIPT
Total No. of Containers: 87
Chain of Custody Seals:
Rec'd Good Condition/Cold:
PO#:
SHIPPED VIA: SKAMPERS

INVOICE TO:
(IF DIFFERENT FROM ABOVE)

WELL SAMPLE RECORD

PROJECT NO. G94-216.82 DATE 3-15-95 CHECKED BY TB

PROJECT Honco Facility SAMPLED BY Tom Ferguson DATE CHECKED 3/16/95

WELL I.D.	DEPTH TO WATER (FT. BMP)	TOTAL WELL DEPTH (FT. BMP)	WELL TYPE AND DIAMETER	WATER VOLUME IN WELL(GAL.)	PURGE RATE (GPM)	DURATION OF PURGING (MIN.)	VOLUME PURGED (GAL.)	PURGE METHOD	METHOD OF SAMPLE COLLECTION	DATE OF SAMPLE COLLECTION	TIME OF SAMPLE COLLECTION	SAMPLE TEMP. (°C)	SAMPLE pH	SAMPLE CONDUCTIVITY UMHOS/CM	COMMENTS (ODOR, COLOR, ETC.)
MW-1	9.58	17.89	2"-PVC	1.41	0.37	19	7.0	C	TB	3-15-95	1542	25.5	5.42	1040	SL. PETRO ODOR SL. SILTY
												"	5.04	990	" "
												"	4.81	980	" "
												"	4.73	990	" CLEAR
												"	4.70	970	" "
										3-15-95	2100				DO - 2.08 mg/l @ 22.4°C
MW-2	6.81	15.12	PVC-2"	1.41	0.47	17	8.0	C	TB	3-15-95	1605	26.0	6.03	760	PETRO ODOR VERY SILTY
												"	6.12	780	" "
												"	6.17	810	" "
												"	6.20	870	" "
												"	6.20	990	" "
										3-15-95	2105				DO - 1.40 mg/l @ 22.4°C
MW-3	9.79	17.32	PVC-2"	1.28	0.46	13	6.0	C	TB	3-15-95	1627	26.0	5.23	550	PETRO ODOR VERY SILTY
												26.5	5.13	520	" "
												"	5.14	510	" "
												"	5.17	510	" "
										3-15-95	2110				DO - 1.92 mg/l @ 22.4°C

PURGE AND COLLECTION METHODS: C = CENTRIFUGAL PUMP; P = PERISTALTIC PUMP; TB = TEFLON BAILER; PB = PVC BAILER; X = OTHER (DESCRIBE)

WELL SAMPLE RECORD

PROJECT NO. G 94-216.82 DATE 3-15-95 CHECKED BY TB

PROJECT Honco Facility SAMPLED BY Tom Ferguson DATE CHECKED 3/16/95

WELL I.D.	DEPTH TO WATER (FT. BMP)	TOTAL WELL DEPTH (FT. BMP)	WELL TYPE AND DIAMETER	WATER VOLUME IN WELL(GAL.)	PURGE RATE (GPM)	DURATION OF PURGING (MIN.)	VOLUME PURGED (GAL.)	PURGE METHOD	METHOD OF SAMPLE COLLECTION	DATE OF SAMPLE COLLECTION	TIME OF SAMPLE COLLECTION	SAMPLE TEMP. (°C)	SAMPLE pH	SAMPLE CONDUCTIVITY UMHOS/CM	COMMENTS (ODOR, COLOR, ETC.)
mw-4	7.16	14.61	PVC-2"	1.27	0.46	13	6.0	C	TB	3-15-95	1746	26.5	5.81	800	Petro odor very silty
												"	5.99	1020	" "
												"	6.08	1130	" "
												25.0	6.14	1180	" "
												25.5	6.18	1260	" "
										3-15-95	2115				DO - 1.89 mg/l @ 22.3°C
mw-5	7.29	18.21	PVC-2"	1.86	0:50	12	6.0	C	TB	3-15-95	1717	27.0	6.86	3730	Petro odor very silty
												25.0	6.94	3870	" "
												"	6.90	3700	" "
										3-15-95	2120				DO - 0.16 mg/l @ 22.4°C
mw-6	10.22	18.34	PVC-2"	1.38	0.67	6	4.0	C	TB	3-15-95	1653	26.0	5.95	880	Petro odor very silty
												25.5	5.91	870	" "
												"	5.87	860	" "
										3-15-95	2125				DO - 1.02 mg/l @ 22.3°C

PURGE AND COLLECTION METHODS: C = CENTRIFUGAL PUMP; P = PERISTALTIC PUMP; TB = TEFLON BAILER; PB = PVC BAILER; X = OTHER (DESCRIBE)

PC&B Environmental Laboratories, Inc.

210 Park Road, Oviedo, Florida 32765
Phone: 407-359-7194 Fax: 407-359-7197

11-16-1995

Maura Clark
FGS, Inc.
111 South Armenia Avenue
Tampa, FL 33609-

Dear Maura Clark:

Enclosed are the results of the analysis of your samples received 11/10/1995.

Our laboratory is certified by the Florida DHRS (Lab #E83239) and operates under an FDEP approved Comprehensive Quality Assurance Plan (#900134G). All data were determined in accordance with published procedures (EPA-600/4-79-020), Methods for Chemical Analysis of Water and Wastes, Revised March 1983 and/or Standard Methods for the examination of Water and Wastewater, 17th Edition 1989 and/or Test Methods for Evaluating Solid Waste (EPA-SW-846, Revised July 1992), unless stated otherwise in our CompQapp under method modifications.

If you have any questions, please do not hesitate to give me a call.

Sincerely,

Declan Cowley
Laboratory Director

PC&B Environmental Laboratories, Inc.

210 Park Road, Oviedo, Florida 32765
Phone: 407-359-7194 Fax: 407-359-7197

Client : FGS, Inc.
111 South Armenia Avenue
Tampa, FL 33609-

Contact : Maura Clark
Phone : (813) 874-8204

Laboratory Reference Number : 95110076

Project Name : HOWCO
Project Number : G95-216.82

Laboratory ID	Matrix	Client ID	Status	Date/Time Sampled
95110076-1	Water	MW-10	RUN	11/08/1995 12:40
95110076-2	Water	MW-7D	RUN	11/08/1995 13:00
95110076-3	Water	MW-7	RUN	11/08/1995 13:20
95110076-4	Water	MW-9	RUN	11/08/1995 13:55
95110076-5	Water	MW-8	RUN	11/08/1995 14:10
95110076-6	Water	MW-30	RUN	11/08/1995 13:40
95110076-7	Water	MW-13	RUN	11/08/1995 13:25
95110076-8	Water	MW-12	RUN	11/08/1995 13:55
95110076-9	Water	MW-11	RUN	11/08/1995 14:20
95110076-10	Water	MW-6D	RUN	11/08/1995 14:55
95110076-11	Water	MW-31	RUN	11/08/1995 12:55
95110076-12	Water	MW-32	ON HOLD	11/08/1995 12:45
95110076-13	Water	TRIP	RUN	11/08/1995

Number	Parameter	Description
10	Group Test	EPA 601/602 Volatile Organics
10	Group Test	RCRA Metals by ICAP in Water
10	EPA 604	Chlorinated Phenols
10	EPA 504	EDB/DBCP
11	EPA 610	Polynuclear Aromatic Hydrocarbons
10	EPA 200.7	Nickel by ICAP
11	EPA 418.1	TRPH by IR

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Halogenated Volatile Organics

CLIENT NAME: FGS, Inc.
PROJECT NAME: HOWCO
PROJECT NUMBER: G95-216.82
DATE RECEIVED: 11/10/1995
ANALYTICAL PROTOCOL: EPA 601

Lab Reference Number	95110076-1	95110076-2	95110076-3	95110076-4	95110076-5
Client Sample ID	MW-10	MW-7D	MW-7	MW-9	MW-8
Date Sampled	11/08/1995	11/08/1995	11/08/1995	11/08/1995	11/08/1995
Date Extracted	11/13/1995	11/13/1995	11/13/1995	11/13/1995	11/13/1995
Date Analyzed	11/13/1995	11/13/1995	11/13/1995	11/13/1995	11/13/1995
Sample Matrix (as Received)	Water	Water	Water	Water	Water
Dilution Factor	1	1	1	1	1
Result Units	ug/l	ug/l	ug/l	ug/l	ug/l
Bromobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chloroethyl vinyl ether	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	1.0 U	30.5	1.0 U	1.0 U	1.0 U
Chloromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromomethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	13.6	7.7	19.6	67.7	18.9
Dichlorodifluoromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	1.0 U	5.1	5.3	19.4	3.3
trans-1,2-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1,2-Tetrachloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	10.4	1.0 U	4.3	1.0 U	1.0 U
1,1,1-Trichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	1.5	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichloropropane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	1.0 U	1.0 U	6.7	12.5	16.9

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

Reviewed by : _____

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Halogenated Volatile Organics

CLIENT NAME: FGS, Inc.
PROJECT NAME: HOWCO
PROJECT NUMBER: G95-216.82
DATE RECEIVED: 11/10/1995
ANALYTICAL PROTOCOL: EPA 601

Lab Reference Number	95110076-6	95110076-7	95110076-8	95110076-9	95110076-11
Client Sample ID	MW-30	MW-13	MW-12	MW-11	MW-31
Date Sampled	11/08/1995	11/08/1995	11/08/1995	11/08/1995	11/08/1995
Date Extracted	11/13/1995	11/13/1995	11/13/1995	11/13/1995	11/13/1995
Date Analyzed	11/13/1995	11/13/1995	11/13/1995	11/13/1995	11/13/1995
Sample Matrix (as Received)	Water	Water	Water	Water	Water
Dilution Factor	1	1	1	1	1
Result Units	ug/l	ug/l	ug/l	ug/l	ug/l
Bromobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chloroethyl vinyl ether	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromomethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	15.6	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	5.4	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1,2-Tetrachloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	4.7	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichloropropane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	8.4	1.0 U	1.0 U	1.0 U	1.0 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

Reviewed by : 

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Halogenated Volatile Organics

CLIENT NAME: FGS, Inc.
PROJECT NAME: HOWCO
PROJECT NUMBER: G95-216.82
DATE RECEIVED: 11/10/1995
ANALYTICAL PROTOCOL: EPA 601

Lab Reference Number	95110076-13
Client Sample ID	TRIP
Date Sampled	11/08/1995
Date Extracted	11/13/1995
Date Analyzed	11/13/1995
Sample Matrix (as Received)	Water
Dilution Factor	1
Result Units	ug/l
Bromobenzene	1.0 U
Bromodichloromethane	1.0 U
Bromoform	1.0 U
Bromomethane	1.0 U
Carbon tetrachloride	1.0 U
Chlorobenzene	1.0 U
Chloroethane	1.0 U
2-Chloroethyl vinyl ether	1.0 U
Chloroform	1.0 U
Chloromethane	1.0 U
Dibromochloromethane	1.0 U
Dibromomethane	1.0 U
1,2-Dichlorobenzene	1.0 U
1,3-Dichlorobenzene	1.0 U
1,4-Dichlorobenzene	1.0 U
1,1-Dichloroethane	1.0 U
Dichlorodifluoromethane	1.0 U
1,2-Dichloroethane	1.0 U
1,1-Dichloroethene	1.0 U
trans-1,2-Dichloroethene	1.0 U
1,2-Dichloropropane	1.0 U
cis-1,3-Dichloropropene	1.0 U
trans-1,3-Dichloropropene	1.0 U
Methylene chloride	1.0 U
1,1,2,2-Tetrachloroethane	1.0 U
1,1,1,2-Tetrachloroethane	1.0 U
Tetrachloroethene	1.0 U
1,1,1-Trichloroethane	1.0 U
1,1,2-Trichloroethane	1.0 U
Trichloroethene	1.0 U
Trichlorofluoromethane	1.0 U
1,2,3-Trichloropropane	1.0 U
Vinyl chloride	1.0 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

Reviewed by : _____

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Aromatic Volatile Organics

CLIENT NAME: FGS, Inc.
PROJECT NAME: HOWCO
PROJECT NUMBER: G95-216.82
DATE RECEIVED: 11/10/1995
ANALYTICAL PROTOCOL: EPA 602

Lab Reference Number	95110076-1	95110076-2	95110076-3	95110076-4	95110076-5
Client Sample ID	MW-10	MW-7D	MW-7	MW-9	MW-8
Date Sampled	11/08/1995	11/08/1995	11/08/1995	11/08/1995	11/08/1995
Date Extracted	11/13/1995	11/13/1995	11/13/1995	11/13/1995	11/13/1995
Date Analyzed	11/13/1995	11/13/1995	11/13/1995	11/13/1995	11/13/1995
Sample Matrix (as Received)	Water	Water	Water	Water	Water
Dilution Factor	1	1	1	1	1
Result Units	ug/l	ug/l	ug/l	ug/l	ug/l
Benzene	5.4	1.0 U	2.2	10.8	10.9
Chlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	22.0	1.0 U	1.0 U	4.9	2.1
MTBE	18.8	16.3	184	84.3	192
Toluene	7.2	17.8	1.0 U	49.0	2.7
m & p-Xylenes	61.2	3.4	2.5	5.6	3.7
o-Xylene	41.4	1.4	1.3	2.1	3.5

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

FDEP CompQAPP # 900134G - FHRS Certification # E83239/83353

Reviewed by : _____

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Aromatic Volatile Organics

CLIENT NAME: FGS, Inc.
PROJECT NAME: HOWCO
PROJECT NUMBER: G95-216.82
DATE RECEIVED: 11/10/1995
ANALYTICAL PROTOCOL: EPA 602

Lab Reference Number	95110076-6	95110076-7	95110076-8	95110076-9	95110076-10
Client Sample ID	MW-30	MW-13	MW-12	MW-11	MW-6D
Date Sampled	11/08/1995	11/08/1995	11/08/1995	11/08/1995	11/08/1995
Date Extracted	11/13/1995	11/13/1995	11/13/1995	11/13/1995	11/13/1995
Date Analyzed	11/13/1995	11/13/1995	11/13/1995	11/13/1995	11/13/1995
Sample Matrix (as Received)	Water	Water	Water	Water	Water
Dilution Factor	1	1	1	1	1
Result Units	ug/l	ug/l	ug/l	ug/l	ug/l
Benzene	2.6	1.0 U	1.0 U	16.4	9.1
Chlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	1.0 U	1.0 U	1.0 U	2.1	37.6
MTBE	166	5.0 U	5.0 U	149	5.0
Toluene	1.0 U	1.0 U	1.0 U	1.0 U	39.5
m & p-Xylenes	2.4	1.0 U	1.0 U	1.0 U	191
o-Xylene	1.7	1.0 U	1.0 U	1.2	82.7

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

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Aromatic Volatile Organics

CLIENT NAME: FGS, Inc.
PROJECT NAME: HOWCO
PROJECT NUMBER: G95-216.82
DATE RECEIVED: 11/10/1995
ANALYTICAL PROTOCOL: EPA 602

Lab Reference Number	95110076-11	95110076-13
Client Sample ID	MW-31	TRIP
Date Sampled	11/08/1995	11/08/1995
Date Extracted	11/13/1995	11/13/1995
Date Analyzed	11/13/1995	11/13/1995
Sample Matrix (as Received)	Water	Water
Dilution Factor	1	1
Result Units	ug/l	ug/l
Benzene	1.0 U	1.0 U
Chlorobenzene	1.0 U	1.0 U
1,2-Dichlorobenzene	1.0 U	1.0 U
1,3-Dichlorobenzene	1.0 U	1.0 U
1,4-Dichlorobenzene	1.0 U	1.0 U
Ethylbenzene	1.0 U	1.0 U
MTBE	5.0 U	5.0 U
Toluene	1.0 U	1.0 U
m & p-Xylenes	1.0 U	1.0 U
o-Xylene	1.0 U	1.0 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

FDEP CompQAPP # 900134G - FHRS Certification # E83239/83353

Reviewed by : _____

Quality Control Report for Spike Analysis

Aromatic Volatile Organics

Matrix: Water
Lab Sample ID: 9511087-04
Spike Units: ug/l

Analysis Date: 11/13/1995
Preparation Date: 11/13/1995
Analyst: SWR

Analyte	Spike Amount	Sample Result	Spike Result	Percent Recovery	Lower Control Limit	Upper Control Limit
Benzene	20.0	0.0	22.2	111	39	164
Ethylbenzene	20.0	0.0	21.6	108	60	135
MTBE	20.0	0.0	21.0	105	39	159
Toluene	20.0	0.0	20.7	104	57	145
m & p-Xylenes	40.0	0.0	45.3	113	50	144
o-Xylene	20.0	0.0	21.2	106	56	140

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Polynuclear Aromatic Hydrocarb

CLIENT NAME: FGS, Inc.
PROJECT NAME: HOWCO
PROJECT NUMBER: G95-216.82
DATE RECEIVED: 11/10/1995
ANALYTICAL PROTOCOL: EPA 610

Lab Reference Number	95110076-1	95110076-2	95110076-3	95110076-4	95110076-5
Client Sample ID	MW-10	MW-7D	MW-7	MW-9	MW-8
Date Sampled	11/08/1995	11/08/1995	11/08/1995	11/08/1995	11/08/1995
Date Extracted	11/13/1995	11/13/1995	11/13/1995	11/13/1995	11/13/1995
Date Analyzed	11/13/1995	11/13/1995	11/13/1995	11/13/1995	11/13/1995
Sample Matrix (as Received)	Water	Water	Water	Water	Water
Dilution Factor	1	1	1	1	1
Result Units	ug/l	ug/l	ug/l	ug/l	ug/l
Acenaphthene	5 U	5 U	5 U	5 U	5 U
Acenaphthylene	5 U	5 U	5 U	5 U	5 U
Anthracene	5 U	5 U	5 U	5 U	5 U
Benzo(a)anthracene	5 U	5 U	5 U	5 U	5 U
Benzo(a)pyrene	5 U	5 U	5 U	5 U	5 U
Benzo(b)fluoranthene	5 U	5 U	5 U	5 U	5 U
Benzo(ghi)perylene	5 U	5 U	5 U	5 U	5 U
Benzo(k)fluoranthene	5 U	5 U	5 U	5 U	5 U
Chrysene	5 U	5 U	5 U	5 U	5 U
Dibenzo(ah)anthracene	5 U	5 U	5 U	5 U	5 U
Fluoranthene	5 U	5 U	5 U	5 U	5 U
Fluorene	5 U	5 U	5 U	5 U	5 U
Indeno(123-cd)pyrene	5 U	5 U	5 U	5 U	5 U
Naphthalene	36	17	5 U	11	5 U
1-Methyl naphthalene	5 U	5 U	5 U	5 U	5 U
2-Methyl naphthalene	11	5 U	5 U	5 U	5 U
Phenanthrene	5 U	5 U	5 U	5 U	5 U
Pyrene	5 U	5 U	5 U	5 U	5 U

U = Undetected. The value preceeding tne 'U' is the MDL for the analyte, based on dilution.

FDEP CompQAPP # 900134G - FHRS Certification # E83239/83353

Reviewed by :

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Polynuclear Aromatic Hydrocarb

CLIENT NAME: FGS, Inc.
PROJECT NAME: HOWCO
PROJECT NUMBER: G95-216.82
DATE RECEIVED: 11/10/1995
ANALYTICAL PROTOCOL: EPA 610

Lab Reference Number	95110076-6	95110076-7	95110076-8	95110076-9	95110076-10
Client Sample ID	MW-30	MW-13	MW-12	MW-11	MW-6D
Date Sampled	11/08/1995	11/08/1995	11/08/1995	11/08/1995	11/08/1995
Date Extracted	11/13/1995	11/13/1995	11/13/1995	11/13/1995	11/13/1995
Date Analyzed	11/13/1995	11/13/1995	11/13/1995	11/13/1995	11/13/1995
Sample Matrix (as Received)	Water	Water	Water	Water	Water
Dilution Factor	1	1	1	1	1
Result Units	ug/l	ug/l	ug/l	ug/l	ug/l
Acenaphthene	5 U	5 U	5 U	5 U	5 U
Acenaphthylene	5 U	5 U	5 U	5 U	5 U
Anthracene	5 U	5 U	5 U	5 U	5 U
Benzo(a)anthracene	5 U	5 U	5 U	5 U	5 U
Benzo(a)pyrene	5 U	5 U	5 U	5 U	5 U
Benzo(b)fluoranthene	5 U	5 U	5 U	5 U	5 U
Benzo(ghi)perylene	5 U	5 U	5 U	5 U	5 U
Benzo(k)fluoranthene	5 U	5 U	5 U	5 U	5 U
Chrysene	5 U	5 U	5 U	5 U	5 U
Dibenzo(ah)anthracene	5 U	5 U	5 U	5 U	5 U
Fluoranthene	5 U	5 U	5 U	5 U	5 U
Fluorene	5 U	5 U	5 U	5 U	5 U
Indeno(123-cd)pyrene	5 U	5 U	5 U	5 U	5 U
Naphthalene	5 U	5 U	5 U	5 U	6
1-Methyl naphthalene	5 U	5 U	5 U	5 U	5 U
2-Methyl naphthalene	5 U	5 U	5 U	5 U	5 U
Phenanthrene	5 U	5 U	5 U	5 U	5 U
Pyrene	5 U	5 U	5 U	5 U	5 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

FDEP CompQAPP # 900134G - FHRS Certification # E83239/83353

Reviewed by : _____

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Polynuclear Aromatic Hydrocarb

CLIENT NAME: FGS, Inc.
PROJECT NAME: HOWCO
PROJECT NUMBER: G95-216.82
DATE RECEIVED: 11/10/1995
ANALYTICAL PROTOCOL: EPA 610

Lab Reference Number	95110076-11
Client Sample ID	MW-31
Date Sampled	11/08/1995
Date Extracted	11/13/1995
Date Analyzed	11/13/1995
Sample Matrix (as Received)	Water
Dilution Factor	1
Result Units	ug/l
Acenaphthene	5 U
Acenaphthylene	5 U
Anthracene	5 U
Benzo(a)anthracene	5 U
Benzo(a)pyrene	5 U
Benzo(b)fluoranthene	5 U
Benzo(ghi)perylene	5 U
Benzo(k)fluoranthene	5 U
Chrysene	5 U
Dibenzo(ah)anthracene	5 U
Fluoranthene	5 U
Fluorene	5 U
Indeno(123-cd)pyrene	5 U
Naphthalene	5 U
1-Methyl naphthalene	5 U
2-Methyl naphthalene	5 U
Phenanthrene	5 U
Pyrene	5 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

Reviewed by : _____

Quality Control Report for Spike Analysis

Polynuclear Aromatic Hydrocarbons

Matrix: Water
Lab Sample ID: 9511076-3
Spike Units: ug/l

Analysis Date: 11/13/1911
Preparation Date: 11/13/1995
Analyst: ELA

Analyte	Spike Amount	Sample Result	Spike Result	Percent Recovery	Lower Control Limit	Upper Control Limit
Fluoranthene	50	0	44	88	51	124
Fluorene	50	0	45	90	51	116
Indeno(123-cd)pyrene	50	0	35	70	37	125
Naphthalene	50	0	40	80	36	105
Phenanthrene	50	0	48	96	56	117
Pyrene	50	0	43	86	58	117
Acenaphthene	50	0	39	78	50	109
Acenaphthylene	50	0	39	78	48	109
Anthracene	50	0	50	100	56	120
Benzo(a)anthracene	50	0	43	86	46	121
Benzo(a)pyrene	50	0	40	80	42	121
Benzo(b)fluoranthene	50	0	54	108	47	125
Benzo(ghi)perylene	50	0	36	72	40	118
Benzo(k)fluoranthene	50	0	55	110	46	124
Chrysene	50	0	38	76	51	121
Dibenzo(ah)anthracene	50	0	36	72	39	124

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210 Park Road
Oviedo, FL 32765
PHONE: 407-359-7194
FAX: 359-7197

EDB/DBCP

CLIENT NAME: FGS, Inc.
PROJECT NAME: HOWCO
PROJECT NUMBER: G95-216.82
DATE RECEIVED: 11/10/1995
ANALYTICAL PROTOCOL: EPA 504

Lab Reference Number	95110076-1	95110076-2	95110076-3	95110076-4	95110076-5
Client Sample ID	MW-10	MW-7D	MW-7	MW-9	MW-8
Date Sampled	11/08/1995	11/08/1995	11/08/1995	11/08/1995	11/08/1995
Date Extracted	11/10/1995	11/10/1995	11/10/1995	11/10/1995	11/10/1995
Date Analyzed	11/10/1995	11/10/1995	11/10/1995	11/10/1995	11/10/1995
Sample Matrix (as Received)	Water	Water	Water	Water	Water
Dilution Factor	1	1	1	1	1
Result Units	ug/l	ug/l	ug/l	ug/l	ug/l
Ethylene dibromide (EDB)	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
1,2-Dibromo-3-chloropropane	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

Reviewed by : _____

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FAX: 359-7197

EDB/DBCP

CLIENT NAME: FGS, Inc.
PROJECT NAME: HOWCO
PROJECT NUMBER: G95-216.82
DATE RECEIVED: 11/10/1995
ANALYTICAL PROTOCOL: EPA 504

Lab Reference Number	95110076-6	95110076-7	95110076-8	95110076-9	95110076-11
Client Sample ID	MW-30	MW-13	MW-12	MW-11	MW-31
Date Sampled	11/08/1995	11/08/1995	11/08/1995	11/08/1995	11/08/1995
Date Extracted	11/10/1995	11/10/1995	11/10/1995	11/10/1995	11/10/1995
Date Analyzed	11/10/1995	11/10/1995	11/10/1995	11/10/1995	11/10/1995
Sample Matrix (as Received)	Water	Water	Water	Water	Water
Dilution Factor	1	1	1	1	1
Result Units	ug/l	ug/l	ug/l	ug/l	ug/l
Ethylene dibromide (EDB)	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
1,2-Dibromo-3-chloropropane	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

FDEP CompQAPP # 900134G - FHRS Certification # E83239/83353

Reviewed by : _____

Quality Control Report for Spike Analysis

EDB/DBCP

Matrix: Water
Lab Sample ID: 9511076-3
Spike Units: ug/l

Analysis Date: 11/10/1995
Preparation Date: 11/10/1995
Analyst: ELA

Analyte	Spike Amount	Sample Result	Spike Result	Percent Recovery	Lower Control Limit	Upper Control Limit
Ethylene dibromide (EDB)	2.00	0.00	2.10	105	79	125
1,2-Dibromo-3-chloropropane	2.0	0.0	2.1	106	50	137

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PHONE: 407-359-7194
FAX: 359-7197

Chlorinated Phenols

CLIENT NAME: FGS, Inc.
PROJECT NAME: HOWCO
PROJECT NUMBER: G95-216.82
DATE RECEIVED: 11/10/1995
ANALYTICAL PROTOCOL: EPA 604

Lab Reference Number	95110076-1	95110076-2	95110076-3	95110076-4	95110076-5
Client Sample ID	MW-10	MW-7D	MW-7	MW-9	MW-8
Date Sampled	11/08/1995	11/08/1995	11/08/1995	11/08/1995	11/08/1995
Date Extracted	11/13/1995	11/13/1995	11/13/1995	11/13/1995	11/13/1995
Date Analyzed	11/14/1995	11/14/1995	11/14/1995	11/14/1995	11/14/1995
Sample Matrix (as Received)	Water	Water	Water	Water	Water
Dilution Factor	1	1	1	1	1
Result Units	ug/l	ug/l	ug/l	ug/l	ug/l
4-Chloro-3-methylphenol	5 U	5 U	5 U	5 U	5 U
2-Chlorophenol	5 U	5 U	5 U	5 U	5 U
2-Cyclohexyl-4,6-dinitrophenol	5 U	5 U	5 U	5 U	5 U
2,4-Dichlorophenol	5 U	5 U	5 U	5 U	5 U
2,4-Dimethylphenol	50	5 U	5 U	5 U	5 U
4,6-Dinitro-2-methylphenol	5 U	5 U	5 U	5 U	5 U
2,4-Dinitrophenol	5 U	5 U	5 U	5 U	5 U
2,6-Dichlorophenol	5 U	5 U	5 U	5 U	5 U
Dinoseb	5 U	5 U	5 U	5 U	5 U
1-Methyl phenol	5 U	5 U	5 U	5 U	5 U
2-Methyl phenol	101	160	5 U	179	5 U
3-Methyl phenol	5 U	5 U	5 U	5 U	5 U
2-Nitrophenol	5 U	5 U	5 U	5 U	5 U
4-Nitrophenol	5 U	5 U	5 U	5 U	5 U
Pentachlorophenol	5 U	5 U	5 U	5 U	5 U
Phenol	5 U	184	5 U	18	5 U
2,4,6-Trichlorophenol	5 U	5 U	5 U	5 U	5 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

Reviewed by : _____

PC&B Environmental Laboratories, Inc.
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PHONE: 407-359-7194
FAX: 359-7197

Chlorinated Phenols

CLIENT NAME: FGS, Inc.
PROJECT NAME: HOWCO
PROJECT NUMBER: G95-216.82
DATE RECEIVED: 11/10/1995
ANALYTICAL PROTOCOL: EPA 604

Lab Reference Number	95110076-6	95110076-7	95110076-8	95110076-9	95110076-11
Client Sample ID	MW-30	MW-13	MW-12	MW-11	MW-31
Date Sampled	11/08/1995	11/08/1995	11/08/1995	11/08/1995	11/08/1995
Date Extracted	11/13/1995	11/13/1995	11/13/1995	11/13/1995	11/13/1995
Date Analyzed	11/14/1995	11/14/1995	11/14/1995	11/14/1995	11/14/1995
Sample Matrix (as Received)	Water	Water	Water	Water	Water
Dilution Factor	1	1	1	1	1
Result Units	ug/l	ug/l	ug/l	ug/l	ug/l
4-Chloro-3-methylphenol	5 U	5 U	5 U	5 U	5 U
2-Chlorophenol	5 U	5 U	5 U	5 U	5 U
2-Cyclohexyl-4,6-dinitrophenol	5 U	5 U	5 U	5 U	5 U
2,4-Dichlorophenol	5 U	5 U	5 U	5 U	5 U
2,4-Dimethylphenol	5 U	5 U	5 U	5 U	5 U
4,6-Dinitro-2-methylphenol	5 U	5 U	5 U	5 U	5 U
2,4-Dinitrophenol	5 U	5 U	5 U	5 U	5 U
2,6-Dichlorophenol	5 U	5 U	5 U	5 U	5 U
Dinoseb	5 U	5 U	5 U	5 U	5 U
1-Methyl phenol	5 U	5 U	5 U	5 U	5 U
2-Methyl phenol	5 U	5 U	5 U	5 U	5 U
3-Methyl phenol	5 U	5 U	5 U	5 U	5 U
2-Nitrophenol	5 U	5 U	5 U	5 U	5 U
4-Nitrophenol	5 U	5 U	5 U	5 U	5 U
Pentachlorophenol	5 U	5 U	5 U	5 U	5 U
Phenol	5 U	5 U	5 U	5 U	5 U
2,4,6-Trichlorophenol	5 U	5 U	5 U	5 U	5 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte, based on dilution.

Reviewed by : _____

Quality Control Report for Spike Analysis

Chlorinated Phenols

Matrix: Water
Lab Sample ID: 9511076-11
Spike Units: ug/l

Analysis Date: 11/14/1995
Preparation Date: 11/13/1995
Analyst: ELA

Analyte	Spike Amount	Sample Result	Spike Result	Percent Recovery		Lower Control Limit	Upper Control Limit
4-Chloro-3-methylphenol	50	0	33	66	*	-1	-1
2-Chlorophenol	50	0	35	70	*	-1	-1
2,4-Dichlorophenol	50	0	49	98	*	-1	-1
4,6-Dinitro-2-methylphenol	50	0	26	52	*	-1	-1
Pentachlorophenol	50	0	22	44	*	-1	-1
Phenol	50	0	24	48	*	-1	-1
2,4,6-Trichlorophenol	50	0	48	96	*	-1	-1

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Report of Analysis

CLIENT NAME: FGS, Inc.
PROJECT NAME: HOWCO
PROJECT NUMBER: G95-216.82
DATE RECEIVED: 11/10/1995

Lab Reference Number			95110076-1	95110076-2	95110076-3	95110076-4	95110076-5
Client Sample ID			MW-10	MW-7D	MW-7	MW-9	MW-8
Date Sampled			11/08/1995	11/08/1995	11/08/1995	11/08/1995	11/08/1995
Sample Matrix (as Received)			Water	Water	Water	Water	Water
EPA 418.1	TRPH	mg/l	1.4	3.1	1.0 U	1.4	1.0 U
EPA 200.7	Arsenic, Total	ug/l	10 U	51	10 U	10 U	10 U
EPA 200.7	Barium, Total	ug/l	50 U	190	50 U	50 U	50 U
EPA 200.7	Cadmium, Total	ug/l	5 U	5 U	5 U	5 U	5 U
EPA 200.7	Chromium, Total	ug/l	44	190	17	6	10
EPA 200.7	Lead, Total	ug/l	1500	940	10	90	5
EPA 245.1	Mercury, Total	ug/l	1.0	0.2 U	0.2 U	0.2 U	0.2 U
EPA 200.7	Nickel, Total	ug/l	7	79	9	15	6
EPA 200.7	Selenium, Total	ug/l	5 U	32	5 U	5 U	5 U
EPA 200.7	Silver, Total	ug/l	5 U	5 U	5 U	5 U	5 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte.

FDEP CompQAPP # 900134G - FHRS Certification # E83239/83353

Reviewed by : _____

PC&B Environmental Laboratories, Inc.
210 Park Road
Oviedo, FL 32765
PHONE: 407-359-7194

Report of Analysis

CLIENT NAME: FGS, Inc.
PROJECT NAME: HOWCO
PROJECT NUMBER: G95-216.82
DATE RECEIVED: 11/10/1995

Lab Reference Number			95110076-6	95110076-7	95110076-8	95110076-9	95110076-10
Client Sample ID			MW-30	MW-13	MW-12	MW-11	MW-6D
Date Sampled			11/08/1995	11/08/1995	11/08/1995	11/08/1995	11/08/1995
Sample Matrix (as Received)			Water	Water	Water	Water	Water
EPA 418.1	TRPH	mg/l	1.2	1.0 U	1.0 U	4.5	1.0 U
EPA 200.7	Arsenic, Total	ug/l	10 U	10 U	10 U	10 U	NR
EPA 200.7	Barium, Total	ug/l	50 U	50 U	57	77	NR
EPA 200.7	Cadmium, Total	ug/l	5 U	5 U	5 U	5 U	NR
EPA 200.7	Chromium, Total	ug/l	14	15	29	9	NR
EPA 200.7	Lead, Total	ug/l	8	15	18	27	NR
EPA 245.1	Mercury, Total	ug/l	0.3	0.3	0.2 U	0.2 U	NR
EPA 200.7	Nickel, Total	ug/l	9	6	5 U	11	NR
EPA 200.7	Selenium, Total	ug/l	5 U	5 U	6	5 U	NR
EPA 200.7	Silver, Total	ug/l	5 U	5 U	5 U	5 U	NR

NR = Analysis not Requested.
U = Undetected. The value preceeding the 'U' is the MDL for the analyte.

FDEP CompQAPP # 900134G - FHRS Certification # E83239/83353

Reviewed by : 

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210 Park Road
Oviedo, FL 32765
PHONE: 407-359-7194

Report of Analysis

CLIENT NAME: FGS, Inc.
PROJECT NAME: HOWCO
PROJECT NUMBER: G95-216.82
DATE RECEIVED: 11/10/1995

Lab Reference Number			95110076-11
Client Sample ID			MW-31
Date Sampled			11/08/1995
Sample Matrix (as Received)			Water
EPA 418.1	TRPH	mg/l	1.0 U
EPA 200.7	Arsenic, Total	ug/l	10 U
EPA 200.7	Barium, Total	ug/l	50 U
EPA 200.7	Cadmium, Total	ug/l	5 U
EPA 200.7	Chromium, Total	ug/l	5 U
EPA 200.7	Lead, Total	ug/l	3 U
EPA 245.1	Mercury, Total	ug/l	0.2 U
EPA 200.7	Nickel, Total	ug/l	5 U
EPA 200.7	Selenium, Total	ug/l	5 U
EPA 200.7	Silver, Total	ug/l	5 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte.

FDEP CompQAPP # 900134G - FHRS Certification # E83239/83353

Reviewed by : _____

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PHONE: 407-359-7194

Report of Analysis

CLIENT NAME: FGS, Inc.
PROJECT NAME: HOWCO
PROJECT NUMBER: G95-216.82
DATE RECEIVED: 11/10/1995

Lab Reference Number			95110076-11
Client Sample ID			MW-31
Date Sampled			11/08/1995
Sample Matrix (as Received)			Water
EPA 418.1	TRPH	mg/l	1.0 U
EPA 200.7	Arsenic, Total	ug/l	10 U
EPA 200.7	Barium, Total	ug/l	50 U
EPA 200.7	Cadmium, Total	ug/l	5 U
EPA 200.7	Chromium, Total	ug/l	5 U
EPA 200.7	Lead, Total	ug/l	3 U
EPA 245.1	Mercury, Total	ug/l	0.2 U
EPA 200.7	Nickel, Total	ug/l	5 U
EPA 200.7	Selenium, Total	ug/l	5 U
EPA 200.7	Silver, Total	ug/l	5 U

U = Undetected. The value preceeding the 'U' is the MDL for the analyte.

FDEP CompQAPP # 900134G - FHRS Certification # E83239/83353

Reviewed by : 

Quality Control Report for Spike Analysis

INORGANICS

Matrix: Water
Lab Sample ID: 9511076-11

Analysis Date: 11/14/1995
Preparation Date: 11/13/1995

Analyte	Spike Amount	Sample Result	Spike Result	Percent Recovery	Lower Control Limit	Upper Control Limit
TRPH	10.0 mg/l	0.0	10.2	102	86	110
TRPH	10.0 mg/l	0.0	9.7	97	86	110
Arsenic, Total	250 ug/l	0	290	116	87	132
Barium, Total	500 ug/l	0	532	106	75	134
Cadmium, Total	100 ug/l	0	107	107	56	119
Chromium, Total	250 ug/l	0	272	109	58	131
Nickel, Total	500 ug/l	0	540	108	52	122
Selenium, Total	250 ug/l	0	257	103	60	119
Silver, Total	100 ug/l	0	99	99	54	124
Mercury, Total	1.0 ug/l	0.0	1.1	110	78	132

9511076

PC&B Laboratories, Inc.

210 Park Road, Oviedo, Fl 32765
407-359-7194 (FAX) 407-359-7197

Chain of Custody

Work Order:

Date: 11.9.95 Page 1 of 1

COMPANY: FGS
ADDRESS: 111 S. ARMENIA AVE, TAMPA, FL 33609
SAMPLED BY: DAVE PRATHER/JIM DOZIER
SIGN: David Prather / Jim Dozier
PHONE NO: 8138748204

#	SAMPLE ID.	DATE/TIME	MATRIX	601/602	504	604	610	418.1	RCRA 8+ PLUS NI (TOTAL)	RCRA 8 PLUS NI DISSOLVED	602	NUMBER OF CONTAINERS
1	MW-10	11.8.95 @ 1240	GW	2	2	1	1	1	1	1		9
2	MW-7D	1300	↓	↓	↓	↓	↓	↓	↓	↓		9
3	MW-7	1320	↓	↓	↓	↓	↓	↓	↓	↓		9
4	MW-9	1355	↓	↓	↓	↓	↓	↓	↓	↓		9
5	MW-8	1410	↓	↓	↓	↓	↓	↓	↓	↓		9
6	MW-30	1340	↓	↓	↓	↓	↓	↓	↓	↓		9
7	MW-13	1325	↓	↓	↓	↓	↓	↓	↓	↓		9
8	MW-12	1355	↓	↓	↓	↓	↓	↓	↓	↓		9
9	MW-11	1420	↓	↓	↓	2	2	↓	↓	↓		11
10	MW-6D	1455	↓	[illegible]	[illegible]	[illegible]	X	X	[illegible]	[illegible]	X	9
11	MW-31	1255	↓	↓	↓	↓	↓	↓	↓	↓		9
12	MW-32	1245	↓	↓	↓	↓	↓	↓	↓			8
13	TRIP		D.I.									1

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1: G. Vdmonsky	11/6/95 11:45	1: David Prather	11-8-95
2: David Prather	11-9-95	2: [signature]	11/10/95 7:20
3:		3:	

SPECIAL INSTRUCTIONS/COMMENTS:
HOLD MW-32 + All FILTERED ~~LEAD~~ RCRAs+Ni SAMPLES UNTIL AUTH. BY FGS
5 DAY T.A.T FAX RESULTS BY 11-21-95 (874-7842)

PROJECT INFORMATION
PROJECT NAME: HOWCO
PROJECT #: G95-216.82
SITE ADDRESS:
PROJECT MANAGER: MAURA CLARK
INVOICE TO: (IF DIFFERENT FROM ABOVE)

SAMPLE RECEIPT
Total No. of Containers: 110
Chain of Custody Seals:
Rec'd Good Condition/Cold:
PO#:
SHIPPED VIA: SKAMPERI

Post-it® Fax Note 7671	Date 4-18-96	# of pages ▶ 2
To JIM DOSIER	From RICHARD DILLEN	
Co./Dept.	Co. HOWCO	
Phone #	Phone #	
Fax #	Fax #	

November 6, 1995

Matrix: Soil

SAMPLE #	B-8@6	B-10@6	B-13@6	B-15@6	B-27@6	B-28@6	B-29@4	B-30@6	B-37@2	S-1 @ 3
EPA 7420										
Lead	xxxxx	xxxxx	xxxxx	xxxxx	5 mg/kg	BDL	5 mg/kg	BDL	40 mg/kg	xxxxx
EPA 8010										
Carbon tetrachloride	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chloroform	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1 Dichloroethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1 Dichloroethylene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Methylene chloride	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1,1 Trichloroethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Tetrachloroethylene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Trichloroethylene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Vinyl chloride	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
EPA 8020										
Benzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ethylbenzene	BDL	BDL	BDL	BDL	BDL	BDLL	BDL	BDL	430 ug/kg	2125ug/kg
Methyl ethyl ketone	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Methyl tert butyl ether	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Toluene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Xylenes	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	550 ug/kg	525 ug/kg

SAMPLE #	B-21@2	B-22@2	B-23@2	B-24@2	B-25@2	B-26@2	B-31@4	B-33@6	B-34@6	B-35@4
EPA 7420										
Lead	BDL.	BDL.	BDL.	BDL.	BDL.	395 mg/kg	BDL.	BDL.	60 mg/kg	BDL.

SAMPLE #	B-36@6	B-39@6	B-40@6	B-44@4						
EPA 7420										
Lead	BDL	BDL	BDL.	95 mg/kg						

APPENDIX F

ATRP APPLICATIONS

Department of
Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

December 1, 1995

-CERTIFIED MAIL-RETURN RECEIPT-

Mr. Jim Hagan
A&E Road Oiling Service
843 43rd Street South
St. Petersburg, Florida 33711

RE: Mike Brown Grading & Excavation - DEP Facility #529502803
4369 9th Avenue South, St. Petersburg, Florida

Dear Mr. Hagan:

The Department has completed its review of documentation submitted for this site. The Department has determined that the contamination related to the storage of petroleum products as defined in Section 376.301(16), Florida Statutes (F.S.), at this site is eligible for state-funded remediation assistance, under the Abandoned Tank Restoration Program.

Pursuant to 95-2, Laws of Florida (LOF), and effective March 29, 1995, no further site rehabilitation work on sites eligible for state assisted cleanup from the Inland Protection Trust Fund shall be eligible for reimbursement. For any site rehabilitation work conducted prior to March 29, 1995, reimbursement may be requested regardless of whether the program task is completed. In accordance with 95-2, LOF, future state assisted rehabilitation will be dictated by the site's priority ranking score, and shall be conducted on a pre-approval of scope of work and costs basis.

> "The person responsible for conducting site rehabilitation, or his agent, shall keep and preserve suitable records of hydrological and other site investigations and assessments, site rehabilitation plans, contracts and contract negotiations, and accounts, invoices, sales tickets, or other payments records from purchases, sales, leases or other involving costs actually incurred related to site rehabilitation. Such records shall be made available upon request to agents and employees of the Department during regular business hours, and at other times upon written request of the Department. In addition, the Department may from time to time request submission of such site-specific information as it may require. All records of costs actually incurred for cleanup shall be certified by affidavit to the Department as being true and correct."

Persons whose substantial interests are affected by this Order of Determination of Eligibility may petition for an administrative proceeding (hearing) in accordance with Section 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within twenty-one (21) days of receipt of this notice. Petitioner, if different from the reimbursement applicant, shall mail a copy of the petition to the reimbursement applicant at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The Petition shall contain the following information;

(a) The name, address, and telephone number of each petitioner, the reimbursement applicant's name and address, if different from petitioner, the Department file number (DEP facility number), and the name and address of the facility;

(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;

(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by petitioner, if any;

(e) A statement of facts which petitioner contends warrant reversal or modification of the department's action or proposed action;

(f) A statement of which rules or statutes petitioner contends require reversal or modification of the department's action or proposed action; and

(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the department to take with respect to the department's action or proposed action.

All requests for extension of time or petitions for an administrative determination must be filed directly with the Department's Office of General Counsel at the address given below within twenty-one (21) days of receipt of this notice (do not send them to the Bureau of Waste Cleanup).

This Order of Determination of Eligibility is final and effective on the date of receipt of this Order unless a petition is filed in accordance with the preceding paragraph. Upon the timely filing of a petition, this Order will not be effective until further order of the Department.

When the Order is final, any party to the Order has the right to seek judicial review of the Order pursuant to Section 120.68, F.S., by filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal, accompanied by the applicable filing fees, with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date the Final Order is filed with the clerk of the Department.

Any questions you may have on the technical aspects of this Order of Determination of Eligibility should be directed to the Petroleum Cleanup Reimbursement Section staff at (904)487-3299. Contact with the above named person does not constitute a petition for administrative determination.

Sincerely,

John M. Ruddell

John M. Ruddell, Director
Division of Waste Management

JMR/awm

Enclosure:

cc: Doug Beason - Office of General Counsel
Nancy Evans - Southwest Florida District Office

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to §120.52 Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Andrea W. McGill 12/01/95
Clerk Date

Department of
Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

December 1, 1995

-CERTIFIED MAIL-RETURN RECEIPT-

Mr. Jim Hagan
A&E Road Oiling Service
843 43rd Street South
St. Petersburg, Florida 33711

RE: Charlie Hennton Landscaping - DEP Facility #529502805
4381 9th Avenue South, St. Petersburg, Florida

Dear Mr. Hagan:

The Department has completed its review of documentation submitted for this site. The Department has determined that the contamination related to the storage of petroleum products as defined in Section 376.301(16), Florida Statutes (F.S.), at this site is eligible for state-funded remediation assistance, under the Abandoned Tank Restoration Program.

Pursuant to 95-2, Laws of Florida (LOF), and effective March 29, 1995, no further site rehabilitation work on sites eligible for state assisted cleanup from the Inland Protection Trust Fund shall be eligible for reimbursement. For any site rehabilitation work conducted prior to March 29, 1995, reimbursement may be requested regardless of whether the program task is completed. In accordance with 95-2, LOF, future state assisted rehabilitation will be dictated by the site's priority ranking score, and shall be conducted on a pre-approval of scope of work and costs basis.

> "The person responsible for conducting site rehabilitation, or his agent, shall keep and preserve suitable records of hydrological and other site investigations and assessments, site rehabilitation plans, contracts and contract negotiations, and accounts, invoices, sales tickets, or other payments records from purchases, sales, leases or other involving costs actually incurred related to site rehabilitation. Such records shall be made available upon request to agents and employees of the Department during regular business hours, and at other times upon written request of the Department. In addition, the Department may from time to time request submission of such site-specific information as it may require. All records of costs actually incurred for cleanup shall be certified by affidavit to the Department as being true and correct."

Persons whose substantial interests are affected by this Order of Determination of Eligibility may petition for an administrative proceeding (hearing) in accordance with Section 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within twenty-one (21) days of receipt of this notice. Petitioner, if different from the reimbursement applicant, shall mail a copy of the petition to the reimbursement applicant at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The Petition shall contain the following information;

(a) The name, address, and telephone number of each petitioner, the reimbursement applicant's name and address, if different from petitioner, the Department file number (DEP facility number), and the name and address of the facility;

(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;

(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by petitioner, if any;

(e) A statement of facts which petitioner contends warrant reversal or modification of the department's action or proposed action;

(f) A statement of which rules or statutes petitioner contends require reversal or modification of the department's action or proposed action; and

(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the department to take with respect to the department's action or proposed action.

All requests for extension of time or petitions for an administrative determination must be filed directly with the Department's Office of General Counsel at the address given below within twenty-one (21) days of receipt of this notice (do not send them to the Bureau of Waste Cleanup).

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Any questions you may have on the technical aspects of this Order of Determination of Eligibility should be directed to the Petroleum Cleanup Reimbursement Section staff at (904)487-3299. Contact with the above named person does not constitute a petition for administrative determination.

Sincerely,

John M. Ruddell

John M. Ruddell, Director
Division of Waste Management

JMR/awm

Enclosure:

cc: Doug Beason - Office of General Counsel
Nancy Evans - Southwest Florida District Office

FILING AND ACKNOWLEDGEMENT
Filed, on this date, pursuant to §120.52 Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Andrea W. McGill 12/01/95
Clerk Date

Department of
Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

December 1, 1995

-CERTIFIED MAIL-RETURN RECEIPT-

Mr. Jim Hagan
A&E Road Oiling Service
843 43rd Street South
St. Petersburg, Florida 33711

RE: Gary Ford Paving Company & Ford Asphalt Paving Company
4340 8th Avenue South, St. Petersburg, Florida
DEP Facility #529502806

Dear Mr. Hagan:

The Department has completed its review of documentation submitted for this site. The Department has determined that the contamination related to the storage of petroleum products as defined in Section 376.301(16), Florida Statutes (F.S.), at this site is eligible for state-funded remediation assistance, under the Abandoned Tank Restoration Program.

Pursuant to 95-2, Laws of Florida (LOF), and effective March 29, 1995, no further site rehabilitation work on sites eligible for state assisted cleanup from the Inland Protection Trust Fund shall be eligible for reimbursement. For any site rehabilitation work conducted prior to March 29, 1995, reimbursement may be requested regardless of whether the program task is completed. In accordance with 95-2, LOF, future state assisted rehabilitation will be dictated by the site's priority ranking score, and shall be conducted on a pre-approval of scope of work and costs basis.

> "The person responsible for conducting site rehabilitation, or his agent, shall keep and preserve suitable records of hydrological and other site investigations and assessments, site rehabilitation plans, contracts and contract negotiations, and accounts, invoices, sales tickets, or other payments records from purchases, sales, leases or other involving costs actually incurred related to site rehabilitation. Such records shall be made available upon request to agents and employees of the Department during regular business hours, and at other times upon written request of the Department. In addition, the Department may from time to time request submission of such site-specific information as it may require. All records of costs actually incurred for cleanup shall be certified by affidavit to the Department as being true and correct."

Persons whose substantial interests are affected by this Order of Determination of Eligibility may petition for an administrative proceeding (hearing) in accordance with Section 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within twenty-one (21) days of receipt of this notice. Petitioner, if different from the reimbursement applicant, shall mail a copy of the petition to the reimbursement applicant at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The Petition shall contain the following information;

(a) The name, address, and telephone number of each petitioner, the reimbursement applicant's name and address, if different from petitioner, the Department file number (DEP facility number), and the name and address of the facility;

(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;

(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by petitioner, if any;

(e) A statement of facts which petitioner contends warrant reversal or modification of the department's action or proposed action;

(f) A statement of which rules or statutes petitioner contends require reversal or modification of the department's action or proposed action; and

(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the department to take with respect to the department's action or proposed action.

All requests for extension of time or petitions for an administrative determination must be filed directly with the Department's Office of General Counsel at the address given below within twenty-one (21) days of receipt of this notice (do not send them to the Bureau of Waste Cleanup).

This Order of Determination of Eligibility is final and effective on the date of receipt of this Order unless a petition is filed in accordance with the preceding paragraph. Upon the timely filing of a petition, this Order will not be effective until further order of the Department.

When the Order is final, any party to the Order has the right to seek judicial review of the Order pursuant to Section 120.68, F.S., by filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal, accompanied by the applicable filing fees, with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date the Final Order is filed with the clerk of the Department.

Any questions you may have on the technical aspects of this Order of Determination of Eligibility should be directed to the Petroleum Cleanup Reimbursement Section staff at (904)487-3299. Contact with the above named person does not constitute a petition for administrative determination.

Sincerely,

John M. Ruddell, Director
Division of Waste Management

JMR/awm

Enclosure:

cc: Doug Beason - Office of General Counsel
Nancy Evans - Southwest Florida District Office

FILING AND ACKNOWLEDGMENT
FILED, on this date, pursuant to §120.52 Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Andrea W. McKillip 12/01/95
Clerk Date

Department of
Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

December 1, 1995

-CERTIFIED MAIL-RETURN RECEIPT-

Mr. Jim Hagan
A&E Road Oiling Service
843 43rd Street South
St. Petersburg, Florida 33711

RE: A&E Road Oiling Service - DEP Facility #529502807
843 43rd Street South, St. Petersburg, Florida

Dear Mr. Hagan:

The Department has completed its review of documentation submitted for this site. The Department has determined that the contamination related to the storage of petroleum products as defined in Section 376.301(16), Florida Statutes (F.S.), at this site is eligible for state-funded remediation assistance, under the Abandoned Tank Restoration Program. **Limited to the contamination from the abandoned tanks located along 43rd Street South and along 9th Avenue South only!**

Pursuant to 95-2, Laws of Florida (LOF), and effective March 29, 1995, no further site rehabilitation work on sites eligible for state assisted cleanup from the Inland Protection Trust Fund shall be eligible for reimbursement. For any site rehabilitation work conducted prior to March 29, 1995, reimbursement may be requested regardless of whether the program task is completed. In accordance with 95-2, LOF, future state assisted rehabilitation will be dictated by the site's priority ranking score, and shall be conducted on a pre-approval of scope of work and costs basis.

"The person responsible for conducting site rehabilitation, or his agent, shall keep and preserve suitable records of hydrological and other site investigations and assessments, site rehabilitation plans, contracts and contract negotiations, and accounts, invoices, sales tickets, or other payments records from purchases, sales, leases or other involving costs actually incurred related to site rehabilitation. Such records shall be made available upon request to agents and employees of the Department during regular business hours, and at other times upon written request of the Department. In addition, the Department may from time to time request submission of such site-specific information as it may require. All records of costs actually incurred for cleanup shall be certified by affidavit to the Department as being true and correct."

Persons whose substantial interests are affected by this Order of Determination of Eligibility may petition for an administrative proceeding (hearing) in accordance with Section 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within twenty-one (21) days of receipt of this notice. Petitioner, if different from the reimbursement applicant, shall mail a copy of the petition to the reimbursement applicant at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The Petition shall contain the following information;

(a) The name, address, and telephone number of each petitioner, the reimbursement applicant's name and address, if different from petitioner, the Department file number (DEP facility number), and the name and address of the facility;

(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;

(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by petitioner, if any;

(e) A statement of facts which petitioner contends warrant reversal or modification of the department's action or proposed action;

(f) A statement of which rules or statutes petitioner contends require reversal or modification of the department's action or proposed action; and

(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the department to take with respect to the department's action or proposed action.

All requests for extension of time or petitions for an administrative determination must be filed directly with the Department's Office of General Counsel at the address given below within twenty-one (21) days of receipt of this notice (do not send them to the Bureau of Waste Cleanup).

This Order of Determination of Eligibility is final and effective on the date of receipt of this Order unless a petition is filed in accordance with the preceding paragraph. Upon the timely filing of a petition, this Order will not be effective until further order of the Department.

When the Order is final, any party to the Order has the right to seek judicial review of the Order pursuant to Section 120.68, F.S., by filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal, accompanied by the applicable filing fees, with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date the Final Order is filed with the clerk of the Department.

Any questions you may have on the technical aspects of this Order of Determination of Eligibility should be directed to the Petroleum Cleanup Reimbursement Section staff at (904)487-3299. Contact with the above named person does not constitute a petition for administrative determination.

Sincerely,

John M. Ruddell, Director
Division of Waste Management

JMR/awm

Enclosure:

cc: Doug Beason - Office of General Counsel
Nancy Evans - Southwest Florida District Office

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to §120.52 Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Andrea W. McGill 12/1/95
Clerk Date

P.13

Florida Department of
Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

April 5, 1994

-CERTIFIED MAIL-RETURN RECEIPT-

Mr. Tim Hagan
Tim's Oil Recovery, Inc.
843 43rd Street South
St. Petersburg, Florida 33711

RE: Tim's Oil Recovery, Inc. dba/Howco Environmental Services
843 43rd Street South, St. Petersburg, FL
DEP Facility #528624557

Dear Mr. Hagan:

The Florida Department of Environmental Protection (DEP) has reviewed documents you submitted as application for eligibility for Restoration Coverage under the requirements of the Abandoned Tank Restoration Program (ATRP), Chapter 17-769.800, Florida Administrative Code (F.A.C.). Based upon this information which you have provided, the subject facility is ineligible for participation in the ATRP for the following reason(s):

1). Eligibility in the Abandoned Tank Restoration Program is restricted to those sites that are no longer in business for storing petroleum products for consumption, use or sale and have not done so since March 1, 1990 pursuant to Section 17-769.800(3)(a), F.A.C.

2). Cleanup under the Inland Protection Trust Fund is limited to contamination as the result of petroleum products. Petroleum products are defined in Section 376.301, Florida Statutes (F.S.) as any liquid fuel commodity made from petroleum, including, but not limited to, all forms of fuel known or sold as diesel fuel, kerosene, all forms of fuel known or sold as gasoline, and fuels containing a mixture of gasoline and other products. Petroleum product does not include lubricants, solvents and in most cases used oils.

A person whose substantial interests are affected by this Order of Ineligibility may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes (F.S.). The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, with 21 days of receipt of this Notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, F.S.

The petition shall contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Facility Identification Number and county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above, as set forth in Chapter 17-103 and 28-5, F.A.C., and must be filed (received) with the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 21 days of receipt of this Notice. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 22I-6, F.A.C.

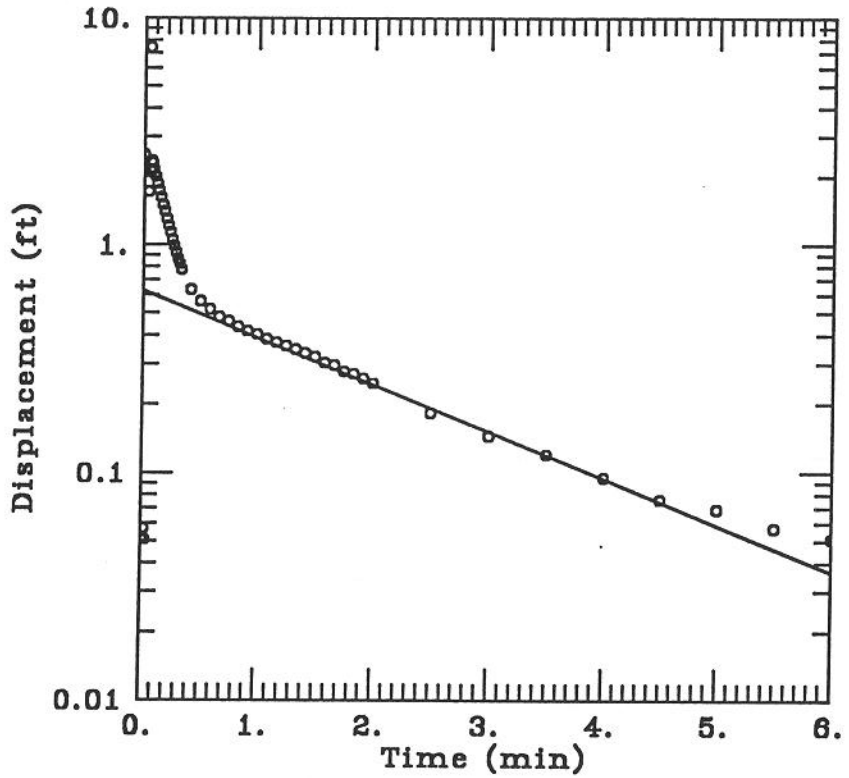
The application is available for public inspection during the normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at the office of the Petroleum Insurance Administrator at the above address.

APPENDIX G

AQUIFER CHARACTERIZATION GRAPHS

FGS, Inc.	Client: Howco Environmental Services
Project No.: G94-216.82	Location: St. Petersburg, Florida

MW-6, Slug Test 1



DATA SET:!
a:216!
02/12/96!

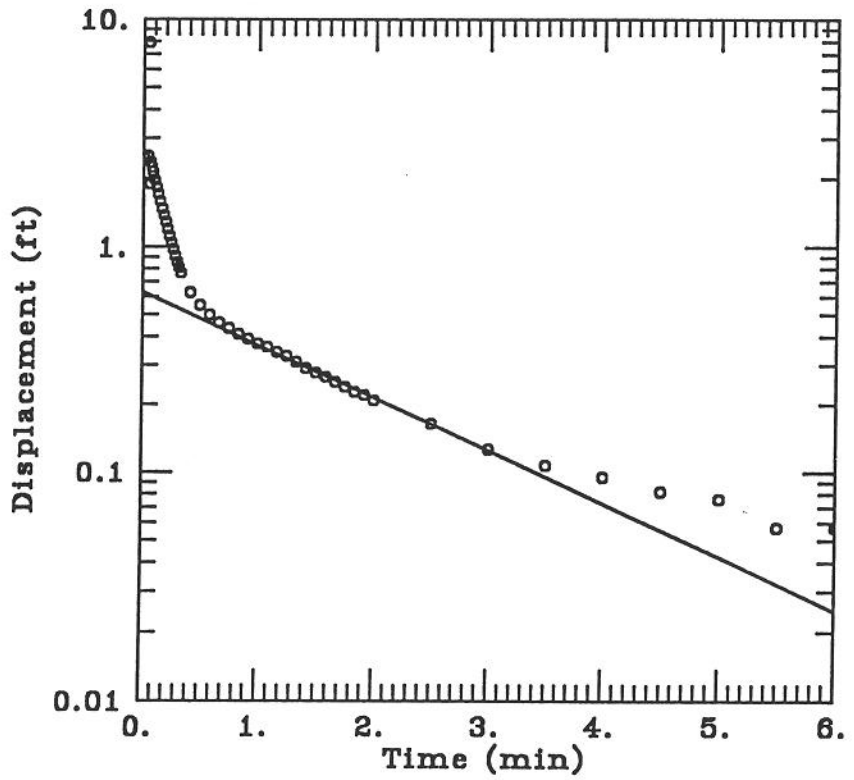
AQUIFER TYPE:!
Unconfined!
SOLUTION METHOD:!
Bouwer-Rice!
TEST DATE:!
2-9-96!
OBS. WELL:!
MW-6!

ESTIMATED PARAMETERS:!
K = 0.002386 ft/min
y0 = 0.6289 ft

TEST DATA:!
H0 = 2.5 ft
rc = 0.208 ft
rw = 0.333 ft
L = 8.58 ft
b = 60. ft
H = 8.58 ft

FGS, Inc.	Client: Howco Environmental Services
Project No.: G94-216.82	Location: St. Petersburg, Florida

MW-6, Slug Test 2



DATA SET:!
a:216!
02/12/96!

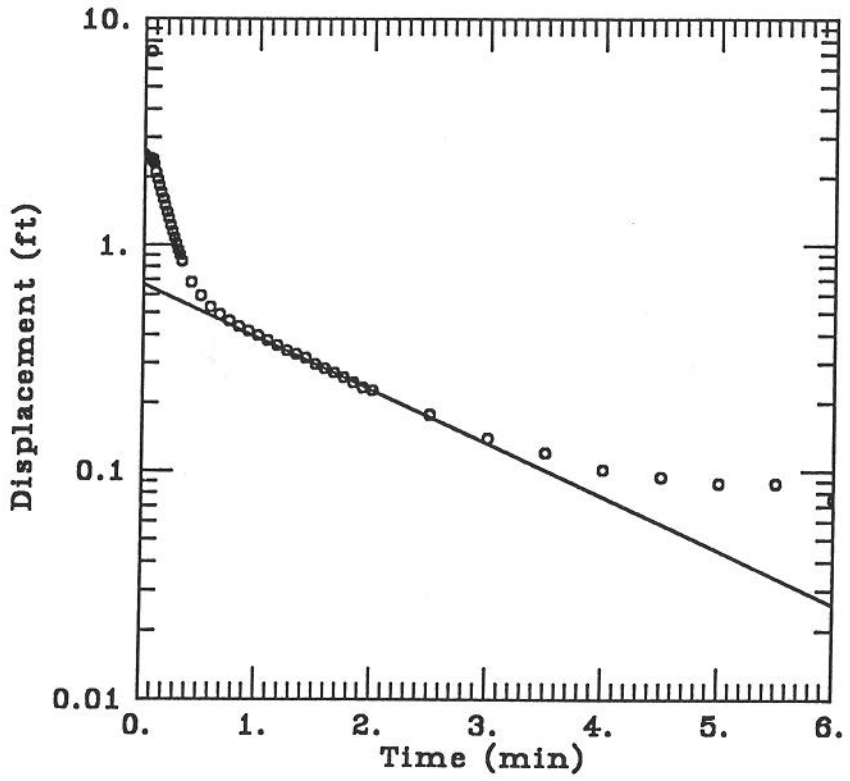
AQUIFER TYPE:!
Unconfined!
SOLUTION METHOD:!
Bouwer-Rice!
TEST DATE:!
2-9-96!
OBS. WELL:!
MW-6!

ESTIMATED PARAMETERS:!
K = 0.002715 ft/min
y0 = 0.631 ft

TEST DATA:!
H0 = 2.5 t
rc = 0.208 ft
rw = 0.333 ft
L = 8.58 ft
b = 60. ft
H = 8.58 ft

FGS, Inc.	Client: Howco Environmental Services
Project No.: G94-216.82	Location: St. Petersburg, Florida

MW-6, Slug Test 3



DATA SET:!
a:216!
02/12/96!

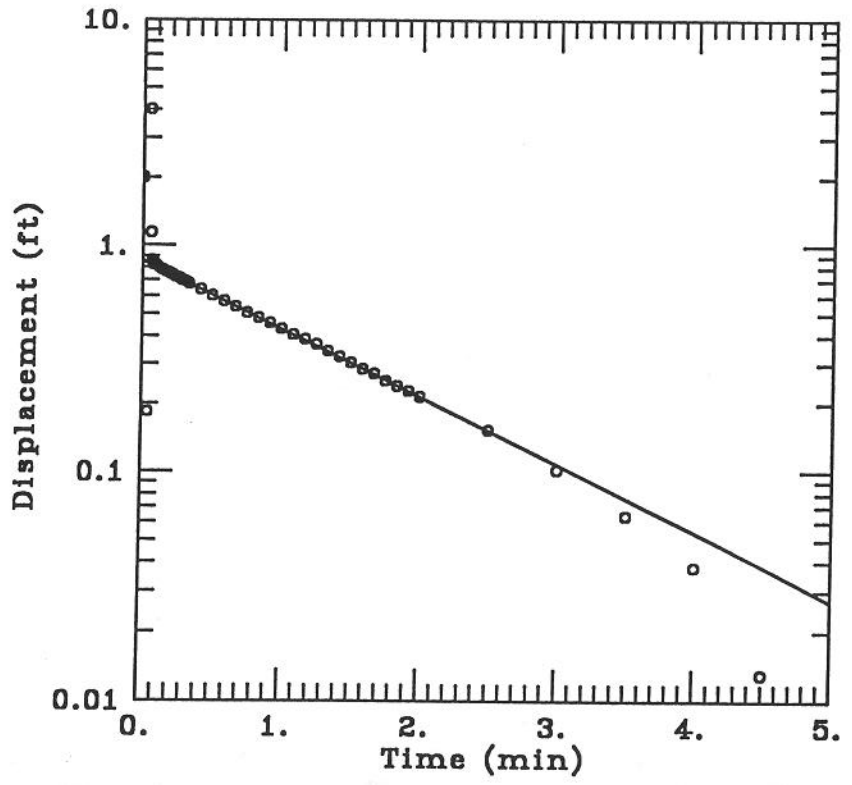
AQUIFER TYPE:!
Unconfined!
SOLUTION METHOD:!
Bouwer-Rice!
TEST DATE:!
2-9-96!
OBS. WELL:!
MW-6!

ESTIMATED PARAMETERS:!
K = 0.002726 ft/min
y0 = 0.671 ft

TEST DATA:!
H0 = 2.5 ft
rc = 0.208 ft
rw = 0.333 ft
L = 8.58 ft
b = 60. ft
H = 8.58 ft

FGS, Inc.	Client: Howco Environmental Services
Project No.: G94-216.82	Location: St. Petersburg, Florida

DW-6D, Slug Test 1



DATA SET:!
a:216!
02/12/96!

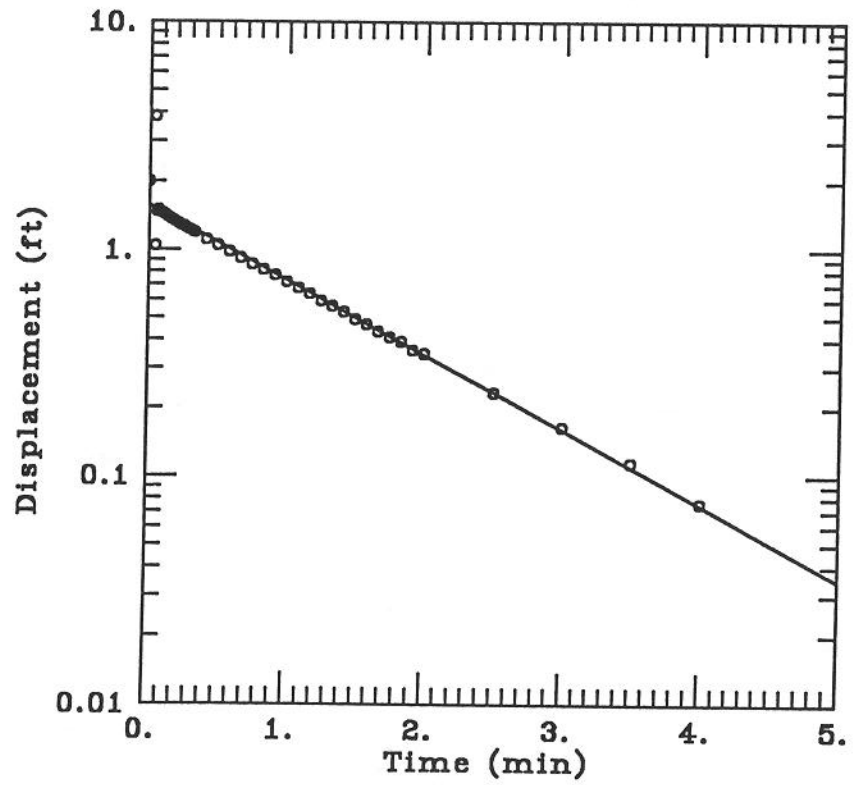
AQUIFER TYPE:!
Unconfined!
SOLUTION METHOD:!
Bouwer-Rice!
TEST DATE:!
2-9-96!
OBS. WELL:!
DW-6D!

ESTIMATED PARAMETERS:!
K = 0.001033 ft/min
y0 = 0.8607 ft

TEST DATA:!
H0 = 2. ft
rc = 0.083 ft
rw = 0.25 ft
L = 6. ft
b = 60. ft
H = 36.15 ft

FGS, Inc.	Client: Howco Environmental Services
Project No.: G94-216.82	Location: St. Petersburg, Florida

DW-6D, Slug Test 2



DATA SET:!
a:216!
02/12/96!

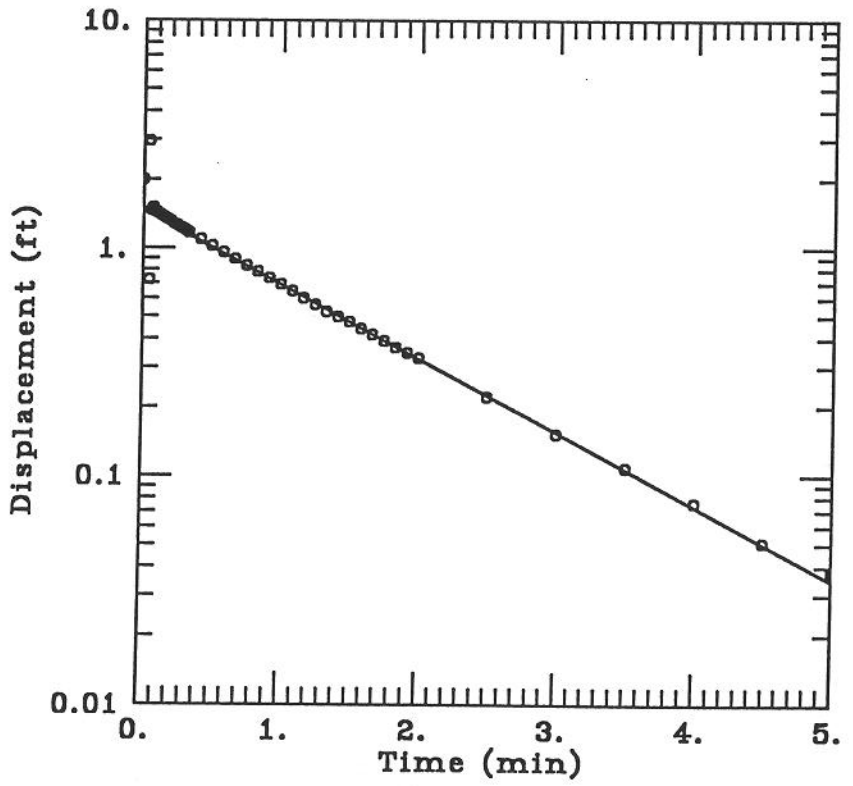
AQUIFER TYPE:!
Unconfined!
SOLUTION METHOD:!
Bouwer-Rice!
TEST DATE:!
2-9-96!
OBS. WELL:!
DW-6D!

ESTIMATED PARAMETERS:!
K = 0.001138 ft/min
y0 = 1.574 ft

TEST DATA:!
H0 = 2. ft
rc = 0.083 ft
rw = 0.25 ft
L = 6. ft
b = 60. ft
H = 36.15 ft

FGS, Inc.	Client: Howco Environmental Services
Project No.: G94-216.82	Location: St. Petersburg, Florida

DW-6D, Slug Test 3



DATA SET:!
a:216!
02/12/96!

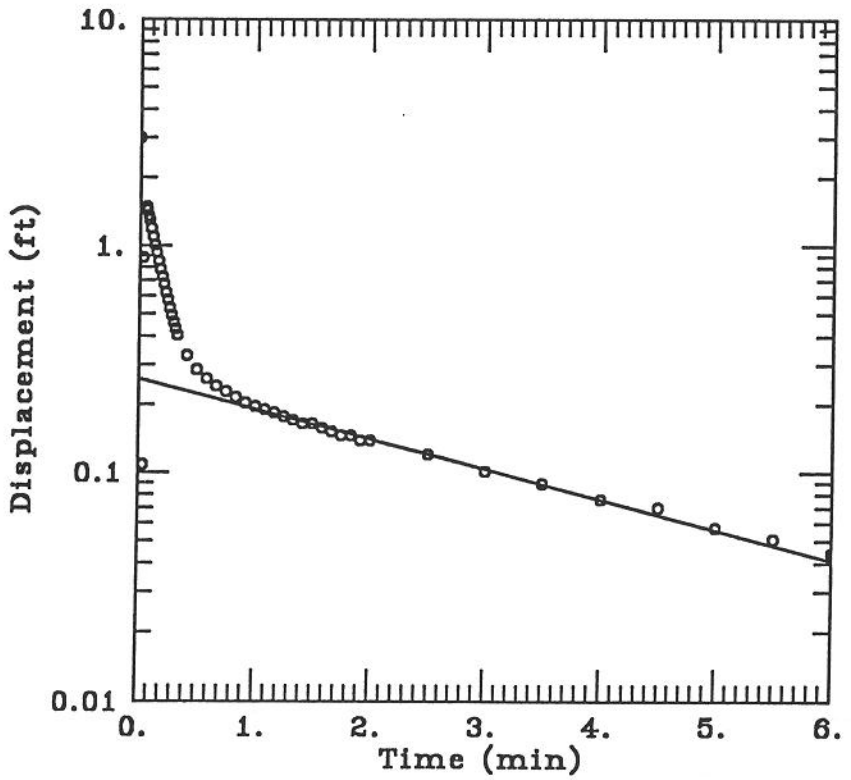
AQUIFER TYPE:!
Unconfined!
SOLUTION METHOD:!
Bouwer-Rice!
TEST DATE:!
2-9-96!
OBS. WELL:!
DW-6D!

ESTIMATED PARAMETERS:!
K = 0.001117 ft/min
y0 = 1.462 ft

TEST DATA:!
H0 = 2. ft
rc = 0.083 ft
rw = 0.25 ft
L = 6. ft
b = 60. ft
H = 36.15 ft

FGS, Inc.	Client: Howco Environmental Services
Project No.: G94-216.82	Location: St. Petersburg, Florida

MW-7, Slug Test 1



DATA SET:!
a:216!
02/12/96!

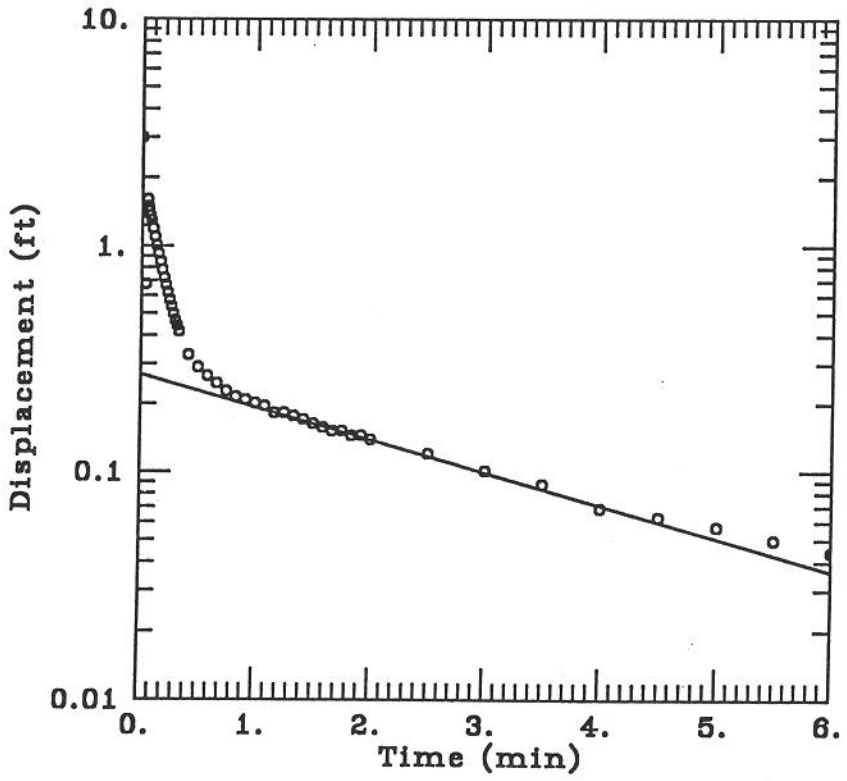
AQUIFER TYPE:!
Unconfined!
SOLUTION METHOD:!
Bouwer-Rice!
TEST DATE:!
2-9-96!
OBS. WELL:!
MW-7!

ESTIMATED PARAMETERS:!
K = 0.001624 ft/min
y0 = 0.2594 ft

TEST DATA:!
H0 = 3. ft
rc = 0.208 ft
rw = 0.333 ft
L = 7.88 ft
b = 60. ft
H = 7.88 ft

FGS, Inc.	Client: Howco Environmental Services
Project No.: G94-216.82	Location: St. Petersburg, Florida

MW-7, Slug Test 2



DATA SET:!
a:216!
02/12/96!

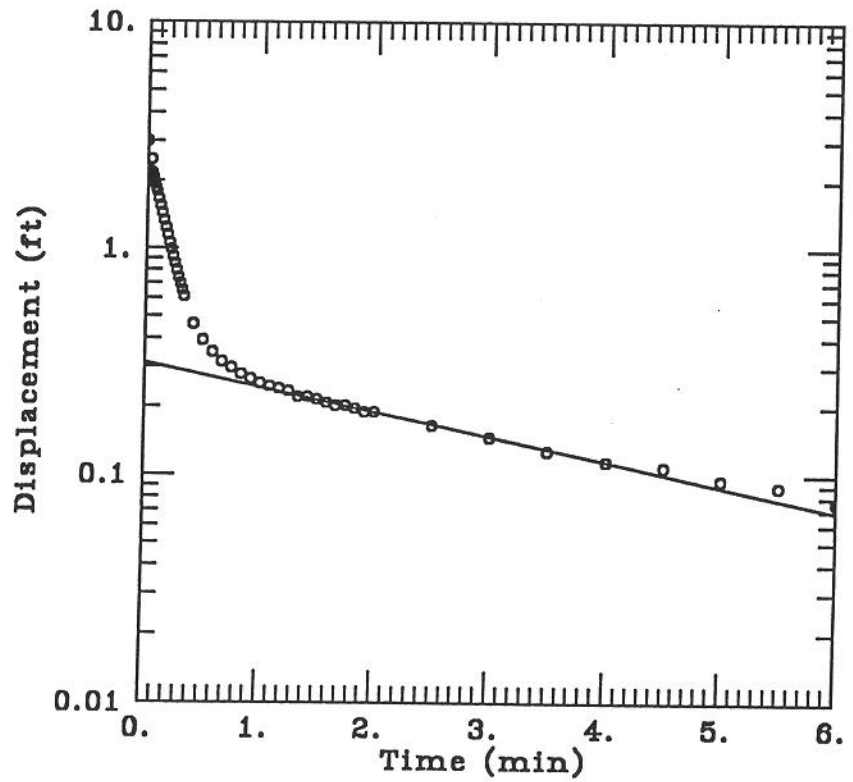
AQUIFER TYPE:!
Unconfined!
SOLUTION METHOD:!
Bouwer-Rice!
TEST DATE:!
2-9-96!
OBS. WELL:!
MW-7!

ESTIMATED PARAMETERS:!
K = 0.001766 ft/min
y0 = 0.2705 ft

TEST DATA:!
H0 = 3. ft
rc = 0.208 ft
rw = 0.333 ft
L = 7.88 ft
b = 60. ft
H = 7.88 ft

FGS, Inc.	Client: Howco Environmental Services
Project No.: G94-216.82	Location: St. Petersburg, Florida

MW-7, Slug Test 3



DATA SET:!
a:216!
02/12/96!

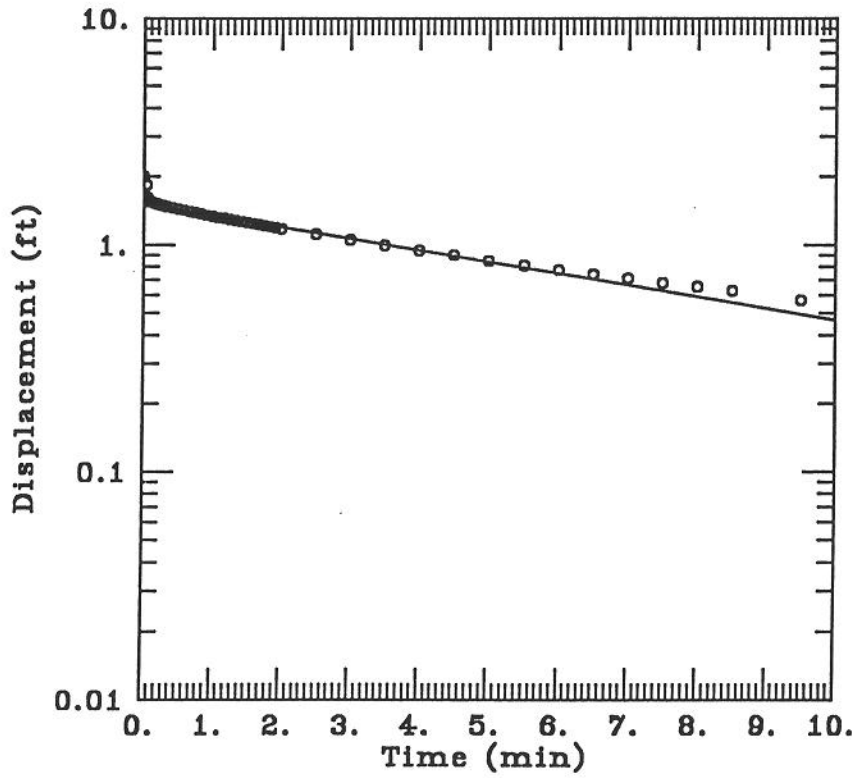
AQUIFER TYPE:!
Unconfined!
SOLUTION METHOD:!
Bouwer-Rice!
TEST DATE:!
2-9-96!
OBS. WELL:!
MW-7!

ESTIMATED PARAMETERS:!
K = 0.00133 ft/min
y0 = 0.3141 ft

TEST DATA:!
H0 = 3. ft
rc = 0.208 ft
rw = 0.333 ft
L = 7.88 ft
b = 60. ft
H = 7.88 ft

FGS, Inc.	Client: Howco Environmental Services
Project No.: G94-216.82	Location: St. Petersburg, Florida

DW-7D, Slug Test 1



DATA SET:!
a:216!
02/12/96!

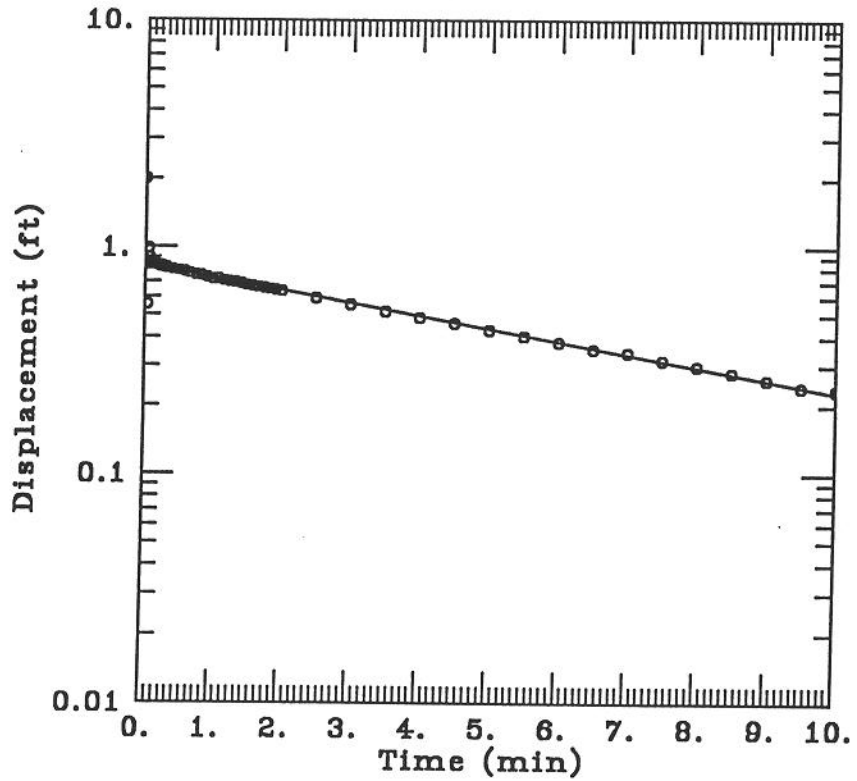
AQUIFER TYPE:!
Unconfined!
SOLUTION METHOD:!
Bouwer-Rice!
TEST DATE:!
2-9-96!
OBS. WELL:!
DW-7D!

ESTIMATED PARAMETERS:!
K = 0.0001774 ft/min
y0 = 1.515 ft

TEST DATA:!
H0 = 2. ft
rc = 0.0833 ft
rw = 0.25 ft
L = 6. ft
b = 60. ft
H = 36.33 ft

FGS, Inc.	Client: Howco Environmental Services
Project No.: G94-216.82	Location: St. Petersburg, Florida

DW-7D, Slug Test 2



DATA SET:!
216!
02/12/96!

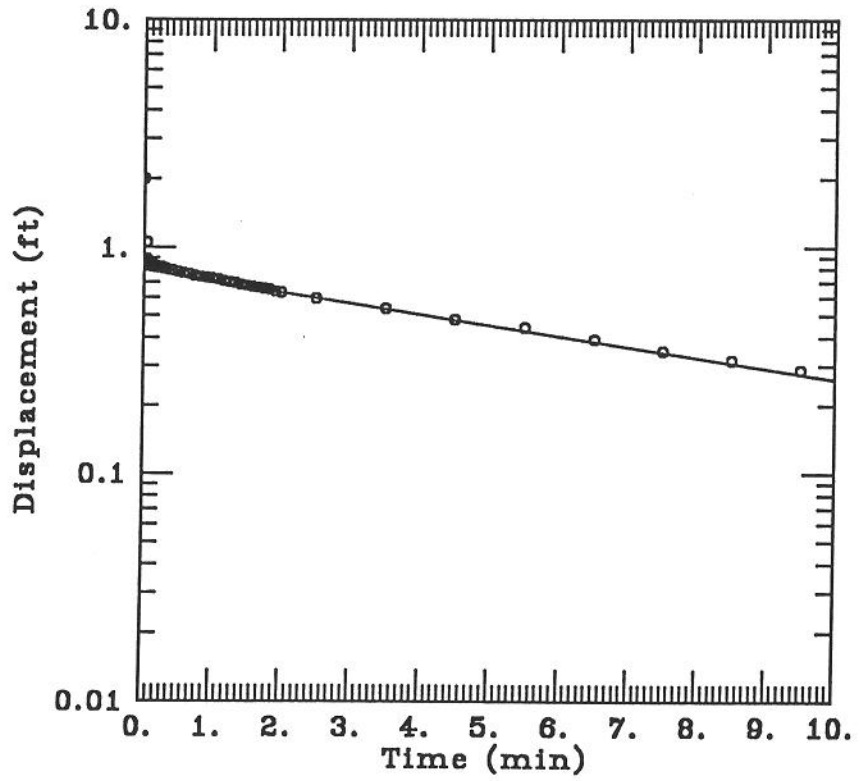
AQUIFER TYPE:!
Unconfined!
SOLUTION METHOD:!
Bouwer-Rice!
TEST DATE:!
2-9-96!
OBS. WELL:!
DW-7D!

ESTIMATED PARAMETERS:!
K = 0.0001952 ft/min
y0 = 0.838 ft

TEST DATA:!
H0 = 2. ft
rc = 0.083 ft
rw = 0.25 ft
L = 6. ft
b = 60. ft
H = 36.33 ft

FGS, Inc.	Client: Howco Environmental Services
Project No.: G94-216.82	Location: St. Petersburg, Florida

DW-7D, Slug Test 3



DATA SET:!
a:216!
02/12/96!

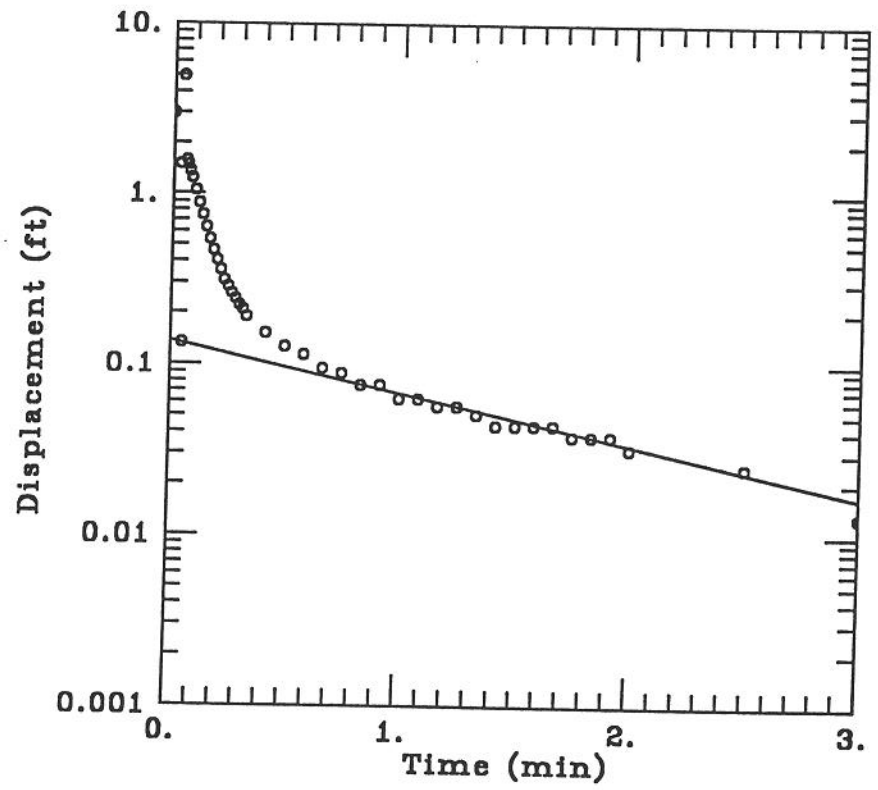
AQUIFER TYPE:!
Unconfined!
SOLUTION METHOD:!
Bouwer-Rice!
TEST DATE:!
2-9-96!
OBS. WELL:!
DW-7D!

ESTIMATED PARAMETERS:!
K = 0.0001675 ft/min
y0 = 0.7925 ft

TEST DATA:!
H0 = 2. ft
rc = 0.0833 ft
rw = 0.25 ft
L = 6. ft
b = 60. ft
H = 36.33 ft

FGS, Inc.	Client: Howco Environmental Services
Project No.: G94-216.82	Location: St. Petersburg, Florida

MW-8, Slug Test 1



DATA SET:!
216!
02/12/96!

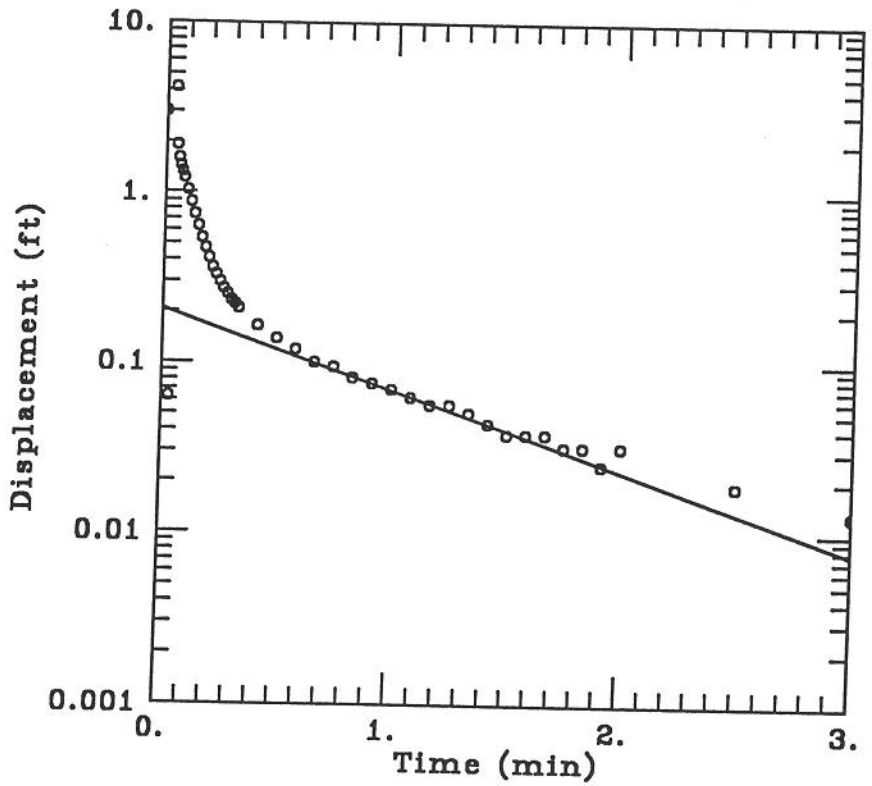
AQUIFER TYPE:!
Unconfined!
SOLUTION METHOD:!
Bouwer-Rice!
TEST DATE:!
2-9-96!
OBS. WELL:!
MW-8!

ESTIMATED PARAMETERS:!
K = 0.003541 ft/min
y0 = 0.1373 ft

TEST DATA:!
H0 = 3. ft
rc = 0.208 ft
rw = 0.333 ft
L = 8.51 ft
b = 60. ft
H = 8.51 ft

FGS, Inc.	Client: Howco Environmental Services
Project No.: G94-216.82	Location: St. Petersburg, Florida

MW-8, Slug Test 2



DATA SET:!
216!
02/12/96!

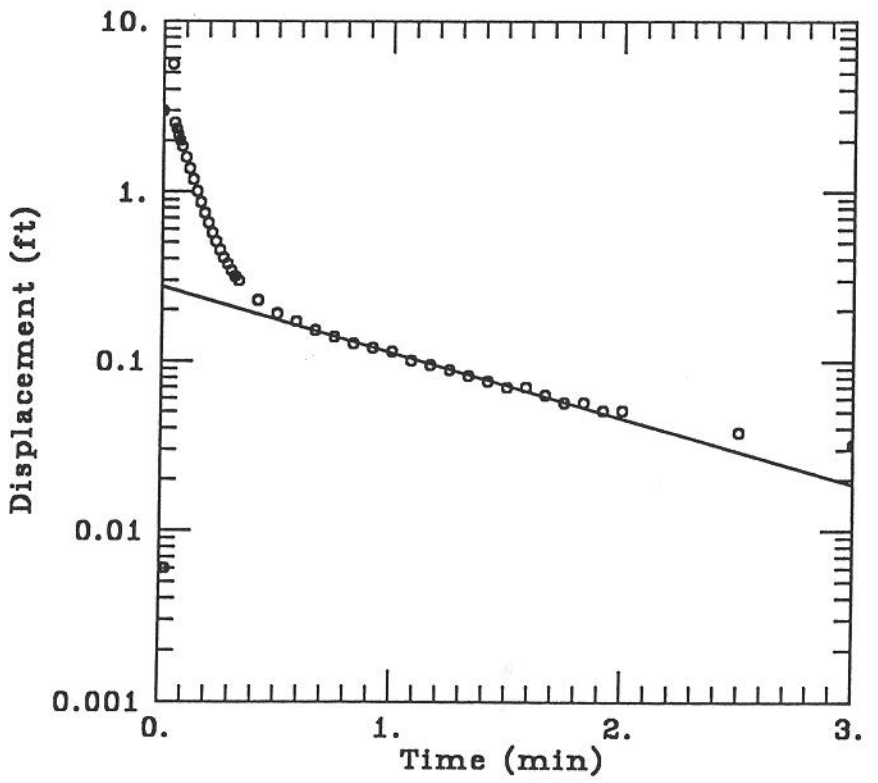
AQUIFER TYPE:!
Unconfined!
SOLUTION METHOD:!
Bouwer-Rice!
TEST DATE:!
2-9-96!
OBS. WELL:!
MW-8!

ESTIMATED PARAMETERS:!
K = 0.005521 ft/min
y0 = 0.2056 ft

TEST DATA:!
H0 = 3. ft
rc = 0.208 ft
rw = 0.333 ft
L = 8.51 ft
b = 60. ft
H = 8.51 ft

FGS, Inc.	Client: Howco Environmental Services
Project No.: G94-216.82	Location: St. Petersburg, Florida

MW-8, Slug Test 3



DATA SET:!
216!
02/12/96!

AQUIFER TYPE:!
Unconfined!
SOLUTION METHOD:!
Bouwer-Rice!
TEST DATE:!
2-9-96!
OBS. WELL:!
MW-8!

ESTIMATED PARAMETERS:!
K = 0.004524 ft/min
y0 = 0.2748 ft

TEST DATA:!
H0 = 3. ft
rc = 0.208 ft
rw = 0.333 ft
L = 8.51 ft
b = 60. ft
H = 8.51 ft