## SITE ASSESSMENT REPORT TIME OIL CO. SITE 2750 2750 WEST COMMODORE WAY SEATTLE, WASHINGTON

Project 783336

March 8, 2000

Prepared for:

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#### **EXECUTIVE SUMMARY**

IT Corporation conducted a subsurface investigation at the Time Oil Co. property located at 2750 West Commodore Way in Seattle, Washington. The investigation area included the former location of an underground storage tank (UST) removed from the site in September of 1991. The UST was reported to have been used to store waste oil. The purpose of the investigation was to assess soil and groundwater for substances regulated by the current Washington State Model Toxics Control Act¹ (MTCA) Method A Compliance Cleanup Levels (Jan. 1996 revision). Tasks performed during the assessment included: 1) locating underground utilities; 2) drilling nine soil borings to a maximum depth of 26.5 feet below grade (bg) at strategic locations; 3) drilling and installing five groundwater monitoring wells; 4) collecting twenty-eight soil samples from the soil borings (continuously in soil boring 02SB-01 and at approximate 5-foot intervals in remaining borings and fifteen soil sample from the monitoring wells; 5) collecting eight soil boring water samples (one each from borings 02SB-02 through 02SB-09); 6) developing the wells and sampling the groundwater in each; 7) performing quantitative chemical analyses on the soil and water samples collected; 8) interpreting the information obtained; and 9) compiling and arranging the data for this report.

## Observations and findings:

- Sediments observed underlying the site include orange brown to gray green sands and silts with varying amounts of clay and gravel predominating the site from the surface to a depth of approximately ten to fifteen feet below grade (bg). A very dense, dry gray clay underlies the sand/silt unit. This unit acts as an apparent aquitard at the site. Existing data show that the hydraulic conductivity of the clay is 1.7 x 10<sup>-8</sup> cm/s (IT Corp., 2000).
- Two soil samples (02SB-01 at 3.5 ft below grade [bg] and 02SB-01 at 6 ft bg) contained TPH-D and TPH-O at concentrations that exceeded the 200 mg/kg MTCA CCL(a) for TPH as diesel and heavier oils. A third sample (02SB-08 at 3.5 feet below grade) contained TPH-O at a concentration of 426 mg/kg. This level exceeds the MTCA (CCL[a]. No other soil samples contained regulated substances in concentrations that exceeded the MTCA CCL(a)s.
- Soil sample 02SB-08 collected at a depth of 3.5 feet bg was also analyzed for total metals, organochlorine pesticides and PCBs, and volatile organic compounds due to its location down gradient of the former used oil tank. All regulated compounds were reported to be either not detected at the method reporting limit, or below their respective MTCA method A or method B guidelines.

<sup>1</sup> Washington Department of Ecology (WAC 173-340), revised Jan. 1996

- Groundwater was encountered in eight of the nine borings and all of the groundwater monitoring wells. Groundwater was reported during drilling at depths of two to 23 feet bg. Boring 02SB-01 was discontinued before water was reached. The stabilized depth to groundwater in the monitoring wells ranged from 6.09 to 17.85 feet bg. Groundwater flow is to the north at a gradient of 0.007 feet per foot.
- Soil Boring Water Samples Total petroleum hydrocarbons as gasoline (TPH-G) were reported to be above the CCL(a) in water samples 02SB-02H2O and 02SB-09H2O at concentrations of 8.26 milligrams per liter (mg/L) and 1.36 mg/L, respectively. TPH-D was reported to be above the CCL(a) in samples 02SB-02H2O, 02SB-03H2O, and 02SB-07H2O at concentrations ranging from 1.07 to 3.12 mg/l. Benzene was reported to be above the CCL(a) in samples 02SB-02H2O through 02SB-05H2O, and 02SB-09H2O at concentrations ranging from 6.64 micrograms per liter (ug/L) to 639 ug/L. Dissolved lead in the soil boring water samples was either not present or present below the CCL(a).
- Groundwater Monitoring Well Water Samples The monitoring wells were sampled September 28, 1999. The TPH-G concentrations in the monitoring wells were similar to the concentrations found in the soil boring water samples: Two wells did not contain detectable TPH-G (02MW-02 and 02MW-05), two wells had TPH-G concentrations below the CCL(a), and remaining well (02MW-04) had a TPH-G concentration of 3.7 mg/l. Neither TPH-D nor TPH-O was detected in any of the wells. Benzene was not detected in wells 02MW-02 and 02MW-04 but was present in wells 02MW-01 and 02MW-03 at concentrations of 72.9 and 56.7 ug/l, respectively. These levels exceed the CCL(a) for benzene. Total lead exceeded the CCL(a) in unfiltered water samples collected from all wells except 02MW-03 (<1.00 ug/l). The highest total lead concentration was detected in 02MW-02 (133 ug/l).

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## 1.0 INTRODUCTION/BACKGROUND

This report presents the work steps and results associated with subsurface investigation work conducted by IT Corporation at the Time Oil Co. property located at 2750 West Commodore Way in Seattle, Washington (Figure 1, Site Location Map). The work was conducted to assess the subsurface extent and concentration of substances regulated under the Washington Department of Ecology (WDOE) Model Toxics Control Act (MTCA; revised Jan. 1996). IT Corporation conducted this investigation at the request of the Time Oil Co.

## 1.1 Work Scope

The following outline summarizes the specific work conducted during the investigation:

- Reviewed the results of the previous investigation of the subject property.
- Located subsurface utilities.
- Drilled and sampled nine soil borings.
- Drilled, installed and developed five groundwater monitoring wells.
- Analyzed forty-three soil samples for petroleum compounds.
- Gauged, sampled and analyzed eight soil boring water samples and five groundwater monitoring well water samples for petroleum hydrocarbons and lead.
- Performed total metals, organochlorine pesticides and PCBs, and volatile organic compounds analysis on one soil sample.
- Evaluated, summarized and presented the information obtained in report form.

## 1.2 Background

The subject property (Figure 2) was the former site of a 300-gallon underground storage tank (UST). The UST location is shown in Figure 3. The UST stored used oil. This UST tank was removed from the site on September 16, 1991. Discolored soil and a petroleum odor were noted during the UST removal. An attempt was made to over-excavate hydrocarbon-affected soils after the UST was removed. Over-excavation activities were discontinued after approximately 100 cubic yards of affected soil had been removed. The resulting excavation measured approximately 35 feet by 20 feet and varied in depth from 2 to 6 feet. The northern boundary of the excavation appeared most heavily impacted and a hydrocarbon sheen was observed upon groundwater pooled in the excavation. A test pit was excavated approximately 20 feet north of the excavation in an effort to assess the lateral limits of the hydrocarbon impacts.

During the 1991 UST removal five soil samples were collected from the limits of the excavation and the test pit. The north sidewall of the excavation was not sampled due to the presence of visible hydrocarbon impacts. The soil samples were analyzed for TPH-diesel and TPH-motor oil. TPH-motor oil and/or diesel results in two of the five samples were equal to or exceeded the MTCA Soil Cleanup Levels were reported by the analytical laboratory (Appendix A, Table 2). Additional soil samples were collected from the limits of the excavation on December 10, 1991. The samples collected from the east and north sidewalls contained TPH concentrations exceeding MTCA Method A Soil Cleanup

Levels. TPH concentrations exceeding the CCL(a) ranged from 200 mg/kg to 25,000 mg/kg in soil samples 02-TIF, 02-TP1, 02-NS2, and 02-ES4 (Figure 3).

Additional excavation activities were conducted on July 28 and 29, 1992 in an effort to define and remove hydrocarbon-affected soils. Excavating activities were terminated on July 29, 1992 because observed impacts appeared to be increasing in severity to the east and excavation of the full extent of affected soils did not appear feasible. Approximately 150 cubic yards of soil were removed during the additional excavating activities. The excavation was backfilled by placing crushed rock from the bottom of the excavation to the top of the saturated zone. The crushed rock was then covered with a layer of 10-mil visqueen. The remaining excavation was backfilled with clean, imported fill sand.

During the 1992 excavation activities, eight soil samples were recovered from the limits of the expanded excavation (Figure 3). HCID analyses determined that TPH chromatogram patterns typical of gasoline, diesel, motor oil and mineral spirits were present in four of the soil samples. Follow-up analysis determined that BTEX concentrations appeared minimal but that TPH impacts (as gasoline, diesel, motor oil and mineral spirits) in excess of MTCA Soil Cleanup Levels were present in three samples (02-A2, 02-A6, and 02-WOWC). Concentrations ranged from 110 mg/kg to 2.800 mg/kg.

Details of work conducted in association with the UST removal conducted in September 1991, and the additional excavating activities conducted in July 1992, are presented respectively in Time Oil Co. reports dated December 30, 1991 and September 22, 1992 (Appendix A). Tank removal work conducted at the 2750 W. Commodore Way property is referenced as Excavation #2 in the December 1991 report. Since fuel service USTs were removed from 2737 W. Commodore Way on the same day, results of that UST removal are discussed as Excavation #1 in the same report. Work referenced as Excavation #1 is not applicable to the 2750 W. Commodore Way site.

#### 2.0 GEOLOGY/HYDROGEOLOGY

The site is located on the south shore of Salmon Bay abutting the bay. The site topography slopes to the north from Commodore Way to the shoreline. The site has approximately 15 feet of relief from the southern high at Commodore Way to the shoreline. Sediments observed underlying the site include brown to gray green sands and silts with varying amounts of clay and gravel predominating the site from the surface to depths of approximately ten to thirty-five ft below grade (bg) depending upon location relative to the shoreline. A very dense, dry gray clay of unknown thickness underlies the site beginning at approximately 15 feet MSL (10-30 ft bg, depending on proximity to the shoreline). This unit is an apparent aguitard for the water table aguifer in this area.

Groundwater was encountered in eight of the nine the borings during drilling, excluding 02SB-01. The depth to groundwater was generally between 2 and 23 feet below grade. The stabilized depth to water in the groundwater monitoring wells ranged from 6.09 to 17.85 feet below grade. Groundwater flows to the north at a gradient of 0.007 feet per foot as measured on September 28, 1999 (Figure 5).

## 3.0 ASSESSMENT ACTIVITY

IT Corporation developed a work plan to install nine soil borings and five groundwater monitoring wells at strategic locations to assess subsurface conditions with respect to petroleum hydrocarbons (Figure 4). The locations of these borings were based on the findings of the underground storage tank (UST) decommissioning and excavation activities conducted by Time Oil Co. (Appendix A) and on site

access considerations (underground utilities, fences, etc.). The monitoring wells were sited based upon the results of the soil boring phase of work.

Prior to the initiation of drilling activities, IT contracted Applied Professional Services (APS) to clear the proposed drilling area for underground utilities. In addition, IT contracted Apollo Geophysics to conduct an electromagnetic resonance and ground penetrating radar survey of the site to define any subsurface utilities noted during the APS work and to better define the area containing the terminals underground product lines. The product lines run northwesterly along the eastern edge of the site driveway (Figure 2).

## 3.1 Soil Borings

Nine soil borings were drilled on June 7 and June 11, 1999 by Cascade Drilling Inc. (Cascade) of Woodinville, Washington. The borings were advanced by hollow stem auger to depths ranging from 9 to 26.5 feet bg. A complete description of the exploration depths for each soil boring is shown in Table 1a, Drilling Summary. Boring locations are shown on Figure 4. Each boring was sampled using a 2-inch inside diameter, split-spoon sampler. An IT Corporation engineer supervised the drilling and maintained a log of the materials encountered in accordance with the Unified Soil Classification System (Appendix B, Drill Logs).

Soil samples were collected continuously in soil boring 02SB-01 and at approximate five-foot intervals in soil borings 02SB-02 through 02SB-09. Each soil sample was screened in the field for volatile hydrocarbons using a photo-ionization detector (PID). PID results are noted on the drill logs. Twenty-eight soil samples collected from the nine borings were submitted for laboratory analysis. Analytical methods and procedures are discussed in the following section. The drilling and soil sampling activities were conducted in accordance with the Standard Operating Procedures (SOP) presented in Appendix C.

Soil encountered in borings 02SB-01 through 02SB-09 were orange brown to gray green sands and silts with varying amounts of clay and gravel predominating the site from the surface to a depth of approximately ten to fifteen feet bg. A very dense, dry gray clay underlies the sand/silt unit. Cross sections of the site detailing the stratigraphy are shown in Figures 9 through 11.

Water was observed in all soil borings except 02SB-01. Depth to water ranged from approximately 2 to 20 feet bg.

## 3.2 Groundwater Monitoring Wells

Five groundwater monitoring wells were drilled and installed on September 13, 1999 by Cascade Drilling Inc. (Cascade) of Woodinville, Washington. The borings were advanced by hollow stem auger to a maximum depth of 35 feet bg. All of the wells were terminated near the upper boundary of the dense clay that underlies the site at a depth of 10-35 feet bg depending upon location. A description of the construction details for each well is shown in Table 1b. Well locations are shown on Figure 4. Wells 02-MW01, 02MW-04 and 02MW-05 were sampled at five-foot intervals using a 2-inch inside diameter, split-spoon sampler. Two wells (02MW-02, and -03) were drilled without sampling due to their proximity to the recently drilled soil borings. An IT Corporation engineer supervised the drilling and well installation. A log of the materials encountered and well as-built data is included in Appendix B, Drill Logs).

Soil samples were screened in the field for volatile hydrocarbons using a photo-ionization detector (PID). Fifteen soil samples collected from wells 02MW-01, 02MW-04, and 01MW-05 were submitted for laboratory analysis. Analytical methods and procedures are discussed in the following section.

The drilling and soil sampling activities were conducted in accordance with the Standard Operating Procedures (SOP) presented in Appendix C.

Soils encountered during the drilling of the monitoring wells were similar to those observed in the soil borings. In wells 02MW-01, -04 and -05 the dense, dry clay was encountered at 19, 19.5, and 35 ft bg, respectively.

Water was encountered in all five wells. The stabilized depth to water ranged from 6.09 to 17.85 feet bg. The direction of groundwater flow at the site was to the north at a gradient of 0.007 feet per foot between wells 02MW-02 and 02MW-05.

#### 4.0 RESULTS

Soil and groundwater samples were collected during the drilling of the nine boreholes and five monitoring wells. These samples were collected using standard IT sampling protocols. The samples were stored on ice under chain of custody protocols for shipment to the project laboratory (North Creek Analytical). North Creek Analytical (NCA) is a Washington State certified laboratory. The results of the sampling effort are discussed below. Laboratory analytical results are referenced against the current MTCA Method A Compliance Cleanup Levels (Jan. 1996 revision).

## 4.1 Gauging Results

The wells were installed on September 11, 1999. After well development and prior to sampling, the wells were gauged for depth to water and apparent product thickness on September 28, 1999. The gauging results are summarized in Table 2. The depth to groundwater was generally between 14 and 19 feet below grade.

The stabilized depth to water in the groundwater monitoring wells ranged from 6.09 to 17.85 feet below grade. Groundwater flows to the north at a gradient of 0.007 feet per foot as measured on September 28, 1999 (Figure 5).

#### 4.2 Soil

A total of 43 soil samples (28 from the soil borings, 15 from the monitoring wells) were selected for laboratory analysis during the project. The soil samples were analyzed by North Creek Analytical of Bothell, WA. Samples were analyzed for BTEX by EPA method 8021B, TPH-G by Method NWTPH-Gx, TPH-D and TPH-O by Method NWTPH-Dx and total lead by EPA Method 6000/7000. One soil sample was also analyzed for VOCs (EPA 8260B), pesticides/PCBs (EPA8081/8082), and RCRA metals (EPA 6000/7000 series methods).

## 4.2.1 Soil Boring Soil Samples

Two soil samples (02SB-01 at 3.5 ft below grade [bg] and 02SB-01 at 6 ft bg) contained TPH-D and TPH-O at concentrations that exceeded the 200 mg/kg MTCA CCL(a) for TPH as diesel and heavier oils. A third sample (02SB-08 at 3.5 feet below grade) contained TPH-O at a concentration of 426 mg/kg. This level exceeds the MTCA (CCL[a]. All other analyte concentrations, including the VOCs, PEST/PCBs, and RCRA metals in sample 02SB-08 were reported to be either below the CCL(a)/CCL(b) or reported as not detected at the method reporting limit. The additional analyses (VOCs, PEST/PCBs/RCRA metals) were run on sample 02SB-08 only due to the samples' TPH-O concentration and the borings' location down gradient of the former used oil tank. Chemical analytical results and CCL(a)s for soil are summarized in Tables 3 through 6. Complete laboratory reports for soil samples are contained in Appendix D.

#### 4.2.2 Monitoring Well Soil Samples

None of the monitoring well soil samples contained TPH or BTEX concentrations that exceeded the CCL(a)s. Complete laboratory reports for soil samples are contained in Appendix D.

#### 4.3 Water

Water samples were analyzed North Creek Analytical of Bothell, Washington. Eight soil boring water samples and five groundwater monitoring well water samples were analyzed for BTEX by EPA Method 8020, TPH-G by Method NWTPH-Gx, TPH-D and TPH-O by Method NWTPH-Dx, and total/dissolved lead by EPA 6020.

The water samples collected from the soil borings were collected using a stainless steel screen set in the open borehole. The results of the soil boring water samples were used to site the monitoring wells. Soil boring water samples are not considered to be representative of groundwater conditions. Water samples collected from the monitoring wells were collected according to standard IT Corporation procedures. These samples are considered to be representative of water quality at the site.

## 4.3.1 Soil Boring Water Samples

Total petroleum hydrocarbons as gasoline (TPH-G) were reported to be above the CCL(a) in water samples 02SB-02H2O and 02SB-09H2O at concentrations of 8.26 milligrams per liter (mg/L) and 1.36 mg/L, respectively. TPH-D was reported to be above the CCL(a) in samples 02SB-02H2O, 02SB-03H2O, and 02SB-07H2O at concentrations ranging from 1.07 to 3.12 mg/l. Benzene was reported to be above the CCL(a) in samples 02SB-02H2O through 02SB-05H2O, and 02SB-09H2O at concentrations ranging from 6.64 micrograms per liter (ug/L) to 639 ug/L. Dissolved lead in the soil boring water samples was either not present or present below the CCL(a). A summary of the water sample analytical results can be found in Table 7. Laboratory reports of the water analyses are contained in Appendix D.

#### 4.3.2 Groundwater Monitoring Well Water Samples

The monitoring wells were sampled September 28, 1999. The TPH-G concentrations in the monitoring wells were similar to the concentrations found in the soil boring water samples: Two wells did not contain detectable TPH-G (02MW-02 and 02MW-05), two wells had TPH-G concentrations below the CCL(a), and remaining well (02MW-04) had a TPH-G concentration of 3.7 mg/l (Figure 6). Neither TPH-D nor TPH-O was detected in any of the wells. Benzene was not detected in wells 02MW-02 and 02MW-04 but was present in wells 02MW-01 and 02MW-03 at concentrations of 72.9 and 56.7 ug/l, respectively (Figure 7). These levels exceed the CCL(a) for benzene. Well 02MW-05 contained benzene at a concentration that was below the CCL(a). Total lead exceeded the CCL(a) in unfiltered samples collected from all wells except 02MW-03 (<1.00 ug/l; Figure 8). The highest total lead concentration was detected in 02MW-02 (133 ug/l). Dissolved lead samples were not collected from the monitoring wells. A summary of the analytical results can be found in Table 7. Laboratory reports of the water analyses are contained in Appendix D.

#### 5.0 CONCLUSIONS

Nine soil borings and five groundwater monitoring wells were drilled in strategic locations to assess the subsurface conditions at Time Oil Co. Seattle Terminal Site 2750. The work was conducted during June and September, 1999.

Groundwater was encountered at depths of two to 23 feet bg during drilling. Static water levels at the site ranged from 6.02 to 17.85 feet bg in the groundwater monitoring wells.

With the exception of one soil sample from boring 02SB-08 and two samples from 02SB-01, the site soils are in compliance with the MTCA CCL(a)s for all site contaminants of concern. The three samples cited above all contained non-compliant levels of TPH-D or TPH-O only.

Site groundwater is impacted with gasoline range hydrocarbons, and benzene. The impacts appear to be restricted to the site wells located in the middle and upgradient of the site relative to the original site work performed in 1991-2. Total lead in the groundwater exceed the CCL(a), however, dissolved lead samples collected from soil boring water samples indicates that the lead at the site is due to suspended sediments.

#### 6.0 RECOMMENDATIONS

IT recommends additional assessment of the groundwater conditions at the site. This includes monitoring of the newly installed wells and the installation of additional borings/wells to define the extent of the groundwater impacts to the south, east, and west of the study area.

## 7.0 REFERENCES

IT Corp., 2000. Site Assessment Report – Time Oil Co. Site 2737, 2737 West Commodore Way, Seattle, Washington. January 26, 2000.

Sloan, Scott B., 1991. Letter report "Underground Storage Tank Site Check/Site Assessment as Seattle Terminal", Time Oil Co. Company. December 30, 1991.

Sloan, Scott B., 1992. Letter report "Excavating Activities Conducted at Former Waste Oil Tank Location Former Time Oil Co. Maintenance Facility", Time Oil Co. Company. September 22, 1992.

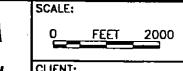
Washington State Department of Ecology. Model Toxics Control Act, WAC 173-340. Revised Jan. 1996.





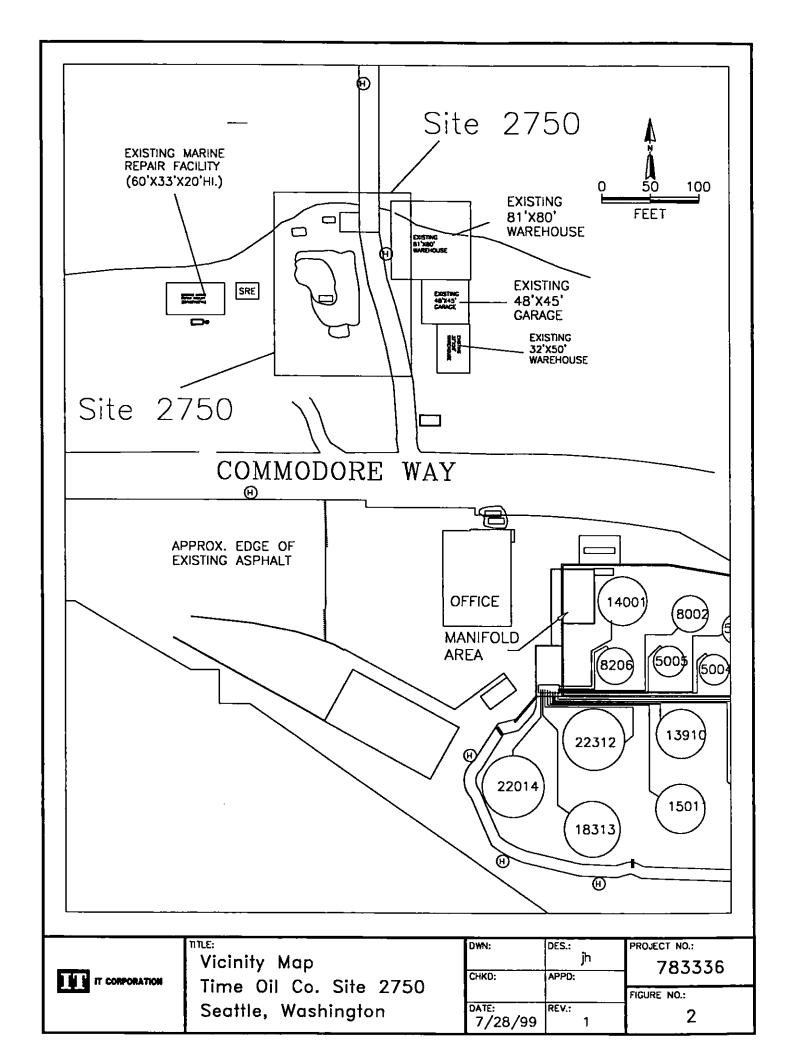


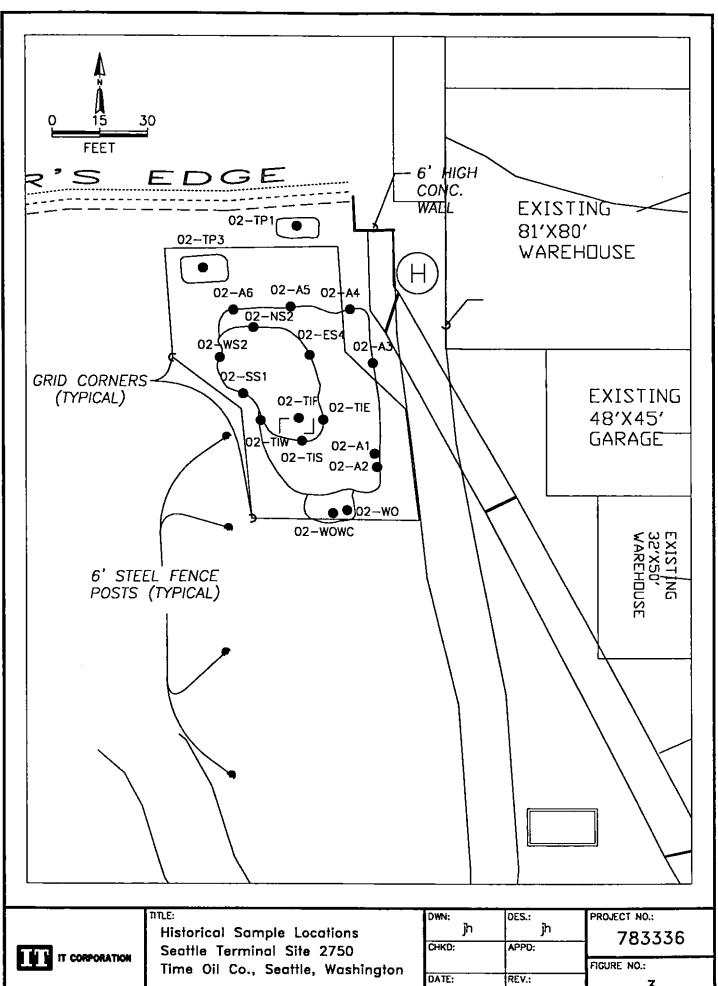
SOURCE: U.S.G.S. 7.5' QUAD SHEET Seattle North, Washington Photorevised 1983



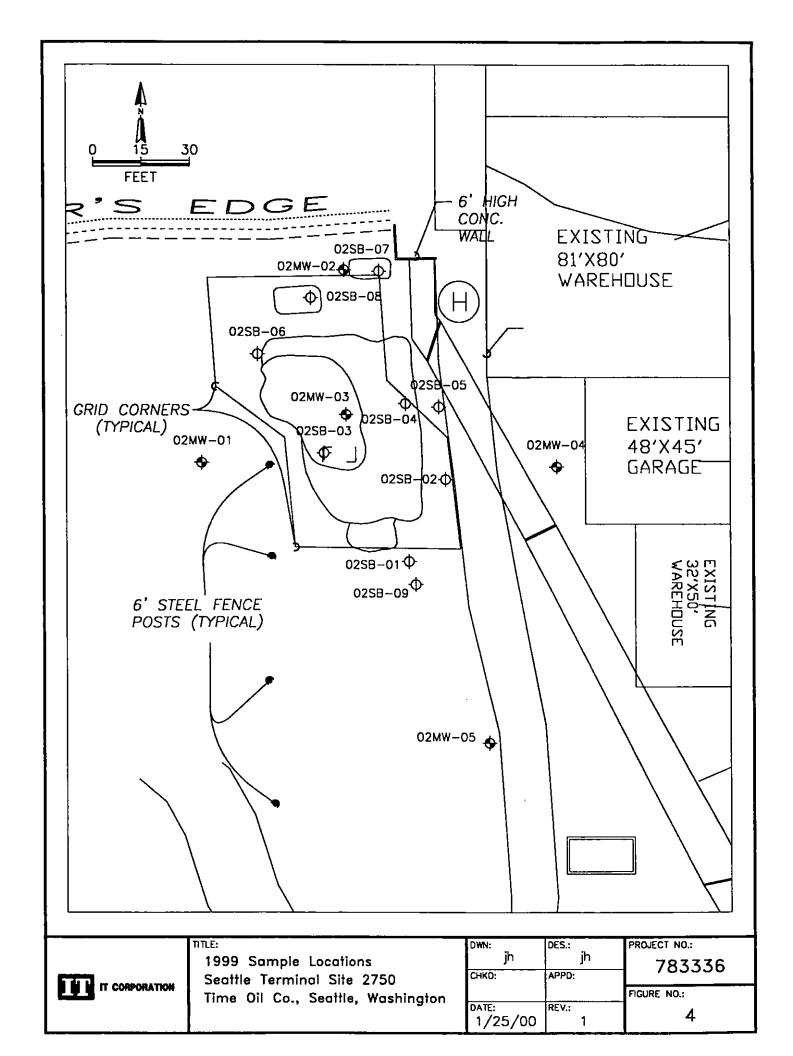
## SITE LOCATION MAP

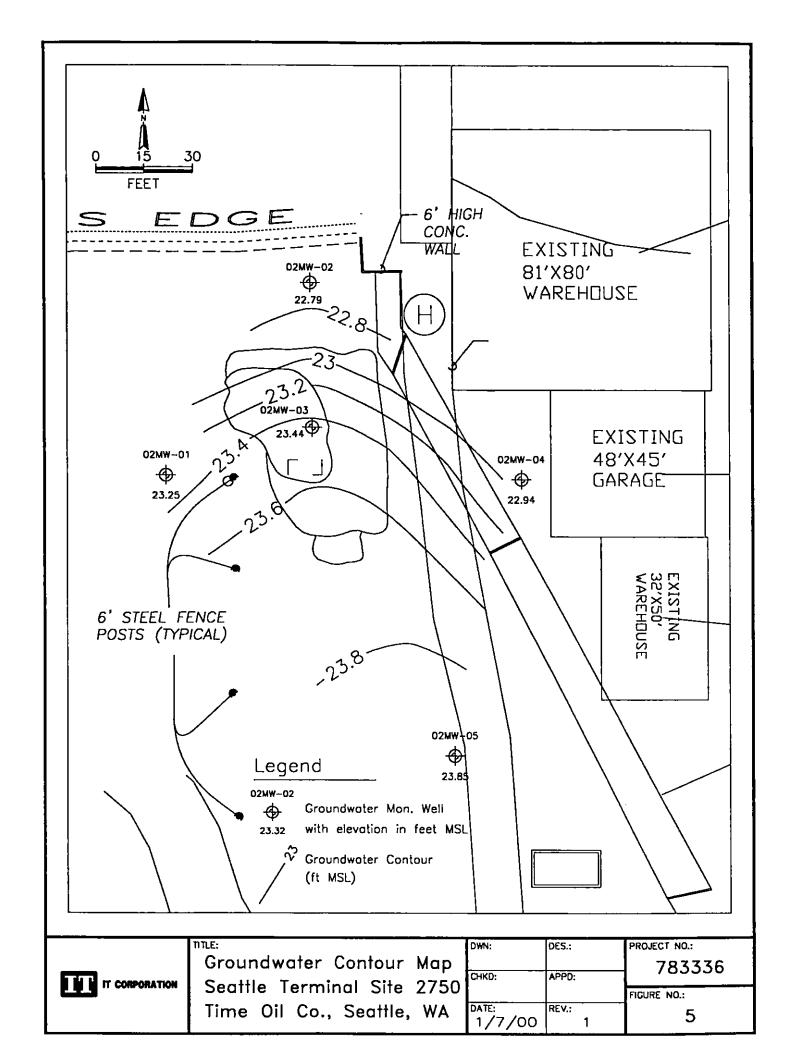
CLIENT: Time Oil Co.	DATE: 7/28/99
LOCATION: 2737—3031 West Commodore Way Seattle, Washington	FIGURE:

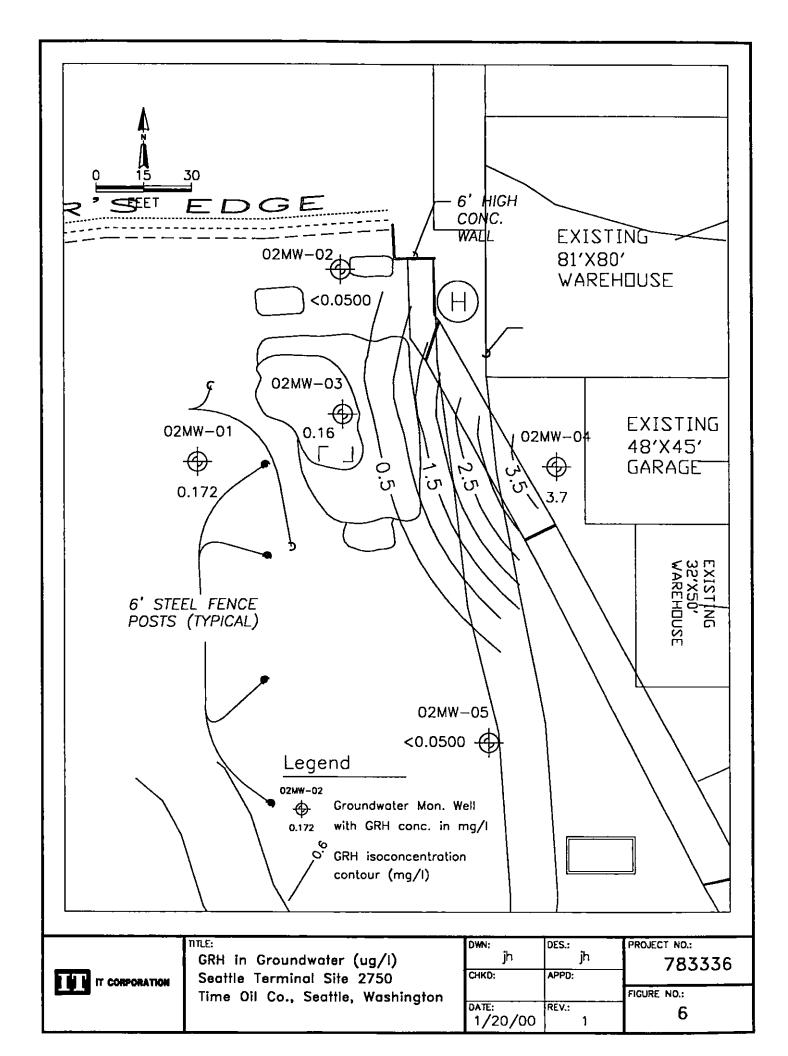


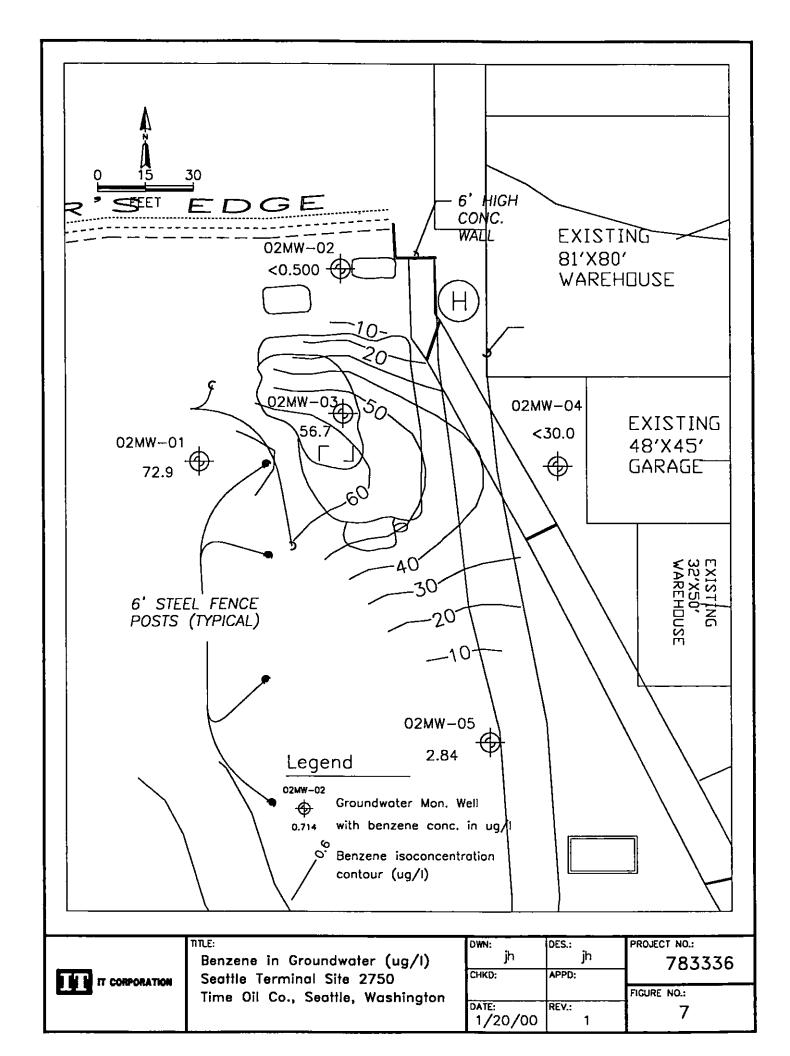


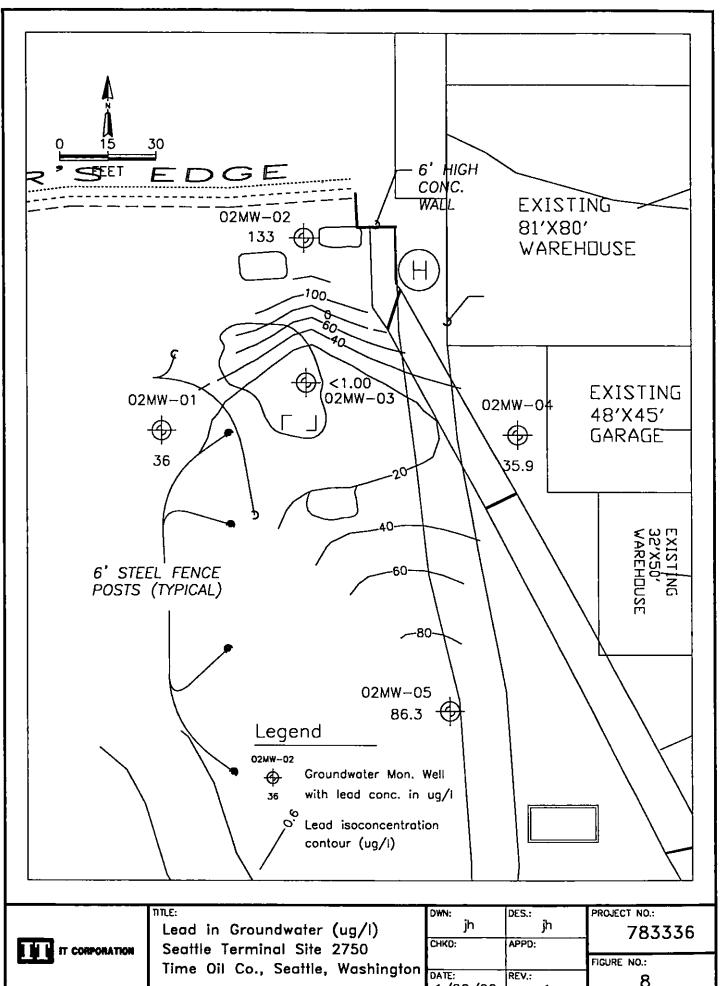
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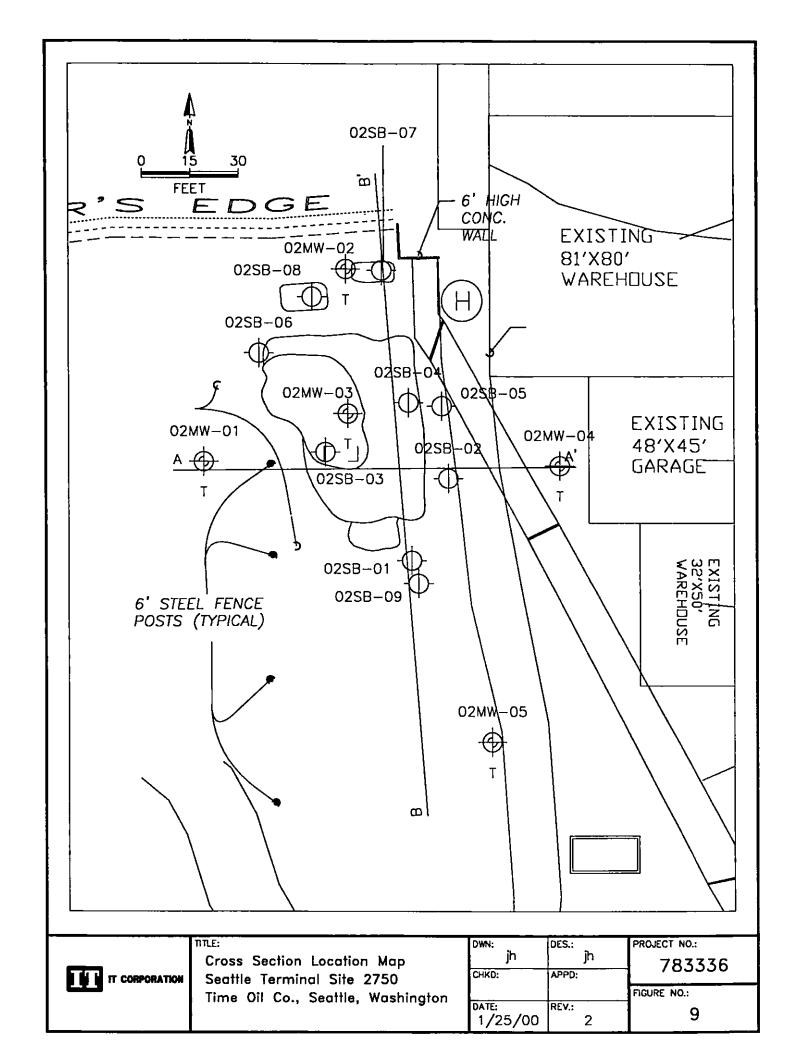


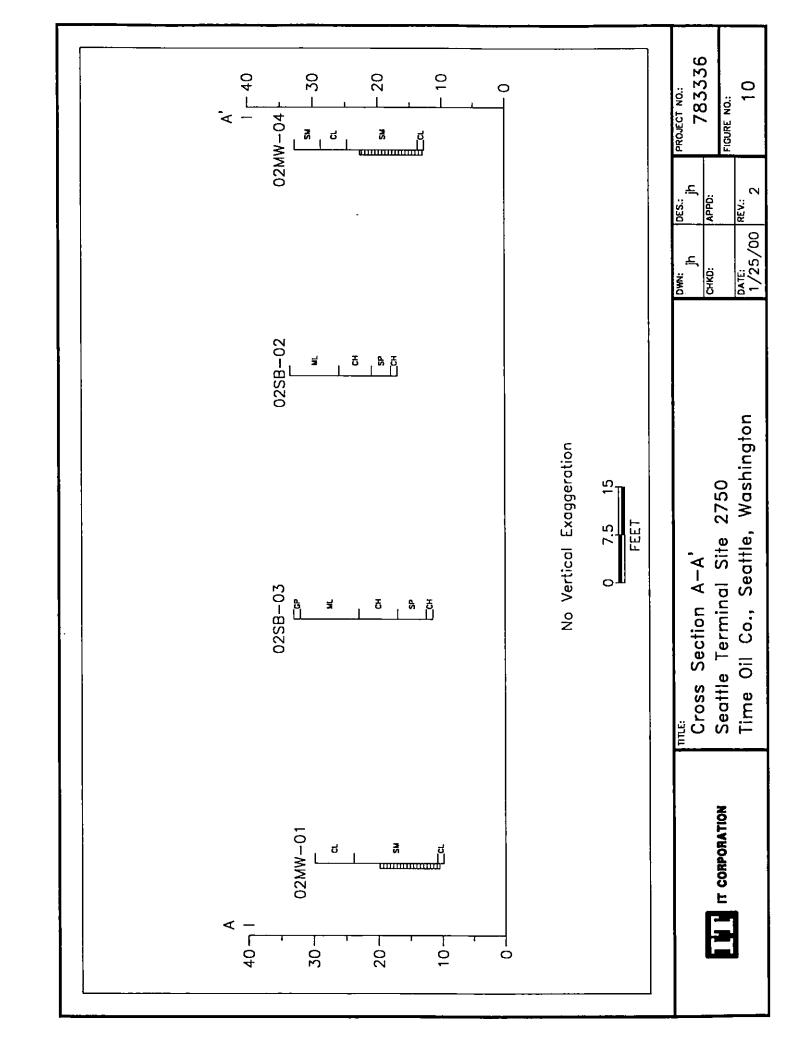


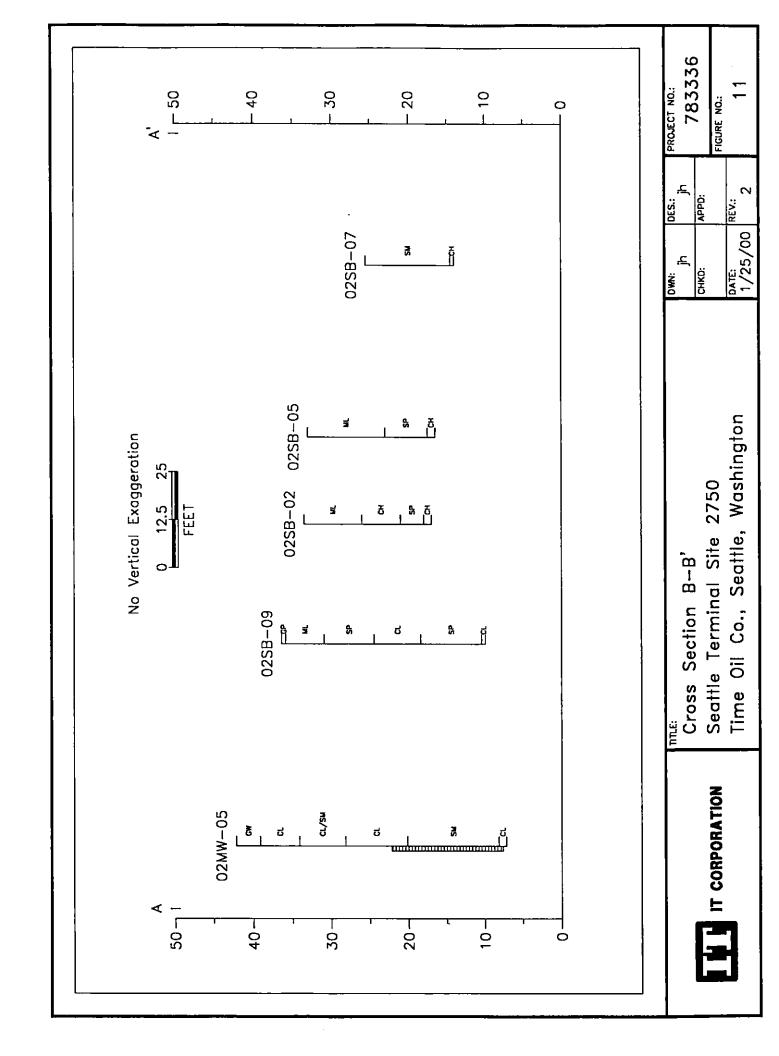




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**TABLES** 

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Table 1a.

Drilling Summary for Soil Borings
Time Oil Co. Site 2750
2750 West Commodore Way, Seattle, WA

SITE	SURVEY CC	OORDINATES Y	BORE DEPTH TOTAL	DATE	DRILLING METHOD	DRILLER	CONSULTANT
			(feet bgs)	5)			
02SB-01	4176.5	5448.0 0.	0.00 14.00	l	em Auger		
02SB-02	4187.8	5473.7 0.	0.00 16.50	) 06/07/99 Hollow Stem Auger	am Auger	CASCADE	
02SB-03	4149.8		0.00 21.50		em Auger	CASCADE	
	4175.5	5497.3 0.	0,00 16,50	) 06/07/99 Hollow Stem Auger	am Auger	CASCADE	
02SB-05	4185.8		0.00 16.50	06/07/99 Hollow Stem Auger	em Auger	CASCADE	
02SB-06	4129.2	5512.7 0.	0.00 11.50	06/07/99 Hollaw Stem Auger	əm Auger	CASCADE	
	4167.2				sm Auger	CASCADE	
02SB-08	4145.7	5530.2 0.	00'6 00'0		am Auger	CASCADE	
	4178.6	5440.8 0.	0.00 26.50	) 06/11/99 Hollow Stem Auger	əm Auger	CASCADE. IT	

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Table 1b.

Drilling Summary for Monitoring Wells
Time Oil Co. Site 2750
2750 West Commodore Way, Seattle, Washington

STRE	WELL	TOTAL	GROUND SURFACE ELEVATION	MP	CASING	w -	SCREENS (feet bgs)		ANNULAR FILLS (feet bgs)	
	(feet bgs)	(feet bgs) (feet bgs)	(feet)	(feet)	(inchas)	INTERVAL	DESCRIPTION		INTERVAL	TYPE
02MW-01	19.33	20.00	0.00	29.34	2.00	10.0-19.3	Slotted PVC			
02MW-02	9.82	10.00	00'0	25.20	2.00	5.0-9.8	Slotted			
02MW-03	19.80	20.00	0.00	33.02	4.00	10.0-19.8	Slotted			
02MW-04	19.80	20.00	00:0	32.31	2.00	10.0-19.8	Slotted	-		
02MW-05	34.54	35.00	0.00	41.70	2.00	20.0-34.5	Slotted			
							PVC			

Table 2
Monitoring Well Gauging Results
Time Oil Co. Site 2750
2750 West Commodore Way, Seattle, Washington

DATE	SITE	MP ELEVATION TIME	TIME	DEPTH TO WATER	FLOATING PRODUCT THICKNESS	WATER ELEV.	CHANGE IN WATER ELEV.	EQUIV. FRESH WATER HEAD
9/28/99 02MW-	02MW-01	29.34	10:05	60'9	0	23.25 NA	NA	23.25
9/28/99 02MW-(	02MW-02	25.20	9:55	2.41	0	22.79 NA	NA	22.79
9/28/99 02MW-(	02MW-03	33.02	10:00	9.58	0	23.44 NA	NA	23.44
9/28/99 02MW-(	02MW-04	32.31	9:50	9.37	0	22.94 NA	NA	22.94
9/28/99 02MW-(	02MW-05	41.70	9.45	17.85	0	23.85 NA	NA	23.85

All Measurements in Feet Based on Mean Sea Level

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Table 3
Soil Sample Analytical Results - NWTPH/BTEX/Lead
Time Oil Co. Site 2750
2750 West Commodore Way, Seattle, WA

				Oferel Punte	Manual Bassas				
SITE	DATE	DEPTH (ft)	Hydrocarbons	Hydrocarbons	Hydrocarbons	Benzene	Toluene	Ethylbenzene	Xylenes (total)
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
MTCA/A/U			100	200	200	0.5	40	20	20
02MW-01	09/13/99	5.00	<5.00	<10.0	<25.0	<0.0500	<0.0500	<0.0500	<0.100
02MW-01	09/13/99	10.00	<5.00	<10.0	<25.0	<0.0500	<0.0500	< 0.0500	<0.100
02MW-01	09/13/99	15.00	<5.00	10.5	27.7	<0.0500	<0.0500	<0.0500	<0,100
02MW-01	09/13/99	19.00	<5.00	<10.0	<25.0	<0.0500	<0.0500	< 0.0500	<0.100
02MW-04	09/13/99	2:00	<5,00	<10.0	<25.0	<0.0500	<0.0500	<0.0500	<0.100
02MW-04	09/13/99	5.00	6.88	<10.0	<25.0	< 0.0500	< 0.0500	< 0.0500	<0.100
02MW-04	09/13/99	10.00	<5.00	<10.0	<25.0	<0,0500	<0.0500	<0,0500	<0,100
02MW-04	09/13/99	15.00	<5.00	<10.0	<25.0	<0.0500	<0.0500	< 0.0500	<0.100
02MW-04	09/13/99	19.00	<5.00	<10.0	<25.0	<0.0500	<0.0500	<0.0500	<0,100
02MW-05	09/13/99	5.00	<5.00	<10.0	<25.0	<0.0500	<0.0500	<0.0500	<0.100
02MW-05	09/13/99	10.00	<5.00	<10.0	<25.0	<0.0500	<0.0500	<0.0500	<0.100
02MW-05	09/13/99	15.00	< 5.00	10.3	37.0	<0.0500	< 0.0500	<0.0500	<0.100
02MW-05	09/13/99	20.00	<5.00	<10,0	<25.0	<0,0500	<0.0500	<0.0500	<0.100
02MW-05	09/13/99	25.00	<5.00	<10.0	<25.0	0.222	<0.0500	< 0.0500	<0.100
02MW-05	09/13/99	30,00	<5.00	<10.0	<25.0	<0.0500	<0.0500	<0.0500	<0.100
02MW-05	09/13/99	34.00	<5.00	< 10.0	<25.0	<0,0500	<0.0500	<0.0500	<0.100
02SB-01	66/0/90	3,50	<5.00	540	1320	<0.0500	<0.0500	<0.0500	<0.100
02SB-01	06/04/99	6.00	<5.00	285	712	<0,0500	<0.0500	< 0.0500	<0.100
0258-01	66/20/90	8.00	<5,00	<10.0	<25.0	<0.0500	<0.0500	<0.0500	<0,100
02SB-01	66/0/90	10.50	< 5.00	<10.0	31.2	<0.0500	<0.0500	<0.0500	<0.100
02SB-01	66/20/90	12.50	<5,00	<10,0	<25.0	<0.0500	0.0598	<0.0500	<0.100
02SB-02	66/20/90	3.50	<5.00	14	42.7	<0,0500	<0.0500	< 0.0500	<0.100
0258-02	66/01/90	8.50	<5.00	<10.0	<25.0	<0.0500	<0,0500	<0.0500	<0.100
02SB-02	06/02/99	13.50	<5.00	<10.0	<25.0	< 0.0500	<0.0500	< 0.0500	<0.100
02SB-02	96/0/90	15.00	<5.00	<10.0	<25.0	<0.0500	<0.0500	<0.0500	<0.100
02SB-03	66/20/90	5.50	<5.00	<10.0	<25.0	<0,0500	<0.0500	<0.0500	<0.100
Values represent total concentrations unless noted	otal concentrat	ions unless not		< = Not detected at indicated reporting limit	ig limit=Not analyzed	pezi			
Limit 2 is used for results comparison	results compai	- 1	For RCL REPT_01S	MTCA/	MTCA/A/U = MTCA Method A Cleanup Levels (revised 1/96)	d A Cleanup Level	s (revised 1/96)		

Page: 1B of 2B Date: 03/07/00

Table 3
Soil Sample Analytical Results - NWTPH/BTEX/Lead
Time Oil Co. Site 2750
2750 West Commodore Way, Seattle, WA

MTCA/A/U = MTCA Method A Cleanup Levels (revised 1/96)	ison For RCL REPT_01S	Limit 2 is used for results comparison
Not detected at indicated reporting limit = Not analyzed		Values represent total concentrations unless noted
	5.50 4.49	02SB-03 06/07/99
	15.00 2.29	02SB-02 06/07/99
	13.50 2.79	02SB-02 06/07/99
	8.50	02SB-02 06/07/99
	3.50 22.8	02SB-02 06/07/99
	12.50 6,18	02SB-01 06/07/99
	10.50 6.03	02SB-01 06/07/99
	8.00 2.8	02SB-01 06/07/99
	6.00 15.1	02SB-01 06/07/99
	3,50	02SB:01 06/07/99
	34.00 3.46	O2MW-05 09/13/99
	30.00	02MW-05 09/13/99
	25.00 1.69	02MW-05 09/13/99
	20.00 3.97	O2MW-05 09/13/99
	15.00 6.92	02MW-05 09/13/99
	10.00 2.82	02MW-05 09/13/99
	5.00 6.91	02MW-05 09/13/99
	19.00 6.77	02MW-04 09/13/99
	15.00 2.26	02MW-04 09/13/99
	10.00	O2KW-04 09/13/99
	5.00 7.15	02MW-04 09/13/99
	2.00 5.04	O2MW-04 09/13/99
	19.00 6.46	09/13/99
	15,00	O2MW-01 09/13/99
	10.00 3.59	02MW-01 09/13/99
	5,00	02MW-01 09/13/99
	250	MTCA/A/U
	DEPTH (ft) Lead (mg/kg)	SITE DATE

of 2B Date: 03/07/00 Page: 2A

Soil Sample Analytical Results - NWTPH/BTEX/Lead 2750 West Commodore Way, Seattle, WA Time Oil Co. Site 2750 Table 3

STE	DATE	ОЕРТН (М	Gasoline Range Hydrocarbons (mg/kg)	Diesel Range Hydrocarbons (mg/kg)	Heavy Oil Range Hydrocarbons (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kgl)	Xyfenes (total) (mg/kg)
MTCA/A/U			100	200	200	0.5	40	20	20
02SB-03	66/20/90	11.00	<5.00	<10.0	<25.0	<0.0500	<0.0500	<0.0500	<0.100
02SB-03	66/20/90	16.00	<5.00	<10.0	<25.0	< 0.0500	<0.0500	< 0.0500	<0.100
02SB-03	66/20/90	20.00	<5.00	11,3	38.8	<0.0500	<0.0500	<0.0500	<0,100
02SB-04	66/20/90	10.50	<5.00	<10.0	<25.0	<0.0500	<0.0500	<0.0500	<0.100
02SB-04	66/20/90	15,00	<5,00	15.2	62.5	<0.0500	<0.0500	<0,0500	<0,100
02SB-05	66/20/90	6.00	<5.00	17.6	64.5	< 0.0500	<0.0500	<0.0500	<0.100
02SB-05	66/20/90	11.00	<5.00	<10.0	<25.0	<0.0500	<0.0500	<0.050.0	<0,100
02SB-05	66/20/90	15.50	<5.00	<10.0	<25.0	<0.0500	<0.0500	<0.0500	<0.100
02SB-06	66/20/90	5.50	<5.00	<10.0	<25.0	<0.0500	<0.0500	<0.0500	<0.100
02SB-06	66/20/90	10.50	<5.00	< 10.0	<25.0	<0.0500	<0.0500	<0.0500	<0.100
0258-07	66/20/90	5.50	<5.00	61.8	53.1	<0.0500	<0.0500	<0,0500	0.134
02SB-07	66/20/90	10.50	< 5.00	<10.0	<25.0	<0.0500	<0.0500	<0.0500	<0.100
02SB-08	66/20/90	3.50	72.6	127	428	<0.0500	<0.0500	<0.0800	<0.570
02SB-08	66/20/90	8.50	<5.00	<10.0	38.1	<0.0500	<0.0500	<0.0500	<0.100
02SB-09	06/11/90	6.00	<5.00	<10.0	<25.0	<0.0500	<0.0500	<0.0500	<0.100
02SB-09	06/11/90	10.00	<5.00	<10.0	<25.0	<0.0500	0.0699	<0.0500	<0.100
02SB-09	06/11/90	15.50	<5.00	<10.0	<25.0	<0.0500	<0.0500	<0.0500	<0.100
02SB-09	06/11/99	20.50	<5.00	11	<25.0	<0.0500	<0.0500	<0.0500	<0.100

Values represent total concentrations unless noted <=Not detected at indicated reporting limit ---=Not analyzed

"godelbedt"

Limit 2 is used for results comparison For RCL REPT\_01\$

MTCA/A/U = MTCA Method A Cleanup Levels (revised 1/96)

Page: 2B of 2B Date: 03/07/00

Table 3
Soil Sample Analytical Results - NWTPH/BTEX/Lead
Time Oil Co. Site 2750
2750 West Commodore Way, Seattle, WA

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			A. 100 000 000 000 000 000 000 000 000 00																		
					:																
									-												
				99999																	
																				200	
			-																		
Lead (mg/kg)	250	6.16	2.99	3.5	2.57	2.97	18	3.72	4.23	2.78	2.2	7.85	2.4	10.6	3.02	•	į	1	ļ		
<b>ДЕРТН (14)</b>		11,00	16.00	20.00	10.50	15.00	00.9	11,00	15.50	5.50	10.50	5.50	10.50	3.50	8.50	6.00	10.00	15.50	20.50	gen in the constant of the person of the constant of the const	
									·	ACTO: 6:00:00 10:00:00 10:00:00 10:00:00 10:00:00											
DATE		66/20/90	06/01/99	06/02/93	06/01/99	66/0/90	06/01/99	66/20/90	06/02/99	66/20/90	06/0/90	06/0/99	66/0/90	66/0/90	66/0/90	06/11/99	06/11/99	08/11/99	06/11/99		
SITE	MTCA/A/U	¥03	3-03	3-03	3-04	3.04	3-05	3-05	3-05	€00	3-06	₹07	3-07	₹08	3-08	3-03	80.8	£09	3-09		
	MTC	02SB-03	02SB-03	02SB-03	02SB-04	02SB-04	0258-05	0258-05	02SB-05	02SB-06	02SB-06	0258-07	02SB-07	02SB-08	02SB-08	02SB-09	02SB-09	02SB-09	02SB-09	1 200	

Values represent total concentrations unless noted <= Not detected at indicated reporting limit ---= Not analyzed

Limit 2 is used for results comparison For RCL REPT\_01S

MTCA/A/U = MTCA Method A Cleanup Levels (revised 1/96)

Page: 1A of 2A Date: 03/07/00

# Table 4 Soil Sample Analytical Results - VOCs Time Oil Co. Site 2750 2750 West Commodore Way, Seattle, WA

CONSTITUENT (Units in mg/kg)	SITE SAMPLE ID	02SB-08 02SB-08A
CONTROL CONTROL	DATE	06/07/99
	DEPTH (ft)	3.50
Carbon tetrachloride	· · · · · · · · · · · · · · · · · · ·	<0.100
Acetone		<2.00
Chloroform		<0.100
Benzene		<del></del>
1,1,1-Trichloroethane		<0.100
Bromomethane		<0.100
Chloromethane		<0.500
Dibromomethane		<0.100
Bromochloromethane		<0.100
Chloroethane		<0.100
Vinyl chloride		<0.100
Methylene chloride		<1.00
Carbon disulfide		<0.100
Bromoform		<0.100
Bromodichloromethane		<0.100
1,1-Dichloroethane		<0.100
1,1-Dichloroethene	and the second s	<0.100
Trichlorofluoromethane		<0:100
Dichlorodifluoromethane		<0.100
1,2-Dichloropropane		<0.100
2-Butanone	:: 954.65779770e 770.6766.657555	<1.00
1,1,2-Trichloroethane		<0.100
Trichloroethene		<0.100
1,1,2,2-Tetrachloroethane		<0.100
1,2,3-Trichlorobenzene		<0.100
Hexachlorobutadiene Naphthalene		<0;100 <0.100
CONTRACTOR OF THE CONTRACTOR O		A 1.7 TO DEPOSITE TO THE PROPERTY OF THE PROPE
o-Xylene 2-Chlorotoluene		<0.100 <0.100
		<0.100 <0.100
1,2,4-Trimethylbenzene		0.102
1,2-Dibromo-3-chloropropane		<0.500
1,2,3-Trichloropropane		<0.100

Limit 2 is used for results comparison For RCL 8260BNCAB

Page: 2A of 2A Date: 03/07/00

## Table 4 Soil Sample Analytical Results - VOCs Time Oil Co. Site 2750 2750 West Commodore Way, Seattle, WA

CONSTITUENT	(Units in mg/kg)	SITE SAMPLE ID DATE DEPTH (ft)	02SB-0 02SB-0 06/07/9 3.50	)8A			
tert-Butylbenzene			<0.10	) <b>O</b>			
Isopropylbenzene			<0.10	O			
p-Isopropyltoluene			<0.10	<i>i</i> O			
4-Nitroaniline			<0.20	Ю.			
Ethylbenzene							
Styrene			<0,10				
n-Propylbenzene		· · · · · · · · · · · · · · · · · · ·	<0.10			The second paper	
n-Butylbenzene			<0.10	ki sebuare i i susu i kuabakeele oo susu sadabaada k			
4-Chlorotoluene	en ann aireach na cealtraich, na near Eart-Cachaige.	n no i si nomboki 2180 dagayadaga .w	<0.10		- 44 4 (000 00 x vis. 000 000)	nn nankan adaps acas s payas aggregagas	· · · · · · · · · · · · · · · · · · ·
1,4-Dichlorobenzer	The chapter of the control of		<0.10	4 period in the incomplete participant from the property of			
1,2-Dibromoethane		C	<0.10		ursestanda Läigide		
1,2-Dichloroethane	and the state of t		<0.10 <1.00				
4-Methyl-2-pentan 1,3,5-Trimethylber			<1.00 <0.10			· • • • • • • • • • • • • • • • • • • •	
Bromobenzene	Zene		<0.10 <0.10	istanon e i e i e i e i e i e i e i e i e i e			
Toluene			7 <b>-</b>				
Chiorobenzene	- A Desertion Control of Control of Control		<0.10	) (1000)			
1,2,4-Trichloroben	zene		<0,10				
Dibromochlorometl	por transfer Section Charges (1)	No. 98 Supplies to the constitution	<0.10	andocen, contrata in a size-and-and-and-and-and-and-and-and-and-and	Mariana da maria da m Maria da maria da ma	88000000000 (00.1 p.	ATT 1000, 100100000 000001 at automatical action
Tetrachloroethene			<0.10	)O			
sec-Butylbenzene			<0.10	0			196 - A A A
1,3-Dichloropropar cis-1,2-Dichloroeth	AT PAL DAAL AT COOL		<0.10 <0.10	render i 1900 i Milliobertuutelise telitalise tusetis			
trans-1,2-Dichloroe	sthene		<0.10				
1,3-Dichlorobenzer	18	***************************************	<0.10	)O	in 1906 de residence de l'espain (i.e.)	######################################	- Milyto Milytonicopopulis (1994) - 1995 - 1995 - 1995
1,1-Dichloroproper	The consequence of the con-		<0.10	AM 1			
2,2-Dichloropropar	1 - 2 - 1/4 - 1	r entring colonia year	<0.10				
2-Hexanone			<1.00	14 to the contraction of the con			
1,1,1,2-Tetrachlor		*	<0.10	00			
Methyl tert-butyl e	and the second of the second o						
cis-1,3-Dichloropro		V (200g)	<0.10		and the second of the second o	e er felter i er i glogg, gereger	A CONTRACTOR SAME DESCRIPTION
trans-1,3-Dichlorop	ropene		<0.10	j <b>o</b>			

Limit 2 is used for results comparison For RCL 8260BNCAB

Page: 1A of 1A Date: 01/25/00

# Table 5 Soil Sample Analytical Results - PEST/PCBs Time Oil Co. Site 2750 2750 West Commodore Way, Seattle, WA

CONSTITUENT	(Units in ug/kg)	SITE SAMPLE ID DATE	02SB-08A 02SB-08A 06/07/99	
4 44 DDT		DEPTH (ft)	3,50	
4,4'-DDT CHLORDANE	en nikolek ilab nilib disebed bendan i	Suriiluse tileetsessessessesse	<1.00 <1.00	PK vedaji
gamma-BHC (Lin	rdane)		<1.00 <1.00	
DIELDRIN	ioano,		<2,00	
ENDRIN		- 1888 (Total residence residence con	<2.00	de i jarre i se
Methoxychlor			<4.00	
4,4'-DDD	TSSTSTTTLETTING LIVE TURNISSERSEN SEEME S		<1.00	glige, a p
4,4'-DDE			<1.00	Selvani
HEPTACHLOR		Up 100000000000000000 turker iraniyya ne se	<1.00	বিক্রি সংগ্রহ - রাজ্য
ALDRIN			<1.00	6.2043.2004 835. (3.48)
alpha-BHC		and the state of t	<0.500	erio di propio di propio
beta-BHC			<0.900	
delta-BHC			<0.600	
Endosulfan I			<1.00	
Heptachlor epoxi	ide		<1.00	
Endosulfan sulfa	Fig. 2010 Communication of the		<b>&lt;</b> 1.00	
alpha-Chlordane			<0.800	
gamma-Chlordan			<0.700	
Endrin aldehyde	nna va maturi manazanna pri gannagang nagnagagan		<2.00	
Toxaphene			<50.0	
Aroclor 1260	The Alkaest Hallow Study Study Trifford	en era akkon doktor atour tegit jottog jottog songer.	<50.0	
Aroclor 1254			<50.0	
Aroclor 1268			<50.0	88484 D 10048
Aroclor 1221			<50.0	
Arocior 1232 Arocior 1248	ntak internetialika tarika kelikelipen yang bibbi.	Andreiche werden von der Specie (1, 200, Sp. 18)	<50.0	8180]TUT40}K
Aroclor 1248 Aroclor 1016			<50.0 <50.0	
Endosulfan II	Pri kaintainin opiniyyi kiyyye.		<2.00	
Aroclor 1262	Dyntecoch duch findesessionessissers		<50.0	10040 1989
Aroclor 1242			<50.0 <50.0	1864 a 1869
(1)	usi V uşungan recsorum isi ising uniq			
				96 no. 1998 970 no. 1988
and the arms of the forest of the	in der vorande endes kombervationer in kabelas Britis ist unterholdsbestift.	deservices receiptivismes electrostecente electric		F1777 5399

Values represent total concentrations unless noted <= Not detected at indicated reporting limit --- = Not analyzed

Limit 2 is used for results comparison For RCL 8081A/8082

Page: 1A of 1A Date: 01/25/00

# Table 6 Soil Sample Analytical Results - RCRA Metals Time Oil Co. Site 2750 2750 West Commodore Way, Seattle, WA

CONSTITUENT (Units in mg/kg)	SITE SAMPLE ID DATE DEPTH (ft)	02SB-08 02SB-08A 06/07/99 3,50	02SB-08 02SB-08B 06/07/99 8.50
Arsenic		4.78	
Barium Cadmium		86.3 <0.500	
Chromium		33,1	
Lead		10.6	3.02
Mercury Selenium		 <0.500	2 <del>1.</del>
Silver		<0.500	
Values represent total concentrations	unless noted <=	Not detected at india	cated reporting limit= Not analyzed
Limit 2 is used for results comparise			

of 1B Date: 03/07/00 Page: 1A

2750 West Commodore Way, Seattle, WA Groundwater Sample Analytical Results Time Oil Co. Site 2750 Table 7

	9.66	1:31	1.89	639	<0.500	0,617	1,36	06/11/99	02SB-09
•	2.78	<0.500	1.25	1.59	<0.500	0.668	0.128	66/0/90	02SB-08
	<1.00	<0.500	<0.500	<0.500	0.626	1.07	<0.0500	06/02/99	02SB-07
•	4.03	0.585	1,11	<0.500	<0.500	0.456	0.103	66/0/90	02SB-06
	20.2	19.9	4.18	19.9	<0.500	0.865	0.685	06/07/99	02SB-05
•	8.18	1.62	2.28	59.8	0.503	0.867	0.0556	06/01/99	02SB-04
	1.93	0.617	1.36	6,64	<0.500	1,07	<0,0500	66/20/90	02SB-03
1	1110	459	155	214	<0.500	3.12	8.26	66/0/90	02SB-02
86.3	<1.00	<0.500	<0.500	2.84	<0.500	<0,250	<0,0500	09/28/99	02MW-05
35.9	473	226	185	<30.0	<0.500	<0.250	3.7	09/28/99	02MW-04
<1.00	414	<0.500	1.13	56.7	<0.500	<0.250	0,16	09/28/99 0,16	02MW-03
133	<1.00	<0.500	<0.500	<0.500	< 0.500	<0.250	<0.0500	09/28/99	02MW-02
36	<1.00	<0.500	0.811	72.9	<0.500	<0.250	0.172	09/28/99 0.172	02MW-01
5.0	20.0	30.0	40.0	5.0	1.0000	1.0000	1.0000		MTCA/A/U
	(l/gn)	(//Bn)	(l/gn)	(//Bn)	(Wg/J)	(mg/l)	(mg/l)		
pen -	Xyjenes (total)	Ethylbenzene	Toluene	B Benzene	neavy ou hang Hydrocarbons	Ureset Kange Hydrocarbons	Gasoline kange Hydrocarbons	DATE	SITE
Total				ď	Heavy Oil Rance	Dissal Banna	Gasoline Range		
								gedeel hid day libeda.cap.or	

Values represent total concentrations unless noted <=Not detected at indicated reporting limit ---=Not analyzed

Limit 2 is used for results comparison For RCL REPT\_02W

MTCA/A/U = MTCA Method A Cleanup Levels (revised 1/96)

of 1B Date: 03/07/00 Page: 1B

> 2750 West Commodore Way, Seattle, WA Groundwater Sample Analytical Results Time Oil Co. Site 2750 Table 7

						1000 1000 1000	
		93943 13843 13843		20000 20000 20000 20000	32.1 8537 : 1008		
	2000 2000 2000 2000 2000	6000			30000 30000 30000		555 6.357 6.357
						0.000 0.000 0.000 0.000 0.000 0.000	
					#61.1 285.1 10.383		9 54 8 54 5
	2000 2000 2000 2000 2000						
			60000 60000 90000		- 8		
						- 10000 - 10000 - 10000 - 10000 - 10000 - 10000	
				90000 90000 90000 90000			ts in
					180000 180000 180000 180000		8335-1 8035-1
					96356 96366 96366		
							20 3to 15 4000 10 20 55 17 70 55 57 90 55 50 40 55 50
							10000 10000 10000 10000 10000 10000
							91151 200000 200000 200000
					alt ( 0 1 1) 0 20 2 3 3	600 600 600 600	200 A 200 A 200 C
	600000 00000 00000 00000 00000						
						8.33.° 8.33.° 8.33.°	\$1333 3333 3333 3333 3333
			1888		636k 835k 835k		5.000 3000 3000 3000 4000 4000
	8000 6000 9000 9000 9000	2000 2000 0 0 0 0 0 0 0 0 0 0 0 0			00.187) 970. 80.00		
	2000 000 000 000 000 000 000 000					10000 10000 10000 10000 10000	<u> </u>
				2000 2000 2000 2000			
				92000 9 100 6000 8000			
					100	0000 • 0000 • 0000 • 0000 •	6000 2000
					2017 2017 2.346 4.346		2000 2000
			90000 90000 90000 90000 90000 90000				
3				0	0	00	0
Dissolved Lead (ug/l)	5,0	1 1		: V	<1.0 1.29	^ <u>^</u>	×1.00
'n	86/8	3/99 3/99	3/99 3/99	06/07/99 06/07/99 <1.00	06/07/99 <1.00 06/07/99 1.29	06/07/99 <1.00 06/07/99 <1.00	> 66/07/90 66/11/90
DATE	09/28/99	09/28/99 09/28/99	09/28/99 09/28/99	06/07/99 06/07/99	06/07	06/07	06/0,
					4,4 1961 1761 1481	191 191 191	
ш	<b>2</b>	~ ~	4				
SITE	MTCA/A/U 02MW-01	02MW-02 02MW-03	02MW-04 02MW-05	02SB-02 02SB-03	02SB-04 02SB-05	02SB-06 02SB-07	02SB-08 02SB-09
	M 02	0 0 0 0	8 8	02 02	8 8	8 8	8 8

Values represent total concentrations unless noted <=Not detected at indicated reporting limit ---=Not analyzed

Limit 2 is used for results comparison For RCL REPT\_02W

MTCA/A/U = MTCA Method A Cleanup Levels (revised 1/96)

### APPENDIX A PREVIOUS REPORTS

PHONE 285-2400 CABLE ADDRESS: TIMOIL (FAX) 206-283-8036

SEATTLE TACOMA PORTLAND STOCKTON RENO RICHMOND LOS ANGELES



### TIME OIL CO.

2737 WEST COMMODORE WAY P.O. BOX 24447

SEATTLE, WA 98199-1233 SEATTLE, WA 98124-0447

December 30, 1991

Washington State Department of Ecology Attention: Joe Hickey 3190 160th Ave. S.E. Bellevue, Wa 98008-5452

RE: Underground Storage Tank Site Check/Site Assessment at Seattle Terminal, 2737 West Commodore Way, Seattle, Wa - Property No. 01-228.

Dear Mr. Hickey:

This letter report is submitted to provide initial information on the removal of underground storage tanks at the above referenced site. The property is located at the north end of the community of Magnolia on the south shore of Salmon Bay in Seattle, Washington (Figure 1). The site is the location of Time Oil Co.'s Seattle Terminal which consists of a two-story office structure, warehouses and above ground storage tanks. Properties surrounding the site are light to heavy marine/industrial.

On September 16, 1991 four tanks were removed by Lee Morse Construction as part of a facility upgrade. They were 4,000, 2,500, 1,500 and 300 gallon capacity tanks that had contained unleaded gasoline, diesel fuel, regular leaded gasoline, and used oil, respectively. See Figures 2 and 3 for tank locations.

The removal of the tanks resulted in two excavations. The gasoline and diesel fuel tanks were removed from excavation #1 and the used oil tank was removed from excavation #2 (Figures 2 and 3).

One 4,000 gallon tank was installed in excavation #1, replacing the former gasoline and diesel fuel tank system. This tank is baffled to provide two compartments of 3,000 and 1,000 gallon capacities and is, therefore, registered as two tanks. The tanks contain regular unleaded gasoline and diesel fuel, respectively. Two new fuel dispensers were also installed replacing the old dispensers.

The following discusses tank removal and sample collection activities, and analytical results.

### FIELD INVESTIGATION

The removal of contaminated soil and sample collection was based on organic vapor analysis readings. Soil samples were collected and placed in Zip-lock bags for headspace analysis using a Micro-tip organic vapor analyzer. When head space readings were below 50 parts per million or contaminated soil removal was not feasible, samples were collected.

Samples were collected from the excavation using a backhoe bucket. Each sample was taken from near the teeth of the backhoe after approximately 6 inches of soil was removed, then transferred to a 4 ounce jar and placed in an ice chest for delivery to Friedman and Bruya analytical laboratory. Sample equipment consisted of disposable latex gloves and a stainless steel spoon which was triple washed between each sampling.

### Excavation #1

The 4,000, 2,500 and 1,500 gallon tanks were removed from excavation #1. The 2,500 and 1,500 gallon tanks were part of a 4,000 gallon baffled tank system that was installed in 1980. They were registered as individual tanks with the Department of Ecology. It is unknown when the 4,000 gallon unleaded gasoline tank was installed. The 4,000 gallon tank and the 2,500 and 1,500 gallon compartments of the baffled tank were tightness tested annually using the Petro-Tite testing system. They were last tested in September 1990 and found to be tight.

Areas of slight rusting and pitting were observed on the 4,000 gallon tank and the baffled tank system but no holes were noted. As the tanks were removed gasoline contamination was observed in the surrounding soil. This contamination is consistent with the nature of contamination found from years of tank overfills and spillage.

Soil encountered at the site consisted of artificial fill and natural material. Artificial fill was encountered from the surface to a depth of approximately 7 feet in the excavation and consisted of brown and grey sandy silt with gravel. Decaying organic material such as wood and grass, and metal debris was observed in the fill.

Natural soils were observed underlying the fill to a minimum depth of approximately 18 feet and was composed of brown sandy silt with gravel that graded to gray silty fine to medium sand with depth. Backfill material for the tank excavation generally consisted of imported sand and soil similar to the surrounding artificial fill. The soil appeared discolored and a hydrocarbon odor was encountered in the excavation during tank removal. Groundwater with a heavy hydrocarbon sheen was encountered at a depth of 18 feet below the ground surface in the excavation.

After the two 4,000 gallon tanks and associated backfill soils were removed, an attempt was made to assess the extent of contamination and remove it. Because of these efforts the excavation was extended to the north, east and west. However, due to high head space readings near the groundwater in the excavation and the proximity of the excavation to the Time Oil office building, excavating was abandoned and soil samples were collected. Approximately 140 cubic yards of soil was removed from the excavation and stockpiled on site.

A total of eight soil samples were collected from the sidewalls and floor within excavation #1 and the former location of the fuel dispensers (Figure 2 - Provides the location and depth of sampling points). A groundwater sample was not collected at the time of tank removal due to the presence of a heavy hydrocarbon sheen. The soil samples were submitted to the analytical laboratory for chemical

testing for total petroleum hydrocarbons as gasoline (TPH-g) and diesel (TPH-d), benzene, toluene, ethylbenzene, xylenes (BTEX), and total lead using EPA methods 8015 (modified), 8020 and 7421, respectively.

Analytical results for these soil samples indicated TPH-g concentrations ranging from less than 2 parts per million (ppm) to 12,000 ppm. The highest TPH concentration of 12,000 ppm was encountered in the sample collected from the area of the fuel dispensers. TPH-d concentrations ranged from less than 50 ppm to 220 ppm. Table 1 provides a summary of soil samples and analytical results for excavation #1 soil samples. See the attached laboratory report for further information.

#### Excavation #2

The 300 gallon tank was removed from excavation #2. It is not known when the tank was installed. However, the tank was used for storing used oil collected during servicing of Time Oil fleet vehicles.

Areas of rusting and pitting were present on the tank and a pin-sized hole was observed after corrosion had been removed indicating that the tank may not have leaked under normal circumstances. As the tank was removed hydrocarbon contamination was observed in the surrounding soil. As in excavation #1, this contamination is also consistent with the nature of contamination found from years of tank overfills and spillage.

Artificial fill and natural soil was encountered in this excavation. The fill ranged in depth from the surface to 4.5 feet at the south end of the excavation and 1 foot at the north end. Natural soil consisting of brown and gray silty fine to medium sand was observed underlying the fill and extending to a minimum depth of groundwater. The soil appeared discolored and a hydrocarbon odor was encountered in the excavation during tank removal.

The depth to groundwater varied from 6 feet to 2 feet below the ground surface as the property sloped down to Salmon Bay to the north. A heavy sheen was observed on the groundwater.

After the 300 gallon tank and associated backfill were removed, an attempt was made to assess the extent of contamination and remove it. Because of these efforts the excavation was extended to the north toward Salmon Bay. When contamination was observed to be extensive, excavating was abandoned and soil samples were collected. A total of approximately 100 cubic yards of soil was removed from the excavation and stockpiled on site.

A total of four soil samples were collected from the sidewalls and floor within the excavation. Soil samples were not collected from the north end of the excavation because very strong hydrocarbon odors and gray discoloration was observed in that area. Instead, a test pit was dug between the excavation and the shoreline (Figure 3) to assess the horizontal extent of contamination. One sample was collected from that test pit. A groundwater sample was not collected at the time of tank removal due to the presence of a heavy hydrocarbon sheen.

The excavation and test pit samples were submitted for chemical analysis for total petroleum hydrocarbons as diesel (TPH-d) and motor oil (TPH-m) using EPA method 8015 (modified). Analytical results for excavation #2 and test pit samples indicated TPH-d concentrations ranging from less than 10 ppm to 310 ppm. TPH-m concentrations ranged from less than 10 ppm to 410 ppm.

Four soil samples were collected from stockpiled soil and combined to form one stockpile composite sample. The composite sample was tested for TCLP lead, halogenated volatile organic compounds using EPA method 8010, PCBs, TPH-d and TPH-m using EPA methods 8015 (modified) and 418.1, respectively. Chemical test results for the stockpile composite sample indicated TPH-d and TPH-m concentrations of 78 ppm and 1700 ppm, respectively.

Table 2 provides a summary of TPH analytical results for excavation #2, test pit and composite soil samples. See the attached laboratory report for the remaining chemical test results.

Time Oil is currently in the process of sending Request for Proposals for further site assessment to environmental consultants in the area. The next stage of work will address the contaminated soil stockpile, the extent of subsurface soil contamination at both excavations, the impact, if any, to the shallow ground water, and provide recommendations for cleanup, if necessary.

If there are any further questions regarding this site please contact me at (206) 286-4490.

Singerely

Liam J. Ru

Attachments:

Table 1
Table 2
Figure 1
Figure 2
Figure 3

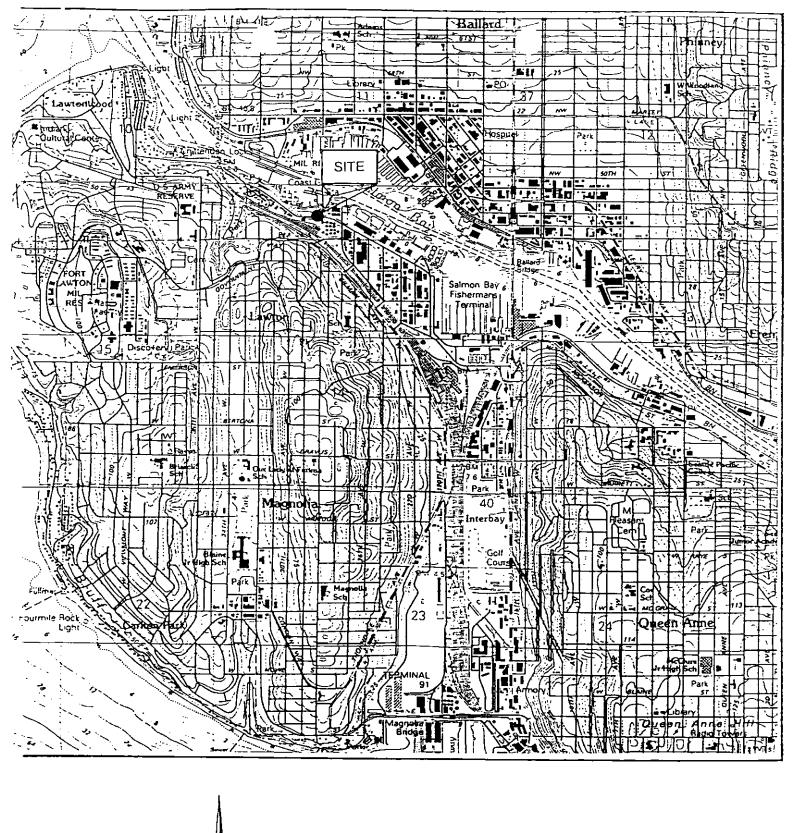
Analytical Report

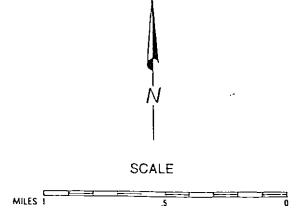
TABLE 1
SUMMARY OF SOIL SAMPLES
AND ANALYTICAL RESULTS
(Excavation #1)

Sample I.D.	TPH g/d (ppm)	Benzene (ppm)	Toluene _(ppm)_	Ethylben (ppm)	xylenes (ppm)
1617-PI1	12,000/220	330	370	390	1600
1617-PI2	1,300/66	27	21	26	64
1500-N1	<2/17	0.003	0.003	<0.002	<0.006
0829-S1	19/76	<0.22	0.38	0.099	0.056
0834-E1	180/<50	<0.22	2.5	5.0	7.2
0839-W1	<2/<50	0.013	0.060	0.023	0.065
0845-Floor	120/200	1.1	.1.3	3.2	12
0926-NW1	<2/<50	0.005	0.049	0.015	0.062

# TABLE 2 SUMMARY OF SOIL SAMPLES AND ANALYTICAL RESULTS (Excavation #2, Test Pit and Stockpile)

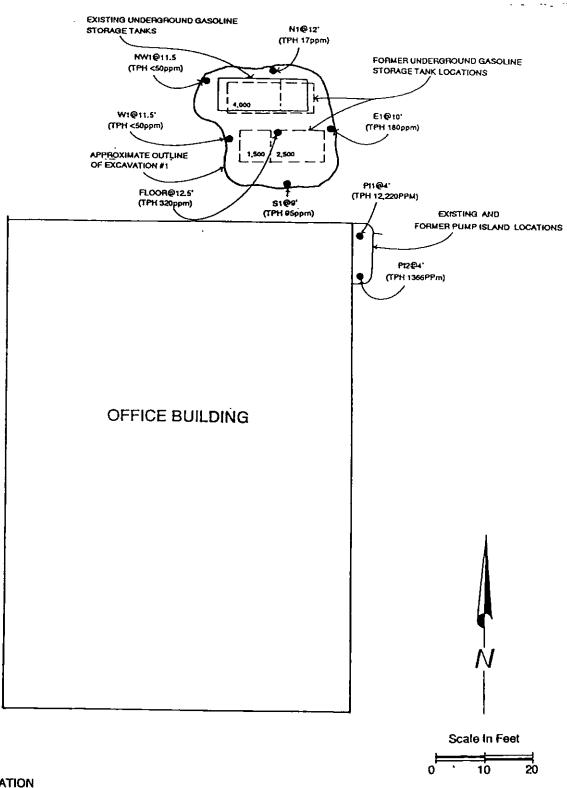
Sample <u>I.D.</u>	TPH-d(8015) (ppm)	TPH-m(8015)	TPH-m(418.1) (ppm)
TPI-3	310	410	
TI-N-4	<10	<10	
TI-E-4	<10	<10	
TI-F-6	<10	200	
TI-W-4	<10	<10	
Pile Composit	te 78	·	1700





TIME OIL CO.
2737 West Commodore Way
SEATTLE TERMINAL

### **WEST COMMODORE WAY**



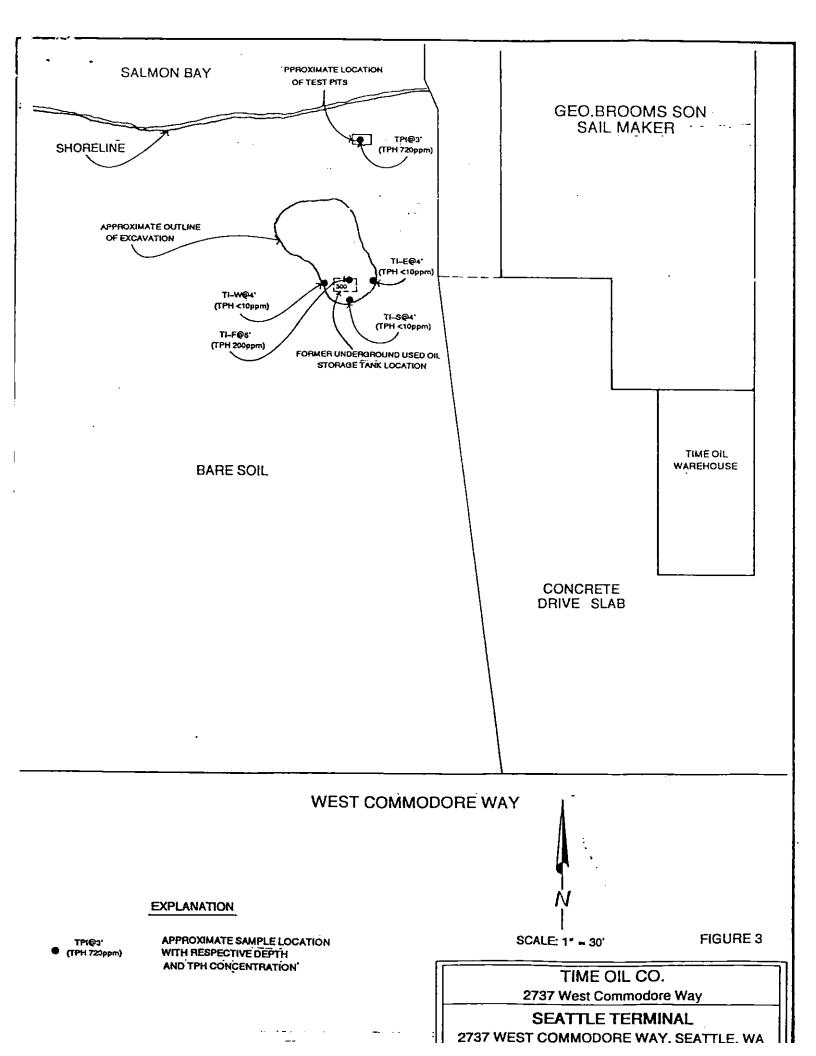
**EXPLANATION** 

● N1@12' (TPH 17ppm) APPROXIMATE SAMPLE LOCATION WITH RESPECTIVE DEPTH AND TPH CONCENTRATION

FIGURE 2

TIME OIL CO. 2737 West Commodore Way

SEATTLE TERMINAL



PHONE 253-2400 CABLE ADDRESS TIMOR (FAX) 206-283-8036

SEATTLE TACOMA PORTLAND STOCKTON RENO RICHMOND LOS ANGELES



### TIME OIL CO.

2737 WEST COMMODORE WAY P.O. BOX 24447

SEATTLE, WA 98199-1233 SEATTLE, WA 98124-0447

September 22, 1992

Washington State Department of Ecology Northwest Region 3190 160th SE Bellevue, Washington 98008-5452 Attention: Mr. Joe Hickey

SUBJECT:

Excavating Activities Conducted at Former Waste Oil Tank Location

Former Time Oil Co. Vehicle Maintenance Facility

2750 Commodore Way; Seattle, Washington

Dear Mr. Hickey,

This letter is to inform you of the findings of additional assessment activities conducted at the above referenced site. On July 28th and 29th, 1992 additional excavation was conducted in the former location of a waste oil tank which was removed in September 1991. Hydrocarbon contamination was discovered during removal of the tank; thus, this additional phase of excavation was undertaken in an attempt to remove remaining soil contamination.

A small amount of groundwater had pooled in the initial excavation associated with tank removal; therefore, lateral excavation was conducted in an attempt to define the limits of the contaminated area. Previous excavating activities had documented that soils located on the southern and western edges of the excavation did not contain hydrocarbons exceeding MTCA Method A Cleanup Levels; thus, the excavation was expanded primarily to the north and east.

After approximately 150 cubic yards of contaminated soil had been removed, excavating activities were terminated because field observations suggested that contaminant severity increased in an easterly direction, and excavation of the full extent of soil contamination did not appear to be feasible. The excavation was backfilled by placing crushed rock below the groundwater surface, installing a layer of 10-mil visqueen upon the crushed rock to reduce settling and surface water infiltration, and backfilling the remaining excavation with fine sand.

Six soil samples were collected from the limits of the northern and eastern sides of the excavation, directly above the groundwater surface, to assess remaining contaminant levels and evaluate the potential for a groundwater impact (See Figure 1 - Site Map for sample locations). The six samples were submitted to a State certified laboratory for hydrocarbon identification (WHCID) analysis to identify the hydrocarbons present. Hydrocarbons identified as gasoline, diesel, and mineral spirits were identified in samples A-1 @8', A-2 @9', and A-6 @3'. Motor oil was also detected in sample A-6 @3'. Additional analysis was conducted on the three samples in which hydrocarbons

were detected to quantify levels of TPH and BTEX by the WTPH Method and EPA Method 8020. These three samples were found to contain levels of TPH-gasoline ranging from 60 to 290 parts per million (ppm), TPH-diesel ranging from 90 to 1,600 ppm, TPH-mineral spirits between 50 and 210 ppm, and 2,300 ppm TPH-motor oil was detected in sample A-6 @3' (See Table 1 - Analytical Results). Laboratory reports are attached.

Two additional soil samples were recovered from the vicinity of an area of visibly impacted soil located near the ground surface on the south side of the excavation. Sample WO-WC was recovered from material believed to represent "worst case" conditions in order to conduct disposal profiling. Sample WO @5' was collected from the same area at a depth of 5 feet below grade to verify removal of the impacted soil once field observations indicated that the visibly impacted area had been fully excavated. WHCID analysis on these two samples detected the presence of diesel fuel in Sample WO-WC and did not detect petroleum hydrocarbons in sample WO @5'. WTPH analysis conducted on Sample WO-WC detected 2,800 ppm TPH-diesel. Laboratory reports are attached.

These analytical results, in combination with field observations, indicate that petroleum hydrocarbon contamination remains beneath the site, and that an impact upon groundwater may have occurred. Time Oil Co. is in the process of submitting a request for proposals to environmental consultants for further assessment of this area. This next phase of assessment will include the installation of soil borings and groundwater monitoring wells to assess the extent of remaining soil contamination and the potential for an impact upon groundwater.

The excavated soil is currently stockpiled upon an adjacent property also owned by Time Oil Co. Samples of this material have been submitted for disposal profiling. Arrangements to recycle the soil will be made once analytical results are received.

If you have any questions regarding this site, please contact either myself at (206) 286-6457 or Liam Russell at (206) 286-4490. If we are not available, Kevin Murphy may be able to answer your questions.

Sincerely,

Scott B. Sloan Geologist

Enclosures:
Table 1 - Analytical Results
Figure 1 - Site Map
Analytical Reports

TABLE 1
Soil Analytical Results
Time Oil Co. Property No. 01–228

2750 Commodore Way; Seattle, Washington

Sample	Donth	TOU	D	<b>~</b>	Ethyl-	Total
Number	Depth	TPH	Benzene	Toluene	benzene	Xylenes
Samples (	Collected 1	0/3/91				
TI-F	6'	200	NT	NT	NT	NT
TI-E	4'	ND	NT	NT	NT	ТИ
TI-S	4'	ND	NT	NT	NT	NT
TI-W	4'	ND	NT <sup>*</sup>	NT	NT	NT
TP1	3'	720	TN	NT	NT	NT
Samples (	Collected 1	2/10/91		•		
SS1	6.5'	12	NT	NT	NT	NT
NS2	2'	840	NT	NT	NT	NT
ES4	<b>5</b> '	25,000	NT	NT	NT	NT
TP3	2'	15	NT	NT	NT	NT
Samples (	Collected 7	(20/02				
A1	8'		ND	AID.	AID	410
A1	b	60–g 50–m	NU	ND	ND	ND
		90-d				
A2	. gʻ.	290-g	ND	ND	ND	ND
		200-m		ND:	NO NO	· ND
	904 - 900 m	<b>330</b> –d	· · · · · · · · · · · · · · · · · · ·			
A3	6'	ND*	NT	NT	NT	NT
A4	3'	ND*	NT	NT	NT	NT
A5	3'	ND*	·NT	NT	NT	NT
A6	୍3'	110–g	0.16	0.14	2.6	4.9
		210-m			<b>.</b>	
		1,600-d		om en en 1968 en 1969. General de 1969 en 19		
		<b>2,300</b> –o				
WO-WC	.2'	<b>2,800</b> –d	NT	NT	NT NT	NT
WO @ 5'	5'	ND*	NT	NT	NT	NT

### NOTES:

Results reported in milligrams per kilogram (mg/kg) of parts per million (ppm).

g = TPH as gasoline, d = TPH as diesel,

m = TPH as mineral spirits, o = TPH as motor oil.

Detection limit for benzene, toluene, and ethylbenzene = 0.02 ppm

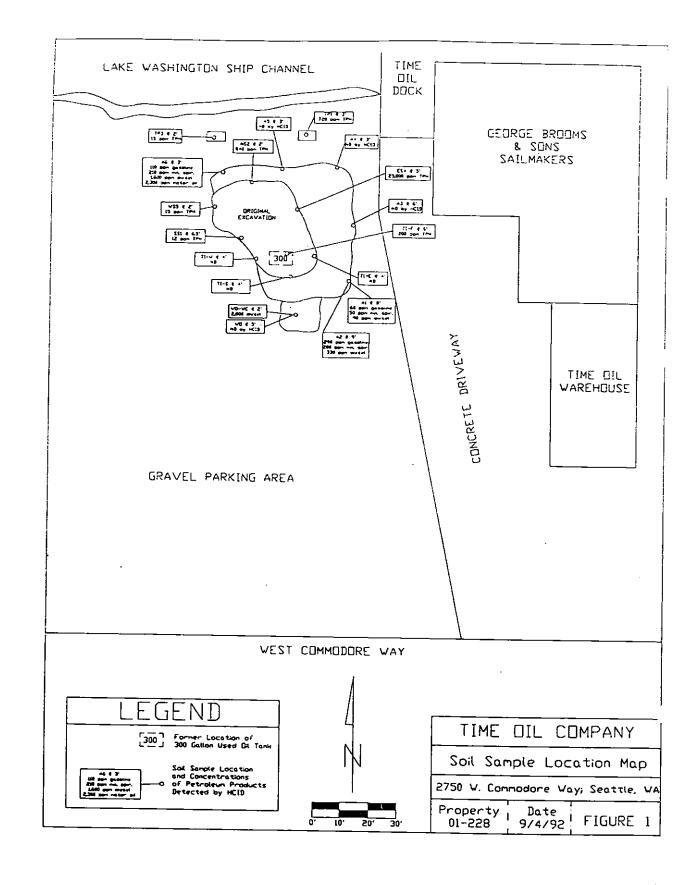
Detection limit for total xylenes = 0.04 ppm.

Shading denotes sample with at least one constituent exceeding Method A Cleanup Standards.

NT = Sample not tested for this constituent.

ND = Not detected.

<sup>\* =</sup> TPH analysis by HCID.



### APPENDIX B DRILL LOGS

п со	RPORATION			Drilling Log	Site ID: 02MW-01
Project Name: Time Oil Co. Seattle ocation: urface Elevation: 0.00' Borehole Diameter: 8.00in "lank Casing: pe: PVC dia: 2.00in fm: creens: type: Slotted size: 0.020in dia: Drilling Company: agged By: necked By:		Total Top ( Static Annul type: type: to: 19.33' type: Methe	Hole Hole of Cos Wate for Filk od: Hol	mber: Depth; 20.00' sing: 29.34' or Level:	See Site Map For Boring Location  Comments:
Well Completion	Sample 10 Recovery	Graphic Log USCS Code	Woter Level	Descr	iption
1- 2- 3- 4- 5- 6- 7- 8- 9- 10- 1- 12- 3- 14- 5- 6- 17- 3- 19- 21- 2- 23- 1- 25- 3- 4- 25- 3- 4- 25- 3- 4- 25- 3- 4- 27- 27- 27- 27- 27- 27- 27- 27- 27- 27		SM CL		Gravel base/fill  Brown soft clay with gray fine  Gray fine grained sand with li  Grades to coarse grained san  Dry, gray hard clay, no odor.	nd, wet.

ı		п	CORPORATI	ION				Orilling Log	Site ID: 02MW-02		
	Project Name: Time Oil Co. Seattle Terminal							mber:	See Site Map For Boring Location		
Surfac	e Elevation:					Тор	Total Hole Depth: 10.00' Top of Casing: 25.20' Comments:				
Borehole Diameter: 8.00in Stank Casing: .ype: PVC dia: 2.00in fm: 0.0' ta: 5.00'							itatic Water Level:  unnular Filt:				
icreen	is: Notted		dio: 2,00in fm:		to: 9.82°	type: type:		fm: to: fm: to: fm: to:			
.oggeo						Date	Storte	low Slem Auger d: //			
hecke	ed By:		<b>_</b>			Perm	it <b>j</b> :	· . <u>-</u> .			
1	.5							Descr	iption		
Depth (ft)	Well Completion	'	Sample 10	rery	Graphic Log	USCS Code	Woter Level				
Cept	3	E	S dim S	Recovery	Graph	SSS	Water				
1-								Gravel base/fill			
2-								Hole not sampled - see log	for 02SB-07 for stratigraphy#		
4-								WATER			
5-											
6-											
7-											
9-											
10-											
11-											
12-											
114-											
5-											
6-											
17-											
8- 19-											
:0-											
21-		<u> </u>									
2-											
23-											
4-  25-											
6-						<u> </u>					
-7-											
		<u> </u>	L	<u> </u>		<u> </u>	<u> </u>	<u> </u>	Page 1 of 3		

IT CORPORATION		Drilling Log Site ID: 02MW-03						
Project Name: Time Oil Co. Seattle Terminal reation: Lurface Elevation: 0.00°	Total Ha	Project Number:  Total Hole Depth: 20.00' Top of Cosing: 33.02'  See Site Map For Boring Location  Comments:						
Borehole Diameter: 12.00in  Tonk Cosing: pe: PVC dio: 4.00in fm: 0.0' to: 10.00' reens: type: Slotted size: 0.020in dio: 4.00in fm: 10.00 Drilling Company: gged By: :ecked By:	Static W Annular type: type: to: 19.80' type: Method:	Woter Level:  or Fill:  fm:						
Well Completion FID Somple ID	Graphic Lag USCS Code	Description						
1- 2- 3- 10- 1- 12- 3- 14- 5- 16- 17- 3- 19- 19- 1- 21- 2- 23- 1- 25- 3- 2/-		Gravel base/fill  Hole not sampled — see log for 02SB-03 for stratigraphy#  WATER						

L

!		П	CORPORA	TION				Drilling Log	Site ID: 02MW-04			
orojec ocali		e Dil Co. S	eattle Terminol				ct Nur	nber:	See Site Map For Boring Location			
Jurfoc	Jurface Elevation: 0.00*							p of Cosing: 32.31' Comments:				
1	Casing:	: 8.00in dia: 2.00in	fm: 0 P° 4	o: 10.00°		Annul	ar Filt					
cree	15:		1711, 0.0 ti 1 dia: 2.00in fr		to: 19.80	type: type: type:		fm: to: fm: to: fm: to:				
	Company: d By:							ow Stem Auger d: //				
	ed By:					Permi						
	Ę							Descr	ription			
ε	Well Completion		9	2	tog:	Code	[exe		*****			
Ueptn (ft)	ک ¥eا	22	Sample ID	Recovery	Graphic Log	USCS Code	Water					
1						SM		Concrete				
2-								Hand dig/hand auger to 5 ft.				
3-												
4-						CL		i				
5-								Orange to blue gray clay, moist with g	ray fine grained sand stringers. No odor. Damp.			
6- 7-												
<sub>B</sub> -						SM						
, g-						SIVI						
10-								Gray to brown, med. grained sand. M	oist to wet, no odor.			
: 1-												
12-												
3-  14-												
5-								Gray sand, wet.				
  16~												
17-												
8-												
19-					17/1/	CL						
0- 					7.7.7.			Dry, gray hard clay, with sand/silt stri	ngers, no odor.#			
21- 2-												
23-												
 4-												
25-												
6-												
<u>∠</u> 7-												
' —	<u> </u>	1	<del></del>			لــــا		<u> </u>	Page 1 of 1			

		П п	CORPORAT	rion				Drilling Log	Site ID: 02MW-05	
<sup>o</sup> roject ocatio		ne Oệ Co. Se	sattle Terminal				ect Nu	mber:	See Site Map For Baring Location	
Luriace Elevation: 0.00'						Total Hole Depth: 35.00' Top of Casing: 41.70' Comments:				
Boreho- Plank (	e Diamete Casina:	r: 8.00in					c Wole dor Fill:	r Level:		
pe: P	/C	dia: 2.00in	fm: 0.0° to:	20.00*		lype	:	fm: to: fm: to:		
type: SI			dia: 2.00in fm	: 20.00'	lo: 34.5	lype	:	fm: to:		
agged	By:					Dote	Storte	d: / /		
necke	d By:	1			<u> </u>	Pern	rit <b>f</b> :	-		
	_						1	Denne		
	Well Completion			1	8		-	Descr	ription	
Uepin (R)			Somple 10	Recovery	Graphic Log	S S S S S	er Level			
3	_ <u>₹</u>	2	<u> </u>	- A	<del></del>	CW SSS	Woter			
1-				ļ		1		Gravel		
2-					0 0	1		Hand dig/hand auger to 5 ft.		
3-		ļ			<i>४-</i> ४-४ ०००					
4-						1 "				
5-						1		Orange to blue gray clay, moist with gray	fine grained sand stringers. No odor. Damp.	
6-						1				
7-						1				
8-						ra Jos				
9-						a/s/		Grades to brown clay, gray sand stringers.	. Damp, no odor. Black, thick fluid adhering to soil.	
10-									•	
1-										
12-										
3-										
14-					XL.	α				
5-						] "		Soft gray clay, dry, no odor.		
16-						}				
.7-										
3-										
19-						1				
0-										
21-						1				
2-										
- 1						SM				
23-										
4-								Gray, med. to coarse grained sand. Wet,	no odor	
25-								viey, mea, to course granica suma. Het,	no ooo.	
5-							]			
<u> </u>										
		<u> </u>				*	•		Page 1 of 1	

Projec	IT CORPORATION  Project Name: Time Oil Co. Seattle Terminalject Number:							Drilling Log Site ID: 02MW-05
Deput (11)	Well Completion	O.A.	Somple 10	Recovery	Graphic Log	USCS Code	Water Level	Description
9-  30-  1-								Gray wet sand, no odor.
35- 6-						α		Dry, gray hard clay, no odor.∦
8- 39- 0- 41-						,	!	
3-  44-  5-  46-								
7- 48- 9- 50-								
-2- 53- 4- 55-								
6-  57-  59-								
D-1-								Page 2 of 2

	IT	CORPORATION
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Site ID: 02SB-01

Page 1 of 1

Project Nome: Time Oil Co. Seattle Terminal

Location:

Surface Elevation: 0.00°

Borehole Diameter: 6.00in

Drilling Company: CASCADE Logged By: CNS

Checked By:

Project Number:

Total Hale Depth: 14.00

Static Water Level:

Method: Hollow Stern Auger

Date Started: 06/07/99

See Site Map Far Boring Location

Chec	ked By:				<del>,</del>	y <del></del>	Permit #:
Depth (ft)	F10	Somple 10	Recovery	Graphic Log	USCS Code	Woter Level	Description
		_		• •	GP		Surface of annual and a surface of a surface o
1-					ML		Surficial covering of gravel and sand. Hand dug to 24"
2-							Brown Silt, some clay, dry, slight odor
3-							
4-							Grades lighter brown, moist to dry
5-	i l						Grades lighter brown, moist to dry
6- 7-	)						Brown orange medium grain Sand, very damp to wet, slight odor
8-	<b>i</b> i				SP		Source Stating Control Stating Country to week, shight oddr
9-							
10-							Soft gray Clay, dry, no to slight odor
11-					СН		
12-						모	Water level at 11.50 feet IP
13-	1						Grades hard, dry—moist, no odor
14-					-		End borehole
15-							
16-							
17-							
18-							
19-	`						
20-							
21-	{				1		
22-							
23-							
24~							
25-	1						
26-							
27-	}						
$\vdash$	<u> </u>	L					

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Site ID: 02SB-02

Project Name: Time OR Co. Seattle Terminal

Location:

Surface Elevation: 0,00 Borehole Diameter: 6.00in

Drilling Company: CASCADE

Logged By: CHS

Project Number:

Total Hale Depth: 16.50

Static Water Level:

Method: Hollow Stern Auger

Date Storled: 06/07/99

See Site Map For Baring Location

C	hecked By:						Permit #:
Cash (ta)	OLS professor	Sample 10	Recovery	Graphic Log	USCS Code	Woler Level	Description
10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1- 2- 3- 4- 5- 6- 7- 8- 9- 0- 1- 2- 3-	Sompl	Recov	Graphi	SSS CH SP CH	Δ	Hand dug to 24"  Dark brown Silt and sand, some gravel up to 1/2", dry, no odor Grades brownish gray, bits of brick, moist to damp  Blueish gray and orange soft Clay, some silt, damp, slight odor  Gray medium grain Sand, wet. Water level at ~12.50 feet IP Grades slight odor
17 18 19 20 2 22 23 24 25 26 27	3- 3- 1- 2- 3- 4-						End borehole

F	Ú	T	IT	CORPORATION
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Site ID: 02SB-03

Page 1 of 1

Project Name: Time Oil Co. Seattle Terminal

Location:

Surface Elevation: 0.00°

Barehole Diameter: 6.00in

Drilling Company: CASCADE

Logged By: CKS

Project Number:

Total Hale Depth: 21.50

Static Water Level:

Method: Hollow Stam Auger

Date Started: 06/07/99

See Site Map For Boring Location

1	ed by: CRS						Oale Started: 06/07/99
Checi	ked By:					·	Permit f:
Depth (11)	FID	Somple 10	Recovery	Graphic Log	USCS Code	Woter Level	Description
1-					GP ML		Surficial covering of brown Gravel and sand. Hand dug to 24"
2-							
3-							
4-							
5-						!	Light brown Silt, some sand, damp to moist, no odor
6-			ļ				
7							
8-							
9-							<b></b>
10-					СН		Light brown and blue Clay, dry no odor
11-							
12-							
13- 14-							
15-							
16-							Gray Sand, wet, no odor
17-					SP		
18-							
19-							Water level at ∼19.50 feet IP
20-	:					호	
21-					СН	_	Gray Clay, very wet
22-				/ /.			End borehole
23-							
24-							
25-							
26-							
27-							

	IT	CORPORATION
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Site ID: 02SB-04

Project Name: Time Oil Co. Seattle Terminal

Location:

Surface Elevation: 0.00

Borehole Diameter: 6.00in

Drilling Company: CASCADE

Logged By: CHS

Project Number:

Total Hole Depth: 16,50

Static Water Level:

Method: Hollow Stam Auger

Oate Storted: 06/07/99

See Site Map For Boring Location

Comments:

Page 1 of 1

	oo oy. <b>ana</b>						odie States: 00/01/39	
Checi	ked By:	<del></del>	1				Permit #:	
Depth (ft)	FIO	Somple 10	Recovery	Graphic Log	USCS Code	Woter Level	Description	
1- 2- 3-					SP		Light brown Gravel and sand. Hand dug to 24"	
4- 5- 6-								
7- 8- 9- 10-					ML	幸	Plastic sheet from bottom of former tank pit dis Gray Silt, wet, no odor. Water level at ~10.00	
11- 12- 13- 14-								
15- 16- 17-							Driller reported contact with Clay. Clay not foun	d in sampler
18- 19- 20-								
21- 22- 23-								
24- 25- 26- 27-								

M	П	CORPORATION
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Site ID: 02SB-05

Project Name: Time Oil Co. Seattle Terminal

Location:

Surface Elevation: 0.00

Borehole Diameter: 6.00in

Drilling Company: CASCADE

Logged By: CHS

Project Number:

Total Hole Depth: 16.50°

Static Water Level:

Method: Hollow Stem Auger

Date Started: 08/07/99

See Site Map For Boring Location

Comments:

Page 1 of 1

Chec	iked By:						Permit #:
	·					!	
				8	یو ا	ن <u>و</u>	Description
Depth (ft)	æ	Somple 10	Recovery	Graphic Log	USCS Code	Woter Level	
P	<u> </u>	- <del> </del>	œ	- <sup>5</sup>	ML	*	
1-							Surficial covering of Gravel and sand. Hand dug to 24"
2-							Light brown Silt, some sand, little gravel, dry, no odor
3-							
4-							
5-							Grades dark gray, no gravel, damp, slight odor
6-							
7-							
8-							
9-							Come South and the A
10-				!	SP		Gray Sand, moist to damp, odor
11-							
12-							Water level at ∼13.50 feet IP
14-						立	Mater level of 3-13.35 feet ii
15-						=	Grades orange, wet, slight odor
16-					СН		Gray Clay, damp, no odor
17-				//	$  \cdot  $		End borehole
18~							
19-							
20-						1	
21-							
22-							
23-				<u></u>			
24-	.						
25-							
26-							
27-							

IT IT	CORPORATION
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Site ID: 02SB-06

Project Name: Time Oil Co. Seattle Terminal

Location:

Surface Elevation: 0.00' Borehole Diameter: 6.00in

Drilling Company: CASCADE

Logged By: CNS

Project Number:

Total Hale Depth; 11.50

Static Water Level:

Method: Hollow Stern Auger

Date Storted: 06/07/99

See Site Map For Boring Location

Comments:

1	ed By: CNS						Dote Storted: 06/07/99
Chec	ked By:			<del>,</del>			Permit #:
Depth (ft)	FID	Sample 10	Recovery	Graphic Log	USCS Code	Water Level	Description
1-					SM		Surficial covering of sand and gravel. Hand dug to 24"
3-		:				고	Water level at ∼3.00 feet IP
5-					<u> </u> 		Orange brown Sand, little silt, wet, no odor
6- 7-		,					
8-							
10-							Cray Clay trace erays, do to maint as ada
11-					СН		Gray Clay, trace gravel, dry to moist, no odor End borehole
13- 14-							
15- 16-							
17-							
18-							
20-					:		
22-				!	   		
23- 24-							•
25- 26-							
27-							

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Site ID: 02SB-07

Page 1 of 1

Project Name: Time Oil Co. Scottle Terminal

Location:

Surface Elevation: 0.00° Barehole Diameter: 6.00in

Drilling Company: CASCADE

Logged By: CNS

Project Number:

Total Hole Depth: 11.50

Static Water Level:

Method: Hollow Stern Auger

Date Started: 06/07/99

See Site Map For Boring Location

Description  Was lessonery  Water Level  Wat	Chec	ked By:			,			Permit #:
SM SM	Depth (It)	FID	Sample 10	Recovery	Graphic Log	USCS Code	Water Level	Description
2- 3- 4-	1- 2- 3- 4- 5- 6- 7- 8- 9- 10- 11- 12- 13- 14- 15- 16- 17- 18- 20- 21- 22- 24- 25- 26-		5			SM	후	Grades gray green and brown, fine to medium grain, little silt, wet, no ador  Grades no silt Gray Clay, damp, no ador End borehole

T I	T CORPORATION
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Site ID: 02SB-08

Project Name: Time Oli Co. Seattle Terminal

Location:

Surface Elevation: 0.00'

Borehole Diameter: 6,00in Drilling Company: CASCADE

Located But CMS

Project Number:

Total Hale Depth: 9,00°

Static Water Level:

Method: Hollow Starn Auger

See Site Map For Boring Location

	ed By: CHS						Date Started: 06/07/99
Chec	ked By:	,		<del>, .</del> _			Permit #:
Oepth (ft)	FID	Somple 10	Recovery	Graphic Log	USCS Code	Water Level	Description
1- 2- 3- 4- 5- 6- 7- 8- 9- 10- 11- 12- 13- 14- 15- 16- 17- 18- 20- 21- 22- 24- 25- 26- 27-					SM	₹_	Hand dug to 24" Light brown Sand and silt, some gravel, dry, no odor Grades moist to damp, odor Water level at ~4.00 feet IP  Gray brown medium grain Sand, little silt, wet, no odor End borehole

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Site ID: 02SB-09

Project Name: Time Oil Co. Scottle Terminal

Location:

Surface Elevation: 0.00

Borehole Diameter: 6.00in

Drilling Company: CASCADE

Logged By: JH

Project Number:

Total Hole Depth: 26.50°

Static Water Level:

Method: Hollow Stern Auger

Date Storted: 06/11/99

See Site Map For Boring Location

Checi	ked By:		<del>1 -</del>	1			Permit #:
Depth (II)	FID	Somple 1D	Recovery	Grophic Log	USCS Code	Woter Level	Description
1-					GP ML		Surficial covering of gray Gravel 6". Hand dug to 24"
2-							Brown Silt and gravel, dry
3-							
4-						:	
5-							Tan to brown very fine groin Sand, very little silt, no gravel, dry, no odor
6-					SP	į	
7-							
8-							
9-							
10-	-						Grades gray, little fines, wet, odor
1 1-							
12-				111	CL		
13-							
14-							
15-							Gray soft Clay and silt, moderately dense, no ador
16-							
17-							
18-				\_\	SP		
19-							
20-	ı						Gray fine to medium grain Sand, little fines, no odor
21-							
22-	,						
23-							
24-							
25-	!						
26-				77.7	CL		Gray hard Clay
27-	i						End borehole
				L	I		Page 1 of 1

#### 1.0 DRILLING

- 1.1 The principle reason for requiring on-site drilling supervision is to acquire reliable information.
- 1.2 While supervising a test boring or well installation, the geologist should always make certain that the driller is making accurate depth measurements by ruler and not by visually "eyeballing" the measurements (five foot auger lengths or drill rods may vary in length by +/- .75 feet.
- 1.3 Discrepancies between the driller's statements of depth and the geologist's should be immediately clarified by remeasurement so that the driller and geologist are in agreement.
- 1.4 Note lithologic changes that occur between sampling depths. Lithologic changes can be estimated by: noting changes in the rate of penetration of the drilling tools; noting color and/or soil-type changes in the drill cuttings; and, noting the soil on the auger flights.
- 1.5 Samples obtained by split-spoon sampler should follow the standard penetration test procedure (see Section 2.0).
- 1.6 For each soil sample taken, the following information must be recorded on the well/boring log:
  - sample depth
  - sample number
  - sampling method: split-spoon (SS), wash sample, auger flight sample, drill cutting sample.
  - blow counts for every 6 inches penetration of the split-spoon sampler
  - sample description should follow the Unified Soil Classification System.
- 1.7 The sample brass tubes must be labeled with the following information
  - job number
  - date and time
  - well/boring number
  - sample number
  - sample depth
  - name of sampler
- 1.8 Insure that samples are sealed in brass tubes as nearly intact and undisturbed as possible. Soil structure can be an important feature in interpreting the subsurface geology.
- 1.9 Seal the ends of the brass tubes with aluminum foil or teflon tape prior to placing on the air tight cap. Place the sealed and labeled tube on ice in a cooler for shipment to the lab along with a chain-of-custody.
- 1.10 Seal the contents of a second brass tube in a plastic sample bag for vapor level measurements.
- 1.11 Measure vapor levels with a photoionization detector (PID) when the samples reach room temperature (70 degrees F). Otherwise keep the samples cool until an instrument is available. Bring the samples to room temperature prior to measuring the vapor levels.
- 1.12 Attempt to determine the depth to groundwater as drilling progresses. After a well has been installed, measure the initial groundwater level. If no well has been installed,

- measure the water level in the boring prior to removing all of the auger flights or casing and backfilling the borehole.
- 1.13 When drilling in soils such as loose sands and silts, which tend to run up into the borehole, whether it is stabilized with casing or augers or not, the driller should maintain a positive head of water in the borehole (that is above the water table) at ALL times.
- 1.14 All pertinent data concerning drilling method, groundwater, penetration resistance, soil description, etc. should be entered onto the well/boring log.
- 1.15 Locate each well/boring location by taping the distances to at least three permanent physical features at the site. These may include any feature that is shown on the site plan provided, such as building corners, pump island, light standards, fences, planters, etc. DO NOT measure to another well/boring as one of the three measurements unless it is absolutely necessary. DO include measurements between well/borings as additional location information. This information, entered onto the well/boring log, will be used in conjunction with survey data to complete the site map and to generate groundwater contour and petroleum distribution maps.
- 1.16 At the completion of drilling, arrange to survey the well/boring locations and elevations.
- 1.17 Groundwater Technology does not assume the responsibility of directing the operations of independent contractors or insuring the safety of their workmen. Inform the contractor of the project requirements. Do not drive contractor trucks or operate or borrow his equipment.
- 1.18 Comply with all applicable articles of the Occupational Safety and Health Act of 1970, (OSHA).

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### 2.0 STANDARD PENETRATION TEST

- 2.1 The standard split-spoon sampler consists of a 2-inch O.D. by 1-3/8-inch I.D., 18-inch minimum length, heat treated, case hardened, steel head, split-spoon and shoe assembly.
- 2.2 The head is vented to prevent pressure buildup during sampling and must be kept clean. A ball check valve is located in the head to prevent downward water pressure during sampling and sample retrieval. Removal of the water check valve often results in sample loss.
- 2.3 The drive rods which connect the split-spoon must have a stiffness equal or greater than an A-rod. In order to reduce rod deflection, especially in deep holes, it may be preferable to use larger diameter rods. The size of the drive rods must be consistent throughout a specific exploration as the energy absorbed will vary with the size and the weight of the rods used. The type of drive rod should be noted on the well/boring log.
- 2.4 The drive head consists of a guide rod to give the drop hammer a free fall in order to strike the anvil attached to the lower end of the assembly. The rod must be a minimum of 3-1/2 feet in length to insure the correct 30-inch hammer drop.
- 2.5 The drop hammer must weigh 140 pounds and have a 2-1/2-inch diameter hole through the center for the passage of the drive head rod.
- 2.6 The hammer is raised with a rope activated by the drill rig cathead. No more than two turns of rope should be allowed on the cathead.
- 2.7 A 30-inch free hammer drop is mandatory and extreme care should be exercised to insure consistent results.
- 2.8 Automatic trip hammers are available which insure a 30-inch, free-fall drop. These are recommended when retaining soil-structure data is critical, such as in liquefaction studies.
- 2.9 Attach the split-spoon sampler to the drill rods and lower the assembly to the bottom of the hole. Measure the drill rod stickup to determine if the bottom of the sampler is resting on the bottom of the hole. If the sampler is not on the bottom (ex. blow-up of the stratum being sampled), remove the assembly and clean out the hole to the appropriate sampling depth.
- 2.10 Note any penetration of the sampler/rod assembly due to the weight of the rods. Do not drop the assembly to the bottom of the hole.
- 2.11 Raise the 140-pound hammer 30 inches above the drivehead anvil and then allow it to drop, free-fall, and strike the anvil. This procedure is repeated until the sampler has been driven 18 inches into the stratum at the bottom of the hole (a 24-inch sampler may be driven 24 inches).
- 2.12 The number of blows of the hammer required for each 6 inches of penetration of the sampler is counted and recorded.
- 2.13 A penetration rate of 100 blows per foot is normally considered refusal; however, this criterion may be varied depending on the nature of the project and the desired information.

- 2.14 The penetration resistance, density, is calculated by adding together the second and the third resistance blowcounts. (Ex: for blow counts 2-6-6, density = 12.)
- 2.15 The sampler is then withdrawn form the borehole, preferably by pulling the rope rather than by bumping it out using the cathead and hammer in reverse.
- 2.16 Keeping the casing/augers/borehole full of water when removing the sampler will enhance sample recovery. however, this practice may not be appropriate when drilling at contamination sites.
- 2.17 When sampling soils where recovery is poor, lining the sampler with a flexible material such as plastic wrap or placing a sand catch in the shoe will often increase sample recovery.
- 2.18 Careful measurement of all drilling tools, samplers, casing, etc. must be exercised throughout all phases of the test boring operation.
- 2.19 Carefully open the sampler and describe the contents, noting soil structure, color, characteristics, etc. following the Unified Soils Classification System.
- 2.20 All pertinent data concerning sampling activities including sampling, interval, blow counts and sample recovery should be entered on the well/boring log.

### 3.0 WATER QUALITY SAMPLING

- 3.1 Water samples should not be taken from the stagnant water in the well.
- 3.2 Water samples should be taken in triplicate.
- 3.3 Remove 3 to 5 volumes of water in the well prior to sampling. The water may be removed by bailing, submersible pump, or purge system. Wells with a slow recovery period should be bailed dry and then sampled within 1 hour or when recovered to 80%. Monitor pH, temperature and specific conductivity with each well volume to insure water quality stabilization has occurred. However, this is not necessary at every well or in all circumstances.
- Use only Teflon, stainless steel, or glass bailers to obtain the sample. Use Teflon only for sampling water containing chlorinated compounds and also for bacteriological samples.
   PVC bailers can be used for one-time sampling for other than EPA 624 analysis. Using a bailer for a one-time sampling reduces the possibility for cross-contamination.
- When sampling, avoid stirring up any sediments in the well and agitating the water to reduce volitization of any dissolved compounds that may be present.
- 3.6 All sampling equipment must be cleaned following the appropriate procedure to avoid cross contamination from site to site and sample to sample. The sampling equipment should be cleaned before each well sampling, between each sampling, and at the end of each sampling round.
- 3.7 Monitoring wells should be gauged prior to sampling.
- 3.8 If possible, the monitoring wells should be sampled starting with the cleanest well and ending with the most contaminated well.
- 3.9 Wells containing free-phase contaminants should not be sampled.
- 3.10 When filling out the chain of custody form:
  - enter the samples in the order in which they were collected;
  - make a note as to the cleaning fluid used to clean the sampling equipment;
  - attempt to identify which samples are the most contaminated:
  - complete all other requested information.
- 3.11 The laboratory sample identification label should be filled out with a waterproof pen and firmly affixed to each sample container. Typically, identification labels require that the following information be supplied:
  - job name
  - job number
  - sampler's name
  - sample identification
  - date sampled and time
  - analysis requested
- 3.12 Acidification is required for samples that will be analyzed by the EPA 624 method. (see Acidification Procedure in this section)
- 3.13 Acidification is recommended for EPA method 601 and 602 samples to preserve them and increase their holding life. (see Acidification Procedure in this section)

- 3.14 Field blanks should be taken as part of each sampling round. A field blank consists of a sample of distilled water which has been collected by putting the distilled water into a sampling bailer after the bailer has been cleaned following the procedure used to clean that bailer during the sampling round. The field blank is stored with the samples. It is not analyzed unless requested by the Project Manager. The field blank should not be identified as such to the laboratory.
- 3.15 Handling of decontaminated equipment:
  - Always use "pristine" gloves (latex, solvex, etc.).
  - Place decontaminated bailers on clean surface (plastic).
  - Do not wipe down bailer with paper towels or cloth.
  - Follow decontamination procedure.
- 3.16 Sample accuracy can be adversely affected by the entrainment of sediment in wells which have not been properly developed. Contaminants adhering to the sediments can be released when samples are acidified for preservation. Therefore, if sediments are present, field filtering of the samples is recommended.
- 3.17 Chemical changes can take place because the sample was oxidized during sampling. It is critical to avoid oxidation of samples when sampling for volatile organic compounds (VOC). Therefore, take care to insure minimal agitation occurs during sampling.
- 3.18 All samples should be properly and promptly preserved.
- 3.19 All samples should be analyzed quickly; arrangements should be made with the testing laboratory to insure prompt analysis is performed within the allowable times for the specific analyses to be done.
- 3.20 Bailer strings that have contacted water or contaminants should be replaced between each well to avoid contamination from a bailer string which has absorbed contamination. A good practice is to replace the string between wells. <u>Caution</u>: some bailer strings are treated with a fungicide which may be detected in priority pollutant analysis.
- 3.21 Notify laboratory that samples are being shipped in advance of sampling to insure proper delivery and turnaround.
- 3.22 On the chain of custody, note what type of decontamination or preservation fluids, chemicals were used.

- 4.0 ACIDIFICATION PROCEDURE (EPA Methods 601,602, and 624)
  - 4.1 At the start of each sampling round, the amount of acid required to lower a sampling container of water to be sampled to a pH of less than 2 should be determined.
  - 4.2 After removing 3 to 5 well volumes from the first well to be sampled, put 5-10 drops of 50% HCL into a 40 ml sample vial (larger sampling container will require more acid) and fill the vial with water form the well; determine the pH of water in the vial with pH paper; if the pH is too high, repeat the procedure using 15-20 drops of acid in the vial; repeat until the pH of the water in the sample vial is a pH of less than 2 on the pH paper. Note the amount of acid required to lower the pH of the volume of water in the sampling vial. (pH paper should not be placed into sampling container. Pour sample onto pH paper to check for proper pH.)
  - 4.3 Discard the practice acidified sample.
  - 4.4 Once the amount of acid required to reach a pH of <2 is known, the acid can be routinely added to each sample container directly; the water to be analyzed is added to vial or container containing the appropriate amount of acid.
  - 4.5 Note that the amount of acid required is site specific and should be noted on the Chain of Custody form.
  - 4.6 The procedure should be repeated for each site at the start of each sampling round.
  - 4.7 Equipment
    - Bailer or other means to remove 3 to 5 well volumes
    - Sampling bailer
    - Polyethylene squirt bottle of 50% hydrochloric (HCL) acid
    - Narrow range pH paper (1.0 2.5 pH range)
    - Paper towels
    - Waterproof pen
    - Laboratory sample identification labels
    - Cooler with ice
    - Chain of custody forms
    - Sample containers (usually 40 ml glass vials with teflon faced septums)
    - Alconox solution and/or methanol
    - Distilled water
    - Safety equipment (gloves, etc.)
    - Dissolved oxygen meter (sometimes used in limited biorec projects in conjunction with bacteriological testing)

#### 5.0 SURVEYING

#### 5.1 Equipment Handling

- The level/transit is a sensitive, expensive instrument, handle it accordingly. Keep it dry and clean as possible. Never carry the instrument in the back of the truck.
- Never leave the instrument on the tripod without securely attaching it.
- Make sure that the tripod is stable at all times.
- Always setup the tripod and instrument so that it is easily seen.
- Never leave a tripod and instrument unattended when surveying in an area with vehicular traffic. Place protective cones around the survey station.
- Keep an eye on the equipment at all times.
- Keep the survey rod free of dirt and grit.

#### 5.2 Leveling the Instrument

- Center the level and screw it into the tripod.
- Firmly plant the tripod legs.
- Use foot screw to level the instrument. The bubble must be within the setting circle in order for the instrument the be level.
- Rotate the level 360 degrees, checking to be sure that the bubble remains inside the circle at every point.

#### 5.3 Focusing the Cross Hairs and Siting

- To focus the cross hairs, look through the instrument and turn the ring around the eyepiece until the hairs come into focus.
- Relax your eye while looking through the eyepiece.
- Use a sun shade.

#### 5.4 Rod

- Be careful when using a rod around overhead power and utility lines.
- The rod is graduated into hundredths of a foot. The bottom of each black line is an odd hundredth; the top of each black line is an even hundredth.
- When surveying to the rod, the rod should be slowly rocked forward and back to determine the lowest, and most accurate, reading.

#### 5.5 Stadia Surveys

- Readings should be taken at the intersection of the vertical cross hair with the three horizontal cross hairs. (A level survey requires reading only the center cross hair.)
- Distance (D) calculation:

```
D = (High Stadia - Low Stadia) x 100
ex:
High Stadia = 8.87 D = (8.87 - 8.29) x 100
Low Stadia = 8.29 D = 58.0
```

- Check the accuracy of your readings as you survey. An acceptable error is .01 feet difference between calculations per siting.
- Check Readings: high mid = mid low

#### 5.6 Bench Marks

- Clearly note the location and type of the bench mark used for each survey. The location should be marked permanently in the field so that it may be reused.
- If an existing bench mark with a known elevation is within a reasonable distance of the site, the surveyors should attempt to use it as the bench mark for the survey. possible existing bench marks are sewer manhole rims, storm drains, USGS (from topo map)
- If there is no known bench mark in the area, a bench mark must be created arbitrarily.
- Use the following guidelines for establishing an arbitrary bench mark:
  - a) use permanent physical features such as the corner of a pump island, a cement floor slab, manhole or sewer <u>rim.</u>
  - b) assign an elevation to the bench mark; if the nearest 10-foot contour is known, use it as the BM elevation; if the contour elevation is not known, assign an arbitrary elevation.
  - c) clearly note the location and elevation of the BM in the field and on all site plans.
  - d) <u>DO NOT USE MONITORING OR RECOVERY WELLS AS BENCH MARKS.</u>

#### 5.7 Level Surveys

- When surveying wells, make certain to choose a survey point that can be used when gauging the well; if the top of the PVC casing is greater than 6 inches below the ground surface, do not use it as the survey point, instead use the lip or rim of the protective casing. Clearly note the survey point of each well in the survey notes.
- Obtain the following for each monitoring well survey location:
  - a) the elevation of the top of the well casing (T.O.C.);
  - b) the elevation of the lip or rim of the protective casing (T.O.R.)
- Permanently mark the survey point with paint or permanent marker.

- Place the rod on the survey point and hold it vertical; move it backwards and forwards to determine the most accurate reading.
- Calculate the elevation from the middle cross hair reading.
- Limit the number of times the instrument must be moved.
- After completing level readings at each set up, shoot back to two or more wells to close the level run.
- In a multiple-station survey, always shoot at least two known points for each station.
- Where there is a significant topographic change across a site, additional survey information will be required in order to document the ground surface elevation differences; this information is critical when drawing cross-sections and in planning trenching and infiltration gallery installations.
- Calculate elevations before moving instrument to determine if there are any irregularities or errors.

#### 5.8 Turning Points

- A TP (turning point) is used when all of the survey points cannot be seen form one instrument position and the instrument must be moved.
- The TP essentially establishes a new bench mark from which a new height of instrument is calculated.
- A TP can be a permanent structure, a PK, the original BM or a well. (A PK is a surveyor's nail driven into the ground/asphalt to create a hub for the rod to rest upon.)
- Complete the following steps to create a TP:
  - a) take a FS (foresight) on the TP and record the measurement under the FS column in the field book;
  - b) the FS is subtracted from the HI (height of instrument) for the current instrument location to determine the elevation of the TP;
  - c) the instrument is then moved to a new location and leveled;
  - d) a BS (backsight) reading is taken to the TP and entered in the BS column in the field book:
  - e) the BS is added to the TP to determine the new HI elevation:
  - f) NOTE: the TP entry in the survey data in the field book will always have <u>4</u> entries: BS, FS, HI, and elevation.

#### 5.9 Taping locations

- Use a tape to verify distances that were surveyed with the instrument.
- Obtain three measurements for each location.
- Pull the tape tightly between points being measured.
- Measure dimensions of buildings on site to confirm base maps.

#### 7.0 EXCAVATION AND TRENCH SOIL SAMPLING

#### 7.1 Purpose

Underground Storage Tank (UST) decommissioning requires documentation of soil conditions. If tank closure is accomplished by excavation, removal and destruction of the tanks and lines, collection of representative samples for subsequent analysis is imperative. Utilizing the following procedures enables Groundwater Technology to secure the best possible retrieval of observations and samples.

#### 7.2 Equipment

- Field Book, standard Surveyor's, waterproof, 5" x 7"
- Pencils
- Clipboard
- 6' folding ruler
- 50' cloth or fiberglass tape with weight
- Interface probe
- PID or other organic vapor screening device
- Sampling jars with air-tight Teflon lids, brass liners, 2" dia. x 6" long
- Aluminum foil or Teflon tape
- Bailer
- Rags probe wipers
- Alconox solution, distilled water, and H<sub>2</sub>O
- Contract Documents, site plan, site sampling plan (QAPP), Site Safety Plan
- Lumber crayon or waterproof marking pen
- Safety equipment such as hard hat, appropriate footwear, respirator, goggles, ear plugs, gloves
- Copies of maps such as topographic or site vicinity
- Pocket knife
- Camera

#### 7.3 Procedure

There are a number of preparations to be made by the Geologist/ Environmental Scientist before a site investigation begins. Attending to these preparations can increase the efficiency and quality of the work to be accomplished.

Before going into the field, each Geologist/Environmental Scientist should be completely familiar with the long and short term project objectives. He or she should review all of the available information about a site including site geology and the nature of the project. He or she should be familiar with all installation and sampling procedures that will be required.

It is the responsibility of the Project Manager to clearly describe the nature of each project and the amount of and type of work to be performed at a site. It is the responsibility of the Geologist/Environmental Scientist to make certain they understand what they are being asked to find out or do and, if they do not understand, then to ASK QUESTIONS.

The importance of communication <u>and</u> documentation cannot be stressed enough. What is not written down is often lost. What is written down and not pointed out may be inadvertently overlooked.

- 7.3.1 The principle reason for requiring excavation supervision is to acquire reliable information.
- 7.3.2 While supervising a tank or piping excavation, the Geologist should always make certain that accurate depth measurements are made by ruler and not by visually "eyeballing" the measurements.
- 7.3.3 Discrepancies between the excavator's statements of depth and the Geologist's should be immediately clarified by remeasurement so that the operator and the Geologist are in agreement.
- 7.3.4 Note strata changes that occur during excavation. Strata changes can be estimated by observing changes in color, soil-type, or the ease of excavation.
- 7.3.5 Photographic records of site conditions are an important tool for filling in narrative discussion. Do not hesitate to take pictures of all site activities before, during, and after. Label and record each photograph in your field notes according to procedures similar to section 7.4.1 (b).

#### 7.4 Sample Collection Methods

- 7.4.1 The following information must be kept during the sampling events:
  - (a) A sketch of the site must be made which clearly shows all of the sample locations and identifies each location with a unique sample identification code.
  - (b) Each soil and water sample must be clearly labeled with its sample identification code. A written record must be maintained which includes, but is not limited to: the date, time and location of the sample collection; the name of the person collecting the sample; how the sample was collected; and any unusual or unexpected problems encountered during the sample collection which may have affected the sample integrity.
  - (c) Formal chain-of-custody records must be maintained for each sample.
- 7.4.2 If soil samples cannot be safely collected from the excavation, a backhoe may be used to remove a bucket of native soil from each of the sample areas. The soil is to be brought rapidly to the surface where samples are to be immediately taken from the soil in the bucket.
- 7.4.3 The following procedures must be used for the collection of soil samples from open pits or trenches:
  - (a) Just prior to collecting each soil sample, approximately three inches of soil must be rapidly scraped away from the surface of the sample location.
  - (b) To minimize the loss of volatile materials, it is recommended that samples be taken using a driven-tube type sampler. A clean brass or stainless steel tube of at least one inch in diameter and three inches in length may be used for this purpose. The tube should be driven into the soil with a suitable instrument such as a wooden mallet or hammer.
  - (c) The ends of the sample-filled tube must be immediately covered with clean aluminum foil or Teflon<sup>R</sup> tape. The foil must be held in place by plastic end caps which are then sealed onto the tube with a suitable tape.

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- (d) Alternatively, samples may be taken with a minimum amount of disturbance and packed in a clean wide-mouth glass jar leaving as little headspace as possible. The jar must then be immediately sealed with a teflon-lined screw cap.
- (e) After the samples are properly sealed, they are to be immediately placed on ice and maintained at a temperature of no greater than 4°C (39°F) until being prepared for analysis by the laboratory. All samples must be analyzed within 14 days of collection.

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# APPENDIX D LABORATORY ANALYTICAL REPORTS



Seattle 18939 120th Avenue NE, Suite 101, Botheil, WA 98011-9508 425.420.9200 fax 425.420.9210

Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776

509.924.9200 fax 509.924.9290 9405 SW Nimbus Avenue, Beaverton, 0R 97008-7132 503.906.9200 fax 503.906.9210

20354 Empire Avenue, Suite E-9, Bend, OR 97708-1883 541,383,9310 | fax 541,382,7588

IT Corporation - Renton

555 South Renton Village Place, Ste 700

Renton, WA 98055

Project:

Time Oil #2750

Project Number: 783336

Project Manager: Jerry Harris

Sampled: 6/7/99

Received: 6/8/99

Reported: 6/25/99 11:31

# ANALYTICAL REPORT FOR SAMPLES:

		<u> </u>	
Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
02SB-07A	B906234-01	Soil	6/7/99
02SB-07B	B906234-02	Soil	6/7/99
02SB-08A	B906234-03	Soil	6/7/99
02SB-08B	B906234-04	Soil	6/7/99
02SB-06A	B906234-05	Soil	6/7/99
02SB-06B	B906234-06	Soil	6/7/99
02SB-01A	B906234-07	Soil	6/7/99
02SB-01B	B906234-08	Soil	6/7/99
02SB-01C	B906234-09	Soil	6/7/99
02SB-01D	B906234-10	Soil	6/7/99
02SB-01E	B906234-11	Soil	6/7/99
02SB-02A	B906234-12	Soil	6/7/99
02SB-02B	B906234-13	Soil	6/7/99
02SB-02C	B906234-14	Soit	6/7/99
02SB-02D	B906234-15	Soil	6/7/99
02SB-05A	B906234-16	Soil	6/7/99
02SB-05B	B906234-17	Soil	6/7/99
02SB-05C	B906234-18	Soil	6/7/99
02SB-04B	B906234-19	Soil	6/7/99
025B-04C RECEIVED JUH 3 0 1999	B906234-20	Soil	6/7/99

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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IT Corporation - Renton

555 South Renton Village Place, Ste 700

Renton, WA 98055

Project: Time Oil #2750

Project Number: 783336

Project Manager: Jerry Harris Sampled: 6/7/99

Received: 6/8/99

Reported: 6/25/99 11:31

# ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
02SB-03A	B906234-21	Soil	6/7/99
02SB-03B	B906234-22	Soil	6/7/99
02SB-03C	B906234-23	Soil	6/7/99
02SB-03D	B906234-24	Soil	6/7/99
02SB-08H2O	B906234-25	Water	6/7/99
02SB-07H2O	B906234-26	Water	6/7/99
02SB-06H2O	B906234-27	Water	6/7/99
02SB-02H2O	B906234-28	Water	6/7/99
02SB-05H2O	B906234-29	Water	6/7/99
02SB-04H2O	B906234-30	Water	6/7/99
02SB-03H2O	B906234-31	Water	6/7/99

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IT Corporation - Renton

555 South Renton Village Place, Ste 700

Project Number: 783336

Project: Time Oil #2750

Sampled: 6/7/99 6/8/99

Renton, WA 98055

Project Manager: Jerry Harris

Received:

Reported: 6/25/99 11:31

## Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
02SB-07A			B9062;	3.4A1			Soil	
Gasoline Range Hydrocarbons	0690370	6/11/99	6/21/99	24-01	5.00	ND	mg/kg dry	
Benzene	"	"	"		0.0500	ND	ing/kg diy	
Toluene	**	**			0.0500	ND ND	н	
Ethylbenzene	tr	н	71		0.0500	ND	#	
Xylenes (total)	н	#	**		0.100	0.134	**	
Surrogate: 4-BFB (FID)	<del>,</del>	"		50.0-150	0.100	92.5	<del>%</del>	
Surrogate: 4-BFB (PID)	n	"	n	50.0-150		94.9	/0 !/	
02SB-07B			B90623	34-02			<u>Soil</u>	
Gasoline Range Hydrocarbons	0690370	6/11/99	6/21/99	<del></del>	5.00	ND	mg/kg dry	
Benzene	61	44	11		0.0500	ND	mg/kg dry	
Toluene	Ħ	••	11		0.0500	ND	**	
Ethylbenzene	н	н	••		0.0500	ND	н	
Xylenes (total)	11	**	•		0.100	ND	et	
Surrogate: 4-BFB (FID)	**	si	#	50.0-150		85.4	%	
Surrogate: 4-BFB (PID)	"	"	**	50.0-150		88.5	u	
02SB-08A			B90623	<u>34-03</u>			Soil	
Gasoline Range Hydrocarbons	0690370	6/11/99	6/21/99		5.00	72.6	mg/kg dry	1
Benzene	II .	n	**		0.0500	ND	11	
Toluene	*	H	**		0.0500	ND	11	
Ethylbenzene	н	H	•		0.0800	ND	ŧŧ	2
Xylenes (total)		#	•		0.570	ND	н	2
Surrogate: 4-BFB (F1D)	,,	n	н	50.0-150		126	%	
Surrogate: 4-BFB (PID)	**	H	H	50.0-150		98.5	"	
02SB-08B			B90623	<del>34-04</del>			Soil	3
Gasoline Range Hydrocarbons	0690523	6/16/99	6/23/99		5.00	ND	mg/kg dry	
Benzene	#	n	**		0.0500	ND	" " "	
Toluene	**	Ħ	••		0.0500	ND	"	
Ethylbenzene	*	**	#		0.0500	ND	н	
Xylenes (total)	н	H	н		0.100	ND	**	
Surrogate: 4-BFB (FID)	#	"	"	50.0-150	<del></del>	75.8	%	
Surrogate: 4-BFB (PID)	*	W	*	50.0-150		92.0	н	
02SB-06A			B90623	<u>34-05</u>			Soil	3
Gasoline Range Hydrocarbons	0690523	6/16/99	6/23/99		5.00	ND	mg/kg dry	•
Benzene	17	m*			0.0500	ND	"	

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\*Refer to end of report for text of notes and definitions.



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IT Corporation - Renton Project: Time Oil #2750 Sampled: 6/7/99 555 South Renton Village Place, Ste 700 Project Number: 783336 Received: 6/8/99

Project Manager: Jerry Harris Renton, WA 98055 Reported: 6/25/99 11:31

### Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes
02SB-06A (continued)			B9062	3 <u>4-05</u>			Soil	<u>3</u>
Toluene	0690523	6/16/99	6/23/99	<del>_</del>	0.0500	ND	mg/kg dry	_
Ethylbenzene	•	ч	11		0.0500	ND	"	
Xylenes (total)	*	ч	N		0.100	ND	H	
Surrogate: 4-BFB (FID)	· ;;		н	50.0-150		83.8	<del></del>	
Surrogate: 4-BFB (PID)	#	"	"	50.0-150		<i>88.2</i>	<i>tt</i>	
02SB-06B			B9062.	34-06			Soil	3
Gasoline Range Hydrocarbons	0690523	6/16/99	6/23/99		5.00	ND	mg/kg dry	
Benzene	ti	11	**		0.0500	ND	11	
Toluene	**	rr .	п		0.0500	ND		
Ethylbenzene	*	η	H		0.0500	ND	**	
Xylenes (total)	"	*			0.100	ND		
Surrogate: 4-BFB (FID)	"	"	"	50.0-150		78.8	%	
Surrogate: 4-BFB (PID)	tt	**	"	50.0-150		85.6	"	
02SB-01A			B9062	3 <u>4-07</u>			<u>Soil</u>	3
Gasoline Range Hydrocarbons	0690523	6/16/99	6/23/99		5.00	ND	mg/kg dry	
Benzene	11	н	н		0.0500	ND	н	
Toluene	41	Ħ	н		0.0500	ND	ft.	
Ethylbenzene	H	11	н		0.0500	ND	**	
Xylenes (total)	**	e e	u		0.100	ND	н	
Surrogate: 4-BFB (FID)	,,	σ.	rr .	50.0-150		85.0	%	
Surrogate: 4-BFB (PID)	"	H	**	50.0-150		90.7	**	
02SB-01B			B9062	<u>34-08</u>			Soil	3
Gasoline Range Hydrocarbons	0690523	6/16/99	6/23/99		5.00	ND	mg/kg dry	
Benzene	n	**	**		0.0500	ND	н	
Toluene	H	n	Ħ		0.0500	ND	u	
Ethylbenzene	•	м	**		0.0500	ND	n	
Xylenes (total)	•	"	"		0.100	ND	**	
Surrogate: 4-BFB (FID)	н	— ii	· · · · · · · · · · · · · · · · · · ·	50.0-150		84.6	%	
Surrogate: 4-BFB (PID)	n	н	77	50.0-150		92.3	"	
02SB-01C			B9062	<u>34-09</u>			<u>Soil</u>	3
Gasoline Range Hydrocarbons	0690523	6/16/99	6/23/99		5.00	ND	mg/kg dry	
Benzene	**	**	H		0.0500	ND	"	
Toluene	•	н	71		0.0500	ND	11	
Ethylbenzene	n	п	**		0.0500	ND	и	

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IT Corporation - Renton Project: Time Oil #2750 Sampled: 6/7/99 555 South Renton Village Place, Ste 700 Project Number: 783336 Received: 6/8/99

Renton, WA 98055 Project Manager: Jerry Harris 6/25/99 11:31 Reported:

### Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes
02SB-01C (continued)			B9062.	34-09			Soil	3
Xylenes (total)	0690523	6/16/99	6/23/99		0.100	ND	mg/kg dry	
Surrogate: 4-BFB (FID)	"	"	"	50.0-150		83.3	%	
Surrogate: 4-BFB (PID)	n	"	"	50.0-150		94.8	N	
02SB-01D			B9062.	<u>34-10</u>			<u>Soil</u>	<u>3</u>
Gasoline Range Hydrocarbons	0690523	6/16/99	6/23/99		5.00	ND	mg/kg dry	
Benzene	•	*1	a		0.0500	ND	"	
Foluene	fI	#1	**		0.0500	ND	н	
Ethylbenzene	**	н	4		0.0500	ND	и	
Xylenes (total)	**	u	17		0.100	ND	"	
Surrogate: 4-BFB (FID)	#	н	n	50.0-150		88.6	%	
Surrogate: 4-BFB (PID)	"	"	н	50.0-150		102	**	
02SB-01E			B9062.	34-11			Soil	3
Gasoline Range Hydrocarbons	0690523	6/16/99	6/23/99		5.00	ND	mg/kg dry	
Benzene	**	*	ţı		0.0500	ND	**	
Toluene	•	17			0.0500	0.0596	**	
Ethylbenzene	н	**	И		0.0500	ND	**	
Xylenes (total)	н	**	н		0.100	ND	Ħ	
Surrogate: 4-BFB (FID)	"	"	"	50.0-150		89.4	%	
Surrogate: 4-BFB (PID)	"	"	H	50.0-150		101	*	
02SB-02A			B9062	3 <u>4-12</u>			Soil	<u>3</u>
Gasoline Range Hydrocarbons	0690523	6/16/99	6/23/99		5.00	ND	mg/kg dry	
Benzene	Ħ	н	Ħ		0.0500	ND	"	
Toluene	Ħ	н	*		0.0500	ND	**	
Ethylbenzene	и	11	**		0.0500	ND	**	
Xylenes (total)	н	*	**		0.100	ND	ti	
Surrogate: 4-BFB (FID)	и	**	"	50.0-150	<del></del>	79.7	%	_
Surrogate: 4-BFB (PID)	"	"	"	50.0-150		91.4	п	
02SB-02B			B9062	3 <u>4-13</u>			Soil	3
Gasoline Range Hydrocarbons	0690523	6/16/99	6/23/99		5.00	ND	mg/kg dry	
Benzene	#	**	**		0.0500	ND	"	
Toluene	*	11	н		0.0500	ND	Ħ	
Ethylbenzene	n	**	**		0.0500	ND	н	
Xylenes (total)	4	91	**		0.100	ND	•	
Surrogate: 4-BFB (FID)	н	и	н	50.0-150		80.4	%	

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IT Corporation - Renton

555 South Renton Village Place, Ste 700

Project: Time Oil #2750

Sampled: 6/7/99

Project Number: 783336

Received: 6/8/99

Renton, WA 98055

Project Manager: Jerry Harris

Reported: 6/25/99 11:31

## Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B North Creek Analytical - Bothell

Number   Prepared   Analyzed   Limits   Limit   Result	Units Soil	Note
Surrogate: 4-BFB (PID)   0690523   6/16/99   6/23/99   50.0-150   96.5		
Surrogate: 4-BFB (PID)   0690523   6/16/99   6/23/99   50.0-150   96.5		<u>3</u>
Gasoline Range Hydrocarbons       0690523       6/16/99       6/22/99       5.00       ND         Benzene       " " " " 0.0500       ND         Toluene       " " " " 0.0500       ND         Ethylbenzene       " " " " 0.0500       ND         Xylenes (total)       " " " 50.0-150       79.3         Surrogate: 4-BFB (FID)       " " " 50.0-150       86.2         B906234-15         Gasoline Range Hydrocarbons       0690523       6/16/99       6/23/99       5.00       ND         Benzene       " " " " 0.0500       ND         Toluene       " " " " 0.0500       ND         Ethylbenzene       " " " 0.0500       ND         Xylenes (total)       " " " 50.0-150       83.2	%	
Gasoline Range Hydrocarbons       0690523       6/16/99       6/22/99       5.00       ND         Benzene       "       "       "       0.0500       ND         Toluene       "       "       "       0.0500       ND         Ethylbenzene       "       "       "       0.0500       ND         Xylenes (total)       "       "       50.0-150       ND         Surrogate: 4-BFB (FID)       "       "       50.0-150       86.2         02SB-02D       B906234-15         Gasoline Range Hydrocarbons       0690523       6/16/99       6/23/99       5.00       ND         Benzene       "       "       "       0.0500       ND         Toluene       "       "       "       0.0500       ND         Ethylbenzene       "       "       "       0.0500       ND         Xylenes (total)       "       "       "       50.0-150       83.2	Soil	<u>3</u>
Benzene " " " " 0.0500 ND Toluene " " " 0.0500 ND Ethylbenzene " " " 0.0500 ND  Xylenes (total) " " " 50.0-150 79.3 Surrogate: 4-BFB (FID) " " " 50.0-150 86.2  D2SB-02D B906234-15 Gasoline Range Hydrocarbons 0690523 6/16/99 6/23/99 5.00 ND Benzene " " 0.0500 ND Toluene " " 0.0500 ND Ethylbenzene " " 0.0500 ND Ethylbenzene " " 0.0500 ND  Xylenes (total) " " 50.0-150 ND  Xylenes (total) " " 50.0-150 ND	mg/kg dry	_
Toluene " " " " 0.0500 ND Ethylbenzene " " " 0.0500 ND  Xylenes (total) " " " 0.100 ND  Surrogate: 4-BFB (FID) " " 50.0-150 79.3  Surrogate: 4-BFB (PID) " " 50.0-150 86.2  D2SB-02D  Gasoline Range Hydrocarbons 0690523 6/16/99 6/23/99 5.00 ND Benzene " " 0.0500 ND  Toluene " " 0.0500 ND  Ethylbenzene " " 0.0500 ND  Ethylbenzene " " 0.0500 ND  Xylenes (total) " " 50.0-150 83.2	"	
Ethylbenzene " " " " 0.0500 ND  Xylenes (total) " " " 50.0-150 79.3  Surrogate: 4-BFB (FID) " " 50.0-150 86.2   02SB-02D  Gasoline Range Hydrocarbons 0690523 6/16/99 6/23/99 5.00 ND  Benzene " " 0.0500 ND  Toluene " " 0.0500 ND  Ethylbenzene " " 0.0500 ND  Ethylbenzene " " 0.0500 ND  Xylenes (total) " " 50.0-150 83.2		
Xylenes (total)       " " " 50.0-150       ND         Surrogate: 4-BFB (FID)       " " 50.0-150       79.3         Surrogate: 4-BFB (PID)       " " 50.0-150       86.2         D2SB-02D       B906234-15         Gasoline Range Hydrocarbons       0690523 6/16/99 6/23/99       5.00 ND         Benzene       " " " 0.0500 ND         Toluene       " " " 0.0500 ND         Ethylbenzene       " " " 0.0500 ND         Xylenes (total)       " " 50.0-150       83.2	11	
Surrogate: 4-BFB (FID)  " " 50.0-150 79.3  Surrogate: 4-BFB (PID)  " " 50.0-150 86.2   B906234-15  Gasoline Range Hydrocarbons 0690523 6/16/99 6/23/99 5.00 ND  Benzene " " 0.0500 ND  Toluene " " 0.0500 ND  Ethylbenzene " " 0.0500 ND  Xylenes (total) " " 50.0-150 83.2	и	
Surrogate: 4-BFB (PID)       " " 50.0-150       86.2         B906234-15         Gasoline Range Hydrocarbons       0690523       6/16/99       6/23/99       5.00       ND         Benzene       " " " 0.0500       ND         Toluene       " " " 0.0500       ND         Ethylbenzene       " " " 0.0500       ND         Xylenes (total)       " " 50.0-150       83.2	%	
Gasoline Range Hydrocarbons         0690523         6/16/99         6/23/99         5.00         ND           Benzene         "         "         0.0500         ND           Toluene         "         "         0.0500         ND           Ethylbenzene         "         "         0.0500         ND           Xylenes (total)         "         "         0.100         ND           Surrogate: 4-BFB (FID)         "         50.0-150         83.2	r)	
Gasoline Range Hydrocarbons       0690523       6/16/99       6/23/99       5.00       ND         Benzene       "       "       0.0500       ND         Toluene       "       "       0.0500       ND         Ethylbenzene       "       "       0.0500       ND         Xylenes (total)       "       "       0.100       ND         Surrogate: 4-BFB (FID)       "       "       50.0-150       83.2	Soil	3
Benzene       " " " 0.0500 ND         Toluene       " " 0.0500 ND         Ethylbenzene       " " 0.0500 ND         Xylenes (total)       " " 0.0500 ND         Surrogate: 4-BFB (FID)       " " 50.0-150 83.2	mg/kg dry	-
Toluene       " " " 0.0500 ND         Ethylbenzene       " " 0.0500 ND         Xylenes (total)       " " 0.0500 ND         Surrogate: 4-BFB (FID)       " " 50.0-150 83.2	"	
Ethylbenzene       " " " 0.0500 ND         Xylenes (total)       " " 0.100 ND         Surrogate: 4-BFB (FID)       " 50.0-150 83.2	11	
Xylenes (total)       " " " 0.100 ND         Surrogate: 4-BFB (FID)       " " 50.0-150 83.2		
Surrogate: 4-BFB (FID) " " " 50.0-150 83.2		
	%	
	,	
02SB-05A B906234-16	Soil	<u>3</u>
Gasoline Range Hydrocarbons 0690523 6/16/99 6/23/99 5.00 ND	mg/kg dry	_
Benzene " " " 0.0500 ND	"	
Toluene " " " 0.0500 ND	Ħ	
Ethylbenzene " " " 0.0500 ND	н	
Xylenes (total) " " " 0.100 ND	**	
Surrogate: 4-BFB (FID) " " " 50.0-150 85.1	%	
Surrogate: 4-BFB (PID) " " 50.0-150 92.7	н	
02SB-05B B906234-17	Soil	3
Gasoline Range Hydrocarbons 0690523 6/16/99 6/22/99 5.00 ND	mg/kg dry	-
Benzene " " " 0.0500 ND	n grag ory	
Toluene " " " 0.0500 ND	n	
Ethylbenzene " " " 0.0500 ND	#1	
Xylenes (total) " " " 0.100 · ND	н	
Surrogate: 4-BFB (FID) " " 50.0-150 80.0	%	
Surrogate: 4-BFB (PID) " " " 50.0-150 89.2		

North Creek Analytical - Bothell



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IT Corporation - Renton

Renton, WA 98055

555 South Renton Village Place, Ste 700

Project Number: 783336

Project: Time Oil #2750

Sampled: 6/7/99

Project Manager: Jerry Harris

Received: 6/8/99 Reported: 6/25/99 11:31

## Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting	·		
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
02SB-03B (continued)			B9062.	<u>34-22</u>			Soil	3
Toluene	0690523	6/16/99	6/23/99		0.0500	ND	mg/kg dry	_
Ethylbenzene	t+	**	11		0.0500	ND		
Xylenes (total)	н	**	н		0.100	ND		
Surrogate: 4-BFB (FID)	n	"	**	50.0-150		74.7	%	
Surrogate: 4-BFB (PID)	"	"	"	50.0-150		99.2	#	
02SB-03C			B9062.	34-23			Soil	3
Gasoline Range Hydrocarbons	0690523	6/16/99	6/23/99		5.00	ND	mg/kg dry	
Benzene	#	**			0.0500	ND	"	
Toluene	*	•			0.0500	ND	11	
Ethylbenzene	*1	•	H		0.0500	ND	н	
Xylenes (total)	Ħ	0	11		0.100	ND	**	
Surrogate: 4-BFB (FID)	н	- "	"	50.0-150		78.6	%	
Surrogate: 4-BFB (PID)	п	"	"	50.0-150		<b>92</b> .7	"	
02SB-03D			B9062	34-24			<u>Soil</u>	
Gasoline Range Hydrocarbons	0690565	6/17/99	6/24/99		5.00	ND	mg/kg dry	
Benzene		**	H		0.0500	ND	N	
Toluene	ti	"	"		0.0500	ND	н	
Ethylbenzene	n	•	н		0.0500	ND	*	
Xylenes (total)	**	"	н		0.100	ND	,,	
Surrogate: 4-BFB (FID)	н	"		50.0-150		85.1	%	
Surrogate: 4-BFB (PID)	"	**	**	50.0-150		91.6	**	
- · ·								

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IT Corporation - Renton Project: Time Oil #2750 Sampled: 6/7/99 555 South Renton Village Place, Ste 700 Project Number: 783336 Received: 6/8/99 Renton, WA 98055 Project Manager: Jerry Harris Reported: 6/25/99 11:31

### Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up) North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Note
02SB-07A			B9062	34-01			Soil	
Diesel Range Hydrocarbons	0690406	6/11/99	6/13/99	<u> </u>	10.0	61.8	mg/kg dry	
Lube Oil Range Hydrocarbons	н	"	н		25.0	53.1	"	
Surrogate: 2-FBP	,,		"	50.0-150		110	%	
02SB-07B			B9062	34-0 <u>2</u>			Soil	
Diesel Range Hydrocarbons	0690406	6/11/99	6/13/99		10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons		"	u		25.0	ND	4	
Surrogate: 2-FBP	<i>H</i>	- "	11	50.0-150	<del></del>	64.0	%	
02SB-08A			B9062	3 <u>4-03</u>			<u>Soil</u>	
Diesel Range Hydrocarbons	0690406	6/11/99	6/13/99		10.0	127	mg/kg dry	
Lube Oil Range Hydrocarbons	н	•	u		25.0	428		
Surrogate: 2-FBP	n	#	"	50.0-150		107	%	
02SB-08B			B9062	<u>34-04</u>			Soil	
Diesel Range Hydrocarbons	0690536	6/16/99	6/17/99		10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	**	**	•		25.0	38.1		
Surrogate: 2-FBP	и	и	"	50.0-150		69.0	%	
02SB-06A			B9062	<u>34-05</u>			<u>Soil</u>	
Diesel Range Hydrocarbons	0690536	6/11/99	6/17/99		10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	**	*	11		25.0	ND	**	
Surrogate: 2-FBP	"	"	"	50.0-150	·	83.7	%	
02SB-06B			B9062	<u>34-06</u>			<u>Soil</u>	
Diesel Range Hydrocarbons	0690536	6/11/99	6/17/99		10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	п	и	11		25.0	ND	4	
Surrogate: 2-FBP	н	"	"	50.0-150		69.1	%	
02SB-01A			B9062	3 <u>4-07</u>			Soil	
Diesel Range Hydrocarbons	0690536	6/11/99	6/18/99		30.0	540	mg/kg dry	4
Lube Oil Range Hydrocarbons	Ħ	н	**		75.0	1320		
Surrogate: 2-FBP	"	"	"	50.0-150		93.7	%	_
02SB-01B			B9062	34-08			Soil	
Diesel Range Hydrocarbons	0690536	6/11/99	6/18/99		30.0	285	mg/kg dry	4
Lube Oil Range Hydrocarbons	*	et .	**		75.0	712	<b>"</b>	
Surrogate: 2-FBP	11	er	n	50.0-150		82.9	%	

North Creek Analytical - Bothell



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1T Corporation - Renton Time Oil #2750 Project: 555 South Renton Village Place, Ste 700 Project Number: 783336 Renton, WA 98055

Received: 6/8/99

Sampled: 6/7/99

Project Manager: Jerry Harris Reported: 6/25/99 11:31

## Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up) North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
02SB-01C			B9062.	24.00			<u>Soil</u>	
Diesel Range Hydrocarbons	0690536	6/11/99	6/17/99	<del>24-02</del>	10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	"	0/11/99	0/1 <i>1199</i> "		25.0	ND ND	mg/kg dry	
Surrogate: 2-FBP	<del></del>			50.0-150	23.0	78.5	%	
Surrogaie. 2-FDF				30.0-130		70.3	70	
02SB-01D			B9062.	<u>34-10</u>			<u>Soil</u>	
Diesel Range Hydrocarbons	0690536	6/11/99	6/18/99		10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	n	n	•		25.0	31.2	10	
Surrogate: 2-FBP	и	d	и	50.0-150		104	%	
02SB-01E			B9062	34-11			Soil	
Diesel Range Hydrocarbons	0690536	6/11/99	6/17/99	<del></del>	10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	4	0	"		25.0	ND	"	
Surrogate: 2-FBP	u	"	"	50.0-150		78.2	%	
04CB 04 4			D00.00	• • • •			0.11	
02SB-02A	0.000.00		<u>B9062.</u>	<u> 54-12</u>			Soil	
Diesel Range Hydrocarbons	0690536	6/11/99	6/17/99		10.0	14.0	mg/kg dry	4
Lube Oil Range Hydrocarbons	ta ta	<u>"</u>			25.0	42.7		
Surrogate: 2-FBP	,	"	,,	50.0-150		75.2	%	
02SB-02B			B9062	<u>34-13</u>			Soil	
Diesel Range Hydrocarbons	0690536	6/11/99	6/17/99		10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	*	"	11		25.0	ND	**	
Surrogate: 2-FBP	"	14	"	50.0-150		90.0	%	
02SB-02C			B9062	34_14			Soil	
Diesel Range Hydrocarbons	0690536	6/11/99	6/17/99	<del>21 1.1</del>	10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	"		11		25.0	ND	"	
Surrogate: 2-FBP	<i>n</i>	W	Ħ	50.0-150		59.4	%	
02SB-02D			DONES	34 15			Soil	
Diesel Range Hydrocarbons	0690536	6/11/99	<u>B9062</u> 6/17/99	<del>34-13</del>	10.0	ND	mg/kg dry	
<del>-</del> -	# 0\$CO\$CO	0/11/ <del>9</del> 9	0/1 <i>//99</i>		25.0	ND ND	mg/kg dry	
Lube Oil Range Hydrocarbons  Surrogate: 2-FBP		"	"	50.0-150	23.0	89.4	%	
-								
02SB-05A			<u>B9062</u>	<u>34-16</u>			Soil	_
Diesel Range Hydrocarbons	0690536	6/11/99	6/17/99		10.0	17.6	mg/kg dry	4
Lube Oil Range Hydrocarbons		···	····		25.0	64.5		
Surrogate: 2-FBP	м	N	w	50.0-150		67.9	%	

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\*Refer to end of report for text of notes and definitions.



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IT Corporation - Renton Project: Time Oil #2750 Sampled: 6/7/99 555 South Renton Village Place, Ste 700 Project Number: 783336 Received: 6/8/99 Renton, WA 98055 Project Manager: Jerry Harris Reported: 6/25/99 11:31

#### Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up) North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
02SB-05B			B9062	34 17			Soil	
Diesel Range Hydrocarbons	0690536	6/11/99	6/17/99	<u>34-17</u>	10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	"	0/11/77	0/1//99		25.0	ND	nig/kg diy	
Surrogate: 2-FBP	n	"	"	50.0-150		94.1	%	
02SB-05C			B9062	34-18			Soil	
Diesel Range Hydrocarbons	0690536	6/11/99	6/17/99	<del> x</del>	10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	**	11	11		25.0	ND	4	
Surrogate: 2-FBP	Ħ	ie	et	50.0-150		68.6	%	·
02SB-04B			B9062	34-19			Soil	
Diesel Range Hydrocarbons	0690536	6/16/99	6/17/99		10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	11	It	m		25.0	ND	"	
Surrogate: 2-FBP	"	н	и	50.0-150		90.4	%	<del></del>
02SB-04C			B9062	34-20			Soil	
Diesel Range Hydrocarbons	0690536	6/16/99	6/17/99		10.0	15.2	mg/kg dry	4
Lube Oil Range Hydrocarbons	и	п	*		25.0	62.5	*	
Surrogate: 2-FBP	#	п	н	50.0-150		76.4	%	
02SB-03A			B9062	34-21			Soil	
Diesel Range Hydrocarbons	0690536	6/16/99	6/17/99		10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	н	11	17		25.0	ND	**	
Surrogate: 2-FBP	"	н	"	50.0-150		84.6	%	
02SB-03B			B9062.	<u>34-22</u>			Soil	
Diesel Range Hydrocarbons	0690536	6/16/99	6/17/99		10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	**	11	n		25.0	ND		
Surrogate: 2-FBP	н	**	н	50.0-150		68.9	%	
02SB-03C			B9062	<u>34-23</u>			<u>Soil</u>	
Diesel Range Hydrocarbons	0690536	6/16/99	6/17/99		10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	# _	11	H		25.0	ND	tı	
Surrogate: 2-FBP	- "	"	"	50.0-150		92.0	%	_
02SB-03D			B9062	34-24			<u>Soil</u>	
Diesel Range Hydrocarbons	0690555	6/17/99	6/19/99		10.0	11.3	mg/kg dry	4
Lube Oil Range Hydrocarbons	#	Ħ	**		25.0	38.8		
Surrogate: 2-FBP	"	"	п	50.0-150		71.8	%	

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IT Corporation - Renton

555 South Renton Village Place, Ste 700

Project Number: 783336

Project: Time Oil #2750

Sampled: 6/7/99

Renton, WA 98055

Received: 6/8/99

Project Manager: Jerry Harris

Reported: 6/25/99 11:31

## Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up) North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
02SB-08H2O			B90623	R4_25			Water	
Diesel Range Hydrocarbons	0690369	6/11/99	6/14/99	<del>94-23</del>	0.250	0.668	mg/l	
Lube Oil Range Hydrocarbons	"	11	U/14/77		0.500	ND		
Surrogate: 2-FBP	н		· r	50.0-150		71.6	%	<u>-</u>
02SB-07H2O			B90623	<u>34-26</u>			Water	
Diesel Range Hydrocarbons	0690369	6/11/99	6/14/99		0.250	1.07	mg/l	
Lube Oil Range Hydrocarbons	н	H	H .		0.500	0.626	н	
Surrogate: 2-FBP	H	n	"	50.0-150		108	%	
02SB-06H2O			B9062.	<u>34-27</u>			Water	
Diesel Range Hydrocarbons	0690369	6/11/99	6/14/99		0.250	0.456	mg/l	
Lube Oil Range Hydrocarbons	**	н	**		0.500	ND	••	
Surrogate: 2-FBP	н	#	<i>H</i>	50.0-150		72.8	%	
02SB-02H2O			B9062.	<u>34-28</u>			<u>Water</u>	
Diesel Range Hydrocarbons	0690369	6/11/99	6/14/99		0.250	3.12	mg/l	
Lube Oil Range Hydrocarbons	11	11	*		0.500	ND	**	
Surrogate: 2-FBP	**	н	н	50.0-150		117	%	
02SB-05H2O			B9062;	<u>34-29</u>			Water	
Diesel Range Hydrocarbons	0690369	6/11/99	6/14/99		0.250	0.865	mg/I	
Lube Oil Range Hydrocarbons	ti .	н	ff		0.500	ND	**	
Surrogate: 2-FBP	"	.,,	н	50.0-150		69.9	%	
02SB-04H2O			B9062.	<u>34-30</u>			Water	
Diesel Range Hydrocarbons	0690369	6/11/99	6/14/99		0.250	0.867	mg/l	
Lube Oil Range Hydrocarbons	ff.	H	m		0.500	0.503	"	
Surrogate: 2-FBP	"	н	н	50.0-150		109	%	
02SB-03H2O			B9062:	34-31			Water	
Diesel Range Hydrocarbons	0690419	6/12/99	6/14/99		0.250	1.07	mg/l	5
Lube Oil Range Hydrocarbons	н	"	H		0.500	ND	"	
Surrogate: 2-FBP	"	.,,	H	50.0-150		87.7	%	_

North Creek Analytical - Bothell



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IT Corporation - Renton 555 South Renton Village Place, Stc 700 Renton, WA 98055

Project: Time Oil #2750 Project Number: 783336 Project Manager: Jerry Harris

Sampled: 6/7/99 Received: 6/8/99

Reported: 6/25/99 11:31

### Total Metals by EPA 6000/7000 Series Methods North Creek Analytical - Bothell

A 1	Batch	Date	Date	Specific	Reporting	<b>.</b>		.,
Analyte	Number	Prepared	Analyzed	Method	Limit	Result	Units	Notes*
02SB-07A			B90623	§4-01			<u>Soil</u>	
Lead	0690627	6/19/99	6/21/99	EPA 6020	0.500	7.85	mg/kg dry	
02SB-07B			B90623	34-02			<u>Soil</u>	
Lead	0690627	6/19/99	6/21/99	EPA 6020	0.500	2.40	mg/kg dry	
02SB-08A			B90623	<u>34-03</u>			<u>Soil</u>	
Lead	0690627	6/19/99	6/21/99	EPA 6020	0.500	10.6	mg/kg dry	
02SB-08B			B90623	<u> 14-04</u>			<u>Soil</u>	
Lead	0690627	6/19/99	6/22/99	EPA 6020	0.500	3.02	mg/kg dry	
02SB-06A			B90623	<u>34-05</u>			<u>Soil</u>	
Lead	0690627	6/19/99	6/22/99	EPA 6020	0.500	2.78	mg/kg dry	
02SB-06B			B90623	<u> 34-06</u>			Soil	
Lead	0690627	6/19/99	6/22/99	EPA 6020	0.500	2.20	mg/kg dry	
02SB-01A			B90623				Soil	
Lead	0690627	6/19/99	6/22/99	EPA 6020	0.500	11.1	mg/kg dry	
02SB-01B			B90623	<u>}4-08</u>			Soil	
Lead	0690627	6/19/9 <del>9</del>	6/22/99	EPA 6020	0.500	15.1	mg/kg dry	
02SB-01C			B90623	<u>34-09</u>			<u>Soil</u>	
Lead	0690627	6/19/99	6/22/99	EPA 6020	0.500	2.80	mg/kg dry	
02SB-01D			B90623	<u>34-10</u>			Soil	
Lead	0690627	6/19/99	6/22/99	EPA 6020	0.500	6.03	mg/kg dry	
02SB-01E			B90623	<u>34-11</u>			<u>Soil</u>	
Lead	0690627	6/19/99	6/22/99	EPA 6020	0.500	6.18	mg/kg dry	
02SB-02A			B90623	<u>34-12</u>			Soil	
Lead	0690627	6/19/99	6/22/99	EPA 6020	0.500	22.8	mg/kg dry	
02SB-02B			B90623	3 <u>4-13</u>			<u>Soil</u>	
Lead	0690627	6/19/99	6/22/99	EPA 6020	0.500	5.00	mg/kg dry	

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IT Corporation - Renton

555 South Renton Village Place, Ste 700

Project: Time Oil #2750

Sampled: 6/7/99

Renton, WA 98055

Project Number: 783336

Received: 6/8/99

Project Manager: Jerry Harris

Reported: 6/25/99 11:31

### Total Metals by EPA 6000/7000 Series Methods North Creek Analytical - Bothell

	Batch	Date	Date	Specific	Reporting		_	
Analyte	Number	Prepared	Analyzed	Method	Limit	Result	Units	Notes*
02SB-02C Lead	0690627	6/19/99	<b>B9062</b> ; 6/22/99	3 <b>4-14</b> EPA 6020	0.500	2.79	<u>Soil</u> mg/kg dry	
<u>02SB-02D</u> Lead	0690627	6/19/99	<u>B9062.</u> 6/22/99	34-15 EPA 6020	0.500	2.29	Soil mg/kg dry	
<u>02SB-05A</u> Lead	0690627	6/19/99	<u><b>B9062</b>:</u> 6/22/99	34-16 EPA 6020	0.500	18.0	<u>Soil</u> mg/kg dry	
<u>02SB-05B</u> Lead	0690627	6/19/99	<u><b>B9062</b>:</u> 6/22/99	34-17 EPA 6020	0.500	3.72	Soil mg/kg dry	
<u>02SB-05C</u> Lead	0690627	6/19/99	<b>B9062</b> 6/22/99	34-18 EPA 6020	0.500	4.23	Soil mg/kg dry	
02SB-04B Lead	0690627	6/19/99	<u><b>B9062</b>:</u> 6/22/99	34-19 EPA 6020	0.500	2.57	Soil mg/kg dry	
02SB-04C Lead	0690627	6/19/99	<u><b>B9062</b>;</u> 6/22/99	34-20 EPA 6020	0.500	2.97	Soil mg/kg dry	
<u>02SB-03A</u> Lead	0690627	6/19/99	<u><b>B9062</b>:</u> 6/22/99	34-21 EPA 6020	0.500	4.49	Soil mg/kg dry	
<u>02SB-03B</u> Lead	0690627	6/19/99	<u><b>B9062.</b></u> 6/21/99	34-22 EPA 6020	0.500	6.16	<u>Soil</u> mg/kg dry	
<u>02SB-03C</u> Lead	0690627	6/19/99	<u>B9062</u> 6/21/99	34-23 EPA 6020	0.500	2.99	<u>Soil</u> mg/kg dry	
02SB-03D Lead	0690627	6/19/99	<u>B9062.</u> 6/22/99	3 <u>4-24</u> EPA 6020	0.500	3.50	<u>Soil</u> mg/kg dry	

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IT Corporation - Renton

555 South Renton Village Place, Ste 700

Renton, WA 98055

Project: Time Oil #2750

Project Number: 783336

Project Manager: Jerry Harris

Sampled: 6/7/99

Received: 6/8/99

Reported: 6/25/99 11:31

### Dissolved Metals by EPA 6000/7000 Series Methods North Creek Analytical - Bothell

	Batch	Date	Date	Specific	Reporting			
Analyte	Number	Prepared	Analyzed	Method	Limit	Result	Units	Notes*
02SB-08H2O			B9062;	34-25			<u>Water</u>	
Lead	0690388	6/11/99	6/15/99	EPA 6020	0.00100	ND	mg/l	
02SB-07H2O			B9062.	<u>34-26</u>			Water	
Lead	0690388	6/11/99	6/15/99	EPA 6020	0.00100	ND	mg/l	
02SB-06H2O			B9062.	<u>34-27</u>			Water	
Lead	0690388	6/11/99	6/15/99	EPA 6020	0.00100	ND	mg/l	
02SB-05H2O			B9062	<u>34-29</u>			<u>Water</u>	
Lead	0690388	6/11/99	6/15/99	EPA 6020	0.00100	0.00129	mg/l	
02SB-04H2O			B9062.	<u>34-30</u>			<u>Water</u>	
Lead	0690388	6/11/99	6/15/99	EPA 6020	0.00100	ND	mg/i	
02SB-03H2O			B9062.	<u>34-31</u>			<u>Water</u>	
Lead	0690388	6/11/99	6/15/99	EPA 6020	0.00100	ND	mg/l	



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IT Corporation - Renton Project: Time Oil #2750 Sampled: 6/7/99 555 South Renton Village Place, Ste 700 Project Number: 783336 Received: 6/8/99 Renton, WA 98055 Project Manager: Jerry Harris Reported: 6/25/99 11:31

#### Gasoline Hydrocarbons per NWTPH-Gx Method and BTEX per EPA Method 8020A North Creek Analytical - Spokane

	Batch	Date	Date	Surrogate	Reporting		<del></del>	
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
ASSE ANTIGO								
02SB-08H2O	2.5222.52		<u>B9062.</u>	<u>34-25</u>			<u>Water</u>	
Benzene	0690058	6/17/99	6/18/99		0.500	1.59	ug/i	
Toluene		н	**		0.500	1.25	н	
Ethylbenzene	71	н	10		0.500	ND	"	
Xylenes (total)	"	H	D		1.00	2.78	#	
Gasoline Range Hydrocarbons	t1	Pf	11		50.0	128	11	
Surrogate: 4-BFB (FID)	n	и	"	50.0-150		98.0	%	
Surrogate: 4-BFB (PID)	n	**	**	<i>53.0-142</i>		74.8	"	
02SB-07H2O			B9062.	34-26			<u>Water</u>	
Benzene	0690058	6/17/99	6/18/99		0.500	ND	ug/l	
Toluene	#	"	0		0.500	ND	"	
Ethylbenzene	0	н	н		0.500	ND	•	
Xylenes (total)	**	11	**		1.00	ND	tr	
Gasoline Range Hydrocarbons	**		**		50.0	ND		
Surrogate: 4-BFB (FID)	**	**	"	50.0-150		87.2	<del></del> %	_
Surrogate: 4-BFB (PID)	н	*	"	53.0-142		86.0	"	
02SB-06H2O			B9062	34-27			Water	
Benzene	0690058	6/17/99	6/18/99		0.500	ND	ug/l	
Toluene	•	11	11		0.500	1.11	"	
Ethylbenzene			н		0.500	0.585	41	
Xylenes (total)	*	**	**		1.00	4.03	11	
Gasoline Range Hydrocarbons	IT	#	**		50.0	103	P	
Surrogate: 4-BFB (FID)	*	n	"	50.0-150		95.2		
Surrogate: 4-BFB (PID)	#	"	"	53.0-142		68.8	н	
02SB-02H2O			B9062	34-28			<u>Water</u>	
Benzene	0690058	6/17/99	6/18/99		50.0	214	ug/l	
Toluene	*	H	н		50.0	155	п п	
Ethylbenzene	11	•			50.0	459	11	
Xylenes (total)	rt .				100	1110	10	
Gasoline Range Hydrocarbons	н	Ħ	н		5000	8260	rŧ	
Surrogate: 4-BFB (FID)		- <b>n</b>	<del>- ,,</del>	50.0-150	2000	104	%	
Surrogate: 4-BFB (PID)	n	"	,,	53.0-142		85.6	70 "	
ATCD ASUSA			****	34.00			***	
02SB-05H2O	0/000	<i>(1)</i> = (0.0	<u>B9062</u> ;	<u> </u>			<u>Water</u>	
Benzene	0690058	6/17/99	6/18/99		0.500	19.9	ug/l	
Toluene	<b>4</b>	**	н		0.500	4.18	**	

North Creek Analytical - Bothell



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1T Corporation - Renton Project: Time Oil #2750 Sampled: 6/7/99 555 South Renton Village Place, Ste 700 Project Number: 783336 Received: 6/8/99 Renton, WA 98055 Project Manager: Jerry Harris Reported: 6/25/99 11:31

## Gasoline Hydrocarbons per NWTPH-Gx Method and BTEX per EPA Method 8020A North Creek Analytical - Spokane

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
02SB-05H2O (continued)			B90623	34-29			<u>Water</u>	
Ethylbenzene	0690058	6/17/99	6/18/99	<del></del>	0.500	19.9	ug/l	
Xylenes (total)	"	"	"		1.00	20.2	ug/t	
Gasoline Range Hydrocarbons	н	н	и		50.0	685	<b>5</b> 1	
Surrogate: 4-BFB (FID)	"	#		50.0-150	30.0	NR	%	6
Surrogate: 4-BFB (PID)	*	"	"	53.0-142		122	"	J
02SB-04H2O			<u>B9062</u> 3	34-30			Water	
Benzene	0690058	6/17/99	6/18/99	<del>_</del>	0.500	59.8	ug/l	
Toluene	"	a			0.500	2.28	"	
Ethylbenzene	H	н	lt .		0.500	1.62	91	
Xylenes (total)	**	*	н		1.00	8.18	**	
Gasoline Range Hydrocarbons	#	н	#		50.0	55.6	<b>1</b> 1	
Surrogate: 4-BFB (FID)	Ħ	н	"	50.0-150		79.2	%	
Surrogate: 4-BFB (PID)	Ħ	#	н	53.0-142		67.6	"	
02SB-03H2Q			B90623	3 <u>4-31</u>			<u>Water</u>	
Benzene	0690058	6/17/99	6/18/99	<del>_</del>	0.500	6.64	ug/l	
Toluene		47	11		0.500	1.36	- <del></del>	
Ethylbenzene		**	0		0.500	0.617	B†	
Xylenes (total)	и	ŧ	n		1.00	1.93		
Gasoline Range Hydrocarbons	n	•	II .		50.0	ND	•	
Surrogate: 4-BFB (FID)	- #	"	"	50.0-150		81.2	%	<del>-</del>
Surrogate: 4-BFB (PID)	"	*	н	53.0-142		66.4	n	

North Creek Analytical - Bothell



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IT Corporation - Renton

555 South Renton Village Place, Ste 700

Renton, WA 98055

Project: Time Oil #2750

Project Number: 783336

Project Manager: Jerry Harris

Sampled: 6/7/99

Received: 6/8/99

Reported: 6/25/99 11:31

## **Dry Weight Determination** North Creek Analytical - Bothell

Lab ID	Matrix	Result	Units
B906234-01	Soil	78.7	%
B906234-02	Soil	76.6	%
B906234-03	Soil	83.4	%
B906234-04	Soil	79.8	%
B906234-05	Soil	80.1	%
B906234-06	Soil	80.0	%
B906234-07	Soil	84.5	%
B906234-08	Soil	88.2	%
B906234-09	Soil	83.5	%
B906234-10	Soil	82.9	%
B906234-11	Soil	81.6	%
B906234-12	Soil	81.9	%
B906234-13	Soil	83.4	%
B906234-14	Soil	78.9	%
B906234-15	Soil	81.9	%
В906234-16	Soil	78.5	%
B906234-17	Soil	80.2	%
B906234-18	Soil	81.7	%
B906234-19	Soil	79.6	%
	B906234-01 B906234-02 B906234-03 B906234-04 B906234-05 B906234-06 B906234-07 B906234-09 B906234-10 B906234-11 B906234-12 B906234-15 B906234-16 B906234-17 B906234-17	B906234-01 Soil B906234-02 Soil B906234-03 Soil B906234-04 Soil B906234-05 Soil B906234-06 Soil B906234-07 Soil B906234-08 Soil B906234-09 Soil B906234-10 Soil B906234-11 Soil B906234-12 Soil B906234-13 Soil B906234-14 Soil B906234-15 Soil B906234-16 Soil B906234-16 Soil B906234-17 Soil	B906234-01       Soil       78.7         B906234-02       Soil       76.6         B906234-03       Soil       83.4         B906234-04       Soil       79.8         B906234-05       Soil       80.1         B906234-06       Soil       80.0         B906234-07       Soil       84.5         B906234-08       Soil       88.2         B906234-09       Soil       83.5         B906234-10       Soil       82.9         B906234-11       Soil       81.6         B906234-12       Soil       81.9         B906234-13       Soil       83.4         B906234-15       Soil       81.9         B906234-15       Soil       81.9         B906234-16       Soil       78.5         B906234-17       Soil       80.2         B906234-18       Soil       81.7

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IT Corporation - Renton 555 South Renton Village Place, Ste 700

Project: Time Oil #2750

Sampled: 6/7/99

Renton, WA 98055

Project Number: 783336

Received: 6/8/99

Project Manager: Jerry Harris Reported: 6/25/99 11:31

### Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes
02SB-05C			B9062	34-18			Soil	3
Gasoline Range Hydrocarbons	0690523	6/16/99	6/23/99	<del></del>	5.00	ND	mg/kg dry	-
Benzene	n	**	tr		0.0500	ND	H	
Toluene	**	**	н		0.0500	ND	11	
Ethylbenzene	n	н	н		0.0500	ND	n .	
Xylenes (total)	n	n	**		0.100	ND	п	
Surrogate: 4-BFB (FID)	"	"	**	50.0-150		81.8	%	
Surrogate: 4-BFB (PID)	u	*	"	50.0-150		96.5	"	
02SB-04B			B9062	<del>34-19</del>			<u>Soil</u>	3
Gasoline Range Hydrocarbons	0690523	6/16/99	6/23/99		5.00	ND	mg/kg dry	•
Benzene	H	n	11		0.0500	ND	"	
Toluene	#	m .	**		0.0500	ND	tf .	
Ethylbenzene	*	11	**		0.0500	ND	**	
Xylenes (total)	*	11	••		0.100	ND	**	
Surrogate: 4-BFB (FID)	"	н		50.0-150		75.1	%	
Surrogate: 4-BFB (PID)	"	*	"	50.0-150		91.1	"	
02SB-04C			B9062	<u>34-20</u>			Soil	<u>3</u>
Gasoline Range Hydrocarbons	0690523	6/16/99	6/23/99		5.00	ND	mg/kg dry	
Benzene	#	H	**		0.0500	ND	•	
Toluene	41	11	н		0.0500	ND	#	
Ethylbenzene	11	н	н		0.0500	ND	Ħ	
Xylenes (total)	11	н	**		0.100	ND	н	
Surrogate: 4-BFB (FID)	"	*	#	50.0-150		70.2	%	
Surrogate: 4-BFB (PID)	н	H	"	50.0-150		84.7	#	
02SB-03A			B9062	34-21			Soil	3
Gasoline Range Hydrocarbons	0690523	6/16/99	6/23/99		5.00	ND	mg/kg dry	
Benzene	11	H	Ħ		0.0500	ND	11	
Toluene	н	*	**		0.0500	ND	"	
Ethylbenzene	н	#	"		0.0500	ND	n	
Xylenes (total)		Ħ	*		0.100	ND	m .	
Surrogate: 4-BFB (FID)	"	n	"	50.0-150		74.0	%	
Surrogate: 4-BFB (PID)	n	"	"	50.0-150		91.9	ee	
02SB-03B			B9062	34-22			Soil	3
Gasoline Range Hydrocarbons	0690523	6/16/99	6/23/99		5.00	ND	mg/kg dry	
Benzene	H	*	ш		0.0500	ND	н	

North Creek Analytical - Bothell

<sup>\*</sup>Refer to end of report for text of notes and definitions.



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IT Corporation - Renton Project: Time Oil #2750 Sampled: 6/7/99 555 South Renton Village Place, Ste 700 Project Number: 783336 Received: 6/8/99

Renton, WA 98055 Project Manager: Jerry Harris Reported: 6/25/99 11:31

### **Dry Weight Determination** North Creek Analytical - Bothell

Sample Name	Lab ID	Matrix	Result	Units
02SB-04C	B906234-20	Soil	77.6	%
02SB-03A	B906234-21	Soil	83.2	%
02SB-03B	B906234-22	Soil	81.5	9,0
02SB-03C	B906234-23	Soil	78.4	9.6
02SB-03D	B906234-24	Soil	76.2	96

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IT Corporation - Renton

Project: Time Oil #2750

Sampled: 6/7/99

555 South Renton Village Place, Ste 700 Renton, WA 98055

Project Number: 783336 Project Manager: Jerry Harris Received: 6/8/99

Reported: 6/25/99 11:31

Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B/Quality Control

North Creek Analytical - Bothell

Batch: .0690370   Date Prepared: 6/11/99   Extraction Method: EPA 5030B (MeOH)		Date	Spike	Sample	QC	R	eporting Limit	Recov.	RPD	RPD
Blank	Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	% Notes*
Blank	Ratch: 0600370	Data Propo	rad: 6/11	<i>1</i> 00		Fretra atio	aa Mashada ED	A EASAB	(MaOU)	
Gasoline Range Hydrocarbons   G20/99   ND   mg/kg dry   5.00				133		Extraction	on Method: Er	A SUSUB	HMEOH	Į.
Benzene	——————————————————————————————————————		<u>LKI</u>		NID		. 500			
Toluene " ND " 0.0500 Ethylbenzene " ND " 0.0500 Ethylbenzene " ND " 0.0500 Surrogate: 4BFB (FID) " 4.00 4.06 " 50.0-150 10/ Surrogate: 4BFB (FID) " 4.00 4.21 " 50.0-150 10/ Surrogate: 4BFB (FID) " 4.00 4.21 " 50.0-150 10/ Surrogate: 4BFB (FID) " 4.00 4.21 " 50.0-150 10/ Surrogate: 4BFB (FID) " 4.00 4.21 " 50.0-150 10/ Surrogate: 4BFB (FID) " 4.00 4.21 " 50.0-150 10/ Surrogate: 4BFB (FID) " 4.00 4.20 " 50.0-150 10/ Surrogate: 4BFB (FID) " 4.00 4.20 " 50.0-150 10/ Surrogate: 4BFB (FID) " 4.00 4.20 " 50.0-150 10/ Surrogate: 4BFB (FID) " 4.00 50.0-150 10/ Surrogate: 4BFB (FID) " 4.92 4.15 " 50.0-150 84.3  Duplicate 0690370-DUP2 B906191-08 Gasoline Range Hydrocarbons 6/22/99 5.39 ND mg/kg dry 50.0-150 84.4  Matrix Spike 0690370-MS1 B906191-07 Benzene 6/22/99 0.612 ND 0.499 mg/kg dry 60.0-140 81.5 Toluene " 0.612 ND 0.497 " 60.0-140 81.2 Ethylbenzene " 0.612 ND 0.497 " 60.0-140 82.6  Surrogate: 4BFB (FID) " 4.90 4.29 " 50.0-150 87.6  Matrix Spike Dup 0690370-MS1 B906191-07 Benzene 6/22/99 0.612 ND 0.521 " 60.0-140 82.6  Surrogate: 4BFB (FID) " 4.90 0.513 mg/kg dry 60.0-140 83.8 20.0 2.78  Matrix Spike Dup 0690370-MSD1 B906191-07  Benzene 6/22/99 0.612 ND 0.513 mg/kg dry 60.0-140 83.5  Surrogate: 4BFB (FID) " 4.90 0.499 " 60.0-140 83.5  Surrogate: 4BFB (FID) " 4.90 0.499 " 60.0-140 83.2 20.0 0.369  Ethylbenzene 9.0.612 ND 0.513 mg/kg dry 60.0-140 83.8 20.0 2.78  Matrix Spike Dup 0690370-MSD1 B906191-07  Benzene 6/22/99 0.612 ND 0.513 mg/kg dry 60.0-140 83.8 20.0 2.78  Ethylbenzene 9.0.612 ND 0.513 mg/kg dry 60.0-140 83.3 20.0 0.369  Ethylbenzene 9.0.612 ND 0.516 60.0-140 84.3 20.0 0.369  Ethylbenzene 9.0.612 ND 0.516 60.0-140 84.3 20.0 0.369  Ethylbenzene 9.0.612 ND 0.516 60.0-140 84.3 20.0 0.369  Ethylbenzene 9.0.612 ND 0.516 9.00-140 84.3 2	• •						-			
Ethylbenzene Xylenes (total) "										
ND	- +	11								
Surrogate: 4-BFB (FID)	•	11								
Comparison of the Image		<del></del>	4.00	·· · -						
Casoline Range Hydrocarbons   6/20/99   25.0   23.8   mg/kg dry   70.0-130   95.2		**								
Gasoline Range Hydrocarbons   6/20/99   25.0   23.8   mg/kg dry   70.0-130   95.2	Surrogate. 4-bi b (11b)		4.00		4.21		30.0-130	103		
Duplicate   O690370-DUP1   B906191-01   B906191-01   B906191-01   B906191-01   B906191-01   B906191-01   B906191-01   B906191-01   B906191-01   B906191-02   B906191-02   B906191-02   B906191-03   B906191-07   B9	LCS	0690370-B	<u>S1</u>							
Duplicate   O690370-DUP1   B906191-01   Surrogate: 4-BFB (FID)	Gasoline Range Hydrocarbons	6/20/99	25.0		23.8	mg/kg dr	y 70.0-130	95.2		
Sasoline Range Hydrocarbons   6/21/99   5.14   ND   mg/kg dry   50.0	Surrogate: 4-BFB (FID)	n	4.00		4.20	"	50.0-150	105		
Sasoline Range Hydrocarbons   6/21/99   5.14   ND   mg/kg dry   50.0	Duplicate	0690370-D	UPI F	3906191-01						
Surrogate: 4-BFB (FID)	Gasoline Range Hydrocarbons	•			ND	me/ke dr	v		50.0	
Sasoline Range Hydrocarbons   6/22/99   5.39   ND   mg/kg dry   50.0	Surrogate: 4-BFB (FID)	"	4.92			"		84.3		
Sasoline Range Hydrocarbons   6/22/99   5.39   ND   mg/kg dry   50.0	Duplicate	0690370-D	UP2 F	3906191-08						
Matrix Spike         0690370-MS1         B906191-07           Benzene         6/22/99         0.612         ND         0.499         mg/kg dry         60.0-140         81.5           Toluene         " 0.612         ND         0.497         " 60.0-140         81.2           Ethylbenzene         " 0.612         ND         0.521         " 60.0-140         85.1           Xylenes (total)         " 1.84         ND         1.52         " 60.0-140         82.6           Surrogate: 4-BFB (PID)         " 4.90         4.29         " 50.0-150         87.6           Matrix Spike Dup         0690370-MSD1         B906191-07         Benzene         6/22/99         0.612         ND         0.513         mg/kg dry         60.0-140         83.8         20.0         2.78           Toluene         " 0.612         ND         0.499         " 60.0-140         81.5         20.0         0.369           Ethylbenzene         " 0.612         ND         0.516         " 60.0-140         81.5         20.0         0.369           Ethylbenzene         " 0.612         ND         0.516         " 60.0-140         83.2         20.0         0.724           Surrogate: 4-BFB (PID)         " 4.90         4.20	— <del></del>				ND	me/ke dr	v		50.0	
Benzene 6/22/99 0.612 ND 0.499 mg/kg dry 60.0-140 81.5 Toluene " 0.612 ND 0.497 " 60.0-140 81.2 Ethylbenzene " 0.612 ND 0.521 " 60.0-140 85.1 Xylenes (total) " 1.84 ND 1.52 " 60.0-140 82.6 Surrogate: 4-BFB (PID) " 4.90 4.29 " 50.0-150 87.6  Matrix Spike Dup Benzene 6/22/99 0.612 ND 0.513 mg/kg dry 60.0-140 83.8 20.0 2.78 Toluene " 0.612 ND 0.499 " 60.0-140 81.5 20.0 0.369 Ethylbenzene " 0.612 ND 0.516 " 60.0-140 84.3 20.0 0.945 Xylenes (total) " 1.84 ND 1.53 " 60.0-140 83.2 20.0 0.724 Surrogate: 4-BFB (PID) " 4.90 4.20 " 50.0-150 85.7  Batch: 0690523  Date Prepared: 6/16/99 Extraction Method: EPA 5030B (MeOH) Blank	Surrogate: 4-BFB (FID)		4.84			"		81.4		
Benzene 6/22/99 0.612 ND 0.499 mg/kg dry 60.0-140 81.5 Toluene " 0.612 ND 0.497 " 60.0-140 81.2 Ethylbenzene " 0.612 ND 0.521 " 60.0-140 85.1 Xylenes (total) " 1.84 ND 1.52 " 60.0-140 82.6 Surrogate: 4-BFB (PID) " 4.90 4.29 " 50.0-150 87.6  Matrix Spike Dup Benzene 6/22/99 0.612 ND 0.513 mg/kg dry 60.0-140 83.8 20.0 2.78 Toluene " 0.612 ND 0.499 " 60.0-140 81.5 20.0 0.369 Ethylbenzene " 0.612 ND 0.516 " 60.0-140 84.3 20.0 0.945 Xylenes (total) " 1.84 ND 1.53 " 60.0-140 83.2 20.0 0.724 Surrogate: 4-BFB (PID) " 4.90 4.20 " 50.0-150 85.7  Batch: 0690523  Date Prepared: 6/16/99 Extraction Method: EPA 5030B (MeOH) Blank	Matrix Spike	0690370-M	IS1 E	3906191-07						
Toluene " 0.612 ND 0.497 " 60.0-140 81.2 Ethylbenzene " 0.612 ND 0.521 " 60.0-140 85.1  Xylenes (total) " 1.84 ND 1.52 " 60.0-140 82.6  Surrogate: 4-BFB (PID) " 4.90 4.29 " 50.0-150 87.6  Matrix Spike Dup 0690370-MSD1 B906191-07  Benzene 6/22/99 0.612 ND 0.513 mg/kg dry 60.0-140 83.8 20.0 2.78  Toluene " 0.612 ND 0.499 " 60.0-140 81.5 20.0 0.369  Ethylbenzene " 0.612 ND 0.516 " 60.0-140 84.3 20.0 0.945  Xylenes (total) " 1.84 ND 1.53 " 60.0-140 83.2 20.0 0.724  Surrogate: 4-BFB (PID) " 4.90 4.20 " 50.0-150 85.7  Batch: 0690523 Date Prepared: 6/16/99  Blank 0690523-BLK1	Benzene				0.499	mg/kg dr	y 60.0-140	81.5		
Ethylbenzene " 0.612 ND 0.521 " 60.0-140 85.1 Xylenes (total) " 1.84 ND 1.52 " 60.0-140 82.6 Surrogate: 4-BFB (PID) " 4.90 4.29 " 50.0-150 87.6   Matrix Spike Dup 0690370-MSD1 B906191-07 Benzene 6/22/99 0.612 ND 0.513 mg/kg dry 60.0-140 83.8 20.0 2.78 Toluene " 0.612 ND 0.499 " 60.0-140 81.5 20.0 0.369 Ethylbenzene " 0.612 ND 0.516 " 60.0-140 84.3 20.0 0.945 Xylenes (total) " 1.84 ND 1.53 " 60.0-140 83.2 20.0 0.724 Surrogate: 4-BFB (PID) " 4.90 4.20 " 50.0-150 85.7  Batch: 0690523 Date Prepared: 6/16/99 Extraction Method: EPA 5030B (MeOH) Blank	Toluene						•			
No.   1.84   ND   1.52	Ethylbenzene	**	0.612	ND		и				
Matrix Spike Dup         0690370-MSD1         B906191-07           Benzene         6/22/99         0.612         ND         0.513         mg/kg dry         60.0-140         83.8         20.0         2.78           Toluene         "         0.612         ND         0.499         "         60.0-140         81.5         20.0         0.369           Ethylbenzene         "         0.612         ND         0.516         "         60.0-140         84.3         20.0         0.945           Xylenes (total)         "         1.84         ND         1.53         "         60.0-140         83.2         20.0         0.724           Surrogate: 4-BFB (PID)         "         4.90         4.20         "         50.0-150         85.7           Batch: 0690523         Date Prepared: 6/16/99         Extraction Method: EPA 5030B (MeOH)           Blank         0690523-BLK1	Xylenes (total)	71	1.84	ND	1.52	11	60.0-140			
Benzene 6/22/99 0.612 ND 0.513 mg/kg dry 60.0-140 83.8 20.0 2.78 Toluene " 0.612 ND 0.499 " 60.0-140 81.5 20.0 0.369 Ethylbenzene " 0.612 ND 0.516 " 60.0-140 84.3 20.0 0.945 Xylenes (total) " 1.84 ND 1.53 " 60.0-140 83.2 20.0 0.724 Surrogate: 4-BFB (PID) " 4.90 4.20 " 50.0-150 85.7  Batch: 0690523 Date Prepared: 6/16/99 Blank 0690523-BLK1	Surrogate: 4-BFB (PID)	н	4.90		4.29	n				_
Benzene 6/22/99 0.612 ND 0.513 mg/kg dry 60.0-140 83.8 20.0 2.78 Toluene " 0.612 ND 0.499 " 60.0-140 81.5 20.0 0.369 Ethylbenzene " 0.612 ND 0.516 " 60.0-140 84.3 20.0 0.945 Xylenes (total) " 1.84 ND 1.53 " 60.0-140 83.2 20.0 0.724 Surrogate: 4-BFB (PID) " 4.90 4.20 " 50.0-150 85.7  Batch: 0690523 Date Prepared: 6/16/99 Blank 0690523-BLK1	Matrix Spike Dup	0690370-M	SD1 E	906191-07						
Toluene " 0.612 ND 0.499 " 60.0-140 81.5 20.0 0.369 Ethylbenzene " 0.612 ND 0.516 " 60.0-140 84.3 20.0 0.945  Xylenes (total) " 1.84 ND 1.53 " 60.0-140 83.2 20.0 0.724  Surrogate: 4-BFB (PID) " 4.90 4.20 " 50.0-150 85.7  Batch: 0690523 Date Prepared: 6/16/99 Blank 0690523-BLK1	Benzene	6/22/99			0.513	mg/kg dr	v 60.0-140	83.8	20.0	2.78
Ethylbenzene " 0.612 ND 0.516 " 60.0-140 84.3 20.0 0.945  Xylenes (total) " 1.84 ND 1.53 " 60.0-140 83.2 20.0 0.724  Surrogate: 4-BFB (PID) " 4.90 4.20 " 50.0-150 85.7  Batch: 0690523 Date Prepared: 6/16/99 Extraction Method: EPA 5030B (MeOH)  Blank 0690523-BLK1	Toluene	н	0.612							
Xylenes (total)         "         1.84         ND         1.53         "         60.0-140         83.2         20.0         0.724           Surrogate: 4-BFB (PID)         "         4.90         4.20         "         50.0-150         85.7           Batch: 0690523         Date Prepared: 6/16/99         Extraction Method: EPA 5030B (MeOH)           Blank         0690523-BLK1	Ethylbenzene	n	0.612			н				
Surrogate: 4-BFB (PID)       " 4.90       4.20 " 50.0-150 85.7         Batch: 0690523       Date Prepared: 6/16/99       Extraction Method: EPA 5030B (MeOH)         Blank       0690523-BLK1	Xylenes (total)	Ħ	1.84			**				0.724
Blank 0690523-BLK1	Surrogate: 4-BFB (PID)	#		<u> </u>		"				
Blank 0690523-BLK1	Batch: 0690523	Date Prena	red: 6/16	/99		Extraction	on Method: EP	A 5030B	(MeOH	)
	Blank	-		<del></del>						-
	Gasoline Range Hydrocarbons				ND	mg/kg dr	y 5.00			- <del>-</del>

North Creek Analytical - Botheil

\*Refer to end of report for text of notes and definitions.



Seattle 18939-120th Avenue Nt., State 101, Bothell, WA 98011-9508 425.420.9200 | fax 425.420.9210

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541.383 9310 fax 541 382.7588

IT Corporation - Renton

Project: Time Oil #2750

Sampled: 6/7/99

555 South Renton Village Place, Ste 700

Project Number: 783336

Received: 6/8/99

Renton, WA 98055

Project Manager: Jerry Harris

Reported: 6/25/99 11:31

# Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B/Quality Control North Creek Analytical - Bothell

	Date	Spike	Sample	QC	R	eporting Limit	Recov.	RPD	RPD
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	% Notes
Blank (continued)	0690523-B	LK1							
Benzene	6/23/99			ND	mg/kg dry	0.0500			
Toluene	R			ND	"	0.0500			
Ethylbenzene	11			ND		0.0500			
Xylenes (total)	**			ND	11	0.100			
Surrogate: 4-BFB (FID)	"	4.00		3.43	"	50.0-150	85.8	_	
Surrogate: 4-BFB (PID)	"	4.00		4.02	et .	50.0-150	100		
LCS	0690523-B	S1							
Gasoline Range Hydrocarbons	6/23/99	25.0		19.7	mg/kg dry	70.0-130	78.8		
Surrogate: 4-BFB (FID)	п	4.00		3.82	"	50.0-150	95.5		
Duplicate	0690523-D	UP1 B	906234-17						
Gasoline Range Hydrocarbons	6/23/99		ND	ND	mg/kg dry	,		50.0	
Surrogate: 4-BFB (FID)	"	4.99		3.88	"	50.0-150	77.8		
<u>Duplicate</u>	0690523-D	UP2 B	906234-14						
Gasoline Range Hydrocarbons	6/23/99		ND	ND	mg/kg dry	,		50.0	
Surrogate: 4-BFB (FID)	11	5.07		3.76	"	50.0-150	74.2		
Matrix Spike	0690523-M	IS1 B	906234-04						
Benzene	6/23/99	0.626	ND	0.522	mg/kg dry	60.0-140	83.4		
Toluene	*	0.626	ND	0.560	"	60.0-140	89.5		
Ethylbenzene		0.626	ND	0.567	Ħ	60.0-140	90.6		
Xylenes (total)	*	1.88	ND	1.69	n	60.0-140	89.9		
Surrogate: 4-BFB (PID)	n	5.01		4.56	rt .	50.0-150	91.0		
Matrix Spike Dup	<u>0690523-M</u>	SD1 B	906234-04						
Benzene	6/23/99	0.626	ND	0.512	mg/kg dry	60.0-140	81.8	20.0	1.94
Toluene		0.626	ND	0.542	"	60.0-140	86.6	20.0	3.29
Ethylbenzene	m	0.626	ND	0.549	Ħ	60.0-140	87.7	20.0	3.25
Xylenes (total)	"	1.88	ND	1.63		60.0-140	86.7	20.0	3.62
Surrogate: 4-BFB (PID)	<u>"</u>	5.01		4.36	н	50.0-150	87.0		
Batch: 0690565 Blank	<u>Date Prepa</u> 0690565-B1		<u>99</u>		Extractio	n Method: EP.	A 5030B	(MeOH)	Į.

ND

ND

ND

mg/kg dry

North Creek Analytical - Bothell

Gasoline Range Hydrocarbons

Benzene

Toluene

\*Refer to end of report for text of notes and definitions.

6/23/99

5.00

0.0500

0.0500



| Seattle | 18939 120th Avenue NE, Suite 101, Bothell, WA 98011-9508 | 425.420.9200 | fax 425.420.9210 | East 11115 Montgomery, Suite B, Spokane, WA 99206-4776 | 509.924.9200 | fax 509.924.9290 | Portland | 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 | 503.906.9200 | fax 503.906.9210 | Charles Avenue | Company of the Part OR 97008-7189 | P

Bend 20354 Empire Avenue, Suite E-9, Bond, OR 97708-1883 541.383.9310 Tax 541.382.7588

IT Corporation - Renton

Project: Time Oil #2750

Project Manager: Jerry Harris

Sampled: 6/7/99

555 South Renton Village Place, Ste 700 Renton, WA 98055

Project Number: 783336

Received: 6/8/99

Reported: 6/25/99 11:31

# Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B/Quality Control

North Creek Analytical - Bothell

	Date	Spike	Sample	QC	R	eporting Limit	Recov.	RPD	RPD
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	% Notes
Blank (continued)	<u>0690565-BI</u>	<u>Ж</u> 1							
Ethylbenzene	6/23/99			ND	mg/kg dr	y <b>0.0500</b>			
Xylenes (total)	Ħ			ND	"	0.100			
Surrogate: 4-BFB (FID)	H	4.00		3.85	и	50.0-150	96.2		
Surrogate: 4-BFB (PID)	"	4.00		4.12	"	50.0-150	103		
LCS	0690565-BS	<u>51</u>							
Gasoline Range Hydrocarbons	6/21/99	25.0		20.5	mg/kg dr	y 70.0-130	82.0		
Surrogate: 4-BFB (FID)	"	4.00		4.00	"	50.0-150	100		
<u>Duplicate</u>	0690565-D1	JP1	B906371-01						
Gasoline Range Hydrocarbons	6/21/99		ND	ND	mg/kg dr	y		50.0	
Surrogate: 4-BFB (FID)	n	4.45		4.03	11	50.0-150	90.6		
Matrix Spike	0690565-M	<u>S1</u>	B906302-05						
Benzene	6/21/99	0.568	ND	0.443	mg/kg dr	y 60.0-140	78.0		
Toluene	н	0.568	ND	0.471	н	60.0-140	82.9		
Ethylbenzene	n	0.568	0.0532	0.481	н	60.0-140	75.3		
Xylenes (total)	**	1.70	ND	1.43	#	60.0-140	84.1		
Surrogate: 4-BFB (PID)	"	4.54		4.17	"	50.0-150	91.9		<del></del>
Matrix Spike Dup	0690565-M	SD1	B906302-05						
Benzene	6/22/99	0.568	ND	0.451	mg/kg dr	y 60.0-140	79.4	20.0	1.78
Toluene	er	0.568	ND	0.477		60.0-140	84.0	20.0	1.32
Ethylbenzene	n	0.568	0.0532	0.477	II .	60.0-140	74.6	20.0	0.934
Xylenes (total)	"	1.70	ND	1.41	н	60.0-140	82.9	20.0	1.44
Surrogate: 4-BFB (PID)	"	4.54		4.08	#	50.0-150	89.9		

North Creek Analytical - Bothell



18939 120th Avenue NE, Spite 101, Botheil, WA 98011-9508 425.420.9200 fax 425.420.9210 East 11115 Montgomery, Suite B, Spokane, WA 99206-4776 509.924.9200 fax 509.924.9290 Seattle

Spokane

9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

20354 Empire Avenue, Suite E-9, Bend, OR 97708-1883 541 383 9310 fax 541 382.7588

1T Corporation - Renton

Time Oil #2750 Project:

Sampled: 6/7/99

555 South Renton Village Place, Ste 700

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Received: 6/8/99

Renton, WA 98055

Project Manager: Jerry Harris

Reported: 6/25/99 11:31

#### Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)/Quality Control North Creek Analytical - Bothell

	Date	Spike	Sample	QC	R	Reporting Limit	Recov.	RPD	RPD	
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	9/0	Notes*
Batch: 0690369	Date Prepa	red: 6/11/	99		Extraction	on Method: EP.	A 3520C	/600 Seri	<u>es</u>	
Blank	0690369-BI		<del></del>							
Diesel Range Hydrocarbons	6/14/99			ND	mg/l	0.250				
Lube Oil Range Hydrocarbons	"			ND		0.500				
Surrogate: 2-FBP		0.325		0.388	<del>11</del>	50.0-150	119			
LCS	0690369-BS	<u>S1</u>								
Diesel Range Hydrocarbons	6/13/99	2.00		1.78	mg/l	60.0-140	89.0			
Surrogate: 2-FBP	п	0.325		0.249	- 4	50.0-150	76.6			
LCS Dup	0690369-B	SD1								
Diesel Range Hydrocarbons	6/14/99	2.00		1.80	mg/l	60.0-140	90.0	40.0	1.12	
Surrogate: 2-FBP	"	0.325		0.342	u	50.0-150	105			
Batch: 0690406	Date Prepa	red: 6/11/	<u> 199</u>		Extracti	on Method: EP	A 3550B			
<u>Blank</u>	0690406-B	<u>LKI</u>								
Diesel Range Hydrocarbons	6/13/99			ND	mg/kg dr	y 10.0				
Lube Oil Range Hydrocarbons	**			ND	4	25.0				<u>-</u>
Surrogate: 2-FBP	и	10.7	•	11.8	н	50.0-150	110			
LCS	<u>0690406-B</u>	<u>\$1</u>								
Diesel Range Hydrocarbons	6/13/99	66.7		56.6	mg/kg dr		84.9			
Surrogate: 2-FBP	"	10.7		7.49	**	50.0-150	70.0			
<u>Duplicate</u>	0690406-D	UP1 E	3906279-01							
Diesel Range Hydrocarbons	6/13/99		740	507	mg/kg di	ry		50.0	37.4	
Lube Oil Range Hydrocarbons	**		2730	1520	**			50.0	56.9	7
Surrogate: 2-FBP	н	11.4		6.64	"	50.0-150	<i>58.2</i>			
<u>Duplicate</u>	0690406-D	UP2 E	3906235-04							
Diesel Range Hydrocarbons	6/13/99		17.0	13.4	mg/kg di	ry		50.0	23.7	
Lube Oil Range Hydrocarbons	tf		37.0	ND	н 			50.0		
Surrogate: 2-FBP	r	13.5		9.41	tz	50.0-150	69.7			
Batch: 0690419	Date Prepa		<u>/99</u>		Extracti	on Method: Ef	A 3520C	:/600 Ser	ies	
<u>Blank</u>	0690419-B	LKi								
Diesel Range Hydrocarbons	6/14/99			ND	mg/l	0.250				
Lube Oil Range Hydrocarbons	н			ND		0.500				
Surrogate: 2-FBP	н	0.325		0.244	- "	50.0-150	75. Ĭ			

North Creek Analytical - Bothell

\*Refer to end of report for text of notes and definitions.



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541.383.9310 fax 541.382 7588

IT Corporation - Renton 555 South Renton Village Place, Ste 700

Renton, WA 98055

7.3 2752

Project: Time Oil #2750 Project Number: 783336

Project Manager: Jerry Harris

Sampled: 6/7/99

Received: 6/8/99

Reported: 6/25/99 11:31

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## Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)/Quality Control North Creek Analytical - Bothell

	Date	Spike	Sample	QC	P	teporting Limit	Recov.	RPD	RPD	
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	%	Notes*
LCS	0690419-BS	\$1								
Diesel Range Hydrocarbons	6/14/99	2.00		1.66	mg/l	60.0-140	83.0			
Surrogate: 2-FBP		0.325	<del></del>	0.334	<u>"</u>	50.0-150	103			
LCS Dup	0690419-B	SD1								
Diesel Range Hydrocarbons	6/14/99	2.00		1.69	mg/l	60.0-140	84.5	40.0	1.79	
Surrogate: 2-FBP	<i>H</i>	0.325		0.257	"	50.0-150	79.1			
Batch: 0690536	Date Prepa	red: 6/16/	99		Extracti	on Method: EP	A 3550B			
Blank	0690536-B									
Diesel Range Hydrocarbons	6/17/99			ND	mg/kg di	ry 10.0				
Lube Oil Range Hydrocarbons	H			ND	H	25.0				
Surrogate: 2-FBP		10.8	*	6.86	n	50.0-150	63.5			
LCS	0690536-B	<b>S1</b>								
Diesel Range Hydrocarbons	6/17/99	66.7		55.2	mg/kg di	ry 60.0-140	82.8			
Surrogate: 2-FBP	"	10.8		9.58	"	50.0-150	88.7			•
<u>Duplicate</u>	0690536-D	UP1 B	906234-23							
Diesel Range Hydrocarbons	6/17/99		ND	12.4	mg/kg di	ry		50.0		8
Lube Oil Range Hydrocarbons	11		ND	29.0	**			50.0		8
Surrogate: 2-FBP	н	13.8		8.96	H .	50.0-150	64.9			
<u>Duplicate</u>	0690536-D	UP2 B	906234-05							
Diesel Range Hydrocarbons	6/17/99		ND	ND	mg/kg d	ry		50.0		
Lube Oil Range Hydrocarbons	**		ND	ND				50.0		
Surrogate: 2-FBP	"	13.5		12.6	"	50.0-150	93.3			
Batch: 0690555	Date Prena	red: 6/17/	29		Extracti	ion Method: EF	A 3550E	<u>.</u>		
Blank	0690555-B	LK1								
Diesel Range Hydrocarbons	6/18/99			ND	mg/kg d	гу 10.0				
Lube Oil Range Hydrocarbons	н			ND	14	25.0	l			
Surrogate: 2-FBP	н	10.8		6.84	"	50.0-150	63.3			
LCS	0690555-B	<u>S1</u>								
Diesel Range Hydrocarbons	6/18/99	66.7		55.0	mg/kg d	гу 60.0-140	82.5			
Surrogate: 2-FBP	,,	10.8	-	9.21	**	50.0-150	85.3			

North Creek Analytical - Bothell



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503 906.9200 fax 503 906 9210 20354 Empire Avenue, Suite E-9, Bend, OR 97708-1883

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IT Corporation - Renton

Project: Time Oil #2750

Sampled: 6/7/99

555 South Renton Village Place, Ste 700

Project Number: 783336

Received: 6/8/99

Renton, WA 98055

Project Manager: Jerry Harris

Reported: 6/25/99 11:31

# Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)/Quality Control North Greek Analytical - Bothell

	Date	Spike	Sample	QC		Reporting Limit	Recov.	RPD	RPD	
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%_	Limit	%	Notes*
<u>Duplicate</u>	0690555-D	UP1 I	3906373 <u>-01</u>							
Diesel Range Hydrocarbons	6/18/99		ND	ND	mg/kg d	lry		50.0		
Lube Oil Range Hydrocarbons	11		36.9	ND	44			50.0		
Surrogate: 2-FBP	"	13.6		7.64	"	50.0-150	56.2	•	<del></del>	~



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IT Corporation - Renton

555 South Renton Village Place, Ste 700

Project: Time Oil #2750

Sampled: 6/7/99

Project Number: 783336

Received: 6/8/99

Renton, WA 98055

Project Manager: Jerry Harris

Reported: 6/25/99 11:31

# Total Metals by EPA 6000/7000 Series Methods/Quality Control North Creek Analytical - Bothell

	Date	Spike	Sample	QC	R	eporting Limit	Recov.	RPD	RPD	
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	%	Notes*
Batch: 0690627	_	Date Prepared: 6/19/99			Extraction Method: EPA					
<u>Blank</u>	<u>0690627-BI</u>	LK1								
Lead	6/21/99			ND	mg/kg dr	y 0.500				
<u>Blank</u>	0690627-BI	LK2								
Lead	6/21/99			ND	mg/kg dr	y 0.500				
Blank	0690627-BI	JK3								
Lead	6/22/99			ND	mg/kg dr	y <b>0.500</b>				
1.00	0.000.27 86									
LCS Lead	<u>0690627-BS</u> 6/22/99	25.0		19.9	mg/kg dr	y 80.0-120	79.6			9
						•				
LCS	<u>0690627-BS</u> 6/22/99	<u>25.0</u>		20.0	ma/lea de	y 80.0-120	80.0			
Lead	0/22/99	23.0		20.0	mg/kg di	y 80.0-120	80.0			
Matrix Spike	<u>0690627-M</u>		906234-11							
Lead	6/21/99	29.7	6.18	29.2	mg/kg di	y 70.0-130	77.5			
Matrix Spike	0690627-M	S2 B	906234-15							
Lead	6/22/99	25.0	2.29	22.1	mg/kg di	y 70.0-130	79.2			
Matrix Spike Dup	0690627-M	SD1 B	906234-11							
Lead	6/22/99	25.3	6.18	35.6	mg/kg di	y 70.0-130	116	20.0	39.8	7
Matrix Spike Dup	0690627-M	SD2 R	906234-1 <u>5</u>							
Lead	6/22/99	26.8	2.29	21.8	mg/kg di	ry 70.0-130	72.8	20.0	8.42	

North Creek Analytical - Bothell



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423-223-220 Tax 923-22-10 East 11115 Montgomery, Suite B, Spokane, WA 99206-4776 509.924.9290 Tax 509.924.9290 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 **Portland** 

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IT Corporation - Renton

555 South Renton Village Place, Ste 700

Project: Time Oil #2750

Sampled: 6/7/99

Project Number: 783336

Received: 6/8/99

Renton, WA 98055

Project Manager: Jerry Harris

Reported: 6/25/99 11:31

#### Dissolved Metals by EPA 6000/7000 Series Methods/Quality Control North Creek Analytical - Bothell

RPD Date Spike Sample QC Reporting Limit Recov. RPD Analyte Analyzed Level Result Result Units Recov. Limits Limit % Notes\*

<u>Batch: 0690388</u> Blank	<u>Date Prepared: 6/11/99</u> 0690388-BLK1	Extraction Method: EPA 3005A						
Lead	6/14/99	ND	mg/l	0.00100				
LCS Lead	0690388-BS1 6/14/99 0.200	0.196	mg/l	80.0-120	98.0			
Matrix Spike Lead	0690388-MS1         B906257-01           6/14/99         0.200         ND	0.199	mg/i	75.0-125	99.5			
<u>Matrix Spike Dup</u> Lead	0690388-MSD1 B906257-01 6/14/99 0.200 ND	0.196	mg/l	75.0-125	98.0	20.0	1.52	

North Creek Analytical - Bothell



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IT Corporation - Renton 555 South Renton Village Place, Ste 700 Renton, WA 98055

Project: Project Number: 783336 Project Manager: Jerry Harris

Time Oil #2750

Sampled: 6/7/99 Received: 6/8/99

Reported: 6/25/99 11:31

### Gasoline Hydrocarbons per NWTPH-Gx Method and BTEX per EPA Method 8020A/Quality Control North Creek Analytical = Spokane

	Date	Spike	Sample	QC		Reporting Limit		RPD	RPD	
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	%	Notes*
Batch: 0690058	Date Prepa	red: 6/17/	<u>99</u>		Extract	tion Method: GC	Volatile	à		
<u>Blank</u>	<u>0690058-B</u> 1	LK1								
Benzene	6/18/99			ND	ug/l	0.500				
Toluene	11			ND	**	0.500				
Ethylbenzene	"			ND	•	0.500				
Xylenes (total)	41			ND	••	1.00				
Gasoline Range Hydrocarbons	9			ND	**	50.0				
Surrogate: 4-BFB (FID)		25.0		27.1	#	50.0-150	108			
Surrogate: 4-BFB (PID)	,,	25.0		22.9	"	53.0-142	91.6			
LCS	0690058-BS	<u>S1</u>								
Gasoline Range Hydrocarbons	6/18/99	1000		829	ug/l	70.0-150	82.9			
Surrogate: 4-BFB (FID)	11	25.0		32.9	**	50.0-150	132			
LCS	0690058-B	<u>52</u>								
Benzene	6/18/99	10.0		8.96	ug/l	80.0-120	89.6			
Toluene	H	10.0		10.2	H	80.0-120	102			
Ethylbenzene	ч	10.0		8.71	и	80.0-120	87.1			
Xylenes (total)	**	30.0		26.7	n	80.0-120	89.0			
Surrogate: 4-BFB (PID)	<del>"</del>	25.0		22.2	**	53.0-142	88.8	-		
<u>Duplicate</u>	0690058-D	<u>UP1 B</u>	906234-27							
Gasoline Range Hydrocarbons	6/18/99		103	82.2	ug/l			60.0	22.5	
Surrogate: 4-BFB (FID)	H	25.0		24.4	"	50.0-150	97.6			
Surrogate: 4-BFB (PID)	**	25.0		18.1	11	53.0-142	72.4			
Duplicate	0690058-D	UP2 S	906060-04							
Gasoline Range Hydrocarbons	6/18/99		ND	ND	ug/l			60.0		
Surrogate: 4-BFB (FID)	"	25.0		22.5	н	50.0-150	90.0			
Surrogate: 4-BFB (PID)	н	25.0		18.8	"	53.0-142	<i>75.2</i>			
Matrix Spike	0690058-M	<u>sı s</u>	906060-04							
Gasoline Range Hydrocarbons	6/18/99	1000	ND	451	ug/l	70.0-130	45.1			10
Surrogate: 4-BFB (FID)	"	25.0		14.2	"	50.0-150	56.8			
Matrix Spike	0690058-M	<u> </u>	906060-04							
Benzene	6/18/99	10.0	ND	7.96	ug/l	54.0-143	79.6			
					-					
Toluene	ri .	10.0	ND	8.77	н	48.0-145	87.7			

North Creek Analytical - Bothell



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20354 Empire Avenue, Suite E-9, Bend, OR 97708-1883 Bend

IT Corporation - Renton 555 South Renton Village Place, Ste 700 Project: Time Oil #2750

Sampled: 6/7/99

Project Number: 783336

Received: 6/8/99

Renton, WA 98055

Project Manager: Jerry Harris

Reported: 6/25/99 11:31

### Gasoline Hydrocarbons per NWTPH-Gx Method and BTEX per EPA Method 8020A/Quality Control North Creek Analytical - Spokane

	Date	Spike	Sample	QC		Reporting Limit	Recov.	RPD	RPD	
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	%	Notes*
Matrix Spike (continued)	0690058-M	<u>S2</u> <u>S</u> 9	906060-04							
Xylenes (total)	6/18/99	30.0	2.05	21.9	ug/t	55.0-140	66.2			

Joy B Chang, Broject Manager



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IT Corporation - Renton 555 South Renton Village Place, Ste 700

Project: Time Oil #2750

Sampled: 6/7/99 Received: 6/8/99

Renton, WA 98055

Project Number: 783336

Project Manager: Jerry Harris

Reported: 6/25/99 11:31

### **Notes and Definitions**

#	Note
1	The chromatogram for this sample does not resemble a typical gasoline pattern.
2	The reporting limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
3	Samples were extracted within hold time, but due to an extraction anomaly no surrogate was added. Samples were re-extracted outside of hold time and analyzed. The samples were similar for both extracts.
4	Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
5	The sample chromatographic pattern does not resemble the fuel standard used for quantitation.
6	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample.
7	The RPD value for this QC sample is above the established control limit. Review of associated QC indicates the high RPD does not represent an out-of-control condition for the batch.
8	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit.
9	The spike recovery for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
10	The spike recovery for this QC sample is outside of NCA established control limits. Alternate sources of QC have been used to validate the batch.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

North Creek Analytical - Bothell



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Work Order #:

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6266234 11-95

**CHAIN OF CUSTODY REPORT** 

NCA WO <1 9 TURNAROUND REQUEST in Business Days\* \* Turnamend Requests less than standard may incur Rush Charges DATE:6/ TIME: / TIME:/ NW Merhod 5 4 3 2 COMMENTS 2 Please Specify Organic & Inorganic Analyses 60 OTHER FIRM: NGA CONT. # OF MATRIX (W, S, O) 02 ار ار <del>ار</del> م 0 Q No 1 ~ 0 タアナウタ RECEIVED BY:  $\mathcal{O}/\mathcal{I}/\mathcal{K}$ REQUESTED ANALYSES PRINT NAME: RECEIVED BY INVOICE TO: COAAI'E TIME: 15,20 TIME: 9:20 FAX: \$15-228-979 P.O. NUMBER: 1. Dento Village Place #700 FIRM: IT COLD [11:13 11:29 12:37 12:40 1,45 11:58 1:39 11:50 2,55 7:84 1:56 7.63 3:50 3:6/ 3:12 275¢ DATE/TIME SAMPLING Renton, WA 48055 Corporation 36/1/9 5496-8-2-5-4 ROJECT NUMBER: 78336 PROJECT NAME: TIME 0: CHS Jesty CLIENT SAMPLE IDENTIFICATION Ø15B-Ø7A \$158-67 B 0280-020 625B-48 B Ø25B-Ø6 A Ø1513-460 028-92 A \$150-02 B \$250-\$2 C 618-61B 9 10-Bect V10-0520 \$ 150 DIC \$250-01 E 20000 ELINQUISHED BY: ELINQUISHED BY: SAMPLED BY: RINT NAME: EPORT TO: RINT NAME: DDRESS: LIENT

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East 11115 Montgomery, Suite B, Spokane, WA 98206-4776 9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

(509) 924-9200 (503) 906-9200

FAX 906-9210 FAX 382-7588 FAX 924-9290 20-02 (541) 383-9310

# Work Order #: CHAIN OF CUSTODY REPORT

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Work Order #: CHAIN OF CUSTODY REPORT

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PROJECT NUMBER: 783336			,2x,								OTHER				
SAMPLED BY: CAUS		9	<del>7</del> ()-	Ź.						* Turna	mound Requests	* Turnaround Requests less than standard may incur Rush Charges.	ue Rush Charge		
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RINT NAME: (2)	FIRM:			F	TIME: /5120	PRINT NAME:		ļ		FIRM		-	HWIE	7	
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ANALYTICAL Environmental Laboratory Services NORTH CREEK

ighter adational

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 East 11115 Montgomery, Suite B, Spokane, WA 99206-4779

(425) 420-9200 (509) 924-9200

FAX 420-9210 (503) 906-9200

AST APPROACHING jā \* Tirmpround Requests fest than standard may incur Ruch Charges. FAX 924-9290 FAX 906-9210 TURNAROUND REQUEST In Business Days \* Flue & Hydrocarbon Analyses ال 14 DATE Ë Organic & Inorganic Analyses 12 SO 12 1 CONTAINGRS OTHER Specify E 10 Work Order # 9405 S.W. Nimbus Avenue, Beaverton, OK 97008-7132 (W. S. A. O) MATRIX ph/Jeywygowy 3  $\leq$ 3 HUA FERRIMITA CHAIN OF CUSTODY REPORT () IN ALLY & OSSCESSIAN OF CUSTODY REPORT () WOT ADDRESS: 2737 W. COMMOSON Word Hospely longed in frac RECEIVED BY (Separate) ECENED BY ASSUME INVOICE TO: THE DITCO A PRINT NAME: PRINT NAME 7 NXXX P.O. NUMBER Ë DATE terpest: 1010 1896 1235-06 WE FIRM IN 1 CONSO 18/10/23/T-0 6/4/94 1/20 18906235-10 1040 B906235-09 7 MCA SAMPLE ID IT Corp. 5555, Partin Unlar Acc. 5/2 700 6/6/1 // 54 + 4/9 1-3 Ebt 522 505 2493 17-1619+ 1390p 1029 B) 0/ 6/9/9 MOISCINAME TIME GIOC SCOTTLE TOMING C7189 1140 SAMPLING Genelolm. Havis Crapp 46/47 64845 14/10 Curty WA Pross MONE 475 228 9845 REPORT TO, JEMY HOWIS CLIENT SAMPLE 035B-08 1h.0 035B-09 Nz 0 **CORPUTE CATION** 035B-07 160 035B-07B 03513 - 09A RELINQUISHED BY (Appear 015B-09B 880-8810x RELINQUISHED BY ASSESSMENT 02.58-08A PROJECT NUMBER: SAMPLED BY: ATTENTION ADDRESS: PRINT NAME: PRINT NAME

(2) Total Matels togst 1xt is arranic barium, colonium, chamium, lead, mercum, soliculum, silver ADDITIONAL REWARD IN VOICE Sepandof of profix: 0158-tx on oreinvoice; 0258-tx on secon); 0358-tx on this

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HME:



503.906 9200 fax 503.906 9210 20354 Empire Avenue, Suite E-9, Bend, OR 97708-1883 541.383.9310 fax 541 382.7588

IT Corporation - Renton

555 South Renton Village Place, Ste 700

Renton, WA 98055

Project:

Time Oil #2750

Project Number: 783336

Project Manager: Jerry Harris Sampled: 6/7/99

Received: 6/8/99

Reported: 6/30/99 09:27

### ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
02SB-08A	B906234-03	Soil	6/7/99

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North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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20354 Empire Avenue, Suite E-9, Bend, DR 97708-1883 541.383.9310 Tax 541.382 7588

IT Corporation - Renton

1555 South Renton Village Place, Ste 700

Renton, WA 98055

Project: Time Oil #2750

Project Number: 783336

Project Manager: Jerry Harris

Sampled: 6/7/99

Received: 6/8/99

Reported: 6/30/99 09:27

### Total Metals by EPA 6000/7000 Series Methods North Creek Analytical - Bothell

	Batch	Date	Date	Specific	Reporting	•		
Analyte	Number	Prepared	Analyzed	Method	Limit	Result	Units	Notes*
02SB-08A			B9062.	34-03			<u>Soil</u>	
Arsenic	0690738	6/23/99	6/24/99	EPA 6020	0.500	4.78	mg/kg dry	
Barium	"	n	н	EPA 6020	5.00	86.3	u .	
Cadmium	11	H		EPA 6020	0.500	ND	11	
Chromium	17		Ħ	EPA 6020	0.500	33.1	"	
Lead	0690627	6/19/99	6/21/99	EPA 6020	0.500	10.6	и	
Selenium	0690738	6/23/99	6/24/99	EPA 6020	0.500	ND	41	
Silver	ŧŧ	•	<b>41</b>	EPA 6020	0.500	ND	w	
Mercury	0690817	6/24/99	6/25/99	EPA 7471A	0.100	ND	w	

North Creek Analytical - Bothell



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425.420.9200 1ax 425.420.9210 East 11115 Montgomery, Suite B, Spokane, WA 99206-4776 509.924.9200 1ax 509.924.9290 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210 20354 Empire Avenue, Suite E-9, Bend, OR 97708-1883 Portland

541.383.9310 fax 541.382.7588

IT Corporation - Renton Project: Time Oil #2750 Sampled: 6/7/99 555 South Renton Village Place, Ste 700 Project Number: 783336 Received: 6/8/99

Renton, WA 98055 Project Manager: Jerry Harris Reported: 6/30/99 09:27

### Organochlorine Pesticides and PCBs by EPA Method 8081A and 8082 North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	_Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
02SB-08A			B9062;	<u>34-03</u>			Soil	
Aldrin	0690668	6/21/99	6/24/99		1.00	ND	ug/kg dry	
alpha-BHC	**	**	0		0.500	ND	н	
beta-BHC	n	11	n		0.900	ND	H	
delta-BHC	**	**	**		0.600	ND	•	
gamma-BHC (Lindane)	н	**	**		1.00	ND		
Chlordane (tech)		п	н		1.00	ND	**	
alpha-Chlordane		"	**		0.800	ND	*1	
gamma-Chlordane	*	н	н		0.700	ND	"	
4,4'-DDD	b		**		1.00	ND	11	
4,4'-DDE	п		н		1.00	ND	ft	
4,4'-DDT	н	•	**		1.00	ND		
Dieldrin	н		н		2.00	ND		
Endosulfan I	н	н	Ħ		1.00	ND	ш	
Endosulfan II		"	11		2.00	ND	и	
Endosulfan sulfate		#	н		1.00	ND	41	
Endrin	tr	н	н		2.00	ND	41	
Endrin aldehyde	H	•	н		2.00	ND	17	
Heptachlor		*	**		1.00	ND	,	
Heptachlor epoxide	н	#	**		1.00	ND	4	
Methoxychlor	н	"	**		4.00	ND	**	
Toxaphene	н	n	Ħ		50.0	ND	•	
Aroclor 1016	*	**	6/25/99		50.0	ND	**	
Aroclor 1221	*	4	11		50.0	ND	н	
Aroclor 1232	н		**		50.0	ND	н	
Aroclor 1242	4	*	n		50.0	ND		
Aroclor 1248	*		p		50.0	ND	н	
Aroclor 1254	•	er	Ħ		50.0	ND	**	
Aroclor 1260		**	н		50.0	ND	**	
Aroclor 1262	Ħ	**	н		50.0	ND	**	
Aroclor 1268	n	*	**		50.0	ND	н	
Surrogate: TCX	#	"	6/24/99	40.0-130		48.1	%	

North Creek Analytical - Bothell



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Portland

20354 Empire Avenue, Suite E-9, Bend, OR 97708-1883 541.383.9310 fax 541.382.7588

IT Corporation - Renton 1555 South Renton Village Place, Ste 700

Project: Time Oil #2750 Project Number: 783336

Sampled: 6/7/99 Received: 6/8/99

Renton, WA 98055

Project Manager: Jerry Harris

6/30/99 09:27 Reported:

### Volatile Organic Compounds by EPA Method 8260B North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
02SB-08A			B9062.	<u>34-03</u>			<u>Seil</u>	
Acetone	0690688	6/21/99	6/21/99		2.00	ND	mg/kg dry	
Benzene	ıı .	tt	#		0.100	ND	н	
Bromobenzene		tt	11		0.100	ND	**	
Bromochloromethane		Ħ	n		0.100	ND	71	
Bromodichloromethane	н	**	#		0.100	ND	н	
Bromoform	**	**	ш		0.100	ND	н	
Bromomethane		#	#		0.100	ND	U	
2-Butanone	н	e	н		1.00	ND	tr	
n-Butylbenzene			"		0.100	ND	W	
sec-Butylbenzene	••	•	н		0.100	ND	"	
tert-Butylbenzene	•	н			0.100	ND	n	
Carbon disulfide	•	н	н		0.100	ND	#1	
Carbon tetrachloride	н		**		0.100	ND	и	
Chlorobenzene	H	#	•		0.100	ND	<b>I</b> f	
Chloroethane	и	н	*		0.100	ND	н	
Chloroform	н	*	•		0.100	ND	*1	
Chloromethane	10	**	++		0.500	ND	**	
2-Chlorotoluene	н	**	•		0.100	ND	11	
4-Chlorotoluene	H	**	•		0.100	ND	п	
Dibromochloromethane	**	H			0.100	ND	61	
1,2-Dibromo-3-chloropropane	n	н	н		0.500	ND	H	
1,2-Dibromoethane	н	н	п		0.100	ND	н	
Dibromomethane	**				0.100	ND	н	
1,2-Dichlorobenzene		"	н		0.100	ND		
1,3-Dichlorobenzene	**	н	#		0.100	ND	н	
1,4-Dichlorobenzene	**	н			0.100	ND	н	
Dichlorodifluoromethane	n	#			0.100	ND	•	
1,1-Dichloroethane	#	H	P		0.100	ND	**	
1,2-Dichloroethane	••	**	**		0.100	ND	**	
1,1-Dichloroethene	n	n	**		0.100	ND	**	
cis-1,2-Dichloroethene	n	n	**		0.100	ND	H	
trans-1,2-Dichloroethene	*	*			0.100	ND		
1,2-Dichloropropane	•	**	**		0.100	ND	11	
1,3-Dichloropropane	n	*	н		0.100	ND	**	
2,2-Dichloropropane	н	77	н		0.100	ND	п	
1,1-Dichloropropene	II.	**			0.100	ND	я	
cis-1,3-Dichloropropene	11	**	н		0.100	ND	41	
trans-1,3-Dichloropropene	<b>n</b> *	**			0.100	ND	#	

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\*Refer to end of report for text of notes and definitions.

North Creek Analytical, Inc. **Environmental Laboratory Network** 



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IT Corporation - Renton

555 South Renton Village Place, Ste 700 Renton, WA 98055

Project: Time Oil #2750

Project Number: 783336 Project Manager: Jerry Harris Sampled: 6/7/99

Received: 6/8/99

6/30/99 09:27 Reported:

### Volatile Organic Compounds by EPA Method 8260B North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting		<u> </u>	
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
02SB-08A (continued)			B90623	<u>34-03</u>			<u>Şoil</u>	
Ethylbenzene	0690688	6/21/99	6/21/99		0.100	ND	mg/kg dry	
Hexachlorobutadiene	**	17	u		0.100	ND	и	
2-Hexanone	н	H	n		1.00	ND	н	
Isopropylbenzene	н	n	**		0.100	ND	11	
p-Isopropyltoluene	n	17	17		0.100	ND	••	
Methylene chloride	н	n	ø		1.00	ND	10	
4-Methyl-2-pentanone	н	Ħ	n		1.00	ND	н	
Naphthalene	н	**	N		0.100	ND		
n-Propylbenzene	11	н	11		0.100	ND	n	
Styrene	н	11	н		0.100	ND	**	
1,1,1,2-Tetrachloroethane	н	#	и		0.100	ND	**	
1,1,2,2-Tetrachloroethane	tr	#	н		0.100	ND	•	
Tetrachloroethene	Ħ	#	н		0.100	ND	н	
Toluene	#	Ħ	н		0.100	ND	11	
1,2,3-Trichlorobenzene	#		19		0.100	ND	**	
1,2,4-Trichlorobenzene	n	n			0.100	ND	D	
1,1,1-Trichloroethane		н	#		0.100	ND	er	
1,1,2-Trichloroethane	**		**		0.100	ND	"	
Trichloroethene	H	н	11		0.100	ND	#	
Trichlorofluoromethane	и	н	н		0.100	ND	н	
1,2,3-Trichloropropane	**	**	н		0.100	ND	*1	
1,2,4-Trimethylbenzene	#	**	н		0.100	0.102	tr	
1,3,5-Trimethylbenzene	н	4	II .		0.100	ND	O	
Vinyl chloride	н	#			0.100	ND	**	
m,p-Xylene	н	Ħ	**		0.200	ND	N	
o-Xylene	*	st	H		0.100	ND	н	
Surrogate: 2-Bromopropene	N	n	"	70.0-130		86.2	%	
Surrogate: 1,2-DCA-d4	*	**	"	70.0-130		77.9	n	
Surrogate: Toluene-d8	*	н	"	70.0-130		83.3	"	
Surrogate: 4-BFB	ĸ	"	"	70.0-130		82.5	"	

North Creek Analytical - Bothell



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 18939-120th Avinue Nt., Suite 101, Bothell, WA 98011-9508-425,420,9200

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IT Corporation - Renton

Project: Time Oil #2750

Sampled: 6/7/99

555 South Renton Village Place, Ste 700

Project Number: 783336

Received: 6/8/99

Renton, WA 98055

Project Manager: Jerry Harris

Reported: 6/30/99 09:27

### **Dry Weight Determination** North Creek Analytical - Bothell

Sample Name	Lab ID	Matrix	Result	Units
02SB-08A	B906234-03	Soil	83.4	%

North Creek Analytical - Bothell



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IT Corporation - Renton

555 South Renton Village Place, Ste 700

Project: Time Oil #2750

Sampled: 6/7/99

Project Number: 783336

Received: 6/8/99

Renton, WA 98055

Project Manager: Jerry Harris

Reported: 6/30/99 09:27

# Total Metals by EPA 6000/7000 Series Methods/Quality Control North Greek Analytical - Bothell

	Date	Spike	Sample	QC	Re	porting Limit	Recov.	RPD	RPD	
Analyte	Analyzed	Level	Result	Result		Recov. Limits	%	Limit	%	Notes*
Batch: 0690627	Date Prepa		<u>99</u>		Extraction	Method: EP	<u>A 3050B</u>			
<u>Blank</u>	0690627-BI	<u>LKI</u>								
Lead	6/21/99			ND	mg/kg dry	0.500				
Blank	0690627-BJ	LK2								
Lead	6/21/99			ND	mg/kg dry	0.500				
Blank	0690627-BI	LK3								
Lead	6/22/99			ND	mg/kg dry	0.500				
LCS	0690627-BS	S1								
Lead	6/22/99	25.0		19.9	mg/kg dry	80.0-120	79.6			1
LCS	0690627-BS	S2								
Lead	6/22/99	25.0		20.0	mg/kg dry	80.0-120	80.0			
Matrix Spike	<u>0690627-M</u>	isi R	906234-11							
Lead	6/21/99	29.7	6.18	29.2	mg/kg dry	70.0-130	77.5			
Matrix Spike	0690627-M	S2 B	906234-15							
Lead	6/22/99	25.0	2.29	22.1	mg/kg dry	70.0-130	79.2			
Matrix Spike Dup	0690627-M	SDI B	906234-11							
Lead	6/22/99	25.3	6.18	35.6	mg/kg dry	70.0-130	116	20.0	39.8	2
Matrix Spike Dup	<u>0690627-M</u>	ISD2 B	906234-15							
Lead	6/22/99	26.8	2.29	21.8	mg/kg dry	70.0-130	72.8	20.0	8.4	
Batch: 0690738	Date Prepa	red: 6/23/	<u>99</u>		Extraction	n Method: EP	<u>A 3050B</u>			
<u>Biank</u>	0690738-B	LK1								
Arsenic	6/23/99			ND	mg/kg dry	0.500				
Barium	"			ND	н	5.00				
Cadmium	и			ND	H	0.500				
Chromium	#			ND	Ħ	0.500				
Selenium	··			ND	11	0.500				
Silver	и			ND	Ħ	0.500				
LCS	0690738-B	<u>Si</u>								
Arsenic	6/23/99	25.0		27.4	mg/kg dry	<sup>-</sup> 70.0-130	110			

North Creek Analytical - Bothell



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IT Corporation - Renton

555 South Renton Village Place, Ste 700

Project: Time Oil #2750

Sampled: 6/7/99

Project Number: 783336

Received: 6/8/99

Renton, WA 98055

Project Manager: Jerry Harris

Reported: 6/30/99 09:27

# Total Metals by EPA 6000/7000 Series Methods/Quality Control North Greek Analytical - Bothell

	ate	Spike	Sample	QC		porting Limit		RPD	RPD	
Analyte A	nalyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	%	Notes*
LCS (continued)	690738-BS1									
	/23/99	25.0		27.5	mg/kg dry	80.0-120	110			
Cadmium "		25.0		26.6	17	70.0-130	106			
Chromium "		25.0		27.7	**	80.0-120	111			
Selenium "		25.0		27.5	**	70.0-130	110			
Silver "		25.0		27.0	H	80.0-120	108			
Matrix Spike 0	690738-MS1	J	B906434-02							
	/23/99	20.1	3.29	24.2	mg/kg dry	70.0-130	104			
Barium "		20.1	13.3	34.3	н .	70.0-130	104	•		
Cadmium "		20.1	ND	19.8	11	70.0-130	98.5			
Chromium "		20.1	5.83	25.2		70.0-130				
Selenium "		20.1	ND	20.0		70.0-130	99.5			
Silver "		20.1	ND	20.0	н	70.0-130	99.5			
Matrix Spike Dup 0	690738-MSE	21 ]	B906434-02							
Arsenic 6	24/99	20.1	3.29	21.8	mg/kg dry	70.0-130	92.1	20.0	12.1	
Barium "		20.1	13.3	36.2	н	70.0-130	114	20.0	9.17	
Cadmium "		20.1	ND	21.4	tt	70.0-130	106	20.0	7.33	
Chromium "		20.1	5.83	31.0	er .	70.0-130	125	20.0	25.8	2
Selenium "		20.1	ND	20.8	**	70.0-130	103	20.0	3.46	
Silver "		20.1	ND	21.0	**	70.0-130	104	20.0	4.42	
Batch: 0690817	ate Prepare	d: 6/24	<u>/99</u>		Extraction	n Method: EP	<u>A 7471A</u>			
Blank 0	690817-BL <u>K</u>	1								
Mercury 6	/25/99			ND	mg/kg dry	0.100				
LCS Q	690817-BS1									
Mercury 6	/25/99	1.75		1.47	mg/kg dry	80.0-120	84.0			
Matrix Spike 0	690817-MS1	. ]	B906434-02							
Mercury 6	/25/99	0.611	ND	0.625	mg/kg dry	80.0-120	102			
Matrix Spike Dup 0	690817-MSD	<u>)</u>	B906434-02							
Mercury 6	/25/99	0.636	ND	0.652	mg/kg dry	80.0-120	103	20.0	0.976	

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IT Corporation - Renton 555 South Renton Village Place, Ste 700

Time Oil #2750 Project:

Sampled: 6/7/99

Renton, WA 98055

Project Number: 783336 Project Manager: Jerry Harris

Received: 6/8/99 Reported: 6/30/99 09:27

Organochlorine Resticides and PCBs by EPA Method 8081A and 8082/Quality Control

North Creek Analytical - Bothell

	Date	Spike	Sample	QC	F	Reporting Limit	Recov.	RPD	RPD	
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	<u>%</u>	Limit	% 1	Notes*
Batch: 0690668	Date Prepa	rad: 6/73/6	30		Evtracti	on Method: EP.	A 3550P			
Blank	0690668-BI		<u> </u>		EAUACU	OH MICHOUS EST.	N 2220B			
Aldrin	6/24/99	<u>UILE</u>		ND	ug/kg dr	y 1.00				
alpha-BHC	U/24///			ND	" uEve ai	0.500				
beta-BHC	,,			ND		0.900				
delta-BHC	**			ND	н	0.600				
gamma-BHC (Lindane)	n			ND	to to	1.00				
Chlordane (tech)	11			ND	н	1.00				
alpha-Chiordane	**			ND	0	0.800				
gamma-Chlordane				ND	41	0.700				
4,4'-DDD	st			ND	11	1.00				
4,4'-DDE	47			ND		1.00				
4,4'-DDT	*			ND	**	1.00				
Dieldrin	n			ND	н	2.00				
Endosulfan I	н			ND		1.00				
Endosulfan II	**			ND	н	2.00				
Endosulfan sulfate	tt .			ND	ш	1.00				
Endrin	er			ND	н	2.00				
Endrin aldehyde	o			ND	"	2.00				
Heptachlor	•			ND	**	1.00				
Heptachlor epoxide	0			ND	**	1.00				
Methoxychlor	0			ND	**	4.00				
Toxaphene	a			ND	**	50.0				
Aroclor 1016	6/25/99			ND	11	50.0				
Aroclor 1221	11			ND	н	50.0				
Aroclor 1232	**			ND	**	50.0				
Aroclor 1242	**			ND	н	50.0				
Aroclor 1248	91			ND	н	50.0				
Aroclor 1254	n			ND	н	50.0				
Aroclor 1260	**			ND	н	50.0				
Aroclor 1262	11			ND		50.0				
Aroclor 1268	n			ND	11	50.0				
Surrogate: TCX	"	6.67		5.56	н	40.0-130	83.4		· <del>-</del>	_
LCS	0400449 D4	21								
Aldrin	<u>0690668-B\$</u> 6/24/99			0.02	/lea	25 () 120	100			
	0/24/99 "	8.33		9.03	ug/kg dr					
gamma-BHC (Lindane)	 H	8.33		8.14		44.0-137				
Heptachlor		8.33		7.37		40.0-146				
Aroclor 1260	6/25/99	333		340	"	28.0-132	102			

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IT Corporation - Renton

Time Oil #2750 Project:

Sampled: 6/7/99

555 South Renton Village Place, Ste 700

Project Number: 783336 Received: 6/8/99

Renton, WA 98055

Project Manager: Jerry Harris

Reported: 6/30/99 09:27

# Organochlorine Pesticides and PCBs by EPA Method 8081A and 8082/Quality Control North Creek Analytical - Bothell

	Date	Spike	Sample	QC	R	eporting Limit	Recov.	RPD	RPD
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	% Notes
LCS (continued)	0690668-B	<u>52</u>							
Surrogate: TCX	6/25/99	6.67		<b>6</b> .75	ug/kg dry	40.0-130	101		<del>_</del>
Matrix Spike	<u>0690668-M</u>	<u>S2</u> <u>B</u>	906500-0 <u>5</u>						
Aldrin	6/24/99	8.68	ND	7.71	ug/kg dry	35.0-138	88.8		
gamma-BHC (Lindane)	n	8.68	ND	6.93	**	44.0-137	79.8		
Heptachlor	ur .	8.68	ND	7.01	н	40.0-146	80.8		
Aroclor 1260	6/25/99	347	ND	357	"	44.0-123	103		
Surrogate: TCX		6.94		5.92	"	40.0-130	85.3		
Matrix Spike Dup	0690668-M	SD2 B	906500-05						
Aldrin	6/24/99	8.68	ND	7.90	ug/kg dry	35.0-138	91.0	33.0	2.45
gamma-BHC (Lindane)	**	8.68	ND	7.30	H	44.0-137	84.1	35.0	5.25
Heptachlor	n	8.68	ND	7.24	n	40.0-146	83.4	32.0	3.17
Aroclor 1260	6/25/99	347	ND	381	**	44.0-123	110	23.0	6.57
Surrogate: TCX	tt	6.94		6.04	re	40.0-130	87.0	-	

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IT Corporation - Renton

Renton, WA 98055

555 South Renton Village Place, Ste 700

Project: Project Number: 783336

Project Manager: Jerry Harris

Time Oil #2750

Sampled: 6/7/99

Received: 6/8/99

Reported: 6/30/99 09:27

# Volatile Organic Compounds by EPA Method 8260B/Quality Control North Creek Analytical - Bothell

	Date	Spike	Sample	QC		Reporting Limit	Recov.	RPD	RPD
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	% Notes
D-4-L-000000									
Batch: 0690688	Date Prepa		<u>99</u>		Extract	tion Method: EP.	A 5030B	[MeOH]	
Blank	0690688-BI	<u> </u>		***		,			
Acetone	6/21/99			ND	mg/kg o				
Benzene	,,			ND		0.100			
Bromobenzene				ND	ŧr.	0.100			
Bromochloromethane	.,			ND	11	0.100			
Bromodichloromethane				ND	**	0.100			
Bromoform	"			ND	**	0.100			
Bromomethane				ND	"	0.100			
2-Butanone	п			ND	n	00.1			
n-Butylbenzene	41			ND	tr	0.100			
sec-Butylbenzene	**			ND	**	0.100			
tert-Butylbenzene	H			ND	n	0.100			
Carbon disulfide	11			ND	n	0.100			
Carbon tetrachloride	11			ND	**	0.100			
Chlorobenzene	н			ND		0.100			
Chloroethane	н			ND	n	0.100			
Chloroform	"			ND		0.100			
Chloromethane	н			ND	**	0.500			
2-Chlorotoluene	Ħ			ND	0	0.100			
4-Chlorotoluene	н			ND	0	0.100			
Dibromochloromethane	te			ND	**	0.100			
1,2-Dibromo-3-chloropropane				ND		0.500			
1,2-Dibromoethane				ND	*	0.100			
Dibromomethane				ND		0.100			
1,2-Dichlorobenzene	n			ND		0.100			
1,3-Dichlorobenzene	н			ND	n	0.100			
1,4-Dichlorobenzene	n			ND	*	0.100			
Dichlorodifluoromethane	11			ND	**	0.100			
1,1-Dichloroethane	4			ND		0.100			
1,2-Dichloroethane	н			ND	**				
1,1-Dichloroethene	**				11	0.100			
•	14			ND		0.100			
cis-1,2-Dichloroethene	**			ND	**	0.100			
trans-1,2-Dichloroethene	**			ND		0.100			
1,2-Dichloropropane				ND	**	0.100			
1,3-Dichloropropane				ND	**	0.100			
2,2-Dichloropropane	11			ND	11	0.100			
1,1-Dichloropropene	Ħ			ND	*1	0.100			
cis-1,3-Dichloropropene	**			ND	41	0.100			

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IT Corporation - Renton 555 South Renton Village Place, Ste 700 Project: Time Oil #2750

Sampled: 6/7/99

Renton, WA 98055

Project Number: 783336 Project Manager: Jerry Harris Received: 6/8/99

Reported: 6/30/99 09:27

# Volatile Organic Compounds by EPA Method 8260B/Quality Control

	Date	Spike	Sample	QC		eporting Limit		RPD	RPD
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	% Notes*
Blank (continued)	0690688-B	LK1							
trans-1,3-Dichloropropene	6/21/99			ND	mg/kg dry	9 0.100			
Ethylbenzene	a			ND	н .	0.100			
Hexachlorobutadiene	10			ND	11	0.100			
2-Hexanone	**			ND	11	1.00			
lsopropylbenzene	**			ND	11	0.100			
p-Isopropyltoluene	н			ND	11	0.100			
Methylene chloride	11			ND	11	1.00			
4-Methyl-2-pentanone				ND	TP.	1.00			
Naphthalene	ø			ND	11	0.100			
n-Propylbenzene	п			ND	••	0.100			
Styrene	"			ND	#	0.100			
1,1,1,2-Tetrachloroethane	н			ND	н	001.0			
1,1,2,2-Tetrachloroethane	If			ND	11	0.100			
Tetrachloroethene	и			ND	10	0.100			
Toluene				ND	**	0.100			
1,2,3-Trichlorobenzene	н			ND	н	0.100			
1,2,4-Trichlorobenzene	н			ND	11	0.100			
1,1,1-Trichloroethane	н			ND	н	0.100			
1,1,2-Trichloroethane	н			ND	•	0.100			
Trichloroethene	н			ND		0.100			
Trichlorofluoromethane	н			ND	11	0.100			
1,2,3-Trichloropropane	"			ND	11	0.100			
1,2,4-Trimethylbenzene	н			ND	н	0.100			
1,3,5-Trimethylbenzene	11			ND	**	0.100			
Vinyl chloride	н			ND	п	0.100			
m,p-Xylene	#			ND	#1	0.200			
o-Xylene	11			ND	н	0.100			
Surrogate: 2-Bromopropene	"	2.00		2.14	"	70.0-130	107		
Surrogate: 1,2-DCA-d4	n	2.00		1.81	"	70.0-130	90.5		
Surrogate: Toluene-d8	"	2.00		2.01	"	70.0-130	100		
Surrogate: 4-BFB	"	2.00		1.83	n	70.0-130	91.5		
LCS	0690688-B	<u>S1</u>							
Benzene	6/21/99	1.00		0.987	mg/kg dry	y 70.0-130	98.7		
Chlorobenzene	н	1.00		1.00		70.0-130	100		
1,1-Dichloroethene	н	1.00		0.903	+	70.0-130	90.3		
Toluene	*	1.00		0.963	**	70.0-130	96.3		
Trichloroethene	#	1.00		1.09		70.0-130	109		

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\*Refer to end of report for text of notes and definitions.

Joy B Chang, Project Manager

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PRINT NAME:



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IT Corporation - Renton 555 South Renton Village Place, Ste 700 Renton, WA 98055

Project: Time Oil #2750 Project Number: 783336

Sampled: 6/11/99 Received: 6/14/99

Project Manager: Jerry Harris

6/25/99 13:22 Reported:

### ANALYTICAL REPORT FOR SAMPLES:

·		<del> </del>	
Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
02SB-09@6-6.5	B906371-01	Soil	6/11/99
02SB-09@20.5-21	B906371-02	Soil	6/11/99
02SB-09@15.5-16	B906371-03	Soil	6/11/99
02SB-09@10-10.5	B906371-04	Soil	6/11/99
02SB-09	B906371-05	Water	6/11/99

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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

> North Creek Analytical, Inc. **Environmental Laboratory Network**



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IT Corporation - Renton Project: Time Oil #2750 Sampled: 6/11/99 555 South Renton Village Place, Ste 700 Project Number: 783336 Renton, WA 98055 Project Manager: Jerry Harris

Received: 6/14/99 Reported: 6/25/99 13:22

### Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
02SB-09@6-6.5			B9063'	71-01			<u>Soil</u>	
Gasoline Range Hydrocarbons	0690565	6/17/99	6/21/99	<del></del>	5.00	ND	mg/kg dry	
Benzene	•	**	81		0.0500	ND	"	
Toluene			41		0.0500	ND		
Ethylbenzene	**	•	17		0.0500	ND	**	
Xylenes (total)			11		0.100	ND	n	
Surrogate: 4-BFB (FID)	"	<del>,</del>	**	50.0-150		94.6	%	···-
Surrogate: 4-BFB (PID)	n	"	"	50.0-150		98.0	H	
02SB-09@20.5-21			B9063	71-02			Soil	
Gasoline Range Hydrocarbons	0690565	6/17/99	6/24/99	<del></del>	5.00	ND	mg/kg dry	
Benzene	н	"	и		0.0500	ND	1	
Toluene	н	и	H		0.0500	ND	u	
Ethylbenzene		**			0.0500	ND	10	
Xylenes (total)	ut	"	at .		0.100	ND	н	
Surrogate: 4-BFB (FID)	a a	н		50.0-150	<del></del>	84.2	%	
Surrogate: 4-BFB (PID)	n	"	18	50.0-150		86.5	"	
02SB-09@15.5-16			B9063	<u>71-03</u>			<u>Soil</u>	
Gasoline Range Hydrocarbons	0690565	6/17/99	6/24/99		5.00	ND	mg/kg dry	
Benzene	**	**	**		0.0500	ND	4	
Toluene	**	*	**		0.0500	ND	#	
Ethylbenzene	n	н	11		0.0500	ND	**	
Xylenes (total)	**		**		0.100	ND		
Surrogate: 4-BFB (FID)	H	**	"	50.0-150		91.4	%	
Surrogate: 4-BFB (PID)	**	"	n	50.0-150		<b>96</b> .7	a	
02SB-09@10-10.5			B9063	71-04			<u>Soil</u>	
Gasoline Range Hydrocarbons	0690565	6/17/99	6/24/99		5.00	ND	mg/kg dry	
Benzene	If .	w ·	**		0.0500	ND	"	
Toluene	H	**	n		0.0500	0.0699		
Ethylbenzene		**	n		0.0500	ND	41	
Xylenes (total)	•	tt .	н		0.100	ND	n	
Surrogate: 4-BFB (FID)	11	N	"	50.0-150	<u>-</u>	86.0	%	
Surrogate: 4-BFB (PID)	u	"	*	50.0-150		91.5	"	
02SB-09			B9063	71-0 <u>5</u>			<u>Water</u>	
Gasoline Range Hydrocarbons	0690659	6/21/99	6/21/99		50.0	1360	ug/l	
Benzene	#	*	н		5.00	639	-#-	

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IT Corporation - Renton 555 South Renton Village Place, Ste 700

Project: Time Oil #2750 Project Number: 783336

Sampled: 6/11/99

Renton, WA 98055

Project Manager: Jerry Harris

Received: 6/14/99 Reported: 6/25/99 13:22

### Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
02SB-09 (continued)			B9063	71-0 <u>5</u>			Water	
Toluene	0690659	6/21/99	6/21/99		0.500	1.89	ug/i	
Ethylbenzene	и	**	•		0.500	1.31	**	
Xylenes (total)	*	•			1.00	9.66	es	
Surrogate: 4-BFB (FID)	**	***		50.0-150		99.0	%	
Surrogate: 4-BFB (PID)	"	**	*	50.0-150		<i>85.2</i>	"	

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IT Corporation - Renton Project: Time Oil #2750 Sampled: 6/11/99 555 South Renton Village Place, Ste 700 Project Number: 783336 Received: 6/14/99

Renton, WA 98055 Project Manager: Jerry Harris Reported: 6/25/99 13:22

### Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up) North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes
02SB-09@6-6.5			B9063	71-01			<u>Soil</u>	
Diesel Range Hydrocarbons	0690555	6/17/99	6/19/99		10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	II .	10	41		25.0	ND		
Surrogate: 2-FBP	" -		n	50.0-150		59.8	%	
02\$B-09@20.5-21			B9063	<u>71-02</u>			Soil	
Diesel Range Hydrocarbons	0690555	6/17/99	6/19/99		10.0	11.0	mg/kg dry	l
Lube Oil Range Hydrocarbons	74	**	•		25.0	ND	n	
Surrogate: 2-FBP	"	H	n	50.0-150		61.7	%	
02SB-09@15.5-16			B9063	71-0 <u>3</u>			<u>Soil</u>	
Diesel Range Hydrocarbons	0690555	6/17/99	6/19/99		10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	Ħ	0	Tr.		25.0	ND	n	
Surrogate: 2-FBP	"	"	"	50.0-150		53.0	%	•
02SB-09@10-10.5			B9063	71-04			Soil	
Diesel Range Hydrocarbons	0690555	6/17/99	6/19/99		10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	•	•	•		25.0	ND		
Surrogate: 2-FBP	" "		h	50.0-150		71.8	%	
02SB-09			B9063	71-05			<u>Water</u>	
Diesel Range Hydrocarbons	0690596	6/18/99	6/19/99		0.250	0.617	mg/l	2
Lube Oil Range Hydrocarbons	Ħ	11			0.500	ND	"	
Surrogate: 2-FBP	n	"	н	50.0-150		71.0	%	



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IT Corporation - Renton 555 South Renton Village Place, Ste 700

Project: Time Oil #2750

Sampled: 6/11/99

Renton, WA 98055

Project Number: 783336 Project Manager: Jerry Harris

Received: 6/14/99 Reported: 6/25/99 13:22

### **Dry Weight Determination** North Creek Analytical - Bothell

<u> </u>	<del></del>			
Sample Name	Lab ID	Matrix	Result	Units
02SB-09@6-6.5	B906371-01	Soil	89.8	%
02SB-09@20.5-21	B906371-02	Soil	81.9	%
02SB-09@15.5-16	B906371-03	Soil	81.9	%
02SB-09@10-10.5	B906371-04	Soil	82.6	%

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IT Corporation - Renton

Project: Time Oil #2750

Sampled: 6/11/99

555 South Renton Village Place, Ste 700

Project Number: 783336

Received: 6/14/99

Renton, WA 98055

Project Manager: Jerry Harris

Reported: 6/25/99 13:22

## Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B/Quality Control North Creek Analytical - Bothell

	Date	Spike	Sample	QC	R	eporting Limit	Recov.	RPD	RPD
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	% Note
Batch: 0690565	Date Prepa	ared: 6/17/	99		Extraction	n Method: EP	A 5030B	(MeQH)	i.
Blank	0690565-B	LK1							•
Gasoline Range Hydrocarbons	6/23/99			ND	mg/kg dry	5.00			
Benzene				ND	,, ,	0.0500			
Toluene	н			ND	**	0.0500			
Ethyl <b>benz</b> ene	**			ND	н	0.0500			
Xylenes (total)	**			ND	**	0.100			
Surrogate: 4-BFB (FID)		4.00		3.85		50.0-150	96.2		
Surrogate: 4-BFB (PID)	н	4.00		4.12	W	50.0-150	103		
LCS	0690565-B	<b>S1</b>							
Gasoline Range Hydrocarbons	6/21/99	25.0		20.5	mg/kg dry	70.0-130	82.0		
Surrogate: 4-BFB (FID)	"	4.00		4.00	*	50.0-150	100		
<u>Duplicate</u>	0690565-D	UPI B	906371-01						
Gasoline Range Hydrocarbons	6/21/99		ND	ND	mg/kg dry	,		50.0	
Surrogate: 4-BFB (FID)	ĸ	4.45	_	4.03	"	50.0-150	90.6		,
Matrix Spike	0690565-M	1S1 B	906302-05						
Benzene	6/21/99	0.568	ND	0.443	mg/kg dry	60.0-140	78.0		
Toluene	н	0.568	ND	0.471	n	60.0-140	82.9		
Ethylbenzene	It*	0.568	0.0532	0.481	*1	60.0-140	75.3		
Xylenes (total)	н	1.70	ND	1.43	н	60.0-140	84.1		
Surrogate: 4-BFB (PID)	"	4.54		4.17	"	50.0-150	91.9		
Matrix Spike Dup	0690565-M	1SD1 B	906302-05						
Benzene	6/22/99	0.568	ND	0.451	mg/kg dr	y 60.0-140	79.4	20.0	1.78
Toluene		0.568	ND	0.477	н	60.0-140	84.0	20.0	1.32
Ethylbenzene	H	0.568	0.0532	0.477	I†	60.0-140	74.6	20.0	0.934
Xylenes (total)	"	1.70	ND	1.41	**	60.0-140	82.9	20.0	1.44
Surrogate: 4-BFB (PID)	H	4.54		4.08	**	50.0-150	89.9		
Batch: 0690659	Date Prepa	ared: 6/21/	99		Extraction	n Method: EP	A 5030B	(MeOH	1
<u>Blank</u>	0690659-B		-						
Methyl tert-butyl ether	6/21/99			ND	ug/l	1.00			
Gasoline Range Hydrocarbons	•	•		ND	н	50.0			
Benzene	*			ND	11	0.500			
Talaana	-				_				

ND

ND

North Creek Analytical - Bothell

Toluene

Ethylbenzene

\*Refer to end of report for text of notes and definitions.

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0.500

0.500



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IT Corporation - Renton

555 South Renton Village Place, Ste 700

Renton, WA 98055

Project: Time Oil #2750

Project Number: 783336

Project Manager: Jerry Harris

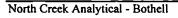
Sampled: 6/7/99

Received: 6/8/99

Reported: 6/30/99 09:27

### Volatile Organic Compounds by EPA Method 8260B/Quality Control North Creek Analytical - Bothell

	Date	Spike	Sample	QC	R	eporting Limit	Recov.	RPD	RPD	
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	<u>%</u>	Notes*
LCS (continued)	0690688-BS1									
Surrogate: 2-Bromopropene	6/21/99	2.00		2.13	mg/kg dry	70.0-130	107			
Surrogate: 1,2-DCA-d4	n	2.00		1.76	rt	70,0-130	88.0			
Surrogate: Toluene-d8	a	2.00		1.93	"	70.0-130	96.5			
Surrogate: 4-BFB	н	2.00		1.80	"	70.0-130	90.0			
Matrix Spike	0690688-MS	L <u>B</u>	906434-05							
Benzene	6/21/99	1.06	ND	0.975	mg/kg dry	70.0-130	92.0			
Chlorobenzene	#	1.06	ND	1.05	**	70.0-130	99.1			
1,1-Dichloroethene	н	1.06	ND	0.805	**	70.0-130	75.9			
Toluene	11	1.06	ND	1.00	ri .	70.0-130	94.3			
Trichloroethene	H	1.06	ND	1.04	"	70.0-130	98.1			
Surrogate: 2-Bromopropene	"	2.11		2.03	11	70.0-130	96.2			
Surrogate: 1,2-DCA-d4	*	2.11		1.77	u	70.0-130	83.9			
Surrogate: Toluene-d8	n	2.11		2.03	11	70.0-130	96.2			
Surrogate: 4-BFB	"	<b>2</b> .11		1.93	**	70.0-130	91.5			
Matrix Spike Dup	0690688-MS	<u>D1</u> <u>B</u>	906434-05							
Benzene	6/21/99	1.06	ND	0.977	mg/kg dr	70.0-130	92.2	15.0	0.217	
Chlorobenzene	n	1.06	ND	0.995		70.0-130	93.9	15.0	5.39	
1,1-Dichloroethene	ti	1.06	ND	0.781	H	70.0-130	73.7	15.0	2.94	
Toluene	*	1.06	ND	0.972	<b>17</b>	70.0-130	91.7	15.0	2.80	
Trichloroethene	п	1.06	ND	1.02	O	70.0-130	96.2	15.0	1.96	
Surrogate: 2-Bromopropene	rr rr	2.11		1.93	н	70.0-130	91.5			
Surrogate: 1,2-DCA-d4	"	2.11		1.70	**	70.0-130	80.6			
Surrogate: Toluene-d8	"	2.11		2.01	"	70.0-130	95.3			
Surrogate: 4-BFB	*	2.11		1.94	"	70.0-130	91.9			





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IT Corporation - Renton 555 South Renton Village Place, Ste 700

Project: Time Oil #2750

Sampled: 6/7/99 Received: 6/8/99

Renton, WA 98055

Project Number: 783336 Project Manager: Jerry Harris

Reported: 6/30/99 09:27

### Notes and Definitions

#	Note
1	The spike recovery for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
2	The RPD value for this QC sample is above the established control limit. Review of associated QC indicates the high RPD does not represent an out-of-control condition for the batch.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

North Creek Analytical - Bothell



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503.906.9200 fax 503 906 9210 Bend 20354 Empire Avenue, Suite E-9, Bend, OR 97708-1883 541.383.9310 fax 541.382.7588

IT Corporation - Renton

Project: Time Oil #2750

Sampled: 6/11/99

555 South Renton Village Place, Ste 700

Project Number: 783336

Received: 6/14/99

Renton, WA 98055

Project Manager: Jerry Harris

Reported: 6/25/99 13:22

# Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B/Quality Control North Creek Analytical - Bothell

	Date	Spike	Sample	QC		Reporting Limit	Recov.	RPD	RPD	
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	%	Notes*
Blank (continued)	0690659-BI	<u>.K1</u>								
Xylenes (total)	6/21/99			ND	ug/l	1.00				
Surrogate: 4-BFB (FID)	n	48.0		42.9	"	50.0-150	89.4			
Surrogate: 4-BFB (PID)	u	48.0		46.3	H	50.0-150	96.5			
LCS	0690659-BS	<u> </u>								
Gasoline Range Hydrocarbons	6/21/99	500		502	ug/l	70.0-130	100			
Surrogate: 4-BFB (FID)	#	48.0		45.3		50.0-150	94.4			
Duplicate	0690659-DI	JPI B	906347-01							
Gasoline Range Hydrocarbons	6/22/99		ND	ND	ug/l			25.0		
Surrogate: 4-BFB (FID)	н	48.0	<del></del> -	43.5	16	50.0-150	90.6		-	
<u>Duplicate</u>	0690659-DU	<u>J<b>P2</b> B</u>	906373-05							
Gasoline Range Hydrocarbons	6/22/99		ND	ND	ug/l			25.0		
Surrogate: 4-BFB (FID)	"	48.0		43.3	"	50.0-150	90.2			<u></u>
Matrix Spike	0690659-M	<u>S1 B</u>	906373-04							
Methyl tert-butyl ether	6/22/99	10.0	ND	14.4	ug/l	70.0-130	144			3
Benzene	**	10.0	0.971	10.4	•	70.0-130	94.3			
Toluene	и	10.0	ND	9.58	**	70.0-130	95.8			
Ethylbenzene	"	10.0	ND	9.83	"	70.0-130	98.3			
Xylenes (total)	**	30.0	ND	29.2	**	70.0-130	97.3			
Surrogate: 4-BFB (PID)	"	48.0		47.4	"	50.0-150	98.8			
Matrix Spike Dup	0690659-M	SDI B	906373-04							
Methyl tert-butyl ether	6/22/99	10.0	ND	16.0	ug/l	70.0-130	160	15.0	10.5	3
Benzene	н	10.0	0.971	11.1	n	70.0-130	101	15.0	6.86	
Toluene	н	10.0	ND	10.2	n	70.0-130	102	15.0	6.27	
Ethylbenzene .	"	10.0	ND	10.5	11	70.0-130	105	15.0	6.59	
Xylenes (total)	н	30.0	ND	31.3	н	70.0-130	104	15.0	6.66	
Surrogate: 4-BFB (PID)	<i>n</i>	48.0		48.2	u	50.0-150	100	_		

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IT Corporation - Renton 555 South Renton Village Place, Ste 700 Project: Time Oil #2750 Sampled: 6/11/99

Project Number: 783336 Received: 6/14/99

Renton, WA 98055 Project Manager: Jerry Harris

Reported: 6/25/99 13:22

# Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)/Quality Control North Creek Analytical - Bothell

	Date	Spike	Sample	QC	R	eporting Limit	Recov.	RPD	RPD
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	% Notes*
Batch: 0690555	Date Prepa	red: 6/17/	99		Extractio	n Method; EP.	A 3550B		
Blank	0690555-B								
Diesel Range Hydrocarbons	6/18/99	_		ND	mg/kg dry	10.0			
Lube Oil Range Hydrocarbons	#1			ND	н	25.0			
Surrogate: 2-FBP	"	10.8		6.84		50.0-150	63.3	·-	- ··
LCS	0690555-B	<u>\$1</u>							
Diesel Range Hydrocarbons	6/18/99	66.7		55.0	mg/kg dry	60.0-140	82.5		
Surrogate: 2-FBP	11	10.8	<b>_</b>	9.21	11	50.0-150	85.3		
<u>Duplicate</u>	0690555-D	UP1 B	906373-01						
Diesel Range Hydrocarbons	6/18/99		ND	ND	mg/kg dry	/		50.0	
Lube Oil Range Hydrocarbons	14		36.9	ND	ti .			50.0	
Surrogate: 2-FBP	н	13.6		7.64	tt	50.0-150	56.2	·	
Batch: 0690596	Date Prepa	red: 6/18/5	99		Extraction Method: EPA 3520C/600 Series				
Blank	0690596-B	LK1							
Diesel Range Hydrocarbons	6/19/99			ND	mg/l	0.250			
Lube Oil Range Hydrocarbons	**			ND	er e	0.500			
Surrogate: 2-FBP	"	0.325		0.241	11	50.0-150	74.2		
LCS	0690596-B	<u>\$1</u>							
Diesel Range Hydrocarbons	6/19/99	2.00		1.73	mg/l	60.0-140	86.5		
Surrogate: 2-FBP	· ·	0.325		0.240	"	50.0-150	73.8		
LCS Dup	0690596-B	SD1							
Diesel Range Hydrocarbons	6/19/99	2.00		1.78	mg/l	60.0-140	89.0	40.0	2.85
Surrogate: 2-FBP	,,	0.325	·	0.240	"	50.0-150	73.8		<del></del>



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IT Corporation - Renton 555 South Renton Village Place, Ste 700

Project: Project Number: 783336

Time Oil #2750

Sampled: 6/11/99 Received: 6/14/99

Renton, WA 98055

Project Manager: Jerry Harris

6/25/99 13:22 Reported:

### Notes and Definitions

#	Note
1	Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
2	The sample chromatographic pattern does not resemble the fuel standard used for quantitation.
3	The spike recovery for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

North Creek Analytical - Bothell



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CHAIN OF CUSTODY REPORT

90% Work Order #:

TURNAROUND REQUEST in Business Days*	Organic & Inorganic Analyses  10 7 5 4 3 2 1 < 1	STD. Petroleum Hydrocarbon Analyses $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	STD. Please Specify	отнек	*Turnamund Requests less than standard may incur Rush Charges.	MATRIX # OF	(W, S, O) CONT. COMMENTS ID	S Notedatestable	) ( S	7 5	\ \ \	N 3 +					· P	5.00	-	Ç	FIRM: COR TIME: 15.45	FIRM: NCA TIME: 1646	TEMP: PAGE OF
INVOICETO: TIMO, I CO Mth Soft Slown	Scottle War		1 1					10-14-04-3411-011			701	\$0-1 \\	<b>&gt;</b>							16/14/9	PRINT NAME:	DATE: RECEIVED BY A LONG TIME: PRINT NAME: PAP.NU TBNTY	Sample is too could s
CLIENT: //me Oil G	ADDRESS: 555 B. Renton VIllagenflaw Ste 700	PHONE: 425-728-949 FAX:475 728-9793	FNAME: 2750	PROJECT NUMBER:	SAMPLED BY:	CLIENT SAMPLE SAMPLING	IDENTIFICATION DATE/TIME & & &	0258-09eb45 4/11/99 821 XX	XXX X 835 1 12-3-02-8220		\$253-09 0 10.5 \\ \X\X\\	XXX 342/ 1 10820			0.	2.	3.	4.	5.	DBY: MA I	'RINT NAME.	PRINT NAME: CRUCK ALL STATE FIRMS STATE SALE	ADDITIONAL REMARKS: MAR CARETUM LOR



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IT Corporation - Renton

Project: Time Oil #2750

Sampled: 9/13/99

555 South Renton Village Place, Ste 700

Project Number: 783336

Received: 9/14/99

Renton, WA 98055 Project Manager: Jerry Harris Reported: 9/22/99 10:45

### ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
02MW-1A	B909253-01	Soil	9/13/99
02MW-1B	B909253-02	Soil	9/13/99
02MW-1C	B909253-03	Soil	9/13/99
02MW-1D	B909253-04	Soil	9/13/99
02MW-4A	B909253-05	Soil	9/13/99
02MW-4B	B909253-06	Soil	9/13/99
02MW-4C	B909253-07	Soil	9/13/99
02MW-4D	B909253-08	Soil	9/13/99
02MW-4E	B909253-09	Soil	9/13/99
02MW-5A	B909253-10	Soit	9/13/99
02MW-5B	B909253-11	Soil	9/13/99
02MW-5C	B909253-12	Soil	9/13/99
02MW-5D	B909253-13	Soil	9/13/99
02MW-5E	B909253-14	Soil	9/13/99
02MW-5F	B909253-15	Soil	9/13/99
02MW-5G	B909253-16	Soil	9/13/99

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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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503 906.9200 Tax 503 906.9210 20332 Empire Avenue, Suite F-1, Bend, OR 97701, 5711, 541, 383, 9310, Jan 541, 382, 7588 Bend

IT Corporation - Renton Project: Time Oil #2750 Sampled: 9/13/99 555 South Renton Village Place, Ste 700 Project Number: 783336 Received: 9/14/99 9/22/99 10:45 Renton, WA 98055 Project Manager: Reported: Jerry Harris

### Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B North Creek Analytical - Bothell

· · · · · · · · · · · · · · · · · · ·	Batch	Date	Date	Surrogate	Reporting			-
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
			_					
<u>02MW-1A</u>			B9092	53-01			<u>Soil</u>	
Gasoline Range Hydrocarbons	0990425	9/14/99	9/15/99		5.00	ND	mg/kg dry	
Benzene	•	**	•		0.0500	ND	•	
Toluene		tı	11		0.0500	ND	ti	
Ethylbenzene	ıı .	n	**		0.0500	ND	**	
Xylenes (total)	n	••	Ħ		0.100	ND	н	
Surrogate: 4-BFB (FID)			**	50.0-150		82.0	%	
Surrogate: 4-BFB (PID)	H	н	**	50.0-150		92.4	н	
02MW-1B			B9092:	53-02			<u>Soil</u>	
Gasoline Range Hydrocarbons	0990425	9/14/99	9/15/99		5.00	ND	mg/kg dry	
Benzene	н	n	11		0.0500	ND	0	
Toluene		**	**		0.0500	ND	•	
Ethylbenzene	н	41	o		0.0500	ND	P	
Xylenes (total)	н	M	**		0.100	ND	#	
Surrogate: 4-BFB (FID)	"	#	"	50.0-150		67.6	%	<del></del>
Surrogate: 4-BFB (PID)	*	"	•	50.0-150		80.5	**	
02MW-1C			B9092	<u>53-03</u>			<u>Soil</u>	
Gasoline Range Hydrocarbons	0990425	9/14/99	9/14/99		5.00	ND	mg/kg dry	
Benzene	it	11	14		0.0500	ND	Ħ	
Toluene	•	•	•		0.0500	ND	II .	
Ethylbenzene	"		•		0.0500	ND	D	
Xylenes (total)	•	41	*		0.100	ND	+	
Surrogate: 4-BFB (FID)	•	Ħ	**	50.0-150		79.4	%	
Surrogate: 4-BFB (PID)	**	•	*	50.0-150		92.2	"	
02MW-1D			B9092:	<u>53-04</u>			Soil	
Gasoline Range Hydrocarbons	0990425	9/14/99	9/15/99		5.00	ND	mg/kg dry	
Benzene	•	•	H		0.0500	ND	**	
Toluene	•	×	11		0.0500	ND	10	
Ethylbenzene		<b>PI</b>	и		0.0500	ND	br .	
Xylenes (total)	•		**		0.100	ND	**	
Surrogate: 4-BFB (FID)	#	н	н	50.0-150		80.1	%	
Surrogate: 4-BFB (PID)	•	<b>"</b>	"	50.0-150		91.8	er .	
02MW-4A			B9092	<u>53-05</u>			Soil	
Gasoline Range Hydrocarbons	0990425	9/14/99	9/15/99		5.00	ND	mg/kg dry	
Benzene	•	*			0.0500	ND	*	

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\*Refer to end of report for text of notes and definitions.

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509 924.9200 tax 509.924.9290 Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503 906.9200 tax 503.906.9210 20332 Empire Avenue, Suito F-1, Bond, OR 97701-5711 541,383,9310 Tax 541,382,7588

IT Corporation - Renton 555 South Renton Village Place, Ste 700 Renton, WA 98055

Project: Project Number:

Time Oil #2750 783336 Project Manager: Jerry Harris

Sampled: 9/13/99 Received: 9/14/99

Reported: 9/22/99 10:45

### Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
02MW-4A (continued)			B9092:	53-05			Soil .	
Toluene	0990425	9/14/99	9/15/99		0.0500	ND	mg/kg dry	
Ethylbenzene	n				0.0500	ND	" " " "	
Xylenes (total)	н	м	44		0.100	ND	21	
Surrogate: 4-BFB (FID)	"	"	"	50.0-150	<del></del>	84.5	%	
Surrogate: 4-BFB (PID)	*	"	"	50.0-150		95.1	"	
02MW-4B			B9092	<u>53-06</u>			<u>Soil</u>	
Gasoline Range Hydrocarbons	0990425	9/14/99	9/15/99		5.00	6.88	mg/kg dry	
Benzene	•	•			0.0500	ND	**	
Toluene	*	II.	•		0.0500	ND	46	
Ethylbenzene	*				0.0500	ND	н	
Xylenes (total)	*		89		0.100	ND	*	
Surrogate: 4-BFB (FID)	n	"	PF	50.0-150		82.6	%	
Surrogate: 4-BFB (PID)	"	••	**	50.0-150		104	#	
)2MW-4C			B9092	53-07			Soil	
Gasoline Range Hydrocarbons	0990425	9/14/99	9/15/99		5.00	ИĎ	mg/kg dry	
Benzene	n	**	40		0.0500	ND	10	
Toluene	н	•	•		0.0500	ND	19	
Ethylbenzene	н	**	•		0.0500	ND	•	
Xylenes (total)	**	••	•		0.100	ND	••	
Surrogate: 4-BFB (FID)	**	<b>n</b>		50.0-150		77.0	%	<del>_</del> _
Surrogate: 4-BFB (PID)	n	**	er	50.0-150		91.6	**	
)2MW-4D			B9092	53-08			<u>Soil</u>	
Gasoline Range Hydrocarbons	0990425	9/14/99	9/15/99		5.00	ND	mg/kg dry	
Benzene	*				0.0500	ND	п	
Toluene	•	••			0.0500	ND	**	
Ethylbenzene		**	<b>H</b>		0.0500	ND	H	
Xylenes (total)		<b></b>			0.100	ND	**	
Surrogate: 4-BFB (FID)	**	"	"	50.0-150		78.2	%	
Surrogate: 4-BFB (PID)	*	"	*	50.0-150		87.8	*	
02MW-4E			B9092	53 <u>-09</u>			Soil	
Gasoline Range Hydrocarbons	0990425	9/14/99	9/15/99		5.00	ND	mg/kg dry	
Benzene	*	H	11		0.0500	ND	,	
Toluene	••		**		0.0500	ND	•	
Ethylbenzene			_		0.0500	ND	,, <b>u</b>	

North Creek Analytical - Bothell



Seattle 18939-120th Avenue NE, Suite 101, Bolliell, WA 98011-9508

425 420.9200 tax 425.420.9210

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541.383.9310 lax 541.382.7588

Project: Time Oil #2750 Sampled: 9/13/99 IT Corporation - Renton 555 South Renton Village Place, Ste 700 Received: 9/14/99 Project Number: 783336 Renton, WA 98055 Reported: 9/22/99 10:45 Project Manager: Jerry Harris

### Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B North Creek Analytical - Bothell

<u> </u>	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
02MW-4E (continued)			B9092	<u>53-09</u>			<u>Soil</u>	
Xylenes (total)	0990425	9/14/99	9/15/99		0.100	ND	mg/kg dry	
Surrogate: 4-BFB (FID)	er .	<i>H</i>	"	50.0-150		77.3	%	
Surrogate: 4-BFB (PID)	**	**	"	50.0-150		86.6	"	
021637.54			B9092	E3 10			Soil	
02MW-5A	0990425	9/14/99	9/15/99	22-10	5.00	ND	mg/kg dry	
Gasoline Range Hydrocarbons	<del>0990423</del>	7/14/77 #	7/13/77	•	0.0500	ND	mg/kg diy	
Benzene Toluene	•		н		0.0500	ND	•	
• • • • • • • • • • • • • • • • • • • •					0.0500	ND	**	
Ethylbenzene Valence (tetal)	er .	••	н		0.100	ND	Ħ	
Xylenes (total)		,,	н	50.0-150	0.100	81.2	%	
Surrogate: 4-BFB (FID)	"	#	,,	50.0-150 50.0-150		93.1	70 N	
Surrogate: 4-BFB (PID)				30.0-130		y <sub>3</sub> .1		
02MW-5B			B9092	<u>53-11</u>			Soil	
Gasoline Range Hydrocarbons	0990425	9/14/99	9/15/99		5.00	ND	mg/kg dry	
Benzene	**		4		0.0500	ND	**	
Toluene	**	#	**		0.0500	ND	şı.	
Ethylbenzene		Ħ	**		0.0500	ND	n	
Xylenes (total)	#	*	*		0.100	ND	17	
Surrogate: 4-BFB (FID)		*	н	50.0-150		82.7	%	
Surrogate: 4-BFB (PID)	"	•	*	50.0-150		94.6	#	
							0.11	
02MW-5C		- 4	B9092	53-12			Soil	
Gasoline Range Hydrocarbons	0990425	9/14/99	9/15/99		5.00	ND	mg/kg dry	
Benzene	•	•	*		0.0500	ND		
Toluene		H	н		0.0500	ND		
Ethylbenzene	н	•			0.0500	ND	in	
Xylenes (total)					0.100	ND		
Surrogate: 4-BFB (FID)	**	ir	<b>"</b>	50.0-150		81.1	%	
Surrogate: 4-BFB (PID)	"	*	н	50.0-150		94.0	*	
02MW-5D			B9092	53_13			Soil	
Gasoline Range Hydrocarbons	0990425	9/14/99	9/14/99	<u></u>	5.00	ND	mg/kg dry	
Benzene	#	9/14/33 #	7/14/77 #		0.0500	ND	н	
Toluene		*	<b>tr</b>		0.0500	ND		
Ethylbenzene .	91	*	Ħ		0.0500	ND	я	
•			w		0.100	ND	*	
Xylenes (total)  Surrogate: 4-BFB (FID)	. #	···		50.0-150			%	

North Creek Analytical - Bothell

\*Refer to end of report for text of notes and definitions.

Joy B Chang, Project Marager



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Bend 20332 Empire Avenue, Suite F-1, Bend OR 97701-5711 541.383 9310 fax 541 382 7588

IT Corporation - Renton

Project:

Time Oil #2750

Sampled: 9/13/99

55 South Renton Village Place, Ste 700

Project Number: 783336

Received: 9/14/99

tenton, WA 98055

Project Manager:

Jerry Harris

Reported: 9/22/99 10:45

## Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
02MW-5D (continued)			B9092	53-13			<u>Soil</u>	
Surrogate: 4-BFB (PID)	0990425	9/14/99	9/14/99	50.0-150		94.5	%	
<u>u2MW-5E</u>			B9092	<u>53-14</u>			Şoil	
Gasoline Range Hydrocarbons	0990425	9/14/99	9/15/99		5.00	ND	mg/kg dry	
Benzene	#	**	*		0.0500	0.222	*	
. oluene	III		**		0.0500	ND	н	
Ethylbenzene	**	**	**		0.0500	ND	11	
(ylenes (total)	н	•	n		0.100	ND	*	
urrogate: 4-BFB (FID)	"	н	н	50.0-150		82.6	%	
Surrogate: 4-BFB (PID)	n	n	"	50.0-150		90.3	u	
12MW-5F			B9092	53-15			Soil	
Gasoline Range Hydrocarbons	0990425	9/14/99	9/15/99		5.00	ND	mg/kg dry	
Benzene	я	**	*		0.0500	ND	#	
'oluene	Ħ	*	**		0.0500	ND	"	
Ethylbenzene		**	н		0.0500	ND	*1	
Xylenes (total)	10	••	**		0.100	ND	н	
Surrogate: 4-BFB (FID)	н —	"	<u>"</u>	50.0-150		73.0	%	
Surrogate: 4-BFB (PID)	н	•	~	50.0-150		81.8	u	
02MW-5G			B9092	53 <u>-16</u>			Soil	
Jasoline Range Hydrocarbons	0990425	9/14/99	9/15/99		5.00	ND	mg/kg dry	
Jenzene .	н	Ħ	4		0.0500	ND	74	
Toluene	#	n	Ħ		0.0500	ND	н	
Ethylbenzene	н	*	**		0.0500	ND	н	
(ylenes (total)	Ħ	Ħ			0.100	ND	H	
Surrogate: 4-BFB (FID)	<del>"</del>		pt .	50.0-150		78.4	%	
Surrogate: 4-BFB (PID)	**	"	"	50.0-150		88.2	"	

North Creek Analytical - Bothell

\*Refer to end of report for text of notes and definitions.

Joy B Chang, Project Manager



Seattle 18939 120th Avenue NE, Suite 101, Bothell, WA 98011-9506

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509 924.9200 fax 509.924.9290 Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210 Bend 20332 Empire Avenue Suite F-1, Bend, OR 97701-5711 541 383,9310 fax 541,382 7588

IT Corporation - Renton 555 South Renton Village Place, Ste 700 Project:

Time Oil #2750

Jerry Harris

Sampled: 9/13/99

:Renton, WA 98055

Project Number: 783336 Project Manager:

Received:

Reported: 9/22/99 10:45

9/14/99

## Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up) North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
02MW-1A			B90925	53-01			Soil	
Diesel Range Hydrocarbons	0990504	9/16/99	9/17/99		10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	**	*	**		25.0	ND	n	
Surrogate: 2-FBP	"	**	*	50.0-150		65.6	%	
02MW-1B			B9092	5 <u>3-02</u>			<u>Soil</u>	
Diesel Range Hydrocarbons	0990504	9/16/99	9/17/99		10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	**	н	н		25.0	ND	н	
Surrogate: 2-FBP	71	"	<b>N</b>	50.0-150	<del></del>	67.5	%	
02MW-1C			B9092	53-03			Soil	
Diesel Range Hydrocarbons	0990504	9/16/99	9/17/99		10.0	10.5	mg/kg dry	
Lube Oil Range Hydrocarbons	**	*	••		25.0	27.7	41	
Surrogate: 2-FBP	"	#	"	50.0-150		62.5	%	
02MW-1D			B9092	53-04			Soil	
Diesel Range Hydrocarbons	0990504	9/16/99	9/17/99		10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	**		*		25.0	ND	н	
Surrogate: 2-FBP	**	,,	"	50.0-150		61.8	%	
02MW-4A			B9092	53-05			Soil	
Diesel Range Hydrocarbons	0990504	9/16/99	9/17/99		10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	Ħ	п	F		25.0	ND	н	
Surrogate: 2-FBP	н	#	n	50.0-150		71.3	%	
02MW-4B			B9092	53-06			<u>Soil</u>	
Diesel Range Hydrocarbons	0990504	9/16/99	9/17/99		10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	•	n			25.0	ND	rf	
Surrogate: 2-FBP	<i>"</i>	"	,,	50.0-150		76.5	%	
02MW-4C			B9092	53-07			Soil	
Diesel Range Hydrocarbons	0990504	9/16/99	9/17/99		10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	*	н	•		25.0	ND		
Surrogate: 2-FBP	*	*	#	50.0-150		61.4	%	
02MW-4D			B9092	53-08			Soil	
Diesel Range Hydrocarbons	0990504	9/16/99	9/17/99		10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	#	•	*		25.0	ND	er	. <u></u>
	· · · · · · · · · · · · · · · · · · ·	<b>"</b>	*	50.0-150		72.3	%	

North Creek Analytical - Bothell



Seattle 18939 120th Avenue MF Suite 101 Bothell WA 98011-9508

425 420 9200 tax 405 420 9210

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Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 Tax 503.906.9210

541 383 9310 fax 541 382 7588

IT Corporation - Renton 555 South Renton Village Place, Ste 700

Project: Time Oil #2750 Project Number: 783336

Sampled: 9/13/99 Received: 9/14/99

Renton, WA 98055

Project Manager: Jerry Harris

Reported: 9/22/99 10:45

## Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up) North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
			D0003	F2 00			Soil	
02MW-4E	0000504	0/1//00	B90925	<u>53-09</u>	10.0	ND	5011 mg/kg dry	
Diesel Range Hydrocarbons	0990504	9/16/99	9/17/ <b>99</b>		25.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons			 #	50.0-150	25.0	66.8	%	
Surrogate: 2-FBP				30.0-130		00.8	70	
02MW-5A			B9092	53-10			Soil	
Diesel Range Hydrocarbons	0990504	9/16/99	9/17/99		10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	0	•			25.0	ND	4	
Surrogate: 2-FBP	"	"	**	50.0-150		80.5	%	<u>, , , , , , , , , , , , , , , , , , , </u>
02MW-5B			B9092	53-11			Soil	
Diesel Range Hydrocarbons	0990504	9/16/99	9/17/99		10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	n	н	tt		25.0	ND	"	
Surrogate: 2-FBP	n	**	**	50.0-150		66.2	%	
							6-7	
02MW-5C			B9092	<u>53-12</u>		10.7	<u>Soil</u>	
Diesel Range Hydrocarbons	0990504	9/16/99	9/17/99 "		10.0	10.3	mg/kg dry "	
Lube Oil Range Hydrocarbons	<del>"</del>	n	<del>"</del>	50.0.150	25.0	37.0 60.2	<del>%</del>	
Surrogate: 2-FBP	"	~		50.0-150		OU.2	70	
02MW-5D			B9092	53-13			Soil	
Diesel Range Hydrocarbons	0990504	9/16/99	9/17/99		10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	N	*	•		25.0	ND		
Surrogate: 2-FBP	,,	"	"	50.0-150	-	80.3	%	
02MW-5E			B9092	53-14			Soil	
Diesel Range Hydrocarbons	0990504	9/16/99	9/17/99		10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	H	н	H		25.0	ND	,	
Surrogate: 2-FBP	н	"	"	50.0-150		70.6	%	
02MW-5F			B9092	53-15			Soil	
Diesel Range Hydrocarbons	0990504	9/16/99	9/17/99	<u>~~</u>	10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons	#	7/ LU/ 7 7	9/1 //97 H		25.0	ND	*	
Surrogate: 2-FBP	n	н	"	50.0-150		65.7	%	
•				<b></b>			C+:I	
02MW-5G		04600	<u>B9092</u>	53-16	• • • •	\ IT>	<u>Soil</u>	
Diesel Range Hydrocarbons	0990504	9/16/99	9/17/99		10.0	ND	mg/kg dry	
Lube Oil Range Hydrocarbons					25.0	ND ND		
Surrogate: 2-FBP	_ '	, M	*	50.0-150		66.2	%	•

North Creek Analytical - Bothell



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IT Corporation - Renton 555 South Renton Village Place, Ste 700

Renton, WA 98055

Time Oil #2750 Project:

Project Number: 783336 Project Manager:

Jerry Harris

Sampled: 9/13/99

Received: 9/14/99

9/22/99 10:45 Reported:

## Total Metals by EPA 6000/7000 Series Methods North Creek Analytical - Bothell

	Batch	Date	Date	Specific	Reporting			
Analyte	Number	Prepared	Analyzed	Method	Limit	Result	Units	Notes*
02MW-1A			B90925	53-01			Soil	
Lead	0990509	9/16/99	9/21/99	EPA 6020	0.500	3.86	mg/kg dry	
							5 5 7	
02MW-1B			B9092				<u>Soil</u>	
Lead	0990509	9/16/99	9/21/99	EPA 6020	0.500	3.59	mg/kg dry	
02MW-1C			B9092	53-03			<u>Soil</u>	
Lead	0990509	9/16/99	9/21/99	EPA 6020	0.500	1.81	mg/kg dry	
02MW-1D			B9092				Soil	
Lead	0990509	9/16/99	9/21/99	EPA 6020	0.500	6.46	mg/kg dry	
02MW-4A			B9092	53-05			Soil	
Lead	0990509	9/16/99	9/21/99	EPA 6020	0.500	5.04	mg/kg dry	
02MW-4B			B9092				Soil	
Lead	0990509	9/16/99	9/21/99	EPA 6020	0.500	7.15	mg/kg dry	
02MW-4C			B9092	53-07			Soil	
Lead	0990509	9/16/99	9/21/99	EPA 6020	0.500	2.47	mg/kg dry	
02MW-4D			B9092				<u>Soil</u>	
Lead	0990509	9/16/99	9/21/99	EPA 6020	0.500	2.26	mg/kg dry	
02MW-4E			B9092	53- <u>09</u>			Soil	
Lead	0990509	9/16/99	9/21/99	EPA 6020	0.500	6.77	mg/kg dry	
			Docoo	<b>**</b>			6.4	
02MW-5A	0000500	0/1//00	B9092:		0.500	6.91	Soil malka day	
Lead	0990509	9/16/99	9/21/99	EPA 6020	0.500	0.71	mg/kg dry	
02MW-5B			B9092	<u>53-11</u>			Soil	
Lead	0990509	9/16/99	9/21/99	EPA 6020	0.500	2.82	mg/kg dry	
							6.2	
<u>02MW-5C</u>	*****	0/1/6/00	B9092		0.500	<i>(</i> 02	Soil	
Lead	0990509	9/16/99	9/21/99	EPA 6020	0.500	6.92	mg/kg dry	
02MW-5D			B9092	53-13			Soil	
Lead	0990509	9/16/99	9/21/99	EPA 6020	0.500	3.97	mg/kg dry	

North Creek Analytical - Bothell

\*Refer to end of report for text of notes and definitions.

Joy B Chang/Project Manager



Seattle 18939 120th Avenue NE, Serte 101 Bothell, WA 98011-9508

425 420 9200 Tax 425 420 9210

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503 906 9200 (ax 503 906 9210 Bend 20332 Empire Avenue, Suite F-1, Bend OR 97701-5711 541 383 9310 (ax 541 382 7588

IT Corporation - Renton
555 South Renton Village Place, Ste 700

Project: Time Oil #2750

Sampled: 9/13/99

Renton, WA 98055

Project Number: 783336
Project Manager: Jerry Harris

Received: 9/14/99 Reported: 9/22/99 10:45

## Total Metals by EPA 6000/7000 Series Methods North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
02MW-5E	0990509	9/16/99	<u>B9092</u> ; 9/21/99	53-14 EPA 6020	0.500	1.69	Soil mg/kg dry	
<u>02MW-5F</u>	0990509	9/16/99	<u>B9092:</u> 9/21/99	53-15 EPA 6020	0.500	3.37	Soil	
Lead  02MW-5G	0990309	9/10/99	B9092:		0.500	3.37	mg/kg dry Soil	
Lead	0990509	9/16/99	9/21/99	EPA 6020	0.500	3.46	mg/kg dry	

North Creek Analytical - Bothell

\*Refer to end of report for text of notes and definitions.

North Creek Analytical, Inc. Fovironmental Laboratory Network



Spokane

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Project: Time Oil #2750 Sampled: 9/13/99 IT Corporation - Renton Received: 9/14/99 555 South Renton Village Place, Ste 700 Project Number: 783336

Renton, WA 98055 Project Manager: Jerry Harris Reported: 9/22/99 10:45

### Dry Weight Determination North Creek Analytical - Bothell

Sample Name	Lab ID	Matrix	Result	Units
02MW-1A	В909253-01	Soil	85.0	%
02MW-1B	B909253-02	Soil	82.2	%
02MW-1C	B909253-03	Soil	84.7	%
02MW-1D	B909253-04	Soil	77.9	%
02MW-4A	B909253-05	Soil	82.5	%
02MW-4B	B909253-06	Soil	82.7	%
02MW-4C	B909253-07	Soil	82.3	%
02MW-4D	B909253-08	Soil	83.8	%
02MW-4E	B909253-09	Soil	77.7	%
02MW-5A	B909253-10	Soil	83.6	%
02MW-5B	B909253-11	Soil	79.6	%
02MW-5C	B909253-12	Soil	80.3	%
02MW-5D	B909253-13	Soil	81.2	%
02MW-5E	B909253-14	Soil	81.2	%
02MW-5F	B909253-15	Soil	72.0	%
02MW-5G	B909253-16	Soil	80.2	%

North Creek Analytical - Bothell



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Deporting Limit Decou

IT Corporation - Renton

Project:

Time Oil #2750

 $\overline{\alpha}$ 

Sampled: 9/13/99

555 South Renton Village Place, Ste 700

Project Number: 783336

Cailea

Received: 9/14/99

Renton, WA 98055

Project Manager: Jerry Harris

Reported: 9/22/99 10:45

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## Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B/Quality Control 2015 North Creek Analytical Bothell 1972

Comple

	Date	Spike	Sample	QC	Re	porting Limit	Recov.	RPD	RPD
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	% Notes
Batch: 0990425	Date Prepa	red: 9/14/9	99		Extraction	Method: EP	A 5030R	(MeOH)	
Blank	0990425-BI				***************************************		××××××		•
Gasoline Range Hydrocarbons	9/14/99	<del></del>		ND	mg/kg dry	5.00			
Benzene	u			ND	"	0.0500			
Toluene	·		-	ND	**	0.0500			
Ethylbenzene	н			ND	•	0.0500			
Xylenes (total)	41			ND	**	0.100			
Surrogate: 4-BFB (FID)		4.00		3.70	H	50.0-150	92.5		
Surrogate: 4-BFB (P1D)	**	4.00		4.31	**	50.0-150	108		
LCS	0990425-BS	<u> </u>							
Gasoline Range Hydrocarbons	9/14/99	25.0		22.7	mg/kg dry	70.0-130	90.8		
Surrogate: 4-BFB (FID)	"	4.00		3.78	"	50.0-150	94.5		
Duplicate	0990425-D1	UP1 B	909253-03			•			
Gasoline Range Hydrocarbons	9/15/99		ND	ND	mg/kg dry			50.0	
Surrogate: 4-BFB (FID)	N -	4.72		3.57	11	50.0-150	75.6		
Duplicate	0990425-DI	UP2 B	909253-13						
Gasoline Range Hydrocarbons	9/15/99		ND	ND	mg/kg dry			50.0	
Surrogate: 4-BFB (FID)	n	4.92		3.87	Ħ	50.0-150	78.7		
Matrix Spike	0990425-M		909253-15						
Benzene	9/15/99	0.695	ND	0.545	mg/kg dry	60.0-140	78.4		
Toluene	#	0.695	ND	0.572	•	60.0-140	82.3		
Ethylbenzene	N	0.695	ND	0.599	•	60.0-140	86.2		
Xylenes (total)	И	2.08	ND	1.82	**	60.0-140			
Surrogate: 4-BFB (PID)	N	5.56		4.85	H	50.0-150	87.2		
Matrix Spike Dup	0990425-M	SD1 B	9092 <u>53-15</u>						
Benzene	9/15/99	0.695	ND	0.539	mg/kg dry	60.0-140	77.6	20.0	1.03
Toluene	н	0.695	ND	0.573	**	60.0-140	82.4	20.0	0.121
Ethylbenzene	и	0.695	ND	0.639	**	60.0-140	91.9	20.0	6.40
Xylenes (total)	*	2.08	ND	1.80	**	60.0-140	86.5	20.0	1.15
Surrogate: 4-BFB (PID)	N	5.56		4.66	H	50.0-150	83.8		

North Creek Analytical - Bothell

\*Refer to end of report for text of notes and definitions.

Joy B Chang, Project Manager



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IT Corporation - Renton

Project: Time Oil #2750 Sampled: 9/13/99

555 South Renton Village Place, Ste 700

Project Number: 783336

Renton, WA 98055

Received: 9/14/99

Project Manager: Jerry Harris

9/22/99 10:45 Reported:

## Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel: Clean-up)/Quality Control (page 1)

	Date	Spike	Sample	QC	R	eporting Limit	Recov.	RPD	RPD	
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	%	Notes*
					<b>.</b>	14 · · · · · · · · · · · · · · · · · · ·				
Batch: 0990504	Date Prepar		199		Extraction	n Method: EP	V SOOR			
<u>Blank</u>	0990504-BL	<u>K1</u>								
Diesel Range Hydrocarbons	9/17/99			ND	mg/kg dr	y <b>10.0</b>				
Lube Oil Range Hydrocarbons				ND	H	25.0				
Surrogate: 2-FBP	u	10.7		6.81	"	50.0-150	63.6			
LCS	0990504-BS	1								
Diesel Range Hydrocarbons	9/17/99	66.7		46.5	mg/kg dr	y 60.0-140	69.7			
Surrogate: 2-FBP	*r	10.7		6.91	n	50.0-150	64.6			
Duplicate	0990504-DU	Pi l	B909296-02							
Diesel Range Hydrocarbons	9/17/99		18.9	18.3	mg/kg dr	у		50.0	3.23	
Lube Oil Range Hydrocarbons	11		ND	ND	*			50.0		
Surrogate: 2-FBP	rr .	11.4		8.07	#	50.0-150	70.8			
<u>Duplicate</u>	0990504-DU	<u> P2</u>	B909253-07							
Diesel Range Hydrocarbons	9/17/99		ND	ND	mg/kg dr	у		50.0		
Lube Oil Range Hydrocarbons	•		ND	ND	"	•		50.0		
Surrogate: 2-FBP	**	13.0		9.26	n	50.0-150	71.2			

North Creek Analytical - Bothell

\*Refer to end of report for text of notes and definitions.

Joy B Chang, Project Manager



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IT Corporation - Renton

Project: Time Oil #2750

Sampled: 9/13/99

555 South Renton Village Place, Ste 700

Project Number: 783336

Received: 9/14/99

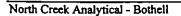
Renton, WA 98055

Project Manager: Jerry Harris

Reported: 9/22/99 10:45

## Total/Metals by EPA 6000/7000 Series Methods/Quality Control North Creek Analytical - Bothell

	Date	Spike	Sample	QC	Rej	orting Limit	Recov.	RPD	RPD	
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	%	Notes*
Batch: 0990509	Date Prepa	red: 9/16/9	<u>99</u>		Extraction	Method: EPA	3050B			
Blank	<u>0990509-BI</u>	∡K1								
Lead	9/21/99			ND	mg/kg dry	0.500				
LCS	0990509-BS	31								
Lead	9/21/99	25.0		27.2	mg/kg dry	80.0-120	109			
Matrix Spike	0990509-M	S1 B9	09264-01							
Lead	9/21/99	17.5	6.27	29.8	mg/kg dry	70.0-130	134			
Matrix Spike	0990509-M	S2 B9	909264-01							
Lead	9/21/99	179	6.27	201	mg/kg dry	70.0-130	109			1
Matrix Spike Dup	0990509-M	SDI B	009264-01							
Lead	9/21/99	17.7	6.27	22.4	mg/kg dry	70.0-130	91.1	20.0	38.1	2





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IT Corporation - Renton 555 South Renton Village Place, Ste 700 Project: Time Oil #2750

Sampled: 9/13/99

Renton, WA 98055

Project Number: 783336 Project Manager: Jerry Harris Received: 9/14/99 Reported: 9/22/99 10:45

#### Notes and Definitions

<u>#</u>	Note
1	Post-digestion Matrix Spike.
2	Visual examination indicates the RPD and/or matrix spike recovery is outside the control limit due to a non-homogeneous sample matrix.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

North Creek Analytical - Bothell



East 11115 Montgomery, Suite B, Spokane, WA 98206-4776 9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 \$ : E uje – cone ' 39 12

FAX 906-9210 FAX 924-9290 FAX 382-7588 )7† X .92(X) (509) 924-9200 (541) 383-9310 (503) 906-9200

Work Order #: 18909253

CHAIN OF CUSTODY REPORT

NCA WO g 5 10 60 DATE OF 14ō 80 6 질 8 9 DATE TIM TURNAROUND REQUEST In Business Days\* 土 \* Turnament Requests less than standard may incur Rush Charge WO TEMPS TO PARTY TIME TIME: / B909253 10 7 5 4 3 2 OTHER Please Specify COMMENTS CONT. # OF FIRMS N P MATRIX (14, S, O) FIRM 2,7 Hotmon PRINT NAMIE: Connie PRINT NAME A REQUESTED ANALYSES DATE: 9/14/99 RECEIVED BY RECTRIVED BYS 1) 1/1/4 TINITE: 12,54 6 INVOICE TO: FAX: 425-228-9793 P.O. NUMBER. TIME: 9:41 Villago 12. #700 FIRM: IT COLD 9:34 7:50 7.54 8:4 67.6 かんぶ 86:41 14:26 18:23 10:37 10:4B DATECTIME SAMPLING 4/13/46 IAMPLED BY: CUS**CLIENT SAMPLE IDENTIFICATION** DITIONAL REMARKS: ROJECT NUMBER: CINOCUSIIEI (P.) 02MW-1C / - 40 OS-NW-CD ( - 4D BLUM-5E ADDRESS: 575 0+1 - MMG IT MARCH V-S-MIKP わるがたって GLAW-5 F OLAN-OB PROJECT NAME: INQUISITED BY: CZMW-- MW-CO 110NE: #25 REPORT TO: INT NAME: NINANIE MUTO CLIENT



9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 East 11115 Montgomery, Suite B, Spokane, WA 98206-4776 only 120th tonne N of the 10th of the 19th of the 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

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FAX 906-9210 IAX 924-9290 FAX 382-7588 מינטי074 איז (541) 383-9310

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Work Order #: CHAIN OF CUSTODY REPORT

NCA WO 9 TURNAROUND REQUEST in Business Days\* \*Turnamunal Requests less than standard may incur Rush Charges DATES 18909253 Please Specify
OTHER COMMENTS 7 5 4 " CONT. ₩ OF KUNITED PLANE (W, S, O) MATRIX INVOICE TO: CONNIP HOFMAN RECEIVED BY REQUESTED ANALYSES DATE: 9/14/99 P.O. NUMBER: FAX: 415-228- 9793 Reg 70 741/40 PL #76 DATE/TIME SAMPLING 86/61/6 CLIENT SAMPLE IDENTIFICATION HONE: 425-128 D5-MW-20 EPORT TO:  $\mathcal{Fer}_{\mathcal{F}}$ ROJECT NUMBER: .ddress: 55,5 LINQUISITED BY: ROJECT NAME: AMPLED BY: LIENT

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IT Corporation - Renton 555 South Renton Village Place, Ste 700

Project: Time Oil #2750

Sampled: 9/28/99

Renton, WA 98055

Project Number: 783336

Received: 9/29/99

Project Manager: Jerry Harris

Reported: 10/6/99 15:57

### ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
02-MW-1	B909648-01	Water	9/28/99
02-MW-2	B909648-02	Water	9/28/99
02-MW-3	B909648-03	Water	9/28/99
02-MW-4	B909648-04	Water	9/28/99
02-MW-5	B909648-05	Water	9/28/99

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North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

> North Creek Analytical, Inc. Environmental Laboratory Network



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IT Corporation - Renton

555 South Renton Village Place, Ste 700

Renton, WA 98055

Project: Time Oil #2750

Project Number: 783336

Project Manager: Jerry Harris

Sampled: 9/28/99

Received: 9/29/99

Reported: 10/6/99 15:57

## Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
0.5 3.577.4							-	
02-MW-1	10000		B90964	<u>48-01</u>			<u>Water</u>	
Gasoline Range Hydrocarbons	1090003	10/1/99	10/1/99		50.0	172	ug/l	
Benzene		Ħ	•		0.500	72.9	**	
Toluene		*			0.500	0.811	41	
Ethylbenzene	**	Ħ	e e		0.500	ND	"	
Xylenes (total)		**			1.00	ND	"	
Surrogate: 4-BFB (FID)	**	"	"	50.0-150		91,7	%	<del></del>
Surrogate: 4-BFB (PID)	n	"	n	50.0-150		83.8	"	
02-MW-2			B90964	<u>48-02</u>			Water	
Gasoline Range Hydrocarbons	1090003	10/1/99	10/1/99		50.0	ND	ug/l	
Benzene	ti	Ħ	#		0.500	ND	**	
Toluene	**		u		0.500	ND	**	
Ethylbenzene	tr	н	н		0.500	ND		
Xylenes (total)	**	tr	н		1.00	ND	N	
Surrogate: 4-BFB (FID)	11	H		50.0-150		82.9	%	<del></del>
Surrogate: 4-BFB (PID)	"	"	#	50.0-150		85.8	"	
02-MW-3			DOOG A	40.03			XXI-4	
Gasoline Range Hydrocarbons	1090003	10/1/99	B90964	<u>+0-U2</u>	50.0	1/0	<u>Water</u>	
Benzene	1090003	10/1/99	10/2/99		50.0	160	ug/l	
Toluene	•	77			0.500	56.7	"	
- · · · · · · ·			*		0.500	1.13	" H	
Ethylbenzene		17	"		0.500	ND		
Xylenes (total)	<u>"</u>	<u>"</u>	# #		1.00	1.14		
Surrogate: 4-BFB (FID)	.,			50.0-150		91.2	%	
Surrogate: 4-BFB (PID)	"	"	*	50.0-150		81.7	"	
02-MW-4			B90964	<u>18-04</u>			Water	
Gasoline Range Hydrocarbons	1090003	10/1/99	10/2/99		250	3700	ug/i	
Benzene	11	*	*		30.0	ND	н	1
Toluene	H	tt.	#		2.50	185	μ	
Ethylbenzene	н	Ħ	n		2.50	226	H	
Xylenes (total)	**	#	Ħ		5.00	473	н	
Surrogate: 4-BFB (FID)	<i>"</i>	H	"	50.0-150		99.6	%	
Surrogate: 4-BFB (PID)	n	n	н	50.0-150		94.6	#	
02-MW-5			B90964	i8-05			<u>Water</u>	
Gasoline Range Hydrocarbons	1090003	10/1/99	10/2/99	- W - W - W -	50.0	ND	ug/l	
Benzene	m	"	10/ <i>23 у у</i> н		0.500	2.84	ug/i	
				••	0.500	4.04		

North Creek Analytical - Bothell



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IT Corporation - Renton 555 South Renton Village Place, Ste 700 Project: Time Oil #2750

Sampled: 9/28/99 Received: 9/29/99

Renton, WA 98055

Project Number: 783336
Project Manager: Jerry Harris

Reported: 10/6/99 15:57

### Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
02-MW-5 (continued)			B90964	<u> 18-05</u>			<u>Water</u>	
Toluene	1090003	10/1/99	10/2/99		0.500	ND	ug/l	
Ethylbenzene	•	**	ŧi		0.500	ND	11	
Xylenes (total)	••	•	41		1.00	ND	**	
Surrogate: 4-BFB (FID)	"	"	"	50.0-150		100	%	
Surrogate: 4-BFB (PID)	"	**	**	50.0-150		90.8	**	

North Creek Analytical - Bothell

\*Refer to end of report for text of notes and definitions.

Joy B Chang, Project Manager



Renton, WA 98055

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IT Corporation - Renton Project: Time Oil #2750 Sampled: 9/28/99

555 South Renton Village Place, Ste 700 Project Number: 783336 Received: 9/29/99

> Project Manager: Jerry Harris Reported: 10/6/99 15:57

## Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
02-MW-1			B9096	<u>48-01</u>			<u>Water</u>	
Diesel Range Hydrocarbons	1090047	10/2/99	10/4/99		0.250	ND	mg/l	
Lube Oil Range Hydrocarbons	er	H	n		0.500	ND	#	
Surrogate: 2-FBP	st.		"	50.0-150		52.8	%	
02-MW-2			B9096	<u>48-02</u>			<u>Water</u>	
Diesel Range Hydrocarbons	1090047	10/2/99	10/4/99		0.250	ND	mg/l	
Lube Oil Range Hydrocarbons	•	•	0		0.500	ND	**	
Surrogate: 2-FBP	п	п	n	50.0-150		51.8	%	
02-MW-3			<u>B9096</u>	<u>48-03</u>			Water	
Diesel Range Hydrocarbons	1090047	10/2/99	10/4/99		0.250	ND	mg/l	
Lube Oil Range Hydrocarbons	e	+1	H		0.500	ND	**	
Surrogate: 2-FBP	"	ıı .	**	50.0-150	· · · · · · · · · · · · · · · · · · ·	57.9	%	
02-MW-4			B90964	<u>48-04</u>			Water	
Diesel Range Hydrocarbons	1090047	10/2/99	10/4/99		0.250	ND	mg/l	
Lube Oil Range Hydrocarbons	**	**			0.500	ND		
Surrogate: 2-FBP	n	N	<del>- "</del>	50.0-150	<u> </u>	53.9	%	_
02-MW-5			B90964	48-0 <u>5</u>			<u>Water</u>	
Diesel Range Hydrocarbons	1090047	10/2/99	10/4/99		0.250	ND	mg/l	
Lube Oil Range Hydrocarbons	**	ft	11		0.500	ND	н	
Surrogate: 2-FBP	н	"	"	50.0-150		33.2	%	2

North Creek Analytical - Bothell



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IT Corporation - Renton 555 South Renton Village Place, Ste 700

Project: Time Oil #2750

Sampled: 9/28/99 Received: 9/29/99

Renton, WA 98055

Project Number: 783336 Project Manager: Jerry Harris

Reported: 10/6/99 15:57

## Total Metals by EPA 6000/7000 Series Methods North Creek Analytical - Bothell

	Batch	Date	Date	Specific	Reporting		<del></del>	
Analyte	Number	Prepared	Analyzed	Method	Limit	Result	Units	Notes*
02-MW-1			B9096	<u> 48-01</u>			<u>Water</u>	
Lead	1090064	10/3/99	10/4/99	EPA 6020	0.00100	0.0360	mg/l	
02-MW-2			B90964	<u>18-02</u>			<u>Water</u>	
Lead	1090064	10/3/99	10/4/99	EPA 6020	0.00100	0.133	mg/l	
02-MW-3			B90964	18-03			Water	
Lead	1090064	10/3/99	10/4/99	EPA 6020	0.00100	ND	mg/l	
02-MW-4			B90964	18-04			Water	
Lead	1090064	10/3/99	10/4/99	EPA 6020	0.00100	0.0359	mg/l	
02-MW-5			B90964	<u>18-05</u>			Water	
Lead	1090064	10/3/99	10/4/99	EPA 6020	0.00100	0.0863	mg/l	

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IT Corporation - Renton

Project: Time Oil #2750

Sampled: 9/28/99

555 South Renton Village Place, Ste 700

Project Number: 783336

Received: 9/29/99

Renton, WA 98055

Project Manager: Jerry Harris

Reported: 10/6/99 15:57

# Wolafile Retroleum Products and BJEFX (by NWIPPHEG vand EPA)8021B/Quality.Control

	Date	Spike	Sample	QC		Reporting Limit	Recov.	RPD	RPD
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	% Notes*
Batch: 1090003	Date Prepa	red: 10/1/	99		Extrac	tion Method: EP.	A 5030R	(P/T)	
Blank	1090003-B		<b>~</b>		241.44			71.11	
Gasoline Range Hydrocarbons	10/1/99			ND	ug/l	50.0			
Benzene	II.			ND		0.500			
Toluene	**			ND	41	0.500			
Ethylbenzene	If .			ND	44	0.500			
Xylenes (total)	10			ND		1.00			
Surrogate: 4-BFB (FID)	,,	48.0		41.5		50.0-150	86.5		
Surrogate: 4-BFB (PID)	"	48.0		41.2	#1	50.0-150	85.8		
<u>Blank</u>	<u>1090003-B</u> 1	LK2							
Gasoline Range Hydrocarbons	10/2/99			ND	ug/l	50.0			
Benzene	11			ND	"	0.500			
Toluene	11			ND		0.500			
Ethylbenzene	**			ND	11	0.500			
Xylenes (total)	•1			ND	"	1.00	·		
Surrogate: 4-BFB (FID)	"	48.0		<i>43</i> .8	"	50.0-150	91.2		
Surrogate: 4-BFB (PID)	"	48.0		41.2	**	50.0-150	85.8		
LCS	1090003-BS	81							
Gasoline Range Hydrocarbons	10/1/99	500		456	ug/l	70.0-130	91.2		
Surrogate: 4-BFB (FID)	#1	48.0		45.9	4	50.0-150	95.6		
<u>Duplicate</u>	1090003-D1	UP1 B	909613-02						
Gasoline Range Hydrocarbons	10/2/99		158000	160000	ug/l			25.0	1.26
Surrogate: 4-BFB (FID)	n '	48.0		44.3	Ħ	50.0-150	92.3		•
<u>Duplicate</u>	1090003-D1	UP2 B	909613-04						
Gasoline Range Hydrocarbons	10/4/99		244000	242000	ug/l			25.0	0.823
Surrogate: 4-BFB (FID)	"	48.0		44.1	**	50.0-150	91.9		
Matrix Spike	1090003-M		909613-07						
Benzene	10/4/99	10.0	ND	8.84	ոճ\յ	70.0-130	88.4		
Foluene	**	10.0	ND	9.09		70.0-130	90.9		
Ethylbenzene	**	10.0	ND	9.22		70.0-130	92.2		
Xylenes (total)	H	30.0	ND	27.8	H	70.0-130	92.7		
Surrogate: 4-BFB (PID)	"	48.0	<del>-</del>	42.6	*	50.0-150	88.7		

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IT Corporation - Renton

555 South Renton Village Place, Ste 700

Project: Time Oil #2750

Sampled: 9/28/99

Project Number: 783336

Received: 9/29/99

Renton, WA 98055

Project Manager: Jerry Harris

Reported: 10/6/99 15:57

## Wolatile Petroleum Products and BTEX by NWTPH-Greand/EPA 8021B/Quality Control 3.28. North Creek Analytical - Bothell Bothell Bothell

**	Date	Spike	Sample	QC		Reporting Limit	Recov.	RPD	RPD	
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	%	Notes*
Matrix Spike Dup	1090003-M	SD1 B	909613-07							
Benzene	10/4/99	10.0	ND	8.51	ug/l	70.0-130	85.1	15.0	3.80	
Toluene	н	10.0	ND	8.50	**	70.0-130	85.0	15.0	6.71	
Ethylbenzene	*1	10.0	ND	8.60	**	70.0-130	86.0	15.0	6.96	
Xylenes (total)	н	30.0	ND	25.8	**	70.0-130	86.0	15.0	7.50	
Surrogate: 4-BFB (PID)	rf	48.0		41.6	n	50.0-150	86.7			_



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Project: Time Oil #2750 Sampled: 9/28/99 IT Corporation - Renton

Received: 9/29/99 555 South Renton Village Place, Ste 700 Project Number: 783336

Reported: 10/6/99 15:57 Renton, WA 98055 Project Manager: Jerry Harris

# Samfvolttiletzetrolenmitzrodirestsyjniwatzi et savatith Aert/Silles ed Kelemenp Quality Controls (1995) North Creek Amalytical a Bothell

	Date	Spike	Sample	QC		Reporting Limit	Recov.	RPD	RPD	_
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	%	Notes*
Batch: 1090047	Date Prepa	red: 10/2/	<u>99</u>		Extra	ction Method: EP.	A 3520C	/600 Seri	<u>es</u>	
<u>Blank</u>	1090047-B	<u>LKI</u>								
Diesel Range Hydrocarbons	10/4/99			ND	mg/l	0.250				
Lube Oil Range Hydrocarbons	"			ND	**	0.500				
Surrogate: 2-FBP	- "	0.320		0.202	**	50.0-150	63.1			
LCS	1090047-B	<u>S1</u>								
Diesel Range Hydrocarbons	10/4/99	2.00		1.15	mg/l	50.0-150	57.5			
Surrogate: 2-FBP	n	0.320		0.169	"	50.0-150	52.8	_		
LCS Dup	1090047-B	SD1								
Diesel Range Hydrocarbons	10/4/99	2.00		0.996	mg/l	50.0-150	49.8	50.0	14.4	3
Surrogate: 2-FBP	*	0.320		0.176	#	50.0-150	55.0			



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IT Corporation - Renton

Project: Time Oil #2750

Sampled: 9/28/99

555 South Renton Village Place, Ste 700

Project Number: 783336

Received: 9/29/99

Renton, WA 98055

Project Manager: Jerry Harris

10/6/99 15:57 Reported:

## TOTELL COLUMN SELECTION OF COLUMN SELECTION OF

	Date	Spike	Sample	QC		Reporting Limit	Recov.	RPD	RPD
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	% Notes*
Batch: 1090064	<u>Date Prepa</u> 1090064-B1		99		Extrac	tion Method: EP.	A 3020A		
Blank Lead	10/4/99	2 <b>XI</b>		ND	mg/l	0.00100			
<u>Blank</u> Lead	<u>1090064-BI</u> 10/4/99	<u>.K2</u>		ND	mg/l	0.00100			
LCS Lead	<u>1090064-BS</u> 10/4/99	0.200		0.191	mg/l	80.0-120	95.5		
LCS Lead	<u>1090064-BS</u> 10/4/99	0.200		0.209	mg/l	80.0-120	105		
<u>Matrix Spike</u> Lead	<u>1090064-M</u> 10/4/99	S1 <u>B</u> 9 0.200	909586-06 ND	0.211	mg/l	75.0-125	105		
<u>Matrix Spike</u> Lead	<u>1090064-M</u> 10/4/99	S2 B9 0.200	009648-03 ND	0.213	mg/l	75.0-125	106		
Matrix Spike Dup Lead	<u>1090064-M</u> 10/4/99	SD1 B9 0.200	909586-06 ND	0.213	mg/l	75.0-125	106	20.0	0.948
Matrix Spike Dup Lead	<u>1090064-M</u> 10/4/99	SD2 B9 0.200	<b>209648-03</b> ND	0.209	mg/l	75.0-125	105	20.0	0.948

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IT Corporation - Renton 555 South Renton Village Place, Ste 700

Project: Time Oil #2750 Project Number: 783336

Sampled: 9/28/99 Received: 9/29/99

Renton, WA 98055 Project Manager: Jerry Harris

Reported: 10/6/99 15:57

#### Notes and Definitions

#	Note
1	The reporting limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
2	Surrogate recovery is below the established control limit, result may be biased low. There was no sample left to perform re-extraction and analysis for confirmation.
3	The spike recovery for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

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FAX 924-9290 FAX 906-9210 FAX 382-7588 (420 3200

TURNAROUND REQUEST in Business Days\* Petroleum Hydrocarbon Analyses - Please Specify Organic & Inorganic Analyses ۳, S77. Work Order #: ST. RENTON VICEAGE PC. 98605-3296 CORREGATION Ste. 700 do REQUESTED ANALYSES CHAIN OF CUSTODY REPORT P.O. NUMBER: 783336 550 INVOICE TO: IT FAX: 420-228-9493 sre. 444 (PM- SERRY HARRIS 98406-3295 reeminan PROJECT NAME TIME OR SEGITLE Stocky ADDRESS: 666 6. RENTS RENTON , WA Ó REPORT TO: CARIS CLIENT: TOME

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IT Corporation - Renton

555 South Renton Village Place, Ste 700

Renton, WA 98055

Project: Time Oil #2750

Project Number: 783336

Project Manager: Jerry Harris

Sampled: 9/28/99 Received: 9/29/99

Reported: 10/6/99 15:57

#### ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
02-MW-1	B909648-01	Water	9/28/99
02-MW-2	B909648-02	Water	9/28/99
02-MW-3	B909648-03	Water	9/28/99
02-MW-4	B909648-04	Water	9/28/99
02-MW-5	B909648-05	Water	9/28/99

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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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IT Corporation - Renton Project: Time Oil #2750 Sampled: 9/28/99
555 South Renton Village Place, Ste 700 Project Number: 783336 Received: 9/29/99
Renton, WA 98055 Project Manager: Jerry Harris Reported: 10/6/99 15:57

## Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
<u>02-MW-1</u>			B9096	<u>48-01</u>			<u>Water</u>	
Gasoline Range Hydrocarbons	1090003	10/1/99	10/1/99		50.0	172	ug/l	
Benzene	et .	и	**		0.500	72.9	н	
Toluene	**		"		0.500	0.811		
Ethylbenzene	11		47		0.500	ND	"	
Xylenes (total)	**	н	н		1.00	ИD	Ħ	
Surrogate: 4-BFB (FID)	"	"	,,	50.0-150		91.7	%	
Surrogate: 4-BFB (PID)	"	"	*	50.0-150		83.8	н	
<u>02-MW-2</u>			B90964	<u> 18-02</u>			Water	
Gasoline Range Hydrocarbons	1090003	10/1/99	10/1/99		50.0	ND	ug/l	
Benzene	**		41		0.500	ND	μ	
Toluene	**	ft	п		0.500	ND	н	
Ethylbenzene	•	n			0.500	ND	**	
Xylenes (total)	0	Ħ	tr		1.00	ND	11	
Surrogate: 4-BFB (FID)		**	"	50.0-150		82.9	%	
Surrogate: 4-BFB (PID)	#	"	~	50.0-150		85.8	"	
02-MW-3			B90964	£8 <u>-03</u>			Water	
Gasoline Range Hydrocarbons	1090003	10/1/99	10/2/99		50.0	160	ug/l	
Benzene	*	••	н		0.500	56.7	"	
Toluene	in		**		0.500	1.13	**	
Ethylbenzene	11	н	•		0.500	ND	n	
Xylenes (total)	**	•	**		1.00	1.14	#	
Surrogate: 4-BFB (FID)	#	н	tt	50.0-150		91.2	%	-
Surrogate: 4-BFB (PID)	11	#	"	50.0-150		81.7	"	
02-MW-4			B90964	18-04			<u>Water</u>	
Gasoline Range Hydrocarbons	1090003	10/1/99	10/2/99		250	3700	ug/l	
Benzene	er	•	It		30.0	ND	"	I
Toluene	*	*	H		2.50	185	**	
Ethylbenzene	**	**	u		2.50	226	Ħ	
Xylenes (total)	n		н		5.00	473	#1	
Surrogate: 4-BFB (FID)	<del></del>	*	"	50.0-150		99.6	%	
Surrogate: 4-BFB (PID)	n	н	et	50.0-150		94.6	/0 H	
02-MW-5			B90964	IR_05			<u>Water</u>	
Gasoline Range Hydrocarbons	1090003	10/1/99	10/2/99	IS VS	50.0	ND	ug/l	
Benzene	1090003	10/1/99	10/2/99		0.500	2.84	# ug∕ı	
P-UZCHE				.*	0.500	2.54		

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\*Refer to end of report for text of notes and definitions.

Joy B Chang, Project Manager

North Creek Analytical, Inc. Environmental Laboratory Network



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IT Corporation - Renton 555 South Renton Village Place, Ste 700

Project: Time Oil #2750

Sampled: 9/28/99

Project Number: 783336

Received: 9/29/99

Renton, WA 98055

Project Manager: Jerry Harris

Reported: 10/6/99 15:57

## Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
02-MW-5 (continued)			B9096	<del>18-05</del>			<u>Water</u>	
Toluene	1090003	10/1/99	10/2/99		0.500	ND	ug/l	
Ethylbenzene	#	•	•		0.500	ND	u u	
Xylenes (total)	*	••	**		1.00	ND		
Surrogate: 4-BFB (FID)	-	**	"	50.0-150		100	%	
Surrogate: 4-BFB (PID)	u	a	H	50.0-150		90.8	,,	

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IT Corporation - Renton

555 South Renton Village Place, Ste 700

Project: Time Oil #2750

Sampled: 9/28/99

Project Number: 783336

Received: 9/29/99

Renton, WA 98055

Project Manager: Jerry Harris

Reported: 10/6/99 15:57

## Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes'
<u>02-MW-1</u>			B9096	<u>48-01</u>			<u>Water</u>	
Diesel Range Hydrocarbons	1090047	10/2/99	10/4/99		0.250	ND	mg/l	
Lube Oil Range Hydrocarbons	n	•	"		0.500	ND	**	
Surrogate: 2-FBP	"	tı .	"	50.0-150		52.8	%	
02-MW-2			B9096-	<u>48-02</u>			Water	
Diesel Range Hydrocarbons	1090047	10/2/99	10/4/99		0.250	ND	mg/l	
Lube Oil Range Hydrocarbons	н	н	**		0.500	ND	71	
Surrogate: 2-FBP	0,	11	"	50.0-150	_	51.8	%	_
<u>02-MW-3</u>			B90964	<u>48-03</u>			Water	
Diesel Range Hydrocarbons	1090047	10/2/99	10/4/99		0.250	ND	mg/l	
Lube Oil Range Hydrocarbons	*	H	н		0.500	ND	11	
Surrogate: 2-FBP	H	#	н	50.0-150		57.9	%	
02-MW-4			B90964	<u>48-04</u>			Water	
Diesel Range Hydrocarbons	1090047	10/2/99	10/4/99		0.250	ND	mg/l	
Lube Oil Range Hydrocarbons	71	•	•		0.500	ND	' н	
Surrogate: 2-FBP	n	"	"	50.0-150		53.9	%	
02-MW-5			B90964	48-0 <u>5</u>			Water	
Diesel Range Hydrocarbons	1090047	10/2/99	10/4/99		0.250	ND	mg/l	
Lube Oil Range Hydrocarbons	H	n	**		0.500	ND	н	
Surrogate: 2-FBP	"	"	,	50.0-150	-	33.2	%	2

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IT Corporation - Renton 555 South Renton Village Place, Ste 700

Project:

Time Oil #2750

Sampled: 9/28/99

Project Number: 783336

Received: 9/29/99

Renton, WA 98055

Project Manager: Jerry Harris

Reported: 10/6/99 15:57

## Total Metals by EPA 6000/7000 Series Methods North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
02-MW-1 Lead	1090064	10/3/99	<u>B9096</u> 10/4/99	48-01 EPA 6020	0.00100	0.0360	<u>Water</u> mg/l	
<u>02-MW-2</u> Lead	1090064	10/3/99	<b>B9096</b> 4 10/4/99	<b>48-02</b> EPA 6020	0.00100	0.133	<u>Water</u> mg/l	
02-MW-3 Lead	1090064	10/3/99	<u>B9096</u> 4 10/4/99	18-03 EPA 6020	0.00100	ND	<u>Water</u> mg/l	
<u>02-MW-4</u> Lead	1090064	10/3/99	<b>B909</b> 64 10/4/99	<u>18-04</u> EPA 6020	0.00100	0.0359	<u>Water</u> mg/l	
<u>02-MW-5</u> Lead	1090064	10/3/99	<u>B90964</u> 10/4/99	<u>18-05</u> EPA 6020	0.00100	0.0863	<u>Water</u> mg/l	

North Creek Analytical - Bothell



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IT Corporation - Renton

555 South Renton Village Place, Ste 700

Renton, WA 98055

Project: Time Oil #2750

Project Number: 783336

Project Manager: Jerry Harris

Sampled: 9/28/99 Received: 9/29/99

Reported: 10/6/99 15:57

## Volatile Petroleum Products and BUEX by NWTPH-Grand-EPA 8021B/Quality. Control to 15.

	Date	Spike	Sample	QC		Reporting Limit	Recov.	RPD	RPD
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	% Notes*
Batch: 1090003	Date Prepa	ead- 10/1:	/QQ		E	tion Matheds Dr	4 6020P	(D/CC)	
Blank	1090003-BI		22		Extrac	tion Method: EP.	<del>a 2030R</del>	(P/1)	
Gasoline Range Hydrocarbons	10/1/99	ΣIXI.		ND	ug/l	50.0			
Benzene	"			ND ND	" ug/i	0,500			
Toluene	**			ND	#	0.500			
Ethylbenzene	10			ND	н	0.500			
Xylenes (total)	**			ND		1.00			
Surrogate: 4-BFB (FID)		48.0		41.5		50.0-150	86.5		
Surrogate: 4-BFB (PID)	"	48.0		41.2	"	50.0-150	85.8		
Blank	1090003-B1	<u>.K2</u>							
Gasoline Range Hydrocarbons	10/2/99			ND	ug/l	50.0			
Benzene	•			ND	*1	0.500			
Toluene	**			ND	•	0.500			
Ethylbenzene	н			ND	•	0.500			
Xylenes (total)	14			ND	н	1.00	-		
Surrogate: 4-BFB (FID)	"	48.0		43.8	"	50.0-150	91.2		
Surrogate: 4-BFB (PID)	"	48.0		41.2	,,	50.0-150	85.8		
LCS	1090003-BS	<b>:1</b>							
Gasoline Range Hydrocarbons	10/1/99	500		456	ug/l	70.0-130	91.2		
Surrogate: 4-BFB (FID)	и	48.0		45.9	<del>"</del> -	50.0-150	95.6	-	
Duplicate	1090003-DU	JP1 B	909613-02						
Gasoline Range Hydrocarbons	10/2/99		158000	160000	սջ/l			25.0	1.26
Surrogate: 4-BFB (FID)	er	48.0		44.3	n	50.0-150	92.3		
<u>Duplicate</u>	1090003-DL	IP2 R	909613-04						
Gasoline Range Hydrocarbons	10/4/99	C.C. F	244000	242000	ug/l			25.0	0.823
Surrogate: 4-BFB (FID)	"	48.0		44.1	"	50.0-150	91.9		
Matrix Spike	1090003-MS	S1 B	909613-07						
Benzene	10/4/99	10.0	ND	8.84	ug/l	70.0-130	88.4		
Foluene	11	10.0	ND	9.09	4 ·	70.0-130	90.9		
Ethylbenzene	н	10.0	ND	9.22	н	70.0-130	92.2		
Xylenes (total)	н	30.0	ND	27.8	н	70.0-130	92.7		
Surrogate: 4-BFB (PID)	<del>"</del>	48.0		42.6	<del>"</del>	50.0-150	88.7		
-0				72.0		50.0-150	00.7		

North Creek Analytical - Bothell



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IT Corporation - Renton

Project: Time Oil #2750

Sampled: 9/28/99

555 South Renton Village Place, Ste 700

Project Number: 783336

Received: 9/29/99

Renton, WA 98055

Project Manager: Jerry Harris

Reported: 10/6/99 15:57

# VolatilePetroleum@roducts and BREX(by NWTRH=Grand)®PA8020B(Quality Control North Greek Analytical Enothell

	Date	Spike	Sample	QC		Reporting Limit	Recov.	RPD	RPD
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	% Notes*
Matrix Spike Dup	1090003-M	SD1 B	909613-07						
Benzene	10/4/99	10.0	ND	8.51	ug/i	70.0-130	85.1	15.0	3.80
Toluene	h	10.0	ND	8.50		70.0-130	85.0	15.0	6.71
Ethylbenzene	H	10.0	ND	8.60	**	70.0-130	86.0	15.0	6.96
Xylenes (total)	"	30.0	ND	25.8	**	70.0-130	86.0	15.0	7.50
Surrogate: 4-BFB (PID)	"	48.0	-	41.6	**	50.0-150	86.7		

Joy B Chang Project Manager



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IT Corporation - Renton

555 South Renton Village Place, Ste 700

Renton, WA 98055

Project: Time Oil #2750

Project Number: 783336

Project Manager: Jerry Harris

Sampled: 9/28/99

Received: 9/29/99

Reported: 10/6/99 15:57

## Semivolatile?Petroleum?Products.by/NWTPHEDxxvfth/Acid/Silico@edKeleueup/Quelity/Controles North Greek Analytical ≈ Bothell

	Date	Spike	Sample	QC		Reporting Limit	Recov.	RPD	RPD	
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	%	Notes*
Batch: 1090047	Date Prepa	red: 10/2/9	99		Extrac	tion Method: EP	A 3520C	/600 Seri	<u>es</u>	
<u>Blank</u>	1090047-B	LK1								
Diesel Range Hydrocarbons	10/4/99			ND	mg/l	0.250				
Lube Oil Range Hydrocarbons	41			ND	11	0.500				
Surrogate: 2-FBP	п	0.320		0.202	r r	50.0-150	63.1			
LCS	1090047-B	<u>S1</u>								
Diesel Range Hydrocarbons	10/4/99	2.00		1.15	mg/i	50.0-150	57.5			
Surrogate: 2-FBP	n	0.320		0.169	**	50.0-150	52.8	-		-
LCS Dup	1090047-B	SD1								
Diesel Range Hydrocarbons	10/4/99	2.00		0.996	mg/l	50.0-150	49.8	50.0	14.4	3
Surrogate: 2-FBP	н	0.320	<del>-</del>	0.176	"	50.0-150	55.0			



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IT Corporation - Renton

Project: Time Oil #2750

Sampled: 9/28/99

555 South Renton Village Place, Ste 700

Project Number: 783336

Received: 9/29/99

Renton, WA 98055

Project Manager: Jerry Harris

Reported: 10/6/99 15:57

# Total Memb by 94A 6000/7000 Series Methods/Quality Control ... North Greek Analytical Abothell

	Date	Spike	Sample	QC		Reporting Limit	Recov.	RPD	RPD	
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	%	Notes*
Batch: 1090064	Date Prepa	red: 10/3/9	99		Extra	ction Method: EP	A 3020A			
<u>Blank</u>	<u> 1090064-BI</u>	K1								
Lead	10/4/99			ND	mg/l	0.00100				
Blank	1090064-BI	<u>.K2</u>								
Lead	10/4/99			ND	mg/l	0.00100				
LCS	1090064-BS	:1								
Lead	10/4/99	0.200		0.191	mg/l	80.0-120	95.5			
1.00	1000064 70									
LCS	1090064-BS	_								
Lead	10/4/99	0.200		0.209	mg/l	80.0-120	105			
Matrix Spike	1090064-M	S1 B9	<u>909586-06</u>							
Lead	10/4/99	0.200	ND	0.211	mg/l	75.0-125	105			
Matrix Spike	1090064-M	S2 B9	09648-03							
Lead	10/4/99	0.200	ND	0.213	mg/l	75.0-125	106			
Matrix Spike Dup	1090064-M	SD1 RG	09586-06							
Lead	10/4/99	0.200	ND	0.213	mg/I	75.0-125	106	20.0	0.948	
					J					
Matrix Spike Dup	<u>1090064-M</u> 5		<u>009648-03</u>							
Lead	10/4/99	0.200	ND	0.209	mg/l	75.0-125	105	20.0	0.948	

North Creek Analytical - Bothell



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IT Corporation - Renton

Project: Time Oil #2750

Sampled: 9/28/99 Received: 9/29/99

Renton, WA 98055

Project Number: 783336

Project Manager: Jerry Harris

Reported: 10/6/99 15:57

### **Notes and Definitions**

6	
#	Note
1	The reporting limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
2	Surrogate recovery is below the established control limit, result may be biased low. There was no sample left to perform re-extraction and analysis for confirmation.
3	The spike recovery for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

Jorth Creek Analytical - Bothell



FAX 924-9290 FAX 906-9210 FAX 382-7588 X 42! -9200 (509) 924-9200 (541) 383-9310 (503) 906-9200 9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 East 11115 Montgomery, Suite B. Spokane, WA 98206-4776 5-110 Work Order #: tici; Tuife I **enuc** 939.1 CHAIN OF CUSTODY REPORT

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CLIENT: TIME OIC			INVOICE TO: IT	" CORPORATION	TURNAROUND REQ	TURNAROUND REQUEST in Business Days*
REPORT TO: CHAIS STOK	STOREY (FM. JERRY	HARRIS)		6 S. RENTON VICLAGE PC.	_	Organic & Inorganic Analyses
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SAMPLED BY: RYAN ROSS	5	198	437 - (T -		Turnamund Requests less than	Turnamund Requests less than standard may incur Rush Charges.
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FLINQUISHED BY:			DATE:	RECEIVED BY:		DATE:
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