INC.# 4445

Applied Geotechnology Inc.

A Report Prepared For

GTE Northwest Incorporated
1800 41st Street, WA0104LB
Everett, Washington 98201

SR 12/15/93 cu

DEPARTMENT OF ECOLOGY
NWRO/TCP TANK UNIT

INTERIM CLEANUP REPORT	☑
SITE CHARACTERIZATION	☐
FINAL CLEANUP REPORT	☐
OTHER _____	☐
AFFECTED MEDIA: SOIL	☑
OTHER _____ GW	☑
INSPECTOR (INIT.) CU	DATE 10/21/93

DEPARTMENT OF ECOLOGY
UNDERGROUND STORAGE TANKS
SEP 08 1993

CONTAMINATION ASSESSMENT REPORT
GTE KIRKLAND SUPPORT CENTER
GTE W.O. #2970-B1B-3C001AD
KIRKLAND, WASHINGTON

AGI Project No. 15,169.130

by:

Alan D. Grey FOR
Jeffrey S. Thompson
Engineering Geologist

John E. Newby, P. E.
President

JOHN E. NEWBY
STATE OF WASHINGTON
19730
REGISTERED
PROFESSIONAL ENGINEER

EXPIRES 8/13/94

APPLIED GEOTECHNOLOGY INC.
300 120th Avenue N.E.
Building 4, Suite 215
Bellevue, Washington 98005
206/453-8383

September 2, 1993

1/2

Independent Action Report Update

Site Name: GTE Vehicle Center

Inc. #: 4445 Date of Report: 9/2/93

County: King Date Report Rec'd: 9/8/93

Reviewed by: C. Madden

Comments (please include: free prod., tank info., media, contaminant migration, GW conc. trends, PCS treated/fate?):

2 USTs, 1 waste; 1 underground oil/water seperator removed 4/93. (1 UST was CIP previously).

UST not had bahole → bottom (1' diameter).

125 cy PCS from this area stockpiled onsite.

No TPH detected in samples from CIP UST.

Waste = no holes, but stained soil.

50 cy stockpiled - samples ND.

UST Pump area - 3' layer visually contaminated soil; 75 cy PCS excavated, leaving 2-3' area below utilities & building footings.

Contaminated water seepage assumed to be from surface. 2 MW's installed - 8/5/93 visit - no gw in MW's.

Rec's →

Recommendations - check gw during wet winter season.

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INTRODUCTION

DESCRIPTION OF PROJECT

This report presents Applied Geotechnology Inc.'s (AGI) assessment of potential hydrocarbon contamination originating from three underground storage tanks (USTs) and a gasoline dispenser at the GTE Kirkland Garage Facility (site) in Kirkland, Washington.

AGI prepared plans and specifications for tank removal and installation of a new UST system. The plans and specifications were distributed to prequalified contractors for bidding. A contract for tank removal and installation was awarded to O'Sullivan Petroleum Equipment Company (O'Sullivan) of Seattle, Washington.

PURPOSE AND SCOPE OF SERVICES

The purpose of our contamination assessment was to observe and document cleanup of contaminated soil or groundwater associated with the UST systems. Our scope of services consisted of the following:

- Monitor removal of the USTs and field screen soil samples from the tank cavities for the presence of fuel hydrocarbons.
- Collect representative soil samples and groundwater samples for chemical analysis.
- Submit soil and groundwater samples for analysis of petroleum hydrocarbons.
- Summarize the results of our findings in this contamination assessment report.

TANK REMOVAL ACTIVITIES

BACKGROUND

The site is located at 12055 Slater Avenue Northeast in Kirkland, and is occupied by several buildings. An office building lies on the north portion of the site and a vehicle maintenance garage is located on the south portion. A 12,000-gallon unleaded gasoline UST, a 500-gallon waste-oil UST, and an underground oil-water separator were located west of the garage. In addition, a gasoline dispenser was located on the north side of the garage. In March 1993, GTE informed AGI that an additional 8,000-gallon UST was located on site immediately west of the office building. Building locations and the former locations of the USTs, separator, and dispenser are shown on Figure 1, Site Plan.

We understand the 8,000-gallon UST was previously used to store unleaded gasoline. The tank had been previously decommissioned and filled with concrete. GTE required removal of the tank and its contents, along with any contaminated soil associated with the tank.

TANK REMOVAL AND SOIL EXCAVATION

8,000-Gallon Gasoline UST

An AGI representative visited the site on April 9, 1993 to observe excavation of the 8,000-gallon gasoline UST located west of the office building. The tank was found to be in good condition. Our representative closely observed the excavation and collected soil samples for field screening. Samples were screened with an organic vapor meter equipped with a photoionization detector (OVM-PID) to evaluate the potential for hydrocarbon contamination in soil samples from the sides and bottom of the excavation.

Vapor screening indicated the presence of organic vapors slightly above background levels in soils from the sides and bottom of the excavation. The excavation was enlarged about 1 to 2 feet in all directions to remove contaminated soil, which was placed on plastic sheeting near the excavation. Soil samples were collected from the sides and bottom of the excavation and submitted to Analytical Technologies Inc. (ATI) for chemical analysis of total petroleum hydrocarbons (TPH).

TPH concentrations were not detected in any of the samples from the excavation. The results of laboratory analysis of soil samples are summarized in Table 1. Copies of original laboratory reports are included in the appendix.

12,000-Gallon Gasoline UST

The 12,000-gallon unleaded gasoline UST was exposed by excavation on April 14, 1993, and the fuel and vent lines and other associated piping were disconnected from the tank. A trackhoe was used to excavate the tank, but could not remove it from the excavation; subsequently, arrangements were made to bring a crane on site to remove the tank the following morning.

A storm on the morning of April 15, 1993 resulted in approximately 2,200 gallons of rainwater collecting in the bottom of the excavation. The rainwater was pumped into a Baker Tank for temporary storage on site so the UST could be removed.

The UST was tested and judged inert by both Sound Testing of Seattle, Washington and AGI. Upon removal, the UST was found to contain a single hole, approximately 1 inch in diameter, located on the bottom of the tank beneath the fill port. The tank was in otherwise good condition, and a protective tar-burlap coating on its outside surface appeared to be intact.

Field screening of soil samples from the bottom and sides of the excavation indicated the presence of organic vapors above background levels in soil samples from the north and east sides, and from the north portion of the excavation bottom. The excavation was enlarged in order to excavate the remaining contaminated soils. Approximately 125 cubic yards of contaminated soil was removed and temporarily stockpiled on site. Soil samples were collected from the tank cavity sides and bottom and from the soil stockpile. Soil samples were submitted to ATI for chemical analysis.

Laboratory results are summarized in Table 2. TPH concentrations were either not detected or were below Washington State Model Toxics Control Act Method A cleanup levels (WAC 173-340, 1991). Sample S1 from the north portion of the excavation bottom contained motor-oil range hydrocarbons at a concentration of 86 milligrams per kilogram (mg/kg). Petroleum hydrocarbons were not indicated in the composite stockpile sample, likely due to mixing of contaminated soil with cleaner soil during excavation and stockpiling. For additional information, refer to the laboratory report in the appendix.

500-Gallon Waste-Oil UST

The 500-gallon waste-oil UST was removed on April 16, 1993. After the overlying soil was removed, the tank was examined and found to contain approximately 1 foot of sludge. The sludge was removed by Coastal Tank of Seattle, Washington and transported off site. The tank was tested and judged inert by both Sound Testing of Seattle, Washington and AGI. Upon removal, the waste-oil tank was found to be in good condition. The tank had no holes, and a protective tar-burlap coating on its outside surface appeared intact.

The sides and bottom of the waste-oil tank excavation appeared stained, and field screening of soil samples from these locations indicated the presence of organic vapors. The excavation was enlarged to remove the stained soil. Approximately 50 cubic yards of contaminated soil was removed from the waste-oil UST excavation and temporarily stockpiled on site. Soil samples were collected from the excavation sides and bottom and from the soil stockpile. A single composite soil sample was also collected from unexcavated soils surrounding an adjacent oil-water separator and the associated piping. Soil samples were submitted to ATI for chemical analysis.

Laboratory results are summarized in Table 2. TPH concentrations were not detected in soil samples collected from the excavation, soil stockpile, or near the oil-water separator. For additional information, refer to the laboratory report in the appendix.

Gasoline Dispenser Removal

The unleaded gasoline dispenser, formerly located in an alcove on the north side of the garage, was removed on April 26, 1993. Our representative closely observed removal of the dispenser, associated piping, and concrete support slab. Hydrocarbon odors and stained soils directly beneath and adjacent to the support slab were noted after the slab was removed.

Soil beneath the dispenser was excavated to a depth of 4 to 5 feet below ground surface (bgs), and approximately 1 foot into native silt, where field observations and headspace readings indicated no organic vapors above background levels. An approximately 3-foot-thick layer of visually contaminated soil extended south beneath the building foundation and alcove walls, and horizontally away from the dispenser location. The excavation was enlarged outside the building in an attempt to define the horizontal limits of the contaminated soil layer.

The north side of the excavation encountered buried utilities, including electrical conduit, air and water pipes, and a storm sewer line. Test pits were excavated around the buried utilities to help evaluate the extent of contaminated soil. A total of approximately 75 cubic yards of contaminated soil was excavated north of the garage and around the dispenser; however, a zone of soil approximately 2 to 3 feet thick remains below the buried utilities and building footings. Excavated soils were separated into "clean" and "contaminated" stockpiles based on headspace screening. Soil samples were collected from the stockpiles and at the edges and bottom of the excavation, and submitted to ATI for analysis. Test pit and soil sample locations are shown on Figure 2.

Results of sample analyses are shown in Table 3. Except for the soil sample collected below the building footings and the "contaminated" soil stockpile, hydrocarbon concentrations were either not detected or were below state cleanup levels. For additional information, refer to the laboratory report in the appendix.

Some seepage with a hydrocarbon-like sheen was observed entering the excavation from beneath the building. The seepage is attributed to surface water percolating down through the soil and spreading laterally above the silt layer. Seepage that collected in the excavation was sampled (sample DS9) and analyzed, and found to contain petroleum hydrocarbons in concentrations exceeding state cleanup levels for groundwater (WAC 173-340, 1991). Test results for sample DS9 are presented in Table 3. Approximately 2,500 gallons of water were pumped from the excavation into an above-ground tank over a period of several weeks and disposed of by Coastal Tank Cleaning. However, seepage still appeared contaminated, likely due to petroleum hydrocarbons leaching from remaining contaminated soil, particularly beneath the building.

A sump and pump were installed in the excavation to control migration of seepage, especially along the storm sewer pipe bedding. Two 8-foot-deep monitoring wells were installed through the pipe bedding immediately east and west of the excavated area, as shown on Figure 2. The excavated area was backfilled with pea gravel and covered with concrete pavement. A diagram showing the relative positions of the sump, monitoring wells, and sewer line is shown on Figure 3, Sump and Monitoring Well Diagram.

After backfilling, water was pumped from the sump to an above-ground storage tank for temporary storage. The pump operated sporadically as seepage collected in sufficient volumes to start the pump. During a site visit on August 5, 1993, approximately 75 gallons of water was observed in the storage tank; no water was observed in the monitoring wells, and the pump was not running. Lack of water in the monitoring wells likely indicates low recharge of the perched groundwater. However, groundwater levels may rise during the relatively wet winter months.

SOIL DISPOSAL

Between 300 and 400 cubic yards of hydrocarbon-contaminated soil was removed from the site during excavation of the three USTs, oil-water separator, and gasoline dispenser. Volume estimates of soils removed from UST and gasoline dispenser excavations are as follows:

- 8,000-gallon UST: 50 to 75 cubic yards
- 12,000-gallon UST: 125 to 150 cubic yards
- 550-gallon UST: 50 to 75 cubic yards
- Gasoline dispenser: 75 to 100 cubic yards

Approximately 200 cubic yards of soil was designated as contaminated, based either on field observations and headspace screening or on chemical analysis. Contaminated soil was transported off site and treated to within state cleanup levels by Rem-Tech of Spokane, Washington.

CONCLUSIONS AND RECOMMENDATIONS

An 8,000-gallon unleaded gasoline UST, a 12,000-gallon unleaded gasoline UST, and a 500-gallon waste-oil UST were excavated and removed from the site. Contaminated soils in excess of cleanup levels were excavated and transported off site. Contaminated soils were also encountered during removal of the gasoline dispenser located in an alcove on the north side of the garage. The contaminated soil around the dispenser was removed except below buried utilities and building foundations. Perched water in the vicinity of the dispenser also contained petroleum hydrocarbons, but it appears most of the water has been pumped out and there is little recharge. The extent of the hydrocarbons in groundwater appears to be limited primarily to the excavation area around the dispenser.

Remaining contaminated soil and perched groundwater around the former dispenser appear limited in depth by a silt layer approximately 4 feet bgs. Our observations and the results of chemical analysis indicate the lateral extent of contamination appears to be within about 20 feet of the former dispenser location. In our opinion, the contaminated soil and perched groundwater do not pose an immediate threat to human health or the environment, but should be controlled or monitored if not removed to state cleanup levels.

We recommend perched groundwater levels be checked again during the following wet winter season. If the perched groundwater has recharged, a water sample should be collected and analyzed. The results of analysis can be used to evaluate requirements for further action. If contamination remains in the perched groundwater, a minimum of periodic monitoring will likely be required to verify that contamination is not migrating off site.

LIMITATIONS

This report has been prepared exclusively for GTE Northwest Incorporated and its other consultants for this project only. Our analyses, conclusions, and recommendations are based on conditions encountered at the time of our field investigation and our experience and judgement. AGI cannot be responsible for interpretation by others of the data contained herein.

Our work has been performed in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the area. No other warranty, express or implied, is made.

REFERENCES

Washington Administrative Code (WAC 173-340), State of Washington Model Toxics Control Act Cleanup Regulation, amended February 1991, 133 p.

DISTRIBUTION

3 Copies

GTE Northwest Incorporated
1800 41st Street, WA0104LB
Everett, Washington 98206

Attention: Mr. D. Scott Kindle

1 Copy

GTE Northwest Incorporated
1800 41st Street, WA0105SS
Everett, Washington 98206

Attention: Mr. Bill Westwood

Quality Assurance/Technical Review by:

Glen M. Bobnick, P.E.
Senior Engineer

JST/JEN/jlh

Table 1
TPH Concentrations in Soil
8,000–Gallon UST Excavation
GTE/Kirkland Tank Installation
Kirkland, Washington

Sample Number	Sample Location	Date Sampled	WTPH–ID Gasoline (mg/kg)	WTPH–ID Diesel (mg/kg)	WTPH–ID Motor Oil (mg/kg)
S1	Bottom of excavation	04/10/93	ND	ND	ND
S2	North & east sides of excavation	04/10/93	ND	ND	ND
S3	South & west sides of excavation	04/10/93	ND	ND	ND
S4	Soil stockpile	04/10/93	ND	ND	ND
Laboratory Detection Limits			20	50	100
State Cleanup Levels [a]			100	200	200

Notes:

a) Method A suggested cleanup level for residential soil promulgated under Washington Administrative Code Chapter 173–340, Model Toxics Control Act Cleanup Regulation.
mg/kg – Milligrams per kilogram.
ND – Not detected.
TPH – Total petroleum hydrocarbons.

Table 2
TPH Concentrations in Soil
12,000–Gallon and 500–Gallon UST Excavations
GTE/Kirkland Tank Installation
Kirkland, Washington

Sample Number	Sample Location	Date Sampled	WTPH–ID Gasoline (mg/kg)	WTPH–ID Diesel (mg/kg)	WTPH–ID Motor Oil (mg/kg)
12,000 Gallon Unleaded Gasoline UST Excavation					
S1	North portion of excavation bottom	04/15/93	ND	ND	86
S2	South portion of excavation bottom	04/15/93	ND	ND	ND
S3	North & east sides	04/16/93	ND	ND	ND
S4	South & west sides	04/15/93	ND	ND	ND
S5	Soil stockpile	04/15/93	ND	ND	ND
500–Gallon Waste–Oil UST Excavation					
SS1	Bottom of excavation	04/16/93	ND	ND	ND
SS2	North & east sides of excavation	04/16/93	ND	ND	ND
SS3	South & west sides of excavation	04/16/93	ND	ND	ND
SS4	Soil stockpile	04/16/93	ND	ND	ND
SS5	Beneath oil–water separator and associated piping	04/16/93	ND	ND	ND
Laboratory Detection Limits			20	50	100
State Cleanup Levels [a]			100	200	200

Notes:

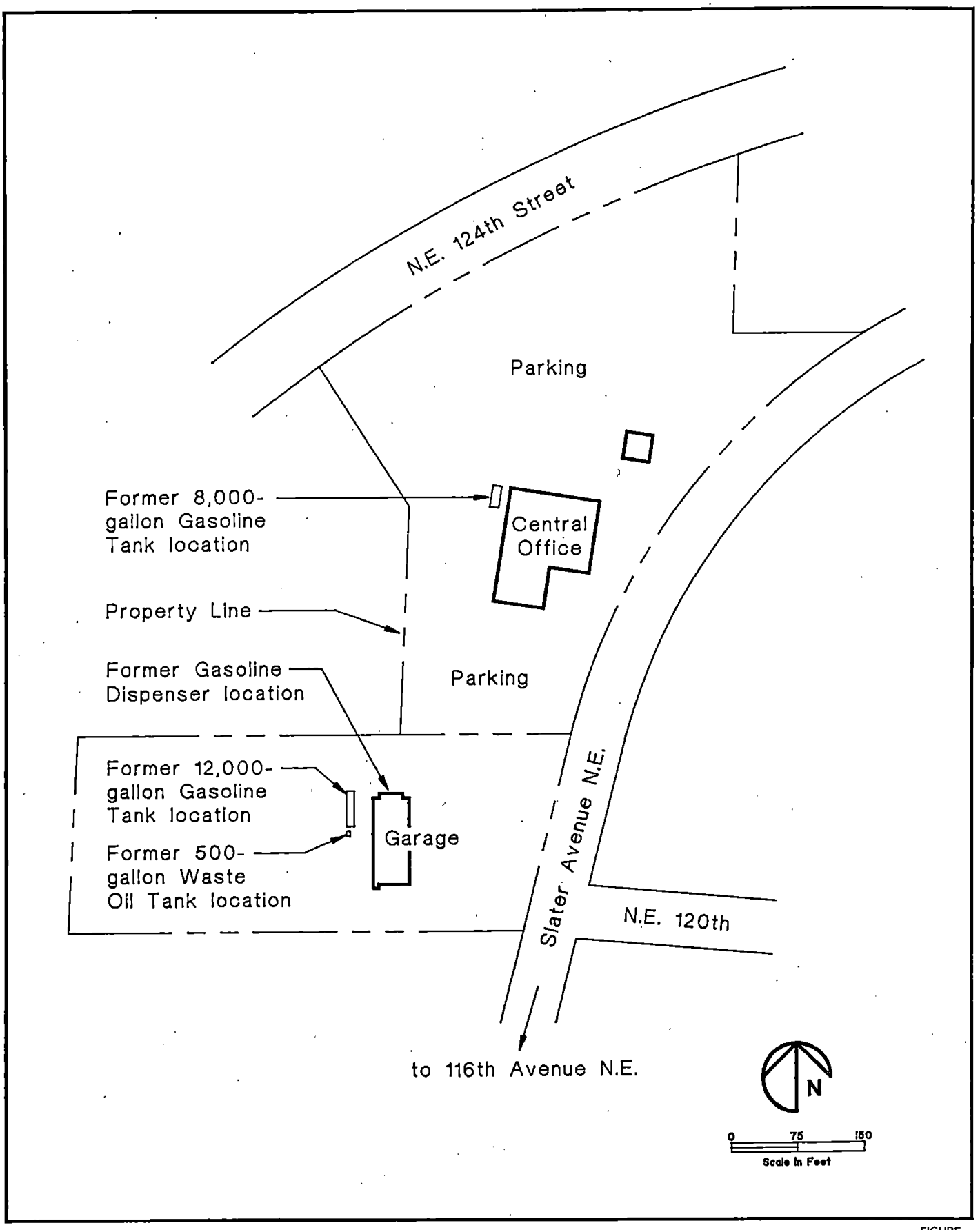
a) Method A suggested cleanup level for residential soil promulgated under Washington Administrative Code Chapter 173–340, Model Toxics Control Act Cleanup Regulation.
mg/kg – Milligrams per kilogram.
ND – Not detected.
TPH – Total petroleum hydrocarbons.

Table 3
TPH and BETX Concentrations in Soil and Groundwater
Gasoline Dispenser Excavation
GTE/Kirkland Tank Installation
Kirkland, Washington

Sample I.D.	Matrix	Sample Location	EPA Test Methods				
			BETX 5030/8020				WTPH–G
			Benzene	Ethylbenzene	Toluene	Total Xylenes	Gasoline
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
DS1	Soil	Bottom of excavation, inside alcove	NA	NA	NA	NA	ND
DS2	Soil	Beneath building & alcove wall	NA	NA	NA	NA	5,900
DS3	Soil	Bottom of excavation, 15' east of former dispenser location	ND	ND	ND	ND	ND
DS4	Soil	Bottom of excavation, 17' north of former dispenser location	ND	ND	ND	ND	ND
DS5	Soil	Bottom of excavation, 15' west of former dispenser location	ND	ND	ND	ND	ND
DS6	Soil	Bottom of excavation, 15' northwest of former dispenser location	ND	ND	ND	0.17	ND
DS7	Soil	Contaminated soil stockpile	ND	6.6	13	72	2,500
DS8	Soil	"Clean" soil stockpile	NA	NA	NA	NA	ND
			(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
DS9	Water	Bottom of excavation	31	ND	41	18.0	2,700
Laboratory Detection Limit		Soil	0.028–0.59	0.028–0.59	0.028–0.59	0.028–0.59	6–7
		Water	2.5	2.5	2.5	2.5	100
State Cleanup Levels [a]		Soil	0.5	20	40	20	100
		Water	5	30	40	20	1,000

Notes:

a) Method A suggested cleanup level for residential soil and groundwater promulgated under Washington Administrative Code Chapter 173–340, State of Washington Model Toxics Control Act Cleanup Regulation.
NA – Not analyzed.
ND – Not detected.
TPH – Total petroleum hydrocarbons.



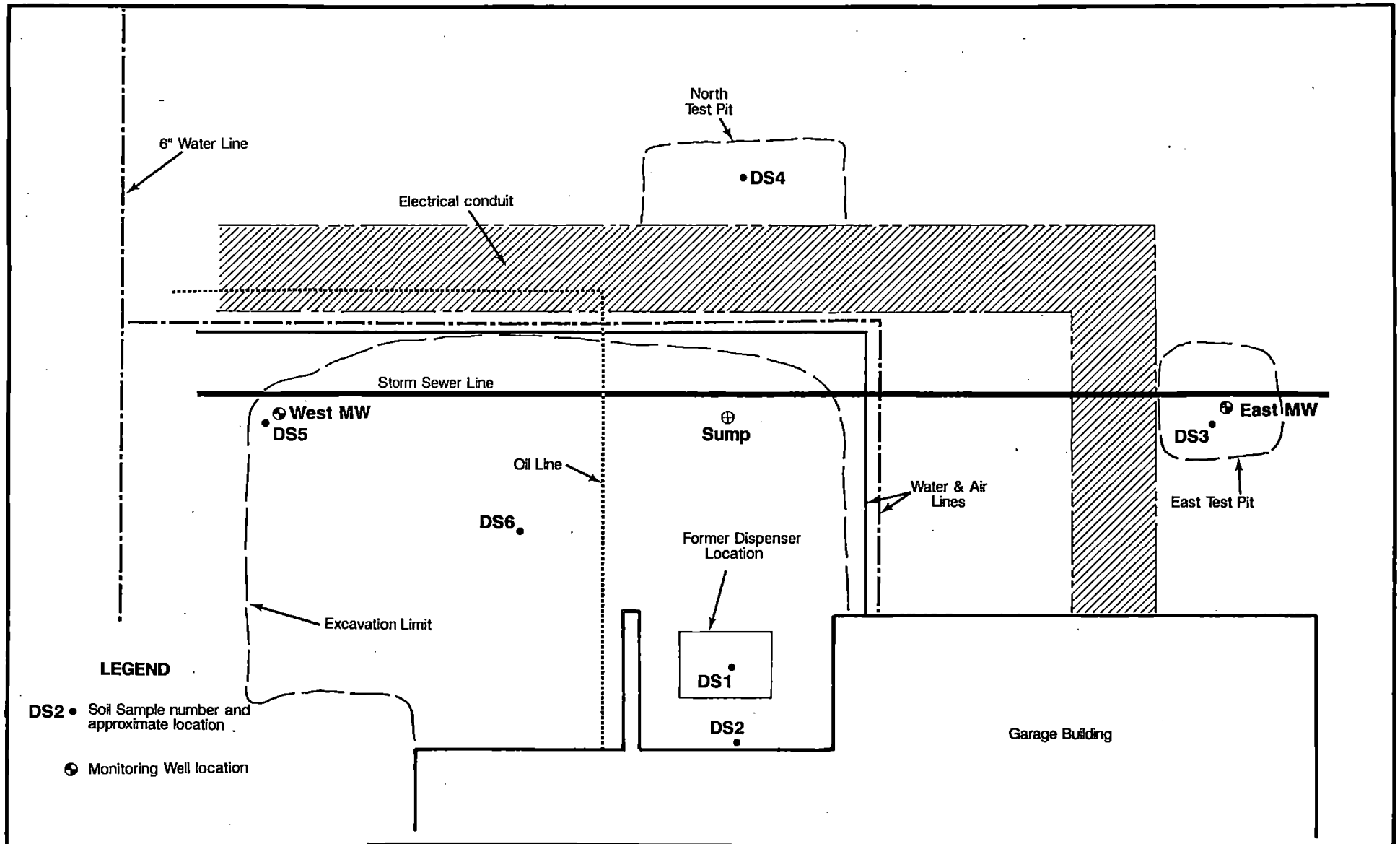
Applied Geotechnology Inc.
Geotechnical Engineering
Geology & Hydrogeology

Site Plan

GTE/Kirkland Garage Facility
Kirkland, Washington

FIGURE
1

JOB NUMBER	DRAWN	APPROVED	DATE	REVISED	DATE
15,169.130	JFL		21 Jun. 93		



Applied Geotechnology Inc.
Geotechnical Engineering
Geology & Hydrogeology

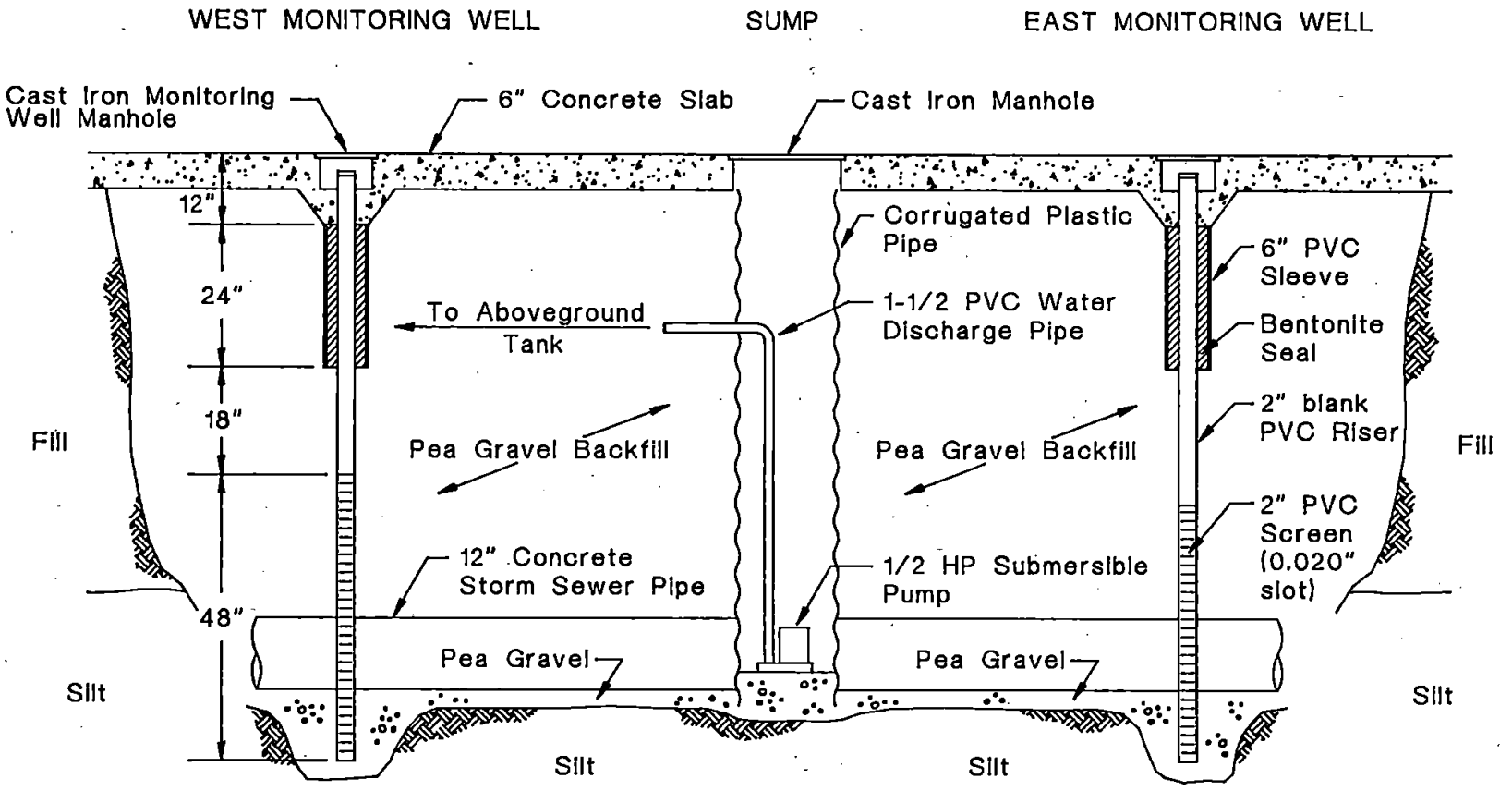
Gasoline Dispenser Excavation

GTE/Kirkland Support Center
Kirkland, Washington

FIGURE
2

JOB NUMBER	DRAWN	APPROVED	DATE	REVISED	DATE
15,169.130	DFF	JSI	9/3/93		

555944



Not to Scale

Applied Geotechnology Inc.
Geotechnical Engineering
Geology & Hydrogeology

Sump and Monitoring Well Diagram

GTE/Kirkland Garage Facility
Kirkland, Washington

FIGURE **3**

JOB NUMBER	DRAWN	APPROVED	DATE	REVISED	DATE
15,169.130	JFL	JSL	1 Jul. 93		

541914

QUALITY ASSURANCE REPORT

PROJECT AND SAMPLE INFORMATION

Project Name: GTE/Kirkland - Tank Removal
Project No.: 15,169.130
Lab Name: Analytical Technologies, Inc. - Renton, WA
Lab Number: 9304-098
Sample No.: S1, S2, S3, S4

Matrix: Soil

QUALITY ASSURANCE SUMMARY

All data are of known and acceptable quality.

ANALYTICAL METHODS

Parameter	Technique	Method
TPH-HCID	GC/FID	WA WTPH-HCID
Moisture	Gravimetric	CLP SOW ILM01.0

TIMELINESS

Parameter	Date Sampled	Date Extracted	Date Analyzed	Time Until Extraction	Time Until Analysis
TPH-HCID	4/10/93	4/14/93	4/14/93	4 (14)	4 (21)

Numbers in parentheses indicate recommended holding times in days for soil.

All samples were extracted and analyzed within recommended holding times for soil.

Detectability and Comparability

TPH-HCID analyses performed without sample dilution. Sample results are comparable.

FUEL HYDROCARBON CHEMISTRY

WA WTPH-HCID: Petroleum hydrocarbons were not detected at or above the reporting limits for "gasoline", "diesel", or "heavy oil".

QUALITY ASSURANCE REPORT

PROJECT AND SAMPLE INFORMATION

Project Name: GTE/Kirkland - Tank Removal
Project No.: 15,169.130
Lab Name: Analytical Technologies, Inc. - Renton, WA
Lab Number: 9304-098
Sample No.: S1, S2, S3, S4

FIELD QUALITY CONTROL SAMPLES

Field Duplicates: None collected.

Rinsate: None collected.

Trip Blank: None collected.

LAB QUALITY CONTROL SAMPLES

Reagent Blank: No analytes were detected at or above their method reporting limits by WA WTPH-HCID.

Matrix Spikes: Matrix spikes are not required by WA WTPH-HCID.

Blank Spike: Blank spikes are not required by WA WTPH-HCID.

Duplicates: Sample/sample duplicate relative percent difference (RPD) data are within ATI's control limit criteria for moisture.

Surrogates: All surrogate spike percent recoveries are within ATI's control limit criteria for WA WTPH-HCID.

SIGNATURES

Prepared by Annette Johnson Date 5/3/93

Checked by Katherine Bourbonais Date 5/3/93

Analytical Technologies, Inc. 560 Naches Avenue, S.W., Suite 101, Renton, WA 98055 (206) 228-8335

Karen L. Mixon, Laboratory Manager

ATI I.D. # 9304-098

April 26, 1993

Applied Geotechnology, Inc.
P.O. Box 3885
Bellevue WA 98009

Attention : Glen Bobnick

Project Number : 15169.130

Project Name : GTE/Kirkland - Tank Removal

Dear Mr. Bobnick:

On April 12, 1993, Analytical Technologies, Inc. (ATI), received four samples for analysis. The samples were analyzed with EPA methodology or equivalent methods as specified in the attached analytical schedule. The results, sample cross reference, and quality control data are enclosed.

Sincerely,

Donna M. McKinney
Senior Project Manager

DMM/hal/hbb/elf

Enclosure

Analytical Technologies, Inc.

ATI I.D. # 9304-098

SAMPLE CROSS REFERENCE SHEET

CLIENT : APPLIED GEOTECHNOLOGY, INC.
PROJECT # : 15169.130
PROJECT NAME : GTE/KIRKLAND - TANK REMOVAL

ATI #	CLIENT DESCRIPTION	DATE SAMPLED	MATRIX
9304-098-1	S1	04/10/93	SOIL
9304-098-2	S2	04/10/93	SOIL
9304-098-3	S3	04/10/93	SOIL
9304-098-4	S4	04/10/93	SOIL

----- TOTALS -----

MATRIX	# SAMPLES
SOIL	4

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ATI I.D. # 9304-098

ANALYTICAL SCHEDULE

CLIENT : APPLIED GEOTECHNOLOGY, INC.
PROJECT # : 15169.130
PROJECT NAME : GTE/KIRKLAND - TANK REMOVAL

ANALYSIS	TECHNIQUE	REFERENCE	LAB
HYDROCARBON IDENTIFICATION	GC/FID	WA DOE WTPH-HCID	R
MOISTURE	GRAVIMETRIC	CLP SOW ILM01.0	R

R = ATI - Renton
SD = ATI - San Diego
PHX = ATI - Phoenix
PNR = ATI - Pensacola
FC = ATI - Fort Collins
SUB = Subcontract

Analytical Technologies, Inc.

ATI I.D. # 9304-098

HYDROCARBON IDENTIFICATION
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: N/A
PROJECT #	: 15169.130	DATE RECEIVED	: N/A
PROJECT NAME	: GTE/KIRKLAND - TANK REMOVAL	DATE EXTRACTED	: 04/14/93
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 04/14/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-HCID	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

RESULTS

GASOLINE CONCENTRATION LESS THAN 20 mg/Kg BY WA DOE WTPH-HCID.

DIESEL CONCENTRATION LESS THAN 50 mg/Kg BY WA DOE WTPH-HCID.

PETROLEUM HYDROCARBONS >C24 CONCENTRATION LESS THAN 100 mg/Kg BY WA DOE WTPH-HCID.

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	109	50 - 150

AnalyticalTechnologies,Inc.

ATI I.D. # 9304-098-1

HYDROCARBON IDENTIFICATION
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/10/93
PROJECT #	: 15169.130	DATE RECEIVED	: 04/12/93
PROJECT NAME	: GTE/KIRKLAND - TANK REMOVAL	DATE EXTRACTED	: 04/14/93
CLIENT I.D.	: S1	DATE ANALYZED	: 04/14/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-HCID	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

RESULTS

GASOLINE CONCENTRATION LESS THAN 20 mg/Kg BY WA DOE WTPH-HCID.

DIESEL CONCENTRATION LESS THAN 50 mg/Kg BY WA DOE WTPH-HCID.

PETROLEUM HYDROCARBONS >C24 CONCENTRATION LESS THAN 100 mg/Kg BY WA DOE WTPH-HCID.

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	106	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-098-2

HYDROCARBON IDENTIFICATION
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/10/93
PROJECT #	: 15169.130	DATE RECEIVED	: 04/12/93
PROJECT NAME	: GTE/KIRKLAND - TANK REMOVAL	DATE EXTRACTED	: 04/14/93
CLIENT I.D.	: S2	DATE ANALYZED	: 04/14/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-HCID	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

RESULTS

GASOLINE CONCENTRATION LESS THAN 20 mg/Kg BY WA DOE WTPH-HCID.

DIESEL CONCENTRATION LESS THAN 50 mg/Kg BY WA DOE WTPH-HCID.

PETROLEUM HYDROCARBONS >C24 CONCENTRATION LESS THAN 100 mg/Kg BY WA DOE WTPH-HCID.

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	107	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-098-3

HYDROCARBON IDENTIFICATION
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/10/93
PROJECT #	: 15169.130	DATE RECEIVED	: 04/12/93
PROJECT NAME	: GTE/KIRKLAND - TANK REMOVAL	DATE EXTRACTED	: 04/14/93
CLIENT I.D.	: S3	DATE ANALYZED	: 04/14/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-HCID	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

RESULTS

GASOLINE CONCENTRATION LESS THAN 20 mg/Kg BY WA DOE WTPH-HCID.

DIESEL CONCENTRATION LESS THAN 50 mg/Kg BY WA DOE WTPH-HCID.

PETROLEUM HYDROCARBONS >C24 CONCENTRATION LESS THAN 100 mg/Kg BY WA DOE WTPH-HCID.

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	104	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-098-4

HYDROCARBON IDENTIFICATION
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/10/93
PROJECT #	: 15169.130	DATE RECEIVED	: 04/12/93
PROJECT NAME	: GTE/KIRKLAND - TANK REMOVAL	DATE EXTRACTED	: 04/14/93
CLIENT I.D.	: S4	DATE ANALYZED	: 04/14/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-HCID	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

RESULTS

GASOLINE CONCENTRATION LESS THAN 20 mg/Kg BY WA DOE WTPH-HCID.

DIESEL CONCENTRATION LESS THAN 50 mg/Kg BY WA DOE WTPH-HCID.

PETROLEUM HYDROCARBONS >C24 CONCENTRATION LESS THAN 100 mg/Kg BY WA DOE WTPH-HCID.

SURROGATE	PERCENT RECOVERY	LIMITS
O-TERPHENYL	111	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-098

GENERAL CHEMISTRY ANALYSIS

CLIENT : APPLIED GEOTECHNOLOGY, INC. MATRIX : SOIL
PROJECT # : 15169.130
PROJECT NAME : GTE/KIRKLAND - TANK REMOVAL

PARAMETER	DATE ANALYZED
MOISTURE	04/16/93

Analytical**Technologies,**Inc.

ATI I.D. # 9304-098

GENERAL CHEMISTRY ANALYSIS
DATA SUMMARY

CLIENT : APPLIED GEOTECHNOLOGY, INC. MATRIX : SOIL
PROJECT # : 15169.130
PROJECT NAME : GTE/KIRKLAND - TANK REMOVAL UNITS : %

ATI I.D. #	CLIENT I.D.	MOISTURE
9304-098-1	S1	10
9304-098-2	S2	9.3
9304-098-3	S3	9.2
9304-098-4	S4	10

Analytical Technologies, Inc.

ATI I.D. # 9304-098

GENERAL CHEMISTRY ANALYSIS
QUALITY CONTROL DATA

CLIENT : APPLIED GEOTECHNOLOGY, INC. MATRIX : SOIL
PROJECT # : 15169.130
PROJECT NAME : GTE/KIRKLAND - TANK REMOVAL UNITS : %

PARAMETER	ATI I.D.	SAMPLE RESULT	DUP RESULT	RPD	SPIKED RESULT	SPIKE ADDED	% REC
MOISTURE	9304-098-4	10	9.8	2	N/A	N/A	N/A

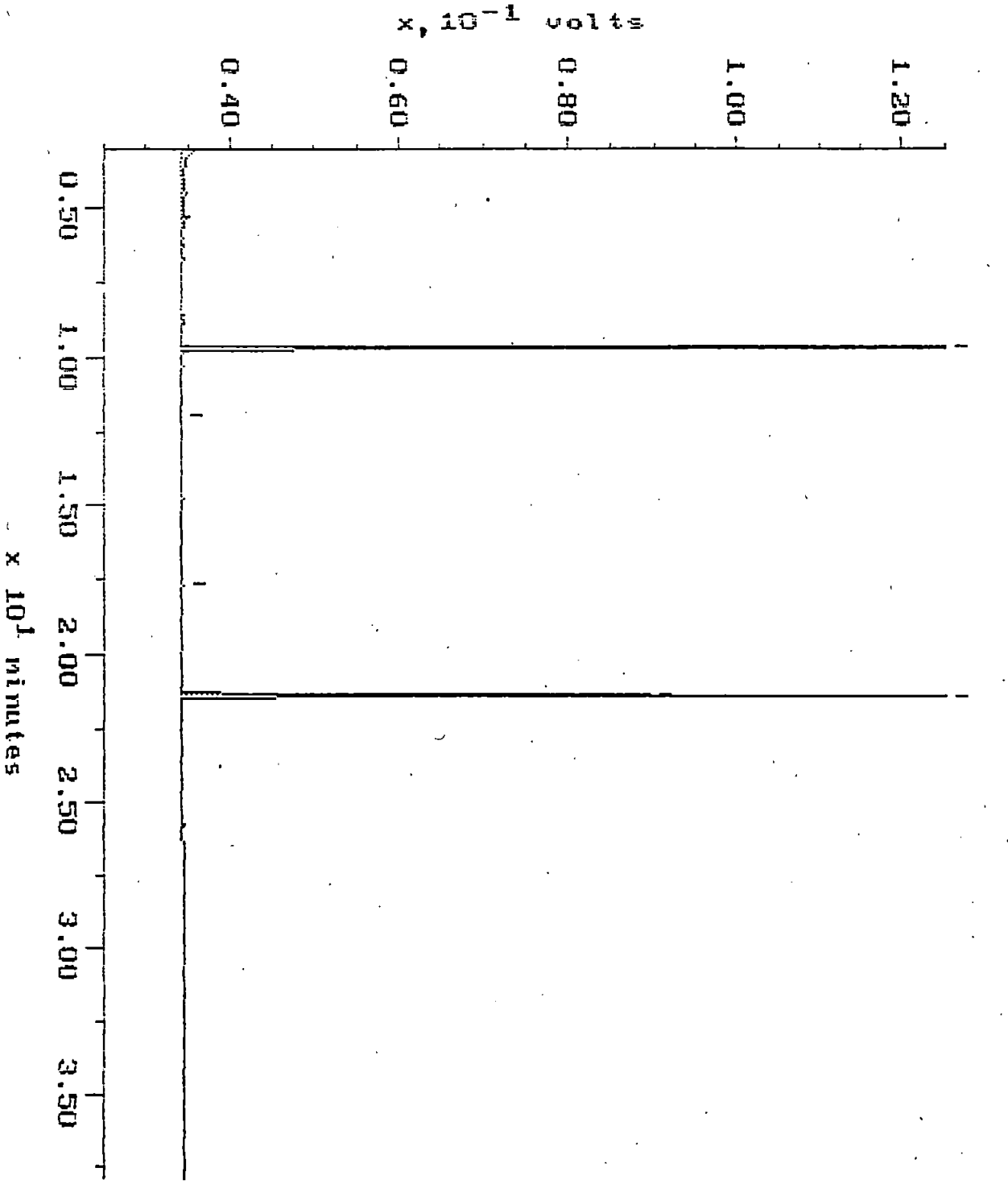
$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Blank

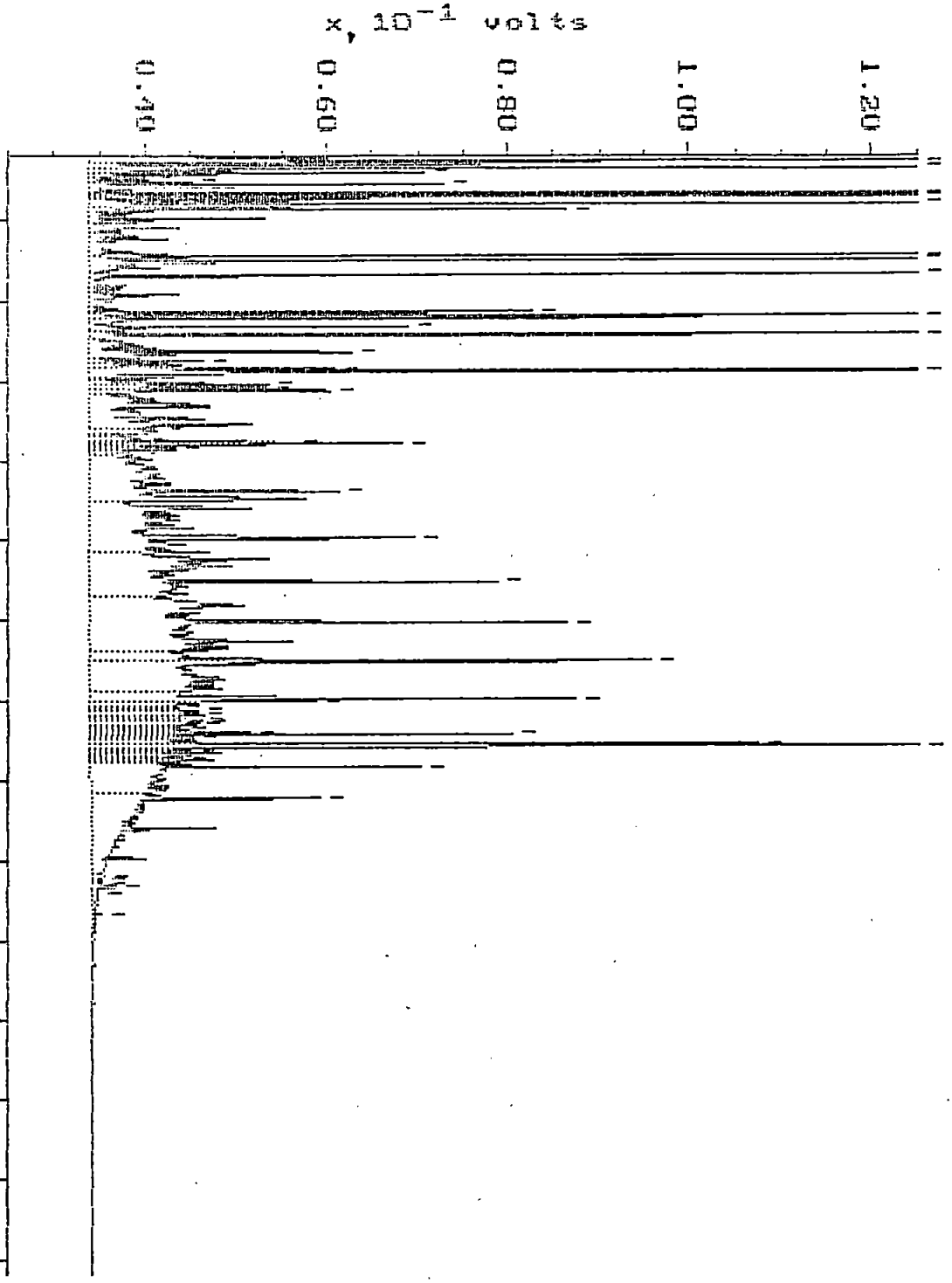
WA DOE WTPH-HCID

Sample: SRB 4-14 Channel: ERNIE Filename: R4148E04
Acquired: 14-APR-93 19:02 Method: F:\BRO2\MAXDATA\ERNIE\FUEL0414 Operator: ATI
Comments: ATI: THE QUALITY TEAM



Continuing Calibration

Sample: DG 402 Channel: ERNIE Filename: R4143E01
Acquired: 14-APR-93 13:37 Method: F:\EROZ\MAXDATA\ERNIE\FUEL0414 Operator: ATI
Comments: ATI: THE QUALITY TEAM

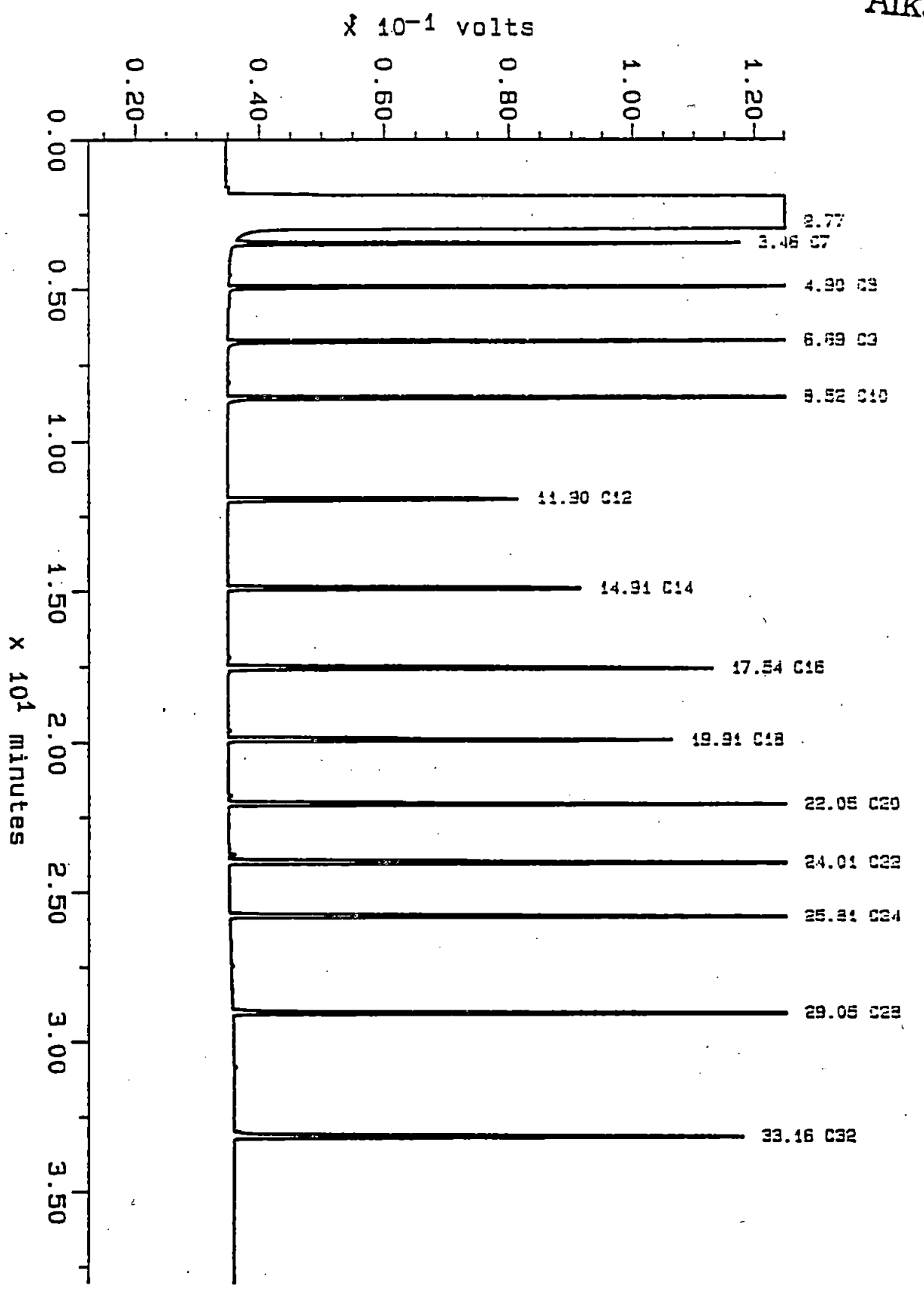


Sample: ALKANE
Acquired: 24-MAR-93 22:09
Inj Vol: 1.00

Channel: ERNIE
Method: F:\EROS\MAXDATA\ERNIE\FUEL0324

Filename: R3248E03
Operator: ATI

Alkane



Applied Geotechnology Inc.
Geotechnical Engineering
Geology & Hydrogeology

CHAIN-OF-CUSTODY

Date 4/8/93 (JST 10) Page 1 of 1

PROJECT INFORMATION

Project Manager: Glen Bobnick
Project Name: GTE/Kirkland - Tank Removal
Project Number: 15167.130 (Expanded SOW)
Site Location: Kirkland WA Sampled By: JST

DISPOSAL INFORMATION

☑ Lab Disposal (return if not indicated)
Disposal Method: _____
Disposed by: _____ Disposal Date: _____

QC INFORMATION (check one)

☑ SW-846 ☐ CLP ☐ Screening ☐ AGI Std. ☐ Special

Laboratory Number: 9304-098

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	PETROLEUM HYDROCARBONS: TPH-ID State: WA	TPH-G State:	TPH-D State:	TPH Special Instructions	418.1 State:	8015M	ORGANIC COMPOUNDS: 8010 Halogenated VOCs	8020 Aromatic VOCs	8020M - BETX only	8240 GCMS Volatiles	8270 GCMS Semivol.	8310 HPLC PAHs	8040 Phenols	DWS - Volatiles and Semivol.	PESTS/PCB's: 8080 OC Pest/PCBs	8080M PCBs only	8140 OP Pesticides	8150 OC Herbicides	DWS - Herb/pest	METALS: Selected metals: list	Total Lead (Wa)	Organic Lead (Ca)	TCL Metals (23)	Priority Poll. Metals (13)	DWS - Metals	MFSP - Metals (Wa)	LEACHING TESTS: TCLP - Volatiles (ZHE)	TCLP - Semivolatiles	TCLP - Pesticides	TCLP - Metals	OTHER				NUMBER OF CONTAINERS
S1	4/10/93	1045	Soil	1	X																																	1
S2	"	1050	"	2	X																																	1
S3	"	1055	"	3	X																																	1
S4	"	1100	"	4	X																																	1

LAB INFORMATION

Lab Name: ATI
Lab Address: 560 Naches Ave
Renton WA
Via: Courier

SAMPLE RECEIPT

Total Number of Containers: 4
Chain of Custody Seals: Y/N/NA: Y
Intact?: Y/N/NA: Y
Received in Good Condition/Cold: Y/Y

Turn Around Time: ☑ Standard ☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 1 wk.

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH DATA

Special Instructions:

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Time: 1500	Signature: Time:	Signature: Time:
Printed Name: Jeff Thompson Date: 4/10/93	Printed Name: Date:	Printed Name: Date:
Company:	Company:	Company:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY: 3.**
Signature: Stacie Pengra Time: 9:55	Signature: Time:	Signature: Time:
Printed Name: Stacie Pengra Date: 4/12/93	Printed Name: Date:	Printed Name: Date:
Company:	Company:	Company:

QUALITY ASSURANCE REPORT

PROJECT AND SAMPLE INFORMATION

Project Name: GTE/Kirkland - UST Upgrade
Project No.: 15,169.130
Lab Name: Analytical Technologies, Inc. - Renton, WA
Lab Number: 9304-167
Sample No.: S1, S2, S3, S4, S5

Matrix: Soil

QUALITY ASSURANCE SUMMARY

All data are of known and acceptable quality.

ANALYTICAL METHODS

Parameter	Technique	Method
TPH-HCID	GC/FID	WA WTPH-HCID
TPH-D	GC/FID	WA WTPH-D
Moisture	Gravimetric	CLP SOW ILM01.0

TIMELINESS

Parameter	Date Sampled	Date Extracted	Date Analyzed	Time Until Extraction	Time Until Analysis
TPH-HCID	4/15/93	4/16/93	4/17/93	1 (14)	2 (21)
TPH-D	4/15/93	4/20/93	4/20/93	5 (14)	5 (30)

Numbers in parentheses indicate recommended holding times in days for soil.

All samples were extracted and analyzed within recommended holding times for soil.

QUALITY ASSURANCE REPORT

PROJECT AND SAMPLE INFORMATION

Project Name: GTE/Kirkland - UST Upgrade
Project No.: 15,169.130
Lab Name: Analytical Technologies, Inc. - Renton, WA
Lab Number: 9304-167
Sample No.: S1, S2, S3, S4, S5

Detectability and Comparability

All analyses were performed without sample dilution. Sample results are comparable.

FUEL HYDROCARBON CHEMISTRY

WA WTPH-HCID: Identification of petroleum hydrocarbons greater than C_{24} were supported by chromatogram for sample S1.

WA WTPH-D: The detection of petroleum hydrocarbons in the range expected for motor oil and heavier is supported by chromatogram for sample S1.

FIELD QUALITY CONTROL SAMPLES

Field Duplicates: None collected.

Rinsate: None collected.

Trip Blank: None collected.

LAB QUALITY CONTROL SAMPLES

Reagent Blank: No analytes were detected at or above their reporting limits by the following methods:

WA WTPH-HCID
WA WTPH-D

Matrix Spikes: Matrix spike percent recovery and relative percent difference (RPD) are within ATI's control limit criteria for WA WTPH-D. Matrix spikes are not required by WA WTPH-HCID.

QUALITY ASSURANCE REPORT

PROJECT AND SAMPLE INFORMATION

Project Name: GTE/Kirkland - UST Upgrade
Project No.: 15,169.130
Lab Name: Analytical Technologies, Inc. - Renton, WA
Lab Number: 9304-167
Sample No.: S1, S2, S3, S4, S5

Blank Spike: Blank spike percent recovery is within ATI's control limit criteria for WA WTPH-D. Blank spikes are not required by WA WTPH-HCID.

Duplicates: Sample/sample duplicate relative percent difference (RPD) data is within ATI's control limit criteria for the following methods:

WA WTPH-D
CLP SOW ILM01.0

Surrogates: All surrogate spike percent recoveries are within ATI's control limit criteria for the following methods:

WA WTPH-HCID
WA WTPH-D

SIGNATURES

Prepared by Annette Johnson Date 5/4/93

Checked by Katherine Bourbonais Date 5/4/93

AnalyticalTechnologies,Inc. 560 Naches Avenue, S.W., Suite 101, Renton, WA 98055 (206) 228-8335

Karen L. Mixon, Laboratory Manager

ATI I.D. # 9304-167

April 28, 1993

Applied Geotechnology, Inc.
P.O. Box 3885
Bellevue WA 98009

Attention : Glen Bobnick

Project Number : 15,169.130

Project Name : GTE/Kirkland

Dear Mr. Bobnick:

On April 16, 1993, Analytical Technologies, Inc. (ATI), received five samples for analysis. The samples were analyzed with EPA methodology or equivalent methods as specified in the attached analytical schedule. The results, sample cross reference, and quality control data are enclosed.

Sincerely,

Donna M. McKinney
Senior Project Manager

DMM/hal/ff

Enclosure

Analytical Technologies, Inc.

ATI I.D. # 9304-167

ANALYTICAL SCHEDULE

CLIENT : APPLIED GEOTECHNOLOGY, INC.
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND

ANALYSIS	TECHNIQUE	REFERENCE	LAB
HYDROCARBON IDENTIFICATION	GC/FID	WA DOE WTPH-HCID	R
TOTAL PETROLEUM HYDROCARBONS	GC/FID	WA DOE WTPH-D	R
MOISTURE	GRAVIMETRIC	CLP SOW ILM01.0	R

R = ATI - Renton
SD = ATI - San Diego
PHX = ATI - Phoenix
PNR = ATI - Pensacola
FC = ATI - Fort Collins
SUB = Subcontract

Analytical Technologies, Inc.

ATI I.D. # 9304-167

HYDROCARBON IDENTIFICATION
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: N/A
PROJECT #	: 15,169.130	DATE RECEIVED	: N/A
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/16/93
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 04/17/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-HCID	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

RESULTS

GASOLINE CONCENTRATION LESS THAN 20 mg/Kg BY WA DOE WTPH-HCID.

DIESEL CONCENTRATION LESS THAN 50 mg/Kg BY WA DOE WTPH-HCID.

PETROLEUM HYDROCARBONS >C24 CONCENTRATION LESS THAN 100 mg/Kg BY WA DOE WTPH-HCID.

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	134	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-167

SAMPLE CROSS REFERENCE SHEET

CLIENT : APPLIED GEOTECHNOLOGY, INC.
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND

ATI #	CLIENT DESCRIPTION	DATE SAMPLED	MATRIX
9304-167-1	S1	04/15/93	SOIL
9304-167-2	S2	04/15/93	SOIL
9304-167-3	S3	04/16/93	SOIL
9304-167-4	S4	04/15/93	SOIL
9304-167-5	S5	04/15/93	SOIL

----- TOTALS -----

MATRIX	# SAMPLES
SOIL	5

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ATI I.D. # 9304-167-1

HYDROCARBON IDENTIFICATION
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/15/93
PROJECT #	: 15,169.130	DATE RECEIVED	: 04/16/93
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/16/93
CLIENT I.D.	: S1	DATE ANALYZED	: 04/17/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-HCID	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

RESULTS

GASOLINE CONCENTRATION LESS THAN 20 mg/Kg BY WA DOE WTPH-HCID.

DIESEL CONCENTRATION LESS THAN 50 mg/Kg BY WA DOE WTPH-HCID.

PETROLEUM HYDROCARBONS >C24 QUALITATIVELY IDENTIFIED BY WA DOE WTPH-HCID.

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	103	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-167-2

HYDROCARBON IDENTIFICATION
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/15/93
PROJECT #	: 15,169.130	DATE RECEIVED	: 04/16/93
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/16/93
CLIENT I.D.	: S2	DATE ANALYZED	: 04/17/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-HCID	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

RESULTS

GASOLINE CONCENTRATION LESS THAN 20 mg/Kg BY WA DOE WTPH-HCID.

DIESEL CONCENTRATION LESS THAN 50 mg/Kg BY WA DOE WTPH-HCID.

PETROLEUM HYDROCARBONS >C24 CONCENTRATION LESS THAN 100 mg/Kg BY WA DOE WTPH-HCID.

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	99	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-167-3

HYDROCARBON IDENTIFICATION
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/16/93
PROJECT #	: 15,169.130	DATE RECEIVED	: 04/16/93
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/16/93
CLIENT I.D.	: S3	DATE ANALYZED	: 04/17/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-HCID	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

RESULTS

GASOLINE CONCENTRATION LESS THAN 20 mg/Kg BY WA DOE WTPH-HCID.

DIESEL CONCENTRATION LESS THAN 50 mg/Kg BY WA DOE WTPH-HCID.

PETROLEUM HYDROCARBONS >C24 CONCENTRATION LESS THAN 100 mg/Kg BY WA DOE WTPH-HCID.

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	116	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-167-4

HYDROCARBON IDENTIFICATION
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/15/93
PROJECT #	: 15,169.130	DATE RECEIVED	: 04/16/93
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/16/93
CLIENT I.D.	: S4	DATE ANALYZED	: 04/17/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-HCID	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

RESULTS

GASOLINE CONCENTRATION LESS THAN 20 mg/Kg BY WA DOE WTPH-HCID.

DIESEL CONCENTRATION LESS THAN 50 mg/Kg BY WA DOE WTPH-HCID.

PETROLEUM HYDROCARBONS >C24 CONCENTRATION LESS THAN 100 mg/Kg BY WA DOE WTPH-HCID.

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	98	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-167-5

HYDROCARBON IDENTIFICATION
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/15/93
PROJECT #	: 15,169.130	DATE RECEIVED	: 04/16/93
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/16/93
CLIENT I.D.	: S5	DATE ANALYZED	: 04/17/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-HCID	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

RESULTS

GASOLINE CONCENTRATION LESS THAN 20 mg/Kg BY WA DOE WTPH-HCID.

DIESEL CONCENTRATION LESS THAN 50 mg/Kg BY WA DOE WTPH-HCID.

PETROLEUM HYDROCARBONS >C24 CONCENTRATION LESS THAN 100 mg/Kg BY WA DOE WTPH-HCID.

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	111	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-167

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: N/A
PROJECT #	: 15,169.130	DATE RECEIVED	: N/A
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/20/93
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 04/20/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-D	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUND	RESULT
FUEL HYDROCARBONS	<40
HYDROCARBON RANGE	C24 - C34
HYDROCARBON QUANTITATION USING	MOTOR OIL

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	85	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-167-1

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/15/93
PROJECT #	: 15,169.130	DATE RECEIVED	: 04/16/93
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/20/93
CLIENT I.D.	: S1	DATE ANALYZED	: 04/20/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-D	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUND	RESULT
FUEL HYDROCARBONS	86
HYDROCARBON RANGE	C24 - C34
HYDROCARBON QUANTITATION USING	MOTOR OIL

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	87	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-167

TOTAL PETROLEUM HYDROCARBONS
QUALITY CONTROL DATA

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	SAMPLE I.D. #	: 9304-167-1
PROJECT #	: 15,169.130	DATE EXTRACTED	: 04/20/93
PROJECT NAME	: GTE/KIRKLAND	DATE ANALYZED	: 04/20/93
METHOD	: WA DOE WTPH-D	UNITS	: mg/Kg
SAMPLE MATRIX	: SOIL		

COMPOUND	SAMPLE RESULT	SAMPLE DUP. RESULT	RPD	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED RESULT	DUP. % REC.	RPD
DIESEL	36	36	0	200	217	90	226	95	4

CONTROL LIMITS	% REC.	RPD
DIESEL	63 - 131	20

SURROGATE RECOVERIES	SPIKE	DUP. SPIKE	LIMITS
O-TERPHENYL	93	98	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-167

TOTAL PETROLEUM HYDROCARBONS
QUALITY CONTROL DATA

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	SAMPLE I.D. #	: BLANK SPIKE
PROJECT #	: 15,169.130	DATE EXTRACTED	: 04/20/93
PROJECT NAME	: GTE/KIRKLAND	DATE ANALYZED	: 04/20/93
METHOD	: WA DOE WTPH-D	UNITS	: mg/Kg
SAMPLE MATRIX	: SOIL		

COMPOUND	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED RESULT	DUP. % REC.	RPD
DIESEL	<10	200	197	99	N/A	N/A	N/A

CONTROL LIMITS	% REC.	RPD
DIESEL	69 - 122	20

SURROGATE RECOVERIES	SPIKE	DUP. SPIKE	LIMITS
O-TERPHENYL	100	N/A	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-167

GENERAL CHEMISTRY ANALYSIS

CLIENT : APPLIED GEOTECHNOLOGY, INC. MATRIX : SOIL
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND

PARAMETER	DATE ANALYZED
MOISTURE	04/16/93

Analytical Technologies, Inc.

ATI I.D. # 9304-167

GENERAL CHEMISTRY ANALYSIS
DATA SUMMARY

CLIENT : APPLIED GEOTECHNOLOGY, INC. MATRIX : SOIL
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND UNITS : %

ATI I.D. #	CLIENT I.D.	MOISTURE
9304-167-1	S1	19
9304-167-2	S2	27
9304-167-3	S3	16
9304-167-4	S4	25
9304-167-5	S5	18

AnalyticalTechnologies,Inc.

ATI I.D. # 9304-167

GENERAL CHEMISTRY ANALYSIS
QUALITY CONTROL DATA

CLIENT : APPLIED GEOTECHNOLOGY, INC. MATRIX : SOIL
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND UNITS : %

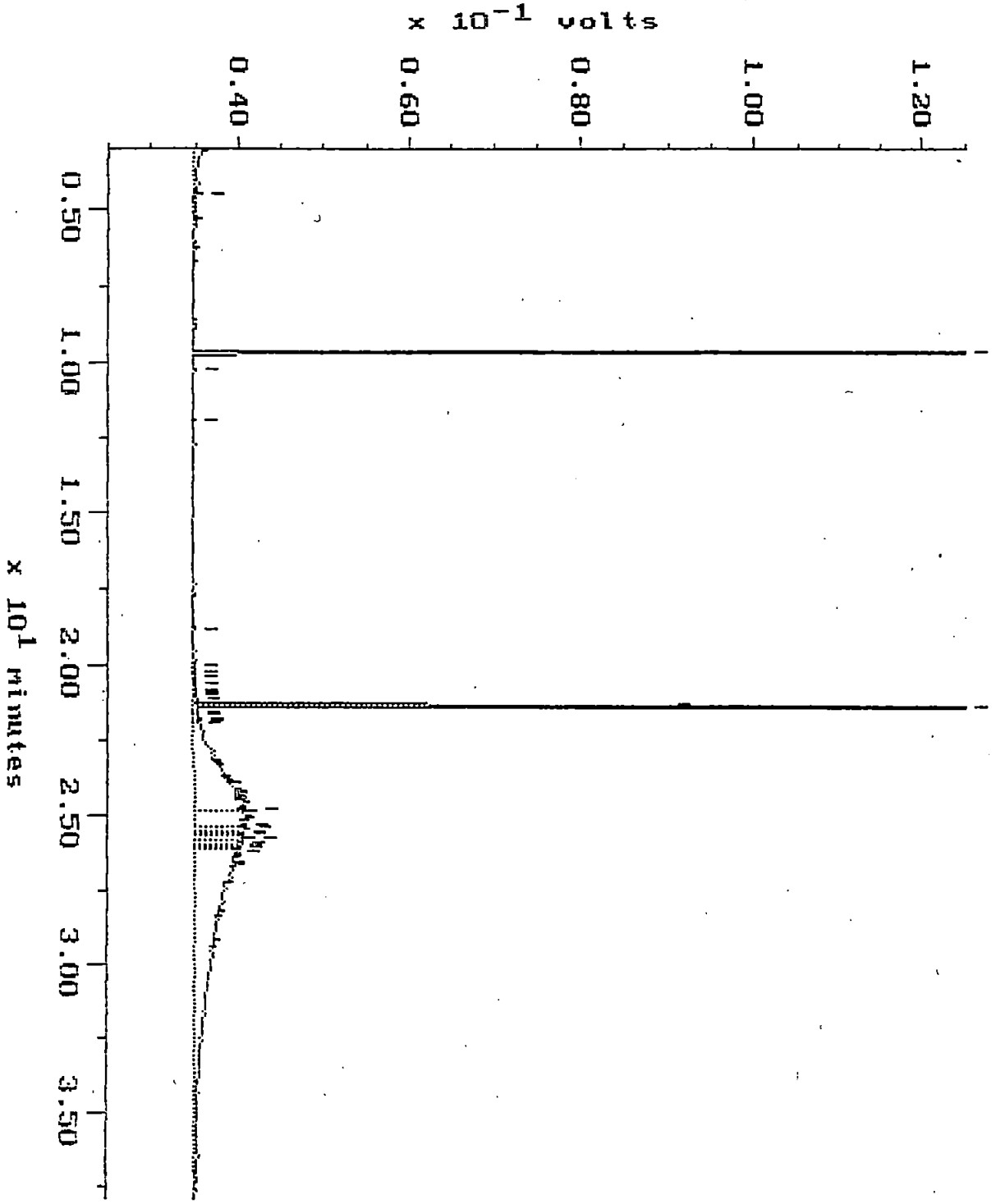
PARAMETER	ATI I.D.	SAMPLE RESULT	DUP RESULT	RPD	SPIKED RESULT	SPIKE ADDED	% REC
MOISTURE	9304-166-5	12	12	0	N/A	N/A	N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

WA DOE WTPH-HCID

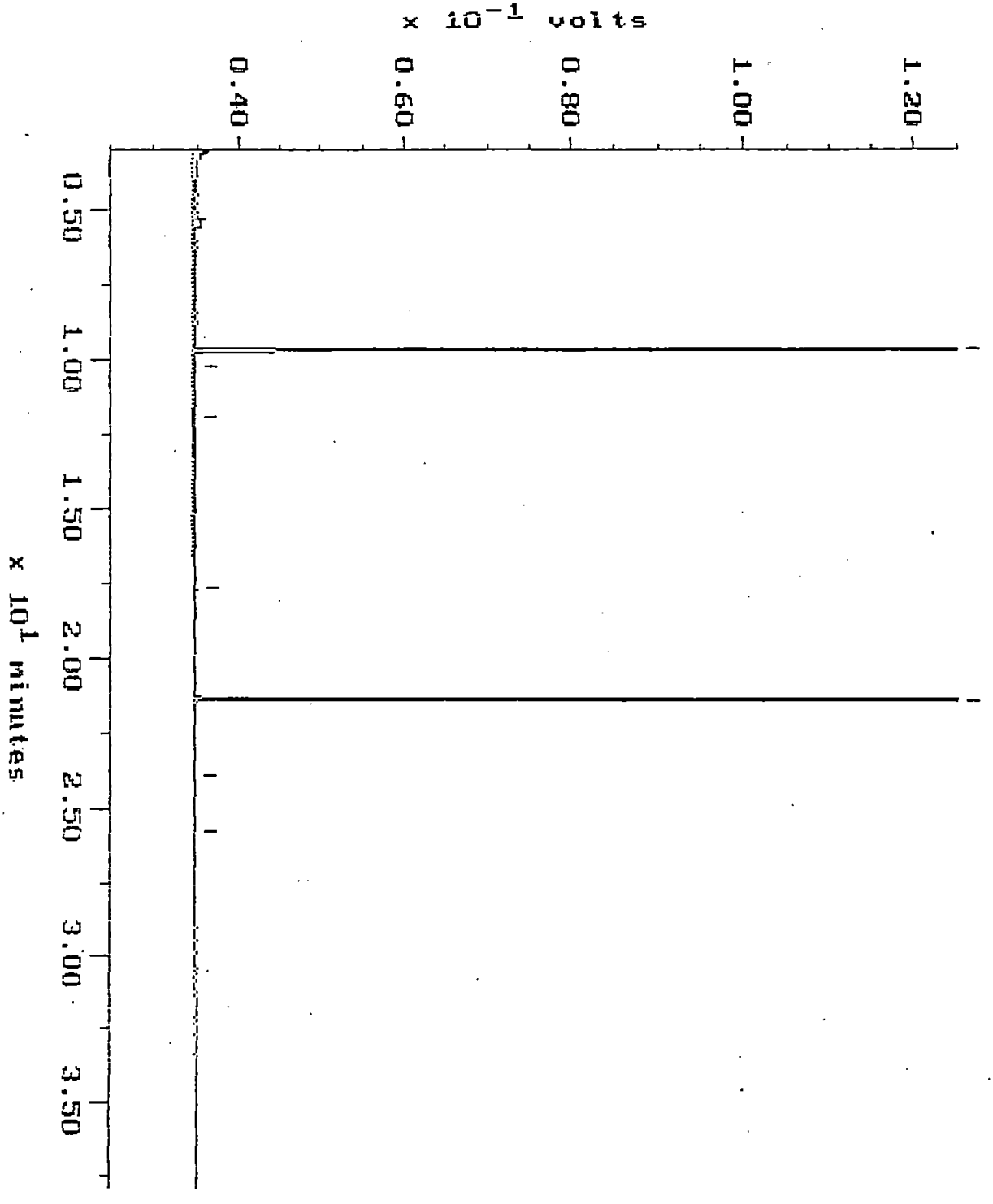
Sample: 9304-167-1 Channel: ERNIE Filename: R4168R10
Acquired: 17-APR-93 5:40 Method: F:\BRO2\MAXDATA\ERNIE\FUEL0416 Operator: ATI
Comments: ATI: THE QUALITY TEAM



WA DOE WTPH-HCID

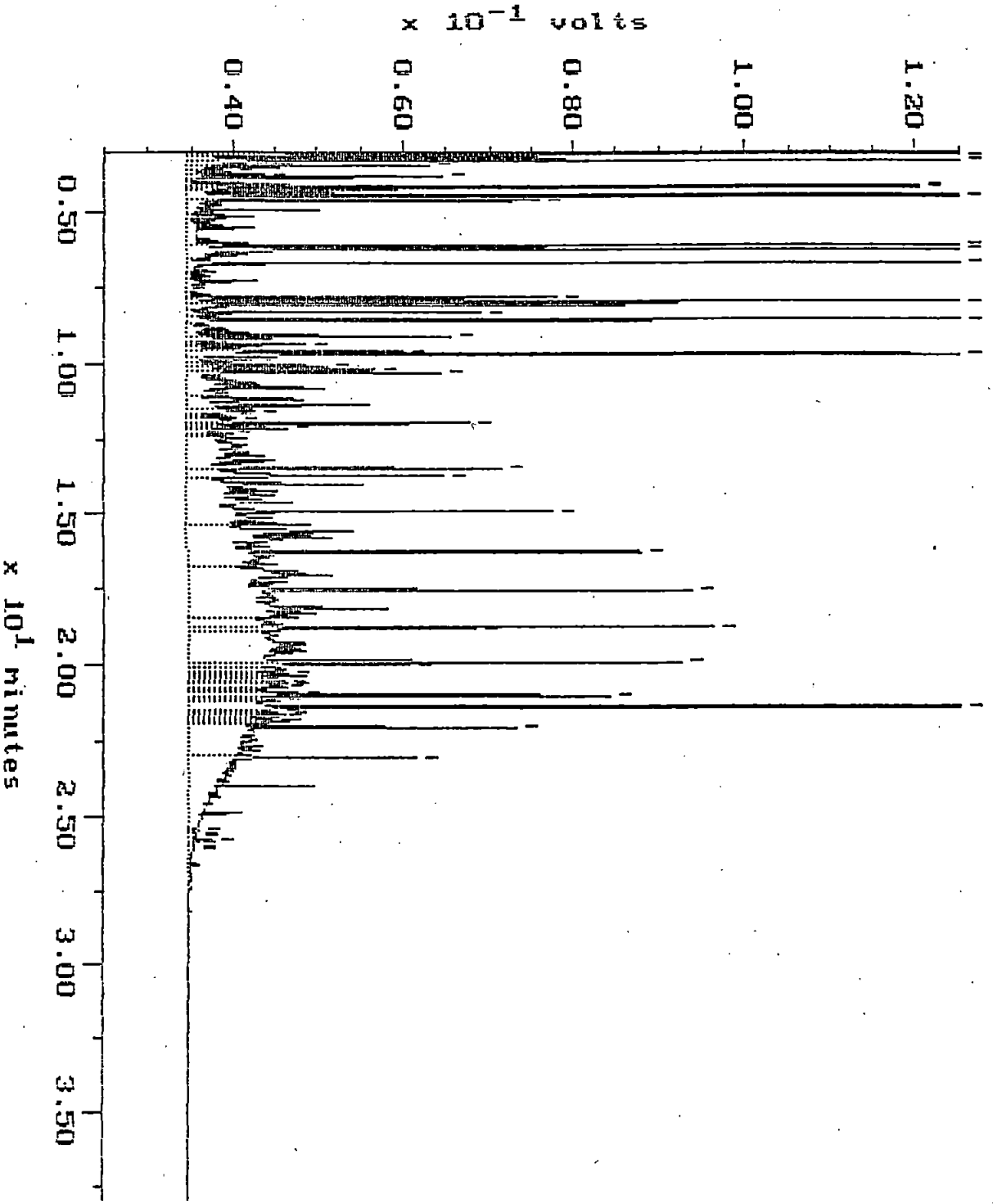
Blank

Sample: SRB 4-16 Channel: ERNIE Filename: R4168R03
Acquired: 17-APR-93 0:19 Method: F:\BR02\MAXDATA\ERNIE\FUEL0416 Operator: ATI
Comments: ATI: THE QUALITY TEAM



Continuing Calibration

Sample: DG 400 Channel: ERNIE Filename: R4168R02
Acquired: 16-APR-93 23:34 Method: F:\BR02\MAXDATA\ERNIE\FUEL0416 Operator: ATI
Comments: ATI: THE QUALITY TEAM

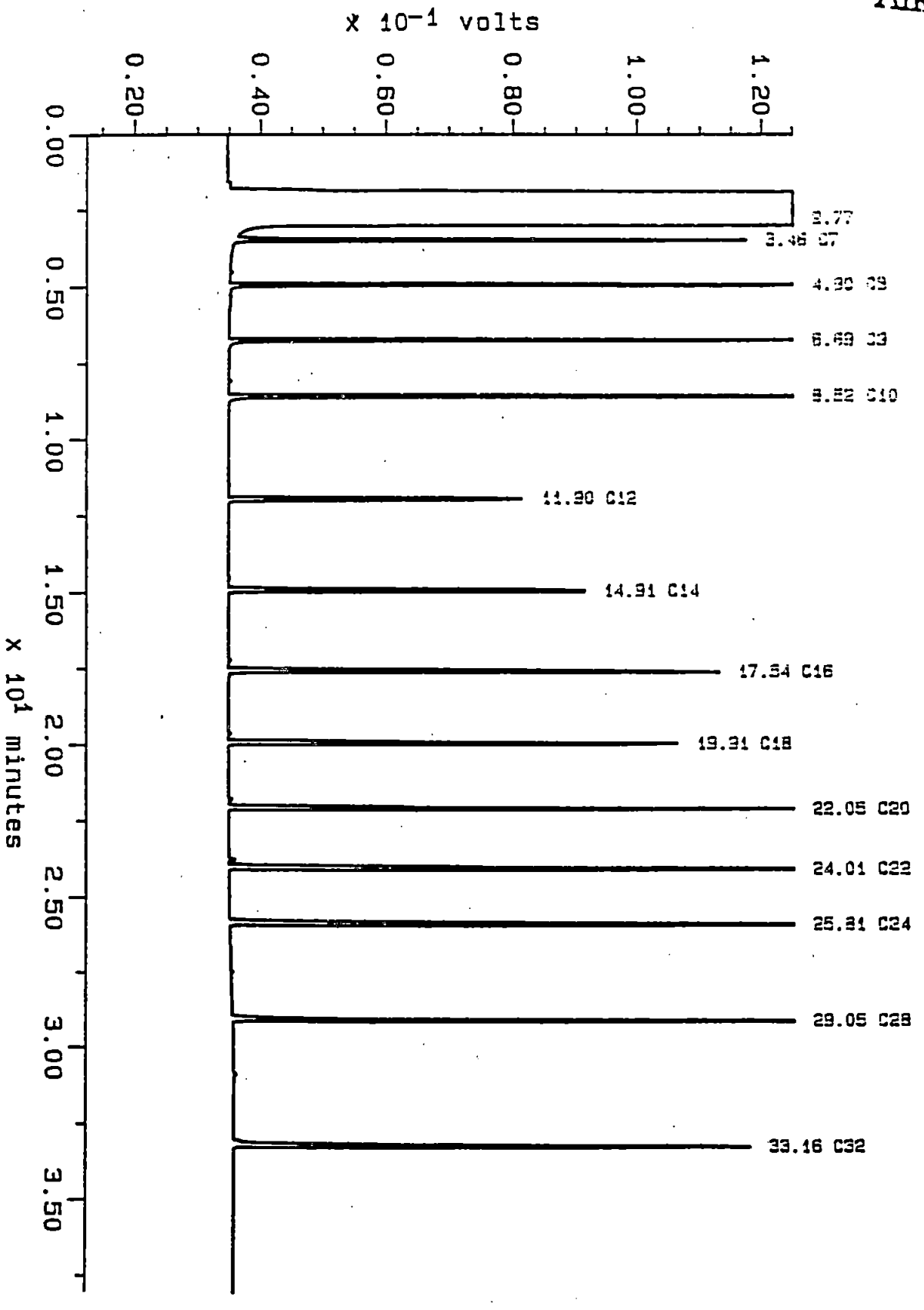


Sample: ALKANE
Acquired: 24-MAR-93 22:09
Inj Vol: 1.00

Channel: ERNIE
Method: F:\2RC2\MAXDATA\ERNIE\FUEL3224

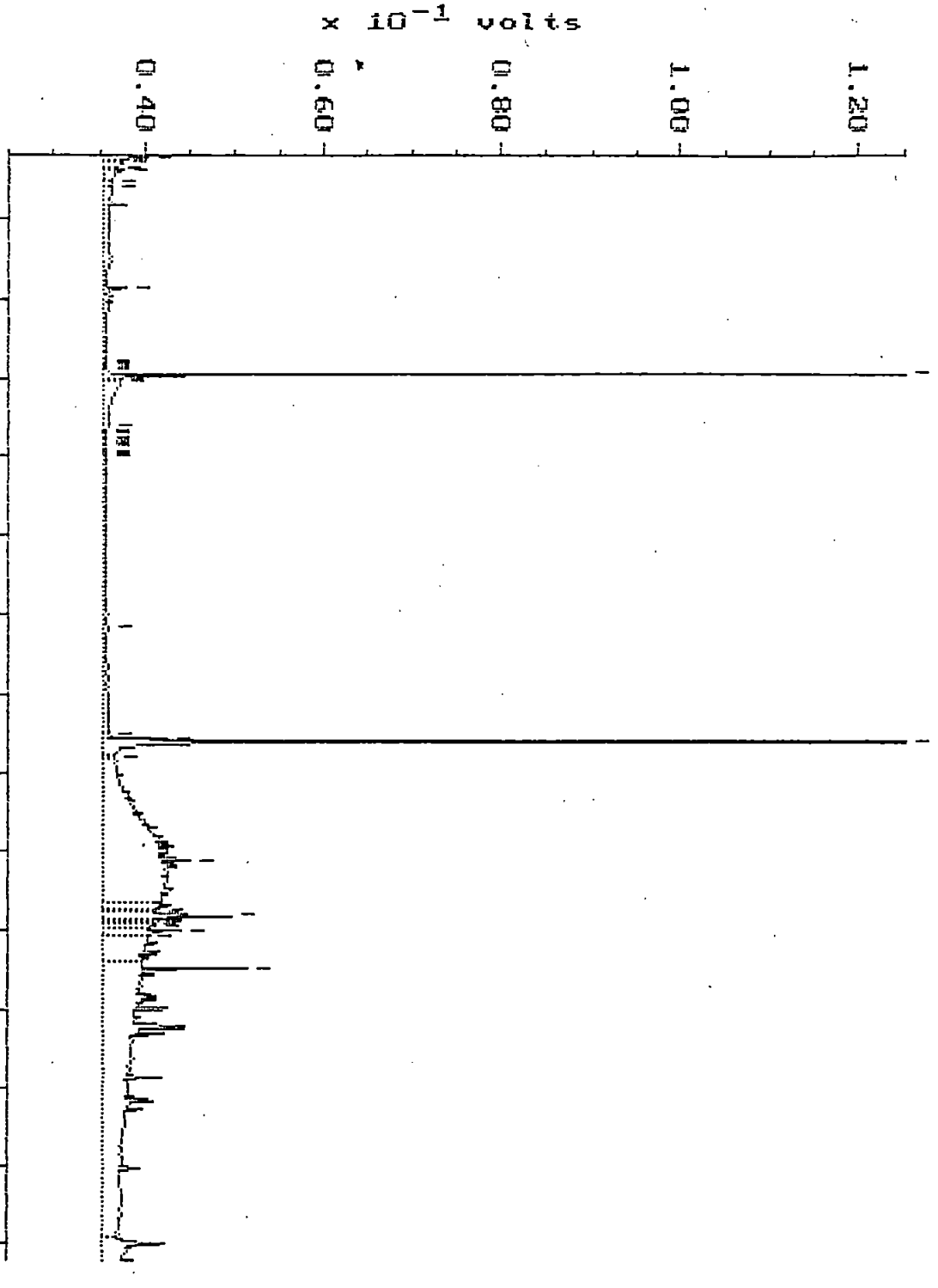
Filename: R3248E03
Operator: ATI

Alkane



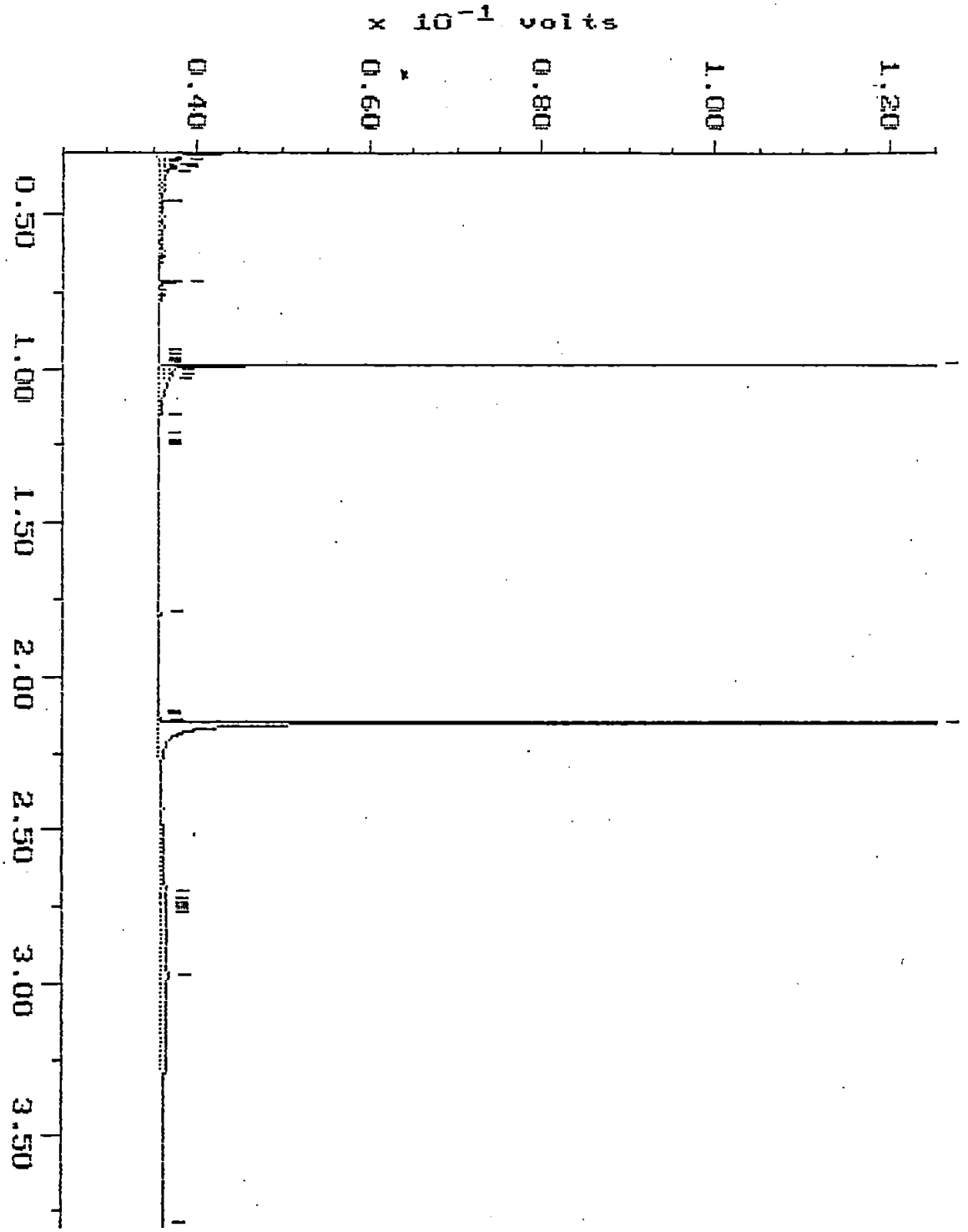
WA DOE WTPH-D

Sample: 9304-167-1 Channel: DEMITRI Filename: R4208D06
Acquired: 20-APR-93 17:00 Method: F:\BRO2\MAXDATA\SERGE-D\FUEL0420 Operator: ATI



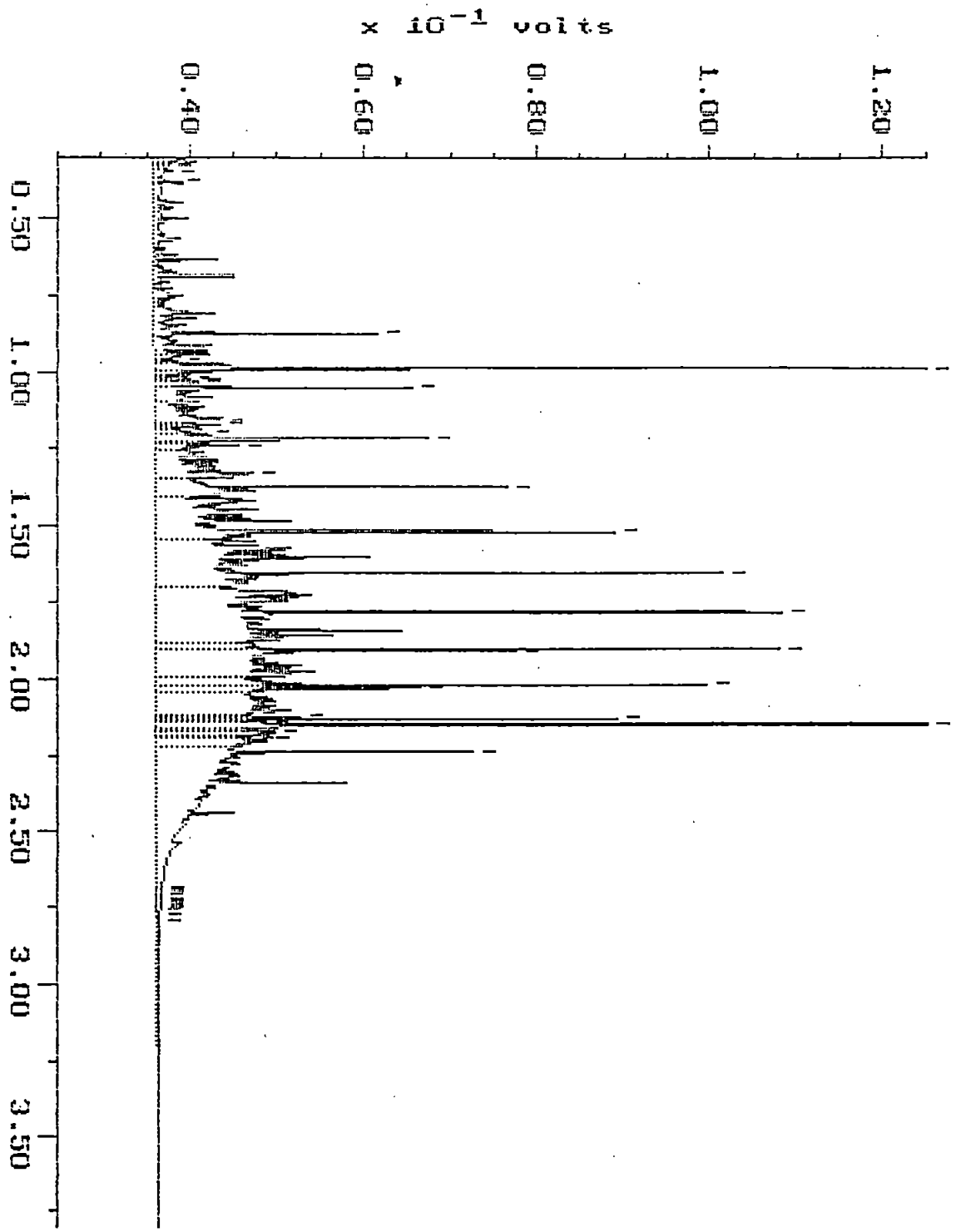
Blank

Sample: SRB 4-20 Channel: DEMITRI Filename: R4208D04
Acquired: 20-APR-93 15:26 Method: F:\BRO2\MAXDATA\SERGE-D\FUEL0420 Operator: ATI

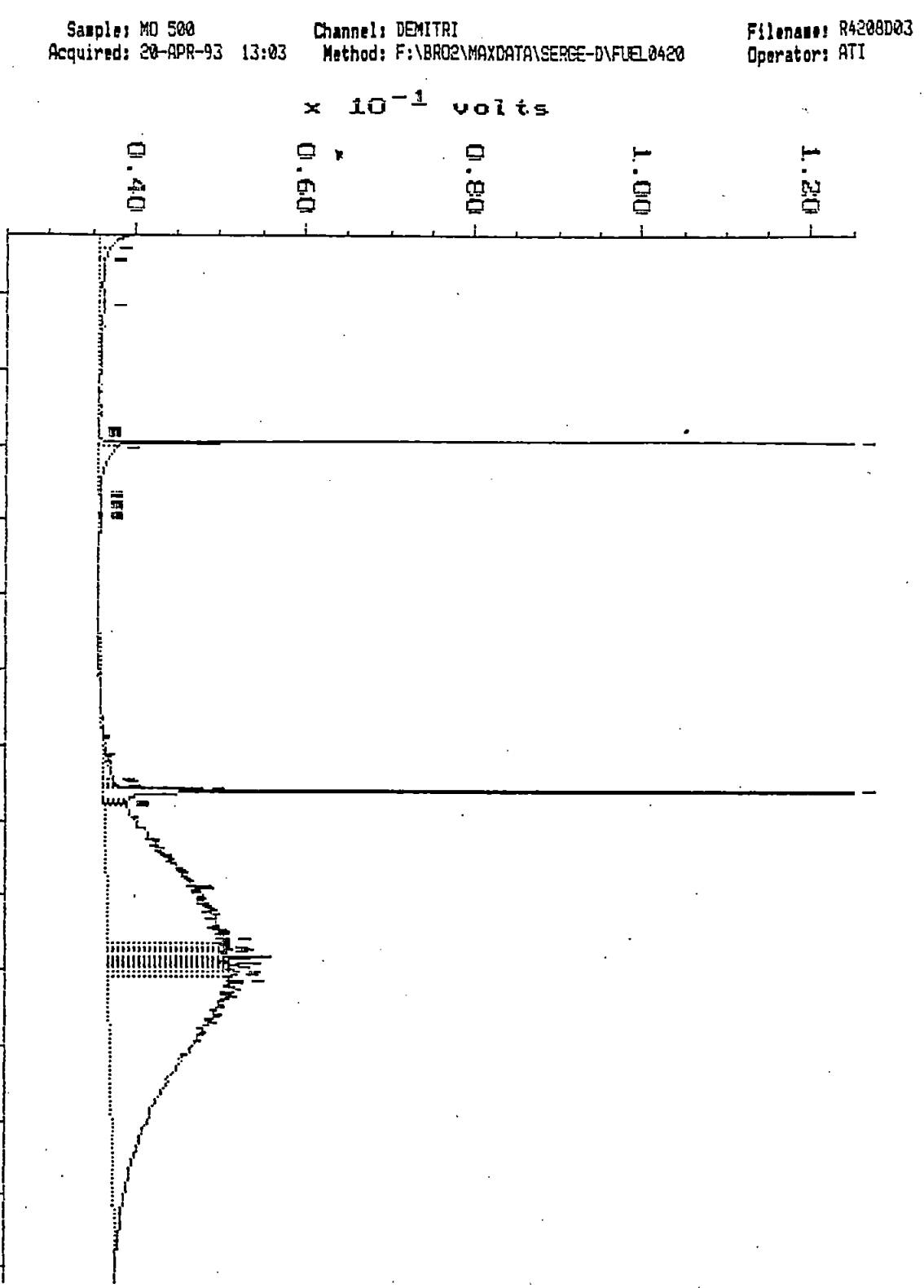


Continuing Calibration

Sample: D 500 Channel: DEMITRI Filename: R4208D02
Acquired: 20-APR-93 12:15 Method: F:\BRO2\MAXDATA\SERGE-D\FUEL0420 Operator: ATI



Continuing Calibration

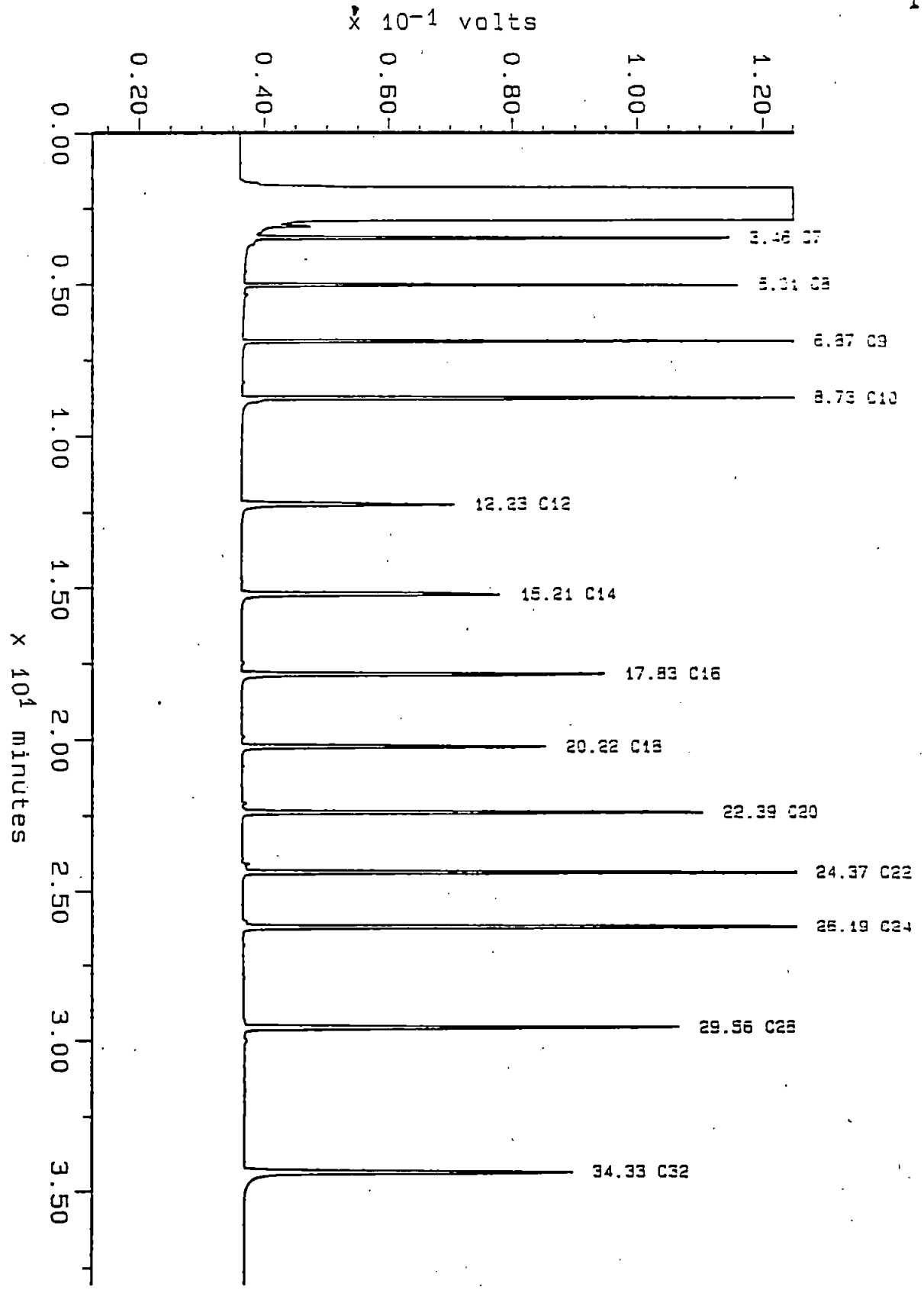


Sample: ALKANE
Acquired: 16-APR-93 16:56
Inj Vol: 1.00

Channel: DEMITRI
Method: F:\BRC2\MAXDATA\BERGE-D\FUEL0416

Filename: R4168011
Operator: ATI

Alkane



Applied Geotechnology Inc.
Geotechnical Engineering
Geology & Hydrogeology

CHAIN-OF-CUSTODY

Date 4/16/93 Page 1 of 1

PROJECT INFORMATION

Project Manager: Glen Bobnick
Project Name: GTE/Kirkland - UST Upgrade
Project Number: 15169.130
Site Location: Kirkland WA Sampled By: JST

DISPOSAL INFORMATION

☑ Lab Disposal (return if not indicated)
Disposal Method: _____
Disposed by: _____ Disposal Date: _____

QC INFORMATION (check one)

☑ SW-846 ☐ CLP ☐ Screening ☐ AGI Std. ☐ Special

Laboratory Number: 9304-167

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	PETROLEUM HYDROCARBONS: TPH-ID State: WA	TPH-G State:	TPH-D State: WA - EXTENDED*	TPH Special Instructions:	418.1 State:	8015M	ORGANIC COMPOUNDS: 8010 Halogenated VOCs	8020 Aromatic VOCs	8020M - BETX only	8240 GCMS Volatiles	8270 GCMS Semivol.	8310 HPLC PAHs	8040 Phenols	DWS - Volatiles and Semivol.	PESTS/PCBs: 8080 OC Pest/PCBs	8080M PCBs only	8140 OP Pesticides	8150 OC Herbicides	DWS - Herb/pest	METALS: Selected metals: list	Total Lead (Wa)	Organic Lead (Ca)	TCL Metals (23)	Priority Poll. Metals (13)	DWS - Metals	MFSP - Metals (Wa)	LEACHING TESTS: TCLP - Volatiles (ZHE)	TCLP - Semivolatiles	TCLP - Pesticides	TCLP - Metals	OTHER	NUMBER OF CONTAINERS
S1	4/15/93	1600	Soil	1	X		✓	4700		*																										1
S2	4/15/93	1610		2	X																															1
S3	4/16/93	0815		3	X																															1
S4	4/15/93	1630		4	X																															1
S5	4/15/93	1640		5	X																															1

LAB INFORMATION

Lab Name: ATI
Lab Address: 560 Naches Ave
Reston WA
Via: Courier

SAMPLE RECEIPT

Total Number of Containers:	5
Chain of Custody Seals?: Y/N/NA	y
Intact?: Y/N/NA	y
Received in Good Condition/Cold:	y

Turn Around Time: ☐ Standard ☐ 24 hr. ☑ 48 hr. ☐ 72 hr. ☐ 1 wk.

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH DATA

Special Instructions: * MOTOR OIL QUANT JST 4/16/93

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Time: 0900	Signature: Time:	Signature: Time:
Printed Name: Jeff Thompson Date: 4/16/93	Printed Name: Date:	Printed Name: Date:
Company: AGI	Company:	Company:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY: 3.**
Signature: Time: 255p	Signature: Time:	Signature: Time:
Printed Name: V. PENNICK Date: 4/16/93	Printed Name: Date:	Printed Name: Date:
Company: ATI-WA	Company:	Company:

AGI OFFICES: Bellevue: (206) 453-8383 Tacoma: (206) 383-4380
Portland: (503) 222-2820 Pleasanton: (415) 460-5495

DISTRIBUTION: White, Canary to Analytical Laboratory; Pink to AGI Project Files; Gold to AGI Disposal Files

Rev. 12/91

QUALITY ASSURANCE REPORT

PROJECT AND SAMPLE INFORMATION

Project Name: GTE/Kirkland
Project No.: 15,169.130
Lab Name: Analytical Technologies, Inc. (ATI) - Renton, WA
Lab Number: 9303-130
Sample No.: SS1

Matrix: Soil

QUALITY ASSURANCE SUMMARY

All data are of known and acceptable quality.

ANALYTICAL METHODS

Parameter	Technique	Method
Fuel Hydrocarbons	GC/FID	EPA 8015 Modified
Moisture	Gravimetric	CLP SOW ILM01.0

TIMELINESS

Parameter	Date Sampled	Date Extracted	Date Analyzed	Time Until Extraction	Time Until Analysis
Fuel Hydrocarbons	3/10/93	3/15/93	3/16/93	5 (14)	6 (14)
Moisture	3/10/93	NA	3/15/93	NA	5 (NA)

NA - Not Applicable
Numbers in parentheses indicate recommended holding times in days for soils.

All samples were extracted and analyzed within recommended holding times for soils.

DETECTABILITY AND COMPARABILITY

All samples were analyzed undiluted. All sample results are comparable.

FUEL HYDROCARBON CHEMISTRY

No analytes were detected at or above the method reporting limits (MRL) by EPA 8015 Modified.

QUALITY ASSURANCE REPORT

PROJECT AND SAMPLE INFORMATION

Project Name: GTE/Kirkland
Project No.: 15,169.130
Lab Name: Analytical Technologies, Inc. (ATI) - Renton, WA
Lab Number: 9303-130
Sample No.: SS1

Matrix: Soil

FIELD QUALITY CONTROL SAMPLES

Field Duplicates: None collected.

Rinsate: None collected.

Trip Blank: None collected.

LAB QUALITY CONTROL SAMPLES

Reagent Blank: No analytes were detected at or above the MRL in the reagent blank for EPA 8015 Modified.

Matrix Spikes: Matrix spike (MS) and matrix spike duplicate (MSD) percent recoveries are within ATI's control limit criteria for EPA 8015 Modified.

Duplicates: Sample/sample duplicate relative percent difference (RPD) is within ATI's control limit criterion for Method CLP SOW ILM01.0.

EPA 8015 Modified: For sample/sample duplicate, analyte was not detected in either sample or sample duplicate. The reproducibility for this method is considered to be acceptable. MS/MSD RPD is within ATI's control limit for this method.

Blank Spike: Blank spike percent recovery is within ATI's control limit criterion for EPA 8015 Modified.

Surrogates: All surrogate percent recoveries for EPA 8015 Modified are within ATI's control limit criteria.

SIGNATURES

Prepared by Angela Li Date 04/30/93

Checked by Katherine Bourbonais Date 4/30/93

Analytical**Technologies,**Inc. 560 Naches Avenue, S.W., Suite 101, Renton, WA 98055 (206) 228-8335
Karen L. Mixon, Laboratory Manager

ATI I.D. # 9303-130

March 23, 1993

Applied Geotechnology, Inc.
P.O. Box 3885
Bellevue WA 98009

Attention : Glen Bobnick

Project Number : 15169.129

Project Name : GTE - Kirkland Tank Removal

Dear Mr. Bobnick:

On March 11, 1993, Analytical Technologies, Inc. (ATI), received one sample for analysis. The sample was analyzed with EPA methodology or equivalent methods as specified in the attached analytical schedule. The results, sample cross reference, and quality control data are enclosed.

Sincerely,

Donna M. McKinney
Senior Project Manager

DMM/hal/ff

Enclosure

Analytical Technologies, Inc.

ATI I.D. # 9303-130

SAMPLE CROSS REFERENCE SHEET

CLIENT : APPLIED GEOTECHNOLOGY, INC.
PROJECT # : 15169.129
PROJECT NAME : GTE - KIRKLAND TANK REMOVAL

ATI #	CLIENT DESCRIPTION	DATE SAMPLED	MATRIX
9303-130-1	SS1	03/10/93	SOIL

----- TOTALS -----

MATRIX	# SAMPLES
SOIL	1

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ATI I.D. # 9303-130

ANALYTICAL SCHEDULE

CLIENT : APPLIED GEOTECHNOLOGY, INC.
PROJECT # : 15169.129
PROJECT NAME : GTE - KIRKLAND TANK REMOVAL

ANALYSIS	TECHNIQUE	REFERENCE	LAB
FUEL HYDROCARBONS	GC/FID	EPA 8015 MODIFIED	R
MOISTURE	GRAVIMETRIC	CLP SOW ILM01.0	R

R = ATI - Renton
SD = ATI - San Diego
PHX = ATI - Phoenix
PNR = ATI - Pensacola
FC = ATI - Fort Collins
SUB = Subcontract

Analytical Technologies, Inc.

ATI I.D. # 9303-130

FUEL HYDROCARBONS
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: N/A
PROJECT #	: 15169.129	DATE RECEIVED	: N/A
PROJECT NAME	: GTE - KIRKLAND TANK REMOVAL	DATE EXTRACTED	: 03/15/93
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 03/16/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: 8015 (MODIFIED)	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUND	RESULT
FUEL HYDROCARBONS	<5
HYDROCARBON RANGE	C7 - C12
HYDROCARBON QUANTITATION USING	GASOLINE
FUEL HYDROCARBONS	<25
HYDROCARBON RANGE	C12 - C24
HYDROCARBON QUANTITATION USING	DIESEL

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	94	52 - 143

Analytical Technologies, Inc.

ATI I.D. # 9303-130-1

FUEL HYDROCARBONS
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 03/10/93
PROJECT #	: 15169.129	DATE RECEIVED	: 03/11/93
PROJECT NAME	: GTE - KIRKLAND TANK REMOVAL	DATE EXTRACTED	: 03/15/93
CLIENT I.D.	: SS1	DATE ANALYZED	: 03/16/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: 8015 (MODIFIED)	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUND	RESULT
FUEL HYDROCARBONS	<6
HYDROCARBON RANGE	C7 - C12
HYDROCARBON QUANTITATION USING	GASOLINE
FUEL HYDROCARBONS	<31
HYDROCARBON RANGE	C12 - C24
HYDROCARBON QUANTITATION USING	DIESEL

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	90	52 - 143

Analytical Technologies, Inc.

ATI I.D. # 9303-130

FUEL HYDROCARBONS
QUALITY CONTROL DATA

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	SAMPLE I.D. #	: 9303-147-6
PROJECT #	: 15169.129	DATE EXTRACTED	: 03/15/93
PROJECT NAME	: GTE - KIRKLAND TANK REMOVAL	DATE ANALYZED	: 03/16/93
METHOD	: 8015 (MODIFIED)	UNITS	: mg/Kg
SAMPLE MATRIX	: SOIL		

COMPOUND	SAMPLE RESULT	SAMPLE DUP. RESULT	RPD	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED RESULT	DUP. % REC.	RPD
FUEL HYDROCARBONS (DIESEL)	<25	<25	NC	500	493	99	487	97	1

CONTROL LIMITS	% REC.	RPD
DIESEL	56 - 137	20

SURROGATE RECOVERIES	SPIKE	DUP. SPIKE	LIMITS
O-TERPHENYL	100	100	52 - 143

Analytical Technologies, Inc.

ATI I.D. # 9303-130

FUEL HYDROCARBONS
QUALITY CONTROL DATA

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	SAMPLE I.D. #	: BLANK SPIKE
PROJECT #	: 15169.129	DATE EXTRACTED	: 03/15/93
PROJECT NAME	: GTE - KIRKLAND TANK REMOVAL	DATE ANALYZED	: 03/16/93
METHOD	: 8015 (MODIFIED)	UNITS	: mg/Kg
SAMPLE MATRIX	: SOIL		

COMPOUND	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED RESULT	DUP. % REC.	RPD
FUEL HYDROCARBONS (DIESEL)	<25	500	501	100	N/A	N/A	N/A

CONTROL LIMITS	% REC.	RPD
DIESEL	67 - 135	20

SURROGATE RECOVERIES	SPIKE	DUP. SPIKE	LIMITS
O-TERPHENYL	104	N/A	52 - 143

Analytical Technologies, Inc.

ATI I.D. # 9303-130

GENERAL CHEMISTRY ANALYSIS

CLIENT : APPLIED GEOTECHNOLOGY, INC. MATRIX : SOIL
PROJECT # : 15169.129
PROJECT NAME : GTE - KIRKLAND TANK REMOVAL

PARAMETER	DATE ANALYZED
MOISTURE	03/15/93

Analytical Technologies, Inc.

ATI I.D. # 9303-130

GENERAL CHEMISTRY ANALYSIS
DATA SUMMARY

CLIENT : APPLIED GEOTECHNOLOGY, INC. MATRIX : SOIL
PROJECT # : 15169.129
PROJECT NAME : GTE - KIRKLAND TANK REMOVAL UNITS : %

ATI I.D. #	CLIENT I.D.	MOISTURE
9303-130-1	SS1	19

AnalyticalTechnologies, Inc.

ATI I.D. # 9303-130

GENERAL CHEMISTRY ANALYSIS
QUALITY CONTROL DATA

CLIENT : APPLIED GEOTECHNOLOGY, INC. MATRIX : SOIL
PROJECT # : 15169.129
PROJECT NAME : GTE - KIRKLAND TANK REMOVAL UNITS : %

PARAMETER	ATI I.D.	SAMPLE RESULT	DUP RESULT	RPD	SPIKED RESULT	SPIKE ADDED	% REC
MOISTURE	9303-124-13	7.0	7.0	0	N/A	N/A	N/A

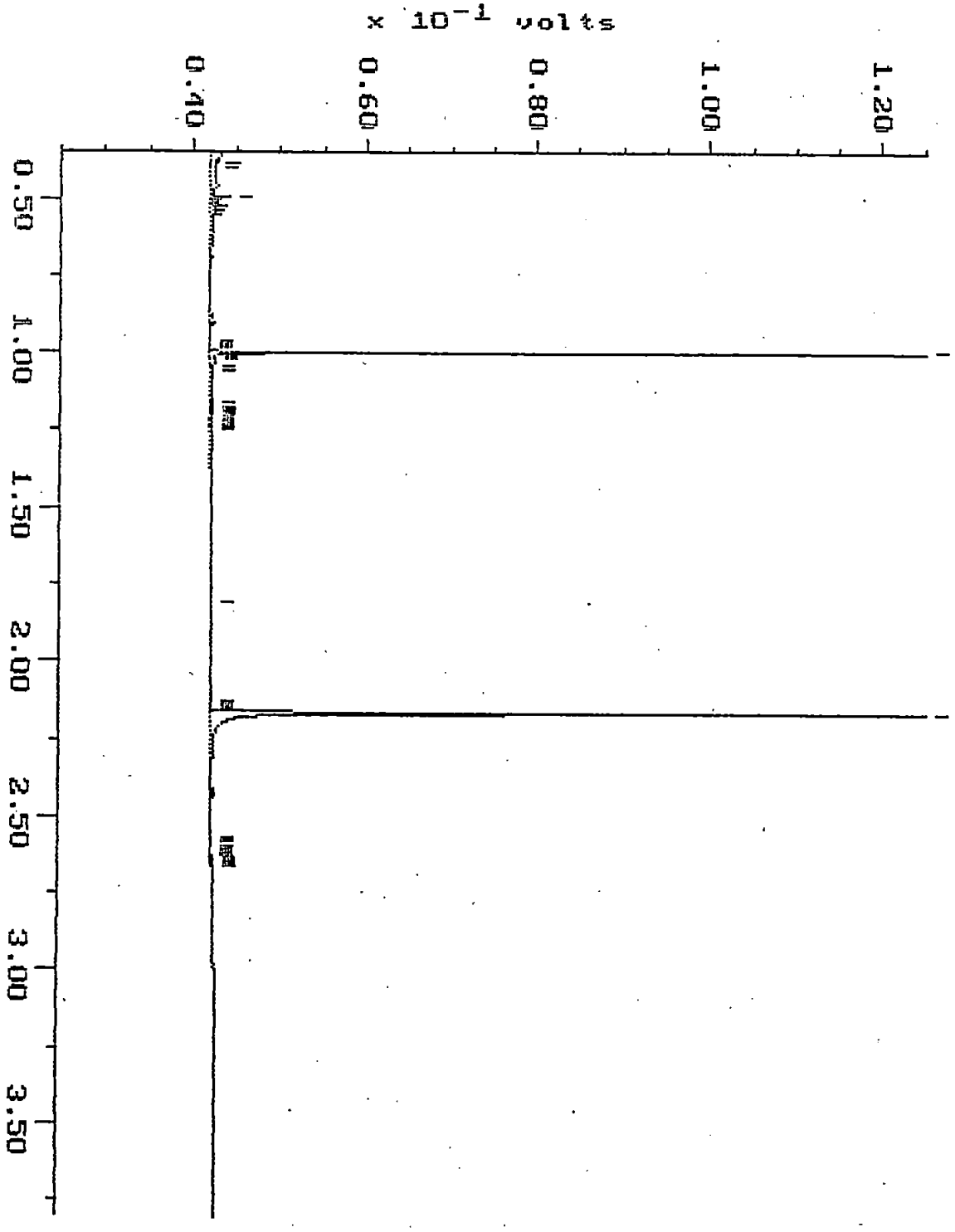
% Recovery = $\frac{\text{(Spike Sample Result - Sample Result)}}{\text{Spike Concentration}} \times 100$

RPD (Relative % Difference) = $\frac{\text{(Sample Result - Duplicate Result)}}{\text{Average Result}} \times 100$

EPA 8015 Modified

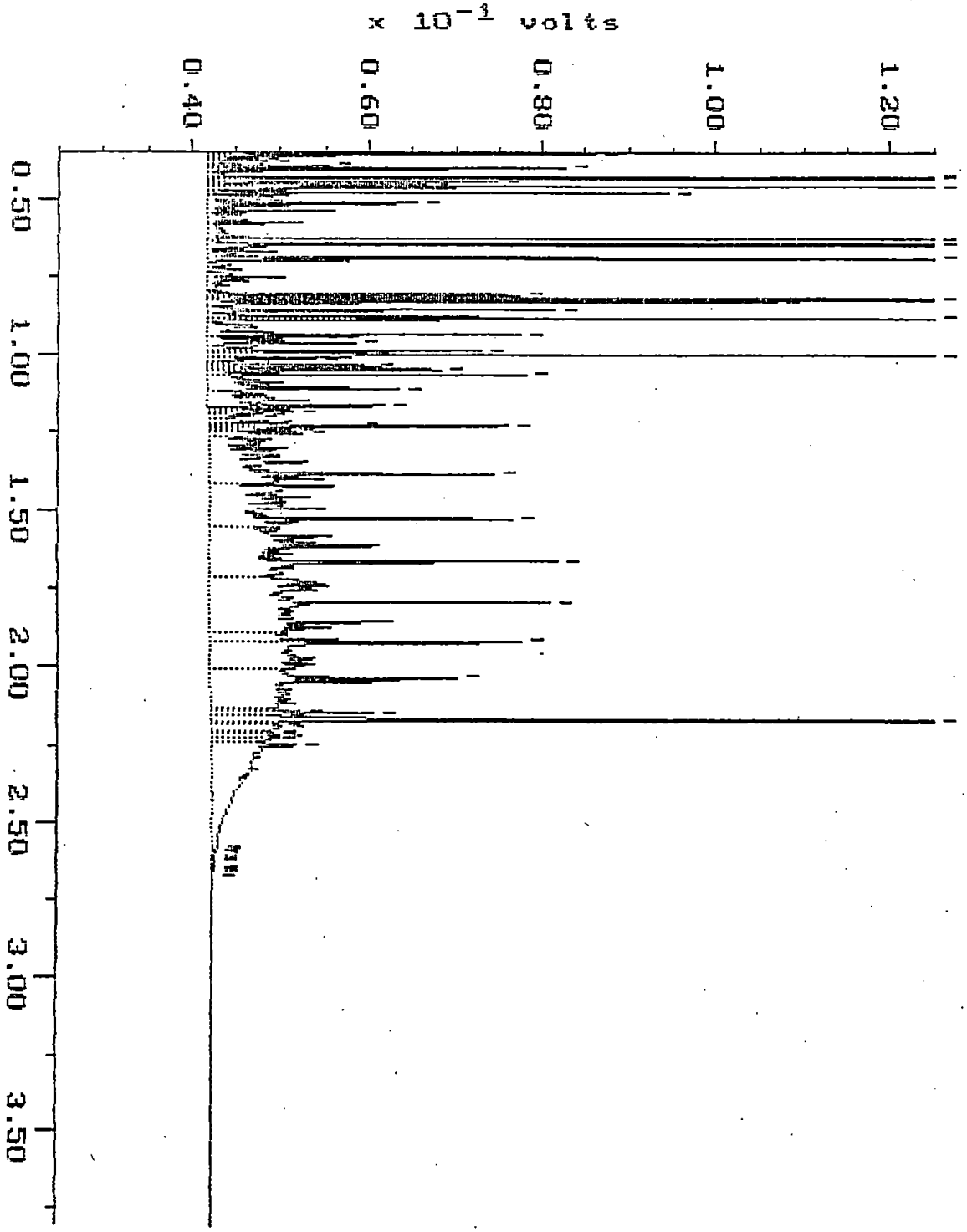
Blank

Sample: SRB 3-15 Channel: FRED Filename: R3158F14
Acquired: 16-MAR-93 3:19 Method: F:\BRO2\MAXDATA\FRED\FUEL8315 Operator: ATI
Comments: ATI RUSH FUELS: A MISSION OF EXCELLENCE IN ANALYTICAL CHROMATOGRAPHY



Continuing Calibration

Sample: DG 400 Channel: FRED Filename: R3158F02
Acquired: 15-MAR-93 17:42 Method: F:\BR02\MAXDATA\FRED\FUEL0315 Operator: ATI
Comments: ATI RUSH FUELS: A MISSION OF EXCELLENCE IN ANALYTICAL CHROMATOGRAPHY

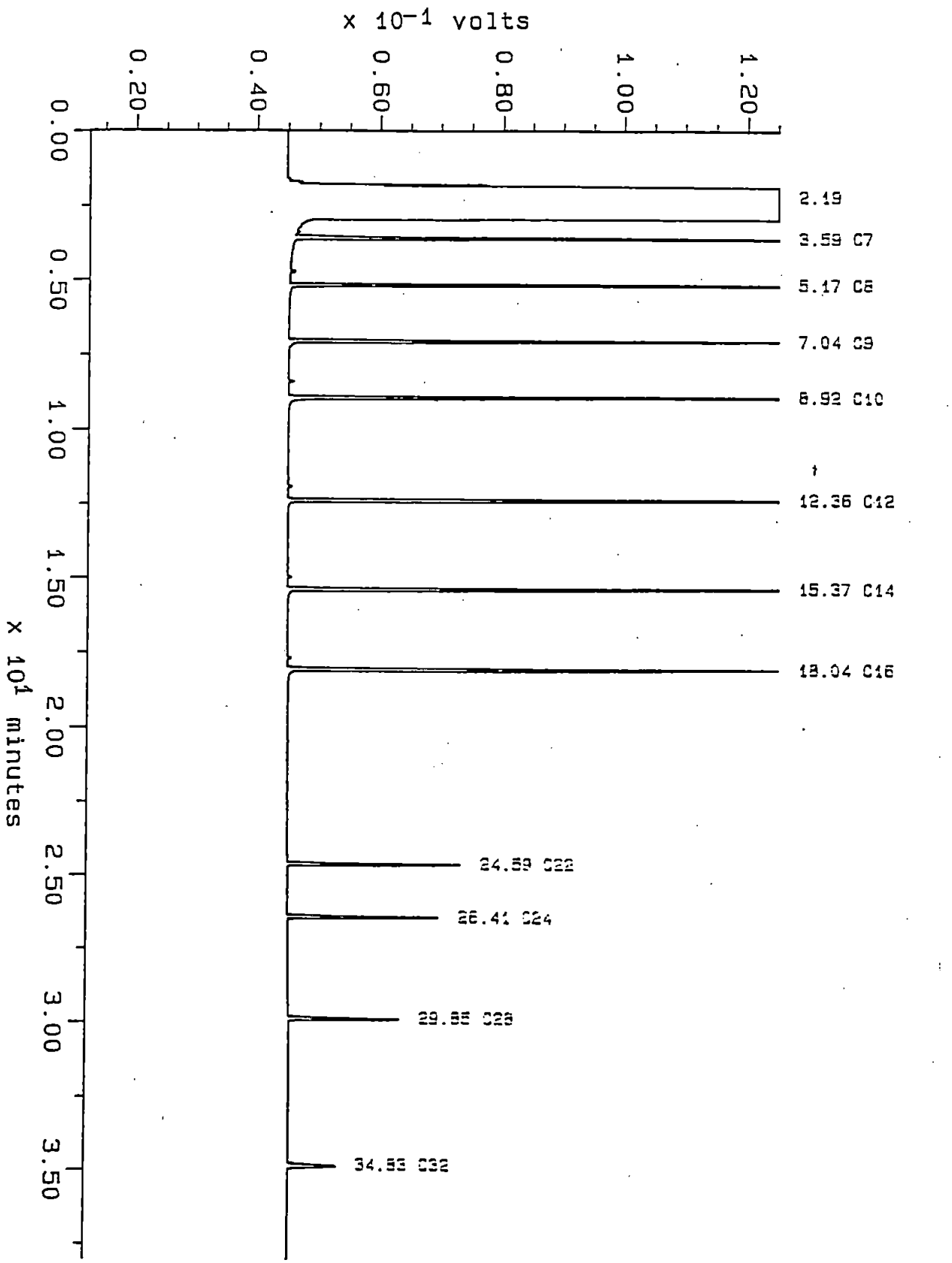


Sample: ALKANE
Acquired: 11-JAN-93 13:01
Inj Vol: 1.00

Channel: FRED
Method: M:\BR02\MAXDATA\FRED\FUEL0111

Filename: 0111FR04
Operator: ATI

Alkane



Applied Geotechnology Inc.
Geotechnical Engineering
Geology & Hydrogeology

CHAIN-OF-CUSTODY

Date 3/10/93 Page 1 of 1

PROJECT INFORMATION

Project Manager: Glen Erbrick
Project Name: GTE / Kirkland Tank Removal
Project Number: 15169.129
Site Location: Kirkland, WA Sampled By: JST

DISPOSAL INFORMATION

☑ Lab Disposal (return if not indicated)
Disposal Method: _____
Disposed by: _____ Disposal Date: _____

QC INFORMATION (check one)

☑ SW-846 ☐ CLP ☐ Screening ☐ AGI Std. ☐ Special

Laboratory Number: 9303-130

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
SS1	3/10/93		Soil	-1

PETROLEUM HYDROCARBONS					ORGANIC COMPOUNDS							PESTS/PCBs					METALS						LEACHING TESTS				OTHER			
TPH-ID State:	TPH-G State:	TPH-D State:	TPH Special Instructions	418.1 State:	8015M	8010 Halogenated VOCs	8020 Aromatic VOCs	8020M - BETX only	8240 GCMS Volatiles	8270 GCMS Semivol.	8310 HPLC PAHs	8040 Phenols	DWS - Volatiles and Semivol.	8080 OC Pest/PCBs	8080M PCBs only	8140 OP Pesticides	8150 OC Herbicides	DWS - Herb/pest	Selected metals: list	Total Lead (Wa)	Organic Lead (Ca)	TCL Metals (23)	Priority Poll. Metals (13)	DWS - Metals	MFSP - Metals (Wa)	TCLP - Volatiles (ZHE)	TCLP - Semivolatiles	TCLP - Pesticides	TCLP - Metals			NUMBER OF CONTAINERS
					X																										1

LAB INFORMATION

Lab Name: ATI
Lab Address: 560 Naches Ave.
Renton, WA
Via: Courier

SAMPLE RECEIPT

Total Number of Containers:	1
Chain of Custody Seals?: Y/N/NA	Y
Intact?: Y/N/NA	Y
Received in Good Condition/Cold:	Y / Y

Turn Around Time: ☑ Standard ☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 1 wk.

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH DATA

Special Instructions:

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: _____ Time:	Signature: Time:	Signature: Time:
Printed Name: Jeff Thompson Date: 3/10/93	Printed Name: Date:	Printed Name: Date:
Company: AGI	Company:	Company:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY: 3.**
Signature: _____ Time: 9:55 am	Signature: Time:	Signature: Time:
Printed Name: STAN KENSLER Date: 3/11/93	Printed Name: Date:	Printed Name: Date:
Company: ATI-WA	Company:	Company:

AGI OFFICES: Bellevue: (206) 453-8383 Tacoma: (206) 383-4380
Portland: (503) 222-2820 Pleasanton: (415) 460-5495

DISTRIBUTION: White, Canary to Analytical Laboratory; Pink to AGI Project Files; Gold to AGI Disposal Files

Rev. 12/91

QUALITY ASSURANCE REPORT

PROJECT AND SAMPLE INFORMATION

Project Name: GTE/Kirkland - UST Upgrade
Project No.: 15,169.130
Lab Name: Analytical Technologies, Inc. - Renton, WA
Lab Number: 9304-166
Sample No.: SS1, SS2, SS3, SS4, SS5

Matrix: Soil

QUALITY ASSURANCE SUMMARY

All data are of known and acceptable quality.

ANALYTICAL METHODS

Parameter	Technique	Method
TPH-HCID	GC/FID	WA WTPH-HCID
Moisture	Gravimetric	CLP SOW ILM01.0

TIMELINESS

Parameter	Date Sampled	Date Extracted	Date Analyzed	Time Until Extraction	Time Until Analysis
TPH-HCID	4/16/93	4/16/93	4/17/93	<1 (14)	1 (21)

Numbers in parentheses indicate recommended holding times in days for soil.

All samples were extracted and analyzed within recommended holding times for soil.

Detectability and Comparability

TPH-HCID analyses performed without sample dilution. Sample results are comparable.

FUEL HYDROCARBON CHEMISTRY

WA WTPH-HCID: Petroleum hydrocarbons were not detected at or above the reporting limits for "gasoline", "diesel", or "heavy oil".

QUALITY ASSURANCE REPORT

PROJECT AND SAMPLE INFORMATION

Project Name: GTE/Kirkland - UST Upgrade
Project No.: 15,169.130
Lab Name: Analytical Technologies, Inc. - Renton, WA
Lab Number: 9304-166
Sample No.: SS1, SS2, SS3, SS4, SS5

FIELD QUALITY CONTROL SAMPLES

Field Duplicates: None collected.

Rinsate: None collected.

Trip Blank: None collected.

LAB QUALITY CONTROL SAMPLES

Reagent Blank: No analytes were detected at or above their method reporting limits by WA WTPH-HCID.

Matrix Spikes: Matrix spikes are not required by WA WTPH-HCID.

Blank Spike: Blank spikes are not required by WA WTPH-HCID.

Duplicates: Sample/sample duplicate relative percent difference (RPD) data are within ATI's control limit criteria for moisture.

Surrogates: All surrogate spike percent recoveries are within ATI's control limit criteria for WA WTPH-HCID.

SIGNATURES

Prepared by Annette Johnson Date 5/3/93

Checked by Katherine Bourbonais Date 5/3/93

Analytical**Technologies,**Inc. 560 Naches Avenue, S.W., Suite 101, Renton, WA 98055 (206) 228-8335

Karen L. Mixon, Laboratory Manager

ATI I.D. # 9304-166

April 26, 1993

Applied Geotechnology, Inc.
P.O. Box 3885
Bellevue WA 98009

Attention : Glen Bobnick

Project Number : 15,169.130

Project Name : GTE/Kirkland

Dear Mr. Bobnick:

On April 16, 1993, Analytical Technologies, Inc. (ATI), received five samples for analysis. The samples were analyzed with EPA methodology or equivalent methods as specified in the attached analytical schedule. The results, sample cross reference, and quality control data are enclosed.

Sincerely,

Donna M. McKinney
Senior Project Manager

DMM/hal/elf

Enclosure

Analytical Technologies, Inc.

ATI I.D. # 9304-166

SAMPLE CROSS REFERENCE SHEET

CLIENT : APPLIED GEOTECHNOLOGY, INC.
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND

ATI #	CLIENT DESCRIPTION	DATE SAMPLED	MATRIX
9304-166-1	SS1	04/16/93	SOIL
9304-166-2	SS2	04/16/93	SOIL
9304-166-3	SS3	04/16/93	SOIL
9304-166-4	SS4	04/16/93	SOIL
9304-166-5	SS5	04/16/93	SOIL

----- TOTALS -----

MATRIX	# SAMPLES
SOIL	5

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ATI I.D. # 9304-166

ANALYTICAL SCHEDULE

CLIENT : APPLIED GEOTECHNOLOGY, INC.
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND

ANALYSIS	TECHNIQUE	REFERENCE	LAB
HYDROCARBON IDENTIFICATION	GC/FID	WA DOE WTPH-HCID	R
MOISTURE	GRAVIMETRIC	CLP SOW ILM01.0	R

R = ATI - Renton
SD = ATI - San Diego
PHX = ATI - Phoenix
PNR = ATI - Pensacola
FC = ATI - Fort Collins
SUB = Subcontract

Analytical Technologies, Inc.

ATI I.D. # 9304-166

HYDROCARBON IDENTIFICATION
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: N/A
PROJECT #	: 15,169.130	DATE RECEIVED	: N/A
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/16/93
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 04/17/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-HCID	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

RESULTS

GASOLINE CONCENTRATION LESS THAN 20 mg/Kg BY WA DOE WTPH-HCID.

DIESEL CONCENTRATION LESS THAN 50 mg/Kg BY WA DOE WTPH-HCID.

PETROLEUM HYDROCARBONS >C24 CONCENTRATION LESS THAN 100 mg/Kg BY WA DOE WTPH-HCID.

SURROGATE	PERCENT RECOVERY	LIMITS
O-TERPHENYL	134	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-166-1

HYDROCARBON IDENTIFICATION
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/16/93
PROJECT #	: 15,169.130	DATE RECEIVED	: 04/16/93
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/16/93
CLIENT I.D.	: SS1	DATE ANALYZED	: 04/17/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-HCID	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

RESULTS

GASOLINE CONCENTRATION LESS THAN 20 mg/Kg BY WA DOE WTPH-HCID.

DIESEL CONCENTRATION LESS THAN 50 mg/Kg BY WA DOE WTPH-HCID.

PETROLEUM HYDROCARBONS >C24 CONCENTRATION LESS THAN 100 mg/Kg BY WA DOE WTPH-HCID.

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	114	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-166-2

HYDROCARBON IDENTIFICATION
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/16/93
PROJECT #	: 15,169.130	DATE RECEIVED	: 04/16/93
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/16/93
CLIENT I.D.	: SS2	DATE ANALYZED	: 04/17/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-HCID	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

RESULTS

GASOLINE CONCENTRATION LESS THAN 20 mg/Kg BY WA DOE WTPH-HCID.

DIESEL CONCENTRATION LESS THAN 50 mg/Kg BY WA DOE WTPH-HCID.

PETROLEUM HYDROCARBONS >C24 CONCENTRATION LESS THAN 100 mg/Kg BY WA DOE WTPH-HCID.

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	110	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-166-3

HYDROCARBON IDENTIFICATION
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/16/93
PROJECT #	: 15,169.130	DATE RECEIVED	: 04/16/93
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/16/93
CLIENT I.D.	: SS3	DATE ANALYZED	: 04/17/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-HCID	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

RESULTS

GASOLINE CONCENTRATION LESS THAN 20 mg/Kg BY WA DOE WTPH-HCID.

DIESEL CONCENTRATION LESS THAN 50 mg/Kg BY WA DOE WTPH-HCID.

PETROLEUM HYDROCARBONS >C24 CONCENTRATION LESS THAN 100 mg/Kg BY WA DOE WTPH-HCID.

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	111	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-166-4

HYDROCARBON IDENTIFICATION
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/16/93
PROJECT #	: 15,169.130	DATE RECEIVED	: 04/16/93
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/16/93
CLIENT I.D.	: SS4	DATE ANALYZED	: 04/17/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-HCID	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

RESULTS

GASOLINE CONCENTRATION LESS THAN 20 mg/Kg BY WA DOE WTPH-HCID.

DIESEL CONCENTRATION LESS THAN 50 mg/Kg BY WA DOE WTPH-HCID.

PETROLEUM HYDROCARBONS >C24 CONCENTRATION LESS THAN 100 mg/Kg BY WA DOE WTPH-HCID.

SURROGATE PERCENT RECOVERY		LIMITS
O-TERPHENYL	113	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-166-5

HYDROCARBON IDENTIFICATION
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/16/93
PROJECT #	: 15,169.130	DATE RECEIVED	: 04/16/93
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/16/93
CLIENT I.D.	: SS5	DATE ANALYZED	: 04/17/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-HCID	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

RESULTS

GASOLINE CONCENTRATION LESS THAN 20 mg/Kg BY WA DOE WTPH-HCID.

DIESEL CONCENTRATION LESS THAN 50 mg/Kg BY WA DOE WTPH-HCID.

PETROLEUM HYDROCARBONS >C24 CONCENTRATION LESS THAN 100 mg/Kg BY WA DOE WTPH-HCID.

SURROGATE	PERCENT RECOVERY	LIMITS
O-TERPHENYL	112	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-166

GENERAL CHEMISTRY ANALYSIS

CLIENT : APPLIED GEOTECHNOLOGY, INC. MATRIX : SOIL
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND

PARAMETER	DATE ANALYZED
MOISTURE	04/16/93

AnalyticalTechnologies,Inc.

ATI I.D. # 9304-166

GENERAL CHEMISTRY ANALYSIS
DATA SUMMARY

CLIENT : APPLIED GEOTECHNOLOGY, INC. MATRIX : SOIL
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND UNITS : %

ATI I.D. #	CLIENT I.D.	MOISTURE
9304-166-1	SS1	16
9304-166-2	SS2	18
9304-166-3	SS3	16
9304-166-4	SS4	18
9304-166-5	SS5	12

Analytical Technologies, Inc.

ATI I.D. # 9304-166

GENERAL CHEMISTRY ANALYSIS
QUALITY CONTROL DATA

CLIENT : APPLIED GEOTECHNOLOGY, INC. MATRIX : SOIL
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND UNITS : %

PARAMETER	ATI I.D.	SAMPLE RESULT	DUP RESULT	RPD	SPIKED RESULT	SPIKE ADDED	% REC
MOISTURE	9304-166-5	12	12	0	N/A	N/A	N/A

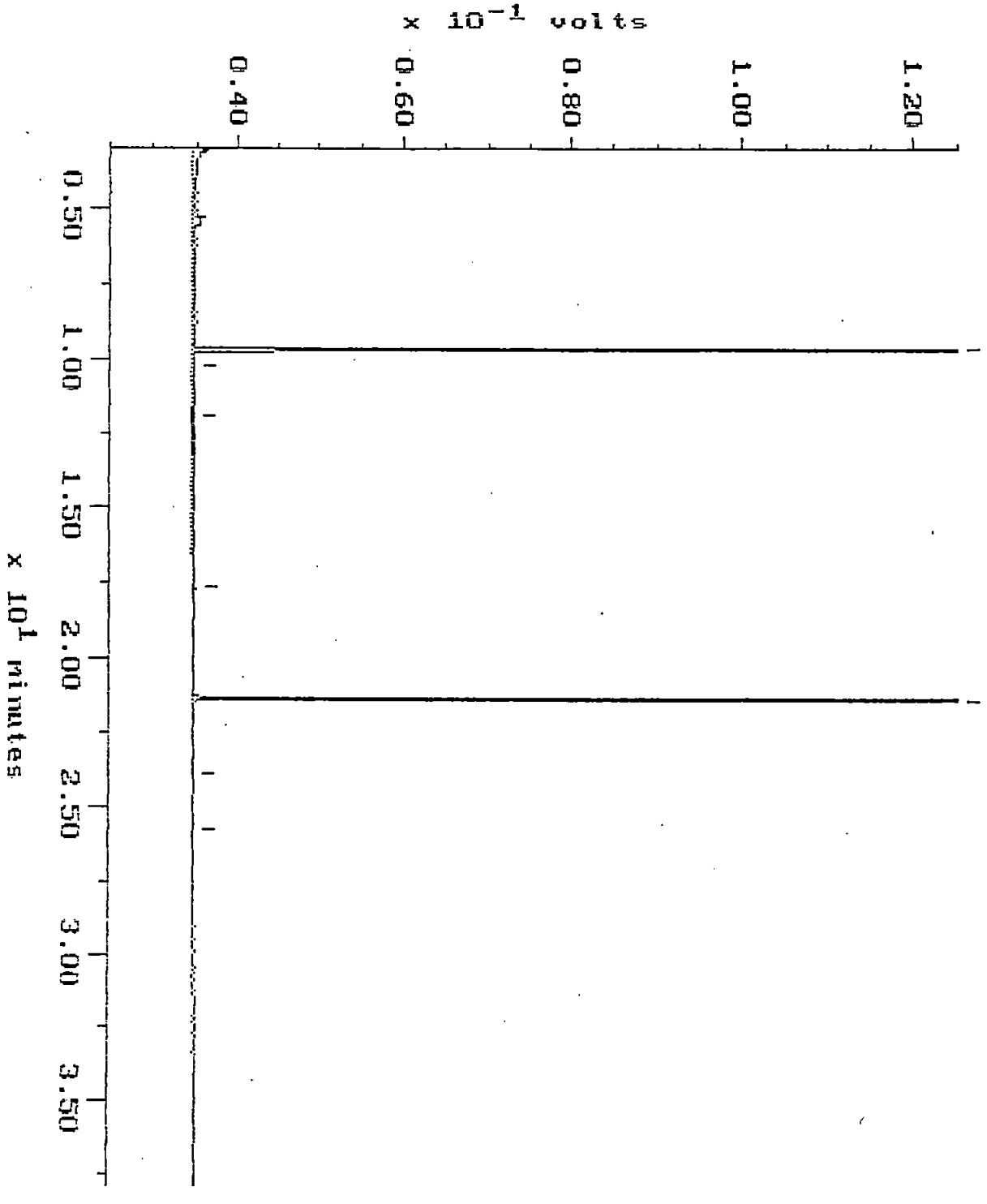
$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Blank

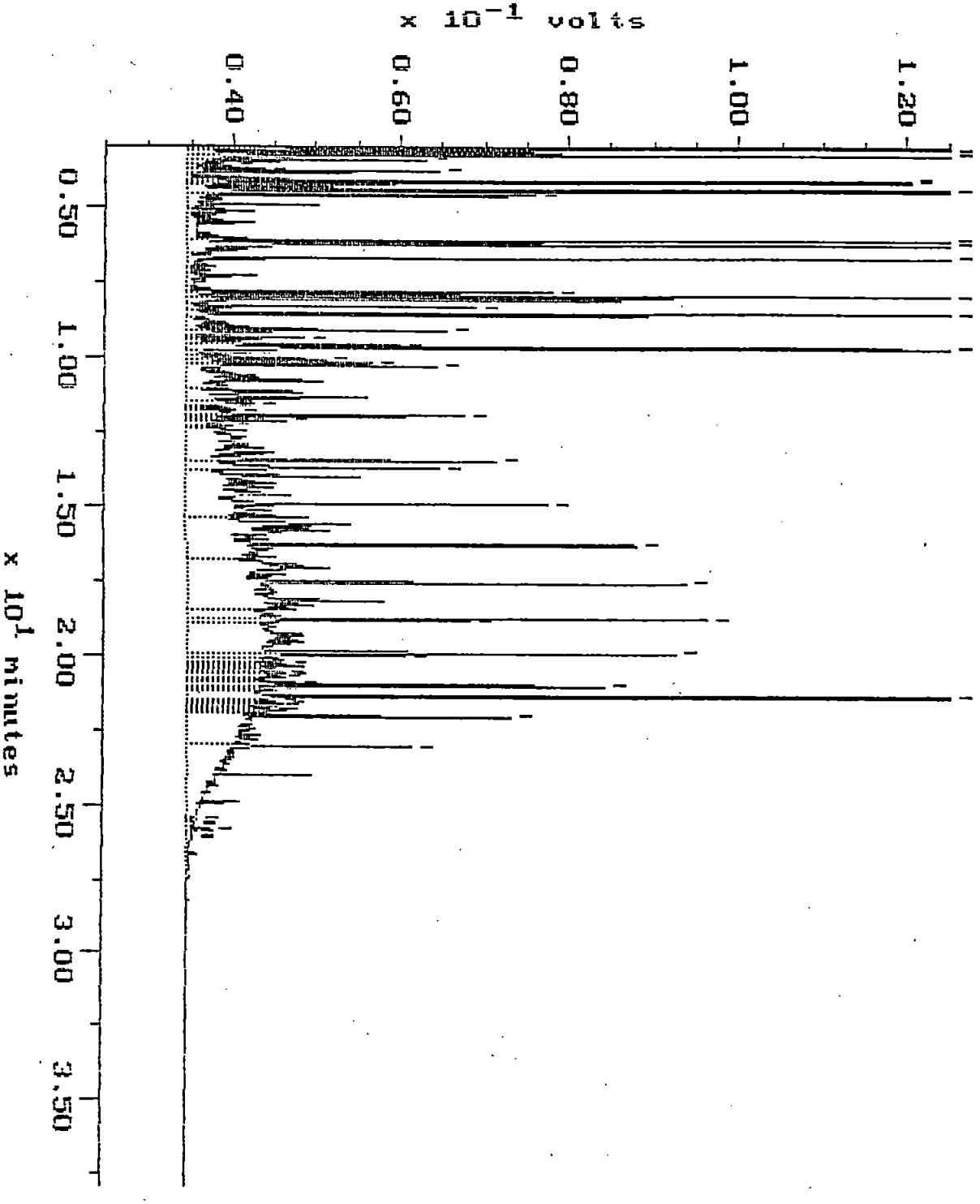
WA DOE WTPH-HCID

Sample: SRB 4-16 Channel: ERNIE Filename: R4168R03
Acquired: 17-APR-93 0:19 Method: F:\BRO2\MAXDATA\ERNIE\FUEL0416 Operator: ATI
Comments: ATI: THE QUALITY TEAM



Continuing Calibration

Sample: DG 400 Channel: ERNIE Filename: R4168R02
Acquired: 16-APR-93 23:34 Method: F:\BR02\MAXDATA\ERNIE\FUEL0416 Operator: ATI
Comments: ATI: THE QUALITY TEAM

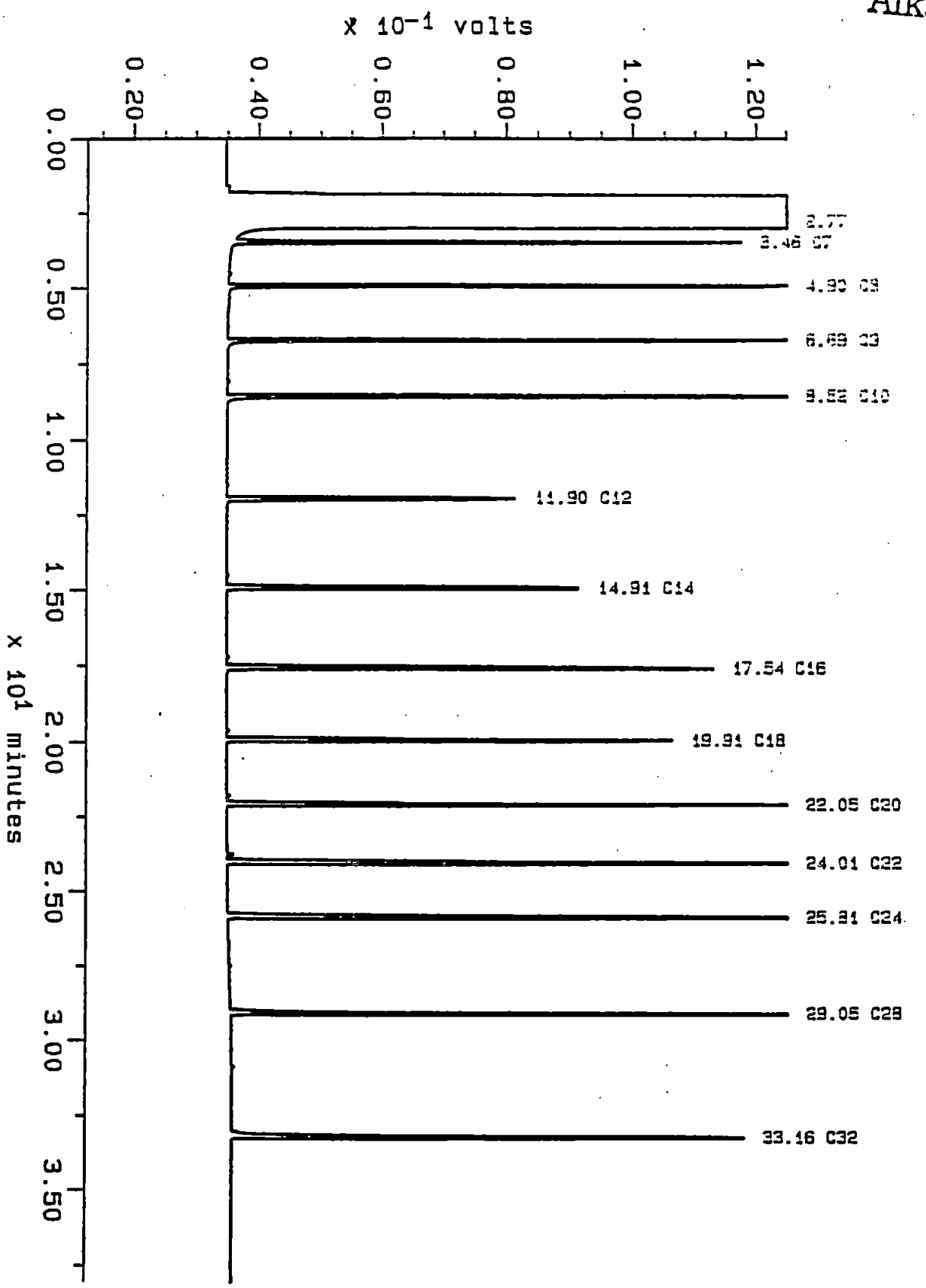


Sample: ALKANE
Acquired: 24-MAR-93 22:09
Inj Vol: 1.00

Channel: ERNIE
Method: F:\ERG2\MAXDATA\ERNIE\FUEL0324

Filename: R3248E03
Operator: ATI

Alkane



Applied Geotechnology Inc.
Geotechnical Engineering
Geology & Hydrogeology

CHAIN-OF-CUSTODY

Date 4/16/93 Page 1 of 1

PROJECT INFORMATION

Project Manager: Glen Bobnick
Project Name: GTE/Kirkland
Project Number: 15169.130
Site Location: Kirkland WA Sampled By: JST

DISPOSAL INFORMATION

☑ Lab Disposal (return if not indicated)
Disposal Method: _____
Disposed by: _____ Disposal Date: _____

QC INFORMATION (check one)

☑ SW-846 ☐ CLP ☐ Screening ☐ AGI Std. ☐ Special

Laboratory Number: 9304-166

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	PETROLEUM HYDROCARBONS: TPH-ID State: WA	TPH-G State:	TPH-D State:	TPH Special Instructions	418.1 State:	8015M	ORGANIC COMPOUNDS: 8010 Halogenated VOCs	8020 Aromatic VOCs	8020M - BETX only	8240 GCMS Volatiles	8270 GCMS Semivol.	8310 HPLC PAHs	8040 Phenols	DWS - Volatiles and Semivol.	PESTS/PCB's: 8080 OC Pest/PCBs	8080M PCBs only	8140 OP Pesticides	8150 OC Herbicides	DWS - Herb/pest	METALS: Selected metals: list	Total Lead (Wa)	Organic Lead (Ca)	TCL Metals (23)	Priority Poll. Metals (13)	DWS - Metals	MFSP - Metals (Wa)	LEACHING TESTS: TCLP - Volatiles (ZHE)	TCLP - Semivolatiles	TCLP - Pesticides	TCLP - Metals	OTHER	NUMBER OF CONTAINERS
SS1	4/16/93	1100	Soil	1	X																														1
SS2	"	1110	"	2	X																														1
SS3	"	1120	"	3	X																														1
SS4	"	1130	"	4	X																														1
SS5	"	1315	"	5	X																														1

LAB INFORMATION

Lab Name: ATI
Lab Address: 560 Naches Ave
Reston WA
Via:

SAMPLE RECEIPT

Total Number of Containers:	5
Chain of Custody Seals: Y/N/NA	Y
Intact?: Y/N/NA	Y
Received in Good Condition/Cold:	Y/Y

Turn Around Time: ☐ Standard ☐ 24 hr. ☑ 48 hr. ☐ 72 hr. ☐ 1 wk.

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH DATA

Special Instructions: * Quantify using motor oil. Call Glen Bobnick to confirm analysis & special instructions.

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Time: 1400	Signature: Time:	Signature: Time:
Printed Name: Jeff Thompson Date: 4/16/93	Printed Name: Date:	Printed Name: Date:
Company:	Company:	Company:

RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY: 3.
Signature: Time: 1455	Signature: Time:	Signature: Time:
Printed Name: STANLEY Date: 4/16/93	Printed Name: Date:	Printed Name: Date:
Company: ATI-WA	Company:	Company:

DISTRIBUTION: White, Canary to Analytical Laboratory; Pink to AGI Project Files; Gold to AGI Disposal Files

QUALITY ASSURANCE REPORT

PROJECT AND SAMPLE INFORMATION

Project Name: GTE/Kirkland - UST Upgrade
Project No.: 15,169.130
Lab Name: Analytical Technologies Inc. - Renton, WA
Lab Number: 9304-268
Sample No.: DS1, DS2

Matrix: Soil

QUALITY ASSURANCE SUMMARY

All data are of known and acceptable quality.

ANALYTICAL METHODS

Parameter	Technique	Method
TPH-Gasoline	GC/FID	WTPH-G
Moisture	Gravimetric	CLP SOW ILM01.0

TIMELINESS

Parameter	Date Sampled	Date Extracted	Date Analyzed	Time Until Extraction	Time Until Analysis
TPH-G	4/27/93	4/28/93	4/29/93	1 (14)	1 (21)
Moisture	4/27/93	N/A	4/28/93	N/A	1

Numbers in parentheses indicate recommended holding times in days for soil.
N/A - Not applicable.

All samples were extracted and analyzed within recommended holding times for soil.

DETECTABILITY AND COMPARABILITY

Analyses were performed without sample dilution.

CHROMATOGRAPHY

The detection of fuel hydrocarbons quantified between toluene and dodecane is supported by chromatogram for sample DS2.

QUALITY ASSURANCE REPORT

PROJECT AND SAMPLE INFORMATION

Project Name: GTE/Kirkland - UST Upgrade
Project No.: 15,169.130
Lab Name: Analytical Technologies Inc. - Renton, WA
Lab Number: 9304-268
Sample No.: DS1, DS2

FIELD QUALITY CONTROL SAMPLES

Field Duplicates: None collected.

Rinsate: None collected.

Trip Blank: None collected.

LAB QUALITY CONTROL SAMPLES

Reagent Blank: No analytes were detected at or above their reporting limits by method WTPH-G.

Matrix Spikes: Matrix spike percent recovery for WTPH-G in sample DS2 is out of ATI's control limit criteria due to high levels of hydrocarbons in the sample. Relative percent difference (RPD) are within ATI's control limit criteria for method WTPH-G. Results are not compromised; data qualification is not recommended.

Blank Spike: Blank spike percent recovery is within ATI's control limit criteria for method WTPH-G.

Duplicates: Sample/sample duplicate relative percent difference (RPD) data are within ATI's control limit criteria for the following methods:

WTPH-G
CLP SOW ILM01.0.

Surrogates: All surrogate spike percent recoveries are within ATI's control limit criteria for method WTPH-G.

SIGNATURES

Prepared by Annette Jakubiak **Date** 6/4/93

Checked by Katherine Bourbonais **Date** 6/7/93

Analytical**Technologies,**Inc. 560 Naches Avenue, S.W., Suite 101, Renton, WA 98055 (206) 228-8335

Karen L. Mixon, Laboratory Manager

ATI I.D. # 9304-268

May 4, 1993

Applied Geotechnology, Inc.
P.O. Box 3885
Bellevue WA 98009

Attention : Glen Bobnick

Project Number : 15,169.130

Project Name : GTE/Kirkland

Dear Mr. Bobnick:

On April 28, 1993, Analytical Technologies, Inc. (ATI), received two samples for analysis. The samples were analyzed with EPA methodology or equivalent methods as specified in the attached analytical schedule. The results, sample cross reference, and quality control data are enclosed.

Sincerely,

Donna M. McKinney
Senior Project Manager

DMM/hal/hbb

Enclosure

Analytical Technologies, Inc.

ATI I.D. # 9304-268

SAMPLE CROSS REFERENCE SHEET

CLIENT : APPLIED GEOTECHNOLOGY, INC.
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND

ATI #	CLIENT DESCRIPTION	DATE SAMPLED	MATRIX
9304-268-1	DS1	04/27/93	SOIL
9304-268-2	DS2	04/27/93	SOIL

----- TOTALS -----

MATRIX	# SAMPLES
SOIL	2

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ATI I.D. # 9304-268

ANALYTICAL SCHEDULE

CLIENT : APPLIED GEOTECHNOLOGY, INC.
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND

ANALYSIS	TECHNIQUE	REFERENCE	LAB
TOTAL PETROLEUM HYDROCARBONS	GC/FID	WA DOE WTPH-G	R
MOISTURE	GRAVIMETRIC	CLP SOW ILM01.0	R

R = ATI - Renton
SD = ATI - San Diego
PHX = ATI - Phoenix
PNR = ATI - Pensacola
FC = ATI - Fort Collins
SUB = Subcontract

Analytical Technologies, Inc.

ATI I.D. # 9304-268

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: N/A
PROJECT #	: 15,169.130	DATE RECEIVED	: N/A
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/28/93
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 04/29/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-G	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUND	RESULT
FUEL HYDROCARBONS	<5
HYDROCARBON RANGE	TOLUENE TO DODECANE
HYDROCARBON QUANTITATION USING	GASOLINE

SURROGATE PERCENT RECOVERY		LIMITS
TRIFLUOROTOLUENE	96	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-268-1

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/27/93
PROJECT #	: 15,169.130	DATE RECEIVED	: 04/28/93
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/28/93
CLIENT I.D.	: DS1	DATE ANALYZED	: 04/29/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-G	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUND	RESULT
FUEL HYDROCARBONS	<7
HYDROCARBON RANGE	TOLUENE TO DODECANE
HYDROCARBON QUANTITATION USING	GASOLINE

SURROGATE PERCENT RECOVERY		LIMITS
TRIFLUOROTOLUENE	81	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-268-2

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/27/93
PROJECT #	: 15,169.130	DATE RECEIVED	: 04/28/93
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/28/93
CLIENT I.D.	: DS2	DATE ANALYZED	: 04/29/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-G	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUND	RESULT
FUEL HYDROCARBONS	5900
HYDROCARBON RANGE	TOLUENE TO DODECANE
HYDROCARBON QUANTITATION USING	GASOLINE

SURROGATE PERCENT RECOVERY		LIMITS
TRIFLUOROTOLUENE	142	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-268

TOTAL PETROLEUM HYDROCARBONS
QUALITY CONTROL DATA

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	SAMPLE I.D. #	: 9304-271-1
PROJECT #	: 15,169.130	DATE EXTRACTED	: 04/28/93
PROJECT NAME	: GTE/KIRKLAND	DATE ANALYZED	: 04/29/93
METHOD	: WA DOE WTPH-G	UNITS	: mg/Kg
SAMPLE MATRIX	: SOIL		

COMPOUND	SAMPLE RESULT	SAMPLE DUP. RESULT	RPD	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED RESULT	DUP. % REC.	RPD
GASOLINE	19.6	20.4	4	N/A	N/A	N/A	N/A	N/A	N/A

CONTROL LIMITS	% REC.	RPD
GASOLINE	N/A	20

SURROGATE RECOVERIES	SAMPLE	SAMPLE DUP.	LIMITS
TRIFLUOROTOLUENE	69	73	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-268

TOTAL PETROLEUM HYDROCARBONS
QUALITY CONTROL DATA

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	SAMPLE I.D. #	: 9304-268-2
PROJECT #	: 15,169.130	DATE EXTRACTED	: 04/28/93
PROJECT NAME	: GTE/KIRKLAND	DATE ANALYZED	: 04/29/93
METHOD	: WA DOE WTPH-G	UNITS	: mg/Kg
SAMPLE MATRIX	: SOIL		

COMPOUND	SAMPLE RESULT	SAMPLE DUP. RESULT	RPD	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED RESULT	DUP. % REC.	RPD
GASOLINE	5010	4850	3	50.0	5560	G	4800	G	15

CONTROL LIMITS	% REC.	RPD
GASOLINE	50 - 112	20

SURROGATE RECOVERIES	SPIKE	DUP. SPIKE	LIMITS
TRIFLUOROTOLUENE	138	116	50 - 150

G = Out of limits due to high levels of target analytes in sample.

Analytical Technologies, Inc.

ATI I.D. # 9304-268

TOTAL PETROLEUM HYDROCARBON
QUALITY CONTROL DATA

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	SAMPLE I.D. #	: BLANK SPIKE
PROJECT #	: 15,169.130	DATE EXTRACTED	: 04/28/93
PROJECT NAME	: GTE/KIRKLAND	DATE ANALYZED	: 04/29/93
METHOD	: WA DOE WTPH-G	UNITS	: mg/Kg
SAMPLE MATRIX	: SOIL		

COMPOUND	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED RESULT	DUP. % REC.	RPD
GASOLINE	<5.00	50.0	51.5	104	N/A	N/A	N/A
CONTROL LIMITS				% REC.			RPD
GASOLINE				80 - 119			20
SURROGATE RECOVERIES		SPIKE		DUP. SPIKE		LIMITS	
TRIFLUOROTOLUENE		94		N/A		50 - 150	

Analytical Technologies, Inc.

ATI I.D. # 9304-268

GENERAL CHEMISTRY ANALYSIS

CLIENT : APPLIED GEOTECHNOLOGY, INC. MATRIX : SOIL
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND

PARAMETER	DATE ANALYZED
MOISTURE	04/28/93

Analytical Technologies, Inc.

ATI I.D. # 9304-268

GENERAL CHEMISTRY ANALYSIS
DATA SUMMARY

CLIENT : APPLIED GEOTECHNOLOGY, INC. MATRIX : SOIL
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND UNITS : %

ATI I.D. #	CLIENT I.D.	MOISTURE
9304-268-1	DS1	25
9304-268-2	DS2	15

Analytical Technologies, Inc.

ATI I.D. # 9304-268

GENERAL CHEMISTRY ANALYSIS
QUALITY CONTROL DATA

CLIENT : APPLIED GEOTECHNOLOGY, INC. MATRIX : SOIL
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND UNITS : %

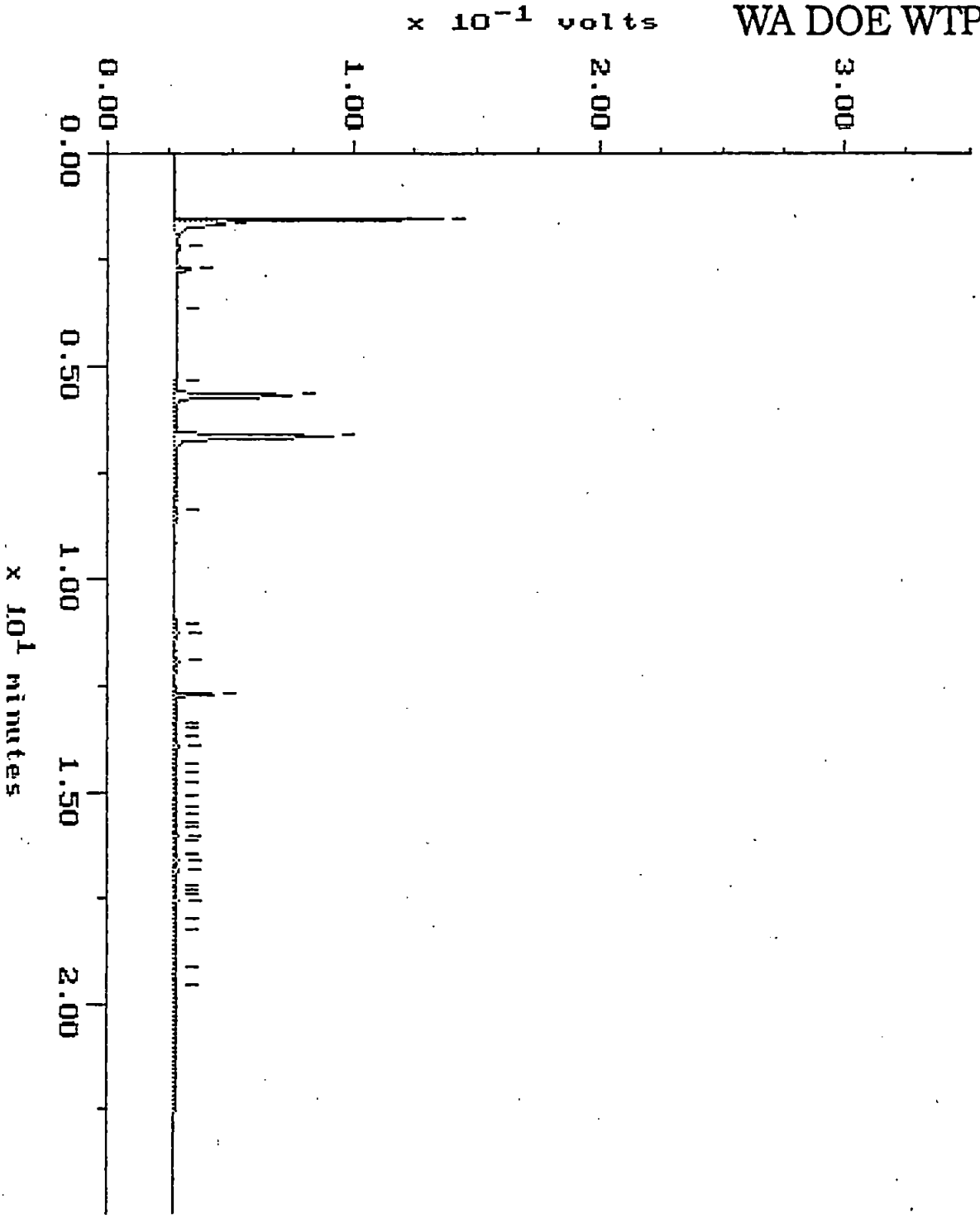
PARAMETER	ATI I.D.	SAMPLE RESULT	DUP RESULT	RPD	SPIKED RESULT	SPIKE ADDED	% REC
MOISTURE	9304-268-2	15	15	0	N/A	N/A	N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Sample: 9304-268-1 Channel: FID Filename: R4299G04
Acquired: 29-APR-93 9:42 Method: F:\BRO2\MAXDATA\GLAD\042993GS Operator: ATI
Comments: ATI : A COMMITMENT TO QUALITY

WA DOE WTPH-G



Applied Geotechnology Inc.
Geotechnical Engineering
Geology & Hydrogeology

CHAIN-OF-CUSTODY

Date 4/27/93 Page 1 of 1

PROJECT INFORMATION

Project Manager: Glen Bobnick
Project Name: GTE/Kirkland - UST Upgrade
Project Number: 15169.130
Site Location: Kirkland WA Sampled By: JST

DISPOSAL INFORMATION

☑ Lab Disposal (return if not indicated)
Disposal Method: _____
Disposed by: _____ Disposal Date: _____

QC INFORMATION (check one)

☑ SW-846 ☐ CLP ☐ Screening ☐ AGI Std. ☐ Special

Laboratory Number: 9304-268

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	PETROLEUM HYDROCARBONS: TPH-ID State:	TPH-G State: WA	TPH-D State:	TPH Special Instructions	418.1 State:	8015M	ORGANIC COMPOUNDS: 8010 Halogenated VOCs	8020 Aromatic VOCs	8020M - BETX only	8240 GCMS Volatiles	8270 GCMS Semivol.	8310 HPLC PAHs	8040 Phenols	DWS - Volatiles and Semivol.	PESTS/PCBs: 8080 OC Pest/PCBs	8080M PCBs only	8140 OP Pesticides	8150 OC Herbicides	DWS - Herb/pest	METALS: Selected metals: list	Total Lead (Wa)	Organic Lead (Ca)	TCL Metals (23)	Priority Poll. Metals (13)	DWS - Metals	MFSP - Metals (Wa)	LEACHING TESTS: TCLP - Volatiles (ZHE)	TCLP - Semivolatiles	TCLP - Pesticides	TCLP - Metals	OTHER	NUMBER OF CONTAINERS
DS1	4/27/93	1600	Soil			X																													1
DS2	4/27/93	1605	Soil			X																													1

LAB INFORMATION

Lab Name: ATI
Lab Address: 560 Naches Ave
Renton WA
Via: Courier

SAMPLE RECEIPT

Total Number of Containers:	2
Chain of Custody Seals?: Y/N/NA	N
Intact?: Y/N/NA	N
Received in Good Condition/Cold:	N/A

Turn Around Time: ☐ Standard ☑ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 1 wk.

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH DATA

Special Instructions:

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Time: 17:50	Signature: Time:	Signature: Time:
Printed Name: Jeff Thompson Date: 4/27/93	Printed Name: Date:	Printed Name: Date:
Company: AGI	Company:	Company:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY: 3.**
Signature: Time: 10:30	Signature: Time:	Signature: Time:
Printed Name: STHAKENSLEA Date: 4/29/93	Printed Name: Date:	Printed Name: Date:
Company: ATI-WA	Company:	Company:

AGI OFFICES: Bellevue: (206) 453-8383 Tacoma: (206) 383-4380
Portland: (503) 222-2820 Pleasanton: (415) 460-5495

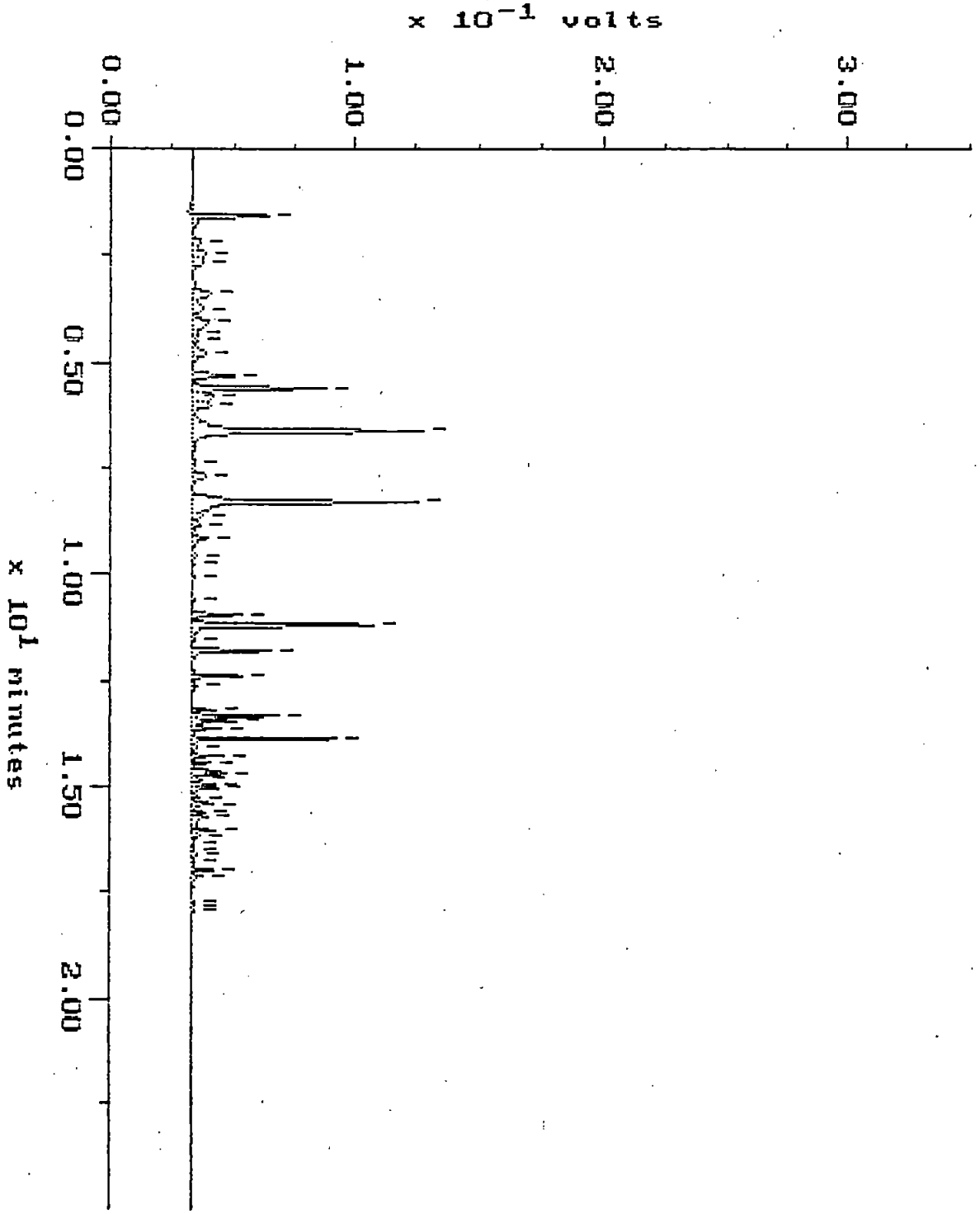
DISTRIBUTION: White, Canary to Analytical Laboratory; Pink to AGI Project Files; Gold to AGI Disposal Files

Continuing Calibration

Sample: STD-C G
Acquired: 29-APR-93 9:00

Channel: JEROME-FID
Method: F:\BRO2\MAXDATA\JEROME\042993JR

Filename: R4299J31
Operator:



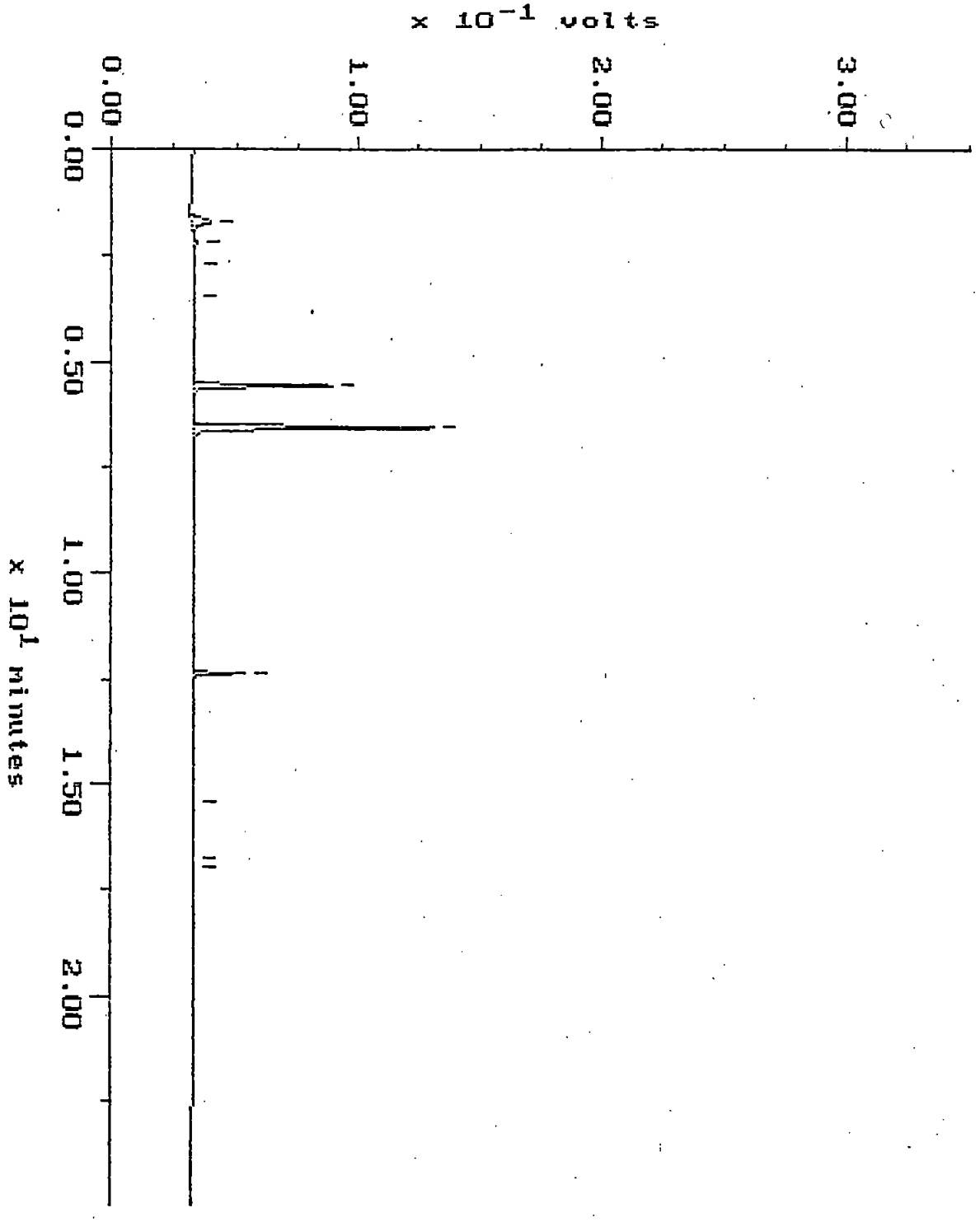
WA DOE WTPH-G

Blank

Sample: SRB 4-28
Acquired: 29-APR-93 14:11

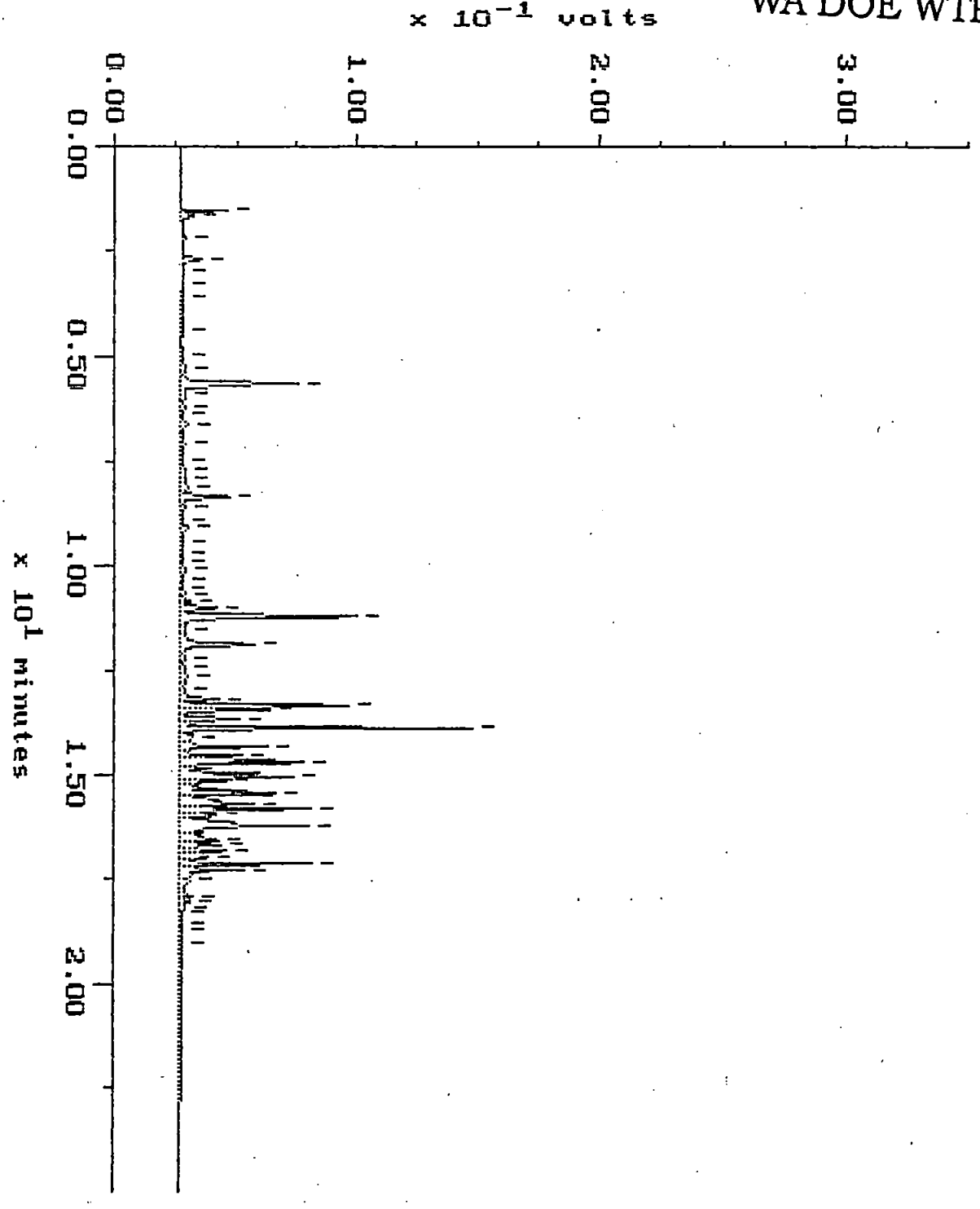
Channel: JEROME-FID
Method: F:\BRO2\MAXDATA\JEROME\042993JR

Filename: R4299J09
Operator:



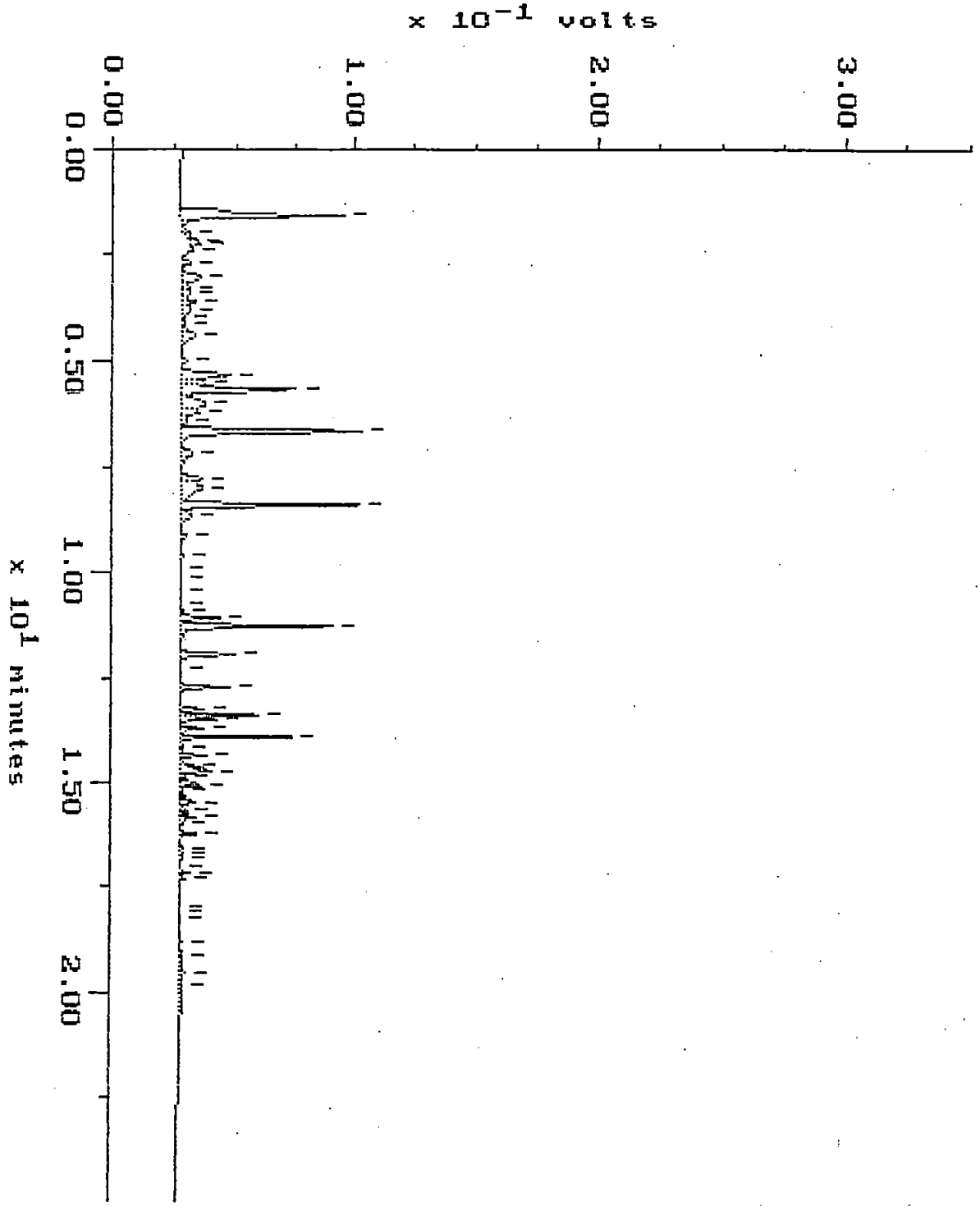
Sample: 9304-268-2 DIL Channel: FID Filename: R4299G13
Acquired: 29-APR-93 14:38 Method: F:\BRO2\MAXDATA\GLAD\04299GS Operator: ATI
Dilution: 1 : 50.000
Comments: ATI : A COMMITMENT TO QUALITY

WA DOE WTPH-G



Continuing Calibration

Sample: STD-C 6 Channel: FID Filename: R4299G01
Acquired: 29-APR-93 8:14 Method: F:\BRO2\MAXDATA\GLAD\04299365 Operator: ATI
Comments: ATI : A COMMITMENT TO QUALITY



QUALITY ASSURANCE REPORT

PROJECT AND SAMPLE INFORMATION

Project Name: GTE/Kirkland - UST Upgrade
Project No.: 15,169.130
Lab Name: Analytical Technologies Inc. - Renton, WA
Lab Number: 9304-304
Sample No.: DS-3, DS-4, DS-5, DS-6, DS-7

Matrix: Soil

QUALITY ASSURANCE SUMMARY

All data are of known and acceptable quality.

ANALYTICAL METHODS

Parameter	Technique	Method
BETX	GC/PID	EPA 8020
TPH-Gasoline	GC/FID	WTPH-G
Moisture	Gravimetric	CLP SOW ILM01.0

TIMELINESS

Parameter	Date Sampled	Date Extracted	Date Analyzed	Time Until Extraction	Time Until Analysis
BETX	4/29/93	5/03/93	5/03/93	4	4 (14)
TPH-G	4/29/93	5/03/93	5/03/93	4 (14)	<1 (21)
Moisture	4/29/93	N/A	4/30/93	N/A	1

Numbers in parentheses indicate recommended holding times in days for soil.
N/A - Not applicable.

All samples were extracted and analyzed within recommended holding times for soil.

QUALITY ASSURANCE REPORT

PROJECT AND SAMPLE INFORMATION

Project Name: GTE/Kirkland - UST Upgrade
Project No.: 15,169.130
Lab Name: Analytical Technologies Inc. - Renton, WA
Lab Number: 9304-304
Sample No.: DS-3, DS-4, DS-5, DS-6, DS-7

DETECTABILITY AND COMPARABILITY

Analyses were performed without sample dilution except for the following:

BETX: Sample DS-7 was diluted 20 fold.
TPH-G: Sample DS-7 was diluted 20 fold.

Sample dilution was required in above noted analyses because several analyte concentrations were above the calibration range. Sample dilution elevates reporting limits for undetected compounds therefore exercise caution when comparing sample results reported near reporting limits.

CHROMATOGRAPHY

The detection of fuel hydrocarbons quantified between toluene and dodecane is supported by chromatogram for sample DS-7.

FIELD QUALITY CONTROL SAMPLES

Field Duplicates: None collected.

Rinsate: None collected.

Trip Blank: None collected.

LAB QUALITY CONTROL SAMPLES

Reagent Blank: No analytes were detected at or above their reporting limits by the following methods:

EPA 8020
WTPH-G

QUALITY ASSURANCE REPORT

PROJECT AND SAMPLE INFORMATION

Project Name: GTE/Kirkland - UST Upgrade
Project No.: 15,169.130
Lab Name: Analytical Technologies Inc. - Renton, WA
Lab Number: 9304-304
Sample No.: DS-3, DS-4, DS-5, DS-6, DS-7

Matrix Spikes: Matrix spike percent recoveries and relative percent difference (RPDs) are within ATI's control limit criteria for the following methods:

WTPH-G

EPA 8020: Matrix spike data was not supplied. Results are not compromised; data qualification is not recommended.

Blank Spike: All blank spike percent recoveries are within ATI's control limit criteria for the following methods:

EPA 8020
WTPH-G

Duplicates: Sample/sample duplicate relative percent difference (RPD) data are within ATI's control limit criteria for the following methods:

WTPH-G
CLP SOW ILM01.0.

Surrogates: All surrogate spike percent recoveries are within ATI's control limit criteria for the following methods:

EPA 8020
WTPH-G

SIGNATURES

Prepared by Annette Johnson Date 6/4/93

Checked by Katherine Bourbonais Date 6/7/93

AnalyticalTechnologies,Inc.
560 Naches Avenue, S.W., Suite 101, Renton, WA 98055 (206) 228-8335
Karen L. Mixon, Laboratory Manager

ATI I.D. # 9304-304

May 18, 1993

Applied Geotechnology, Inc.
P.O. Box 3885
Bellevue WA 98009

Attention : Glen Bobnick

Project Number : 15,169.130

Project Name : GTE/Kirkland

Dear Mr. Bobnick:

On April 30, 1993, Analytical Technologies, Inc. (ATI), received five samples for analysis. The samples were analyzed with EPA methodology or equivalent methods as specified in the attached analytical schedule. The results, sample cross reference, and quality control data are enclosed.

Sincerely,

Donna M. McKinney
Senior Project Manager

DMM/hal/ff

Enclosure

Analytical Technologies, Inc.

ATI I.D. # 9304-304

SAMPLE CROSS REFERENCE SHEET

CLIENT : APPLIED GEOTECHNOLOGY, INC.
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND

ATI #	CLIENT DESCRIPTION	DATE SAMPLED	MATRIX
9304-304-1	DS-3	04/29/93	SOIL
9304-304-2	DS-4	04/29/93	SOIL
9304-304-3	DS-5	04/29/93	SOIL
9304-304-4	DS-6	04/30/93	SOIL
9304-304-5	DS-7	04/30/93	SOIL

----- TOTALS -----

MATRIX	# SAMPLES
SOIL	5

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ATI I.D. # 9304-304

ANALYTICAL SCHEDULE

CLIENT : APPLIED GEOTECHNOLOGY, INC.
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND

ANALYSIS	TECHNIQUE	REFERENCE	LAB
BETX	GC/PID	EPA 8020	R
TOTAL PETROLEUM HYDROCARBONS	GC/FID	WA DOE WTPH-G	R
MOISTURE	GRAVIMETRIC	CLP SOW ILM01.0	R

R = ATI - Renton
SD = ATI - San Diego
PHX = ATI - Phoenix
PNR = ATI - Pensacola
FC = ATI - Fort Collins
SUB = Subcontract

Analytical Technologies, Inc.

ATI I.D. # 9304-304

VOLATILE ORGANIC ANALYSIS
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: N/A
PROJECT #	: 15,169.130	DATE RECEIVED	: N/A
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/30/93
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 05/03/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8020 (BETX)	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUND	RESULT
BENZENE	<0.025
ETHYLBENZENE	<0.025
TOLUENE	<0.025
TOTAL XYLENES	<0.025

SURROGATE PERCENT RECOVERY		LIMITS
BROMOFLUOROBENZENE	93	52 - 116

Analytical Technologies, Inc.

ATI I.D. # 9304-304

VOLATILE ORGANIC ANALYSIS
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: N/A
PROJECT #	: 15,169.130	DATE RECEIVED	: N/A
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 05/03/93
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 05/03/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8020 (BETX)	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUND	RESULT
BENZENE	<0.025
ETHYLBENZENE	<0.025
TOLUENE	<0.025
TOTAL XYLENES	<0.025

SURROGATE PERCENT RECOVERY		LIMITS
BROMOFLUOROBENZENE	88	52 - 116

Analytical Technologies, Inc.

ATI I.D. # 9304-304-1

VOLATILE ORGANIC ANALYSIS
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/29/93
PROJECT #	: 15,169.130	DATE RECEIVED	: 04/30/93
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 05/03/93
CLIENT I.D.	: DS-3	DATE ANALYZED	: 05/03/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8020 (BETX)	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUND	RESULT
BENZENE	<0.028
ETHYLBENZENE	<0.028
TOLUENE	<0.028
TOTAL XYLENES	<0.028

SURROGATE PERCENT RECOVERY		LIMITS
BROMOFLUOROBENZENE	80	52 - 116

Analytical Technologies, Inc.

ATI I.D. # 9304-304-2

VOLATILE ORGANIC ANALYSIS
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/29/93
PROJECT #	: 15,169.130	DATE RECEIVED	: 04/30/93
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/30/93
CLIENT I.D.	: DS-4	DATE ANALYZED	: 05/02/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8020 (BETX)	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUND	RESULT
BENZENE	<0.030
ETHYLBENZENE	<0.030
TOLUENE	<0.030
TOTAL XYLENES	<0.030

SURROGATE PERCENT RECOVERY		LIMITS
BROMOFLUOROBENZENE	81	52 - 116

Analytical Technologies, Inc.

ATI I.D. # 9304-304-3

VOLATILE ORGANIC ANALYSIS
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/29/93
PROJECT #	: 15,169.130	DATE RECEIVED	: 04/30/93
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/30/93
CLIENT I.D.	: DS-5	DATE ANALYZED	: 05/02/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8020 (BETX)	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUND	RESULT
BENZENE	<0.028
ETHYLBENZENE	<0.028
TOLUENE	<0.028
TOTAL XYLENES	<0.028

SURROGATE PERCENT RECOVERY		LIMITS
BROMOFLUOROBENZENE	83	52 - 116

Analytical Technologies, Inc.

ATI I.D. # 9304-304-4

VOLATILE ORGANIC ANALYSIS
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/30/93
PROJECT #	: 15,169.130	DATE RECEIVED	: 04/30/93
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/30/93
CLIENT I.D.	: DS-6	DATE ANALYZED	: 05/03/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8020 (BETX)	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUND	RESULT
BENZENE	<0.030
ETHYLBENZENE	<0.030
TOLUENE	<0.030
TOTAL XYLENES	0.17

SURROGATE PERCENT RECOVERY		LIMITS
BROMOFLUOROBENZENE	83	52 - 116

Analytical Technologies, Inc.

ATI I.D. # 9304-304-5

VOLATILE ORGANIC ANALYSIS
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/30/93
PROJECT #	: 15,169.130	DATE RECEIVED	: 04/30/93
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/30/93
CLIENT I.D.	: DS-7	DATE ANALYZED	: 05/02/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8020 (BETX)	DILUTION FACTOR	: 20

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUND	RESULT
BENZENE	<0.59
ETHYLBENZENE	6.6
TOLUENE	13
TOTAL XYLENES	72

SURROGATE PERCENT RECOVERY		LIMITS
BROMOFLUOROBENZENE	98	52 - 116

Analytical Technologies, Inc.

ATI I.D. # 9304-304

VOLATILE ORGANIC ANALYSIS
QUALITY CONTROL DATA

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	SAMPLE I.D. #	: BLANK SPIKE
PROJECT #	: 15,169.130	DATE EXTRACTED	: 04/30/93
PROJECT NAME	: GTE/KIRKLAND	DATE ANALYZED	: 05/03/93
EPA METHOD	: 8020 (BETX)	UNITS	: mg/Kg
SAMPLE MATRIX	: SOIL		

COMPOUND	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED RESULT	DUP. % REC.	RPD
BENZENE	<0.025	1.00	0.978	98	N/A	N/A	N/A
TOLUENE	<0.025	1.00	1.06	106	N/A	N/A	N/A
TOTAL XYLENES	<0.025	2.00	2.16	108	N/A	N/A	N/A

CONTROL LIMITS	% REC.	RPD
BENZENE	63 - 115	20
TOLUENE	75 - 110	20
TOTAL XYLENES	79 - 109	20

SURROGATE RECOVERIES	SPIKE	DUP. SPIKE	LIMITS
BROMOFLUOROBENZENE	97	N/A	52 - 116

Analytical Technologies, Inc.

ATI I.D. # 9304-304

VOLATILE ORGANIC ANALYSIS
QUALITY CONTROL DATA

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	SAMPLE I.D. #	: BLANK SPIKE
PROJECT #	: 15,169.130	DATE EXTRACTED	: 05/03/93
PROJECT NAME	: GTE/KIRKLAND	DATE ANALYZED	: 05/03/93
EPA METHOD	: 8020 (BETX)	UNITS	: mg/Kg
SAMPLE MATRIX	: SOIL		

COMPOUND	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED RESULT	DUP. % REC.	RPD
BENZENE	<0.025	1.00	0.986	99	N/A	N/A	N/A
TOLUENE	<0.025	1.00	1.00	100	N/A	N/A	N/A
TOTAL XYLENES	<0.025	2.00	1.97	99	N/A	N/A	N/A

CONTROL LIMITS	% REC.	RPD
BENZENE	63 - 115	20
TOLUENE	75 - 110	20
TOTAL XYLENES	79 - 109	20

SURROGATE RECOVERIES	SPIKE	DUP. SPIKE	LIMITS
BROMOFLUOROBENZENE	96	N/A	52 - 116

Analytical Technologies, Inc.

ATI I.D. # 9304-304

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: N/A
PROJECT #	: 15,169.130	DATE RECEIVED	: N/A
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/30/93
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 05/03/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-G	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUND	RESULT
FUEL HYDROCARBONS	<5
HYDROCARBON RANGE	TOLUENE TO DODECANE
HYDROCARBON QUANTITATION USING	GASOLINE

SURROGATE PERCENT RECOVERY		LIMITS
TRIFLUOROTOLUENE	91	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-304

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: N/A
PROJECT #	: 15,169.130	DATE RECEIVED	: N/A
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 05/03/93
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 05/03/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-G	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUND	RESULT
FUEL HYDROCARBONS	<5
HYDROCARBON RANGE	TOLUENE TO DODECANE
HYDROCARBON QUANTITATION USING	GASOLINE

SURROGATE PERCENT RECOVERY		LIMITS
TRIFLUOROTOLUENE	99	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-304-1

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/29/93
PROJECT #	: 15,169.130	DATE RECEIVED	: 04/30/93
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 05/03/93
CLIENT I.D.	: DS-3	DATE ANALYZED	: 05/03/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-G	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUND	RESULT
FUEL HYDROCARBONS	<6
HYDROCARBON RANGE	TOLUENE TO DODECANE
HYDROCARBON QUANTITATION USING	GASOLINE

SURROGATE PERCENT RECOVERY		LIMITS
TRIFLUOROTOLUENE	71	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-304-2

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/29/93
PROJECT #	: 15,169.130	DATE RECEIVED	: 04/30/93
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/30/93
CLIENT I.D.	: DS-4	DATE ANALYZED	: 05/02/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-G	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUND	RESULT
FUEL HYDROCARBONS	<6
HYDROCARBON RANGE	TOLUENE TO DODECANE
HYDROCARBON QUANTITATION USING	GASOLINE

SURROGATE PERCENT RECOVERY		LIMITS
TRIFLUOROTOLUENE	73	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-304-3

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/29/93
PROJECT #	: 15,169.130	DATE RECEIVED	: 04/30/93
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/30/93
CLIENT I.D.	: DS-5	DATE ANALYZED	: 05/02/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-G	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUND	RESULT
FUEL HYDROCARBONS	<6
HYDROCARBON RANGE	TOLUENE TO DODECANE
HYDROCARBON QUANTITATION USING	GASOLINE

SURROGATE PERCENT RECOVERY		LIMITS
TRIFLUOROTOLUENE	75	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-304-4

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/30/93
PROJECT #	: 15,169.130	DATE RECEIVED	: 04/30/93
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/30/93
CLIENT I.D.	: DS-6	DATE ANALYZED	: 05/03/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-G	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUND	RESULT
FUEL HYDROCARBONS	<6
HYDROCARBON RANGE	TOLUENE TO DODECANE
HYDROCARBON QUANTITATION USING	GASOLINE

SURROGATE PERCENT RECOVERY		LIMITS
TRIFLUOROTOLUENE	75	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-304-5

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 04/30/93
PROJECT #	: 15,169.130	DATE RECEIVED	: 04/30/93
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 04/30/93
CLIENT I.D.	: DS-7	DATE ANALYZED	: 05/02/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-G	DILUTION FACTOR	: 20

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUND	RESULT
FUEL HYDROCARBONS	2500
HYDROCARBON RANGE	TOLUENE TO DODECANE
HYDROCARBON QUANTITATION USING	GASOLINE

SURROGATE PERCENT RECOVERY		LIMITS
TRIFLUOROTOLUENE	94	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-304

TOTAL PETROLEUM HYDROCARBONS
QUALITY CONTROL DATA

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	SAMPLE I.D. #	: 9304-295-3
PROJECT #	: 15,169.130	DATE EXTRACTED	: 04/30/93
PROJECT NAME	: GTE/KIRKLAND	DATE ANALYZED	: 05/02/93
METHOD	: WA DOE WTPH-G	UNITS	: mg/Kg
SAMPLE MATRIX	: SOIL		

COMPOUND	SAMPLE RESULT	SAMPLE DUP. RESULT	RPD	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED RESULT	DUP. % REC.	RPD
GASOLINE	<5.0	<5.0	NC	N/A	N/A	N/A	N/A	N/A	N/A

CONTROL LIMITS	% REC.	RPD
GASOLINE	N/A	20

SURROGATE RECOVERIES	SAMPLE	SAMPLE DUP.	LIMITS
TRIFLUOROTOLUENE	75	76	50 - 150

NC = Not Calculable.

Analytical Technologies, Inc.

ATI I.D. # 9304-304

TOTAL PETROLEUM HYDROCARBONS
QUALITY CONTROL DATA

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	SAMPLE I.D. #	: 9304-295-1
PROJECT #	: 15,169.130	DATE EXTRACTED	: 04/30/93
PROJECT NAME	: GTE/KIRKLAND	DATE ANALYZED	: 05/02/93
METHOD	: WA DOE WTPH-G	UNITS	: mg/Kg
SAMPLE MATRIX	: SOIL		

COMPOUND	SAMPLE RESULT	SAMPLE DUP. RESULT	RPD	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED RESULT	DUP. % REC.	RPD
GASOLINE	<5.0	<5.0	NC	50.0	47.6	95	52.7	105	10

CONTROL LIMITS	% REC.	RPD
GASOLINE	50 - 112	20

SURROGATE RECOVERIES	SPIKE	DUP. SPIKE	LIMITS
TRIFLUOROTOLUENE	71	73	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-304

TOTAL PETROLEUM HYDROCARBONS
QUALITY CONTROL DATA

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	SAMPLE I.D. #	: 9304-320-2
PROJECT #	: 15,169.130	DATE EXTRACTED	: 05/03/93
PROJECT NAME	: GTE/KIRKLAND	DATE ANALYZED	: 05/04/93
METHOD	: WA DOE WTPH-G	UNITS	: mg/Kg
SAMPLE MATRIX	: SOIL		

COMPOUND	SAMPLE RESULT	SAMPLE DUP. RESULT	RPD	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED RESULT	DUP. % REC.	RPD
GASOLINE	<5.0	<5.0	NC	50.0	39.4	79	38.9	78	1

CONTROL LIMITS	% REC.	RPD
GASOLINE	50 - 112	20

SURROGATE RECOVERIES	SPIKE	DUP. SPIKE	LIMITS
TRIFLUOROTOLUENE	84	85	50 - 150

NC = Not Calculable.

Analytical Technologies, Inc.

ATI I.D. # 9304-304

TOTAL PETROLEUM HYDROCARBONS
QUALITY CONTROL DATA

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	SAMPLE I.D. #	: BLANK SPIKE
PROJECT #	: 15,169.130	DATE EXTRACTED	: 04/30/93
PROJECT NAME	: GTE/KIRKLAND	DATE ANALYZED	: 05/03/93
METHOD	: WA DOE WTPH-G	UNITS	: mg/Kg
SAMPLE MATRIX	: SOIL		

COMPOUND	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED RESULT	DUP. % REC.	RPD
GASOLINE	<5.0	50.0	48.0	96	N/A	N/A	N/A

CONTROL LIMITS	% REC.	RPD
GASOLINE	80 - 119	20

SURROGATE RECOVERIES	SAMPLE	SAMPLE DUP.	LIMITS
TRIFLUOROTOLUENE	89	N/A	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9304-304

TOTAL PETROLEUM HYDROCARBONS
QUALITY CONTROL DATA

CLIENT : APPLIED GEOTECHNOLOGY, INC.
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND
METHOD : WA DOE WTPH-G
SAMPLE MATRIX : SOIL

SAMPLE I.D. # : BLANK SPIKE
DATE EXTRACTED : 05/03/93
DATE ANALYZED : 05/03/93
UNITS : mg/Kg

COMPOUND	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED RESULT	DUP. % REC.	RPD
GASOLINE	<5.0	50.0	50.4	101	N/A	N/A	N/A
CONTROL LIMITS				% REC.			RPD
GASOLINE				80 - 119			20
SURROGATE RECOVERIES		SPIKE		DUP. SPIKE		LIMITS	
TRIFLUOROTOLUENE		103		N/A		50 - 150	

Analytical Technologies, Inc.

ATI I.D. # 9304-304

GENERAL CHEMISTRY ANALYSIS

CLIENT : APPLIED GEOTECHNOLOGY, INC. MATRIX : SOIL
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND

PARAMETER	DATE ANALYZED
MOISTURE	04/30/93

Analytical Technologies, Inc.

ATI I.D. # 9304-304

GENERAL CHEMISTRY ANALYSIS
DATA SUMMARY

CLIENT : APPLIED GEOTECHNOLOGY, INC. MATRIX : SOIL
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND UNITS : %

ATI I.D. #	CLIENT I.D.	MOISTURE
9304-304-1	DS-3	11
9304-304-2	DS-4	18
9304-304-3	DS-5	11
9304-304-4	DS-6	16
9304-304-5	DS-7	15

Analytical Technologies, Inc.

ATI I.D. # 9304-304

GENERAL CHEMISTRY ANALYSIS
QUALITY CONTROL DATA

CLIENT : APPLIED GEOTECHNOLOGY, INC. MATRIX : SOIL
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND UNITS : %

PARAMETER	ATI I.D.	SAMPLE RESULT	DUP RESULT	RPD	SPIKED RESULT	SPIKE ADDED	% REC
MOISTURE	9304-313-1	7.9	7.9	0	N/A	N/A	N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

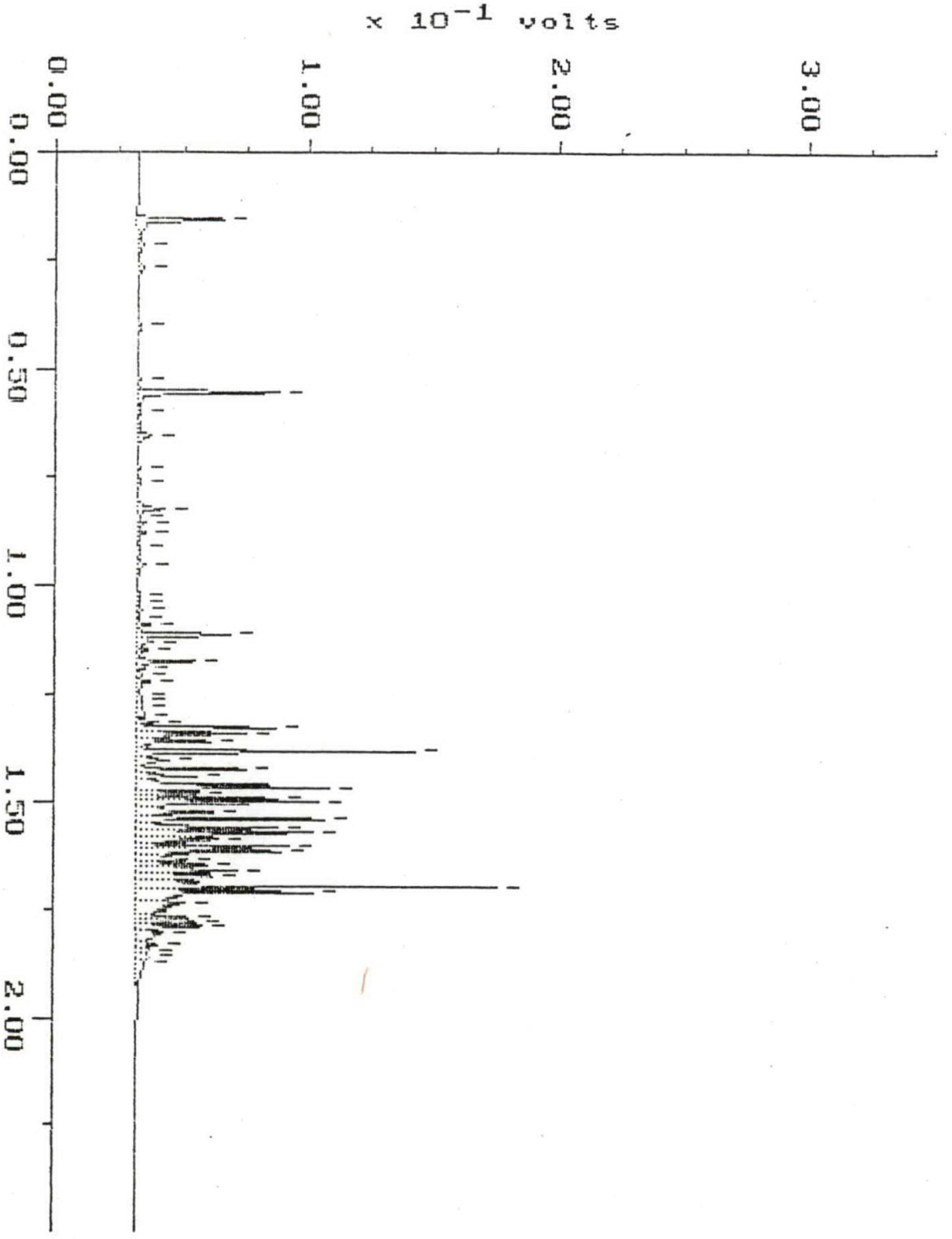
$$\text{RPD (Relative \% Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

WA DOE WTPH-G

Sample: 9304-304-5 DIL
Acquired: 02-MAY-93 19:36
Dilution: 1 : 20.000

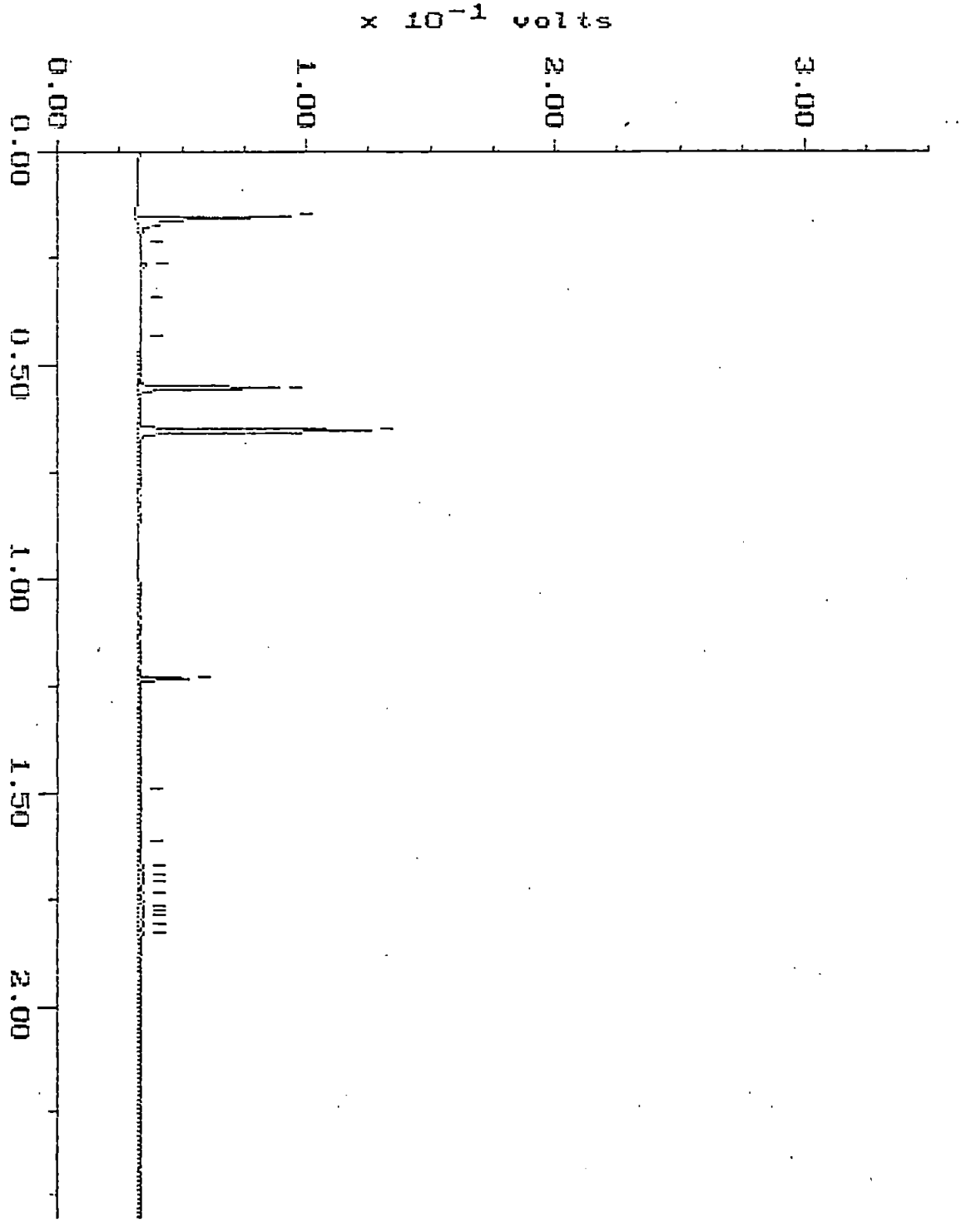
Channel: JEROME-FID
Method: F:\BRO2\MAXDATA\JEROME\050293JR

Filename: R5029J14
Operator:



Blank

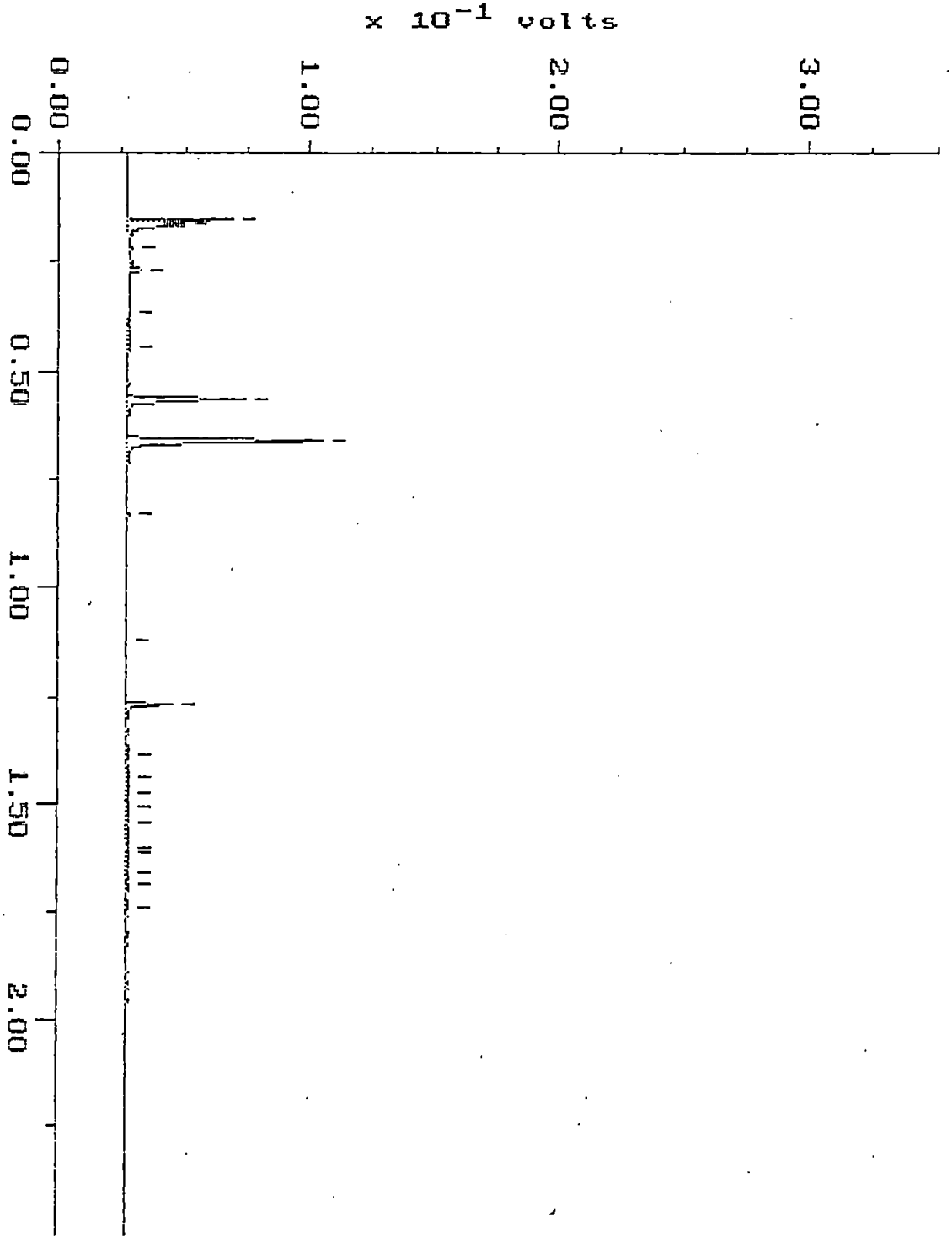
Sample: SRB B 4-30 Channel: JEROME-FID Filename: R5039J04
Acquired: 03-MAY-93 10:09 Method: F:\BR02\MAXDATA\JEROME\050393JR Operator:



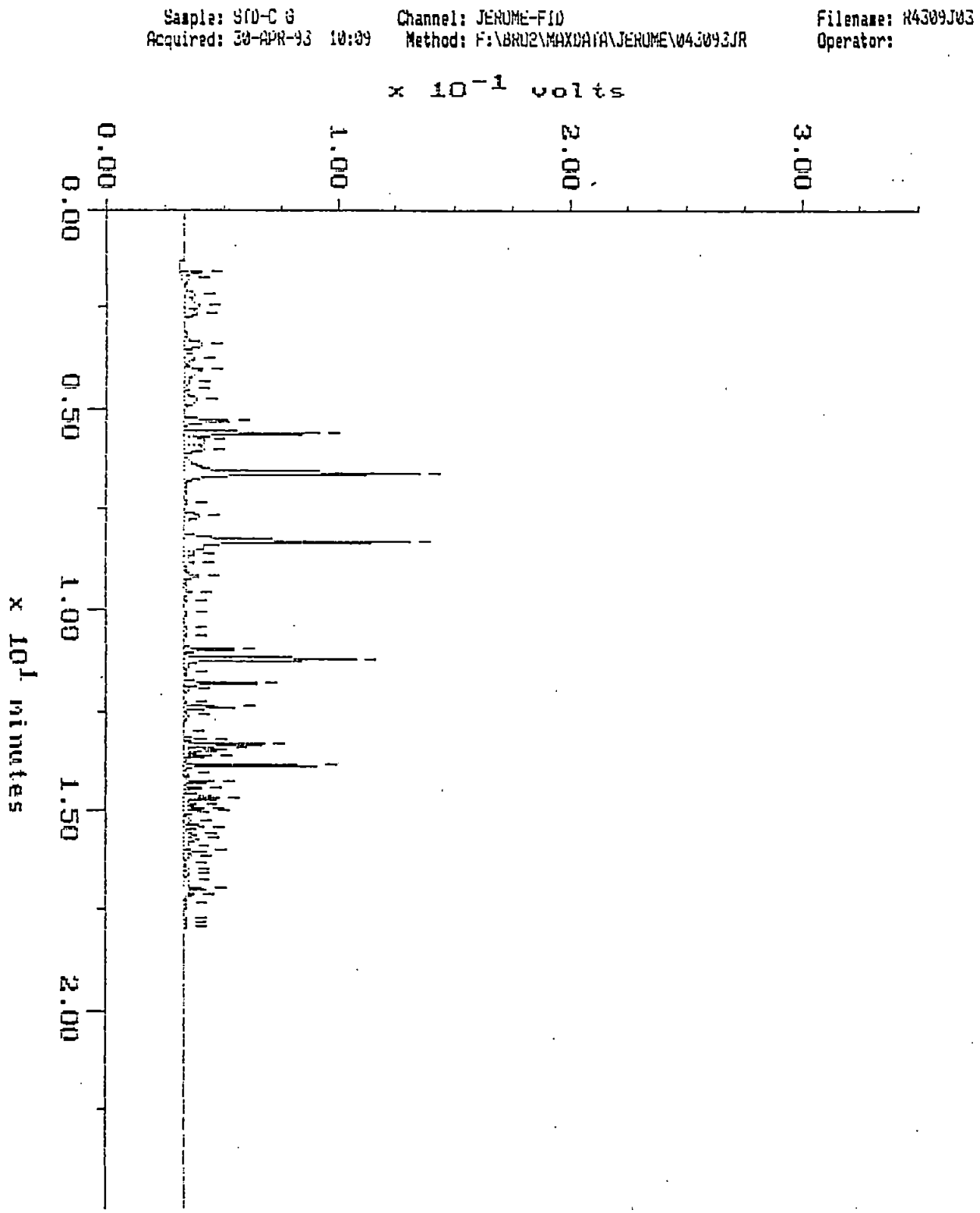
WA DOE WTPH-G

Blank

Sample: SRB-A 5-3 Channel: FID Filename: R5039G19
Acquired: 03-MAY-93 20:56 Method: F:\BRO2\MAXDATA\GLAD\05039GS Operator: ATI
Comments: ATI : A COMMITMENT TO QUALITY

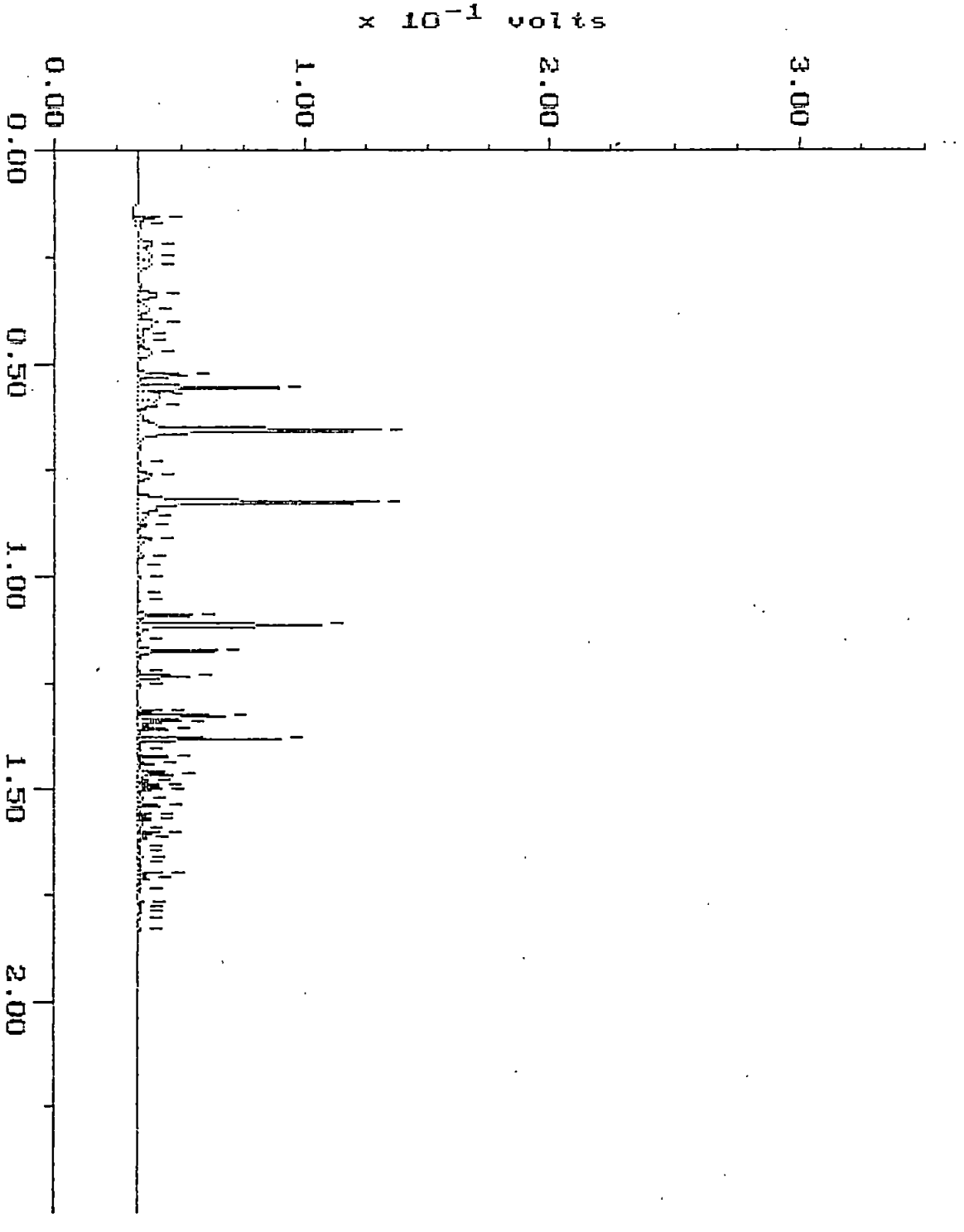


Continuing Calibration



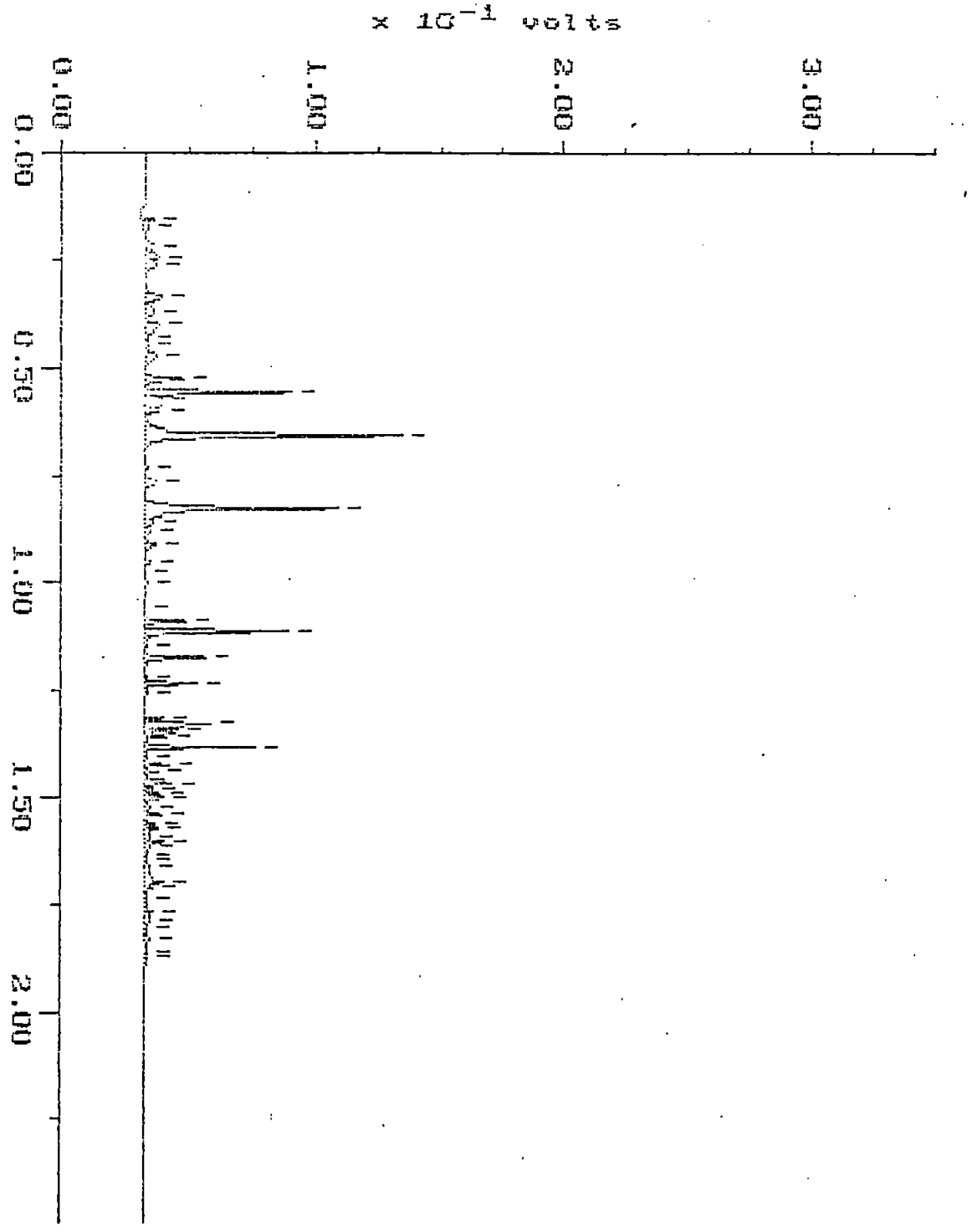
Continuing Calibration

Sample: STD-C 6 Channel: JEROME-FID Filename: R5029J03
Acquired: 02-MAY-93 14:09 Method: F:\BR02\MAXDATA\JEROME\050293JR Operator:



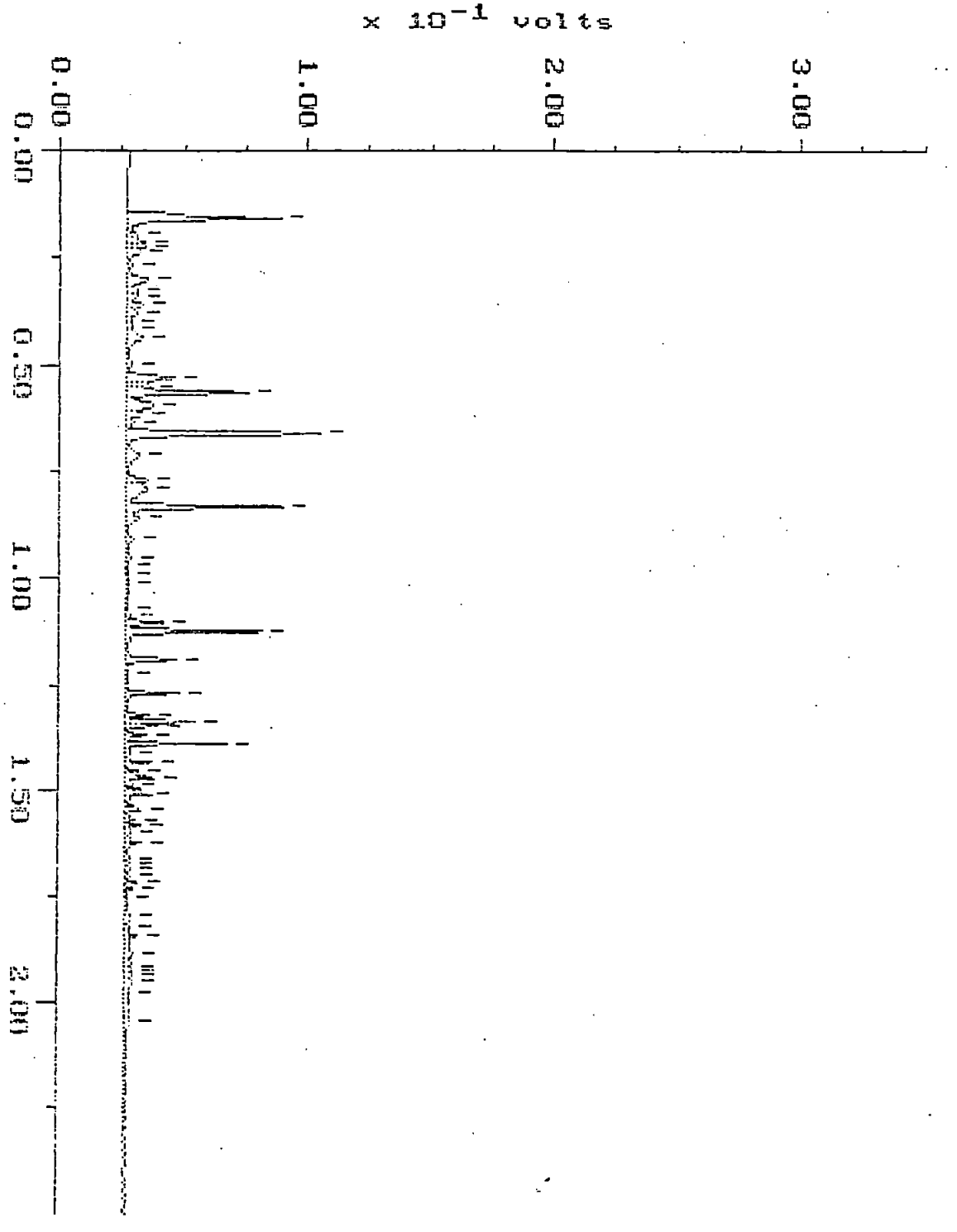
Continuing Calibration

Sample: STD-C 6 Channel: JEROME-FID Filename: R5039J01
Acquired: 03-MAY-93 7:45 Method: F:\BRG2\MAXDATA\JEROME\050393JR Operator:



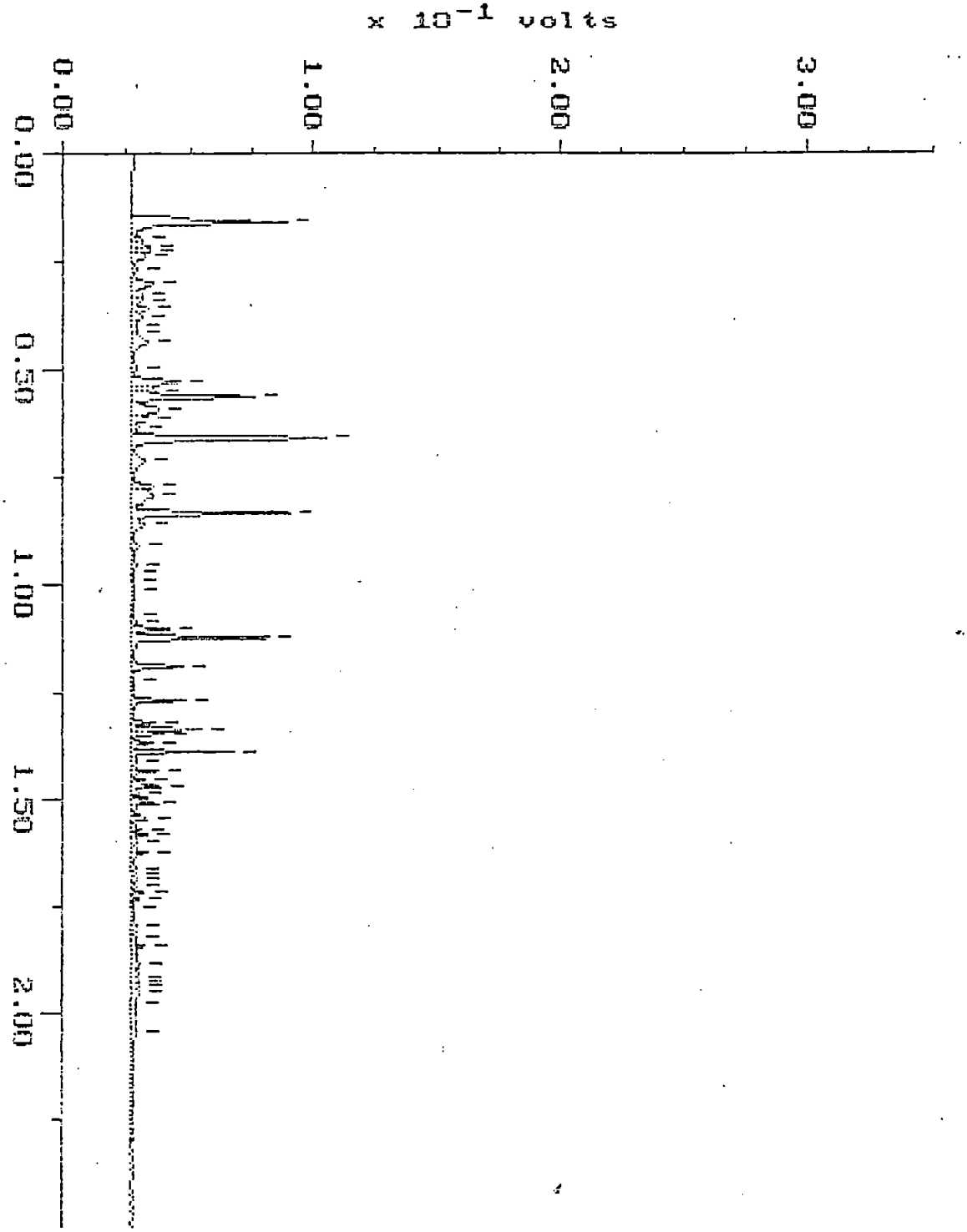
Continuing Calibration

Sample: STD-C G Channel: FID Filename: R5039G01
Acquired: 03-MAY-93 7:49 Method: F:\BRO2\MAXDATA\GLAD\05039GS Operator: ATI
Comments: ATI : A COMMITMENT TO QUALITY



Continuing Calibration

Sample: STD-C G Channel: FID Filename: R5039G01
Acquired: 03-MAY-93 7:49 Method: F:\BRO2\MAXDATA\GLAD\050393GS Operator: ATI
Comments: ATI : A COMMITMENT TO QUALITY



Applied Geotechnology Inc.
Geotechnical Engineering
Geology & Hydrogeology

CHAIN-OF-CUSTODY

Date 4-30-93 Page 1 of 1

PROJECT INFORMATION

Project Manager: GLEN BOBNICK
Project Name: GTE/KIRKLAND - UST UPGRADE
Project Number: 15,169.130
Site Location: KIRKLAND Sampled By: LGC

DISPOSAL INFORMATION

☒ Lab Disposal (return if not indicated)
Disposal Method:
Disposed by: Disposal Date:

QC INFORMATION (check one)

☐ SW-846 ☐ CLP ☐ Screening ☐ AGI Std. ☐ Special

Laboratory Number: 9304-304

ANALYSIS REQUEST

Analyses marked (all samples): TPH-G State: WA; Other: HEADSPACE

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	TPH-G State: WA	HEADSPACE	NUMBER OF CONTAINERS
DS-3	4-29-93	1245	SOIL	1	X	Ø	1
DS-4	↓	1400	↓	2	X	Ø	1
DS-5	↓	1545	↓	3	X	Ø	1
DS-6	4-30-93	1015	↓	4	X	4	1
DS-7	"	1035	↓	5	X	277	1

Other analyses listed on form (not marked): TPH-ID State; TPH-D State; TPH Special Instructions; 418.1 State; 8015M; 8010 Halogenated VOCs; 8020 Aromatic VOCs; 8020M - BETX only; 8240 GCMS Volatiles; 8270 GCMS Semivol.; 8310 HPLC PAHs; 8040 Phenols; DWS - Volatiles and Semivol.; 8080 OC Pest/PCBs; 8080M PCBs only; 8140 OP Pesticides; 8150 OC Herbicides; DWS - Herb/pest; Selected metals: list; Total Lead (Wa); Organic Lead (Ca); TCL Metals (23); Priority Poll. Metals (13); DWS - Metals; MFSP - Metals (Wa); TCLP - Volatiles (ZHE); TCLP - Semivolatiles; TCLP - Pesticides; TCLP - Metals.

LAB INFORMATION

Lab Name: ATI
Lab Address: RENTON
Via: COURIER

SAMPLE RECEIPT

Total Number of Containers:	5
Chain of Custody Seals?: Y/N/NA	Y
Intact?: Y/N/NA	Y
Received in Good Condition/Cold:	Y Y

Turn Around Time: ☐ Standard ☒ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 1 wk.

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH DATA

Special Instructions:

	RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature / Time	[signature] 1130	[signature] 1151	
Printed Name / Date	L CHRISTENSON 4-30-93	GARY LEW 4-30-93	
Company	AGI	AGI	

	RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY: 3.
Signature / Time	[signature] 1131	[signature] 4:51	
Printed Name / Date	GARY LEW 4-30-93	STIMAKENSLER 4/30/93	
Company	AGI	ATI-WA	

AGI OFFICES: Bellevue: (206) 453-8383 Tacoma: (206) 383-4380 Portland: (503) 222-2820 Pleasanton: (415) 460-5495

DISTRIBUTION: White, Canary to Analytical Laboratory; Pink to AGI Project Files; Gold to AGI Disposal Files

Rev. 12/91

QUALITY ASSURANCE REPORT

PROJECT AND SAMPLE INFORMATION

Project Name: GTE/Kirkland - UST Upgrade
Project No.: 15,169.130
Lab Name: Analytical Technologies Inc. - Renton, WA
Lab Number: 9305-017
Sample No.: DS-8

Matrix: Soil

QUALITY ASSURANCE SUMMARY

All data are of known and acceptable quality.

ANALYTICAL METHODS

Parameter	Technique	Method
TPH-Gasoline	GC/FID	WTPH-G
Moisture	Gravimetric	CLP SOW ILM01.0

TIMELINESS

Parameter	Date Sampled	Date Extracted	Date Analyzed	Time Until Extraction	Time Until Analysis
TPH-G	5/02/93	5/04/93	5/05/93	2 (14)	1 (21)
Moisture	5/02/93	N/A	5/05/93	N/A	3

Numbers in parentheses indicate recommended holding times in days for soil.
N/A - Not applicable.

All samples were extracted and analyzed within recommended holding times for soil.

DETECTABILITY AND COMPARABILITY

Analyses were performed without sample dilution.

FIELD QUALITY CONTROL SAMPLES

Field Duplicates: None collected.

Rinsate: None collected.

Trip Blank: None collected.

QUALITY ASSURANCE REPORT

PROJECT AND SAMPLE INFORMATION

Project Name: GTE/Kirkland - UST Upgrade
Project No.: 15,169.130
Lab Name: Analytical Technologies Inc. - Renton, WA
Lab Number: 9305-017
Sample No.: DS-8

LAB QUALITY CONTROL SAMPLES

Reagent Blank: No analytes were detected at or above their reporting limits by method WTPH-G.

Matrix Spikes: Matrix spike percent recovery and relative percent difference (RPD) are within ATI's control limit criteria for method WTPH-G.

Blank Spike: Blank spike percent recovery is within ATI's control limit criteria for method WTPH-G.

Duplicates: Sample/sample duplicate relative percent difference (RPD) data are within ATI's control limit criteria for the following methods:

WTPH-G
CLP SOW ILM01.0.

Surrogates: All surrogate spike percent recoveries are within ATI's control limit criteria for method WTPH-G.

SIGNATURES

Prepared by Annette Johnson Date 6/4/93

Checked by _____ Date _____

Analytical Technologies, Inc.
560 Naches Avenue, S.W., Suite 101, Renton, WA 98055 (206) 228-8335
Karen L. Mixon, Laboratory Manager

ATI I.D. # 9305-017

May 14, 1993

Applied Geotechnology, Inc.
P.O. Box 3885
Bellevue WA 98009

Attention : Glen Bobnick

Project Number : 15,169.130

Project Name : GTE/Kirkland

Dear Mr. Bobnick:

On May 3, 1993, Analytical Technologies, Inc. (ATI), received one sample for analysis. The sample was analyzed with EPA methodology or equivalent methods as specified in the attached analytical schedule. The results, sample cross reference, and quality control data are enclosed.

Sincerely,

Donna M. McKinney
Senior Project Manager

DMM/hal/ff

Enclosure

Analytical Technologies, Inc.

ATI I.D. # 9305-017

SAMPLE CROSS REFERENCE SHEET

CLIENT : APPLIED GEOTECHNOLOGY, INC.
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND

ATI #	CLIENT DESCRIPTION	DATE SAMPLED	MATRIX
9305-017-1	DS-8	05/02/93	SOIL

----- TOTALS -----

MATRIX	# SAMPLES
SOIL	1

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ATI I.D. # 9305-017

ANALYTICAL SCHEDULE

CLIENT : APPLIED GEOTECHNOLOGY, INC.
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND

ANALYSIS	TECHNIQUE	REFERENCE	LAB
TOTAL PETROLEUM HYDROCARBONS	GC/FID	WA DOE WTPH-G	R
MOISTURE	GRAVIMETRIC	CLP SOW ILM01.0	R

R = ATI - Renton
SD = ATI - San Diego
PHX = ATI - Phoenix
PNR = ATI - Pensacola
FC = ATI - Fort Collins
SUB = Subcontract

Analytical Technologies, Inc.

ATI I.D. # 9305-017

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: N/A
PROJECT #	: 15,169.130	DATE RECEIVED	: N/A
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 05/04/93
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 05/04/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-G	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUND	RESULT
FUEL HYDROCARBONS	<5
HYDROCARBON RANGE	TOLUENE TO DODECANE
HYDROCARBON QUANTITATION USING	GASOLINE

SURROGATE PERCENT RECOVERY		LIMITS
TRIFLUOROTOLUENE	96	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9305-017-1

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 05/02/93
PROJECT #	: 15,169.130	DATE RECEIVED	: 05/03/93
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: 05/04/93
CLIENT I.D.	: DS-8	DATE ANALYZED	: 05/05/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: WA DOE WTPH-G	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUND	RESULT
FUEL HYDROCARBONS	<6
HYDROCARBON RANGE	TOLUENE TO DODECANE
HYDROCARBON QUANTITATION USING	GASOLINE

SURROGATE PERCENT RECOVERY		LIMITS
TRIFLUOROTOLUENE	79	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9305-017

TOTAL PETROLEUM HYDROCARBONS
QUALITY CONTROL DATA

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	SAMPLE I.D. #	: 9304-312-2
PROJECT #	: 15,169.130	DATE EXTRACTED	: 05/04/93
PROJECT NAME	: GTE/KIRKLAND	DATE ANALYZED	: 05/05/93
METHOD	: WA DOE WTPH-G	UNITS	: mg/Kg
SAMPLE MATRIX	: SOIL		

COMPOUND	SAMPLE RESULT	SAMPLE DUP. RESULT	RPD	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED RESULT	DUP. % REC.	RPD
GASOLINE	<5.00	<5.00	NC	50.0	49.3	99	45.7	91	8

CONTROL LIMITS	% REC.	RPD
GASOLINE	50 - 112	20

SURROGATE RECOVERIES	SPIKE	DUP. SPIKE	LIMITS
TRIFLUOROTOLUENE	79	76	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9305-017

TOTAL PETROLEUM HYDROCARBONS
QUALITY CONTROL DATA

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	SAMPLE I.D. #	: BLANK SPIKE
PROJECT #	: 15,169.130	DATE EXTRACTED	: 05/04/93
PROJECT NAME	: GTE/KIRKLAND	DATE ANALYZED	: 05/04/93
METHOD	: WA DOE WTPH-G	UNITS	: mg/Kg
SAMPLE MATRIX	: SOIL		

COMPOUND	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED RESULT	DUP. % REC.	RPD
GASOLINE	<5.00	50.0	49.9	100	N/A	N/A	N/A

CONTROL LIMITS	% REC.	RPD
GASOLINE	80 - 119	20

SURROGATE RECOVERIES	SPIKE	DUP. SPIKE	LIMITS
TRIFLUOROTOLUENE	89	N/A	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9305-017

GENERAL CHEMISTRY ANALYSIS

CLIENT : APPLIED GEOTECHNOLOGY, INC. MATRIX : SOIL
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND

PARAMETER	DATE ANALYZED
MOISTURE	05/05/93

Analytical Technologies, Inc.

ATI I.D. # 9305-017

GENERAL CHEMISTRY ANALYSIS
DATA SUMMARY

CLIENT : APPLIED GEOTECHNOLOGY, INC. MATRIX : SOIL
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND UNITS : %

ATI I.D. #	CLIENT I.D.	MOISTURE
9305-017-1	DS-8	11

Analytical Technologies, Inc.

ATI I.D. # 9305-017

GENERAL CHEMISTRY ANALYSIS
QUALITY CONTROL DATA

CLIENT : APPLIED GEOTECHNOLOGY, INC. MATRIX : SOIL
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND UNITS : %

PARAMETER	ATI I.D.	SAMPLE RESULT	DUP RESULT	RPD	SPIKED RESULT	SPIKE ADDED	% REC
MOISTURE	9305-009-1	18	19	5	N/A	N/A	N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

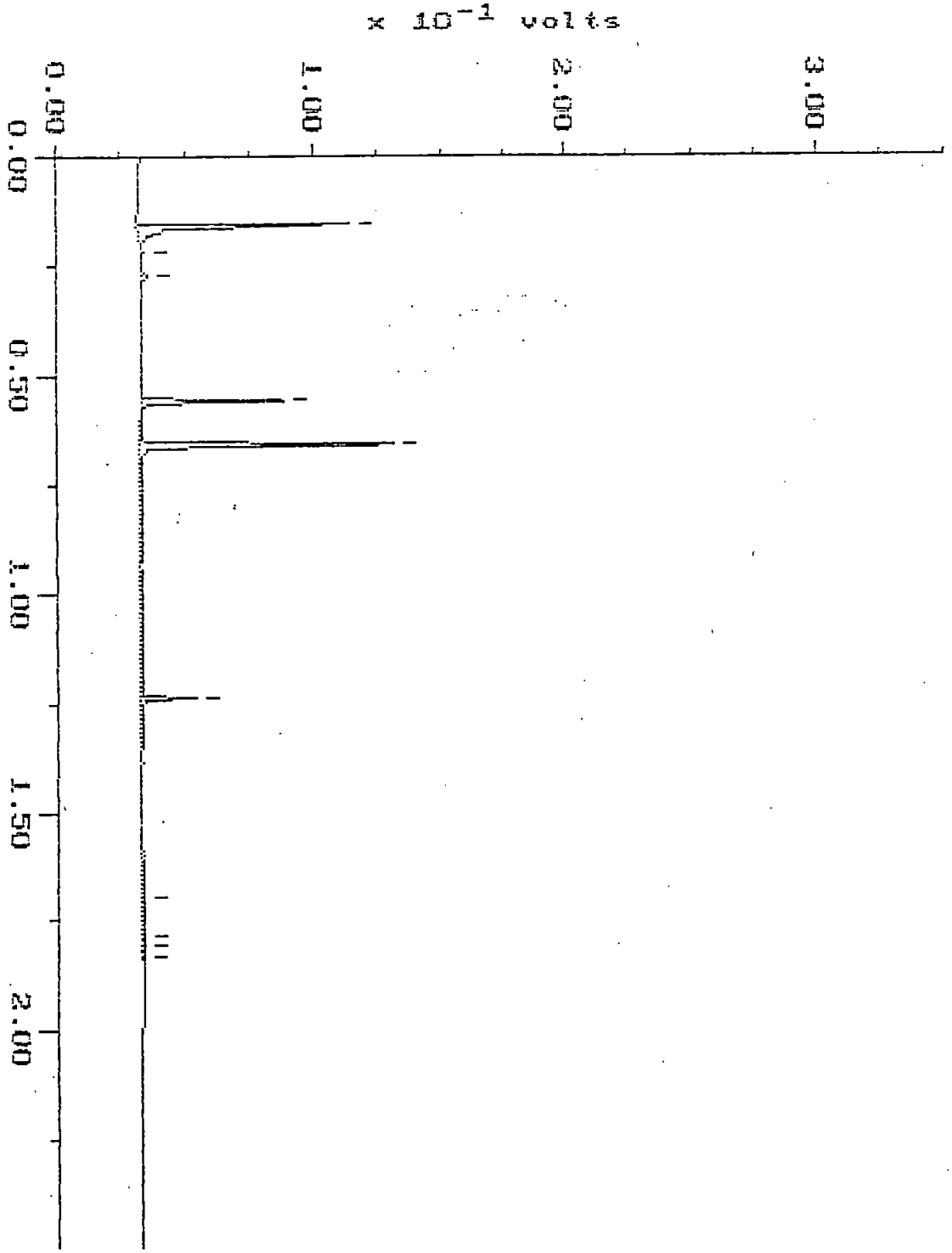
WA DOE WTPH-G

Blank

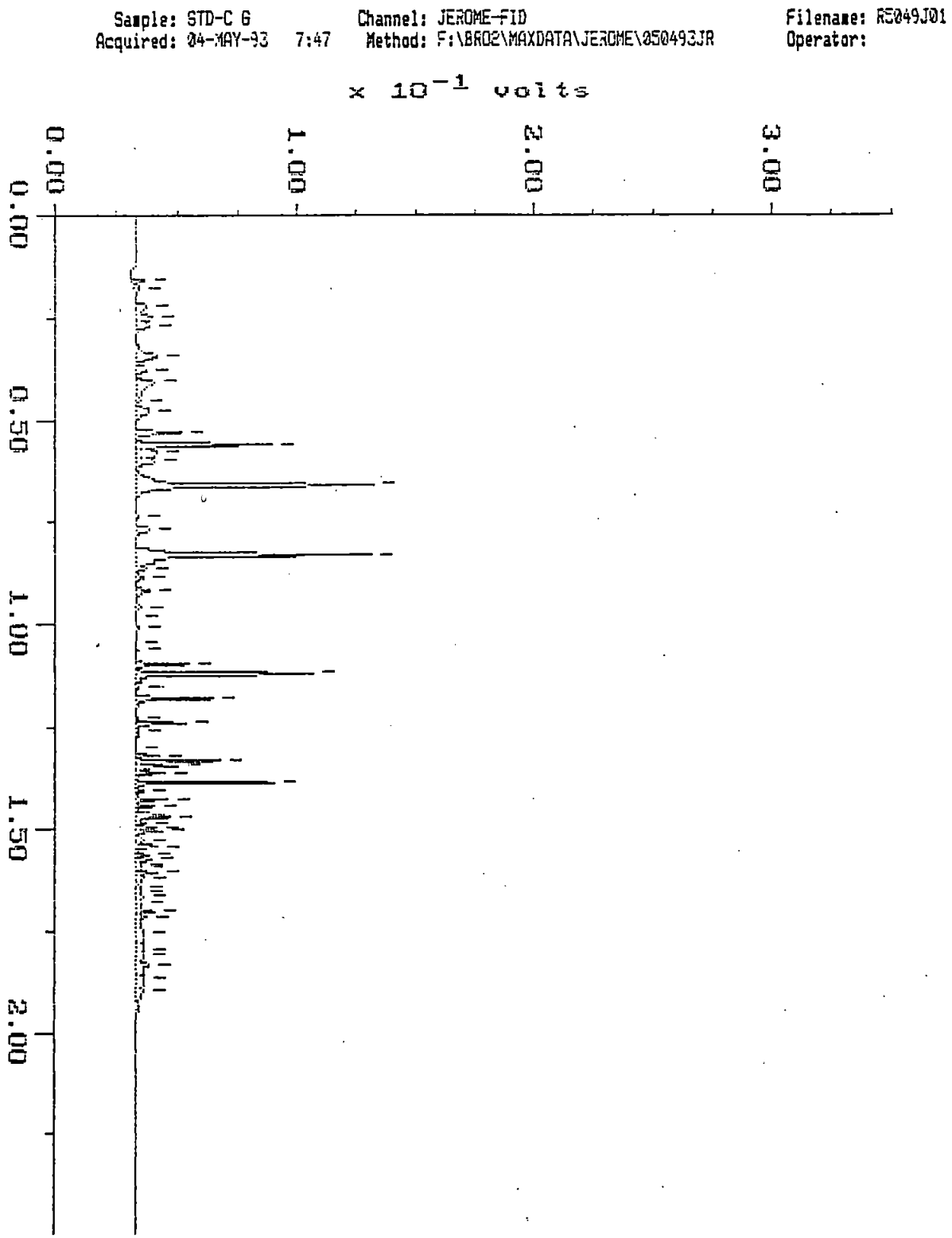
Sample: SRB-B 3-4
Acquired: 04-MAY-93 20:56

Channel: JEROME-FID
Method: F:\BRG2\MAXDATA\JEROME\050493JR

Filename: R5049J19
Operator:



Continuing Calibration



Applied Geotechnology Inc.
Geotechnical Engineering
Geology & Hydrogeology

CHAIN-OF-CUSTODY

Date 5/2/93 Page 1 of 1

PROJECT INFORMATION

Project Manager: GLEN BOBNICK
Project Name: GTE/KIRKLAND
Project Number: 15.169.130
Site Location: KIRKLAND Sampled By: LGC

DISPOSAL INFORMATION

☒ Lab Disposal (return if not indicated)
Disposal Method: _____
Disposed by: _____ Disposal Date: _____

QC INFORMATION (check one)

☐ SW-846 ☐ CLP ☐ Screening ☐ AGI Std. ☐ Special

Laboratory Number: 9305-017

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	PETROLEUM HYDROCARBONS: TPH-ID State:	TPH-G State: WA	TPH-D State:	TPH Special Instructions	418.1 State:	8015M	ORGANIC COMPOUNDS: 8010 Halogenated VOCs	8020 Aromatic VOCs	8020M - BETX only	8240 GCMS Volatiles	8270 GCMS Semivol.	8310 HPLC PAHs	8040 Phenols	DWS - Volatiles and Semivol.	PESTS/PCB's: 8080 OC Pest/PCBs	8080M PCBs only	8140 OP Pesticides	8150 OC Herbicides	DWS - Herb/pest	METALS: Selected metals: list	Total Lead (Wa)	Organic Lead (Ca)	TCL Metals (23)	Priority Poll. Metals (13)	DWS - Metals	MFSP - Metals (Wa)	LEACHING TESTS: TCLP - Volatiles (ZHE)	TCLP - Semivolatiles	TCLP - Pesticides	TCLP - Metals	OTHER	NUMBER OF CONTAINERS
DS-B	5/2/93	1145	Soil	1		X																													1

LAB INFORMATION

Lab Name: ATI
Lab Address: RENTON
Via: AGI courier

SAMPLE RECEIPT

Total Number of Containers:	1
Chain of Custody Seals: Y/N/NA	Y
Intact?: Y/N/NA	Y
Received in Good Condition/Cold:	Y

Turn Around Time: ☒ Standard ☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 1 wk.

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH DATA

Special Instructions:

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Time: 1430	Signature: Time:	Signature: Time:
Printed Name: L CHRISTENSON Date: 5/2/93	Printed Name: Date:	Printed Name: Date:
Company: AGI	Company:	Company:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY: 3.**
Signature: Stacie Pengra Time: 1630	Signature: Time:	Signature: Time:
Printed Name: Stacie Pengra Date: 5/5/93	Printed Name: Date:	Printed Name: Date:
Company: ATI	Company:	Company:

QUALITY ASSURANCE REPORT

PROJECT AND SAMPLE INFORMATION

Project Name: GTE/Kirkland - UST Upgrade
Project No.: 15,169.130
Lab Name: Analytical Technologies, Inc. - Renton, Washington
Lab Number: 9305-045
Sample No.: DS-9

Matrix: Water

QUALITY ASSURANCE SUMMARY

All data are of known and acceptable quality.

ANALYTICAL METHODS

Parameter	Technique	Method
BETX	GC/PID	EPA 8020
TPH-G	GC/FID	WTPH-G

TIMELINESS

Parameter	Date Sampled	Date Extracted	Date Analyzed	Time Until Extraction	Time Until Analysis
BETX	5/05/93	N/A	5/07/93	N/A	2 (14)
TPH-G	5/05/93	N/A	5/07/93	N/A	2 (14)

N/A - Not applicable.
Numbers in parentheses indicate recommended holding times in days for water.
All samples were extracted and analyzed within recommended holding times for water.

DETECTABILITY AND COMPARABILITY

Sample DS-9 was diluted 5 fold for analysis EPA 8020 and WTPH-G because several analyte concentrations were above the calibration range. Sample dilution elevates reporting limits for undetected compounds therefore exercise caution when comparing sample results reported near reporting limits.

QUALITY ASSURANCE REPORT

PROJECT AND SAMPLE INFORMATION

Project Name: GTE/Kirkland - UST Upgrade
Project No.: 15,169.130
Lab Name: Analytical Technologies, Inc. - Renton, Washington
Lab Number: 9305-045
Sample No.: DS-9

CHROMATOGRAPHY

The detection of fuel hydrocarbons quantified between toluene and dodecane is supported by chromatogram for sample DS-9.

FIELD QUALITY CONTROL SAMPLES

Field Duplicates: None collected.

Rinsate: None collected.

Trip Blank: None collected.

LAB QUALITY CONTROL SAMPLES

Method Blank: No analytes were detected at or above their reporting limits by the following methods:

EPA 8020
WTPH-G

Matrix Spikes: All matrix spike percent recoveries and relative percent differences (RPDs) are within ATI's control limit criteria for the following methods:

EPA 8020
WTPH-G

Blank Spikes: All blank spike percent recoveries are within ATI's control limit criteria for the following methods:

EPA 8020
WTPH-G

QUALITY ASSURANCE REPORT

PROJECT AND SAMPLE INFORMATION

Project Name: GTE/Kirkland - UST Upgrade
Project No.: 15,169.130
Lab Name: Analytical Technologies, Inc. - Renton, Washington
Lab Number: 9305-045
Sample No.: DS-9

Duplicates: Sample/sample duplicate relative percent difference (RPD) data are within ATI's control limit criteria for the method WTPH-G.

Surrogates: All surrogate spike percent recoveries are within ATI's control limit criteria for the following methods:

EPA 8020
WTPH-G

SIGNATURES

Prepared by Annette Johnson Date 6/4/93

Checked by Katherine Bourbonais Date 6/7/93

Analytical**Technologies,**Inc. 560 Naches Avenue, S.W., Suite 101, Renton, WA 98055 (206) 228-8335

Karen L. Mixon, Laboratory Manager

ATI I.D. # 9305-045

May 18, 1993

Applied Geotechnology, Inc.
P.O. Box 3885
Bellevue WA 98009

Attention : Glen Bobnick

Project Number : 15,169.130

Project Name : GTE/Kirkland

Dear Mr. Bobnick:

On May 6, 1993, Analytical Technologies, Inc. (ATI), received one sample for analysis. The sample was analyzed with EPA methodology or equivalent methods as specified in the attached analytical schedule. The results, sample cross reference, and quality control data are enclosed.

Sincerely,

Donna M. McKinney
Senior Project Manager

DMM/hal/dmc

Enclosure

Analytical Technologies, Inc.

ATI I.D. # 9305-045

SAMPLE CROSS REFERENCE SHEET

CLIENT : APPLIED GEOTECHNOLOGY, INC.
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND

ATI #	CLIENT DESCRIPTION	DATE SAMPLED	MATRIX
9305-045-1	DS-9	05/05/93	WATER

----- TOTALS -----

MATRIX	# SAMPLES
WATER	1

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ATI I.D. # 9305-045

ANALYTICAL SCHEDULE

CLIENT : APPLIED GEOTECHNOLOGY, INC.
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND

ANALYSIS	TECHNIQUE	REFERENCE	LAB
BETX	GC/PID	EPA 8020	R
TOTAL PETROLEUM HYDROCARBONS	GC/FID	WA DOE WTPH-G	R

R = ATI - Renton
SD = ATI - San Diego
PHX = ATI - Phoenix
PNR = ATI - Pensacola
FC = ATI - Fort Collins
SUB = Subcontract

Analytical Technologies, Inc.

ATI I.D. # 9305-045

BETX - GASOLINE
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: N/A
PROJECT #	: 15,169.130	DATE RECEIVED	: N/A
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: N/A
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 05/06/93
SAMPLE MATRIX	: WATER	UNITS	: ug/L
METHOD	: WA DOE WTPH-G - 8020(BETX)	DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
BENZENE	<0.5
ETHYLBENZENE	<0.5
TOLUENE	<0.5
TOTAL XYLENES	<0.5
FUEL HYDROCARBONS	<100
HYDROCARBON RANGE	TOLUENE TO DODECANE
HYDROCARBON QUANTITATION USING	GASOLINE

SURROGATE PERCENT RECOVERY		LIMITS
BROMOFLUOROBENZENE	99	76 - 120
TRIFLUOROTOLUENE	94	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9305-045

BETX - GASOLINE
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: N/A
PROJECT #	: 15,169.130	DATE RECEIVED	: N/A
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: N/A
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 05/07/93
SAMPLE MATRIX	: WATER	UNITS	: ug/L
METHOD	: WA DOE WTPH-G - 8020(BETX)	DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
BENZENE	<0.5
ETHYLBENZENE	<0.5
TOLUENE	<0.5
TOTAL XYLENES	<0.5
FUEL HYDROCARBONS	<100
HYDROCARBON RANGE	TOLUENE TO DODECANE
HYDROCARBON QUANTITATION USING	GASOLINE

SURROGATE PERCENT RECOVERY		LIMITS
BROMOFLUOROBENZENE	101	76 - 120
TRIFLUOROTOLUENE	94	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9305-045-1

BETX - GASOLINE
DATA SUMMARY

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	DATE SAMPLED	: 05/05/93
PROJECT #	: 15,169.130	DATE RECEIVED	: 05/06/93
PROJECT NAME	: GTE/KIRKLAND	DATE EXTRACTED	: N/A
CLIENT I.D.	: DS-9	DATE ANALYZED	: 05/07/93
SAMPLE MATRIX	: WATER	UNITS	: ug/L
METHOD	: WA DOE WTPH-G - 8020(BETX)	DILUTION FACTOR	: 5

COMPOUNDS	RESULTS
BENZENE	31
ETHYLBENZENE	<2.5
TOLUENE	41
TOTAL XYLENES	180
FUEL HYDROCARBONS	2700
HYDROCARBON RANGE	TOLUENE TO DODECANE
HYDROCARBON QUANTITATION USING	GASOLINE

SURROGATE PERCENT RECOVERY		LIMITS
BROMOFLUOROBENZENE	105	76 - 120
TRIFLUOROTOLUENE	86	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9305-045

BETX - GASOLINE
QUALITY CONTROL DATA

CLIENT : APPLIED GEOTECHNOLOGY, INC.
PROJECT # : 15,169.130
PROJECT NAME : GTE/KIRKLAND
SAMPLE MATRIX : WATER
METHOD : WA DOE WTPH-G - 8020(BETX)

SAMPLE I.D. # : 9305-034-3
DATE EXTRACTED : N/A
DATE ANALYZED : 05/06/93
UNITS : ug/L

COMPOUNDS	SAMPLE RESULT	DUP. SAMPLE RESULT	RPD	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
BENZENE	<0.500	N/A	N/A	20.0	19.8	99	19.5	98	2
TOLUENE	1.23	N/A	N/A	20.0	22.4	106	22.0	104	2
TOTAL XYLENES	7.74	N/A	N/A	40.0	49.5	104	48.1	101	3
GASOLINE	375	425	13	1000	1510	114	1460	109	3

CONTROL LIMITS	% REC.	RPD
BENZENE	77 - 112	20
TOLUENE	72 - 113	20
TOTAL XYLENES	80 - 110	20
GASOLINE	58 - 127	20

SURROGATE RECOVERIES	SPIKE	DUP. SPIKE	LIMITS
BROMOFLUOROBENZENE	103	102	76 - 120
TRIFLUOROTOLUENE	95	89	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9305-045

BETX - GASOLINE
QUALITY CONTROL DATA

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	SAMPLE I.D. #	: BLANK SPIKE
PROJECT #	: 15,169.130	DATE EXTRACTED	: N/A
PROJECT NAME	: GTE/KIRKLAND	DATE ANALYZED	: 05/06/93
SAMPLE MATRIX	: WATER	UNITS	: ug/L
METHOD	: WA DOE WTPH-G - 8020(BETX)		

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
BENZENE	<0.500	20.0	20.9	105	N/A	N/A	N/A
TOLUENE	<0.500	20.0	21.9	110	N/A	N/A	N/A
TOTAL XYLENES	<0.500	40.0	42.9	107	N/A	N/A	N/A
GASOLINE	<100	1000	958	96	N/A	N/A	N/A

CONTROL LIMITS	% REC.	RPD
BENZENE	80 - 111	20
TOLUENE	78 - 111	20
TOTAL XYLENES	80 - 114	20
GASOLINE	75 - 120	20

SURROGATE RECOVERIES	SPIKE	DUP. SPIKE	LIMITS
BROMOFLUOROBENZENE	100	N/A	76 - 120
TRIFLUOROTOLUENE	95	N/A	50 - 150

Analytical Technologies, Inc.

ATI I.D. # 9305-045

BETX - GASOLINE
QUALITY CONTROL DATA

CLIENT	: APPLIED GEOTECHNOLOGY, INC.	SAMPLE I.D. #	: BLANK SPIKE
PROJECT #	: 15,169.130	DATE EXTRACTED	: N/A
PROJECT NAME	: GTE/KIRKLAND	DATE ANALYZED	: 05/07/93
SAMPLE MATRIX	: WATER	UNITS	: ug/L
METHOD	: WA DOE WTPH-G - 8020(BETX)		

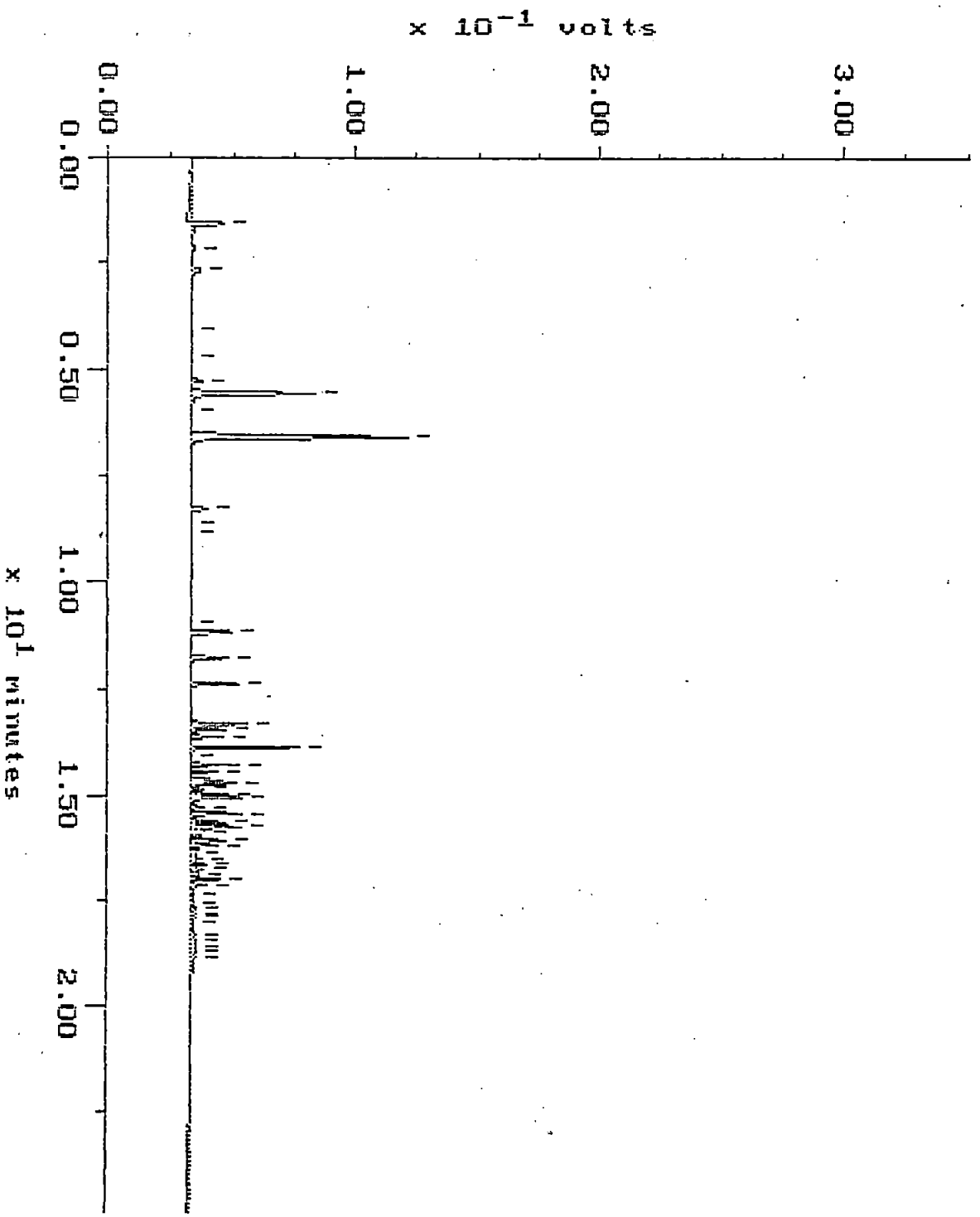
COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
BENZENE	<0.500	20.0	18.2	91	N/A	N/A	N/A
TOLUENE	<0.500	20.0	19.5	98	N/A	N/A	N/A
TOTAL XYLENES	<0.500	40.0	42.6	107	N/A	N/A	N/A
GASOLINE	<100	1000	942	94	N/A	N/A	N/A

CONTROL LIMITS	% REC.	RPD
BENZENE	80 - 111	20
TOLUENE	78 - 111	20
TOTAL XYLENES	80 - 114	20
GASOLINE	75 - 120	20

SURROGATE RECOVERIES	SPIKE	DUP. SPIKE	LIMITS
BROMOFLUOROBENZENE	105	N/A	76 - 120
TRIFLUOROTOLUENE	90	N/A	50 - 150

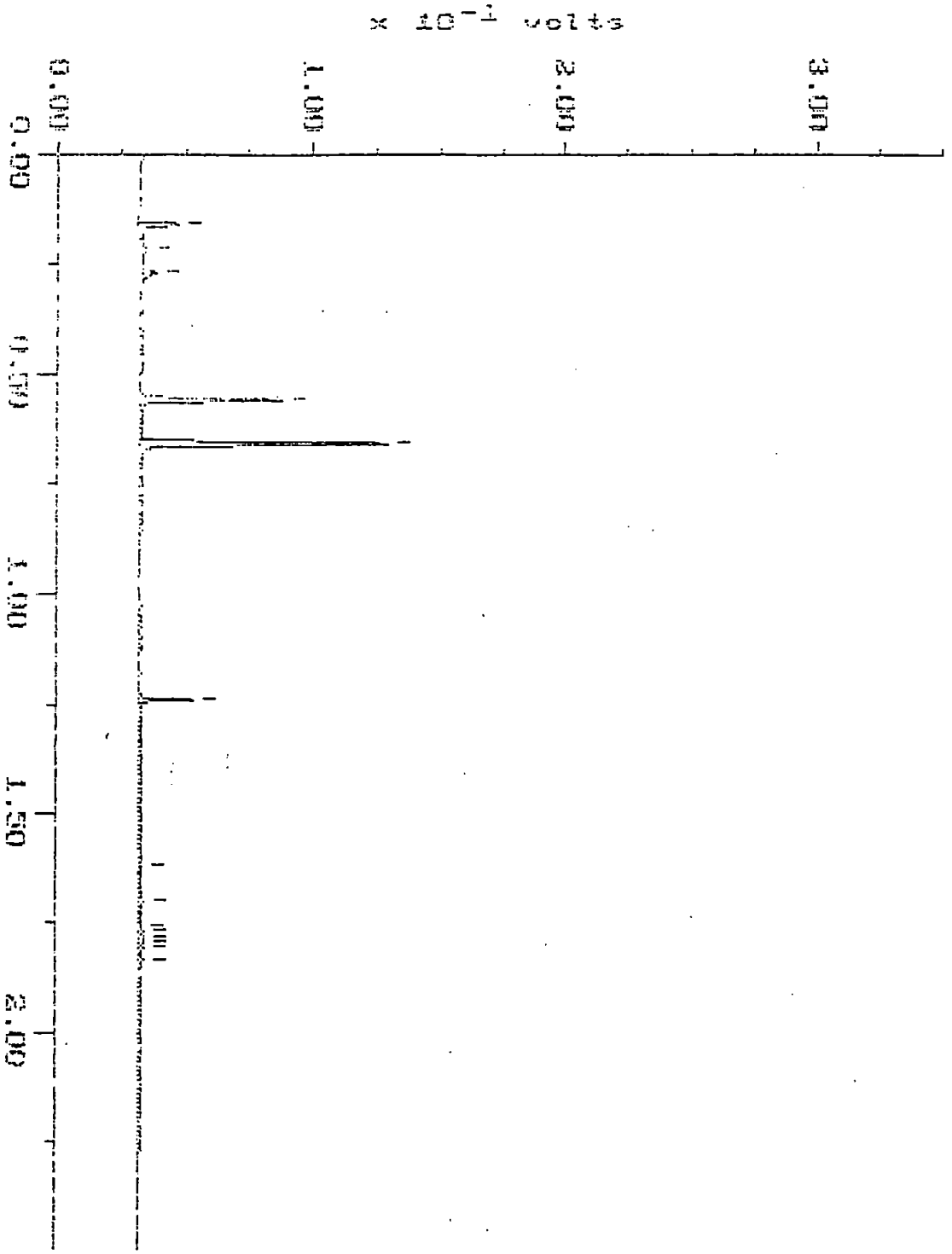
WA DOE WTPH-G

Sample: 9305-045-1 DIL Channel: JEROME-FID Filename: R5079J04
Acquired: 07-MAY-93 11:46 Method: F:\BR02\MAXDATA\JEROME\050793JR Operator:
Dilution: 1 : 5.000



WA DOE WTPH-G Blank

Sample: MB 5-06 Channel: VERCHE-FID Filename: 5C069J03
Acquired: 06-MAY-93 9:15 Method: F:\BRG2\MAXDATA\VERCHE\05069J.M Operator:



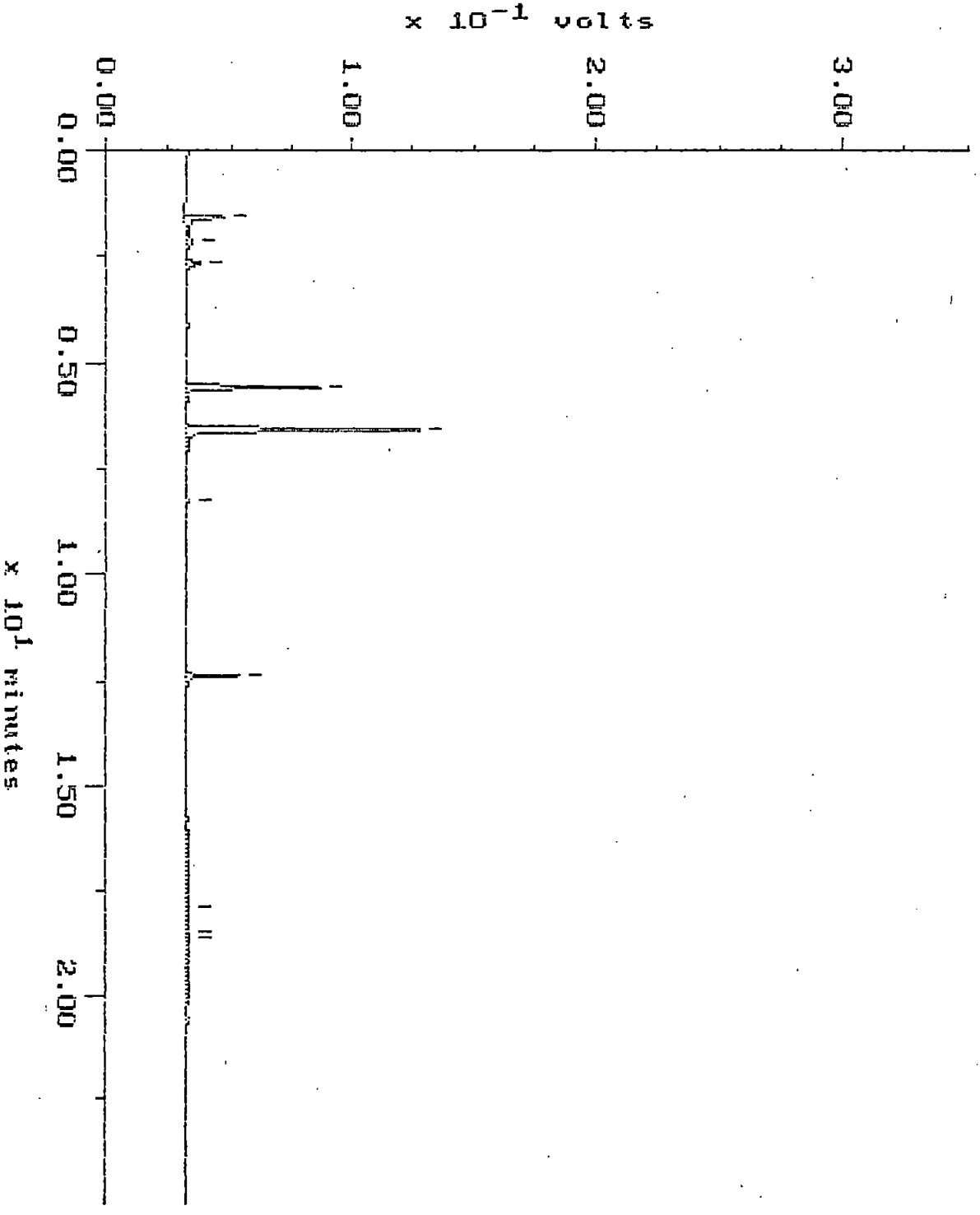
WA DOE WTPH-G

Blank

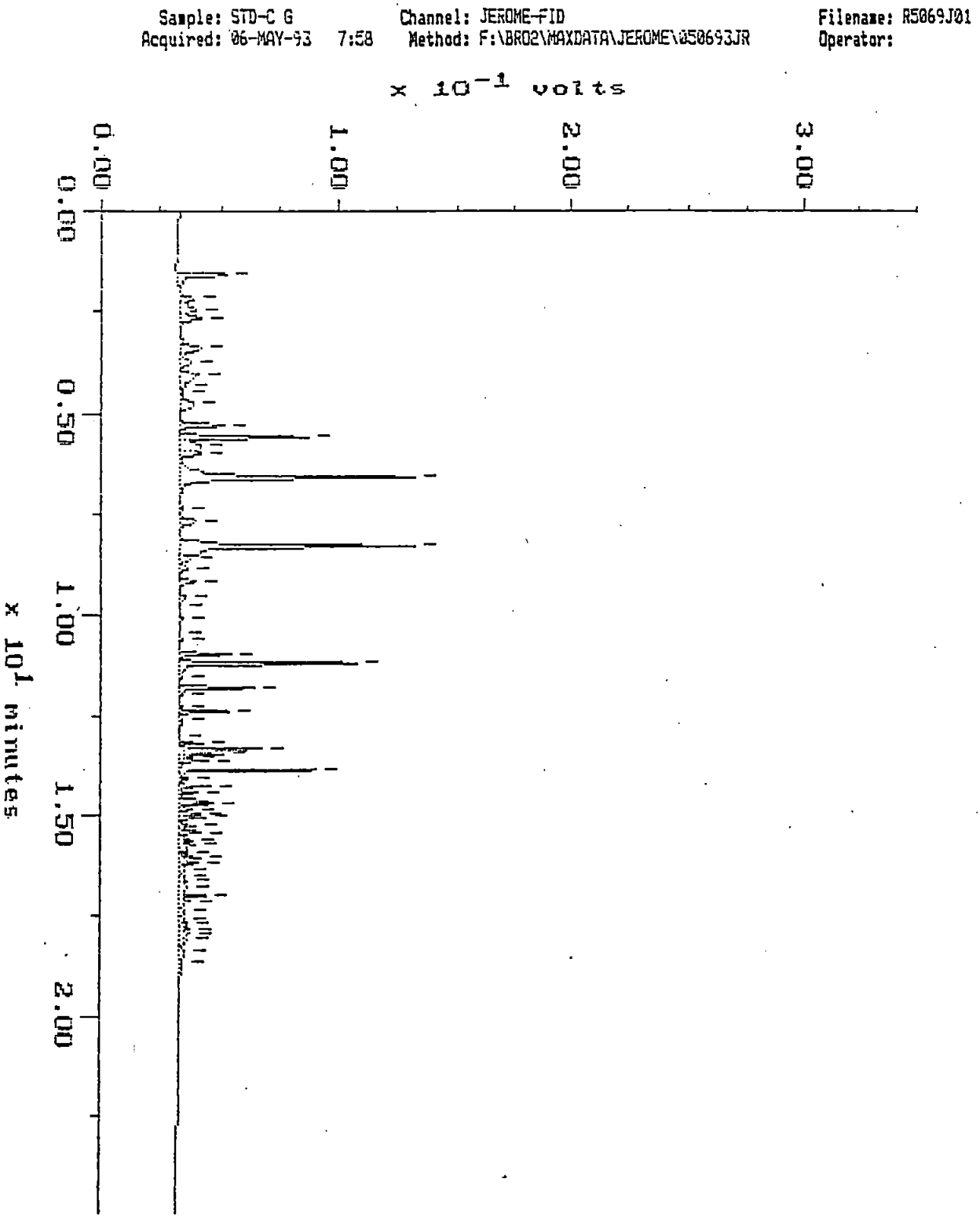
Sample: WRB 5-07
Acquired: 07-MAY-93 9:23

Channel: JEROME-FID
Method: F:\BRO2\MAXDATA\JEROME\050793JR

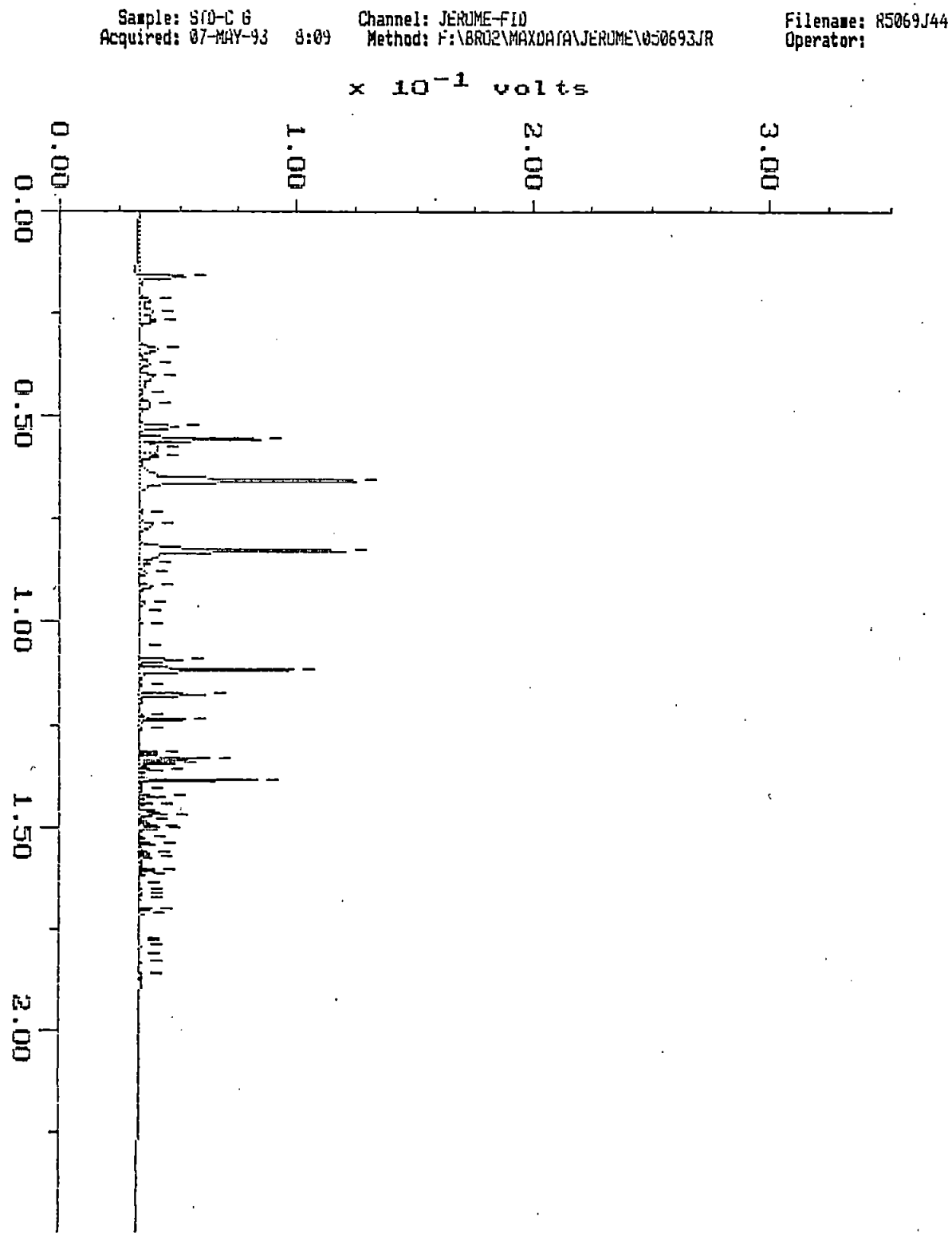
Filename: R5079J01
Operator:



Continuing Calibration



Continuing Calibration



Applied Geotechnology Inc.
Geotechnical Engineering
Geology & Hydrogeology

CHAIN-OF-CUSTODY

Date 5/5/93 Page 1 of 1

PROJECT INFORMATION

Project Manager: GLEN BOBNICK
Project Name: GTE / KIRKLAND
Project Number: 15169.130
Site Location: KIRKLAND Sampled By: LGC

DISPOSAL INFORMATION

☒ Lab Disposal (return if not indicated)
Disposal Method: _____
Disposed by: _____ Disposal Date: _____

QC INFORMATION (check one)

☐SW-846 ☐CLP ☐Screening ☐AGI Std. ☐Special

Laboratory Number: 9305-045

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	PETROLEUM HYDROCARBONS: TPH-ID State:	TPH-G State:	TPH-D State:	TPH Special Instructions	418.1 State:	8015M	ORGANIC COMPOUNDS: 8010 Halogenated VOCs	8020 Aromatic VOCs	8020M - BETX only	8240 GCMS Volatiles	8270 GCMS Semivol.	8310 HPLC PAHs	8040 Phenols	DWS - Volatiles and Semivol.	PESTS/PCB's: 8080 OC Pest/PCBs	8080M PCBs only	8140 OP Pesticides	8150 OC Herbicides	DWS - Herb/pest	METALS: Selected metals: list	Total Lead (Wa)	Organic Lead (Ca)	TCL Metals (23)	Priority Poll. Metals (13)	DWS - Metals	MFSP - Metals (Wa)	LEACHING TESTS: TCLP - Volatiles (ZHE)	TCLP - Semivolatiles	TCLP - Pesticides	TCLP - Metals	OTHER	NUMBER OF CONTAINERS
DS-9	5/5/93	1045	WATER	1	X					X			X																							3

LAB INFORMATION

Lab Name: ATI
Lab Address: RENTON
Via: COURIER

SAMPLE RECEIPT

Total Number of Containers:	3
Chain of Custody Seals: Y/N/NA	N
Intact?: Y/N/NA	Y
Received in Good Condition/Cold:	Y/-

Turn Around Time: ☒ Standard ☐24 hr. ☐48 hr. ☐72 hr. ☐1 wk.

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH DATA

Special Instructions:

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Time: 1515	Signature: Time:	Signature: Time:
Printed Name: C. CHRISTENSEN Date: 5/5/93	Printed Name: Date:	Printed Name: Date:
Company: AGT	Company:	Company:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY: 3.**
Signature: Time:	Signature: Time:	Signature: Time:
Printed Name: STAN KENSTEL Date: 5/6/93	Printed Name: Date:	Printed Name: Date:
Company: PTI-LAB	Company:	Company:

AGI OFFICES: Bellevue: (206) 453-8383 Tacoma: (206) 383-4380
Portland: (503) 222-2820 Pleasanton: (415) 460-5495

DISTRIBUTION: White, Canary to Analytical Laboratory; Pink to AGI Project Files; Gold to AGI Disposal Files

Rev. 4/92