HARTCROWSER

Earth and Environmental Technologies

Hart Crowser, Inc.
1910 Fairview Avenue East
Seattle, Washington 98102-3699
FAX 206.328.5581
206.324.9530

J-2616-03

June 21, 1990

Mr. Jim Sepic
Rabanco
4730 32nd Avenue South
Seattle, Washington 98118

Mr. Jim Strock
Seafirst Bank
Columbia Seafirst Center
P.O. Box 3586
Seattle, Washington 98124

Re: Diesel Tank Remediation
Eastside Disposal
Bellevue, Washington

Dear Messrs. Sepic and Strock:

This letter report presents the results of remediation activities related to the removal of one 1,000-gallon underground storage tank (UST) at the above-referenced site.

The purpose of our work was to observe excavation of soil containing diesel residues, collect soil samples for chemical analysis and cleanup verification, and to assess the extent of diesel residues beneath the welding shop.

The site vicinity map is presented on Figure 1. A site plan showing the location of the former UST and sample locations is presented on Figure 2. Table 1 summarizes the analytical results for soil samples collected from the hand-auger borings and the excavation side walls following the UST removal. Attachment A presents our field exploration and sampling methods. Attachment B presents laboratory certificates.

SUMMARY OF FINDINGS

The following is a summary of our findings. The body of this report should be referred to for additional information and supporting data.

- One approximately 1,000-gallon UST (diesel) was removed from the site by Northwest EnviroServices (NWES) on November 9, 1989.
- Approximately 380 cubic yards of soil (containing diesel residues) were excavated and disposed of off-site.
- Analytical results from soil samples collected from the excavation side walls indicated total petroleum hydrocarbon concentrations (as diesel) below the draft Ecology Method A Compliance Levels for soil (200 ppm) except adjacent to the welding shop (DS-4, 8,600 ppm).
- About 80 cubic yards of soil containing diesel residues exceeding draft Ecology cleanup guidelines remain beneath the welding shop.
- Analytical results from a soil sample (DS-9) collected from the south side wall of the excavation indicates the presence of a petroleum hydrocarbon heavier than diesel (similar to hydraulic or motor oil).
- The excavation was backfilled as per discussion with Ecology (Joe Hickey, May 23, 1990).

SITE DESCRIPTION

The Eastside Disposal site is located at 969 118th S.E. in Bellevue, Washington. Eastside Disposal (Rabanco, Inc.) currently leases the site from Seafirst Bank.

FIELD OBSERVATION

Tank Excavation and Tank Condition

Hart Crowser was not present during the UST removal. The UST was removed by NWES. Soil samples collected from the UST excavation side walls by NWES confirmed the presence of diesel residues in the soils.

Soil Excavation

From February 1 to March 12, 1990, about 380 cubic yards of soil were removed from the UST excavation. Soils were disposed of off-site. Fifteen soil samples (10 from excavation side walls and 5 from test pits) were collected during the soil removal activities.

Ten soil samples, DS-1 through DS-10, were collected from the excavation side walls from February 1, 1990, through April 12, 1990. Analytical results (Table 1) from soil sampling collected on February 1, 1990, were used to assess locations for additional soil excavation. Generally, soil was excavated in those locations until field screening techniques (visual and odor) indicated no diesel present. When this occurred soil excavation stopped and verification soil samples were collected (Figure 2).

Test Pits. In addition, five test pits, TP-1 through TP-5, were advanced on February 9, 1990, and March 12, 1990, in order to assess the lateral extent of diesel residues in the soil. One soil sample was collected from each test pit. During the test pit exploration an area containing debris fill was encountered south of the UST excavation (Figure 2). This area is generally south of TP-2 and TP-3. Part of this debris fill was excavated. Analytical results (Table 1) from a verification soil sample (DS-9) collected in this debris fill indicated that the diesel residues in the soil from the UST ended and a petroleum hydrocarbon heavier than diesel (similar to hydraulic or motor oil) was present in the debris fill at a concentration of 630 ppm.

Soil Borings

Analytical results for soil sample DS-4 indicated that soils containing diesel residues may extend beneath the welding shop. On February 27, 1990, a soil boring was

advanced by NWES laterally underneath the welding shop. This boring was located adjacent to the former UST and advanced about 6 feet underneath the welding shop. Soil samples were collected at 3 feet and 6 feet. Analytical results indicated that TPH concentrations in the soils at 3 feet (1,600 ppm) and 6 feet (3,200 ppm) exceeded the draft Ecology Method A Compliance Levels for soil. On April 2, 1990, five hand-auger borings were advanced by Hart Crowser to assess the extent of TPH residues in the soil underneath the welding shop. Analytical data indicated that soil containing TPH residues exceeding the draft Ecology Method A Compliance Levels for soil extended about 20 feet north underneath the welding shop. Data also indicated that a 10- to 15-foot-wide band of soil containing TPH residues exceeding the draft Ecology Method A Compliance Levels for soil extended in a westerly direction underneath the welding shop. It is estimated that about 80 cubic yards of soil containing diesel residues exceeding the draft Ecology Method A Compliance Levels for soil remain beneath the building. The approximate extent of the diesel residues is presented on Figure 2.

Groundwater Sample

A groundwater sample was collected from a groundwater monitoring well (MW-1) located near the welding shop. MW-1 was used to assess groundwater quality from a previous study. MW-1 was located about 100 feet southwest of the welding shop and is downgradient from the former diesel tank. No TPH concentrations were detected (detection limit 10 ppm) in the groundwater sample collected from MW-1 on February 9, 1990. Due to the somewhat complex site groundwater conditions and distance from the welding shop, MW-1 may not accurately reflect whether TPH in the soil underneath the welding shop is impacting site groundwater quality.

CURRENT STATUS

About 80 cubic yards of soil containing diesel residues exceeding draft Ecology Method A Compliance Levels for soil remain underneath the welding shop. Removal of this soil is not possible using conventional methods due to undermining of the welding shop foundation.

The excavation has been backfilled. No further action is currently planned. Soil along the southern wall of the excavation contains petroleum hydrocarbon residues indicative of a heavier petroleum hydrocarbon (similar to hydraulic or motor oil).

LIMITATIONS

Our work was accomplished in accordance with generally accepted professional practices related to the nature of the work accomplished in the same or similar localities at the time the work was performed. This report is intended for the exclusive use of Rabanco, Inc., and Seafirst Bank for specific application to the referenced site. No other warranty, express or implied, is made.

We appreciate the opportunity to provide you with environmental consulting services. If you have any questions concerning the information presented in this report, or if we can be of further assistance, please contact me or Scott Ferris at (206) 324-9530.

Sincerely,

HART CROWSER, INC.

DAVID K. BABCOCK
Staff Geologist Engineer

SCOTT S. FERRIS
Associate
Chemical Engineer

DKB/SSF:jbc/ob
2616-03.lr

Attachments:

Table 1 - Soil Quality Dta
Figure 1 - Site Vicinity Map
Figure 2 - Soil Quality Data
Attachment A - Field Exploration and Sampling Methods
Attachment B - Laboratory Certificates

Table 1 – Soil Quality Data*

Sample Number	Concentrations in parts per million (ppm)	
	Total Petroleum Hydrocarbons Method 8015M	Total Petroleum Hydrocarbons Method 418.1
DS-1	N/A	190
DS-2	N/A	310
DS-3	N/A	820
DS-4	N/A	8,600
DS-5	3,600	10,000
DS-6	7,200	5,400
DS-7	N/A	62
DS-8	25 U	760
DS-9	630	10,000
DS-10	25 U	N/A
TP-1	17 J	N/A
TP-2	810	N/A
TP-3	3,700	N/A
TP-4	25 U	N/A
TP-5	N/A	25
E-1	25 U	N/A
E-2	50	N/A
E-3	350	N/A
E-4	25 U	N/A
E-5	2,200	
3' (NWES)	1,200	1,600
6' (NWES)	N/A	3,200

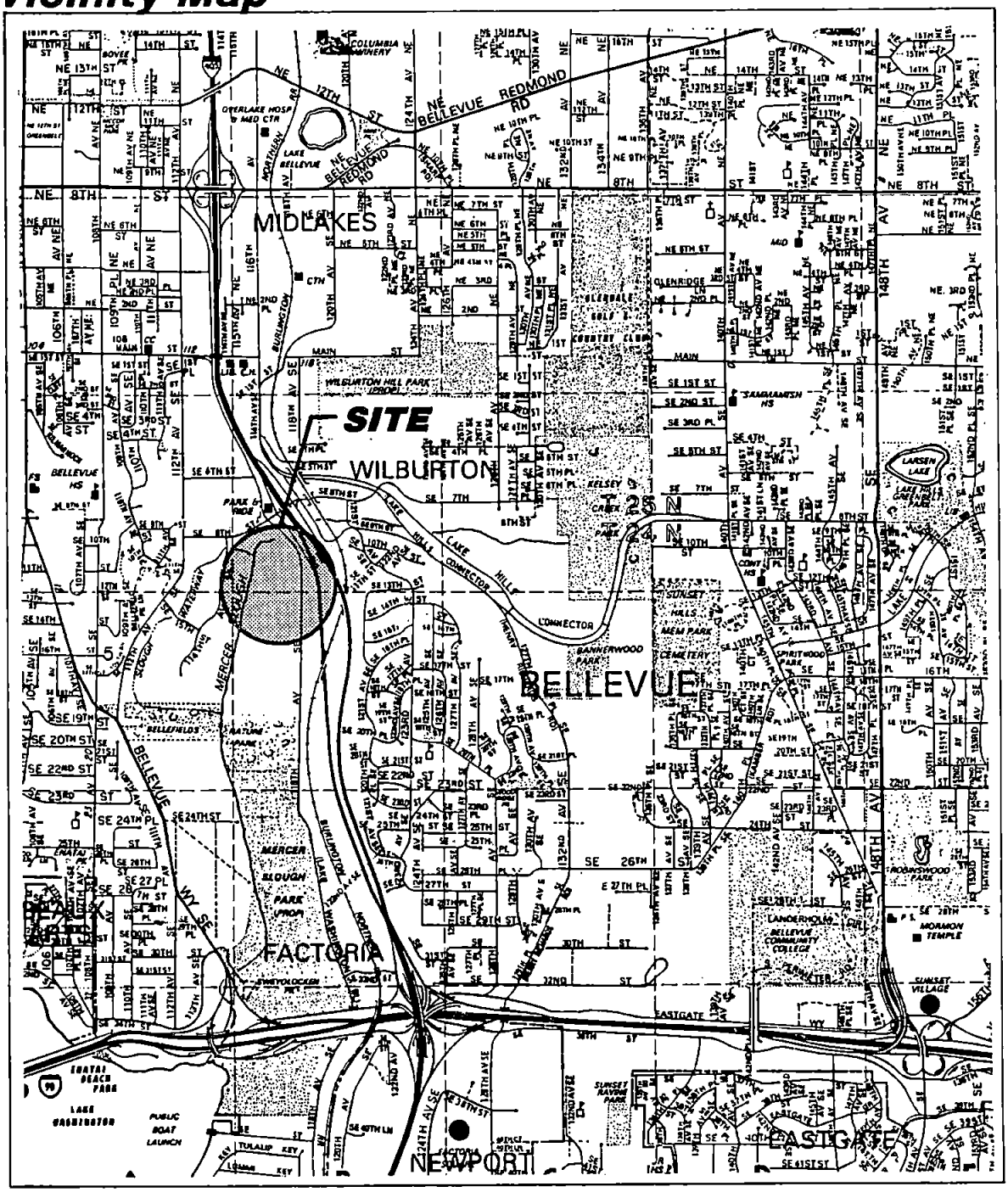
U – Indicates compound was analyzed for but was not detected at the given detection limit.

J – Indicates an estimated value when the result is less than the calculted detection limit

N/A – Indicates sample was not analyzed using this method.

* – All soil samples collected by Hart Crowser with the exception of 3' (NWES) and 6' (NWES) which were collected by Northwest EnviroServic

Vicinity Map



0 2000 4000

Scale in Feet

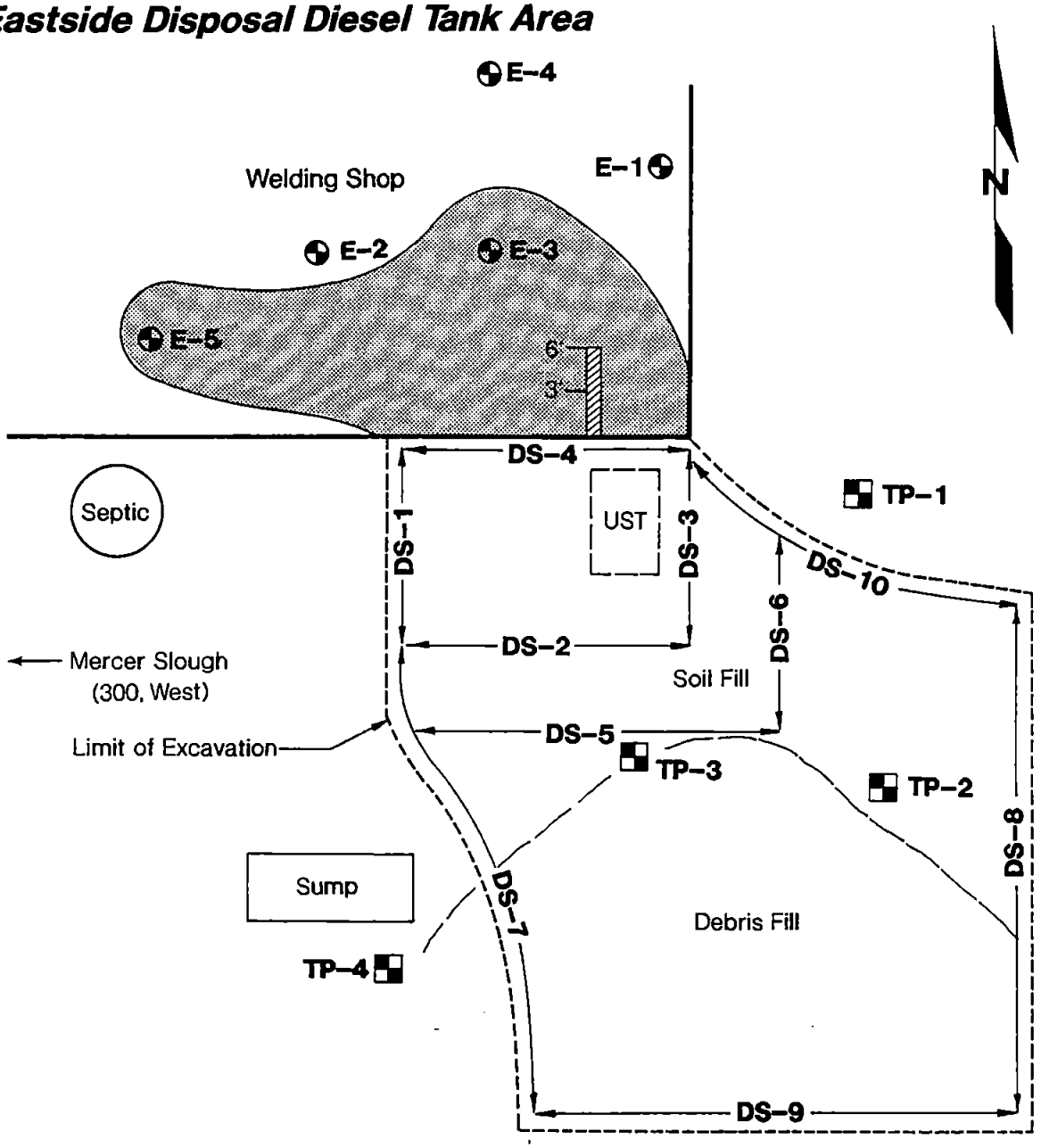
HARTCROWSER

J-2616-03 4/90

Figure 1

Excavation and Sample Location Map

Eastside Disposal Diesel Tank Area



3' 6'
NWES Sample Location

E-1 Hart Crowser Hand Auger Sample Location and Number

TP-1 Test Pit Location and Number

DS-1 Sidewall Sample Location and Number

Estimated Extent of Contamination

TP-5 (100' South)

0 10 20

Scale in Feet

HARTCROWSER

J-2616-03 4/90

Figure 2

ATTACHMENT A
FIELD EXPLORATION AND SAMPLING METHODS

ATTACHMENT A
FIELD EXPLORATION AND SAMPLING METHODS

We obtained a total of seventeen soil samples from the tank excavation. Samples were obtained during tank removal operations from in-place soils in the excavation to document soil quality.

Tank Excavation

Samples were obtained from the tank excavation and surrounding soils to determine the petroleum hydrocarbon concentrations, if any, remaining in the ground. The side walls of the excavation were scraped and a sample collected with a stainless-steel spoon and composited in a stainless-steel bowl. Soil was placed in laboratory-prepared glass jars with teflon-lined lids and stored temporarily in a chilled cooler for transport to the testing laboratory. Chain of custody records were maintained recording sample collection and handling information.

Equipment Decontamination

Sampling equipment was decontaminated between each sampling event. Equipment was scrubbed with a stiff-bristle brush using a laboratory-grade detergent and tap water, then rinsed with deionized water, and allowed to air dry.

Field Explorations

The program of subsurface explorations for this project included completion of five test pits and five hand-auger borings.

Test Pits. Test pit logs were not made of the soils encountered during excavation. The sample location was typically four feet below the ground surface. The test pits were located in the field by hand taping from existing physical features.

Hand-Auger Boring. Five borings, designated E-1 through E-5, were advanced using an 8-inch-diameter hand-auger. Samples were collected from the auger with a stainless-steel spoon and placed in a glass jar for chemical analysis.

Samples were transferred to Analytical Resources Incorporated (ARI) under chain of custody protocol. ARI performed analyses on the soil samples; results of which are presented in Attachment B.

ATTACHMENT B
CERTIFICATES OF ANALYSIS
ANALYTICAL RESOURCES INCORPORATED (ARI)

ANALYTICAL RESOURCES INCORPORATED

Analytical
Chemists &
Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

06 February, 1990

David Babcock
Hart Crowser
1910 Fairview Ave. E.
Seattle, WA 98102-3699

RE: Project ID: Eastside Disposal, #2616-03; ARI Project Nos. 4558 & 4592.

Dear David:

Please find the enclosed results for the above referenced Project.

If you have any questions or need additional information, please feel free to call any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Catherine Greer

Catherine P. Greer
Project Coordinator

CPG

enclosures

cc: file #4558, 4592

ANALYTICAL RESOURCES INCORPORATED

Analytical
Chemists &
Consultants

333 Ninth Ave. North
Seattle, Wa 98109-5187
(206) 621-6490

TOTAL PETROLEUM HYDROCARBONS by IR Scan
Modified EPA Method 418.1

Matrix: Soil

QC Report No: 4558 - Hart Crowser
Project: 2616-03
Eastside Disposal
VTSR: 02/01/90

Data Release Authorized _____
Data Prepared: 02/01/90 - MAC:C C.G.

Date Prepared: 02/01/90
Date of Analysis: 02/01/90

Lab ID	Client Sample ID	Dilution Factor	TPH (ppm)
4558 MB	*Method Blank*	*1*	10 U
4558 A	**DS-1**	**1**	**190**
4558 B	**DS-2**	**1**	**310**
4558 C	**DS-3**	**1**	**820**
4558 D	**DS-4**	**20**	**8600**

Values reported in ppm (mg/Kg) based on wet weight of sample

U Indicates compound was analyzed for but not detected at the given detection limit.

Sample Custody Record

DATE 2/1/90 PAGE 1 OF 1

HARTCROWSER

Hart Crowser, Inc.
1910 Fairview Avenue East
Seattle, Washington 98102-3699

JOB NUMBER 2616-03 LAB NUMBER

PROJECT MANAGER DAVID BABCOCK

PROJECT NAME Eastside Disposal

SAMPLED BY: DAVID BABCOCK

LAB NO.	SAMPLE	TIME	STATION	MATRIX	TESTING: TPH 418.1	NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
	DS-1	2/1/90		SOIL	X	1	24 HR
	DS-2	↓			X	1	↓
	DS-3				X	1	
	DS-4				X	1	

RELINQUISHED BY	DATE	RECEIVED BY	DATE
Signature: DAVID BABCOCK	2/1/90	Signature: Terrie Hedger	2/1/90
Printed Name: HC	TIME 12/25	Printed Name: ARI	TIME 12:25
Company		Company	
RELINQUISHED BY	DATE	RECEIVED BY	DATE
Signature	TIME	Signature	TIME
Printed Name		Printed Name	
Company		Company	

TOTAL NUMBER OF CONTAINERS: 4

METHOD OF SHIPMENT: HAND

SPECIAL SHIPMENT/HANDLING OR STORAGE REQUIREMENTS

24 HR

DISTRIBUTION:

1. PROVIDE WHITE AND YELLOW COPIES TO LABORATORY
2. RETURN PINK COPY TO PROJECT MANAGER
3. LABORATORY TO FILL IN SAMPLE NUMBER AND SIGN FOR RECEIPT
4. LABORATORY TO RETURN WHITE COPY TO HART CROWSER

ANALYTICAL RESOURCES INCORPORATED

Analytical
Chemists &
Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

TOTAL PETROLEUM HYDROCARBONS by IR Scan
Modified EPA Method 418.1

Matrix: Soil

QC Report No: 4592 - Hart Crowser
Project: #2616-03
Eastside Disposal
VTSR: 02/05/90

Data Release Authorized _____
Data Prepared: 02/06/90 - MAC:C C.G.

Date Prepared: 02/06/90
Date of Analysis: 02/06/90

Lab ID	Client Sample ID	Dilution Factor	TPH (ppm)
4592 MB	*Method Blank*	*1*	10 U
4592 A	**DS-5**	**25**	**10000**
4592 B	**DS-6**	**25**	**5400**

Values reported in ppm (mg/Kg) based on wet weight of sample

U Indicates compound was analyzed for but not detected at the given detection limit.

Sample Custody Record

DATE 2/5/90 PAGE 1 OF 1

HARTCROWSER

Hart Crowser, Inc.
1910 Fairview Avenue East
Seattle, Washington 98102-3699

JOB NUMBER 2616-03 LAB NUMBER

PROJECT MANAGER DAVID BABCOCK

PROJECT NAME EASTSIDE DISPOSAL

SAMPLED BY:

LAB NO.	SAMPLE	TIME	STATION	MATRIX	TESTING: TPH 418.1	NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
	DS-5	2:30		SOIL	X	1	
	DS-6	2:35			X	1	

RELINQUISHED BY	DATE	RECEIVED BY	DATE
Signature	2/5	Signature Terrie Hedger	2/5/90
Printed Name DAVID BABCOCK	TIME	Printed Name Terrie Hedger	TIME
Company 4C	2:53	Company ART	14:50
RELINQUISHED BY	DATE	RECEIVED BY	DATE
Signature	TIME	Signature	TIME
Printed Name		Printed Name	
Company		Company	

TOTAL NUMBER OF CONTAINERS 2

METHOD OF SHIPMENT HAND

SPECIAL SHIPMENT/HANDLING OR STORAGE REQUIREMENTS

24 HOUR RUSH

DISTRIBUTION:

1. PROVIDE WHITE AND YELLOW COPIES TO LABORATORY
2. RETURN PINK COPY TO PROJECT MANAGER
3. LABORATORY TO FILL IN SAMPLE NUMBER AND SIGN FOR RECEIPT
4. LABORATORY TO RETURN WHITE COPY TO HART CROWSER

ANALYTICAL RESOURCES INCORPORATED

Analytical
Chemists &
Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

08 February, 1990

David Babcock
Hart Crowser
1910 Fairview Ave. E.
Seattle, WA 98102-3699

RE: Project ID: Eastside Disposal, #2616-03; ARI Project No. 4592 II.

Dear David:

Please find the enclosed results for the above referenced Project.

If you have any questions or need additional information, please feel free to call any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Catherine Greer

Catherine P. Greer
Project Coordinator

CPG

enclosures

cc: file #4592 II

ANALYTICAL RESOURCES INCORPORATED

Analytical
Chemists &
Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

TOTAL PETROLEUM HYDROCARBONS BY GC/FID
Modified EPA Method 8015

Matrix: Soil

Data Release Authorized _____
Data Prepared: 02/08/90 - MAC:C C.G.

Project No.: Eastside Disposal #2616.03
QC Report No: 4592 II - Hart Crowser
VTSR: In-House

Date of Analysis: 02/08/90

Lab ID	Client Sample ID	TPH (ppm) Dry Wt. Basis	Pattern ID
4592 MB	*Method Blank*	25 U	—
4592 A	**DS-5**	**3600**	**Diesel**
4592 B	**DS-6**	**7200**	**Diesel**

U Indicates compound was analyzed for but not detected at the given detection limit.

13 February 1990

ANALYTICAL RESOURCES INCORPORATED

Analytical
Chemists &
Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

Mr. David Babcock
Hart Crowser, Inc.
1910 Fairview Ave. East
Seattle, WA 98102-3699

RE: Project No. 2616.03 Eastside Disposal / ARI Job. No. 4631

Dear Mr. Babcock:

Enclosed are final results for the above-referenced project. These results were previously faxed to you.

If you have any questions or require additional information, please feel free to call any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Michelle J. Turner
Project Coordinator

enclosures
cc: file

ANALYTICAL RESOURCES INCORPORATED

Analytical
Chemists &
Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

TOTAL PETROLEUM HYDROCARBONS BY GC/FID
Modified EPA Method 8015

Matrix: Soil

Data Release Authorized _____
Data Prepared: 02/13/90 - MAC:C C.G.

Project No.: Eastside Disposal #2616.03
QC Report No: 4631 - Hart Crowser
VTSR: 02/09/90

Date of Analysis: 02/13/90

Lab ID	Client Sample ID	TPH (ppm) Dry Wt. Basis	Pattern ID
4631 MB	*Method Blank*	25 U	---
4631 B	**TP-1**	**17 J**	**Diesel**
4631 C	**TP-2**	**810**	**Diesel**
4631 D	**TP-3**	**3700**	**Diesel**
4631 E	TP-4	25 U	---

J Indicates an estimated value when the result is less than the calculated detection limit.

U Indicates compound was analyzed for but not detected at the given detection limit.

ANALYTICAL RESOURCES INCORPORATED

Analytical
Chemists &
Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

TOTAL PETROLEUM HYDROCARBONS by IR Scan
Modified EPA Method 418.1

Matrix: Waters

QC Report No: 4631 - Hart Crowser
Project: Eastside Disposal
VTSR: 02/09/90

Data Release Authorized _____
Data Prepared: 02/12/90 - MAC:C C.G.

Date Prepared: 02/12/90
Date of Analysis: 02/12/90

Lab ID	Client Sample ID	Dilution Factor	TPH (ppm)
4631 MB	*Method Blank*	*1*	10 U
4631 A	MW-1	1	10 U

U Indicates compound was analyzed for but not detected at the given detection limit.

ANALYTICAL
RESOURCES
INCORPORATED

Analytical
Chemists &
Consultants

333 Ninth Ave North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

TOTAL PETROLEUM HYDROCARBONS by IR Scan
Modified EPA Method 418.1

Matrix: Soils/Sediments

Project: Eastside Bellevue
32-13181
QC Report No: 4746 - NW Enviro
VTSR: 02/27/90

Data Release Authorized _____
Data Prepared: 02/28/90 - MAC:C C.G.

Date Prepared: 02/27/90
Date of Analysis: 02/27/90

Lab ID	Client Sample ID	Dilution Factor	TPH (ppm)
4746 MB	*Method Blank*	*1*	10 U
4746 A	**3'**	**1**	**1600**
4746 B	**6'**	**5**	**3200**

Values reported in ppm (mg/Kg) based on wet weight of sample

U Indicates compound was analyzed for but not detected at the given detection limit.

BILL TO: Northwest EnviroField Services, Inc.
P. O. Box 80743
Seattle, WA 98108

ANALYSIS TO: SAME AS ABOVE

SAMPLED BY: Ken Ewalt

CHAIN OF CUSTODY RECORD

DATED: 3-15-90

PROJECT NAME: East Side Response
PROJECT LOCATION: Bellevue
SITE NUMBER: 32-13181

Sample #	Date/Time Sampled	Type of Sample	# of Containers	Lab Sample #	Analysis Required	Comments:
3'	3/07/90		1	4746-A	8015 mod. (Purge)	Send Bill to Hart-Crowser w/ analytics

Relinquished by: (Signature)	Date:	Received by: (Signature)	Date:
Ken Ewalt	Time:		Time:
Firm: N.W.E.S.		Laboratory:	

Additional Comments: Send Bill and Analysis to Hart-Crowser
David Babcock.

OK. Per Hans Helm NW Enviro Service Inc.

ANALYTICAL RESOURCES INCORPORATED

Analytical
Chemists &
Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

15 March, 1990

David Babcock
Hart Crowser
1910 Fairview Ave. E.
Seattle, WA 98102-3699

RE: Project ID: Eastside Disposal #2616-03 / ARI Project No. 4871.

Dear David:

Please find the enclosed results for the above referenced Project.

If you have any questions or need additional information, please feel free to call any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Catherine Greer

Catherine P. Greer
Project Coordinator

CPG

enclosures

cc: file #4871

ANALYTICAL RESOURCES INCORPORATED

Analytical
Chemists &
Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

TOTAL PETROLEUM HYDROCARBONS by IR Scan
Modified EPA Method 418.1

Matrix: Soils

Project: Eastside Disposal #2616-03
QC Report No: 4871 - Hart Crowser
VTSR: 03/12/90

Data Release Authorized _____
Data Prepared: 03/13/90 - MAC:C C.G.

Date Prepared: 03/12/90
Date of Analysis: 03/12/90

Lab ID	Client Sample ID	Dilution Factor	TPH (ppm)
4871 MB	*Method Blank*	*1*	10 U
4871 A	DS-7	1	62
4871 B	DS-8	1	760
4871 C	DS-9	25	10000
4871 D	TP-5	1	25

U Indicates compound was analyzed for but not detected at the given detection limit.

ANALYTICAL RESOURCES INCORPORATED

Analytical
Chemists &
Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

TOTAL PETROLEUM HYDROCARBONS BY GC/FID
Modified EPA Method 8015

Matrix: Soil

Project No.: Eastside Disposal #2616-03
QC Report No: 4871 - Hart Crowser
VTSR: 03/12/90

Data Release Authorized _____
Data Prepared: 03/14/90 - MAC:C C.G.

Date of Analysis: 03/13/90

Lab ID	Client Sample ID	TPH (ppm)	Pattern ID
4871 MB	*Method Blank*	25 U	—
4871 C	**DS-9**	**630**	**Diesel ***

* Indicates a hit within the retention time range of the listed petroleum product but not a good pattern match.

U Indicates compound was analyzed for but not detected at the given detection limit.

Chain of Custody Record & Laboratory Analysis Request

Date: 3/12/9

Page 1 of 1

Number of coolers: 1

ANALYTICAL RESOURCES INCORPORATED
333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

Project: 2616-03 EASTSIDE DISPOSAL | Assigned Lab ID:

Client Contact: DAVID BABCOCK

Phone: 324-9530

Samplers: DAVID BABCOCK

Sample ID	Date	Time	Matx	No Cont	Lab ID	TPH 8015	TPH 418.1	Other
DS-7	3/12		Soil	1			X	
DS-8	"		"	1			X	TAT
DS-9				1		X	X	418.1 = 3-13-90
TP-5				1		[illegible]	X	8015 = 3-16-90

Comments/Special Instructions:
RAPID TURNAROUND
CALL DAVE BABCOCK W/ RESULTS - ASAP

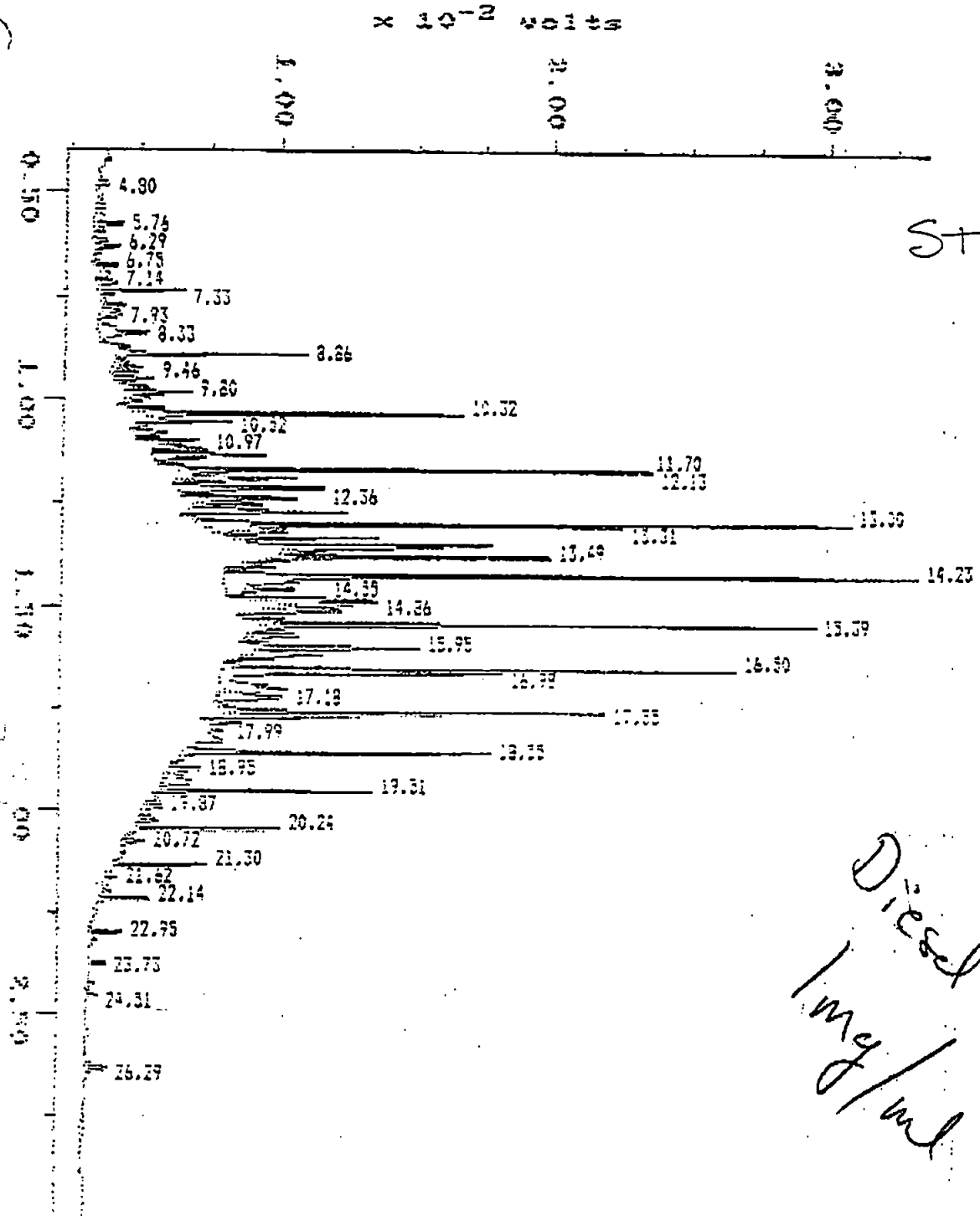
HOLD SAMPLE PROBABLE ANALYSIS FOR PCP/CREASOTE

Relinquished by:	Relinquished by:	Relinquished by:
(Signature) [signature]	(Signature)	(Signature)
Printed Name: DAVID BABCOCK	Printed Name:	Printed Name:
Company: HART CROWSER	Company:	Company:
Date: 3/12/90 Time: 11:35	Date: Time:	Date: Time:
Received by: (Signature) [signature] Terrie Hedger	Received by: (Signature)	Received by: (Signature)
Printed Name: ART	Printed Name:	Printed Name:
Company: Terrie Hedger	Company:	Company:
Date: 3-12-90 Time: 11:35	Date: Time:	Date: Time:

Sample: DIESEL 1MG/ML
Acquired: 15-MAR-90 11:39

Channel: FID 1 DB-5
Method: D:\MAX\TPH\TPH

Filename: DIESEL
Operator: PK



STANDARD

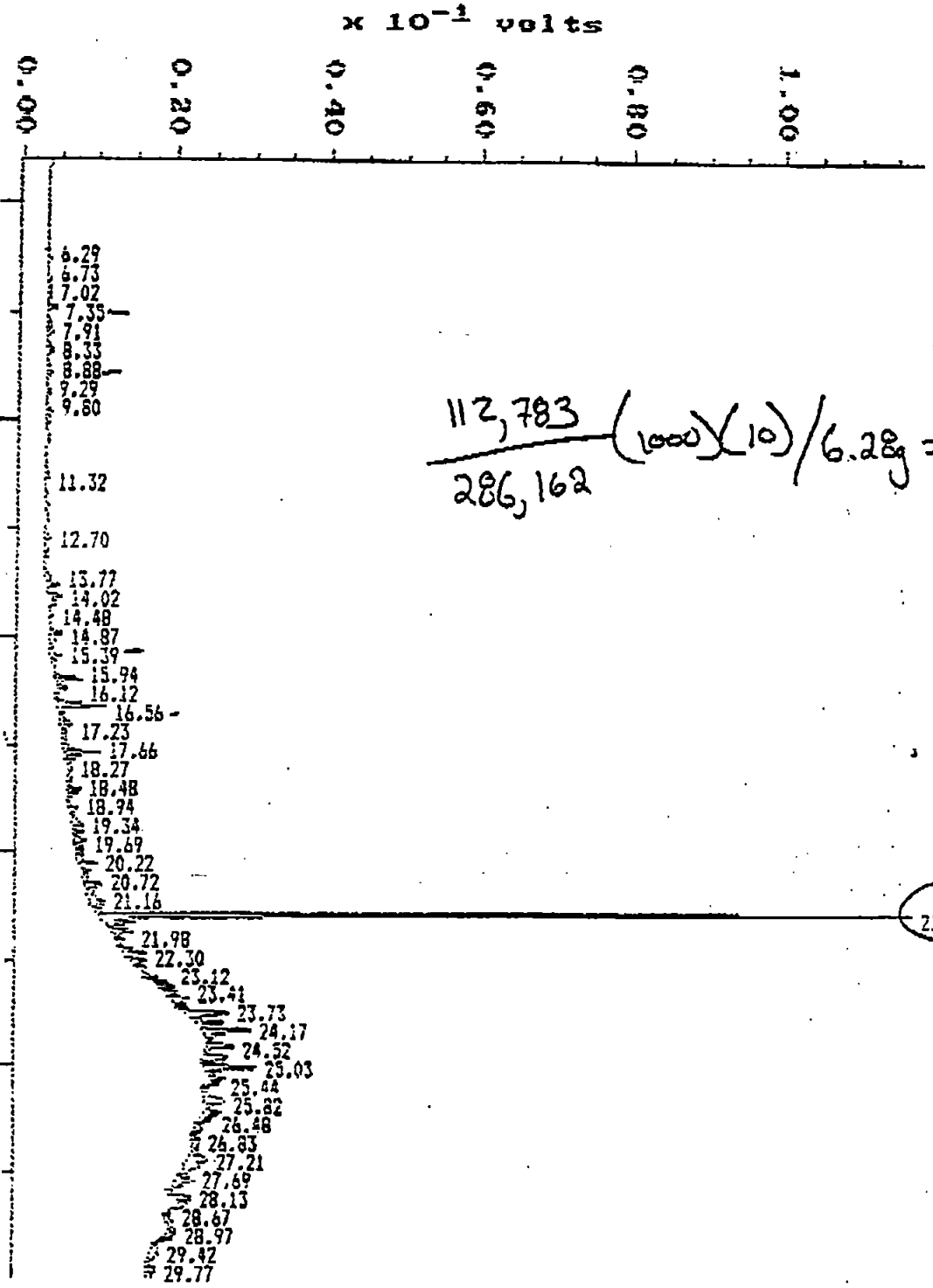
Diesel
1mg/ml

DS-9

Sample: 48719
Acquired: 13-MAR-90 15:54

Channel: FID II DB-5
Method: D:\MAX\TPH\TPH

Filename: 48719
Operator: PK



$\frac{112,783}{286,162}(1000)(10)/6.28g = 630_{ppm}$

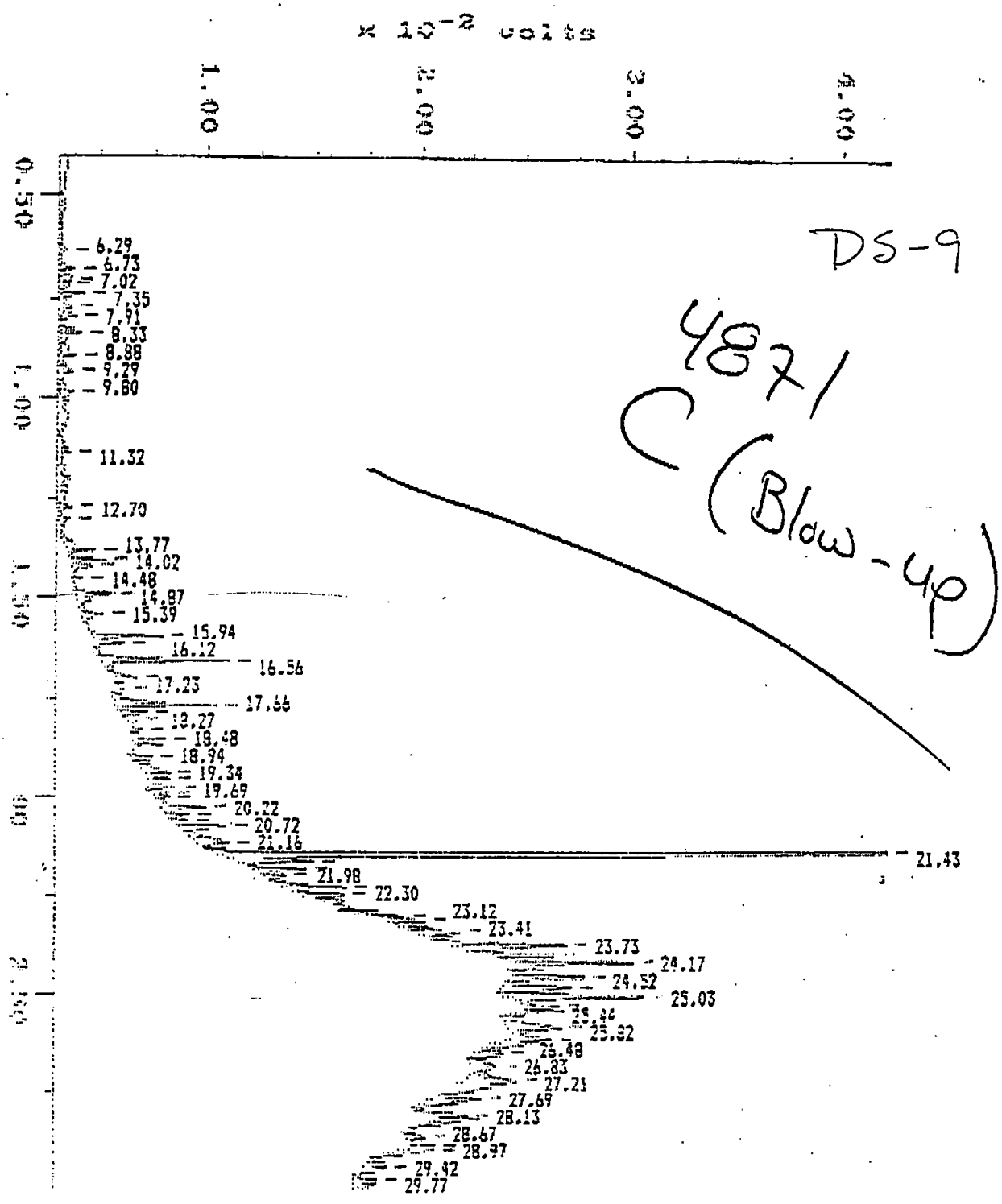
Diesel Standard used to quant (Not Diesel Pattern)

Surr. 111%

Sample: 48719 -
Acquired: 13-MAR-90 15:54

Channel: FID II DS-5
Method: D:\MAX\TPH\TPH

Filename: 48719
Operator: PK



DS-9

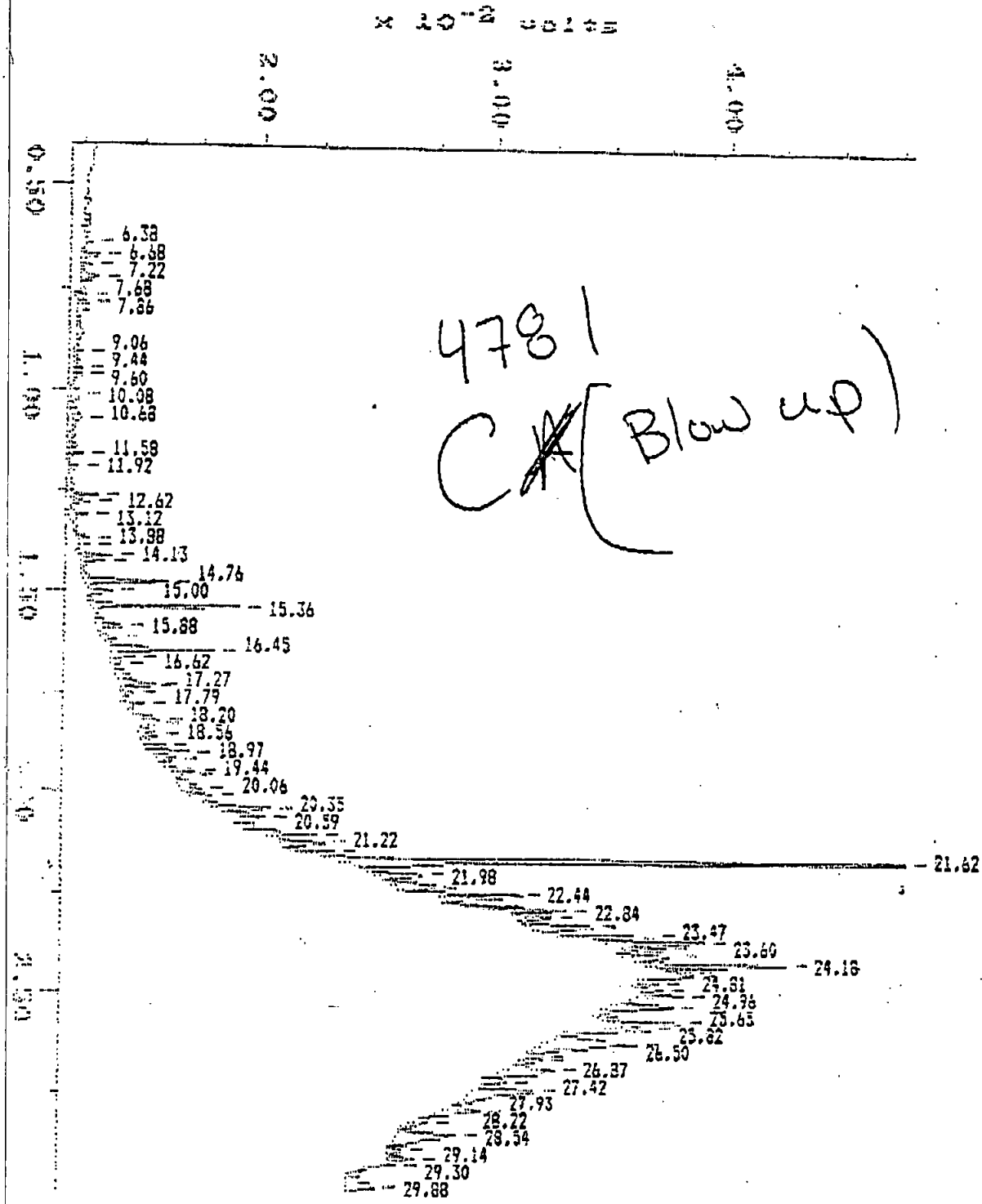
48719

C (Blow-up)

Sample: 48719 ,
Acquired: 13-MAR-90 15:58

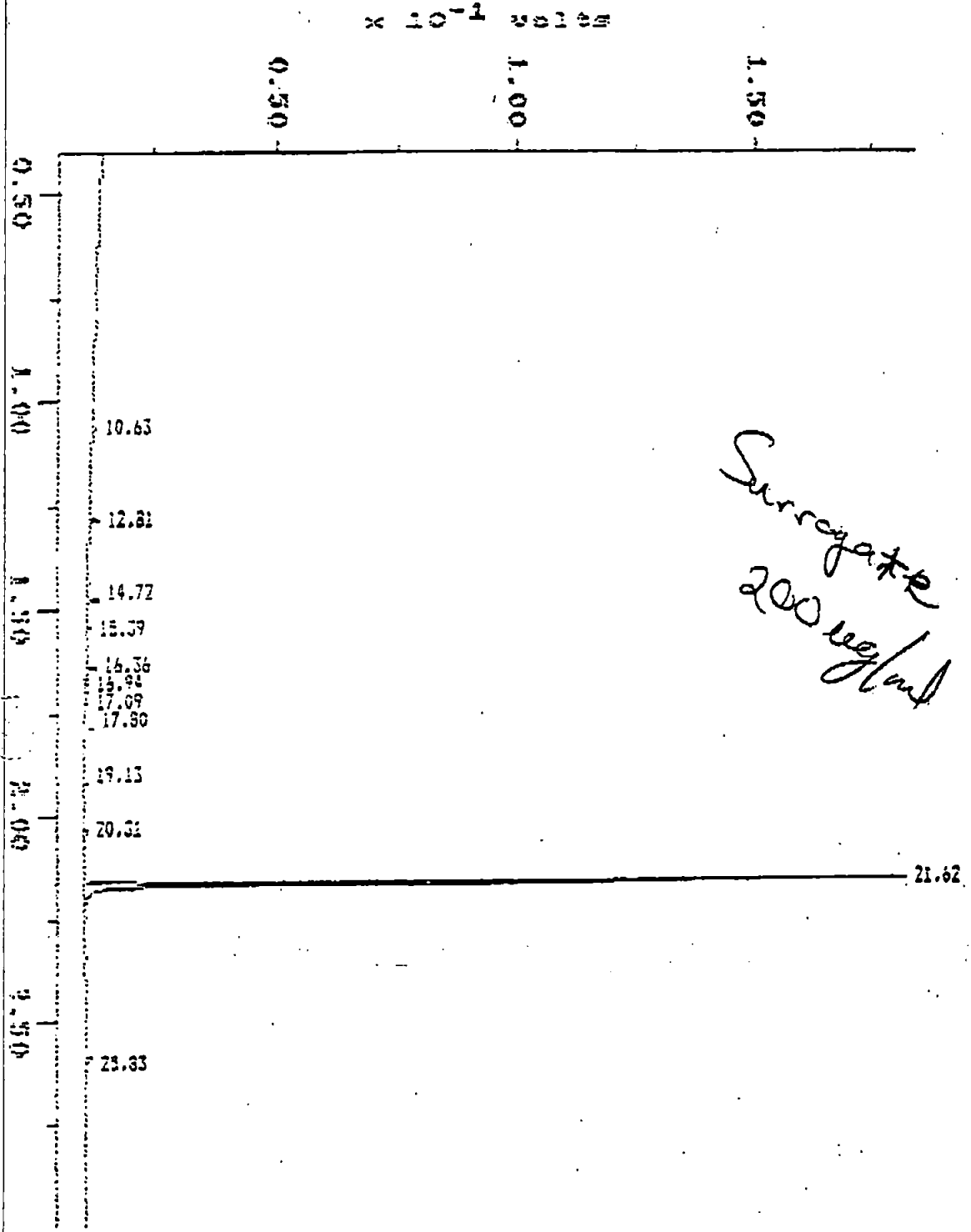
Channel: FID II DB-1701
Method: D:\MAI\TPH\TPH

Filename: 48719
Operator: PK



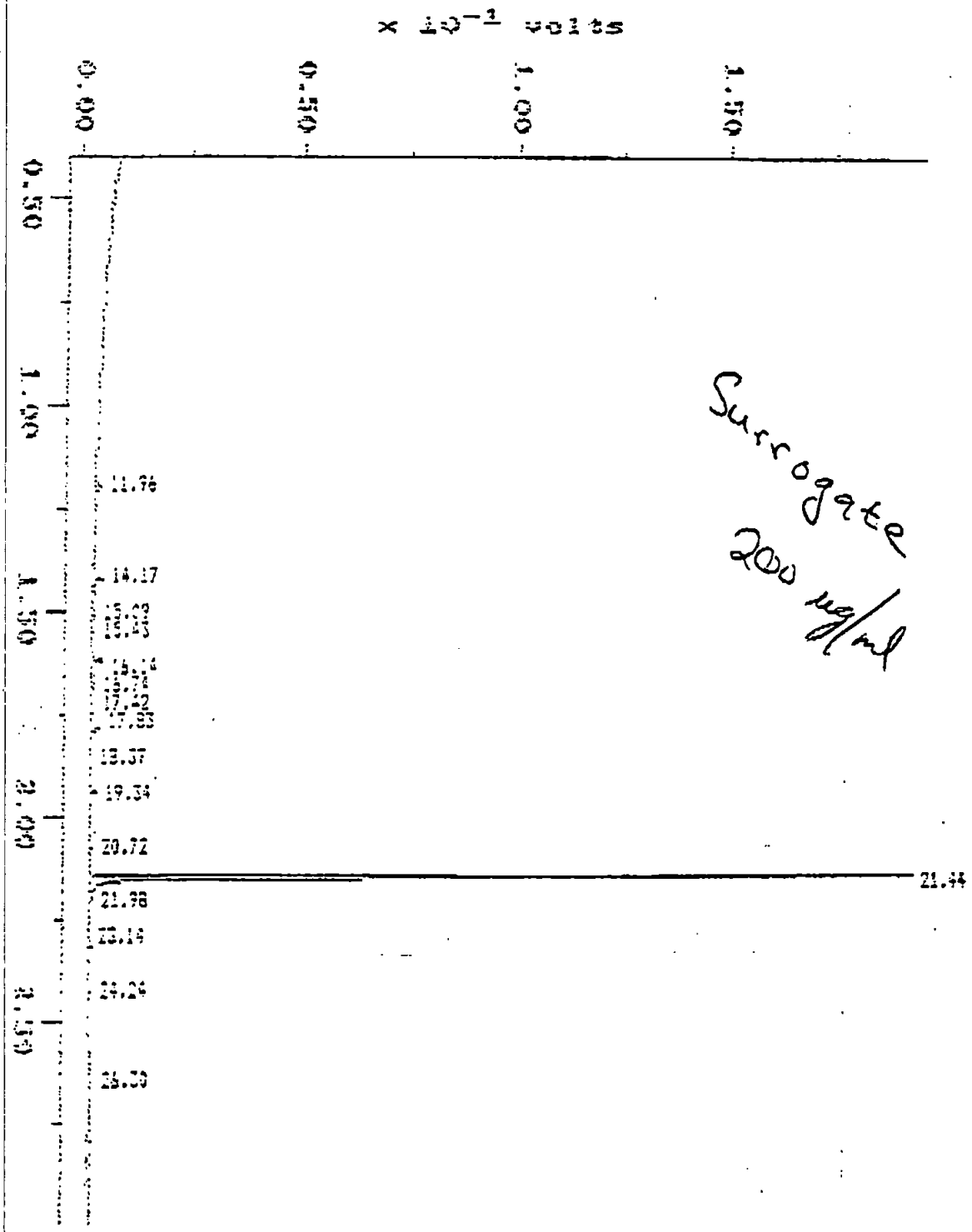
4781
C# (Blow up)

Sample: SURR .2MG/ML Channel: FID II DB-1701 Filename: SURR
Acquired: 13-MAR-90 19:07 Method: D:\MAX\TPH\TPH Operator: PK



Surrogate
200 ug/ml

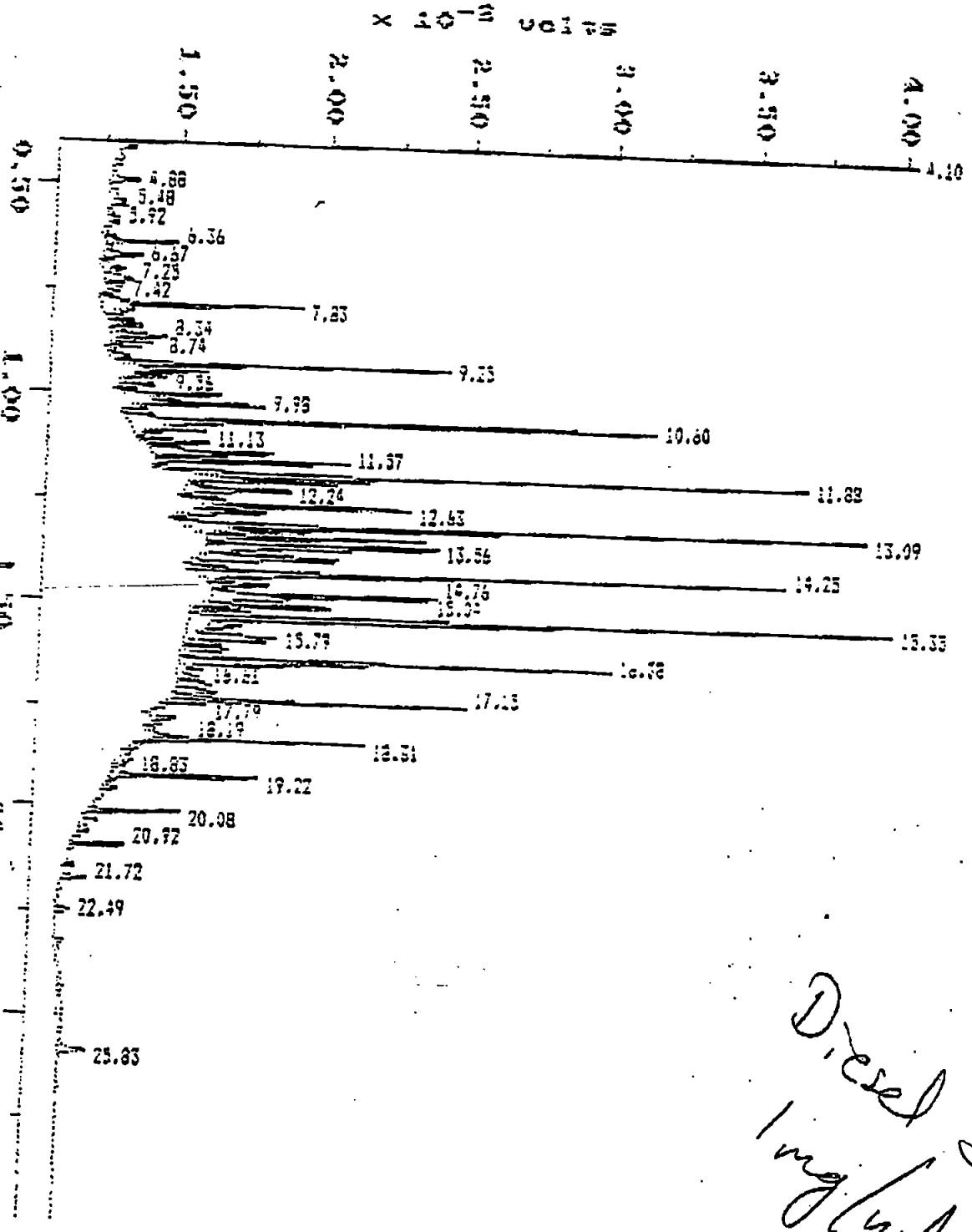
Sample: SURR .2MG/ML Channel: FID II DB-5 Filename: SURR
Acquired: 13-MAR-90 10:07 Method: D:\MAX\TPH\TPH Operator: PK



Surrogate
200 ug/ml

Sample: DIESEL 1MG/ML Channel: PID II 00-1791
Acquired: 13-MAR-90 11:39 Method: D:\MAX\TPH\TPH

Filename: DIESEL
Operator: PK

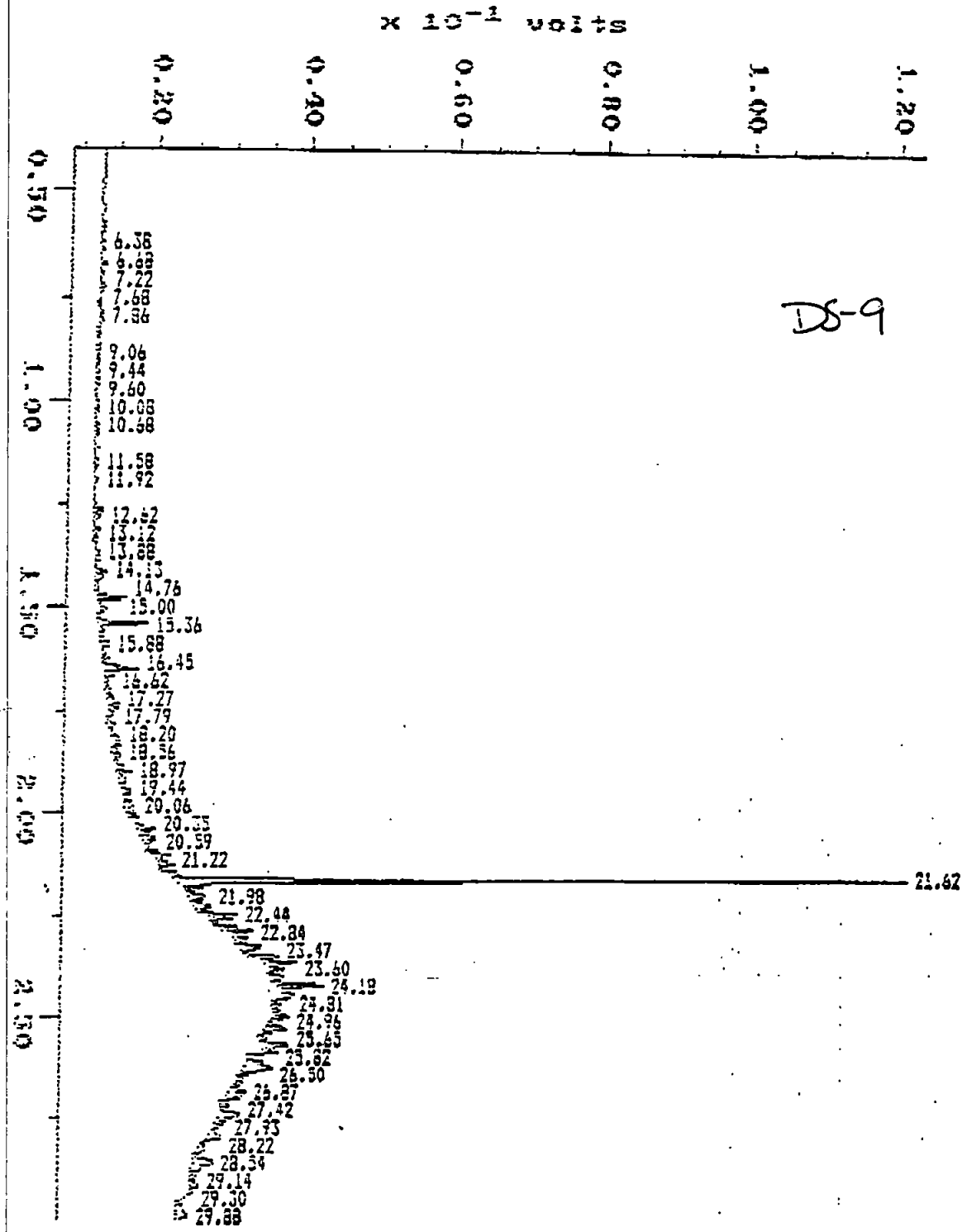


Diesel Standard
1 mg/ml

Sample: 48719
Acquired: 13-MAR-90 15:54

Channel: FID II DB-1701
Method: D:\MAX\TPH\TPH

Filename: 48719
Operator: PK



DS-9

ANALYTICAL RESOURCES INCORPORATED

Analytical
Chemists &
Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

19 March, 1990

David Babcock
Hart Crowser
1910 Fairview Ave. E.
Seattle, WA 98102-3699

RE: Project ID: Eastside Disposal #2616-03 / ARI Project No. 4871 II.

Dear David:

Please find the enclosed results for the above referenced Project.

If you have any questions or need additional information, please feel free to call any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Catherine Greer

Catherine P. Greer
Project Coordinator

CPG

enclosures

cc: file #4871 II

ANALYTICAL RESOURCES INCORPORATED

Analytical
Chemists &
Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

TOTAL PETROLEUM HYDROCARBONS BY GC/FID
Modified EPA Method 8015

Matrix: Soil

Project No.: Eastside Disposal #2616-03
QC Report No: 4871 II - Hart Crowser
VTSR: 03/12/90
(In-House)

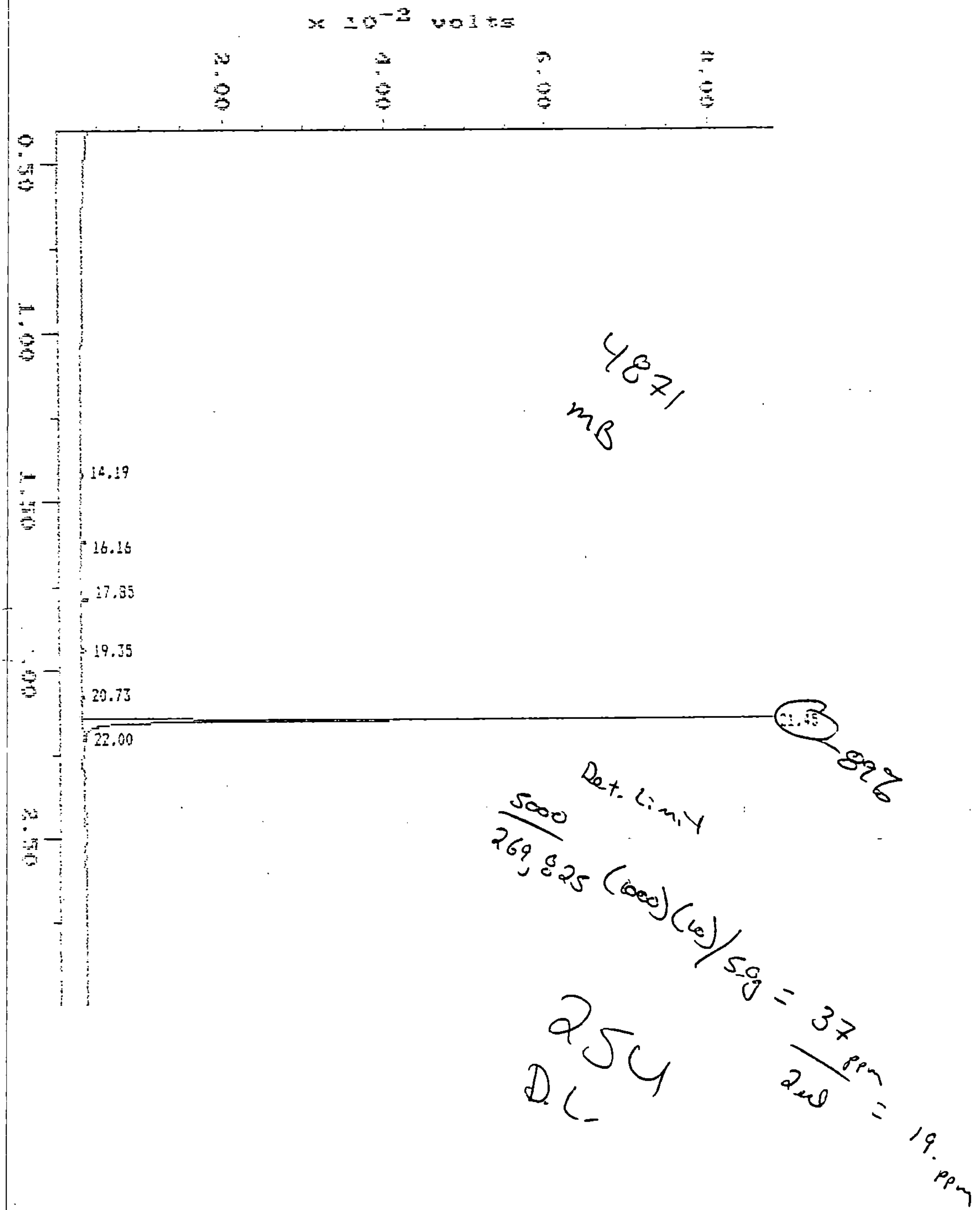
Data Release Authorized _____
Data Prepared: 03/16/90 - MAC:C C.G.

Date of Analysis: 03/16/90

Lab ID	Client Sample ID	TPH (ppm)	Pattern ID
4871 MB	*Method Blank*	25 U	—
4871 B	DS-8	25 U	—

U Indicates compound was analyzed for but not detected at the given detection limit.

Sample: 4871MB   Channel: FID II DB-5   Filename: 4871MB
Acquired: 15-MAR-90 21:20   Method: D:\MAX\TPH\TPH   Operator: PK



Sample: 4871MB
Acquired: 15-MAR-90 21:20

Channel: FID 1I DB-1701
Method: D:\MAX\TPH\TPH

Filename: 4871MB
Operator: PK

MAXIMA 820 CUSTOM REPORT

Printed: 15-MAR-1990 22:04:36

MPLE: 4871MB
#7 in Method: TPH
Acquired: 15-MAR-1990 21:20
Rate: 2.6 points/sec
Duration: 30.000 minutes
Operator: PK

Type: UNKN
Instrument: 5890-FID2
Filename: 4871MB
Index: 7

ETECTOR: FID II DB-5

Retention Time (minutes)	Peak Height	Peak Area	Type	Solution Conc (ug/ml)	Component Name
14.192	327	1530	BB		
16.155	748	3123	BB		
17.845	908	3680	BB		
19.353	715	3004	BB		
20.731	478	1949	BB		
21.446	84782 / 191,098	326444 89%	BB		
21.999	323	1331	BB		
	88250	341060		0.00	

3498

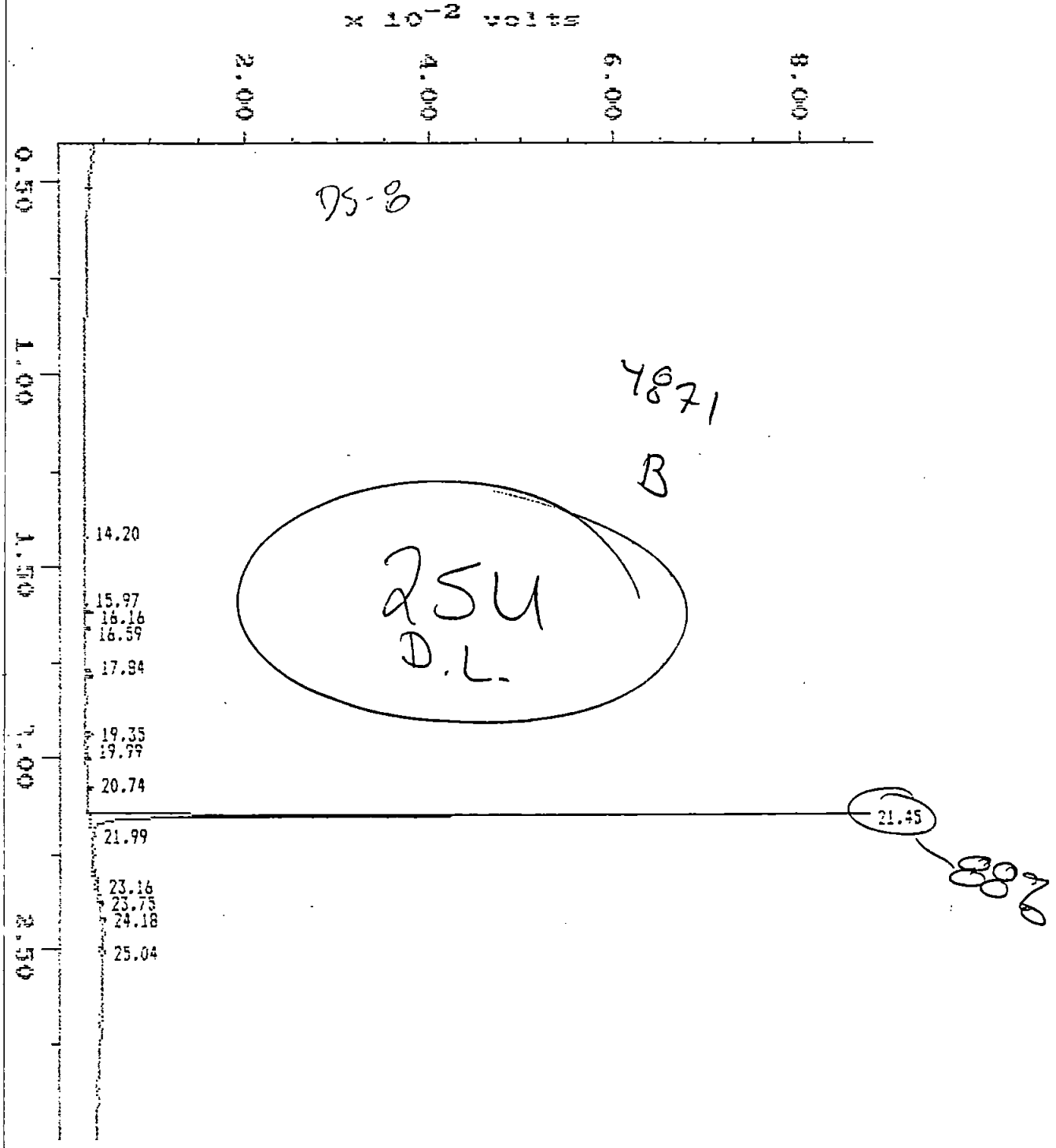
DETECTOR: FID II DB-1701

Retention Time (minutes)	Peak Height	Peak Area	Type	Solution Conc (ug/ml)	Component Name
14.738	666	2535	BB		
16.376	846	3029	BB		
17.813	676	2469	BB		
19.132	457	1636	BB		
20.322	333	1269	BB		
21.435	68656	291451	BB		
	71634	302589		0.00	

Sample: 4871B
Acquired: 15-MAR-90 22:03

Channel: FID II DB-5
Method: D:\MAX\TPH\TPH

Filename: 4871B
Operator: PK



DS-8

4871
B

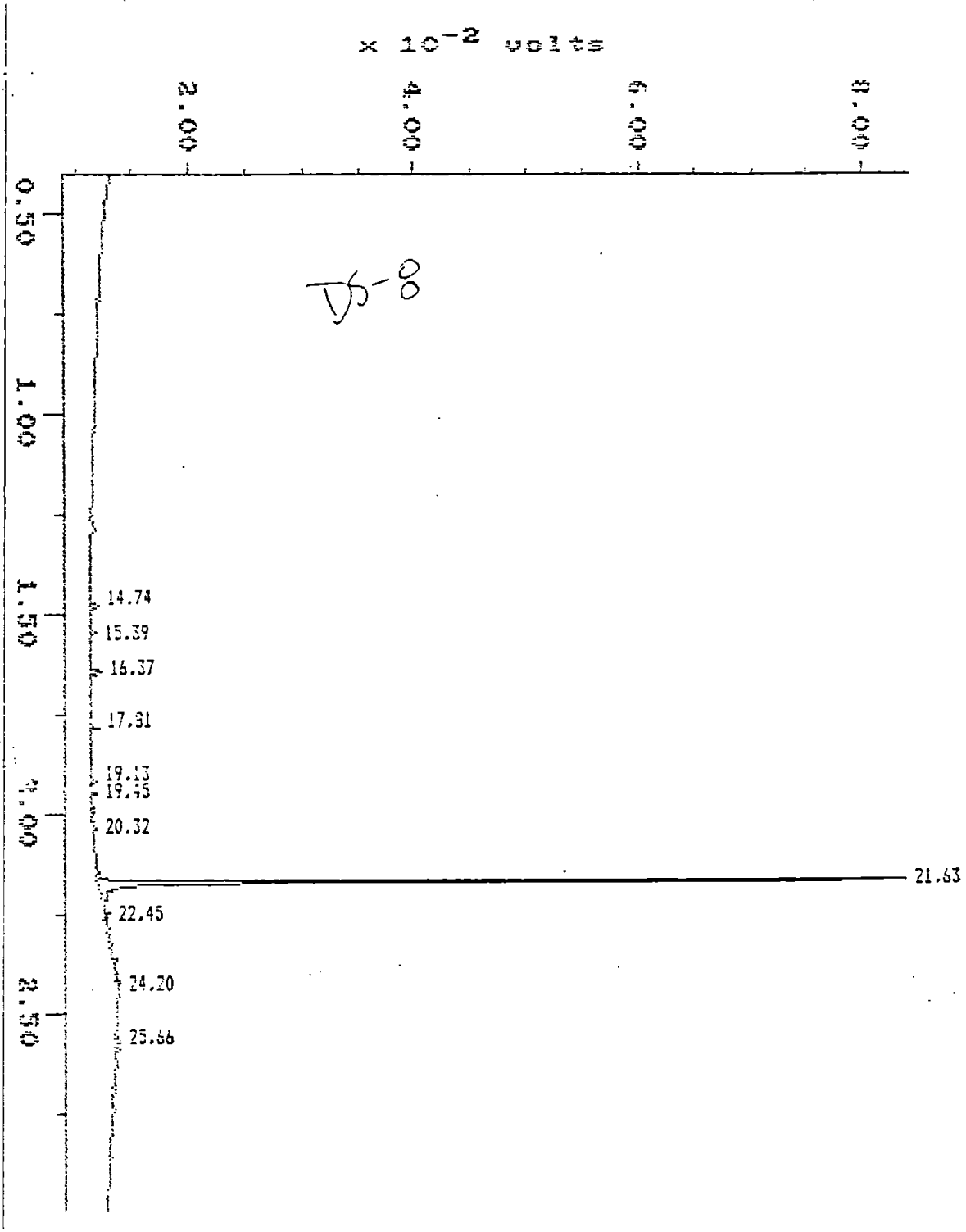
254
D.L.

887

Sample: 4871B
Acquired: 15-MAR-90 22:03

Channel: FID II DB-1701
Method: D:\MAX\TPH\TPH

Filename: 48718
Operator: PK



D-8

MAXIMA 820 CUSTOM REPORT

Printed: 15-MAR-1990 22:47:12

MPLE: 48713 Type: UNKN

#8 in Method: TPH Instrument: 5890-FID2

Acquired: 15-MAR-1990 22:03 Filename: 48713

Rate: 2.6 points/sec Index: 8

Duration: 30.000 minutes

Operator: PK

ETECTOR: FID II DB-5

Retention Time (minutes)	Peak Height	Peak Area	Type	Solution Conc (ug/ml)	Component Name
14.199	331	1689	BB		
15.967	306	1106	BP		
16.155	744	3106	PB		
16.591	580	1997	BB		
17.676	459	3147	BP		
17.839	889	3588	PB		
19.353	737	2260	BB		
19.990	372	2278	BB		
20.778	609	2341	BB		
21.453	83945	309040	BB		
21.955	762	1225	BB		
23.156	372	3966	BP		
23.747	387	2146	PB		
24.183	446	3073	BB		
25.041	475	2713	BB		
OTAL	91012	343574		0.00	

141,098

889

7,062

3,394

ETECTOR: FID II DB-1701

Retention Time (minutes)	Peak Height	Peak Area	Type	Solution Conc (ug/ml)	Component Name
14.736	564	3556	BB		
15.395	386	1699	BB		
16.370	860	4555	BB		
17.813	712	2459	BB		
19.132	495	1759	BB		
19.451	411	1284	BB		
20.322	389	2593	BB		
21.407	316	1145	BP		

..635	71733	276640	BB	
22.447	479	2732	BB	
24.196	330	2407	BB	
25.658	317	3673	BB	
	77293	304501		0.00

ANALYTICAL RESOURCES INCORPORATED

Analytical
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333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

19 March, 1990

David Babcock
Hart Crowser
1910 Fairview Ave. E.
Seattle, WA 98102-3699

RE: Project ID: Eastside Disposal #32-13181 / ARI Project No. 4901.

Dear David:

Please find the enclosed results for the above referenced Project.

If you have any questions or need additional information, please feel free to call any time.

Sincerely,

3'

ANALYTICAL RESOURCES, INC.

Catherine Greer

Catherine P. Greer
Project Coordinator

CPG

enclosures

cc: file #4901

ANALYTICAL RESOURCES INCORPORATED

Analytical
Chemists &
Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

TOTAL PETROLEUM HYDROCARBONS BY GC/FID
Modified EPA Method 8015

Matrix: Soils/Sediments

Data Release Authorized _____
Report Prepared: 03/16/90 - MAC:E

Project: 32-13181
Eastside Disposal
QC Report No: 4901-Hart Crowser
VTSR: 03/15/90

Date of Analysis: 03/15/90

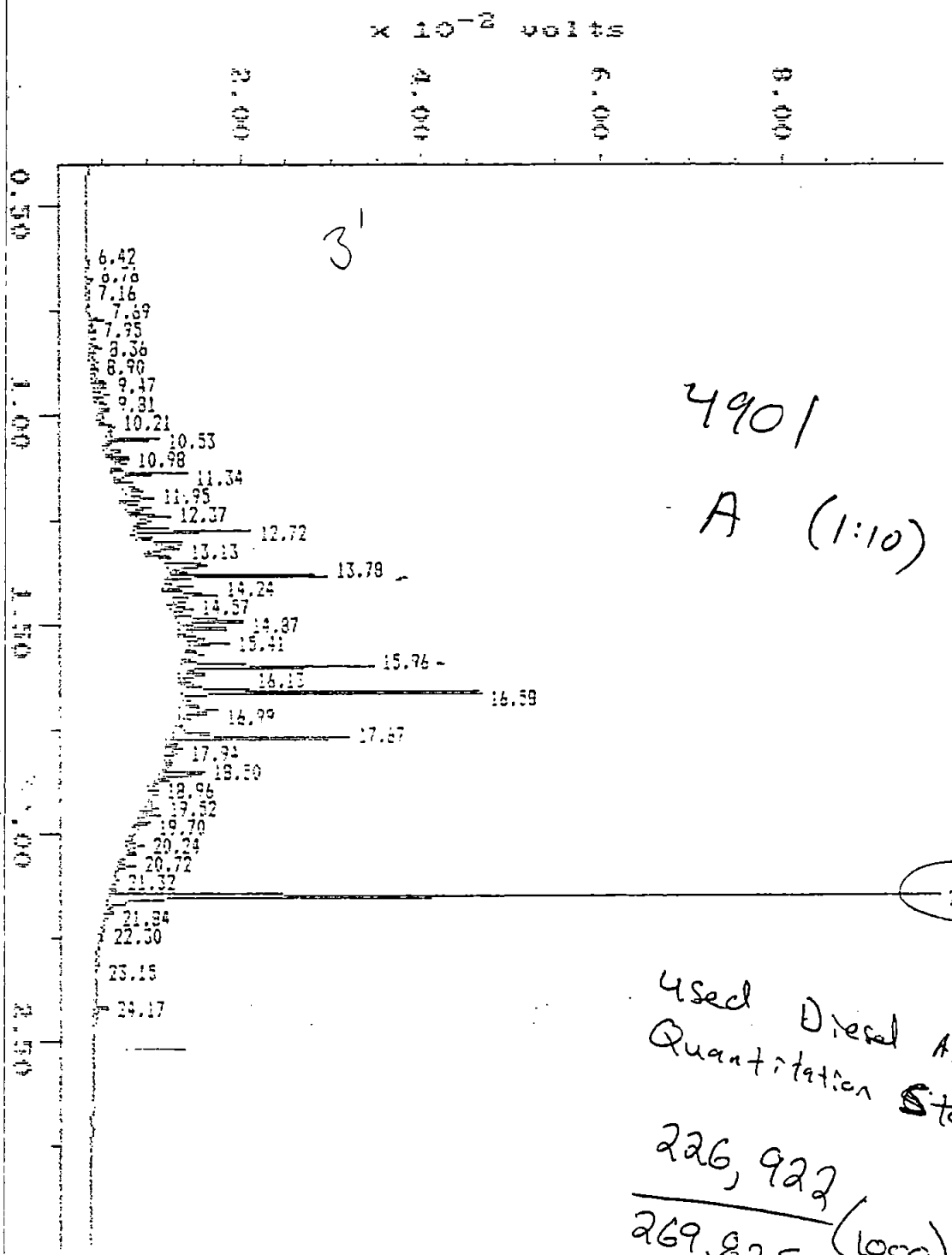
Lab ID	Client Sample ID	TPH (ppm)	Pattern ID
4901 MB	*Method Blank*	25 U	—
4901 A	*3'*	**1200**	**Diesel**

U Indicates compound was analyzed for but not detected at the given detection limit.

Sample: 4901A
Acquired: 15-MAR-90 22:45

Channel: FID 1 DB-5
Method: D:\MAX\TPH\TPH

Filename: 4901A
Operator: PK



3'

4901

A (1:10)

Used Diesel As Quantitation Std.

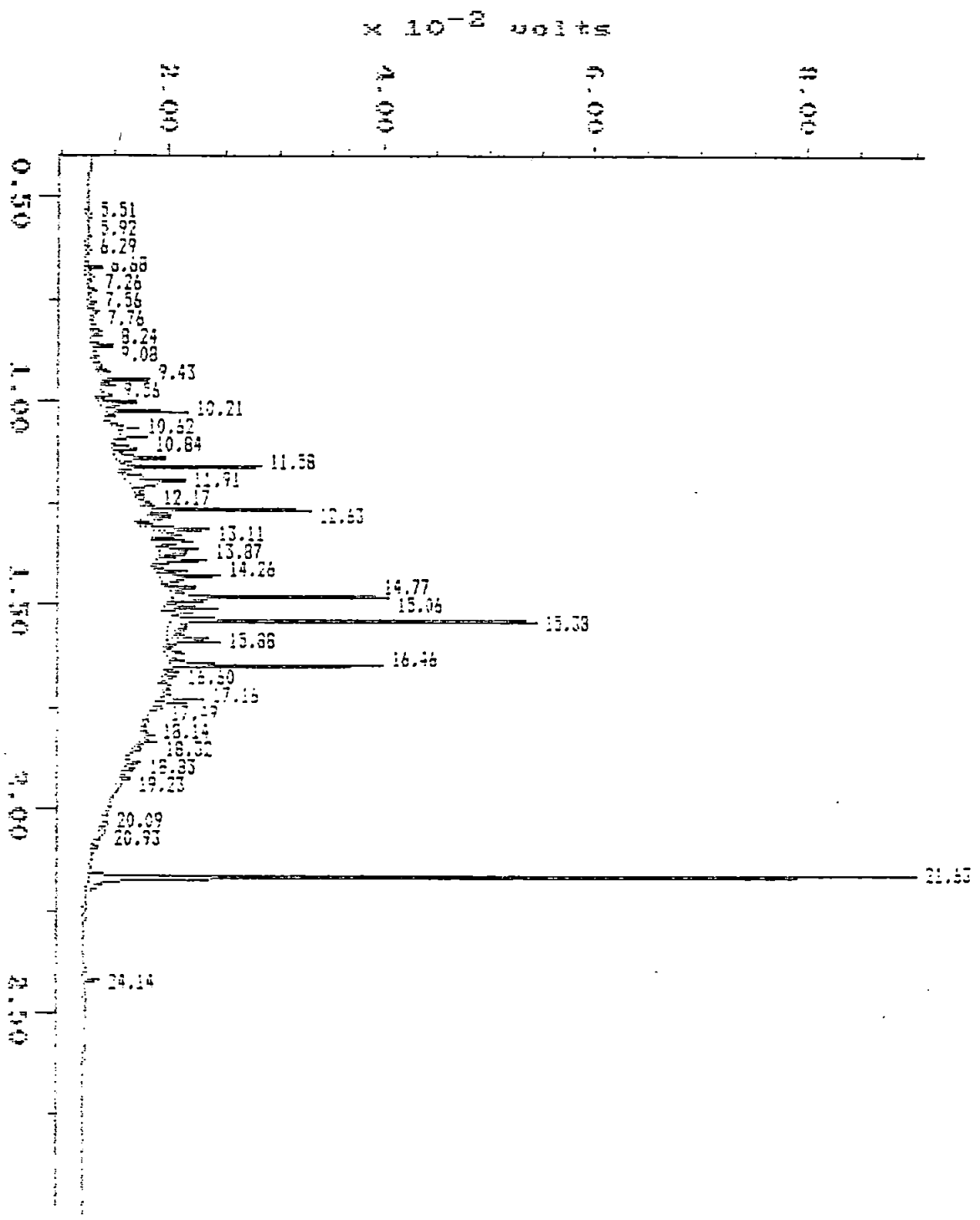
$$\frac{226,922}{269,825}(1000)(10)/674_g = 1,248 \text{ ppm}$$

1,200 ppm
Used Diesel Std

Sample: 4901A
Acquired: 15-MAR-90 22:45

Channel: FID 1 DB-1701
Method: D:\MAX\TPH\TPH

Filename: 4901A
Operator: PK



MAXIMA 820 CUSTOM REPORT

Printed: 15-MAR-1990 23:30:53

MPLE: 4901A
#9 in Method: TPH
Acquired: 15-MAR-1990 22:45
Rate: 2.6 points/sec
Duration: 30.000 minutes
Operator: PK

Type: UNKN
Instrument: 5890-FID2
Filename: 4901A
Index: 9

DETECTOR: FID II DB-5

Retention Time (minutes)	Peak Height	Peak Area	Type	Solution Conc (ug/ml)	Component Name
6.301	372	1615	BP		
6.425	435	1767	PP		
6.756	667	3431	PP		
7.010	383	2421	PP		
7.159	402	2123	PP		
7.692	1437	4819	PP		
7.946	751	3042	PP		
8.154	494	2440	PP		
8.355	999	5876	PP		
8.706	488	2961	PP		
8.901	570	3594	PP		
9.213	1231	10905	PP		
9.467	1519	6124	PP		
9.681	896	3829	PP		
9.811	1266	4974	PP		
9.935	546	4108	PP		
10.214	1045	3192	PP		
10.526	5721	24916	PP		
10.799	1807	9923	PP		
10.981	2008	6199	PP		
11.105	1163	7389	PP		
11.339	7913	30879	PP		
11.807	1777	24901	PP		
11.950	2834	8727	PP		
12.164	2930	20581	PP		
12.366	4044	13148	PP		
12.483	1598	7018	PP		
12.717	12663	45420	PP		
13.009	3098	18824	PP		
13.133	2088	7929	PP		
13.347	1627	8285	PP		
13.510	4419	32862	PP		
13.783	17111	53659	PP		
4.030	3071	13753	PP		

14.233	4990	22709	PP	
14.407	1553	9126	PP	
14.569	2489	12562	PP	
14.875	6844	42533	PP	
15.037	5106	28511	PP	
15.317	1796	10851	PP	
15.408	4120	19857	PP	
15.674	2182	12108	PP	
15.960	21129	90728	PP	
16.129	1995	11824	BB	
16.396	727	4353	PP	
16.584	32614	138585	PP	
16.773	667	1708	BV	
16.994	4027	19733	VB	
17.670	19441	74071	PP	
17.845	1161	4418	BV	
17.936	1672	5106	VV	
18.021	1170	5318	VV	
18.190	306	1598	VV	
18.294	743	1824	VV	
18.391	488	1533	VB	
18.502	4653	24230	PP	
18.671	1277	6779	PP	
18.963	1020	5013	PP	
19.134	575	1717	PP	
19.280	1439	6851	PP	
19.516	2179	7611	PP	
19.704	1559	6362	PP	
19.880	749	3643	PP	
20.237	1969	9603	PP	
20.432	1234	5741	PP	
20.725	1895	7663	PB	
21.316	541	2302	BP	
21.486	91480	322975	PB	
21.836	518	2663	BB	
22.298	305	1270	BB	
23.149	349	1307	BB	
24.170	1087	5916	BB	
	318402	1368701		0.00

191,088

962

226,922

DETECTOR: FID II DB-1701

Retention Time (minutes)	Peak Height	Peak Area	Type	Solution Conc (ug/ml)	Component Name
5.508	386	2461	BB		

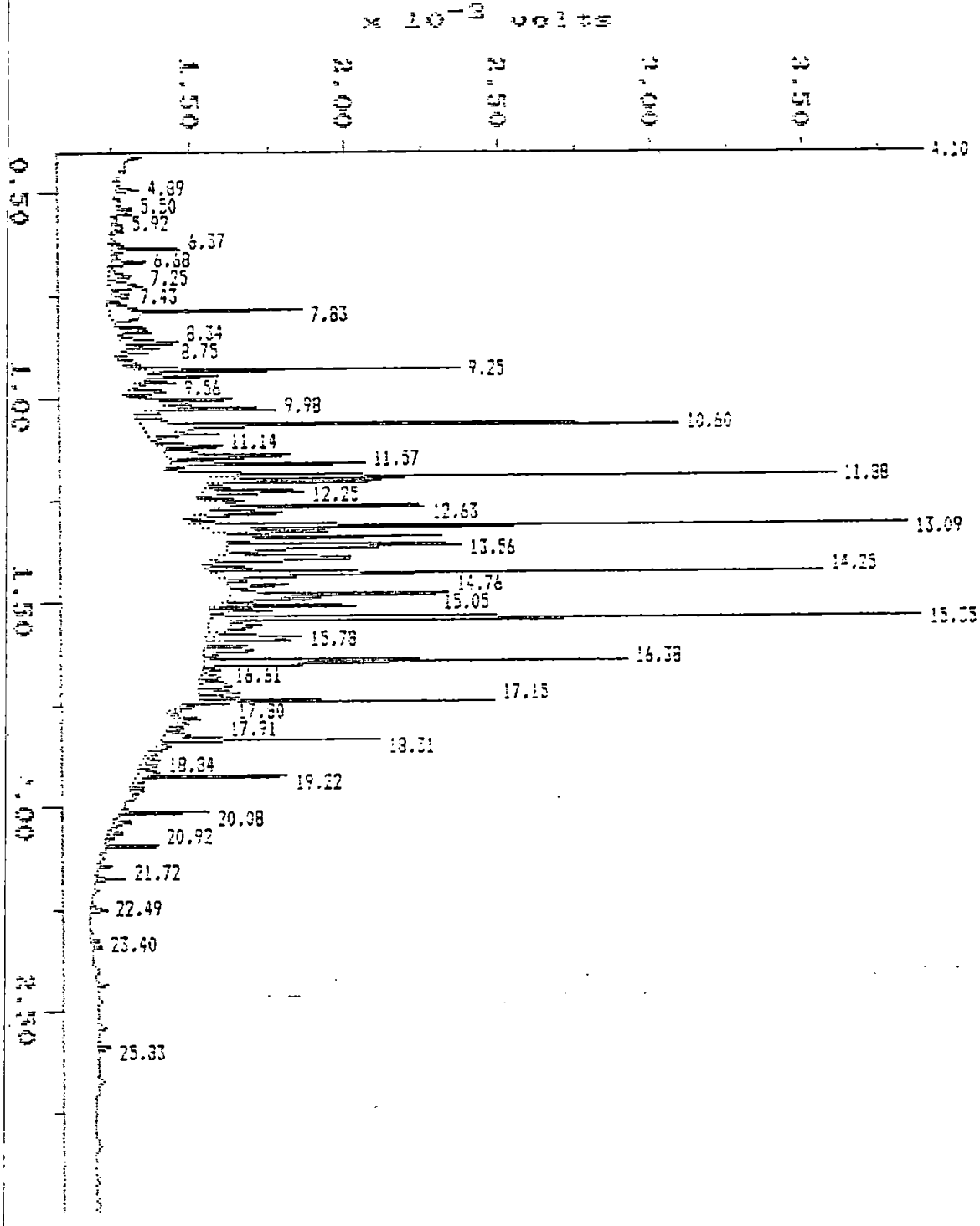
5.924	427	1573	PP
6.288	340	3634	PP
6.685	1508	7407	PP
6.945	620	4662	PP
7.263	681	3853	PP
7.556	723	3897	PP
7.764	1105	5714	PP
8.069	672	4546	PP
8.238	937	2798	PP
8.342	867	2947	PP
8.615	1965	12195	PP
8.869	749	2468	PP
9.077	727	3722	PP
9.220	994	4582	PP
9.434	4556	13296	PP
9.564	1322	5402	PP
9.818	1469	7215	PP
9.987	3336	17340	PP
10.214	7439	27473	PP
10.617	2072	8266	PP
10.845	2742	10597	PP
11.131	2001	11213	PP
11.365	4395	23211	PP
11.579	12747	39417	PP
11.911	5160	46367	PP
12.171	913	2647	PP
12.346	439	2354	PP
12.470	1095	3263	PP
12.626	15357	50941	PP
12.795	2556	16767	PP
13.107	5027	28415	PP
13.269	1703	5610	PP
13.412	3529	17109	PP
13.558	3044	24865	PP
13.874	4494	24991	PP
14.147	2713	7389	PP
14.264	5339	29505	PP
14.550	2549	13758	PP
14.771	20178	83332	PP
15.057	4802	17596	PP
15.174	2231	7092	PP
15.375	34448	149666	PP
15.531	732	3141	SS
15.791	3285	12523	SV
15.882	4324	14519	VS
16.149	1573	10098	PP
16.461	20310	73507	PP
16.604	1422	4460	SV
16.734	1229	6395	VS
17.026	968	6798	PP

17.163	947	3081	PP	
17.273	4068	11253	PP	
17.377	2869	7561	PP	
17.488	1145	4532	PP	
17.793	776	6429	PP	
18.138	1091	5854	PP	
18.320	1683	6236	PP	
18.495	955	6316	PP	
18.833	1313	5775	PP	
18.976	1156	3831	PP	
19.230	1174	15963	PP	
20.088	539	1961	PP	
20.322	669	4526	PP	
20.504	709	6246	PP	
20.926	367	2450	PB	
21.628	77500	292231	BB	
24.144	1250	3313	BB	
	302764	1282725		0.00

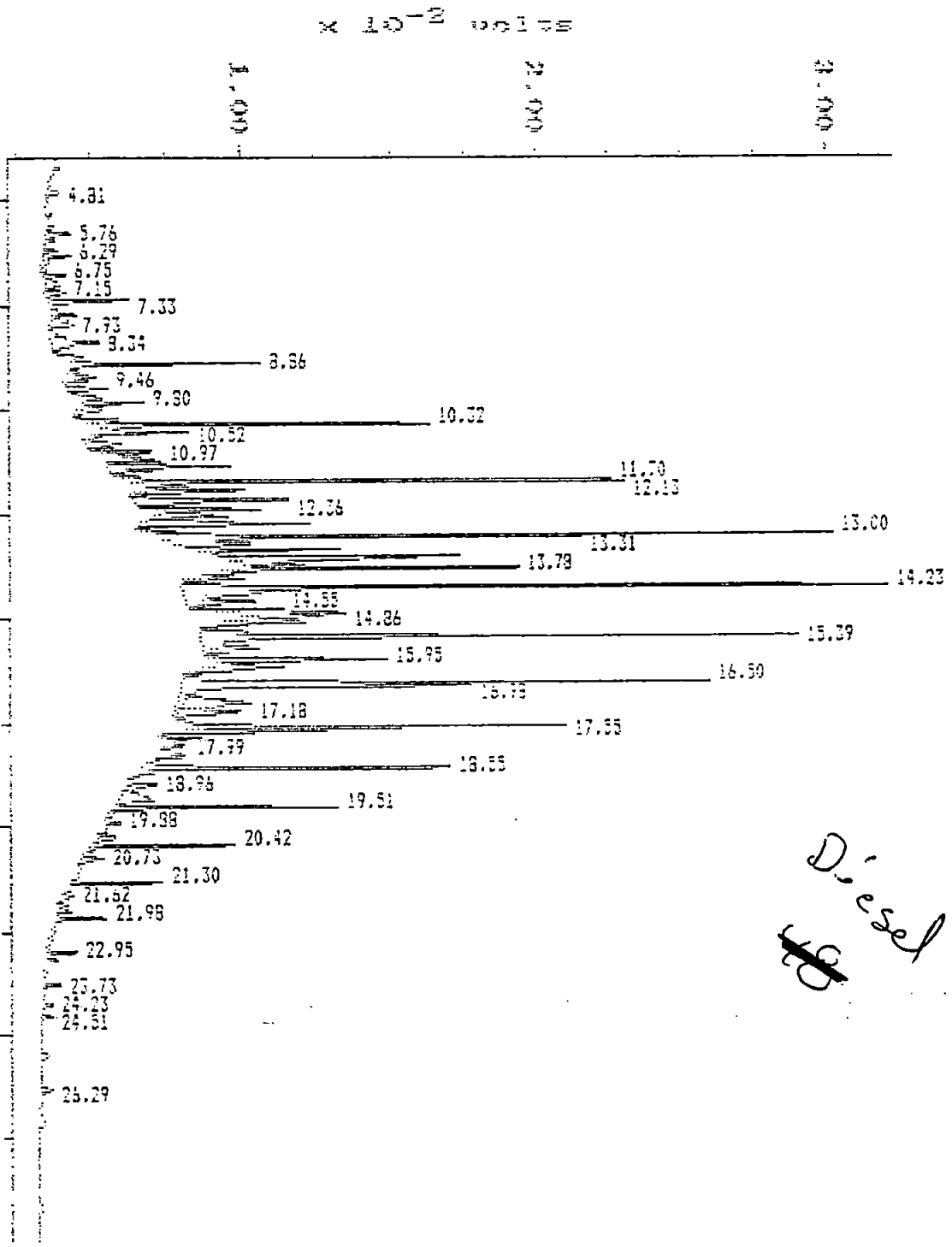
Sample: DIESEL4B
Acquired: 14-MAR-90 19:25

Channel: FID II DB-1701
Method: D:\MAX\TPH\TPH

Filename: DIESEL4B
Operator: PK



Sample: DIESEL48 Channel: FID 1 DB-5 Filename: DIESEL48
Acquired: 14-MAR-90 19:25 Method: D:\MAX\TPH\TPH Operator: PK



Diesel 1 mg/ml

MAXIMA 820 CUSTOM REPORT

Printed: 14-MAR-1990 20:10:37

MPLE: DIESEL48
#48 in Method: TPH
Acquired: 14-MAR-1990 19:25
Rate: 2.6 points/sec
Duration: 30.000 minutes
Operator: PK

Type: UNKN
Instrument: 5890-FID2
Filename: DIESEL48
Index: 48

ETECTOR: FID II DB-5

Retention Time (minutes)	Peak Height	Peak Area	Type	Solution Conc (ug/ml)	Component Name
4.806	378	2432	BB		
5.762	808	6440	BP		
6.145	432	1236	PP		
6.295	913	5680	PP		
6.750	725	3170	PP		
6.977	450	4231	PP		
7.146	702	3428	PP		
7.335	2706	11180	PP		
7.686	787	3194	PP		
7.926	797	7495	PP		
8.036	1667	15337	PP		
8.700	495	2357	PP		
8.862	6361	21099	PP		
9.200	1021	8781	PP		
9.460	1357	5802	PP		
9.668	839	3161	PP		
9.798	2029	7306	PP		
9.967	723	5565	PP		
10.318	11216	41329	PP		
10.520	2701	7361	PP		
10.786	1142	7715	PP		
10.975	1715	5425	PP		
11.092	707	2459	PP		
11.202	1387	3781	PP		
11.326	4040	20234	PP		
11.696	16690	55830	PP		
11.891	3188	16620	PP		
12.125	5172	31783	PP		
12.359	3607	11392	PP		
12.528	2369	11698	PP		
12.704	5590	25930	PP		
12.996	23047	99099	PP		
13.315	4890	15926	PP		
13.497	8091	50847	PP		

13.776	9406	30419	PP		
14.017	1589	6187	SS		
14.231	24013	105165	PP		
14.550	1834	9677	SS		
14.862	3782	32912	PP		
15.050	2352	13383	PP		
15.395	20456	85130	PP		
15.655	1459	8663	SS		
15.947	5739	24058	PP		
16.110	2419	14827	PP		
16.500	17944	102550	PP		
16.981	2291	25080	SV		
17.182	2109	12596	VS		
17.553	12557	38184	PP		
17.657	4668	13851	PP		
17.839	1061	3376	PP		
17.998	607	2793	PP		
18.281	1022	7472	PP		
18.554	10359	35513	PP		
18.757	1019	7026	SV		
19.334	1208	13335	VS		
19.509	7541	26169	PP		
19.880	508	2149	PB		
20.205	588	4082	BP		
20.419	4808	16497	PP		
0.731	760	3725	PB		
21.297	3103	9054	BP		
21.622	379	1478	BB		
21.830	317	1418	BV		
21.979	438	2018	VB		
22.142	1752	5551	PB		
22.948	1020	3541	BP		
23.136	381	1377	PB		
23.734	597	2183	BB		
24.235	340	1638	BB		
24.508	316	1247	BB		
26.289	334	2063	BB		
	269825	1201969		0.00	

DETECTOR: FID II 98-1701

Retention Time (minutes)	Peak Height	Peak Area	Type	Solution Conc (ug/ml)	Component Name
4.098	551	2870	BB		
4.391	729	3347	BP		

5.365	433	2241	PP
5.495	439	1374	PP
5.924	309	1266	PB
6.366	2117	8314	BP
6.678	1117	5991	PP
7.010	663	5135	PP
7.250	960	7549	PP
7.426	490	1582	PP
7.536	490	1804	PP
7.829	6172	33706	PP
8.232	862	2468	BP
8.342	1001	3164	PP
8.602	1616	9743	PP
8.745	1136	3996	PP
8.862	927	2727	PP
9.109	480	3136	PP
9.252	10383	30312	BB
9.429	2326	7485	BB
9.558	1085	4199	PP
9.772	1165	6120	BB
9.980	2661	8483	BB
10.110	795	3465	BB
10.214	3718	11768	BB
10.604	17550	73981	BB
10.838	1450	3432	SS
11.137	1949	8977	PP
11.358	3878	22750	BP
11.573	6325	22627	PP
11.878	20028	59020	PP
12.015	4992	15423	BP
12.249	3189	18392	BP
12.470	1194	4344	PP
12.626	6679	27690	PP
12.769	2485	15619	BB
13.094	23002	79869	PP
13.230	2604	10519	SS
13.373	6940	23839	PP
13.562	7560	43672	PP
13.887	4323	34219	PP
14.127	1439	6032	PP
14.251	19908	64999	PP
14.524	1854	8988	PP
14.764	8995	43853	PP
15.050	4059	14198	PP
15.161	1949	6062	BB
15.349	23136	97954	PP
15.518	968	5960	SS
15.785	2796	21704	SV
15.993	1299	8357	VS
16.103	1534	10256	PP

16.376	13813	56748	PP	
16.610	547	1912	SV	
16.792	646	4197	VV	
17.007	1025	7175	VV	
17.150	1275	6611	VV	
17.267	1315	3263	VS	
17.371	9717	23852	PP	
17.475	413	3137	SS	
17.800	794	3702	PP	
17.910	456	1966	PP	
18.313	7071	26664	PP	
18.482	485	3370	SV	
18.671	338	2326	VV	
18.840	538	3196	VV	
18.970	556	1809	VS	
19.217	4828	20939	PP	
19.548	430	1754	PB	
20.081	2866	8331	BP	
20.309	508	3787	PP	
20.588	496	3218	PP	
20.920	1696	5395	PB	
21.407	373	1652	BB	
21.719	917	2769	BB	
22.486	508	2901	BB	
23.403	303	2034	BB	
5.827	351	1922	BB	
	---	---		---
TOTAL	275274	1124598		0.00

Sample Custody Record

DATE 2/9/90 PAGE 1 OF 1

HARTCROWSER

Hart Crowser, Inc.
1910 Fairview Avenue East
Seattle, Washington 98102-3699

JOB NUMBER 2616-03 LAB NUMBER

PROJECT MANAGER DAVID BABCOCK

PROJECT NAME EASTSIDE DISPOSAL

SAMPLED BY: DAVID BABCOCK

LAB NO.	SAMPLE	TIME	STATION	MATRIX	TESTING: TPH 418.1	TESTING: TPH 8015M	NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
4631A	MW-1	2/8/90		H_2O	X		1	
4631B	TP-1	2/9/90		SOIL		X	1	LOW
4631C	TP-2	2/9/90		↓		X	1	
4631D	TP-3	2/9/90				X	1	HIGH
4631E	TP-4	2/9/90				X	1	

RELINQUISHED BY	DATE	RECEIVED BY	DATE
Signature: DAVID BABCOCK	2/9/90	Signature: Terrie Hedger	2/9/90
Printed Name: DAVID BABCOCK	TIME	Printed Name: Terrie Hedger	TIME
Company: HC	16:40	Company: ARI	16:40
RELINQUISHED BY	DATE	RECEIVED BY	DATE
Signature		Signature	
Printed Name	TIME	Printed Name	TIME
Company		Company	

TOTAL NUMBER OF CONTAINERS: 5

METHOD OF SHIPMENT: HAND DEL

SPECIAL SHIPMENT/HANDLING OR STORAGE REQUIREMENTS: 24 HR TURNAROUND

CONTACT DAVID BABCOCK ABOUT SCHEDULE

DISTRIBUTION:

1. PROVIDE WHITE AND YELLOW COPIES TO LABORATORY
2. RETURN PINK COPY TO PROJECT MANAGER
3. LABORATORY TO FILL IN SAMPLE NUMBER AND SIGN FOR RECEIPT
4. LABORATORY TO RETURN WHITE COPY TO HART CROWSER

ANALYTICAL RESOURCES INCORPORATED

Analytical
Chemists &
Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

06 April 1990

Mr. David Babcock
Hart Crowser, Inc.
1910 Fairview Ave. East
Seattle, WA 98102-3699

RE: Project No. 2616-04, Eastside Disposal / ARI Job. No. 6026

Dear Mr. Babcock:

Enclosed are final results for the above-referenced project. These results were faxed to you earlier today.

If you have any questions or require additional information, please feel free to call any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Michelle J. Turner
Project Coordinator

enclosures
cc: file

ANALYTICAL RESOURCES INCORPORATED

Analytical
Chemists &
Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

TOTAL PETROLEUM HYDROCARBONS BY GC/FID
Modified EPA Method 8015

Matrix: Soil

Project No.: #2616-04
QC Report No: 6026 - Hart Crowser
VTSR: 04/02/90
Date of Analysis: 04/05/90

Data Release Authorized _____
Data Prepared: 04/05/90 - MAC:C C.G.

Lab ID	Client Sample ID	TPH (ppm)	Pattern ID
6026 MB	*Method Blank*	25 U	—
6026 A	E-1	25 U	—
6026 B	**E-2**	**50**	**Diesel ***
6026 C	**E-3**	**350**	**Diesel ***
6026 D	E-4	25 U	—
6026 E	**E-5**	**2200**	**Diesel ***
6026 F	S-10	25 U	—

U Indicates compound was analyzed for but not detected at the given detection limit.
* Indicates a hit within the retention time range of the listed petroleum product but not an exact pattern match.

Sample Custody Record

DATE 4/2/90 PAGE 1 OF

HARTCROWSER

Hart Crowser, Inc.
1910 Fairview Avenue East
Seattle, Washington 98102-3699

JOB NUMBER 2616-04 LAB NUMBER

PROJECT MANAGER DAVID BABCOCK

PROJECT NAME EASTSIDE DISPOSAL

SAMPLED BY: DAVID BABCOCK

LAB NO.	SAMPLE	TIME	STATION	MATRIX	TESTING: 8015 mod.	NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
6026A	E-1			SOIL		1	
6026B	E-2					1	
6026C	E-3					1	
6026D	E-4					1	
6026E	E-5					1	
6026F	S-10					1	

4/6/90

RELINQUISHED BY	DATE	RECEIVED BY	DATE
Signature: [signature]	4/2	Signature: Terrie Hedger	4/3/90
Printed Name: DAVID BABCOCK	TIME	Printed Name: Terrie Hedger	TIME
Company: HC	12:18	Company: ARI	12:18
RELINQUISHED BY	DATE	RECEIVED BY	DATE
Signature:		Signature:	
Printed Name:	TIME	Printed Name:	TIME
Company:		Company:	

TOTAL NUMBER OF CONTAINERS: 6

METHOD OF SHIPMENT:

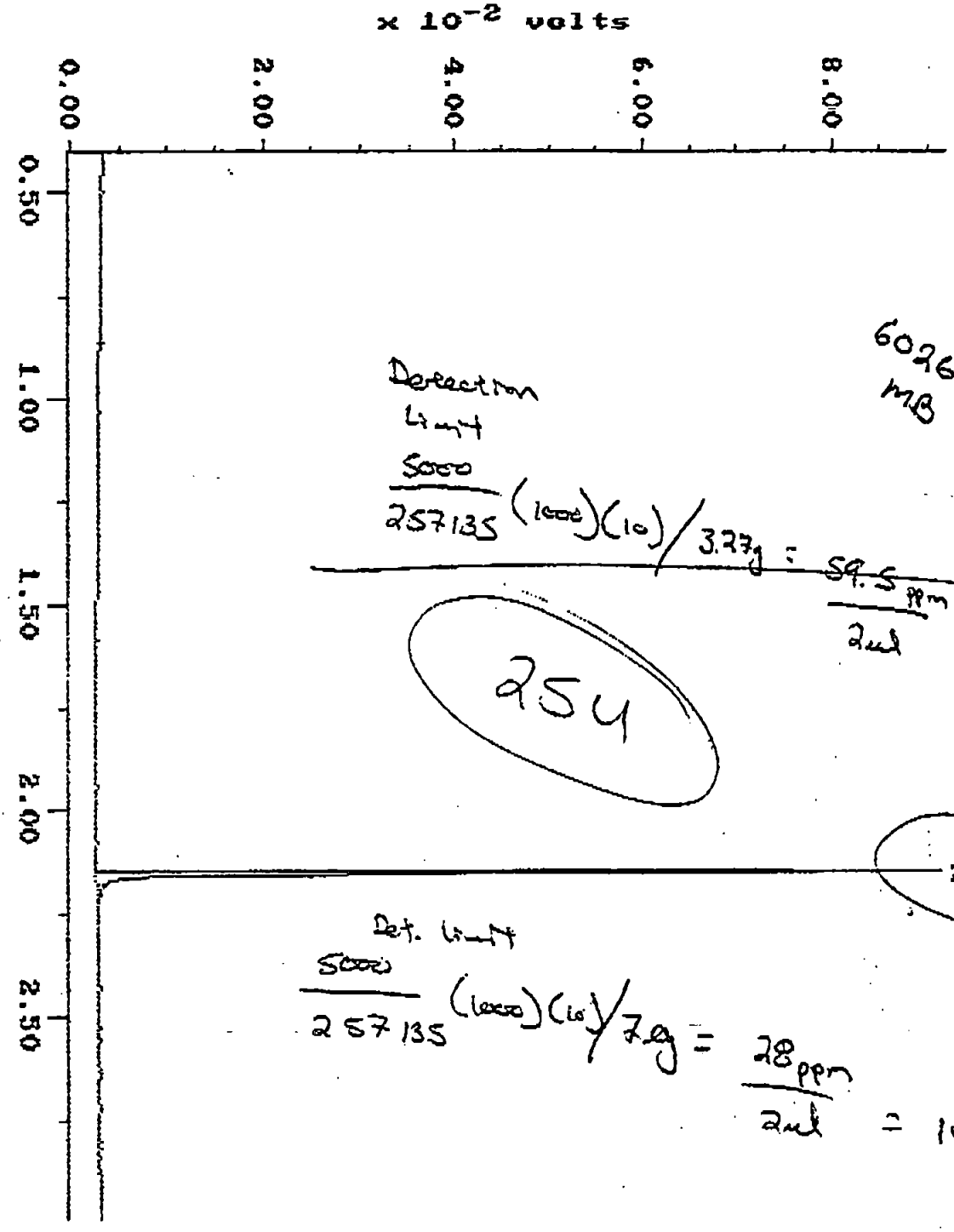
SPECIAL SHIPMENT/HANDLING OR STORAGE REQUIREMENTS

ONE WEEK TURN AROUND

DISTRIBUTION:

1. PROVIDE WHITE AND YELLOW COPIES TO LABORATORY
2. RETURN PINK COPY TO PROJECT MANAGER
3. LABORATORY TO FILL IN SAMPLE NUMBER AND SIGN FOR RECEIPT
4. LABORATORY TO RETURN WHITE COPY TO HART CROWSER

Sample: 60264 Channel: FID II DB-5 Filename: 60264
Acquired: 04-APR-90 9:13 Method: D:\MAX\TPH\TPH Operator: PK



6026 MB

Detection Limit

$\frac{5000}{257135}(1000)(10)/3.27_g = \frac{59.5_{ppm}}{2ml} = 30_{ppm}$

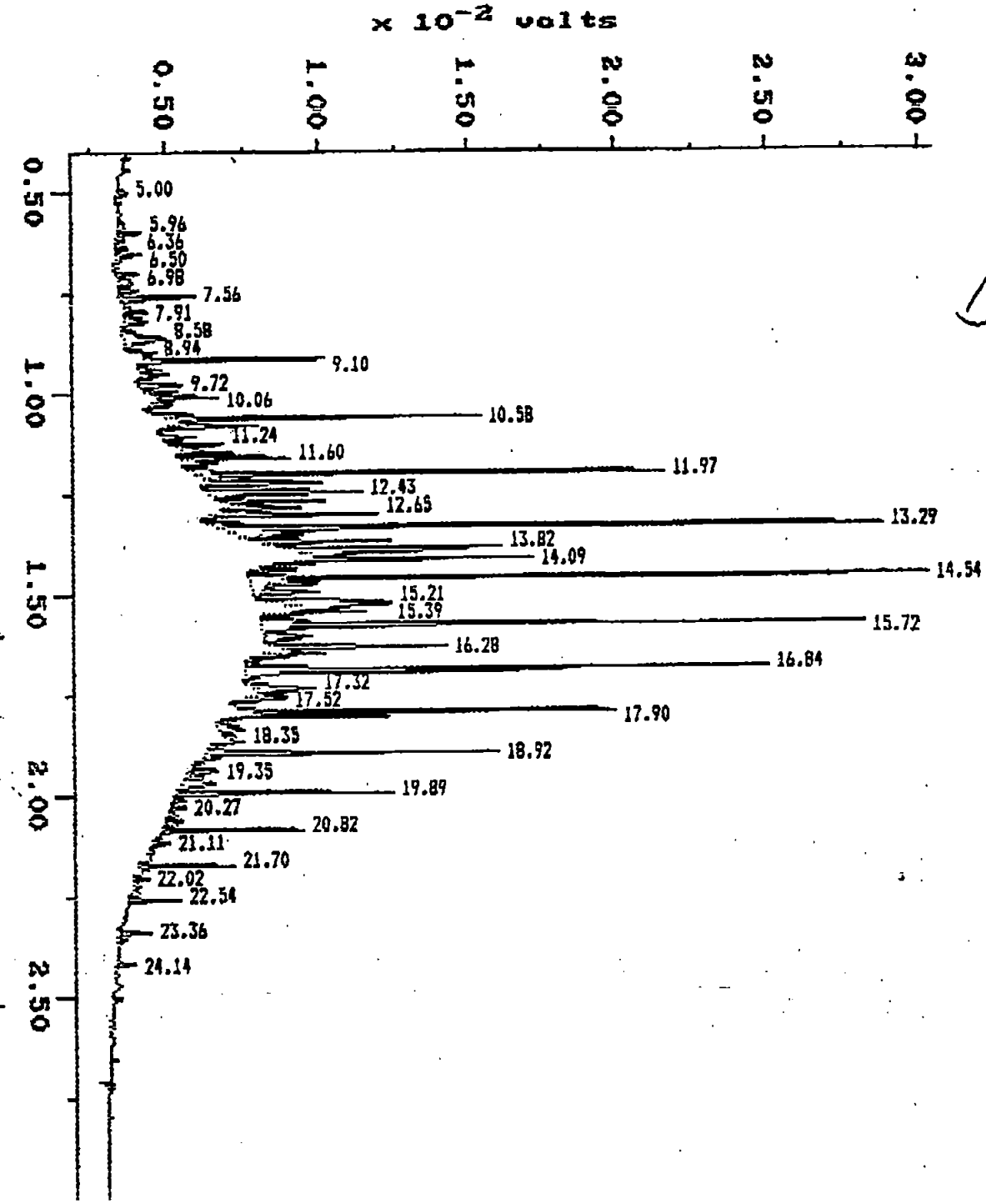
254

Det. Limit

$\frac{5000}{257135}(1000)(10)/7_g = \frac{28_{ppm}}{2ml} = 14_{ppm}$

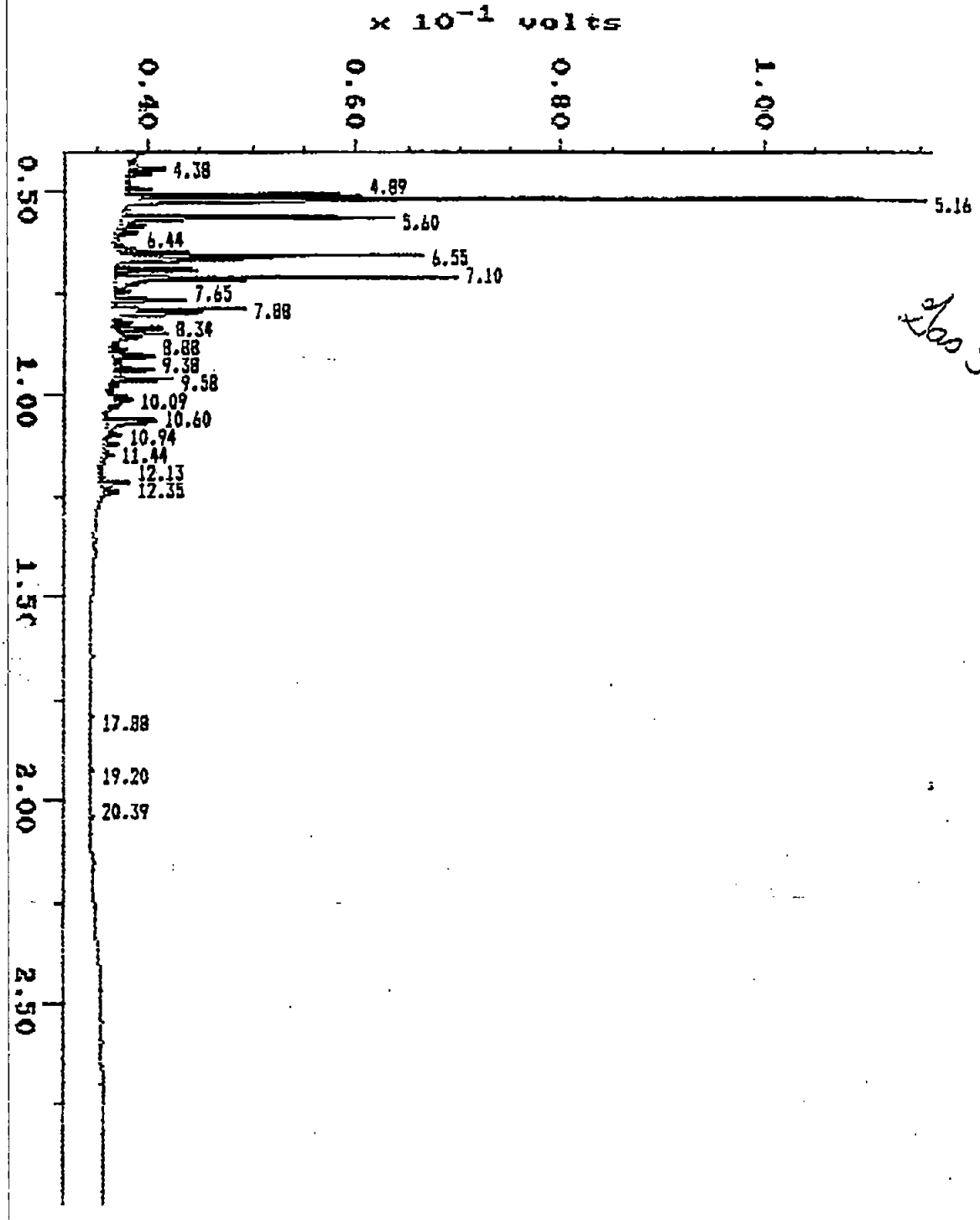
100%

Sample: DIESEL
Acquired: 04-APR-90 8:31
Channel: FID II DB-5
Method: D:\RAX\TPH\TPH
Filename: DIESEL
Operator: PK



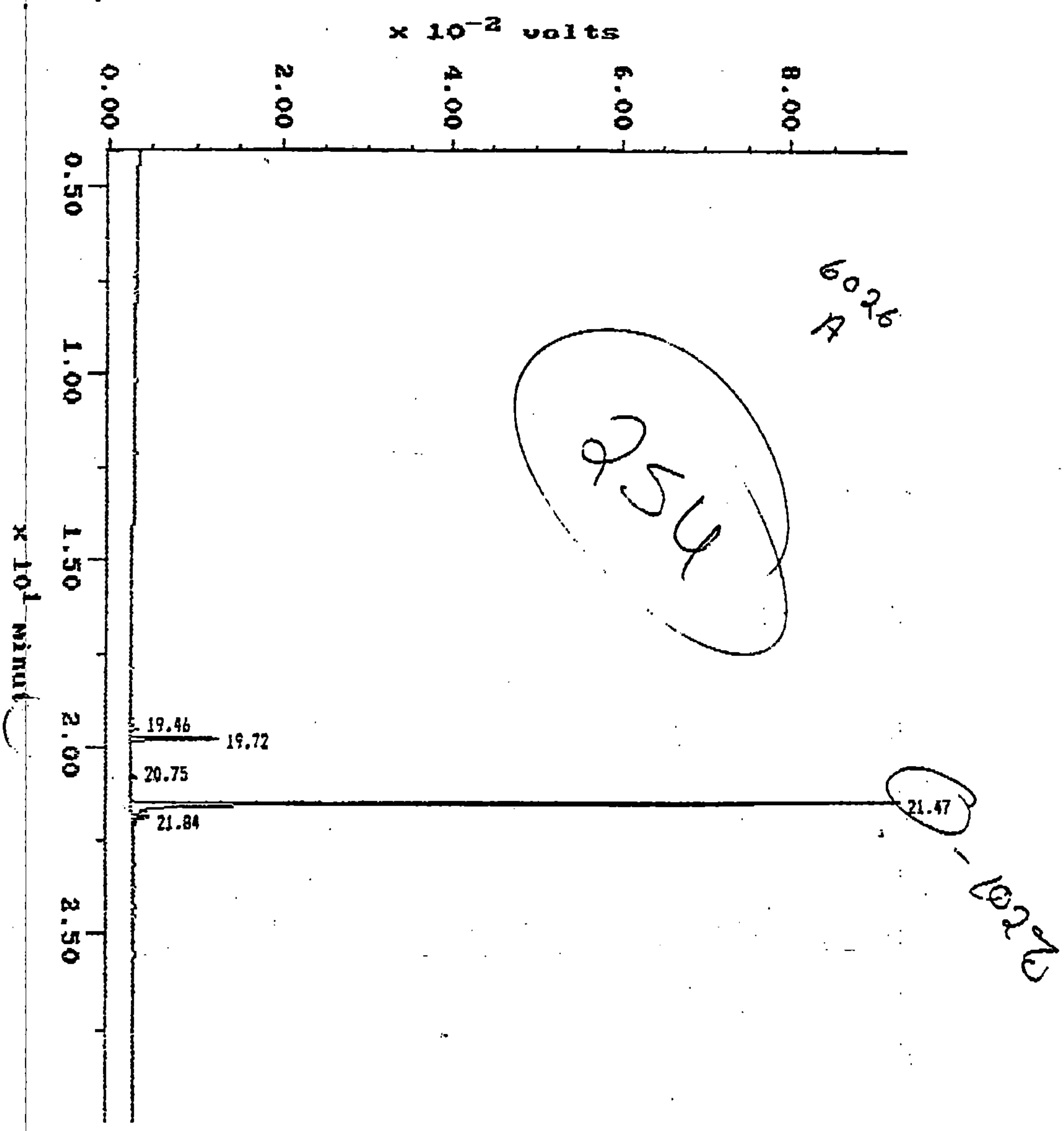
Diesel Std.

Sample: GAS
Acquired: 04-APR-90 7:48
Channel: FID II DB-1701
Method: D:\MAX\TPH\TPH
Filename: GAS
Operator: PK

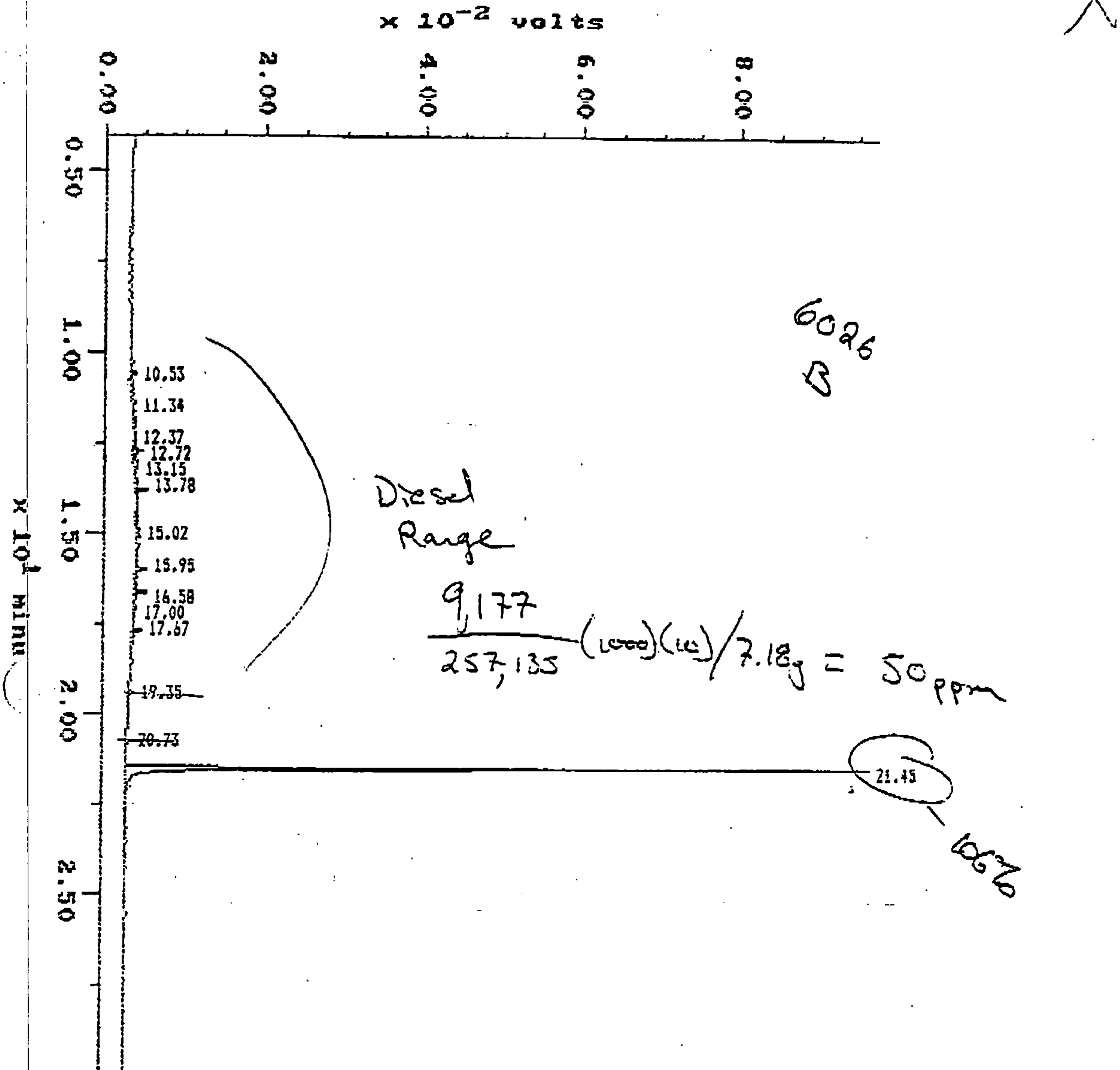


100 Std.

Sample: 60265 Channel: FID II DB-5 Filename: 60265
Acquired: 04-APR-90 9:56 Method: D:\MAX\TPH\TPH Operator: PK



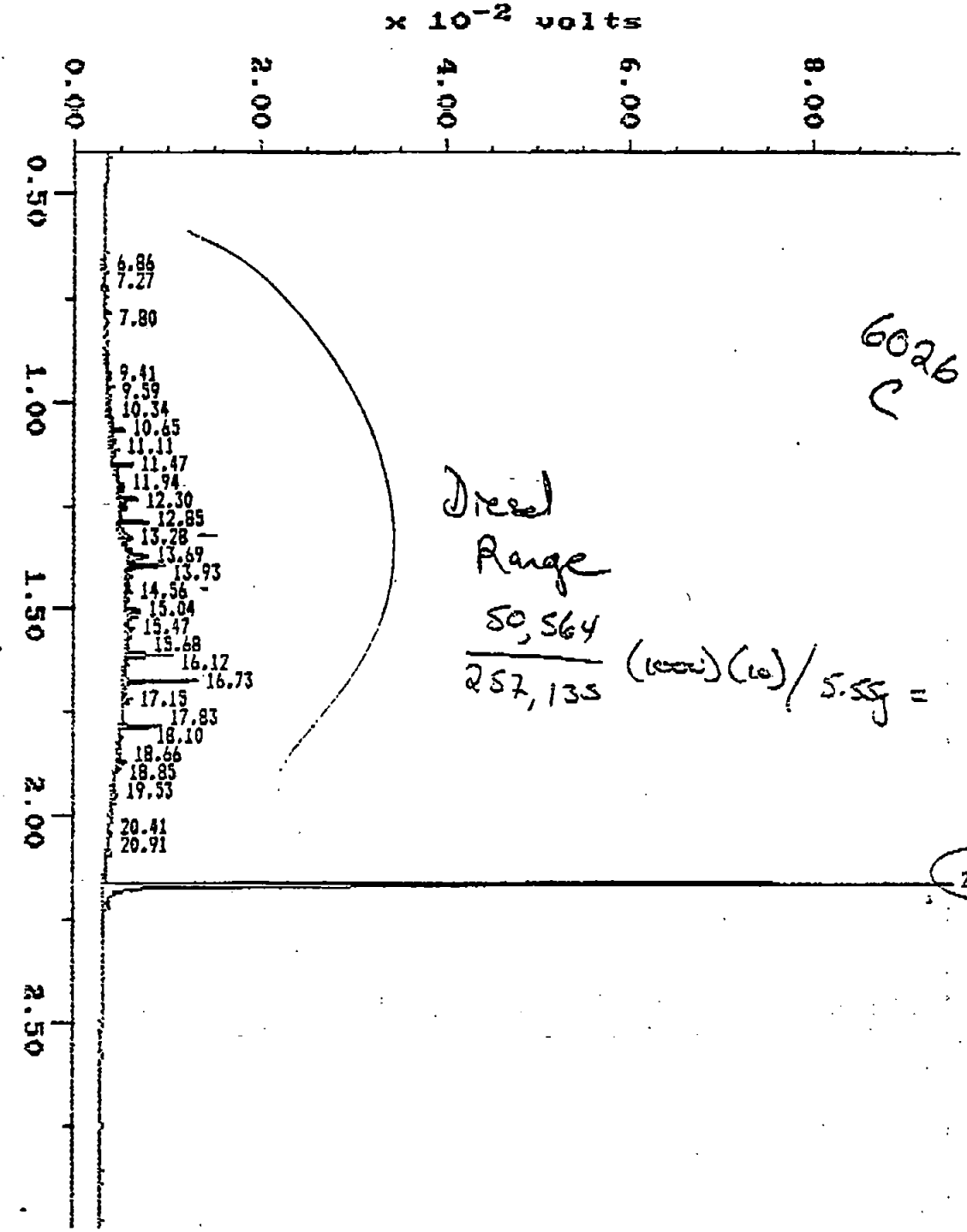
Sample: 60266 Channel: FID II DB-5 Filename: 60266
Acquired: 04-APR-90 10:39 Method: D:\MAX\TPH\TPH Operator: PK



Sample: 60267
Acquired: 04-APR-90 11:22

Channel: FID II DB-5
Method: D:\MAI\TPH\TPH

Filename: 60267
Operator: PK



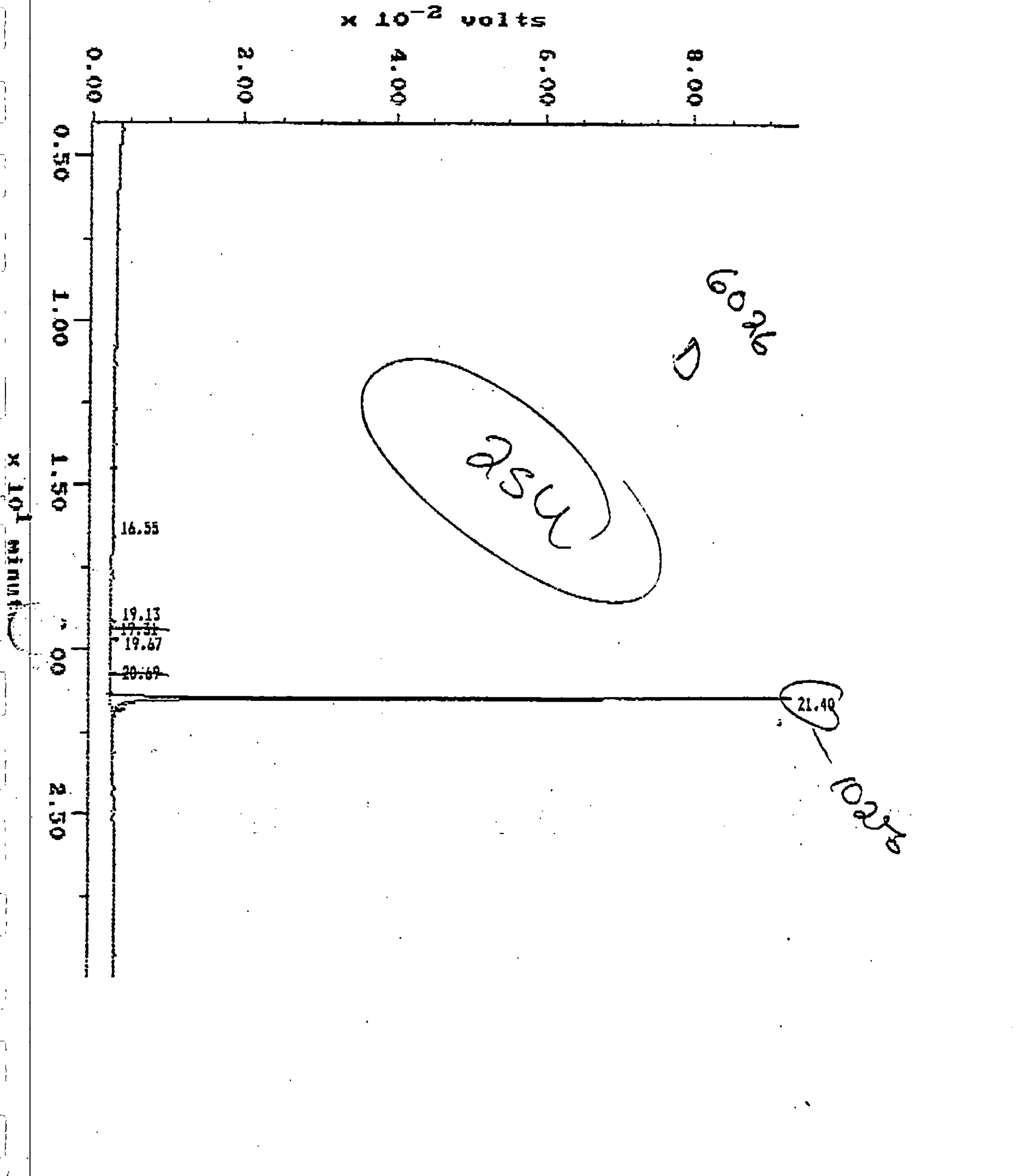
6026
C

Diesel Range

$\frac{50,564}{257,135}$ (1000)(10)/5.55 = 350 ppm

1047b

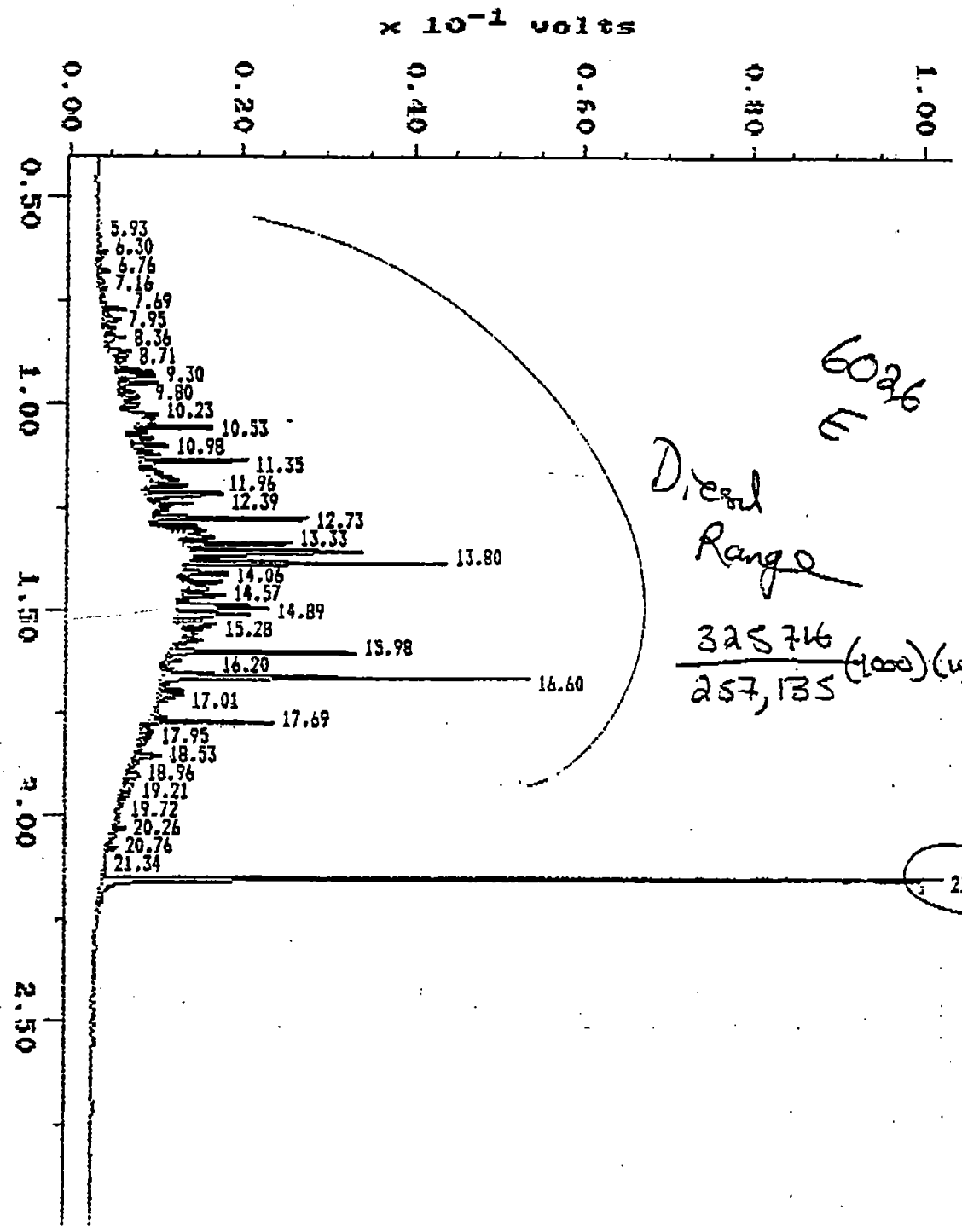
Sample: 60268 Channel: FID II DB-5 Filename: 60268
Acquired: 04-APR-90 12:04 Method: D:\MAX\TPH\TPH Operator: PK



Sample: 60269
Acquired: 04-APR-90 12:47

Channel: FID II DB-5
Method: D:\MAX\TPH\TPH

Filename: 60269
Operator: PK



6026
E

Diesel Range

$\frac{325716}{257,135}(1000)(10)/5.64g = 2,200\ ppm$

Sample: 602610
Acquired: 04-APR-90 13:30

Channel: FID 11 DB-5
Method: D:\MAX\TPH\TPH

Filename: 602610
Operator: PK