

SITE ASSESSMENT SUMMARY REPORT
for
UST Removals at Yakima Fire Station #1
Yakima, Washington

1.0 General

This field report describes the work performed on the above referenced project at Fire Station #1 in Yakima, Washington. Surrounding land use is primarily light industrial and commercial. The Project General Contractor was CEcon Corporation (CEcon), headquartered in Tacoma, Washington.

2.0 Project Objectives

The objectives of the work were to remove one (1) 500 gallon diesel underground storage tank (UST), one (1) 500 gallon unleaded gasoline UST, and associated piping and ancillary equipment, to identify any potential soil contamination caused by the USTs and to remove and dispose of petroleum contaminated soil (PCS) if encountered. The site was to be restored to grade and concrete slab replaced after UST removal and disposal. A general location map and site layout map are included in Appendix A.

3.0 Notifications/Permits

In October 1997, a 30 day intent to close notice was submitted to Washington State Department of Ecology (WDOE). On 13 November 1997, CEcon submitted a UST Removal Checklist to City of Yakima Code Administration for the USTs slated for removal. A Copy of the UST Removal Checklist is included in Appendix B.

4.0 Field Work

CEcon personnel initiated and completed site work in November 1997.

4.1 UST Removal/Decommissioning. CEcon personnel uncovered the USTs' piping and triple rinsed the two tanks. A total of 120 gallons of waste water was pumped from the two tanks during the rinse process and disposed of at Emerald Petroleum Services. On 18 November 1997, CEcon personnel placed approximately thirty (30) pounds of dry ice in the unleaded gasoline UST and twenty (20) pounds in the diesel UST to inert the vapor space with CO₂. The USTs' internal atmospheres were checked for percent oxygen. When the oxygen levels measured below 10%, the USTs were determined to be safe for removal. CEcon personnel excavated and stockpiled overburden material on visqueen at the site. Excavated material consisted of sand and pea gravel. Native soil was not encountered. The USTs' piping was dismantled and removed. CEcon

personnel removed the USTs, which were approximately 3 feet below grade, from the excavation using a backhoe. The USTs were transported to an offsite staging area for cleaning and subsequent disposal at Schnitzer Steel Industries, Inc. of Tacoma. Disposal receipts, including receipts for UST rinsate and tank disposal, are included in Appendix C.

During excavation and stockpiling, soil was field screened using a Foxboro Miran IFF Infrared Spectrometer (IR). Field screening of soil from the UST excavation indicated that there was no total petroleum hydrocarbon (TPH) contamination above the Model Toxics Control Act (MTCA) cleanup level of 200 parts per million (ppm). Field screening of soil from under the dispensers indicated high levels of TPH contamination. Confirmation samples were collected from the UST excavation and from under the dispensers and submitted to Sound Analytical Services in Tacoma, Washington. Analytical results for the confirmation samples are summarized in Appendix B.

4.1.2 Sample Collection. On 18 November 1997, Andrew J. Riddell, a WDOE registered site assessor, collected discrete grab soil samples from six (6) locations within the UST excavation and one (1) location under the dispensers. Two (2) composite samples consisting of two (2) discrete grab samples from adjacent sidewalls, two (2) discrete grab samples from under the tank locations and one (1) discrete grab sample from under the dispensers were submitted to Sound Analytical Services. The soil samples were analyzed for gasoline range TPH and BTEX contamination by WTPH-G/EPA 8020 and diesel range TPH contamination by method WTPH-D.

4.1.3 Laboratory Results. Laboratory analytical results indicated that TPH and BTEX concentrations in the samples collected from the excavation were below MTCA cleanup levels. Laboratory analytical results from under the dispensers indicated a TPH concentration of 20,000 mg/kg. Soil sample locations are provided on the site layout map included in Appendix A. Analytical data sheets for field and QC samples are included in Appendix D.

4.1.4 Remedial Action. No remedial action was required in association with the USTs. Contaminated soil associated with the dispensers could not be removed due to proximity to the fire station building.

4.1.5 Site Restoration. On 18 November 1997, the UST excavation was backfilled and compacted with imported fill material per the contract specifications. The site was graded to match surrounding conditions and previously removed concrete was replaced.

5.0 Project Documentation

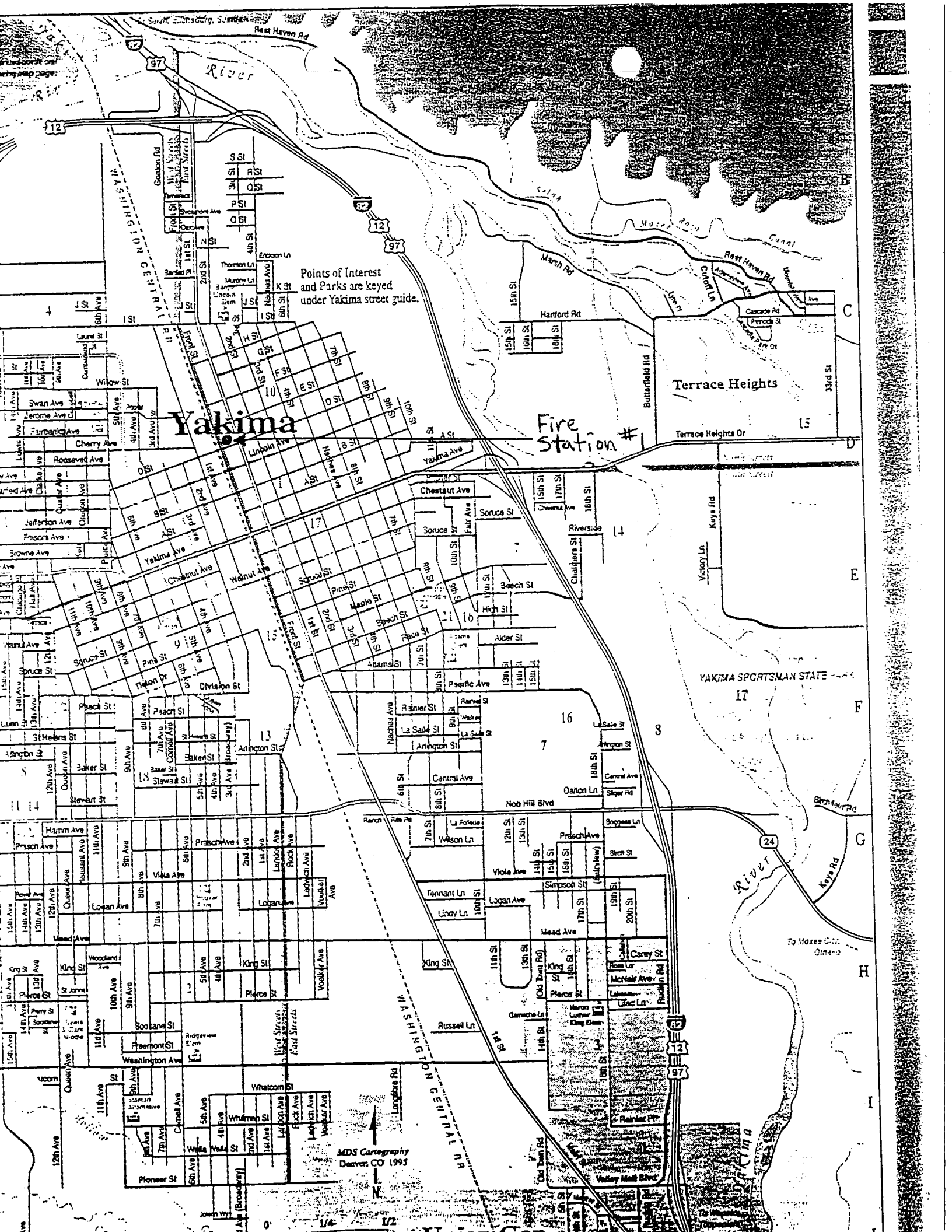
General information regarding this project is included in Appendix A. Specifically, Appendix A includes: a general location map and site map. Appendix B contains site specific information including: WDOE forms; City of Yakima UST removal checklist; and

site assessment data sheets. Appendix C includes receipts for UST contents/rinsate disposal and tank disposal. Appendix D contains analytical data reports for field and QC samples analyzed by Sound Analytical.

6.0 Conclusions and Recommendations

Two (2) USTs were removed. No contaminated soil was discovered during removal of the USTs. Contaminated soil discovered under the dispensers remains due to the proximity of the contamination to the fire station building's foundation.

APPENDIX A



Yakima

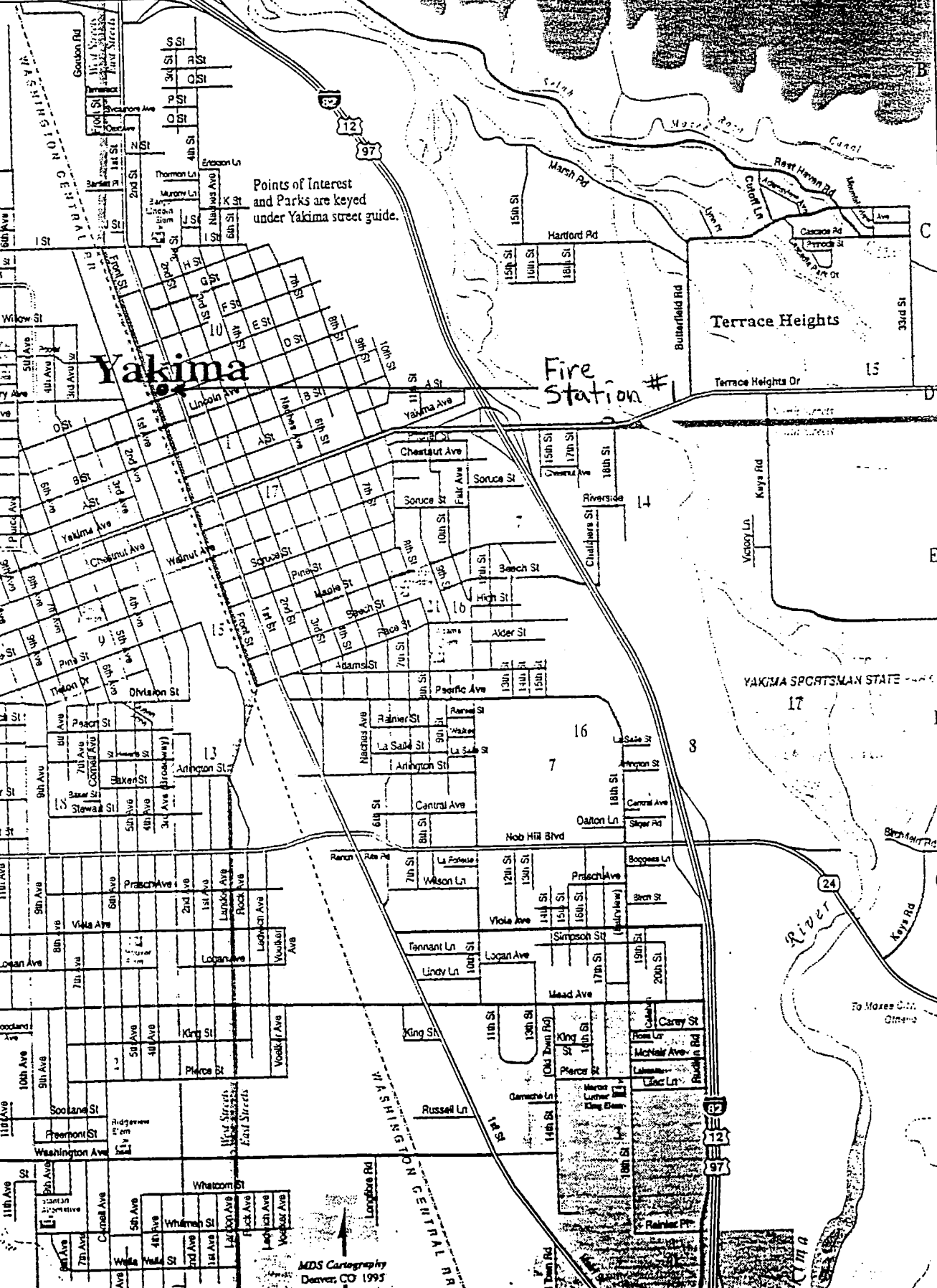
Points of Interest and Parks are keyed under Yakima street guide.

Fire Station #1

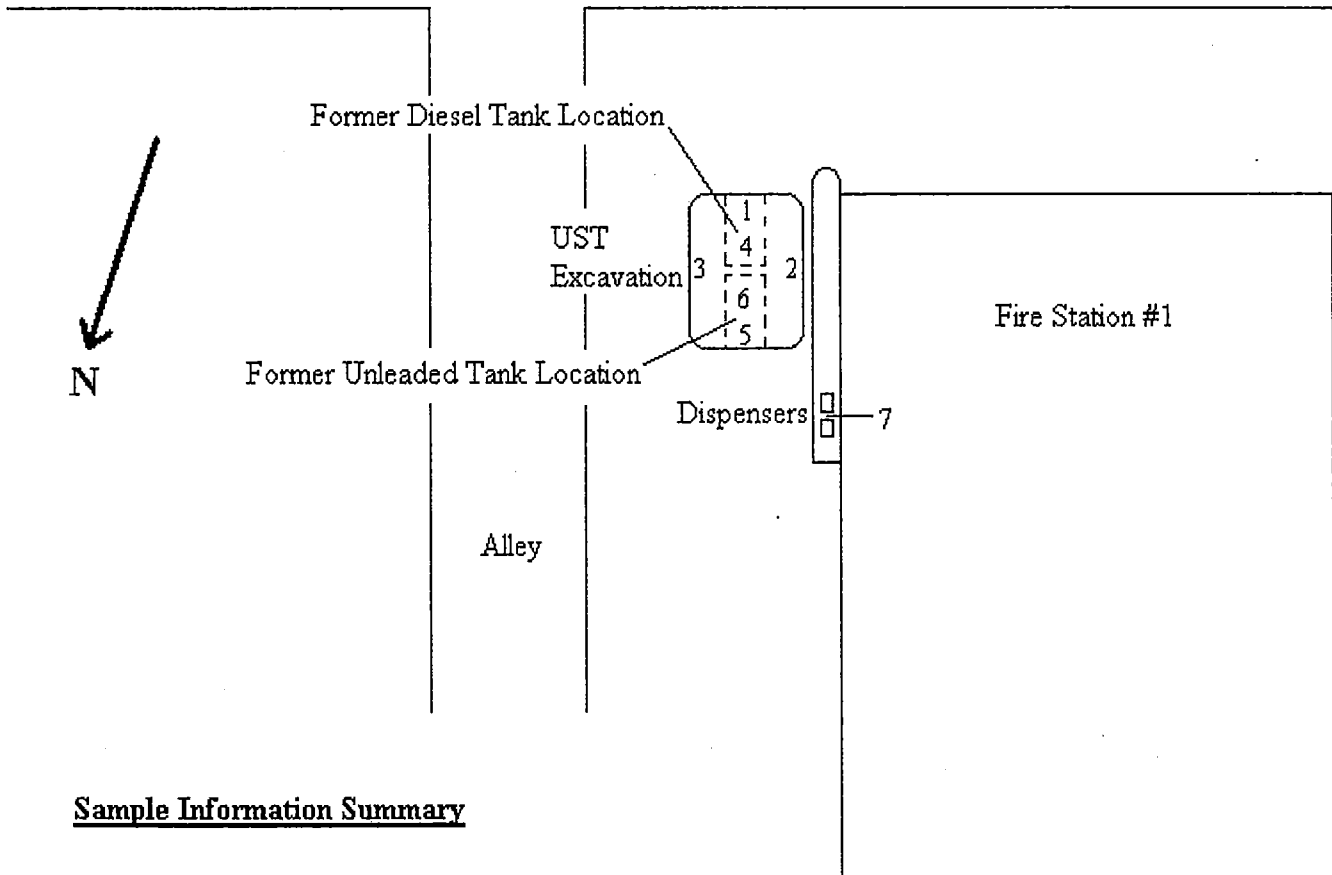
Terrace Heights

YAKIMA SPORTSMAN STATE

MDS Cartography
Denver, CO 1995



E "D" Street



Sample Information Summary

Sample #	Field ID	Sample Type	Depth
1	9768-FS1-1	Sidewall	4 ft
2	9768-FS1-2	Sidewall	4 ft
3	9768-FS1-3	Sidewall	4 ft
4	9768-FS1-4	Bottom	6 ft
5	9768-FS1-5	Sidewall	4 ft
6	9768-FS1-6	Bottom	6 ft
7	9768-DISP-1	Surface	NA

Site Diagram and Sample Location Summary

Fire Station #1
401 N. Front Street
Yakima, WA
Scale: 1" = 20'

SITE ASSESSMENT DATA SHEET

Project Location:	<u>Yakima, WA</u>	Site Identification:	<u>Fire Station #1</u>
Site Assessor:	<u>Andrew J. Riddell</u>	Contaminants of Concern:	<u>Diesel/Unleaded Gas</u>
Date Sampled:	<u>18-Nov-97</u>	Screening Instruments/Techniques:	<u>Foxboro</u>
Analytical Lab:	<u>Sound Analytical Services, Inc.</u>		<u>Miran IR Spectrometer</u>

Field ID	Matrix	Analyses/ Detection Limits	Results	Remarks
9768-FS1-1,2	Soil	WTPH-D/14 ppm	ND	Composite of adjacent sidewalls
9768-FS1-1,2	Soil	WTPH-G/2.2 ppm	ND	Composite of adjacent sidewalls
9768-FS1-1,2	Soil	BTEX/22 ppb	ND	Composite of adjacent sidewalls
9768-FS1-3,5	Soil	WTPH-D/15 ppm	ND	Composite of adjacent sidewalls
9768-FS1-3,5	Soil	WTPH-G/2.4 ppm	ND	Composite of adjacent sidewalls
9768-FS1-3,5	Soil	BTEX/24 ppb	ND	Composite of adjacent sidewalls
9768-FS1-4	Soil	WTPH-D/13 ppm	ND	Bottom grab sample
9768-FS1-6	Soil	WTPH-G/2.0 ppm	47 ppm	Bottom grab sample
9768-FS1-6	Soil	BTEX/20 ppb	ND	Bottom grab sample
9768-DISP-1	Soil	WTPH-D/250 ppm	20,000 ppm	Grab sample from under dispensers

Note: Shaded box indicates sample result above MTCA cleanup level.

APPENDIX B



UNDERGROUND STORAGE TANK 30 DAY NOTICE

FOR OFFICE USE ONLY

Site ID #: _____

Owner ID #: _____

Once validated by Ecology, this form serves as your temporary permit for the tanks listed below.

See back of form for instructions

Please check the appropriate box: Intent to Install Intent to Close Both

Site Information

Site ID Number 007633
(Available from Ecology if the tanks are registered)
 Site/Business Name Fire Station #1
 Site Address 401 North Front St.
 City/State Yakima, WA
 Zip Code 98901 Telephone (509) 575-6060

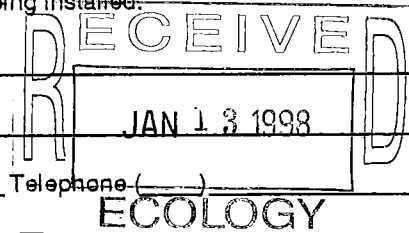
Owner Information

(This form will be returned to this address)

UST Owner/Operator City of Yakima
 Mailing Address 129 North Second St.
 City/State Yakima, WA
 Zip Code 98901 Telephone (509) 575-6093

Tank Installation Company (If known). Fill out this section ONLY if tanks are being installed.

Service Company _____ Contact Name _____
 Address _____
 Street _____ State _____ P.O. Box _____
 City _____ Zip Code _____ Telephone _____



Tank Permanent Closure Company (If known). Fill out this section ONLY if tanks are being closed.

Service Company MEcon Corporation Contact Name Charles Engstrom
 Address 1703 Portland Ave.
 City Tacoma State WA Zip Code 98421 Telephone (253) 272-8851

Tank Closure Information

Fill out this section ONLY if tanks are being closed.

Tank Installation Information

Fill out this section ONLY if tanks are being installed.

Tank ID	Projected Closure Date	Tank Capacity	Substance Stored	Date Tank Last Used	Is There Product In the Tank (Yes/No)	If No, Date Tank Was Pumped	Tank ID	Approx. Install Date
Front #1	11/97	500 gal	diesel	in use	Yes			
Front #2	11/97	500 gal	unleaded	in use	Yes			

City of Yakima
Code Administration
129 N 2nd St.
Yakima WA 98901
509/575-6126
509/575-6105 Fax

Underground Storage Tank Removal Checklist

Fuel/Vapors + Oxygen + Ignition Source = Explosion)

**IT IS THE RESPONSIBILITY OF THE CONTRACTOR
TO CONTACT THE FIRE INSPECTOR ASSIGNED
TO THE SITE TO SCHEDULE AN
INSPECTION TO WITNESS TANK REMOVAL.**

Location: 401 North Front St.

Date of Removal: 11-18-97

Business Name: Fire Station #1

Contractor Name and Ph # CEcon Corp. (253)272-8851

Owner: City of Yakima

Fire Master: 4167 Fire Inspector: TOM ALLEN

gas LEL=01
% O₂ = 8.8
dies LEL=00
% O₂ = 8.6
Thomson Allen
Fire Code Inspector
City of Yakima
11-18-97(1)

Inerting (replacing oxygen w/non-reactive gas so it doesn't support explosion. Dry ice gas from solid to heavier than air gaseous form of CO₂ displaces oxygen and some product). Bottled CO₂ into tank is riskier due to potential static charges. Compressed inert gas nitrogen is introduced under low pressure which is pumped through opening to bottom of tank, then mixes and distributes throughout tank. Testing is done with oxygen indicator.

Purging (replacing vapors w/air through diffuser or eductor, moving vapors up and away from tank). Where purging the tank with air, the air pressure in the tank shall not exceed 5 psig NFPA3-3.2. Diffused airblowers and eductors shall be properly bonded to prevent the generation of static electric charges NFPA3-3.3.1/3-3.3.2.

Weather conditions must allow for safe dispersal of vapors around tank.
Water (residual product goes to top and is pumped off and disposed of. Impractical for larger tanks due to amount of work involved.)

- Cleaned on site
- Cleaned off site

How are tanks being disposed of:

General Metals of Tacoma - (Metals Recyclers)

- Type of product in tank: diesel + unleaded gas
- Tank capacity: (1) 500 gal. diesel + (1) 500 gal. gas
- Estimated age of tank: 10-15 yrs
- Is tank being replaced? Yes No
If yes, with what type and capacity of tank?
Have necessary permits and approval been obtained?

Precautions

- Explosion Meter On Site
- Two (2) fire extinguishers w/minimum rating of not less than 4A:80BC on site: _____ NFPA2-2.4
- Soil contamination evident: _____
- Tank(s) blocked: _____
- Method of notifying Fire Dept. provided in case of emergency NFPA2-2.5
- Non-sparking tools used on site: _____
- No Smoking/No Open Flames within 25' in all directions.
FLAMMABLE - NO SMOKING signs posted conspicuously NFPA2-2.1
- Precautions shall be taken to prevent the accumulation and discharge of static electricity NFPA2-2.6
- No flames on site: _____
- Motorized equipment grounded: _____
- Utility/Gas/Water lines marked: _____

APPENDIX C



NORTHWEST ENVIROSERVICE INC.

36011

BILL OF LADING AND GALLONAGE REPORT

CUSTOMER CECON CORP DATE 11/22/97

JOB LOCATION CITY OF YAKIMA

DRIVER SCOTT EQUIP 1

JOB NO _____ DOCUMENT NO 0339

PRODUCT DIESEL GAS & WATER EST. GALS 262

PRODUCT _____ EST. GALS _____

DRUMS _____ NO _____

OTHER _____ EST SOLIDS _____

CUSTOMER SIGNATURE _____

N.W.E.S. DISPOSAL

WASH OUT: YES NO TIME IN _____ TIME OUT _____

WATER 200 GAL LOCATION 1 PIT PH 6.0 CODE WPA-A

SOLIDS _____ GAL LOCATION _____ CODE _____

_____ % SUSPENDED SOLIDS BY CENTRIFUGE + _____ GALS. SEDIMENT

OIL/DIESEL 62 GAL LOCATION P-31 CODE DIES

HOC'S 270 PCB'S _____ B.S.&W. _____ API. _____ LAB: YES NO

GAS _____ GAL LOCATION _____

HWP _____ GAL LOCATION _____

OTHER _____

FACILITY REPRESENTATIVE

DRIVER SIGNATURE

CUSTOMER



JOB # 97-68

1703 Portland Avenue • Tacoma, WA 98421 • (206) 272-8851

No 0339

Environmental and Industrial Contractors

SHIPPER CITY OF YAKIMA
129 NO. SECOND ST., YAKIMA
 ADDRESS VARIOUS FIRE STATIONS
 ORIGIN UNDERGROUND STORAGE TANKS

PHONE (509) 5756093

U.S. D.O.T. DESCRIPTION Including Proper Shipping Name, Hazard Class & I.D. Number	CONTAINER		QUANTITY	
	No.	Type	Wt.	Vol.
THIS MATERIAL IS NOT REGULATED UNDER WAC 173-303, 40 CFR PART 261 or 40 CFR PART 1761 (DIESEL, GAS, AND WATER) NA 1993 COMBUSTIBLE LIQUID N.O.S. 3 PG III		VAC-TRK		262 gals.

PHYSICAL STATE (CIRCLE): SOLID LIQUID SLUDGE OTHER _____

SPECIAL INSTRUCTIONS AND ADDITIONAL INFORMATION _____

IN THE EVENT OF A SPILL, CONTACT EITHER THE DEPARTMENT OF ECOLOGY 800-258-5990 AND/OR THE NATIONAL RESPONSE CENTER, U.S. COAST GUARD 800-424-8802 FOR EMERGENCY ASSISTANCE.

This is to certify that the above-named materials are properly classified, described, packaged, marked, labeled and are in proper condition for transportation according to the applicable regulation of the U.S. Department of Transportation.

SHIPPER SIGNATURE Scott Senesky FOR CITY OF YAKIMA FIRE DEPT. DATE 11-21-97

TRANSPORTER CECON CORP PHONE (253) 2728851

ADDRESS 1703 PORTLAND AVE., TACOMA

SIGNATURE Scott L. Senesky

DESTINATION EMERALD PETROLEUM INC. PHONE (206) 6221108

ADDRESS 1700 Airport Way, SEATTLE

SIGNATURE John J. Steiner DATE 11/22/97

198590

SEQ. NO.

GROSS WT.
(LB.)

DATE

W. D. CARLL

W D

65

15820

08:10 08:17 15 Dec 97

CODE	MATERIAL	\$/UNIT	TARE WT. (LB.)	NET WT. (LB.)	ADJUSTED NET WT. (LB.)	AMOUNT
17	# 1 SHEAR		12260	3560	3560	
	<p>97-68</p> <p>FS#1 : (1) 500 gallon unleaded (1) 500 gallon diesel</p> <p>FS#5 : (1) 500 gallon diesel</p> <p>Tehoma (em) : (1) 500 gallon diesel</p>					

APPENDIX D

SOUND ANALYTICAL SERVICES, INC.

Client Name	CEcon Corp.
Client ID:	COMP. 9768-FS1-1 & 9768-FS1-2
Lab ID:	68982-01
Date Received:	11/20/97
Date Prepared:	11/25/97
Date Analyzed:	12/1/97
% Solids	89.88

Volatile Organic Compounds and Gasoline by Methods 8020 Modified/WTPH-G Modified

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
Trifluorotoluene (PID)	95		37	125
Trifluorotoluene (FID)	92		50	150

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	Flags
Benzene	ND	0.022	
Toluene	ND	0.022	
Ethylbenzene	ND	0.022	
m,p-Xylene	ND	0.044	
o-Xylene	ND	0.022	
Gasoline	ND	2.2	

SOUND ANALYTICAL SERVICES, INC.

Client Name	CEcon Corp.
Client ID:	COMP. 9768-FS1-3 & 9768-FS1-5
Lab ID:	68982-02
Date Received:	11/20/97
Date Prepared:	11/25/97
Date Analyzed:	12/1/97
% Solids	81.86

Volatile Organic Compounds and Gasoline by Methods 8020 Modified/WTPH-G Modified

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
Trifluorotoluene (PID)	79		37	125
Trifluorotoluene (FID)	76		50	150

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	Flags
Benzene	ND	0.024	
Toluene	ND	0.024	
Ethylbenzene	ND	0.024	
m,p-Xylene	ND	0.049	
o-Xylene	ND	0.024	
Gasoline	ND	2.4	

SOUND ANALYTICAL SERVICES, INC.

Client Name	CEcon Corp.
Client ID:	9768-FS1-6
Lab ID:	68982-04
Date Received:	11/20/97
Date Prepared:	11/25/97
Date Analyzed:	12/1/97
% Solids	96.94

Volatile Organic Compounds and Gasoline by Methods 8020 Modified/WTPH-G Modified

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
Trifluorotoluene (PID)	98		37	125
Trifluorotoluene (FID)	98		50	150

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	Flags
Benzene	ND	0.02	
Toluene	ND	0.02	
Ethylbenzene	ND	0.02	
m,p-Xylene	ND	0.041	
o-Xylene	ND	0.02	
Gasoline	47	2	

SOUND ANALYTICAL SERVICES, INC.

Client Name	CEcon Corp.
Client ID:	COMP. 9768-FS1-1 & 9768-FS1-2
Lab ID:	68982-01
Date Received:	11/20/97
Date Prepared:	11/26/97
Date Analyzed:	12/1/97
% Solids	89.88

Diesel by WTPH-D

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
o-Terphenyl	83		50	150

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	Flags
Diesel (>nC12-nC24)	ND	14	

SOUND ANALYTICAL SERVICES, INC.

Client Name	CEcon Corp.
Client ID:	COMP. 9768-FS1-3 & 9768-FS1-5
Lab ID:	68982-02
Date Received:	11/20/97
Date Prepared:	11/26/97
Date Analyzed:	12/1/97
% Solids	81.86

Diesel by WTPH-D

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
o-Terphenyl	69		50	150

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	Flags
Diesel (>nC12-nC24)	ND	15	

SOUND ANALYTICAL SERVICES, INC.

Client Name	CEcon Corp.
Client ID:	9768-FS1-4
Lab ID:	68982-03
Date Received:	11/20/97
Date Prepared:	11/26/97
Date Analyzed:	12/1/97
% Solids	97.06

Diesel by WTPH-D

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
o-Terphenyl	85		50	150

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	Flags
Diesel (>nC12-nC24)	12	13	J

SOUND ANALYTICAL SERVICES, INC.

Client Name	CEcon Corp.
Client ID:	9768-DISP-1
Lab ID:	68982-05
Date Received:	11/20/97
Date Prepared:	11/26/97
Date Analyzed:	12/2/97
% Solids	96.85

Diesel by WTPH-D

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
o-Terphenyl	-	X8	50	150

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	Flags
Diesel (>nC12-nC24)	20000	250	

SOUND ANALYTICAL SERVICES, INC.

Lab ID: Method Blank - GB1323
Date Received: -
Date Prepared: 11/25/97
Date Analyzed: 11/25/97
% Solids

Volatile Organic Compounds and Gasoline by Methods 8020 Modified/WTPH-G Modified

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
Trifluorotoluene (PID)	99		37	125
Trifluorotoluene (FID)	94		50	150

Sample results are on an as received basis.

Analyte	Result (mg/kg)	PQL	Flags
Benzene	ND	0.02	
Toluene	ND	0.02	
Ethylbenzene	ND	0.02	
m,p-Xylene	ND	0.04	
o-Xylene	ND	0.02	
Gasoline	ND	2	

SOUND ANALYTICAL SERVICES, INC.

Blank Spike Report

Lab ID: GB1323
Date Prepared: 11/25/97
Date Analyzed: 11/25/97
QC Batch ID: GB1323

Volatile Organic Compounds and Gasoline by Methods 8020 Modified/WTPH-G Modified

Parameter Name	Blank Result (mg/kg)	Spike Amount (mg/kg)	BS Result (mg/kg)	BS % Rec.	Flag
Benzene	ND	1	0.96	96	
Toluene	ND	1	1	100	
Ethylbenzene	ND	1	1	101	
m,p-Xylene	ND	2	2.1	105	
o-Xylene	ND	1	1	100	
Gasoline	ND	27	27	101	

SOUND ANALYTICAL SERVICES, INC.

Duplicate Report

Client Sample ID: S-36
Lab ID: 69012-01
Date Prepared: 11/25/97
Date Analyzed: 11/25/97
QC Batch ID: GB1323

Volatile Organic Compounds and Gasoline by Methods 8020 Modified/WTPH-G Modified

Parameter Name	Sample Result (mg/kg)	Duplicate Result (mg/kg)	RPD %	Flag
Benzene	ND	ND	NC	
Toluene	ND	ND	NC	
Ethylbenzene	0.024	0.025	4.1	
m,p-Xylene	0.07	0.071	1.4	
o-Xylene	0.093	0.097	4.2	
Gasoline	160	180	12.0	

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID: BATCH QC
Lab ID: 69012-01
Date Prepared: 11/25/97
Date Analyzed: 11/25/97
QC Batch ID: GB1323

Volatile Organic Compounds and Gasoline by Methods 8020 Modified/WTPH-G Modified

Compound Name	Sample	Spike	MS	MS	MSD	MSD	RPD	Flag
	Result	Amount	Result		Result			
	(mg/kg)	(mg/kg)	(mg/kg)	% Rec.	(mg/kg)	% Rec.		
Benzene	ND	1.12	1.02	91.8	1.06	94.9	3.3	
Toluene	ND	1.12	1.06	95.4	1.1	98.4	3.1	
Ethylbenzene	0.024	1.12	1.11	97	1.14	99.8	2.8	
m,p-Xylene	0.07	2.23	2.3	100	2.36	103	3	
o-Xylene	0.093	1.12	1.15	94.7	1.17	96.5	1.9	
Gasoline	160	29.8	156	0.903	165	33.3	190	X7a

SOUND ANALYTICAL SERVICES, INC.

Lab ID: Method Blank - DI1394
Date Received: -
Date Prepared: 11/26/97
Date Analyzed: 12/1/97
% Solids

Diesel by WTPH-D

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
o-Terphenyl	94		50	150

Sample results are on an as received basis.

Analyte	Result (mg/kg)	PQL	Flags
Diesel (>nC12-nC24)	ND	13	

SOUND ANALYTICAL SERVICES, INC.

Blank Spike Report

Lab ID: DI1394
Date Prepared: 11/26/97
Date Analyzed: 12/1/97
QC Batch ID: DI1394

Diesel by WTPH-D

Parameter Name	Blank Result (mg/kg)	Spike Amount (mg/kg)	BS Result (mg/kg)	BS % Rec.	Flag
Diesel (>nC12-nC24)	0	250	230	93	

SOUND ANALYTICAL SERVICES, INC.

Duplicate Report

Client Sample ID: 9768-DISP-1
Lab ID: 68982-05
Date Prepared: 11/26/97
Date Analyzed: 12/2/97
QC Batch ID: DI1394

Diesel by WTPH-D

Parameter Name	Sample Result (mg/kg)	Duplicate Result (mg/kg)	RPD %	Flag
Diesel (>nC12-nC24)	20000	17000	16.0	X4

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike/Matrix Spike Duplicate Report

Client Sample ID: 9768-TC-1
Lab ID: 68980-01
Date Prepared: 11/26/97
Date Analyzed: 12/1/97
QC Batch ID: DI1394

Diesel Range by WTPH-D Modified

Compound Name	Sample Result (mg/kg)	Spike Amount (mg/kg)	MS Result (mg/kg)	MS % Rec.	MSD Result (mg/kg)	MSD % Rec.	RPD	Flag
Diesel (>nC12-nC24)	19	263	205	70.9	213	72.4	2.1	

SOUND ANALYTICAL SERVICES, INC.

ANALYTICAL & ENVIRONMENTAL CHEMISTS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE: (253) 922-2310 - FAX: (253) 922-5047

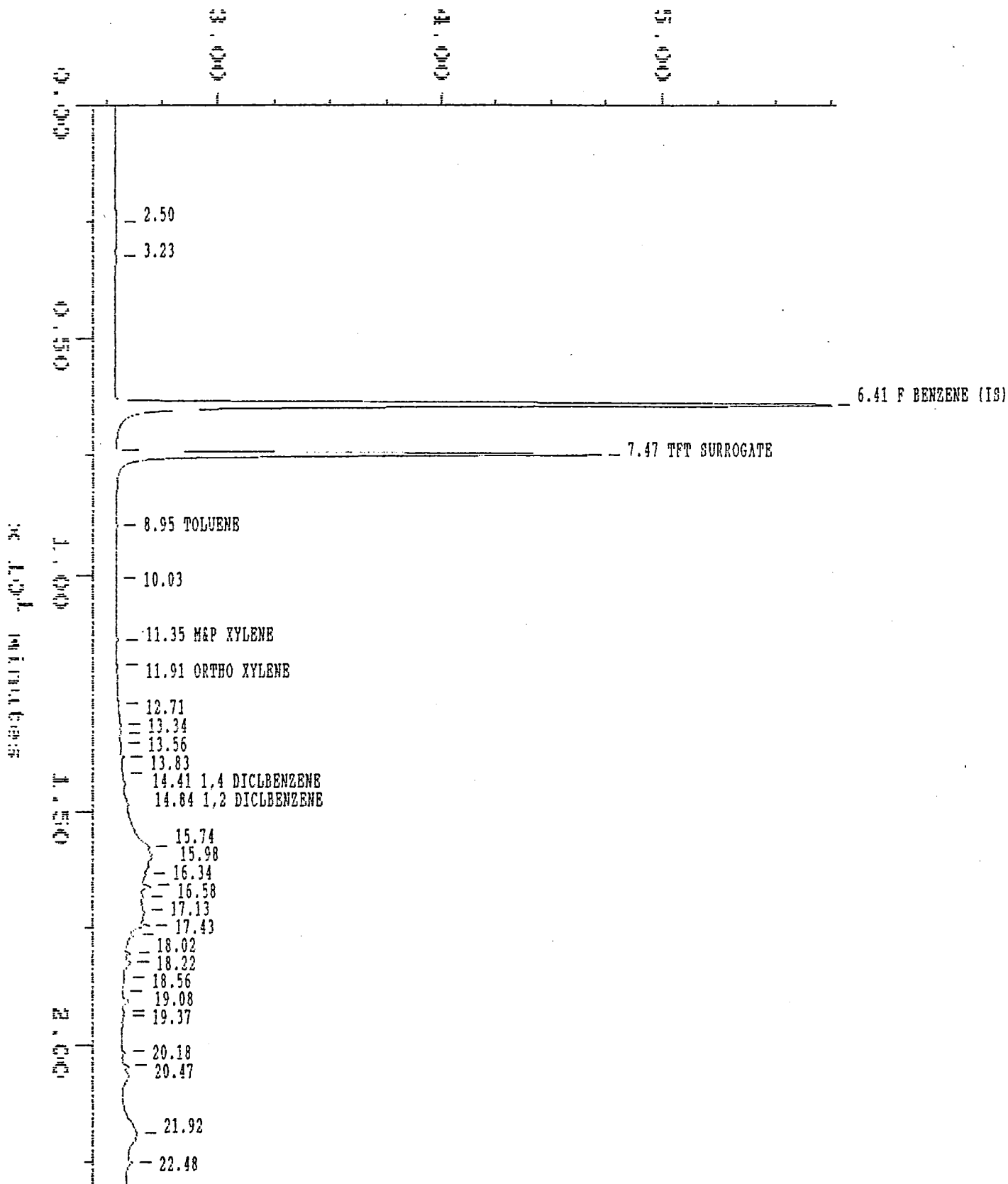
DATA QUALIFIERS AND ABBREVIATIONS

- B1: This analyte was detected in the associated method blank. The analyte concentration was determined not to be significantly higher than the associated method blank (less than ten times the concentration reported in the blank).
- B2: This analyte was detected in the associated method blank. The analyte concentration in the sample was determined to be significantly higher than the method blank (greater than ten times the concentration reported in the blank).
- C: Additional confirmation performed.
- D: The reported result for this analyte is calculated based on a secondary dilution factor.
- E: The concentration of this analyte exceeded the instrument calibration range.
- J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.
- MCL: Maximum Contaminant Level
- MDL: Method Detection Limit
- N: See analytical narrative.
- ND: Not Detected
- PQL: Practical Quantitation Limit
- X1: Contaminant does not appear to be "typical" product. Elution pattern suggests it may be _____.
- X2: Contaminant does not appear to be "typical" product. Further testing is suggested for identification.
- X3: Identification and quantification of peaks was complicated by matrix interference; GC/MS confirmation is recommended.
- X4: RPD for duplicates outside advisory QC limits. Sample was re-analyzed with similar results.
- X4a: RPD for duplicates outside advisory QC limits due to analyte concentration near the method practical quantitation limit/detection limit.
- X5: Matrix spike was diluted out during analysis.
- X6: Recovery of matrix spike was outside advisory QC limits. Sample was re-analyzed with similar results.
- X7: Recovery of matrix spike outside advisory QC limits. Matrix interference is indicated by blank spike recovery data.
- X7a: Recovery and/or RPD values for MS/MSD outside advisory QC limits due to high contaminant levels.
- X8: Surrogate was diluted out during analysis.
- X9: Surrogate recovery outside advisory QC limits due to matrix composition.

Sample: 68982 1 Channel: PID
Acquired: 01 DEC 97 9:51 Method: C:\MAX\DATA1\091201

Filename: C2510
Operator: JMC

10⁴ units

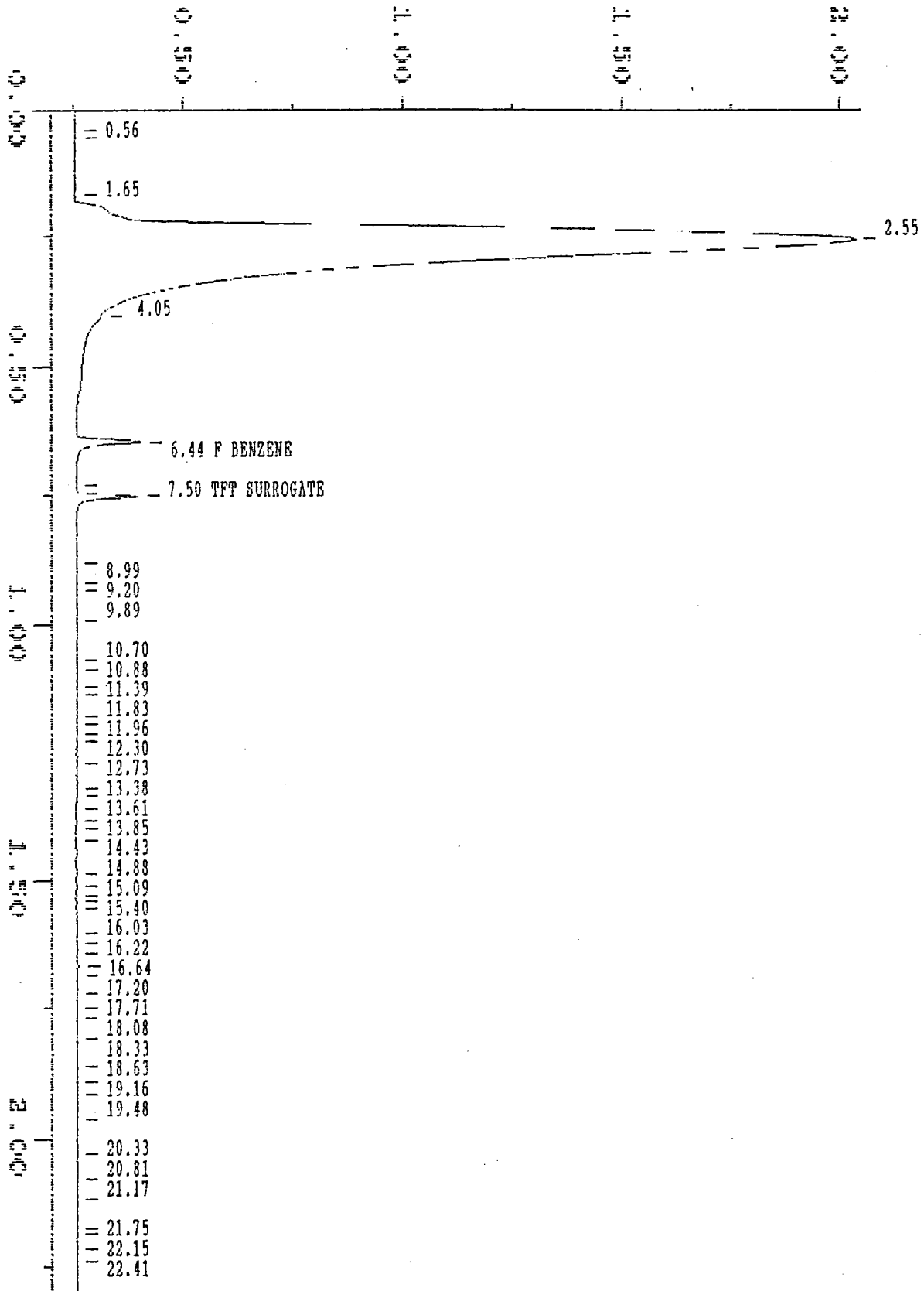


Sample: 68982 1
Acquired: 01 DEC 97

Channel: FID
Method: C:\MAX\DATA1\091201

Filename: C2510
Operator: JMC

0.50 1.00 1.50 2.00



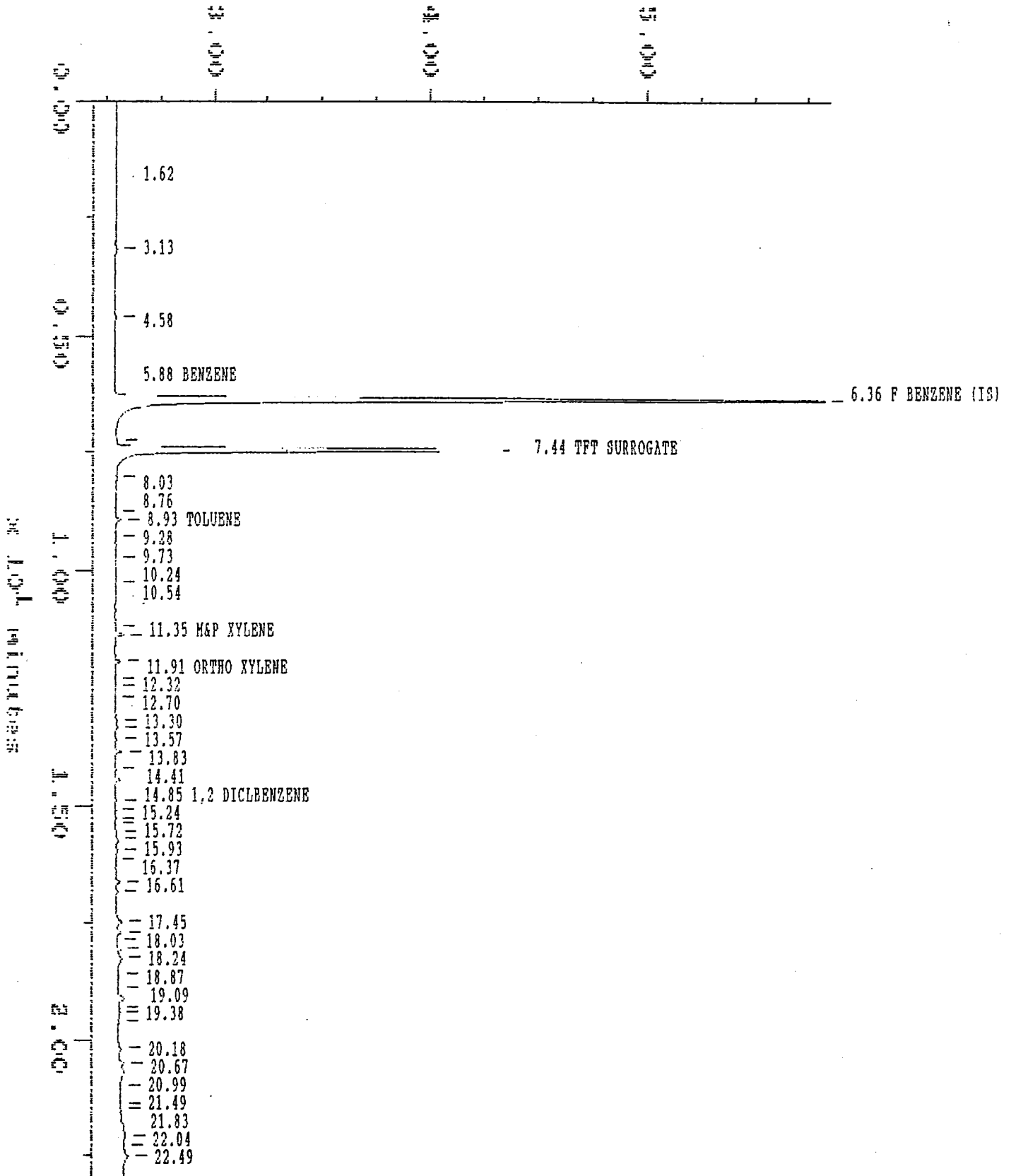
DE J. Q. L. MILLER

Sample: 68982 2
Acquired: 01 DEC 97 10:18
Dilution: 1 : 44.000

Channel: PID
Method: C:\MAX\DATA\091201
Amount: 10.005

Filename: C2511
Operator: JHC

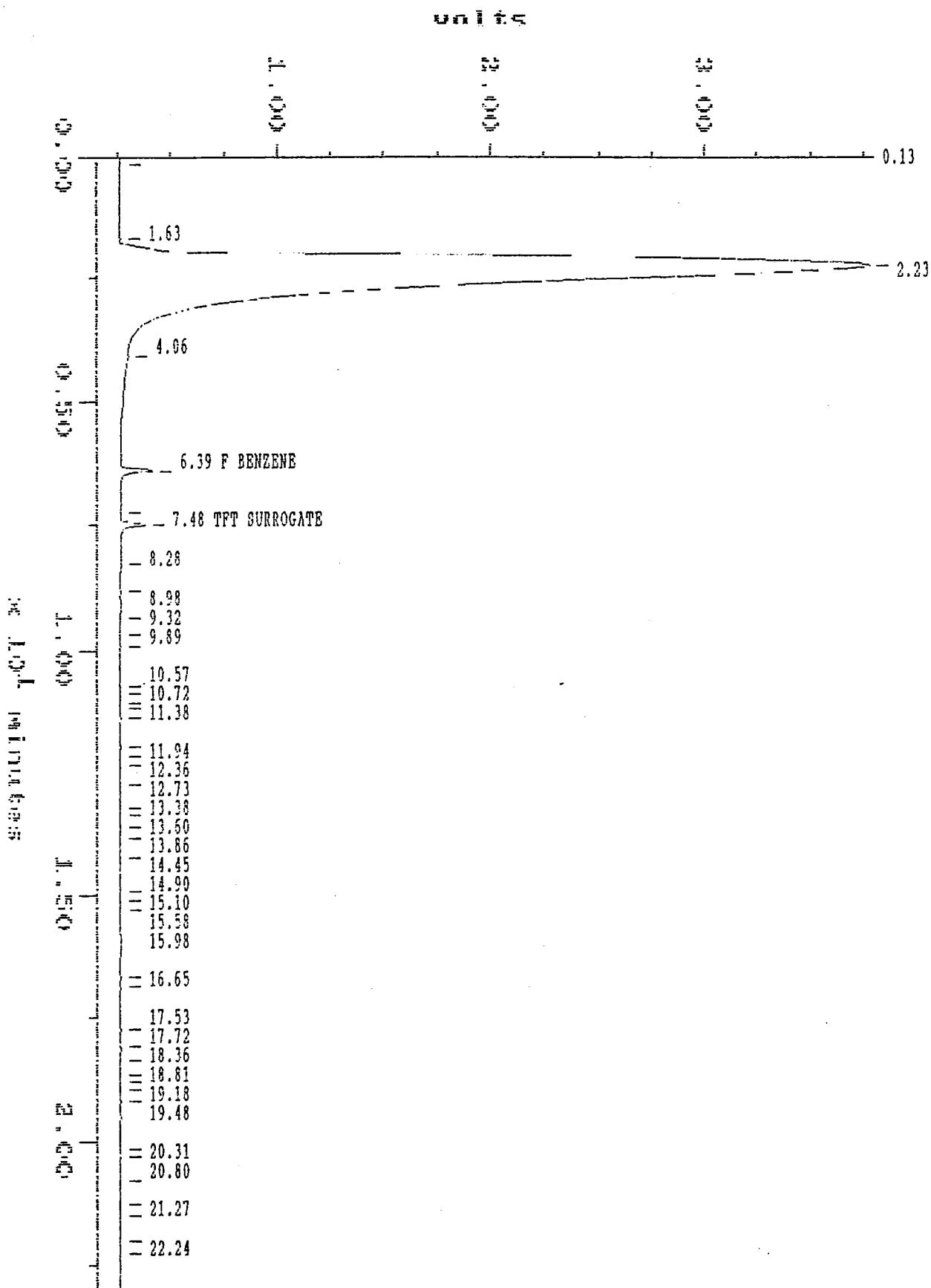
x 10⁻⁴ units



Sample: 68982 2
Acquired: 01 DEC 97 10:18
Dilution: 1 : 44.000

Channel: FID
Method: C:\MAX\DATA\1\091201
Amount: 10.005

Filename: C2511
Operator: JMC

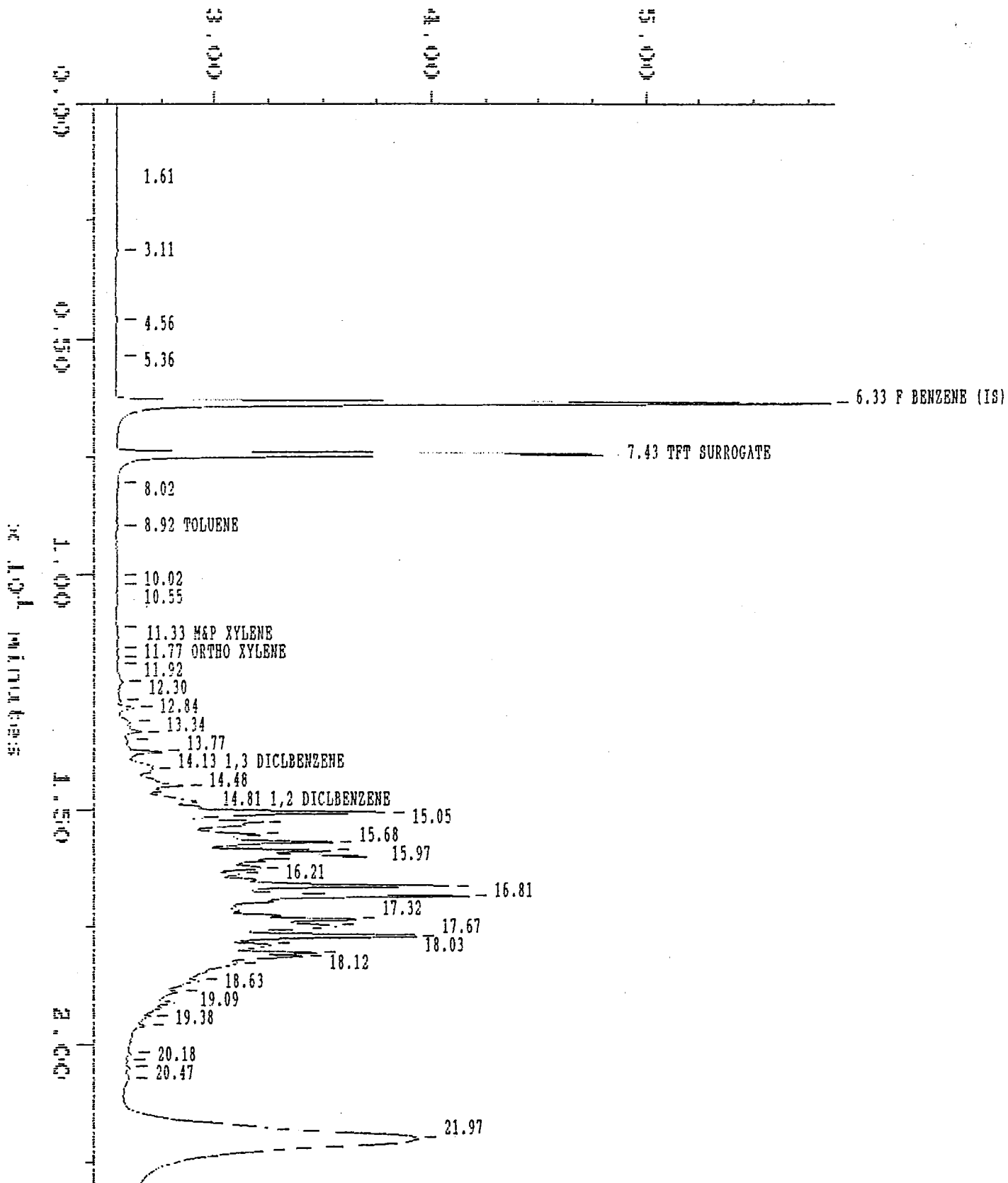


Sample: 68982 4
Acquired: 01 DEC 97 10:45
Dilution: 1 : 44.000

Channel: PID
Method: C:\MAX\DATA1\091201
Amount: 10.080

Filename: C2512
Operator: JMC

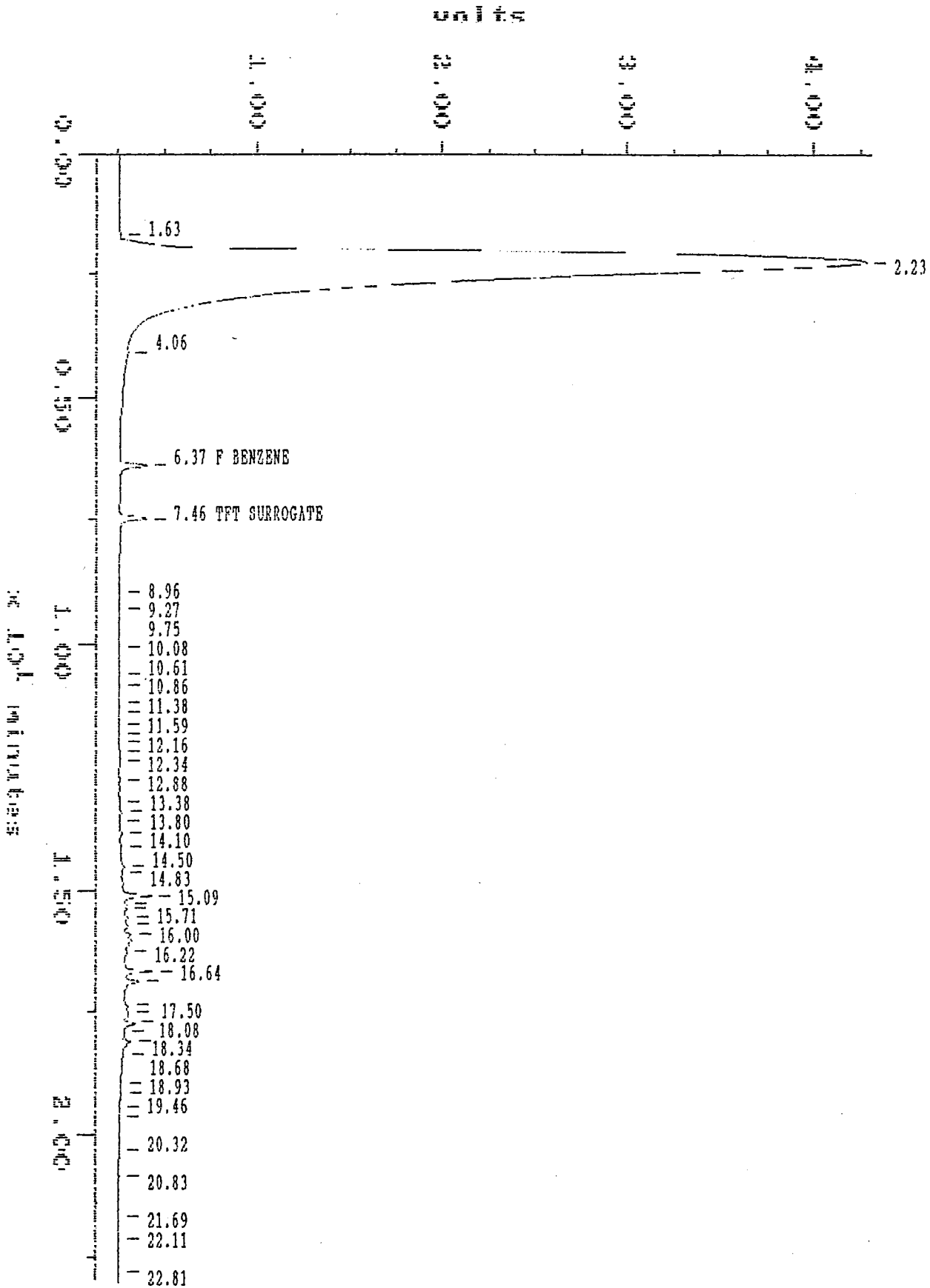
$\times 10^{-4}$ units

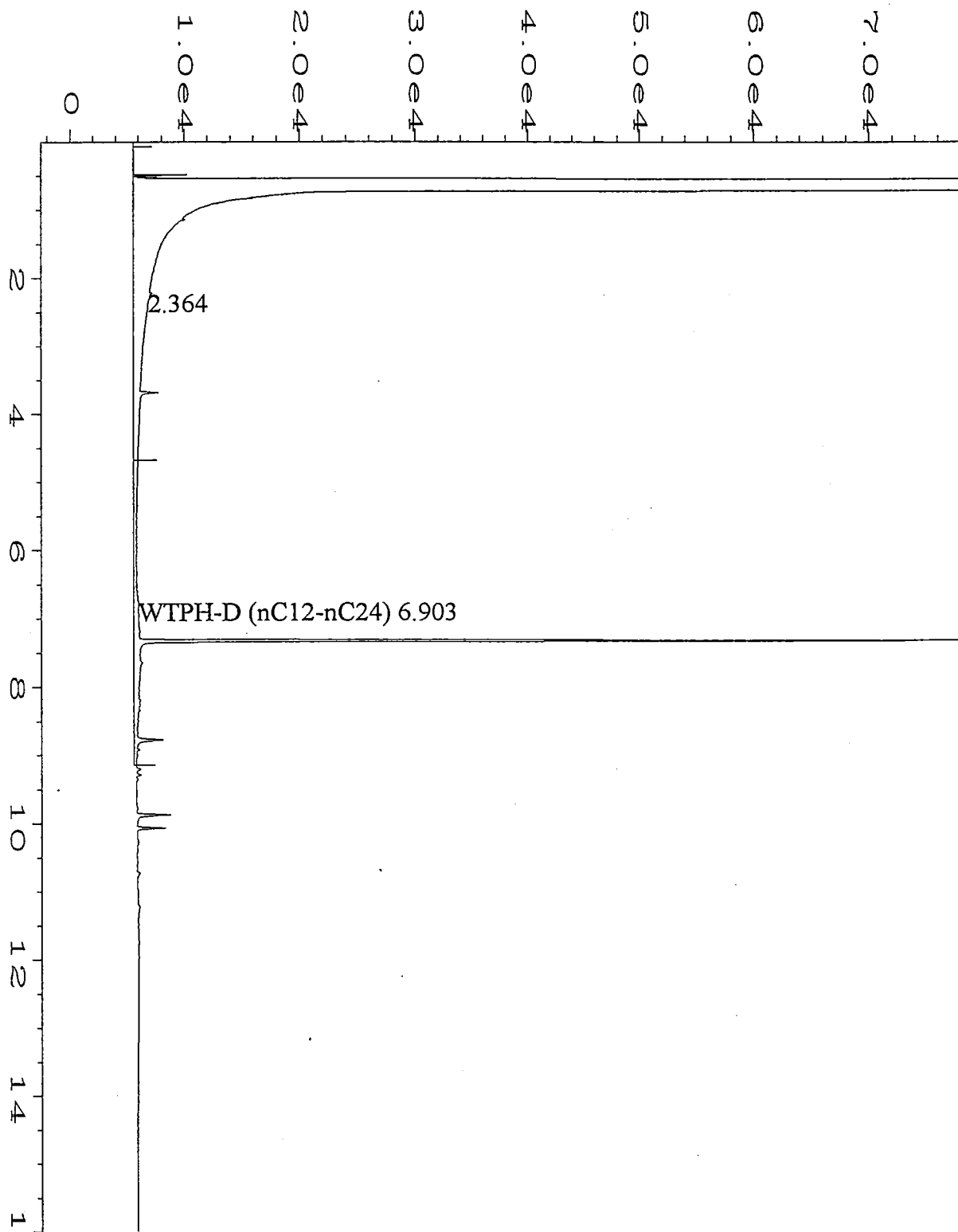


Sample: 68982 4
Acquired: 01 DEC 97 10:45
Dilution: 1 : 44.000

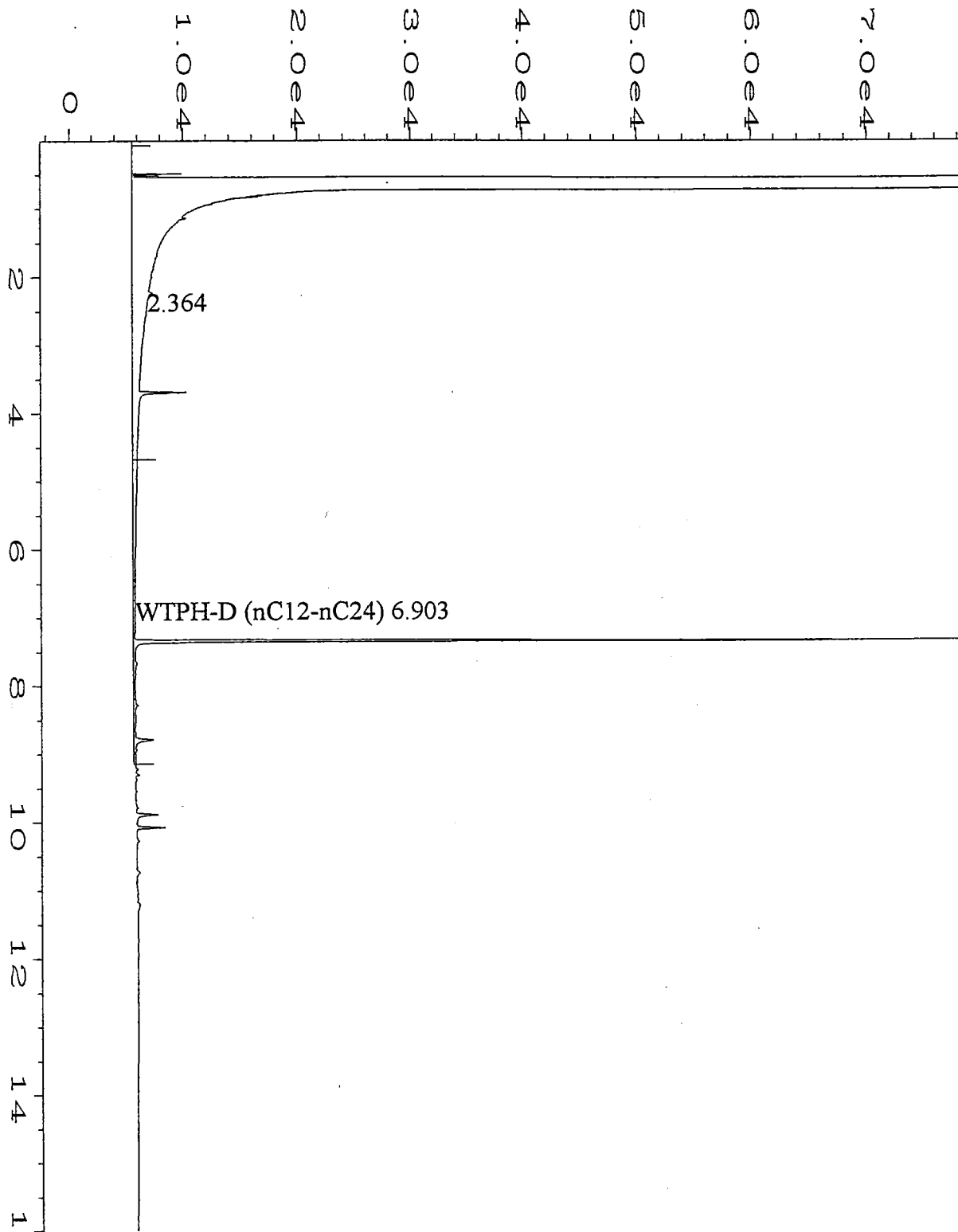
Channel: FID
Method: C:\MAX\DATA\1\091201
Amount: 10.080

Filename: C2512
Operator: JMC

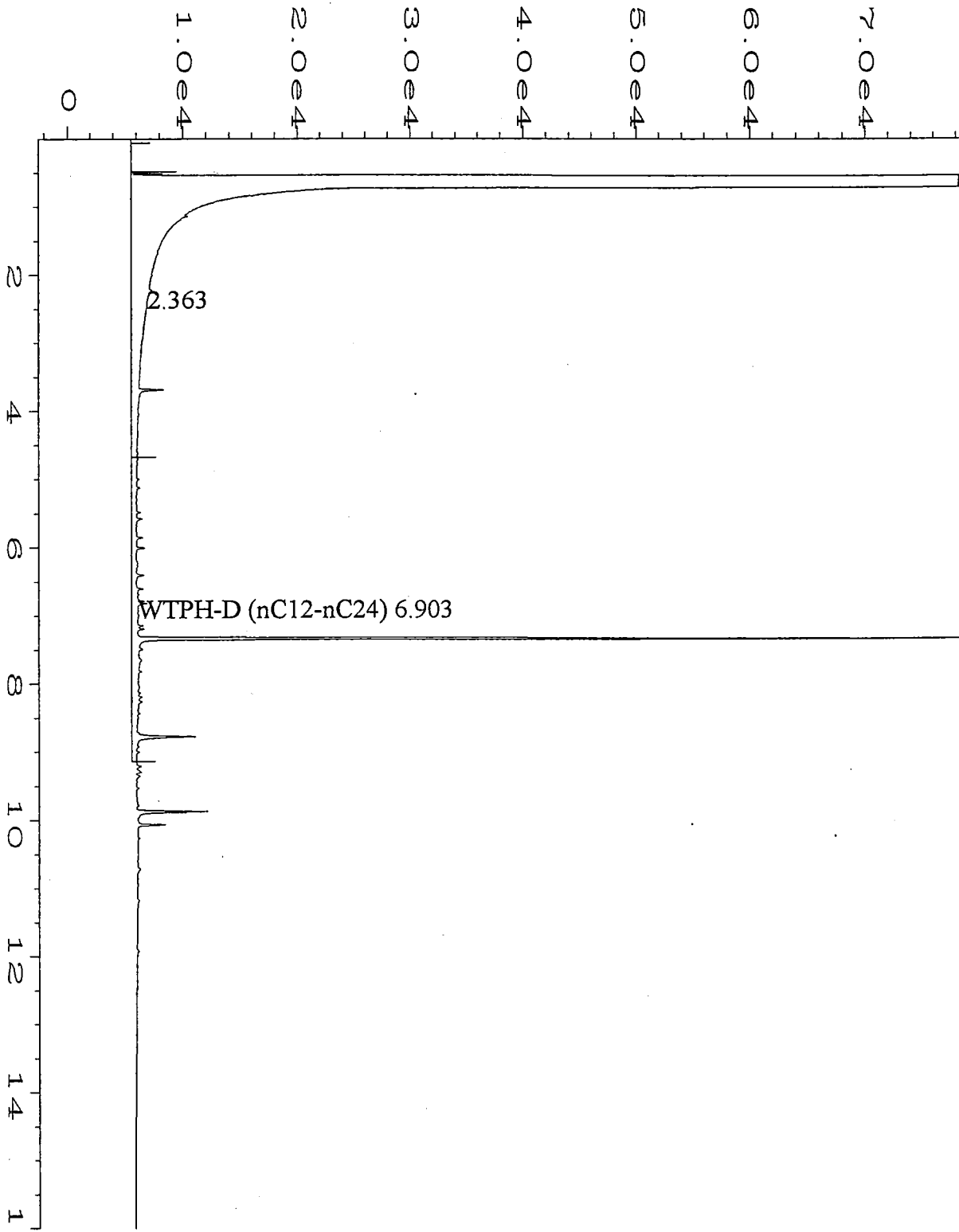




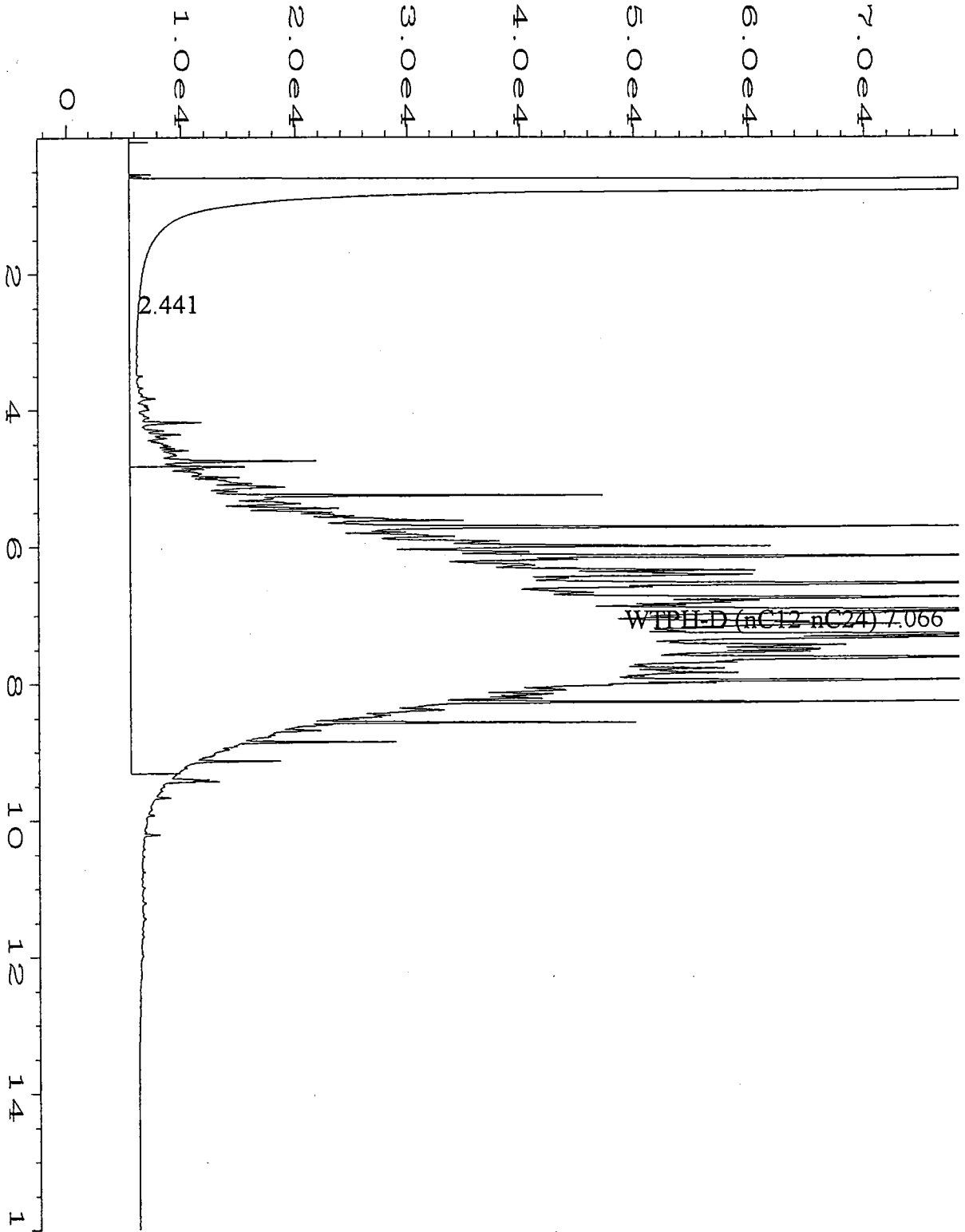
Data File Name	: C:\HPCHEM\2\DATA\120197_A\024F0101.D	Page Number	: 1
Operator	: DAS/AJ	Vial Number	: 24
Instrument	: VARIAN 34	Injection Number	: 1
Sample Name	: 68982-1	Sequence Line	: 1
Run Time Bar Code:		Instrument Method:	SR1027-V.MTH
Acquired on	: 01 Dec 97 09:08 PM	Analysis Method	: 1124-WD.MTH
Report Created on:	02 Dec 97 09:04 AM	Sample Amount	: 0
Last Recalib on	: 24 NOV 97 01:52 PM	ISTD Amount	:
Multiplier	: 1		



Data File Name	: C:\HPCHEM\2\DATA\120197_A\025F0101.D	Page Number	: 1
Operator	: DAS/AJ	Vial Number	: 25
Instrument	: VARIAN 34	Injection Number	: 1
Sample Name	: 68982-2	Sequence Line	: 1
Run Time Bar Code:		Instrument Method:	SR1027-V.MTH
Acquired on	: 01 Dec 97 09:33 PM	Analysis Method	: 1124-WD.MTH
Report Created on:	02 Dec 97 09:04 AM	Sample Amount	: 0
Last Recalib on	: 24 NOV 97 01:52 PM	ISTD Amount	:
Multiplier	: 1		



Data File Name	: C:\HPCHEM\2\DATA\120197_A\026F0101.D	Page Number	: 1
Operator	: DAS/AJ	Vial Number	: 26
Instrument	: VARIAN 34	Injection Number	: 1
Sample Name	: 68982-3	Sequence Line	: 1
Run Time Bar Code:		Instrument Method:	SR1027-V.MTH
Acquired on	: 01 Dec 97 09:58 PM	Analysis Method	: 1124-WD.MTH
Report Created on:	02 Dec 97 09:04 AM	Sample Amount	: 0
Last Recalib on	: 24 NOV 97 01:52 PM	ISTD Amount	:
Multiplier	: 1		



Data File Name	: C:\HPCHEM\2\DATA\120297_A\015F0101.D	Page Number	: 1
Operator	: DAS/AJ	Vial Number	: 15
Instrument	: VARIAN 34	Injection Number	: 1
Sample Name	: 68982-5 1:20	Sequence Line	: 1
in Time Bar Code:		Instrument Method:	SR1027-V.MTH
Acquired on	: 02 Dec 97 09:38 PM	Analysis Method	: 1124-WD.MTH
Report Created on:	03 Dec 97 08:35 AM	Sample Amount	: 0
Last Recalib on	: 24 NOV 97 01:52 PM	ISTD Amount	:
Multiplier	: 1		



SOUND ANALYTICAL SERVICES, INC.

ANALYTICAL & ENVIRONMENTAL CHEMISTS

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Tacoma, Washington 98424

(253) 922-2310 • FAX (253) 922-5047

68982 10/14

CHAIN OF CUSTODY / REQUEST FOR LABORATORY ANALYSIS

CLIENT: CECON				ANALYSIS REQUESTED:																	
PROJECT NAME: F.S. #1																					
CONTACT: AJ Riddell																					
PHONE NO: 272-8851																					
LAB #	SAMPLE I.D.	DATE	TIME	MATRIX	# of Containers	Halogenated Volatiles EPA 601/8010	Aromatic Volatiles EPA 602/8020	Chlorinated Pest., PCB's EPA 608/8080	PAH's	Volatile Organics EPA 624/8240 (GC/MS)	Semi-volatiles EPA625/8270 (GC/MS)	TPH 418.1	Oil & Grease	Total Metals (Specify below)	8 Metals	Volatiles	Semi-volatiles	Pesticides & Herbicides	WTPH-D	WTPH-G/BTEX	
1	9768-FS1-1	11/8/97	1300	S	1														X	X	
2	-2		1315		1														X	X	
3	-3		1330		1														X	X	
4	-4		1345		1														X	X	
5	-5		1350		1														X	X	
6	-6		1340		1														X	X	
7	9768-disp-1		1400	V	1														X		

SPECIAL INSTRUCTIONS/COMMENTS:		Firm	Time / Date
Relinquished By	<i>AJ Riddell</i>	CECON	1530 / 11/20/97
Received By	<i>S. Giang</i>	SAS	1530 11/20/97
Relinquished By			
Received By			
Relinquished By			
Received By			

These samples will be disposed of 45 days after receipt.
 Check this box to have samples returned .
 Composite: FS1-1,2
 FS1-3,5