

#9280
TOWN PUMP
PANTRY
UST/LOST

UST Closure Site Assessment Report

LILLARD
#403976

For Removal of Two UST's
and Associated Ancillary Equipment
At The DeVere and Sons Distributing, Inc. Facility,
Cle Elum, WA

Prepared For:

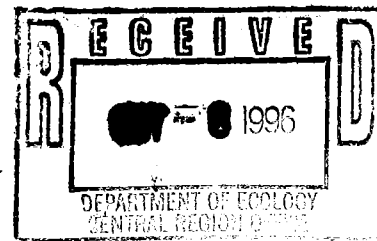
Northwest Petroleum Equipment, Inc.
265 Johnson Road
Selah, WA 98942

Prepared By:



P.O. BOX 1644, ZILLAH, WA 98953
PHONE (509) 829-6400

September, 1996



Executive Summary

On July 16-17, 1996, Northwest Petroleum Equipment (NPE) and Randy's Blue Dot Excavating, Inc. (RBDEI) decommissioned and removed two (2) Underground Storage Tanks (UST's) at the DeVere & Sons Distributing, Inc. facility, First and Short Street, Cle Elum, WA. The WSDOE Site Identification number is 009280. The tanks consisted of one 1,000 gallon regular leaded gasoline tank (Tank #2) and one 1,000 gallon unleaded gasoline tank (Tank #3). Sage Earth Sciences, Inc. (Sage) provided closure site assessment services upon removal of the two (2) UST's. A visual inspection of the tanks found them to be in fair condition and no holes were observed.

Pacific Northern Environmental (PNE) previously removed a 4,000 gallon diesel UST from the immediate vicinity of the two (2) UST's included in Sage's scope of work. Site conditions during removal of the diesel UST are documented in the *PNE UST Decommissioning and Site Assessment Report (July, 1994)*. This report also addresses a diesel release, originating from a damaged underground diesel fuel line, adjacent to the UST's.

Both UST's were removed from a single excavation. Apparently impacted soil and groundwater was observed upon removal of the UST's. Groundwater was exposed at the floor of the excavation at a depth of approximately six and eight-tenths (6.8) feet below ground surface (BGS).

Sage collected six (6) soil samples (NWP-0596-S2 through NWP-0596-S7) and one (1) groundwater sample (NWP-0596-W8) from within the UST excavation. These samples were submitted to Friedman & Bruya, Inc. (FBI), Seattle, WA for independent laboratory analysis. Analysis of soil samples collected within the excavation found diesel range petroleum hydrocarbons, at concentrations exceeding the Method A Cleanup Levels of WAC 173-340-740 in samples collected from beneath the original position of Tank #2 and Tank #3 as well as the southern sidewall of the excavation. Analysis of the groundwater sample found diesel, gasoline, benzene, toluene, ethylbenzene, xylene and total lead at concentrations exceeding the Method A Groundwater Cleanup Levels of WAC 173-340-720.

Sage also collected a soil sample from beneath the original position of each fuel dispenser (NWP-0596-S9 and S10). In addition, Sage collected one (1) soil sample from beneath the original position of each underground fuel line (NWP-0596-S11 & S12). FBI analysis of these soil samples found diesel and gasoline range petroleum hydrocarbons, in a sample collected from beneath the western fuel dispenser, at concentrations exceeding the Cleanup Levels.

Sage collected three (3) samples (NWP-0596-S13 through S15) from the stockpile of soil generated during the UST removal process. Comparison of analytical results for soil stockpile samples with the WSDOE "End Use Criteria for Petroleum Contaminated Soils" indicates that the soil stockpile is designated as "Class 4 Soil". The lower one (1) foot of the excavation was backfilled with imported fill material. The remainder of the excavation was backfilled with the soil stockpile generated during the UST removal process.

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1.0 Introduction

1.1 Purpose

The purpose of this closure site assessment report is to describe findings and actions taken associated with the removal of two (2) Underground Storage Tanks (UST's) at the DeVere & Sons Distributing, Inc. Facility, Cle Elum, WA. The investigation complies with regulatory requirements established by the Washington State Department of Ecology (WSDOE).

1.2 Scope of Work

Northwest Petroleum Equipment (NPE) of Selah, WA provided UST decommissioning services. Randy's Blue Dot Excavating, Inc. (RBDEI) of Cle Elum, WA provided UST removal and excavation services. Sage Earth Sciences, Inc. (Sage) provided closure site assessment services upon removal of two (2) UST's and associated ancillary equipment. Other tank systems were excluded from Sage's scope of work. Sage provided field screening services and collected representative soil samples in accordance with the WSDOE Guidance for Site Checks and Site Assessments for Underground Storage Tanks (February, 1991; 90-52, Revised October, 1992). Soil samples were submitted to Friedman & Bruya, Inc. (FBI), Seattle, WA. for independent laboratory analysis.

2.0 Background Information

2.1 Site Location

The facility is located at First and Short Street, Cle Elum, WA. It is situated within the SW 1/4 of the SW 1/4, Section 25, Township 20 North, Range 15 East, Willamette Meridian. The site latitude is 47° 11' 32" and the longitude is 120° 54' 54". The location of the site is shown by Figure 1.

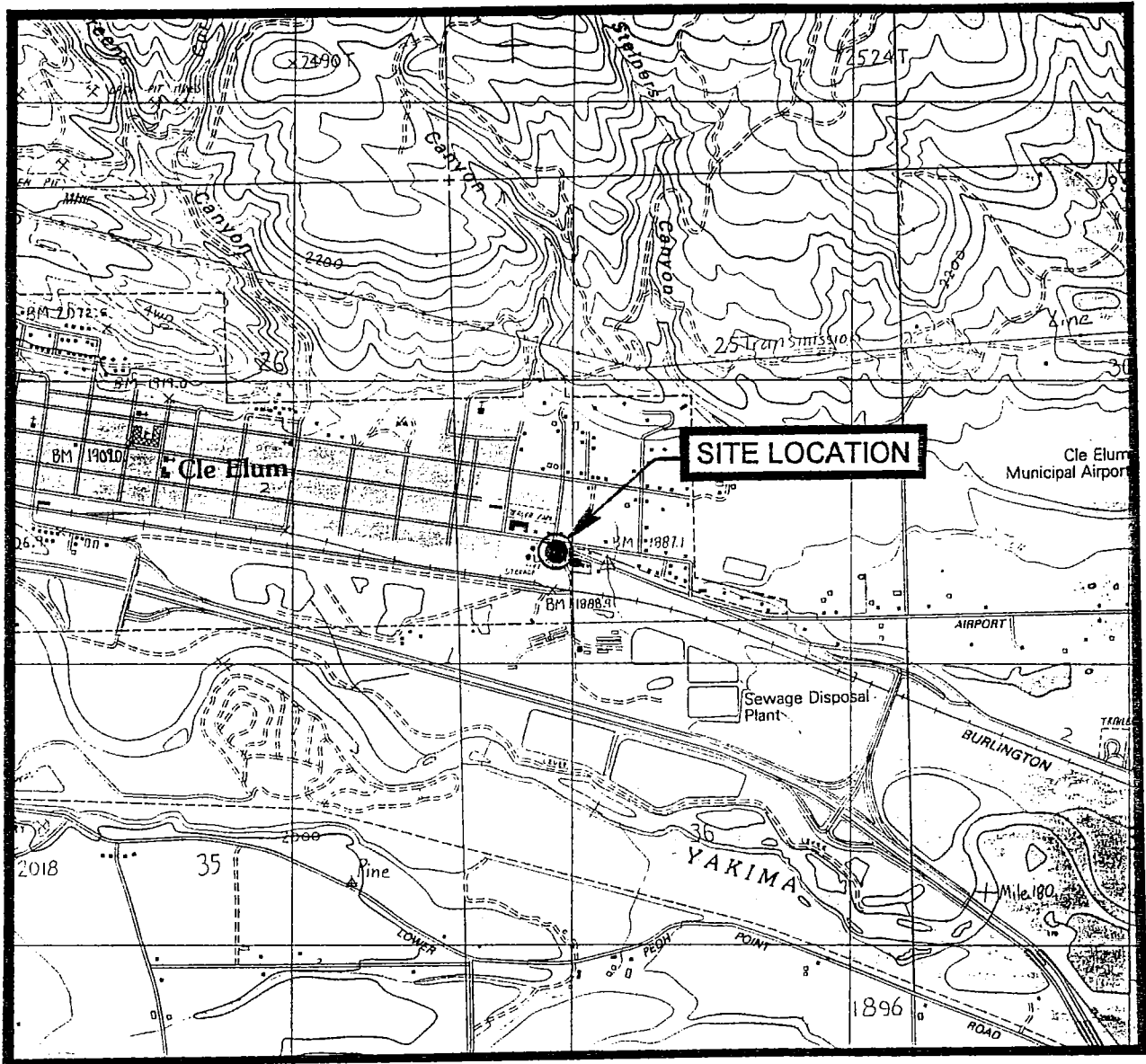
2.2 Site Description

The facility is owned and operated by:

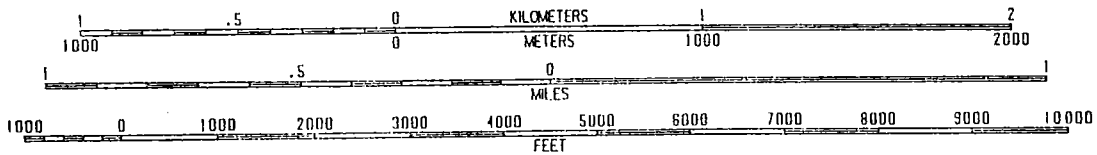
DeVere & Sons Distributing, Inc.

P.O. Box 336
Cle Elum, WA 98922
(509) 674-2442

The authorized site contact is Mr. James DeVere. The subject property is occupied by a bulk petroleum distribution facility. Two (2) buildings, consisting of an office/warehouse and mini-mart, are situated on the property as shown by Figure 2. An Aboveground Storage Tank (AST) basin, with associated dispensers, is located west of the office/warehouse building.



SCALE 1:24 000



CONTOUR INTERVAL 40 FEET

To convert feet to meters multiply by .3048
 To convert meters to feet multiply by 3.2808

FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER COLORADO 80225
 OR RESTON, VIRGINIA 22092



QUADRANGLE LOCATION

Figure 1. Site Location Map



Figure 2. Site Vicinity Map

An alley is located immediately east of the property. First Street lies immediately north of the site. The Cle Elum Feed property is located immediately west of the subject property. Short Avenue lies north of the subject property. Zacklift, a forklift service facility, is located east of the subject property, across the alley. Commercial businesses lie north of the subject property, across First Street. A gravel lot and Burlington Northern Railroad Tracks lie south of the subject property.

The nearest surface water consists of a ditch located approximately one-tenth (1/10) of a mile north of the site. The Yakima River lies approximately two-fifths (2/5) of a mile south of the site.

2.3 UST System Information

The WSDOE Site Identification number is 009280. Two (2) Underground Storage Tanks (UST's) and associated ancillary equipment are located on the northern portion of the property as shown by Figure 2. These UST's, which are the focus of this investigation, consisted of:

- ♦ one (1) regular leaded gasoline tank (Tank #2) and
- ♦ one (1) unleaded gasoline tank (Tank #3).

The UST's were used to support retail sale of petroleum products and were installed in approximately 1982. A map of the UST's included in Sage's scope of work is shown by Figure 3. Underground fuel lines led from the UST's to a fuel dispenser island located approximately thirty (30) feet north of these UST's.

A 4,000 gallon diesel UST (Tank #1) was removed from the immediate vicinity of these two (2) UST's by Pacific Northern Environmental (PNE) in June, 1994. Activities and findings associated with this UST removal are documented in the *PNE UST Decommissioning and Site Assessment Report (July, 1994)*. Three (3) additional UST's (Tank #4 through Tank #6), excluded from the scope of work for this project, are currently located west of the mini-mart building. These three (3) UST's are scheduled to be removed in August, 1996.

2.4 Soils Description

Soil observed within the UST excavation consisted of river deposited, subrounded cobbles and boulders up to one (1) foot in diameter. The matrix consists of gravely sand. This soil unit extends from ground surface to a depth of at least eight (8) feet Below Ground Surface (BGS), the maximum depth of excavation activities. This soil unit is designated as "GP" according to the Unified Soil Classification System. Soil description are documented on the Soil Excavation Profile (Appendix A).

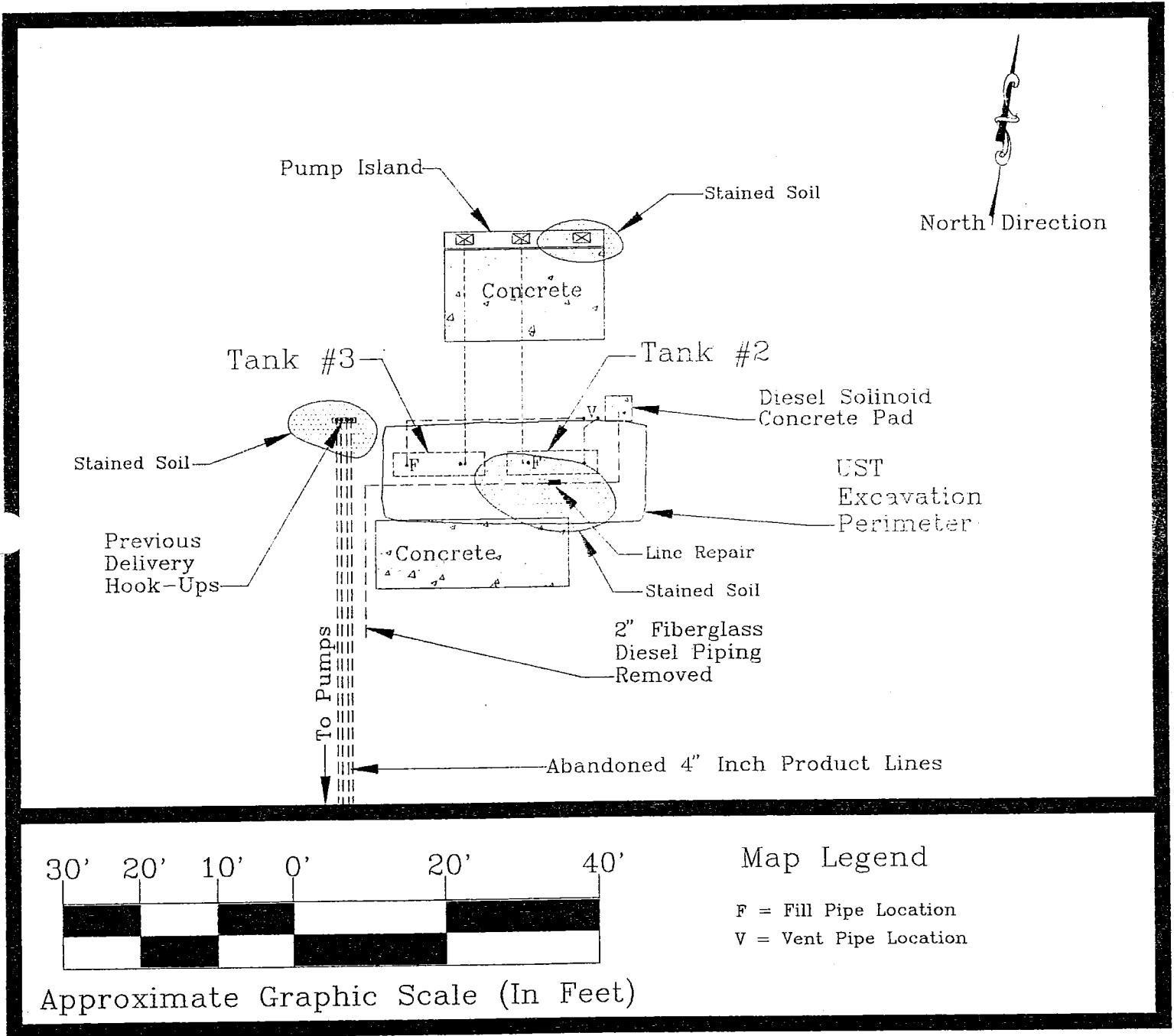


Figure 3. Diagram of UST's Included in the Scope of Work

2.5 Hydrogeology

Groundwater was encountered during excavation activities at depths of approximately 6.8 feet BGS. No hydrogeologic investigation was conducted for this project.

3.0 Closure Site Assessment

NPE and RBDEI decommissioned and removed the UST's on July 16-17, 1996. During the UST removal process, underground fuel lines, leading to the AST basin, were encountered west of the subject UST's as shown by Figure 3.

Rodney Heit, an environmental assessor registered with the International Fire Code Institute (I.F.C.I. #947832236), provided closure site assessment services on July 16-17, 1996. Soil sampling methods are described by Appendix B. Soil sample descriptions are documented by the Daily Field Sampling Log (Appendix C). The analytical and quality control methods employed during this investigation are described by Appendix D.

3.1 Tank #2 and Tank #3 Excavation

Both of the UST's removed during this project were removed from a single excavation. Surficial stained soils were observed near the terminal ends of the underground AST product delivery lines. In addition, stained soils were observed immediately south of the Tank #2 location. This soil staining was apparently a result of damage to a diesel fuel line as documented in the *PNE UST Decommissioning and Site Assessment Report (July, 1994)*.

Upon removal, Sage performed a visual inspection of the tanks and fuel lines. The inspection found corrosion and pitting on the tank and line surfaces. However, no holes were observed in the tanks or fuel lines. Approximately eighty (80) cubic yards of soil generated during removal of UST's was temporarily stockpile adjacent to the UST excavation. This soil stockpile appeared to be impacted by diesel.

Sage collected six (6) soil samples (NWP-0596-S2 through NWP-0596-S7) from within the UST excavation and one (1) sample of groundwater (NWP-0596-W8) exposed at the floor of the UST excavation. Sage submitted these samples to FBI for independent laboratory analysis. These sampling locations are shown by Figure 4.

Hydrocarbon Identification (HCID) analysis of the soil samples collected within the UST excavation found no detectable (less than 20 parts per million) gasoline range petroleum hydrocarbons and no detectable (less than 100 parts per million) heavy oil range petroleum hydrocarbons. However, diesel range petroleum hydrocarbons were detected (concentrations greater than 50 parts per million) in soil samples NWP-0596-S2, S3, and S7. Additional analysis of these samples by WTPH-D (diesel range petroleum hydrocarbons) found diesel at concentrations ranging from 1,800 parts per million (ppm) up to 11,000 ppm. Additional analysis of three (3) soil samples (NWP-0596-S3, S6 and

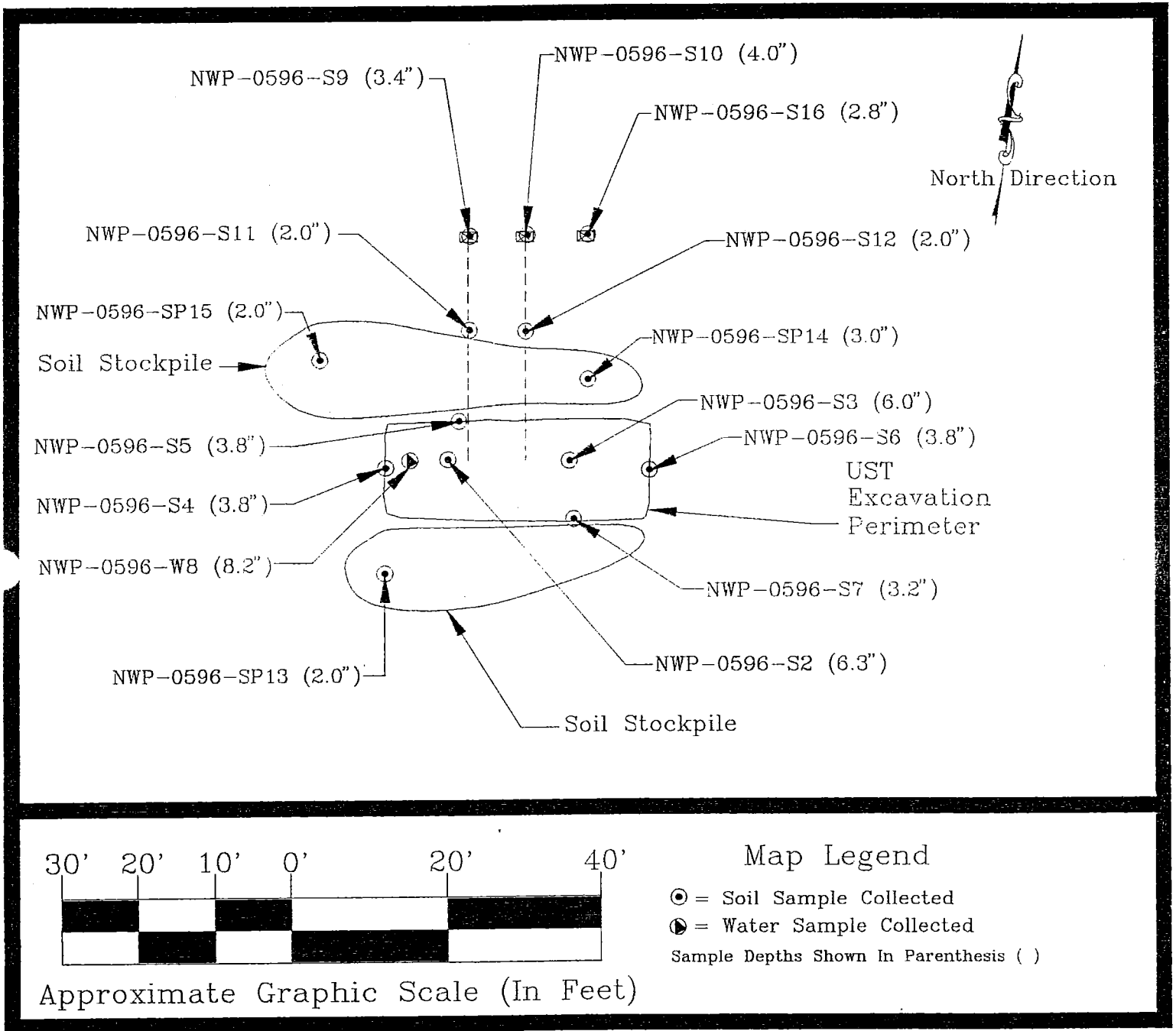


Figure 4. Closure Site Assessment Sampling Locations

S7) found total lead at concentrations ranging from no detect (less than 2 ppm) up to 13 ppm.

The analytical results are attached as Appendix E. Comparison of the analytical results with the Method A Soil Cleanup Levels (Cleanup Levels) of WAC 173-340-740 (Appendix F) indicates that soil remediation is required at the NWP-0596-S2, S3 and S7 sampling locations to reduce diesel concentrations to acceptable levels. These samples were collected from beneath the original position of Tank #2, beneath the original position of Tank #3 and the southern sidewall of the excavation, respectively.

Analysis of the groundwater sample (NWP-0596-W8) found:

- ♦ diesel range petroleum hydrocarbons at a concentration of 320 ppm,
- ♦ gasoline range petroleum hydrocarbons at a concentration of 20 ppm,
- ♦ benzene at a concentration of 130 parts per billion (ppb),
- ♦ toluene at a concentration of 540 ppb,
- ♦ ethylbenzene at a concentration of 140 ppb,
- ♦ total xylenes at a concentration of 1,500 ppb and
- ♦ total lead at a concentration of 140 ppb.

Comparison of the analytical results (Appendix E) with the Method A Groundwater Cleanup Levels (Cleanup Levels) of WAC 173-340-720 indicates that groundwater remediation is required to reduce, diesel, gasoline, benzene, toluene, ethylbenzene, xylene and total lead concentrations to acceptable levels.

3.2 Fuel Lines and Dispenser Island

NWP and RBDEI removed the fuel lines and dispensers on July 16-17, 1996. Diesel stained soil was observed adjacent to the diesel dispenser (located on the eastern portion of the fuel dispenser island). Assessment of this fuel dispenser was excluded from Sage's scope of work.

Sage collected a soil sample from beneath the original position of each fuel dispenser (NWP-0596-S9, S10 and S16). In addition, Sage collected one soil sample from beneath each of the two underground gasoline lines (NWP-0596-S11 and S12). These sampling locations shown by Figure 4. Since assessment of the diesel dispenser was not included in Sage's scope of work, sample NWP-0596-S16 was not analyzed. However, surficial staining indicates that a release has occurred at this location.

HCID analysis of the soil samples found detectable gasoline (greater than 20 ppm) and diesel (greater than 50 ppm) in sample NWP-0596-S9. No heavy oil range petroleum hydrocarbons were detected (less than 100 ppm) in this sample. HCID analysis of the remaining soil samples found no detectable petroleum hydrocarbons. Analysis of samples NWP-0596-S10 and S12 found total lead at concentrations ranging from 3 ppm up to 4 ppm.

Additional analysis of sample NWP-0596-S9 found:

- ◆ diesel range petroleum hydrocarbons at a concentration of 490 ppm,
- ◆ gasoline range petroleum hydrocarbons at a concentration of 1,500 ppm,
- ◆ no detectable (less than 1 ppm) benzene,
- ◆ no detectable (less than 1 ppm) toluene,
- ◆ no detectable (less than 1 ppm) ethylbenzene
- ◆ total xylenes at a concentration of 12 ppm and
- ◆ total lead at a concentration of 2 ppm.

Comparison of the FBI analytical results (Appendix E) with the Cleanup Levels (Appendix F) indicates that remedial action is required at the NWP-0596-S9 sampling location (beneath the original position of the western fuel dispenser) to reduce diesel and gasoline concentrations to acceptable levels.

3.3 Soil Stockpile

Sage collected three (3) samples (NWP-0596-SP13 through NWP-0596-SP15) from the stockpile of soil (approximately 80 cubic yards) generated during the UST removal process. These sampling locations are shown by Figure 4.

HCID analysis of the soil stockpile samples indicated:

- ◆ no detectable (less than 20 ppm) gasoline,
- ◆ detectable (greater than 50 ppm) diesel and
- ◆ detectable (greater than 100 ppm) heavy oil range hydrocarbons only in sample NWP-0596-SP14.

Additional analysis of the stockpile samples found:

- ◆ diesel at concentrations ranging from 270 ppm up to 7,200 ppm,
- ◆ Total Recoverable Petroleum Hydrocarbons (TRPH) at a concentration of 36 ppm in sample NWP-0596-SP14 and
- ◆ total lead a concentrations ranging from 18 ppm up to 35 ppm.

Comparison of the analytical results (Appendix E) with the WSDOE End Use Criteria for Petroleum Contaminated Soil (Appendix G) indicates that the soil stockpile is designated as "Class 4 Soil". For Class 4 Soil, the WSDOE recommends the following:

- ◆ treatment,
- ◆ disposal in a permitted, municipal landfill or
- ◆ permitted as a new PCS landfill.

The lowermost portion (approximately one feet) was backfilled with imported fill material. The remainder of the excavation was backfilled with the stockpile of soil generated during the UST removal process.

Appendix A

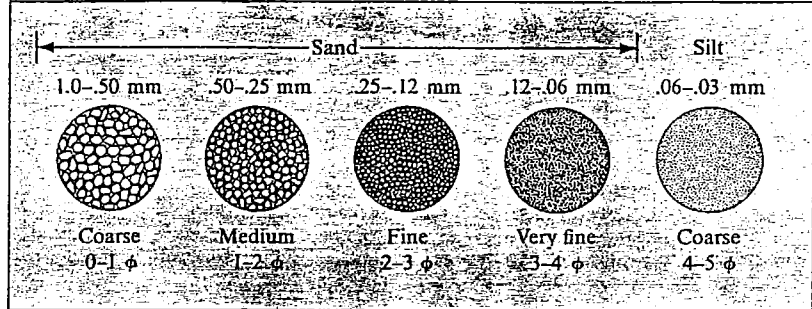
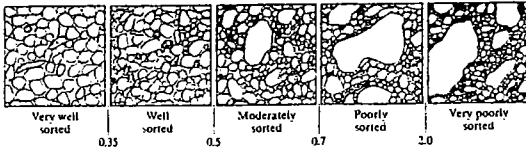
SOIL EXCAVATION PROFILE



Earth Sciences, Inc.
602 Cherryhill Lane
P.O. Box 1644
Zillah, WA 98953
Phone (509) 829-6400

Field Crew RODNEY HEIT
Project Name De Vere & Sons CARDLOCK Project # NWP-0596
Address FIRST & SHORT STREET Cle Elum, WA Date 7-16-96

Location S.W. 1/4 S.W. 1/4 Sec. 25 T. 20 N. R. 15 E. W.M. Elevation ~1887 Datum MSL (USGS)
Pit Dimensions APPROX. 10' x 34' x 8' Finish Depth 8.5865 Pit Orientation EAST TO WEST



Additional Detrital Rock Classifications on Reverse

Description of Lithologies

Sample #	Matrix	Groundwater	Depth (ft)	Graphic Log	Unified Soil Classification
			8.5		
			1		
			2		
			3		
			4		
			5		
			6		
			7		
			8		

River deposited, subrounded cobbles and small boulders up to approximately one foot in diameter. The matrix consists of gravelly sand. This unit extends from ground surface (GS) to approx. (8.5) feet BGS at which point the UST excavation was terminated.

NEAR THE FLOOR OF THE WESTERN MOST UST, A PIT WAS ESTABLISHED TO APPROX 9.5 FEET BGS THE PIT WAS ALLOWED TO EQUILIBRATE BEFORE A GRAB WATER SAMPLE WAS COLLECTED.

Rodney L. Heit

7-16-96

SAGE Representative

Date

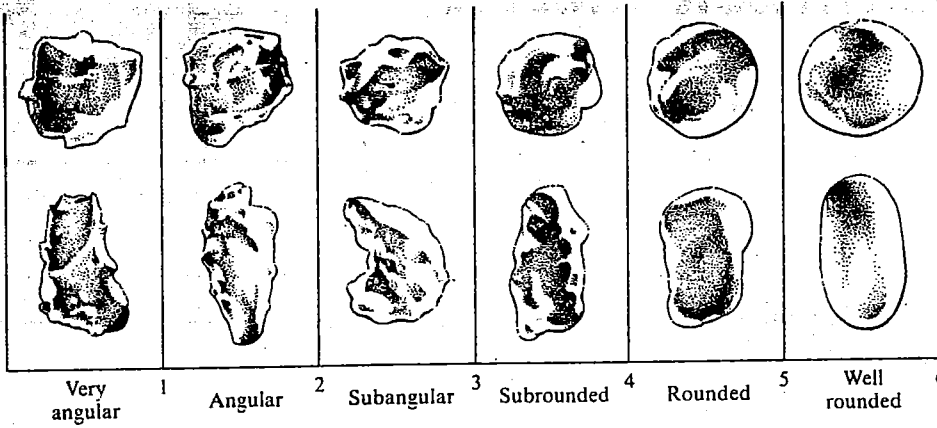


Figure 13-4
Terminology for degree of rounding of detrital grains using a hand lens. The numbers assigned to each roundness class permit calculation of mean roundness and standard deviation. [After M. C. Powers, 1953, *Jour. Sed. Petrology*, 23, Fig. 1.]

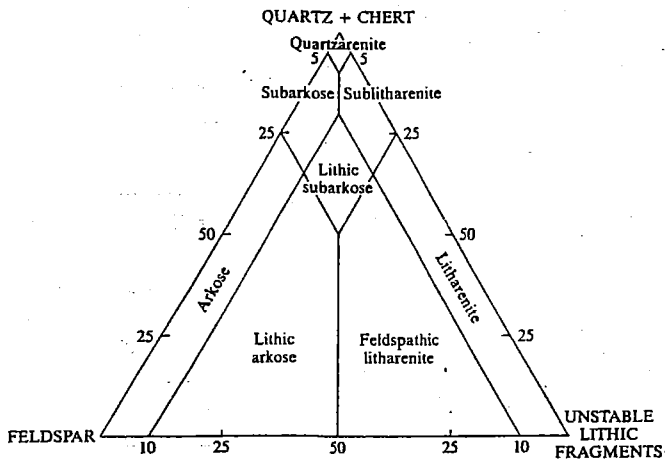
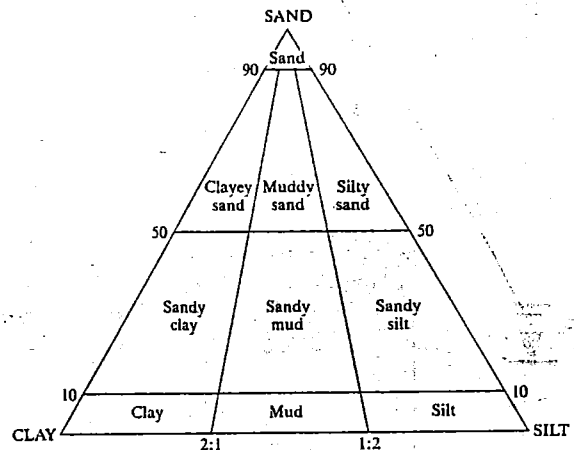


Figure 13-37
One of the many mineralogical classifications of sandstones in common use. [From E. F. McBride, 1963, *Jour. Sed. Petrology*, 33, Fig. 1.]



The Udden-Wentworth Grain Size Scale for Clastic Sediments*

	Name	Millimeters	Micrometers	ϕ
GRAVEL	Boulder	4,096		-12
	Cobble	256		-8
	Pebble	64		-6
	Granule	4		-2
	Very coarse sand	2		-1
SAND	Coarse sand	1		0
	Medium sand	0.5	500	1
	Fine sand	0.25	250	2
	Very fine sand	0.125	125	3
	Coarse silt	0.062	62	4
MUD	Coarse silt	0.031	31	5
	Medium silt	0.016	16	6
	Fine silt	0.008	8	7
	Very fine silt	0.004	4	8
	Clay			

*As devised by J. A. Udden (1898) and C. K. Wentworth (1924). The ϕ scale (Krumbein, 1934) was devised to facilitate statistical manipulation of grain-size data and is commonly used. $\phi = -\log_2 \text{mm}$.

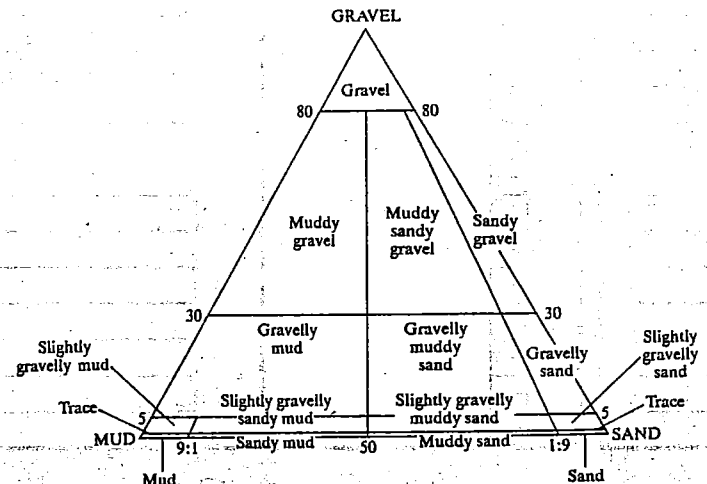


Figure 13-3
Triangular classification of grain sizes in detrital rocks. If no gravel is present, triangle A is used; if gravel is present, triangle B. Note the emphasis given to even a trace amount of gravel. [From R. L. Folk, 1954, *Jour. Geology*, 62, Fig. 1.]

Appendix B

Soil Sampling Methodology

Soil sampling locations were chosen at locations considered representative of soil conditions. To collect representative soil samples, Sage Earth Sciences uses the methodology outlined below.

1. Select a new sample jar whose volume is adequate for the appropriate analysis.
2. Remove a minimum of six (6) inches of soil to minimize the loss of volatile compounds.
3. Immediately transfer soil to the sample container, using the container itself to collect the sample. Using new nitrile gloves, pack the soil tightly into the container to prevent the loss of volatile compounds. Ensure that the container is filled completely to exclude any airspace in the sample.
4. Label the jar with a unique identification number, the analytical procedure to be used, the time and date of sample collection and the person who collected the sample.
5. Enter the sample on the Chain-of-Custody form and the Daily Field Sampling Log.
6. Place the sample in wet ice to cool the samples to approximately four (4) degrees Celsius.
7. Place the samples in a shipping cooler packed with absorbent material and blue ice for shipment.
8. Secure the Chain-of-Custody form to the underside of the cooler lid in a sealable plastic bag with tape.
9. Upon completion of sampling activities, secure the lid of the cooler with strapping tape and affix custody seals across the lid/cooler interface. Place appropriate shipping waybills atop the cooler.
10. Ship the samples to the laboratory via commercial courier.

Groundwater Sampling Methodology

To collect groundwater samples, Sage used the methodology outlined below.

1. Select a new sample jar with an adequate volume for the appropriate analysis. Utilize a new disposable bailer attached to monofilament line to collect groundwater exposed within the excavation.
2. Using new vinyl gloves, transfer the water into the sample container minimizing sample agitation and fill until an inverted meniscus forms at the top of the sample container.
3. Replace the sample container cap and invert to ensure there is no airspace in the sample.
4. Label the sample container with a unique identification number, the analytical procedure to be used, the time and date of sample collection and the name of the person collecting the sample.
5. Enter the sample on the Chain-of-Custody form and the Field Sampling Log.
6. Place the sample in wet ice to cool the sample to approximately four (4) degrees Celsius.
7. Place the samples in a shipping cooler packed with absorbent material and blue ice for shipment.
8. Secure the Chain-of-Custody form to the underside of the cooler lid in a sealable plastic bag with tape.
9. Upon completion of sampling activities, secure the lid of the cooler with strapping tape and affix custody seals across the lid/cooler interface. Place appropriate shipping waybills atop the cooler.
10. Ship the samples to the laboratory via commercial courier.

Appendix C

Appendix D

Analytical Methods

For independent laboratory analysis, Sage submitted representative soil samples to:

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282

The analytical methods chosen for selected soil samples consist of:

- ◆ HCID (Hydrocarbon Identification),
- ◆ WTPH-G (Gasoline Range Petroleum Hydrocarbons),
- ◆ WTPH-D (Diesel Range Petroleum Hydrocarbons),
- ◆ EPA Method 8020/602 (Benzene, Toluene, Ethylbenzene & Xylenes),
- ◆ EPA Method 418.1 (Total Recoverable Petroleum Hydrocarbons) and
- ◆ Method 6010 (Total Lead).

Quality Control

One (1) travel blank (NWP-0596-TB1) was analyzed for the sample shipment. Analysis of the travel blank was used to detect contamination from transport and/or storage practices. No contaminants were detected in the travel blank.

Appendix E

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D
Beth M. Albertson, M.S.
Bradley T. Benson
Kelley D. Wilt

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044

July 26, 1996

Rodney Heit, Project Manager
Sage Earth Sciences, Inc.
601 Glenwood Drive
Zillah, WA 98953

Dear Mr. Heit:

Enclosed are the results from the testing of material submitted on July 18, 1996 from your NW8-0596, Dever & Sons Cardlock project.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Bradley T. Benson
Chemist

keh
Enclosures
SES0726R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: July 26, 1996

Date Received: July 18, 1996

Project: NW8-0596, Dever & Sons Cardlock

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR GASOLINE, DIESEL AND HEAVY OIL
BY WTPH-HCID

Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY
THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO
PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION
OF ANY MATERIAL PRESENT

<u>Sample ID</u>	<u>Gasoline</u>	<u>Diesel</u>	<u>Heavy Oil</u>	<u>Surrogate (% Recovery)</u>
NWP-0596-S2	ND	D	ND	70
NWP-0596-S3	ND	D	ND	48
NWP-0596-S4	ND	ND	ND	82
NWP-0596-S5	ND	ND	ND	78
NWP-0596-S6	ND	ND	ND	77
NWP-0596-S7	ND	D	ND	76
NWP-0596-S9	D	D	ND	69
NWP-0596-S10	ND	ND	ND	80
NWP-0596-S11	ND	ND	ND	74
NWP-0596-S12	ND	ND	ND	70
NWP-0596-SP13	ND	D	ND	69
NWP-0596-SP14	ND	D	D	102
NWP-0596-SP15	ND	D	ND	80
Method Blank	ND	ND	ND	100

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 100 mg/kg heavy oil.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: July 26, 1996
Date Received: July 18, 1996
Project: NW8-0596, Dever & Sons Cardlock
Date Samples Extracted: July 23, 1996

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL
BY GC/FID (Modified 8015)

Samples Processed Using Method 3550
Results Reported as $\mu\text{g/g}$ (ppm)

<u>Sample ID</u>	<u>Diesel</u>	<u>Surrogate</u> (% Recovery)
NWP-0596-S2	11,000	100
NWP-0596-S3	11,000	100
NWP-0596-S7	1,800	97
NWP-0596-S9	490	96
NWP-0596-SP13	7,200	100
NWP-0596-SP14	270	90
NWP-0596-SP15	910	96
Method Blank	<10	113

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: July 26, 1996
 Date Received: July 18, 1996
 Project: NW8-0596, Dever & Sons Cardlock

QUALITY ASSURANCE RESULTS
 FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM
 HYDROCARBONS AS DIESEL
 BY GC/FID (Modified 8015)

Laboratory Code: 70724 (Duplicate)

Analyte:	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Diesel	ug/g (ppm)	110	80	32 v	0-20

Laboratory Code: 70724 (Matrix Spike)

Analyte:	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	Relative Percent Difference
Diesel	ug/g (ppm)	500	110	99	107	65-132	8

Laboratory Code: Spike Blank

Analyte:	Reporting Units	Spike Level	% Recovery MS	% Recovery MSD	Acceptance Criteria	Relative Percent Difference
Diesel	ug/g (ppm)	500	101	104	62-136	3

v - The sample consists of greater than 30% rocks. Variability is attributable to this sample type.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: July 26, 1996
Date Received: July 18, 1996
Project: NW8-0596, Dever & Sons Cardlock
Date Samples Extracted: July 22, 1996

RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES AND GASOLINE
USING EPA METHODS 8020 AND 8015
Samples Processed Using Method 5030
Results Reported as $\mu\text{g/L}$ (ppb)

<u>Sample #</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline</u>	<u>Surrogate % Recovery</u>
NWP-0596-TB1	<1	<1	<1	<1	<50	110
NWP-0596-W8	130	540	140	1,500	20,000	107
Method Blank	<1	<1	<1	<1	<50	107

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: July 26, 1996

Date Received: July 18, 1996

Project: NW8-0596, Dever & Sons Cardlock

QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE,
ETHYLBENZENE, XYLENES AND GASOLINE
USING EPA METHODS 8020 AND 8015

Laboratory Code: 70922 (Duplicate)

Analyte:	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Benzene	ug/L (ppb)	3	2	40 a	0-20
Toluene	ug/L (ppb)	6	6	0	0-20
Ethylbenzene	ug/L (ppb)	<1	<1	nm	0-20
Xylenes	ug/L (ppb)	7	7	0	0-20
Gasoline	ug/L (ppb)	2,500	2,700	8	0-20

Laboratory Code: Spike Blank

Analyte:	Reporting Units	Spike Level	% Recovery		Acceptance Criteria	Relative Percent Difference
			MS	MSD		
Benzene	ug/L (ppb)	100	101	99	80-115	2
Toluene	ug/L (ppb)	100	107	105	81-118	2
Ethylbenzene	ug/L (ppb)	100	110	109	82-120	1
Xylenes	ug/L (ppb)	300	111	110	84-121	1
Gasoline	ug/L (ppb)	1,000	107	108	84-126	1

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

a - The analyte was detected at a level less than five times the detection limit. The RPD results may not provide reliable information on the variability of the analysis.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: July 26, 1996
Date Received: July 18, 1996
Project: NW8-0596, Dever & Sons Cardlock
Date Samples Extracted: July 24, 1996
Date Extracts Analyzed: July 25, 1996

**RESULTS FROM THE ANALYSIS OF THE WATER SAMPLE
FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL
BY GC/FID (Modified 8015)
Samples Processed Using Method 3510
Results Reported as $\mu\text{g/L}$ (ppb)**

<u>Sample ID</u>	<u>Diesel</u>	<u>Surrogate</u> (% Recovery)
NWP-0596-W8	320,000 a	90 d
Method Blank	<100	112

a - The GC trace is not characteristic of the water soluble fraction of diesel.

d - The sample was diluted. Surrogate recoveries may not be meaningful.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: July 26, 1996

Date Received: July 18, 1996

Project: NW8-0596, Dever & Sons Cardlock

QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM
HYDROCARBONS AS DIESEL
BY GC/FID (Modified 8015)

Laboratory Code: Spike Blank

Analyte:	Reporting Units	Spike Level	% Recovery		Acceptance Criteria	Relative Percent Difference
			MS	MSD		
Diesel	ug/L (ppb)	2,500	102	102	63-150	0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: July 26, 1996
Date Received: July 18, 1996
Project: NW8-0596, Dever & Sons Cardlock
Date Samples Extracted: July 22-23, 1996
Date Extracts Analyzed: July 24, 1996

**RESULTS FROM THE ANALYSIS
OF THE WATER SAMPLE FOR TOTAL LEAD
Samples Processed Using Method 3005M
Results Reported as $\mu\text{g/L}$ (ppb)**

<u>Sample ID</u>	<u>Lead</u>
NWP-0596-W8	140
Method Blank	<5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: July 26, 1996

Date Received: July 18, 1996

Project: NW8-0596, Dever & Sons Cardlock

QUALITY ASSURANCE RESULTS
FOR TOTAL METALS BY
INDUCTIVELY COUPLED PLASMA (ICP)
(METHOD 6010)

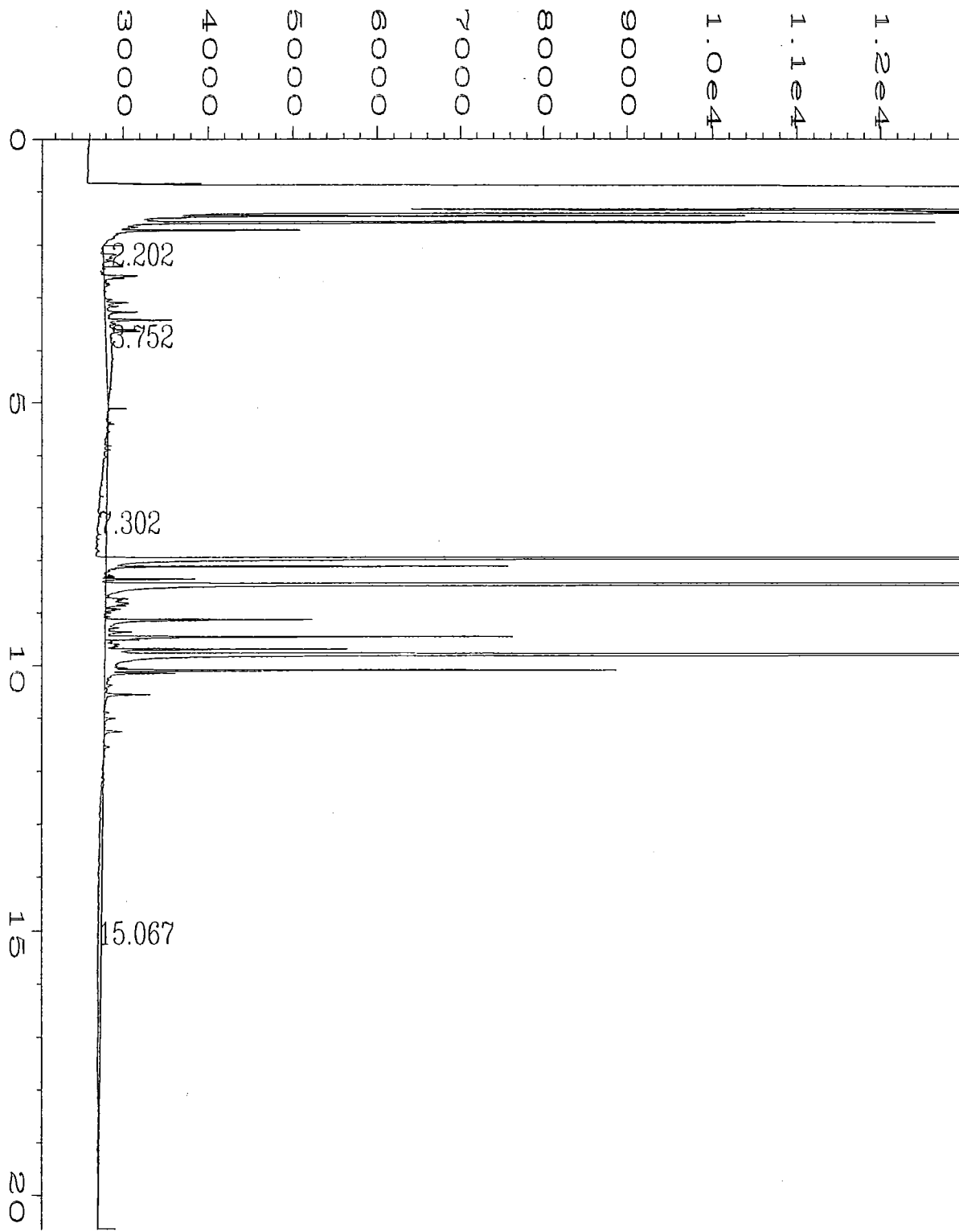
Laboratory Code: 70766 (Duplicate)

Analyte:	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Lead	ug/L (ppb)	<5	<5	nm	0-20

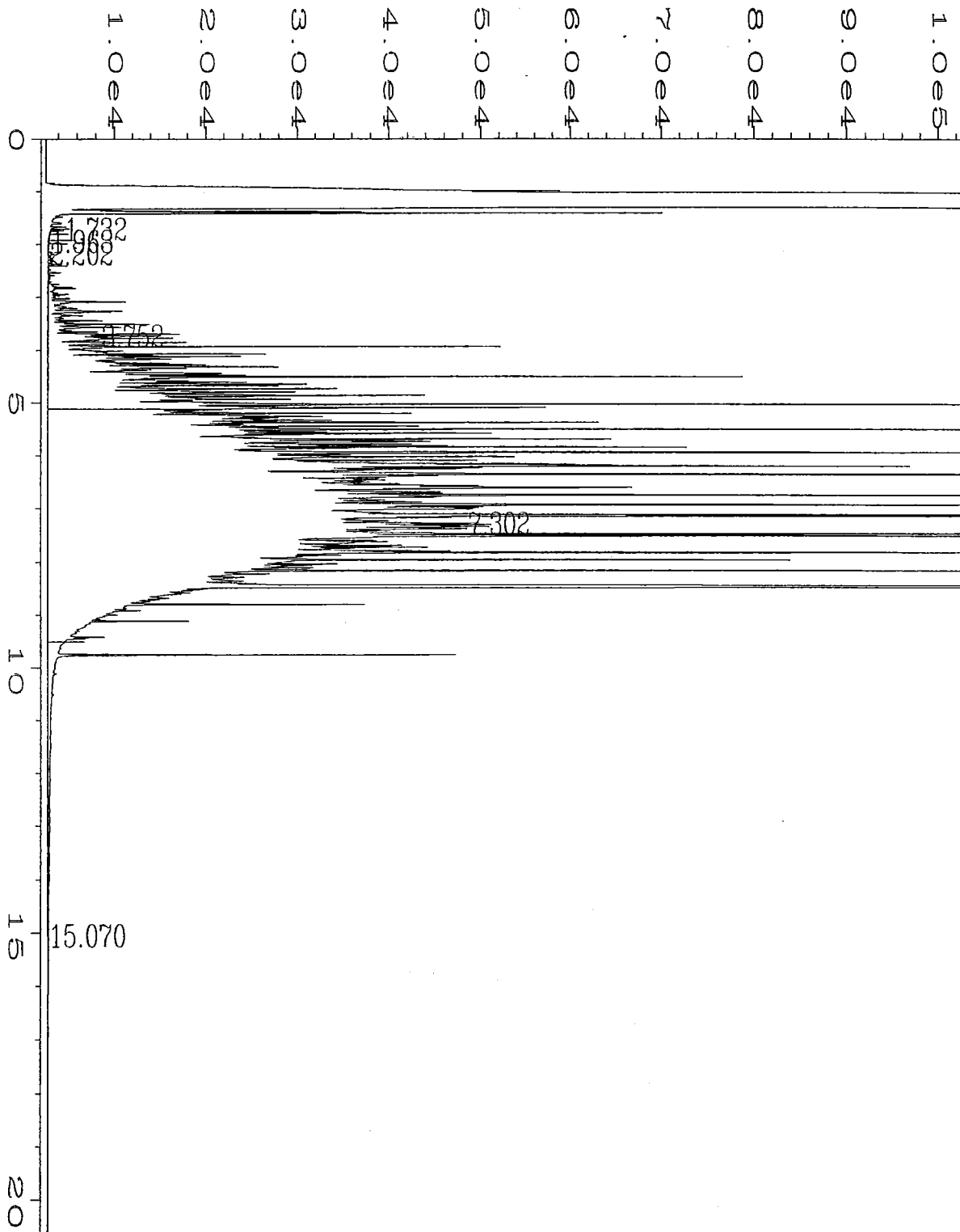
Laboratory Code: Spike Blank

Analyte:	Reporting Units	Spike Level	% Recovery		Acceptance Criteria	Relative Percent Difference
			MS	MSD		
Lead	ug/L (ppb)	500	104	104	80-120	0

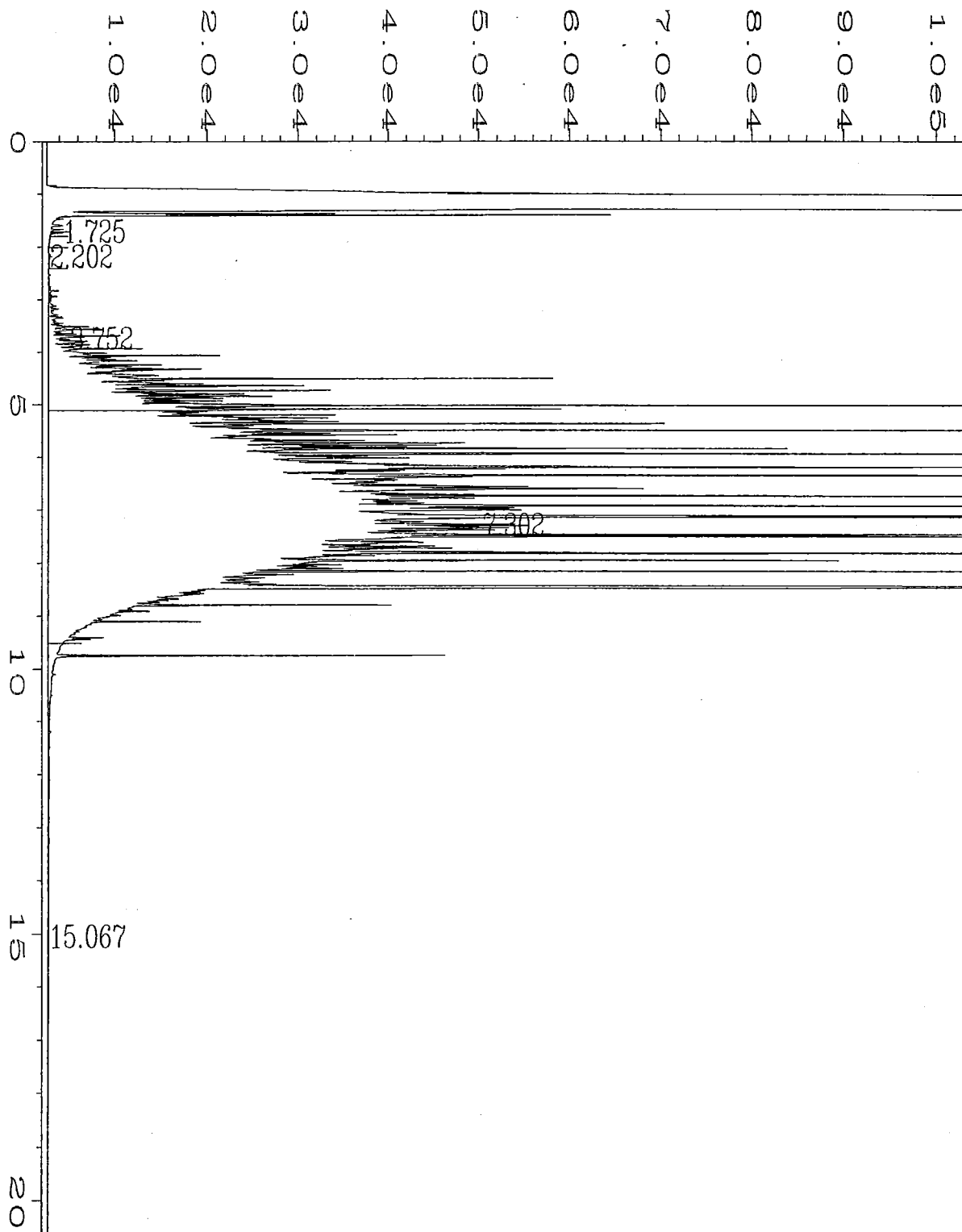
nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.



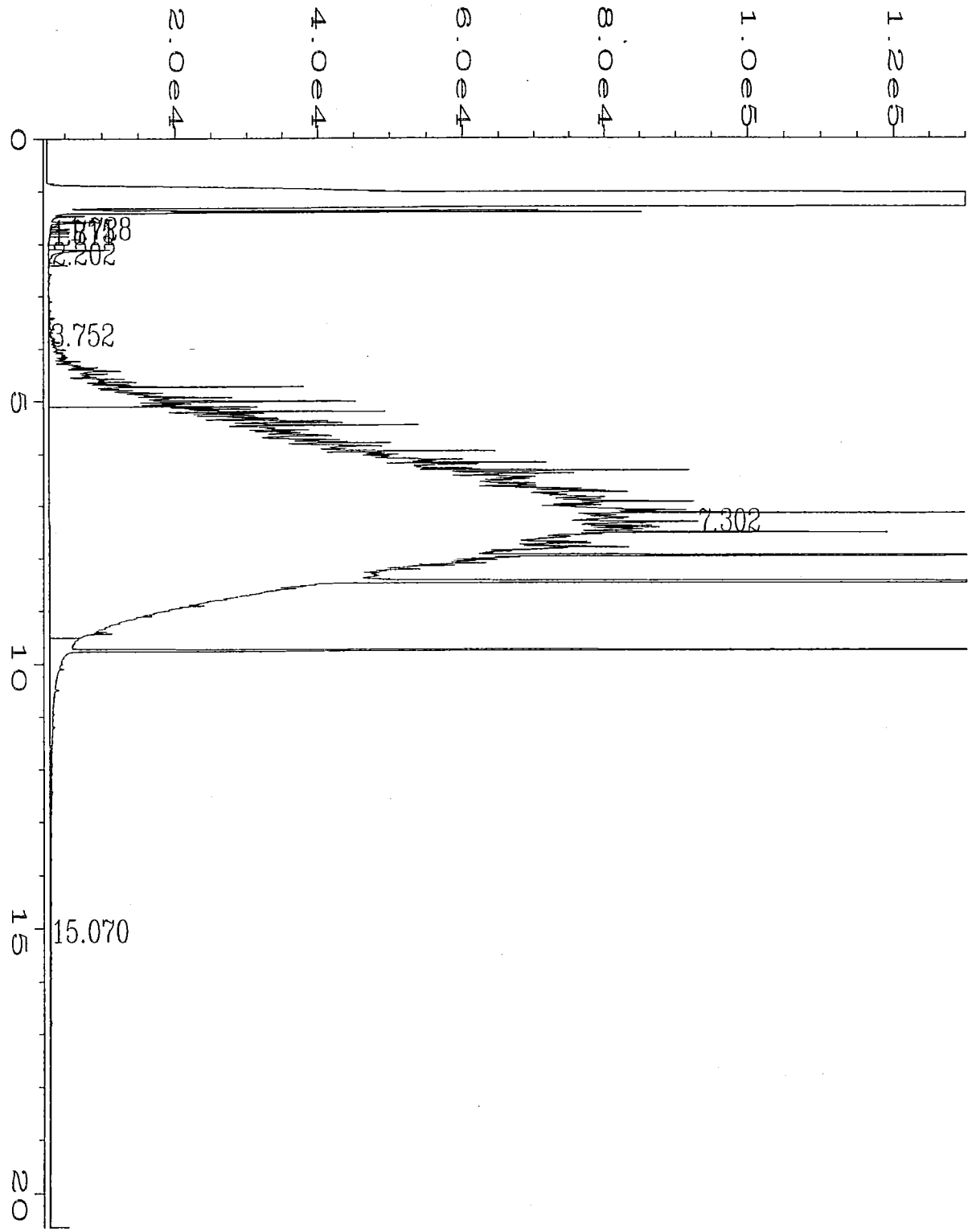
Data File Name	: C:\HPCHEM\4\DATA\07-22-96\057F2501.D	Page Number	: 1
Operator	: SO	Vial Number	: 57
Instrument	: ANALYZER4	Injection Number	: 1
Sample Name	: TR MB 06-407	Sequence Line	: 25
Run Time Bar Code:		Instrument Method:	TPHD.MTH
quired on	: 23 Jul 96 07:01 PM	Analysis Method	: TPHD.MTH
Report Created on:	25 Jul 96 10:58 AM		



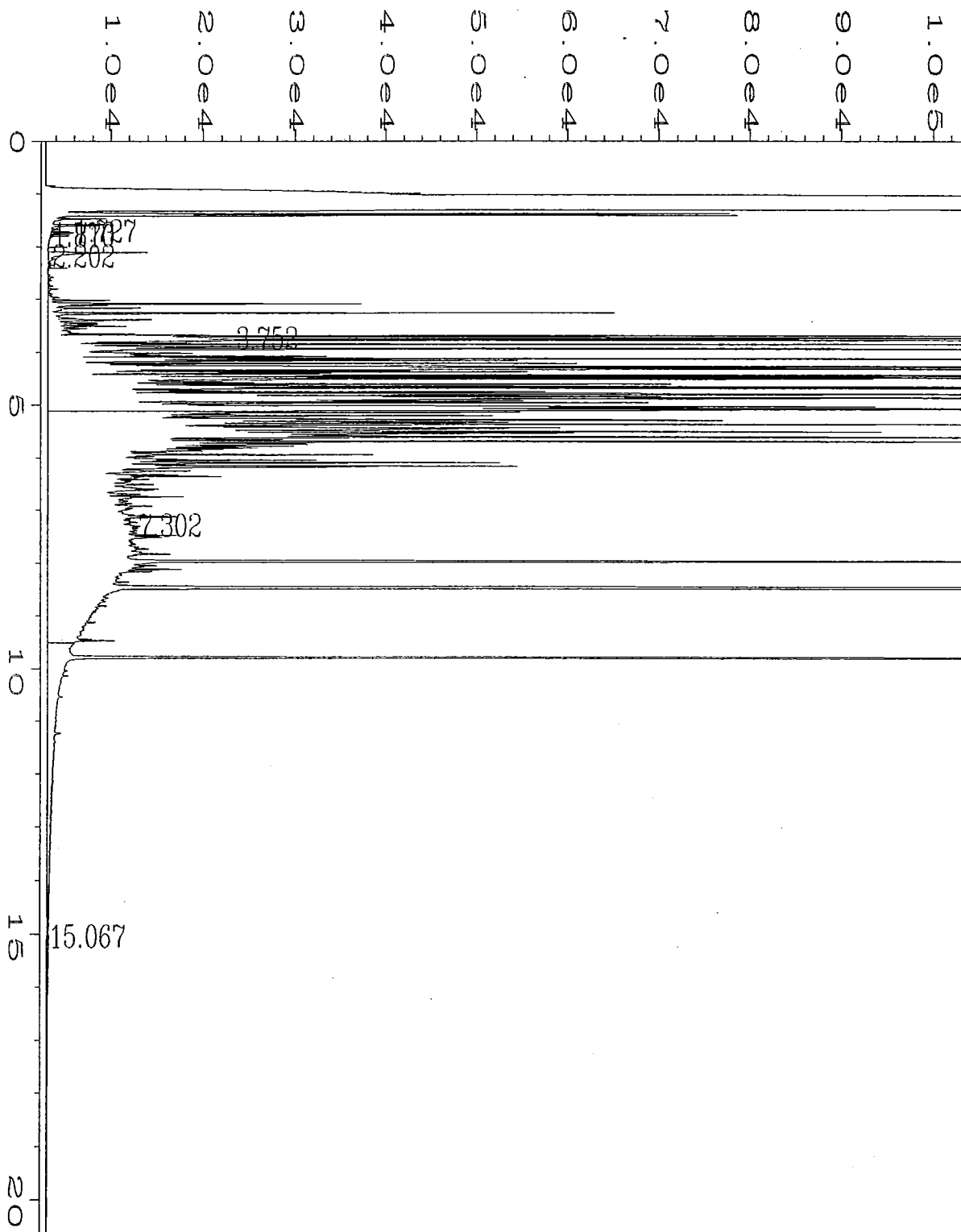
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Operator	: SO	Vial Number	: 91
Instrument	: ANALYZER4	Injection Number	: 1
Sample Name	: 70893 1:10	Sequence Line	: 36
Run Time Bar Code:		Instrument Method:	TPHD.MTH
quired on	: 24 Jul 96 04:45 PM	Analysis Method	: TPHD.MTH
Report Created on:	25 Jul 96 10:55 AM		



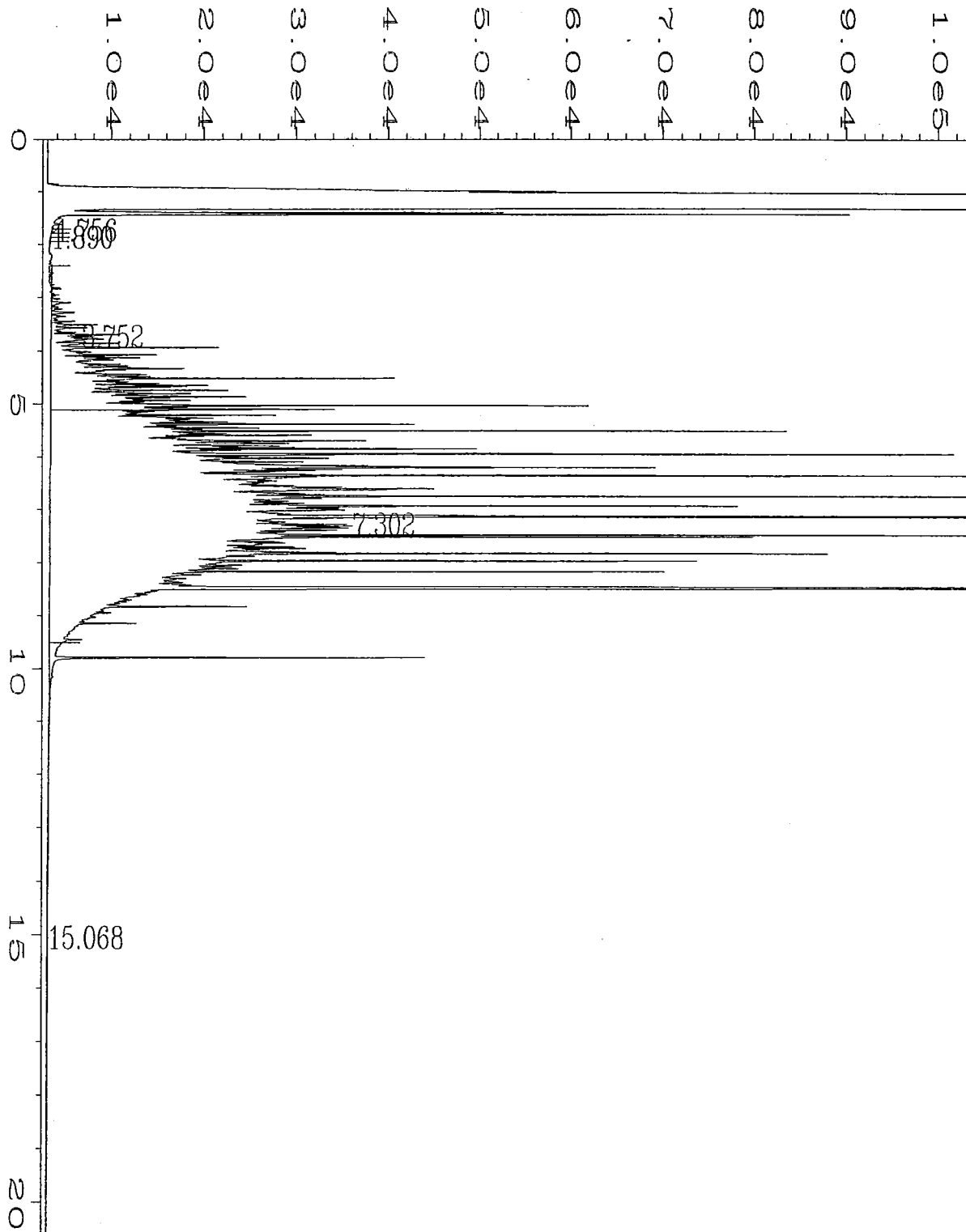
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Operator	: SO	Vial Number	: 92
Instrument	: ANALYZER4	Injection Number	: 1
Sample Name	: 70894 1:10	Sequence Line	: 36
Run Time Bar Code:		Instrument Method:	TPHD.MTH
quired on	: 24 Jul 96 05:17 PM	Analysis Method	: TPHD.MTH
Report Created on:	25 Jul 96 10:55 AM		



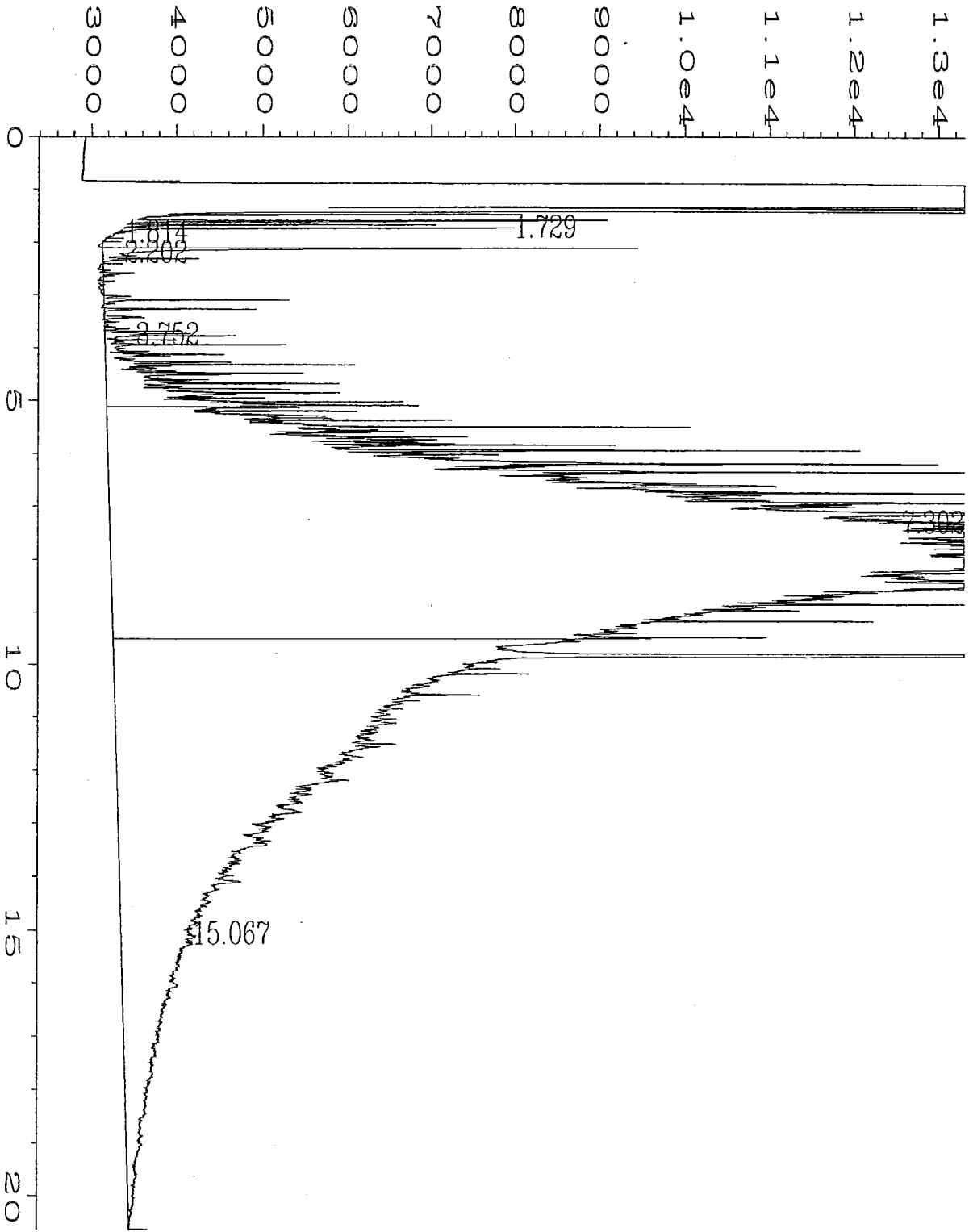
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Instrument	: ANALYZER4	Injection Number	: 1
Sample Name	: 70898	Sequence Line	: 35
Run Time Bar Code:		Instrument Method:	TPHD.MTH
quired on	: 24 Jul 96 04:13 PM	Analysis Method	: TPHD.MTH
Report Created on:	25 Jul 96 10:56 AM		



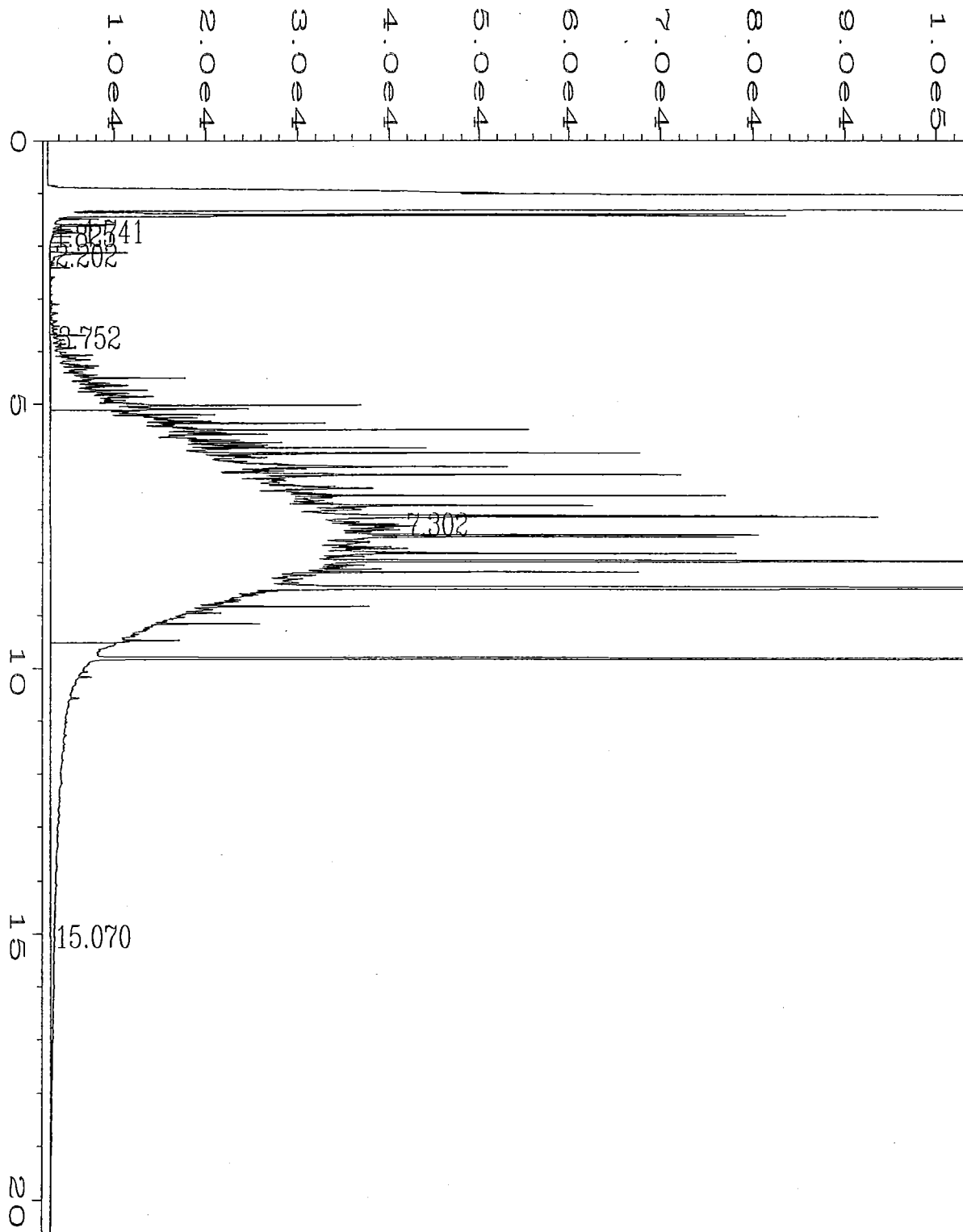
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Operator	: SO	Vial Number	: 81
Instrument	: ANALYZER4	Injection Number	: 1
Sample Name	: 70902	Sequence Line	: 28
Run Time Bar Code:		Instrument Method:	TPHD.MTH
quired on	: 24 Jul 96 07:31 AM	Analysis Method	: TPHD.MTH
Report Created on:	25 Jul 96 10:57 AM		



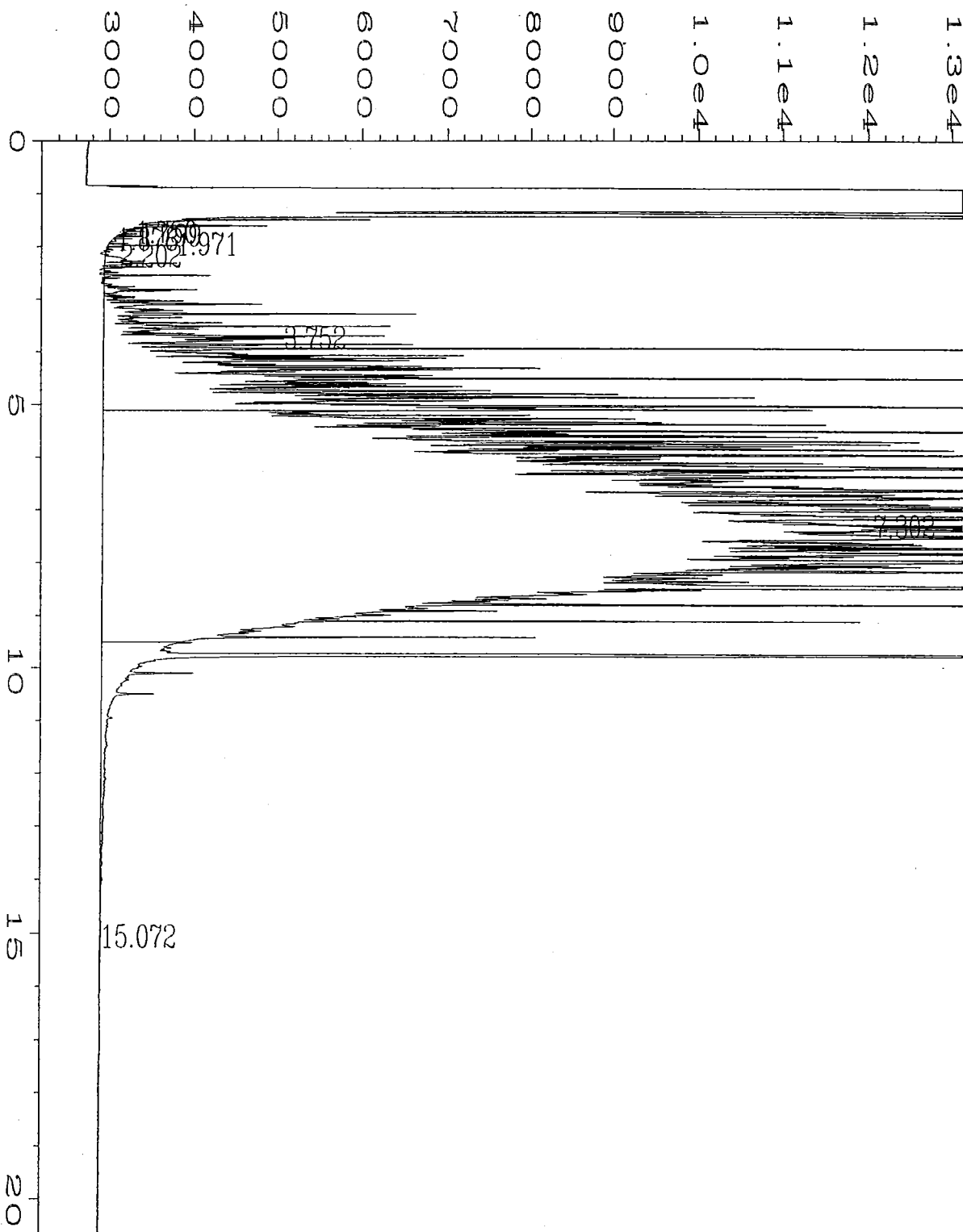
Data File Name	: C:\HPCHEM\4\DATA\07-22-96\005F4401.D	Page Number	: 1
Operator	: SO	Vial Number	: 5
Instrument	: ANALYZER4	Injection Number	: 1
Sample Name	: 70906 1:10	Sequence Line	: 44
Print Time Bar Code:		Instrument Method:	TPHD.MTH
quired on	: 25 Jul 96 09:15 AM	Analysis Method	: TPHD.MTH
Report Created on:	25 Jul 96 10:59 AM		



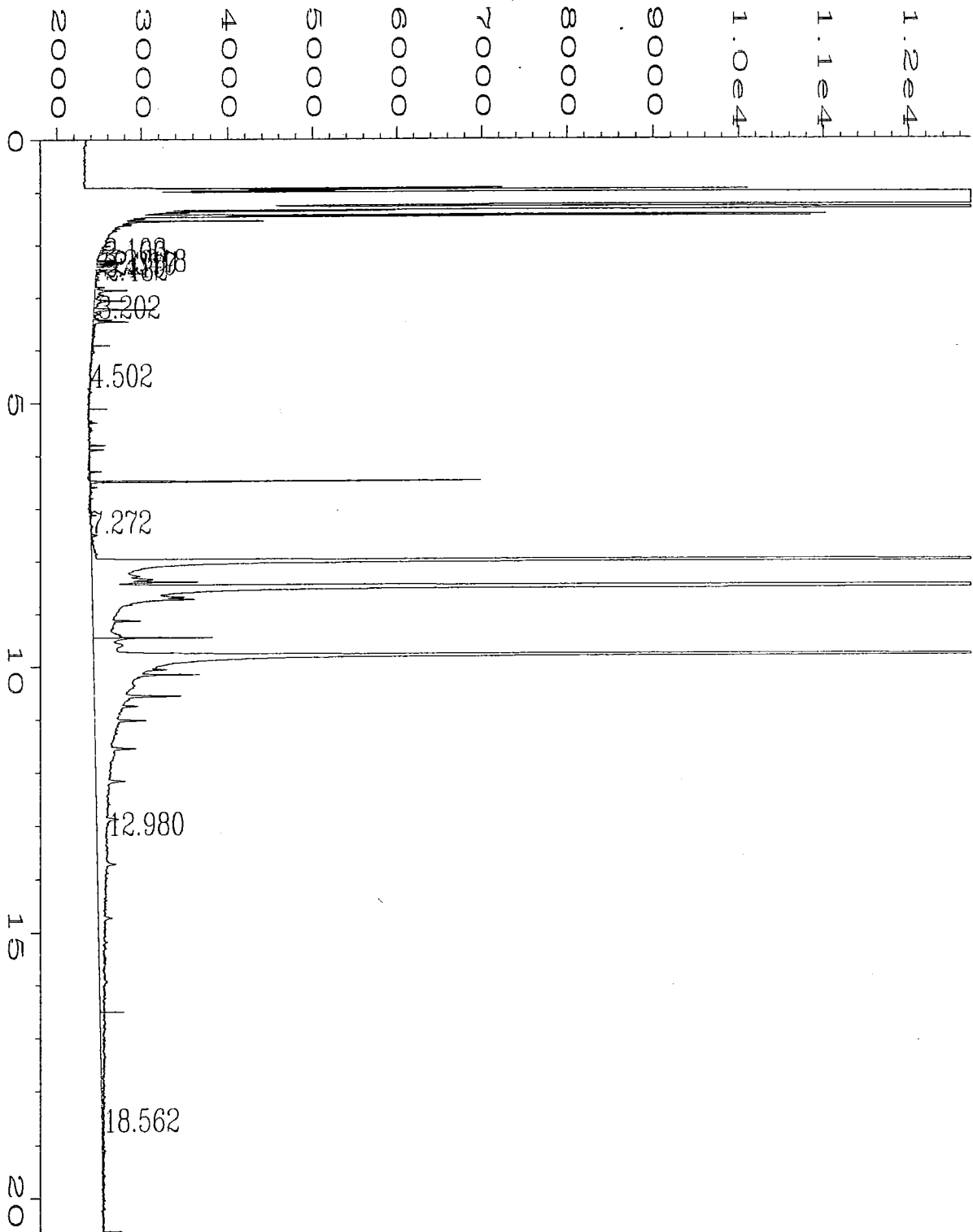
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Operator	: SO	Vial Number	: 83
Instrument	: ANALYZER4	Injection Number	: 1
Sample Name	: 70907	Sequence Line	: 28
Run Time Bar Code:		Instrument Method:	TPHD.MTH
quired on	: 24 Jul 96 08:30 AM	Analysis Method	: TPHD.MTH
Report Created on:	25 Jul 96 10:57 AM		



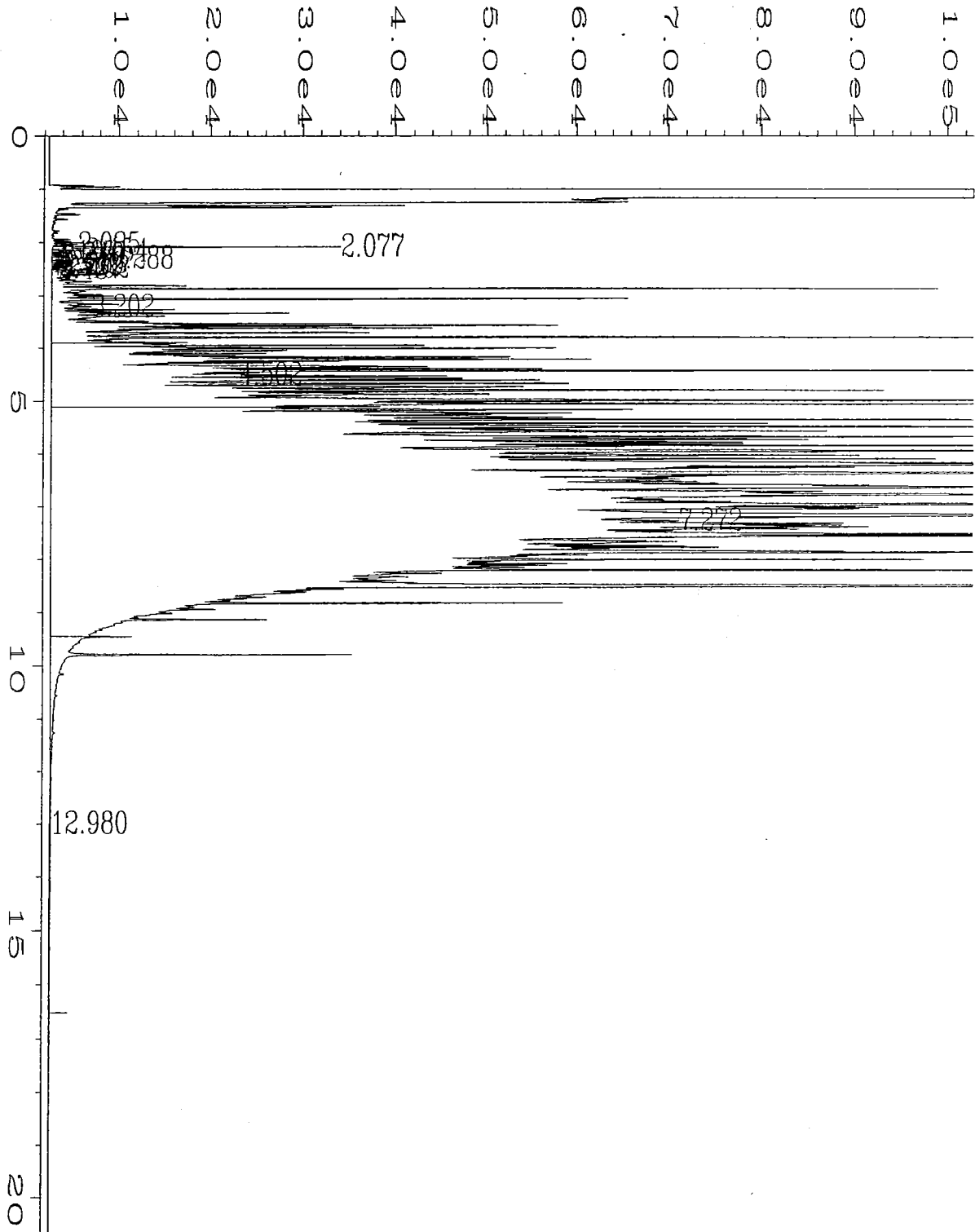
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Instrument	: ANALYZER4	Injection Number	: 1
Sample Name	: 70908	Sequence Line	: 28
Run Time Bar Code:		Instrument Method:	TPHD.MTH
quired on	: 24 Jul 96 08:59 AM	Analysis Method	: TPHD.MTH
Report Created on:	25 Jul 96 10:58 AM		



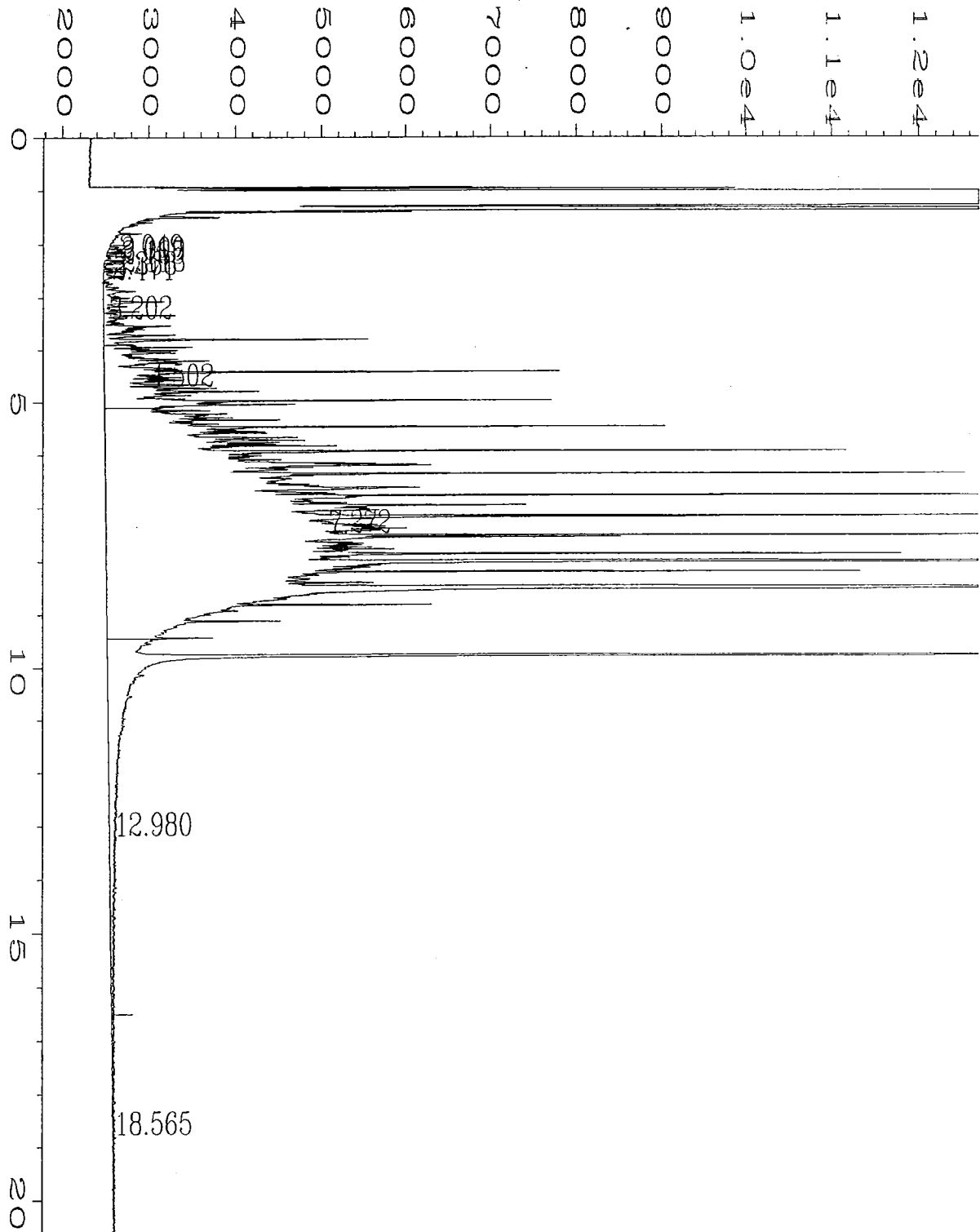
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Operator	: SO	Vial Number	: 89
Instrument	: ANALYZER4	Injection Number	: 1
Sample Name	: 500 WADF	Sequence Line	: 32
Print Time Bar Code:		Instrument Method:	TPHD.MTH
quired on	: 24 Jul 96 01:36 PM	Analysis Method	: TPHD.MTH
Report Created on:	25 Jul 96 10:51 AM		



Data File Name	: C:\HPCHEM\1\DATA\07-24-96\009F0301.D	Page Number	: 1
Operator	: KWILT	Vial Number	: 9
Instrument	: ANALYZER1	Injection Number	: 1
Sample Name	: KJ 0724 MB06-411	Sequence Line	: 3
Run Time Bar Code:		Instrument Method:	TPHD.MTH
Acquired on	: 24 Jul 96 09:14 AM	Analysis Method	: TPHD.MTH
Report Created on:	24 Jul 96 09:28 PM		



Data File Name	: C:\HPCHEM\1\DATA\07-24-96\019F0501.D	Page Number	: 1
Operator	: KWILT	Vial Number	: 19
Instrument	: ANALYZER1	Injection Number	: 1
Sample Name	: 70901 1:10	Sequence Line	: 5
Run Time Bar Code:		Instrument Method	: TPHD.MTH
Required on	: 24 Jul 96 09:49 PM	Analysis Method	: TPHD.MTH
Report Created on:	25 Jul 96 01:40 AM		



Data File Name	: C:\HPCHEM\1\DATA\07-24-96\004F0201.D	Page Number	: 1
Operator	: KWILT	Vial Number	: 4
Instrument	: ANALYZER1	Injection Number	: 1
Sample Name	: 200 WADF	Sequence Line	: 2
Run Time Bar Code:		Instrument Method:	TPHD.MTH
Acquired on	: 24 Jul 96 07:03 AM	Analysis Method	: TPHD.MTH
Report Created on:	24 Jul 96 09:32 PM		

BRS VDU



7-19-96 P.O. Box 1611
601 Glenwood Drive
Zillah, WA 98953
Phone (509) 829-6400
Fax (509) 829-6443

CHAIN OF CUSTODY FORM
Project Name *Rever & Sons Cardlock*
Project Number *NWP-0596*
Sampler *Rodney Scott*
Date *7-17-96* Time *7:00 AM -*
Destination *FRIEDMAN & BRYAN INC*

Sample Number	Matrix	Numbers of Containers	Container Size	Analyses Requested				Archives	
				HClO	WTPHG	BTEX	WTPHD		TOTAL LEAD
NWP-0596-S90	SOIL	1	4oz	X	X	X			470902
NWP-0596-S10	SOIL	1	4oz	X	X	X		X	70903
NWP-0596-S11	SOIL	1	4oz	X	X	X		X	70904
NWP-0596-S12	SOIL	1	4oz	X	X	X		X	70906
NWP-0596-S13	SOIL	1	4oz	X	X	X		X	70906
NWP-0596-S14	SOIL	1	4oz	X	X	X		X	70907
NWP-0596-S15	SOIL	1	4oz	X	X	X		X	70908
NWP-0596-S16	SOIL	1	4oz					X	70909
NWP-0596-BD	SOIL	1	4oz					X	70910 - Blind Duplicate

Relinquished by: *Rodney Scott* Date: *7-18-96*
 Firm: *Sage Earth Sciences Inc.* Time: *12:30*
 Received By: *Cathy K. Lowrey* Date: *7-19-96*
 Firm: *FRB* Time: *3:00*

Relinquished by: _____ Date: _____
 Firm: _____ Time: _____

Container Condition: Good Violated
 Cool (1°C): Yes No
 Custody Seals: Intact Violated

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D
Beth M. Albertson, M.S.
Bradley T. Benson
Kelley D. Wilt

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044

August 1, 1996

Rodney Heit, Project Manager
Sage Earth Sciences, Inc.
601 Glenwood Drive
Zillah, WA 98953

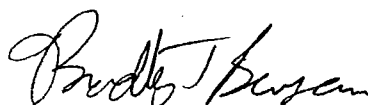
Dear Mr. Heit:

Enclosed are the results from the additional testing of material submitted on July 19, 1996 from your NWP-0596 Dever & Sons Cardlock project.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Bradley T. Benson
Chemist

keh
Enclosures
SES0801R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: August 1, 1996
Date Received: July 19, 1996
Project: NWP-0596 Dever & Sons Cardlock
Date Samples Extracted: July 30, 1996

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLE
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES AND GASOLINE
USING EPA METHODS 8020 AND 8015
Samples Processed Using Method 5030
Results Reported as $\mu\text{g/g}$ (ppm)

<u>Sample #</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline</u>	<u>Surrogate % Recovery</u>
NWP-0596-S9	<1	<1	<1	12	1,500	99
Method Blank	<0.02	<0.02	<0.02	<0.02	<1	95

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: August 1, 1996
 Date Received: July 19, 1996
 Project: NWP-0596 Dever & Sons Cardlock

QUALITY ASSURANCE RESULTS
 FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE,
 ETHYLBENZENE, XYLENES AND GASOLINE
 USING EPA METHODS 8020 AND 8015

Laboratory Code: 70902 (Duplicate)

Analyte:	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Benzene	ug/g (ppm)	<1	<1	nm	0-20
Toluene	ug/g (ppm)	<1	<1	nm	0-20
Ethylbenzene	ug/g (ppm)	<1	<1	nm	0-20
Xylenes	ug/g (ppm)	12	9	29 o	0-20
Gasoline	ug/g (ppm)	1,500	1,400	7	0-20

Laboratory Code: Spike Blank

Analyte:	Reporting Units	Spike Level	% Recovery		Acceptance Criteria	Relative Percent Difference
			MS	MSD		
Benzene	ug/g (ppm)	1	86	87	67-108	1
Toluene	ug/g (ppm)	1	87	89	66-110	2
Ethylbenzene	ug/g (ppm)	1	88	90	66-110	2
Xylenes	ug/g (ppm)	3	89	91	64-108	2
Gasoline	ug/g (ppm)	10	100	102	66-115	2

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

o - RPD results are outside control limits.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: August 1, 1996
Date Received: July 19, 1996
Project: NWP-0596 Dever & Sons Cardlock
Date Samples Extracted: July 29, 1996
Date Extracts Analyzed: July 30, 1996

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL LEAD USING METHOD 6010
Samples Processed Using Method 3050
Results Reported as $\mu\text{g/g}$ (ppm)

<u>Sample ID</u>	<u>Lead</u>
NWP-0596-S3	13
NWP-0596-S6	<2
NWP-0596-S7	<2
NWP-0596-S10	3
NWP-0596-S12	4
NWP-0596-SP13	18
NWP-0596-SP14	35
NWP-0596-SP15	19
Method Blank	<2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: August 1, 1996
 Date Received: July 19, 1996
 Project: NWP-0596 Dever & Sons Cardlock

QUALITY ASSURANCE RESULTS
 FOR LEAD BY
 INDUCTIVELY COUPLED PLASMA (ICP)
 (METHOD 6010)

Laboratory Code: 70894 (Duplicate)

Analyte:	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Lead	ug/g (ppm)	13	12	8	0-20

Laboratory Code: 70894 (Matrix Spike)

Analyte:	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	Relative Percent Difference
Lead	ug/g (ppm)	100	13	97	93	50-150	4

Laboratory Code: Spike Blank

Analyte:	Reporting Units	Spike Level	% Recovery		Acceptance Criteria	Relative Percent Difference
			MS	MSD		
Lead	ug/g (ppm)	100	111	110	80-120	1

BTD V



P.O. Box 1644
601 Glenwood Drive
Pullah, WA 98953
Phone (509) 829-6400
Fax (509) 829-6443

CHAIN-OF-CUSTODY FORM

Project Name Dever & Son's Coedlock
Project Number NWP-0596
Sampler Rodney Heit
Date 7-16-96 Time 8:00AM
Destination FRIEDMAN AND BEUYA INC.

Sample Number	Matrix	Number of Containers	Container Size	Analyses Requested						
				HClD	WTPHG	BTEX	WTPHD	TOTAL LEAD	602	
NWP-0596-TB1	H ₂ O	2	40 ml/v	X	X	X			70891-70892	
NWP-0596-S2	Soil	1	4oz	X	X	X			70893	
NWP-0596-S3	Soil	1	4oz	X	X	X	X		70894	
NWP-0596-S4	Soil	1	4oz	X	X	X			70895	
NWP-0596-S5	Soil	1	4oz	X	X	X			70896	
NWP-0596-S6	Soil	1	4oz	X	X	X	X		70897	
NWP-0596-S7	Soil	1	4oz	X	X	X	X		70898	
NWP-0596-W8	H ₂ O	3	2-4oz 1-liter	X	X	X	X	X	70899-01	

Relinquished by: Rodney Heit Date: 7-18-96 Time: 12:30
Firm: Sage Earth Sciences Inc.

Received By: Calvin Sewing Date: 7-19-96 Time: 5:00
Firm: FBI

Relinquished by: _____ Date: _____ Time: _____
Firm: _____

Received By: _____ Date: _____ Time: _____
Firm: _____

Container Condition: Good Violated _____ Cool (4°C): Yes No _____ Custody Seals: Intact Violated _____



Earth Sciences, Inc.

7-19-96

P.O. Box 1644
 01 Glenwood Drive
 Zillah, WA 98953
 Phone (509) 829-6400
 Fax (509) 829-6443

CHAIN-OF-CUSTODY FORM
 Project Name Dever & Sons Cardlock
 Project Number NWP-0596
 Sampler Rodney Hart
 Date 7-17-96 Time 7:00 AM
 Destination FRIEDMAN & BEVIA INC

Sample Number	Matrix	Number of Containers	Container Size	Analyses Requested					
				HClO	WTPHG	BTEX	WTPHD	TOTAL LEAD	ARCHIVE
NWP-0596-S9	SOIL	1	4oz	X	X	X	X	X	4-0902
NWP-0596-S10	SOIL	1	4oz	X	X	X	X	X	70903
NWP-0596-S11	SOIL	1	4oz	X	X	X	X	X	70904
NWP-0596-S12	SOIL	1	4oz	X	X	X	X	X	70905
NWP-0596-S13	SOIL	1	4oz	X	X	X	X	X	70906
NWP-0596-S14	SOIL	1	4oz	X	X	X	X	X	70907
NWP-0596-S15	SOIL	1	4oz	X	X	X	X	X	70908
NWP-0596-S16	SOIL	1	4oz					X	70909
NWP-0596-BD	SOIL	1	4oz					X	70910-Blind Duplicate

Relinquished by: Rodney & Deil Date: 7-18-96
 Firm: Sage Earth Sciences Inc. Time: 12:30
 Received By: Carolyn K. Lowmyer Date: 7-19-96
 Firm: FRST Time: 3:00

Relinquished by: _____ Date: _____
 Firm: _____ Time: _____

Container Condition: Good Violated _____
 Custody Seals: Intact Violated _____
 Cool (4°C): Yes No _____

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D
Beth M. Albertson, M.S.
Bradley T. Benson
Kelley D. Wilt

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044

August 9, 1996

Rodney Heit, Project Manager
Sage Earth Sciences, Inc.
601 Glenwood Drive
Zillah, WA 98953

Dear Mr. Heit:

Enclosed are the results from the additional testing of material submitted on July 19, 1996 from your NWP-0596 Dever & Sons Cardlock project.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Bradley T. Benson
Chemist

keh
Enclosures
SES0809R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: August 9, 1996
Date Received: July 19, 1996
Project: NWP-0596 Dever & Sons Cardlock
Date Samples Extracted: August 9, 1996
Date Extracts Analyzed: August 9, 1996

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLE
FOR TOTAL PETROLEUM HYDROCARBONS
BY METHOD 418.1 (5520.F)
Results Reported as $\mu\text{g/g}$ (ppm)**

<u>Sample ID</u>	<u>Total Petroleum Hydrocarbons</u>
NWP-0596-SP14	36
Method Blank	<10

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: August 9, 1996
Date Received: July 19, 1996
Project: NWP-0596 Dever & Sons Cardlock

**QUALITY ASSURANCE RESULTS
FOR TOTAL PETROLEUM HYDROCARBONS
BY METHOD 418.1 (5520F)**

Laboratory Code: 66960 (Duplicate)

<u>Analyte:</u>	<u>Reporting Units</u>	<u>Sample Result</u>	<u>Duplicate Result</u>	<u>Relative Percent Difference</u>	<u>Acceptance Criteria</u>
418.1	ug/g (ppm)	36	43	18a	0-20

Laboratory Code: Spike Blank

<u>Analyte:</u>	<u>Reporting Units</u>	<u>Spike Level</u>	<u>% Recovery</u>		<u>Acceptance Criteria</u>	<u>Relative Percent Difference</u>
			<u>ms</u>	<u>msd</u>		
418.1	ug/g (ppm)	250	80	80	80-120	0

a - The analyte was detected at a level less than five times the detection. The RPD results may not provide reliable information on the variability of the analysis.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: August 9, 1996
Date Received: July 19, 1996
Project: NWP-0596 Dever & Sons Cardlock
Date Samples Extracted: August 7, 1996
Date Extracts Analyzed: August 8, 1996

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLE
FOR LEAD USING METHOD 6010**

**Samples Processed Using Method 3050
Results Reported as $\mu\text{g/g}$ (ppm)**

<u>Sample ID</u>	<u>Lead</u>
NWP-0596-S9	2
Method Blank	<1

FRIEDMAN & BRUYA, INC

ENVIRONMENTAL CHEMISTS

Date of Report: August 9, 1996
 Date Received: July 19, 1996
 Project: NWP-0596 Dever & Sons Cardlock

QUALITY ASSURANCE RESULTS
 FOR TOTAL LEAD BY
 INDUCTIVELY COUPLED PLASMA (ICP)
 (METHOD 6010)

Laboratory Code: 70902 (Duplicate)

Analyte:	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Lead	ug/g (ppm)	2	6	100a	0-20

Laboratory Code: 70902 (Matrix Spike)

Analyte:	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	Relative Percent Difference
Lead	ug/g (ppm)	100	2	94	94	50-150	0

Laboratory Code: Spike Blank

Analyte:	Reporting Units	Spike Level	% Recovery MS	% Recovery MSD	Acceptance Criteria	Relative Percent Difference
Lead	ug/g (ppm)	100	105	103	80-120	2

a - The analyte was detected at a level less than five times the detection limit. The RPD results may not provide reliable information on the variability of the analysis.



Earth Sciences, Inc.

Sample No. 7-96
 Date 7-2-96
 Time 7:00 AM
 Destination Fairbairn, MN, USA

Sample Number	Matrix	Number of Containers	Container Size	HClO	WTPHG	BTEX	TOTAL LEAD: 10000	ARCHIVES	Requested
NWP-0596-S9	Soil	1	4oz		X	X	X		4-0902
NWP-0596-S10	Soil	1	4oz		X	X	X		4-0903
NWP-0596-S11	Soil	1	4oz		X	X	X		70904
NWP-0596-S12	Soil	1	4oz		X	X	X		70905
NWP-0596-S13	Soil	1	4oz		X	X	X		70906
NWP-0596-S14	Soil	1	4oz		X	X	X		70907
NWP-0596-S15	Soil	1	4oz		X	X	X		70908
NWP-0596-S16	Soil	1	4oz		X	X	X		70909
NWP-0596-B7	Soil	1	4oz						70910

7-96
 7-2-96
 7:00 AM
 Fairbairn, MN, USA

Appendix F

Method A Cleanup Levels - Ground Water *

Hazardous Substance	CAS Number	Cleanup Level
Arsenic	7440-38-2	5.0 ug/liter ^b
Benzene	71-43-2	5.0 ug/liter ^c
Cadmium	7440-43-9	5.0 ug/liter ^d
Chromium (Total)	7440-47-3	50.0 ug/liter ^e
DDT	50-29-3	0.1 ug/liter ^f
1,2 Dichloroethane	107-06-2	5.0 ug/liter ^g
Ethylbenzene	100-41-4	30.0 ug/liter ^h
Ethylene dibromide	106-93-4	0.01 ug/liter ⁱ
Gross Alpha Particle Activity		15.0 pCi/liter ^j
Gross Beta Particle Activity		4.0 mrem/yr ^k
Lead	7439-92-1	5.0 ug/liter ^l
Lindane	58-89-9	0.2 ug/liter ^m
Methylene chloride	75-09-2	5.0 ug/liter ⁿ
Mercury	7439-97-6	2.0 ug/liter ^o
PAHs (carcinogenic)		0.1 ug/liter ^p
PCB mixtures		0.1 ug/liter ^q
Radium 226 and 228		5.0 pCi/liter ^r
Radium 226		3.0 pCi/liter ^s
Tetrachloroethylene	127-18-4	5.0 ug/liter ^t
Toluene	108-88-3	40.0 ug/liter ^u
Total Petroleum Hydrocarbons		1000.0 ug/liter ^v
1,1,1 Trichloroethane	71-55-6	200.0 ug/liter ^w
Trichloroethylene	79-01-5	5.0 ug/liter ^x
Vinyl chloride	75-01-4	0.2 ug/liter ^y
Xylenes	1330-20-7	20.0 ug/liter ^z

Method A Cleanup Levels - Soil *

Hazardous Substance	CAS Number	Cleanup Level
Arsenic	7440-38-2	20.0 mg/kg ^b
Benzene	71-43-2	0.5 mg/kg ^c
Cadmium	7440-43-9	2.0 mg/kg ^d
Chromium	7440-47-3	100.0 mg/kg ^e
DDT	50-29-3	1.0 mg/kg ^f
Ethylbenzene	100-41-4	20.0 mg/kg ^g
Ethylene dibromide	106-93-4	0.001 mg/kg ^h
Lead	7439-92-1	250.0 mg/kg ⁱ
Lindane	58-89-9	1.0 mg/kg ^j
Methylene chloride	75-09-2	0.5 mg/kg ^k
Mercury (inorganic)	7439-97-6	1.0 mg/kg ^l
PAHs (carcinogenic)		1.0 mg/kg ^m
PCB Mixtures		1.0 mg/kg ⁿ
Tetrachloroethylene	127-18-4	0.5 mg/kg ^o
Toluene	108-88-3	40.0 mg/kg ^p
TPH (gasoline)		100.0 mg/kg ^q
TPH (diesel)		200.0 mg/kg ^r
TPH (other)		200.0 mg/kg ^s
1,1,1 Trichloroethane	71-55-6	20.0 mg/kg ^t
Trichloroethylene	79-01-5	0.5 mg/kg ^u
Xylenes	1330-20-7	20.0 mg/kg ^v

Appendix G

TABLE V. END USE CRITERIA FOR PETROLEUM-CONTAMINATED SOILS

Analyte	Analytical Method	Soil Class (ppm)			
		1	2	3	4
Heavy fuel hydrocarbons (C24-C30)	WTPH-418.1 mod.	<60	60-200	200-2000	>2000
Diesel (C12-C24)	WTPH-D	<25	25-200	200-500	>500
Gasoline (C6-C12)	WTPH-G	<5	5-100	100-250	>250
Benzene	8020	<0.005	0.005-0.5	≤0.5	>0.5
Ethylbenzene	8020	<0.005	0.005-20	≤20	>20
Toluene	8020	<0.005	0.005-40	≤40	>40
Xylenes (total)	8020	<0.005	0.005-20	≤20	>20

Treatment is recommended for all Class 3 and 4 soils.

NOTES:

Class 1 Soil Uses:

Any use which will not cause threat to human health or the environment.

Class 2 Soil Uses:

Backfill at the cleanup site
 Fill in commercial or industrial areas
 Cover or fill in permitted landfills
 Road subgrade or other road construction fill
Fill in or near: wetlands, surface water, ground water, drinking water wells or utility trenches is NOT recommended. Use as residential topsoil is also NOT recommended.

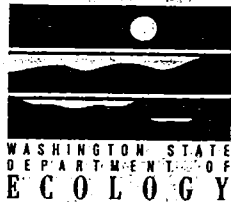
Class 3 Soil Uses:

Treatment
 Disposal at the original site (no solid waste disposal permit needed)
 Road construction (no solid waste disposal permit needed)
 Use or disposal in permitted, municipal landfills.
 Permitted as a new PCS landfill
 (An evaluation should be made to ensure that disposal will not cause a threat to human health or the environment, e.g. use near water bodies)

Class 4 Soil Uses:

Treatment
 Disposal in a permitted, municipal landfill
 Permitted as a new PCS landfill

Appendix H



**UNDERGROUND STORAGE TANK
TEMPORARY/PERMANENT CLOSURE
and SITE ASSESSMENT NOTICE**

See back of form for instructions
Please the appropriate box(es)
Please type or print information

For Office Use Only
Owner # _____
Site # _____

Temporary Tank Closure Permanent Tank Closure Change-In-Service Site Assessment/ Site Check

SITE INFORMATION:

Site ID Number (on invoice or available from Ecology if the tanks are registered): 009280
Site/Business Name: De Vere + Sons Dist
Site Address: 1st + Short St Telephone: (509) 674-2442
Olney WA 98922
City State ZIP-Code

TANK INFORMATION:

Tank ID	Closure Date	Tank Capacity	Substance Stored
# 2	7-16-96	1,000 GAL	REG LEADED
# 3	7-16-96	1,000 "	REG UNLEAD

**CONTAMINATION
PRESENT AT THE
TIME OF CLOSURE**

Yes No
 Unknown
Check unknown if no obvious contamination was observed and sample results have not yet been received from analytical lab.

UST SYSTEM OWNER/OPERATOR:

UST Owner/Operator: JAMES DEVERE
Owners Signature: [Signature] Telephone: () _____
Address: P.O. Box 336
[Signature] _____
City State P.O. Box ZIP-Code

TANK CLOSURE/CHANGE-IN-SERVICE PERFORMED BY:

Service Provider: NORTHWEST PETROLEUM EQUIP. License Number: _____
Licensed Supervisor: JAMES INGBERG Decommissioning License Number: 1FC1 82846
Supervisors Signature: [Signature]
Address: 265 Johnson Rd
SELMA WA 98942
City State ZIP-Code
Telephone: () _____

SITE CHECK/SITE ASSESSMENT CONDUCTED BY:

Name of Registered Site Assessor: Rodney L Heit
Telephone: (509) 829-6400
Address: 601 Glenwood Drive 1644
Zillah WA 98953
City State ZIP-Code

PLEASE READ CAREFULLY

INSTRUCTIONS

This form is to be completed by the Tank Owner and submitted to Ecology within 30 days of tank closure.

Mark the appropriate box(es) for temporary tank closure, permanent tank closure, change-in-service, or site assessment.

Permanent Closure and Change-in-Service require a site assessment be performed.

SITE INFORMATION:

Fill in the site information. Be sure to include the Ecology site ID number. This number may be found on the invoice or permit. Include a contact telephone number so any problems may be resolved quickly.

TANK INFORMATION:

List the tanks that were closed. Please use tank ID numbers and indicate the date of permanent closure. Be sure to attach your Underground Storage Tank Permits for any tanks that are now closed.

UST SYSTEM OWNER/OPERATOR:

Please fill in the owner's/operator's name, address, and telephone number. **Be sure to sign this form.**

TANK CLOSURE/CHANGE-IN-SERVICE PERFORMED BY:

List the closure company. Companies that provide UST services **MUST** be licensed by Ecology. Ask to see their supervisor's license. Make sure the licensed supervisor signs this form.

SITE CHECK/SITE ASSESSMENT CONDUCTED BY:

Fill in the site assessor information for permanent closure or change-in-service. Mark the appropriate box showing whether contamination from the underground tank(s) was or is present at the site. A site check/site assessment **MUST** be conducted by a site assessor who is registered with Ecology.

If contamination at the site is found or suspected, the appropriate Ecology Regional Office must be notified within 24 hours. If the contamination is confirmed, a site characterization report must be submitted to the regional office within 90 days. If contamination is not confirmed, a site assessment report must be submitted to the above address within 30 days.

Tanks exempt from notification requirements are:

Farm or residential tanks, 1100 gallons or less, used to store motor fuel for personal or farm use only. The fuel must not be for resale or used for business purposes.

Tanks used for storing heating oil that is used on the premises where the tank is located.

Tanks with a capacity of 110 gallons or less.

Equipment or machinery tanks such as hydraulic lifts or electrical equipment tanks.

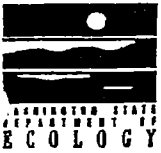
Emergency overflow tanks, catch basins, or sumps.

**For more information call toll free in the state of Washington
1-800-826-7716 or (206) 438-7137**

Return this completed form to:

Underground Storage Tank Section

Department of Ecology
P. O. Box 47655
Olympia, WA 98504-7655



UNDERGROUND STORAGE TANK Site Check/Site Assessment Checklist

For Office Use Only	
Owner #	_____
Site #	_____

INSTRUCTIONS

When a release has **not** been confirmed and reported, this Site Check/Site Assessment Checklist must be completed and signed by a person registered with Ecology. **The results of the site check or site assessment must be included with this checklist.** This form must be submitted to Ecology at the address shown below within 30 days after completion of the site check/site assessment.

SITE INFORMATION: Include the Ecology site ID number if the tanks are registered with Ecology. This number may be found on the tank owner's invoice or tank permit.

TANK INFORMATION: Please list all tanks for which the site check or site assessment is being conducted. Use the owner's tank ID numbers if available, and indicate tank capacity and substance stored.

REASON FOR CONDUCTING SITE CHECK/SITE ASSESSMENT: Please check the appropriate item.

CHECKLIST: Please initial each item in the appropriate box.

SITE ASSESSOR INFORMATION: This form must be signed by the registered site assessor who is responsible for conducting the site check/site assessment.

Underground Storage Tank Section
Department of Ecology
P. O. Box 47655
Olympia, WA 98504-7655

SITE INFORMATION

Site ID Number (on invoice or available from Ecology if the tanks are registered): 009280

Site/Business Name: De Ver & Sons Dist., Inc.

Site Address: FIRST STREET & SHORT STREET Telephone: (509) 674-2442

(P.O. BOX 336) Cle Elum, WA. 98922

TANK INFORMATION

Tank ID No.	Tank Capacity	Substance Stored
# 2	1,000 Gallon	Regular Leaded Gasoline
# 3	1,000 Gallon	Unleaded Gasoline

REASON FOR CONDUCTING SITE CHECK/SITE ASSESSMENT

Check one:

- Investigate suspected release due to on-site environmental contamination
- Investigate suspected release due to off-site environmental contamination.
- Extend temporary closure of UST system for more than 12 months.
- UST system undergoing change-in-service.
- UST system permanently closed-in-place.
- UST system permanently closed with tank removed.
- Abandoned tank containing product.
- Required by Ecology or delegated agency for UST system closed before 12/22/88.
- Other (describe): not a release

CHECKLIST

Each item of the following checklist shall be initialed by the person registered with the Department of Ecology whose signature appears below.

		YES	NO
1.	The location of the UST site is shown on a vicinity map.	RE*	
2.	A brief summary of information obtained during the site inspection is provided. (see Section 3.2 in site assessment guidance)	RE*	
3.	A summary of UST system data is provided. (see Section 3.1)	RE*	
4.	The soils characteristics at the UST site are described. (see Section 5.2)	RE*	
5.	Is there any apparent groundwater in the tank excavation?	RE*	
6.	A brief description of the surrounding land use is provided. (see Section 3.1)	RE*	
7.	Information has been provided indicating the number and types of samples collected, methods used to collect and analyze the samples, and the name and address of the laboratory used to perform the analyses.	RE*	
8.	A sketch or sketches showing the following items is provided:		
	- location and ID number for all field samples collected	RE*	
	- groundwater samples distinguished from soil samples (if applicable)	RE*	
	- samples collected from stockpiled excavated soil	RE*	
	- tank and piping locations and limits of excavation pit	RE*	
	- adjacent structures and streets	RE*	
	- approximate locations of any on-site and nearby utilities	RE*	
9.	If sampling procedures different from those specified in the guidance were used, has justification for using these alternative sampling procedures been provided? (see Section 3.4)	RE*	
10.	A table is provided showing laboratory results for each sample collected including; sample ID number, constituents analyzed for and corresponding concentration, analytical method and detection limit for that method.	RE*	
11.	Any factors that may have compromised the quality of the data or validity of the results are described.	RE*	
12.	The results of this site check/site assessment indicate that a confirmed release of a regulated substance has not occurred.		RE*

SITE ASSESSOR INFORMATION

Rodney Heit Person registered with Ecology Sage Earth Sciences Inc. Firm Affiliated with
 Business Address: 601 Glenwood Drive Telephone: (509) 829-6400
Street
Zillah, WA. 98953
City State ZIP+Code

I hereby certify that I have been in responsible charge of performing the site check/site assessment described above. Persons submitting false information are subject to penalties under Chapter 173.360 WAC.

7-16-96 Date Rodney L Heit Signature of Person Registered with Ecology

Appendix I