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Job # 192-1925
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REPORT
OF
UNDERGROUND STORAGE TANK SITE ASSESSMENT

Prepared for:

CITY OF KENNEWICK
615 East Columbia Drive
P.O. Box 6108
Kennewick, Washington 99336

UNDERGROUND STORAGE TANK SITE ASSESSMENT
Bear-Mart Auto Sales
1 East First Avenue
Kennewick, Washington

Prepared by:

SR 12/21/92 SB

CHEN-NORTHERN, INC.
Consulting Engineers & Scientists
2214 North 4th Avenue
Pasco, Washington
(509) 547-1671

May, 1992

May 20, 1992

City of Kennewick
615 East Columbia Dr.
P.O. Box 6104
Kennewick, Washington 99336-0108

ATTN: Mr. Bob Hammond

Subject: Underground Storage Tank Site Assessment, Bear-Mart Auto Sales, 1 East First Avenue, Kennewick, Washington.
Job No: 192-1925

Dear Mr. Hammond,

Chen-Northern is submitting the limited environmental assessment report for the above referenced site for your review.

Field assessment activities for the tank closure were completed on March 30, 1992, and, based on the results of the site assessment, it is our professional opinion that the subsoil has been impacted. It is recommended that the scope of services be expanded to investigate the extent of contamination.

In order to comply with guidelines set by the Washington State Department of Ecology, an Underground Storage Tank Closure Assessment report and checklists have been completed for the subject site. We have enclosed three copies of this report for your records. We have also enclosed two sets of checklists which, after acquiring the appropriate signatures and information, should be returned to us for forwarding to the Washington State Department of Ecology along with two copies of the assessment report.

We appreciate the opportunity of working with you on this project and hope that you are pleased with our services. If you have any questions or need additional information, please contact us at your convenience.

Sincerely,

Gerald G. Harper
Branch Manager

Enclosure: Underground Storage Tank Closure Assessment
Sit Check/Site Assessment Checklist
Permanent Closure/Change-in-Service Checklist

UNDERGROUND STORAGE TANK SITE ASSESSMENT
BEAR-MART AUTO SALES
KENNEWICK, WASHINGTON
JOB NO. 192-1925
MAY, 1992

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EXECUTIVE SUMMARY

Underground Storage Tank Closure Assessment activities including excavation and tank observations, analytical testing, and site evaluations have been completed for the subject site. The scope of services, described herein, indicated evidence of contamination by various compounds in subsoils native to the site. Washington State Department of Ecology Action Levels were exceeded for tested parameters. It is recommended that the Washington State Department of Ecology be notified as to the conditions that exist at the site. Further subsurface investigations may be required in order to determine the type and extent of contamination.

UNDERGROUND STORAGE TANK SITE ASSESSMENT
BEAR-MART AUTO SALES
KENNEWICK, WASHINGTON
JOB NO. 192-1925
MAY, 1992

1.0 PROJECT DESCRIPTION

1.1 Introduction

At the request of the City of Kennewick, Chen-Northern, Inc., has completed Underground Storage Tank Closure Assessment activities for the Bear-Mart Auto Sales facility located at 1 East First Avenue in Kennewick, Washington. This report presents the assessment findings on an underground storage tank (UST) previously located at the subject site. Field activities were performed on March 30, 1992.

1.2 Purpose and Scope

The scope of services outlined herein included the following:

1. Contracting a registered subcontractor to properly remove and dispose of the tank as well as backfill the excavation.

2. Observations by qualified personnel of the removal and condition of the UST and distribution piping. Dimensions, appearance, and corrosion protection methods were observed and documented.

3. A general observation of the excavation for signs of contamination including visible free product, subsoil discoloration, and organic vapor analysis of selected subsoil samples using a photoionization unit.

4. Collecting subsoil samples from tank excavation for laboratory analysis. These samples were analyzed for Total Petroleum Hydrocarbons (TPH, EPA Method 418.1) and Hydrocarbon Identification (HCID). Sampling locations were chosen based on visual observations of the excavations and at pre-specified points.

5. Preparing a report summarizing the findings of the limited environmental assessment, rendering an evaluation concerning apparent contamination at the site.

1.3 Background

A single UST of unknown origin was located in the alley behind Bear-Mart Auto Sales. Being in the city right of way, this UST had become the inherited responsibility of the City of Kennewick. Chen-Northern was contacted to perform a site assessment for the closure of the unregistered tank. Reportedly, this tank was originally used for heating fuel but in recent time had become the storage tank for waste paints and thinners. The estimated age of the tank was 10 to 20 years.

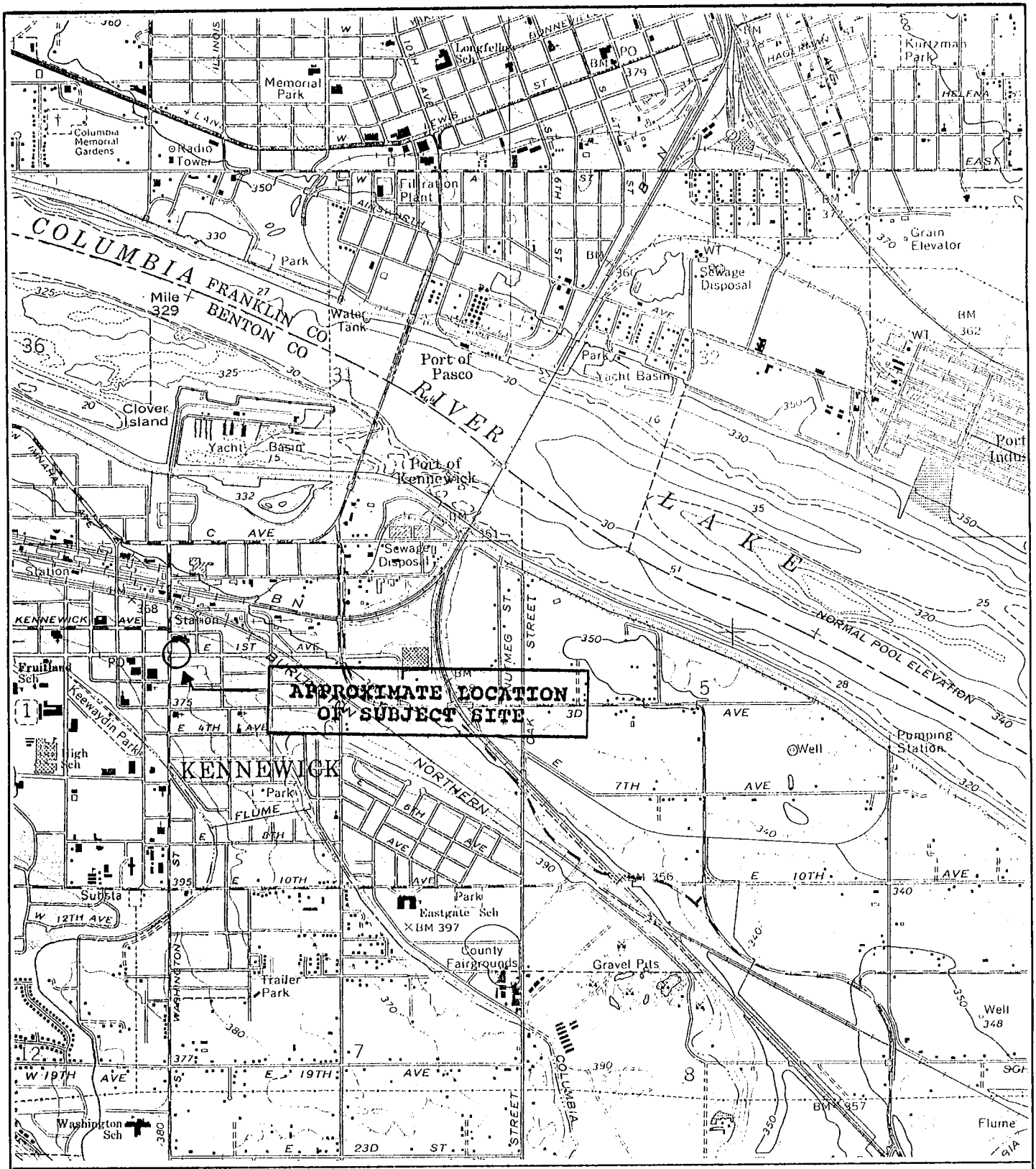
2.0 ENVIRONMENTAL ASSESSMENT FINDINGS

2.1 Site Description and Geology

The subject site is located in the Kennewick Central Business District in the SW 1/4 of the NW 1/4 of Section 6, Township 8 North, Range 30 East, Benton County, Washington. The tank was positioned in the alley behind the Bear-Mart Auto Sales property. Adjacent tracts include commercial and retail facilities. The location of the subject site is shown in Figure 1, the Site Location Map. Subsurface materials consist of fill underlain by sandy gravel of alluvial origin. Groundwater is estimated to be 11 feet below grade. Based on previous work performed by Chen-Northern in the area of the site, the groundwater flow direction is to the northeast. The nearest surface water, the Columbia River, is located approximately 1 mile northeast of the excavation area.

2.2 Tank Removal

Chen-Northern, Inc., was contracted to decommission UST, and in turn retained the K. Kaser Co., Inc., to assist in the physical removal and disposal of the tank. The contents of the tank had been previously screened and removed by the City of Kennewick for proper disposal. The tank contents were analyzed by NHS, Inc., and shown to be a mixture of various compounds and water (laboratory results are presented in Appendix C). The top of the tank had been exposed and the tank had been vented prior to the arrival of our representative and was vented. Dry ice (CO_2) was added to the tank in



192-1925	Chen Northern, Inc.	SITE LOCATION MAP: CITY OF KENNEWICK UNDERGROUND STORAGE TANK SITE ASSESSMENT	Fig. 1

order to drop the lower explosive limit (LEL) level below 20%. After further venting, the tank was removed from the excavation. Excavating continued until native subsoils were exposed for testing purposes. Excavating was limited due to the proximity of building foundations. Methods described met all local fire codes and regulations prescribed by the Washington State Department of Ecology for the decommissioning of USTs. The location of the excavation is shown in Figure 2, the Detailed Site Plan, while the physical data of the tank is presented in Table 1.

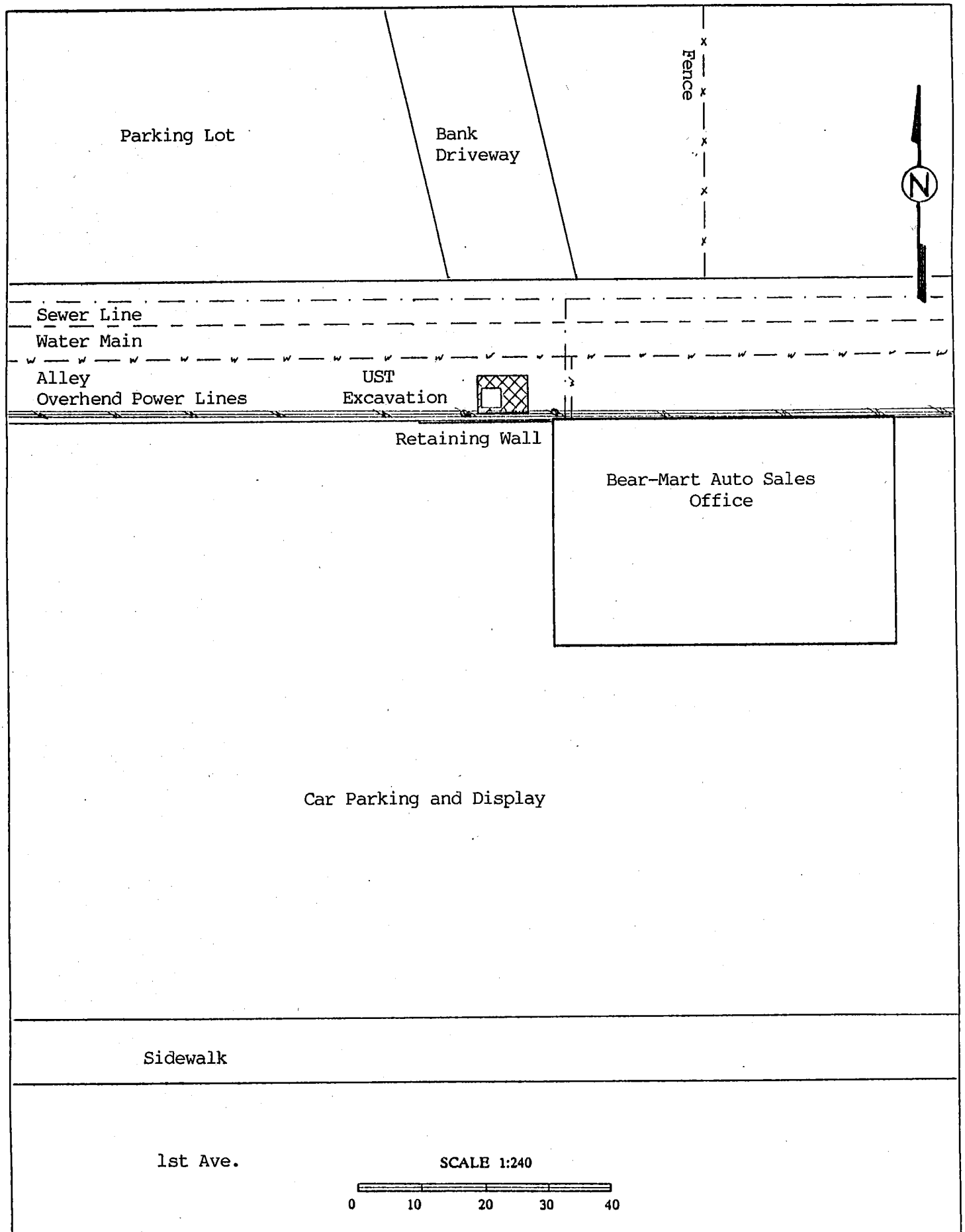
TABLE 1

Physical Data of Tanks

Tank No.	Construction Material	Additional Protection	Dimensions (ft) Diameter	Length	Capacity(gals.)	Age (years)	Contents
1	Bare Steel	None	3.5	4	275	30	Various

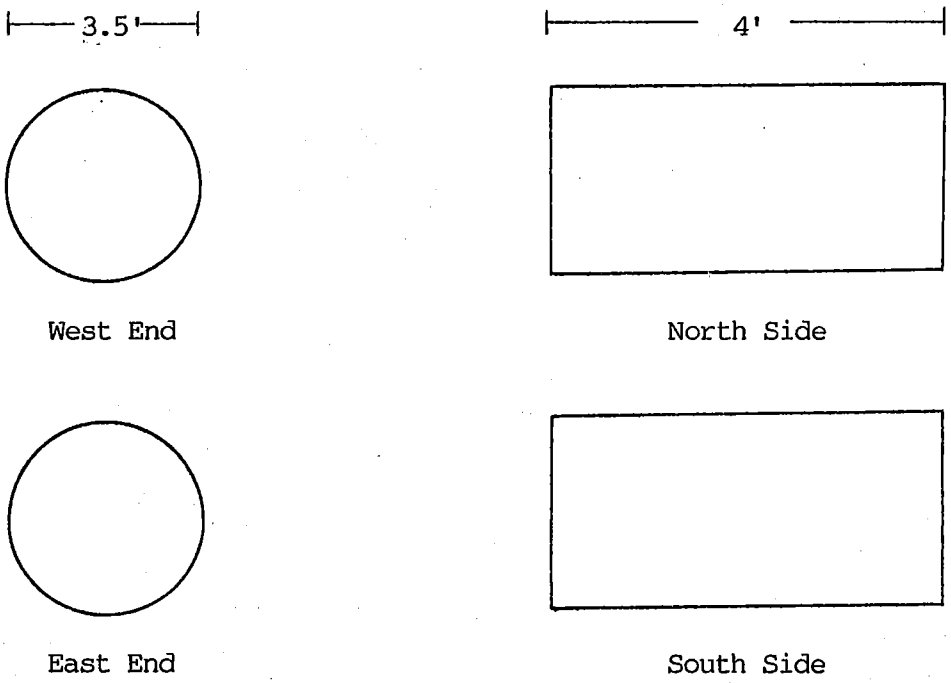
The backfill materials and excavation subsoils were visually examined for evidence of regulated substance contamination. Following the removal of the tank, subsoil samples were collected from the tank excavation to evaluate the condition of the subsoils. The tank had areas of slight rusting but was not pitted or perforated. No noticeable signs of contamination were observed in the excavated subsoil or in the excavation. A diagram of the tank and excavation is shown in Figure 3.

Volatile organic vapor monitoring procedures consisted of scanning the excavated subsoil with a photoionization detector (PID), Microtip Model 102, for the detection of volatile organic compounds. Headspace samples were prepared by placing representative subsoil samples in a clean glass container, covering the container with aluminum foil, sealing the container, and allowing the sample to warm to approximately 75 degrees F. The headspace of each sample was then measured with the PID to detect volatile compounds. This methodology is considered representative of in-situ conditions but is dependent on field conditions, including the chemical nature of the contaminant and weather conditions. Headspace measurements ranged between 2.9 and 8.1 parts per million (Appendix B).

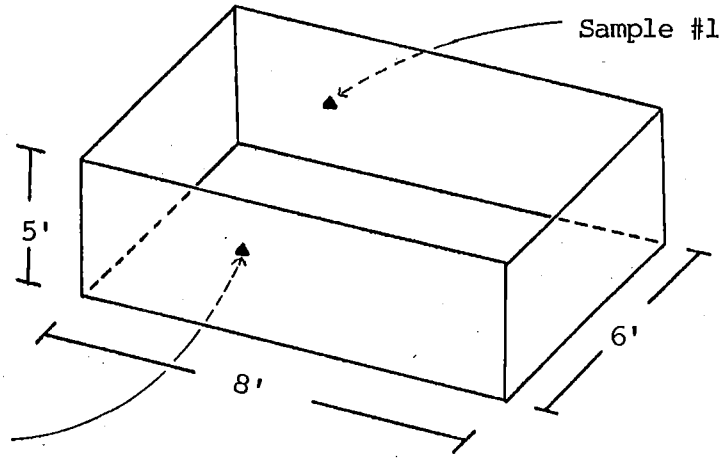


192-1925	Chen Northern, Inc.	Detailed Site Plan Underground Storage Tank Site Assessment	Fig. 2

Tank #1 Diagram



Excavation #1 Diagram



192-1925	Chen Northern, Inc.	Tank and Excavation Diagrams Underground Storage Tank Site Assessment	Fig. 3

2.3 Analytical Results

Representative soil samples were collected at the site and submitted for analysis to our laboratory in Billings, Montana. The samples were placed in coolers with ice for temporary storage then transferred to the laboratory. Tests were performed in accordance with the following guidelines:

1. Selected subsoil samples were analyzed for Total Petroleum Hydrocarbons, EPA Method 418.1.

2. Selected subsoil samples were analyzed for Hydrocarbon Identification, HCID.

Laboratory results are included in Appendix C and are summarized in Table 2. Samples were collected from underneath the tank, approximately five feet below ground surface (BGS), and from the north wall of the excavation, approximately three feet BGS. TPH concentrations in the subsoil samples exceeded the action levels set by the Washington State Department of Ecology. The hydrocarbon identification (HCID) analysis was conducted according to Washington State Department of Ecology guidelines using a gas chromatograph with a flame ionization detector and reference fuels. The results were inconclusive as to the hydrocarbon contamination present but did confirm the absence of #2 diesel fuel and mineral spirits. Logic dictates that the contaminants might be composed of the mixture contained in the tank at the time of closure. Further detailed analysis would be required to confirm this.

Table 2

Summary of Analytical Results for Subsoil Samples[1]

Tank No.	Location	Matrix	TPH-418.1
1	North Wall - 3'	Subsoil	990*
1	Base - 5'	Subsoil	520*
State Action Levels:		Subsoil	200

[1]All results are reported as a dry weight basis and are expressed as milligrams per kilogram (parts per million or ppm).

*Exceed Washington State Department of Ecology Action Levels.

3.0 SUMMARY/CONCLUSIONS

Underground Storage Tank Closure Assessment activities including excavation and tank observations, analytical testing, and site evaluations have been completed for the subject site. Results of the limited environmental assessment indicated evidence of contamination in subsoils native to the site. Washington State Department of Ecology Action Levels were exceeded for TPH analysis.

4.0 RECOMMENDATIONS

It is recommended that the Washington State Department of Ecology be notified as to the conditions that exist at the subject tract. Based on the results of our site assessment, further subsurface investigations may be required to determine the type and extent of contamination in the subsoil and to determine if groundwater has been impacted.

5.0 LIMITATIONS

This work was performed in accordance with the generally accepted practices of other consultants undertaking similar studies at the same time and in the same geographical area. Chen-Northern observed that degree of care and skill generally exercised by other consultants under similar circumstances and conditions. Chen-Northern's findings and conclusions must be considered not as scientific certainties, but as opinions based on our professional judgement concerning the significance of the data gathered during the course of monitoring. Other than this, no warranty is implied or intended.

Prepared and submitted by:

Greg L. Thurman
Assistant Project Engineer

Reviewed by:

Roger Braun
Senior Environmental Manager

APPENDIX A

Tank Closure Site Assessment Checklists and Forms

UNDERGROUND STORAGE TANK
Site Check/Site Assessment Checklist

The purpose of this form is to certify the proper investigation of an UST site for the presence of a release. These activities shall be conducted in accordance with Chapter 173.360 WAC. A description of the various situations requiring a site check or site assessment is provided in the guidance document for UST site checks and site assessments.

This Site Check/Site Assessment Checklist shall be completed and signed by a person registered with the Department of Ecology to perform site assessments.

Two copies of the results of the site check or site assessment should be included with this checklist according to the reporting requirements in the guidance document for UST site checks and site assessments.

For further information about completing this form, please contact the Department of Ecology UST Program.

The completed checklist should be mailed to the following address:

Underground Storage Tank Section
Department of Ecology
Mail Stop PV-11
Olympia, WA 98504-8711

1. UST SYSTEM OWNER AND LOCATION

UST Owner/Operator: City of Kennewick

Owners Address: 615 East Columbia Dr. (Street) P.O. Box

Kennewick (City) Wa (State) 99336 (ZIP-Code)

Telephone: (509) 586-4181

Site ID Number (on invoice or available from Ecology if tank is registered): N/A

Site/Business Name: Bear-Mart Auto Sales

Site Address: 1 East First Avenue (Street) County

Kennewick (City) Wa (State) 99336 (ZIP-Code)

2. SITE CHECK/SITE ASSESSMENT CONDUCTED BY:

Registered Person: Chen-Northern, Inc.; Paul Danielson

Address: 2214 North 4th Avenue (Street) P.O. Box

Pasco (City) Wa (State) 99302 (ZIP-Code)

Telephone: (509) 547-1671

APPENDIX B

PID Analysis

PID Analysis and Results

Site Location: Bear-Mart Auto Sales, 1 E. First St., Kennewick, Washington

Date	Sample Location	Reading (ppm)
3/30/92	Tank Base - 5'	8.1
3/30/92	North Wall - 3'	2.1

COMMENTS: Locations are marked on Figure 3, The Tank and Excavation Diagram

Screened By: Paul Danielson

PID Unit: Micro-Tip, Model 102

APPENDIX C

Laboratory Results and Chain-of-Custody Forms

Huntingdon
Chen-Northern, Inc., Division
600 SOUTH 25TH STREET
P.O. BOX 30615
BILLINGS, MT 59107
(406) 248-9161
FAX (406) 248-9282

TECHNICAL REPORT

* Revised: 5/14/92

REPORT TO: ATTN: MR. PAUL DANIELSON
CHEN-NORTHERN, INC.
P O BOX 2601
TRI-CITIES, WA 99302

DATE: April 20, 1992
JOB NUMBER: 87-921
SHEET: 1 of 10
INVOICE NO.: 126355

REPORT OF: Soil Analysis - Bear Mart - City of Kennewick (192-1925)

SAMPLE IDENTIFICATION:

On April 1, 1992, these soil samples (our laboratory numbers 126114 and 126115) were received in our laboratory for analysis. The total petroleum hydrocarbon determinations were made in accordance with Environmental Protection Agency Method 418.1.

The test results are shown on the following page.

* On April 27, 1992, hydrocarbon identification analysis was requested. The samples were extracted and analyzed using a gas chromatograph with a flame ionization detector. Reference fuels were analyzed in a similar manner. We are unable to identify the type of hydrocarbon contamination present. The samples do not contain #2 diesel or mineral spirts (paint thinner) as suspected. Attached are chromatograms for your reference.

Reviewed by Dennis Jensen

Attachments (chromatograms)

rmr

Client Name: **CHEN-NORTHERN, INC. TRI-CITIES, WA**
Project No.: 87-921
Project Name: Bear Mart - City of Kennewick (192-1925)

Laboratory No.: 126114
Sample Name: 1925-1 3' NORTH SIDE WALL
Sample Date: 03/30/92
Collected by: PAUL DANIELSON
Time Sampled: 1030
Sample Type: SOIL

PARAMETER	MEASURED VALUE		DATE ANALYZED
INORGANICS:			
Moisture	11.3	%	04/13/92
PETROLEUM HYDROCARBONS (418.1):			
Recoverable Petroleum Hydrocarbons as rec'd	880 *	mg/kg	04/13/92
Recoverable Petroleum Hydrocarbons dry basis	990	mg/kg	04/13/92

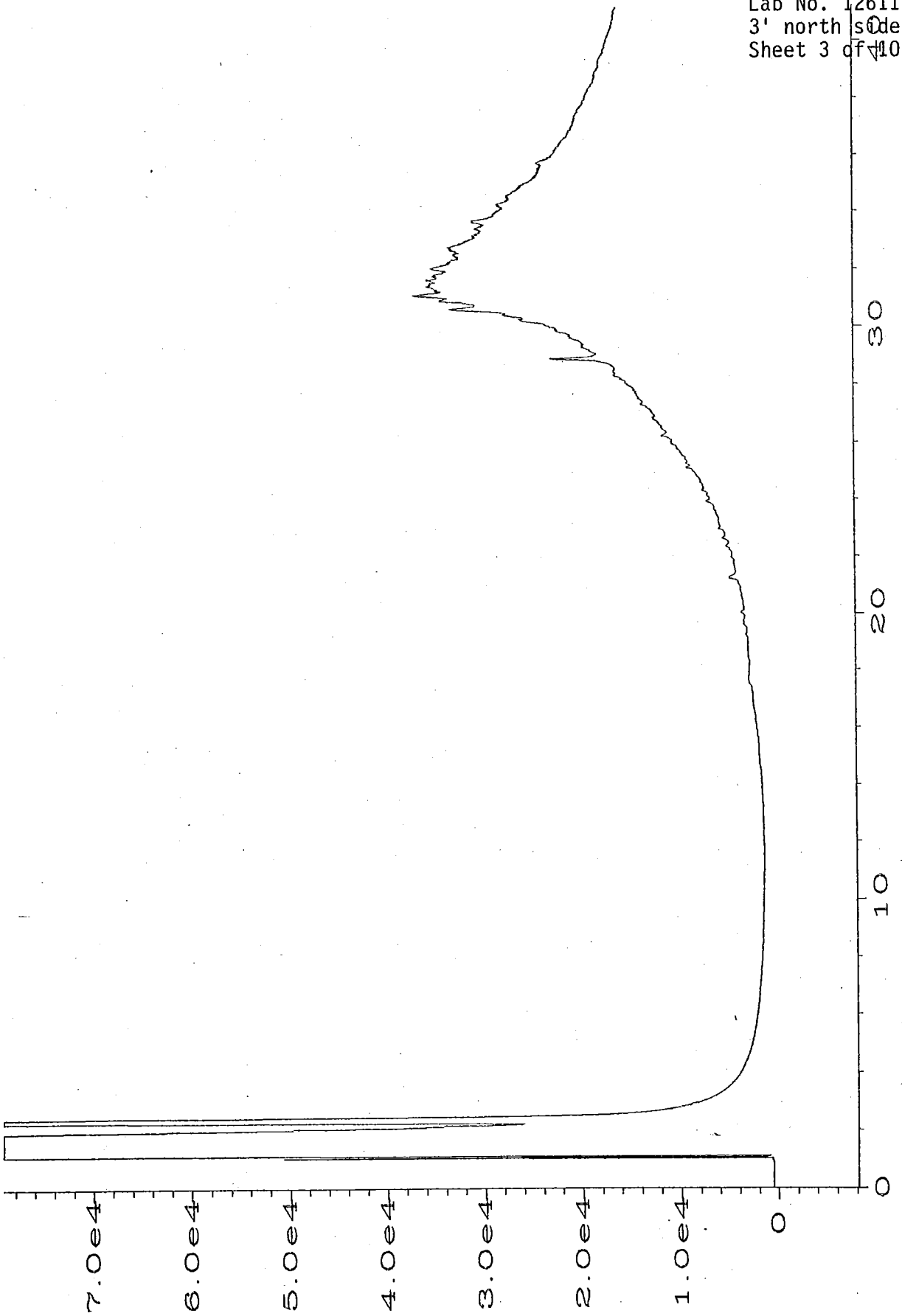
Lboratory No.: 126115
Sample Name: 1925-2 5' NEAR BASE OF TANK
Sample Date: 03/30/92
Collected by: PAUL DANIELSON
Time Sampled: 1030
Sample Type: SOIL

PARAMETER	MEASURED VALUE		DATE ANALYZED
INORGANICS:			
Moisture	17.0	%	04/13/92
PETROLEUM HYDROCARBONS (418.1):			
Recoverable Petroleum Hydrocarbons as rec'd	430 *	mg/kg	04/13/92
Recoverable Petroleum Hydrocarbons dry basis	520	mg/kg	04/13/92

* This sample was first extracted and then analyzed for Total Petroleum Hydrocarbons as Diesel. The sample contained higher boiling compounds that are not in the Diesel range. TPH by method 418.1 was suggested and analyzed.

Sig. 1 in A:\001F0101.D

Hydrocarbon Identificatio
Lab No. 126114 1925-1
3' north side wall
Sheet 3 of 10



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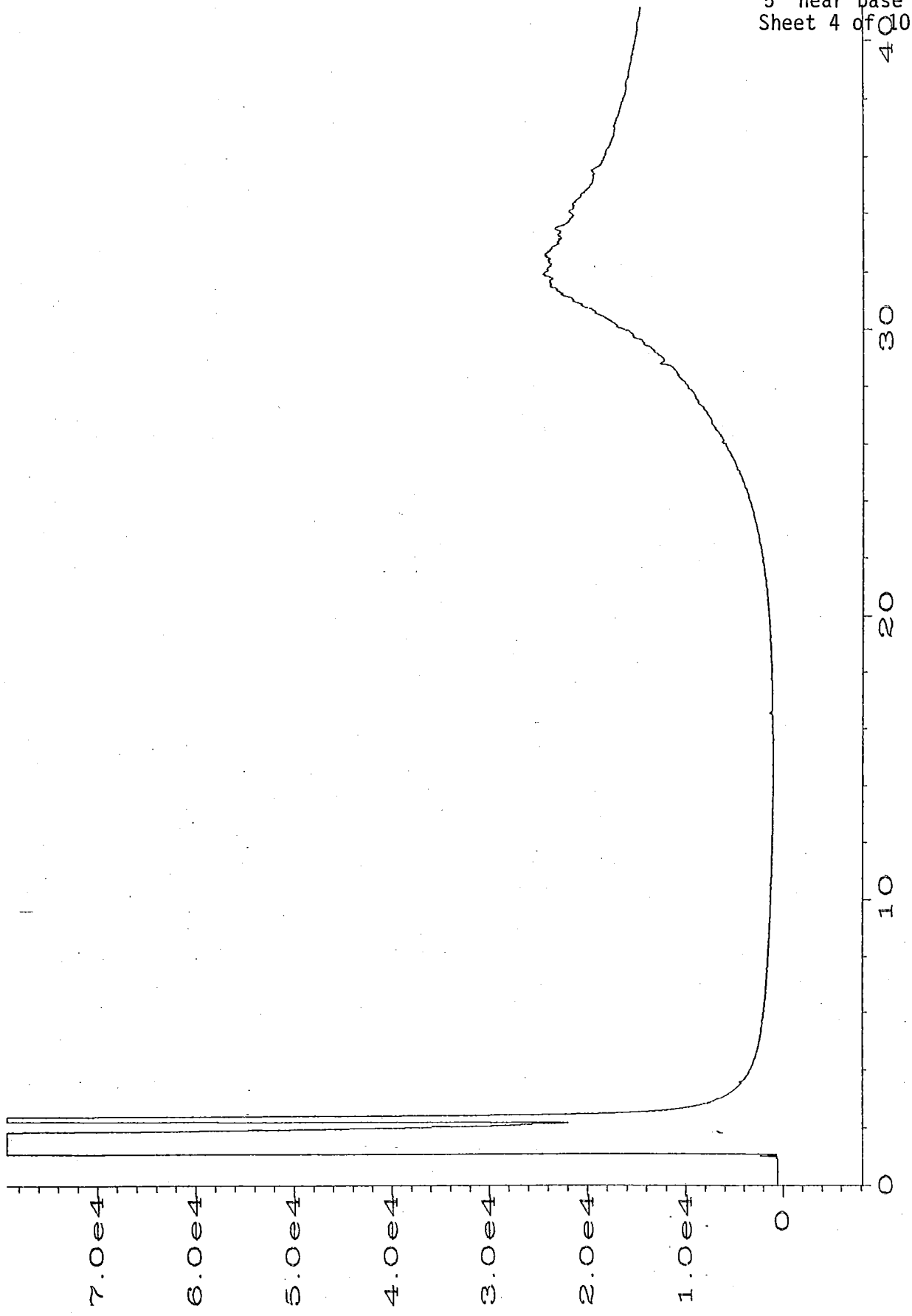
Hydrocarbon Identificatio
Lab No. 126115 1925-2
5' near base of tank
Sheet 4 of 10



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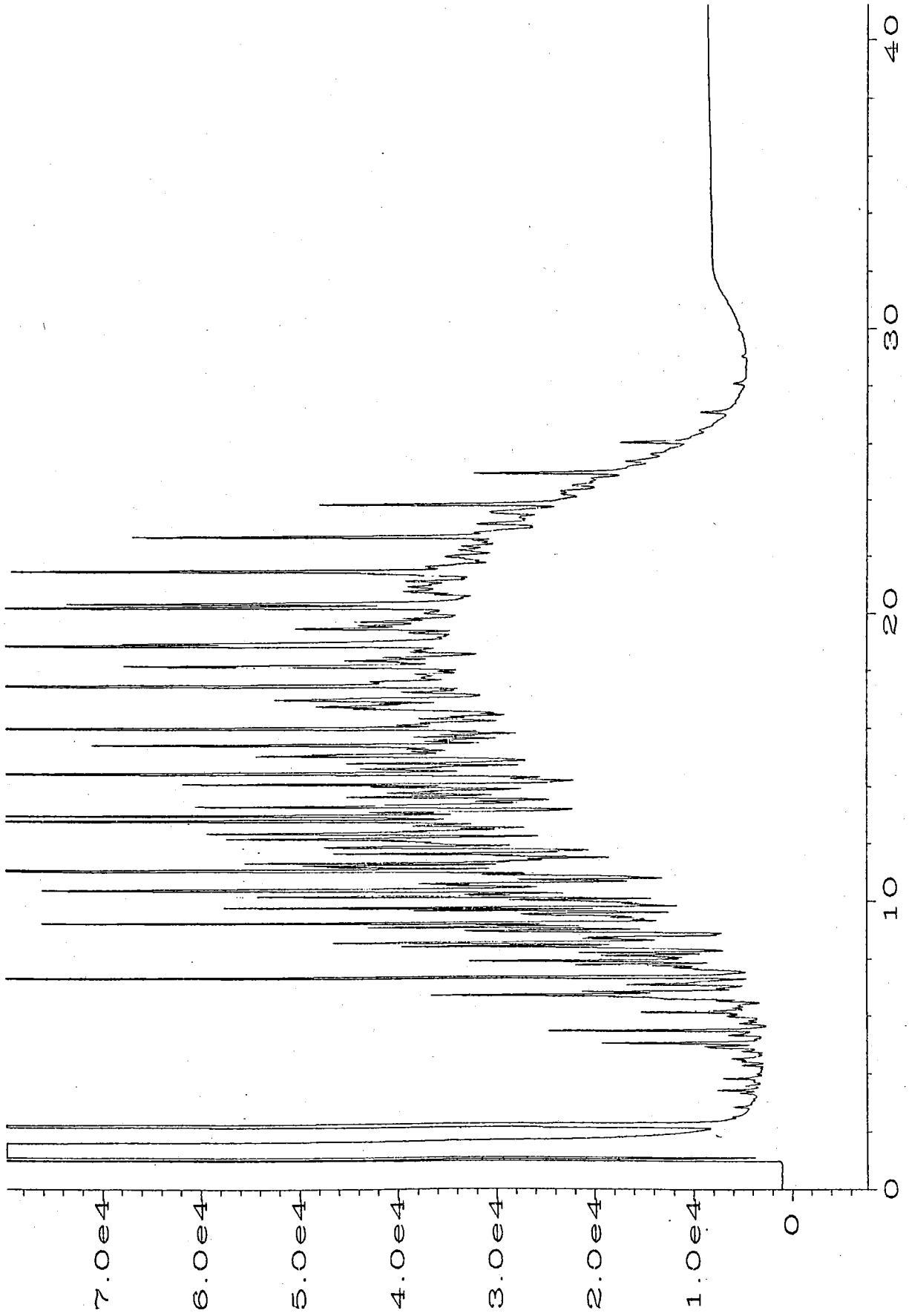

MINERAL SPIRITS
Sheet 8 of 10

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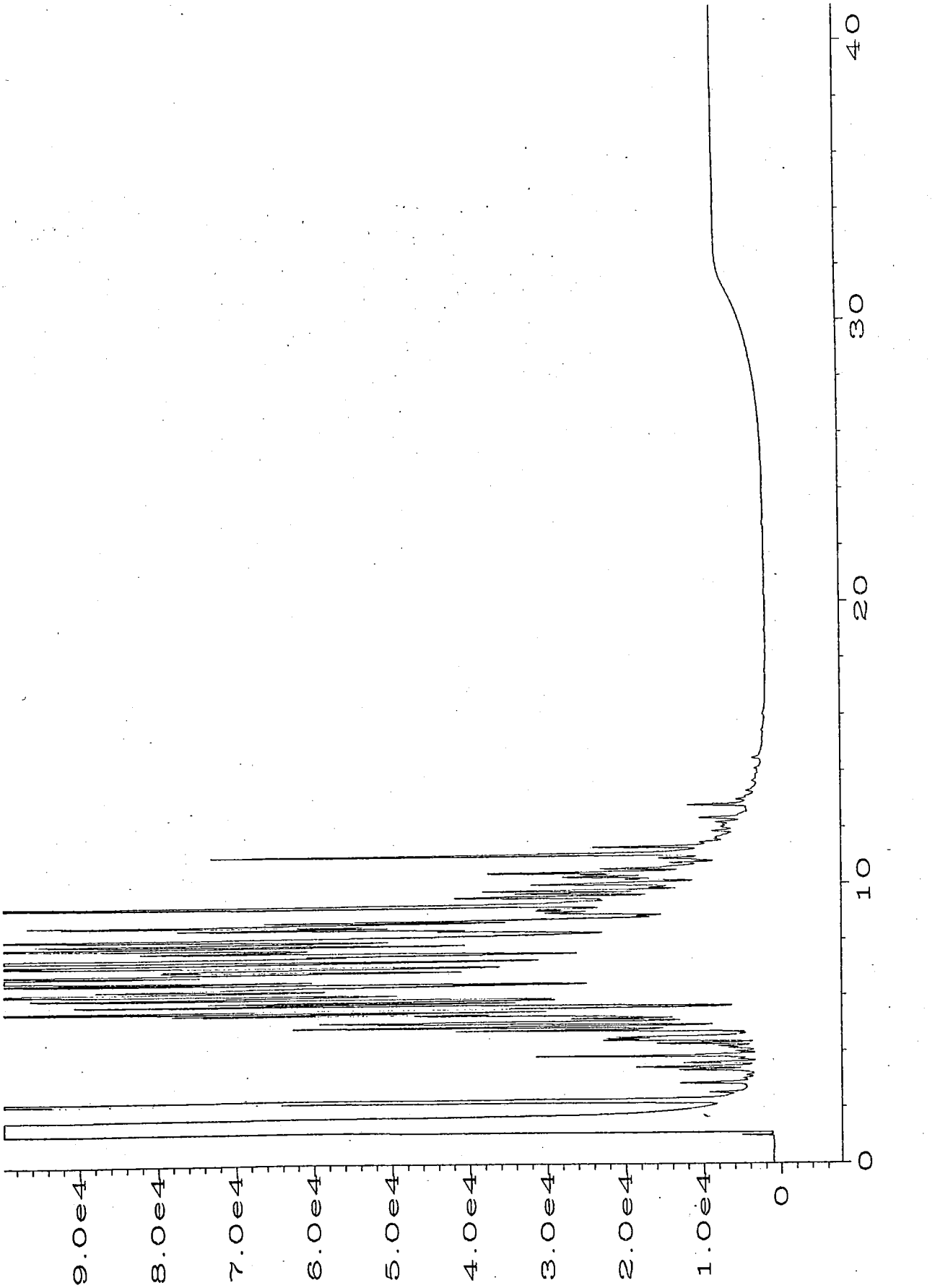

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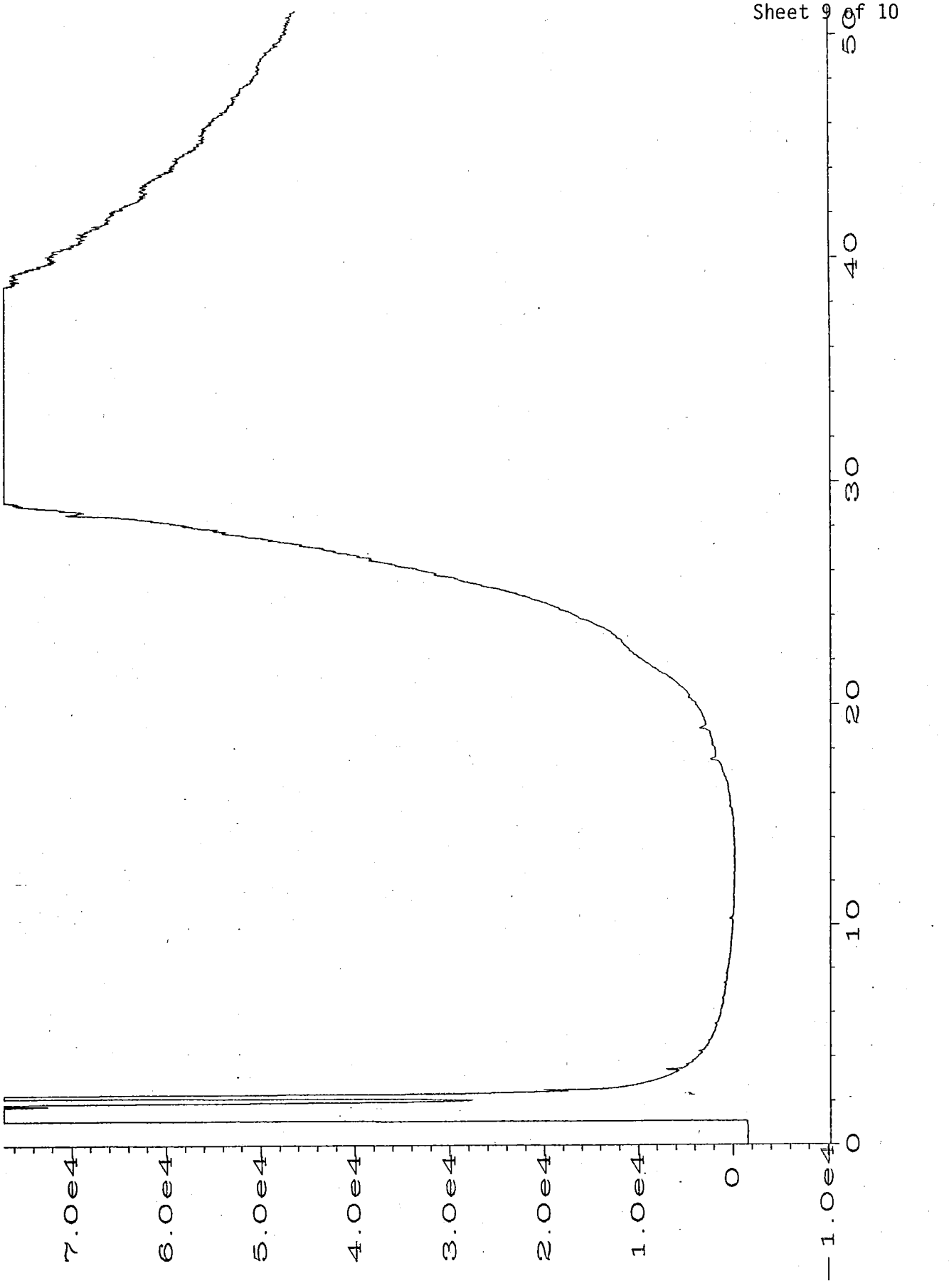
Diesel Extraction
Lab No. 126115
Sheet 9 of 10



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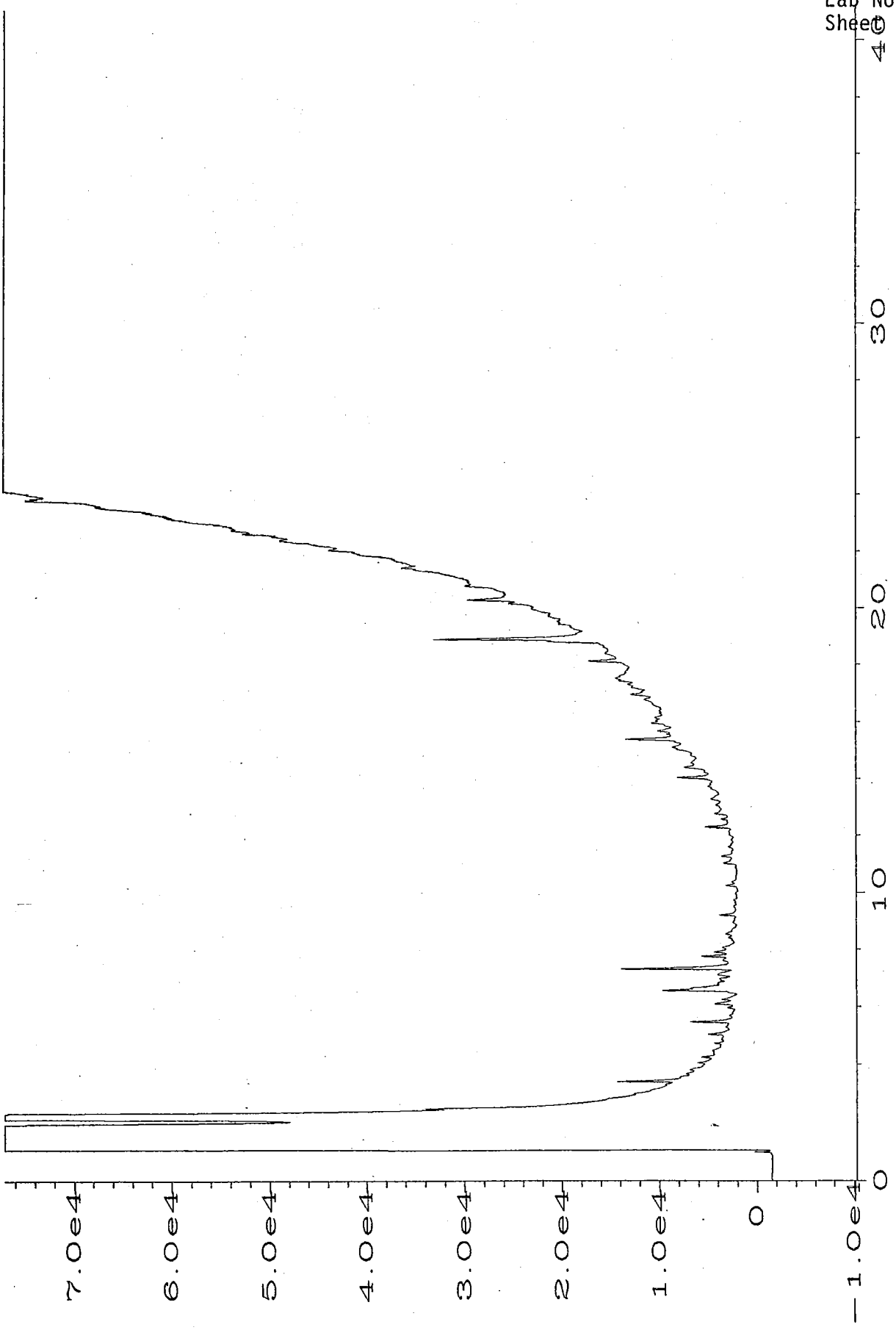
Diesel Extraction
Lab No. 126114
Sheet 10 of 10



JOB NO.: 192 - 1925

SITE NAME: City of Kennewick

PROJECT: Bear - Mart

SAMPLED BY: Paul Danielson

Chen Northern, Inc.

CONSULTING ENGINEERS AND SCIENTISTS
ENVIRONMENTAL SERVICES DIVISION

CNI T-City

CHAIN OF CUSTODY RECORD

CUSTODY NO.:

PROJ. ENG.:

CONTACT:

	SAMPLE NUMBER	DATE	TIME	SAMPLE LOCATION	MATRIX	COMPOSITE OR GRAB	FIELD MEASUREMENTS	NO. OF CONTAINERS	ANALYSIS REQUIRED							REMARKS (PRESERVATION, ETC.)
HC114	1925-1	3-30-92	10:30A	3' North Side Wall	Soil	Comp.		1	X							
15	1925-2	3-30-92	10:30A	5' Near Base of Tank	Soil	Comp.		1	X							
																Reanalyze by method
																418.1 due to ~~heavy~~ high ability
																hydrocarbon contamination
																Per Paul Danielson
																4-10-92 D.J.

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature) [signature]	Date/Time 3-31-92 3:00pm	Received by: (Signature) Carrier UPS Red	Relinquished by: (Signature)	Date/Time 4/1/92	Received by: (Signature) CNI [signature] S. Cleveland
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Shipped/Delivered:		Date/Time
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Remarks: SHIPPED By U.P.S. Overnight / 1 Day		
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)			

CAWM-1

APPENDIX D

References

REFERENCES:

American Petroleum Institute, 1987, Recommended Practice for Abandonment or Removal of Used Underground Service Station Tanks, APi Bulletin 1604, 8p.

Camp, V.E., Hopper, P.R., Swanson, D.A., and Wright, T.L., 1982 Columbia River Basalt in Idaho: Physical and Chemical Characteristics, Flow Distribution, and Tectonic Implications, Cenozoic Geology of Idaho: Idaho Bureau of Mines and Geology Bulletin 26, p.55-75.

New England Interstate Water Pollution Control Commission, 1988, Tank Closure Without Tears: An Inspector's Safety Guide, Boston, Massachusetts.

Uniform Fire Code, 1988, Abandonment and Status of Tanks, Sec. 79.115.