

2R - 10

REPORTS

DATE:

1997

Soil Analysis Report
Devon Energy's Keel-B Gathering Pit

ROUSTABOUTS - BACKHOES - FLUID LEVELS - SOIL BIO - REMEDIATION
SAND BLASTING - PAINTING

C J R CONTRACTORS, INC.

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JEFF HAM
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SITE ASSESSMENT

DEPTH TO GROUNDWATER	>100' = 0 SCORE
HORIZONTAL DISTANCE TO PRIVATE WATER WELL	>200' = 0 SCORE
DISTANCE TO SURFACE WATER	>1000' = 0 SCORE
LATERAL AND VERTICAL CONTAMINATION	50' Length 30' Wide 4' Deep

RANKING SITE

Based on the information provided in the previous section relating to depth to groundwater, wellhead protection area, and distance to nearest surface water body, the ranking for the site is O.

RECOMMENDED REMEDIATION ACTION LEVELS

Benzene	- 10 PPM
BTEX	- 50 PPM
TPH	- 5000 PPM

CJR CONTRACTORS
SOIL ANALYSIS REPORT

DATE: 4-3-97
INSPECTOR: J. L. HAM

CLIENT: DEVON ENERGY
FACILITY: KEEL-B GATHERING PIT

SAMPLE NO. 1	<u>24700</u>	PPM <u>TPH taken 1-15-97 from Contaminated Soil</u>
SAMPLE NO. 2	<u>1260</u>	PPM <u>TPH taken 1-15-97 8' deep</u>
SAMPLE NO. 3	<u>1120</u>	PPM <u>TPH taken 8' deep after excavation of Contaminated Soil</u>
SAMPLE NO. 4	<u>4800</u>	PPM <u>TPH taken from the remediated soil</u>
SAMPLE NO. 5	<u>3900</u>	PPM <u>TPH taken from the remediated soil</u>
SAMPLE NO. 6	<u>4580</u>	PPM <u>TPH taken from the remediated soil</u>
SAMPLE NO. 7	<u>4710</u>	PPM <u>TPH taken from the remediated soil</u>
SAMPLE NO. 8	<u>3840</u>	PPM <u>TPH taken from the remediated soil</u>

COMMENTS

This report represents the soil analysis conducted on Devon Energy's Keel-B Gathering Pit in Loco Hills, New Mexico. The information contained in this report identifies the Total Petroleum Hydrocarbon (TPH) levels present at the site before remediation began and after remediation was completed. An area approximately 35' wide x 60' long was excavated 8' deep. Sample #3 represents the TPH percentage from the bottom of the pit. The Analytical results, from Cardinal Laboratories, on the Benzene Levels which were taken 8' deep can be found on the following pages. Contaminated soil was then spread out, fresh soil blended in and disced until TPH levels were below 5000 PPM. Samples 4 through 8 were taken from the remediated soil on location by CJR Contractors, Inc. using General Analysis Corporations MEGA - TPH Analyzer. These results can be found above. A detailed description of the Analyzer can be found on the following pages, along with photographic documentation.

Thank You,



Jeff Ham
CJR Contractors, Inc.



PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

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ANALYTICAL RESULTS FOR
 CJR CONTRACTORS
 ATTN: J.L. HAM
 401 W. BROADWAY
 DENVER CITY, TX 79323
 FAX TO: 806-592-3412

Receiving Date: 03/14/97
 Reporting Date: 03/17/97
 Project Number: NOT GIVEN
 Project Name: DEVON ENERGY
 Project Location: KEEL-B GATHERING PIT

Sampling Date: 03/14/97
 Sample Type: SOIL
 Sample Condition: COOL & INTACT
 Sample Received By: GP
 Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE		03/15/97	03/15/97	03/15/97	03/15/97
H2853-1	KEEL-B GATHERING PIT	<0.020	0.035	<0.020	0.063
Quality Control		0.097	0.098	0.095	0.286
True Value QC		0.100	0.100	0.100	0.300
% Accuracy		96.8	97.5	94.5	95.2
Relative Percent Difference		1.8	1.6	6.0	5.9

METHOD: EPA SW 846-8020, 5030, Gas Chromatography

Burgess R. Cooke
 Chemist

3/17/97
 Date

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. H2853-1. Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.

GENERAL ANALYSIS CORPORATION

MEGA-TPH ANALYZER

INSTRUMENT DESCRIPTION

THE MEGA-TPH ANALYZER IS A WAVELENGTH-SPECIFIC, DUAL CHANNEL, PORTABLE INFRARED FILTOMETER.

THE ANALYTICAL WAVELENGTH USED TO QUANTIFY TOTAL PETROLEUM HYDROCARBONS IS 3.4 UM AS IS SPECIFIED IN EPA METHOD 418.1, "PETROLEUM HYDROCARBONS, TOTAL RECOVERABLE". THE REFERENCE WAVELENGTH, WHICH IS OUT OF THE C-H STRETCH BAND, PROVIDES A SIGNAL WHICH IS CONSTANTLY RATIOED AGAINST THE ANALYTICAL SIGNAL FOR INCREASED ELECTRONIC STABILITY.

THE MEGA-TPH ANALYZER IS FACTORY CALIBRATED WITH EPA METHOD 418.1 REFERENCE OIL.