API 30-039-23368

# Kimbell Oil Company of Texas

**777 Taylor Street, Suite P-IIA**
**Fort Worth, Texas 76102**

**April 3, 2006**

NMOCD
District III Office
Attention: Mr. Danny Foust
1000 Rio Brazos Road
Aztec, New Mexico 87410

**RE: Salazar 4E: Final Site Excavation, Remediation and Restoration Spill Report**

Dear Mr. Foust:

Please find enclosed, in duplicate, Kimbell Oil Company of Texas' Form C-141, Release Notification and Corrective Action, FINAL REPORT, for the above referenced well. As you are aware, all spill site excavations, remediations and actions conducted onsite were pre-approved by either your self and/or BLM personnel in conjunction with our third party contractor, Envirotech. Please find enclosed 1 original and 1 copy of Envirotech's final site report for this project. We will continue to file reports with the NMOCD and the BLM as the four Bio-Piles of condensate contaminated soils are fully remediated and restored and spread into a natural non-piled contour around each of the four (4) pile sites.

Should there be any further information that you might require, please contact the undersigned at your convenience.

Sincerely yours,

Jonathan M. Stickland
Operations Engineering

No justification for monitor wells, DGF 4/11/06

**KIMBELL OIL COMPANY OF TEXAS**
**SPILL CLEANUP REPORT**
**SALAZAR NO. 4E**

## TABLE OF CONTENTS

## INTRODUCTION

Envirotech, Inc. of Farmington, New Mexico, was contracted by Kimbell Oil Company of Texas to provide environmental spill response and cleanup services at the Salazar No. 4E, Unit F, Sec 34, Twp 25N, Rng 6W, Rio Arriba County, New Mexico; see ***Figure 1, Vicinity Map***. A ball valve on a 300 barrel (bbl) production tank had frozen, forcing the valve to push through the threadings releasing approximately 183 bbls of condensate. Cleanup activities included the environmental excavation of contaminated soil, transportation of contaminated soils, acquisition of backfill soils, continual confirmation sampling, and the documentation of site activities.

## ACTIVITIES PERFORMED

Envirotech was contacted with a request to respond to a release of 183 bbls of condensate at the above referenced location. An initial site assessment was completed by Mr. Morgan Killion, General Superintendent for Envirotech. His assessment enabled the proper planning of the estimated scope of work necessary to respond accordingly to the environmental incident.

On January 18, 2006, Mr. Michael Marquez, Environmental Scientist for Envirotech, traveled to the site to hand auger four (4) borings to three (3) feet below ground surface (BGS). These borings were completed in an attempt to determine what site equipment, if any, would need to be relocated. The hand auger locations are noted as S1 through S4; see ***Figure 2, Site Map***. At the required depth, a sample was taken and screened in the field using an Organic Vapor Meter (OVM). The samples were collected into quart-size Ziplock baggies, filled approximately half-full, allowed to heat to approximately 65 degrees Fahrenheit, and the peak measurement recorded. Field screening showed all hand auger locations exceeded the 100 parts per million (ppm) criteria determined from the New Mexico Oil Conservation Division (NMOCD) guidelines found in a publication titled *Guidelines for Remediation of Leaks, Spills, and Releases,* dated August 13, 1993. These ranking criteria were determined by the following field observations:

1. Depth to Ground Water; < 50 vertical feet; NMOCD Ranking of 20 points
2. Distance to Surface Water Body; < 200 horizontal feet; NMOCD Ranking of 20 points

Following the guidelines in the aforementioned publication, any ranking which exceeds 20 points is required to have closure sample analysis of Total Petroleum Hydrocarbons (TPH) < 100 ppm and a Total Benzene, Toluene, Ethlybenzene, and Xylenes (BTEX) of < 50,000 ppb.

On the same day hand auguring was completed, Mr. Bart Dodson, with the Bureau of Land Management (BLM), Farmington District Office, arrived on-site to determine what stipulations and requirements would be required from the BLM while excavation activities commenced. Mr. Dodson expressed a concern due to the proximity of the Salazar No. 4E to the Largo Wash. Because of this concern, he requested all impacted soils be transported away from the flood plain, to sites without the concern for surface water patterns. Additionally, he also began the task of finding borrow soil locations to be used as a source for local backfill material.

Mr. Marquez also completed an additional assessment of the berm containment area surrounding the Aboveground Storage Tanks (AST). Measurements were taken of the width and length of the berm as well as the lowest point found vertically throughout the bermed area. Field calculations found that the berm complied with SPCC requirements and had sufficient area to hold the largest capacity of the two (2) AST's present, see ***Section 4, Containment Calculations***.

To respond accordingly to the field data and observations identified by the BLM, Envirotech initially transported a track-hoe and two (2) front-end loaders to the Salazar No. 4E for the environmental excavation of impacted soils. One (1) front-end loader was taken to the first of many locations needed to gather backfill material and to create a bio-pile for impacted soils. The remaining equipment was kept at the Salazar No. 4E and the environmental excavation commenced.

Upon initial penetration of the ground surface, strong hydrocarbon odors were detected. Overwhelming hydrocarbon vapors present indicated impacted soils being removed were from the release of the 183 bbls of condensate. A field assessment concluded the release would have an area equal to that of the bermed area surrounding the aboveground storage tanks (AST) and would migrate through subsurface soils in a conical pattern.

At approximately nine (9) feet below ground surface (BGS), dark grey to black soils were encountered; see ***Section 3, Site Photography***. Additional excavation visually verified we had encountered substantially more impacted soils than previously anticipated. With this new site information, environmental excavation would follow all contaminants until remaining soils were below NMOCD guidelines.

As contaminated soils were excavated with the track-hoe, the front-end loader piled then loaded 20 cubic yard ($yd^3$) belly dump trucks to minimize the accumulation of soils on-site. Impacted soils were transported to other Kimbell Oil Company of Texas lease sites within the immediate area to be placed into bio-piles. To minimize the unnecessary removal of non-impacted soil, overburden was removed as applicable, depending on contamination patterns, and stockpiled on-site to be later used as backfill material.

On February 1, 2006, a discrete sample was taken from 22 feet BGS and analyzed for TPH in the field using USEPA Method 418.1 as well as an OVM. Field TPH determination showed a TPH value of 4,930 ppm and an OVM measurement of 676 ppm; see ***Section 2, 418.1 Field Analysis***. Based on this field data, continued vertical excavation was necessary to fully remove contaminated soils.

To determine the approximate amount of impacted soils remaining, five (5) test holes were dug and screened using an OVM and visual observations surrounding the extent of excavation on February 3, 2006. These test holes, identified as TH-1 through TH-5, see ***Figure 2, Site Map,*** gave verifiable data to develop further excavation planning. Although TH-2 showed an OVM measurement above screening level, the west wall was later determined to be below NMOCD guidelines for TPH. The data provided by the test holes was an invaluable resource in directing the continued excavation of soils.

A sample was taken at 28 feet BGS on February 6, 2006. The sample was screened in the field using an OVM following the referenced field method. The sample passed the established 100 ppm screening standard, therefore the soil was transferred into a four (4) ounce glass jar, placed inside an ice chest, and transported under a Chain of Custody document to Envirotech's Laboratory for analysis by USEPA Method 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons and by USEPA Method 8021 Aromatic Volatile Organics. Upon review of laboratory analysis, the sample showed measurements of 5.1 ppm TPH and Total BTEX of 1,050 parts per billion (ppb), both of which are below NMOCD established guidelines; see ***Section 1, Laboratory Analysis.*** Based on the laboratory data, it was established that 28 feet BGS would be the vertical extent of contamination.

Mr. Denny Foust of the NMOCD inspected the site on February 7, 2006. Mr. Foust gave instructions for the continued excavation of the site until all impacted soils had been removed to the greatest extent possible. Also completed on this day was the additional closure sampling of the south wall and southern portion of the east wall. A review of laboratory analysis showed both areas were below regulatory guidelines; see ***Section 1, Laboratory Analysis.*** Both of these wall areas were the furthest up-gradient as determined by surface geology. The surface was relatively planar with a slight slope to the northeast. As an additional safety measure, Mr. Foust requested a four (4) inch piping barricade to be constructed as a barrier and placed around the wellhead; see ***Section 3, Site Photography.*** This would prevent the accidental contact of any mobile site equipment with the wellhead. Contact with the wellhead would be detrimental to site activities. Mr. Earl North made the appropriate arrangements for construction of the barrier the following day.

Excavation continued in a northeasterly direction throughout the following days. A sampling event was completed on February 15, 2006. An area of concern was found on the northern area of the east wall, although TPH was at 152 ppm, a Total BTEX analysis showed a measurement of 101,710 ppb; see ***Section 1, Laboratory Analysis.*** This amount is twice the regulatory level as determined by the NMOCD publication referenced on page one (1) of this report. Field screening was completed throughout this time period to guide the excavation to prevent the unnecessary removal of non-impacted soils.

On February 21, 2006, a meeting with Mr. Denny Foust, NMOCD, Mr. Mike Stahle, Field Superintendent for Envirotech, and Mr. Michael Marquez was conducted. The purpose of the meeting was to determine the status of the project and to discuss upcoming planning and necessary work steps to complete the excavation. A site map was presented showing the overall progress with the estimated contamination still assumed to be present. Mr. Foust agreed the process was being completed as required and then asked for additional test holes to be dug. These test holes (TH) can be identified as: TH 10 feet west from meter (TH-6), TH 25 feet NE of wellhead (TH-7), and TH 20 feet N of wellhead (TH-8); see ***Figure 2, Site Map and Section 1, Laboratory Analysis***. Test holes TH-6 and TH-7 were well below established criteria. TH-8, at a depth of 15 feet, showed a TPH value of 4,570 ppm which exceeded NMOCD standards of 100 ppm. Based on this data, additional excavation would need to continue in an easterly direction until all impacted soils greater than established standards had been removed. An additional test hole was completed approximately 17 feet east of the meter house (TH-9) with OVM measurements below the 100 ppm standards; see ***Figure 2, Site Map and Section 3, Site Photography***.

Special concern was taken when excavating near the wellhead during the following days. A spotter was used on the ground to guide the track hoe operator when the equipment was in the vicinity of the wellhead barriers.

The last sampling event was completed on March 6, 2006. Samples were taken of the remaining walls. The walls in question were the north and east walls. A review of laboratory analysis showed TPH levels to be Non Detectible (ND) in both walls. Permission was given to backfill the excavation and start compacting soils for the re-construction of well site equipment.

Backfill was pushed into the excavation with the front-end loader so that a ramp could safely be constructed. This ramp would allow the semi-trucks to release the backfill soil directly into the excavation. As the soils were released, the front-end loader would level and compact the soils with the pneumatic tires as well as the weight of the machine. Some of the backfill material used initially came from a stock pond; this material had a sufficient moisture content to optimize compaction of the backfill materials.

The site activities were completed on March 13, 2006. The area was returned to original grade and conditions; see ***Section 3, Site Photography***.

## SOIL IMPACT

An estimated 12,500 $yd^3$ of soils has been removed from the Salazar No. 4E and placed in four (4) bio-piles. These four (4) bio-piles are on the same lease as the Salazar No. 4E. All impacted soils have been removed in accordance with NMOCD guidelines and will be treated, monitored and sampled until levels are below regulatory guidance.

## GROUNDWATER IMPACT

Although groundwater was not visibly encountered, the upper portion of the water / soil interface was believed to have occurred at 26 feet BGS. This can be seen in ***Section 2, Site Photography.*** A sample taken at 28 feet BGS shows levels below regulatory guidelines. Based on the extensive amount of contamination encountered, it is feasible to assume groundwater has been impacted. It is recommended that a series of three (3) monitors be drilled and completed as monitor wells to define the horizontal extent of contamination. The proposed locations can be referenced on ***Figure 3, PMW Locations.***

## RECOMMENDATIONS

Envirotech, Inc. recommends the monthly mixing and blending of the above stated bio-piles. To further aide in the breakdown of the residual hydrocarbons, urea nitrate will be added to the piles during the on-site blending process. In addition, quarterly sampling will be completed in coordination with field activities to accurately determine the appropriate monitoring time remaining. As a cost saving measure, five (5) point composite samples will be taken for approximately every 500 $yd^3$ to monitor the progress of the contaminated soil. Samples will be delivered to Envirotech's Laboratory and analyzed by the following methods:

1. USEPA Method 8015;
2. USPEA Method 8021

At the time when the contaminants fall below regulatory guidelines in the previously stated amounts, final closure sampling will consist of a five (5) point composite sample for approximately every 200 $yd^3$ of contamination present. When the piles fall below regulatory guidelines, the soil will be released to be used as Kimbell Oil Company of Texas sees fit.

Envirotech further recommends that monitor wells be placed to determine the horizontal and vertical extent of groundwater contamination. These monitor wells will also monitor the natural attenuation of the groundwater to verify that the site has been successfully remediated.

**STATEMENT OF LIMITATIONS**

Envirotech has completed the environmental excavation from an initial release of 183 barrels of condensate from the Salazar No. 4E, Unit F, Sec 34, Township 25N, Range 6W, Rio Arriba County, New Mexico, and restored the site to pre-incident conditions. The work and services provided by Envirotech were in accordance with the NMOCD standards. All observations and conclusions provided here are based on the information and current site conditions found at the site throughout the spill response activities.

The undersigned has conducted this service at the above referenced site. This work has been conducted and reported in accordance with generally accepted professional practices in geology, engineering, environmental chemistry, and hydrogeology.

We appreciate the opportunity to be of service. Should you have any questions or require additional information, please contact our office at (505) 632-0615.

Respectfully Submitted,
**ENVIROTECH INC.**

Michael P. Marquez
Environmental Scientist / Safety Officer
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Reviewed by:

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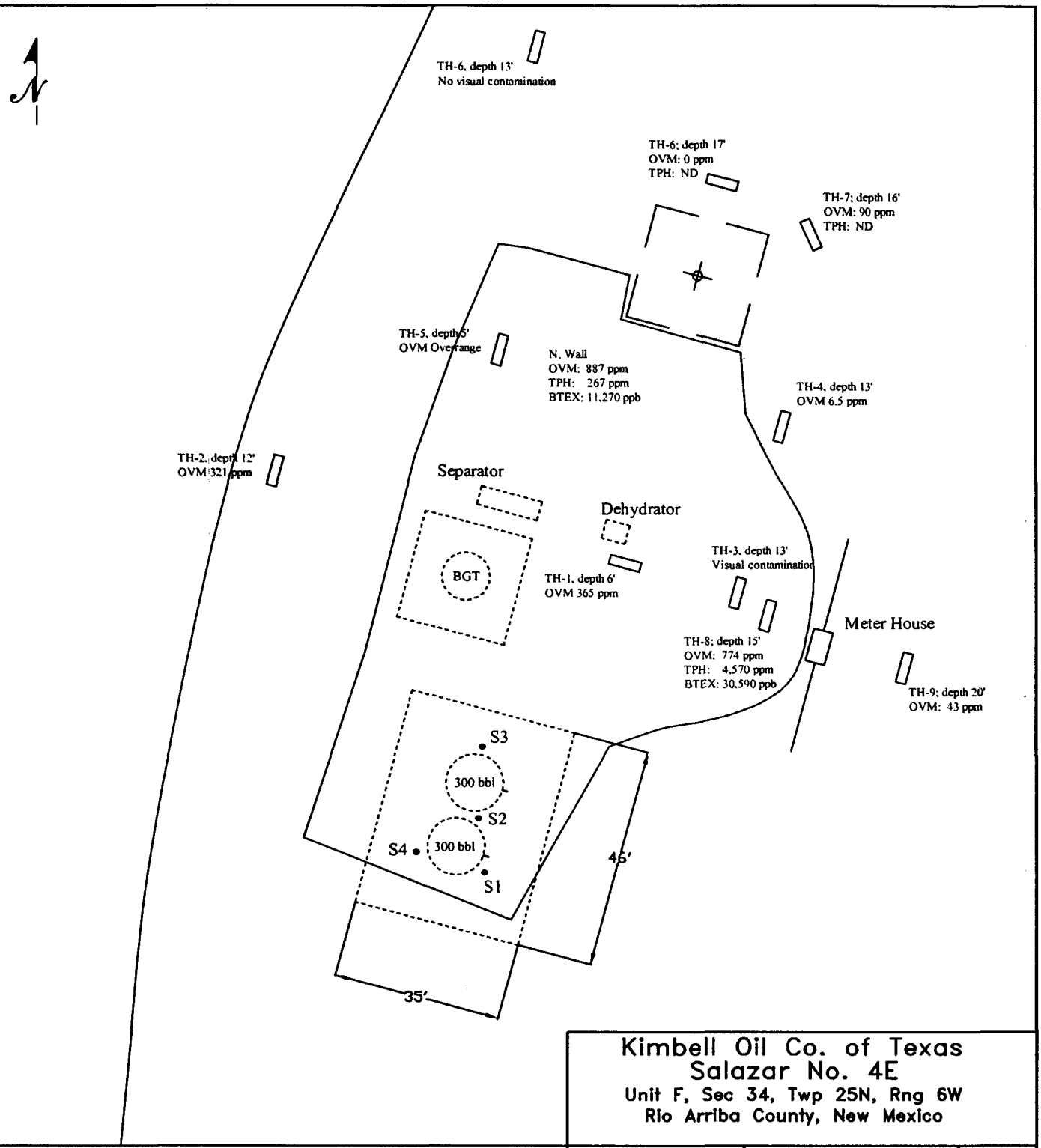


# Kimbell Oil Co. of Texas
## Salazar No. 4E
**Unit F, Sec 34, Twp 25N, Rng 6W**
**Rio Arriba County, New Mexico**

## Legend

S1: OVM 953 ppm
S2: OVM 1531 ppm
S3: OVM 530 ppm
S4: OVM 1061 ppm

----- Original locations of site equipment.

____ Solid blue line denotes areas at extent of excavation that are below NMOCD guidelines

▭ TH: Denotes Test Hole

| | | |
|---|---|---|
| SCALE: 1" = 30' | FIGURE NO. 2 | REV |
| PROJECT NO. 06011-001 | | |

REVISIONS

| NO. | DATE | BY | DESCRIPTION |
|---|---|---|---|
| 1 | 2/20/06 | MPM | Current excavation dimensions |

| MAP DRWN | MPM | 1/18/06 | BASE DRWN | MPM | 1/18/06 |
|---|---|---|---|---|---|

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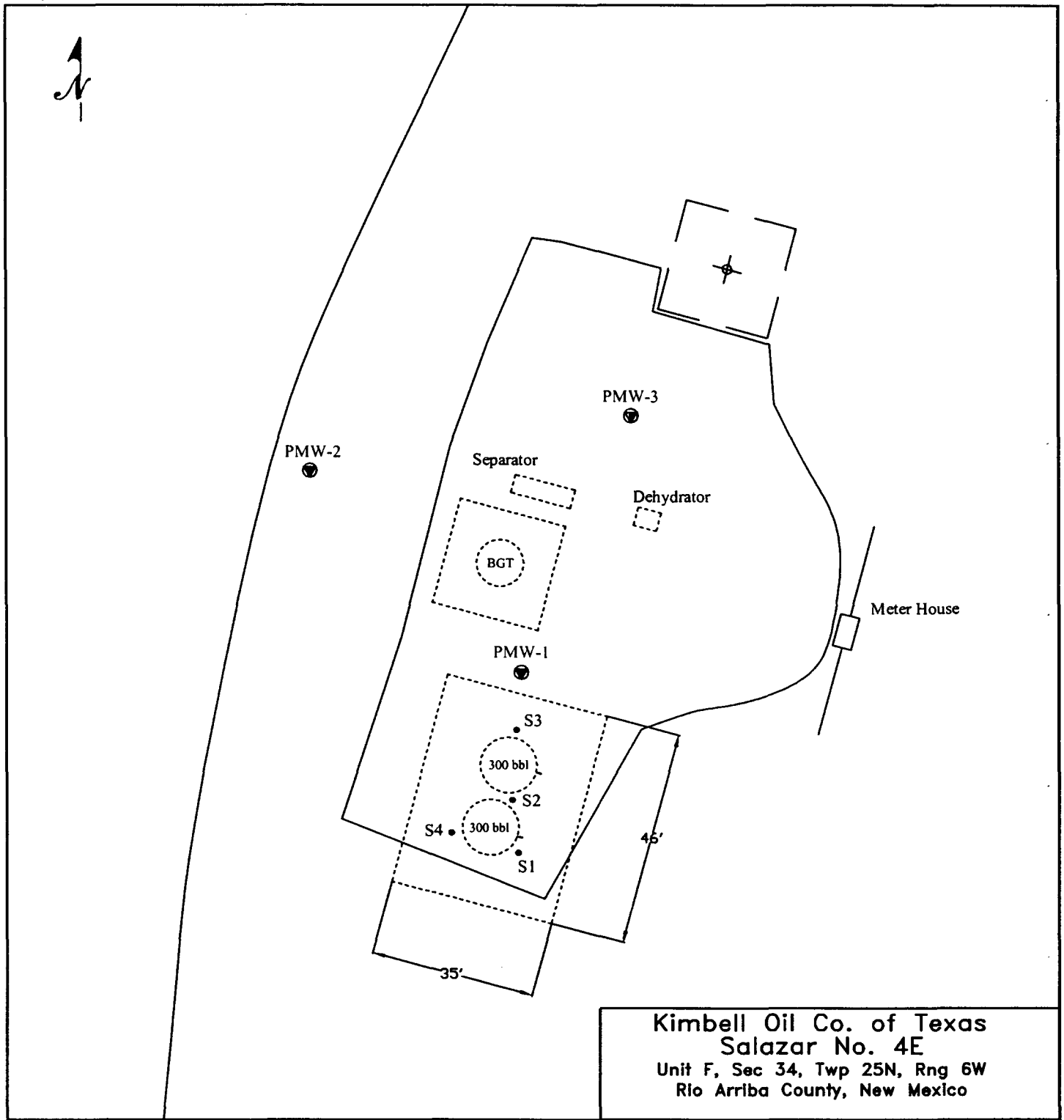


# Kimbell Oil Co. of Texas
## Salazar No. 4E
**Unit F, Sec 34, Twp 25N, Rng 6W**
**Rio Arriba County, New Mexico**

## Legend

S1: Denotes Sample Point

S1: OVM 953 ppm
S2: OVM 1531 ppm
S3: OVM 530 ppm
S4: OVM 1061 ppm

----- Original locations of site equipment.

—— Solid blue line denotes areas at extent of excavation that are below NMOCD guidelines

▭ TH: Denotes Test Hole

● PMW-1: Proposed Monitor Well

| | | | |
|---|---|---|---|
| SCALE: 1" = 30' | FIGURE NO. 3 | REV |
| PROJECT NO. 06011-001 | | |

REVISIONS

| NO. | DATE | BY | DESCRIPTION |
|---|---|---|---|
| 1 | | | |

| | | | | | |
|---|---|---|---|---|---|
| MAP DRWN | MPM | 1/18/06 | BASE DRWN | MPM | 1/18/06 |

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

# EPA METHOD 8015 Modified
# Nonhalogenated Volatile Organics
# Total Petroleum Hydrocarbons

| | | | |
|---|---|---|---|
| Client: | Kimbell Oil | Project #: | 06011-001 |
| Sample ID: | Bottom @ 28' | Date Reported: | 02-07-06 |
| Laboratory Number: | 36145 | Date Sampled: | 02-06-06 |
| Chain of Custody No: | 15506 | Date Received: | 02-06-06 |
| Sample Matrix: | Soil | Date Extracted: | 02-07-06 |
| Preservative: | Cool | Date Analyzed: | 02-07-06 |
| Condition: | Cool and Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/Kg) | Det. Limit (mg/Kg) |
|---|---|---|
| **Gasoline Range (C5 - C10)** | **5.1** | **0.2** |
| **Diesel Range (C10 - C28)** | **ND** | **0.1** |
| **Total Petroleum Hydrocarbons** | **5.1** | **0.2** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Salazar 4E.**

Analyst

Review

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021
## AROMATIC VOLATILE ORGANICS

| | | | |
|---|---|---|---|
| Client: | Kimbell Oil | Project #: | 06011-001 |
| Sample ID: | Bottom @ 28' | Date Reported: | 02-07-06 |
| Laboratory Number: | 36145 | Date Sampled: | 02-06-06 |
| Chain of Custody: | 15506 | Date Received: | 02-06-06 |
| Sample Matrix: | Soil | Date Analyzed: | 02-07-06 |
| Preservative: | Cool | Date Extracted: | 02-07-06 |
| Condition: | Cool & Intact | Analysis Requested: | BTEX |

| Parameter | Concentration (ug/Kg) | Det. Limit (ug/Kg) |
|---|---|---|
| **Benzene** | **15.4** | **1.8** |
| **Toluene** | **176** | **1.7** |
| **Ethylbenzene** | **101** | **1.5** |
| **p,m-Xylene** | **599** | **2.2** |
| **o-Xylene** | **158** | **1.0** |
| **Total BTEX** | **1,050** | |

ND - Parameter not detected at the stated detection limit.

| Surrogate Recoveries: | Parameter | Percent Recovery |
|---|---|---|
| | **Fluorobenzene** | **98.0 %** |
| | **1,4-difluorobenzene** | **98.0 %** |
| | **Bromochlorobenzene** | **98.0 %** |

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

**Comments:** **Salazar 4E.**

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

# EPA METHOD 8015 Modified
# Nonhalogenated Volatile Organics
# Total Petroleum Hydrocarbons

| | | | |
|---|---|---|---|
| Client: | Kimbell Oil | Project #: | 06011-001 |
| Sample ID: | S. Wall | Date Reported: | 02-09-06 |
| Laboratory Number: | 36172 | Date Sampled: | 02-07-06 |
| Chain of Custody No: | 15517 | Date Received: | 02-08-06 |
| Sample Matrix: | Soil | Date Extracted: | 02-08-06 |
| Preservative: | Cool | Date Analyzed: | 02-09-06 |
| Condition: | Cool and Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/Kg) | Det. Limit (mg/Kg) |
|---|---|---|
| **Gasoline Range (C5 - C10)** | **ND** | **0.2** |
| **Diesel Range (C10 - C28)** | **ND** | **0.1** |
| **Total Petroleum Hydrocarbons** | **ND** | **0.2** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Salazar 4E.**

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

# EPA METHOD 8015 Modified
# Nonhalogenated Volatile Organics
# Total Petroleum Hydrocarbons

| | | | |
|---|---|---|---|
| Client: | Kimbell Oil | Project #: | 06011-001 |
| Sample ID: | E. Wall, Southern Area | Date Reported: | 02-09-06 |
| Laboratory Number: | 36173 | Date Sampled: | 02-07-06 |
| Chain of Custody No: | 15517 | Date Received: | 02-08-06 |
| Sample Matrix: | Soil | Date Extracted: | 02-08-06 |
| Preservative: | Cool | Date Analyzed: | 02-09-06 |
| Condition: | Cool and Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/Kg) | Det. Limit (mg/Kg) |
|---|---|---|
| **Gasoline Range (C5 - C10)** | **ND** | **0.2** |
| **Diesel Range (C10 - C28)** | **ND** | **0.1** |
| **Total Petroleum Hydrocarbons** | **ND** | **0.2** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Salazar 4E.**

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

# EPA METHOD 8015 Modified
# Nonhalogenated Volatile Organics
# Total Petroleum Hydrocarbons

| | | | |
|---|---|---|---|
| Client: | Kimbell Oil | Project #: | 06011-001 |
| Sample ID: | W. Wall (Composite) | Date Reported: | 02-17-06 |
| Laboratory Number: | 36245 | Date Sampled: | 02-15-06 |
| Chain of Custody No: | 15556 | Date Received: | 02-15-06 |
| Sample Matrix: | Soil | Date Extracted: | 02-16-06 |
| Preservative: | Cool | Date Analyzed: | 02-17-06 |
| Condition: | Cool and Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/Kg) | Det. Limit (mg/Kg) |
|---|---|---|
| **Gasoline Range (C5 - C10)** | **ND** | **0.2** |
| **Diesel Range (C10 - C28)** | **ND** | **0.1** |
| **Total Petroleum Hydrocarbons** | **ND** | **0.2** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Salazar 4 E.**

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

# EPA METHOD 8015 Modified
# Nonhalogenated Volatile Organics
# Total Petroleum Hydrocarbons

| | | | |
|---|---|---|---|
| Client: | Kimbell Oil | Project #: | 06011-001 |
| Sample ID: | E. Wall (Composite) | Date Reported: | 02-17-06 |
| Laboratory Number: | 36246 | Date Sampled: | 02-15-06 |
| Chain of Custody No: | 15556 | Date Received: | 02-15-06 |
| Sample Matrix: | Soil | Date Extracted: | 02-16-06 |
| Preservative: | Cool | Date Analyzed: | 02-17-06 |
| Condition: | Cool and Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/Kg) | Det. Limit (mg/Kg) |
|---|---|---|
| **Gasoline Range (C5 - C10)** | **141** | **0.2** |
| **Diesel Range (C10 - C28)** | **11.0** | **0.1** |
| **Total Petroleum Hydrocarbons** | **152** | **0.2** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Salazar 4 E.**

Analyst

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021
## AROMATIC VOLATILE ORGANICS

| | | | |
|---|---|---|---|
| Client: | Kimbell Oil | Project #: | 06011-001 |
| Sample ID: | W. Wall (Composite) | Date Reported: | 02-17-06 |
| Laboratory Number: | 36245 | Date Sampled: | 02-15-06 |
| Chain of Custody: | 15556 | Date Received: | 02-15-06 |
| Sample Matrix: | Soil | Date Analyzed: | 02-17-06 |
| Preservative: | Cool | Date Extracted: | 02-16-06 |
| Condition: | Cool & Intact | Analysis Requested: | BTEX |

| Parameter | Concentration (ug/Kg) | Det. Limit (ug/Kg) |
|---|---|---|
| **Benzene** | **ND** | **1.8** |
| **Toluene** | **2.0** | **1.7** |
| **Ethylbenzene** | **ND** | **1.5** |
| **p,m-Xylene** | **55.4** | **2.2** |
| **o-Xylene** | **28.7** | **1.0** |
| **Total BTEX** | **86.1** | |

ND - Parameter not detected at the stated detection limit.

| Surrogate Recoveries: | Parameter | Percent Recovery |
|---|---|---|
| | **Fluorobenzene** | **98.0 %** |
| | **1,4-difluorobenzene** | **98.0 %** |
| | **Bromochlorobenzene** | **98.0 %** |

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

**Comments:** **Salazar 4E.**

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021
## AROMATIC VOLATILE ORGANICS

| | | | |
|---|---|---|---|
| Client: | Kimbell Oil | Project #: | 06011-001 |
| Sample ID: | E. Wall (Composite) | Date Reported: | 02-17-06 |
| Laboratory Number: | 36246 | Date Sampled: | 02-15-06 |
| Chain of Custody: | 15556 | Date Received: | 02-15-06 |
| Sample Matrix: | Soil | Date Analyzed: | 02-17-06 |
| Preservative: | Cool | Date Extracted: | 02-16-06 |
| Condition: | Cool & Intact | Analysis Requested: | BTEX |

| Parameter | Concentration (ug/Kg) | Det. Limit (ug/Kg) |
|---|---|---|
| **Benzene** | **207** | **1.8** |
| **Toluene** | **22,580** | **1.7** |
| **Ethylbenzene** | **8,240** | **1.5** |
| **p,m-Xylene** | **57,460** | **2.2** |
| **o-Xylene** | **13,220** | **1.0** |
| **Total BTEX** | **101,710** | |

ND - Parameter not detected at the stated detection limit.

| Surrogate Recoveries: | Parameter | Percent Recovery |
|---|---|---|
| | **Fluorobenzene** | **99.0 %** |
| | **1,4-difluorobenzene** | **99.0 %** |
| | **Bromochlorobenzene** | **99.0 %** |

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

**Comments:** **Salazar 4E.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

# EPA METHOD 8015 Modified
# Nonhalogenated Volatile Organics
# Total Petroleum Hydrocarbons

| | | | |
|---|---|---|---|
| Client: | Kimbell Oil | Project #: | 06011-001 |
| Sample ID: | TH, 10' from Meter | Date Reported: | 02-22-06 |
| Laboratory Number: | 36284 | Date Sampled: | 02-20-06 |
| Chain of Custody No: | 15567 | Date Received: | 02-20-06 |
| Sample Matrix: | Soil | Date Extracted: | 02-21-06 |
| Preservative: | Cool | Date Analyzed: | 02-22-06 |
| Condition: | Cool and Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/Kg) | Det. Limit (mg/Kg) |
|---|---|---|
| **Gasoline Range (C5 - C10)** | **4,020** | **0.2** |
| **Diesel Range (C10 - C28)** | **550** | **0.1** |
| **Total Petroleum Hydrocarbons** | **4,570** | **0.2** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Salazar 4E.**

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

# EPA METHOD 8015 Modified
# Nonhalogenated Volatile Organics
# Total Petroleum Hydrocarbons

| | | | |
|---|---|---|---|
| Client: | Kimbell Oil | Project #: | 06011-001 |
| Sample ID: | N. Wall Grab | Date Reported: | 02-22-06 |
| Laboratory Number: | 36285 | Date Sampled: | 02-20-06 |
| Chain of Custody No: | 15567 | Date Received: | 02-20-06 |
| Sample Matrix: | Soil | Date Extracted: | 02-21-06 |
| Preservative: | Cool | Date Analyzed: | 02-22-06 |
| Condition: | Cool and Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/Kg) | Det. Limit (mg/Kg) |
|---|---|---|
| **Gasoline Range (C5 - C10)** | **253** | **0.2** |
| **Diesel Range (C10 - C28)** | **13.5** | **0.1** |
| **Total Petroleum Hydrocarbons** | **267** | **0.2** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Salazar 4E.**

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

# EPA METHOD 8015 Modified
# Nonhalogenated Volatile Organics
# Total Petroleum Hydrocarbons

| | | | |
|---|---|---|---|
| Client: | Kimbell Oil | Project #: | 06011-001 |
| Sample ID: | TH, 25' NE of Wellhead | Date Reported: | 02-22-06 |
| Laboratory Number: | 36286 | Date Sampled: | 02-20-06 |
| Chain of Custody No: | 15567 | Date Received: | 02-20-06 |
| Sample Matrix: | Soil | Date Extracted: | 02-21-06 |
| Preservative: | Cool | Date Analyzed: | 02-22-06 |
| Condition: | Cool and Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/Kg) | Det. Limit (mg/Kg) |
|---|---|---|
| **Gasoline Range (C5 - C10)** | **ND** | **0.2** |
| **Diesel Range (C10 - C28)** | **ND** | **0.1** |
| **Total Petroleum Hydrocarbons** | **ND** | **0.2** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Salazar 4E.**

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

# EPA METHOD 8015 Modified
# Nonhalogenated Volatile Organics
# Total Petroleum Hydrocarbons

| | | | |
|---|---|---|---|
| Client: | Kimbell Oil | Project #: | 06011-001 |
| Sample ID: | TH, 20' N of Wellhead | Date Reported: | 02-22-06 |
| Laboratory Number: | 36287 | Date Sampled: | 02-20-06 |
| Chain of Custody No: | 15567 | Date Received: | 02-20-06 |
| Sample Matrix: | Soil | Date Extracted: | 02-21-06 |
| Preservative: | Cool | Date Analyzed: | 02-22-06 |
| Condition: | Cool and Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/Kg) | Det. Limit (mg/Kg) |
|---|---|---|
| **Gasoline Range (C5 - C10)** | **ND** | **0.2** |
| **Diesel Range (C10 - C28)** | **ND** | **0.1** |
| **Total Petroleum Hydrocarbons** | **ND** | **0.2** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Salazar 4E.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021
## AROMATIC VOLATILE ORGANICS

| | | | |
|---|---|---|---|
| Client: | Kimbell Oil | Project #: | 06011-001 |
| Sample ID: | TH, 10' from Meter | Date Reported: | 02-22-06 |
| Laboratory Number: | 36284 | Date Sampled: | 02-20-06 |
| Chain of Custody: | 15567 | Date Received: | 02-20-06 |
| Sample Matrix: | Soil | Date Analyzed: | 02-22-06 |
| Preservative: | Cool | Date Extracted: | 02-21-06 |
| Condition: | Cool & Intact | Analysis Requested: | BTEX |

| Parameter | Concentration (ug/Kg) | Det. Limit (ug/Kg) |
|---|---|---|
| **Benzene** | **3,410** | **1.8** |
| **Toluene** | **8,480** | **1.7** |
| **Ethylbenzene** | **4,580** | **1.5** |
| **p,m-Xylene** | **10,040** | **2.2** |
| **o-Xylene** | **4,080** | **1.0** |
| **Total BTEX** | **30,590** | |

ND - Parameter not detected at the stated detection limit.

| Surrogate Recoveries: | Parameter | Percent Recovery |
|---|---|---|
| | **Fluorobenzene** | **97.0 %** |
| | **1,4-difluorobenzene** | **97.0 %** |
| | **Bromochlorobenzene** | **97.0 %** |

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

**Comments:** **Salazar 4E.**

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8021
## AROMATIC VOLATILE ORGANICS

| | | | |
|---|---|---|---|
| Client: | Kimbell Oil | Project #: | 06011-001 |
| Sample ID: | N. Wall, Grab | Date Reported: | 02-22-06 |
| Laboratory Number: | 36285 | Date Sampled: | 02-20-06 |
| Chain of Custody: | 15567 | Date Received: | 02-20-06 |
| Sample Matrix: | Soil | Date Analyzed: | 02-22-06 |
| Preservative: | Cool | Date Extracted: | 02-21-06 |
| Condition: | Cool & Intact | Analysis Requested: | BTEX |

| Parameter | Concentration (ug/Kg) | Det. Limit (ug/Kg) |
|---|---|---|
| **Benzene** | **934** | **1.8** |
| **Toluene** | **2,860** | **1.7** |
| **Ethylbenzene** | **1,360** | **1.5** |
| **p,m-Xylene** | **4,810** | **2.2** |
| **o-Xylene** | **1,310** | **1.0** |
| **Total BTEX** | **11,270** | |

ND - Parameter not detected at the stated detection limit.

| Surrogate Recoveries: | Parameter | Percent Recovery |
|---|---|---|
| | **Fluorobenzene** | **98.0 %** |
| | **1,4-difluorobenzene** | **98.0 %** |
| | **Bromochlorobenzene** | **98.0 %** |

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

**Comments:** **Salazar 4E.**

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

# EPA METHOD 8015 Modified
# Nonhalogenated Volatile Organics
# Total Petroleum Hydrocarbons

| | | | |
|---|---|---|---|
| Client: | Kimbell Oil | Project #: | 06011-001 |
| Sample ID: | E. Wall Composite | Date Reported: | 03-07-06 |
| Laboratory Number: | 36390 | Date Sampled: | 03-06-06 |
| Chain of Custody No: | 15648 | Date Received: | 03-06-06 |
| Sample Matrix: | Soil | Date Extracted: | 03-06-06 |
| Preservative: | Cool | Date Analyzed: | 03-07-06 |
| Condition: | Cool and Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/Kg) | Det. Limit (mg/Kg) |
|---|---|---|
| **Gasoline Range (C5 - C10)** | **ND** | **0.2** |
| **Diesel Range (C10 - C28)** | **ND** | **0.1** |
| **Total Petroleum Hydrocarbons** | **ND** | **0.2** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Lybrook.**

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

# EPA METHOD 8015 Modified
# Nonhalogenated Volatile Organics
# Total Petroleum Hydrocarbons

| | | | |
|---|---|---|---|
| Client: | Kimbell Oil | Project #: | 06011-001 |
| Sample ID: | N. Wall Comp. | Date Reported: | 03-07-06 |
| Laboratory Number: | 36391 | Date Sampled: | 03-06-06 |
| Chain of Custody No: | 15648 | Date Received: | 03-06-06 |
| Sample Matrix: | Soil | Date Extracted: | 03-06-06 |
| Preservative: | Cool | Date Analyzed: | 03-07-06 |
| Condition: | Cool and Intact | Analysis Requested: | 8015 TPH |

| Parameter | Concentration (mg/Kg) | Det. Limit (mg/Kg) |
|---|---|---|
| **Gasoline Range (C5 - C10)** | **ND** | **0.2** |
| **Diesel Range (C10 - C28)** | **ND** | **0.1** |
| **Total Petroleum Hydrocarbons** | **ND** | **0.2** |

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Lybrook.**

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