Update Report

Environmental Remediation
Sampling Investigation
Dig & Haul Operations

Doral Energy Operating
Amoco #3 Tank Battery
Environmental Remediation
(Historic Minor Spill Inside Tank Battery)

Lease:
Amoco #3 Tank Battery
Location 660 FSL & 660FWL of Sec 26 –T7S-R31E
Coordinates: N 33.67234 W-103.75095
API #30-005-20634
Chaves County, NM

Prepared for
Bureau of Land Management
&
Doral Energy Operating

October 3rd, 2011

Prepared by:
Baseline Solutions, LLC
Andy Price
Midland, Texas

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Baseline Solutions was contracted by Doral Energy to conduct a remediation project in cooperation with the Bureau of Land Management Roswell office and New Mexico Oil Conservation Division, Hobbs office, at the Amoco #3 Tank Battery. An historic oil/saltwater spill occurred before Doral Energy acquired this lease. This was a minor spill which was contained within the tank battery bermed area. Baseline Solutions has completed the environmental sampling investigation as well as dig & haul operations. The sampling investigation was a quantitative and qualitative analysis. Dig & haul operations were conducted along with field testing to insure oil and or chloride contaminated soil had been excavated. Contaminated soil was hauled to Gandy's Disposal.
The site location is described as:

Amoco #3 Tank Battery
Located 660 FSL & 660FWL of Sec 26 –T7S-R31E
Coordinates: N 33.67234 W-103.75095
API #30-005-20634
Chaves County, NM

Completed remediation operations include:

- Sampling investigation - completed on 5/19/11.
- Dig & Haul operations - completed on 7/12/12

Sampling Investigation: A systematic grid was laid out with five areas classified as A,B,C,D,E. The sampling grid covered the entire area inside the bermed secondary containment.

- TPH highest surface level –132,000ppm
- TPH highest level at 1ft depth – 2,150ppm
- Chloride highest surface level – 14,100ppm
- Chloride highest level at 1ft depth – 1,3502ppm

Lab results for sampling investigation are listed below (please see app. C).

Sample field code	**TPH** PPM	Sample field code	**Chloride** PPM
A – Surface	10,900	A – Surface	374
B – Surface	132,000	B – Surface	931
C - Surface	12,900	C - Surface	14,100
D - Surface	18,900	D - Surface	11,100
E - Surface	15,000	E - Surface	6,650
A – 1'	2,150	A – 1'	1,350
B – 1'	230	B – 1'	428
C - 1'	855	C - 1'	341
D - 1'	531	D - 1'	271
E - 1'	1460	E - 1'	736

NMOCD acceptable level for Chlorides is 250ppm and less.
NMOCD acceptable level for Total Petroleum Hydrocarbons (TPH) is 5000ppm and less.

Contaminated Area Delineated: Soil borings with field and laboratory analysis indicated the oil/saltwater spill to be an approximate averaged area of 95ft X 20ftX1.5ft depth.

OCD Site Ranking: No Surface hydrology issues were identified for surface run-off due to total containment of the minor spill, topographical gradient and rain fall average. Subsurface hydrology data indicates groundwater for this area to be at an estimated average depth of 91ft plus. **The OCD site ranking is considered to be 10 or less (please see section 5 in the body of this report).**

Conclusion – Sampling Investigation:
TPH and Chloride contamination for spill area was determined to be an average depth of 1' to 2'.
Dig & Haul operations were the choice for abatement.

EXECUTIVE SUMMARY - Continued

Dig & Haul Operations:

Contaminated Area Excavated: Dig and Haul operations was the method used to remove contaminated soils. Samples were screened on site during excavation with field instrumentation. Formal composite samples were taken for lab analysis from five separate areas when screening indicated chloride and TPH levels were below required limits.

"Dig & Haul" Operations:

- Formal lab samples were taken at the total depth of the excavation and numerous photos were taken as well to document the completed excavation. Please see enclosed photos. Over all excavation depths ranged from 1' to 3' depths.
- A total of 102 cubic yards of contaminated soil were removed and disposed of at the Gandy Disposal facility. Backfill soil will be taken delivered from a near by caliche pit. No backfill operations have been completed. Backfill for excavated will not be completed until approval from BLM.
- The tank battery berm was rebuilt in areas where equipment needed entry and sections of the berm were removed.
- Sections of the fence were removed for equipment to enter. The fence was put back in place.

Lab results for dig & haul operations are listed below (please see app. C).

Sample field code	**TPH** PPM	Sample field code	**Chloride** PPM
A	4790	A	<200
B	453	B	<200
C	4480	C	<200
D	643	D	530
E	1580	E	392

Conclusion:

- Total Petroleum Hydrocarbon (TPH) levels were determined to be below the required limit of
- 5,000ppm.
- Chloride levels for the spill area were determined to be below the required limit of 250ppm in all areas except areas D & E. These two areas were minutely over the standard level of 250ppm.
- No further backfill will be completed until proper approval from BLM.
- Please see enclosed:
    - Site diagram
    - Project photos
    - Laboratory analysis report/results

RECOMMENDATION:
Complete backfill operations. Submit closing report with Sundry Notice to BLM. Submit same closing report to NMOCD with Final c141.

1.0 INTRODUCTION

Baseline Solutions, (Andy Price) was retained by Doral Energy Operating, to conduct an Environmental remediation project at the Amoco #3 Tank Battery.

A. Site Description / Location

- Spill Location
  - Legal Description:
    Amoco #3 Tank Battery
    Located 660 FSL & 660FWL of Sec 26 –T7S-R31E
    Coordinates: N 33.67234 W-103.75095
    API #30-005-20634
    Chaves County, NM
- An historic oil/saltwater spill occurred before Doral Energy acquired this lease. This was a minor spill which was contained within the tank battery bermed area. Baseline Solutions has completed the environmental sampling investigation as well as dig & haul operations. The sampling investigation was a quantitative and qualitative analysis. Dig & haul operations were conducted along with field testing to insure oil and or chloride contaminated soil had been excavated. Contaminated soil was hauled to Gandy's Disposal.
- A berm was in place for secondary containment of storage tanks. The historic spill was contained completely within the bermed area of the tank battery. (Please see app. A photos).

2.0 Purpose

- The purpose of this environmental project is to:
  - Quantify the level of Total Petroleum Hydrocarbons (TPH) and, Chlorides associated with the historic spill located at the tank battery
  - Delineate the area of contamination for the Amoco #3 Tank Battery
  - Remediate contaminated soil in cooperation with BLM and NMOCD guidelines

3.0 PROCEDURES AND METHODS

The procedures and methods for this project were conducted according to EPA protocol and conducted in a professional manner within the parameters as established in the scope and purpose of this investigation.

A. Sampling Methods and Procedures

- Visual site reconnaissance of entire property with photos
- Grab samples were taken and screened for Chlorides with an Electrical Conductivity Meter (Milwaukee Model SM802). This process is used to identify any elevated levels for chlorides for a specific depth and area.
- Grab samples were taken and screened for Total Petroleum Hydrocarbons (TPH), with a Photoionization Detector (Mini Rae Plus - model # PGM-76IS). This process is used to identify any elevated levels for TPH for a specific depth and area.
- The parameter of the spill area was delineated first by visual reconnaissance and screening surface samples and then with soil borings.

- A site grid was developed from data collected with grab sample screening.
- Grid samples were taken and combined within specific areas which made up the identified composite samples.
- Samples were systematically taken from soil borings at surface and 1ft intervals. Samples were screened with an EC meter and PID detector.
- **TPH:**
    - **Spill Area:** TPH levels at surface and to a depth of 1ft to 3ft were **above** BLM/OCD guidelines for the Sample Grid area. Samples were field screened at depths of 1ft to 3ft at which point TPH had dropped to acceptable levels. Samples were taken at an average depth of 1.5ft for lab analysis. TPH levels for all samples taken for grid areas A, B, C, D & E, were **below** regulatory standard levels.
- **Chlorides:**
    - **Spill Footprint:** Chloride levels at surface and to a depth of 1ft to 3ft were **above** BLM/OCD requirements for the Sample Grid area. Samples were field screened at depths of 1ft to 3ft at which point Chloride**s** had dropped to acceptable levels. Samples were taken at an average depth of 1.5ft for lab analysis. Chloride levels for Sample Grid areas A, B, C were **below** regulatory standard limits. Grid areas D & E were minutely above standard levels.
- Lab Samples: Samples were taken from 5 grid areas, from soil borings at 1ft intervals to a maximum depth of 3ft.
- Decontamination procedures were maintained
- All samples were kept on ice until delivered to lab
- A field log was maintained
- A formal chain of custody was maintained
- Composite samples were delivered to Trace Analysis in Midland, TX - an EPA approved lab.

4.0 INVESTIGATION RESULTS

Lab results for sampling investigation are listed below (please see app. C).

Sample field code	**TPH** PPM	Sample field code	**Chloride** PPM
A – Surface	10,900	A – Surface	374
B – Surface	132,000	B – Surface	931
C - Surface	12,900	C - Surface	14,100
D - Surface	18,900	D - Surface	11,100
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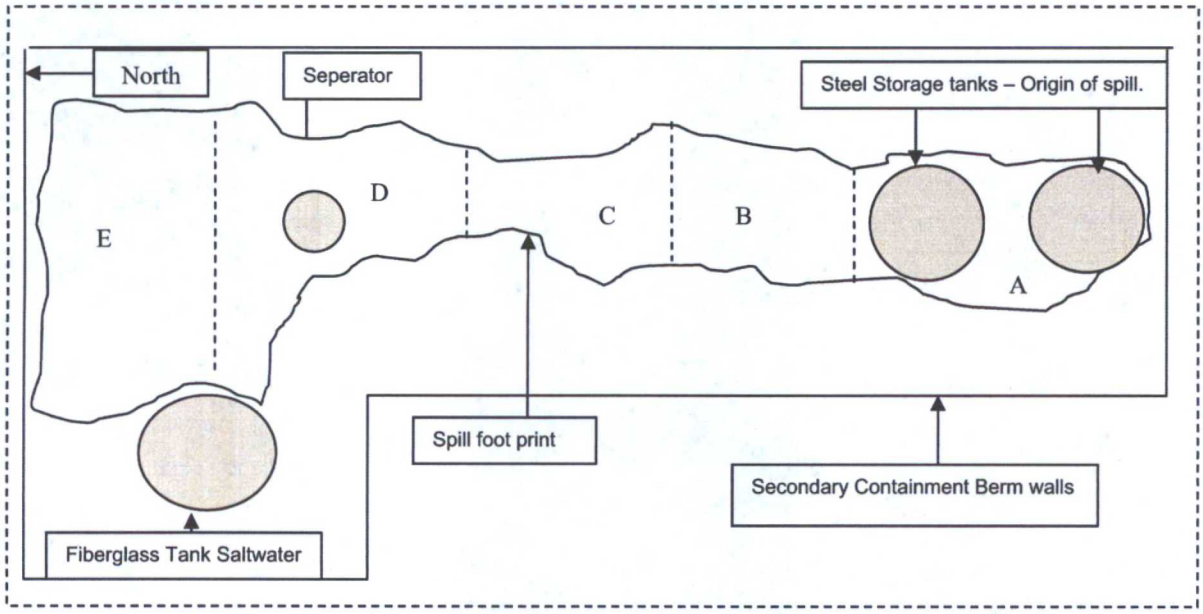
A – 1'	2,150	A – 1'	1,350
B – 1'	230	B – 1'	428
C - 1'	855	C - 1'	341
D - 1'	531	D - 1'	271
E - 1'	1460	E - 1'	736

NMOCD acceptable level for Chlorides is 250ppm and less.
NMOCD acceptable level for Total Petroleum Hydrocarbons (TPH) is 5000ppm and less.

Contaminated Area Delineated:
The sampling grid area consisted of five sections within the tank battery berm:



5.0 OCD SITE RANKING

SITE RANKING – According to NMOCD "Spill Clean up Guidelines" for "Unsaturated Contaminated Soils"

The general site characteristics obtained during the site assessment was used to determine the appropriate soil remediation action levels using a risk based approach. Site soils were contaminated by petroleum and saltwater constituents and were scored according to the ranking criteria below to determine their relative threat to public health, fresh waters and the environment.

Ranking Criteria

Depth To Ground Water	Ranking Score
<50 feet	20
50 - 99	**10**
>100	0

- **Depth to ground water is approximately 97'**, according to USGS information dated 4/95 (please app. E). USGS measurements were taken from the closest water well (on record), with the following description:
  Roosevelt County, New Mexico
  07S.32E Sec30
  Latitude 33°41'01", Longitude 103°43'02" NAD27
  Hydrologic Unit Code 13060003
  Land-surface elevation 4,398 feet above sea level
  Depth to groundwater is approximately 97'.

- **The NMOCD rating is considered to be <u>10 or less.</u>**

<u>Wellhead Protection Area</u>

<1000 feet from a water source, or;
<200 feet from private domestic water source

Yes	20
<u>No</u>	**<u>0</u>**

<u>Distance To Surface Water Body</u>

<200 horizontal feet	20
200 - 1000 horizontal feet	10
<u>>1000 horizontal feet</u>	**<u>0</u>**

From NMOCD "Spill Clean up Guidelines"
Recommended remediation action level. The total ranking score determines the degree of remediation that may be required at any given site. The total ranking score is the sum of all four individual ranking criteria listed in Section IV.A.2.a.
Total NMOCD Ranking Score for this spill site is considered to be 10.

6. HYDROLOGY REVIEW

1. Depth to Ground Water Approximately 97ft, (see app. C)

- Depth to ground water is approximately 97', according to USGS information dated 4/95. USGS measurements were taken from the closest water well (on record), with the following description:
  Roosevelt County, New Mexico
  07S.32E Sec30
  Latitude 33°41'01", Longitude 103°43'02" NAD27
  Hydrologic Unit Code 13060003
  Land-surface elevation 4,398 feet above sea level
  The depth of the hole is 173 feet below land surface.

2. Area Water Sources (see app. C)
The nearest water source (wells, springs or other sources of fresh water extraction), were identified being:

- Water well located an estimated 1 ½ to 2 miles west of the subject location. Water well location description is 07S.32E Sec30

3. Distance to Nearest Surface Water Body (see app. C)

- An intermittent surface pond is over 4 miles east of the subject site. Surface pond location description is T8S R30E Sec1.
- The gradient for the specific lease location area is considered to be generally to the north.

7.0 Dig & Haul Operations Completed

1. **Contaminated Area Excavated**:
   - Dig and Haul operations were used to remove contaminated soils. Samples were screened on site during excavation with field instrumentation photoionization detector and electrical conductivity meter. Formal composite samples were taken for lab analysis from five separate areas when screening indicated chloride and TPH levels were below required limits.

2. **"Dig & Haul" Operations:**
   - Formal lab samples were taken at the total depth of the excavation and numerous photos were taken as well to document the completed excavation. Please see enclosed photos. Over all excavation depths ranged from 1' to 3' depths.
   - A total of 102 cubic yards of contaminated soil were removed and disposed of at the Gandy Disposal facility. Backfill soil will be delivered from a near by caliche pit. No backfill operations have been completed. Backfill for spill area will not be completed until proper approval from BLM.
   - The tank battery berm was rebuilt in areas where equipment needed entry and sections of the berm were removed.
   - Sections of the fence were removed for equipment to enter. The fence was put back in place.

Lab results for dig & haul operations are listed below (please see app. C).

Sample field code	**TPH** PPM	Sample field code	**Chloride** PPM
A	4790	A	<200
B	453	B	<200
C	4480	C	<200
D	643	D	530
E	1580	E	392

3. **Conclusion:**
   - Total Petroleum Hydrocarbon (TPH) levels were determined to be below the required limit of
   - 5,000ppm.
   - Chloride levels for the spill area were determined to be below the required limit of 250ppm in all areas except areas D & E. These two areas were minutely over the standard level of 250ppm.
   - No further backfill will be completed until proper approval from BLM.
   - Please see enclosed:
     - Site diagram
     - Project photos
     - Laboratory analysis report/results

8.0 REGULATORY REVIEW

This sampling investigation is intended to be in compliance with:

A. Bureau of Land Management
   - Onshore Order #1
   - 43 CFR Part 3160

- [Federal Register: March 7, 2007 (Volume 72, Number 44)], [Rules and Regulations], [Page 10307-10338]

B. New Mexico Oil Conservation Division:

- Rule 116 RELEASE NOTIFICATION AND CORRECTIVE ACTION [1-1-50...2-1-96; A, 3-15-97]
    - 116.D. CORRECTIVE ACTION: The responsible person must complete Division approved corrective action for releases which endanger public health or the environment. Releases will be addressed in accordance with a remediation plan submitted to and approved by the Division or with an abatement plan submitted in accordance with Rule 19 (19 NMAC 15.A. 19). [3-15-97]
- Rule 19 (19 NMAC 15.A. 19). [3-15-97].

9.0 CONCLUSIONS / RECOMMENDATIONS

Conclusion:

Sampling Investigation:

- TPH and Chloride contamination for spill area was determined to be an average depth of 1' to 2'. Dig & Haul operations were the choice for abatement.

RECOMMENDATION:
Complete backfill operations. Submit closing report with Sundry Notice to BLM. Submit same closing report to NMOCD with Final c141.

10. LIMITATIONS

This report was prepared exclusively for use by Doral Energy Operating. The contents of the report shall not be disseminated to, or used by any other party without Doral Energy Operating written consent.

Baseline Solutions hereby gives notice that any statement or opinion in this report shall not be construed to create any warranty or representation that the real property on which the investigation was conducted is free of pollution or complies with any or all applicable regulatory or statutory requirements, or that the property is fit for any particular purpose.

Unless otherwise indicated in this report, no attempt was made to check on the compliance of present or past owners of the site with federal, state or local laws and regulations.

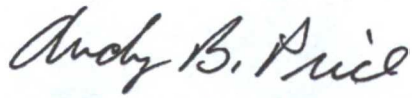
The conclusions presented in this report were based on the services described, and not on specific tasks or procedures beyond the scope of described services or the time and budgetary constraints imposed by Doral Energy Operating.

Person or entity considering use, acquisition, or other involvement or activity concerning the property shall be solely responsible for determining the adequacy of the property for any and all uses for which that person or entity shall use the property. Any person or entity considering the use, acquisition, or other involvement or activity concerning the property which is the subject of this report should enter into any use, occupation, acquisition, or the like on sole reliance of its own judgment and on its own personal investigation of such property, and not in reliance on any representation made by Baseline Solutions regarding such property, the character quality, or its value. Baseline Solutions performed environmental services in a professional manner using that degree of skill and care exercised for similar projects under similar conditions by reputable and competent environmental consultants. Baseline Solutions shall not be responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed at the time the environmental services were conducted.

QUALIFICATION AND SIGNATURE OF ENVIRONMENTAL PROFESSIONAL

Prepared By:

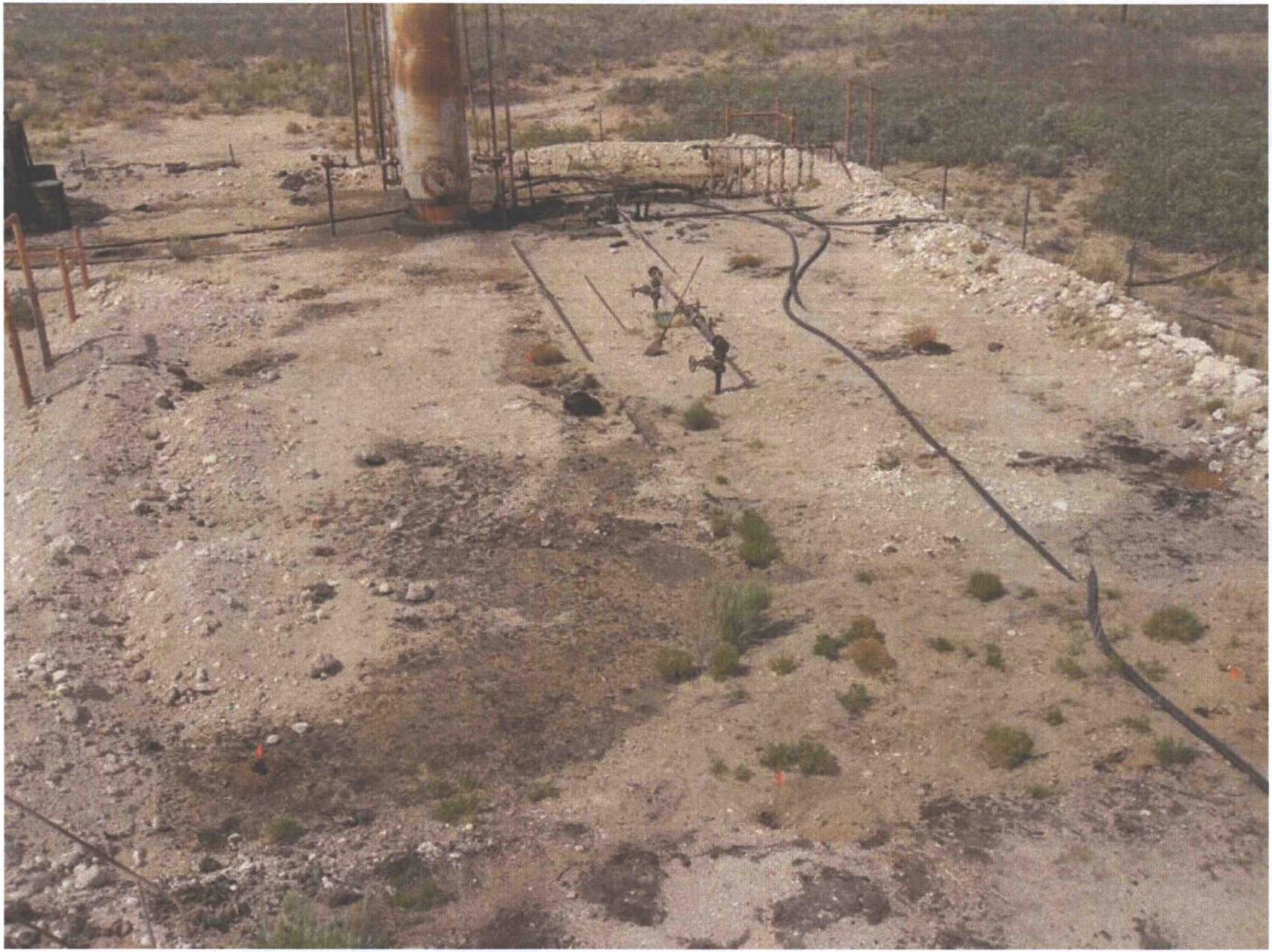
Andy B. Price



Registered Environmental Professional Registry #9116

APPENDIXES

A. Site Photos
B. Lab Reports
D. OCD Form C141
E. Hydrology




CASE

Summary Report

Andy Price
Doral Energy
22610 US Hwy. 281 North
Ste. 218
San Antonio, TX 78258

Report Date: June 1, 2011

Work Order: 11052023

Project Location: Sec. 26, T7S-R3IE, Chaves Co.
Project Name: Amoco #3

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
266948	A-S	soil	2011-05-19	13:05	2011-05-20
266949	B-S	soil	2011-05-19	13:15	2011-05-20
266950	C-S	soil	2011-05-19	13:30	2011-05-20
266951	D-S	soil	2011-05-19	13:40	2011-05-20
266952	E-S	soil	2011-05-19	13:50	2011-05-20
266953	A-1'	soil	2011-05-19	14:10	2011-05-20
266954	B-1'	soil	2011-05-19	14:20	2011-05-20
266955	C-1'	soil	2011-05-19	14:35	2011-05-20
266956	D-1'	soil	2011-05-19	14:50	2011-05-20
266957	E-1'	soil	2011-05-19	15:15	2011-05-20

Sample - Field Code	TPH DRO - NEW DRO (mg/Kg)	TPH GRO GRO (mg/Kg)
266948 - A-S	**10900**	**35.8**
266949 - B-S	**13200**	**5.83**
266950 - C-S	**12900**	**366**
266951 - D-S	**18900**	**263**
266952 - E-S	**15000**	**233**
266953 - A-1'	**2150**	**17.2**
266954 - B-1'	**230**	<2.00
266955 - C-1'	**855**	**16.2**
266956 - D-1'	**531**	**10.6**
266957 - E-1'	**1460**	**25.8**

Sample: 266948 - A-S

continued ...

sample 266948 continued ...

Param	Flag	Result	Units	RL

Param	Flag	Result	Units	RL
Chloride		**374**	mg/Kg	4

Sample: 266949 - B-S

Param	Flag	Result	Units	RL
Chloride		**931**	mg/Kg	4

Sample: 266950 - C-S

Param	Flag	Result	Units	RL
Chloride		**14100**	mg/Kg	4

Sample: 266951 - D-S

Param	Flag	Result	Units	RL
Chloride		**11100**	mg/Kg	4

Sample: 266952 - E-S

Param	Flag	Result	Units	RL
Chloride		**6650**	mg/Kg	4

Sample: 266953 - A-1'

Param	Flag	Result	Units	RL
Chloride		**1350**	mg/Kg	4

Sample: 266954 - B-1'

Param	Flag	Result	Units	RL
Chloride		**428**	mg/Kg	4

Sample: 266955 - C-1'

Param	Flag	Result	Units	RL
Chloride		**341**	mg/Kg	4

Sample: 266956 - D-1'

Param	Flag	Result	Units	RL
Chloride		**271**	mg/Kg	4

Sample: 266957 - E-1'

Param	Flag	Result	Units	RL
Chloride		**736**	mg/Kg	4

Summary Report

Andy Price
Doral Energy
22610 US Hwy. 281 North
Ste. 218
San Antonio, TX 78258

Report Date: July 26, 2011

Work Order: 11072017

Project Location: Sec. 26, T7S-R3IE, Chaves Co.
Project Name: Amoco #3

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
272311	A	soil	2011-07-19	13:05	2011-07-20
272312	B	soil	2011-07-19	13:15	2011-07-20
272313	C	soil	2011-07-19	13:25	2011-07-20
272314	D	soil	2011-07-19	13:35	2011-07-20
272315	E	soil	2011-07-19	13:50	2011-07-20

Sample - Field Code		TPH DRO - NEW DRO (mg/Kg)		TPH GRO GRO (mg/Kg)
272311 - A		**4790**		<2.00
272312 - B		**453**		<2.00
272313 - C		**4480**		<2.00
272314 - D		**643**		<2.00
272315 - E		**1580**		<2.00

Sample: 272311 - A

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 272312 - B

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 272313 - C

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 272314 - D

Param	Flag	Result	Units	RL
Chloride		**530**	mg/Kg	4

Sample: 272315 - E

Param	Flag	Result	Units	RL
Chloride		**392**	mg/Kg	4

Summary Report

Andy Price
EnerVest Operating LLC
1001 Fannin Street
Suite 800
Houston, TX 77002

Report Date: February 1, 2011

Work Order: 11012518

Project Location: Sec. 13, T14S-R33E, Lea Co., NM
Project Name: Chalupa-Pyro

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
256123	1	soil	2011-01-25	08:00	2011-01-25
256124	2	soil	2011-01-25	08:15	2011-01-25
256125	3	soil	2011-01-25	08:30	2011-01-25
256126	4	soil	2011-01-25	09:00	2011-01-25
256127	5	soil	2011-01-25	09:15	2011-01-25

Sample - Field Code		TPH DRO - NEW DRO (mg/Kg)		TPH GRO GRO (mg/Kg)
256123 - 1		<50.0		<2.00
256124 - 2		<50.0		**6.71**
256125 - 3		<50.0		<2.00
256126 - 4		<50.0		<2.00
256127 - 5		<50.0		<2.00

Sample: 256123 - 1

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 256124 - 2

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 256125 - 3

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 256126 - 4

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 256127 - 5

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Summary Report

Andy Price
EnerVest Operating LLC
1001 Fannin Street
Suite 800
Houston, TX 77002

Report Date: February 1, 2011

Work Order: 11012518

Project Location: Sec. 13, T14S-R33E, Lea Co., NM
Project Name: Chalupa-Pyro

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
256123	1	soil	2011-01-25	08:00	2011-01-25
256124	2	soil	2011-01-25	08:15	2011-01-25
256125	3	soil	2011-01-25	08:30	2011-01-25
256126	4	soil	2011-01-25	09:00	2011-01-25
256127	5	soil	2011-01-25	09:15	2011-01-25

Sample - Field Code	TPH DRO - NEW DRO (mg/Kg)	TPH GRO GRO (mg/Kg)
256123 - 1	<50.0	<2.00
256124 - 2	<50.0	**6.71**
256125 - 3	<50.0	<2.00
256126 - 4	<50.0	<2.00
256127 - 5	<50.0	<2.00

Sample: 256123 - 1

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 256124 - 2

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 256125 - 3

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 256126 - 4

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 256127 - 5

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00