CLOSURE REPORT

LOVINGTON PADDOCK #81

NMOCD 1RP-1227
COMPANY # 4323
EPI REF: #200067

30025 03927 0000

UL-F (SE¼ OF THE NW¼) OF SECTION 12 T17S R36E
~6 MILES SOUTHEAST OF LOVINGTON
LEA COUNTY, NEW MEXICO
LATITUDE: N 32° 51' 08.57" **LONGITUDE: W 103° 18' 32.18"**

APRIL 2007

RP# 1227

PREPARED BY:

ENVIRONMENTAL PLUS, INC.
2100 AVENUE O
EUNICE, NEW MEXICO 88231

PREPARED FOR:

Chevron

Incident - nPAC0711046846
Application - pPAC0711047017

Distribution List

Chevron USA – Lovington Paddock #81

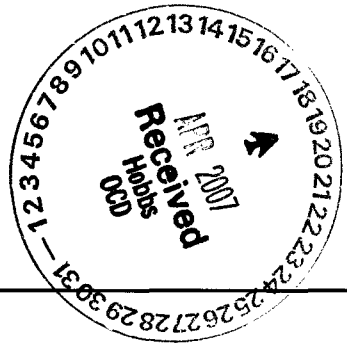
NMOCD 1RP #1227; EPI Ref: 200067

Name	Title	Company or Agency	Mailing Address	e-mail
Larry Johnson	Environmental Engineer	NMOCD – Hobbs	1625 French Drive Hobbs, NM 88240	larry.johnson@state.nm.us
Larry Williams	HES Champion	Chevron	P.O. Box 1949 Eunice, NM 88231	larry.williams@chevron.com
Darr Angell	Property Owner		P.O. Box 190 Lovington, NM 88260	
File	- -	Environmental Plus, Inc.	P.O. Box 1558 Eunice, NM 88231	ddominguez@envplus.net

LETTER OF TRANSMITTAL

ENVIRONMENTAL PLUS, INC.

Date:	April 19, 2007
To:	**Mr. Larry Johnson**
Company Name:	New Mexico Oil Conservation Division
Address:	1625 French Drive
City / State / Zip:	Hobbs, New Mexico 88240
From:	David P. Duncan
CC:	Larry Williams, Chevron USA - Eunice, NM
	Darr Angell, Property Owner, Lovington, NM
Project #:	NMOCD Ref. 1RP#1227: EPI Ref. #200067
Project Name:	Lovington Paddock #81
Subject:	**Closure Report**



# of originals	# of copies	Description
1		Chevron USA – Lovington Paddock #81– Closure Report

Remarks

Dear Mr. Johnson:

Enclosed is a hard bound copy of the *Closure Report* for the above referenced site. Upon NMOCD approval of the document, EPI will remit hard bound copies of the *Closure Report* to individuals noted on the Distribution List. Should you have any technical questions, concerns or need additional information, please contact me at (505) 394-3481 or via email at dduncan@envplus.net. Official correspondence should be directed to Mr. Larry Williams, Chevron USA, at (505) 396-4414 ext. #128 (office), (505) 390-7165 (cellular) or via e-mail at lcwl@chevron.com.

Sincerely,

David P. Duncan
Civil Engineer

P. O. Box 1558
Eunice, NM 88240
(505) 394-3481
Fax: (505) 394-2601

STANDARD OF CARE

Closure Report

Lovington Paddock #81

NMOCD 1RP #1227; EPI Ref. #200067

The information provided in this report was collected consistent with the New Mexico Oil Conservation Division (NMOCD) *Guidelines for Remediation of Leaks, Spills and Releases* (August 13, 1993), the NMOCD *Unlined Surface Impoundment Closure Guidelines* (February, 1993) and Environmental Plus, Inc. (EPI) *Standard Operating Procedures and Quality Assurance/Quality Control Plan*. The conclusions are based on field observations and laboratory analytical reports as presented in the report. Recommendations follow NMOCD guidance and represent the professional opinions of EPI staff. These opinions were derived using currently accepted geologic, hydro-geologic and engineering practices at this time and location. The report was prepared or reviewed by a certified or registered professional with a background in engineering, environmental and/or natural sciences.

Prepared by:

Daniel Dominguez
Environmental Consultant

Date

Reviewed by:

David P. Duncan
Civil Engineer

Date 9/19/07

Table of Contents

1.0 PROJECT SYNOPSIS

Site Specific:

- ***Company Name:*** Chevron USA, Inc.
- ***Facility Name:*** Lovington Paddock #81
- ***Project Reference:*** 200067
- ***Company Contacts:*** Larry Williams
- ***Site Location:*** WGS84 N32° 51' 08.57"; W103° 18' 32.18"
- ***Legal Description:*** Unit Letter-F (SE¼ of the NW¼), Section 12, T17S, R36E
- ***General Description:*** Approximately 6-miles southeast of Lovington, New Mexico
- ***Elevation:*** 3,817-ft amsl
- ***Land Ownership:*** Darr Angell
- ***EPI Personnel:*** Project Consultant –Jason Stegemoller

Release Specific:

- ***Product Released:*** Produced water
- ***Volume Released:*** Unknown ***Volume Recovered:*** Unknown
- ***Time of Occurrence:*** Unknown ***Time of Discovery:*** Unknown
- ***Release Source:*** Corrosion of a flowline
- ***Initial Surface Area Affected:*** ~5,400 square feet

Remediation Specific:

- ***Final Vertical extent of contamination:*** Chloride impacted soil exists to 3-feet bgs near the point of release.
- ***Depth to Ground Water:*** Approximately 59-ft bgs
- ***Water wells within 1,000-ft:*** One (USGS 17S 36E 12.1.2.3); Figure 2 - #31
- ***Private domestic water sources within 200-ft:*** None
- ***Surface water bodies within 1,000-ft:*** None
- ***NMOCD Site Ranking Index:*** 30 points
- ***Remedial goals for Soil:*** TPH – 100 mg/Kg; BTEX – 50 mg/Kg; Benzene – 10 mg/Kg; Chloride residuals may not be capable of impacting groundwater above NMWQCC groundwater standards of 250 mg/L.
- ***RCRA Waste Classification:*** Exempt
- ***Remediation Option Selected:*** a) Impacted soil from the release area was excavated and disposed off site by another contractor; b) backfilled excavation with clean topsoil and caliche; c) graded and contoured site area to allow natural drainage; d) disturbed area will be seeded with a blend preferred by the land owner.
- ***Disposal Facility:*** Excavation and disposal by another contractor
- ***Volume disposed:*** Unknown
- ***Project Completion Date:*** March 8, 2006

2.0 SITE AND RELEASE INFORMATION

2.1 Describe the land use and pertinent geographic features within 1,000 feet of the site.
Land surrounding the area is rangeland and utilized for livestock grazing as well as oilfield operations.

2.2 Identify and describe the source or suspected source(s) of the release.
Corrosion of a flowline.

2.3 What is the volume of the release? (if known): unknown ***barrels of:*** Produced water

2.4 What is the volume recovered? (if any): none ***barrels***

2.5 When did the release occur? (if known): unknown

2.6 Geological Description
The United States Geological Survey (USGS) Ground-Water Report 6, "Geology and Ground-water Conditions in Southern Lea County, New Mexico," A. Nicholson and A. Clebsch, 1961, describes the near surface geology of southern Lea County as "an inter-grade of the Quaternary Alluvium (QA) sediments, i.e., fine to medium sand, with the mostly eroded Cenozoic Ogallala (CO) formation. Typically, the QA and CO formations in the area are capped by a thick inter-bed of caliche that was encountered between 5' and 10' bgs."

2.7 Ecological Description
The area is typical of the Upper Chihuahuan Desert Biome consisting primarily of sandy soil covered with short semi-arid grasses, interspersed with Honey Mesquite and forbs. Mammals represented include Orrd's and Merriam's Kangaroo Rats, Deer Mouse, White Throated Wood Rat, Cottontail Rabbit, Black Tailed Jackrabbit, Mule Deer, Bobcat, Red Fox and Coyote. Reptiles, amphibians and birds are numerous and typical of the area. A survey of Listed, Threatened or Endangered species was not conducted.

2.8 Area Groundwater
The unconfined groundwater aquifer at this site is projected to be ~59 feet (ft) bgs based on water depth data obtained from the New Mexico State Engineers Office and United States Geological Survey data base (reference *Table 1*).

2.9 Area Water Wells
One (1) water well exists within a 1,000-foot radius of the site (reference *Table 1* and *Figure 2*).

2.10 Area Surface Water Features
No surface water features exist within a 1,000-foot radius of the site (reference *Figure 2*).

3.0 NMOCD SITE RANKING

Contaminant delineation and remedial work done at this site indicate chemical parameters of the soil and physical parameters of the groundwater were characterized consistent with the characterization and remediation/abatement goals and objectives set forth in the following New Mexico Oil Conservation Division (NMOCD) publications:

- ***Guidelines for Remediation of Leaks, Spills and Releases (August 13, 1993)***
- ***Unlined Surface Impoundment Closure Guidelines (February, 1993)***
- ***Pit and Below-Grade Tank Guidelines (November, 2004)***

Acceptable thresholds for contaminants/constituents of concern (CoC) were determined based on the NMOCD Ranking Criteria as follows:

- *Depth to Groundwater (i.e., distance from the lower most acceptable concentration to ground-water);*
- *Wellhead Protection Area (i.e., distance from fresh water supply wells);*
- *Distance to Surface Water Body (i.e., horizontal distance to all down gradient surface water bodies).*

Based on the proximity of the site to protectable area water wells, surface water bodies, and depth to groundwater from the lower most contamination, the NMOCD ranking score for the site is thirty (30) points with the soil remedial goals highlighted in the Site Ranking table presented below:

1. Ground Water	**2. Wellhead Protection Area**	**3. Distance to Surface Water**
Depth to GW <50 feet: *20 points*	**If <1,000' from water source, or; <200' from private domestic water source: *20 points***	**<200 horizontal feet: *20 points***
Depth to GW 50 to 99 feet: *10 points*		**200-1,000 horizontal feet: *10 points***
Depth to GW >100 feet: 0 points	**If >1,000' from water source, or; >200' from private domestic water source: *0 points***	**>1,000 horizontal feet: *0 points***
Site Rank (1+2+3) = 10 + 20 + 0 = 30 points		

Total Site Ranking Score and Acceptable Remedial Goal Concentrations			
Ranking Score	**20 or >**	10	0
Benzene[1]	**10 ppm**	10 ppm	10 ppm
BTEX[1]	**50 ppm**	50 ppm	50 ppm
TPH	**100 ppm**	1,000 ppm	5,000 ppm

[1] A field soil vapor headspace measurement of 100 ppm can be substituted in lieu of laboratory analyses for benzene and BTEX.

4.0 EXCAVATED SOIL INFORMATION

4.1 ***Was soil excavated for off-site treatment or disposal?*** ☒ ***Yes*** ☐ ***No***

Date excavated: Unknown

Total volume removed: Unknown

4.2 ***Indicated soil treatment type:***

- ☐ ***Disposal***
- ☐ ***Land Treatement***
- ☐ ***Composting/Biopiling***
- ☒ ***Other*** (Unknown)

Name and location of treatment/disposal facility:

Unknown

5.0 SAMPLING INFORMATION

5.1 Briefly describe the field screening methods used to distinguish contaminated from uncontaminated soil.

Organic Vapor Concentrations – A portion of each soil boring soil sample was placed in a polyethylene bag to allow sufficient time and temperature for organic vapors to volatilize. The detector portion of a Photo-ionization Detector equipped with a 10.6 electron volt lamp was placed in the bag to analyze organic vapor concentration.

Chloride Concentrations – A La Motte Chloride Test Kit was utilized for field chloride concentration analyses.

5.2 Briefly describe the soil analytical sampling and handling procedures used.

Soil borings were advanced utilizing a trailer mounted auger with a hollow stem for collection of soil samples. Soil samples were collected at 2-foot bgs, 5-foot bgs and at 5-foot intervals thereafter to the TD of each respective soil borings.

Upon collection of each sample, a portion was immediately placed in a laboratory provided container, labeled and set on ice for transport to an independent laboratory for quantification of total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene and total xylenes (BTEX), chloride and sulfate concentrations.

5.3 Discuss sample locations and provide rationale for their locations.

On February 7, 2006, two (2) soil borings (SB-1 and SB-2) were advanced throughout the release area to approximately 11-ft bgs to delineate the extent of vertically impacted soil. The soil boring locations were chosen to provide the best representative examples of contaminated soil within the release area (reference *Figure 4*).

6.0 ANALYTICAL RESULTS

6.1 Describe the vertical and horizontal extent and magnitude of soil contamination.

Laboratory analyses of the soil samples collected from SB-1 and SB-2 indicated benzene, BTEX and TPH concentrations were ND at or above laboratory MDL. Chloride concentrations ranged from 7.04 mg/L (SB-2 @ 5-feet bgs) to 311 mg/L (SB-1 @ 2-feet bgs) (reference *Table 2* and *Figure 4*).

6.2 Is surface soil contamination present at the site (i.e., soil in the uppermost two feet that is visibly stained, contaminated at greater than 10 ppm (PID) or hydrocarbon saturated)?

☐ *yes* ☒ *no*

If yes, attach a site map identifying extent(s) of surface soil contamination.

7.0 DISCUSSION

7.1 Discuss the risks associated with the remaining soil contamination:

Benzene, TPH and BTEX constituent concentrations were ND at or above laboratory MDL. Laboratory analytical results indicated chloride impacted soil exists above the groundwater in the vadose zone. Soil above NMOCD remedial threshold goals remain in-situ at a depth of 3-ft bgs. However, chloride concentrations in intervals beneath 3-ft bgs are below NMOCD Remedial Threshold Goals of 250 mg/Kg. Based on depth to groundwater (~59-ft bgs), contaminants remaining in-situ are not capable of impacting groundwater above NMWQCC groundwater standards of 250 mg/L.

7.2 Discuss the risks associated with the impacted groundwater:

Groundwater is not impacted.

7.3 Discuss other concerns not mentioned above: Not applicable

8.0 CONCLUSIONS AND RECOMMENDATIONS

8.1 Recommendation for the site:

- ☒ ***Site Closure***
- ☐ ***Additional Groundwater Monitoring***
- ☐ ***Corrective Action***

8.2 Base the recommendation above on Guidelines for Remediation of Leaks, Spills and Releases (August 13, 1993). Describe below how you applied the policy to support your recommendation. If closure is recommended, please summarize significant site investigative events and describe how site specific risk issues have been adequately addressed or minimized to acceptable low risk levels.

Chloride impacted soils were excavated and transported for disposal. Based on laboratory analytical data taken from the soil borings, most impacted soil in sidewalls and bottom were excavated (reference *Table 2*). The excavation was backfilled with topsoil, graded for natural drainage and will be seeded with a blend preferred by the land owner.

8.3 If additional groundwater monitoring is recommended, indicate the proposed monitoring schedule and frequency. Conduct quarterly monitoring until the NMOCD responds to this report.

Not Applicable

8.4 If corrective action is recommended, provide a conceptual approach.

Not applicable

FIGURES

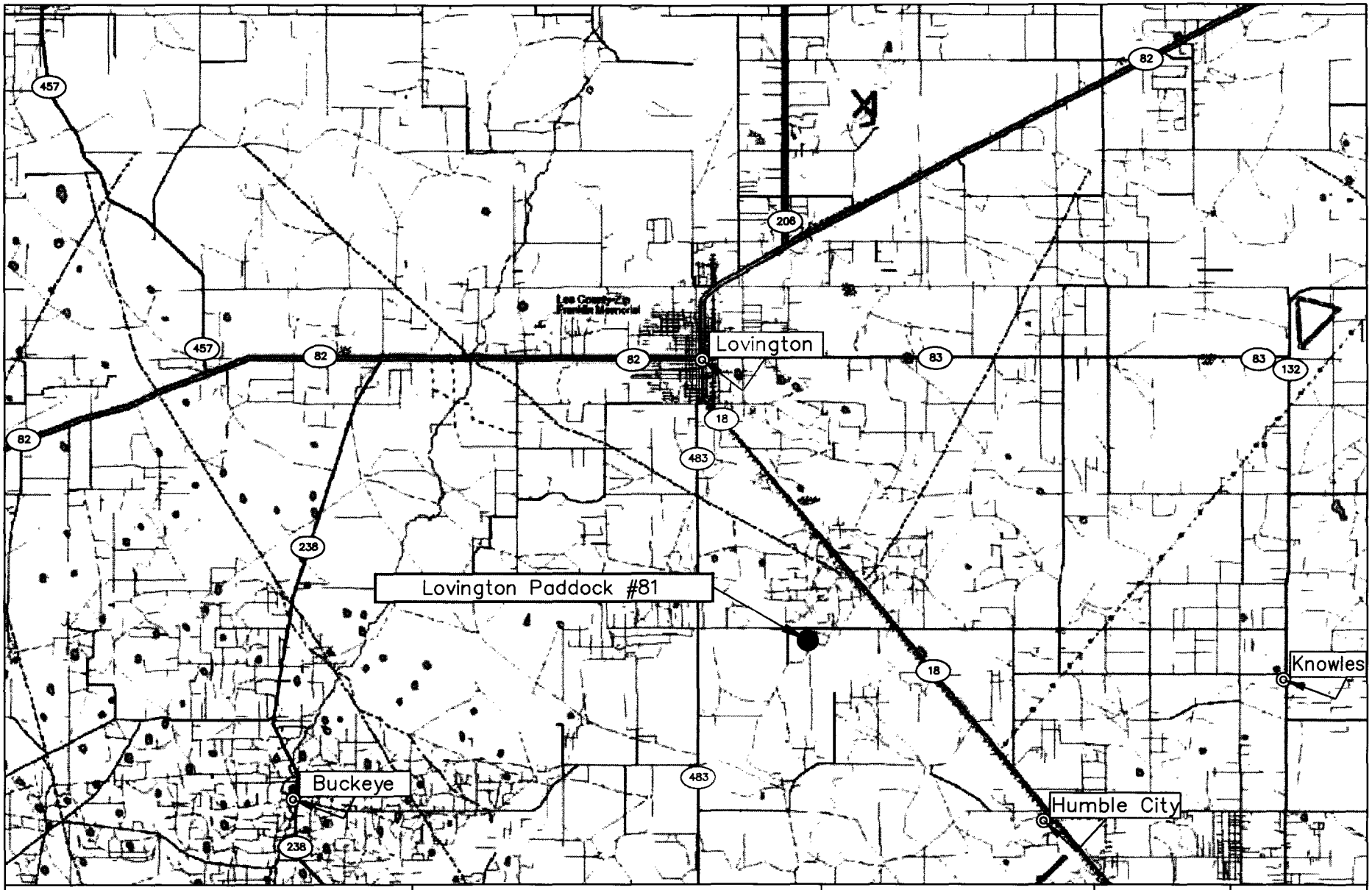


Figure 1 Area Map Chevron Corporation Lovington Paddock #81	Lea County, New Mexico SE 1/4 of the NW 1/4, Sec. 12, T17S, R36E N 32° 51' 08.57" W 103° 18' 32.18" Elevation: 3,817 feet amsl	DWG By: Daniel Dominguez November 2006	REVISED:
		0 3 6 Miles	SHEET 1 of 1
			N

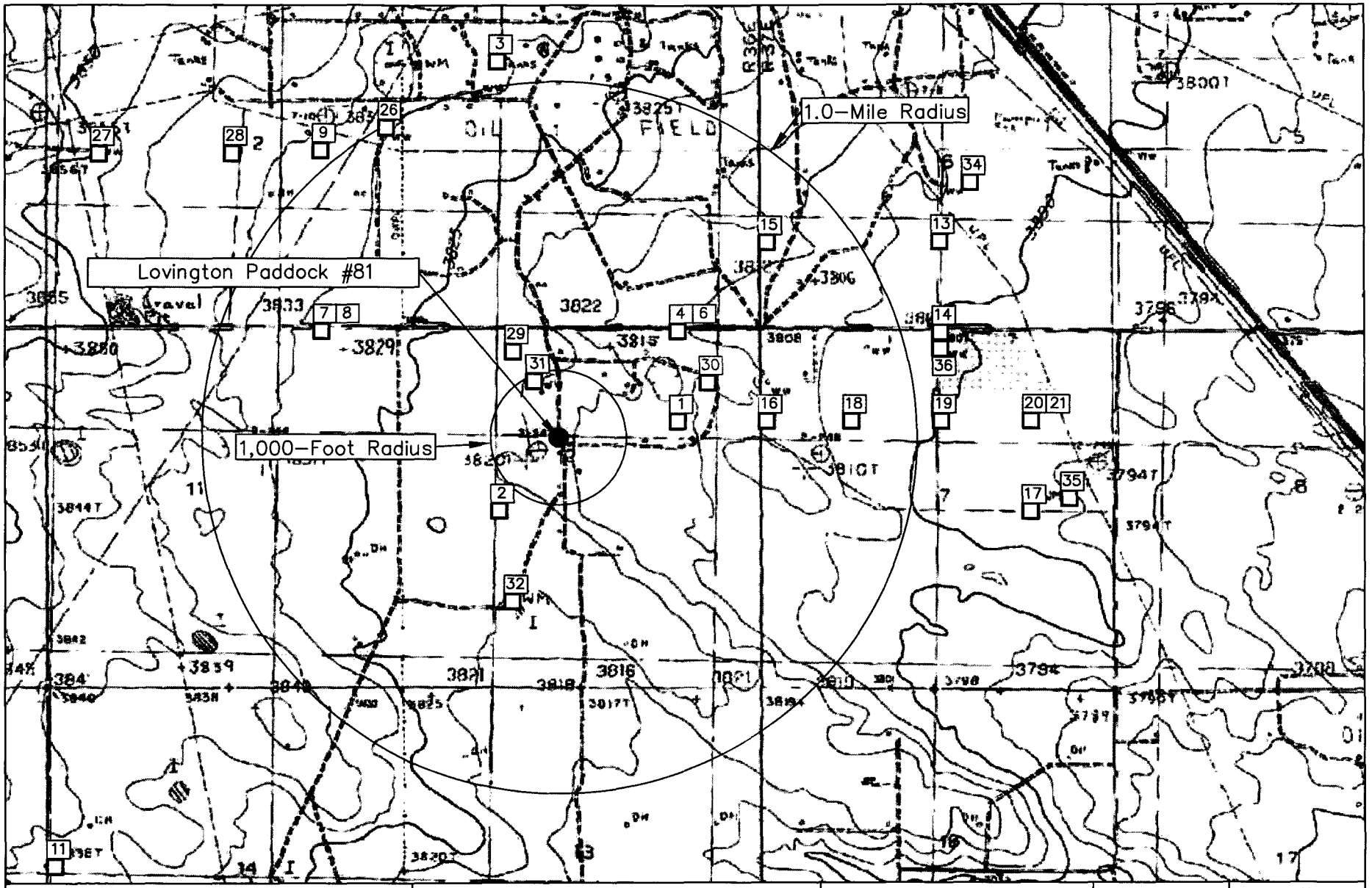


Figure 2
Site Location Map
Chevron Corporation
Lovington Paddock #81

Lea County, New Mexico
SE 1/4 of the NW 1/4, Sec. 12, T17S, R36E
N 32° 51' 08.57" W 103° 18' 32.18"
Elevation: 3,817 feet amsl

DWG By: Daniel Dominguez
November 2006

REVISED:

0 2,000 4,000
Feet

SHEET
1 of 1

N

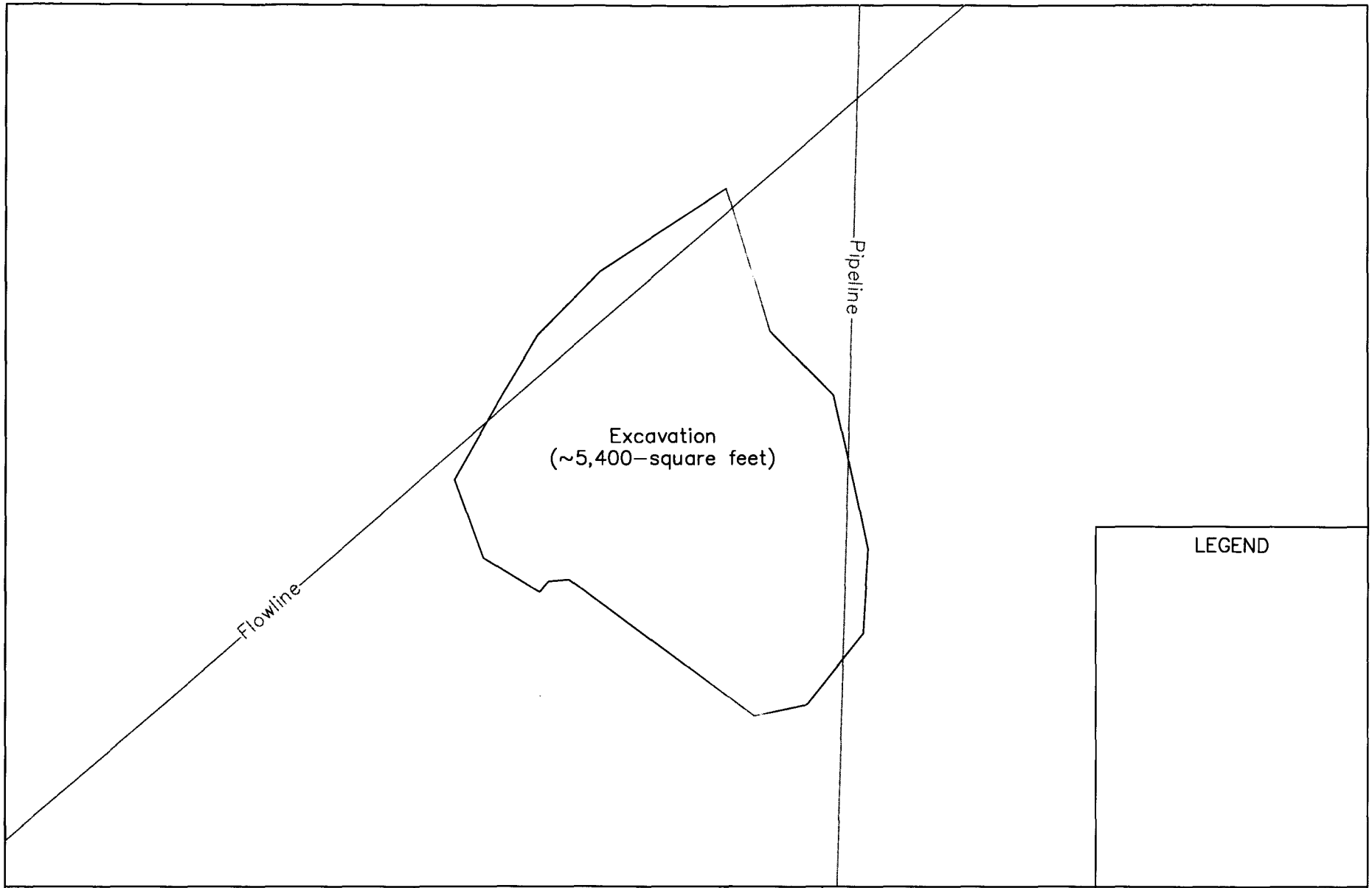


Figure 3 Site Map Chevron Corporation Lovington Paddock #81	Lea County, New Mexico SE 1/4 of the NW 1/4, Sec. 12, T17S, .R36E N 32° 51' 08.57" W 103° 18' 32.18" Elevation: 3,817 feet amsl	DWG By: Daniel Dominguez November 2006 0 30 60 Feet	REVISED: SHEET 1 of 1	N

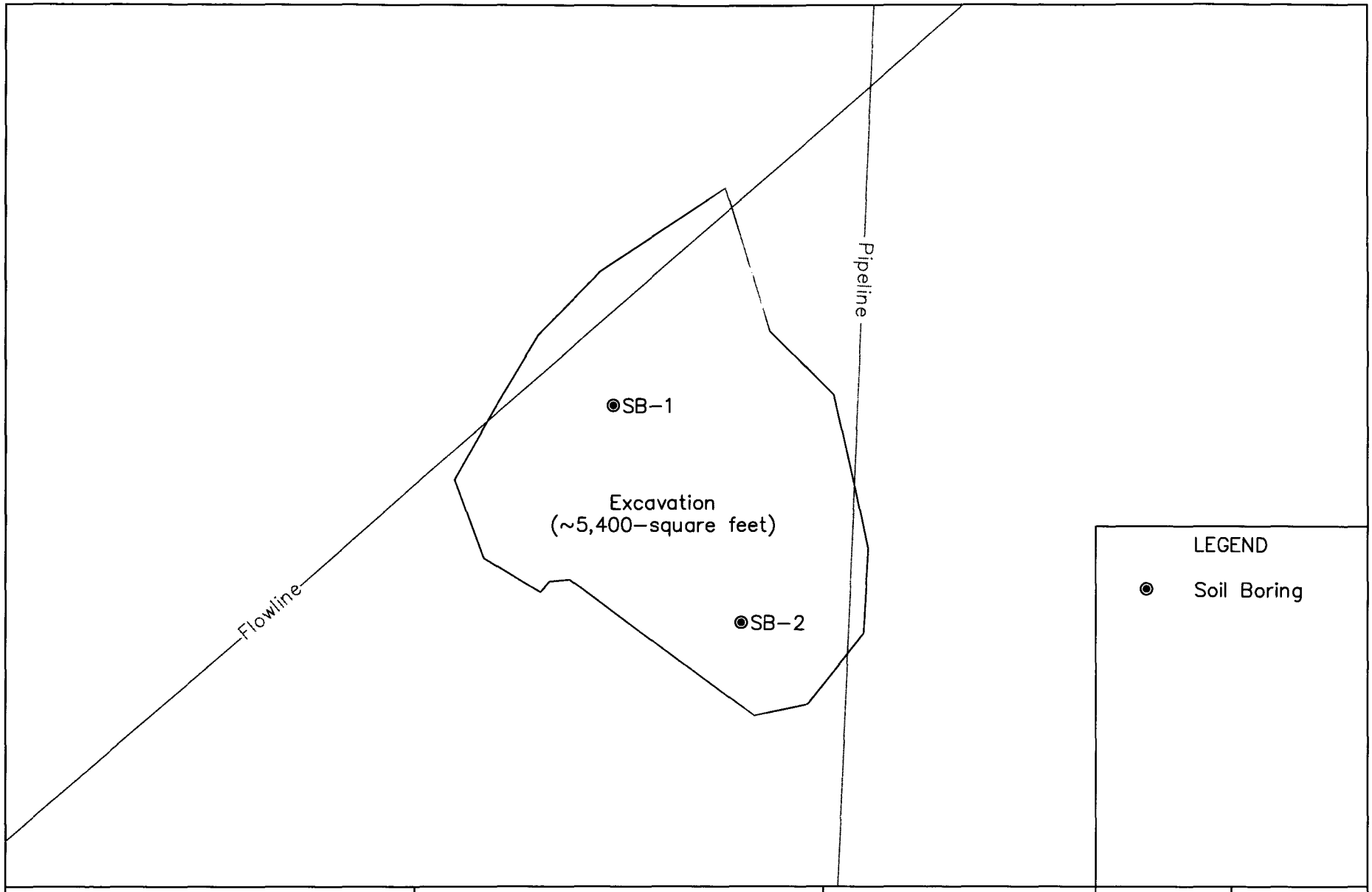


Figure 4
Soil Boring Map
Chevron Corporation
Lovington Paddock #81

Lea County, New Mexico
SE 1/4 of the NW 1/4, Sec. 12, T17S, .R36E
N 32° 51' 08.57" W 103° 18' 32.18"
Elevation: 3,817 feet amsl

DWG By: Daniel Dominguez
November 2006

REVISED:

SHEET
1 of 1

TABLES

TABLE 1

WELL INFORMATION REPORT*

Chevron USA - Lovington Paddock #81 (Ref #200067)

Ref. #	Well Number	Diversion[A]	Owner	Use	Twsp	Rng	Sec q q q	Latitude	Longitude	Date Measured	Surface Elevation[B]	Depth to Water
1	L 02205	3	HOWARD DRILLING CO. & HOLMES	PRO	17S	36E	12 2 2	N32° 51' 10.90"	W103° 18' 11.46"	01-May-53	3,811	45
2	L 06395 (E)	0	NCVAY DRILLING COMPANY	PRO	17S	36E	12 1 4	N32° 50' 57.89"	W103° 18' 42.48"	19-Oct-68	3,822	47
3	L 01584	3	LEE DRILLING CO.	PRO	17S	36E	01 1 2	N32° 52' 3.36"	W103° 18' 42.66"	29-Sep-52	3,830	48
4	L 02331	3	J.P. (BUM) GIBBONS INC.	PRO	17S	36E	01 4 4	N32° 51' 23.99"	W103° 18' 11.48"	02-Sep-53	3,810	48
6	L 10633 S3				17S	36E	01 4 4 4	N32° 51' 23.99"	W103° 18' 11.48"	10-May-01	3,810	80
7	L 02413	3	JACK CLAYTON	DOM	17S	36E	02 4 4	N32° 51' 24.10"	W103° 19' 13.63"	20-Nov-53	3,830	90
8	L 02426	3	THE OHIO OIL CO.	PRO	17S	36E	02 4 4	N32° 51' 24.10"	W103° 19' 13.63"	03-Dec-53	3,830	48
9	L 03676	3	JACK CAYTON	DOM	17S	36E	02 2 4	N32° 51' 50.31"	W103° 19' 13.71"	17-Sep-57	3,834	68
11	L 03882	3	MORAN OIL PRODUCING AND	PRO	17S	36E	14 1 3	N32° 50' 6.01"	W103° 19' 59.81"	26-May-58	3,838	57
13	L 00449	442.8	J. LYNN WALKER	IRR	17S	37E	06 4 2 1	N32° 51' 37.00"	W103° 17' 25.99"	20-May-05	3,804	101
14	L 00449 EXPLORE				17S	37E	06 4	N32° 51' 23.92"	W103° 17' 25.96"	11-May-05	3,800	118
15	L 02474	3	LEE DRILLING CO.	PRO	17S	37E	06 3 1	N32° 51' 37.04"	W103° 17' 55.96"	14-Jan-54	3,813	40
16	L 01603 APPRO	3	SIMMONS DRILLING CO.	PRO	17S	37E	07 1 1	N32° 51' 10.87"	W103° 17' 55.91"	25-Oct-52	3,807	39
17	L 04197 APPRO EXP	3	E. D. JR. SHIPP	STK	17S	37E	07 2 4	N32° 50' 57.74"	W103° 17' 10.38"	07-Jul-59	3,796	45
18	L 04359 B	120	CHARLES WORDEN	DAI	17S	37E	07 1 2 1	N32° 51' 10.86"	W103° 17' 41.40"	10-Jan-04	3,804	75
19	L 04712	3	ELBERT D. SHIPP	DOM	17S	37E	07 2 1 2	N32° 51' 10.84"	W103° 17' 25.89"	11-Sep-61	3,800	75
20	L 10021	3	E. D. ASTON	DOM	17S	37E	07 2 2 2	N32° 51' 10.81"	W103° 17' 10.42"	19-Jul-88	3,797	70
21	L 11056	3	KENNETH GOFF	DOM	17S	37E	07 2 2 2	N32° 51' 10.81"	W103° 17' 10.42"	09-May-00	3,797	62
26	USGS #2				17S	36E	2 2 4 4			14-Jan-86		62.96
27	USGS #3				17S	36E	2 3 1 2			13-Jan-81		53.19
28	USGS #4				17S	36E	2 4 1 1			19-Jan-96		57.77
29	USGS #5				17S	36E	12 1 2 1			27-Feb-76		44.1
30	USGS #6				17S	36E	12 2 2 3			19-Jan-96		55.32
31	USGS #7				17S	36E	12 1 2 3			14-Jan-86		50.87
32	USGS #8				17S	36E	12 3 2 3			14-Jan-86		45.93
34	USGS #10				17S	37E	6 4 1 1			31-Jan-91		61.64
35	USGS #11				17S	37E	7 2 4 3			24-Jan-91		53.44
36	USGS #12				17S	37E	7 2 1 1			07-Jan-81		51.09

TABLE 1

WELL INFORMATION REPORT*

Chevron USA - Lovington Paddock #81 (Ref #200067)

Ref. #	Well Number	Diversion[A]	Owner	Use	Twsp	Rng	Sec q q q	Latitude	Longitude	Date Measured	Surface Elevation[B]	Depth to Water
[illegible]												

* = Data obtained from the New Mexico Office of the State Engineer Website (http://iwaters.ose.state.nm.us:7001/iWATERS/wr_RegisServlet1) and USGS Database.

Shaded well information indicates well location not shown on Figure 2

[A] = in acre feet per annum

[B] = Interpolated from USGS Topographical Map

PRO = Production

IRR = Irrigation

DOM = Domestic one household

STK = Livestock watering

DAI = Dairy operation

(quarters are 1=NW, 2=NE, 3=SW, 4=SE)

(quarters are biggest to smallest - X Y are in Feet - UTM are in Meters)

TABLE 2

Summary of Soil Boring Field Analyses and Laboratory Analytical Data

Chevron USA

Lovington Paddock #81 (EPI Ref.# 200067)

Sample I.D.	Depth (feet)	Soil Status	Sample Date	PID Field Analysis (ppm)	Field Chloride Analyses (mg/L)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Total Xylenes (mg/Kg)	Total BTEX (mg/Kg)	Carbon Ranges C6-C12 (mg/Kg)	Carbon Ranges C12-C28 (mg/Kg)	Carbon Ranges C28-C35 (mg/Kg)	Total Hydrocarbons C6-C35 (mg/Kg)	Chloride (mg/L)
SB-1	2-3	In situ	07-Feb-06	0.6	400	<0.0250	<0.0250	<0.0250	<0.050	<0.125	<10.0	<10.0	<10.0	<30.0	**311**
	5-6	In situ	07-Feb-06	0.3	160	<0.0250	<0.0250	<0.0250	<0.050	<0.125	<10.0	<10.0	<10.0	<30.0	33.2
	10-11	In situ	07-Feb-06	0.3	160	<0.0250	<0.0250	<0.0250	<0.050	<0.125	<10.0	<10.0	<10.0	<30.0	13.5
SB-2	2-3	In situ	07-Feb-06	0.2	160	<0.0250	<0.0250	<0.0250	<0.050	<0.125	<10.0	<10.0	<10.0	<30.0	9.65
	5-6	In situ	07-Feb-06	0.1	160	<0.0250	<0.0250	<0.0250	<0.050	<0.125	<10.0	<10.0	<10.0	<30.0	7.04
	10-11	In situ	07-Feb-06	0.1	160	<0.0250	<0.0250	<0.0250	<0.050	<0.125	<10.0	<10.0	<10.0	<30.0	7.49
NMOCD Remedial Threshold Goals				100		10				50				100	250 [1]

BOLD *values exceed NMOCD Remedial Threshold Goals*

1 = Chloride residuals may not be capable of impacting groundwater above NMWQCC Groundwater Standards of 250 mg/L

- - = Not Analyzed; J = Analyte detected, but below Reporting Limit. Therefore, result is an estimated concentration (CPL J-Flag)

APPENDICES

APPENDIX I

PROJECT PHOTOGRAPHS

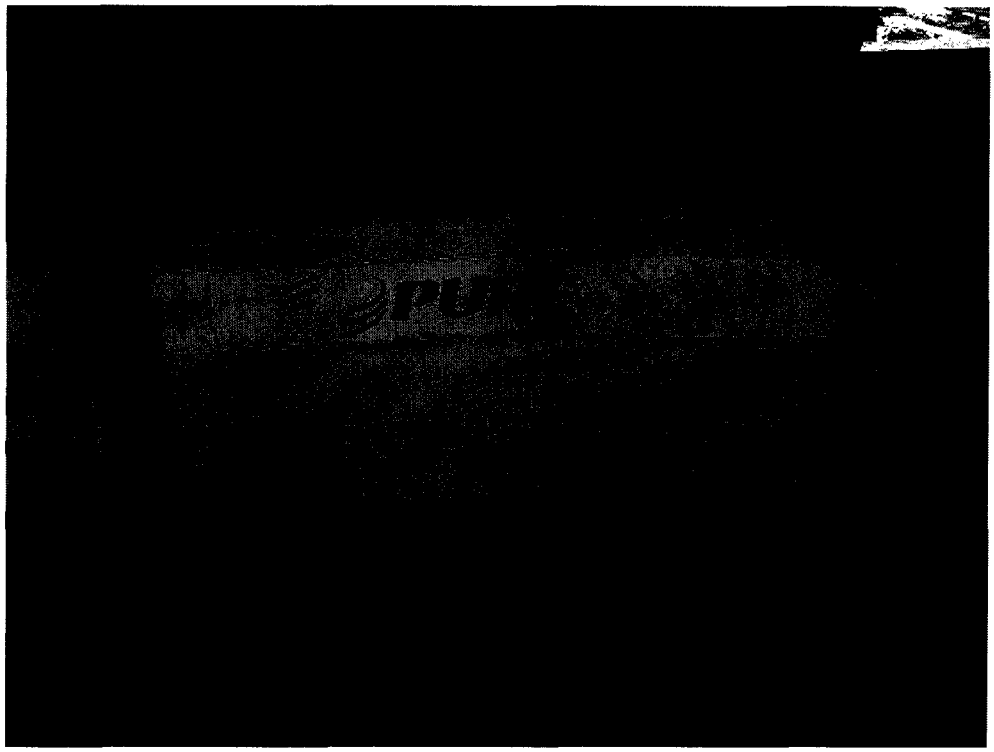


Photo #1:Lease sign.

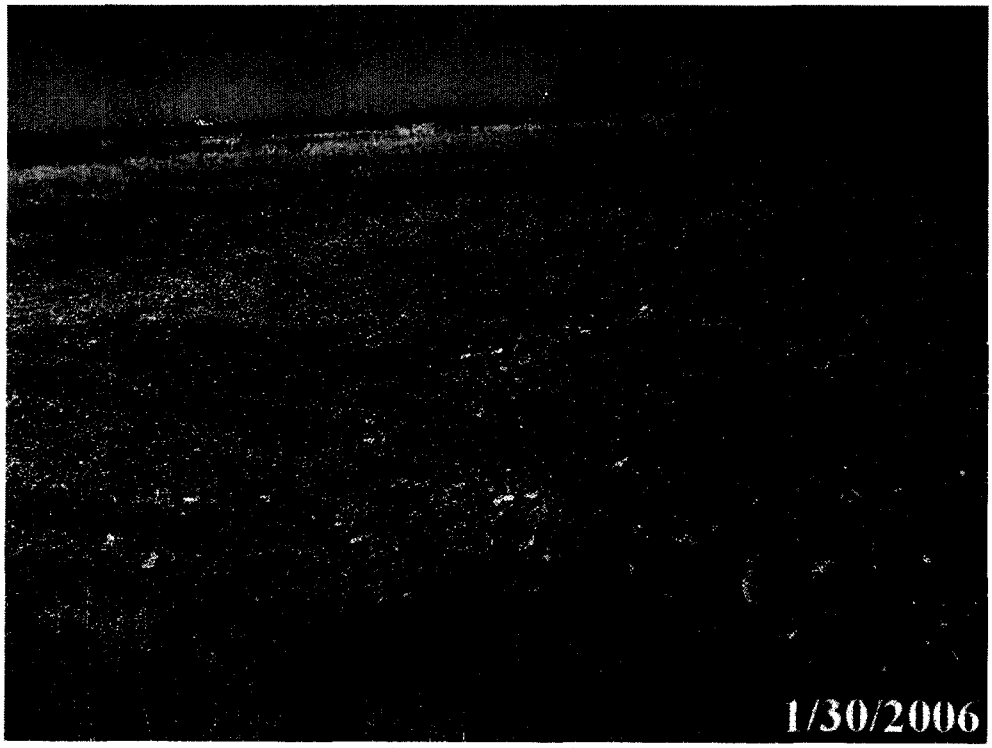


Photo #2: Excavated release area.

Photo #3: Excavated release area.

Photo #4: Excavated release area.

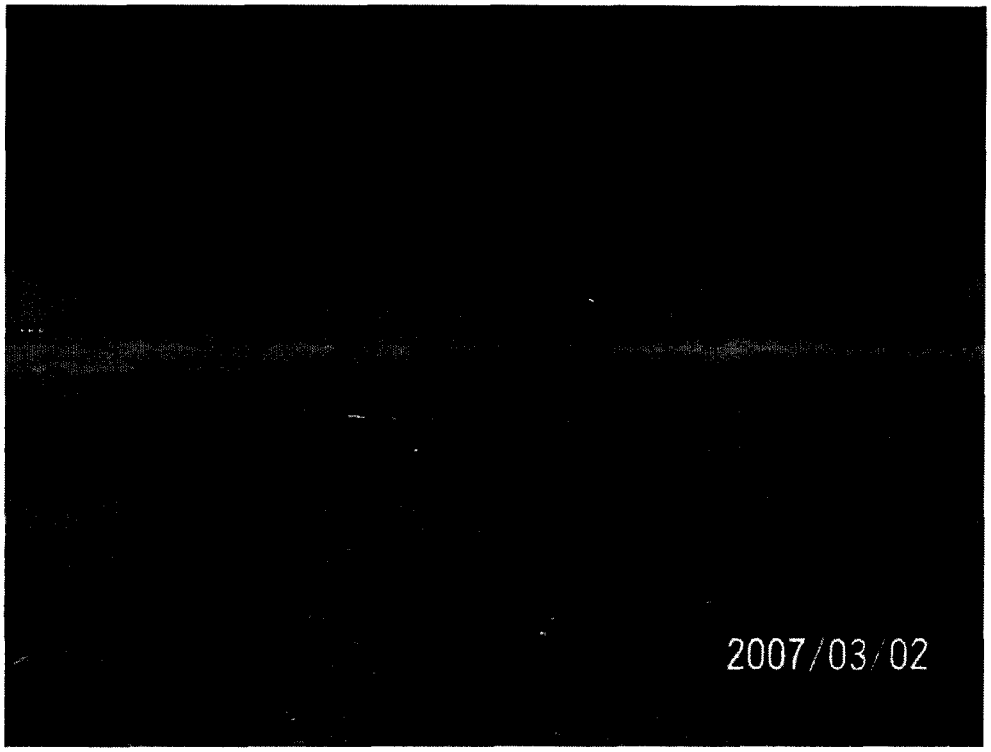


Photo #5: Remediated site.

Photo #6: Remediated site.

Photo #7: Remediated site.

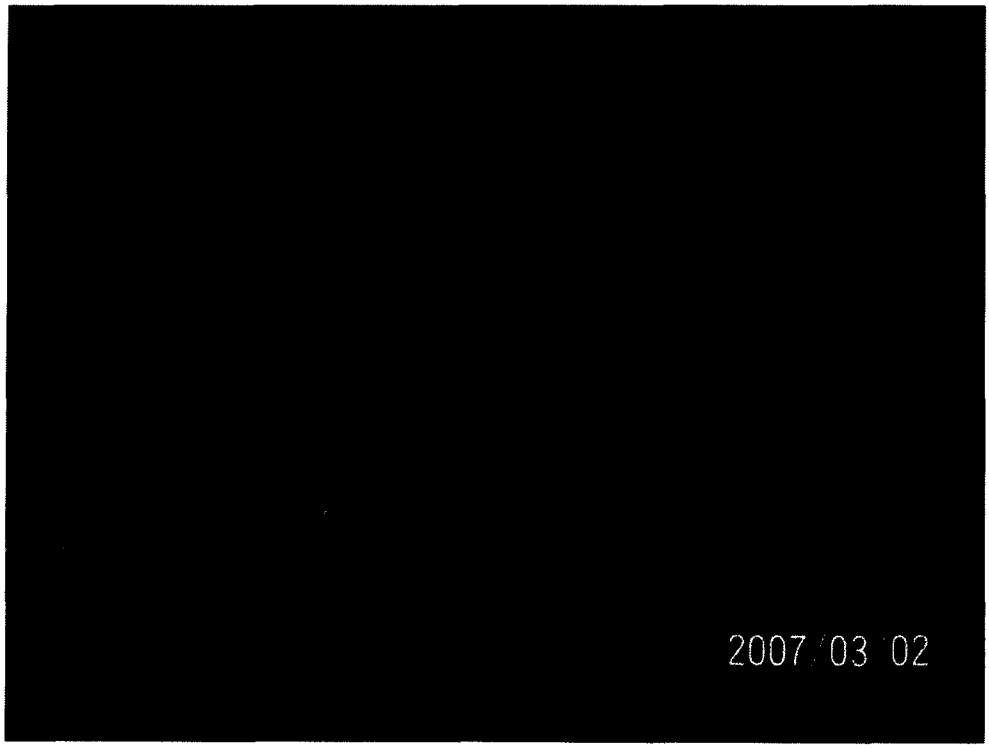


Photo #8: Remediated site.

APPENDIX II

LABORATORY ANALYTICAL REPORTS
AND
CHAIN-OF-CUSTODY FORM

ENVIRONMENTAL LAB OF

12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

Iain Olness

Environmental Plus, Incorporated

P.O. Box 1558

Eunice, NM 88231

Project: Chevron USA/ Lovington Paddock #81

Project Number: 200067

Location: UL-F, Sec. 12, T 17 S, R 36 E

Lab Order Number: 6B08019

Report Date: 02/15/06

Environmental Plus, Incorporated	Project: Chevron USA/ Lovington Paddock #81	Fax: 505-394-2601
P.O. Box 1558	Project Number: 200067	Reported:
Eunice NM, 88231	Project Manager: Iain Olness	02/15/06 17:09

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB-1 2'-3'	6B08019-01	Soil	02/07/06 16:10	02/08/06 11:10
SB-1 5'-6'	6B08019-02	Soil	02/07/06 16:17	02/08/06 11:10
SB-1 10'-11'	6B08019-03	Soil	02/07/06 16:27	02/08/06 11:10
SB-2 2'-3'	6B08019-04	Soil	02/07/06 16:40	02/08/06 11:10
SB-2 5'-6'	6B08019-05	Soil	02/07/06 16:51	02/08/06 11:10
SB-2 10'-11'	6B08019-06	Soil	02/07/06 17:04	02/08/06 11:10

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-1 2'-3' (6B08019-01) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EB61034	02/10/06	02/14/06	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*83.0 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*103 %*	*80-120*		"	"	"	"	
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EB61011	02/10/06	02/10/06	EPA 8015M	
Carbon Ranges C12-C28	ND	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*93.4 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*76.8 %*	*70-130*		"	"	"	"	
SB-1 5'-6' (6B08019-02) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EB61034	02/10/06	02/14/06	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*83.2 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*106 %*	*80-120*		"	"	"	"	
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EB61011	02/10/06	02/10/06	EPA 8015M	
Carbon Ranges C12-C28	ND	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*93.4 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*79.2 %*	*70-130*		"	"	"	"	

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-1 10'-11' (6B08019-03) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EB61034	02/10/06	02/14/06	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*84.0 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*102 %*	*80-120*		"	"	"	"	
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EB61011	02/10/06	02/11/06	EPA 8015M	
Carbon Ranges C12-C28	ND	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*91.4 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*77.0 %*	*70-130*		"	"	"	"	
SB-2 2'-3' (6B08019-04) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EB61501	02/13/06	02/14/06	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*92.2 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*99.2 %*	*80-120*		"	"	"	"	
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EB61011	02/10/06	02/11/06	EPA 8015M	
Carbon Ranges C12-C28	ND	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*96.2 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*78.2 %*	*70-130*		"	"	"	"	

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-2 5'-6' (6B08019-05) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EB61501	02/13/06	02/14/06	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*83.5 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.5 %*	*80-120*		"	"	"	"	
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EB61011	02/10/06	02/11/06	EPA 8015M	
Carbon Ranges C12-C28	ND	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*86.8 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*75.0 %*	*70-130*		"	"	"	"	
SB-2 10'-11' (6B08019-06) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EB61501	02/13/06	02/14/06	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*89.8 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*	*80-120*		"	"	"	"	
Carbon Ranges C6-C12	ND	10.0	mg/kg dry	1	EB61011	02/10/06	02/11/06	EPA 8015M	
Carbon Ranges C12-C28	ND	10.0	"	"	"	"	"	"	
Carbon Ranges C28-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*88.2 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*73.8 %*	*70-130*		"	"	"	"	

General Chemistry Parameters by EPA / Standard Methods
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-1 2'-3' (6B08019-01) Soil									
Chloride	**311**	10.0	mg/kg	20	EB61302	02/11/06	02/13/06	EPA 300.0	
% Moisture	**1.5**	0.1	%	1	EB61007	02/09/06	02/10/06	% calculation	
Sulfate	**50.9**	10.0	mg/kg	20	EB61302	02/11/06	02/13/06	EPA 300.0	
SB-1 5'-6' (6B08019-02) Soil									
Chloride	**33.2**	5.00	mg/kg	10	EB61302	02/11/06	02/13/06	EPA 300.0	
% Moisture	**0.3**	0.1	%	1	EB61007	02/09/06	02/10/06	% calculation	
Sulfate	**33.8**	5.00	mg/kg	10	EB61302	02/11/06	02/13/06	EPA 300.0	
SB-1 10'-11' (6B08019-03) Soil									
Chloride	**13.5**	5.00	mg/kg	10	EB61302	02/11/06	02/13/06	EPA 300.0	
% Moisture	**0.5**	0.1	%	1	EB61007	02/09/06	02/10/06	% calculation	
Sulfate	**29.6**	5.00	mg/kg	10	EB61302	02/11/06	02/13/06	EPA 300.0	
SB-2 2'-3' (6B08019-04) Soil									
Chloride	**9.65**	5.00	mg/kg	10	EB61302	02/11/06	02/13/06	EPA 300.0	
% Moisture	**0.5**	0.1	%	1	EB61007	02/09/06	02/10/06	% calculation	
Sulfate	**23.7**	5.00	mg/kg	10	EB61302	02/11/06	02/13/06	EPA 300.0	
SB-2 5'-6' (6B08019-05) Soil									
Chloride	**7.04**	5.00	mg/kg	10	EB61302	02/11/06	02/13/06	EPA 300.0	
% Moisture	**0.4**	0.1	%	1	EB61007	02/09/06	02/10/06	% calculation	
Sulfate	**24.9**	5.00	mg/kg	10	EB61302	02/11/06	02/13/06	EPA 300.0	
SB-2 10'-11' (6B08019-06) Soil									
Chloride	**7.49**	5.00	mg/kg	10	EB61302	02/11/06	02/13/06	EPA 300.0	
% Moisture	**0.3**	0.1	%	1	EB61007	02/09/06	02/10/06	% calculation	
Sulfate	**25.2**	5.00	mg/kg	10	EB61302	02/11/06	02/13/06	EPA 300.0	

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB61011 - Solvent Extraction (GC)										
Blank (EB61011-BLK1)				Prepared & Analyzed: 02/10/06						
Carbon Ranges C6-C12	ND	10.0	mg/kg wet							
Carbon Ranges C12-C28	ND	10.0	"							
Carbon Ranges C28-C35	ND	10.0	"							
Total Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	*48.8*		*mg/kg*	*50.0*		*97.6*	*70-130*			
Surrogate: 1-Chlorooctadecane	*43.2*		*"*	*50.0*		*86.4*	*70-130*			
LCS (EB61011-BS1)				Prepared & Analyzed: 02/10/06						
Carbon Ranges C6-C12	477		mg/kg	500		95.4	75-125			
Carbon Ranges C12-C28	508		"	500		102	75-125			
Total Hydrocarbon C6-C35	985		"	1000		98.5	75-125			
Surrogate: 1-Chlorooctane	*57.2*		*"*	*50.0*		*114*	*70-130*			
Surrogate: 1-Chlorooctadecane	*52.4*		*"*	*50.0*		*105*	*70-130*			
Calibration Check (EB61011-CCV1)				Prepared: 02/10/06 Analyzed: 02/11/06						
Carbon Ranges C6-C12	467		mg/kg	500		93.4	80-120			
Carbon Ranges C12-C28	543		"	500		109	80-120			
Total Hydrocarbon C6-C35	1010		"	1000		101	80-120			
Surrogate: 1-Chlorooctane	*56.5*		*"*	*50.0*		*113*	*70-130*			
Surrogate: 1-Chlorooctadecane	*48.7*		*"*	*50.0*		*97.4*	*70-130*			
Matrix Spike (EB61011-MS1)	**Source: 6B08020-07**			Prepared & Analyzed: 02/10/06						
Carbon Ranges C6-C12	507		mg/kg	500	ND	101	75-125			
Carbon Ranges C12-C28	579		"	500	ND	116	75-125			
Total Hydrocarbon C6-C35	1090		"	1000	ND	109	75-125			
Surrogate: 1-Chlorooctane	*56.1*		*"*	*50.0*		*112*	*70-130*			
Surrogate: 1-Chlorooctadecane	*53.0*		*"*	*50.0*		*106*	*70-130*			

Organics by GC - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB61011 - Solvent Extraction (GC)										
Matrix Spike Dup (EB61011-MSD1)	**Source: 6B08020-07**			Prepared & Analyzed: 02/10/06						
Carbon Ranges C6-C12	523		mg/kg	500	ND	105	75-125	3.11	20	
Carbon Ranges C12-C28	597		"	500	ND	119	75-125	3.06	20	
Total Hydrocarbon C6-C35	1120		"	1000	ND	112	75-125	2.71	20	
Surrogate: 1-Chlorooctane	*56.4*		"	*50.0*		*113*	*70-130*			
Surrogate: 1-Chlorooctadecane	*54.5*		"	*50.0*		*109*	*70-130*			
Batch EB61034 - EPA 5030C (GC)										
Blank (EB61034-BLK1)				Prepared: 02/10/06 Analyzed: 02/14/06						
Benzene	ND	0.0250	mg/kg wet							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
Xylene (p/m)	ND	0.0250	"							
Xylene (o)	ND	0.0250	"							
Surrogate: a,a,a-Trifluorotoluene	*34.2*		*ug/kg*	*40.0*		*85.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*43.7*		"	*40.0*		*109*	*80-120*			
LCS (EB61034-BS1)				Prepared: 02/10/06 Analyzed: 02/14/06						
Benzene	0.0964	0.00100	mg/kg wet	0.100		96.4	80-120			
Toluene	0.102	0.00100	"	0.100		102	80-120			
Ethylbenzene	0.108	0.00100	"	0.100		108	80-120			
Xylene (p/m)	0.199	0.00100	"	0.200		99.5	80-120			
Xylene (o)	0.118	0.00100	"	0.100		118	80-120			
Surrogate: a,a,a-Trifluorotoluene	*39.4*		*ug/kg*	*40.0*		*98.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*34.3*		"	*40.0*		*85.8*	*80-120*			
Calibration Check (EB61034-CCV1)				Prepared: 02/10/06 Analyzed: 02/14/06						
Benzene	49.7		ug/kg	50.0		99.4	80-120			
Toluene	54.4		"	50.0		109	80-120			
Ethylbenzene	55.5		"	50.0		111	80-120			
Xylene (p/m)	112		"	100		112	80-120			
Xylene (o)	59.3		"	50.0		119	80-120			
Surrogate: a,a,a-Trifluorotoluene	*38.0*		"	*40.0*		*95.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*35.5*		"	*40.0*		*88.8*	*80-120*			

Organics by GC - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB61034 - EPA 5030C (GC)										
Matrix Spike (EB61034-MS1)		**Source: 6B08019-02**		Prepared: 02/10/06 Analyzed: 02/14/06						
Benzene	1.21	0.0250	mg/kg dry	1.25	ND	96.8	80-120			
Toluene	1.34	0.0250	"	1.25	ND	107	80-120			
Ethylbenzene	1.46	0.0250	"	1.25	ND	117	80-120			
Xylene (p/m)	2.94	0.0250	"	2.51	ND	117	80-120			
Xylene (o)	1.49	0.0250	"	1.25	ND	119	80-120			
Surrogate: a,a,a-Trifluorotoluene	*36.2*		*ug/kg*	*40.0*		*90.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*42.2*		*"*	*40.0*		*106*	*80-120*			
Matrix Spike Dup (EB61034-MSD1)		**Source: 6B08019-02**		Prepared: 02/10/06 Analyzed: 02/14/06						
Benzene	1.28	0.0250	mg/kg dry	1.25	ND	102	80-120	5.23	20	
Toluene	1.41	0.0250	"	1.25	ND	113	80-120	5.45	20	
Ethylbenzene	1.50	0.0250	"	1.25	ND	120	80-120	2.53	20	
Xylene (p/m)	2.99	0.0250	"	2.51	ND	119	80-120	1.69	20	
Xylene (o)	1.50	0.0250	"	1.25	ND	120	80-120	0.837	20	
Surrogate: a,a,a-Trifluorotoluene	*37.0*		*ug/kg*	*40.0*		*92.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*45.1*		*"*	*40.0*		*113*	*80-120*			
Batch EB61501 - EPA 5030C (GC)										
Blank (EB61501-BLK1)				Prepared: 02/13/06 Analyzed: 02/14/06						
Benzene	ND	0.0250	mg/kg wet							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
Xylene (p/m)	ND	0.0250	"							
Xylene (o)	ND	0.0250	"							
Surrogate: a,a,a-Trifluorotoluene	*34.7*		*ug/kg*	*40.0*		*86.8*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*38.8*		*"*	*40.0*		*97.0*	*80-120*			

Organics by GC - Quality Control
Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB61501 - EPA 5030C (GC)										
LCS (EB61501-BS1)				Prepared: 02/13/06 Analyzed: 02/14/06						
Benzene	0.0947	0.00100	mg/kg wet	0.100		94.7	80-120			
Toluene	0.104	0.00100	"	0.100		104	80-120			
Ethylbenzene	0.116	0.00100	"	0.100		116	80-120			
Xylene (p/m)	0.215	0.00100	"	0.200		108	80-120			
Xylene (o)	0.119	0.00100	"	0.100		119	80-120			
Surrogate: a,a,a-Trifluorotoluene	*33.9*		*ug/kg*	*40.0*		*84.8*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*46.4*		*"*	*40.0*		*116*	*80-120*			
Calibration Check (EB61501-CCV1)				Prepared: 02/13/06 Analyzed: 02/15/06						
Benzene	100		ug/kg	100		100	80-120			
Toluene	105		"	100		105	80-120			
Ethylbenzene	108		"	100		108	80-120			
Xylene (p/m)	198		"	200		99.0	80-120			
Xylene (o)	118		"	100		118	80-120			
Surrogate: a,a,a-Trifluorotoluene	*39.7*		*"*	*40.0*		*99.2*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*32.8*		*"*	*40.0*		*82.0*	*80-120*			
Matrix Spike (EB61501-MS1)		**Source: 6B08020-04**		Prepared: 02/13/06 Analyzed: 02/15/06						
Benzene	2.16	0.0250	mg/kg dry	2.68	ND	80.6	80-120			
Toluene	2.32	0.0250	"	2.68	ND	86.6	80-120			
Ethylbenzene	2.45	0.0250	"	2.68	ND	91.4	80-120			
Xylene (p/m)	4.56	0.0250	"	5.36	ND	85.1	80-120			
Xylene (o)	2.90	0.0250	"	2.68	ND	108	80-120			
Surrogate: a,a,a-Trifluorotoluene	*32.1*		*ug/kg*	*40.0*		*80.2*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*32.5*		*"*	*40.0*		*81.2*	*80-120*			
Matrix Spike Dup (EB61501-MSD1)		**Source: 6B08020-04**		Prepared: 02/13/06 Analyzed: 02/15/06						
Benzene	2.40	0.0250	mg/kg dry	2.68	ND	89.6	80-120	10.6	20	
Toluene	2.55	0.0250	"	2.68	ND	95.1	80-120	9.36	20	
Ethylbenzene	2.65	0.0250	"	2.68	ND	98.9	80-120	7.88	20	
Xylene (p/m)	4.88	0.0250	"	5.36	ND	91.0	80-120	6.70	20	
Xylene (o)	3.12	0.0250	"	2.68	ND	116	80-120	7.14	20	
Surrogate: a,a,a-Trifluorotoluene	*33.5*		*ug/kg*	*40.0*		*83.8*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*33.8*		*"*	*40.0*		*84.5*	*80-120*			

Environmental Plus, Incorporated	Project: Chevron USA/ Lovington Paddock #81	Fax: 505-394-2601
P.O. Box 1558	Project Number: 200067	**Reported:**
Eunice NM, 88231	Project Manager: Iain Olness	02/15/06 17:09

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB61007 - General Preparation (Prep)										
Blank (EB61007-BLK1)				Prepared: 02/09/06 Analyzed: 02/10/06						
% Solids	100		%							
Duplicate (EB61007-DUP1)		Source: 6B08014-01		Prepared: 02/09/06 Analyzed: 02/10/06						
% Solids	98.8		%		98.6			0.203	20	
Duplicate (EB61007-DUP2)		Source: 6B08019-06		Prepared: 02/09/06 Analyzed: 02/10/06						
% Solids	99.7		%		99.7			0.00	20	
Duplicate (EB61007-DUP3)		Source: 6B09002-03		Prepared: 02/09/06 Analyzed: 02/10/06						
% Solids	74.8		%		74.5			0.402	20	
Batch EB61302 - Water Extraction										
Blank (EB61302-BLK1)				Prepared: 02/11/06 Analyzed: 02/13/06						
Chloride	ND	0.500	mg/kg							
Sulfate	ND	0.500	"							
LCS (EB61302-BS1)				Prepared: 02/11/06 Analyzed: 02/13/06						
Chloride	8.98		mg/L	10.0		89.8	80-120			
Sulfate	9.72		"	10.0		97.2	80-120			
Calibration Check (EB61302-CCV1)				Prepared: 02/11/06 Analyzed: 02/13/06						
Chloride	9.04		mg/L	10.0		90.4	80-120			
Sulfate	9.84		"	10.0		98.4	80-120			
Duplicate (EB61302-DUP1)		Source: 6B08017-16		Prepared: 02/11/06 Analyzed: 02/13/06						
Sulfate	80.5	5.00	mg/kg		78.5			2.52	20	
Chloride	18.5	5.00	"		18.9			2.14	20	

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By: Raland K Tuttle Date: 2-16-06

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer
Jeanne Mc Murrey, Inorg. Tech Director
LaTasha Cornish, Chemist
Sandra Sanchez, Lab Tech.

Environmental Plus, Inc.

Chain of Custody Form

2100 Avenue O, Eunice, NM 88231 P.O. Box 1558, Eunice, NM 88231
(505) 394-3481 FAX: (505) 394-2601

Company Name	Environmental Plus, Inc.
EPI Project Manager	Iain Olness
Mailing Address	P.O. BOX 1558
City, State, Zip	Eunice New Mexico 88231
EPI Phone#/Fax#	505-394-3481 / 505-394-2601
Client Company	Chevron USA
Facility Name	Lovington Paddock #81
Location	UL-F, Sec. 12, T 17 S, R 36 E
Project Reference	200067
EPI Sampler Name	George Blackburn

Bill To

Attn: Iain Olness
PO Box 1558
Eunice, NM 88231

LAB I.D. (LB08019)	SAMPLE I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUND WATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE	ICE/COOL	OTHER	SAMPLING: DATE	TIME	ANALYSIS REQUEST: BTEX 8021B	TPH 8015M	CHLORIDES (Cl^-)	SULFATES ($SO_4^{=}$)	pH	TCLP	OTHER >>>	PAH			
-01	1 SB-1 (2'-3')	X	1			X					X		07-Feb-06	16:10	X	X	X	X							
-02	2 SB-1 (5'-6')	X	1			X					X		07-Feb-06	16:17	X	X	X	X							
-03	3 SB-1 (10'-11')	X	1			X					X		07-Feb-06	16:27	X	X	X	X							
-04	4 SB-2 (2'-3')	X	1			X					X		07-Feb-06	16:40	X	X	X	X							
-05	5 SB-2 (5'-6')	X	1			X					X		07-Feb-06	16:51	X	X	X	X							
-06	6 SB-2 (10'-11')	X	1			X					X		07-Feb-06	17:04	X	X	X	X							
	7																							
	8																							
	9																							
	10																							

Sampler Relinquished: Iain Olness	Date: 2/8/06 Time: 0800	Received By:	E-mail results to: iolness@envplus.net
Relinquished by:	Date: 2/8/06 Time: 11:10	Received By: (lab staff) Caeen Kelly	REMARKS: 4oz glass seal jar / label
Delivered by:	Sample Cool & Intact: (Yes) No	Checked By: CK	

5.0 °C

Environmental Lab of Texas
Variance / Corrective Action Report – Sample Log-In

Client: Highlander

Date/Time: 2/8/16 11:10

Order #: 1602080 19

Initials: CK

Sample Receipt Checklist

Temperature of container/cooler?	Yes	No	5.0 C
Shipping container/cooler in good condition?	Yes	No	
Custody Seals intact on shipping container/cooler?	Yes	No	Not present
Custody Seals intact on sample bottles?	Yes	No	Not present
Chain of custody present?	Yes	No	
Sample Instructions complete on Chain of Custody?	Yes	No	
Chain of Custody signed when relinquished and received?	Yes	No	
Chain of custody agrees with sample label(s)	Yes	No	
Container labels legible and intact?	Yes	No	
Sample Matrix and properties same as on chain of custody?	Yes	No	
Samples in proper container/bottle?	Yes	No	
Samples properly preserved?	Yes	No	
Sample bottles intact?	Yes	No	
Preservations documented on Chain of Custody?	Yes	No	
Containers documented on Chain of Custody?	Yes	No	
Sufficient sample amount for indicated test?	Yes	No	
All samples received within sufficient hold time?	Yes	No	
VOC samples have zero headspace?	Yes	No	Not Applicable

Other observations:

_____

_____

_____

Variance Documentation:

Contact Person: - _____ Date/Time: _____ Contacted by: _____

Regarding:

_____

_____

_____

Corrective Action Taken:

_____

_____

_____

_____

_____

_____

_____

_____

APPENDIX III

SOIL BORING LOGS

Log Of Test Borings

ENVIRONMENTAL PLUS, INC.
CONSULTING AND
REMEDIAL CONSTRUCTION
EUNICE, NEW MEXICO
505-394-3481

Project Number: 200067

Project Name: Lovington Paddock #81

Location: UL F, Section 12, Township 17 South, Range 36 East

Boring Number: SB-1 | Surface Elevation: 3,817-feet amsl

Start Date: 2-07-06 Time: 1610 hrs

Completion Date: 2-07-06 Time: 1637 hrs

Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	Chloride Analysis (mg/Kg)	U.S.C.S. Symbol	Depth (feet)	Description
1620	SS	12		.6	400			2' CALICHE, White
1627	SS	12		.3	160		5	5' ROCK, Tan
1631	SS	12		.3	160		10	10' ROCK, Tan
								End of Soil Boring at 11' bgs
							15	
							20	
							25	
							30	

Water Level Measurements (feet)

Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level
-	-	-	-	-	-
-	-	-	-	-	-

Drilling Method: Straub

Backfill Method: Bentonite

Field Representative: GB

Log Of Test Borings

(NOTE - Page 1 of 1)

ENVIRONMENTAL PLUS, INC.
CONSULTING AND
REMEDIAL CONSTRUCTION
EUNICE, NEW MEXICO
505-394-3481

Project Number: 200067

Project Name: Lovington Paddock #81

Location: UL F, Section 12, Township 17 South, Range 36 East

Boring Number: SB-2 | Surface Elevation: 3,817-feet amsl

Start Date: 2-07-06 Time: 1640 hrs

Completion Date: 2-07-06 Time: 1720 hrs

Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	Chloride Analysis (mg/Kg)	U.S.C.S. Symbol	Depth (feet)	Description
1640	SS	12		.2	160		0	2' CALICHE, White
1651	SS	12		.1	160		5	5' ROCK, Tan
1705	SS	12		.1	160		10	10' ROCK, Tan
								End of Soil Boring at 11' bgs
							15	
							20	
							25	
							30	

Water Level Measurements (feet)

Date	Time	Sample Depth	Casing Depth	Cave-In Depth	Water Level
-	-	-	-	-	-
-	-	-	-	-	-

Drilling Method: Straub

Backfill Method: Bentonite

Field Representative: GB

APPENDIX IV

INFORMATION AND METRICS FORM
INITIAL NMOCD FORM C-141
FINAL NMOCD FORM C-141

Chevron

Information and Metrics

Incident Date: Unknown	**NMOCD Notified:** Unknown

Site: Lovington Paddock #81	**Assigned Site Reference :** NMOCD 1RP#1227; EPI #200067
Company: Chevron	
Street Address:	
Mailing Address: P.O. Box 1949	
City, State, Zip: Eunice, New Mexico 88231	
Representative: Larry Williams	
Representative Telephone:	
Telephone:	
Fluid volume released (bbls): unknown	**Recovered (bbls):** none
>25 bbls: Notify NMOCD verbally within 24 hrs and submit form C-141 within 15 days. (Also applies to unauthorized releases >500 mcf Natural Gas)	
5-25 bbls: Submit form C-141 within 15 days (Also applies to unauthorized releases of 50-500 mcf Natural Gas)	
Leak, Spill, or Pit (LSP) Name: Lovington Paddock #81	
Source of contamination: Injection Well	
Land Owner, i.e., BLM, ST, Fee, Other: Darr Angell	
LSP Dimensions: Unknown	
LSP Area: ~5,400 ft^2	
Location of Reference Point (RP):	
Location distance and direction from RP:	
Latitude: N 32° 51' 08.57"	
Longitude: W 103° 18' 32.18"	
Elevation above mean sea level: 3,817 feet	
Feet from South Section Line:	
Feet from East Section Line:	
Location- Unit or ¼¼: SE¼ of the NW¼	**Unit Letter:** F
Location- Section: 12	
Location- Township: 17 South	
Location- Range: 36 East	
Surface water body within 1000 ' radius of site: none	
Domestic water wells within 1000' radius of site: none	
Agricultural water wells within 1000' radius of site: One (USGS 17S 36E 12.1.2.3); Figure 2 - #31	
Public water supply wells within 1000' radius of site: none	
Depth from land surface to groundwater (DG): ~59 feet	
Depth of contamination (DC): ~3 feet	
Depth to groundwater (DG – DC = DtGW): ~56 feet	

1. Groundwater	**2. Wellhead Protection Area**	**3. Distance to Surface Water Body**
If Depth to GW <50 feet: *20 points*	If <1000' from water source, or;<200' from private domestic water source: *20 points*	<200 horizontal feet: *20 points*
If Depth to GW 50 to 99 feet: *10 points*		200-1000 horizontal feet: *10 points*
If Depth to GW >100 feet: *0 points*	If >1000' from water source, or; >200' from private domestic water source: *0 points*	>1000 horizontal feet: *0 points*
Site Rank (1+2+3) =10+20+0=30		

Total Site Ranking Score and Acceptable Concentrations

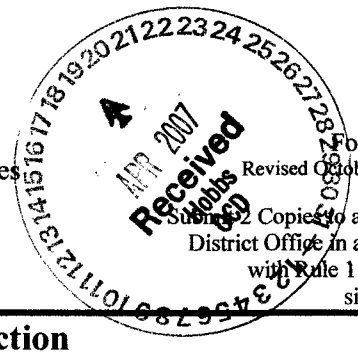
Parameter	>19	10-19	0-9
Benzene[1]	10 ppm	10 ppm	10 ppm
BTEX[1]	50 ppm	50 ppm	50 ppm
TPH	100 ppm	1,000 ppm	5,000 ppm

[1]100 ppm field VOC headspace measurement may be substituted for lab analysis

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505



Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR ☒ Initial Report ☐ Final Report

Name of Company: Chevron	**Contact:** Larry Williams
Address: P.O. Box 1949 Eunice, NM 88231	**Telephone No.:**
Facility Name: Lovington Paddock #81	**Facility Type:** Injection well

Surface Owner: Darr Angel	**Mineral Owner:** State of New Mexico	**API No.:**

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	12	17S	36E					Lea

Latitude: N 32° 51' 08.57" **Longitude:** W 103° 18' 32.18"

NATURE OF RELEASE

Type of Release: produced water	**Volume of Release:** unknown	**Volume Recovered:** none
Source of Release: Injection well	**Date and Hour of Occurrence:** 30 January 2006 in the a.m.	**Date and Hour of Discovery:** 30 January 2006 @ a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	**If YES, To Whom?**	
By Whom?	**Date and Hour:**	
Was a Watercourse Reached? ☐ Yes ☒ No	**If YES, Volume Impacting the Watercourse:** Not Applicable	

If a Watercourse was Impacted, Describe Fully.* Not Applicable

Depth to Groundwater: ~59 feet

Describe Cause of Problem and Remedial Action Taken.* An unknown amount of produced water was released when a flow-line failed. Zero (0) barrels of fluid were recovered. Upon discovery of the release, Chevron contacted EPI for an Emergency Response team. The Emergency Response team worked on the release area on 1/30/06. Standing liquid was solidified and the impacted material stockpiled on plastic barriers on site. EPI is continuing cleanup of the release area.

Describe Area Affected and Cleanup Action Taken.* Approximately 5,400 square feet of surface area was affected by the release.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

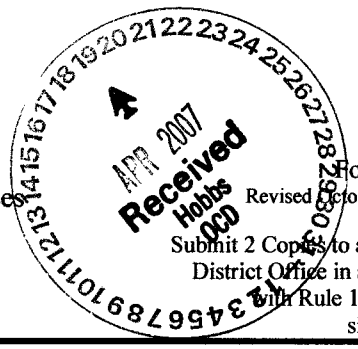
Signature: Larry Williams	OIL CONSERVATION DIVISION	
Printed Name: Larry Williams	**Approved by District Supervisor:**	
Title: HES Champion	**Approval Date:**	**Expiration Date:**
E-mail Address: larry.williams@chevron.com	**Conditions of Approval:**	**Attached** ☐
Date: 1-30-06 **Phone:** 505-396-4414 ex128		

*** Attach Additional Sheets If Necessary**

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505



Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR ☐ Initial Report ☒ Final Report

Name of Company: Chevron	**Contact:** Larry Williams
Address: P.O. Box 1949 Eunice, NM 88231	**Telephone No.:**
Facility Name: Lovington Paddock #81	**Facility Type:** Injection well

Surface Owner: Darr Angell	**Mineral Owner:** State of New Mexico	**API No.:**

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	12	17S	36E					Lea

Latitude: N 32° 51' 08.57" **Longitude:** W 103° 18' 32.18"

RP # 1227

NATURE OF RELEASE

Type of Release: produced water	**Volume of Release:** unknown	**Volume Recovered:** none
Source of Release: Injection well	**Date and Hour of Occurrence:** unknown	**Date and Hour of Discovery:** unknown
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	**If YES, To Whom?** unknown	
By Whom? unknown	**Date and Hour:** unknown	
Was a Watercourse Reached? ☐ Yes ☒ No	**If YES, Volume Impacting the Watercourse:** Not Applicable	

If a Watercourse was Impacted, Describe Fully.* Not Applicable

Depth to Groundwater: ~59 feet

Describe Cause of Problem and Remedial Action Taken.* An unknown amount of produced water was released when a flow-line failed. Zero (0) barrels of fluid were recovered. Approximately 5,400 square feet of surface area was affected by the release. Impacted soil from the release area was excavated and disposed off site by another contractor.

Describe Area Affected and Cleanup Action Taken.* Initial Site Assessment on the release area was conducted by EPI on 1/30/06. Soil borings were advanced and work continued from 3/7/06 through 3/8/06. Based on laboratory analytical data taken from the soil borings, most impacted soil in the bottom of the excavation were removed. The excavation was backfilled with clean topsoil and caliche around the well head. The disturbed area was contoured for natural drainage and will be seeded with a blend preferred by the land owner.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Larry Williams	OIL CONSERVATION DIVISION
Printed Name: Larry Williams	**Approved by District Supervisor:** ENVIRENGR
Title: HES Champion	**Approval Date:** 4.20.07 **Expiration Date:** —
E-mail Address: larry.williams@chevron.com	**Conditions of Approval:** — **Attached** ☐
Date: 4-19-07 **Phone:** 505-396-4414 ex128	

*** Attach Additional Sheets If Necessary**