

March 29, 2010

Mr. Mike Bratcher  
Oil Conservation Division  
New Mexico Energy, Minerals and Natural Resources Department  
1301 W. Grand Avenue  
Artesia, New Mexico 88210

**Re: Remediation Workplan,  
Marks and Garner Production LTD Co., Levers #3Y  
Unit Letter N (SE/4, SW/4), Section 33, Township 16 South, Range 29 East,  
Eddy County, New Mexico  
(Latitude: N 32.87188°, Longitude: W 104.08195°)  
2RP #305**

Dear Mr. Bratcher:

Marks and Garner Production LTD Co. (M&G), has retained Ocotillo Environmental, LLC (Ocotillo) to remediate impacts to soil from a leak at the Levers #3Y wellhead. The well is located in the southeast quarter (SE/4) of the southwest quarter (SW/4), Section 33, Township 16 South, Range 29 East, Eddy County, New Mexico (Site). The date and volume of the release are unknown. A C-141 was submitted to the New Mexico Oil Conservation Division (NMOCD) on April 24, 2009. Appendix A provides a copy of the C141. Figure 1 shows the site location.

Based on published literature (1961), well records of the New Mexico State Engineer, and well records of the United States Geological Survey, groundwater occurs at approximately 65 feet bgs in the well located nearest the Site. No domestic water wells are located within 1,000 feet of the site. The NMOCD has established recommended remediation action levels (RRALs) for benzene, total BTEX and TPH resulting from spills of natural gas liquids ("Guidelines for Remediation of Leaks, Spills and Releases, August 13, 1993"). Remediation levels for benzene, total BTEX and TPH were calculated using the following NMOCD criteria:

Criteria	Result	Ranking Score
Depth-to-Groundwater	50 - 99 Feet	10
Wellhead Protection Area	No	0
Distance to Surface Water Body	>1000 Horizontal Feet	0
		<b>Total: 10</b>

The following RRALs have been assigned based on NMOCD criteria:

**Benzene 10 mg/kg**  
**Total BTEX 50 mg/kg**  
**TPH 1,000 mg/kg**

### **Initial Investigation**

On September 10, 2009, a letter was prepared for the NMOCD by R.T. Hicks Consultants, Ltd. (Hicks), that reported results of soil samples collected at the site in order to provide horizontal delineation of the spill. Hicks also provided documentation that groundwater in the area is confined, thereby making the depth to groundwater "not relevant". Appendix B provides a copy of the "Hicks" diagram (Plate 2B) showing sample point locations and chloride concentrations, as well as a copy of the "Hicks" table of Field and Laboratory Data – Soil Samples.

### **Current Investigation**

On March 2, 2010, Ocotillo installed two (2) soil borings (BH-1 and BH-2) at the site, using an air rotary drilling rig, in order to further assess the horizontal and vertical limits of the spill. Soil samples from the exploratory borings were collected in five foot intervals from the ground surface to a depth of approximately 46 feet below ground surface (bgs). The soil borings were plugged with bentonite. Figure 2 shows the locations of the soil borings. Appendix C provides copies of the Well Record and Logs provided to the Office of the State Engineer.

The soil samples from borings BH-1 and BH-2 were placed in clean glass sample jars, labeled, chilled in an ice chest, and delivered under chain-of-custody control to Cardinal Laboratories in Hobbs, New Mexico. All soil samples collected from borings BH-1 and BH-2 were analyzed for chlorides by EPA method 4500 Cl<sup>-</sup>B. The upper three (3) samples from soil boring BH-1 (0-1', 5-6' and 10-11' bgs) were also analyzed for TPH by EPA Method SW-846 8015. Table 1 presents a summary of the laboratory analysis of soil samples. Laboratory analysis and chain of custody documentation are included in Appendix D.

Referring to Table 1, with the exception of the sample from 0-1' bgs (160 mg/kg), chloride concentrations in samples from boring BH-1 were above the NMOCD standard of 250 mg/kg until a depth of 45-46' bgs (144 mg/kg). The soil samples collected from background boring BH-2 all reported chloride concentrations below 250 mg/kg. Samples collected from boring BH-1 reported TPH concentrations below 1,000 mg/kg at a depth of 5-6' bgs (33.2 mg/kg) and 10-11' bgs (11.1 mg/kg).

### **Proposed Remediation**

Marks and Garner proposes to conduct excavation of the chloride impacted soil in the vicinity of soil boring BH-1 to a depth of approximately five (5) feet bgs. Horizontal delineation will be determined by laboratory analysis of samples collected during excavation. All excavated soil with a chloride concentration greater than 5,000 mg/kg will be hauled to an NMOCD approved disposal facility. Excavated soil with a chloride concentration less than 5,000 mg/kg will be blended on-site with organic material, in order to reduce the chloride concentrations to less than 1,000 mg/kg. A 20 mil plastic liner will be installed at the five foot depth, and the excavated areas will be backfilled with either clean soil or blended soil with a chloride concentration less than 1,000 mg/kg. Excess blended soil (with a chloride concentration less than 1,000 mg/kg) will be used to construct firewalls around the Marks and Garner tank batteries and / or other ancillary equipment.

Mr. Mike Bratcher  
Page 3  
March 29, 2010

If you have any questions or need additional information, please call Mr. Quinton Welborn at (575) 631-0949, or myself at (575) 441-7244. We may also be reached by email at [qwelborn@valornet.com](mailto:qwelborn@valornet.com) or [Cindy.Crain@gmail.com](mailto:Cindy.Crain@gmail.com).

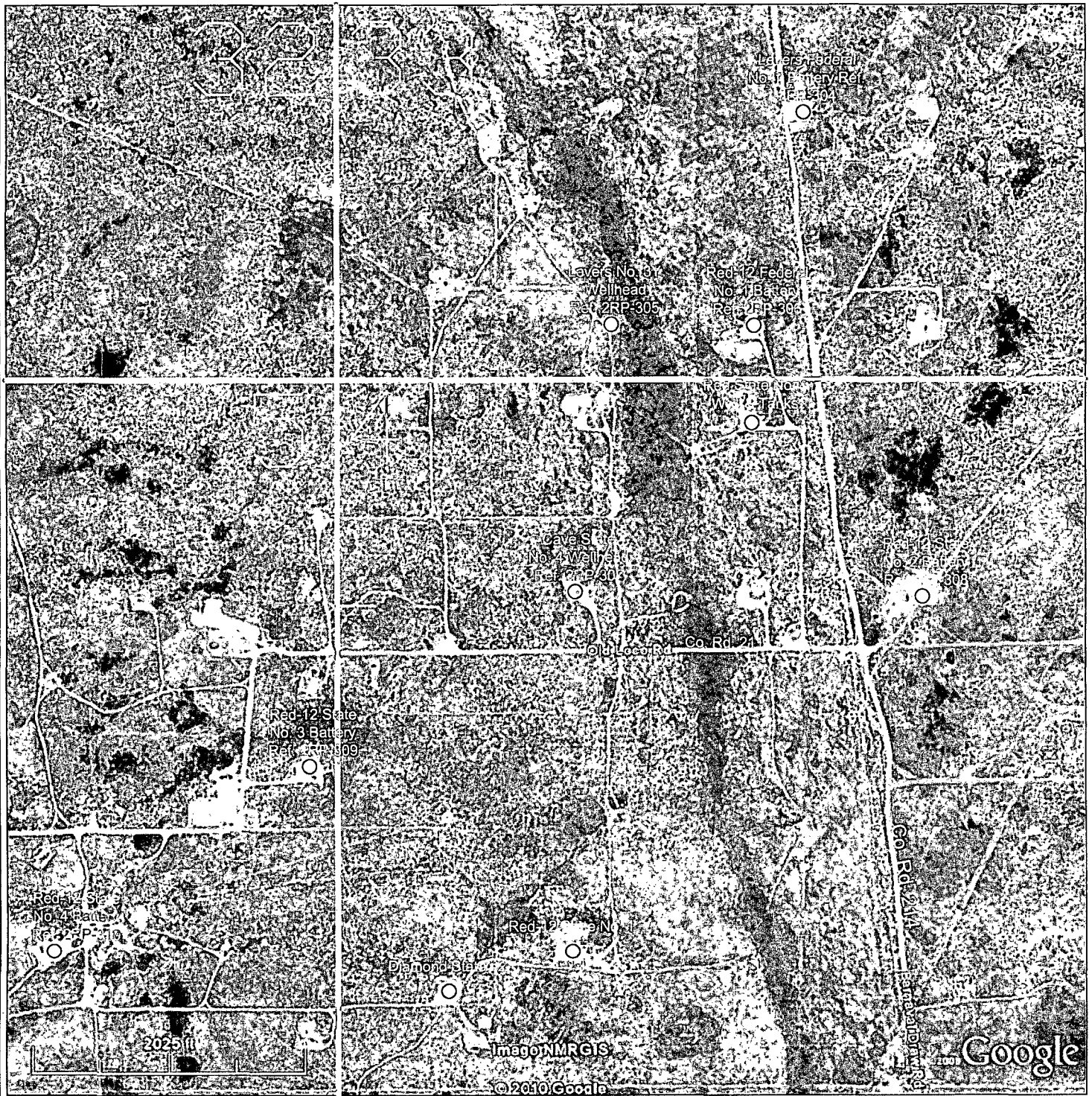
Sincerely,  
***Ocotillo Environmental, LLC***

A handwritten signature in cursive script that reads "Cindy K. Crain".

Cindy K. Crain, P.G.  
Environmental Manager

cc: Quinton Welborn, Marks & Garner

## FIGURES



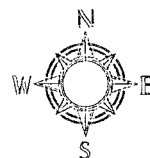
**FIGURE # 1**

Eddy County, New Mexico

Marks and Garner Production Ltd  
Co.

T-16-S, R-29-E, Sec. 33  
T-17-S, R-29-E, Sec. 4 & 5

**Site Vicinity Map**

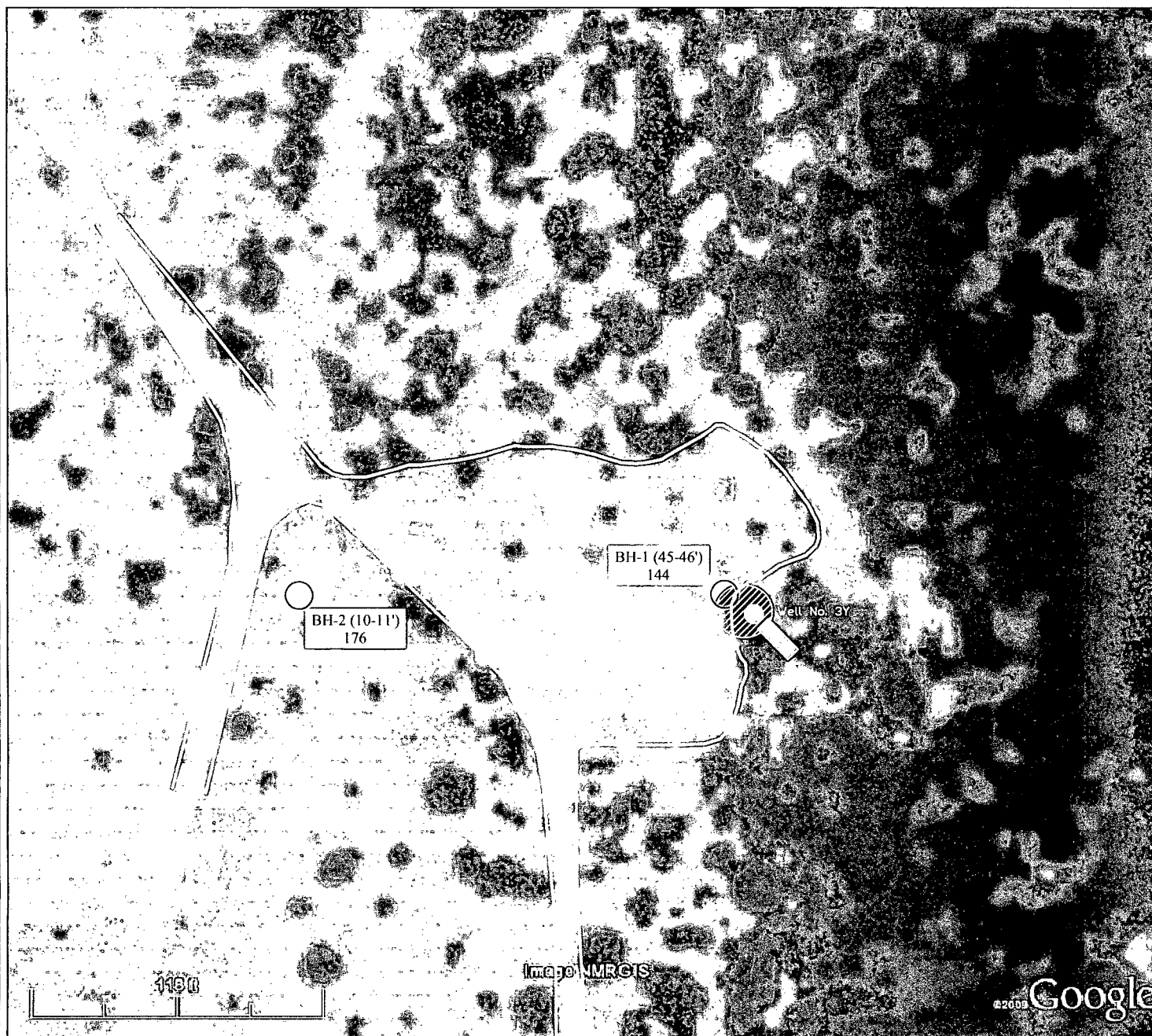


DATE: 04-05-10

NAME: JTC

PROJECT NO.:

Ocotillo ENVIRONMENTAL



**FIGURE # 2**

Eddy County, New Mexico

Marks and Garner

Levers No. 3Y

T-16-S, R-29-E, Sec 33

**Site Drawing With Boring  
Locations**

Ocotillo ENVIRONMENTAL

**LEGEND**

⊙  
BH-1 (45-46')  
144  
Boring Location With  
Depth (feet bgs) and  
Chloride Concentration  
(mg/kg)

**GPS Coordinates**

BH-1 N.32.87188 W.104.08195  
BH-2 N.32.87184 W.104.08255



DATE: 04-05-10  
NAME: JTC  
PROJECT NO.: 0110-011C

## TABLE

**Table 1:**  
**Summary of Laboratory Analysis of Soil Samples from Soil Borings**  
**Marks and Garner Production LTD Co., Levers #3Y**  
**Unit Letter N, Section 33, Township 16 South, Range 29 East**  
**Eddy County, New Mexico**

Sample Date	Bore Hole	Sample Depth (feet BGS)	TPH - GRO (C6 - C10) (mg/kg)	TPH - DRO (>C10 - C28) (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
WQCC Standard					1,000	250
3/2/10	BH-1	0 - 1	<50	1,480	1,480	160
3/2/10	BH-1	5 - 6	<10	33.2	33.2	1,280
3/2/10	BH-1	10 - 11	<10	11.1	11.1	2,040
3/2/10	BH-1	15 - 16	---	---	---	1,420
3/2/10	BH-1	20 - 21	---	---	---	1,940
3/2/10	BH-1	25 - 26	---	---	---	2,200
3/2/10	BH-1	30 - 31	---	---	---	3,720
3/2/10	BH-1	35 - 36	---	---	---	2,200
3/2/10	BH-1	40 - 41	---	---	---	2,120
3/2/10	BH-1	45 - 46	---	---	---	144
3/2/10	BH-2	0 - 1	---	---	---	<16
3/2/10	BH-2	5 - 6	---	---	---	96
3/2/10	BH-2	10 - 11	---	---	---	176
3/2/10	BH-2	15 - 16	---	---	---	144
3/2/10	BH-2	20 - 21	---	---	---	144
3/2/10	BH-2	25 - 26	---	---	---	160
3/2/10	BH-2	30 - 31	---	---	---	96
3/2/10	BH-2	35 - 36	---	---	---	80
3/2/10	BH-2	40 - 41	---	---	---	64
3/2/10	BH-2	45 - 46	---	---	---	48

Notes: Samples Analyzed by Cardinal Laboratories, Hobbs, NM

1. BGS: Depth in feet below ground surface
2. mg/kg: Milligrams per kilogram
3. --- No Data Available
4. < Less than method detection limit



## **APPENDIX A**

### **INITIAL C141 DOCUMENTATION**

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

MAY - 7 2009

Form C-14  
Revised October 10, 2001

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

30-015-02787

Release Notification and Corrective Action

NMB0913437033

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Marks & Garner Production 14070	Contact Quinton Welborn	
Address P.O. Box 1089	Telephone No. 575-393-9358	
Facility Name LEAKS 6031	Facility Type Oil Well	
Surface Owner State	Mineral Owner Marks & Garner	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
N	33	16S	29E	330	S	1970	W	Eddy

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

NATURE OF RELEASE

Type of Release	Volume of Release	Volume Recovered
Source of Release	Date and Hour of Occurrence	Date and Hour of Discovery
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	
If a Watercourse was Impacted, Describe Fully.*		
Describe Cause of Problem and Remedial Action Taken.* LEAKING WELL HEAD, CLEAN WELL HEAD and AFFECTED AREA		
Describe Area Affected and Cleanup Action Taken.* FIX LEAK + CLEAN WELL HEAD		

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: <u>Quinton Welborn</u>		OIL CONSERVATION DIVISION	
Printed Name: <u>QUINTON WELBORN</u>		Signed By: <u>Mike Brannan</u> Approved by: <u>District Supervisor</u>	
Title: <u>MANAGER</u>		Approval Date: <u>MAY 14 2009</u>	Expiration Date:
E-mail Address: <u>QUELBORN@OCD.NMGOV</u>		Conditions of Approval: <u>Remediation per OCD Rules &amp; Guidelines</u>	Attached <input checked="" type="checkbox"/>
Date: <u>4-24-09</u>	Phone: <u>575-393-9358</u>		

Attach Additional Sheets If Necessary

NMB091343704

DATE: 4/16/09

2RP-305

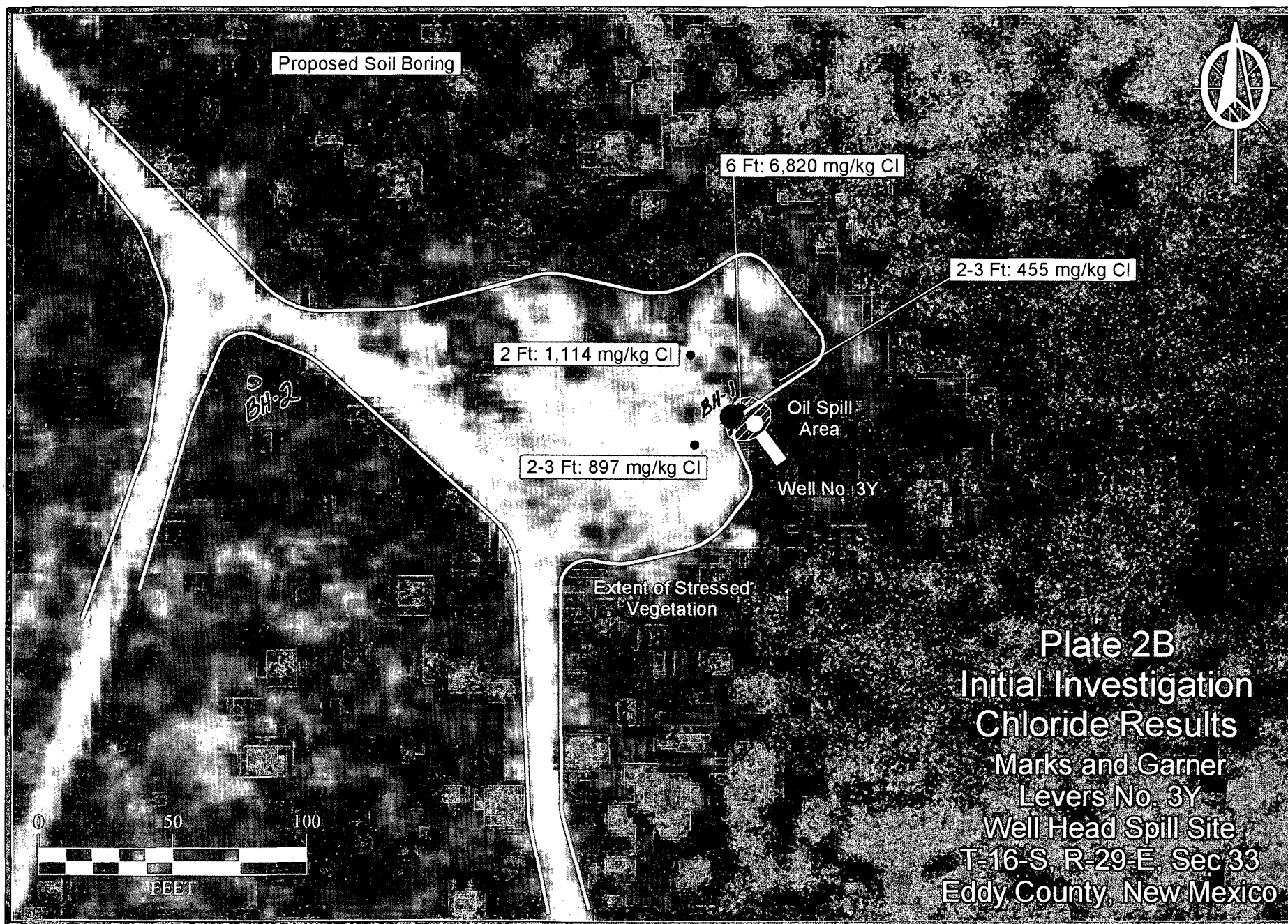
**APPENDIX B**

**R.T. HICKS INITIAL INVESTIGATION**

**PLATE 2B**

**And**

**TABLE OF FIELD AND LABORATORY DATA**



**Marks & Garner - Levers No. 3Y Site**  
Field and Laboratory Data - Soil Samples

Sample Location	Depth (feet)	Sample Date	Field Cl (mg/kg)	Lab Cl (mg/kg)	PID (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	BTEX (mg/kg)	C <sub>6-12</sub> (mg/kg)	C <sub>12-28</sub> (mg/kg)	C <sub>28-35</sub> (mg/kg)
Center Oil Spill	Surf	6/22/2009	---	---	85	0.0130	0.537	1.3850	3.5	5.47	1,340	<b>44,500</b>	3,150
	2.0	6/22/2009	---	---	39	---	---	---	---	---	---	---	---
	3.0	6/22/2009	---	---	64	---	---	---	---	---	---	---	---
	4.0	6/22/2009	---	---	127	---	---	---	---	---	---	---	---
	5.0	6/22/2009	---	---	210	---	---	---	---	---	---	---	---
	6.0	6/22/2009	---	<b>6,820</b>	334	<0.0107	0.212	0.6995	6.553	7.47	1,690	<b>6,640</b>	581
15-Feet East	2-3	8/27/2009	<b>455</b>	---	0	---	---	---	---	---	---	---	---
20-Feet West	2-3	8/27/2009	<b>897</b>	---	0	---	---	---	---	---	---	---	---
25-Feet North	2	8/27/2009	<b>1,114</b>	---	0	---	---	---	---	---	---	---	---

<b>NMOCD 1993 Guideline RRALs</b>	<b>250*</b>	<b>---</b>	<b>10</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>50</b>	<b>5,000</b>
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\*Chloride RRAL is based on the NMOCD May 28, 2004 Interim Pit and Below-Grade Tank Guidelines

**APPENDIX C**

**WELL RECORD AND LOGS**



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

[www.ose.state.nm.us](http://www.ose.state.nm.us)

1. GENERAL AND WELL LOCATION	POD NUMBER (WELL NUMBER) LEVERS 3 Y SB-1				OSE FILE NUMBER(S)						
	WELL OWNER NAME(S) MARKS AND GARNER PRODUCTION COMPANY LTD				PHONE (OPTIONAL)						
	WELL OWNER MAILING ADDRESS P.O. BOX 1089				CITY HOBBS		STATE NM		ZIP 88241		
	WELL LOCATION (FROM GPS)	DEGREES LATITUDE 32		MINUTES 52		SECONDS 19.00 N		* ACCURACY REQUIRED: ONE TENTH OF A SECOND * DATUM REQUIRED: WGS 84			
		LONGITUDE 104		4		55.00 W					
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS FROM LOCO HILLS GENERAL STORE GO 6 MI W TO CR 214 TURN R GO 3 MI FOLLOW GPS TO SITE.											
2. OPTIONAL	(2.5 ACRE) 1/4	(10 ACRE) 1/4	(40 ACRE) 1/4	(160 ACRE) 1/4	SECTION	TOWNSHIP <input type="checkbox"/> NORTH <input type="checkbox"/> SOUTH	RANGE <input type="checkbox"/> EAST <input type="checkbox"/> WEST				
	SUBDIVISION NAME				LOT NUMBER	BLOCK NUMBER	UNIT/TRACT				
	HYDROGRAPHIC SURVEY					MAP NUMBER	TRACT NUMBER				
3. DRILLING INFORMATION	LICENSE NUMBER WD1478		NAME OF LICENSED DRILLER EDWARD BRYAN				NAME OF WELL DRILLING COMPANY STRAUB CORPORATION				
	DRILLING STARTED 3-2-10		DRILLING ENDED 3-2-10		DEPTH OF COMPLETED WELL (FT) 0		BORE HOLE DEPTH (FT) 50		DEPTH WATER FIRST ENCOUNTERED (FT) N/A		
	COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input checked="" type="checkbox"/> SHALLOW (UNCONFINED)						STATIC WATER LEVEL IN COMPLETED WELL (FT) N/A				
	DRILLING FLUID: <input checked="" type="checkbox"/> AIR <input type="checkbox"/> MUD <input type="checkbox"/> ADDITIVES - SPECIFY:										
	DRILLING METHOD: <input checked="" type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input type="checkbox"/> OTHER - SPECIFY:										
	DEPTH (FT)		BORE HOLE DIA. (IN) 5	CASING MATERIAL N/A	CONNECTION TYPE (CASING) N/A	INSIDE DIA. CASING (IN) N/A	CASING WALL THICKNESS (IN) N/A	SLOT SIZE (IN) N/A			
	FROM 0	TO 50									
4. WATER BEARING STRATA	DEPTH (FT)		THICKNESS (FT)	FORMATION DESCRIPTION OF PRINCIPAL WATER-BEARING STRATA (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)				YIELD (GPM)			
	FROM	TO									
METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA						TOTAL ESTIMATED WELL YIELD (GPM)					

FOR OSE INTERNAL USE

WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION	PAGE 1 OF 2	



# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

[www.ose.state.nm.us](http://www.ose.state.nm.us)

1. GENERAL AND WELL LOCATION	POD NUMBER (WELL NUMBER) <b>LEVERS 3 Y SB-2</b>				OSE FILE NUMBER(S)			
	WELL OWNER NAME(S) <b>MARKS AND GARNER PRODUCTION COMPANY LTD</b>				PHONE (OPTIONAL)			
	WELL OWNER MAILING ADDRESS <b>P.O. BOX 1089</b>				CITY <b>HOBBS</b>		STATE <b>NM</b>	ZIP <b>88241</b>
	WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	* ACCURACY REQUIRED: ONE TENTH OF A SECOND * DATUM REQUIRED: WGS 84			
		LATITUDE	<b>32</b>	<b>52</b>				
	LONGITUDE	<b>104</b>	<b>4</b>	<b>55.00</b> W				
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS <b>FROM LOCO HILLS GENERAL STORE GO 6 MI W TO CR 214 TURN R GO 3 MI FOLLOW GPS TO SITE</b>								
2. OPTIONAL	(2.5 ACRE) $\frac{1}{4}$	(10 ACRE) $\frac{1}{4}$	(40 ACRE) $\frac{1}{4}$	(160 ACRE) $\frac{1}{4}$	SECTION	TOWNSHIP <input type="checkbox"/> NORTH <input type="checkbox"/> SOUTH	RANGE <input type="checkbox"/> EAST <input type="checkbox"/> WEST	
	SUBDIVISION NAME				LOT NUMBER	BLOCK NUMBER	UNIT/TRACT	
	HYDROGRAPHIC SURVEY					MAP NUMBER	TRACT NUMBER	
3. DRILLING INFORMATION	LICENSE NUMBER <b>WD1478</b>		NAME OF LICENSED DRILLER <b>EDWARD BRYAN</b>			NAME OF WELL DRILLING COMPANY <b>STRAUB CORPORATION</b>		
	DRILLING STARTED <b>3-2-10</b>		DRILLING ENDED <b>3-2-10</b>		DEPTH OF COMPLETED WELL (FT) <b>0</b>	BORE HOLE DEPTH (FT) <b>45</b>	DEPTH WATER FIRST ENCOUNTERED (FT) <b>N/A</b>	
	COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input checked="" type="checkbox"/> SHALLOW (UNCONFINED)					STATIC WATER LEVEL IN COMPLETED WELL (FT) <b>N/A</b>		
	DRILLING FLUID: <input checked="" type="checkbox"/> AIR <input type="checkbox"/> MUD <input type="checkbox"/> ADDITIVES - SPECIFY:							
	DRILLING METHOD: <input checked="" type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input type="checkbox"/> OTHER - SPECIFY:							
	DEPTH (FT)		BORE HOLE DIA. (IN) <b>5</b>	CASING MATERIAL <b>N/A</b>	CONNECTION TYPE (CASING) <b>N/A</b>	INSIDE DIA. CASING (IN) <b>N/A</b>	CASING WALL THICKNESS (IN) <b>N/A</b>	SLOT SIZE (IN) <b>N/A</b>
	FROM	TO						
	<b>0</b>	<b>45</b>						
4. WATER BEARING STRATA	DEPTH (FT)		THICKNESS (FT)	FORMATION DESCRIPTION OF PRINCIPAL WATER-BEARING STRATA (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)				YIELD (GPM)
	FROM	TO						
METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA						TOTAL ESTIMATED WELL YIELD (GPM)		

FOR OSE INTERNAL USE

WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION	PAGE 1 OF 2	



## **APPENDIX D**

### **ANALYTICAL DATA AND CHAIN OF CUSTODY DOCUMENTATION**



# ARDINAL LABORATORIES

PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

March 9, 2010

Cindy Crain  
Ocotillo Environmental, LLC  
P.O. Box 1816  
Hobbs, NM 88241

Re: Levers #3Y (0110-011C)

Enclosed are the results of analyses for sample number H19369, received by the laboratory on 03/03/10 at 12:30 pm.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method SW-846 8260	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method TX 1005	Total Petroleum Hydrocarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.2	Regulated VOCs (V2, V3)

Accreditation applies to public drinking water matrices.

Total Number of Pages of Report: 6 (includes Chain of Custody)

Sincerely,

Celey D. Keene  
Laboratory Director

ANALYTICAL RESULTS FOR  
OCOTILLO ENVIRONMENTAL  
ATTN: CINDY CRAIN  
P.O. BOX 1816  
HOBBS, NM 88240  
FAX TO (432) 272-0304


Receiving Date: 03/03/10  
Reporting Date: 03/05/10  
Project Owner: MARKS & GARNER (0110-011C)  
Project Name: LEVERS #3Y  
Project Location: EDDY CO., NM

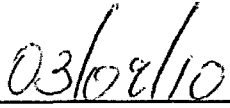
Sampling Date: 03/02/10  
Sample Type: SOIL  
Sample Condition: COOL & INTACT @ 5°C  
Sample Received By: JH  
Analyzed By: AB

LAB NUMBER	SAMPLE ID	GRO (C <sub>6</sub> -C <sub>10</sub> ) (mg/kg)	DRO (>C <sub>10</sub> -C <sub>28</sub> ) (mg/kg)
		03/05/10	03/05/10
H19369-1	BH-1 (0-1')	<50.0	1,480
H19369-2*	BH-1 (5-6')	<10.0	33.2
H19369-3	BH-1 (10-11')	<10.0	11.1
Quality Control		501	574
True Value QC		500	500
% Recovery		100	115
Relative Percent Difference		1.7	1.1

METHOD: SW-846 8015 M. Reported on wet weight.

\*One or more TPH surrogates outside historical limits due to matrix interference.

  
Chemist

  
Date

H19369 TPH OCO



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR  
OCOTILLO ENVIRONMENTAL, LLC  
ATTN: CINDY CRAIN  
P.O. BOX 1816  
HOBBS, NM 88241  
FAX TO: (432) 272-0304

Receiving Date: 03/03/10  
Reporting Date: 03/07/10  
Project Number: 0110-011C (MARKS & GARNER)  
Project Name: LEVERS #3Y  
Project Location: EDDY CO., NM


Analysis Date: 03/05/10  
Sampling Date: 03/02/10  
Sample Type: SOIL  
Sample Condition: COOL & INTACT @ 5°C  
Sample Received By: JH  
Analyzed By: HM

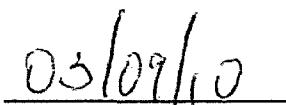
LAB NO.	SAMPLE ID	Cl <sup>-</sup> (mg/kg)
H19369-1	BH-1 (0-1')	160
H19369-2	BH-1 (5-6')	1,280
H19369-3	BH-1 (10-11')	2,040
H19369-4	BH-1 (15-16')	1,420
H19369-5	BH-1 (20-21')	1,940
H19369-6	BH-1 (25-26')	2,200
H19369-7	BH-1 (30-31')	3,720
H19369-8	BH-1 (35-36')	2,200
H19369-9	BH-1 (40-41')	2,120
H19369-10	BH-1 (45-46')	144
Quality Control		500
True Value QC		500
% Recovery		100
Relative Percent Difference		2.0

METHOD: Standard Methods

4500-Cl<sup>-</sup>B

Note: Analyses performed on 1:4 w:v aqueous extracts.

  
Chemist

  
Date

H19369 Ocotillo

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ANALYTICAL RESULTS FOR  
OCOTILLO ENVIRONMENTAL, LLC  
ATTN: CINDY CRAIN  
P.O. BOX 1816  
HOBBS, NM 88241  
FAX TO: (432) 272-0304

Receiving Date: 03/03/10  
Reporting Date: 03/07/10  
Project Number: 0110-011C (MARKS & GARNER)  
Project Name: LEVERS #3Y  
Project Location: EDDY CO., NM

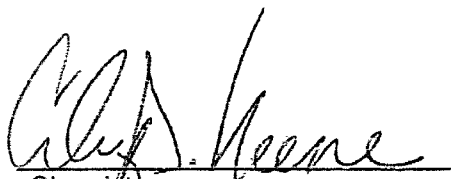
Analysis Date: 03/05/10  
Sampling Date: 03/02/10  
Sample Type: SOIL  
Sample Condition: COOL & INTACT @ 5°C  
Sample Received By: JH  
Analyzed By: HM

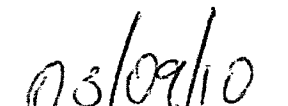
LAB NO.	SAMPLE ID	Cl <sup>-</sup> (mg/kg)
H1936-11	BH-2 (0-1')	< 16
H1936-12	BH-2 (5-6')	96
H1936-13	BH-2 (10-11')	176
H1936-14	BH-2 (15-16')	144
H1936-15	BH-2 (20-21')	144
H1936-16	BH-2 (25-26')	160
H1936-17	BH-2 (30-31')	96
H1936-18	BH-2 (35-36')	80
H1936-19	BH-2 (40-41')	64
H1936-20	BH-2 (45-46')	48
Quality Control		500
True Value QC		500
% Recovery		100
Relative Percent Difference		2.0

METHOD: Standard Methods

4500-ClB

Note: Analyses performed on 1:4 w:v aqueous extracts.

  
Chemist

  
Date

H19369 Ocotillo



# CARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603  
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325) 673-7020

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 2

Company Name: <u>Ocotillo Environmental</u>				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>																					
Project Manager: <u>Cindy Crain</u>				P.O. #:				<div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Chloride</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH 8015M</div> </div>																					
Address: <u>2125 French Dr. P.O. Box 1816</u>				Company: <u>Ocotillo</u>																									
City: <u>Hobbs</u> State: <u>NM</u> Zip: <u>88240</u>				Attn:																									
Phone #: <u>(575) 441-7244</u> Fax #: <u>(432) 272-0304</u>				Address: <u>Same</u>																									
Project #: <u>0110-011C</u> Project Owner: <u>Marks &amp; Garner</u>				City:																									
Project Name: <u>Levers # 3Y</u>				State: Zip:																									
Project Location: <u>Eddy Co., NM</u>				Phone #:																									
Sampler Name: <u>Cindy Crain</u>				Fax #:																									
FOR LAB USE ONLY		Lab I.D.		Sample I.D.		(GRAB OR (COMP. # CONTAINERS		GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER:		ACID/BASE		ICE / COOL		OTHER:		DATE		TIME	
		H19369-1		BH-1 (0-1')		G 1						✓								✓						3/2/10		1030	
		-2		" (5-6')		G 1						✓								✓						"		1036	
		-3		" (10-11')		G 1						✓								✓						"		1042	
		-4		" (15-16')		G 1						✓														"		1045	
		-5		" (20-21')		G 1						✓														"		1048	
		-6		" (25-26')		G 1						✓														"		1100	
		-7		" (30-31')		G 1						✓														"		1105	
		-8		" (35-36')		G 1						✓														"		1118	
		-9		" (40-41')		G 1						✓														"		1122	
		10		" (45-46')		G 1						✓														"		1130	

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Relinquished By: <u>Cindy Crain</u>		Date: <u>3/3/10</u>		Received By: <u>Don Green</u>		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:	
		Time: <u>1033</u>				Fax Result: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Add'l Fax #:	
Relinquished By: <u>Don Green</u>		Date: <u>3/3/10</u>		Received By: <u>Jodi Benson</u>		REMARKS:	
		Time: <u>12:30</u>				Fax to (432) 272-0304  Please email results to: Cindy.Crain@gmail.com	
Delivered By: (Circle One)							
Sampler - UPS - Bus - Other:		Sample Condition		CHECKED BY: (Initials)			
		Copied <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>		<u>JCH</u>			

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

#26

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325) 673-7020

Company Name: <u>Ocotillo Environmental</u>				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>																			
Project Manager: <u>Cindy Crain</u>				P.O. #:																							
Address: <u>2125 French Dr. P.O. Box 1816</u>				Company: <u>Ocotillo</u>																							
City: <u>Hobbs</u> State: <u>NM</u> Zip: <u>88240</u>				Attn:																							
Phone #: <u>(575) 441-7244</u> Fax #: <u>(432) 272-0304</u>				Address: <u>Same</u>																							
Project #: <u>0110-011C</u> Project Owner: <u>Marks &amp; Garner</u>				City:																							
Project Name: <u>Lavers # 3Y</u>				State: Zip:																							
Project Location: <u>Eddy Co., NM</u>				Phone #:																							
Sampler Name: <u>Cindy Crain</u>				Fax #:																							
FOR LAB USE ONLY	Lab I.D.	Sample I.D.	(GRAB OR (C)OMP. # CONTAINERS	MATRIX						PRESERV.		SAMPLING		Chloride													
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE													TIME	
	HA310-11	BH-2 (0-1')	G 1			✓								3/21/0	1200	✓											
	-12	" (5-6')	G 1			✓								"	1202	✓											
	-13	" (10-11')	G 1			✓								"	1205	✓											
	-14	" (15-16')	G 1			✓								"	1207	✓											
	-15	" (20-21')	G 1			✓								"	1210	✓											
	-16	" (25-26')	G 1			✓								"	1212	✓											
	-17	" (30-31')	G 1			✓								"	1214	✓											
	-18	" (35-36')	G 1			✓								"	1216	✓											
	-19	" (40-41')	G 1			✓								"	1219	✓											
	-20	" (45-46')	G 1			✓								"	1223	✓											

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Relinquished By:		Date:	Received By:	Phone Result:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
<i>Edgar Crain</i>		3/3/10	<i>Don Green</i>	Fax Result:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
		Time:		REMARKS:		
		1033				
Relinquished By:		Date:	Received By:			
<i>Don Green</i>		3/3/10	<i>Jodi Benson</i>			
		Time:				
		12:30				
Delivered By: (Circle One)		Sample Condition		CHECKED BY:		
<input checked="" type="checkbox"/> UPS <input type="checkbox"/> Bus <input type="checkbox"/> Other:		Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Copl <input type="checkbox"/> Yes <input type="checkbox"/> Yes No <input type="checkbox"/> No <input type="checkbox"/> No		(Initials) <i>JA</i>		

*-Fax to (432) 272-0304*

*Please email results*

† Cardinal cannot accept verbal changes. Please fax written changes to 506-393-2478

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