

Cimarex Energy Company Delaware Lusk 909 Lateral Closure Report

**Section 29, T19S, R32E
Lea County, New Mexico**

June 21, 2013



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Prepared for:

**Cimarex Energy Company
2020 West Bender Street
Hobbs, New Mexico 88240**

By:

**Safety & Environmental Solutions, Inc.
703 East Clinton Street
Hobbs, New Mexico 88240
(575) 397-0510**

I. Company Contacts

Representative	Company	Telephone	E-mail
Jimmy Christian	Cimarex Energy Co.	432-208-3145	jchristian@cimarex.com
Bob Allen	SESI	575-397-0510	ballen@sesi-nm.com

II. Background

Safety and Environmental Solutions, Inc. (SESI) was engaged by Cimarex Energy Company to perform site assessment of a release area at the Delaware Lusk 909 Lateral located in Section 29 of Township 19 South, Range 32 East, Lea County, New Mexico.

According to the C-141 dated September 9, 2012, the cause of the release was to due to a breach on the injection line. An unknown amount of produced water was released with zero recovery.

New Mexico Oil Conservation Division (NMOCD) representative Mr. Geoffrey Leking and Jennifer Van Curen Bureau of Land Management (BLM) was contacted on September 10, 2012.

III. Surface and Ground Water

The nearest groundwater of record is approximately 1.4 miles north west of the site. The New Mexico Office of State Engineer record is in Section 20 Range 32 East and Township 19 South. The reported depth was 345 feet below ground surface (BGS).

IV. Characterization

The target cleanup levels are determined using the *Guidelines for Remediation of Leaks, Spills and Releases* published by the NMOCD (August 13, 1993). Based on the ranking criteria presented below, the applicable Recommended Remediation Action Levels (RRAL) are 10 parts per million (ppm) Benzene, 50 ppm combined benzene, toluene, ethylbenzene, and total xylenes (BTEX), and 5,000 ppm Total Petroleum Hydrocarbons (TPH).

Depth to Ground Water:			
(Vertical distance from contaminants to seasonal high water elevation of groundwater)	Less than 50 feet	20 points	
	50 feet to 99 feet	10 points	
	>100 feet	0 points	X
Wellhead Protection Area:			
(Less than 200 feet from a private domestic water source; or less than 1000 feet from all other water sources)	Yes	20 points	
	No	0 points	X
Distance to Surface Water:			
(Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 200 feet	20 points	
	200 feet to 1000 feet	10 points	
	>1000 feet	0 points	X
RANKING SCORE (TOTAL POINTS)			0

V. Work Performed

On April 17, 2013, SESI was on site with Jimmy Christian from Cimarex and with Jerry Caudill from Price Construction to determine the plan of action for the excavation at this location.

On April 19, 2013, SESI was on site to collect samples and field test for chloride. SESI spotted and day lighted any buried lines running through the excavation area. Field tests were run on the samples to determine the depth where the chloride value was below 250 ppm.

SESI began excavation on April 22, 2013. Price Construction used a dozer to push up all the contaminated soil into a pile that was hauled to Lea Land. There were six belly dumps on site daily and a loader from Price Construction. The site was divided into two (2) sections due to a buried steel flow line and an electric line running through the middle of the site. Each area was excavated to a depth of approximately 4' bgs. The excavated soil was transported to Lea Land, an approved NMOCD facility.

The total excavated area at the site was 230' X 100' X 4". The excavated area will be fitted with a 150' X 95' poly plastic liner on the north end of excavation which was installed under the flow line and towards the north end of the excavation. The second piece of liner was 80' X 100'. The second liner was then overlapped to the edge of the first liner with second. The middle of each area will be domed to ensure that future spills or surface water will no impact any contaminated soil left in place.

Jimmy Christian, with Cimarex, asked SESI to use the uncontaminated soil that had been stock piled on the adjoining location for backfill. There was not enough stock pile to backfill the north end, consequently, SESI transported a total of 209 loads of backfill from Lea Land to the site. A total of 202 loads of contaminated soil were transported to Lea Land.

Documentation samples were taken prior to the installation of the liners. Samples were properly packaged, preserved and transported under chain of custody to Cardinal Laboratories. The results of the analysis are as follows:

Lab ID	Sample ID	Cl (mg/kg)
Analysis Date:	-	05/06/13
H301061-01	E. Wall PT. 1	64.0
H301061-02	E. Wall PT. 2	32.0
H301061-03	E. Wall PT. 3	32.0
H301061-04	W. Wall PT. 1	32.0
H301061-05	W. Wall PT. 2	<16.0
H301061-06	W. Wall PT. 3	32.0
H301061-07	N. Wall PT. 1	48.0
H301061-08	N. Wall PT. 2	96.0
H301061-09	PT. 1 @ 4' BGS	1300
H301061-10	PT. 2 @ 4' BGS	17600
H301061-11	PT. 3 @ 4' BGS	6000
H301061-12	PT. 4 @ 4' BGS	12000
H301061-13	PT. 5 @ 4' BGS	12800

H301061-14	PT. 6 @ 4' BGS	2960
H301061-15	PT. 7 @ 4' BGS	1330
H301061-16	PT. 8 @ 4' BGS	9520
H301061-17	PT. 9 @ 4' BGS	28400
H301061-18	PT. 10 @ 4' BGS	5840
H301061-19	E Wall PT. 4	<16.0
H301061-20	E Wall PT. 5	96.0
H301061-21	W. Wall PT. 4	112
H301061-22	W. Wall PT. 5	112
H301061-23	S. Wall PT. 1	96.0
H301061-24	S. Wall PT. 2	96.0

The results of the sampling are to be used for documenting the levels of contamination left in place underneath the liners that were installed.

VI. Conclusion

Remedial actions at this site have all been performed with the approval of, and in accordance with all New Mexico Oil Conservation Division (NMOCD) requirements.

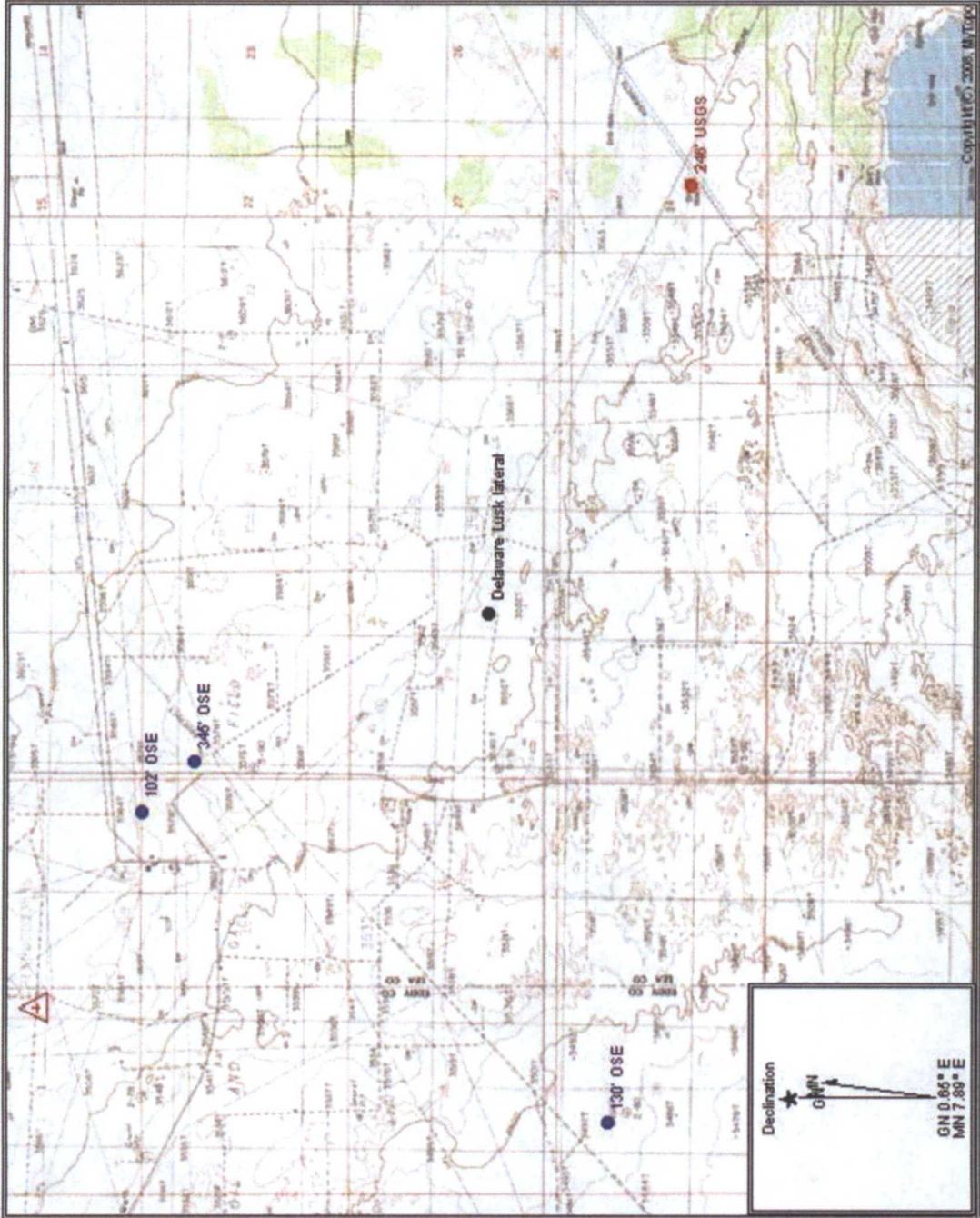
As a result, we respectfully submit this closure report for your consideration and approval.

VII. Figures & Appendices

Figure 1 – Vicinity Map

Figure 2 – Site Plan

Figure 3 – C-141



Map Name: LAGUNA GATUNA,
Scale: 1 inch = 4,000 ft.

Map Center: 032.6288376° N 103.7831162° W
Map Type: Topographic

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Leking, Geoffrey R, EMNRD

From: Susana Rodriguez [office2@sesi-nm.com]
Sent: Friday, September 03, 2010 3:02 PM
To: Leking, Geoffrey R, EMNRD
Subject: CIM-10-011 Delineation Report Work Plan
Attachments: CIM-10-011 Delineation Report Work Plan.pdf; H20725R SESI.pdf; 20100903093442484.pdf
Importance: High

Geoff:

Attached please find the Delineation Report/Work plan for the Valley Forge 20 3-H. Please review and let me know when we came begin this project. I will be by your office on Tuesday to hand deliver a hard copy of the report. Please call me if you have any questions.

Thank you,

Susana Rodriguez
Administrative Assistant
Safety & Environmental Solutions, Inc.
575.397.0510