

Results of Directional Survey

API number:	30-025-41089		
OGRID:		Operator:	OCCIDENTAL PERMIAN LTD
		Property:	SOUTH LUSK 28 FEDERAL # 1H

surface	ULSTR:	A	28	T 19S	R 32E
				330 FNL	585 FEL

BH Loc	ULSTR:	P	28	T 19S	R 32E
13745	MD	9431.3	TVD	349 FSL	587 FEL
				4931 FNL	

Top Perf/OH	ULSTR:	A	28	T 19S	R 32E
9702	MD	9415.2	TVD	892 FNL	582 FEL

Bot Perf/OH	ULSTR:	P	28	T 19S	R 32E
13602	MD	9432.1	TVD	492 FSL	591 FEL
				4788 FNL	

	MD	N/S	E/W	VD
	9698	-558.50	3.60	9414.5
TOP PERFS/OH	9702	-562.44	3.34	9415.15
	9730	-590.00	1.50	9419.70
	13596	-4452.30	-5.90	9432.10
BOT PERFS/OH	13602	-4458.29	-5.73	9432.06
	13695	-4551.20	-3.10	9431.50

NEXT TO LAST	13695	-4551.20	-3.10	9431.50
LAST READING	13745	-4601.20	-1.50	9431.30
TD	13745	-4601.20	-1.50	9431.30

Surface Location	330	FN	585	FE
Projected BHL	4931	FN	587	FE
Location of				
Top Perfs/OH	892	FN	582	FE
Bottom Perfs/OH	4788	FN	591	FE

SUMMARY of Subsurface Locations

Surface Location	A-28-19S-32E	330	FN	585	FE	Vert. Depth
Top Perfs/OH	A-28-19S-32E	892	FN	582	FE	9415.15
Bottom Perfs/OH	P-28-19S-32E	4788	FN	591	FE	9432.06
Projected TD	P-28-19S-32E	4931	FN	587	FE	9431.30

MAR 31 2014



HOBBS OCD

FEB 13 2014

RECEIVED

Oper.: Occidental Permian Ltd.

Well: South Lusk 28 Federal 1H

API # 30-025-41089

Loc: 330' FNL & 585' FEL SEC 28 T19S, R32E

County/State: LEA, NM

Spud Date: 11/24/13

GL: 3586.10' KB = 24' (ORIGINAL KB = 3610.10')

16.0" 75# J-55 BTC CSG @ 958' W/ CMT CIRC TO SFC
(18.5" HOLE SIZE, 800 SX)
CIRCULATED 130 BBLs (422 SX) CMT TO SFC

11.75" 47# J-55 BTC CSG @ 2765' W/ CMT TO SFC
(14.75" HOLE SIZE, 1340 SX)
CIRCULATED 122 BBLs (364 SX) CMT TO SFC

8.625" 32# J-55 LTC CSG @ 4665' W/ CMT TO SFC
(10.625" HOLE SIZE, 960 SX)
CIRCULATED 82 BBLs (244 SX) CMT TO SFC

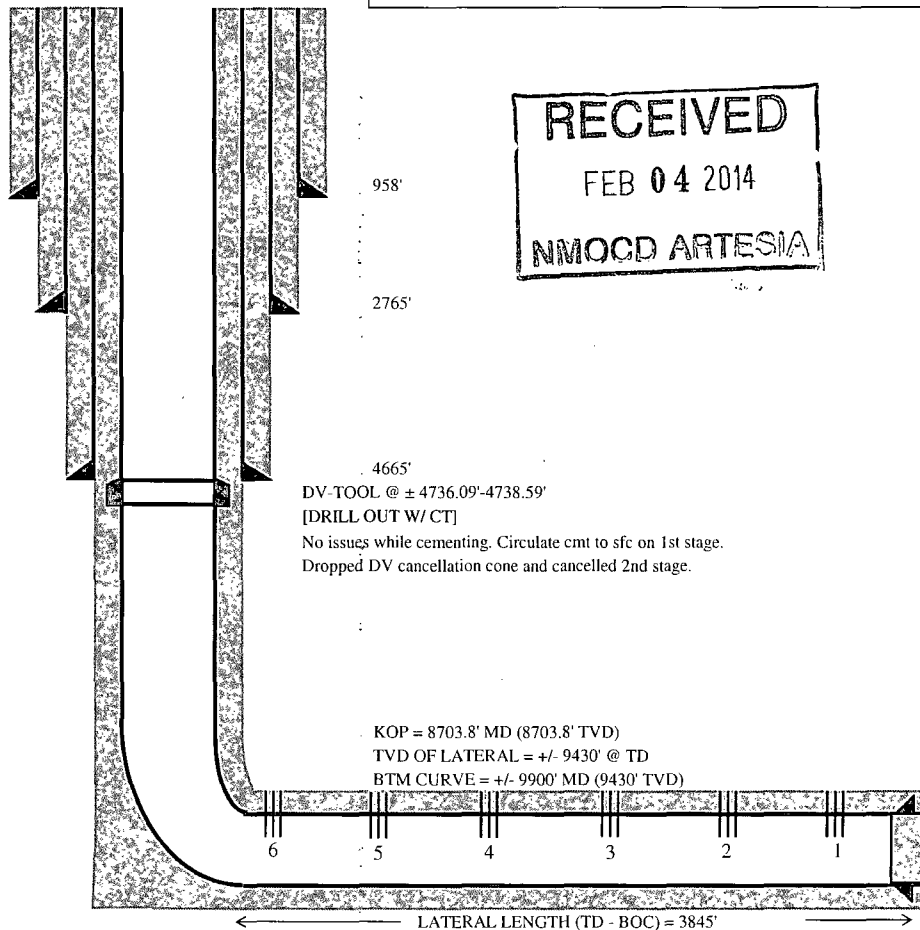
MARKER JOINT @ 8694.37' - 8709.03' MD (14.66')

5.5" 17# L-80 BTC CSG @ 13745' W/ CMT TO SFC
(7.875" HOLE SIZE, 1530 SX)
CIRCULATED 147 BBLs (280 SX) CMT TO SFC
No issues while cementing. Circulate cmt to sfc on 1st stage.
Dropped DV cancellation cone and cancelled 2nd stage.

ID = 4.892" - DID = 4.767" - BURST = 7740 PSI - COLLAPSE = 6190 PSI

Formation Tops

RUSTLER	887
SALADO	1072
TANSILL	2492
YATES	2632
CPTN	2970
7 RIVERS	3063
QUEEN	3505
CHERRY CANYON	4616
DELAWARE	4731
2BSPG Carb	7350
BSGL	7374
1BSPG SS	8553
2BSPG Carb	8700
2BSPG SS	9300



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FEB 04 2014

NMOCD ARTESIA

TD = 13745'

SHOE = 13745' / PBTD = 13664.62'

12/30/13 - 01/10/14

Perforations 13,093 13,602-13,600, 13,433-13,431, 13,264-13,262, 13,095-13,093, 12,926-12,924, 12,757-12,755, 12,588-12,586, 12,419-12,417, 12,250-12,248, 12,081-12,079, 11,912-11,910, 11,743-11,741, 11,574-11,572, 11,405-11,403, 11,236-11,234, 11,067-11,065, 10,898-10,896, 10,729-10,727, 10,560-10,558, 10,391-10,389, 10,222-10,220, 10,053-10,051, 9,884-9,882, 9,702-9,700 (Total 180 holes, 6 spf, 60 deg phase, 0.43" hole diameter)

Fluid - 106,485 gals 15# linear gel pad; 199,495 gals 15# crosslinked gel pad; 1,181,574 gals 13# crosslinked gel; 24,000 gals 15% HCl; 70152 gals treated water flush

Proppant - 27,981 lbs 100 mesh sand; 1,159,365 lbs 20/40 White sand; 1,170,612 lbs 20/40 Atlas CRC-LT Prop

HOBBS OCD

FEB 13 2014

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OCCIDENTAL PERMIAN LTD.

Lusk Bone Spring
Lea County, NM (Grid North)
South Lusk 28 Federal #1H
DH - Job #321113-MPH-1206

Survey: MWD - Tie-in @ 915 by MS

SDI Survey Report

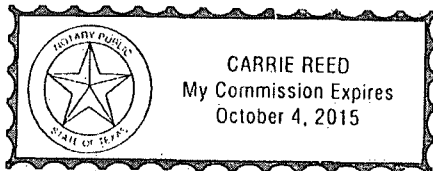
This survey is correct to the best of my knowledge and is supported by actual field data.

Richard A. ...

Notarized this date 29th of January, 2014.

Carrie Reed

Notary Signature
County of Midland
State of Texas



SDI
SDI Survey Report

Company:	OCCIDENTAL PERMIAN LTD.	Local Co-ordinate Reference:	Well South Lusk 28 Federal #1H
Project:	Lusk Bone Spring	TVD Reference:	Mean Sea Level (System)
Site:	Lea County, NM (Grid North)	MD Reference:	Mean Sea Level (System)
Well:	South Lusk 28 Federal #1H	North Reference:	Grid
Wellbore:	DH - Job #321113-MPH-1206	Survey Calculation Method:	Minimum Curvature
Design:	DH - Job #321113-MPH-1206	Database:	EDM-Regulatory

Project:	Lusk Bone Spring		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site:	Lea County, NM (Grid North)				
Site Position:		Northing:	590,853.87 usft	Latitude:	32° 37' 23.247 N
From:	Lat/Long	Easting:	671,588.95 usft	Longitude:	103° 46' 33.646 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.30 °

Well:	South Lusk 28 Federal #1H, Horizontal					
Well Position	+N/-S	0.0 usft	Northing:	596,142.24 usft	Latitude:	32° 38' 15.384 N
	+E/-W	0.0 usft	Easting:	675,257.07 usft	Longitude:	103° 45' 50.426 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	0.0 usft	

Wellbore:	DH - Job #321113-MPH-1206				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/26/2013	7.41	60.48	48,625

Design:	DH - Job #321113-MPH-1206				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.0	0.0	0.0	180.55	

Survey Program:	Date: 1/29/2014				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
993.0	13,745.0	MWD - Tie-in @ 915 by MS (DH - Job #32	MWD	MWD	

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)
915.0	1.89	231.40	914.9	-6.4	-7.9	230.93	10.1
993.0	1.85	233.42	992.9	-7.9	-9.9	231.22	12.7
1,055.0	1.85	227.62	1,054.8	-9.2	-11.4	231.13	14.7
1,147.0	2.02	230.09	1,146.8	-11.3	-13.8	230.74	17.8
1,241.0	1.14	237.46	1,240.7	-12.8	-15.8	230.99	20.4
1,335.0	0.79	251.52	1,334.7	-13.5	-17.2	231.86	21.9
1,430.0	0.79	254.34	1,429.7	-13.9	-18.5	233.03	23.1
1,524.0	0.79	240.01	1,523.7	-14.4	-19.7	233.77	24.4
1,619.0	0.62	232.80	1,618.7	-15.1	-20.6	233.91	25.5
1,713.0	0.35	221.38	1,712.7	-15.6	-21.2	233.75	26.3
1,807.0	0.20	296.00	1,806.7	-15.7	-21.6	233.93	26.7
1,902.0	0.09	116.00	1,901.7	-15.7	-21.7	234.10	26.7

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Project: Lusk Bone Spring		TVD Reference: Mean Sea Level (System)	
Site: Lea County, NM (Grid North)		MD Reference: Mean Sea Level (System)	
Well: South Lusk 28 Federal #1H		North Reference: Grid	
Wellbore: DH - Job #321113-MPH-1206		Survey Calculation Method: Minimum Curvature	
Design: DH - Job #321113-MPH-1206		Database: EDM-Regulatory	

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)	
1,996.0	0.35	52.98	1,995.7	-15.5	-21.4	233.97	26.4	
2,091.0	0.35	34.44	2,090.7	-15.1	-21.0	234.20	25.9	
2,185.0	0.53	77.68	2,184.7	-14.8	-20.4	234.03	25.2	
2,280.0	0.53	31.62	2,279.7	-14.3	-19.7	234.01	24.4	
2,374.0	0.70	56.32	2,373.7	-13.6	-19.0	234.36	23.4	
2,468.0	0.62	68.19	2,467.7	-13.1	-18.1	233.99	22.3	
2,563.0	0.18	68.10	2,562.7	-12.9	-17.5	233.56	21.7	
2,657.0	0.44	59.04	2,656.7	-12.6	-17.0	233.37	21.2	
2,700.0	0.43	75.95	2,699.7	-12.5	-16.7	233.16	20.9	
2,785.0	0.09	112.75	2,784.7	-12.5	-16.3	232.65	20.5	
2,848.0	0.18	31.89	2,847.7	-12.4	-16.2	232.63	20.4	
2,942.0	0.26	90.69	2,941.7	-12.3	-15.9	232.40	20.1	
3,036.0	0.18	155.81	3,035.7	-12.4	-15.7	231.61	20.0	
3,131.0	0.26	152.03	3,130.7	-12.7	-15.5	230.59	20.1	
3,225.0	0.35	129.44	3,224.7	-13.1	-15.2	229.19	20.1	
3,319.0	0.53	150.63	3,318.7	-13.7	-14.8	227.17	20.1	
3,413.0	0.53	157.66	3,412.7	-14.5	-14.4	224.84	20.4	
3,507.0	0.44	163.28	3,506.7	-15.2	-14.1	222.85	20.7	
3,602.0	0.62	132.43	3,601.7	-15.9	-13.6	220.59	20.9	
3,696.0	0.62	104.40	3,695.6	-16.4	-12.8	217.92	20.7	
3,790.0	0.62	108.61	3,789.6	-16.7	-11.8	215.26	20.4	
3,884.0	0.70	119.78	3,883.6	-17.1	-10.8	212.26	20.2	
3,979.0	0.53	127.69	3,978.6	-17.7	-9.9	209.39	20.3	
4,073.0	0.44	121.97	4,072.6	-18.1	-9.3	207.16	20.4	
4,167.0	0.26	138.06	4,166.6	-18.5	-8.8	205.60	20.5	
4,261.0	0.35	86.47	4,260.6	-18.6	-8.4	204.34	20.4	
4,356.0	0.35	125.31	4,355.6	-18.8	-7.9	202.82	20.4	
4,450.0	0.18	101.32	4,449.6	-19.0	-7.5	201.62	20.4	
4,545.0	0.44	118.99	4,544.6	-19.2	-7.0	200.19	20.4	
4,614.0	0.62	100.27	4,613.6	-19.4	-6.4	198.43	20.4	
4,731.0	0.26	106.51	4,730.6	-19.5	-5.6	195.91	20.3	
4,826.0	0.18	130.41	4,825.6	-19.7	-5.3	194.92	20.4	
4,920.0	0.26	200.99	4,919.6	-20.0	-5.2	194.62	20.7	
5,014.0	0.35	199.76	5,013.6	-20.5	-5.4	194.75	21.2	
5,109.0	0.79	235.53	5,108.6	-21.1	-6.0	195.93	22.0	
5,203.0	1.14	248.01	5,202.6	-21.8	-7.4	198.79	23.1	
5,297.0	1.32	263.57	5,296.6	-22.3	-9.4	202.79	24.2	
5,391.0	1.41	267.35	5,390.5	-22.5	-11.6	207.31	25.3	
5,486.0	1.49	266.20	5,485.5	-22.6	-14.0	211.77	26.6	
5,580.0	2.02	268.14	5,579.5	-22.7	-16.9	216.58	28.3	
5,674.0	1.58	314.02	5,673.4	-21.9	-19.5	221.64	29.3	
5,769.0	2.11	336.25	5,768.4	-19.4	-21.1	227.44	28.7	
5,863.0	1.14	337.22	5,862.3	-16.9	-22.2	232.62	27.9	
5,957.0	0.79	334.14	5,956.3	-15.5	-22.8	235.82	27.6	

SDI

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Project:	Lusk Bone Spring	TVD Reference:	Mean Sea Level (System)
Site:	Lea County, NM (Grid North)	MD Reference:	Mean Sea Level (System)
Well:	South Lusk 28 Federal #1H	North Reference:	Grid
Wellbore:	DH - Job #321113-MPH-1206	Survey Calculation Method:	Minimum Curvature
Design:	DH - Job #321113-MPH-1206	Database:	EDM-Regulatory

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)	
6,052.0	1.08	313.16	6,051.3	-14.3	-23.8	238.97	27.7	
6,146.0	1.14	297.93	6,145.3	-13.2	-25.2	242.29	28.5	
6,241.0	1.14	282.73	6,240.3	-12.6	-27.0	244.97	29.8	
6,335.0	1.23	280.09	6,334.3	-12.2	-28.9	247.08	31.4	
6,429.0	1.41	284.40	6,428.2	-11.8	-31.0	249.24	33.2	
6,524.0	1.14	285.71	6,523.2	-11.2	-33.0	251.27	34.9	
6,618.0	1.32	292.48	6,617.2	-10.5	-34.9	253.22	36.5	
6,712.0	1.32	292.57	6,711.2	-9.7	-36.9	255.28	38.2	
6,806.0	1.41	290.37	6,805.1	-8.9	-39.0	257.17	40.0	
6,900.0	1.49	282.37	6,899.1	-8.2	-41.3	258.74	42.1	
6,995.0	0.70	338.45	6,994.1	-7.4	-42.7	260.15	43.4	
7,089.0	0.97	5.43	7,088.1	-6.1	-42.9	261.91	43.3	
7,183.0	0.88	4.29	7,182.1	-4.6	-42.7	263.88	43.0	
7,277.0	1.14	25.65	7,276.1	-3.0	-42.3	265.91	42.4	
7,372.0	1.23	36.19	7,371.0	-1.3	-41.3	268.13	41.3	
7,466.0	1.49	38.48	7,465.0	0.4	-39.9	270.61	39.9	
7,561.0	1.32	31.10	7,560.0	2.3	-38.6	273.46	38.6	
7,655.0	1.58	24.50	7,653.9	4.4	-37.5	276.75	37.7	
7,749.0	1.76	17.91	7,747.9	7.0	-36.5	280.84	37.2	
7,844.0	1.67	20.64	7,842.9	9.7	-35.6	285.22	36.8	
7,938.0	1.76	20.11	7,936.8	12.3	-34.6	289.60	36.7	
8,032.0	1.23	355.85	8,030.8	14.7	-34.2	293.25	37.2	
8,126.0	0.88	11.67	8,124.8	16.4	-34.1	295.68	37.8	
8,221.0	1.41	2.53	8,219.8	18.3	-33.9	298.33	38.5	
8,315.0	1.85	357.61	8,313.7	20.9	-33.9	301.71	39.8	
8,409.0	0.70	32.41	8,407.7	22.9	-33.7	304.28	40.7	
8,503.0	0.44	164.07	8,501.7	23.1	-33.2	304.77	40.5	
8,598.0	1.14	215.31	8,596.7	22.0	-33.7	303.09	40.2	
8,644.0	1.23	218.13	8,642.7	21.2	-34.3	301.74	40.3	
8,673.0	1.06	224.37	8,671.7	20.8	-34.6	300.93	40.4	
8,704.0	1.67	229.29	8,702.7	20.3	-35.2	299.93	40.6	
8,735.0	3.61	199.41	8,733.6	19.0	-35.8	297.98	40.6	
8,767.0	6.16	179.19	8,765.5	16.4	-36.2	294.36	39.7	
8,798.0	8.62	171.28	8,796.2	12.4	-35.8	289.13	37.9	
8,830.0	9.85	170.23	8,827.8	7.3	-35.0	281.87	35.7	
8,861.0	13.19	165.57	8,858.2	1.3	-33.6	272.23	33.6	
8,892.0	15.39	164.78	8,888.2	-6.1	-31.7	259.11	32.2	
8,924.0	17.32	162.49	8,918.9	-14.7	-29.1	243.16	32.6	
8,955.0	19.96	165.48	8,948.3	-24.3	-26.4	227.42	35.8	
8,987.0	21.98	166.80	8,978.2	-35.4	-23.7	213.78	42.6	
9,018.0	25.76	169.87	9,006.5	-47.7	-21.2	203.93	52.1	
9,049.0	28.67	171.54	9,034.1	-61.6	-18.9	197.02	64.5	
9,081.0	30.95	171.72	9,061.9	-77.4	-16.6	192.08	79.1	
9,112.0	33.41	173.13	9,088.1	-93.7	-14.4	188.73	94.8	

SDI

SDI Survey Report

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Site:	Lea County NM (Grid North)	MD Reference:	Mean Sea Level (System)
Well:	South Lusk 28 Federal #1H	North Reference:	Grid
Wellbore:	DH - Job #321113-MPH-1206	Survey Calculation Method:	Minimum Curvature
Design:	DH - Job #321113-MPH-1206	Database:	EDM-Regulatory

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)	
9,144.0	35.09	175.32	9,114.6	-111.7	-12.6	186.43	112.4	
9,175.0	37.02	175.15	9,139.6	-129.8	-11.1	184.87	130.3	
9,207.0	39.66	175.32	9,164.7	-149.6	-9.4	183.60	149.9	
9,238.0	40.63	175.41	9,188.4	-169.5	-7.8	182.64	169.7	
9,270.0	42.47	176.38	9,212.4	-190.7	-6.3	181.89	190.8	
9,300.0	43.70	178.84	9,234.3	-211.2	-5.4	181.48	211.3	
9,332.0	47.22	178.84	9,256.7	-234.0	-5.0	181.22	234.0	
9,363.0	52.41	176.82	9,276.7	-257.6	-4.1	180.90	257.7	
9,395.0	54.61	176.38	9,295.7	-283.3	-2.5	180.51	283.3	
9,426.0	54.34	176.55	9,313.8	-308.5	-1.0	180.18	308.5	
9,457.0	57.51	177.35	9,331.1	-334.1	0.4	179.93	334.1	
9,489.0	61.64	177.35	9,347.3	-361.7	1.7	179.74	361.7	
9,520.0	64.98	177.08	9,361.2	-389.4	3.0	179.56	389.4	
9,552.0	67.36	177.43	9,374.2	-418.6	4.4	179.40	418.6	
9,583.0	70.17	178.14	9,385.4	-447.5	5.5	179.29	447.5	
9,614.0	73.07	179.89	9,395.2	-476.9	6.0	179.28	476.9	
9,667.0	77.82	182.09	9,408.5	-528.2	5.1	179.44	528.2	
9,698.0	79.84	183.59	9,414.5	-558.5	3.6	179.63	558.5	
9,730.0	81.60	184.20	9,419.7	-590.0	1.5	179.86	590.0	
9,761.0	84.50	184.20	9,423.4	-620.7	-0.8	180.07	620.7	
9,792.0	86.44	184.90	9,425.9	-651.5	-3.2	180.28	651.5	
9,824.0	86.79	185.34	9,427.7	-683.3	-6.1	180.51	683.4	
9,855.0	86.97	185.43	9,429.4	-714.2	-9.0	180.72	714.2	
9,886.0	89.08	185.17	9,430.5	-745.0	-11.9	180.91	745.1	
9,918.0	91.98	184.55	9,430.2	-776.9	-14.6	181.07	777.0	
10,012.0	91.89	184.02	9,427.0	-870.6	-21.6	181.42	870.8	
10,106.0	93.47	184.11	9,422.6	-964.2	-28.2	181.68	964.6	
10,200.0	94.97	184.29	9,415.7	-1,057.7	-35.1	181.90	1,058.3	
10,294.0	93.42	182.92	9,408.8	-1,151.3	-41.0	182.04	1,152.0	
10,388.0	90.48	181.56	9,405.6	-1,245.1	-44.7	182.05	1,245.9	
10,483.0	90.13	180.07	9,405.1	-1,340.1	-46.0	181.97	1,340.9	
10,577.0	90.40	178.84	9,404.7	-1,434.1	-45.1	181.80	1,434.8	
10,671.0	88.90	177.96	9,405.3	-1,528.1	-42.5	181.59	1,528.7	
10,765.0	88.02	178.93	9,407.8	-1,622.0	-40.0	181.41	1,622.5	
10,860.0	88.37	178.84	9,410.8	-1,716.9	-38.1	181.27	1,717.4	
10,954.0	88.29	178.49	9,413.5	-1,810.9	-35.9	181.14	1,811.2	
11,049.0	88.72	178.42	9,416.0	-1,905.8	-33.4	181.00	1,906.1	
11,143.0	88.90	178.40	9,418.0	-1,999.7	-30.7	180.88	2,000.0	
11,237.0	89.43	178.84	9,419.3	-2,093.7	-28.5	180.78	2,093.9	
11,332.0	90.13	179.54	9,419.7	-2,188.7	-27.1	180.71	2,188.9	
11,426.0	90.75	179.37	9,419.0	-2,282.7	-26.2	180.66	2,282.8	
11,520.0	89.16	179.63	9,419.1	-2,376.7	-25.4	180.61	2,376.8	
11,615.0	90.04	179.89	9,419.7	-2,471.7	-25.0	180.58	2,471.8	
11,709.0	91.80	179.37	9,418.2	-2,565.7	-24.4	180.55	2,565.8	
11,804.0	90.13	179.81	9,416.6	-2,660.6	-23.7	180.51	2,660.7	

SDI

SDI Survey Report

Company:	OCCIDENTAL PERMIAN LTD.	Local Co-ordinate Reference:	Well South Lusk 28 Federal #1H
Project:	Lusk Bone Spring	TVD Reference:	Mean Sea Level (System)
Site:	Lea County, NM (Grid North)	MD Reference:	Mean Sea Level (System)
Well:	South Lusk 28 Federal #1H	North Reference:	Grid
Wellbore:	DH - Job #321113-MPH-1206	Survey Calculation Method:	Minimum Curvature
Design:	DH - Job #321113-MPH-1206	Database:	EDM-Regulatory

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)	
11,899.0	88.99	179.98	9,417.3	-2,755.6	-23.6	180.49	2,755.7	
11,993.0	89.16	180.07	9,418.9	-2,849.6	-23.6	180.47	2,849.7	
12,087.0	88.81	179.28	9,420.5	-2,943.6	-23.1	180.45	2,943.7	
12,181.0	89.43	179.10	9,422.0	-3,037.6	-21.7	180.41	3,037.7	
12,276.0	88.99	178.84	9,423.3	-3,132.6	-20.0	180.37	3,132.6	
12,370.0	89.34	178.49	9,424.6	-3,226.5	-17.8	180.32	3,226.6	
12,464.0	89.16	178.31	9,425.9	-3,320.5	-15.2	180.26	3,320.5	
12,559.0	88.99	179.63	9,427.4	-3,415.4	-13.5	180.23	3,415.5	
12,653.0	88.90	180.33	9,429.1	-3,509.4	-13.5	180.22	3,509.5	
12,747.0	89.87	180.69	9,430.1	-3,603.4	-14.3	180.23	3,603.5	
12,842.0	89.60	180.42	9,430.6	-3,698.4	-15.2	180.24	3,698.4	
12,936.0	89.16	180.25	9,431.6	-3,792.4	-15.8	180.24	3,792.4	
13,031.0	89.08	179.63	9,433.1	-3,887.4	-15.7	180.23	3,887.4	
13,125.0	89.52	179.54	9,434.2	-3,981.4	-15.0	180.22	3,981.4	
13,220.0	89.60	179.02	9,434.9	-4,076.4	-13.8	180.19	4,076.4	
13,314.0	90.57	179.02	9,434.8	-4,170.4	-12.2	180.17	4,170.4	
13,408.0	90.48	178.75	9,433.9	-4,264.3	-10.4	180.14	4,264.4	
13,502.0	90.66	178.66	9,433.0	-4,358.3	-8.3	180.11	4,358.3	
13,596.0	90.40	178.49	9,432.1	-4,452.3	-5.9	180.08	4,452.3	
13,695.0	90.31	178.22	9,431.5	-4,551.2	-3.1	180.04	4,551.2	
Last MWD Survey								
13,745.0	90.10	178.22	9,431.3	-4,601.2	-1.5	180.02	4,601.2	
Projection to Bit								

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
13,695.0	9,431.5	-4,551.2	-3.1	Last MWD Survey
13,745.0	9,431.3	-4,601.2	-1.5	Projection to Bit



Azimuths to Grid North
True North: -0.31°
Magnetic North: 7.10°

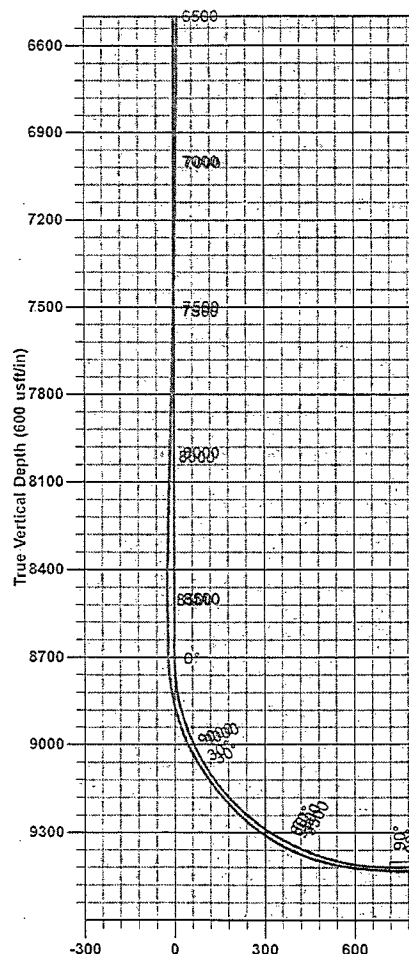
Magnetic Field
Strength: 48599.5nT
Dip Angle: 60.48°
Date: 11/20/2013
Model: IGRF2010

To convert a Magnetic Direction to a Grid Direction, Add 7.10°
To convert a True Direction to a Grid Direction, Subtract 0.31°



KB @ 3610.10'
Gr @ 3586.10'

South Lusk 28 Fed 1H
Lea County, New Mexico
Northing: 596142.20
Easting: 675257.10
Design #1



WELL DETAILS South Lusk 28 Fed 1H						
			Ground Level:	3586.10		
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	596142.20	675257.10	32.638	-103.764	

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8703.80	0.00	0.00	8703.80	0.00	0.00	0.00	0.00	0.00	
9828.80	90.00	180.55	9420.00	-716.16	-6.88	8.00	180.55	716.20	
13733.62	90.00	180.55	9420.00	-4620.80	-44.40	0.00	0.00	4621.01	SL28F 1H BHL

DESIGN TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	
SL28F 1H BHL	9420.00	-4620.80	-44.40	591521.40	675212.70	

SITE DETAILS:
South Lusk 28 Fed 1H
Site Centre Northing: 596142.20
Easting: 675257.10
Positional Uncertainty: 0.00
Convergence: 0.31
Local North: Grid

PROJECT DETAILS:
Lea County, New Mexico
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

Jody Barclay
8:59, December 17 2013

Scientific Drilling
2740 N. Highway 287
Decatur, TX 76234

Lateral TGT Line
20'up/20'down

