

15-41031

OCCIDENTAL PERMIAN LTD.

Livingston Ridge, Delaware

Eddy County, NM

Neff "25" Federal #5H

DH - Job #320813-MPH-800

Survey: MWD - Tie-In @ 868' by ExtremeMWD

SDI Survey Report

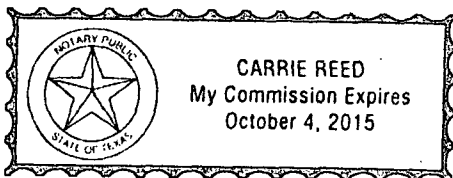
This survey is correct to the best of my knowledge and is supported by actual field data.



Notarized this date 1st of October, 2013.



Notary Signature
County of Midland
State of Texas



SDI
SDI Survey Report

Company:	OCCIDENTAL PERMIAN LTD.	Local Co-ordinate Reference:	Well Neff "25" Federal #5H
Project:	Livingston Ridge, Delaware	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Neff "25" Federal #5H	North Reference:	Grid
Wellbore:	DH - Job #320813-MPH-800	Survey Calculation Method:	Minimum Curvature
Design:	DH - Job #320813-MPH-800	Database:	EDM-Regulatory

Project	Livingston Ridge, Delaware		
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:	Eddy County, NM				
Site Position:		Northing:	498,074.40 usft	Latitude:	32° 22' 4.800 N
From:	Lat/Long	Easting:	678,253.09 usft	Longitude:	103° 45' 21.600 W
Position Uncertainty:	0.0 usft	Slot Radius:	0"	Grid Convergence:	0.31 °

Well	Neff "25" Federal #5H, Directional					
Well Position	+N/-S	0.0 usft	Northing:	498,074.90 usft	Latitude:	32° 22' 4.408 N
	+E/-W	0.0 usft	Easting:	685,540.32 usft	Longitude:	103° 43' 56.636 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft	Ground Level:	0.0 usft	

Wellbore	DH - Job #320813-MPH-800				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/6/2013	7.41	60.24	48,497

Design	DH - Job #320813-MPH-800			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	180.21

Survey Program	Date 10/7/2013				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
944.0	12,297.0	MWD - Tie-In @ 868' by ExtremeMWD (D	MWD	MWD	

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)	
868.0	0.48	227.88	868.0	-2.4	-2.7	227.90	3.6	
944.0	0.70	210.39	944.0	-3.1	-3.2	226.08	4.4	
1,038.0	0.79	212.58	1,038.0	-4.1	-3.8	222.94	5.6	
1,132.0	0.79	214.69	1,132.0	-5.2	-4.5	221.19	6.9	
1,227.0	0.88	217.29	1,227.0	-6.3	-5.3	220.33	8.3	
1,321.0	0.79	216.28	1,320.9	-7.4	-6.2	219.83	9.6	
1,415.0	0.79	218.91	1,414.9	-8.4	-7.0	219.57	10.9	
1,510.0	0.79	214.52	1,509.9	-9.5	-7.7	219.26	12.2	
1,604.0	0.88	215.79	1,603.9	-10.6	-8.5	218.85	13.6	
1,699.0	0.88	216.98	1,698.9	-11.8	-9.4	218.61	15.0	
1,793.0	0.79	216.98	1,792.9	-12.9	-10.2	218.48	16.4	
1,887.0	0.88	221.99	1,886.9	-13.9	-11.1	218.56	17.8	

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Wellbore:	DH - Job #320813-MPH-800	Survey Calculation Method:	Minimum Curvature
Design:	DH - Job #320813-MPH-800	Database:	EDM-Regulatory

Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)
1,982.0	1.01	221.99	1,981.9	-15.1	-12.1	218.84	19.4
2,076.0	0.88	223.39	2,075.9	-16.2	-13.2	219.12	20.9
2,170.0	1.10	223.39	2,169.9	-17.4	-14.3	219.43	22.5
2,265.0	1.10	224.71	2,264.8	-18.7	-15.6	219.78	24.3
2,359.0	1.19	226.60	2,358.8	-20.0	-16.9	220.20	26.2
2,454.0	1.32	228.01	2,453.8	-21.4	-18.4	220.72	28.3
2,548.0	0.62	161.30	2,547.8	-22.6	-19.1	220.14	29.6
2,643.0	0.70	141.31	2,642.8	-23.6	-18.6	218.21	30.0
2,737.0	0.70	142.01	2,736.8	-24.5	-17.8	216.10	30.3
2,832.0	0.70	127.11	2,831.8	-25.3	-17.0	213.96	30.5
2,926.0	0.79	127.11	2,925.8	-26.0	-16.1	211.67	30.6
3,020.0	0.79	122.50	3,019.7	-26.8	-15.0	209.26	30.7
3,210.0	0.79	80.18	3,209.7	-27.2	-12.6	204.81	30.0
3,304.0	0.70	107.77	3,303.7	-27.3	-11.4	202.68	29.6
3,399.0	0.79	109.58	3,398.7	-27.7	-10.2	200.29	29.5
3,493.0	1.01	113.09	3,492.7	-28.2	-8.9	197.43	29.6
3,587.0	1.71	112.61	3,586.7	-29.1	-6.8	193.17	29.9
3,682.0	2.42	115.11	3,681.6	-30.5	-3.7	186.89	30.7
3,776.0	1.89	104.61	3,775.5	-31.7	-0.4	180.70	31.7
3,871.0	0.09	318.58	3,870.5	-32.1	1.1	178.07	32.1
3,965.0	0.09	298.01	3,964.5	-32.0	1.0	178.27	32.0
4,059.0	0.31	94.68	4,058.5	-32.0	1.2	177.93	32.0
4,153.0	0.62	104.79	4,152.5	-32.1	1.9	176.62	32.2
4,247.0	0.79	111.51	4,246.5	-32.5	3.0	174.73	32.6
4,342.0	0.79	105.01	4,341.5	-32.9	4.2	172.66	33.2
4,436.0	0.88	119.82	4,435.5	-33.4	5.5	170.67	33.9
4,497.0	0.88	118.28	4,496.5	-33.9	6.3	169.45	34.5
4,613.0	0.62	92.72	4,612.5	-34.3	7.7	167.33	35.2
4,707.0	0.79	81.38	4,706.5	-34.3	8.9	165.49	35.4
4,801.0	0.97	89.73	4,800.5	-34.2	10.3	163.21	35.7
4,895.0	0.79	90.87	4,894.5	-34.2	11.7	161.02	36.1
4,989.0	0.79	95.35	4,988.4	-34.2	13.0	159.15	36.6
5,084.0	0.53	62.66	5,083.4	-34.1	14.1	157.56	36.9
5,178.0	0.88	82.08	5,177.4	-33.8	15.2	155.80	37.0
5,273.0	0.79	76.02	5,272.4	-33.5	16.5	153.74	37.4
5,367.0	0.79	78.65	5,366.4	-33.2	17.8	151.83	37.7
5,462.0	0.62	65.12	5,461.4	-32.9	18.9	150.11	38.0
5,556.0	0.62	66.57	5,555.4	-32.5	19.8	148.59	38.1
5,651.0	0.53	62.66	5,650.4	-32.1	20.7	147.16	38.2
5,746.0	0.88	64.33	5,745.4	-31.6	21.8	145.43	38.3
5,840.0	0.62	67.23	5,839.4	-31.1	22.9	143.63	38.6
5,934.0	0.97	77.60	5,933.4	-30.7	24.1	141.84	39.0
6,029.0	0.97	69.42	6,028.4	-30.2	25.7	139.68	39.7
6,123.0	0.79	80.76	6,122.3	-29.8	27.0	137.83	40.3

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6,217.0	0.70	81.03	6,216.3	-29.7	28.2	136.39	41.0	
6,312.0	0.70	316.57	6,311.3	-29.1	28.4	135.72	40.7	
6,406.0	1.32	308.75	6,405.3	-28.0	27.2	135.90	39.1	
6,500.0	1.32	312.71	6,499.3	-26.6	25.5	136.20	36.9	
6,594.0	1.14	323.69	6,593.3	-25.1	24.2	136.11	34.9	
6,689.0	1.32	323.08	6,688.2	-23.5	23.0	135.66	32.9	
6,783.0	1.32	311.12	6,782.2	-21.9	21.5	135.56	30.7	
6,878.0	1.32	302.33	6,877.2	-20.6	19.8	136.23	28.6	
6,972.0	1.41	300.23	6,971.2	-19.5	17.8	137.49	26.4	
7,066.0	1.14	286.43	7,065.1	-18.6	16.0	139.42	24.5	
7,160.0	1.41	298.03	7,159.1	-17.8	14.0	141.77	22.7	
7,255.0	1.32	296.36	7,254.1	-16.8	12.0	144.38	20.6	
7,349.0	1.49	292.93	7,348.1	-15.8	9.9	147.90	18.7	
7,443.0	1.67	284.84	7,442.0	-15.0	7.5	153.50	16.8	
7,554.0	1.41	287.01	7,553.0	-14.2	4.6	162.00	14.9	
7,592.0	1.49	282.91	7,591.0	-13.9	3.7	165.21	14.4	
7,624.0	1.41	232.46	7,623.0	-14.1	3.0	168.13	14.4	
7,655.0	3.17	199.94	7,653.9	-15.1	2.4	171.11	15.3	
7,687.0	6.33	189.66	7,685.8	-17.7	1.8	174.29	17.8	
7,718.0	9.48	185.71	7,716.5	-21.9	1.2	176.80	22.0	
7,749.0	13.19	188.52	7,746.9	-28.0	0.4	179.08	28.0	
7,780.0	16.00	188.52	7,776.9	-35.7	-0.7	181.14	35.7	
7,812.0	18.91	188.60	7,807.4	-45.2	-2.1	182.71	45.2	
7,843.0	21.72	188.96	7,836.5	-55.8	-3.8	183.88	55.9	
7,875.0	24.45	187.64	7,865.9	-68.2	-5.6	184.68	68.4	
7,906.0	27.00	184.47	7,893.9	-81.6	-7.0	184.89	81.9	
7,937.0	29.55	181.84	7,921.2	-96.3	-7.8	184.62	96.6	
7,969.0	32.54	180.96	7,948.6	-112.8	-8.2	184.15	113.0	
8,000.0	35.17	179.99	7,974.3	-130.0	-8.3	183.66	130.3	
8,032.0	37.72	179.55	8,000.1	-149.0	-8.2	183.16	149.3	
8,063.0	40.01	179.46	8,024.2	-168.5	-8.1	182.74	168.7	
8,095.0	42.47	179.29	8,048.3	-189.6	-7.8	182.37	189.7	
8,126.0	44.97	179.05	8,070.7	-211.0	-7.5	182.04	211.1	
8,157.0	46.34	179.64	8,092.3	-233.2	-7.3	181.79	233.3	
8,189.0	47.57	179.02	8,114.2	-256.5	-7.0	181.56	256.6	
8,220.0	49.51	179.11	8,134.7	-279.8	-6.6	181.36	279.8	
8,252.0	51.79	179.64	8,155.0	-304.5	-6.4	181.20	304.6	
8,283.0	54.52	179.99	8,173.6	-329.3	-6.3	181.09	329.4	
8,315.0	56.63	179.55	8,191.7	-355.7	-6.2	180.99	355.8	
8,346.0	59.27	179.73	8,208.1	-382.0	-6.0	180.90	382.0	
8,377.0	61.38	179.64	8,223.5	-408.9	-5.9	180.82	409.0	
8,409.0	63.05	179.90	8,238.4	-437.2	-5.7	180.75	437.3	
8,440.0	64.72	179.90	8,252.0	-465.1	-5.7	180.70	465.1	
8,472.0	67.09	179.20	8,265.1	-494.3	-5.5	180.63	494.3	

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Wellbore:	DH - Job #320813-MPH-800	Survey Calculation Method:	Minimum Curvature
Design:	DH - Job #320813-MPH-800	Database:	EDM-Regulatory

Survey								
MD (usft)	Inc. (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)	
8,503.0	68.85	179.38	8,276.7	-523.0	-5.1	180.56	523.0	
8,535.0	70.43	179.46	8,287.9	-553.0	-4.8	180.50	553.0	
8,566.0	72.15	179.47	8,297.8	-582.4	-4.5	180.45	582.4	
8,597.0	76.23	179.31	8,306.2	-612.2	-4.2	180.39	612.2	
8,629.0	79.23	179.73	8,313.0	-643.4	-4.0	180.35	643.5	
8,660.0	82.04	179.64	8,318.1	-674.0	-3.8	180.32	674.0	
8,692.0	84.06	179.73	8,322.0	-705.8	-3.6	180.29	705.8	
8,731.0	85.82	179.64	8,325.4	-744.6	-3.4	180.26	744.6	
8,762.0	86.70	179.73	8,327.4	-775.6	-3.2	180.24	775.6	
8,793.0	87.41	179.99	8,329.0	-806.5	-3.1	180.22	806.5	
8,825.0	88.72	179.90	8,330.1	-838.5	-3.1	180.21	838.5	
8,856.0	90.31	180.17	8,330.4	-869.5	-3.1	180.21	869.5	
8,888.0	90.57	180.25	8,330.1	-901.5	-3.3	180.21	901.5	
8,982.0	89.78	180.25	8,329.8	-995.5	-3.7	180.21	995.5	
9,076.0	90.66	179.99	8,329.5	-1,089.5	-3.9	180.20	1,089.5	
9,171.0	90.07	179.72	8,328.9	-1,184.5	-3.6	180.18	1,184.5	
9,265.0	88.90	179.20	8,329.7	-1,278.5	-2.7	180.12	1,278.5	
9,359.0	89.60	179.20	8,330.9	-1,372.5	-1.4	180.06	1,372.5	
9,453.0	87.93	178.15	8,333.0	-1,466.4	0.8	179.97	1,466.4	
9,548.0	87.85	180.17	8,336.5	-1,561.3	2.1	179.92	1,561.3	
9,642.0	88.81	181.31	8,339.2	-1,655.3	0.9	179.97	1,655.3	
9,736.0	89.34	182.36	8,340.7	-1,749.2	-2.1	180.07	1,749.2	
9,830.0	90.31	183.77	8,341.0	-1,843.1	-7.1	180.22	1,843.1	
9,924.0	89.52	184.21	8,341.1	-1,936.9	-13.6	180.40	1,936.9	
10,018.0	90.13	184.03	8,341.4	-2,030.6	-20.4	180.58	2,030.7	
10,112.0	91.98	185.26	8,339.7	-2,124.3	-28.0	180.76	2,124.5	
10,207.0	89.34	182.28	8,338.6	-2,219.1	-34.3	180.88	2,219.3	
10,301.0	87.76	181.22	8,341.0	-2,313.0	-37.1	180.92	2,313.3	
10,395.0	89.78	181.75	8,343.0	-2,406.9	-39.6	180.94	2,407.2	
10,490.0	88.55	180.25	8,344.4	-2,501.9	-41.2	180.94	2,502.2	
10,584.0	88.64	179.11	8,346.7	-2,595.9	-40.7	180.90	2,596.2	
10,678.0	89.78	179.29	8,348.0	-2,689.8	-39.4	180.84	2,690.1	
10,773.0	89.34	179.38	8,348.7	-2,784.8	-38.3	180.79	2,785.1	
10,867.0	89.96	177.71	8,349.3	-2,878.8	-35.9	180.71	2,879.0	
10,961.0	91.10	177.18	8,348.4	-2,972.7	-31.7	180.61	2,972.9	
11,056.0	92.24	176.83	8,345.6	-3,067.5	-26.7	180.50	3,067.6	
11,150.0	91.80	176.21	8,342.3	-3,161.3	-21.0	180.38	3,161.4	
11,244.0	92.77	177.09	8,338.6	-3,255.1	-15.5	180.27	3,255.1	
11,338.0	91.01	177.53	8,335.5	-3,348.9	-11.1	180.19	3,348.9	
11,433.0	88.46	177.53	8,335.9	-3,443.8	-7.0	180.12	3,443.8	
11,527.0	90.40	179.11	8,336.9	-3,537.7	-4.3	180.07	3,537.7	
11,621.0	90.13	179.02	8,336.4	-3,631.7	-2.8	180.04	3,631.7	
11,716.0	89.69	179.73	8,336.6	-3,726.7	-1.7	180.03	3,726.7	
11,810.0	90.31	179.64	8,336.6	-3,820.7	-1.2	180.02	3,820.7	

SDI
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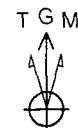
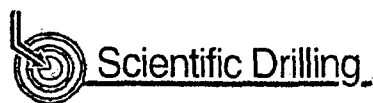
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11,904.0	90.04	179.02	8,336.3	-3,914.7	-0.1	180.00	3,914.7	
Last MWD Survey								
12,297.0	90.04	179.02	8,336.0	-4,307.7	6.6	179.91	4,307.7	
Projection to Bit								

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
11,904.0	8,336.3	-3,914.7	-0.1	Last MWD Survey	
12,297.0	8,336.0	-4,307.7	6.6	Projection to Bit	



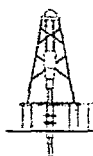
N25F 5H
Eddy County, New Mexico
Northing: 498074.90
Easting: 685540.30
Design #2



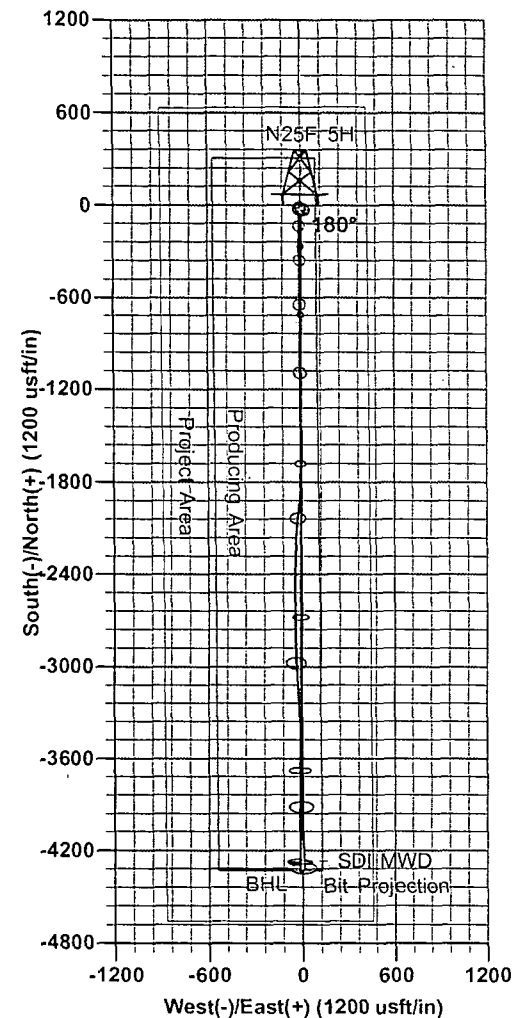
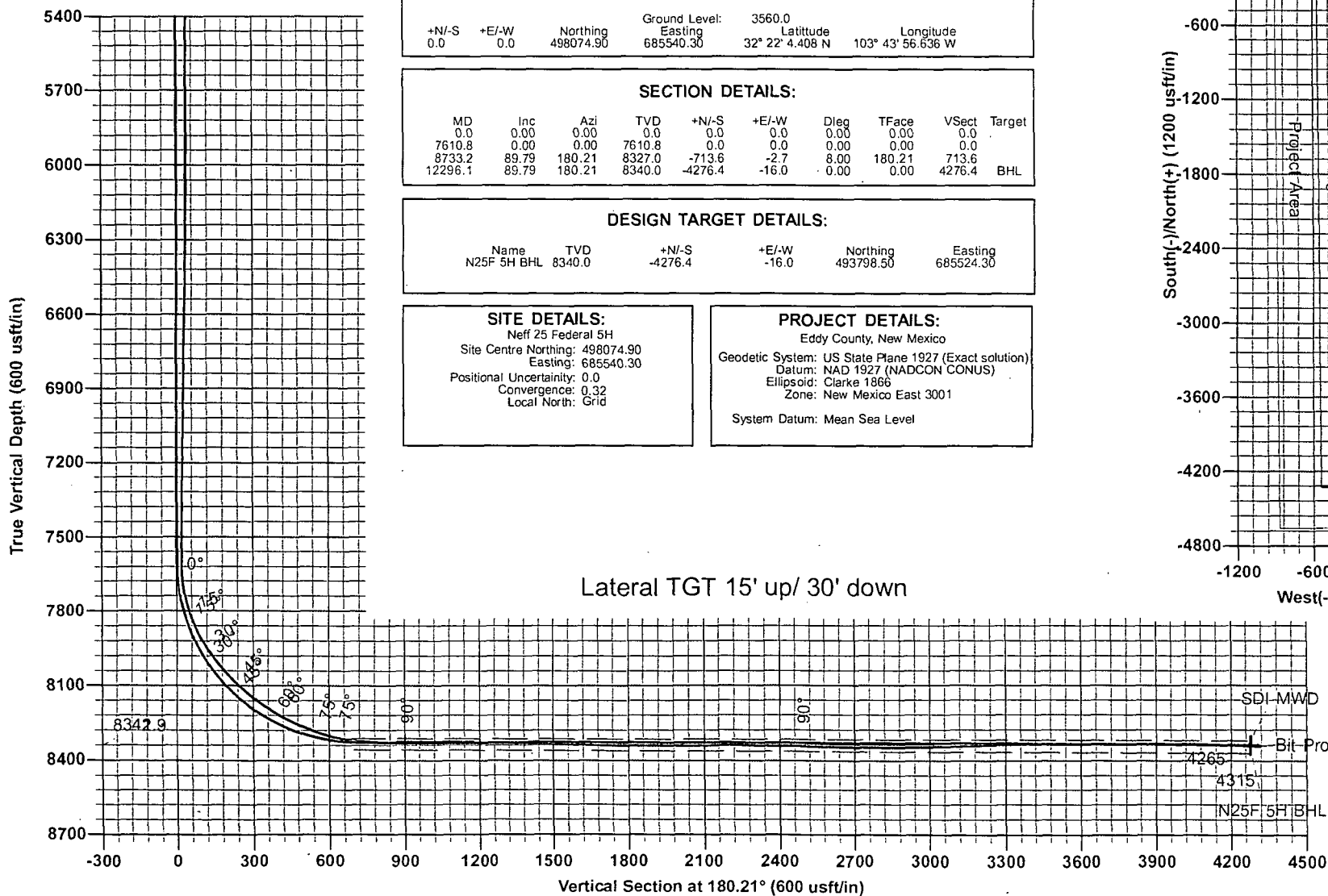
To convert a Magnetic Direction to a Grid Direction, Add 7.09°
To convert a True Direction to a Grid Direction, Subtract 0.32°

Azimuths to Grid North
True North: -0.32°
Magnetic North: 7.09°

Magnetic Field
Strength: 48471.5snT
Dip Angle: 60.24°
Date: 8/1/2013
Model: IGRF2010



KB @ 3584.0usft (H&P 474)
Gr: 3560.0



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

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

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Form C-402
Revised October 12, 2005
Submit to Appropriate District Office
State Lease- 4 Copies
Fee Lease- 3 Copies

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-41031	Pool Code 39360	Pool Name Livingston Ridge Delaware
Property Code 39674	Property Name NEFF "25" FEDERAL	Well Number 5H
OCRID No. 16694	Operator Name OXY USA INC.	Elevation 3560.0'

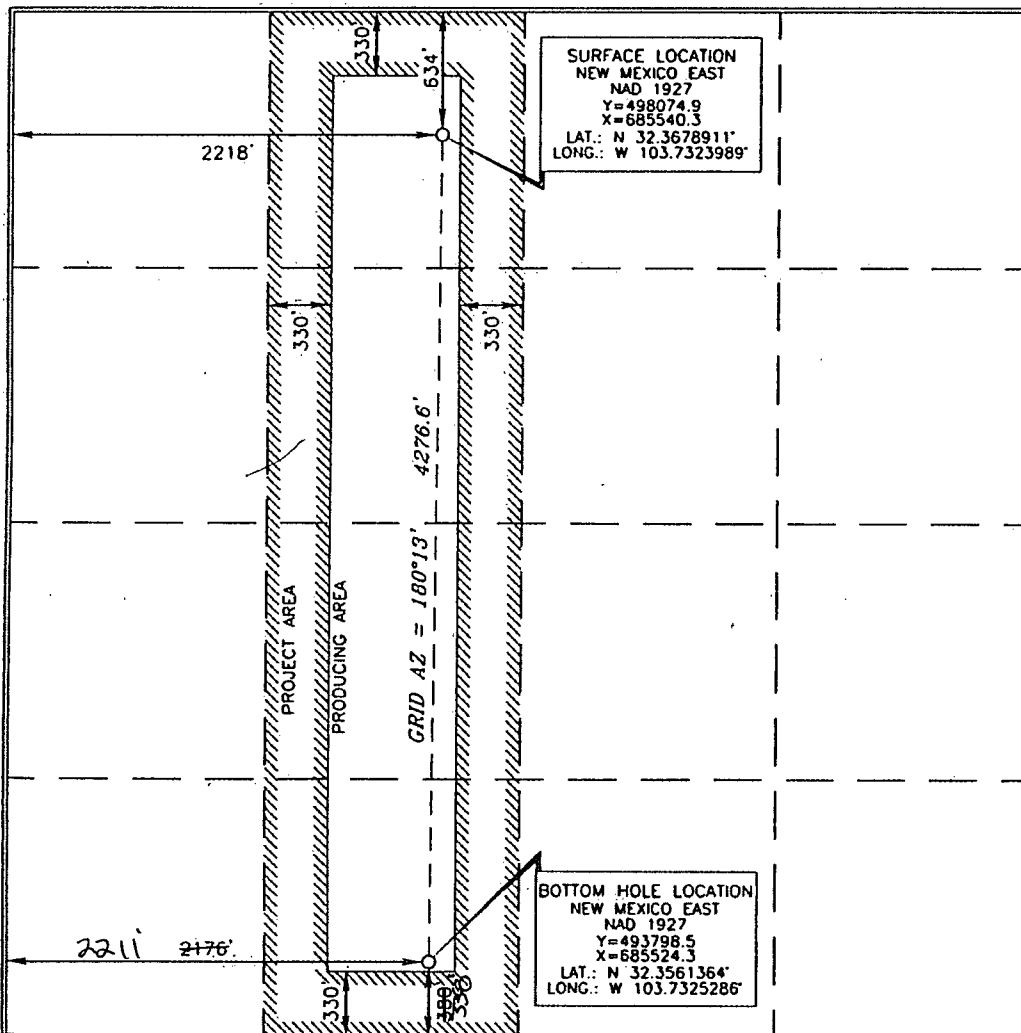
Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	25	22 SOUTH	31 EAST, N.M.P.M.		634'	NORTH	2218'	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	25	22 SOUTH	31 EAST, N.M.P.M.		380' 338'	SOUTH	2176' 2011'	WEST	EDDY
Dedicated Acres 160		Joint or Infill N	Consolidation Code	Order No.					

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature: *David Stewart Sr.* Date: 2/13/14
Printed Name: David Stewart Sr. Res. Asst.

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual survey made by me or under my supervision, and that the same is true and correct to the best of my belief.

Surveyor: *Terry A. Paul* Date of Survey: AUGUST 3, 2011
Signature and Seal of Professional Land Surveyor
Certificate Number: 15079

OXY USA Inc.
Neff 25 Federal #5H
API No. 30-015-41031

17-1/2" hole @ 895'
13-3/8" csg @ 873'
w/ 650sx-TOC-Surf-Circ

12-1/4" hole @ 4550'
9-5/8" csg @ 4536'
w/ 1550sx-TOC-Surf-Circ

Sqz 30bbl HES Well-Lock @ 4658-4693'

8-3/4" hole @ 12300'
5-1/2" csg @ 12297'
w/ 1770sx-TOC-Surf-Circ
DVT @ 4644'

2-7/8" tbg w/ ESP @ 7554'

Sliding Sleeves @ 8623,8892,9167,9442,9707,9970,10227,10550,10770,11038,11252,11463,11685,11909,12158'
Perfs @ 8630,8970,9320,9680,10404,10400'

TD - 12300'M 8342'V