OCCIDENTAL PERMIAN LTD.

Culebra Bluff Bone Spring
Eddy County, NM (Grid North)
Villa A Fee Com #2H
DH - Job #321014-MPH-1209

30-015-42284

Survey: MWD

Regulatory Report (Grid North)

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

Kurt Hartz

Notarized this date 23rd of December, 2014.

Carrie Reed

Notary Signature
County of Midland
State of Texas

NOTARY PUBLIC STATE OF TEXAS
CARRIE REED
My Commission Expires
October 4, 2015

Regulatory Report (Grid North)

Company:	OCCIDENTAL PERMIAN LTD.	**Local Co-ordinate Reference:**	Well Villa A Fee Com #2H
Project:	Culebra Bluff Bone Spring	**TVD Reference:**	Mean Sea Level (System)
Site:	Eddy County, NM (Grid North)	**MD Reference:**	Mean Sea Level (System)
Well:	Villa A Fee Com #2H	**North Reference:**	Grid
Wellbore:	DH - Job #321014-MPH-1209	**Survey Calculation Method:**	Minimum Curvature
Design:	DH - Job #321014-MPH-1209	**Database:**	MID_Regulatory

Project Culebra Bluff 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 Eddy County, NM (Grid North)

Site Position:		**Northing:**	477,147.85 usft	**Latitude:**	32° 18' 41.768 N
From:	Lat/Long	**Easting:**	568,288.54 usft	**Longitude:**	104° 6' 44.256 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16"	**Grid Convergence:**	0.12 °

Well Villa A Fee Com #2H, Horizontal

Well Position	**+N/-S**	0.0 usft	**Northing:**	479,736.52 usft	**Latitude:**	32° 19' 7.414 N
	+E/-W	0.0 usft	**Easting:**	566,877.28 usft	**Longitude:**	104° 7' 0.640 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	0.0 usft	**Ground Level:**	0.0 usft

Wellbore DH - Job #321014-MPH-1209

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/19/2014	7.44	60.10	48,305

Design DH - Job #321014-MPH-1209

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	137.46

Survey Program **Date** 12/22/2014

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
448.0	13,820.0	MWD (DH - Job #321014-MPH-1209)	MWD	MWD

Survey

MD (usft)	Inc (°)	Azi (grid_north_azim	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.0
448.0	1.03	260.74	448.0	-0.6	-4.0	260.74	4.0
509.0	1.06	266.45	509.0	-0.8	-5.1	261.37	5.1
601.0	1.09	270.64	600.9	-0.8	-6.8	263.18	6.9
694.0	1.09	267.21	693.9	-0.8	-8.6	264.35	8.6
786.0	1.13	282.73	785.9	-0.7	-10.3	266.18	10.4
879.0	0.97	274.35	878.9	-0.4	-12.0	267.96	12.0
971.0	0.81	277.20	970.9	-0.3	-13.4	268.77	13.4
1,066.0	0.92	288.09	1,065.9	0.0	-14.8	270.13	14.8
1,160.0	1.34	271.40	1,159.9	0.3	-16.6	271.01	16.6
1,254.0	1.11	259.95	1,253.8	0.2	-18.6	270.50	18.6
1,349.0	1.00	274.79	1,348.8	0.1	-20.4	270.20	20.4

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Survey

MD (usft)	Inc (°)	Azi (grid_north_azim	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)
1,443.0	1.10	278.78	1,442.8	0.3	-22.1	270.72	22.1
1,538.0	0.23	73.71	1,537.8	0.5	-22.8	271.18	22.8
1,632.0	0.64	87.99	1,631.8	0.5	-22.1	271.40	22.1
1,727.0	1.52	95.93	1,726.8	0.4	-20.3	271.21	20.3
1,821.0	2.29	98.77	1,820.7	0.0	-17.2	270.05	17.2
1,916.0	2.40	105.59	1,915.6	-0.8	-13.4	266.55	13.4
2,010.0	2.07	117.71	2,009.6	-2.1	-10.0	258.01	10.2
2,105.0	2.51	105.81	2,104.5	-3.5	-6.5	241.74	7.4
2,199.0	2.77	111.24	2,198.4	-4.9	-2.4	206.20	5.4
2,294.0	2.99	113.61	2,293.3	-6.7	2.0	163.29	7.0
2,388.0	2.73	112.42	2,387.2	-8.5	6.3	143.45	10.6
2,479.0	1.97	107.51	2,478.1	-9.8	9.8	135.03	13.9
2,573.0	1.14	13.85	2,572.1	-9.4	11.6	129.08	14.9
2,668.0	1.17	9.82	2,667.0	-7.5	12.0	122.18	14.2
2,762.0	1.12	1.50	2,761.0	-5.7	12.2	115.00	13.4
2,856.0	1.22	12.60	2,855.0	-3.8	12.4	106.94	13.0
2,951.0	1.08	10.72	2,950.0	-1.9	12.8	98.50	12.9
3,045.0	1.29	3.28	3,044.0	0.0	13.0	89.93	13.0
3,140.0	1.41	10.61	3,138.9	2.2	13.3	80.47	13.5
3,234.0	1.10	1.90	3,232.9	4.3	13.5	72.50	14.2
3,329.0	1.15	356.19	3,327.9	6.1	13.5	65.58	14.8
3,423.0	0.93	354.88	3,421.9	7.8	13.4	59.65	15.5
3,517.0	1.21	358.26	3,515.9	9.6	13.3	54.17	16.4
3,612.0	0.98	354.85	3,610.8	11.4	13.2	49.14	17.4
3,706.0	1.12	355.61	3,704.8	13.1	13.0	44.82	18.5
3,801.0	1.18	351.33	3,799.8	15.0	12.8	40.49	19.7
3,895.0	1.19	338.06	3,893.8	16.9	12.3	36.10	20.9
3,990.0	0.95	340.59	3,988.8	18.5	11.7	32.21	21.9
4,084.0	0.98	341.77	4,082.8	20.0	11.2	29.14	22.9
4,179.0	1.30	342.65	4,177.7	21.8	10.6	25.88	24.3
4,273.0	1.16	333.43	4,271.7	23.7	9.8	22.56	25.7
4,367.0	1.20	349.54	4,365.7	25.5	9.2	19.91	27.1
4,462.0	0.52	223.98	4,460.7	26.2	8.8	18.50	27.6
4,556.0	0.50	206.43	4,554.7	25.5	8.3	17.98	26.8
4,651.0	0.85	214.42	4,649.7	24.6	7.7	17.41	25.7
4,746.0	1.23	216.44	4,744.7	23.2	6.7	16.12	24.1
4,840.0	1.24	231.39	4,838.6	21.7	5.3	13.72	22.3
4,935.0	1.31	236.08	4,933.6	20.5	3.6	9.97	20.8
5,029.0	1.29	226.30	5,027.6	19.1	1.9	5.79	19.2
5,124.0	1.35	232.80	5,122.6	17.7	0.3	0.89	17.7
5,218.0	1.41	234.26	5,216.5	16.4	-1.5	354.60	16.4
5,313.0	1.40	235.13	5,311.5	15.0	-3.4	347.07	15.4
5,407.0	1.38	232.91	5,405.5	13.7	-5.3	338.85	14.7
5,502.0	1.19	236.14	5,500.5	12.4	-7.0	330.55	14.3

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Wellbore:	DH - Job #321014-MPH-1209	**Survey Calculation Method:**	Minimum Curvature
Design:	DH - Job #321014-MPH-1209	**Database:**	MID_Regulatory

Survey

MD (usft)	Inc (°)	Azi (grid_north_azim	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)
5,596.0	1.35	233.41	5,594.4	11.2	-8.7	322.18	14.2
5,690.0	1.34	240.53	5,688.4	10.0	-10.6	313.52	14.6
5,785.0	1.53	233.33	5,783.4	8.7	-12.6	304.83	15.3
5,880.0	1.29	233.74	5,878.4	7.3	-14.4	296.97	16.2
5,974.0	1.55	228.60	5,972.3	5.9	-16.2	289.90	17.3
6,068.0	1.95	220.43	6,066.3	3.8	-18.2	281.83	18.6
6,163.0	2.06	269.20	6,161.2	2.6	-21.0	276.97	21.1
6,257.0	1.98	279.45	6,255.2	2.8	-24.3	276.60	24.4
6,352.0	1.71	262.39	6,350.1	2.9	-27.3	276.04	27.5
6,446.0	0.17	203.31	6,444.1	2.6	-28.7	275.12	28.9
6,541.0	1.42	171.53	6,539.1	1.3	-28.6	272.57	28.7
6,635.0	1.79	128.55	6,633.1	-0.8	-27.3	268.36	27.3
6,729.0	1.95	134.53	6,727.0	-2.8	-25.0	263.57	25.2
6,824.0	2.25	136.36	6,821.9	-5.3	-22.6	256.78	23.2
6,918.0	2.75	143.64	6,915.9	-8.5	-20.0	247.06	21.7
7,013.0	2.64	142.39	7,010.8	-12.0	-17.3	235.18	21.1
7,107.0	1.96	131.78	7,104.7	-14.8	-14.8	224.92	20.9
7,201.0	2.01	130.01	7,198.6	-16.9	-12.3	215.99	20.9
7,296.0	1.64	126.40	7,293.6	-18.8	-9.9	207.83	21.3
7,390.0	1.40	127.56	7,387.5	-20.3	-7.9	201.35	21.8
7,485.0	0.69	147.48	7,482.5	-21.5	-6.7	197.34	22.5
7,579.0	0.36	127.98	7,576.5	-22.2	-6.2	195.57	23.0
7,674.0	1.13	188.73	7,671.5	-23.3	-6.1	194.65	24.1
7,768.0	0.08	144.06	7,765.5	-24.2	-6.2	194.31	25.0
7,863.0	0.15	191.86	7,860.5	-24.4	-6.2	194.19	25.2
7,957.0	0.99	63.82	7,954.5	-24.2	-5.5	192.75	24.8
8,052.0	0.66	107.06	8,049.5	-24.0	-4.2	189.96	24.3
8,146.0	1.42	158.86	8,143.5	-25.2	-3.3	187.39	25.4
8,241.0	3.30	153.45	8,238.4	-28.8	-1.6	183.23	28.8
8,335.0	1.55	106.11	8,332.3	-31.5	0.8	178.54	31.6
8,430.0	1.70	86.39	8,427.3	-31.8	3.4	173.82	32.0
8,524.0	1.01	136.18	8,521.2	-32.3	5.4	170.49	32.8
8,577.0	1.04	144.30	8,574.2	-33.0	6.0	169.68	33.6
8,624.0	0.86	114.68	8,621.2	-33.5	6.6	168.89	34.2
8,656.0	2.80	87.76	8,653.2	-33.6	7.6	167.28	34.5
8,687.0	7.52	89.28	8,684.1	-33.6	10.4	162.83	35.1
8,719.0	12.56	85.95	8,715.6	-33.3	15.9	154.41	36.9
8,750.0	15.03	85.26	8,745.7	-32.7	23.3	144.53	40.2
8,782.0	17.07	85.77	8,776.4	-32.0	32.1	134.91	45.4
8,813.0	18.56	90.91	8,805.9	-31.8	41.6	127.37	52.3
8,844.0	19.70	93.80	8,835.2	-32.2	51.7	121.89	60.9
8,876.0	21.46	95.34	8,865.2	-33.1	63.0	117.73	71.1
8,907.0	23.85	92.52	8,893.8	-33.9	74.9	114.36	82.2
8,918.7	25.08	90.60	8,904.4	-34.0	79.7	113.12	86.7

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Wellbore:	DH - Job #321014-MPH-1209	**Survey Calculation Method:**	Minimum Curvature
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Survey

MD (usft)	Inc (°)	Azi (grid_north_azim	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)
8,939.0	27.26	87.67	8,922.7	-33.9	88.7	110.92	94.9
8,970.0	31.28	88.63	8,949.7	-33.4	103.8	107.84	109.0
9,002.0	34.26	88.48	8,976.6	-33.0	121.1	105.23	125.5
9,033.0	35.81	92.42	9,002.0	-33.1	138.9	103.41	142.8
9,065.0	36.12	94.97	9,027.9	-34.3	157.7	102.28	161.3
9,096.0	38.69	95.76	9,052.5	-36.1	176.4	101.56	180.1
9,127.0	42.45	98.65	9,076.1	-38.6	196.4	101.13	200.2
9,190.0	51.34	94.10	9,119.1	-43.6	242.1	100.21	245.9
9,253.0	60.58	90.06	9,154.3	-45.4	294.1	98.77	297.6
9,285.0	64.84	89.12	9,169.0	-45.2	322.6	97.97	325.7
9,316.0	68.73	88.42	9,181.2	-44.6	351.1	97.24	353.9
9,348.0	70.91	90.54	9,192.2	-44.3	381.1	96.63	383.7
9,379.0	75.37	91.97	9,201.2	-45.0	410.7	96.25	413.2
9,405.0	79.08	95.21	9,207.0	-46.6	436.0	96.09	438.5
9,437.0	83.16	96.23	9,211.9	-49.7	467.5	96.07	470.1
9,457.8	83.48	96.36	9,214.3	-52.0	488.0	96.08	490.8
9,468.0	83.64	96.42	9,215.5	-53.1	498.1	96.09	500.9
9,500.0	83.10	95.60	9,219.2	-56.4	529.7	96.08	532.7
9,531.0	83.50	95.69	9,222.8	-59.5	560.3	96.06	563.5
9,563.0	84.66	95.94	9,226.1	-62.7	592.0	96.04	595.3
9,594.0	86.17	97.02	9,228.6	-66.2	622.7	96.07	626.2
9,626.0	87.92	98.13	9,230.2	-70.4	654.4	96.14	658.2
9,657.0	88.29	98.50	9,231.3	-74.9	685.0	96.24	689.1
9,751.0	88.52	98.62	9,233.9	-88.8	778.0	96.52	783.0
9,846.0	88.72	98.57	9,236.2	-103.0	871.9	96.74	877.9
9,940.0	88.69	98.84	9,238.3	-117.3	964.8	96.93	971.9
10,035.0	90.03	99.42	9,239.3	-132.3	1,058.6	97.13	1,066.8
10,129.0	88.86	98.53	9,240.3	-147.0	1,151.4	97.28	1,160.7
10,224.0	88.05	97.98	9,242.8	-160.6	1,245.4	97.35	1,255.7
10,318.0	87.88	95.90	9,246.2	-172.0	1,338.6	97.32	1,349.6
10,412.0	88.45	96.68	9,249.2	-182.3	1,432.0	97.25	1,443.6
10,507.0	86.94	95.03	9,253.0	-192.0	1,526.4	97.17	1,538.4
10,601.0	86.27	94.60	9,258.5	-199.8	1,619.9	97.03	1,632.2
10,696.0	86.33	94.27	9,264.7	-207.2	1,714.4	96.89	1,726.9
10,790.0	87.72	95.04	9,269.6	-214.8	1,808.0	96.77	1,820.7
10,885.0	88.05	95.07	9,273.1	-223.2	1,902.6	96.69	1,915.6
10,979.0	89.16	95.10	9,275.4	-231.5	1,996.2	96.61	2,009.6
11,074.0	89.50	95.08	9,276.5	-239.9	2,090.8	96.55	2,104.5
11,168.0	89.03	94.60	9,277.7	-247.8	2,184.4	96.47	2,198.5
11,262.0	88.82	94.38	9,279.4	-255.2	2,278.1	96.39	2,292.4
11,357.0	87.82	95.21	9,282.2	-263.1	2,372.8	96.33	2,387.3
11,451.0	88.62	96.21	9,285.1	-272.5	2,466.3	96.30	2,481.3
11,546.0	88.93	95.72	9,287.2	-282.4	2,560.7	96.29	2,576.2
11,640.0	90.20	96.95	9,287.9	-292.7	2,654.1	96.29	2,670.2
11,735.0	89.46	98.80	9,288.2	-305.7	2,748.2	96.35	2,765.2

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11,829.0	89.23	98.27	9,289.2	-319.7	2,841.2	96.42	2,859.1
11,924.0	89.40	97.95	9,290.4	-333.1	2,935.2	96.47	2,954.1
12,018.0	89.60	98.04	9,291.2	-346.2	3,028.3	96.52	3,048.0
12,113.0	89.60	98.05	9,291.9	-359.5	3,122.4	96.57	3,143.0
12,207.0	89.43	97.78	9,292.7	-372.4	3,215.5	96.61	3,237.0
12,302.0	89.43	97.60	9,293.6	-385.1	3,309.6	96.64	3,331.9
12,396.0	89.50	97.50	9,294.5	-397.5	3,402.8	96.66	3,425.9
12,490.0	89.56	97.06	9,295.2	-409.4	3,496.0	96.68	3,519.9
12,584.0	89.46	96.69	9,296.1	-420.6	3,589.4	96.68	3,613.9
12,678.0	89.43	96.50	9,297.0	-431.4	3,682.7	96.68	3,707.9
12,772.0	89.46	96.02	9,297.9	-441.7	3,776.2	96.67	3,801.9
12,866.0	89.46	95.50	9,298.8	-451.1	3,869.7	96.65	3,895.9
12,960.0	89.66	95.35	9,299.5	-460.0	3,963.3	96.62	3,989.9
13,054.0	90.00	95.20	9,299.8	-468.6	4,056.9	96.59	4,083.8
13,149.0	90.57	96.91	9,299.3	-478.7	4,151.3	96.58	4,178.8
13,243.0	91.07	96.73	9,297.9	-489.8	4,244.7	96.58	4,272.8
13,338.0	91.21	96.52	9,296.1	-500.8	4,339.0	96.58	4,367.8
13,432.0	91.34	96.08	9,294.0	-511.1	4,432.4	96.58	4,461.8
13,527.0	91.68	95.71	9,291.5	-520.8	4,526.9	96.56	4,556.7
13,621.0	89.97	95.94	9,290.1	-530.4	4,620.4	96.55	4,650.7
13,687.1	89.90	95.93	9,290.2	-537.2	4,686.1	96.54	4,716.8
13,716.0	89.87	95.93	9,290.2	-540.2	4,714.9	96.54	4,745.7
13,752.0	89.97	95.82	9,290.3	-543.9	4,750.7	96.53	4,781.7
Last MWD Survey							
13,820.0	89.97	95.82	9,290.3	-550.8	4,818.3	96.52	4,849.7
Projection to Bit							

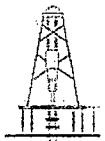
Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
13,752.0	9,290.3	-543.9	4,750.7	Last MWD Survey
13,820.0	9,290.3	-550.8	4,818.3	Projection to Bit

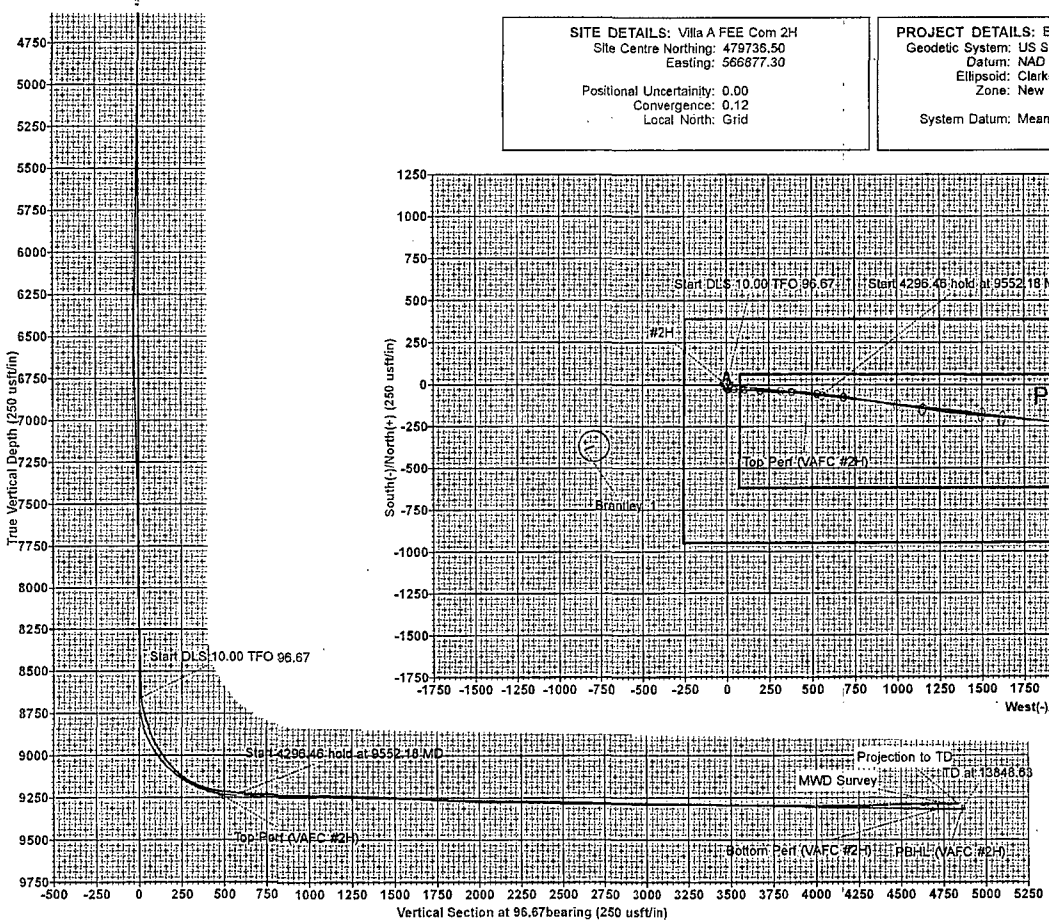
Checked By: _____ Approved By: _____ Date: _____

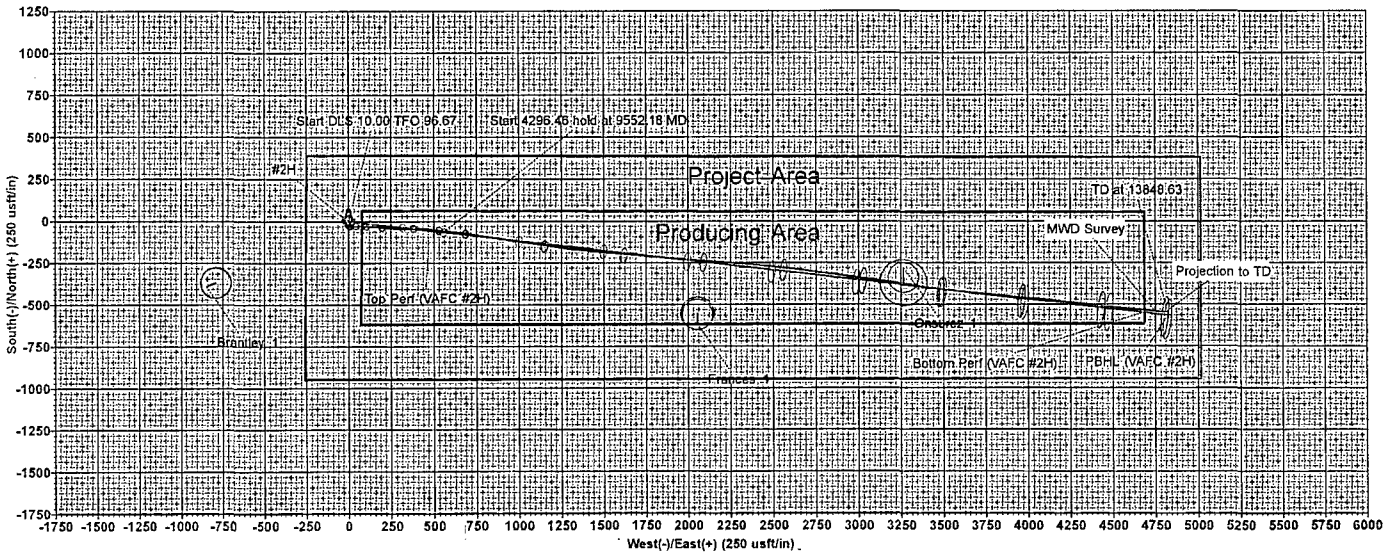
OXY Permian

Villa A FEE Com 2H #2H
Eddy County, NM (NAD 27 NME)
Northing: (Y) 479736.50
Easting: (X) 566877.30
Plan #2



KB=25' @ 3057.40usft (TBD)
Ground Level: 3032.40





WELL DETAILS:

Ground Level: 3032.40

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	479736.50	566877.30	32° 19' 7.414 N	104° 7' 0.640 W

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	
8663.40	0.00	0.00	8663.40	0.00	0.00	0.00	0.00	0.00	
9552.18	88.88	96.67	9236.25	-65.24	557.93	10.00	96.67	561.74	
13848.63	88.88	96.67	9320.40	-564.10	4824.50	0.00	0.00	4857.37	PBHL (VAFC #2H)

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
Top Perf (VAFC #2H)	9236.40	-248.40	463.70	479488.10	567341.00
Bottom Perf (VAFC #2H)	9317.56	-547.79	4685.00	479188.71	571562.30
PBHL (VAFC #2H)	9320.40	-564.10	4824.50	479172.40	571701.80

SITE DETAILS: Villa A FEE Com 2H
Site Centre Northing: 479736.50
Easting: 566877.30

Positional Uncertainity: 0.00
Convergence: 0.12
Local North: Grid

PROJECT DETAILS: Eddy County, NM (NAD 27 NME)
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

LEGEND

- Villa B Com #2, #2, OH V0
- Onsurez 1, O1, OH V0
- Frances 1, F1, OH V0
- Brantley 1, B1, OH V0
- #2H, OH, OH V0
- Plan #2

Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001

Local Origin: Well #2H, Grid North

Latitude: 32° 19' 7.414 N
Longitude: 104° 7' 0.640 W

Grid East: 566877.30
Grid North: 479736.50
Scale Factor: 1.000

Geomagnetic Model: BGGM2014
Sample Date: 12-Sep-14
Magnetic Declination: 7.61°
Dip Angle from Horizontal: 60.09°
Magnetic Field Strength: 48246

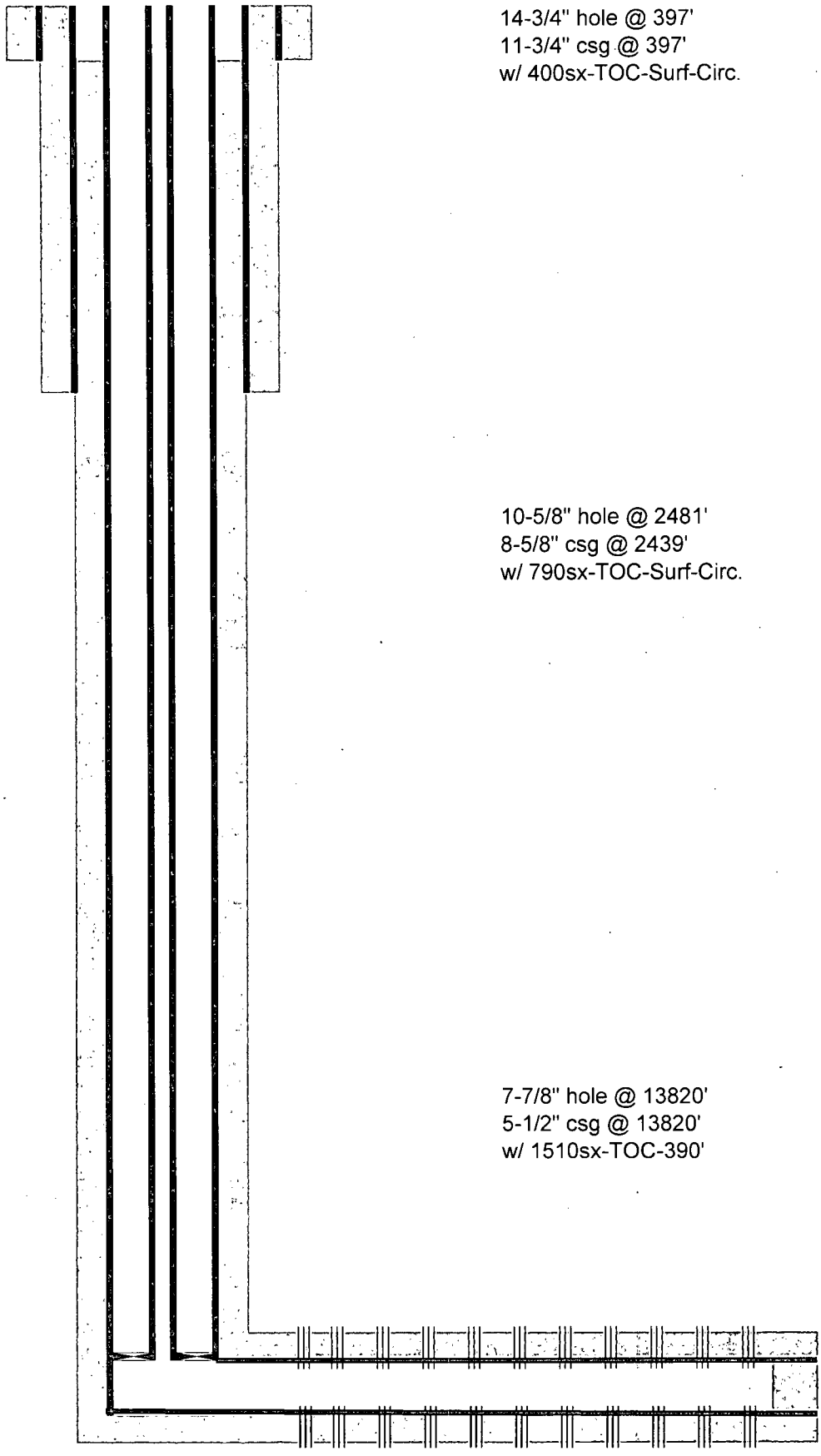
To convert Magnetic North to Grid, Add 7.50°
To convert Magnetic North to True, Add 7.61° East
To convert True North to Grid, Subtract 0.12°

To convert Magnetic North to Grid, Add 7.50°
To convert True North to Grid, Subtract 0.12°

Azimuths to Grid North
True North: -0.12°
Magnetic North: 7.50°

Magnetic Field
Strength: 48246.3nT
Dip Angle: 60.09°
Date: 9/12/2014
Model: BGGM2014

OXY USA WTP LP
Villa A Fee Com 2H
API No. 30-015-42284



14-3/4" hole @ 397'
11-3/4" csg @ 397'
w/ 400sx-TOC-Surf-Circ.

10-5/8" hole @ 2481'
8-5/8" csg @ 2439'
w/ 790sx-TOC-Surf-Circ.

7-7/8" hole @ 13820'
5-1/2" csg @ 13820'
w/ 1510sx-TOC-390'

2-7/8" tbg & pkr @ 8582'

Perfs @ 9456-13679'

TD- 13820'M 9290'V