Gyrodata Midland
10504 WCR 72
Midland Texas 79707

Tel: 432-561-8458
www.gyrodata.com

I, Kevin Willard, certify that; I am employed by Gyrodata Inc.; that I am authorized and qualified to review the Rate Gyro Multishot survey from a depth of 0 feet to a depth of 603 feet conducted on the day(s) of 9/7/17 through 9/8/17; that this survey was conducted at the request of OXY USA for the PATTON MDP1 18 FEDERAL Well 3H API No. 30-015-44333 in EDDY COUNTY, NEW MEXICO; that the data is true, correct, complete, and within the limitations of the tool as set forth by Gyrodata Inc.; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Gyrodata Inc.

Kevin Willard
West Texas Operations

A Gyrodata Directional Survey

FINAL DEFINITIVE COPY

for

OXY USA

Lease: Patton MDP1 18 Federal Well: 3H, 4 1/2 Inch Drillpipe
Location: Transcend Drilling Rig #1, Eddy County, New Mexico

Job Number: MD0917GDM668

Run Date: 08 Sep 2017
Report Generated: 03 Oct 2017 08:05

Surveyor: David Ellis

Calculation Method: MINIMUM CURVATURE

Survey surface coordinates obtained from: Well Plan/Plot
Survey Latitude: 32.224001 deg. N
Longitude: 103.818948 deg. W

Azimuth Correction:

Gyro: -0.27000 deg to Grid North

Depth Reference: Rotary Table

Air Gap (RKB to Ground / RKB to MSL): 6.00

Ground Elevation (Ground to MSL / MSL to Mudline): 3534.00

Vertical Section Calculated from Well Head Location

Closure Calculated from Well Head Location

Horizontal Coordinates Calculated from Well Head Location

A Gyrodata Directional Survey

OXY USA
Lease: Patton MDP1 18 Federal Well: 3H, 4 1/2 Inch Drillpipe
Location: Transcend Drilling Rig #1, Eddy County, New Mexico
Job Number: MD0917GDM668

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	CLOSURE AZIMUTH deg.	HORIZONTAL COORDINATES feet	
0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.00 N	0.00 E
0 TO 603.77 FT. RATE GYROSCOPIC MULTISHOT SURVEY RUN INSIDE 4 1/2 INCH DRILLPIPE								
ALL MEASURED DEPTHS AND COORDINATES REFERENCED TO TRANSCEND DRILLING RIG #1 WITH R.K.B. HEIGHT OF 6 FT.								
74.23	0.65	340.03	0.88	74.23	0.4	340.0	0.40 N	0.14 W
166.03	0.54	347.64	0.15	166.02	1.4	342.4	1.31 N	0.41 W
257.38	0.21	20.35	0.42	257.37	1.9	346.6	1.89 N	0.45 W
351.91	0.42	119.44	0.53	351.90	1.9	357.4	1.88 N	0.09 W
445.58	0.57	136.03	0.22	445.57	1.5	21.3	1.37 N	0.54 E
540.23	0.63	141.76	0.09	540.21	1.3	62.2	0.63 N	1.19 E
603.77	0.70	151.35	0.21	603.75	1.6	89.6	0.01 N	1.59 E

Final Station Closure: Distance: 1.59 ft Az: 89.61 deg.

Schlumberger Drilling and Measurements
Drilling Group
Geo Market Area: South West Texas Basin
7220 W I-H 20
Midland, Texas 79706
Phone : (432) 742-5400 (Main)
Fax : (432) 742-5606 (Shared)

Schlumberger

Well Reference:

32.22367 -103.81525

I, Rasheed Atanda certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of October 24, 2017 through November 02, 2017, conduct or supervise the taking of the TelePacer & SlimPulse surveys from a depth of 722.00 feet to a depth of 14746.00 feet referenced to driller's depth; that the data is true, correct, complete and within the limitations of the tool as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I am authorized and qualified to make this report; that this survey was conducted at the request of OXY USA INC. for the Patton MDP1 18 Federal 3H Well (Original Hole) API No. 30-015-44333 in New Mexico; and that I have reviewed this report and find that it conforms to the principals and procedures as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation.

By
Rasheed Atanda
FE

Subscribed and Sworn to before me this 10th day of November (month) 2017 (yr)

My Commission expires:

12-20-2020

(signature)
Notary Public

Adams County Colorado
(County State)

JENNIFER ALLEMAND
Notary Public
State of Colorado
Notary ID # 20164047962
My Commission Expires 12-20-2020

Schlumberger

Oxy Patton MDP1 18 Federal 3H Gyro+MWD 0-14,784' Survey Geodetic Report

(Def Survey)

Report Date:	November 07, 2017 - 02:14 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	OXY	**Vertical Section Azimuth:**	173.102 ° (Grid North)
Field:	NM Eddy County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Oxy Patton MDP1 18 Federal 3H / Oxy Patton MDP1 18 Federal 3H	**TVD Reference Datum:**	RKB=26.5'
Well:	Oxy Patton MDP1 18 Federal 3H	**TVD Reference Elevation:**	3560.500 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	3534.000 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.963 °
Survey Name:	Oxy Patton MDP1 18 Federal 3H Gyro+MWD 0-14,784'	**Total Gravity Field Strength:**	998.4276mgn (9.80665 Based)
Survey Date:	October 21, 2017	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	267.773 ° / 5673.991 ft / 6.351 / 0.567	**Total Magnetic Field Strength:**	48081.366 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.992 °
Location Lat / Long:	N 32° 13' 26.84840", W 103° 49' 9.95718"	**Declination Date:**	October 21, 2017
Location Grid N/E Y/X:	N 445650.360 ftUS, E 700252.810 ftUS	**Magnetic Declination Model:**	HDGM 2017
CRS Grid Convergence Angle:	0.2740 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99993801	**Grid Convergence Used:**	0.2740 °
Version / Patch:	2.10.565.0	**Total Corr Mag North->Grid North:**	6.6887 °
		Local Coord Referenced To:	Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Tie-In	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	445650.36	700252.81	N 32 13 26.85	W 103 49 9.96
	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	445650.36	700252.81	N 32 13 26.85	W 103 49 9.96
	94.73	0.65	340.03	94.73	-0.38	0.36	-0.13	0.95	445650.72	700252.68	N 32 13 26.85	W 103 49 9.96
	186.53	0.54	347.64	186.52	-1.31	1.28	-0.40	0.15	445651.64	700252.41	N 32 13 26.86	W 103 49 9.96
	277.88	0.21	20.35	277.87	-1.89	1.85	-0.44	0.42	445652.21	700252.37	N 32 13 26.87	W 103 49 9.96
	372.41	0.42	119.44	372.40	-1.84	1.85	-0.07	0.53	445652.21	700252.74	N 32 13 26.87	W 103 49 9.96
	466.08	0.57	136.03	466.07	-1.27	1.34	0.55	0.22	445651.70	700253.36	N 32 13 26.86	W 103 49 9.95
	560.73	0.63	141.76	560.71	-0.45	0.59	1.20	0.09	445650.95	700254.01	N 32 13 26.85	W 103 49 9.94
Last Gyro	624.27	0.70	151.35	624.25	0.21	-0.02	1.60	0.21	445650.34	700254.41	N 32 13 26.85	W 103 49 9.94
	722.00	0.35	185.44	721.97	1.06	-0.84	1.86	0.47	445649.52	700254.67	N 32 13 26.84	W 103 49 9.94
	799.00	0.06	174.33	798.97	1.33	-1.12	1.84	0.38	445649.24	700254.65	N 32 13 26.84	W 103 49 9.94
	960.00	0.00	266.32	959.97	1.41	-1.20	1.85	0.04	445649.16	700254.66	N 32 13 26.84	W 103 49 9.94
	1050.00	0.00	256.11	1049.97	1.41	-1.20	1.85	0.00	445649.16	700254.66	N 32 13 26.84	W 103 49 9.94
	1140.00	0.06	122.54	1139.97	1.44	-1.23	1.89	0.07	445649.13	700254.70	N 32 13 26.84	W 103 49 9.94
	1231.00	0.00	341.19	1230.97	1.47	-1.25	1.93	0.07	445649.11	700254.74	N 32 13 26.84	W 103 49 9.93
	1410.00	0.06	188.56	1409.97	1.56	-1.34	1.91	0.03	445649.02	700254.72	N 32 13 26.84	W 103 49 9.93
	1512.00	0.13	293.86	1511.97	1.56	-1.35	1.80	0.15	445649.01	700254.61	N 32 13 26.83	W 103 49 9.94
	1627.00	0.11	323.23	1626.97	1.39	-1.21	1.61	0.06	445649.15	700254.42	N 32 13 26.84	W 103 49 9.94
	1817.00	0.28	47.21	1816.97	0.96	-0.75	1.85	0.15	445649.61	700254.66	N 32 13 26.84	W 103 49 9.94
	1912.00	0.38	71.37	1911.97	0.76	-0.49	2.31	0.18	445649.87	700255.12	N 32 13 26.84	W 103 49 9.93
	2006.00	0.43	87.37	2005.97	0.73	-0.37	2.96	0.13	445649.99	700255.77	N 32 13 26.84	W 103 49 9.92
	2195.00	0.36	104.59	2194.96	1.00	-0.49	4.25	0.07	445649.87	700257.05	N 32 13 26.84	W 103 49 9.91
	2290.00	0.25	138.71	2289.96	1.28	-0.72	4.67	0.22	445649.64	700257.48	N 32 13 26.84	W 103 49 9.90
	2384.00	0.20	136.08	2383.96	1.58	-0.99	4.92	0.05	445649.37	700257.73	N 32 13 26.84	W 103 49 9.90
	2479.00	0.28	104.88	2478.96	1.80	-1.17	5.26	0.16	445649.19	700258.07	N 32 13 26.84	W 103 49 9.90
	2573.00	0.29	94.83	2572.96	1.93	-1.25	5.72	0.05	445649.11	700258.53	N 32 13 26.84	W 103 49 9.89
	2668.00	0.45	76.66	2667.96	1.94	-1.19	6.32	0.21	445649.17	700259.13	N 32 13 26.84	W 103 49 9.88
	2762.00	0.46	74.00	2761.95	1.84	-1.00	7.04	0.02	445649.36	700259.85	N 32 13 26.84	W 103 49 9.88
	2857.00	0.45	72.65	2856.95	1.71	-0.78	7.77	0.02	445649.58	700260.57	N 32 13 26.84	W 103 49 9.87
	2951.00	0.34	82.42	2950.95	1.64	-0.63	8.39	0.14	445649.73	700261.20	N 32 13 26.84	W 103 49 9.86
	3046.00	0.36	91.58	3045.95	1.68	-0.60	8.97	0.06	445649.76	700261.78	N 32 13 26.84	W 103 49 9.85
	3141.00	0.40	90.86	3140.95	1.77	-0.62	9.60	0.04	445649.74	700262.41	N 32 13 26.84	W 103 49 9.85
	3235.00	0.48	74.60	3234.94	1.75	-0.52	10.31	0.16	445649.84	700263.12	N 32 13 26.84	W 103 49 9.84
	3424.00	0.68	47.86	3423.93	0.99	0.44	11.90	0.18	445650.80	700264.71	N 32 13 26.85	W 103 49 9.82
	3519.00	0.86	59.28	3518.92	0.37	1.19	12.94	0.25	445651.55	700265.74	N 32 13 26.86	W 103 49 9.81
	3613.00	1.08	92.95	3612.91	0.24	1.50	14.43	0.64	445651.86	700267.24	N 32 13 26.86	W 103 49 9.79
	3708.00	1.46	106.54	3707.89	0.88	1.11	16.48	0.51	445651.47	700269.29	N 32 13 26.86	W 103 49 9.77
	3803.00	1.40	111.83	3802.86	1.92	0.34	18.72	0.15	445650.70	700271.53	N 32 13 26.85	W 103 49 9.74
	3897.00	1.68	130.98	3896.83	3.49	-1.00	20.82	0.62	445649.36	700273.63	N 32 13 26.84	W 103 49 9.71
	3992.00	2.14	148.51	3991.77	6.14	-3.42	22.80	0.78	445646.94	700275.61	N 32 13 26.81	W 103 49 9.69
	4181.00	2.54	150.41	4180.62	13.21	-10.07	26.71	0.22	445640.29	700279.52	N 32 13 26.75	W 103 49 9.65
	4240.00	2.41	150.46	4239.56	15.56	-12.29	27.97	0.22	445638.07	700280.78	N 32 13 26.73	W 103 49 9.63
	4440.00	0.34	148.91	4439.49	19.98	-16.46	30.35	1.04	445633.91	700283.16	N 32 13 26.68	W 103 49 9.60
	4535.00	0.08	200.20	4534.49	20.30	-16.76	30.47	0.31	445633.60	700283.28	N 32 13 26.68	W 103 49 9.60
	4629.00	0.16	309.81	4628.49	20.26	-16.74	30.35	0.21	445633.62	700283.16	N 32 13 26.68	W 103 49 9.60
	4724.00	0.16	260.50	4723.49	20.17	-16.67	30.12	0.14	445633.69	700282.92	N 32 13 26.68	W 103 49 9.61
	4819.00	0.13	261.36	4818.49	20.18	-16.71	29.88	0.03	445633.65	700282.69	N 32 13 26.68	W 103 49 9.61
	4913.00	0.13	301.00	4912.49	20.12	-16.67	29.68	0.09	445633.69	700282.49	N 32 13 26.68	W 103 49 9.61
	5008.00	0.08	234.36	5007.49	20.08	-16.66	29.54	0.13	445633.71	700282.34	N 32 13 26.68	W 103 49 9.61
	5102.00	0.13	292.89	5101.49	20.06	-16.65	29.38	0.12	445633.71	700282.19	N 32 13 26.68	W 103 49 9.62
	5196.00	0.11	313.04	5195.49	19.94	-16.55	29.22	0.05	445633.81	700282.03	N 32 13 26.68	W 103 49 9.62
	5291.00	0.13	250.91	5290.49	19.89	-16.52	29.05	0.13	445633.84	700281.86	N 32 13 26.68	W 103 49 9.62
	5385.00	0.08	272.95	5384.49	19.90	-16.55	28.89	0.07	445633.81	700281.69	N 32 13 26.68	W 103 49 9.62
	5480.00	0.08	155.54	5479.49	19.96	-16.61	28.85	0.14	445633.75	700281.66	N 32 13 26.68	W 103 49 9.62
	5575.00	1.63	311.34	5574.48	19.01	-15.78	27.86	1.79	445634.58	700280.67	N 32 13 26.69	W 103 49 9.63
	5669.00	4.24	310.91	5668.35	15.44	-12.62	24.23	2.78	445637.74	700277.04	N 32 13 26.72	W 103 49 9.68
	5764.00	6.73	308.50	5762.90	8.87	-6.85	17.22	2.63	445643.51	700270.03	N 32 13 26.78	W 103 49 9.76
	5859.00	5.28	308.00	5857.38	1.82	-0.70	9.42	1.53	445649.66	700262.23	N 32 13 26.84	W 103 49 9.85
	5954.00	3.00	313.74	5952.13	-3.19	3.71	4.18	2.44	445654.07	700256.99	N 32 13 26.88	W 103 49 9.91
	6048.00	1.68	10.65	6046.06	-6.40	6.77	2.65	2.67	445657.13	700255.46	N 32 13 26.92	W 103 49 9.93
	6143.00	4.38	70.45	6140.93	-8.52	9.35	6.33	4.02	445659.71	700259.14	N 32 13 26.94	W 103 49 9.88
	6237.00	9.16	80.22	6234.25	-9.69	11.83	17.09	5.21	445662.19	700269.90	N 32 13 26.96	W 103 49 9.76
	6332.00	13.94	85.71	6327.30	-9.55	13.97	35.97	5.16	445664.33	700288.77	N 32 13 26.98	W 103 49 9.54
	6425.00	17.37	83.69	6416.84	-8.89	16.33	60.94	3.73	445666.69	700313.75	N 32 13 27.01	W 103 49 9.25
	6522.00	19.78	81.38	6508.78	-9.24	20.38	91.57	2.60	445670.74	700344.37	N 32 13 27.05	W 103 49 8.89
	6616.00	20.86	78.62	6596.93	-11.03	26.07	123.70	1.54	445676.43	700376.50	N 32 13 27.10	W 103 49 8.52
	6711.00	20.73	72.64	6685.76	-15.40	34.43	156.33	2.24	445684.78	700409.13	N 32 13 27.18	W 103 49 8.14
	6806.00	20.52	66.80	6774.68	-23.13	46.00	187.69	2.18	445696.36	700440.49	N 32 13 27.29	W 103 49 7.77
	6900.00	20.60	61.44	6862.70	-33.86	60.40	217.36	2.00	445710.76	700470.15	N 32 13 27.44	W 103 49 7.42
	6995.00	18.81	59.28	6952.13	-46.21	76.22	245.21	2.03	445726.57	700498.00	N 32 13 27.59	W 103 49 7.10
	7090.00	17.52	56.46	7042.40	-58.81	91.94	270.29	1.64	445742.30	700523.09	N 32 13 27.75	W 103 49 6.81
	7185.00	16.02	53.48	7133.36	-71.71	107.64	292.75	1.82	445758.00	700545.54	N 32 13 27.90	W 103 49 6.54
	7279.00	14.96	59.88	7223.95	-82.90	121.45	313.67	2.14	445771.80	700566.46	N 32 13 28.04	W 103 49 6.30
	7374.00	13.72	68.68	7316.00	-90.54	131.70	334.77	2.64	445782.05	700587.56	N 32 13 28.14	W 103 49 6.05
	7469.00	12.82	77.46	7408.47	-94.39	138.09	355.56	2.32	445788.44	700608.35	N 32 13 28.20	W 103 49 5.81
	7564.00	11.58	87.99	7501.33	-94.61	140.71	375.38	2.68	445791.06	700628.17	N 32 13 28.22	W 103 49 5.58
	7658.00	10.42	100.82	7593.62	-91.22	139.45	393.16	2.87	445789.80	700645.95	N 32 13 28.21	W 103 49 5.37
	7753.00	9.18	114.36	7687.24	-84.67	134.71	408.50	2.75	445785.06	700661.29	N 32 13 28.16	W 103 49 5.19

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	
	7848.00	7.91	128.41	7781.20	-76.09	127.52	420.53	2.56	445777.87	700673.32	N 32 13 28.09	W 103 49	5.05
	7942.00	6.73	145.35	7874.44	-66.62	118.97	428.73	2.60	445769.32	700681.52	N 32 13 28.01	W 103 49	4.96
	8037.00	5.80	133.91	7968.87	-57.97	111.06	435.36	1.63	445761.41	700688.14	N 32 13 27.93	W 103 49	4.88
	8132.00	5.22	117.06	8063.44	-51.83	105.76	442.66	1.80	445756.12	700695.45	N 32 13 27.87	W 103 49	4.80
	8226.00	4.06	92.87	8157.14	-48.88	103.65	449.80	2.39	445754.01	700702.58	N 32 13 27.85	W 103 49	4.72
	8415.00	2.59	54.35	8345.84	-49.80	105.81	459.95	1.37	445756.16	700712.73	N 32 13 27.87	W 103 49	4.60
	8510.00	2.81	57.32	8440.73	-51.84	108.31	463.65	0.27	445758.67	700716.43	N 32 13 27.90	W 103 49	4.55
	8604.00	3.47	82.78	8534.60	-52.86	109.92	468.42	1.62	445760.27	700721.20	N 32 13 27.91	W 103 49	4.50
	8699.00	4.44	107.29	8629.38	-51.37	109.19	474.78	2.03	445759.54	700727.56	N 32 13 27.91	W 103 49	4.42
	8793.00	4.61	116.35	8723.08	-47.81	106.43	481.64	0.78	445756.78	700734.42	N 32 13 27.88	W 103 49	4.34
	8888.00	4.22	101.76	8817.80	-44.60	104.02	488.48	1.25	445754.37	700741.26	N 32 13 27.85	W 103 49	4.27
	8983.00	2.71	79.62	8912.63	-43.62	103.71	494.11	2.10	445754.07	700746.89	N 32 13 27.85	W 103 49	4.20
	9078.00	2.69	74.66	9007.53	-44.08	104.71	498.47	0.25	445755.06	700751.25	N 32 13 27.86	W 103 49	4.15
	9172.00	1.71	91.06	9101.46	-44.21	105.26	502.00	1.23	445755.62	700754.78	N 32 13 27.87	W 103 49	4.11
	9267.00	2.87	108.43	9196.38	-43.00	104.49	505.68	1.41	445754.84	700758.45	N 32 13 27.86	W 103 49	4.06
	9362.00	4.96	117.21	9291.15	-39.68	101.86	511.59	2.28	445752.21	700764.36	N 32 13 27.83	W 103 49	4.00
	9461.00	7.92	124.11	9389.52	-32.80	96.07	521.04	3.09	445746.43	700773.82	N 32 13 27.77	W 103 49	3.89
	9556.00	18.25	184.06	9482.27	-13.78	77.45	525.44	16.62	445727.80	700778.21	N 32 13 27.59	W 103 49	3.84
	9650.00	22.97	150.27	9570.53	17.70	46.71	533.52	13.39	445697.07	700786.30	N 32 13 27.29	W 103 49	3.74
	9745.00	34.02	150.90	9653.89	59.52	7.27	555.71	11.64	445657.63	700808.48	N 32 13 26.89	W 103 49	3.49
	9840.00	40.89	165.88	9729.42	115.16	-46.28	576.29	11.97	445604.09	700829.06	N 32 13 26.36	W 103 49	3.25
	9934.00	50.16	175.47	9795.28	181.96	-112.31	586.68	12.24	445538.05	700839.45	N 32 13 25.71	W 103 49	3.13
	10029.00	56.64	178.89	9851.90	257.97	-188.43	590.33	7.41	445461.94	700843.10	N 32 13 24.96	W 103 49	3.10
	10124.00	61.23	180.89	9900.92	338.74	-269.78	590.45	5.16	445380.60	700843.22	N 32 13 24.15	W 103 49	3.10
	10218.00	67.94	180.05	9941.24	422.90	-354.63	589.77	7.18	445295.75	700842.55	N 32 13 23.31	W 103 49	3.11
	10313.00	78.08	180.63	9968.96	512.91	-445.36	589.22	10.69	445205.02	700841.99	N 32 13 22.41	W 103 49	3.12
	10408.00	88.11	180.63	9980.37	606.29	-539.55	588.19	10.56	445110.85	700840.96	N 32 13 21.48	W 103 49	3.14
	10479.00	89.35	182.31	9981.94	676.51	-610.50	586.37	2.94	445039.90	700839.14	N 32 13 20.78	W 103 49	3.17
	10554.00	88.18	183.64	9983.56	750.38	-685.38	582.47	2.36	444965.02	700835.25	N 32 13 20.04	W 103 49	3.22
	10648.00	88.59	184.43	9986.20	842.63	-779.11	575.86	0.95	444871.30	700828.64	N 32 13 19.11	W 103 49	3.30
	10743.00	88.56	184.72	9988.57	935.71	-873.78	568.29	0.31	444776.64	700821.06	N 32 13 18.18	W 103 49	3.39
	10837.00	88.59	185.07	9990.90	1027.69	-967.41	560.27	0.37	444683.01	700813.04	N 32 13 17.25	W 103 49	3.49
	10932.00	88.55	183.97	9993.28	1120.78	-1062.08	552.78	1.16	444588.35	700805.56	N 32 13 16.31	W 103 49	3.58
	11026.00	88.62	182.79	9995.60	1213.25	-1155.89	547.24	1.26	444494.55	700800.02	N 32 13 15.38	W 103 49	3.65
	11121.00	88.66	182.29	9997.85	1306.93	-1250.77	543.04	0.53	444399.67	700795.81	N 32 13 14.45	W 103 49	3.71
	11215.00	88.62	181.01	10000.08	1399.86	-1344.70	540.33	1.36	444305.75	700793.11	N 32 13 13.52	W 103 49	3.74
	11310.00	88.42	178.81	10002.54	1494.15	-1439.66	540.48	2.32	444210.79	700793.25	N 32 13 12.58	W 103 49	3.75
	11404.00	88.62	177.44	10004.96	1587.76	-1533.58	543.55	1.47	444116.88	700796.33	N 32 13 11.65	W 103 49	3.72
	11499.00	89.35	176.51	10006.65	1682.53	-1628.43	548.57	1.24	444022.04	700801.34	N 32 13 10.71	W 103 49	3.66
	11593.00	88.56	176.59	10008.36	1776.34	-1722.24	554.22	0.84	443928.23	700807.00	N 32 13 9.78	W 103 49	3.60
	11687.00	90.55	180.24	10009.09	1869.91	-1816.18	556.82	4.42	443834.29	700809.59	N 32 13 8.85	W 103 49	3.58
	11782.00	89.83	178.19	10008.78	1964.36	-1911.17	558.12	2.29	443739.32	700810.90	N 32 13 7.91	W 103 49	3.57
	11876.00	89.38	178.92	10009.43	2057.94	-2005.13	560.49	0.91	443645.35	700813.27	N 32 13 6.98	W 103 49	3.54
	11971.00	88.25	178.52	10011.39	2152.46	-2100.09	562.61	1.26	443550.41	700815.39	N 32 13 6.04	W 103 49	3.53
	12065.00	91.93	178.19	10011.24	2246.05	-2194.03	565.31	3.93	443456.47	700818.09	N 32 13 5.11	W 103 49	3.50
	12160.00	89.35	178.28	10010.18	2340.65	-2288.97	568.24	2.72	443361.53	700821.01	N 32 13 4.17	W 103 49	3.47
	12349.00	90.00	179.39	10011.25	2528.70	-2477.93	572.08	0.68	443172.59	700824.85	N 32 13 2.30	W 103 49	3.44
	12443.00	90.69	178.90	10010.69	2622.17	-2571.92	573.48	0.90	443078.61	700826.26	N 32 13 1.37	W 103 49	3.43
	12538.00	90.62	178.89	10009.60	2716.68	-2666.89	575.31	0.07	442983.64	700828.09	N 32 13 0.43	W 103 49	3.41
	12633.00	89.48	178.82	10009.52	2811.20	-2761.87	577.21	1.20	442888.67	700829.99	N 32 12 59.49	W 103 49	3.39
	12728.00	90.48	179.14	10009.55	2905.70	-2856.85	578.90	1.11	442793.69	700831.68	N 32 12 58.55	W 103 49	3.38
	12822.00	90.69	178.27	10008.59	2999.25	-2950.82	581.03	0.95	442699.72	700833.80	N 32 12 57.62	W 103 49	3.36
	12917.00	90.07	177.52	10007.96	3093.91	-3045.76	584.52	1.02	442604.80	700837.29	N 32 12 56.68	W 103 49	3.32
	13011.00	91.58	177.58	10006.61	3187.62	-3139.66	588.54	1.61	442510.90	700841.31	N 32 12 55.75	W 103 49	3.28
	13106.00	92.06	176.19	10003.59	3282.36	-3234.47	593.69	1.55	442416.10	700846.47	N 32 12 54.82	W 103 49	3.23
	13200.00	91.37	174.92	10000.78	3376.23	-3328.14	600.98	1.54	442322.43	700853.75	N 32 12 53.89	W 103 49	3.15
	13295.00	91.00	174.79	9998.81	3471.16	-3422.74	609.49	0.41	442227.84	700862.27	N 32 12 52.95	W 103 49	3.05
	13390.00	89.07	176.45	9998.76	3566.06	-3517.45	616.75	2.68	442133.13	700869.52	N 32 12 52.01	W 103 49	2.97
	13484.00	89.76	179.25	9999.72	3659.73	-3611.37	620.27	3.07	442039.22	700873.04	N 32 12 51.08	W 103 49	2.94
	13579.00	88.04	180.48	10001.54	3754.04	-3706.35	620.50	2.23	441944.25	700873.27	N 32 12 50.14	W 103 49	2.94
	13674.00	86.83	181.83	10005.79	3848.01	-3801.23	618.59	1.91	441849.37	700871.36	N 32 12 49.21	W 103 49	2.97
	13769.00	88.73	182.49	10009.47	3941.75	-3896.09	615.01	2.12	441754.52	700867.78	N 32 12 48.27	W 103 49	3.02
	13863.00	91.93	183.80	10008.93	4034.29	-3989.93	609.85	3.68	441660.69	700862.62	N 32 12 47.34	W 103 49	3.08
	13958.00	89.66	182.71	10007.61	4127.79	-4084.76	604.46	2.65	441565.86	700857.23	N 32 12 46.40	W 103 49	3.15
	14053.00	89.55	182.43	10008.27	4221.49	-4179.66	600.20	0.32	441470.97	700852.97	N 32 12 45.46	W 103 49	3.20
	14147.00	89.59	183.08	10008.97	4314.16	-4273.55	595.68	0.69	441377.08	700848.45	N 32 12 44.53	W 103 49	3.26
	14242.00	89.76	183.15	10009.51	4407.71	-4368.41	590.52	0.19	441282.23	700843.29	N 32 12 43.59	W 103 49	3.33
	14431.00	90.07	182.66	10009.79	4593.95	-4557.16	580.94	0.31	441093.49	700833.71	N 32 12 41.73	W 103 49	3.45
	14525.00	89.52	180.39	10010.13	4686.93	-4651.12	578.44	2.48	440999.53	700831.21	N 32 12 40.80	W 103 49	3.48
	14619.00	90.41	179.19	10010.18	4780.29	-4745.12	578.78	1.59	440905.54	700831.56	N 32 12 39.87	W 103 49	3.48
Last Survey	14746.00	90.07	177.02	10009.65	4906.79	-4872.04	582.98	1.73	440778.63	700835.76	N 32 12 38.61	W 103 49	3.44
Proj. to TD	14784.00	90.07	177.02	10009.61	4944.70	-4909.99	584.96	0.00	440740.68	700837.73	N 32 12 38.24	W 103 49	3.42

Survey Type: Def Survey

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	26.500	1/98.425	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Patton MDP1 18 Federal 3H Gyro+MWD 0-14,784'
	1	26.500	26.500	Act Stns	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Patton MDP1 18 Federal 3H Gyro+MWD 0-14,784'
	1	26.500	624.270	Act Stns	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Patton MDP1 18 Federal 3H Gyro+MWD
	1	624.270	14784.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Patton MDP1 18 Federal 3H Gyro+MWD

Schlumberger

OXY

Borehole: Original Borehole | **Well:** Oxy Patton MDP1 18 Federal 3H | **Field:** NM Eddy County (NAD 83) | **Structure:** Oxy Patton MDP1 18 Federal 3H

Gravity & Magnetic Parameters
Model: HDGM 2017 Dip: 59.992° Date: 21-Oct-2017
MagDec: 6.963° FS: 48081.366nT Gravity FS: 998.428mgn (9.80665 Based)

Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet
Lat: N 32 13 26.85 Northing: 445650.36ftUS Grid Conv: 0.274°
Lon: W 103 49 9.96 Easting: 790252.81ftUS Scale Fact: 0.99993801

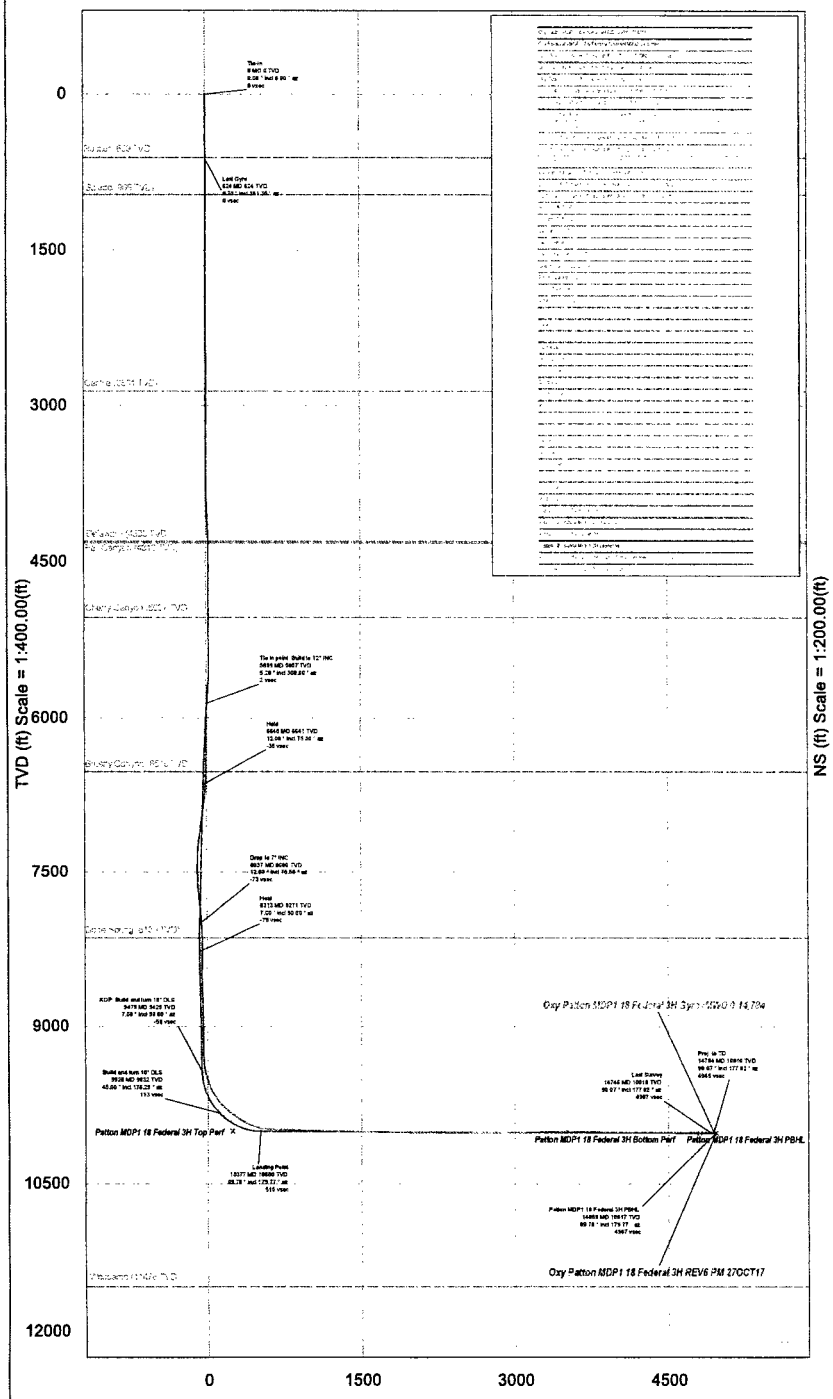
Miscellaneous
Slot: Oxy Patton MDP1 18 Federal 3H TVD Ref: RKB=26.5'(3560.5ft above MSL)
Plan: Oxy Patton MDP1 18 Federal 3H REV6 PM 27OCT17

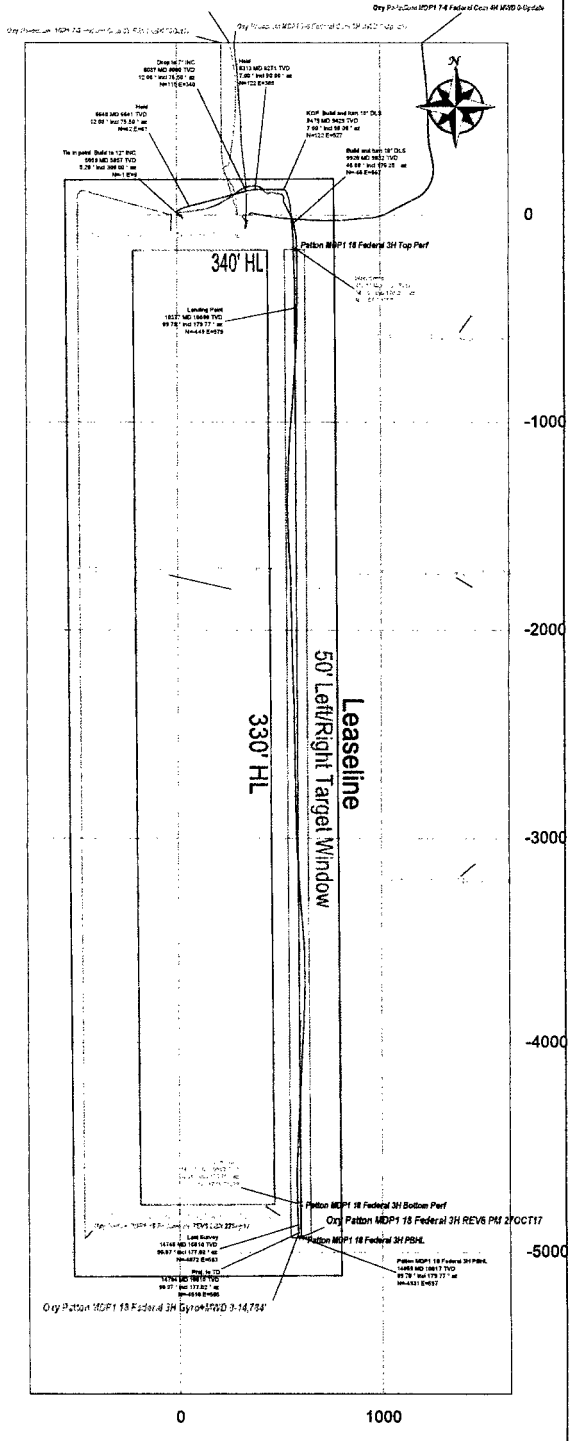
Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
Rustler	809.02	0.68	152.08	809.00	0.24	-0.05	1.62	0.38
Salado	966.03	0.00	256.11	966.00	1.56	-1.34	1.89	0.00
Castile	2861.05	0.45	72.97	2861.00	1.85	-0.91	7.84	0.14
Delaware	4303.46	1.75	150.36	4303.00	17.83	-14.43	29.15	1.04
Bell Canyon	4319.49	1.59	150.33	4319.00	18.26	-14.84	29.38	1.04
ICP	4331.49	1.46	150.30	4331.00	18.55	-15.12	29.54	1.04
Cherry Canyon	5037.51	0.08	258.91	5037.00	20.24	-16.81	29.54	0.12
Tie in point, Build to 12° INC	5859.00	5.28	308.00	5857.38	1.94	-0.81	9.45	
Brushy Canyon	6522.74	9.62	71.48	6518.00	-30.90	35.74	38.10	2.00
Hold	6647.61	12.00	75.50	6640.65	-34.75	42.32	60.55	2.00
Drop to 7° INC	8037.33	12.00	75.50	8000.00	-72.97	114.67	340.29	0.00
Bone Spring	8178.79	9.36	81.04	8139.00	-75.31	120.12	365.90	2.00
Hold	8312.58	7.00	90.00	8271.43	-74.74	121.84	384.80	2.00
KOP, Build and turn 10° DLS	9478.50	7.00	90.00	9428.66	-57.68	121.84	528.89	0.00
Build and turn 10° DLS	9928.21	45.00	176.25	9831.74	113.23	-45.49	568.76	10.00
Landing Point	10377.12	89.78	179.77	10000.00	515.43	-449.19	578.65	10.00
Patton MDP1 18 Federal 3H PBHL	14859.33	89.78	179.77	10017.00	4967.29	-4931.34	586.59	0.00
Wolfcamp	NaN			11476.00				

Grid
True Mag

Grid North
Tot Corr (M->G 6.689°)
Mag Dec (6.963°)
Grid Conv (0.274°)





Vertical Section (ft) Azim = 173.10° Scale = 1:400.00(ft) Origin = 0N/-S, 0E/-W

EW (ft) Scale = 1:200.00(ft)