Oilfield Services, Central U.S. Land
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)

NM OIL CONSERVATION
ARTESIA DISTRICT
JAN 3 1 2019
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Schlumberger

30-015-45079 October 3- October 7, 2018

Sidetrack - Plugback & redrill

Well Reference:
17, 24S, 31E, Eddy NM
N 32.22248 W -103.79550

I, Jude Omokwale certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of October 03, 2018 through October 07, 2018, conduct or supervise the taking of the TelePacer/SlimPulse & Third Party Corrected surveys from a depth of 10818.00 feet to a depth of 13983.00 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 17 Federal 176H-ST02 Well (Side Track) API No. 30-015-45079-02 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
Jude Omokwale
FS

Subscribed and Sworn to before me this 5th day of December (month) 2018 (yr)

My Commission expires:

2-16-2022

D. Adams
Notary Public (signature)

Adams County Colorado
(County State)

DONNA ADAMS
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20184007893
MY COMMISSION EXPIRES FEBRUARY 16, 2022

Schlumberger

Patton MDP1 17 Federal 176H ST02 MWD to 14025MD Survey Geodetic Report

(Def Survey)

Report Date:	October 09, 2018 - 09:39 AM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	OXY	**Vertical Section Azimuth:**	168.130 ° (Grid North)
Field:	NM Eddy County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Oxy Patton MDP1 17 Federal 176H / Patton MDP1 17 Federal 176H	**TVD Reference Datum:**	RKB = 26.5
Well:	Patton MDP1 17 Federal 176H	**TVD Reference Elevation:**	3572.600 ft above MSL
Borehole:	ST002	**Seabed / Ground Elevation:**	3546.300 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.650 °
Survey Name:	Patton MDP1 17 Federal 176H ST02 MWD to 14025MD	**Total Gravity Field Strength:**	998.4271mgn (9.80665 Based)
Survey Date:	October 03, 2018	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	256.036 ° / 6115.835 ft / 6.387 / 0.679	**Total Magnetic Field Strength:**	47970.368 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.946 °
Location Lat / Long:	N 32° 13' 20.91268", W 103° 47' 43.78626"	**Declination Date:**	October 03, 2018
Location Grid N/E Y/X:	N 445086.770 mUS, E 707657.830 mUS	**Magnetic Declination Model:**	HDGM 2018
CRS Grid Convergence Angle:	0.2858 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99994077	**Grid Convergence Used:**	0.2868 °
Version / Patch:	2.10.740.0	**Total Corr Mag North->Grid North:**	6.5634 °
		Local Coord Referenced To:	Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (mUS)	Easting (mUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
RKB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	445086.77	707657.83	N 32 13 20.91	W 103 47 43.79
Ground Level	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	445086.77	707657.83	N 32 13 20.91	W 103 47 43.79
	98.50	0.51	145.48	98.50	0.30	-0.26	0.18	0.71	445086.51	707658.01	N 32 13 20.91	W 103 47 43.78
	185.50	0.59	114.73	185.50	0.92	-0.77	0.81	0.35	445086.00	707658.64	N 32 13 20.91	W 103 47 43.78
	273.50	0.42	158.27	273.49	1.51	-1.26	1.34	0.46	445085.51	707659.17	N 32 13 20.90	W 103 47 43.77
	368.50	0.34	191.21	368.49	2.11	-1.86	1.41	0.24	445084.91	707659.24	N 32 13 20.89	W 103 47 43.77
	462.50	0.60	205.31	462.49	2.76	-2.58	1.15	0.30	445084.19	707658.98	N 32 13 20.89	W 103 47 43.77
	557.50	0.71	195.03	557.48	3.66	-3.60	0.78	0.17	445083.17	707658.61	N 32 13 20.88	W 103 47 43.78
	651.50	0.88	205.43	651.47	4.77	-4.81	0.32	0.24	445081.96	707658.15	N 32 13 20.87	W 103 47 43.78
End of Gyro	745.50	0.93	203.16	745.46	5.97	-6.16	-0.29	0.07	445080.61	707657.54	N 32 13 20.85	W 103 47 43.79
	861.00	0.06	207.51	860.95	6.73	-7.03	-0.72	0.78	445079.74	707657.11	N 32 13 20.84	W 103 47 43.80
	978.00	0.03	339.87	977.95	6.69	-7.00	-0.79	0.05	445079.77	707657.04	N 32 13 20.84	W 103 47 43.80
	1071.00	0.03	322.51	1070.95	6.64	-6.96	-0.81	0.01	445079.81	707657.02	N 32 13 20.84	W 103 47 43.80
	1254.00	0.08	194.84	1253.95	6.72	-7.05	-0.87	0.06	445079.72	707656.96	N 32 13 20.84	W 103 47 43.80
	1439.00	0.03	309.26	1438.95	6.79	-7.14	-0.94	0.05	445079.63	707656.89	N 32 13 20.84	W 103 47 43.80
	1533.00	0.03	29.44	1532.95	6.76	-7.10	-0.95	0.04	445079.67	707656.88	N 32 13 20.84	W 103 47 43.80
	1628.00	0.04	263.80	1627.95	6.72	-7.07	-0.97	0.06	445079.70	707656.86	N 32 13 20.84	W 103 47 43.80
	1722.00	0.03	83.95	1721.95	6.71	-7.06	-0.98	0.07	445079.71	707656.85	N 32 13 20.84	W 103 47 43.80
	1817.00	0.03	280.38	1816.95	6.70	-7.06	-0.98	0.06	445079.71	707656.85	N 32 13 20.84	W 103 47 43.80
	1911.00	0.03	141.51	1910.95	6.72	-7.07	-0.99	0.06	445079.70	707656.84	N 32 13 20.84	W 103 47 43.80
	2100.00	0.03	60.10	2099.95	6.75	-7.08	-0.91	0.02	445079.69	707656.92	N 32 13 20.84	W 103 47 43.80
	2194.00	0.03	121.76	2193.95	6.75	-7.09	-0.87	0.03	445079.69	707656.90	N 32 13 20.84	W 103 47 43.80
	2288.00	0.03	134.91	2287.95	6.79	-7.12	-0.83	0.01	445079.65	707657.00	N 32 13 20.84	W 103 47 43.80
	2383.00	0.04	219.19	2382.95	6.83	-7.16	-0.84	0.05	445079.61	707656.99	N 32 13 20.84	W 103 47 43.80
	2477.00	0.03	330.37	2476.95	6.83	-7.16	-0.87	0.06	445079.61	707656.96	N 32 13 20.84	W 103 47 43.80
	2571.00	0.04	218.67	2570.95	6.83	-7.17	-0.90	0.06	445079.60	707656.93	N 32 13 20.84	W 103 47 43.80
	2666.00	0.03	254.02	2665.95	6.85	-7.20	-0.95	0.02	445079.57	707656.88	N 32 13 20.84	W 103 47 43.80
	2760.00	0.04	122.48	2759.95	6.86	-7.22	-0.94	0.07	445079.55	707656.89	N 32 13 20.84	W 103 47 43.80
	2854.00	0.03	229.10	2853.95	6.91	-7.26	-0.93	0.06	445079.51	707656.90	N 32 13 20.84	W 103 47 43.80
	2949.00	0.03	283.28	2948.95	6.91	-7.27	-0.98	0.03	445079.50	707656.85	N 32 13 20.84	W 103 47 43.80
	3137.00	0.03	225.80	3136.95	6.92	-7.29	-1.06	0.02	445079.48	707656.77	N 32 13 20.84	W 103 47 43.80
	3325.00	0.08	272.02	3324.95	6.91	-7.32	-1.23	0.03	445079.45	707656.60	N 32 13 20.84	W 103 47 43.80
	3477.00	0.08	281.41	3476.95	6.84	-7.30	-1.44	0.01	445079.47	707656.39	N 32 13 20.84	W 103 47 43.80
	3609.00	0.08	239.71	3608.95	6.84	-7.32	-1.61	0.04	445079.45	707656.22	N 32 13 20.84	W 103 47 43.81
	3770.00	0.03	225.56	3769.95	6.90	-7.41	-1.73	0.03	445079.36	707656.10	N 32 13 20.84	W 103 47 43.81
	3892.00	0.03	150.43	3891.95	6.94	-7.46	-1.74	0.03	445079.31	707656.09	N 32 13 20.84	W 103 47 43.81
	3987.00	0.09	298.10	3986.95	6.92	-7.45	-1.80	0.12	445079.32	707656.03	N 32 13 20.84	W 103 47 43.81
	4081.00	0.14	244.95	4080.95	6.90	-7.47	-1.97	0.12	445079.30	707655.86	N 32 13 20.84	W 103 47 43.81
	4175.00	0.04	260.37	4174.95	6.93	-7.52	-2.10	0.11	445079.25	707655.73	N 32 13 20.84	W 103 47 43.81
	4269.00	0.08	294.90	4268.95	6.89	-7.50	-2.19	0.06	445079.27	707655.64	N 32 13 20.84	W 103 47 43.81
	4364.00	0.08	342.22	4363.95	6.76	-7.41	-2.27	0.07	445079.36	707655.56	N 32 13 20.84	W 103 47 43.81
	4552.00	0.03	296.68	4551.95	6.62	-7.26	-2.36	0.03	445079.51	707655.47	N 32 13 20.84	W 103 47 43.81
	4647.00	0.03	68.03	4646.95	6.60	-7.24	-2.36	0.06	445079.53	707655.47	N 32 13 20.84	W 103 47 43.81
	4741.00	0.03	1.91	4740.95	6.57	-7.21	-2.33	0.03	445079.56	707655.50	N 32 13 20.84	W 103 47 43.81
	4835.00	0.03	185.88	4834.95	6.57	-7.21	-2.34	0.06	445079.57	707655.49	N 32 13 20.84	W 103 47 43.81
	4930.00	0.03	283.61	4829.95	6.58	-7.22	-2.36	0.05	445079.55	707655.47	N 32 13 20.84	W 103 47 43.81
	5118.00	0.14	21.78	5117.95	6.37	-7.00	-2.32	0.08	445079.77	707655.51	N 32 13 20.84	W 103 47 43.81
	5307.00	0.68	119.80	5306.95	6.92	-7.34	-1.27	0.36	445079.43	707656.56	N 32 13 20.84	W 103 47 43.80
	5402.00	1.91	70.77	5401.92	7.10	-7.10	0.72	1.63	445079.67	707658.55	N 32 13 20.84	W 103 47 43.78
	5496.00	3.43	56.52	5495.82	5.86	-5.03	4.54	1.75	445081.74	707662.37	N 32 13 20.80	W 103 47 43.73
	5590.00	6.57	45.59	5589.45	1.93	0.28	10.73	3.48	445087.05	707668.56	N 32 13 20.91	W 103 47 43.68
	5685.00	9.77	41.12	5683.38	-8.66	11.20	20.88	3.10	445097.97	707678.71	N 32 13 21.02	W 103 47 43.54
	5800.00	12.52	30.96	5796.40	-20.38	27.68	32.60	3.21	445114.44	707690.43	N 32 13 21.18	W 103 47 43.41
	5874.00	13.08	25.64	5868.56	-32.90	42.10	40.35	1.78	445128.87	707698.18	N 32 13 21.33	W 103 47 43.31
	6070.00	13.07	22.32	6059.48	-68.83	82.80	58.37	0.38	445169.36	707716.19	N 32 13 21.73	W 103 47 43.10
	6157.00	12.64	21.71	6144.30	-84.90	100.54	65.02	0.52	445187.31	707723.45	N 32 13 21.90	W 103 47 43.02
	6251.00	12.81	20.53	6236.03	-102.13	119.71	73.02	0.28	445206.47	707730.65	N 32 13 22.09	W 103 47 42.93
	6440.00	15.84	25.43	6419.21	-140.08	162.34	91.34	1.82	445249.10	707749.17	N 32 13 22.51	W 103 47 42.71
	6535.00	17.43	27.95	6510.24	-161.32	186.62	103.58	1.84	445273.37	707761.40	N 32 13 22.75	W 103 47 42.57
	6629.00	18.58	28.11	6599.83	-183.61	212.26	117.23	1.22	445299.02	707775.08	N 32 13 23.01	W 103 47 42.41
	6723.00	18.94	29.33	6688.84	-206.56	238.77	131.78	0.57	445325.53	707789.58	N 32 13 23.27	W 103 47 42.24
	6817.00	17.92	29.15	6777.82	-228.95	264.70	146.28	1.09	445351.45	707804.10	N 32 13 23.52	W 103 47 42.07
	7008.00	17.69	30.59	6957.76	-272.07	314.81	175.06	0.26	445401.56	707832.88	N 32 13 24.02	W 103 47 41.73
	7100.00	19.82	30.21	7047.82	-292.01	338.05	188.69	2.21	445424.80	707846.51	N 32 13 24.25	W 103 47 41.57
	7195.00	14.77	30.05	7139.49	-310.51	359.56	201.19	0.00	445446.33	707859.01	N 32 13 24.46	W 103 47 41.42
	7289.00	13.75	29.45	7230.60	-327.82	379.08	212.69	1.10	445466.43	707870.50	N 32 13 24.66	W 103 47 41.29
	7384.00	12.60	29.08	7323.09	-344.12	398.57	223.27	1.21	445485.92	707881.09	N 32 13 24.85	W 103 47 41.16
	7572.00	11.81	36.14	7506.85	-372.48	432.03	244.59	0.90	445518.77	707902.40	N 32 13 25.16	W 103 47 40.91
	7761.00	16.13	51.50	7690.28	-397.21	464.02	278.57	2.99	445550.78	707934.38	N 32 13 25.49	W 103 47 40.54
	7856.00	17.52	49.47	7781.21	-409.98	481.53	297.76	1.59	445568.27	707955.57	N 32 13 25.66	W 103 47 40.29
	7950.00	18.55	47.82	7870.59	-424.31	500.76	319.60	1.22	445587.50	707977.41	N 32 13 25.85	W 103 47 40.04
Tie-In	8045.00	17.64	43.91	7960.90	-440.04	521.28	340.78	1.60	445608.02	707998.59	N 32 13 26.05	W 103 47 39.79
	8172.00	16.66	38.85	8082.26	-462.39	549.32	365.55	1.40	445636.06	708023.35	N 32 13 26.33	W 103 47 39.50
	8267.00	25.36	51.07	8170.90	-480.31	572.77	389.97	10.21	445659.50	708047.78	N 32 13 26.56	W 103 47 39.21
	8361.00	30.68	66.75	8253.99	-493.40	594.16	428.08	10.44	445680.89	708085.88	N 32 13 26.77	W 103 47 38.77
	8456.00	28.13	79.04	8338.80	-497.00	607.21	472.69	5.95	445693.95	708130.49	N 32 13 26.90	W 103 47 38.25
	8556.00	28.15	83.87	8424.99	-494.27	614.22	510.29	2.28	445700.95	708177.09	N 32 13 26.96	W 103 47 37.71
	8650.00	34.43	98.57	8505.40	-482.74	612.82	567.74	10.48	445699.35	708225.53	N 32 13 26.95	W 103 47 37.14

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 ° ' ")
	8745.00	38.24	124.78	8582.38	-451.78	591.71	618.77	10.72	445676.45	708276.58	N 32 13 26.74	W 103 47 36.55
	8840.00	37.78	137.57	8657.35	-405.27	553.40	662.02	8.29	445640.14	708320.41	N 32 13 26.36	W 103 47 36.04
	8934.00	46.21	140.09	8727.15	-350.18	505.69	703.48	9.20	445592.43	708361.27	N 32 13 25.88	W 103 47 35.57
	9029.00	51.59	148.26	8789.63	-284.56	447.30	744.70	8.09	445534.04	708402.48	N 32 13 25.30	W 103 47 35.09
	9124.00	61.60	154.96	8841.91	-208.61	377.55	782.07	12.05	445464.30	708439.86	N 32 13 24.61	W 103 47 34.66
	9218.00	69.80	159.70	8880.91	-123.61	297.68	815.31	9.85	445384.43	708473.09	N 32 13 23.82	W 103 47 34.28
	9313.00	74.53	164.92	8909.63	-34.62	212.45	842.44	7.22	445299.21	708500.22	N 32 13 22.97	W 103 47 33.97
	9408.00	78.74	169.09	8931.59	57.74	122.42	863.16	6.15	445209.19	708520.96	N 32 13 22.08	W 103 47 33.73
	9503.00	81.44	172.03	8947.95	151.22	30.13	878.52	4.17	445118.90	708536.30	N 32 13 21.17	W 103 47 33.56
	9597.00	86.32	174.96	8957.97	244.24	-62.70	889.09	6.05	445024.08	708546.87	N 32 13 20.25	W 103 47 33.44
	9645.00	87.93	175.97	8960.37	291.78	-110.49	892.88	3.98	444976.29	708550.66	N 32 13 19.78	W 103 47 33.40
	9696.00	89.17	176.26	8961.66	342.27	-161.35	896.34	2.50	444925.43	708554.11	N 32 13 19.27	W 103 47 33.36
	9790.00	88.21	177.26	8963.81	435.18	-255.17	901.65	1.47	444831.61	708559.42	N 32 13 18.34	W 103 47 33.31
	9884.00	87.66	179.53	8967.20	527.61	-349.07	904.28	2.48	444737.72	708562.05	N 32 13 17.41	W 103 47 33.28
	9977.00	88.00	178.86	8970.72	618.81	-441.99	905.59	0.81	444644.80	708563.36	N 32 13 16.49	W 103 47 33.27
	10072.00	87.04	179.02	8974.63	712.04	-536.89	907.34	1.02	444549.92	708565.12	N 32 13 15.56	W 103 47 33.26
	10167.00	87.76	178.39	8979.14	805.33	-631.76	909.49	1.01	444455.05	708567.26	N 32 13 14.62	W 103 47 33.24
	10262.00	87.38	179.21	8983.17	898.60	-726.66	911.47	0.95	444360.16	708569.25	N 32 13 13.68	W 103 47 33.22
	10356.00	87.62	178.05	8987.27	990.94	-820.54	913.72	1.26	444266.28	708571.49	N 32 13 12.75	W 103 47 33.20
	10448.00	87.42	178.18	8991.25	1081.48	-912.40	916.74	0.26	444174.42	708574.52	N 32 13 11.84	W 103 47 33.17
Tie-in to ST01	10631.00	87.76	181.99	8998.95	1260.30	-1095.21	916.47	2.09	443991.63	708574.24	N 32 13 10.03	W 103 47 33.18
	10818.00	86.19	183.90	9008.82	1440.82	-1281.66	906.88	1.32	443805.16	708564.65	N 32 13 8.19	W 103 47 33.30
	10912.00	94.73	174.69	9008.08	1532.85	-1375.49	906.03	13.35	443711.37	708565.80	N 32 13 7.26	W 103 47 33.30
	11006.00	95.78	174.22	8999.45	1625.88	-1468.65	917.07	1.22	443618.21	708574.85	N 32 13 6.33	W 103 47 33.20
	11101.00	95.26	175.69	8990.32	1719.77	-1562.84	925.39	1.63	443524.02	708583.16	N 32 13 5.40	W 103 47 33.11
	11195.00	95.50	177.04	8981.50	1812.39	-1656.24	931.32	1.45	443430.63	708589.09	N 32 13 4.48	W 103 47 33.04
	11290.00	94.61	176.37	8973.13	1905.96	-1750.71	936.76	1.17	443336.17	708594.53	N 32 13 3.54	W 103 47 32.98
	11385.00	93.37	177.12	8966.52	1999.86	-1845.32	942.14	1.52	443241.56	708599.91	N 32 13 2.61	W 103 47 32.93
	11574.00	88.79	177.16	8962.96	2186.24	-2034.00	951.57	2.42	443052.89	708609.34	N 32 13 0.74	W 103 47 32.83
	11764.00	91.40	178.51	8962.64	2373.50	-2223.65	958.74	1.55	442863.08	708616.52	N 32 12 58.86	W 103 47 32.76
	11858.00	91.61	182.18	8960.17	2465.33	-2317.60	956.18	3.91	442769.11	708615.95	N 32 12 57.93	W 103 47 32.77
	11953.00	91.37	186.47	8957.70	2556.50	-2412.47	951.02	4.52	442674.44	708608.79	N 32 12 56.99	W 103 47 32.86
	12047.00	90.27	189.69	8956.36	2644.64	-2505.52	937.81	3.82	442581.41	708595.58	N 32 12 56.07	W 103 47 33.02
	12142.00	88.38	188.58	8957.48	2733.52	-2599.30	922.73	2.31	442487.63	708580.50	N 32 12 55.15	W 103 47 33.20
	12236.00	87.93	185.89	8960.50	2822.28	-2692.49	910.90	2.90	442394.44	708568.67	N 32 12 54.23	W 103 47 33.34
	12331.00	89.96	184.09	8962.25	2913.18	-2787.11	902.84	2.88	442299.83	708560.41	N 32 12 53.29	W 103 47 33.44
	12426.00	91.40	181.22	8961.13	3005.12	-2881.99	898.24	3.38	442204.96	708556.01	N 32 12 52.35	W 103 47 33.50
	12520.00	90.54	181.01	8959.53	3096.70	-2975.96	896.41	0.94	442111.00	708554.18	N 32 12 51.42	W 103 47 33.53
	12615.00	89.34	179.15	8959.63	3189.64	-3070.95	896.28	2.33	442016.01	708554.05	N 32 12 50.48	W 103 47 33.53
	12805.00	89.17	178.95	8962.10	3376.77	-3260.81	902.74	1.16	441826.16	708560.51	N 32 12 48.60	W 103 47 33.47
	12994.00	88.62	174.04	8965.75	3564.18	-3449.17	917.58	1.57	441637.81	708575.35	N 32 12 46.74	W 103 47 33.31
	13183.00	88.93	176.10	8969.79	3751.26	-3637.64	930.53	2.15	441449.35	708588.30	N 32 12 44.87	W 103 47 33.17
	13278.00	89.20	176.80	8971.34	3844.71	-3732.60	933.10	0.79	441354.40	708590.87	N 32 12 43.93	W 103 47 33.14
	13373.00	89.27	177.76	8972.61	3938.22	-3827.54	935.95	1.10	441259.46	708593.72	N 32 12 42.99	W 103 47 33.12
	13467.00	89.24	178.38	8973.83	4030.80	-3921.48	939.13	0.64	441165.53	708596.90	N 32 12 42.06	W 103 47 33.08
	13561.00	89.10	177.81	8975.19	4123.37	-4015.42	942.27	0.60	441071.60	708600.04	N 32 12 41.13	W 103 47 33.05
	13751.00	90.06	178.63	8976.59	4310.43	-4205.32	948.17	0.66	440881.71	708605.94	N 32 12 39.25	W 103 47 33.00
	13845.00	89.92	180.79	8976.60	4402.51	-4299.31	948.65	2.30	440787.72	708606.42	N 32 12 38.32	W 103 47 33.00
Final MWD Survey	13983.00	90.30	181.87	8976.34	4536.86	-4437.27	945.44	0.83	440649.77	708603.22	N 32 12 36.98	W 103 47 33.04
Proj to TD	14025.00	90.30	181.87	8976.12	4577.66	-4479.25	944.07	0.00	440607.80	708601.85	N 32 12 30.54	W 103 47 33.06

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 17 Federal 176H Gyro + MWD 0-11405' MD (USE)
	1	26.500	26.500	Act Stns	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Patton MDP1 17 Federal 176H Gyro + MWD 0-11405' MD (USE)
	1	26.500	745.000	Act Stns	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Patton MDP1 17 Federal 176H Gyro +
	1	745.000	8045.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Patton MDP1 17 Federal 176H Gyro +
	1	8045.000	10631.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	ST001 / Oxy Patton MDP1 17 Federal 176H ST01 MD + Gyro to
	1	10631.000	14025.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	ST002 / Patton MDP1 17 Federal 176H ST02 MWD to 14025MD

Final PvA - ST02 - Rev0 H&P 657 (RKB=26.5')

Schlumberger

OXY

Borehole:	Well:	Field:	Structure:
ST002	Patton MDP1 17 Federal 176H	NM Eddy County (NAD 83)	Oxy Patton MDP1 17 Federal 176H

Gravity & Magnetic Parameters
Model: HDGM 2018 Dip: 59.944° Date: 03-Oct-2018
MagDec: 6.85° FS: 47970.383nT Gravity FS: 998.427mgn (9.80665 Based)

Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet
Lat: N 32 13 23.91 Northing: 445038.77ftUS Grid Conv: 0.2869°
Lon: W 103 47 43.79 Easting: 707657.83ftUS Scale Fact: 0.99984077

Miscellaneous
Slot: Patton MDP1 17 Federal 176H TVD Ref: RKB = 26.5ft (3572.8ft above MSL)
Plan: Patton MDP1 17 Federal 176H ST02 MWD to 14025MD

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
Tie-In to ST01	10631.00	87.76	181.99	8998.95	1260.30	-1095.21	916.47	
Exit Target Box	11620.00	89.50	177.53	8963.73	2237.50	-2085.94	953.98	1.55
Enter Target Box	11901.00	91.50	184.12	8959.01	2506.84	-2360.72	955.82	4.52
100' FSL Cross	13950.00	90.21	181.81	8976.49	4504.79	-4404.29	946.45	0.63
Final MWD Survey	13983.00	90.30	181.87	8976.34	4530.66	-4437.27	945.44	0.63
Proj to TD	14025.00	90.30	181.87	8976.12	4577.66	-4479.25	944.07	0.00