

Outford 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)
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NM OIL CONSERVATION
ARTESIA DISTRICT

JAN 31 2019

Schlumberger

RECEIVED

September 29 & 30, 2018 - Sidetrack

30-015-45079

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

I, Kristina Hansen certify that: I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of September 29, 2018 through September 30, 2018, conduct or supervise the taking of the TelePacer/SlimPulse & Third Party Corrected surveys from a depth of 9645.00 feet to a depth of 11860.00 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 ST01 Well (Side Track) API No. 30-015-45079-01 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
Kristina Hansen
FE

Kristina Hansen

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

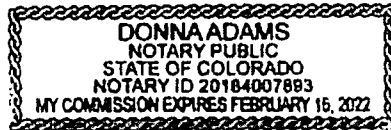
My Commission expires:

2-16-2022

D. Adams
Notary Public

Adams County Colorado
(County State)

(signature)



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 ° ' ")
	8550.00	34.43	08.57	8505.42	-482.85	812.53	587.73	10.48	445898.26	708225.53	N 32 13 26.95	W 103 47 37.14
	8743.00	38.24	124.78	8582.40	-451.89	591.82	618.70	18.72	445878.35	708276.58	N 32 13 28.74	W 103 47 36.55
	8940.00	37.78	137.57	8657.37	-405.16	553.31	682.62	8.29	445840.05	708320.40	N 32 13 28.35	W 103 47 38.04
	8934.00	46.21	140.99	8727.18	-350.09	505.00	703.48	9.29	445892.34	708381.28	N 32 13 25.88	W 103 47 35.57
	9029.00	51.59	148.28	8789.85	-284.47	447.21	744.60	8.09	445833.95	708402.48	N 32 13 22.50	W 103 47 35.08
	9029.00	61.60	154.98	8841.93	-208.52	377.46	782.07	12.05	445484.21	708439.85	N 32 13 24.61	W 103 47 34.66
	9124.00	69.80	159.70	8880.93	-123.52	297.59	815.31	9.85	445844.34	708473.09	N 32 13 23.82	W 103 47 34.28
	9313.00	74.53	164.82	8909.85	-57.83	212.30	842.43	7.22	445299.11	708500.21	N 32 13 22.97	W 103 47 33.97
	9408.00	78.74	169.09	8931.82	151.31	122.33	878.52	4.17	445118.80	708520.88	N 32 13 22.08	W 103 47 33.73
Final Gyro	9503.00	81.44	172.03	8947.87	151.31	30.03	892.68	6.15	445209.09	708536.29	N 32 13 21.17	W 103 47 33.50
	9597.00	86.32	174.98	8957.89	244.33	-82.79	889.09	8.05	445023.98	708546.87	N 32 13 20.25	W 103 47 33.44
	9645.00	87.93	175.08	8960.40	291.87	-110.58	892.88	3.97	444878.20	708550.65	N 32 13 19.77	W 103 47 33.48
	9696.00	89.17	176.20	8961.89	342.38	-161.45	896.33	2.49	444825.33	708554.10	N 32 13 19.27	W 103 47 33.36
	9790.00	88.21	177.26	8963.84	435.27	-255.27	901.84	1.47	444831.52	708559.41	N 32 13 18.34	W 103 47 33.31
	9884.00	87.66	178.53	8967.22	527.70	-349.18	904.27	2.48	444737.83	708562.04	N 32 13 17.41	W 103 47 33.28
	9977.00	88.00	178.88	8970.75	618.90	-442.09	905.57	0.81	444644.71	708563.35	N 32 13 16.49	W 103 47 33.27
	10072.00	87.04	179.03	8974.86	712.13	-538.98	907.32	1.03	444549.82	708565.10	N 32 13 15.55	W 103 47 33.26
	10187.00	87.78	178.39	8978.17	805.41	-631.88	909.46	1.01	444454.95	708567.23	N 32 13 14.62	W 103 47 33.24
	10282.00	87.38	179.21	8983.10	898.69	-720.75	911.45	0.95	444380.08	708569.22	N 32 13 13.68	W 103 47 33.22
	10356.00	87.62	178.88	8987.29	991.02	-820.83	913.68	1.25	444268.19	708571.48	N 32 13 12.75	W 103 47 33.20
	10448.00	87.42	178.19	8991.28	1081.54	-912.50	918.69	0.26	444174.33	708574.48	N 32 13 11.84	W 103 47 33.17
	10631.00	87.78	181.99	8998.97	1200.38	-1095.30	918.40	2.68	443991.54	708577.16	N 32 13 10.93	W 103 47 33.18
	10725.00	88.14	184.30	9002.34	1351.10	-1189.09	911.25	2.49	443897.75	708580.02	N 32 13 9.10	W 103 47 33.25
	10818.00	87.90	184.14	9005.55	1440.41	-1281.79	904.41	0.31	443805.06	708582.18	N 32 13 8.18	W 103 47 33.33
	11007.00	87.83	180.83	9012.59	1623.31	-1470.44	898.06	1.70	443618.42	708585.83	N 32 13 6.32	W 103 47 33.44
	11102.00	87.83	178.87	9017.79	1716.15	-1563.29	898.14	2.89	443521.57	708589.91	N 32 13 5.38	W 103 47 33.45
	11197.00	88.04	178.80	9024.48	1809.24	-1655.04	897.80	0.16	443426.83	708593.87	N 32 13 4.44	W 103 47 33.43
	11386.00	85.18	178.52	9038.93	1894.48	-1848.44	892.14	0.50	443328.45	708599.82	N 32 13 2.58	W 103 47 33.39
	11481.00	85.80	178.83	9048.40	2087.57	-1943.12	894.25	0.78	443143.77	708602.02	N 32 13 1.64	W 103 47 33.37
	11575.00	88.35	178.88	9052.84	2179.89	-2038.88	898.06	0.59	443050.01	708603.83	N 32 13 0.71	W 103 47 33.36
	11870.00	85.90	179.26	9059.26	2272.78	-2131.05	907.81	0.83	442955.25	708605.39	N 32 12 59.77	W 103 47 33.35
Final Survey	11860.00	85.28	179.41	9073.87	2458.58	-2321.07	908.81	0.34	442785.84	708607.58	N 32 12 57.60	W 103 47 33.33
PTB	11882.00	85.28	179.41	9083.80	2577.82	-2442.85	911.00	0.00	442644.27	708608.84	N 32 12 58.70	W 103 47 33.32

Survey Type: Def Survey

Survey Error Model: ISCWBA Rev 0 *** 3-D 95.000% Confidence 2.7855 sigma

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EQU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	28.500	1/98.425	30.000	30.000	NAL_NSQ+MSHOT-Depth Only	Original Borehole / Oxy Paton MDP1 17 Federal 176H Gyro + MWD 0-11405' MD (USE)
	1	28.500	28.500	Act Sns	30.000	30.000	NAL_NSQ+MSHOT-Depth Only	Original Borehole / Oxy Paton MDP1 17 Federal 176H Gyro + MWD 0-11405' MD (USE)
	1	28.500	651.500	Act Sns	30.000	30.000	NAL_NSQ+MSHOT	Original Borehole / Oxy Paton MDP1 17 Federal 176H Gyro + MWD 0-11405' MD (USE)
	1	651.500	8043.000	Act Sns	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Paton MDP1 17 Federal 176H Gyro + ST001 / Oxy Paton MDP1 17
	1	8043.000	11882.000	Act Sns	30.000	30.000	NAL_MWD_IFR1+MS	Federal 176H ST01 MD + Gyro to

...Paton MDP1 17 Federal 176HST001/Oxy Paton MDP1 17 Federal 176H ST01 MD + Gyro to 11882' MD (USE)