

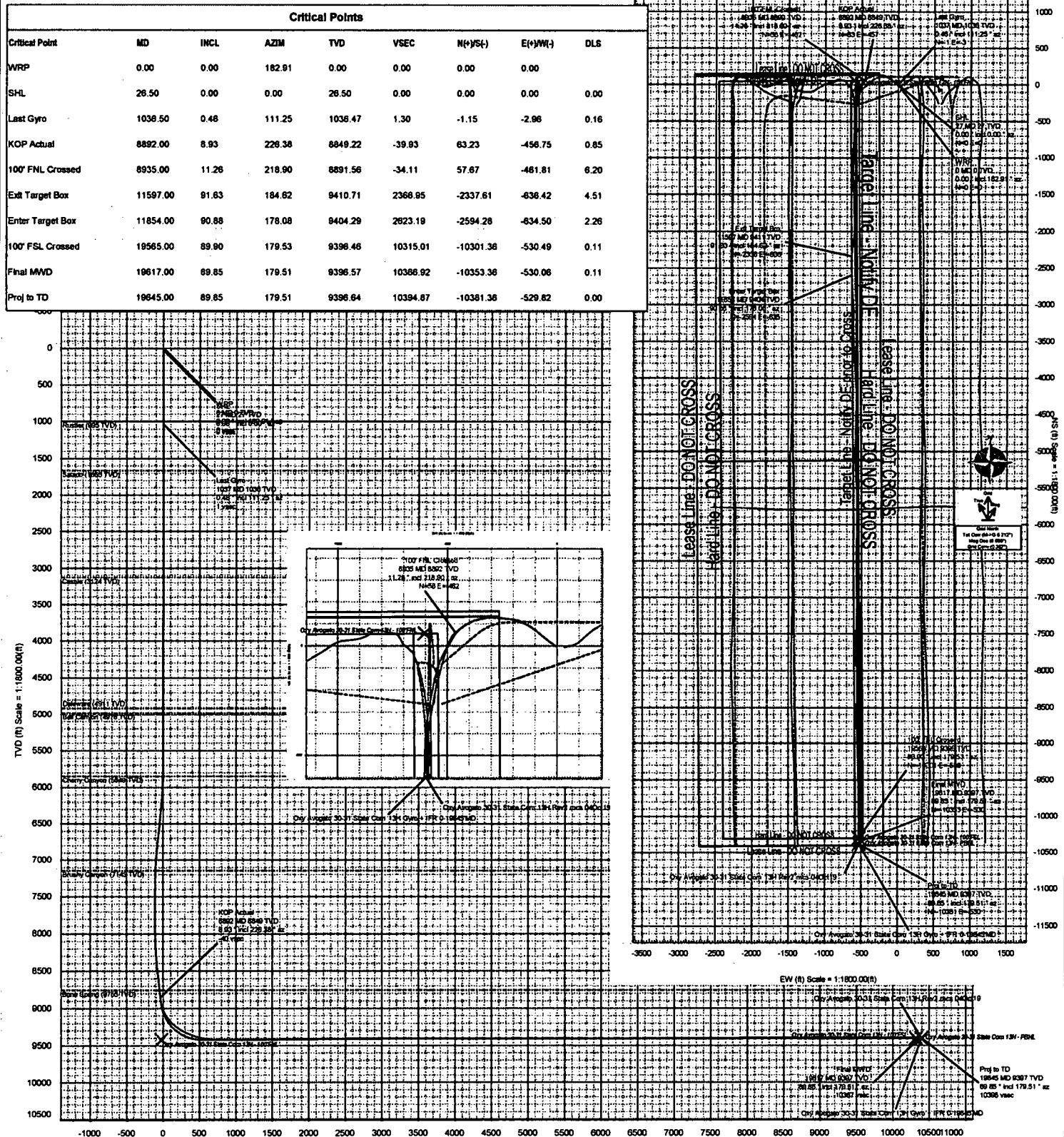
Schlumberger

OXY



Borehole:	Well:	Field:	Structure:
Original Borehole	Oxy Avogato 30-31 State Com 13H	NM Lea County (NAD 83)	Oxy Avogato 30-31 State Com 13H

Gravity & Magnetic Parameters				Surface Location				Miscellaneous			
Model:	FR1	Dip:	80.08°	Date:	03-Oct-2018	Lat:	N 32 22 10.72	North:	498981.871US	Grid Conv:	0.388°
MagDec:	6.58°	F8:	48047N	Gravity F8:	998.442mgals (3.80855 Based)	Lon:	W 103 38 38.63	East:	78423.771US	Scale Fact:	0.99999509
								Plan: Oxy Avogato 30-31 State Com 13H Gyro + FR 0-186457MD			



Oxy Avogato 30-31 State Com 13H Gyro + IFR 0-19645' MD Survey Geodetic Report (Def Survey)



Report Date: October 21, 2019 - 10:22 AM
Client: OXY
Field: NM Lea County (NAD 83)
Structure / Slot: Oxy Avogato 30-31 State Com 13H / Oxy Avogato 30-31 State Com 13H
Well: Oxy Avogato 30-31 State Com 13H
Borehole: Original Borehole
UWI / API#: Unknown / 30-025-45958
Survey Name: Oxy Avogato 30-31 State Com 13H Gyro + IFR 0-19645' MD
Survey Date: September 06, 2019
Tort / AHD / DDI / ERD Ratio: 221.628 * / 11000.953 ft / 6.706 / 1.167
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 22' 10.72412", W 103° 36' 38.69133"
Location Grid N/E Y/X: N 498961.900 RUS, E 764429.700 RUS
CRS Grid Convergence Angle: 0.3869 *
Grid Scale Factor: 0.99996609
Version / Patch: 2.10.782.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 182.915 * (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB=26.5'
TVD Reference Elevation: 3718.000 ft above MSL
Seabed / Ground Elevation: 3691.500 ft above MSL
Magnetic Declination: 6.599 *
Total Gravity Field Strength: 998.4495mgm (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 48047.000 nT
Magnetic Dip Angle: 80.085 *
Declination Date: October 03, 2019
Magnetic Declination Model: IFR1
North Reference: Grid North
Total Corr Mag North->Grid: 6.2121 *
North: Well Head
Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azlm Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (RUS)	Easting (RUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
WRP SHL	0.00	0.00	182.91	0.00	0.00	0.00	0.00	N/A	498961.90	764429.70	N 32 22 10.72	W 103 36 38.69
	26.50	0.00		26.50	0.00	0.00	0.00	0.00	498961.90	764429.70	N 32 22 10.72	W 103 36 38.69
	111.80	0.17	323.59	111.80	-0.10	0.10	-0.08	0.20	498962.00	764429.62	N 32 22 10.73	W 103 36 38.69
Last Gyro	199.00	0.29	302.51	199.00	-0.31	0.32	-0.34	0.17	498962.22	764429.36	N 32 22 10.73	W 103 36 38.70
	277.50	0.44	293.38	277.50	-0.51	0.55	-0.78	0.20	498962.45	764428.92	N 32 22 10.73	W 103 36 38.70
	371.90	0.55	286.34	371.89	-0.74	0.82	-1.55	0.13	498962.72	764428.15	N 32 22 10.73	W 103 36 38.71
	466.60	0.66	277.22	466.59	-0.89	1.02	-2.53	0.15	498962.92	764427.17	N 32 22 10.73	W 103 36 38.72
	561.10	0.58	264.12	561.08	-0.86	1.04	-3.54	0.17	498962.94	764426.16	N 32 22 10.73	W 103 36 38.73
	655.60	0.42	239.57	655.58	-0.59	0.81	-4.32	0.28	498962.71	764425.38	N 32 22 10.73	W 103 36 38.74
	750.20	0.32	177.47	750.18	-0.14	0.37	-4.60	0.41	498962.27	764425.10	N 32 22 10.73	W 103 36 38.74
	844.70	0.48	152.53	844.68	0.45	-0.23	-4.42	0.23	498961.87	764425.28	N 32 22 10.72	W 103 36 38.74
	938.60	0.61	115.72	938.57	0.97	-0.78	-3.79	0.39	498961.12	764425.91	N 32 22 10.72	W 103 36 38.74
	1036.50	0.46	111.25	1036.47	1.30	-1.15	-2.98	0.16	498960.75	764426.74	N 32 22 10.71	W 103 36 38.73
	1231.00	0.04	330.15	1230.97	1.48	-1.37	-2.26	0.25	498960.53	764427.44	N 32 22 10.71	W 103 36 38.72
	1321.00	0.08	76.94	1320.97	1.44	-1.33	-2.22	0.11	498960.57	764427.48	N 32 22 10.71	W 103 36 38.72
	1412.00	0.03	218.20	1411.97	1.44	-1.33	-2.17	0.12	498960.57	764427.53	N 32 22 10.71	W 103 36 38.72
	1594.00	0.07	271.53	1593.97	1.48	-1.37	-2.31	0.03	498960.53	764427.39	N 32 22 10.71	W 103 36 38.72
	1778.00	0.03	108.32	1777.97	1.50	-1.38	-2.38	0.05	498960.52	764427.32	N 32 22 10.71	W 103 36 38.72
	1866.00	0.03	109.51	1865.97	1.51	-1.39	-2.33	0.00	498960.51	764427.37	N 32 22 10.71	W 103 36 38.72
	1957.00	0.07	315.68	1956.97	1.48	-1.38	-2.35	0.11	498960.54	764427.35	N 32 22 10.71	W 103 36 38.72
	2048.00	0.03	41.63	2047.97	1.42	-1.30	-2.37	0.08	498960.60	764427.33	N 32 22 10.71	W 103 36 38.72
	2138.00	0.03	148.75	2137.97	1.42	-1.31	-2.34	0.05	498960.59	764427.36	N 32 22 10.71	W 103 36 38.72
	2229.00	0.03	356.03	2228.97	1.42	-1.30	-2.33	0.06	498960.60	764427.37	N 32 22 10.71	W 103 36 38.72
	2319.00	0.03	280.13	2318.97	1.39	-1.27	-2.36	0.04	498960.63	764427.34	N 32 22 10.71	W 103 36 38.72
	2409.00	0.03	264.52	2408.97	1.39	-1.27	-2.40	0.01	498960.63	764427.30	N 32 22 10.71	W 103 36 38.72
	2498.00	0.07	195.84	2497.97	1.45	-1.33	-2.44	0.07	498960.57	764427.26	N 32 22 10.71	W 103 36 38.72
	2588.00	0.03	60.46	2587.97	1.49	-1.37	-2.44	0.10	498960.53	764427.26	N 32 22 10.71	W 103 36 38.72
	2678.00	0.07	347.84	2677.97	1.43	-1.30	-2.43	0.07	498960.60	764427.27	N 32 22 10.71	W 103 36 38.72
	2857.00	0.03	307.26	2856.97	1.29	-1.17	-2.49	0.03	498960.73	764427.21	N 32 22 10.71	W 103 36 38.72
	2947.00	0.07	345.59	2946.97	1.23	-1.10	-2.52	0.08	498960.80	764427.18	N 32 22 10.71	W 103 36 38.72
	3037.00	0.07	141.29	3036.97	1.22	-1.09	-2.50	0.15	498960.81	764427.20	N 32 22 10.71	W 103 36 38.72
	3217.00	0.10	30.75	3216.97	1.16	-1.04	-2.35	0.08	498960.88	764427.35	N 32 22 10.71	W 103 36 38.72
	3308.00	0.03	332.67	3307.97	1.07	-0.95	-2.32	0.10	498960.95	764427.38	N 32 22 10.71	W 103 36 38.72
	3397.00	0.03	293.30	3396.97	1.04	-0.92	-2.35	0.02	498960.98	764427.35	N 32 22 10.72	W 103 36 38.72
	3487.00	0.03	127.65	3486.97	1.05	-0.93	-2.36	0.07	498960.97	764427.34	N 32 22 10.72	W 103 36 38.72
	3577.00	0.08	28.31	3576.97	1.00	-0.89	-2.31	0.10	498961.01	764427.39	N 32 22 10.72	W 103 36 38.72
	3667.00	0.03	96.54	3666.97	0.95	-0.83	-2.26	0.08	498961.07	764427.44	N 32 22 10.72	W 103 36 38.72
	3756.00	0.08	104.77	3755.97	0.96	-0.85	-2.17	0.06	498961.05	764427.53	N 32 22 10.72	W 103 36 38.72
	3847.00	0.13	91.14	3846.96	0.97	-0.87	-2.01	0.06	498961.03	764427.69	N 32 22 10.72	W 103 36 38.71
	3937.00	0.04	144.32	3936.96	0.99	-0.90	-1.89	0.12	498961.00	764427.81	N 32 22 10.72	W 103 36 38.71
	4032.00	0.08	16.05	4031.96	0.95	-0.86	-1.85	0.12	498961.04	764427.85	N 32 22 10.72	W 103 36 38.71
	4126.00	0.03	310.21	4125.96	0.87	-0.78	-1.85	0.08	498961.12	764427.85	N 32 22 10.72	W 103 36 38.71
	4220.00	0.08	261.11	4219.96	0.87	-0.78	-1.93	0.07	498961.12	764427.77	N 32 22 10.72	W 103 36 38.71
	4315.00	0.08	156.51	4314.96	0.95	-0.85	-1.97	0.13	498961.05	764427.73	N 32 22 10.72	W 103 36 38.71
	4409.00	0.05	38.31	4408.96	0.97	-0.87	-1.92	0.12	498961.03	764427.78	N 32 22 10.72	W 103 36 38.71
	4504.00	0.05	68.16	4503.96	0.92	-0.83	-1.88	0.03	498961.07	764427.84	N 32 22 10.72	W 103 36 38.71
	4599.00	0.07	8.32	4598.96	0.84	-0.75	-1.81	0.07	498961.15	764427.89	N 32 22 10.72	W 103 36 38.71
	4693.00	0.07	233.53	4692.96	0.82	-0.73	-1.85	0.14	498961.17	764427.85	N 32 22 10.72	W 103 36 38.71
	4788.00	0.07	350.00	4787.96	0.80	-0.71	-1.91	0.13	498961.19	764427.79	N 32 22 10.72	W 103 36 38.71
	4883.00	0.08	225.84	4882.96	0.80	-0.70	-1.96	0.14	498961.20	764427.74	N 32 22 10.72	W 103 36 38.71
	4977.00	0.03	275.93	4976.96	0.84	-0.74	-2.04	0.07	498961.18	764427.66	N 32 22 10.72	W 103 36 38.72
5072.00	0.07	93.95	5071.96	0.84	-0.74	-2.00	0.11	498961.18	764427.70	N 32 22 10.72	W 103 36 38.71	
5168.00	0.03	15.04	5165.96	0.82	-0.72	-1.94	0.08	498961.18	764427.76	N 32 22 10.72	W 103 36 38.71	
5261.00	0.07	153.40	5260.96	0.85	-0.75	-1.91	0.10	498961.15	764427.79	N 32 22 10.72	W 103 36 38.71	
5355.00	0.03	9.74	5354.96	0.87	-0.78	-1.88	0.10	498961.12	764427.82	N 32 22 10.72	W 103 36 38.71	
5449.00	0.15	183.05	5448.96	0.97	-0.87	-1.88	0.19	498961.03	764427.82	N 32 22 10.72	W 103 36 38.71	
5544.00	0.05	209.32	5543.96	1.58	-1.47	-2.15	0.53	498960.43	764427.55	N 32 22 10.71	W 103 36 38.72	
5639.00	0.93	261.49	5638.95	2.21	-2.05	-3.18	0.78	498959.85	764426.52	N 32 22 10.70	W 103 36 38.73	
5733.00	1.93	291.14	5732.92	1.67	-1.59	-5.41	1.29	498960.31	764424.29	N 32 22 10.71	W 103 36 38.75	
5828.00	3.09	300.22	5827.83	0.19	0.27	-9.11	1.29	498962.17	764420.59	N 32 22 10.73	W 103 36 38.60	
5922.00	4.36	303.91	5921.63	-2.61	3.54	-14.27	1.37	498965.44	764415.43	N 32 22 10.76	W 103 36 38.86	
6017.00	5.65	304.95	6016.27	-7.15	8.23	-21.10	1.36	498970.13	764408.60	N 32 22 10.81	W 103 36 38.94	
6111.00	6.59	306.59	6109.73	-12.60	14.10	-26.22	1.02	498976.00	764400.48	N 32 22 10.87	W 103 36 39.03	
6206.00	7.63	308.51	6204.00	-19.29	21.28	-38.53	1.12	498983.18	764391.17	N 32 22 10.94	W 103 36 39.14	
6300.00	8.73	309.26	6297.00	-27.15	28.68	-48.94	1.18	498991.58	764380.76	N 32 22 11.02	W 103 36 39.26	
6395.00	9.81	310.11	6290.00	-36.31	39.45	-60.71	1.15	499001.35	764368.99	N 32 22 11.12	W 103 36 39.40	
6490.00	10.39	309.73	6484.33	-46.34	50.14	-73.49	0.61	499012.04	764356.21	N 32 22 11.23	W 103 36 39.54	
6585.00	10.14	308.43	6477.81	-56.33	60.82	-86.83	0.36	499022.71	764343.07	N 32 22 11.33	W 103 36 39.70	
6679.00	10.19	306.75	6470.33	-65.77	70.93	-99.77	0.32	499032.83	764329.93	N 32 22 11.43	W 103 36 39.85	
6774.00	10.44	304.78	6463.80	-74.99	80.87	-113.56	0.46	499042.77	764316.13	N 32 22 11.53	W 103 36 40.01	
6868.00	10.25	302.27	6456.27	-83.59	90.20	-127.64	0.52	499052.09	764302.06	N 32 22 11.63	W 103 36 40.17	
6962.00	10.33	299.39	6448.76	-91.44	98.80	-142.06	0.55	499060.69	764287.65	N 32 22 11.71	W 103 36 40.34	
7057.00	10.10	294.95	7042.25	-98.37	106.49	-157.03	0.68	499068.39	764272.67	N 32 22 11.79	W 103 36 40.51	
7151.00	10.13	288.04	7134.79	-103.62	112.53	-172.37	1.29	499074.42	764257.34	N 32 22 11.85	W 103 36 40.69	
7246.00	10.37	281.74	7228.28	-107.11	116.85	-186.68	1.21	499078.75	764241.03	N 32 22 11.89	W 103 36 40.88	
7341.00	10.05	276.68	7321.78	-108.96	119.56	-205.29	1.00	499081.45	764			

Comments	MD (ft)	Incl (°)	Azim (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DL8 (ft/100ft)	Northing (ft)	Easting (ft)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	7625.00	9.95	276.81	7601.40	-112.59	125.70	-254.59	0.09	499087.59	764175.12	N 32 22 11.88	W 103 36 41.85
	7719.00	10.05	275.03	7693.97	-113.44	127.38	-270.83	0.35	499089.28	764156.88	N 32 22 12.00	W 103 36 41.84
	7814.00	9.99	271.76	7787.52	-113.58	128.38	-287.32	0.60	499090.28	764142.39	N 32 22 12.01	W 103 36 42.03
	7909.00	9.89	268.49	7881.10	-112.79	128.40	-303.71	0.60	499090.29	764126.00	N 32 22 12.01	W 103 36 42.22
	8004.00	10.04	264.50	7974.68	-110.95	127.39	-320.11	0.74	499089.29	764109.60	N 32 22 12.01	W 103 36 42.41
	8098.00	10.22	260.02	8067.20	-107.89	125.16	-336.48	0.86	499087.05	764093.23	N 32 22 11.88	W 103 36 42.60
	8192.00	10.25	255.95	8159.71	-103.59	121.68	-352.81	0.77	499083.58	764076.81	N 32 22 11.95	W 103 36 42.80
	8287.00	9.91	251.49	8253.24	-98.13	117.04	-368.78	0.90	499078.93	764060.95	N 32 22 11.91	W 103 36 42.98
	8381.00	10.24	247.52	8345.79	-91.59	111.27	-384.15	0.82	499073.17	764045.56	N 32 22 11.85	W 103 36 43.16
	8475.00	10.13	243.54	8438.31	-83.96	104.40	-399.27	0.78	499066.29	764030.44	N 32 22 11.78	W 103 36 43.34
	8570.00	10.09	238.87	8531.84	-75.20	96.37	-413.87	0.68	499058.27	764015.84	N 32 22 11.71	W 103 36 43.51
	8759.00	9.83	230.58	8718.00	-55.06	77.57	-440.51	0.77	499039.46	763989.21	N 32 22 11.52	W 103 36 43.82
	8892.00	8.93	226.38	8849.22	-39.93	63.23	-456.75	0.85	499025.13	763972.96	N 32 22 11.38	W 103 36 44.01
KOP Actual	8935.00	11.26	218.90	8891.56	-34.11	57.67	-481.81	6.20	499019.58	763967.91	N 32 22 11.33	W 103 36 44.07
100' FNL	8987.00	14.23	213.20	8942.27	-24.48	48.36	-468.50	6.20	499010.26	763961.22	N 32 22 11.23	W 103 36 44.15
Crossed	9081.00	26.25	209.31	9030.31	4.23	20.47	-485.06	12.88	498982.37	763944.66	N 32 22 10.96	W 103 36 44.35
	9176.00	37.43	210.80	9110.89	48.70	-22.79	-510.21	11.80	498939.11	763919.51	N 32 22 10.53	W 103 36 44.84
	9270.00	45.53	200.09	9181.34	106.17	-78.89	-536.43	11.43	498882.91	763893.29	N 32 22 9.98	W 103 36 44.95
	9365.00	53.33	193.01	9243.12	176.22	-148.10	-556.70	9.96	498813.80	763873.02	N 32 22 9.30	W 103 36 45.19
	9460.00	61.23	191.03	9294.44	255.08	-226.22	-573.27	8.50	498735.69	763856.45	N 32 22 8.52	W 103 36 45.39
	9554.00	68.44	188.00	9335.88	338.85	-309.39	-587.16	8.25	498652.52	763842.56	N 32 22 7.70	W 103 36 45.58
	9649.00	70.49	184.63	9370.75	427.03	-397.20	-596.84	5.39	498564.72	763832.88	N 32 22 6.83	W 103 36 45.68
	9743.00	79.82	180.35	9394.82	517.77	-487.85	-600.71	10.86	498474.07	763829.01	N 32 22 5.94	W 103 36 45.73
	9838.00	82.58	181.84	9409.35	611.59	-581.70	-602.51	3.29	498380.22	763827.22	N 32 22 5.01	W 103 36 45.78
	9933.00	87.78	182.71	9417.33	708.21	-678.26	-606.27	5.55	498285.66	763823.46	N 32 22 4.07	W 103 36 45.81
	9982.00	87.87	182.75	9419.28	755.18	-725.17	-608.60	0.24	498236.78	763821.12	N 32 22 3.59	W 103 36 45.84
	10076.00	89.08	182.49	9421.95	849.13	-819.03	-612.89	1.53	498142.90	763816.83	N 32 22 2.86	W 103 36 45.90
	10176.00	89.77	182.01	9422.95	949.12	-918.94	-616.82	0.84	498042.99	763812.90	N 32 22 1.87	W 103 36 45.95
	10265.00	90.04	179.93	9423.10	1038.07	-1007.93	-618.32	2.38	497954.01	763811.40	N 32 22 0.79	W 103 36 45.98
	10360.00	90.37	181.20	9422.78	1132.88	-1102.92	-619.26	1.38	497859.02	763810.48	N 32 21 59.85	W 103 36 46.00
	10454.00	90.21	178.33	9422.28	1226.63	-1198.91	-618.88	3.08	497765.04	763810.85	N 32 21 58.92	W 103 36 46.00
	10549.00	90.33	178.41	9421.83	1321.53	-1291.87	-618.17	0.15	497670.08	763811.55	N 32 21 57.98	W 103 36 45.98
	10643.00	90.11	178.37	9421.47	1415.24	-1385.83	-613.53	0.24	497576.12	763816.19	N 32 21 57.05	W 103 36 45.95
	10738.00	90.20	178.18	9421.21	1509.92	-1480.79	-610.87	0.22	497481.17	763819.05	N 32 21 56.11	W 103 36 45.90
	10833.00	90.62	178.37	9420.54	1604.61	-1575.74	-607.81	0.49	497386.22	763821.91	N 32 21 55.17	W 103 36 45.90
	10927.00	90.72	178.22	9419.44	1698.30	-1668.69	-605.02	0.19	497292.27	763824.70	N 32 21 54.24	W 103 36 45.85
	11022.00	90.70	178.42	9418.28	1782.99	-1764.64	-602.23	0.21	497197.32	763827.49	N 32 21 53.30	W 103 36 45.85
	11116.00	90.73	178.64	9417.05	1866.76	-1858.61	-599.82	0.24	497103.36	763829.80	N 32 21 52.37	W 103 36 45.83
	11211.00	90.33	181.18	9416.21	1951.56	-1953.59	-597.67	0.25	497008.38	763830.05	N 32 21 51.43	W 103 36 45.84
	11400.00	90.81	187.88	9414.65	2170.37	-2141.89	-614.59	3.54	496820.09	763815.13	N 32 21 49.57	W 103 36 46.02
	11589.00	91.64	184.98	9410.94	2358.96	-2329.64	-635.75	1.63	496632.34	763793.97	N 32 21 47.72	W 103 36 46.29
Exit Target Box	11597.00	91.63	184.62	9410.71	2368.95	-2337.61	-636.42	4.51	496624.37	763793.30	N 32 21 47.64	W 103 36 46.29
	11778.00	91.45	176.48	9405.84	2547.58	-2518.38	-636.12	4.51	496443.61	763791.60	N 32 21 45.85	W 103 36 46.33
Enter Target Box	11854.00	90.88	178.08	9404.29	2623.19	-2594.28	-634.50	2.26	496367.71	763795.22	N 32 21 45.10	W 103 36 46.29
	11873.00	90.74	178.49	9404.02	2642.12	-2613.27	-633.94	2.26	496348.73	763795.79	N 32 21 44.91	W 103 36 46.29
	11888.00	90.97	178.70	9402.60	2736.84	-2708.23	-631.61	0.33	496253.77	763798.11	N 32 21 43.97	W 103 36 46.27
	12062.00	90.77	176.00	9401.18	2830.38	-2802.11	-627.26	2.88	496159.89	763802.46	N 32 21 43.04	W 103 36 46.22
	12157.00	90.49	173.23	9400.13	2924.37	-2896.67	-618.35	2.93	496065.33	763811.37	N 32 21 42.10	W 103 36 46.13
	12251.00	89.73	175.84	9399.95	3017.38	-2990.24	-609.40	2.89	495971.77	763820.32	N 32 21 41.18	W 103 36 46.03
	12346.00	89.76	180.49	9400.37	3112.01	-3085.18	-606.36	4.89	495876.85	763823.37	N 32 21 40.24	W 103 36 46.00
	12440.00	89.18	182.05	9401.24	3205.96	-3179.13	-608.44	1.77	495782.88	763821.28	N 32 21 39.31	W 103 36 46.03
	12535.00	89.52	179.51	9402.32	3300.88	-3274.11	-609.73	2.70	495687.91	763819.99	N 32 21 38.37	W 103 36 46.06
	12629.00	89.88	179.22	9402.83	3394.70	-3368.10	-608.69	0.48	495593.92	763821.03	N 32 21 37.44	W 103 36 46.05
	12724.00	89.94	178.20	9403.00	3489.44	-3463.08	-606.55	1.08	495498.95	763823.17	N 32 21 36.50	W 103 36 46.03
	12818.00	89.63	177.69	9403.35	3583.09	-3557.02	-603.18	0.63	495405.01	763826.54	N 32 21 35.57	W 103 36 46.00
	12913.00	89.35	177.18	9404.20	3677.65	-3651.92	-598.93	0.61	495310.12	763830.79	N 32 21 34.63	W 103 36 45.98
	13008.00	89.90	176.99	9404.82	3772.15	-3746.79	-594.10	0.61	495215.24	763835.62	N 32 21 33.69	W 103 36 45.91
	13102.00	89.51	176.84	9405.30	3865.64	-3840.85	-589.04	0.44	495121.39	763840.68	N 32 21 32.76	W 103 36 45.88
	13197.00	89.77	176.58	9405.90	3960.08	-3935.49	-583.59	0.39	495026.55	763846.13	N 32 21 31.82	W 103 36 45.80
	13291.00	89.70	176.17	9406.33	4053.47	-4029.30	-577.64	0.44	494932.74	763852.08	N 32 21 30.89	W 103 36 45.74
	13386.00	89.90	176.14	9406.68	4147.81	-4124.09	-571.27	0.21	494837.96	763858.45	N 32 21 29.96	W 103 36 45.68
	13480.00	90.01	176.12	9406.74	4241.15	-4217.88	-564.93	0.12	494744.18	763864.79	N 32 21 29.03	W 103 36 45.61
	13572.00	89.54	176.66	9407.10	4332.55	-4309.69	-559.14	0.78	494652.36	763870.58	N 32 21 28.12	W 103 36 45.55
	13668.00	89.87	178.35	9407.59	4428.12	-4405.60	-554.96	1.79	494556.46	763874.76	N 32 21 27.17	W 103 36 45.51
	13762.00	89.86	179.72	9407.82	4521.90	-4499.58	-553.38	1.48	494462.48	763878.34	N 32 21 26.24	W 103 36 45.50
	13857.00	89.52	179.98	9408.33	4616.78	-4594.58	-553.11	0.44	494367.49	763876.61	N 32 21 25.30	W 103 36 45.50
	13951.00	89.88	179.69	9408.99	4710.62	-4688.58	-552.82	0.33	494273.49	763876.90	N 32 21 24.37	W 103 36 45.50
	14046.00	89.87	179.14	9409.36	4805.44	-4783.57	-551.85	0.61	494178.50	763877.87	N 32 21 23.43	W 103 36 45.50
	14140.00	89.81	179.42	9409.54	4899.25	-4877.56	-550.67	0.30	494084.51	763879.05	N 32 21 22.50	W 103 36 45.49
	14234.00	90.06	179.30	9409.58	4993.07	-4971.56	-549.82	0.20	493990.52	763880.10	N 32 21 21.57	W 103 36 45.49
	14329.00	89.90	178.89	9409.60	5087.86	-5066.54	-548.12	0.48	493895.54	763881.60	N 32 21 20.63	W 103 36 45.48
	14423.00	90.25	178.99	9409.47	5181.84	-5160.53	-546.38	0.39	493801.56	763883.34	N 32 21 19.70	W 103 36 45.47
	14518.00	90.04	178.18	9409.23	5276.42	-5255.51	-544.87	0.30	493706.57	763884.85	N 32 21 18.78	W 103 36 45.48
	14612.00	90.38	179.47	9409.90	5370.24	-5349.51	-543.76	0.48	493612.58	763885.98	N 32 21 17.83	W 103 36 45.45
	14706.00	90.47	179.80	9408.22	5464.08	-5443.50	-543.18	0.37	493518.59	763886.58	N 32 21 16.90	W 103 36 45.45
	14801.00	90.20	180.35	9407.87	5558.96	-5538.50	-					

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
	18014.00	90.30	179.91	9394.05	8766.80	-8750.45	-544.29	0.89	490211.77	763885.43	N 32 20 44.18	W 103 36 45.72
	18108.00	90.32	179.38	9393.55	8860.65	-8844.44	-543.69	0.59	490117.77	763886.03	N 32 20 43.25	W 103 36 45.72
	18202.00	90.10	179.35	9393.20	8954.47	-8938.44	-542.64	0.23	490023.78	763887.08	N 32 20 42.32	W 103 36 45.72
	18297.00	90.34	179.87	9392.84	9049.30	-9033.43	-541.82	0.42	489928.79	763887.90	N 32 20 41.38	W 103 36 45.72
	18391.00	90.36	179.23	9392.26	9143.12	-9127.43	-540.92	0.47	489834.80	763888.80	N 32 20 40.45	W 103 36 45.71
	18486.00	90.18	179.32	9391.81	9237.93	-9222.42	-539.72	0.21	489739.81	763890.00	N 32 20 39.51	W 103 36 45.71
	18580.00	89.75	179.71	9391.87	9331.77	-9316.41	-538.92	0.62	489645.82	763890.80	N 32 20 38.58	W 103 36 45.71
	18675.00	89.69	179.52	9392.34	9426.61	-9411.41	-538.28	0.21	489550.83	763891.43	N 32 20 37.64	W 103 36 45.71
	18769.00	89.66	179.83	9392.87	9520.45	-9505.41	-537.59	0.12	489456.84	763892.13	N 32 20 36.71	W 103 36 45.71
	18958.00	90.05	179.83	9393.35	9709.15	-9694.40	-536.70	0.23	489267.85	763893.02	N 32 20 34.84	W 103 36 45.71
	19053.00	89.65	179.53	9393.60	9804.00	-9789.40	-536.17	0.53	489172.85	763893.55	N 32 20 33.90	W 103 36 45.71
	19147.00	89.71	179.27	9394.12	9897.82	-9883.39	-535.18	0.28	489078.86	763894.54	N 32 20 32.97	W 103 36 45.71
	19241.00	89.35	179.43	9394.89	9991.64	-9977.38	-534.12	0.42	488984.87	763895.60	N 32 20 32.04	W 103 36 45.70
	19335.00	89.74	179.28	9395.64	10085.45	-10071.38	-533.06	0.44	488890.89	763896.68	N 32 20 31.11	W 103 36 45.70
	19430.00	89.70	179.23	9396.10	10180.26	-10166.37	-531.82	0.07	488795.90	763897.90	N 32 20 30.17	W 103 36 45.69
	19524.00	89.94	179.55	9396.40	10274.08	-10260.36	-530.82	0.43	488701.91	763898.90	N 32 20 29.24	W 103 36 45.69
100' FSL	19565.00	89.90	179.53	9396.46	10315.01	-10301.36	-530.49	0.11	488660.91	763899.23	N 32 20 28.83	W 103 36 45.68
Crossed												
Final MWD	19617.00	89.85	179.51	9396.57	10368.92	-10353.36	-530.06	0.11	488608.91	763899.68	N 32 20 28.32	W 103 36 45.68
Proj to TD	19645.00	89.85	179.51	9396.64	10394.87	-10381.36	-529.82	0.00	488580.92	763899.90	N 32 20 28.04	W 103 36 45.68

Survey Type: Def Survey

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

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	26.500	1/98.425	30.000	30.000 GYD_GC+DROP+OH-Depth Only	Original Borehole / Oxy Avogato 30-31 State Com 13H Gyro + IFR 0-19645MD
	1	26.500	26.500	Act Strs	30.000	30.000 GYD_GC+DROP+OH-Depth Only	Original Borehole / Oxy Avogato 30-31 State Com 13H Gyro + IFR 0-19645MD
	1	26.500	1036.500	Act Strs	30.000	30.000 GYD_GC+DROP+OH	Original Borehole / Oxy Avogato 30-31 State Com 13H Gyro + IFR Original Borehole / Oxy Avogato
	1	1036.500	19645.000	Act Strs	30.000	30.000 A010Mb_MWD+IFR1+SAG+MS	30-31 State Com 13H Gyro + IFR 0-19645MD

...Original Borehole\Oxy Avogato 30-31 State Com 13H Gyro + IFR 0-19645MD

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)

Schlumberger

HOBBS QCD
NOV 14 2019
RECEIVED

November 3, 2019

OXY USA Inc
P.O. Box 4294
Houston, TX 77210-4294

S30, T22S, R33E Lea, NM
N 32.36965 W -103.61075

Re:

CLIENT: OXY USA Inc
WELL: Avogato 30-31 State Com 13H
FIELD: Red Tank; Bone Spring, East

RIG: HP 656
COUNTY: Eddy
API NO: 30-025-45958
JOB NO: 19MLH0356

Enclosed, please find the original copy of the survey performed on the referenced well by Drilling & Measurements, a division of Schlumberger Technology Corporation (P-5 No. 754900).
Other information required by your office is as follows.

<u>Name & Title of Surveyor</u>	<u>Drainhole Number</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
Hossam Elezaby FE	Avogato 30-31 State Com 13H Original Hole	1231.00 Ft to 19617.00 Ft	September 10, 2019 to October 18, 2019	TelePacer 3rd Party Corrected

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:
S30, T22S, R33E Lea, NM
N 32.36965 W -103.61075

I, Hossam Elezaby certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of September 10, 2019 through October 18, 2019, conduct or supervise the taking of the Third Party Corrected Surveys surveys from a depth of 1231.00 feet to a depth of 19617.00 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 Incorporated for the Avogato 30-31 State Com 13H Well (Original Hole) API No. 30-025-45958 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

Hossam Elezaby
FE

Hossam Elezaby

Subscribed and Sworn to before me this 3 day of November (month) 2019 (yr)

My Commission expires:

6/14/2023

Notary Public

Cowache, Oklahoma
(County State)

(signature)

