

Schlumberger

OXY

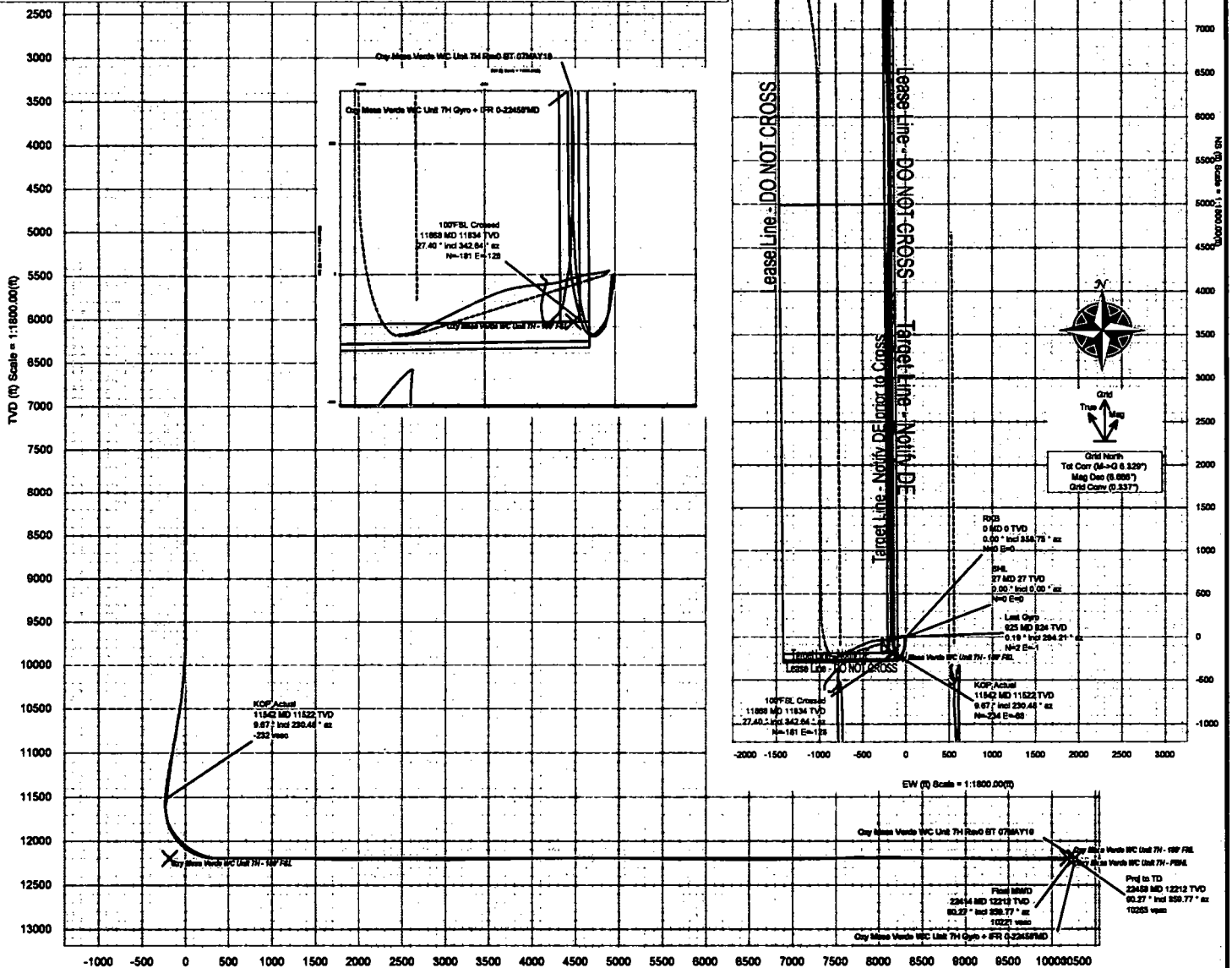


Borehole:	Well:	Field:	Structure:
Original Borehole	Oxy Mesa Verde WC Unit 7H	NM Lea County (NAD 83)	Oxy Mesa Verde WC Unit 7H

Gravity & Magnetic Parameters				Surface Location				Miscellaneous			
Model:	IFR1	Dip:	63.982°	Date:	26-Jun-2019	Lat:	N 32 12 28.48	Northing:	441088.848US	Grid Conv:	0.3372°
MagDec:	6.889°	FB:	47852.7hT	Gravity FB:	988.431mag (2.00003 Based)	Lon:	W 102 42 2.80	Easting:	736988.090US	Scale Fact:	0.3398234
								Plan: Oxy Mesa Verde WC Unit 7H Gyro + IFR 0-23458FMD			

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
RKB	0.00	0.00	358.75	0.00	0.00	0.00	0.00	
SHL	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00
Last Gyro	924.50	0.19	284.21	924.49	2.19	2.17	-1.20	0.37
KOP Actual	11542.00	9.87	230.48	11522.19	-231.97	-233.52	-88.17	1.05
100' FSL Crossed	11868.00	27.40	342.84	11833.84	-178.51	-181.35	-128.15	11.18
100' FNL Crossed	22377.00	90.25	359.89	12212.11	10183.99	10181.39	-230.32	0.33
Final MWD	22414.00	90.27	359.77	12211.84	10220.98	10218.39	-230.43	0.33
Proj to TD	22458.00	90.27	359.77	12211.73	10284.98	10282.39	-230.80	0.00



Vertical Section (TV) Azim = 358.75° Scale = 1:1800.00(ft) Orth = 0N-S, 0E-W

Oxy Mesa Verde WC Unit 7H Gyro + IFR 0-22458' MD Survey Geodetic Report (Def Survey)



Report Date: July 15, 2019 - 12:12 AM
 Client: OXY
 Field: NM Lea County (NAD 83)
 Structure / Slot: Oxy Mesa Verde WC Unit 7H / Oxy Mesa Verde WC Unit 7H
 Well: Oxy Mesa Verde WC Unit 7H
 Borehole: Original Borehole
 UWI / API#: Unknown / 30-025-45920
 Survey Name: Oxy Mesa Verde WC Unit 7H Gyro + IFR 0-22458' MD
 Survey Date: June 17, 2019
 Tort / AHD / DDI / ERD Ratio: 308.119' / 10818.333 ft / 6.785 / 0.886
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 12' 39.4804", W 103° 42' 2.50326"
 Location Grid N/E Y/X: N 441059.640 NUS, E 736999.090 NUS
 CRS Grid Convergence Angle: 0.3372°
 Grid Scale Factor: 0.99995294
 Version / Patch: 2.10.760.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 358.748° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB
 Seabed / Ground Elevation: 3589.500 ft above MSL
 Seabed / Ground Elevation: 3583.000 ft above MSL
 Magnetic Declination: 8.868°
 Total Gravity Field Strength: 988.4311 mgn (8.80665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 47893.700 nT
 Magnetic Dip Angle: 59.862°
 Declination Date: June 25, 2019
 Magnetic Declination Model: IFR1
 North Reference: Grid North
 Grid Convergence Used: 0.3372°
 Total Corr Mag North->Grid: 6.3288°
 North: Well Head
 Local Coord Referenced To:

	MD	Incl	Azlm Grid	TVD	VSEC	NS	EW	DLS	Northing	Easting	Latitude	Longitude
Comments	(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft/100ft)	(ftUS)	(ftUS)	(N/S ° ' ")	(E/W ° ' ")
RKB	0.00	0.00	358.75	0.00	0.00	0.00	0.00	N/A	441059.64	736999.09	N 32 12 39.48 W 103 42 2.50	
SHL	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	441059.64	736999.09	N 32 12 39.48 W 103 42 2.50	
	89.50	0.38	10.55	89.50	0.24	0.24	0.04	0.52	441059.88	736999.13	N 32 12 39.48 W 103 42 2.50	
	126.50	0.46	13.82	126.50	0.43	0.43	0.09	0.31	441060.07	736999.18	N 32 12 39.48 W 103 42 2.50	
	185.50	0.37	16.89	185.50	0.84	0.84	0.20	0.16	441060.48	736999.29	N 32 12 39.48 W 103 42 2.50	
	211.50	0.29	14.78	211.50	0.98	0.99	0.24	0.31	441060.63	736999.33	N 32 12 39.48 W 103 42 2.50	
	241.50	0.21	11.72	241.50	1.11	1.11	0.27	0.27	441060.75	736999.36	N 32 12 39.48 W 103 42 2.50	
	267.50	0.27	350.58	267.50	1.22	1.22	0.27	0.41	441060.88	736999.38	N 32 12 39.48 W 103 42 2.50	
	288.50	0.25	355.57	288.50	1.36	1.36	0.25	0.10	441061.00	736999.34	N 32 12 39.48 W 103 42 2.50	
	330.50	0.23	339.76	330.50	1.49	1.49	0.23	0.22	441061.13	736999.32	N 32 12 39.50 W 103 42 2.50	
	361.50	0.21	342.35	361.50	1.60	1.60	0.19	0.07	441061.24	736999.28	N 32 12 39.50 W 103 42 2.50	
	393.50	0.19	333.79	393.50	1.70	1.71	0.15	0.11	441061.35	736999.24	N 32 12 39.50 W 103 42 2.50	
	424.50	0.19	338.46	424.50	1.80	1.80	0.10	0.05	441061.44	736999.19	N 32 12 39.50 W 103 42 2.50	
	456.50	0.21	342.89	456.49	1.90	1.91	0.07	0.08	441061.55	736999.16	N 32 12 39.50 W 103 42 2.50	
	488.50	0.21	331.82	488.49	2.01	2.01	0.02	0.13	441061.65	736999.11	N 32 12 39.50 W 103 42 2.50	
	519.50	0.19	326.24	519.49	2.11	2.11	-0.03	0.09	441061.75	736999.06	N 32 12 39.50 W 103 42 2.50	
	551.50	0.17	315.94	551.49	2.19	2.18	-0.10	0.12	441061.82	736998.99	N 32 12 39.50 W 103 42 2.50	
	582.50	0.19	297.23	582.49	2.24	2.24	-0.17	0.20	441061.88	736998.92	N 32 12 39.50 W 103 42 2.51	
	614.50	0.18	296.82	614.49	2.29	2.29	-0.27	0.03	441061.93	736998.82	N 32 12 39.50 W 103 42 2.51	
	645.50	0.13	282.03	645.49	2.32	2.32	-0.34	0.21	441061.96	736998.75	N 32 12 39.50 W 103 42 2.51	
	677.50	0.13	261.68	677.49	2.33	2.32	-0.41	0.14	441061.96	736998.68	N 32 12 39.50 W 103 42 2.51	
	708.50	0.18	259.88	708.49	2.32	2.31	-0.50	0.16	441061.95	736998.59	N 32 12 39.50 W 103 42 2.51	
	740.50	0.19	263.16	740.49	2.30	2.29	-0.60	0.05	441061.93	736998.49	N 32 12 39.50 W 103 42 2.51	
	771.50	0.22	270.30	771.49	2.30	2.29	-0.71	0.13	441061.93	736998.38	N 32 12 39.50 W 103 42 2.51	
	803.50	0.21	266.44	803.49	2.30	2.28	-0.83	0.05	441061.92	736998.26	N 32 12 39.50 W 103 42 2.51	
	834.50	0.21	264.49	834.49	2.29	2.27	-0.94	0.02	441061.91	736998.15	N 32 12 39.50 W 103 42 2.51	
	866.50	0.19	242.16	866.49	2.27	2.24	-1.05	0.25	441061.88	736998.04	N 32 12 39.50 W 103 42 2.52	
	897.50	0.15	232.32	897.49	2.22	2.19	-1.13	0.16	441061.83	736997.96	N 32 12 39.50 W 103 42 2.52	
Last Gyro	924.50	0.19	264.21	924.49	2.19	2.17	-1.20	0.37	441061.81	736997.89	N 32 12 39.50 W 103 42 2.52	
	1012.00	0.10	97.03	1011.99	2.17	2.14	-1.27	0.33	441061.78	736997.82	N 32 12 39.50 W 103 42 2.52	
	1197.00	0.18	289.87	1196.99	2.24	2.21	-1.35	0.14	441061.85	736997.74	N 32 12 39.50 W 103 42 2.52	
	1289.00	0.14	162.73	1288.99	2.18	2.15	-1.44	0.29	441061.79	736997.65	N 32 12 39.50 W 103 42 2.52	
	1382.00	0.13	78.21	1381.99	2.09	2.06	-1.30	0.20	441061.70	736997.79	N 32 12 39.50 W 103 42 2.52	
	1473.00	0.14	222.85	1472.99	2.03	2.00	-1.27	0.28	441061.64	736997.82	N 32 12 39.50 W 103 42 2.52	
	1690.00	0.11	145.51	1689.99	1.71	1.68	-1.33	0.08	441061.32	736997.78	N 32 12 39.50 W 103 42 2.52	
	1754.00	0.13	23.73	1753.99	1.73	1.71	-1.23	0.22	441061.35	736997.66	N 32 12 39.50 W 103 42 2.52	
	1848.00	0.13	194.22	1847.99	1.73	1.70	-1.22	0.28	441061.34	736997.54	N 32 12 39.50 W 103 42 2.52	
	2037.00	0.18	21.72	2036.99	1.76	1.74	-1.17	0.15	441061.38	736997.82	N 32 12 39.50 W 103 42 2.52	
	2131.00	0.13	268.45	2130.99	1.88	1.88	-1.23	0.26	441061.50	736997.66	N 32 12 39.50 W 103 42 2.52	
	2225.00	0.14	352.99	2224.99	2.00	1.97	-1.35	0.19	441061.61	736997.74	N 32 12 39.50 W 103 42 2.52	
	2320.00	0.11	244.84	2319.99	2.08	2.04	-1.45	0.21	441061.68	736997.84	N 32 12 39.50 W 103 42 2.52	
	2414.00	0.11	249.24	2413.99	2.01	1.97	-1.81	0.01	441061.61	736997.48	N 32 12 39.50 W 103 42 2.52	
	2508.00	0.13	312.88	2508.99	2.05	2.01	-1.78	0.13	441061.65	736997.31	N 32 12 39.50 W 103 42 2.52	
	2603.00	0.14	168.84	2602.99	2.01	1.97	-1.83	0.27	441061.61	736997.26	N 32 12 39.50 W 103 42 2.52	
	2698.00	0.13	82.88	2697.99	1.95	1.91	-1.72	0.23	441061.55	736997.38	N 32 12 39.50 W 103 42 2.52	
	2792.00	0.11	40.84	2791.99	2.06	2.03	-1.66	0.08	441061.67	736997.53	N 32 12 39.50 W 103 42 2.52	
	2888.00	0.16	150.73	2887.99	2.01	1.98	-1.44	0.24	441061.62	736997.65	N 32 12 39.50 W 103 42 2.52	
	2981.00	0.10	81.25	2980.99	1.91	1.88	-1.29	0.16	441061.52	736997.80	N 32 12 39.50 W 103 42 2.52	
	3075.00	0.16	240.83	3074.99	1.85	1.83	-1.32	0.27	441061.47	736997.77	N 32 12 39.50 W 103 42 2.52	
	3169.00	0.13	170.94	3168.99	1.69	1.66	-1.42	0.18	441061.30	736997.87	N 32 12 39.50 W 103 42 2.52	
	3264.00	0.16	110.01	3263.99	1.53	1.50	-1.28	0.16	441061.14	736997.81	N 32 12 39.50 W 103 42 2.52	
	3358.00	0.13	91.10	3357.99	1.48	1.46	-1.05	0.06	441061.10	736998.04	N 32 12 39.50 W 103 42 2.52	
	3453.00	0.13	171.10	3452.99	1.37	1.35	-0.93	0.18	441060.99	736998.16	N 32 12 39.49 W 103 42 2.51	
	3547.00	0.19	16.53	3546.99	1.41	1.39	-0.87	0.33	441061.03	736998.22	N 32 12 39.49 W 103 42 2.51	
	3641.00	0.44	38.35	3640.99	1.84	1.83	-0.80	0.29	441061.47	736998.49	N 32 12 39.50 W 103 42 2.51	
	3736.00	0.36	89.59	3735.98	2.12	2.11	-0.07	0.37	441061.75	736999.02	N 32 12 39.50 W 103 42 2.50	
	3830.00	0.20	124.09	3829.98	2.02	2.02	0.36	0.24	441061.66	736999.45	N 32 12 39.50 W 103 42 2.50	
	3924.00	0.18	205.53	3923.98	1.79	1.80	0.43	0.28	441061.44	736999.52	N 32 12 39.50 W 103 42 2.50	
	4018.00	0.11	65.33	4017.98	1.69	1.70	0.45	0.29	441061.34	736999.54	N 32 12 39.50 W 103 42 2.50	
	4113.00	0.18	31.11	4112.98	1.66	1.67	0.81	0.11	441061.51	736999.70	N 32 12 39.50 W 103 42 2.50	
	4207.00	0.10	120.55	4206.98	1.94	1.95	0.76	0.22	441061.59	736999.85	N 32 12 39.50 W 103 42 2.49	
	4302.00	0.14	161.95	4301.98	1.78	1.80	0.88	0.10	441061.44	736999.95	N 32 12 39.50 W 103 42 2.49	
	4396.00	0.13	265.77	4395.98	1.67	1.68	0.79	0.23	441061.32	736999.88	N 32 12 39.50 W 103 42 2.49	
	4491.00	0.19	251.87	4490.98	1.62	1.63	0.54	0.07	441061.27	736999.83	N 32 12 39.50 W 103 42 2.50	
	4585.00	0.16	357.21	4584.98	1.70	1.71	0.38	0.30	441061.35	736999.47	N 32 12 39.50 W 103 42 2.50	
	4679.00	0.10	151.18	4678.98	1.76	1.77	0.41	0.27	441061.41	736999.50	N 32 12 39.50 W 103 42 2.50	
	4774.00	0.05	146.16	4773.98	1.65	1.66	0.48	0.05	441061.30	736999.57	N 32 12 39.50 W 103 42 2.50	
	4862.00	0.13	188.93	4861.98	1.37	1.38	0.49	0.05	441061.02	736999.58	N 32 12 39.49 W 103 42 2.50	
	5057.00	0.13	3.86	5056.98	1.37	1.38	0.48	0.27	441061.02	736999.57	N 32 12 39.49 W 103 42 2.50	
	5151.00	0.11	289.15	5150.98	1.51	1.52	0.40	0.16	441061.16	736999.49	N 32 12 39.50 W 103 42 2.50	
	5245.00	0.16	69.90	5244.98	1.59	1.60	0.44	0.27	441061.24	736999.53	N 32 12 39.50 W 103 42 2.50	
	5340.00	0.13	230.10	5339.98	1.56	1.57	0.48	0.30	441061.21	736999.57	N 32 12 39.50 W 103 42 2.50	
	5434.00	0.13	291.83	5433.98	1.54	1.54	0.30	0.14	441061.18	736999.39	N 32 12 39.50 W 103 42 2.50	
	5528.00	0.13	240.19	5527.98	1.53	1.53	0.11	0.12	441061.17	736999.20	N 32 12 39.50 W 103 42 2.50	
	5623.00	0.14	240.82	5622.98	1.42	1.42	-0.08	0.01	441061.06	736999.01	N 32 12 39.49 W 103 42 2.50	
	5717.00											

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DL8 (ft/100ft)	Northing (ft)	Easting (ft)	Latitude (N/S ° ° ')	Longitude (E/W ° ° ')
	6094.00	0.16	237.38	6093.98	0.91	0.92	0.16	0.30	441060.56	738999.25	N 32 12 39.48 W 103 42 2.50	
	6189.00	0.16	117.11	6188.98	0.78	0.78	0.17	0.29	441080.42	738999.28	N 32 12 39.48 W 103 42 2.50	
	6283.00	0.06	110.42	6282.98	0.70	0.71	0.33	0.11	441080.35	738999.42	N 32 12 39.48 W 103 42 2.50	
	6377.00	0.11	10.94	6376.98	0.77	0.78	0.40	0.14	441080.42	738999.49	N 32 12 39.48 W 103 42 2.50	
	6474.00	0.09	205.12	6473.98	0.79	0.80	0.38	0.20	441080.44	738999.47	N 32 12 39.48 W 103 42 2.50	
	6561.00	0.09	201.27	6560.98	0.53	0.53	0.27	0.00	441080.17	738999.36	N 32 12 39.48 W 103 42 2.50	
	6650.00	0.11	71.12	6649.98	0.44	0.45	0.38	0.10	441080.09	738999.47	N 32 12 39.48 W 103 42 2.50	
	6944.00	0.10	316.10	6943.98	0.53	0.54	0.41	0.19	441060.18	738999.50	N 32 12 39.48 W 103 42 2.50	
	7039.00	0.16	287.11	7038.98	0.63	0.64	0.23	0.09	441060.28	738999.32	N 32 12 39.48 W 103 42 2.50	
	7133.00	0.24	229.84	7132.98	0.55	0.55	-0.05	0.22	441060.19	738999.04	N 32 12 39.48 W 103 42 2.50	
	7227.00	0.25	209.93	7226.98	0.25	0.25	-0.30	0.09	441059.89	738998.79	N 32 12 39.48 W 103 42 2.51	
	7322.00	0.20	114.58	7321.98	0.00	0.00	-0.25	0.35	441059.64	738998.84	N 32 12 39.48 W 103 42 2.51	
	7416.00	0.10	143.59	7415.98	-0.14	-0.14	-0.06	0.13	441059.50	738999.03	N 32 12 39.48 W 103 42 2.50	
	7510.00	0.17	1.75	7509.98	-0.06	-0.06	0.00	0.27	441059.58	738999.09	N 32 12 39.48 W 103 42 2.50	
	7605.00	0.19	290.73	7604.98	0.14	0.13	-0.15	0.22	441059.77	738998.94	N 32 12 39.48 W 103 42 2.50	
	7699.00	0.12	179.74	7698.98	0.10	0.09	-0.29	0.28	441059.73	738998.80	N 32 12 39.48 W 103 42 2.51	
	7793.00	0.31	145.70	7792.97	-0.22	-0.22	-0.15	0.24	441059.42	738998.94	N 32 12 39.48 W 103 42 2.50	
	7882.00	0.31	191.22	7881.97	-1.14	-1.14	0.04	0.13	441058.50	738999.13	N 32 12 39.47 W 103 42 2.50	
	8076.00	0.09	323.20	8075.97	-1.33	-1.33	-0.05	0.40	441058.31	738999.04	N 32 12 39.47 W 103 42 2.50	
	8171.00	0.18	320.39	8170.97	-1.17	-1.17	-0.18	0.07	441058.47	738998.91	N 32 12 39.47 W 103 42 2.51	
	8265.00	0.20	214.45	8264.97	-1.20	-1.20	-0.36	0.31	441058.44	738998.73	N 32 12 39.47 W 103 42 2.51	
	8360.00	0.48	232.20	8359.97	-1.57	-1.59	-0.77	0.31	441058.05	738998.32	N 32 12 39.47 W 103 42 2.51	
	8456.00	0.04	314.84	8455.97	-1.78	-1.81	-1.11	0.50	441057.83	738997.98	N 32 12 39.48 W 103 42 2.52	
	8551.00	0.07	168.23	8550.97	-1.82	-1.84	-1.12	0.11	441057.80	738997.97	N 32 12 39.48 W 103 42 2.52	
	8645.00	0.04	169.09	8644.97	-1.81	-1.93	-1.10	0.03	441057.71	738997.99	N 32 12 39.48 W 103 42 2.52	
	8740.00	0.02	347.15	8739.97	-1.82	-1.95	-1.10	0.06	441057.69	738997.99	N 32 12 39.48 W 103 42 2.52	
	8834.00	0.11	19.39	8833.97	-1.82	-1.85	-1.07	0.10	441057.79	738998.02	N 32 12 39.48 W 103 42 2.52	
	8928.00	0.06	108.67	8927.97	-1.75	-1.78	-1.00	0.13	441057.86	738998.09	N 32 12 39.48 W 103 42 2.51	
	9117.00	0.10	334.56	9116.97	-1.64	-1.68	-0.97	0.08	441057.98	738998.12	N 32 12 39.48 W 103 42 2.51	
	9306.00	0.06	30.16	9305.97	-1.40	-1.42	-0.99	0.04	441058.22	738998.10	N 32 12 39.47 W 103 42 2.51	
	9401.00	0.04	261.51	9400.97	-1.36	-1.39	-1.00	0.10	441058.25	738998.09	N 32 12 39.47 W 103 42 2.52	
	9495.00	0.09	211.47	9494.97	-1.43	-1.45	-1.07	0.08	441058.19	738998.02	N 32 12 39.47 W 103 42 2.52	
	9589.00	0.07	203.59	9588.97	-1.54	-1.57	-1.13	0.02	441058.07	738997.96	N 32 12 39.47 W 103 42 2.52	
	9684.00	0.66	292.29	9683.97	-1.38	-1.42	-1.66	0.70	441058.22	738997.43	N 32 12 39.47 W 103 42 2.52	
	9778.00	1.88	269.31	9777.94	-1.15	-1.23	-3.69	1.36	441058.41	738995.40	N 32 12 39.47 W 103 42 2.55	
	9872.00	2.77	225.54	9871.87	-2.69	-2.84	-6.84	2.04	441058.80	738992.25	N 32 12 39.45 W 103 42 2.58	
	9967.00	3.68	205.49	9966.72	-6.97	-7.18	-9.78	1.50	441052.46	738989.31	N 32 12 39.41 W 103 42 2.62	
	10061.00	4.74	187.56	10060.47	-13.48	-13.74	-11.58	1.80	441045.90	738987.51	N 32 12 39.35 W 103 42 2.64	
	10156.00	5.17	186.07	10155.12	-21.81	-21.89	-12.55	0.47	441037.75	738986.54	N 32 12 39.26 W 103 42 2.65	
	10250.00	5.92	184.46	10248.68	-30.83	-30.93	-13.38	0.81	441028.71	738985.71	N 32 12 39.18 W 103 42 2.68	
	10344.00	7.03	184.53	10342.08	-41.18	-41.50	-14.21	1.18	441018.14	738984.88	N 32 12 39.07 W 103 42 2.67	
	10439.00	8.71	188.51	10438.18	-54.09	-54.44	-15.48	1.79	441005.20	738983.81	N 32 12 38.94 W 103 42 2.69	
	10533.00	8.83	185.11	10532.08	-68.31	-68.70	-16.93	0.28	440990.94	738982.16	N 32 12 38.80 W 103 42 2.71	
	10628.00	9.94	185.59	10622.81	-83.70	-84.12	-18.38	1.17	440975.52	738980.71	N 32 12 38.65 W 103 42 2.72	
	10722.00	10.63	184.46	10715.30	-100.38	-100.84	-19.84	0.76	440958.80	738979.25	N 32 12 38.48 W 103 42 2.74	
	10816.00	10.34	184.51	10807.73	-117.40	-117.90	-21.18	0.31	440941.75	738977.91	N 32 12 38.32 W 103 42 2.76	
	10911.00	10.18	189.15	10901.21	-134.14	-134.68	-23.19	0.89	440924.96	738975.90	N 32 12 38.15 W 103 42 2.78	
	11005.00	10.22	192.75	10993.72	-150.41	-151.02	-26.35	0.68	440908.63	738972.74	N 32 12 37.99 W 103 42 2.82	
	11099.00	10.42	190.87	11088.20	-166.81	-167.50	-29.78	0.42	440892.15	738969.30	N 32 12 37.83 W 103 42 2.86	
	11194.00	10.23	194.36	11179.87	-183.33	-184.11	-33.50	0.69	440875.54	738965.59	N 32 12 37.68 W 103 42 2.91	
	11288.00	10.48	206.56	11272.15	-198.93	-199.85	-39.40	2.34	440859.80	738959.89	N 32 12 37.51 W 103 42 2.98	
	11383.00	10.16	218.08	11365.82	-213.06	-214.17	-46.43	2.19	440845.48	738950.68	N 32 12 37.36 W 103 42 3.08	
	11438.00	10.24	225.11	11419.75	-220.18	-221.44	-54.89	2.27	440838.21	738944.21	N 32 12 37.29 W 103 42 3.18	
	11542.00	9.87	230.48	11522.19	-231.97	-233.52	-66.17	1.05	440826.13	738930.92	N 32 12 37.17 W 103 42 3.31	
	11636.00	13.68	277.74	11614.42	-235.14	-237.06	-85.31	1.63	440822.59	738913.79	N 32 12 37.14 W 103 42 3.51	
	11730.00	17.10	314.83	11709.28	-223.41	-225.79	-106.16	10.87	440833.66	738882.94	N 32 12 37.25 W 103 42 3.75	
	11825.00	22.73	340.07	11784.70	-195.89	-198.62	-122.38	10.69	440801.03	738876.73	N 32 12 37.52 W 103 42 3.94	
KOP Actual	11868.00	27.40	342.64	11833.64	-178.51	-181.35	-128.15	11.16	440878.29	738870.95	N 32 12 37.69 W 103 42 4.01	
100FSL Crossed	11919.00	32.98	344.81	11877.71	-153.73	-156.73	-135.30	11.18	440902.91	738863.80	N 32 12 37.94 W 103 42 4.09	
	12013.00	42.14	346.25	11852.14	-97.89	-101.29	-149.53	9.78	440958.38	738849.57	N 32 12 38.48 W 103 42 4.25	
	12108.00	46.90	350.38	12019.87	-32.51	-36.08	-162.91	5.66	441023.56	738836.19	N 32 12 39.13 W 103 42 4.40	
	12202.00	56.09	355.89	12078.36	40.59	36.85	-171.46	10.79	441096.49	738827.64	N 32 12 39.86 W 103 42 4.50	
	12297.00	64.01	359.80	12125.76	122.81	119.02	-174.37	9.10	441178.65	738824.73	N 32 12 40.87 W 103 42 4.52	
	12391.00	70.69	358.48	12161.94	206.50	205.71	-175.82	7.24	441265.34	738823.48	N 32 12 41.53 W 103 42 4.53	
	12486.00	76.27	358.96	12186.54	301.17	297.35	-177.66	9.04	441356.88	738821.44	N 32 12 42.43 W 103 42 4.55	
	12580.00	89.62	0.10	12195.83	394.59	390.78	-178.42	11.08	441450.40	738820.68	N 32 12 43.36 W 103 42 4.55	
	12620.00	89.62	358.98	12195.89	434.59	430.78	-178.74	2.80	441480.40	738820.36	N 32 12 43.75 W 103 42 4.55	
	12620.00	90.89	0.39	12195.00	634.55	630.76	-179.84	0.95	441690.37	738819.26	N 32 12 45.73 W 103 42 4.55	
	12917.00	89.97	359.54	12194.27	731.52	727.76	-179.80	1.29	441787.36	738819.20	N 32 12 46.69 W 103 42 4.55	
	13010.00	88.56	357.88	12195.47	824.51	820.73	-181.81	2.26	441880.32	738817.19	N 32 12 47.81 W 103 42 4.56	
	13103.00	90.10	358.29	12196.56	917.50	913.67	-184.94	1.69	441973.28	738814.16	N 32 12 48.53 W 103 42 4.59	
	13197.00	89.62	358.22	12196.79	1011.49	1007.62	-187.80	0.52	442067.21	738811.30	N 32 12 49.48 W 103 42 4.62	
	13290.00	90.96	359.06	12196.31	1104.49	1100.59	-190.00	1.70	442160.18	738809.09	N 32 12 50.38 W 103 42 4.64	
	13383.00	89.28	358.26	12196.12	1197.48	1193.56	-192.18	2.00	442253.14	738806.82	N 32 12 51.30 W 103 42 4.68	
	13476.00	89.04	358.61	12197.48	1290.47	1286.52	-194.56	0.65	442346.10	738804.54	N 32 12 52.22 W 103 42 4.68	
	13569.00	89.66	359.91	12198.54	1383.46	1379.51	-195.80	1.36	442438.08	738803.50	N 32 12 53.14 W 103 42 4.69	
	13663.00	88.01	359.16	12200.45	1477.43	1473.48	-196.36	1.93	442533.05	738802.74	N 32 12 54.07 W 103 42 4.69	
	13756.00	87.90	358.35	12203.77	1570.37	1568.40	-198.38	0.88	442625.96	738800.72	N 32 12 54.99 W 103 42 4.70	
	13851.00	89.04	358.73	12206.30	1665.33	1661.33	-200					

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 ° ° ' '')
	16783.00	89.97	0.59	12189.97	4595.50	4592.34	-194.49	1.50	445651.75	736804.81	N 32 13 24.93 W 103 42 4.45	
	16877.00	88.90	0.54	12190.89	4689.44	4688.33	-193.57	1.14	445745.74	736805.53	N 32 13 25.88 W 103 42 4.44	
	16972.00	88.73	0.53	12192.88	4784.38	4781.30	-192.68	0.18	445840.71	736806.42	N 32 13 26.80 W 103 42 4.42	
	17067.00	89.14	0.89	12194.82	4879.30	4878.28	-191.42	0.85	445935.68	736807.88	N 32 13 27.74 W 103 42 4.40	
	17161.00	89.78	0.34	12195.53	4973.24	4970.27	-190.33	0.96	446029.88	736808.77	N 32 13 28.67 W 103 42 4.38	
	17256.00	88.56	0.79	12198.82	5068.18	5065.25	-189.39	1.35	446124.84	736809.71	N 32 13 29.61 W 103 42 4.36	
	17350.00	90.14	1.20	12197.99	5162.10	5159.23	-187.76	1.74	446218.61	736811.34	N 32 13 30.54 W 103 42 4.34	
	17445.00	89.42	0.51	12198.35	5257.03	5254.21	-186.34	1.05	446313.60	736812.76	N 32 13 31.48 W 103 42 4.31	
	17540.00	88.45	359.96	12200.12	5351.98	5349.20	-185.85	1.17	446408.57	736813.15	N 32 13 32.42 W 103 42 4.30	
	17728.00	88.52	359.18	12205.11	5540.90	5538.12	-187.37	0.41	446597.49	736811.73	N 32 13 34.29 W 103 42 4.30	
	17824.00	88.90	359.38	12207.25	5635.87	5633.09	-188.56	0.45	446892.45	736810.53	N 32 13 35.23 W 103 42 4.31	
	17919.00	91.38	356.30	12207.02	5730.88	5728.06	-190.49	2.85	446787.42	736808.81	N 32 13 36.17 W 103 42 4.33	
	18014.00	89.97	356.34	12205.90	5825.82	5822.94	-194.93	2.54	446882.30	736804.17	N 32 13 37.11 W 103 42 4.37	
	18109.00	89.17	357.29	12206.81	5920.78	5917.79	-200.21	1.31	446977.14	736798.89	N 32 13 38.05 W 103 42 4.43	
	18203.00	88.38	356.95	12207.60	6014.74	6011.73	-203.29	1.78	447071.08	736795.81	N 32 13 38.88 W 103 42 4.46	
	18298.00	90.17	358.42	12208.18	6109.74	6106.70	-205.47	1.00	447166.05	736793.83	N 32 13 39.82 W 103 42 4.48	
	18393.00	88.83	357.08	12209.00	6204.72	6201.82	-209.20	1.99	447260.96	736789.90	N 32 13 40.88 W 103 42 4.51	
	18488.00	89.72	356.48	12210.21	6299.69	6296.54	-212.90	1.73	447355.87	736788.20	N 32 13 41.80 W 103 42 4.55	
	18582.00	89.42	356.83	12210.91	6393.69	6390.51	-215.12	0.51	447449.84	736783.98	N 32 13 42.73 W 103 42 4.57	
	18677.00	89.31	354.29	12211.97	6488.59	6485.31	-220.82	4.78	447544.83	736778.28	N 32 13 43.67 W 103 42 4.63	
	18772.00	90.03	356.75	12212.54	6584.42	6584.99	-228.83	2.56	447644.31	736770.47	N 32 13 44.65 W 103 42 4.71	
	18867.00	91.82	0.10	12209.31	6778.35	6774.88	-233.85	2.02	447834.17	736765.25	N 32 13 46.53 W 103 42 4.76	
	19061.00	90.79	358.57	12207.09	6872.32	6868.82	-234.84	2.02	447928.13	736764.16	N 32 13 47.46 W 103 42 4.77	
	19250.00	90.75	358.78	12204.55	7061.30	7057.78	-239.29	0.12	448117.05	736759.81	N 32 13 49.33 W 103 42 4.81	
	19440.00	90.51	357.86	12202.48	7251.28	7247.68	-244.85	0.51	448306.94	736754.25	N 32 13 51.21 W 103 42 4.86	
	19534.00	90.55	358.76	12201.59	7345.25	7341.55	-249.28	1.17	448400.83	736749.84	N 32 13 52.14 W 103 42 4.90	
	19724.00	93.88	5.40	12194.23	7534.74	7531.17	-245.70	4.87	448590.44	736753.40	N 32 13 54.02 W 103 42 4.85	
	19818.00	92.85	5.44	12188.88	7627.95	7624.59	-238.84	1.31	448683.88	736762.27	N 32 13 54.94 W 103 42 4.74	
	19913.00	91.13	3.73	12185.74	7722.40	7719.23	-229.25	2.41	448778.49	736769.85	N 32 13 55.88 W 103 42 4.64	
	20008.00	89.03	1.14	12185.81	7817.19	7814.13	-225.21	3.51	448873.39	736773.89	N 32 13 56.81 W 103 42 4.59	
	20102.00	89.88	1.87	12188.52	7911.08	7908.10	-222.91	1.05	448967.35	736778.19	N 32 13 57.74 W 103 42 4.58	
	20197.00	92.44	7.24	12184.61	8005.55	8002.75	-215.53	6.48	449062.00	736783.57	N 32 13 58.68 W 103 42 4.48	
	20292.00	89.21	0.86	12183.24	8100.08	8097.45	-209.00	7.71	449156.69	736790.10	N 32 13 59.62 W 103 42 4.38	
	20387.00	89.17	359.45	12184.59	8195.05	8192.44	-208.81	1.27	449251.68	736790.19	N 32 14 0.56 W 103 42 4.37	
	20482.00	88.35	356.88	12186.84	8290.01	8287.38	-211.95	2.84	449346.59	736787.15	N 32 14 1.50 W 103 42 4.40	
	20577.00	88.72	356.90	12189.07	8384.93	8382.19	-217.10	0.39	449441.42	736782.00	N 32 14 2.44 W 103 42 4.48	
	20672.00	88.45	357.99	12191.42	8479.88	8477.06	-221.33	1.18	449536.29	736777.77	N 32 14 3.37 W 103 42 4.50	
	20768.00	88.83	357.56	12193.85	8573.84	8570.98	-224.88	0.81	449630.18	736774.12	N 32 14 4.30 W 103 42 4.53	
	20861.00	88.80	357.81	12195.53	8668.80	8665.88	-228.98	0.09	449725.08	736770.12	N 32 14 5.24 W 103 42 4.58	
	20956.00	89.24	0.46	12197.07	8763.77	8760.83	-230.58	3.02	449820.04	736768.52	N 32 14 6.18 W 103 42 4.59	
	21050.00	89.45	359.87	12198.15	8857.74	8854.82	-230.31	0.87	449914.02	736768.79	N 32 14 7.11 W 103 42 4.58	
	21145.00	89.45	359.73	12199.08	8952.72	8949.81	-230.84	0.15	450009.01	736768.46	N 32 14 8.05 W 103 42 4.57	
	21240.00	88.48	359.41	12200.78	9047.78	9044.79	-231.36	1.08	450103.99	736767.74	N 32 14 8.99 W 103 42 4.58	
	21335.00	88.72	359.01	12203.10	9142.88	9139.78	-232.67	0.49	450198.95	736768.43	N 32 14 9.93 W 103 42 4.59	
	21429.00	89.51	0.22	12204.55	9238.83	9233.74	-233.30	1.54	450292.93	736765.80	N 32 14 10.88 W 103 42 4.59	
	21524.00	87.18	357.38	12207.29	9331.58	9328.68	-235.29	3.87	450387.85	736763.82	N 32 14 11.80 W 103 42 4.60	
	21619.00	90.55	2.80	12209.18	9426.49	9423.60	-235.30	6.54	450482.78	736763.80	N 32 14 12.74 W 103 42 4.60	
	21713.00	90.68	2.87	12208.17	9520.28	9517.49	-230.81	0.32	450578.66	736768.29	N 32 14 13.67 W 103 42 4.54	
	21808.00	88.68	359.09	12208.71	9615.16	9612.45	-229.19	4.51	450671.82	736769.91	N 32 14 14.61 W 103 42 4.51	
	21903.00	90.00	359.70	12209.82	9710.15	9707.43	-230.19	1.55	450768.60	736768.91	N 32 14 15.55 W 103 42 4.52	
	21998.00	90.20	0.14	12209.68	9805.13	9802.43	-230.32	0.51	450861.59	736768.78	N 32 14 16.49 W 103 42 4.51	
	22093.00	90.27	0.08	12209.27	9900.10	9897.43	-230.14	0.10	450956.59	736768.96	N 32 14 17.43 W 103 42 4.50	
	22188.00	87.83	359.72	12210.84	9995.06	9992.41	-230.31	2.60	451051.56	736768.79	N 32 14 18.37 W 103 42 4.50	
	22283.00	90.20	0.19	12212.48	10090.02	10087.39	-230.38	2.54	451146.54	736768.72	N 32 14 19.31 W 103 42 4.49	
100' FNL Crossed	22377.00	90.25	359.89	12212.11	10183.99	10181.39	-230.32	0.33	451240.53	736768.78	N 32 14 20.24 W 103 42 4.49	
Final MWD	22414.00	90.27	359.77	12211.94	10229.98	10218.39	-230.43	0.33	451277.53	736768.87	N 32 14 20.60 W 103 42 4.49	
Proj to TD	22458.00	90.27	359.77	12211.73	10264.98	10262.39	-230.60	0.00	451321.52	736768.50	N 32 14 21.04 W 103 42 4.48	

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	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	26.500	1/68.425	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Mesa Verde WC Unit 7H Gyro + IFR 0-22458'MD
	1	26.500	26.500	Act Strs	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Mesa Verde WC Unit 7H Gyro + IFR 0-22458'MD
	1	26.500	924.500	Act Strs	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Mesa Verde WC Unit 7H Gyro + IFR 0-22458'MD
	1	924.500	22458.000	Act Strs	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Mesa Verde WC Unit 7H Gyro + IFR 0-

Offshore Drilling, Completion & Logging
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

July 18, 2019

OXY USA Incorporated
Greenway Plaza Suite 110
Houston, TX, 77046

HOBBS OCD
SEP 13 2019
RECEIVED

Re:

S17, T24S, R32E, Lea NM
N 32.21097 W -103.7012152

CLIENT: OXY USA Incorporated
WELL: Mesa Verde WC Unit 7H
FIELD: Mesa Verde Wolfcamp

RIG: H&P 657
COUNTY: Lea
API NO: 30-025-45920
JOB NO: 19MLH0315

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>
Sarah Almohsen FE	Mesa Verde WC Unit 7H Original Hole	1012.00 Ft to 22414.00 Ft	June 28, 2019 to July 14, 2019	SlimPulse 3rd Party Corrected

If any other information is required, please contact the undersigned at the above letterhead and phone number.
Sincerely,

Andrew Salomon
Field Service Manager

Schlumberger-Private

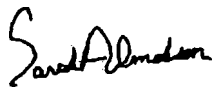
Schlumberger Drilling and Measurements
Drilling Group
Geo Market Area: South West Texas Basin
7220 W I-H 20
Midland, Texas 79706
Phone : (432) 742-5400 (Main)
Fax : (432) 742-5606 (Shared)

Schlumberger

Well Reference:
S17, T24S, R32E, Lea NM
N 32.21097 W -103.7012152

I, Sarah Almohsen certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of June 28, 2019 through July 14, 2019, conduct or supervise the taking of the SlimPulse & 3rd Party Corrected surveys from a depth of 1012.00 feet to a depth of 22414.00 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 Mesa Verde WC Unit 7H Well (Original Hole) API No. 30-025-45920 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
Sarah Almohsen
FE



Subscribed and Sworn to before me this 1 day of August (month) 2019 (yr)

My Commission expires:

6/14/2023



Notary Public

Comanche Oklahoma
(County State)

(signature)

