

30-015-44551

Schlumberger

Oxy Mesa Verde BS Unit 16H - Gyro + MWD(IFR1) to 15561' MD Survey
Geodetic Report
(Def Survey)



NM OIL CONSERVATION
ARTESIA DISTRICT

AUG 30 2018

RECEIVED

Report Date: August 10, 2018 - 02:51 PM
Client: OXY
Field: NM Eddy County (NAD 83)
Structure / Slot: Oxy Mesa Verde BS Unit 16H / Mesa Verde BS Unit 16H
Well: Mesa Verde BS Unit 16H
Borehole: Original Borehole
UWI / API#s: Unknown / 30-015-44551
Survey Name: Oxy Mesa Verde BS Unit 16H - Gyro + MWD(IFR1) to 15561' MD
Survey Date: August 10, 2018
Tort / AHD / DDI / ERD Ratio: 225.900 * / 5669.740 ft / 6.271 / 0.531
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 12' 38.09705", W 103° 43' 32.67668"
Location Grid N/E Y/X: N 440875.110 / US, E 729252.880 / US
CRS Grid Convergence Angle: 0.3239 *
Grid Scale Factor: 0.99994953
Version / Patch: 2.10.720.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 0.000 * (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB=30'
TVD Reference Elevation: 3607.700 ft above MSL
Seabed / Ground Elevation: 3577.700 ft above MSL
Magnetic Declination: 6.811 *
Total Gravity Field Strength: 998.4270mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47976.258 nT
Magnetic Dip Angle: 59.918 *
Declination Date: August 10, 2018
Magnetic Declination Model: HDGM 2018
North Reference: Grid North
Grid Convergence Used: 0.3239 *
Total Corr Mag North->Grid North: 6.4870 *
Local Coord Referenced To: Well Head

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 ° ' ")
RKB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	440875.11	729252.88	N 32 12 38.10	W 103 43 32.68
Ground Level	30.00	0.00	0.00	30.00	0.00	0.00	0.00	0.00	440875.11	729252.88	N 32 12 38.10	W 103 43 32.68
	75.39	0.38	268.19	75.39	0.00	0.00	-0.15	0.84	440875.11	729252.73	N 32 12 38.10	W 103 43 32.68
	136.72	0.71	280.92	136.72	0.06	0.06	-0.73	0.57	440875.17	729252.15	N 32 12 38.10	W 103 43 32.69
	192.91	0.67	277.30	192.90	0.17	0.17	-1.39	0.11	440875.28	729251.49	N 32 12 38.10	W 103 43 32.69
	253.94	0.64	271.09	253.93	0.22	0.22	-2.09	0.13	440875.33	729250.79	N 32 12 38.10	W 103 43 32.69
	314.98	0.56	266.77	314.97	0.21	0.21	-2.73	0.15	440875.32	729250.15	N 32 12 38.10	W 103 43 32.70
	377.71	0.52	269.93	377.69	0.19	0.19	-3.32	0.08	440875.30	729249.56	N 32 12 38.10	W 103 43 32.72
	440.66	0.43	271.17	440.64	0.20	0.20	-3.84	0.14	440875.31	729249.04	N 32 12 38.10	W 103 43 32.72
	503.52	0.37	262.00	503.50	0.17	0.17	-4.28	0.14	440875.28	729248.60	N 32 12 38.10	W 103 43 32.73
	566.39	0.23	237.63	566.37	0.08	0.08	-4.58	0.30	440875.19	729248.30	N 32 12 38.10	W 103 43 32.73
	629.29	0.17	205.73	629.27	-0.07	-0.07	-4.73	0.20	440875.04	729248.15	N 32 12 38.10	W 103 43 32.73
	692.18	0.29	153.85	692.16	-0.30	-0.30	-4.70	0.36	440874.81	729248.18	N 32 12 38.09	W 103 43 32.73
	755.04	0.36	143.38	755.02	-0.60	-0.60	-4.51	0.15	440874.51	729248.37	N 32 12 38.09	W 103 43 32.73
	817.92	0.41	129.56	817.89	-0.90	-0.90	-4.22	0.17	440874.21	729248.68	N 32 12 38.09	W 103 43 32.73
	880.79	0.46	128.37	880.76	-1.20	-1.20	-3.85	0.08	440873.91	729249.03	N 32 12 38.09	W 103 43 32.72
	943.69	0.41	126.82	943.66	-1.50	-1.50	-3.47	0.08	440873.61	729249.41	N 32 12 38.08	W 103 43 32.72
Rustler	971.03	0.42	128.46	971.00	-1.62	-1.62	-3.32	0.05	440873.49	729249.56	N 32 12 38.08	W 103 43 32.72
Final Gyro	1010.10	0.43	130.70	1010.07	-1.80	-1.80	-3.09	0.05	440873.31	729249.79	N 32 12 38.08	W 103 43 32.71
Salado	1095.03	0.11	194.17	1095.00	-2.09	-2.09	-2.87	0.46	440873.02	729250.01	N 32 12 38.08	W 103 43 32.71
	1123.00	0.15	251.80	1122.97	-2.12	-2.12	-2.91	0.46	440872.99	729249.97	N 32 12 38.08	W 103 43 32.71
	1306.00	0.10	55.82	1305.97	-2.11	-2.11	-3.01	0.14	440873.00	729249.87	N 32 12 38.08	W 103 43 32.71
	1491.00	0.15	264.00	1490.97	-2.04	-2.04	-3.12	0.13	440873.07	729249.78	N 32 12 38.08	W 103 43 32.71
	1680.00	0.15	343.01	1679.97	-1.83	-1.83	-3.43	0.10	440873.28	729249.45	N 32 12 38.08	W 103 43 32.72
	1869.00	0.17	0.40	1868.97	-1.31	-1.31	-3.51	0.03	440873.80	729249.37	N 32 12 38.08	W 103 43 32.72
	2058.00	0.15	359.93	2057.97	-0.79	-0.79	-3.50	0.01	440874.32	729249.38	N 32 12 38.09	W 103 43 32.72
	2248.00	0.10	357.99	2247.97	-0.37	-0.37	-3.51	0.03	440874.74	729249.37	N 32 12 38.09	W 103 43 32.72
	2437.00	0.15	201.35	2436.97	-0.44	-0.44	-3.81	0.13	440874.67	729249.27	N 32 12 38.09	W 103 43 32.72
	2626.00	0.15	273.87	2625.97	-0.65	-0.65	-3.94	0.09	440874.46	729248.94	N 32 12 38.09	W 103 43 32.72
	2816.00	0.15	213.31	2815.96	-0.84	-0.84	-4.33	0.08	440874.27	729248.55	N 32 12 38.09	W 103 43 32.73
	3005.00	0.15	211.65	3004.96	-1.26	-1.26	-4.59	0.00	440873.85	729248.29	N 32 12 38.08	W 103 43 32.73
	3100.00	0.15	94.56	3099.96	-1.38	-1.38	-4.53	0.27	440873.73	729248.35	N 32 12 38.08	W 103 43 32.73
	3194.00	0.35	312.49	3193.96	-1.19	-1.19	-4.62	0.51	440873.92	729248.26	N 32 12 38.09	W 103 43 32.73
Castile	3289.00	0.69	336.75	3288.96	-0.47	-0.47	-5.06	0.42	440874.64	729247.82	N 32 12 38.09	W 103 43 32.74
	3333.04	0.75	354.40	3333.00	0.06	0.06	-5.20	0.52	440875.17	729247.68	N 32 12 38.10	W 103 43 32.74
	3478.00	1.26	27.52	3477.93	2.42	2.42	-4.55	0.52	440877.53	729248.33	N 32 12 38.12	W 103 43 32.73
	3573.00	0.88	32.07	3572.92	3.96	3.96	-3.68	0.41	440879.07	729249.20	N 32 12 38.14	W 103 43 32.72
	3667.00	0.87	45.09	3666.91	5.08	5.08	-2.79	0.21	440880.19	729250.09	N 32 12 38.15	W 103 43 32.71
	3782.00	0.71	87.66	3781.90	5.61	5.61	-1.69	0.62	440880.72	729251.19	N 32 12 38.15	W 103 43 32.70
	3951.00	0.56	140.72	3950.89	4.94	4.94	0.06	0.31	440880.05	729252.94	N 32 12 38.15	W 103 43 32.68
	4141.00	0.77	205.88	4140.88	3.08	3.08	0.09	0.39	440878.19	729252.97	N 32 12 38.13	W 103 43 32.68
	4330.00	0.17	256.91	4329.87	1.87	1.87	-0.74	0.36	440876.98	729252.14	N 32 12 38.12	W 103 43 32.69
	4520.00	0.60	282.20	4519.87	2.02	2.02	-1.98	0.24	440877.13	729250.90	N 32 12 38.12	W 103 43 32.70
Delaware	4615.00	0.61	289.82	4614.86	2.29	2.29	-2.95	0.09	440877.40	729249.93	N 32 12 38.12	W 103 43 32.71
Bell Canyon	4657.14	0.54	302.25	4657.00	2.47	2.47	-3.32	0.34	440877.58	729249.56	N 32 12 38.12	W 103 43 32.72
	4672.14	0.52	307.44	4672.00	2.55	2.55	-3.44	0.34	440877.66	729249.44	N 32 12 38.12	W 103 43 32.72
	4709.00	0.49	321.51	4708.86	2.78	2.78	-3.67	0.34	440877.89	729249.21	N 32 12 38.12	W 103 43 32.72
	4899.00	0.10	298.06	4898.85	3.49	3.49	-4.32	0.21	440878.60	729248.56	N 32 12 38.13	W 103 43 32.73
	4993.00	0.21	290.65	4992.85	3.59	3.59	-4.55	0.12	440878.70	729248.33	N 32 12 38.13	W 103 43 32.73
	5088.00	0.17	7.70	5087.85	3.79	3.79	-4.70	0.25	440878.90	729248.18	N 32 12 38.13	W 103 43 32.73
	5278.00	0.15	25.05	5277.85	4.30	4.30	-4.55	0.03	440879.41	729248.33	N 32 12 38.14	W 103 43 32.73
	5467.00	0.21	325.65	5466.85	4.81	4.81	-4.64	0.10	440879.92	729248.24	N 32 12 38.14	W 103 43 32.73
Cherry Canyon	5534.15	0.22	317.58	5534.00	5.00	5.00	-4.80	0.05	440880.11	729248.08	N 32 12 38.15	W 103 43 32.73
	5657.00	0.25	305.11	5656.85	5.33	5.33	-5.18	0.05	440880.44	729247.70	N 32 12 38.15	W 103 43 32.74
	5846.00	0.15	240.16	5845.85	5.45	5.45	-5.73	0.12	440880.58	729247.15	N 32 12 38.15	W 103 43 32.74
	6035.00	0.10	73.71	6034.85	5.37	5.37	-5.79	0.13	440880.48	729247.09	N 32 12 38.15	W 103 43 32.74
	6130.00	0.15	349.89	6129.85	5.52	5.52	-5.73	0.18	440880.63	729247.15	N 32 12 38.15	W 103 43 32.74
	6225.00	0.17	345.14	6224.85	5.77	5.77	-5.79	0.03	440880.88	729247.09	N 32 12 38.15	W 103 43 32.74
	6319.00	0.21	266.11	6318.85	5.90	5.90	-6.00	0.26	440881.01	729246.89	N 32 12 38.16	W 103 43 32.75
	6509.00	1.21	124.24	6508.84	4.75	4.75	-4.68	0.73	440879.85	729248.20	N 32 12 38.14	W 103 43 32.73
	6603.00	2.66	125.75	6602.78	2.91	2.91	-2.09	1.54	440878.02	729250.79	N 32 12 38.13	W 103 43 32.70
Brushy Canyon	6698.00	4.22	125.65	6697.61	-0.41	-0.41	2.54	1.64	440874.70	729255.42	N 32 12 38.09	W 103 43 32.65
	6782.67	5.07	121.61	6782.00	-4.19	-4.19	8.25	1.07	440870.92	729261.13	N 32 12 38.06	W 103 43 32.58
	6792.00	5.16	121.25	6791.29	-4.62	-4.62	8.96	1.07	440870.49	729261.84	N 32 12 38.05	W 103 43 32.57
	6982.00	6.55	115.79	6980.30	-13.77	-13.77	26.02	0.79	440861.34	729278.90	N 32 12 37.96	W 103 43 32.37
	7078.00	7.84	111.29	7073.55	-18.43	-18.43	38.82	1.50	440856.68	729289.70	N 32 12 37.91	W 103 43 32.25
	7266.00	8.88	112.65	7261.53	-28.78	-28.78	62.43	0.56	440846.33	729315.31	N 32 12 37.81	W 103 43 31.95
	7455.00	8.65	113.71	7448.33	-40.12	-40.12	88.93	0.15	440835.00	729341.78	N 32 12 37.70	W 103 43 31.64
	7644.00	8.75	112.53	7635.15	-51.34	-51.34	115.20	0.11	440823.77	729368.07	N 32 12 37.58	W 103 43 31.34
	7833.00	8.31	113.67	7822.06	-62.33	-62.33	140.99	0.25	440812.78	729393.86	N 32 12 37.47	W 103 43 31.04
	7928.00	8.49	112.27	7916.04	-67.74	-67.74	153.77	0.29	440807.37	729406.84	N 32 12 37.42	W 103 43 30.89
	8117.00	7.39	108.29	8103.23	-76.85	-76.85	178.22	0.65	440798.27	729431.09	N 32 12 37.33	W 103 43 30.61
	8306.00	7.29	107.15	8290.68	-84.20	-84.20	201.22	0.09	440790.92	729454.09	N 32 12 37.25	W 103 43 30.34
Bone Spring	8474.62	6.92	111.35	8458.00	-91.05	-91.05	220.90	0.38	440784.06	729473.77	N 32 12 37.18	W 103 43 30.11
	8495.00	6.88	111.89	8478.24	-91.95	-91.95	223.18	0.38	440783.16	729476.05	N 32 12 37.17	W 103 43

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ft)	Easting (ft)	Latitude (N/S ° ° °)	Longitude (E/W ° ° °)
	9061.00	2.69	15.76	9041.44	-107.99	-107.99	272.34	3.48	440767.12	729525.20	N 32 12 37.01	W 103 43 29.51
	9156.00	3.61	281.95	9136.34	-105.23	-105.23	270.02	4.89	440769.89	729522.88	N 32 12 37.04	W 103 43 29.54
	9250.00	4.30	237.15	9230.14	-106.53	-106.53	264.16	3.28	440768.59	729517.03	N 32 12 37.03	W 103 43 29.61
	9344.00	2.06	199.52	9324.00	-110.03	-110.03	260.63	3.14	440765.09	729513.50	N 32 12 36.99	W 103 43 29.65
	9439.00	1.41	140.00	9418.96	-112.54	-112.54	260.82	1.91	440762.58	729513.68	N 32 12 36.97	W 103 43 29.65
	9533.00	3.38	89.66	9512.88	-113.89	-113.89	264.29	2.64	440761.23	729517.16	N 32 12 36.96	W 103 43 29.61
	9627.00	5.90	92.11	9606.56	-114.53	-114.53	271.85	2.75	440760.59	729524.72	N 32 12 36.95	W 103 43 29.52
	9722.00	7.90	92.43	9700.87	-114.99	-114.99	283.26	2.11	440760.13	729536.12	N 32 12 36.94	W 103 43 29.39
	9816.00	8.93	88.88	9793.86	-115.12	-115.12	297.00	1.23	440760.00	729549.87	N 32 12 36.94	W 103 43 29.23
	9885.00	9.33	90.87	9861.98	-115.10	-115.10	307.95	0.74	440760.02	729560.81	N 32 12 36.94	W 103 43 29.10
Actual KOP	10071.00	12.81	77.81	10044.52	-110.97	-110.97	343.20	2.29	440764.15	729596.06	N 32 12 36.98	W 103 43 28.69
	10166.00	20.38	53.44	10135.61	-98.86	-98.86	366.84	10.67	440776.25	729619.70	N 32 12 37.10	W 103 43 28.41
	10261.00	28.11	25.52	10222.44	-68.67	-68.67	389.88	14.35	440806.44	729642.74	N 32 12 37.40	W 103 43 28.14
	10356.00	35.21	10.84	10303.37	-21.44	-21.44	404.71	10.98	440853.67	729657.57	N 32 12 37.86	W 103 43 27.97
	10451.00	44.96	0.47	10376.05	39.23	39.23	410.16	12.41	440914.34	729663.02	N 32 12 38.46	W 103 43 27.90
	10546.00	56.92	359.68	10435.80	112.86	112.86	410.21	12.61	440987.97	729663.07	N 32 12 39.19	W 103 43 27.89
	10641.00	63.08	0.31	10483.28	195.10	195.10	410.22	6.51	441070.20	729663.08	N 32 12 40.00	W 103 43 27.89
	10736.00	69.01	2.20	10521.84	281.85	281.85	412.15	6.50	441156.94	729665.01	N 32 12 40.86	W 103 43 27.86
	10831.00	74.68	1.55	10551.43	372.03	372.03	415.09	6.00	441247.12	729667.95	N 32 12 41.76	W 103 43 27.82
	10926.00	75.57	1.74	10575.81	463.81	463.81	417.73	0.96	441338.90	729670.59	N 32 12 42.66	W 103 43 27.78
	11021.00	83.97	1.73	10592.67	557.17	557.17	420.56	8.84	441432.25	729673.42	N 32 12 43.59	W 103 43 27.75
	11116.00	89.31	356.91	10598.24	651.94	651.94	419.42	7.57	441527.02	729672.28	N 32 12 44.52	W 103 43 27.75
	11147.00	89.76	356.08	10598.49	682.88	682.88	417.53	3.05	441557.96	729670.39	N 32 12 44.83	W 103 43 27.77
	11211.00	87.45	356.58	10600.05	746.73	746.73	413.43	3.69	441621.80	729668.29	N 32 12 45.46	W 103 43 27.82
	11289.00	84.04	358.49	10605.84	824.43	824.43	410.08	5.01	441699.49	729662.94	N 32 12 46.23	W 103 43 27.85
	11385.00	86.84	357.66	10613.47	920.06	920.06	406.87	3.04	441795.12	729659.73	N 32 12 47.18	W 103 43 27.88
	11480.00	88.08	353.92	10617.68	1014.69	1014.69	399.90	4.14	441889.75	729652.76	N 32 12 48.12	W 103 43 27.96
	11575.00	86.87	352.23	10621.86	1108.90	1108.90	388.46	2.19	441983.95	729641.32	N 32 12 49.05	W 103 43 28.08
	11670.00	87.77	352.49	10626.31	1202.95	1202.95	375.84	0.99	442078.00	729628.70	N 32 12 49.98	W 103 43 28.22
	11765.00	86.15	356.12	10631.35	1297.33	1297.33	366.43	4.18	442172.37	729619.29	N 32 12 50.91	W 103 43 28.33
	11860.00	91.48	1.21	10633.31	1392.22	1392.22	364.22	7.76	442267.26	729617.08	N 32 12 51.85	W 103 43 28.35
	11955.00	91.27	1.09	10631.03	1487.17	1487.17	366.13	0.25	442362.20	729618.99	N 32 12 52.79	W 103 43 28.32
	12050.00	91.72	0.37	10628.55	1582.13	1582.13	367.34	0.89	442457.16	729620.20	N 32 12 53.73	W 103 43 28.30
	12145.00	91.69	358.29	10625.73	1677.08	1677.08	366.23	2.19	442552.10	729619.09	N 32 12 54.67	W 103 43 28.30
	12240.00	90.35	356.72	10624.03	1771.97	1771.97	362.09	2.17	442646.98	729614.95	N 32 12 55.61	W 103 43 28.35
	12335.00	89.11	359.46	10624.48	1866.90	1866.90	358.93	3.17	442741.91	729611.79	N 32 12 56.55	W 103 43 28.38
	12430.00	86.94	0.92	10627.76	1961.84	1961.84	359.24	2.75	442836.84	729612.10	N 32 12 57.49	W 103 43 28.37
	12525.00	85.77	2.52	10633.80	2056.60	2056.60	362.09	2.08	442931.60	729614.95	N 32 12 58.43	W 103 43 28.33
	12715.00	86.25	1.54	10647.02	2246.02	2246.02	368.80	0.57	443121.01	729621.66	N 32 13 0.30	W 103 43 28.24
	12810.00	87.14	359.93	10652.49	2340.85	2340.85	370.02	1.93	443215.83	729622.88	N 32 13 1.24	W 103 43 28.22
	12905.00	86.39	358.59	10657.86	2435.68	2435.68	368.79	1.61	443310.67	729621.65	N 32 13 2.18	W 103 43 28.22
	13000.00	88.49	1.64	10662.10	2530.57	2530.57	368.98	3.90	443405.55	729621.84	N 32 13 3.12	W 103 43 28.22
	13095.00	91.83	2.87	10661.83	2625.48	2625.48	372.72	3.75	443500.45	729625.58	N 32 13 4.06	W 103 43 28.17
	13189.00	89.97	359.42	10660.36	2719.43	2719.43	374.60	4.17	443594.40	729627.46	N 32 13 4.98	W 103 43 28.14
	13284.00	89.07	359.70	10661.15	2814.43	2814.43	373.87	0.99	443689.39	729626.73	N 32 13 5.92	W 103 43 28.14
	13475.00	89.42	359.81	10663.67	3005.41	3005.41	373.05	0.19	443880.36	729625.91	N 32 13 7.81	W 103 43 28.14
	13570.00	89.01	359.58	10664.97	3100.40	3100.40	372.55	0.49	443975.34	729625.41	N 32 13 8.75	W 103 43 28.14
	13665.00	89.21	359.95	10666.45	3195.39	3195.39	372.16	0.44	444070.33	729625.02	N 32 13 9.69	W 103 43 28.13
	13759.00	90.11	359.79	10667.01	3289.38	3289.38	371.94	0.97	444164.32	729624.80	N 32 13 10.62	W 103 43 28.13
	13949.00	88.59	359.77	10669.16	3479.36	3479.36	371.21	0.80	444254.29	729624.07	N 32 13 11.56	W 103 43 28.13
	14139.00	88.42	359.36	10674.12	3669.29	3669.29	369.77	0.23	444344.21	729623.63	N 32 13 12.50	W 103 43 28.13
	14234.00	89.97	0.19	10675.45	3764.28	3764.28	369.40	1.85	444434.19	729623.26	N 32 13 13.43	W 103 43 28.13
	14329.00	89.93	0.02	10675.54	3859.28	3859.28	369.57	0.18	444524.17	729622.83	N 32 13 14.37	W 103 43 28.12
	14424.00	89.76	0.01	10675.79	3954.28	3954.28	369.60	0.18	444614.15	729622.46	N 32 13 15.31	W 103 43 28.12
	14519.00	89.11	359.59	10676.73	4049.27	4049.27	369.27	0.81	444704.13	729622.13	N 32 13 16.25	W 103 43 28.11
	14614.00	92.55	0.11	10675.35	4144.25	4144.25	369.02	3.66	444794.11	729621.88	N 32 13 17.19	W 103 43 28.11
	14804.00	93.10	359.71	10665.99	4334.01	4334.01	368.72	0.36	444884.09	729621.58	N 32 13 18.14	W 103 43 28.10
	14994.00	90.52	358.98	10659.99	4523.89	4523.89	366.55	1.41	444974.07	729621.28	N 32 13 19.08	W 103 43 28.11
	15183.00	90.31	359.80	10658.62	4712.87	4712.87	364.54	0.45	445064.05	729620.98	N 32 13 20.02	W 103 43 28.12
	15373.00	89.97	359.33	10658.15	4902.87	4902.87	363.09	0.31	445154.03	729620.68	N 32 13 20.96	W 103 43 28.13
	15468.00	89.12	359.69	10659.00	5092.86	5092.86	362.18	0.86	445244.01	729620.38	N 32 13 21.90	W 103 43 28.13
100' FNL Final MWD Survey PBHL	15517.00	88.83	359.82	10659.66	5046.85	5046.85	362.02	0.86	445334.00	729620.08	N 32 13 22.84	W 103 43 28.13
	15561.00	88.83	359.82	10660.56	5090.84	5090.84	361.89	0.00	445424.00	729619.78	N 32 13 23.78	W 103 43 28.13

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	30.000	1/98.425	30.000	30.000 NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Mesa Verde BS Unit 16H - Gyro + MWD(IFR1) to 15561' MD
	1	30.000	30.000	Act Stns	30.000	30.000 NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Mesa Verde BS Unit 16H - Gyro + MWD(IFR1) to 15561' MD
	1	30.000	1010.100	Act Stns	30.000	30.000 NAL_NSG+MSHOT	Original Borehole / Oxy Mesa Verde BS Unit 16H - Gyro + MWD(IFR1) to 15561' MD
	1	1010.100	7928.000	Act Stns	30.000	30.000 NAL_MWD_IFR1+MS	Original Borehole / Oxy Mesa Verde BS Unit 16H - Gyro + MWD(IFR1) to 15561' MD
	1	7928.000	9061.000	Act Stns	30.000	30.000 NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Mesa Verde BS Unit 16H - Gyro + MWD(IFR1) to 15561' MD
	1	9061.000	15561.000	Act Stns	30.000	30.000 NAL_MWD_IFR1+MS	Original Borehole / Oxy Mesa Verde BS Unit 16H - Gyro + MWD(IFR1) to 15561' MD



OXY



Borehole:

Well:

Field:

Structure:

Original Borehole

Mesa Verde BS Unit 16H

NM Eddy County (NAD 83)

Oxy Mesa Verde BS Unit 16H

Gravity & Magnetic Parameters

Model: HDQM 2018 Dip: 68.918° Date: 21-Jul-2018
MagDec: 6.813° FS: 47879.443nT Gravity FS: 999.427mgn (9.80665 Based)

Surface Location

Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet

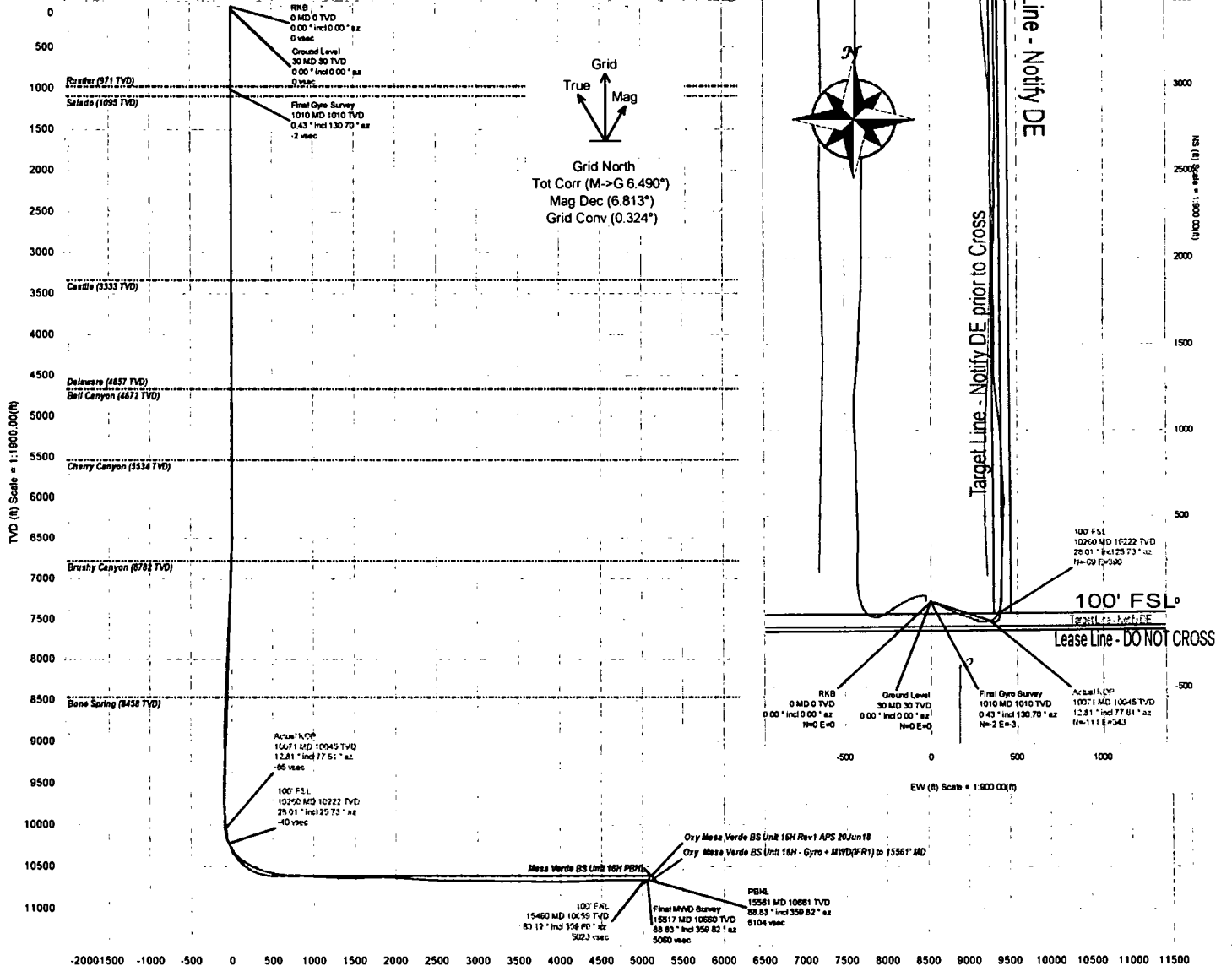
Lat:	N 32 12 38.10	Northing:	440875.11RUS	Grid Conv:	0.3259°
Lon:	W 103 43 32.68	Easting:	729262.88RUS	Scale Fact:	0.98994953

Miscellaneous

Slot: Mesa Verde BS Unit 16H TVD Ref: RKB=30'(3607.7ft above MSL)
Plan: Oxy Mesa Verde BS Unit 16H Rev1 APS 20Jun18

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rustler	971.00	0.00	107.86	971.00	0.00	0.00	0.00	0.00
Salado	1065.00	0.00	107.86	1065.00	0.00	0.00	0.00	0.00
Castle	3333.00	0.00	107.86	3333.00	0.00	0.00	0.00	0.00
Delaware	4657.00	0.00	107.86	4657.00	0.00	0.00	0.00	0.00
Bell Canyon	4672.00	0.00	107.86	4672.00	0.00	0.00	0.00	0.00
Cherry Canyon	5534.00	0.00	107.86	5534.00	0.00	0.00	0.00	0.00
Build 2"/100'	6365.00	0.00	107.86	6365.00	0.00	0.00	0.00	0.00
Hold Tangent	6715.12	7.00	107.86	6714.25	-5.02	-8.55	20.34	2.00
Brushy Canyon	6783.36	7.00	107.86	6782.00	-6.97	-8.11	26.26	0.00
Bone Spring	8471.98	7.00	107.86	8458.00	-55.30	-72.24	224.20	0.00
Turn 2"/100'	9626.95	7.00	107.86	9604.36	-88.35	-115.43	358.22	0.00
Build/Turn 10"/100'	10127.25	7.00	16.50	10102.19	-65.66	-95.50	396.00	2.00
Landing Point	10960.27	90.00	359.64	10608.00	502.98	473.65	410.42	10.00
Mesa Verde BS Unit 16H PBH	15578.23	90.00	359.64	10608.00	5105.78	5091.52	381.29	0.00



Vertical Section (ft) Azim = 4.28° Scale = 1:1900.00(ft) Origin = 0N-S, 0E-W