

Provide Signature Page for Directional Survey

Schlumberger

Oxy Mesa Verde BS Unit 21H Gyro+MWD 0 - 15389 MD Survey Geodetic

Report

(Def Survey)

30-015-44546



Report Date: November 01, 2018 - 03:59 PM
Client: OXY
Field: NM Eddy County (NAD 83)
Structure / Slot: Oxy Mesa Verde BS Unit 21H / Oxy Mesa Verde BS Unit 21H
Well: Mesa Verde BS Unit 21H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Oxy Mesa Verde BS Unit 21H Gyro+MWD 0 - 15389 MD
Survey Date: August 01, 2018
Tort / AMD / DDI / ERD Ratio: 201.803° / 5616.428 ft / 6.224 / 0.540
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 12' 38.11168", W 103° 44' 14.35574"
Location Grid N/E Y/X: N 440856.540 RUS, E 725672.120 RUS
CRS Grid Convergence Angle: 0.3177°
Grid Scale Factor: 0.99994801
Version / Patch: 2.10.740.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 355.070° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3615.900 ft above MSL
Seabed / Ground Elevation: 3589.400 ft above MSL
Magnetic Declination: 6.760°
Total Gravity Field Strength: 998.4252mgn (0.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47978.800 nT
Magnetic Dip Angle: 59.894°
Declination Date: October 04, 2018
Magnetic Declination Model: IIFR1
North Reference: Grid North
Grid Convergence Used: 0.3177°
Total Corr Mag North→Grid: 6.4423°
North: 6.4423°
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	440856.54	725672.12	N 32 12 38.11	W 103 44 14.36
SHL	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	440856.54	725672.12	N 32 12 38.11	W 103 44 14.36
	96.57	0.78	253.88	96.57	-0.09	-0.13	-0.46	1.11	440856.41	725671.66	N 32 12 38.11	W 103 44 14.36
	187.73	0.84	247.46	187.72	-0.42	-0.56	-1.67	0.12	440855.98	725670.45	N 32 12 38.11	W 103 44 14.38
	276.60	0.88	250.03	276.58	-0.79	-1.04	-2.91	0.06	440855.50	725669.21	N 32 12 38.10	W 103 44 14.39
	370.99	1.00	251.84	370.96	-1.17	-1.55	-4.38	0.13	440854.99	725667.74	N 32 12 38.10	W 103 44 14.41
	465.23	1.03	251.64	465.18	-1.55	-2.07	-5.96	0.03	440854.47	725666.16	N 32 12 38.09	W 103 44 14.43
	559.53	1.12	257.85	559.46	-1.86	-2.53	-7.67	0.16	440854.01	725664.45	N 32 12 38.09	W 103 44 14.45
	653.88	1.09	259.14	653.80	-2.07	-2.90	-9.45	0.04	440853.65	725662.67	N 32 12 38.08	W 103 44 14.47
	748.41	1.16	270.73	748.31	-2.07	-3.05	-11.29	0.25	440853.49	725660.83	N 32 12 38.08	W 103 44 14.49
	842.96	1.24	271.52	842.84	-1.86	-3.01	-13.27	0.09	440853.53	725658.85	N 32 12 38.08	W 103 44 14.51
	937.34	1.18	262.98	937.20	-1.78	-3.10	-15.26	0.20	440853.44	725656.86	N 32 12 38.08	W 103 44 14.53
Last Gyro	1010.14	1.15	258.47	1009.98	-1.89	-3.34	-16.72	0.13	440853.20	725655.40	N 32 12 38.08	W 103 44 14.55
	1091.00	0.05	112.35	1090.84	-2.00	-3.52	-17.48	1.47	440853.02	725654.64	N 32 12 38.08	W 103 44 14.56
	1182.00	0.08	334.36	1181.84	-1.96	-3.48	-17.47	0.13	440853.06	725654.65	N 32 12 38.08	W 103 44 14.56
	1365.00	0.09	69.37	1364.84	-1.80	-3.31	-17.39	0.07	440853.23	725654.73	N 32 12 38.08	W 103 44 14.56
	1456.00	0.05	261.15	1455.84	-1.79	-3.29	-17.36	0.15	440853.25	725654.76	N 32 12 38.08	W 103 44 14.56
	1638.00	0.08	307.74	1637.84	-1.71	-3.23	-17.54	0.03	440853.31	725654.58	N 32 12 38.08	W 103 44 14.56
	1728.00	0.08	157.71	1727.84	-1.72	-3.24	-17.57	0.17	440853.30	725654.55	N 32 12 38.08	W 103 44 14.56
	1820.00	0.11	284.05	1819.84	-1.76	-3.28	-17.63	0.18	440853.26	725654.49	N 32 12 38.08	W 103 44 14.56
	1911.00	0.05	5.63	1910.84	-1.69	-3.22	-17.71	0.13	440853.32	725654.41	N 32 12 38.08	W 103 44 14.56
	2098.00	0.06	359.31	2098.84	-1.51	-3.05	-17.70	0.01	440853.50	725654.42	N 32 12 38.08	W 103 44 14.56
	2191.00	0.05	286.65	2190.84	-1.45	-2.98	-17.74	0.07	440853.56	725654.38	N 32 12 38.08	W 103 44 14.56
	2380.00	0.05	209.69	2379.84	-1.49	-3.03	-17.86	0.03	440853.51	725654.26	N 32 12 38.08	W 103 44 14.56
	2474.00	0.09	341.29	2473.84	-1.45	-3.00	-17.91	0.14	440853.54	725654.21	N 32 12 38.08	W 103 44 14.56
	2569.00	0.11	138.48	2568.84	-1.45	-2.99	-17.87	0.21	440853.55	725654.25	N 32 12 38.08	W 103 44 14.56
	2663.00	0.05	304.09	2662.84	-1.49	-3.04	-17.84	0.17	440853.50	725654.28	N 32 12 38.08	W 103 44 14.56
	2758.00	0.06	47.32	2757.84	-1.44	-2.98	-17.84	0.09	440853.56	725654.28	N 32 12 38.08	W 103 44 14.56
	2947.00	0.05	310.41	2946.84	-1.32	-2.86	-17.83	0.04	440853.68	725654.29	N 32 12 38.08	W 103 44 14.56
	3136.00	0.12	147.01	3135.84	-1.43	-2.97	-17.79	0.09	440853.57	725654.33	N 32 12 38.08	W 103 44 14.56
	3231.00	0.06	177.60	3230.84	-1.57	-3.11	-17.73	0.08	440853.43	725654.39	N 32 12 38.08	W 103 44 14.56
	3326.00	0.12	18.29	3325.84	-1.53	-3.06	-17.70	0.19	440853.48	725654.42	N 32 12 38.08	W 103 44 14.56
	3420.00	0.09	43.92	3419.84	-1.39	-2.92	-17.62	0.06	440853.62	725654.50	N 32 12 38.08	W 103 44 14.56
	3515.00	0.17	24.81	3514.84	-1.22	-2.73	-17.51	0.09	440853.81	725654.62	N 32 12 38.09	W 103 44 14.56
	3609.00	0.12	130.29	3608.84	-1.17	-2.67	-17.37	0.25	440853.87	725654.75	N 32 12 38.09	W 103 44 14.56
	3799.00	0.08	51.12	3798.84	-1.24	-2.72	-17.12	0.07	440853.82	725655.00	N 32 12 38.09	W 103 44 14.56
	3894.00	0.11	95.33	3893.83	-1.22	-2.68	-16.97	0.08	440853.86	725655.15	N 32 12 38.09	W 103 44 14.55
	4083.00	0.11	106.22	4082.83	-1.31	-2.75	-16.62	0.01	440853.79	725655.50	N 32 12 38.09	W 103 44 14.55
	4272.00	0.11	177.08	4271.83	-1.56	-2.98	-16.44	0.07	440853.56	725655.69	N 32 12 38.08	W 103 44 14.55
	4464.00	0.11	243.79	4463.83	-1.81	-3.25	-16.59	0.06	440853.29	725655.53	N 32 12 38.08	W 103 44 14.55
	4653.00	0.44	328.28	4652.83	-1.23	-2.71	-17.14	0.23	440853.83	725654.98	N 32 12 38.09	W 103 44 14.56
	4748.00	0.04	202.37	4747.83	-0.93	-2.43	-17.34	0.49	440854.11	725654.78	N 32 12 38.09	W 103 44 14.56
	4937.00	0.06	119.29	4936.83	-1.05	-2.54	-17.28	0.04	440854.00	725654.84	N 32 12 38.09	W 103 44 14.56
	5032.00	0.09	124.93	5031.83	-1.12	-2.61	-17.17	0.03	440853.93	725654.95	N 32 12 38.09	W 103 44 14.56
	5221.00	0.08	306.55	5220.83	-1.13	-2.61	-17.16	0.09	440853.93	725654.96	N 32 12 38.09	W 103 44 14.56
	5410.00	0.08	198.25	5409.83	-1.16	-2.66	-17.31	0.07	440853.88	725654.81	N 32 12 38.09	W 103 44 14.56
	5600.00	0.04	130.01	5599.83	-1.33	-2.83	-17.30	0.04	440853.71	725654.82	N 32 12 38.08	W 103 44 14.56
	5695.00	0.04	16.24	5694.83	-1.33	-2.82	-17.26	0.07	440853.72	725654.86	N 32 12 38.08	W 103 44 14.56
	5789.00	0.08	346.48	5788.83	-1.23	-2.72	-17.27	0.05	440853.82	725654.85	N 32 12 38.09	W 103 44 14.56
	5979.00	1.16	298.44	5978.82	-0.04	-1.68	-18.99	0.58	440854.86	725653.13	N 32 12 38.10	W 103 44 14.58
	6073.00	2.82	296.40	6072.76	1.68	-0.20	-21.90	1.77	440856.34	725650.22	N 32 12 38.11	W 103 44 14.61
	6168.00	3.65	277.14	6167.61	3.53	1.22	-26.99	1.43	440857.76	725645.13	N 32 12 38.13	W 103 44 14.67
	6263.00	4.57	261.39	6262.37	3.92	1.03	-33.74	1.52	440857.57	725638.39	N 32 12 38.12	W 103 44 14.75
	6358.00	6.21	251.98	6356.94	2.51	-1.13	-42.38	1.96	440855.41	725629.76	N 32 12 38.10	W 103 44 14.85
	6452.00	7.66	246.57	6450.25	-0.62	-5.19	-52.95	1.69	440851.35	725619.17	N 32 12 38.06	W 103 44 14.97
	6547.00	8.98	243.03	6544.25	-5.42	-11.07	-65.37	1.49	440845.47	725606.76	N 32 12 38.01	W 103 44 15.12
	6641.00	9.49	243.22	6637.03	-11.05	-17.89	-78.82	0.54	440838.65	725593.30	N 32 12 37.94	W 103 44 15.27
	6736.00	9.13	246.40	6730.78	-16.38	-24.44	-92.72	0.66	440832.10	725579.40	N 32 12 37.87	W 103 44 15.44
	6831.00	9.53	247.83	6824.53	-21.12	-30.42	-106.91	0.49	440826.12	725565.22	N 32 12 37.82	W 103 44 15.60
	6925.00	9.09	247.34	6917.29	-25.69	-36.22	-120.97	0.48	440820.32	725551.16	N 32 12 37.76	W 103 44 15.77
	7020.00	8.49	248.58	7011.17	-29.97	-41.67	-134.42	0.66	440814.87	725537.70	N 32 12 37.71	W 103 44 15.92
	7115.00	8.37	247.97	7105.15	-33.99	-46.83	-147.36	0.16	440809.71	725524.77	N 32 12 37.66	W 103 44 16.07
	7209.00	7.88	248.57	7198.20	-37.83	-51.75	-159.70	0.53	440804.79	725512.43	N 32 12 37.61	W 103 44 16.22
	7398.00	7.16	246.33	7385.58	-45.30	-61.21	-182.55	0.91	440795.33	725489.58	N 32 12 37.52	W 103 44 16.48
	7493.00	6.38	250.84	7479.91	-48.50	-65.32	-192.96	0.49	440791.22	725479.17	N 32 12 37.48	W 103 44 16.61
	7588.00	6.65	248.99	7574.30	-51.32	-69.03	-203.08	0.36	440787.52	725469.05	N 32 12 37.44	W 103 44 16.72
	7682.00	6.50	249.31	7667.67	-54.30	-72.90	-213.25	0.04	440783.64	725458.88	N 32 12 37.40	W 103 44 16.84
	7777.00	6.65	249.83	7762.04	-57.21	-76.70	-223.44	0.17	440779.85	725448.69	N 32 12 37.37	W 103 44 16.96
	7872.00	6.66	251.25	7856.42	-59.94	-80.32	-233.71	0.24	440776.22	725438.42	N 32 12 37.33	W 103 44 17.08
	7966.00	6.51	253.48	7949.80	-62.31	-83.59	-243.98	0.32	440772.96	725428.15	N 32 12 37.30	W 103 44 17.20
	8061.00	6.57	255.88	8044.18	-64.26	-86.45	-254.41	0.29	440770.10	725417.72	N 32 12 37.27	W 103 44 17.32
	8203.00	6.22	257.55	8185.30	-66.57	-90.09	-269.80	0.28	440766.46	725402.33	N 32 12 37.24	W 103 44 17.50
	8251.00	6.27	256.76	8233.01	-67.29	-91.25	-274.89	0.21	440765.30	725397.24	N 32 12 37.22	W 103 44 17.62
	8345.00	5.93	254.50	8326.48	-68.92	-93.72	-284.57	0.44	440762.82	725387.57	N 32 12 37.20	W 103 44 17.67
Bones Spring Intersection	8453.04	5.30	254.06	8434.00	-70.90							

Comments	MD (ft)	Incl (°)	Azim Grd (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ° ' ")	Longitude (E/W ° ° ' ")
	8913.00	4.10	224.70	8892.93	-79.45	-107.51	-321.93	1.92	440748.03	725350.20	N 32 12 37.07 W	103 44 18.11
	9008.00	4.01	229.17	8987.70	-83.59	-112.10	-325.84	0.35	440744.45	725345.30	N 32 12 37.02 W	103 44 18.17
	9198.00	3.25	263.64	9177.34	-87.63	-117.04	-337.22	1.19	440739.51	725334.92	N 32 12 36.97 W	103 44 18.29
	9292.00	3.91	277.00	9271.15	-87.03	-116.94	-343.05	1.13	440738.60	725329.09	N 32 12 36.97 W	103 44 18.36
	9387.00	4.53	281.01	9365.90	-85.33	-115.83	-349.94	0.72	440740.71	725322.20	N 32 12 36.98 W	103 44 18.44
	9482.00	5.02	295.53	9460.57	-82.19	-113.32	-357.38	1.37	440743.22	725314.76	N 32 12 37.01 W	103 44 18.52
	9576.00	4.84	312.85	9554.23	-77.18	-108.86	-364.01	1.57	440747.68	725308.13	N 32 12 37.05 W	103 44 18.60
	9671.00	4.28	323.43	9648.93	-71.22	-103.31	-369.06	1.09	440753.23	725303.08	N 32 12 37.11 W	103 44 18.68
	9727.00	4.25	334.87	9704.78	-67.50	-99.77	-371.18	1.51	440756.78	725300.96	N 32 12 37.14 W	103 44 18.68
	9767.00	4.37	337.43	9744.66	-64.65	-97.02	-372.39	0.57	440759.53	725299.75	N 32 12 37.17 W	103 44 18.70
	9862.00	8.36	292.52	9839.11	-58.02	-91.02	-380.17	6.42	440765.52	725291.97	N 32 12 37.23 W	103 44 18.79
	9956.00	15.04	328.43	9931.21	-43.93	-77.98	-392.89	10.20	440778.56	725279.25	N 32 12 37.36 W	103 44 18.93
100' FSL Cross	9980.92	15.34	331.33	9955.26	-38.02	-72.34	-396.17	3.28	440784.21	725275.97	N 32 12 37.42 W	103 44 18.97
	10052.00	16.39	338.97	10023.64	-19.78	-54.72	-404.28	3.28	440801.82	725267.86	N 32 12 37.59 W	103 44 19.06
	10146.00	23.41	9.33	10112.20	11.18	-23.80	-406.02	13.06	440832.74	725266.13	N 32 12 37.90 W	103 44 19.08
	10241.00	33.55	10.84	10195.60	54.85	20.72	-398.00	10.70	440877.26	725274.14	N 32 12 38.34 W	103 44 18.99
	10336.00	44.43	10.69	10269.33	112.31	79.36	-386.86	11.45	440935.89	725285.28	N 32 12 38.92 W	103 44 18.85
	10431.00	57.34	4.82	10329.17	184.09	152.23	-377.29	14.40	441008.76	725294.85	N 32 12 39.64 W	103 44 18.74
	10525.00	67.29	354.34	10372.88	266.82	235.19	-378.24	14.46	441091.72	725293.90	N 32 12 40.46 W	103 44 18.74
	10620.00	81.23	355.12	10398.59	358.03	326.02	-386.60	14.69	441182.54	725285.54	N 32 12 41.36 W	103 44 18.83
	10715.00	89.79	353.47	10406.02	452.64	420.16	-396.01	9.18	441276.68	725276.13	N 32 12 42.29 W	103 44 18.94
	10761.00	90.14	352.57	10406.05	498.61	465.82	-401.60	2.10	441322.34	725270.51	N 32 12 42.74 W	103 44 19.00
	10856.00	93.65	353.81	10402.91	593.49	560.08	-412.86	3.92	441416.59	725259.28	N 32 12 43.68 W	103 44 19.12
	10950.00	95.92	353.69	10395.06	687.13	653.19	-423.06	2.42	441509.70	725249.09	N 32 12 44.60 W	103 44 19.24
	11045.00	95.68	354.58	10385.46	781.63	747.21	-432.71	0.97	441603.71	725239.43	N 32 12 45.53 W	103 44 19.34
	11140.00	92.34	354.69	10378.82	876.38	841.55	-441.57	3.52	441698.04	725230.57	N 32 12 46.46 W	103 44 19.44
	11234.00	88.66	356.87	10378.00	970.35	935.27	-448.49	4.55	441791.76	725223.66	N 32 12 47.39 W	103 44 19.52
	11424.00	85.66	356.63	10387.41	1160.02	1124.71	-459.25	1.58	441981.19	725212.90	N 32 12 49.27 W	103 44 19.63
	11519.00	89.76	359.24	10391.21	1254.79	1219.54	-462.66	5.11	442076.02	725209.48	N 32 12 50.20 W	103 44 19.66
	11614.00	92.78	1.10	10389.10	1349.38	1314.50	-462.38	3.73	442170.97	725209.76	N 32 12 51.14 W	103 44 19.65
	11709.00	93.23	2.03	10384.12	1443.64	1409.34	-459.79	1.09	442265.80	725212.36	N 32 12 52.08 W	103 44 19.62
	11804.00	93.06	1.91	10378.91	1537.81	1504.14	-456.53	0.22	442360.60	725215.62	N 32 12 53.02 W	103 44 19.57
	11898.00	93.20	2.00	10373.78	1630.99	1597.94	-453.33	0.18	442454.40	725218.82	N 32 12 53.95 W	103 44 19.53
	11993.00	92.58	1.85	10368.99	1725.19	1692.77	-450.14	0.67	442549.22	725222.00	N 32 12 54.89 W	103 44 19.49
	12088.00	93.02	1.66	10364.35	1819.43	1787.61	-447.23	0.50	442644.05	725224.91	N 32 12 55.82 W	103 44 19.45
	12182.00	92.10	0.70	10360.15	1912.80	1881.49	-445.30	1.41	442737.93	725226.84	N 32 12 56.75 W	103 44 19.42
	12277.00	92.92	0.02	10355.99	2007.31	1976.40	-444.70	1.12	442832.83	725227.44	N 32 12 57.69 W	103 44 19.40
	12372.00	91.13	0.45	10352.63	2101.86	2071.34	-444.31	1.94	442927.76	725227.83	N 32 12 58.63 W	103 44 19.39
	12466.00	93.02	2.18	10349.23	2195.23	2165.24	-442.16	2.72	443021.66	725229.98	N 32 12 59.56 W	103 44 19.36
	12561.00	92.16	0.87	10344.94	2289.53	2260.11	-439.63	1.65	443116.53	725232.51	N 32 13 0.50 W	103 44 19.33
	12656.00	93.02	1.77	10340.64	2383.87	2354.98	-437.45	1.31	443211.40	725234.70	N 32 13 1.44 W	103 44 19.30
	12845.00	92.09	1.92	10332.22	2571.36	2543.70	-431.37	0.50	443400.10	725240.77	N 32 13 3.31 W	103 44 19.21
	12940.00	91.17	0.86	10329.52	2665.74	2638.63	-429.07	1.48	443495.02	725243.08	N 32 13 4.24 W	103 44 19.18
	13129.00	90.65	0.37	10326.51	2853.83	2827.59	-427.04	0.38	443683.98	725245.11	N 32 13 6.11 W	103 44 19.14
	13318.00	91.06	359.92	10323.69	3042.07	3016.57	-426.56	0.32	443872.95	725247.74	N 32 13 8.95 W	103 44 19.12
	13507.00	90.34	359.57	10321.39	3230.42	3205.55	-427.40	0.42	444061.92	725249.70	N 32 13 11.73 W	103 44 19.12
	13697.00	89.82	359.80	10321.12	3419.81	3395.55	-428.45	0.17	444251.90	725243.31	N 32 13 12.66 W	103 44 19.12
	13791.00	89.96	359.73	10321.30	3513.49	3489.55	-428.63	0.32	444440.89	725242.71	N 32 13 13.60 W	103 44 19.12
	13886.00	89.72	359.54	10321.57	3608.19	3584.54	-430.62	0.57	444534.88	725241.53	N 32 13 14.53 W	103 44 19.13
	13980.00	89.58	359.02	10322.14	3701.93	3678.53	-431.89	0.60	444629.86	725240.25	N 32 13 15.47 W	103 44 19.14
	14075.00	89.96	359.44	10322.52	3796.68	3773.52	-432.30	1.01	444724.85	725239.84	N 32 13 16.41 W	103 44 19.14
	14170.00	90.68	0.07	10321.99	3891.36	3868.52	-432.70	0.93	444818.84	725239.44	N 32 13 17.34 W	103 44 19.14
	14264.00	90.07	359.44	10321.38	3985.04	3962.52	-433.51	1.89	444913.82	725238.64	N 32 13 18.28 W	103 44 19.14
	14359.00	88.28	359.59	10322.74	4079.74	4057.50	-428.16	2.56	445026.67	725243.98	N 32 13 20.15 W	103 44 19.07
	14548.00	90.92	3.65	10324.06	4267.45	4246.36	-423.34	1.65	445197.52	725248.80	N 32 13 21.09 W	103 44 19.00
	14643.00	91.44	2.17	10322.11	4361.54	4341.22	-420.94	1.53	445291.46	725251.20	N 32 13 22.02 W	103 44 18.97
	14737.00	91.17	0.76	10319.97	4454.93	4435.16	-420.11	0.54	445480.41	725252.03	N 32 13 23.89 W	103 44 18.95
	14826.00	91.03	359.74	10316.34	4643.12	4624.12	-420.63	0.16	445574.39	725251.51	N 32 13 24.82 W	103 44 18.95
	15020.00	90.93	359.63	10314.73	4736.80	4718.11	-421.36	0.15	445669.37	725250.78	N 32 13 25.76 W	103 44 18.95
	15115.00	90.96	359.49	10313.16	4831.50	4813.09	-422.12	0.28	445763.35	725250.03	N 32 13 26.69 W	103 44 18.95
	15209.00	91.20	359.59	10311.39	4925.19	4907.07	-422.67	0.39	445858.32	725249.47	N 32 13 27.63 W	103 44 18.95
	15304.00	90.86	359.74	10309.68	5019.87	5002.05	-422.70	0.31	445965.32	725249.44	N 32 13 28.57 W	103 44 18.95
100' FNL Cross	15311.00	90.88	359.74	10309.58	5026.65	5009.05	-422.87	0.00	445900.32	725249.27	N 32 13 28.05 W	103 44 18.95
Final MWD	15346.00	90.99	359.72	10309.01	5061.73	5044.05	-423.08		445943.31	725249.06	N 32 13 28.47 W	103 44 18.95
Prof to TD	15389.00	90.99	359.72	10308.26	5104.58	5087.04						

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 Mesa Verde BS Unit 21H Gyro+MWD 0 - 15389MD
	1	26.500	26.500	Act Stns	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Mesa Verde BS Unit 21H Gyro+MWD 0 - 15389MD
	1	26.500	1010.000	Act Stns	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Mesa Verde BS Unit 21H Gyro+MWD 0 - 15389MD
	1	1010.000	3609.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Mesa Verde BS Unit 21H Gyro+MWD 0 - 15389MD
	1	3609.000	4653.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Mesa Verde BS Unit 21H Gyro+MWD 0 - 15389MD
	1	4653.000	9482.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Mesa Verde BS Unit 21H Gyro+MWD 0 - 15389MD
	1	9482.000	10950.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Mesa Verde BS Unit 21H Gyro+MWD 0 - 15389MD
	1	10950.000	15389.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Mesa Verde BS Unit 21H Gyro+MWD 0 - 15389MD

...Mesa Verde BS Unit 21H\Original Borehole\Oxy Mesa Verde BS Unit 21H Gyro+MWD 0 - 15389MD

Schlumberger

OXY



Borehole: Original Borehole Well: Mesa Verde BS Unit 21H Field: NM Eddy County (NAD 83) Structure: Oxy Mesa Verde BS Unit 21H

Gravity & Magnetic Parameters

Model: BPR1 Dip: 68.894° Date: 04-Oct-2018
MagDec: 6.76° FS: 47978.5nT Gravity FS: 998.425mg (9.80665 Based)

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

Lat: N 32 12 28.11 Northing: 440808.647US Grid Conv: 0.3177°
Lon: W 103 44 14.38 Easting: 72872.127US Scale Fact: 0.88884301

Miscellaneous

Slot: Oxy Mesa Verde BS Unit 21H TVD Ref: RKB(2618.81' above MSL)
Plan: Oxy Mesa Verde BS Unit 21H Gyro+MWD 0 - 15389' MWD

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
RKB	0.00	0.00	0.00	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	1010.14	1.15	258.47	1009.98	-3.34	-3.34	-16.72	0.13
Bones Spring Intersection	8453.04	5.30	254.06	8434.00	-96.58	-96.58	-294.75	0.58
100' FSL Cross	9980.92	15.34	331.33	9955.26	-72.34	-72.34	-396.17	3.28
100' FNL Cross	15311.00	90.88	359.74	10309.58	5009.05	5009.05	-422.70	0.31
Final MWD	15346.00	90.99	359.72	10309.01	5044.05	5044.05	-422.87	0.31
Proj to TD	15389.00	90.99	359.72	10308.26	5087.04	5087.04	-423.08	0.00

