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30-015-45386

Schlumberger

Oxy Sterling Silver MDP1 33-4 Federal Com 6H Gyro+MWD 0' to 20550' MD
Survey Geodetic Report
(Def Survey)

Report Date:	February 19, 2019 - 12:16 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	OXY	**Vertical Section Azimuth:**	176.727 ° (Grid North)
Field:	NM Eddy County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Oxy Sterling Silver MDP1 33-4 Federal Com 6H / Oxy Sterling Silver MDP1 33-4 Federal Com 6H	**TVD Reference Datum:**	RKB=26.5'
Well:	Oxy Sterling Silver MDP1 33-4 Federal Com 6H	**TVD Reference Elevation:**	3413.600 ft above MSL
Borehole:	Original Hole	**Seabed / Ground Elevation:**	3387.100 ft above MSL
UWI / API#:	Unknown / 30-015-45386	**Magnetic Declination:**	6.849 °
Survey Name:	Oxy Sterling Silver MDP1 33-4 Federal Com 6H Gyro+MWD 0' to 20550' MD	**Total Gravity Field Strength:**	998.4499mgn (9.80665 Based)
Survey Date:	December 20, 2018	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	295.026 ° / 11403.985 ft / 6.828 / 1.110	**Total Magnetic Field Strength:**	48004.700 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.994 °
Location Lat / Long:	N 32° 16' 4.77359", W 103° 47' 0.23771"	**Declination Date:**	February 08, 2019
Location Grid N/E Y/X:	N 461664.280 ftUS, E 711313.890 ftUS	**Magnetic Declination Model:**	IFR1
CRS Grid Convergence Angle:	0.2936 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99994218	**Grid Convergence Used:**	0.2936 °
Version / Patch:	2.10.753.0	**Total Corr Mag North->Grid North:**	6.5554 °
		Local Coord Referenced To:	Well Head

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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 ° ' ")
WRP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	461664.28	711313.89	N 32 16 4.77	W 103 47 0.24
SHL	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	461664.28	711313.89	N 32 16 4.77	W 103 47 0.24
	48.00	0.82	117.59	48.00	0.08	-0.07	0.14	3.81	461664.21	711314.03	N 32 16 4.77	W 103 47 0.24
	135.00	0.64	122.09	134.99	0.68	-0.62	1.10	0.22	461663.66	711314.99	N 32 16 4.77	W 103 47 0.22
	217.00	0.48	218.19	216.99	1.20	-1.13	1.28	1.02	461663.15	711315.17	N 32 16 4.76	W 103 47 0.22
	311.00	0.50	262.99	310.99	1.52	-1.49	0.62	0.40	461662.79	711314.51	N 32 16 4.76	W 103 47 0.23
	405.00	0.34	258.10	404.98	1.59	-1.60	-0.06	0.17	461662.68	711313.83	N 32 16 4.76	W 103 47 0.24
Last Gyro	497.00	0.31	235.62	496.98	1.76	-1.79	-0.53	0.14	461662.49	711313.36	N 32 16 4.76	W 103 47 0.24
	616.00	0.30	246.98	615.98	2.03	-2.10	-1.08	0.05	461662.18	711312.81	N 32 16 4.75	W 103 47 0.25
	710.00	0.42	229.10	709.98	2.33	-2.42	-1.57	0.17	461661.86	711312.32	N 32 16 4.75	W 103 47 0.26
	804.00	0.49	238.51	803.98	2.73	-2.86	-2.17	0.11	461661.42	711311.72	N 32 16 4.75	W 103 47 0.26
	992.00	0.21	223.58	991.97	3.34	-3.53	-3.09	0.16	461660.75	711310.80	N 32 16 4.74	W 103 47 0.27
	1085.00	0.23	145.10	1084.97	3.62	-3.80	-3.10	0.30	461660.48	711310.79	N 32 16 4.74	W 103 47 0.27
	1180.00	0.12	138.43	1179.97	3.86	-4.03	-2.93	0.12	461660.25	711310.96	N 32 16 4.73	W 103 47 0.27
	1366.00	0.53	169.41	1365.97	4.87	-5.02	-2.64	0.23	461659.26	711311.25	N 32 16 4.72	W 103 47 0.27
	1460.00	0.56	171.64	1459.96	5.75	-5.91	-2.49	0.04	461658.37	711311.40	N 32 16 4.72	W 103 47 0.27
	1556.00	0.39	150.47	1555.96	6.51	-6.65	-2.27	0.25	461657.63	711311.62	N 32 16 4.71	W 103 47 0.26
	1660.00	0.48	180.18	1659.96	7.27	-7.40	-2.09	0.23	461656.88	711311.80	N 32 16 4.70	W 103 47 0.26
	1755.00	0.49	148.34	1754.95	8.02	-8.14	-1.88	0.28	461656.14	711312.01	N 32 16 4.69	W 103 47 0.26
	1944.00	0.45	163.66	1943.95	9.45	-9.54	-1.25	0.07	461654.74	711312.64	N 32 16 4.68	W 103 47 0.25
	2132.00	0.27	190.68	2131.94	10.60	-10.69	-1.12	0.13	461653.60	711312.77	N 32 16 4.67	W 103 47 0.25
	2227.00	0.34	181.68	2226.94	11.10	-11.19	-1.17	0.09	461653.09	711312.72	N 32 16 4.66	W 103 47 0.25
	2321.00	0.06	334.06	2320.94	11.33	-11.42	-1.20	0.42	461652.86	711312.69	N 32 16 4.66	W 103 47 0.25
	2415.00	0.10	287.22	2414.94	11.26	-11.35	-1.30	0.08	461652.93	711312.59	N 32 16 4.66	W 103 47 0.25
	2510.00	0.26	353.71	2509.94	11.02	-11.11	-1.40	0.25	461653.17	711312.49	N 32 16 4.66	W 103 47 0.25
	2705.00	0.51	13.91	2704.94	9.75	-9.83	-1.24	0.14	461654.45	711312.65	N 32 16 4.68	W 103 47 0.25
	2799.00	0.45	46.62	2798.93	9.11	-9.17	-0.87	0.29	461655.11	711313.02	N 32 16 4.68	W 103 47 0.25
	2894.00	0.41	53.33	2893.93	8.68	-8.71	-0.33	0.07	461655.57	711313.56	N 32 16 4.69	W 103 47 0.24
	2988.00	0.34	44.35	2987.93	8.31	-8.31	0.13	0.10	461655.97	711314.02	N 32 16 4.69	W 103 47 0.24
	3083.00	0.16	356.54	3082.93	7.98	-7.98	0.32	0.27	461656.30	711314.21	N 32 16 4.69	W 103 47 0.23
	3177.00	0.15	1.35	3176.93	7.73	-7.73	0.32	0.02	461656.56	711314.21	N 32 16 4.70	W 103 47 0.23
	3271.00	0.11	127.61	3270.93	7.67	-7.66	0.39	0.25	461656.62	711314.28	N 32 16 4.70	W 103 47 0.23
	3460.00	0.60	146.90	3459.92	8.64	-8.60	1.08	0.26	461655.68	711314.97	N 32 16 4.69	W 103 47 0.23
	3555.00	0.54	163.23	3554.92	9.51	-9.44	1.48	0.18	461654.84	711315.37	N 32 16 4.68	W 103 47 0.22
	3743.00	1.26	157.23	3742.90	12.32	-12.20	2.53	0.39	461652.08	711316.42	N 32 16 4.65	W 103 47 0.21
	3838.00	0.69	182.81	3837.88	13.87	-13.73	2.91	0.74	461650.55	711316.80	N 32 16 4.64	W 103 47 0.20
	4026.00	0.60	188.28	4025.87	15.96	-15.84	2.71	0.06	461648.45	711316.60	N 32 16 4.62	W 103 47 0.21
	4215.00	0.36	202.26	4214.86	17.47	-17.36	2.34	0.14	461646.92	711316.23	N 32 16 4.60	W 103 47 0.21
	4268.00	0.31	208.24	4267.86	17.74	-17.64	2.21	0.11	461646.64	711316.10	N 32 16 4.60	W 103 47 0.21
	4456.00	0.56	351.90	4455.86	17.26	-17.18	1.84	0.44	461647.10	711315.73	N 32 16 4.60	W 103 47 0.22
	4645.00	2.50	20.07	4644.78	12.55	-12.40	3.13	1.07	461651.88	711317.02	N 32 16 4.65	W 103 47 0.20
	4739.00	3.22	19.35	4738.67	8.24	-7.98	4.71	0.77	461656.30	711318.60	N 32 16 4.69	W 103 47 0.18
	4836.00	3.56	20.55	4835.50	2.97	-2.59	6.67	0.36	461661.69	711320.56	N 32 16 4.75	W 103 47 0.16
	4931.00	1.84	336.93	4930.40	-1.17	1.58	7.10	2.70	461665.86	711320.99	N 32 16 4.79	W 103 47 0.15
	5025.00	3.81	257.80	5024.31	-2.10	2.30	3.46	4.15	461666.58	711317.35	N 32 16 4.80	W 103 47 0.20
	5120.00	6.87	243.30	5118.89	0.65	-0.92	-4.71	3.50	461663.36	711309.19	N 32 16 4.76	W 103 47 0.29
	5214.00	9.42	236.46	5211.93	6.76	-7.69	-16.14	2.90	461656.59	711297.75	N 32 16 4.70	W 103 47 0.43
	5309.00	8.90	233.38	5305.72	14.72	-16.37	-28.52	0.75	461647.91	711285.37	N 32 16 4.61	W 103 47 0.57
	5403.00	8.75	232.20	5398.61	22.77	-25.09	-40.01	0.25	461639.19	711273.89	N 32 16 4.53	W 103 47 0.71
	5497.00	8.63	231.69	5491.53	30.87	-33.85	-51.19	0.15	461630.44	711262.70	N 32 16 4.44	W 103 47 0.84
	5626.00	8.52	230.25	5619.09	42.11	-45.96	-66.13	0.19	461618.33	711247.76	N 32 16 4.32	W 103 47 1.01
	5720.00	6.18	228.34	5712.31	49.39	-53.77	-75.27	2.50	461610.51	711238.63	N 32 16 4.25	W 103 47 1.12
	5815.00	2.69	221.99	5807.01	54.13	-58.83	-80.58	3.70	461605.45	711233.32	N 32 16 4.20	W 103 47 1.18
	5909.00	0.30	119.54	5900.98	55.82	-60.59	-81.84	2.95	461603.69	711232.05	N 32 16 4.18	W 103 47 1.19
	6003.00	0.34	77.32	5994.97	55.91	-60.65	-81.35	0.25	461603.63	711232.54	N 32 16 4.18	W 103 47 1.19
	6045.00	0.27	95.28	6036.97	55.90	-60.63	-81.13	0.28	461603.65	711232.76	N 32 16 4.18	W 103 47 1.19
	6098.00	0.23	109.19	6089.97	55.96	-60.68	-80.91	0.14	461603.60	711232.99	N 32 16 4.18	W 103 47 1.18
	6192.00	0.69	64.32	6183.97	55.82	-60.50	-80.22	0.59	461603.79	711233.67	N 32 16 4.18	W 103 47 1.18
	6286.00	2.17	58.27	6277.94	54.75	-59.32	-78.20	1.58	461604.97	711235.70	N 32 16 4.19	W 103 47 1.15
	6381.00	5.00	56.00	6372.74	51.78	-56.05	-73.23	2.98	461608.23	711240.66	N 32 16 4.22	W 103 47 1.09
	6475.00	7.65	57.26	6466.16	46.61	-50.38	-64.57	2.82	461613.90	711249.32	N 32 16 4.28	W 103 47 0.99
	6569.00	9.37	56.87	6559.12	39.72	-42.81	-52.90	1.83	461621.47	711260.99	N 32 16 4.35	W 103 47 0.86
	6664.00	10.25	56.22	6652.73	31.58	-33.89	-39.40	0.93	461630.40	711274.49	N 32 16 4.44	W 103 47 0.70
	6758.00	10.85	56.28	6745.14	22.85	-24.32	-25.09	0.64	461639.96	711288.80	N 32 16 4.53	W 103 47 0.53
	6853.00	10.81	53.87	6838.45	13.49	-14.11	-10.46	0.48	461650.17	711303.43	N 32 16 4.63	W 103 47 0.36
	6947.00	10.85	47.74	6930.78	3.14	-2.96	3.21	1.23	461661.32	711317.10	N 32 16 4.74	W 103 47 0.20
	7041.00	10.42	45.79	7023.17	-8.00	8.92	15.85	0.60	461673.20	711329.74	N 32 16 4.86	W 103 47 0.05
	7136.00	10.51	46.66	7116.59	-19.20	20.85	28.31	0.19	461685.13	711342.20	N 32 16 4.98	W 103 46 59.91
	7230.00	10.65	45.34	7208.99	-30.46	32.84	40.72	0.30	461697.12	711354.61	N 32 16 5.10	W 103 46 59.76
	7325.00	10.63	43.30	7302.36	-42.29	45.39	52.98	0.40	461709.67	711366.86	N 32 16 5.22	W 103 46 59.62
	7419.00	10.49	44.28	7394.76	-54.03	57.83	64.90	0.24	461722.10	711378.78	N 32 16 5.34	W 103 46 59.48
	7513.00	10.26	45.22	7487.23	-65.35	69.85	76.81	0.30	461734.12	711390.70	N 32 16 5.46	W 103 46 59.34
	7608.00	10.34	45.73	7580.70	-76.55	81.76	88.92	0.13	461746.03	711402.81	N 32 16 5.58	W 103 46 59.20
	7702.00	10.47	43.43	7673.15	-87.94	93.85	100.84	0.46	461758.13	711414.72	N 32 16 5.70	W 103 46 59.06
	7797.00	10.07	44.57	7766.63	-99.43	106.04	112.60	0.47	461770.31	711426.48	N 32 16 5.82	W 103 46 58.92
	7891.00	10.26	46.42	7859.15	-110.37	117.66	124.43	0.40	461781.93	711438.31	N 32 16 5.93	W 103 46 58.78
	7986.00	10.17	55.87	7952.65	-120.14	128.20	137.50	1.76	461792.47	711451.39	N 32 16 6.04	W 103 46 58.63

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 ° ' ")
	8080.00	9.96	65.15	8045.21	-127.39	136.27	151.75	1.74	461800.55	711465.63	N 32 16 6.11	W 103 46 58.46
	8175.00	8.73	74.00	8138.96	-132.00	141.71	166.14	1.99	461805.99	711480.02	N 32 16 6.17	W 103 46 58.29
	8269.00	7.34	82.31	8232.03	-134.03	144.48	178.95	1.92	461808.76	711492.83	N 32 16 6.19	W 103 46 58.15
	8363.00	7.83	97.98	8325.22	-133.24	144.40	191.24	2.25	461808.67	711505.12	N 32 16 6.19	W 103 46 58.00
	8458.00	8.43	97.77	8419.27	-130.65	142.56	204.55	0.63	461806.83	711518.42	N 32 16 6.17	W 103 46 57.85
	8583.00	8.91	101.54	8542.84	-126.42	139.38	223.11	0.59	461803.65	711536.99	N 32 16 6.14	W 103 46 57.63
	8651.00	9.46	92.49	8609.97	-124.51	138.09	233.85	2.27	461802.36	711547.73	N 32 16 6.13	W 103 46 57.51
	8745.00	11.90	74.38	8702.36	-125.81	140.36	250.91	4.38	461804.63	711564.79	N 32 16 6.15	W 103 46 57.31
	8840.00	11.83	81.27	8795.34	-128.83	144.48	269.97	1.49	461808.75	711583.84	N 32 16 6.19	W 103 46 57.08
	8934.00	12.44	86.55	8887.24	-129.78	146.55	289.60	1.35	461810.82	711603.47	N 32 16 6.21	W 103 46 56.86
	9029.00	16.89	89.37	8979.12	-129.17	147.32	313.63	4.74	461811.59	711627.50	N 32 16 6.22	W 103 46 56.58
	9123.00	20.02	95.01	9068.28	-126.22	146.06	343.32	3.83	461810.33	711657.19	N 32 16 6.20	W 103 46 56.23
	9217.00	18.97	108.60	9156.94	-118.21	139.78	373.85	4.94	461804.05	711687.71	N 32 16 6.14	W 103 46 55.88
	9312.00	17.79	110.88	9247.09	-106.52	129.68	402.04	1.45	461793.95	711715.91	N 32 16 6.04	W 103 46 55.55
	9406.00	16.44	121.13	9336.95	-93.12	117.68	426.85	3.51	461781.96	711740.72	N 32 16 5.92	W 103 46 55.26
	9500.00	15.31	120.65	9427.36	-78.68	104.48	448.91	1.21	461768.75	711762.78	N 32 16 5.78	W 103 46 55.00
KOP Actual	9566.00	14.97	122.15	9491.07	-68.88	95.50	463.63	0.79	461759.78	711777.49	N 32 16 5.70	W 103 46 54.83
	9707.00	11.15	127.52	9628.40	-49.41	77.50	489.87	2.84	461741.78	711803.73	N 32 16 5.52	W 103 46 54.53
	9802.00	20.38	154.93	9719.85	-27.97	56.85	504.21	12.24	461721.13	711818.07	N 32 16 5.31	W 103 46 54.36
	9897.00	28.38	147.00	9806.33	7.06	22.87	523.56	9.08	461687.15	711837.42	N 32 16 4.97	W 103 46 54.14
	9992.00	35.04	155.87	9887.15	52.23	-21.03	547.04	8.54	461643.25	711860.90	N 32 16 4.54	W 103 46 53.87
	10087.00	42.56	171.64	9961.31	109.94	-77.92	562.92	13.02	461586.36	711876.78	N 32 16 3.97	W 103 46 53.69
	10182.00	49.23	175.40	10027.40	177.99	-145.66	570.49	7.57	461518.63	711884.35	N 32 16 3.30	W 103 46 53.60
	10276.00	61.81	174.34	10080.51	255.28	-222.67	577.46	13.41	461441.62	711891.31	N 32 16 2.54	W 103 46 53.53
	10372.00	71.96	178.49	10118.17	343.43	-310.66	582.85	11.29	461353.64	711896.70	N 32 16 1.67	W 103 46 53.47
	10467.00	77.39	181.42	10143.27	434.86	-402.23	582.89	6.44	461262.07	711896.75	N 32 16 0.76	W 103 46 53.47
	10561.00	81.03	180.36	10160.86	526.94	-494.54	581.46	4.03	461169.76	711895.32	N 32 15 59.85	W 103 46 53.50
	10656.00	89.18	176.73	10168.97	621.45	-589.07	583.88	9.38	461075.24	711897.74	N 32 15 58.92	W 103 46 53.47
	10701.00	89.68	176.31	10169.41	666.44	-633.99	586.61	1.45	461030.33	711900.47	N 32 15 58.47	W 103 46 53.44
	10792.00	89.65	179.67	10169.95	757.41	-724.92	589.80	3.69	460939.41	711903.66	N 32 15 57.57	W 103 46 53.41
	10885.00	89.23	180.46	10170.86	850.24	-817.91	589.70	0.96	460846.42	711903.55	N 32 15 56.65	W 103 46 53.42
	10978.00	88.92	180.81	10172.36	943.02	-910.89	588.67	0.50	460753.44	711902.52	N 32 15 55.73	W 103 46 53.44
	11076.00	89.23	181.64	10173.94	1040.70	-1008.86	586.57	0.90	460655.48	711900.43	N 32 15 54.76	W 103 46 53.47
	11171.00	89.27	182.02	10175.18	1135.31	-1103.80	583.54	0.40	460560.55	711897.39	N 32 15 53.82	W 103 46 53.51
	11266.00	89.03	182.33	10176.59	1229.88	-1198.72	579.93	0.41	460465.63	711893.79	N 32 15 52.88	W 103 46 53.56
	11361.00	89.06	181.23	10178.17	1324.49	-1293.66	576.98	1.16	460370.70	711890.84	N 32 15 51.94	W 103 46 53.60
	11456.00	88.72	182.69	10180.02	1419.07	-1388.58	573.74	1.58	460275.78	711887.59	N 32 15 51.00	W 103 46 53.64
	11551.00	89.10	183.12	10181.82	1513.51	-1483.44	568.92	0.60	460180.93	711882.78	N 32 15 50.07	W 103 46 53.70
	11646.00	88.61	183.63	10183.72	1607.85	-1578.26	563.33	0.74	460086.12	711877.19	N 32 15 49.13	W 103 46 53.77
	11741.00	88.85	182.10	10185.83	1702.28	-1673.11	558.58	1.63	459991.27	711872.44	N 32 15 48.19	W 103 46 53.83
	11836.00	89.10	179.18	10187.53	1797.03	-1768.08	557.52	3.08	459896.30	711871.38	N 32 15 47.25	W 103 46 53.85
	11931.00	89.30	178.17	10188.85	1891.96	-1863.05	559.72	1.08	459801.34	711873.58	N 32 15 46.31	W 103 46 53.83
	12026.00	89.06	179.59	10190.21	1986.89	-1958.02	561.58	1.52	459706.38	711875.43	N 32 15 45.37	W 103 46 53.81
	12121.00	89.75	178.27	10191.20	2081.81	-2052.99	563.35	1.57	459611.41	711877.21	N 32 15 44.43	W 103 46 53.80
	12216.00	89.54	177.83	10191.79	2176.78	-2147.94	566.58	0.51	459516.47	711880.44	N 32 15 43.49	W 103 46 53.77
	12311.00	89.34	177.72	10192.72	2271.76	-2242.86	570.27	0.24	459421.56	711884.13	N 32 15 42.55	W 103 46 53.73
	12406.00	89.41	177.45	10193.75	2366.74	-2337.77	574.27	0.29	459326.65	711888.13	N 32 15 41.61	W 103 46 53.69
	12501.00	89.61	178.44	10194.56	2461.72	-2432.70	577.68	1.06	459231.72	711891.53	N 32 15 40.67	W 103 46 53.66
	12596.00	89.47	177.62	10195.33	2556.69	-2527.64	580.94	0.88	459136.79	711894.80	N 32 15 39.73	W 103 46 53.62
	12691.00	91.85	178.09	10194.23	2651.66	-2622.56	584.50	2.55	459041.87	711898.36	N 32 15 38.79	W 103 46 53.59
	12786.00	90.68	178.25	10192.14	2746.60	-2717.49	587.53	1.24	458946.95	711901.39	N 32 15 37.85	W 103 46 53.56
	12881.00	88.85	177.75	10192.53	2841.57	-2812.43	590.85	2.00	458852.02	711904.70	N 32 15 36.91	W 103 46 53.53
	13071.00	89.54	177.38	10195.19	3031.53	-3002.23	598.92	0.41	458662.22	711912.77	N 32 15 35.04	W 103 46 53.44
	13261.00	90.27	180.94	10195.51	3221.33	-3192.18	601.70	1.91	458472.29	711915.56	N 32 15 33.16	W 103 46 53.42
	13356.00	89.54	181.23	10195.67	3316.05	-3287.16	599.91	0.83	458377.31	711913.76	N 32 15 32.22	W 103 46 53.45
	13451.00	91.99	181.94	10194.40	3410.70	-3382.11	597.28	2.69	458282.37	711911.13	N 32 15 31.28	W 103 46 53.48
	13546.00	89.78	180.87	10192.93	3505.36	-3477.06	594.95	2.58	458187.42	711908.80	N 32 15 30.34	W 103 46 53.52
	13641.00	89.54	181.62	10193.50	3600.06	-3572.04	592.89	0.83	458092.45	711906.74	N 32 15 29.40	W 103 46 53.55
	13831.00	90.38	177.89	10193.63	3789.76	-3762.00	593.70	2.01	457902.50	711907.55	N 32 15 27.52	W 103 46 53.55
	13925.00	89.25	180.18	10193.93	3883.68	-3855.98	595.28	2.72	457808.53	711909.14	N 32 15 26.59	W 103 46 53.54
	14021.00	89.39	177.24	10195.07	3979.60	-3951.94	597.44	3.07	457712.58	711911.30	N 32 15 25.64	W 103 46 53.52
	14116.00	89.25	179.06	10196.20	4074.56	-4046.88	600.51	1.92	457617.64	711914.36	N 32 15 24.70	W 103 46 53.49
	14306.00	89.35	179.99	10198.52	4264.32	-4236.86	602.08	0.49	457427.68	711915.94	N 32 15 22.82	W 103 46 53.48
	14401.00	88.73	178.75	10200.11	4359.20	-4331.84	603.13	1.46	457332.70	711916.98	N 32 15 21.88	W 103 46 53.47
	14590.00	88.49	179.60	10204.70	4547.97	-4520.76	605.85	0.47	457143.79	711919.70	N 32 15 20.01	W 103 46 53.45
	14685.00	87.94	182.14	10207.66	4642.67	-4615.69	604.41	2.73	457048.86	711918.26	N 32 15 19.07	W 103 46 53.48
	14780.00	88.15	180.96	10210.90	4737.28	-4710.60	601.84	1.26	456953.96	711915.69	N 32 15 18.13	W 103 46 53.51
	14875.00	88.35	180.17	10213.80	4832.02	-4805.55	600.90	0.86	456859.02	711914.76	N 32 15 17.19	W 103 46 53.53
	15065.00	88.35	180.32	10219.27	5021.58	-4995.47	600.09	0.08	456669.11	711913.94	N 32 15 15.31	W 103 46 53.55
	15255.00	90.79	179.74	10220.70	5211.25	-5185.45	599.99	1.32	456479.14	711913.85	N 32 15 13.43	W 103 46 53.56
	15445.00	91.35	179.37	10217.15	5400.98	-5375.41	601.47	0.35	456289.19	711915.32	N 32 15 11.55	W 103 46 53.55
	15540.00	91.38	180.00	10214.88	5495.83	-5470.38	601.99	0.66	456194.23	711915.84	N 32 15 10.61	W 103 46 53.55
	15635.00	90.66	179.66	10213.19	5590.67	-5565.37	602.27	0.84	456099.25	711916.12	N 32 15 9.67	W 103 46 53.56
	15730.00	90.38	181.16	10212.33	5685.47	-5660.36	601.59	1.61	456004.26	711915.45	N 32 15 8.73	W 103 46 53.57
	15825.00	90.25	180.90	10211.81	5780.20	-5755.34	599.88	0.31	455909.29	711913.74	N 32 15 7.79	W 103 46 53.60
	15920.00	90.18	181.11	10211.45	5874.94	-5850.32	598.22	0.23	455814.31	711912.07	N 32 15 6.85	W 103 46 53.62
	16015.00	90.42	181.24	10210.95	5969.65	-5945.30	596.27	0.29	455719.33	711910.12	N 32 15 5.91	W 103 46 53.65
	16109.00	90.45	181.31	10210.24	6063.35	-6039.28	594.18	0.08	455625.36	711908.03	N 32 15 4.99	W 103 46 53.68
	16204.00	90.38	181.50	10209.55	6158.03	-6134.25	591.85	0.21	455530.40	711905.70	N 32 15 4.05	W 103 46 53.71
	16299.00	87.74	180.47	10211.11	6252.75	-6229.21	590.22	2.98	455435.44	711904.07	N 32 15 3.11	W 103 46 53.74
	16394.00	89.21	181.06	10213.64	6347.47	-6324.16	588.95	1.67	455340.49	711902.80	N 32 15 2.17	W 103 46 53.76
	16489.00	89.76	181.25	10214.49	6442.19	-6419.14	587.03	0.61	455245.52	711900.89	N 32 15 1.23	W 103 46 53.79
	16583.00	89.45	180.66	10215.14	6535.93	-6513.12	585.47	0.71	455151.55	711899.32	N 32 15 0.30	W 103 46 53.81
	16678.00	90.59	182.46	10215.11	6630.58	-6608.08	582.88	2.24	455056.59	711896.73	N 32 14 59.36	W 103 46 53.84
	16773.00	89.59	181.45	10214.96	6725.19	-6703.03	579.64	1.50	454961.66	711893.49	N 32 14 58.42	W 103 46 53.89
	16963.00	89.52	179.46	10216.44	6914.77	-6893.00	578.13	1.05	454771.69	711891.99	N 32 14 56.54	W 103 46 53.92
	17058.00	89.66	180.05	10217.11	7009.63	-6988.00	578.54	0.64	454676.70	711892.39	N 32 14 55.60	W 103 46 53.92
	17153.00	89.49	180.55	10217.82	7104.45	-7083.00	578.04	0.56	454581.71	711891.89	N 32 14 54.66	W 103 46 53.93
	17343.00	89.83	180.01	10218.95	7294.08	-7272.99	577.11	0.34	454391.73	711890.97	N 32 14 52.78	W 103 46 53.95
	17533.00	90.73	179.88	10218.02	7483.77	-7462.99	577.29	0.48	454201.74	711891.15	N 32 14 50.90	W 103 46 53.96
	17723.00	90.69	181.94	10215.66	7673.24	-7652.94	574.28	1.08	454011.80	711888.13	N 32 14 49.02	W 103 46 54.01
	17818.00	90.25	179.22	10214.88	7768.01	-7747.92	573.31	2.90	453916.82	711887.17	N 32 14 48.08	W 103 46 54.02
	18008.00	89.08	180.10	10216.00	7957.76	-7937.91	574.44	0.77	453726.85	711888.30	N 32 14 46.20	W 103 46 54.02
	18103.00	87.98	181.27	10218.43	8052.50	-8032.87	573.31	1.69	453631.89	711887.16	N 32 14 45.26	W 103 46 54.04
	18197.00	88.36	182.22	10221.43	8146.09	-8126.77	570.45	1.09	453537.99	711884.30	N 32 14 44.33	W 103 46 54.08
	18292.00	88.70	181.58	10223.87	8240.67	-8221.69	567.30	0.76	453443.08	711881.15	N 32 14 43.39	W 103 46 54.12
	18387.00	88.63	180.04	10226.08	8335.40	-8316.65	565.95	1.62	453348.13	711879.81	N 32 14 42.45	W 103 46 54.14
	18482.00	89.15	178.41	10227.93	8430.29	-8411.62	567.24	1.80	453253.16	711881.10	N 32 14 41.51	W 103 46 54.13
	18577.00	89.05	178.55	10229.42	8525.23	-8506.58	569.76	0.18	453158.21	711883.61	N 32 14 40.57	W 103 46 54.11
	18767.00	89.80	180.31	10231.32	8715.00	-8696.55	571.65	1.01	452968.25	711885.50	N 32 14 38.69	W 103 46 54.10
	18862.00	89.63	178.98	10231.80	8809.87	-8791.54	572.24	1.41	452873.26	711886.09	N 32 14 37.75	W 103 46 54.10
	19052.00	90.11	178.60	10232.23	8999.75	-8981.50	576.25	0.32	452683.32	711890.10	N 32 14 35.87	W 103 46 54.06
	19147.00	89.91	180.00	10232.21	9094.65	-9076.49	577.41	1.49	452588.33	711891.27	N 32 14 34.93	W 103 46 54.06
	19242.00	90.04	179.61	10232.25	9189.51	-9171.49	577.73	0.43	452493.34	711891.59	N 32 14 33.99	W 103 46 54.06
	19431.00	90.35	179.40	10231.61	9378.29	-9360.48	579.37	0.20	452304.36	711893.22	N 32 14 32.12	W 103 46 54.05
	19526.00	90.32	178.98	10231.05	9473.20	-9455.47	580.71	0.44	452209.38	711894.56	N 32 14 31.18	W 103 46 54.04
	19716.00	90.15	178.44	10230.27	9663.08	-9645.42	584.99	0.30	452019.44	711898.84	N 32 14 29.30	W 103 46 54.00
	19811.00	89.84	179.17	10230.28	9758.02	-9740.40	586.97	0.83	451924.46	711900.82	N 32 14 28.36	W 103 46 53.98
	19906.00	90.08	179.22	10230.35	9852.93	-9835.39	588.30	0.26	451829.48	711902.16	N 32 14 27.42	W 103 46 53.97

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 ° ' ")
	20001.00	88.05	178.42	10231.90	9947.85	-9930.35	590.26	2.30	451734.52	711904.11	N 32 14 26.48	W 103 46 53.96
	20191.00	84.60	177.60	10244.08	10137.38	-10119.81	596.84	1.87	451545.07	711910.69	N 32 14 24.61	W 103 46 53.89
	20286.00	84.22	178.04	10253.33	10231.91	-10214.29	600.44	0.61	451450.60	711914.29	N 32 14 23.67	W 103 46 53.86
	20381.00	84.26	178.50	10262.86	10326.40	-10308.77	603.29	0.48	451356.13	711917.14	N 32 14 22.74	W 103 46 53.83
	20476.00	87.64	179.45	10269.57	10421.07	-10403.50	604.98	3.70	451261.40	711918.84	N 32 14 21.80	W 103 46 53.81
Final MWD	20503.00	88.05	179.21	10270.59	10448.03	-10430.48	605.30	1.76	451234.42	711919.15	N 32 14 21.53	W 103 46 53.81
Proj to TD	20550.00	88.05	179.21	10272.19	10494.96	-10477.45	605.95	0.00	451187.46	711919.80	N 32 14 21.07	W 103 46 53.81

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 Hole / Oxy Sterling Silver MDP1 33-4 Federal Com 6H Gyro+MWD 0' to 20550' MD
	1	26.500	26.500	Act Stns	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Hole / Oxy Sterling Silver MDP1 33-4 Federal Com 6H Gyro+MWD 0' to 20550' MD
	1	26.500	497.000	Act Stns	30.000	30.000	NAL_NSG+MSHOT	Original Hole / Oxy Sterling Silver MDP1 33-4 Federal Com 6H
	1	497.000	4268.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Hole / Oxy Sterling Silver MDP1 33-4 Federal Com 6H
	1	4268.000	5497.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Hole / Oxy Sterling Silver MDP1 33-4 Federal Com 6H
	1	5497.000	20550.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Hole / Oxy Sterling Silver MDP1 33-4 Federal Com 6H

Schlumberger

OXY

Borehole:	Well:	Field:	Structure:
Original Hole	Oxy Sterling Silver MDP1 33-4 Federal Com 6H	NM Eddy County (NAD 83)	Oxy Sterling Silver MDP1 33-4 Federal Com 6H

Gravity & Magnetic Parameters

Model: IFR1 Dip: 59.994° Date: 08-Feb-2019
MagDec: 6.849° FS: 48004.7nT Gravity FS: 998.48mgn (9.80665 Based)

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

Lat: N 32 18 4.77 Northing: 481684.28ftUS Grid Conv: 0.2938°
Lon: W 103 47 0.24 Easting: 711313.89ftUS Scale Fact: 0.99994218

Miscellaneous

Oxy Sterling
Slot: Silver MDP1 33-4 Federal Com 6H TVD Ref: RKB=26.5'(3413.6ft above MSL)
Plan: Oxy Sterling Silver MDP1 33-4 Federal Com 6H Gyro+MWD 0' to 20550' MD

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
WRP	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	497.00	0.31	235.62	496.98	1.76	-1.79	-0.53	0.14
Bonespring Intersection	8083.84	9.91	65.46	8049.00	-127.63	136.55	152.35	1.99
KOP Actual	9566.00	14.97	122.15	9491.07	-68.88	95.50	463.63	0.79
100' FNL Crossing	10005.00	35.94	158.35	9897.73	59.33	-27.98	549.97	13.02
100' FSL Crossing	20472.52	87.52	179.42	10269.43	10417.60	-10400.03	604.95	3.70
Final MWD	20503.00	88.05	179.21	10270.59	10448.03	-10430.48	605.30	1.76
Proj to TD	20550.00	88.05	179.21	10272.19	10494.96	-10477.45	605.95	0.00