Schlumberger

Oxy Sterling Silver MDP1 Federal Com 7H Gyro + IFR 0'-20685' MD Survey
Geodetic Report
(Def Survey)

Report Date:	February 07, 2019 - 09:43 AM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	OXY	**Vertical Section Azimuth:**	178.456 ° (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 7H / Oxy Sterling Silver MDP1 33-4 Federal Com 7H	**TVD Reference Datum:**	RKB
Well:	Sterling Silver MDP1 "33-4" Federal Com 7H	**TVD Reference Elevation:**	3427.700 ft above MSL
Borehole:	Original Hole	**Seabed / Ground Elevation:**	3401.200 ft above MSL
UWI / API#:	Unknown / 30-015-45389	**Magnetic Declination:**	6.840 °
Survey Name:	Oxy Sterling Silver MDP1 Federal Com 7H Gyro + IFR 0'-20685' MD	**Total Gravity Field Strength:**	998.4491mgn (9.80665 Based)
Survey Date:	December 31, 2018	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	231.151 ° / 11171.530 ft / 6.717 / 1.091	**Total Magnetic Field Strength:**	48010.100 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.994 °
Location Lat / Long:	N 32° 16' 4.50741", W 103° 46' 33.71372"	**Declination Date:**	January 27, 2019
Location Grid N/E Y/X:	N 461649.130 ftUS, E 713591.330 ftUS	**Magnetic Declination Model:**	IFR1
CRS Grid Convergence Angle:	0.2975 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99994307	**Grid Convergence Used:**	0.2975 °
Version / Patch:	2.10.753.0	**Total Corr Mag North->Grid North:**	6.5425 °
		Local Coord Referenced To:	Well Head

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	461649.13	713591.33	N 32 16 4.51	W 103 46 33.71
SHL	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	461649.13	713591.33	N 32 16 4.51	W 103 46 33.71
	95.50	0.39	214.88	95.50	0.19	-0.19	-0.13	0.57	461648.94	713591.20	N 32 16 4.51	W 103 46 33.72
	125.50	0.29	188.22	125.50	0.35	-0.35	-0.20	0.62	461648.78	713591.13	N 32 16 4.50	W 103 46 33.72
	182.50	0.32	170.56	182.50	0.65	-0.65	-0.20	0.17	461648.48	713591.13	N 32 16 4.50	W 103 46 33.72
	236.50	0.29	163.28	236.50	0.93	-0.93	-0.13	0.09	461648.20	713591.20	N 32 16 4.50	W 103 46 33.72
	299.50	0.27	176.88	299.50	1.23	-1.23	-0.08	0.11	461647.90	713591.25	N 32 16 4.50	W 103 46 33.71
	362.50	0.26	195.75	362.50	1.51	-1.52	-0.11	0.14	461647.61	713591.22	N 32 16 4.49	W 103 46 33.72
	425.50	0.27	219.24	425.50	1.76	-1.77	-0.24	0.17	461647.36	713591.09	N 32 16 4.49	W 103 46 33.72
	488.50	0.32	233.28	488.49	1.98	-1.99	-0.48	0.14	461647.14	713590.85	N 32 16 4.49	W 103 46 33.72
Final Gyro	530.50	0.23	238.03	530.49	2.09	-2.11	-0.64	0.22	461647.02	713590.69	N 32 16 4.49	W 103 46 33.72
	680.00	0.35	234.63	679.99	2.49	-2.53	-1.27	0.08	461646.60	713590.06	N 32 16 4.48	W 103 46 33.73
	861.00	0.09	304.03	860.99	2.72	-2.77	-1.84	0.18	461646.36	713589.49	N 32 16 4.48	W 103 46 33.74
	1044.00	0.14	114.71	1043.99	2.73	-2.78	-1.76	0.13	461646.35	713589.57	N 32 16 4.48	W 103 46 33.73
	1225.00	0.03	73.60	1224.99	2.82	-2.86	-1.51	0.07	461646.27	713589.82	N 32 16 4.48	W 103 46 33.73
	1408.00	0.06	86.68	1407.99	2.80	-2.84	-1.37	0.02	461646.29	713589.96	N 32 16 4.48	W 103 46 33.73
	1598.00	0.06	236.09	1597.99	2.85	-2.89	-1.35	0.06	461646.24	713589.98	N 32 16 4.48	W 103 46 33.73
	1692.00	0.07	177.68	1691.99	2.94	-2.98	-1.39	0.07	461646.15	713589.94	N 32 16 4.48	W 103 46 33.73
	1881.00	0.09	221.94	1880.99	3.16	-3.20	-1.48	0.03	461645.93	713589.85	N 32 16 4.48	W 103 46 33.73
	1976.00	0.06	182.02	1975.99	3.26	-3.31	-1.54	0.06	461645.82	713589.79	N 32 16 4.47	W 103 46 33.73
	2070.00	0.11	163.46	2069.99	3.40	-3.44	-1.51	0.06	461645.69	713589.82	N 32 16 4.47	W 103 46 33.73
	2165.00	0.06	123.17	2164.99	3.52	-3.56	-1.44	0.08	461645.57	713589.89	N 32 16 4.47	W 103 46 33.73
	2354.00	0.18	278.94	2353.99	3.52	-3.57	-1.65	0.12	461645.56	713589.68	N 32 16 4.47	W 103 46 33.73
	2448.00	0.20	292.52	2447.99	3.43	-3.48	-1.95	0.05	461645.65	713589.38	N 32 16 4.47	W 103 46 33.74
	2542.00	0.21	316.98	2541.99	3.23	-3.29	-2.22	0.09	461645.84	713589.11	N 32 16 4.47	W 103 46 33.74
	2637.00	0.22	290.99	2636.99	3.03	-3.10	-2.51	0.10	461646.03	713588.82	N 32 16 4.48	W 103 46 33.74
	2732.00	0.03	341.57	2731.99	2.94	-3.01	-2.69	0.21	461646.12	713588.64	N 32 16 4.48	W 103 46 33.75
	2921.00	0.02	3.85	2920.99	2.86	-2.93	-2.70	0.01	461646.20	713588.63	N 32 16 4.48	W 103 46 33.75
	3015.00	0.11	207.07	3014.99	2.92	-2.99	-2.74	0.14	461646.14	713588.59	N 32 16 4.48	W 103 46 33.75
	3110.00	0.06	287.58	3109.99	2.98	-3.06	-2.83	0.12	461646.07	713588.50	N 32 16 4.48	W 103 46 33.75
	3299.00	0.03	117.85	3298.99	2.97	-3.05	-2.88	0.05	461646.08	713588.45	N 32 16 4.48	W 103 46 33.75
	3394.00	0.19	1.33	3393.99	2.83	-2.91	-2.86	0.22	461646.22	713588.47	N 32 16 4.48	W 103 46 33.75
	3488.00	0.20	113.58	3487.99	2.74	-2.82	-2.70	0.34	461646.31	713588.63	N 32 16 4.48	W 103 46 33.75
	3583.00	0.20	126.35	3582.99	2.92	-2.98	-2.42	0.05	461646.15	713588.91	N 32 16 4.48	W 103 46 33.74
	3677.00	0.07	109.06	3676.99	3.04	-3.10	-2.23	0.14	461646.03	713589.10	N 32 16 4.48	W 103 46 33.74
	3771.00	0.26	135.56	3770.99	3.21	-3.27	-2.03	0.21	461645.86	713589.30	N 32 16 4.48	W 103 46 33.74
	3866.00	0.29	130.94	3865.98	3.53	-3.58	-1.69	0.04	461645.55	713589.64	N 32 16 4.47	W 103 46 33.73
	3960.00	0.34	144.78	3959.98	3.93	-3.96	-1.35	0.10	461645.17	713589.98	N 32 16 4.47	W 103 46 33.73
	4055.00	0.15	150.59	4054.98	4.27	-4.30	-1.13	0.20	461644.83	713590.20	N 32 16 4.46	W 103 46 33.73
	4244.00	0.18	80.86	4243.98	4.45	-4.47	-0.71	0.10	461644.66	713590.62	N 32 16 4.46	W 103 46 33.72
	4403.00	0.06	356.80	4402.98	4.33	-4.35	-0.47	0.12	461644.78	713590.86	N 32 16 4.46	W 103 46 33.72
	4498.00	0.11	9.35	4497.98	4.19	-4.21	-0.46	0.06	461644.92	713590.87	N 32 16 4.47	W 103 46 33.72
	4592.00	0.24	61.04	4591.98	4.02	-4.02	-0.27	0.20	461645.11	713591.06	N 32 16 4.47	W 103 46 33.72
	4686.00	0.18	17.68	4685.98	3.79	-3.79	-0.06	0.18	461645.34	713591.27	N 32 16 4.47	W 103 46 33.71
	4875.00	0.14	347.47	4874.98	3.28	-3.28	-0.02	0.05	461645.85	713591.31	N 32 16 4.47	W 103 46 33.71
	5064.00	0.17	284.85	5063.98	2.97	-2.98	-0.34	0.09	461646.15	713590.99	N 32 16 4.48	W 103 46 33.72
	5159.00	0.19	290.00	5158.98	2.87	-2.89	-0.62	0.03	461646.24	713590.71	N 32 16 4.48	W 103 46 33.72
	5348.00	0.11	262.49	5347.98	2.78	-2.81	-1.10	0.06	461646.32	713590.23	N 32 16 4.48	W 103 46 33.73
	5443.00	0.16	255.07	5442.98	2.82	-2.86	-1.31	0.06	461646.28	713590.02	N 32 16 4.48	W 103 46 33.73
	5537.00	0.16	274.69	5536.98	2.83	-2.88	-1.57	0.06	461646.25	713589.76	N 32 16 4.48	W 103 46 33.73
	5632.00	0.16	275.88	5631.98	2.80	-2.85	-1.84	0.00	461646.28	713589.49	N 32 16 4.48	W 103 46 33.74
	5726.00	0.18	307.94	5725.98	2.69	-2.75	-2.08	0.10	461646.38	713589.25	N 32 16 4.48	W 103 46 33.74
	5916.00	0.18	300.92	5915.98	2.34	-2.41	-2.57	0.01	461646.72	713588.76	N 32 16 4.48	W 103 46 33.74
	6009.00	0.23	295.53	6008.97	2.18	-2.26	-2.87	0.06	461646.87	713588.46	N 32 16 4.49	W 103 46 33.75
	6103.00	0.20	299.05	6102.97	2.01	-2.10	-3.18	0.03	461647.03	713588.15	N 32 16 4.49	W 103 46 33.75
	6198.00	2.31	25.67	6197.95	0.22	-0.29	-2.50	2.43	461648.84	713588.83	N 32 16 4.50	W 103 46 33.74
	6293.00	3.40	25.79	6292.83	-3.98	3.97	-0.44	1.15	461653.10	713590.89	N 32 16 4.55	W 103 46 33.72
	6387.00	3.08	22.49	6386.68	-8.77	8.82	1.74	0.39	461657.94	713593.07	N 32 16 4.59	W 103 46 33.69
	6482.00	3.00	22.80	6481.54	-13.36	13.47	3.68	0.09	461662.59	713595.01	N 32 16 4.64	W 103 46 33.67
	6576.00	2.83	21.68	6575.42	-17.73	17.88	5.49	0.19	461667.02	713596.82	N 32 16 4.68	W 103 46 33.65
	6671.00	2.56	21.02	6670.32	-21.85	22.05	7.11	0.29	461671.18	713598.44	N 32 16 4.73	W 103 46 33.63
	6769.00	2.45	20.72	6768.22	-25.81	26.05	8.64	0.11	461675.18	713599.97	N 32 16 4.76	W 103 46 33.61
	6864.00	4.92	21.96	6863.02	-31.42	31.73	10.88	2.60	461680.86	713602.21	N 32 16 4.82	W 103 46 33.59
	6958.00	6.91	23.80	6956.52	-40.23	40.64	14.67	2.13	461689.77	713606.00	N 32 16 4.91	W 103 46 33.54
	7053.00	9.39	28.80	7050.55	-52.09	52.66	20.71	2.71	461701.79	713612.04	N 32 16 5.03	W 103 46 33.47
	7147.00	11.88	34.75	7142.93	-66.51	67.34	29.92	2.89	461716.46	713621.25	N 32 16 5.17	W 103 46 33.36
	7241.00	13.15	37.19	7234.70	-82.65	83.81	41.90	1.46	461732.93	713633.23	N 32 16 5.33	W 103 46 33.22
	7336.00	16.01	36.60	7326.63	-101.38	102.94	56.25	3.01	461752.06	713647.57	N 32 16 5.52	W 103 46 33.05
	7431.00	16.05	37.39	7417.93	-121.90	123.89	72.03	0.23	461773.01	713663.36	N 32 16 5.73	W 103 46 32.87
	7525.00	15.63	34.13	7508.37	-142.30	144.69	87.03	1.05	461793.82	713678.35	N 32 16 5.93	W 103 46 32.69
	7620.00	14.62	35.28	7600.07	-162.29	165.08	101.13	1.11	461814.20	713692.46	N 32 16 6.14	W 103 46 32.53
	7714.00	15.27	32.83	7690.89	-182.00	185.16	114.70	0.96	461834.28	713706.02	N 32 16 6.33	W 103 46 32.37
	7809.00	14.86	33.13	7782.63	-202.35	205.87	128.14	0.44	461854.99	713719.46	N 32 16 6.54	W 103 46 32.21
	7998.00	13.31	33.72	7965.94	-240.04	244.27	153.46	0.82	461893.38	713744.78	N 32 16 6.92	W 103 46 31.91
	8093.00	11.31	38.75	8058.76	-256.08	260.63	165.37	2.39	461909.75	713756.69	N 32 16 7.08	W 103 46 31.77
Bone Spring Intersection	*8138.01*	*9.84*	*43.19*	*8103.00*	*-262.18*	*266.88*	*170.76*	*3.72*	*461915.99*	*713762.08*	*N 32 16 7.14*	*W 103 46 31.71*

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 ° ' ")
	8187.00	8.34	49.74	8151.37	-267.38	272.23	176.34	3.72	461921.34	713767.66	N 32 16 7.19	W 103 46 31.64
	8282.00	7.49	49.06	8245.47	-275.62	280.74	186.28	0.90	461928.85	713777.59	N 32 16 7.28	W 103 46 31.53
	8376.00	5.80	60.98	8338.84	-281.70	287.06	195.06	2.31	461936.17	713786.38	N 32 16 7.34	W 103 46 31.42
	8471.00	4.20	60.08	8433.47	-285.57	291.12	202.27	1.69	461940.24	713793.59	N 32 16 7.38	W 103 46 31.34
	8565.00	3.06	82.30	8527.29	-287.47	293.18	207.74	1.90	461942.29	713799.06	N 32 16 7.40	W 103 46 31.28
	8660.00	2.86	61.02	8622.16	-288.84	294.66	212.33	1.17	461943.78	713803.65	N 32 16 7.41	W 103 46 31.22
	8754.00	4.28	60.76	8715.98	-291.55	297.51	217.44	1.51	461946.63	713808.76	N 32 16 7.44	W 103 46 31.16
	8847.00	3.92	92.04	8808.75	-292.96	299.10	223.65	2.40	461948.21	713814.96	N 32 16 7.46	W 103 46 31.09
	8942.00	4.52	104.97	8903.50	-291.69	298.01	230.51	1.18	461947.13	713821.82	N 32 16 7.44	W 103 46 31.01
	9037.00	4.64	128.16	8998.20	-288.18	294.67	237.15	1.94	461943.78	713828.46	N 32 16 7.41	W 103 46 30.93
	9131.00	5.49	157.51	9091.85	-281.55	288.17	241.86	2.86	461937.28	713833.17	N 32 16 7.35	W 103 46 30.88
	9226.00	6.65	178.37	9186.33	-271.80	278.47	243.75	2.60	461927.58	713835.07	N 32 16 7.25	W 103 46 30.86
	9321.00	5.88	184.43	9280.76	-261.46	268.12	243.53	1.07	461917.23	713834.85	N 32 16 7.15	W 103 46 30.86
	9415.00	4.94	187.26	9374.34	-252.67	259.30	242.65	1.04	461908.42	713833.96	N 32 16 7.06	W 103 46 30.87
	9510.00	6.22	190.65	9468.89	-243.60	250.19	241.18	1.39	461899.30	713832.50	N 32 16 6.97	W 103 46 30.89
	9604.00	5.74	188.67	9562.38	-233.99	240.53	239.53	0.56	461889.65	713830.85	N 32 16 6.88	W 103 46 30.91
	9620.00	5.92	189.02	9578.29	-232.39	238.93	239.28	1.15	461888.04	713830.60	N 32 16 6.86	W 103 46 30.91
KOP Actual	9755.00	6.31	184.01	9712.53	-218.17	224.65	237.67	0.49	461873.77	713828.99	N 32 16 6.72	W 103 46 30.93
	9850.00	19.73	168.80	9804.89	-197.06	203.61	240.43	14.46	461852.73	713831.75	N 32 16 6.51	W 103 46 30.90
	9945.00	31.16	177.78	9890.57	-156.53	163.18	244.52	12.67	461812.30	713835.83	N 32 16 6.11	W 103 46 30.86
	10039.00	41.45	183.14	9966.24	-101.04	107.65	243.75	11.45	461756.77	713835.07	N 32 16 5.56	W 103 46 30.87
	10134.00	49.02	183.69	10033.09	-33.89	40.37	239.71	7.98	461689.49	713831.03	N 32 16 4.89	W 103 46 30.92
100' FNL Crossing	*10190.19*	*50.73*	*180.65*	*10069.30*	*8.97*	*-2.56*	*238.10*	*5.14*	*461646.57*	*713829.42*	*N 32 16 4.47*	*W 103 46 30.94*
	10228.00	51.92	178.68	10092.93	38.48	-32.07	238.28	5.14	461617.06	713829.60	N 32 16 4.18	W 103 46 30.94
	10323.00	62.60	175.40	10144.25	118.23	-111.73	242.54	11.61	461537.40	713833.85	N 32 16 3.39	W 103 46 30.90
	10417.00	70.48	178.37	10181.65	204.35	-197.76	247.15	8.87	461451.38	713838.47	N 32 16 2.54	W 103 46 30.85
	10512.00	76.80	182.00	10208.40	295.39	-288.85	246.81	7.59	461360.30	713838.13	N 32 16 1.64	W 103 46 30.86
	10606.00	87.37	182.82	10221.33	388.14	-381.74	242.89	11.28	461267.42	713834.21	N 32 16 0.72	W 103 46 30.91
	10657.00	87.75	183.16	10223.50	438.94	-432.62	240.24	1.00	461216.53	713831.55	N 32 16 0.21	W 103 46 30.94
	10744.00	87.17	182.65	10227.35	525.59	-519.42	235.83	0.89	461129.74	713827.15	N 32 15 59.36	W 103 46 31.00
	10837.00	86.20	184.13	10232.73	618.09	-612.10	230.34	1.90	461037.06	713821.66	N 32 15 58.44	W 103 46 31.07
	10931.00	87.68	186.47	10237.75	711.27	-705.56	221.67	2.94	460943.61	713812.99	N 32 15 57.51	W 103 46 31.17
	11120.00	90.02	184.41	10241.54	898.81	-893.64	203.76	1.65	460755.54	713795.08	N 32 15 55.65	W 103 46 31.39
	11214.00	90.20	183.30	10241.36	992.39	-987.43	197.44	1.20	460661.76	713788.76	N 32 15 54.73	W 103 46 31.47
	11309.00	90.68	182.17	10240.63	1087.12	-1082.32	192.91	1.29	460566.88	713784.23	N 32 15 53.79	W 103 46 31.53
	11403.00	90.33	180.08	10239.80	1181.01	-1176.29	191.06	2.25	460472.91	713782.38	N 32 15 52.86	W 103 46 31.56
	11497.00	90.88	179.28	10238.81	1274.98	-1270.28	191.59	1.03	460378.92	713782.91	N 32 15 51.93	W 103 46 31.56
	11592.00	90.54	178.81	10237.63	1369.97	-1365.26	193.17	0.61	460283.95	713784.49	N 32 15 50.99	W 103 46 31.55
	11686.00	90.57	178.77	10236.72	1463.96	-1459.24	195.16	0.05	460189.98	713786.47	N 32 15 50.06	W 103 46 31.53
	11781.00	89.78	177.50	10236.43	1558.96	-1554.18	198.25	1.57	460095.04	713789.57	N 32 15 49.12	W 103 46 31.50
	11875.00	88.20	178.22	10238.09	1652.94	-1648.10	201.76	1.85	460001.13	713793.08	N 32 15 48.19	W 103 46 31.46
	11969.00	90.30	180.57	10239.32	1746.90	-1742.07	202.75	3.35	459907.16	713794.07	N 32 15 47.26	W 103 46 31.46
	12064.00	93.64	179.70	10236.06	1841.79	-1837.00	202.53	3.63	459812.24	713793.84	N 32 15 46.32	W 103 46 31.47
	12253.00	91.74	178.91	10227.19	2030.55	-2025.77	204.82	1.09	459623.48	713796.13	N 32 15 44.45	W 103 46 31.45
	12442.00	89.99	179.40	10224.33	2219.51	-2214.72	207.60	0.96	459434.54	713798.92	N 32 15 42.58	W 103 46 31.43
	12536.00	90.30	180.42	10224.09	2313.48	-2308.72	207.75	1.13	459340.55	713799.07	N 32 15 41.65	W 103 46 31.43
	12725.00	89.89	178.15	10223.78	2502.45	-2497.69	210.11	1.22	459151.59	713801.43	N 32 15 39.78	W 103 46 31.42
	12819.00	90.02	177.76	10223.85	2596.44	-2591.63	213.46	0.44	459057.65	713804.78	N 32 15 38.85	W 103 46 31.38
	12914.00	89.92	177.62	10223.90	2691.43	-2686.55	217.29	0.18	458962.73	713808.61	N 32 15 37.91	W 103 46 31.35
	13103.00	89.95	177.24	10224.12	2880.40	-2875.36	225.77	0.20	458773.94	713817.08	N 32 15 36.04	W 103 46 31.26
	13197.00	90.20	178.05	10224.00	2974.39	-2969.28	229.63	0.90	458680.02	713820.95	N 32 15 35.11	W 103 46 31.22
	13385.00	89.78	178.35	10224.03	3162.39	-3157.19	235.53	0.27	458492.13	713826.85	N 32 15 33.26	W 103 46 31.16
	13480.00	89.51	178.60	10224.62	3257.39	-3252.15	238.06	0.39	458397.17	713829.38	N 32 15 32.32	W 103 46 31.14
	13669.00	89.89	177.95	10225.61	3446.38	-3441.06	243.75	0.40	458208.27	713835.07	N 32 15 30.45	W 103 46 31.08
	13858.00	89.47	179.62	10226.66	3635.37	-3630.01	247.76	0.91	458019.33	713839.07	N 32 15 28.58	W 103 46 31.05
	13953.00	89.68	181.33	10227.37	3730.30	-3725.00	246.97	1.81	457924.35	713838.29	N 32 15 27.64	W 103 46 31.06
	14141.00	90.13	180.18	10227.68	3918.15	-3912.98	244.49	0.66	457736.38	713835.81	N 32 15 25.78	W 103 46 31.10
	14330.00	89.82	179.93	10227.76	4107.08	-4101.98	244.31	0.21	457547.39	713835.63	N 32 15 23.91	W 103 46 31.12
	14519.00	89.92	179.93	10228.19	4296.01	-4290.98	244.54	0.05	457358.40	713835.86	N 32 15 22.04	W 103 46 31.13
	14709.00	90.26	180.77	10227.89	4485.91	-4480.98	243.38	0.48	457168.42	713834.70	N 32 15 20.16	W 103 46 31.15
	14897.00	90.44	179.76	10226.74	4673.81	-4668.97	242.51	0.55	456980.44	713833.83	N 32 15 18.30	W 103 46 31.17
	15086.00	90.37	180.59	10225.41	4862.72	-4857.96	241.94	0.44	456791.46	713833.25	N 32 15 16.43	W 103 46 31.19
	15275.00	90.37	180.31	10224.19	5051.60	-5046.95	240.45	0.15	456602.48	713831.77	N 32 15 14.56	W 103 46 31.22
	15370.00	90.61	180.40	10223.37	5146.54	-5141.94	239.86	0.27	456507.49	713831.18	N 32 15 13.62	W 103 46 31.23
	15464.00	90.30	180.51	10222.63	5240.48	-5235.94	239.12	0.35	456413.50	713830.43	N 32 15 12.69	W 103 46 31.25
	15558.00	89.85	177.81	10222.50	5334.46	-5329.92	240.50	2.91	456319.52	713831.81	N 32 15 11.76	W 103 46 31.24
	15747.00	89.85	177.61	10223.00	5523.45	-5518.77	248.05	0.11	456130.69	713839.36	N 32 15 9.89	W 103 46 31.16
	15936.00	90.37	178.18	10222.64	5712.44	-5707.64	254.99	0.41	455941.83	713846.30	N 32 15 8.02	W 103 46 31.09
	16031.00	89.71	177.45	10222.57	5807.43	-5802.57	258.61	1.04	455846.90	713849.93	N 32 15 7.08	W 103 46 31.05
	16125.00	89.34	179.63	10223.35	5901.42	-5896.53	261.01	2.35	455752.95	713852.32	N 32 15 6.15	W 103 46 31.03
	16314.00	89.51	180.26	10225.25	6090.35	-6085.52	261.19	0.35	455563.97	713852.50	N 32 15 4.28	W 103 46 31.04
	16503.00	89.40	179.67	10227.04	6279.27	-6274.51	261.30	0.32	455374.99	713852.62	N 32 15 2.41	W 103 46 31.05
	16692.00	89.30	179.67	10229.19	6468.22	-6463.49	262.39	0.05	455186.02	713853.71	N 32 15 0.54	W 103 46 31.05
	16881.00	89.85	182.62	10230.59	6656.98	-6652.43	258.62	1.59	454997.09	713849.93	N 32 14 58.67	W 103 46 31.10
	17071.00	90.44	182.61	10230.11	6846.48	-6842.23	249.95	0.31	454807.30	713841.26	N 32 14 56.79	W 103 46 31.22
	17260.00	90.68	181.53	10228.26	7035.09	-7031.09	243.12	0.59	454618.45	713834.44	N 32 14 54.92	W 103 46 31.31
	17354.00	89.89	180.28	10227.80	7129.00	-7125.08	241.64	1.57	454524.47	713832.95	N 32 14 53.99	W 103 46 31.33
	17543.00	89.92	179.77	10228.11	7317.93	-7314.08	241.55	0.27	454335.48	713832.87	N 32 14 52.12	W 103 46 31.34
	17732.00	89.34	180.28	10229.33	7506.85	-7503.07	241.47	0.41	454146.50	713832.79	N 32 14 50.25	W 103 46 31.36
	17921.00	89.34	179.74	10231.51	7695.77	-7692.06	241.44	0.29	453957.52	713832.75	N 32 14 48.38	W 103 46 31.37
	18109.00	89.27	180.41	10233.79	7883.68	-7880.04	241.19	0.36	453769.55	713832.51	N 32 14 46.52	W 103 46 31.38
	18298.00	89.92	177.67	10235.12	8072.65	-8068.99	244.36	1.49	453580.61	713835.67	N 32 14 44.65	W 103 46 31.36
	18487.00	89.95	177.31	10235.34	8261.62	-8257.81	252.63	0.19	453391.80	713843.95	N 32 14 42.78	W 103 46 31.27
	18581.00	89.75	177.62	10235.58	8355.61	-8351.72	256.79	0.39	453297.90	713848.11	N 32 14 41.85	W 103 46 31.23
	18770.00	89.44	178.37	10236.92	8544.59	-8540.60	263.40	0.43	453109.04	713854.72	N 32 14 39.98	W 103 46 31.16
	18959.00	90.37	179.78	10237.23	8733.58	-8729.57	266.46	0.89	452920.08	713857.77	N 32 14 38.11	W 103 46 31.14
	19148.00	90.40	179.49	10235.96	8922.53	-8918.56	267.66	0.15	452731.10	713858.97	N 32 14 36.24	W 103 46 31.14
	19337.00	90.44	179.80	10234.58	9111.48	-9107.55	268.87	0.22	452542.12	713859.98	N 32 14 34.37	W 103 46 31.14
	19527.00	90.57	180.09	10232.90	9301.41	-9297.54	268.68	0.12	452352.14	713860.00	N 32 14 32.49	W 103 46 31.15
	19715.00	87.58	177.18	10235.94	9489.34	-9485.42	273.16	2.22	452164.27	713864.47	N 32 14 30.64	W 103 46 31.11
	19810.00	88.41	178.06	10239.26	9584.27	-9580.28	277.10	1.27	452069.41	713868.41	N 32 14 29.70	W 103 46 31.07
	19904.00	90.57	179.80	10240.10	9678.25	-9674.25	278.85	2.95	451975.45	713870.17	N 32 14 28.77	W 103 46 31.05
	20094.00	90.09	179.47	10239.00	9868.21	-9864.24	280.06	0.31	451785.47	713871.38	N 32 14 26.89	W 103 46 31.05
	20283.00	89.16	178.16	10240.24	10057.19	-10053.19	283.97	0.85	451596.53	713875.29	N 32 14 25.02	W 103 46 31.02
	20378.00	91.47	179.87	10239.72	10152.18	-10148.17	285.61	3.03	451501.56	713876.92	N 32 14 24.08	W 103 46 31.00
	20472.00	91.06	178.41	10237.64	10246.15	-10242.13	287.02	1.61	451407.60	713878.33	N 32 14 23.15	W 103 46 30.99
100' FSL Crossing	*20603.00*	*92.64*	*178.46*	*10233.42*	*10377.07*	*-10373.01*	*290.59*	*1.20*	*451276.73*	*713881.90*	*N 32 14 21.85*	*W 103 46 30.96*
	20623.37	92.88	178.47	10232.44	10397.42	-10393.35	291.14	1.20	451256.39	713882.45	N 32 14 21.65	W 103 46 30.95
Final MWD	20635.00	93.53	178.83	10231.79	10409.03	-10404.96	291.41	6.39	451244.79	713882.72	N 32 14 21.54	W 103 46 30.95
Proj to TD	20685.00 ✓	93.53	178.83	10228.71	10458.94	-10454.85	292.43	0.00	451194.89	713883.74	N 32 14 21.04	W 103 46 30.94

Survey Type: Def Survey ✓

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

...Original Hole\Oxy Sterling Silver MDP1 Federal Com 7H Gyro + IFR 0'-20685' MD

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 ° ' ")

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 Federal Com 7H Gyro + IFR 0'-20685' MD
	1	26.500	26.500	Act Stns	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Hole / Oxy Sterling Silver MDP1 Federal Com 7H Gyro + IFR 0'-20685' MD
	1	26.500	530.500	Act Stns	30.000	30.000	NAL_NSG+MSHOT	Original Hole / Oxy Sterling Silver MDP1 Federal Com 7H Gyro +
	1	530.500	5916.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Hole / Oxy Sterling Silver MDP1 Federal Com 7H Gyro +
	1	5916.000	6671.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Hole / Oxy Sterling Silver MDP1 Federal Com 7H Gyro +
	1	6671.000	20685.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Hole / Oxy Sterling Silver MDP1 Federal Com 7H Gyro +