

Vertical Section (ft) Azim = 182.42° Scale = 1:1600.00(ft) Origin = 0N/-S, 0E/-W



Oxy Lost Tank 30-19 Fed Com 31H from 0 to 22338' MD Survey Geodetic Report

(Def Survey)

Report Date: November 05, 2018 - 10:36 AM
Client: OXY
Field: NM Lea County (NAD 83)
Structure / Slot: Oxy Lost Tank 30-19 Fed Com 31H / Oxy Lost Tank 30-19 Fed Com 31H
Well: Oxy Lost Tank 30-19 Fed Com 31H
Borehole: Original Borehole
UWI / API#: Unknown / 30-025-45182
Survey Name: Oxy Lost Tank 30-19 Fed Com 31H from 0 to 22338' MD
Survey Date: October 08, 2018
Tort / AHD / DDI / ERD Ratio: 261.837' / 11565.678 ft / 6.752 / 0.966
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 23' 0.94267", W 103° 43' 12.35071"
Location Grid N/E Y/X: N 503826.030 ftUS, E 730639.180 ftUS
CRS Grid Convergence Angle: 0.3284°
Grid Scale Factor: 0.99995013
Version / Patch: 2.10.740.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 162.420° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB 26.5 (H&P 617)
TVD Reference Elevation: 3635.500 ft above MSL
Seabed / Ground Elevation: 3609.000 ft above MSL
Magnetic Declination: 6.941°
Total Gravity Field Strength: 998.4559mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 48170.000 nT
Magnetic Dip Angle: 80.195°
Declination Date: October 08, 2018
Magnetic Declination Model: IFR1
North Reference: Grid North
Grid Convergence Used: 0.3284°
Total Corr Mag North→Grid: 6.6126°
North:
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	503826.03	730639.18	N 32 23 0.94	W 103 43 12.35
SHL	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	503826.03	730639.18	N 32 23 0.94	W 103 43 12.35
	120.03	0.51	329.36	120.03	-0.35	0.36	-0.21	0.55	503826.39	730638.97	N 32 23 0.95	W 103 43 12.35
	208.78	0.39	294.00	208.78	-0.79	0.82	-0.69	0.33	503826.85	730638.49	N 32 23 0.95	W 103 43 12.36
	301.70	0.29	296.07	301.69	-1.00	1.05	-1.19	0.11	503827.08	730637.99	N 32 23 0.95	W 103 43 12.36
	396.24	0.06	288.16	396.23	-1.11	1.17	-1.45	0.24	503827.20	730637.73	N 32 23 0.95	W 103 43 12.37
	490.62	0.15	134.84	490.61	-1.04	1.10	-1.41	0.22	503827.13	730637.77	N 32 23 0.95	W 103 43 12.37
	585.07	0.20	156.58	585.06	-0.81	0.88	-1.26	0.09	503826.89	730637.92	N 32 23 0.95	W 103 43 12.37
	679.82	0.17	164.77	679.81	-0.53	0.58	-1.16	0.04	503826.61	730638.02	N 32 23 0.95	W 103 43 12.36
	774.10	0.12	156.84	774.09	-0.30	0.35	-1.08	0.06	503826.38	730638.10	N 32 23 0.95	W 103 43 12.36
Last Gyro	867.88	0.37	168.27	867.87	0.08	-0.04	-0.98	0.27	503825.99	730638.20	N 32 23 0.94	W 103 43 12.36
	953.00	0.06	173.78	952.99	0.39	-0.35	-0.92	0.36	503825.68	730638.26	N 32 23 0.94	W 103 43 12.36
	1015.00	0.16	158.19	1014.99	0.50	-0.46	-0.88	0.17	503825.57	730638.30	N 32 23 0.94	W 103 43 12.36
	1076.00	0.09	130.23	1075.99	0.61	-0.57	-0.81	0.15	503825.46	730638.37	N 32 23 0.94	W 103 43 12.36
	1138.00	0.11	306.92	1137.99	0.60	-0.57	-0.82	0.32	503825.46	730638.36	N 32 23 0.94	W 103 43 12.36
	1261.00	0.11	70.80	1260.99	0.49	-0.46	-0.81	0.16	503825.57	730638.37	N 32 23 0.94	W 103 43 12.36
	1384.00	0.07	121.26	1383.99	0.48	-0.46	-0.83	0.07	503825.57	730638.55	N 32 23 0.94	W 103 43 12.36
	1445.00	0.12	85.74	1444.99	0.50	-0.47	-0.54	0.12	503825.56	730638.64	N 32 23 0.94	W 103 43 12.36
	1507.00	0.11	30.16	1506.99	0.43	-0.42	-0.44	0.17	503825.61	730638.74	N 32 23 0.94	W 103 43 12.36
	1701.00	0.15	261.88	1700.99	0.32	-0.29	-0.60	0.12	503825.74	730638.58	N 32 23 0.94	W 103 43 12.36
	1796.00	0.07	57.44	1795.99	0.31	-0.28	-0.67	0.23	503825.75	730638.51	N 32 23 0.94	W 103 43 12.36
	1891.00	0.09	319.93	1890.99	0.22	-0.19	-0.67	0.13	503825.84	730638.51	N 32 23 0.94	W 103 43 12.36
	2081.00	0.09	15.66	2080.99	-0.04	0.07	-0.73	0.04	503826.10	730638.45	N 32 23 0.94	W 103 43 12.36
	2177.00	0.07	189.63	2176.99	-0.05	0.08	-0.72	0.17	503826.11	730638.46	N 32 23 0.94	W 103 43 12.36
	2367.00	0.09	283.60	2366.99	0.03	0.00	-0.88	0.06	503826.03	730638.30	N 32 23 0.94	W 103 43 12.36
	2482.00	0.11	118.99	2481.99	0.06	-0.02	-0.87	0.21	503826.01	730638.31	N 32 23 0.94	W 103 43 12.36
	2557.00	0.07	180.59	2556.99	0.16	-0.13	-0.80	0.10	503825.90	730638.38	N 32 23 0.94	W 103 43 12.36
	2652.00	0.07	348.52	2651.99	0.16	-0.13	-0.81	0.15	503825.90	730638.37	N 32 23 0.94	W 103 43 12.36
	2748.00	0.07	200.51	2747.99	0.16	-0.12	-0.84	0.14	503825.91	730638.34	N 32 23 0.94	W 103 43 12.36
	2843.00	0.11	71.07	2842.99	0.18	-0.15	-0.77	0.17	503825.88	730638.41	N 32 23 0.94	W 103 43 12.36
	2938.00	0.03	155.78	2937.99	0.17	-0.14	-0.68	0.12	503825.89	730638.50	N 32 23 0.94	W 103 43 12.36
	3033.00	0.11	293.16	3032.99	0.16	-0.13	-0.75	0.14	503825.90	730638.43	N 32 23 0.94	W 103 43 12.36
	3128.00	0.09	304.01	3127.99	0.09	-0.05	-0.90	0.03	503825.98	730638.28	N 32 23 0.94	W 103 43 12.36
	3224.00	0.11	132.19	3223.99	0.11	-0.07	-0.89	0.21	503825.96	730638.29	N 32 23 0.94	W 103 43 12.36
	3319.00	0.07	187.27	3318.99	0.22	-0.19	-0.83	0.10	503825.84	730638.35	N 32 23 0.94	W 103 43 12.36
	3414.00	0.11	256.88	3413.99	0.31	-0.27	-0.93	0.11	503825.76	730638.25	N 32 23 0.94	W 103 43 12.36
	3509.00	0.11	92.46	3508.99	0.33	-0.29	-0.92	0.23	503825.74	730638.26	N 32 23 0.94	W 103 43 12.36
	3604.00	0.07	69.90	3603.99	0.31	-0.28	-0.78	0.06	503825.75	730638.40	N 32 23 0.94	W 103 43 12.36
	3699.00	0.16	108.10	3698.99	0.32	-0.30	-0.60	0.12	503825.73	730638.58	N 32 23 0.94	W 103 43 12.36
	3794.00	0.07	70.12	3793.99	0.34	-0.32	-0.42	0.12	503825.71	730638.76	N 32 23 0.94	W 103 43 12.36
	3889.00	0.07	309.36	3888.99	0.28	-0.26	-0.41	0.13	503825.77	730638.77	N 32 23 0.94	W 103 43 12.36
	3984.00	0.12	81.71	3983.99	0.23	-0.21	-0.35	0.18	503825.82	730638.83	N 32 23 0.94	W 103 43 12.35
	4079.00	0.07	56.95	4078.99	0.17	-0.17	-0.21	0.07	503825.86	730638.97	N 32 23 0.94	W 103 43 12.35
	4173.00	0.02	68.27	4172.99	0.13	-0.13	-0.14	0.05	503825.90	730639.04	N 32 23 0.94	W 103 43 12.35
	4268.00	0.07	38.90	4267.99	0.08	-0.08	-0.09	0.06	503825.95	730639.09	N 32 23 0.94	W 103 43 12.35
	4363.00	0.02	224.70	4362.99	0.05	-0.04	-0.07	0.09	503825.99	730639.11	N 32 23 0.94	W 103 43 12.35
	4458.00	0.03	150.48	4457.99	0.08	-0.08	-0.07	0.03	503825.95	730639.11	N 32 23 0.94	W 103 43 12.35
	4552.00	0.11	12.77	4551.99	0.01	-0.01	-0.04	0.14	503826.02	730639.14	N 32 23 0.94	W 103 43 12.35
	4647.00	0.11	271.43	4646.99	-0.08	0.08	-0.11	0.18	503826.11	730639.07	N 32 23 0.94	W 103 43 12.35
	4742.00	0.09	110.09	4741.99	-0.05	0.06	-0.13	0.21	503826.09	730639.05	N 32 23 0.94	W 103 43 12.35
	4837.00	0.02	64.63	4836.99	-0.04	0.04	-0.04	0.08	503826.07	730639.14	N 32 23 0.94	W 103 43 12.35
	5027.00	0.09	185.79	5026.99	0.10	-0.09	-0.03	0.05	503825.94	730639.15	N 32 23 0.94	W 103 43 12.35
	5224.00	0.11	31.70	5223.99	0.09	-0.09	0.06	0.10	503825.94	730639.24	N 32 23 0.94	W 103 43 12.35
	5312.00	0.03	120.07	5311.99	0.02	-0.03	0.12	0.13	503826.00	730639.30	N 32 23 0.94	W 103 43 12.35
	5407.00	0.03	269.49	5406.99	0.04	-0.04	0.12	0.06	503825.99	730639.30	N 32 23 0.94	W 103 43 12.35
	5502.00	0.03	58.33	5501.99	0.02	-0.03	0.11	0.06	503826.00	730639.29	N 32 23 0.94	W 103 43 12.35
	5597.00	0.11	88.81	5596.99	0.00	-0.01	0.23	0.09	503826.02	730639.41	N 32 23 0.94	W 103 43 12.35
	5692.00	0.09	262.00	5691.99	0.01	-0.02	0.24	0.21	503826.01	730639.42	N 32 23 0.94	W 103 43 12.35
	5882.00	0.03	109.37	5881.99	0.05	-0.06	0.14	0.06	503825.97	730639.32	N 32 23 0.94	W 103 43 12.35
	5977.00	0.03	137.21	5976.99	0.08	-0.08	0.18	0.02	503825.95	730639.36	N 32 23 0.94	W 103 43 12.35
	6071.00	0.07	114.34	6070.99	0.12	-0.13	0.25	0.05	503825.90	730639.43	N 32 23 0.94	W 103 43 12.35
	6166.00	0.03	121.55	6165.99	0.15	-0.16	0.33	0.04	503825.87	730639.51	N 32 23 0.94	W 103 43 12.35
	6261.00	0.09	160.94	6260.99	0.23	-0.25	0.37	0.07	503825.78	730639.55	N 32 23 0.94	W 103 43 12.35
	6399.00	0.03	178.76	6398.99	0.37	-0.39	0.41	0.05	503825.64	730639.59	N 32 23 0.94	W 103 43 12.35
	6569.00	0.13	220.58	6568.99	0.58	-0.58	0.28	0.06	503825.45	730639.46	N 32 23 0.94	W 103 43 12.35
	6684.00	0.05	306.13	6683.99	0.83	-0.83	0.18	0.14	503825.40	730639.38	N 32 23 0.94	W 103 43 12.35
	6759.00	0.04	134.97	6758.99	0.63	-0.63	0.17	0.09	503825.40	730639.35	N 32 23 0.94	W 103 43 12.35
	6853.00	0.07	238.08	6852.99	0.68	-0.69	0.14	0.09	503825.34	730639.32	N 32 23 0.94	W 103 43 12.35
	6948.00	0.04	136.08	6947.99	0.74	-0.74	0.12	0.09	503825.29	730639.30	N 32 23 0.94	W 103 43 12.35
	7042.00	0.15	204.33	7041.99	0.87	-0.88	0.09	0.15	503825.15	730639.27	N 32 23 0.93	W 103 43 12.35
	7137.00	0.99	338.40	7136.98	0.24	-0.23	-0.26	1.16	503825.80	730638.92	N 32 23 0.94	W 103 43 12.35
	7232.00	2.41	340.24	7231.94	-2.36	2.42	-1.24	1.50	503826.45	730637.94	N 32 23 0.97	W 103 43 12.37
	7326.00	3.68	339.91	7325.80	-6.98	7.11	-2.95	1.35	503833.14	730636.23	N 32 23 1.01	W 103 43 12.38
	7421.00	5.23	341.86	7420.51	-13.85	14.09	-5.34	1.64	503840.12	730633.84	N 32 23 1.08	W 103 43 12.41
	7515.00	6.43	342.17	7514.03	-22.80	23.17	-8.29	1.28	503849.20	730630.89	N 32 23 1.17	W 103 43

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 ° ' ")
	19424.00	88.66	180.71	11928.10	7116.92	-7103.53	-467.13	0.77	496722.87	730172.08	N 32 21 50.68	W 103 43 18.27
	19514.00	89.14	180.87	11931.75	7306.81	-7293.48	-469.75	0.27	496532.93	730169.46	N 32 21 48.80	W 103 43 18.31
	19709.00	88.49	181.97	11933.71	7401.77	-7388.42	-472.10	1.34	496437.99	730167.10	N 32 21 47.88	W 103 43 18.35
	19898.00	88.18	181.44	11939.20	7590.67	-7577.26	-477.72	0.32	496249.16	730161.48	N 32 21 45.99	W 103 43 18.43
	19992.00	88.14	181.52	11942.22	7684.61	-7671.18	-480.15	0.10	496155.25	730159.06	N 32 21 45.07	W 103 43 18.46
	20087.00	87.83	181.36	11945.56	7779.54	-7766.09	-482.53	0.37	496060.34	730156.67	N 32 21 44.13	W 103 43 18.50
	20181.00	87.97	180.92	11949.01	7873.45	-7860.01	-484.40	0.49	495966.43	730154.80	N 32 21 43.20	W 103 43 18.52
	20276.00	89.31	178.96	11951.26	7968.33	-7954.98	-484.30	2.50	495871.47	730154.90	N 32 21 42.26	W 103 43 18.53
	20370.00	89.72	177.76	11952.06	8062.09	-8048.93	-481.61	1.35	495777.52	730157.59	N 32 21 41.33	W 103 43 18.50
	20559.00	89.11	177.48	11953.99	8250.42	-8237.76	-473.77	0.36	495588.70	730165.44	N 32 21 39.46	W 103 43 18.42
	20749.00	90.45	177.80	11954.72	8439.75	-8427.59	-465.94	0.73	495398.88	730173.28	N 32 21 37.58	W 103 43 18.35
	20938.00	89.48	176.86	11954.83	8628.00	-8616.38	-457.14	0.71	495210.10	730182.07	N 32 21 35.71	W 103 43 18.28
	21033.00	89.42	177.59	11955.74	8722.80	-8711.28	-452.54	0.77	495115.22	730186.67	N 32 21 34.77	W 103 43 18.21
	21188.00	90.55	177.25	11955.78	8877.01	-8866.10	-445.56	0.76	494960.39	730193.64	N 32 21 33.24	W 103 43 18.14
	21316.00	88.42	180.13	11956.93	9004.71	-8994.05	-442.63	2.80	494832.45	730198.57	N 32 21 31.97	W 103 43 18.11
	21411.00	88.45	180.84	11959.53	9099.62	-9089.01	-443.27	0.54	494737.49	730195.93	N 32 21 31.03	W 103 43 18.13
	21505.00	88.63	180.94	11961.92	9193.55	-9182.97	-444.57	0.37	494643.54	730194.63	N 32 21 30.10	W 103 43 18.15
	21600.00	88.01	180.92	11964.71	9288.48	-9277.91	-446.11	0.65	494548.60	730193.09	N 32 21 29.17	W 103 43 18.17
	21789.00	90.24	182.84	11967.60	9477.43	-9466.77	-452.31	1.56	494359.75	730188.89	N 32 21 27.30	W 103 43 18.26
	21884.00	90.59	183.31	11968.91	9572.42	-9561.63	-457.41	0.62	494264.90	730181.80	N 32 21 26.36	W 103 43 18.32
	22073.00	90.11	178.39	11965.75	9761.28	-9750.55	-480.21	2.62	494075.99	730179.00	N 32 21 24.49	W 103 43 18.37
	22264.00	90.17	178.39	11965.29	9951.81	-9941.47	-454.84	0.03	493885.07	730184.36	N 32 21 22.60	W 103 43 18.32
Final MWD Survey	22295.00	90.17	178.10	11965.19	9982.73	-9972.46	-453.89	0.94	493854.09	730185.31	N 32 21 22.29	W 103 43 18.31
Proj to TD	22338.00	90.17	178.10	11965.07	10025.81	-10015.43	-452.47	0.00	493811.12	730186.74	N 32 21 21.87	W 103 43 18.29

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	1/98.425	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Lost Tank 30-19 Fed Com 31H from 0 to 22338'MD
	1	26.500	26.500	Act Stns	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Lost Tank 30-19 Fed Com 31H from 0 to 22338'MD
	1	26.500	867.880	Act Stns	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Lost Tank 30-19 Fed Com 31H from 0 to
	1	867.880	9315.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Lost Tank 30-19 Fed Com 31H from 0 to
	1	9315.000	9981.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Lost Tank 30-19 Fed Com 31H from 0 to
	1	9981.000	21033.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Lost Tank 30-19 Fed Com 31H from 0 to
	1	21033.000	21316.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Lost Tank 30-19 Fed Com 31H from 0 to
	1	21316.000	22338.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Lost Tank 30-19 Fed Com 31H from 0 to

...Oxy Lost Tank 30-19 Fed Com 31H\Original Borehole\Oxy Lost Tank 30-19 Fed Com 31H from 0 to 22338'MD