

Schlumberger

Oxy Corral Fly 02-01 State 21H Gyro+MWD 0-18,990' Survey Geodetic Report (Def Survey)



NM OIL CONSERVATION
ARTESIA DISTRICT

MAY 21 2018

RECEIVED

Report Date: January 19, 2018 - 09:18 AM
Client: OXY
Field: NM Eddy County (NAD 83)
Structure / Slot: Oxy Corral Fly 02-01 State 21H / Oxy Corral Fly 02-01 State 21H
Well: Oxy Corral Fly 02-01 State 21H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Oxy Corral Fly 02-01 State 21H Gyro+MWD 0-18,990'
Survey Date: December 21, 2017
Tort / AHD / DDI / ERD Ratio: 196 943' / 11096 999 ft / 6 662 / 1 228
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 9' 47.35301", W 103° 57' 47.91736"
Location Grid N/E Y/X: N 423287.190 NUS, E 655836.970 NUS
CRS Grid Convergence Angle: 0.1970 °
Grid Scale Factor: 0.99992411
Version / Patch: 2.10.696.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 85.479 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB=26.5'
TVD Reference Elevation: 3023.100 ft above MSL
Seabed / Ground Elevation: 2996.600 ft above MSL
Magnetic Declination: 7.049 °
Total Gravity Field Strength: 998.4589mgm (9 80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 48041.590 nT
Magnetic Dip Angle: 59.939 °
Declination Date: December 21, 2017
Magnetic Declination Model: HDGM 2017
North Reference: Grid North
Grid Convergence Used: 0.1970 °
Total Corr Mag North->Grid North: 6.8516 °
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 ° ' ")
SHL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	423287.19	655836.97	N 32° 9' 47.35" W 103° 57' 47.92"	
	35.90	0.97	85.63	35.90	0.30	0.02	0.30	2.70	423287.21	655837.27	N 32° 9' 47.35" W 103° 57' 47.91"	
	91.60	0.90	88.97	91.59	1.21	0.07	1.21	0.16	423287.26	655838.18	N 32° 9' 47.35" W 103° 57' 47.90"	
	121.20	0.77	87.78	121.19	1.64	0.08	1.64	0.44	423287.27	655838.61	N 32° 9' 47.35" W 103° 57' 47.90"	
	149.50	0.93	90.02	149.48	2.06	0.09	2.06	0.58	423287.28	655839.03	N 32° 9' 47.35" W 103° 57' 47.89"	
	179.00	0.92	93.56	178.98	2.53	0.07	2.54	0.20	423287.26	655839.51	N 32° 9' 47.35" W 103° 57' 47.89"	
	208.70	0.88	83.99	208.68	3.00	0.08	3.00	0.52	423287.27	655839.97	N 32° 9' 47.35" W 103° 57' 47.88"	
	238.00	0.90	74.42	237.97	3.45	0.17	3.45	0.51	423287.36	655840.42	N 32° 9' 47.35" W 103° 57' 47.88"	
	269.30	0.84	61.79	269.27	3.90	0.34	3.89	0.64	423287.53	655840.88	N 32° 9' 47.36" W 103° 57' 47.87"	
	300.90	0.88	63.04	300.87	4.34	0.56	4.31	0.14	423287.75	655841.28	N 32° 9' 47.36" W 103° 57' 47.87"	
	331.10	0.66	61.96	331.06	4.71	0.75	4.67	0.73	423287.94	655841.64	N 32° 9' 47.36" W 103° 57' 47.86"	
	362.80	0.50	54.38	362.76	5.00	0.91	4.94	0.56	423288.10	655841.91	N 32° 9' 47.36" W 103° 57' 47.86"	
	382.10	0.57	51.94	382.06	5.15	1.02	5.08	0.38	423288.21	655842.05	N 32° 9' 47.36" W 103° 57' 47.86"	
	495.00	0.33	20.75	494.96	5.76	1.67	5.64	0.30	423288.86	655842.51	N 32° 9' 47.37" W 103° 57' 47.85"	
	556.00	0.36	335.54	555.96	5.77	2.01	5.62	0.44	423289.20	655842.59	N 32° 9' 47.37" W 103° 57' 47.85"	
	621.00	0.23	318.38	620.96	5.62	2.29	5.45	0.24	423289.48	655842.42	N 32° 9' 47.38" W 103° 57' 47.85"	
	681.00	0.48	298.59	680.95	5.33	2.50	5.15	0.48	423289.69	655842.12	N 32° 9' 47.38" W 103° 57' 47.86"	
	799.00	0.45	202.09	798.95	4.71	2.31	4.54	0.59	423289.50	655841.51	N 32° 9' 47.38" W 103° 57' 47.86"	
	890.00	0.36	130.31	889.95	4.76	1.80	4.63	0.53	423289.98	655841.60	N 32° 9' 47.37" W 103° 57' 47.86"	
	1071.00	0.29	329.83	1070.95	4.96	1.82	4.83	0.35	423289.01	655841.80	N 32° 9' 47.37" W 103° 57' 47.86"	
	1251.00	0.18	227.97	1250.95	4.54	2.03	4.39	0.21	423289.22	655841.38	N 32° 9' 47.37" W 103° 57' 47.87"	
	1342.00	0.29	223.94	1341.95	4.25	1.77	4.13	0.12	423289.96	655841.10	N 32° 9' 47.37" W 103° 57' 47.87"	
	1452.00	0.44	145.31	1451.95	4.26	1.22	4.17	0.43	423288.41	655841.14	N 32° 9' 47.36" W 103° 57' 47.87"	
	1547.00	0.45	121.15	1546.94	4.74	0.73	4.70	0.20	423287.92	655841.67	N 32° 9' 47.36" W 103° 57' 47.86"	
	1706.00	0.08	130.22	1705.94	5.33	0.33	5.32	0.23	423287.52	655842.29	N 32° 9' 47.36" W 103° 57' 47.86"	
	1801.00	0.18	24.96	1800.94	5.45	0.42	5.43	0.23	423287.61	655842.40	N 32° 9' 47.36" W 103° 57' 47.85"	
	1896.00	0.36	337.85	1895.94	5.43	0.84	5.38	0.29	423288.02	655842.35	N 32° 9' 47.36" W 103° 57' 47.85"	
	1991.00	0.23	210.10	1990.94	5.23	0.95	5.18	0.56	423288.14	655842.15	N 32° 9' 47.36" W 103° 57' 47.86"	
	2086.00	0.13	180.27	2085.94	5.12	0.67	5.08	0.14	423287.86	655842.05	N 32° 9' 47.36" W 103° 57' 47.86"	
	2181.00	0.22	72.54	2180.94	5.29	0.62	5.25	0.30	423287.81	655842.22	N 32° 9' 47.36" W 103° 57' 47.86"	
	2275.00	0.18	51.95	2274.94	5.58	0.77	5.54	0.09	423287.96	655842.51	N 32° 9' 47.36" W 103° 57' 47.85"	
	2370.00	0.28	126.86	2369.94	5.88	0.72	5.84	0.31	423287.91	655842.81	N 32° 9' 47.36" W 103° 57' 47.85"	
	2465.00	0.52	68.23	2464.94	6.47	0.74	6.43	0.47	423287.93	655843.40	N 32° 9' 47.36" W 103° 57' 47.84"	
	2654.00	0.24	50.41	2653.93	7.61	1.31	7.53	0.16	423288.50	655844.50	N 32° 9' 47.37" W 103° 57' 47.83"	
	2749.00	0.13	141.55	2748.93	7.84	1.35	7.75	0.29	423288.54	655844.72	N 32° 9' 47.37" W 103° 57' 47.83"	
	2844.00	0.18	117.33	2843.93	8.02	1.20	7.95	0.09	423288.39	655844.92	N 32° 9' 47.36" W 103° 57' 47.82"	
	2939.00	0.08	19.07	2938.93	8.18	1.19	8.11	0.22	423288.38	655845.08	N 32° 9' 47.36" W 103° 57' 47.82"	
	3034.00	0.17	196.40	3033.93	8.15	1.12	8.09	0.26	423288.31	655845.06	N 32° 9' 47.36" W 103° 57' 47.82"	
	3129.00	0.08	141.05	3128.93	8.13	0.95	8.08	0.15	423288.14	655845.05	N 32° 9' 47.36" W 103° 57' 47.82"	
	3224.00	0.08	159.86	3223.93	8.18	0.85	8.13	0.03	423288.04	655845.10	N 32° 9' 47.36" W 103° 57' 47.82"	
	3319.00	0.08	174.96	3318.93	8.19	0.72	8.16	0.02	423287.91	655845.13	N 32° 9' 47.36" W 103° 57' 47.82"	
	3414.00	0.06	166.58	3413.93	8.20	0.60	8.18	0.02	423287.79	655845.15	N 32° 9' 47.36" W 103° 57' 47.82"	
	3509.00	1.49	21.77	3508.92	8.76	1.70	8.65	1.62	423288.89	655845.62	N 32° 9' 47.37" W 103° 57' 47.82"	
	3604.00	2.98	13.08	3603.84	10.05	5.25	9.67	1.60	423292.44	655846.64	N 32° 9' 47.40" W 103° 57' 47.80"	
	3699.00	4.64	11.54	3698.63	11.86	11.42	10.99	1.75	423298.61	655847.96	N 32° 9' 47.47" W 103° 57' 47.79"	
	3794.00	6.32	8.13	3793.19	14.07	20.37	12.50	1.80	423307.56	655849.47	N 32° 9' 47.55" W 103° 57' 47.77"	
	3889.00	7.71	5.78	3887.48	16.35	31.88	13.88	1.49	423319.07	655850.85	N 32° 9' 47.67" W 103° 57' 47.75"	
	3983.00	8.44	3.31	3980.55	18.42	45.04	14.92	0.86	423332.23	655851.89	N 32° 9' 47.80" W 103° 57' 47.74"	
	4078.00	8.53	0.73	4074.51	20.02	59.05	16.41	0.41	423346.23	655852.38	N 32° 9' 47.94" W 103° 57' 47.74"	
	4173.00	8.39	356.62	4168.48	20.80	73.01	15.09	0.65	423360.20	655852.06	N 32° 9' 48.07" W 103° 57' 47.74"	
	4268.00	8.86	356.68	4262.40	21.09	87.24	14.26	0.49	423374.42	655851.23	N 32° 9' 48.22" W 103° 57' 47.75"	
	4362.00	9.64	357.88	4355.18	21.57	102.33	13.55	0.85	423389.51	655850.52	N 32° 9' 48.37" W 103° 57' 47.76"	
	4457.00	10.29	358.24	4448.74	22.31	118.76	12.99	0.69	423405.94	655849.98	N 32° 9' 48.53" W 103° 57' 47.76"	
	4552.00	10.39	357.62	4542.20	23.04	135.80	12.38	0.16	423422.98	655849.35	N 32° 9' 48.70" W 103° 57' 47.77"	
	4646.00	10.25	355.08	4634.68	23.30	152.60	11.31	0.51	423439.78	655848.28	N 32° 9' 48.86" W 103° 57' 47.78"	
	4741.00	10.44	353.89	4728.14	23.00	169.58	9.67	0.30	423456.76	655846.64	N 32° 9' 49.03" W 103° 57' 47.80"	
	4836.00	10.46	350.95	4821.58	22.08	188.65	7.39	0.56	423473.83	655844.36	N 32° 9' 49.20" W 103° 57' 47.82"	
	4931.00	10.66	350.07	4914.95	20.57	203.83	4.52	0.27	423491.00	655841.49	N 32° 9' 49.37" W 103° 57' 47.86"	
	5120.00	10.58	345.35	5100.72	15.87	237.83	-2.88	0.46	423525.00	655834.09	N 32° 9' 49.71" W 103° 57' 47.94"	
	5215.00	10.10	346.55	5194.18	13.05	254.37	-7.02	0.55	423541.74	655829.95	N 32° 9' 49.87" W 103° 57' 47.99"	
	5310.00	10.21	344.67	5287.69	10.17	270.59	-11.19	0.37	423557.76	655825.78	N 32° 9' 50.03" W 103° 57' 48.04"	
	5405.00	9.93	348.99	5381.23	7.67	286.75	-14.98	0.85	423573.92	655821.99	N 32° 9' 50.19" W 103° 57' 48.08"	
	5499.00	10.00	354.11	5473.81	6.58	302.83	-17.36	0.95	423589.99	655819.61	N 32° 9' 50.35" W 103° 57' 48.11"	
	5594.00	9.87	358.57	5567.39	6.80	319.17	-18.41	0.82	423606.34	655818.56	N 32° 9' 50.51" W 103° 57' 48.12"	
	5689.00	9.96	1.94	5660.97	8.16	335.52	-18.34	0.62	423622.69	655818.63	N 32° 9' 50.67" W 103° 57' 48.12"	
	5784.00	10.21	4.33	5754.50	10.38	352.13	-17.42	0.51	423639.09	655819.55	N 32° 9' 50.84" W 103° 57' 48.11"	
	5879.00	10.14	4.05	5848.01	12.93	368.87	-16.20	0.09	423656.03	655820.77	N 32° 9' 51.00" W 103° 57' 48.09"	
	5973.00	10.40	3.00	5940.50	15.27	385.59	-15.17	0.34	423672.75	655821.80	N 32° 9' 51.17" W 103° 57' 48.08"	
	6068.00	10.39	1.31	6033.94	17.26	402.72	-14.52	0.32	423689.88	655822.45	N 32° 9' 51.34" W 103° 57' 48.07"	
	6258.00	10.11	353.97	6220.92	18.56	436.43	-15.88	0.70	423723.59	655821.09	N 32° 9' 51.67" W 103° 57' 48.08"	
	6352.00	9.45	351.98	6313.55	17.87	452.28	-17.83	0.79	423739.44	655819.14	N 32° 9' 51.83" W 103° 57' 48.11"	
	6447.00	9.08	349.38	6407.31	16.60	467.37	-20.30	0.59	423754.52	655816.67	N 32° 9' 51.98" W 103° 57' 48.11"	

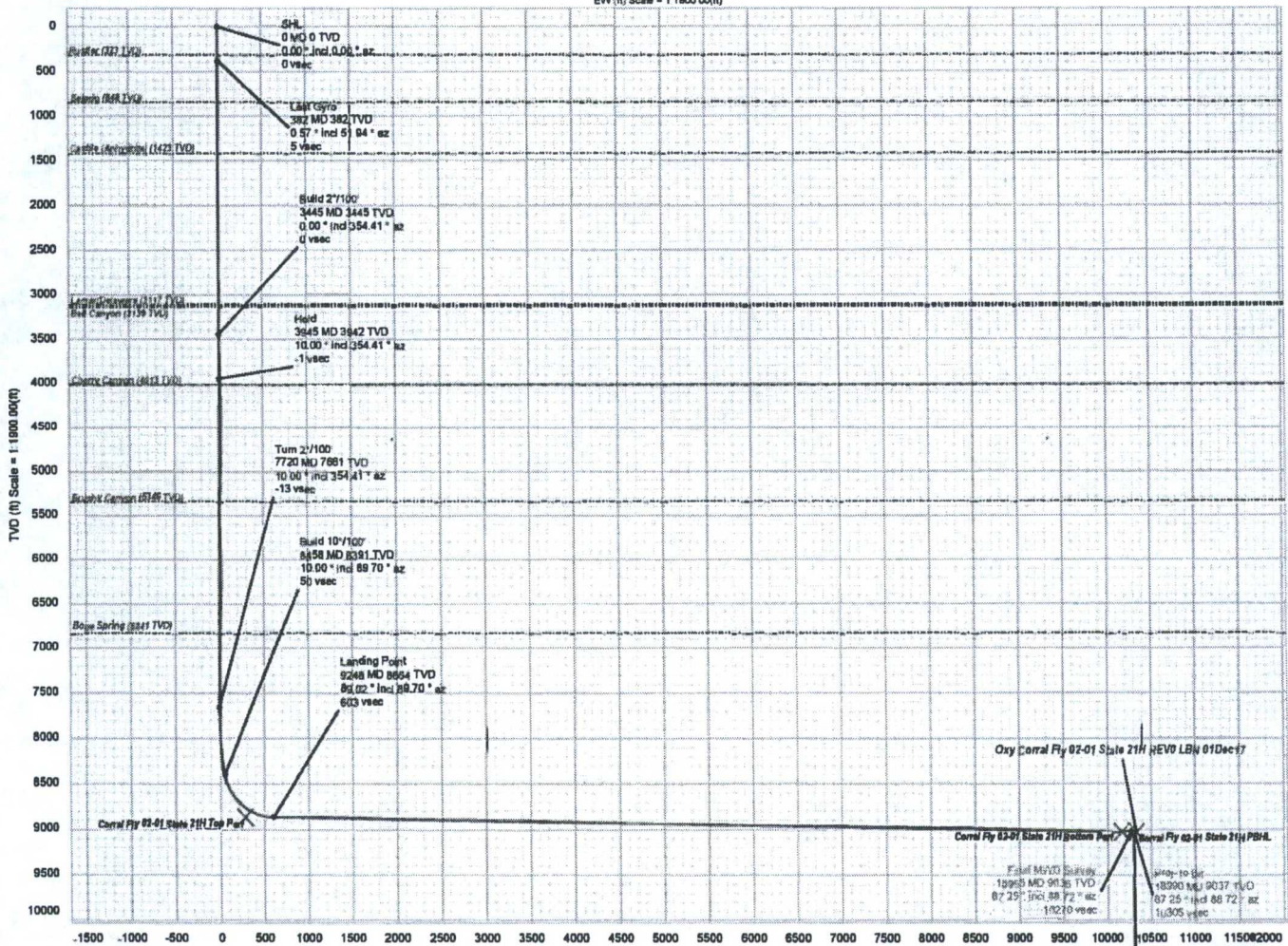
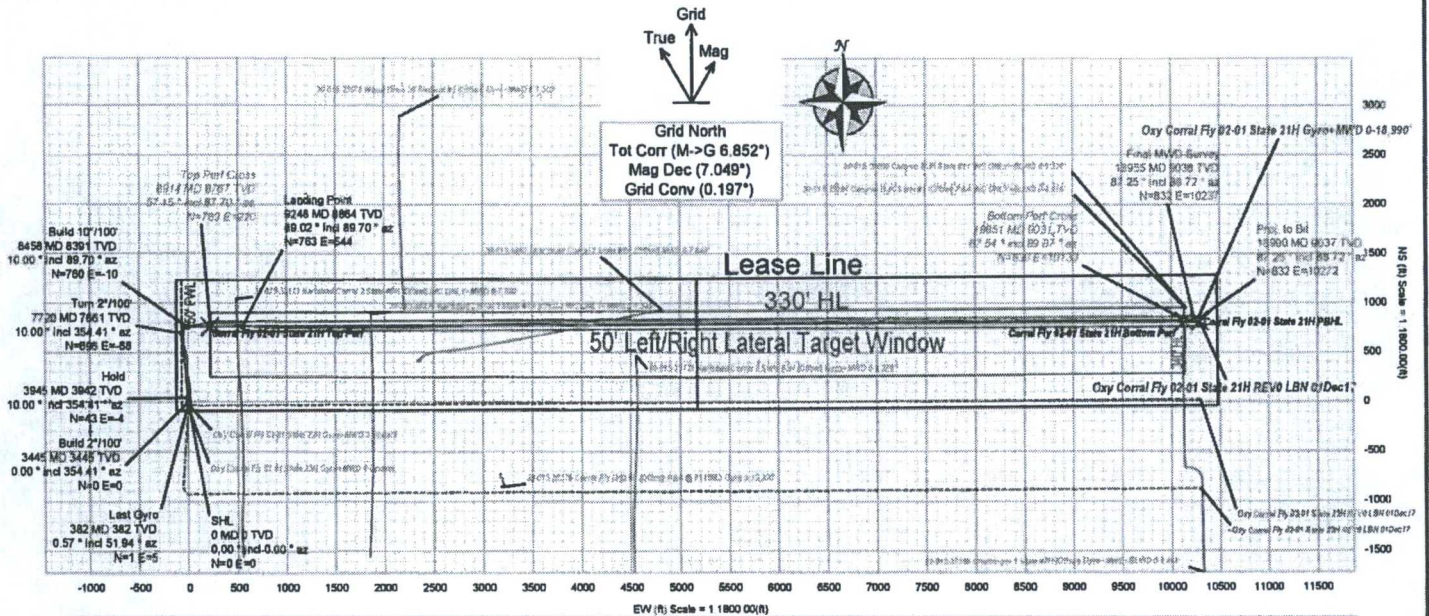
Survey Error Model: ISCSA Rev 0 *** 3-D 95.000% Confidence 2.7855 sigma											
Survey Type:											
Description											
Part	MD From (m)	MD To (m)	EOU Prod (ft)	Hole Size (in)	Casing Diameter (in)	Survey Test Type	Borehole / Survey				
1	0.000	26.501	1/88.425	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Corral Fly	02-01 State 21H Gyro+MWD 0-18,990'	Original Borehole / Oxy Corral Fly	02-01 State 21H Gyro+MWD 0-18,990'	Original Borehole / Oxy Corral Fly
1	26.501	26.501		30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Corral Fly	02-01 State 21H Gyro+MWD 0-18,990'	Original Borehole / Oxy Corral Fly	02-01 State 21H Gyro+MWD 0-18,990'	Original Borehole / Oxy Corral Fly
1	382.100	382.100		30.000	30.000	NAL_MWDP_LUS.0.5.DEG	Original Borehole / Oxy Corral Fly	02-01 State 21H Gyro+MWD 0-18,990'	Original Borehole / Oxy Corral Fly	02-01 State 21H Gyro+MWD 0-18,990'	Original Borehole / Oxy Corral Fly
1	382.100	18890.000		Act Sins	30.000		Act Sins	18890.000	Act Sins	30.000	
Comments	MD	Incl	Asm Ghd	TVD	VSEC	NS	EW	DLS	Northng	Eastng	Latitude
16428.00	69.55	69.91	69.70.59	7751.75	822.90	7710.80	0.11	0.13	424111.03	66547.17	N 32 9 55.23 W 103 58 18.18
16423.00	69.44	69.98	69.71.43	7648.46	824.01	7705.79	0.13	0.13	424111.13	66536.12	N 32 9 55.23 W 103 58 17.08
16317.00	69.55	69.90	69.72.25	7640.17	824.12	7698.78	0.13	0.13	424111.25	66537.96	N 32 9 55.23 W 103 58 15.99
16132.00	69.48	69.16	69.73.00	6934.96	825.74	7694.75	2.47	2.47	424112.86	66531.10	N 32 9 55.23 W 103 58 14.88
16007.00	69.94	69.82	69.78.03	6129.75	827.34	6998.71	2.78	2.78	424114.46	66492.04	N 32 9 55.23 W 103 58 13.78
15901.00	69.61	69.81	69.78.39	6223.47	827.46	6183.71	0.35	0.35	424114.60	664920.04	N 32 9 55.23 W 103 58 12.68
15996.00	69.66	69.82	69.77.00	6318.18	827.62	6278.71	0.05	0.05	424114.74	664914.74	N 32 9 55.23 W 103 58 11.58
17091.00	69.54	69.89	69.78.49	6412.89	827.77	6373.69	1.18	1.18	424114.90	664914.90	N 32 9 55.23 W 103 58 10.47
17280.00	69.82	69.89	69.78.03	6377.00	827.62	6318.18	0.05	0.05	424114.74	664914.74	N 32 9 55.23 W 103 58 11.58
17374.00	69.54	69.80	69.85.83	6694.49	823.14	6646.55	2.07	2.07	424110.27	664428.94	N 32 9 55.19 W 103 58 7.18
17664.00	69.17	69.60	69.86.92	6693.94	823.88	6646.50	0.25	0.25	424109.89	664428.94	N 32 9 55.19 W 103 58 6.27
17755.00	69.20	69.53	69.82.23	6977.53	823.11	6940.47	1.06	1.06	424110.23	664428.94	N 32 9 55.19 W 103 58 6.27
17755.00	69.25	69.98	69.88.00	6972.25	823.99	6935.39	0.73	0.73	424113.10	664666.66	N 32 9 55.20 W 103 58 2.77
18007.00	69.87	69.87	69.88.08	6956.46	826.08	6938.18	0.38	0.38	424115.18	664666.66	N 32 9 55.20 W 103 58 2.77
18132.00	69.88	69.87	69.88.36	6940.16	826.36	6941.16	0.62	0.62	424115.46	664550.30	N 32 9 55.22 W 103 58 6.47
18226.00	69.42	69.83	69.10.06	6943.82	828.04	6908.12	0.61	0.61	424115.16	664344.36	N 32 9 55.21 W 103 58 6.67
18231.00	69.43	69.83	69.12.16	6938.48	827.75	6903.11	0.63	0.63	424114.87	664339.33	N 32 9 55.20 W 103 58 6.17
18519.00	69.80	69.27	69.12.05	6928.80	827.42	6922.05	0.20	0.20	424114.54	664668.25	N 32 9 55.18 W 103 58 6.97
18598.00	69.08	69.18	69.24.17	10016.14	828.32	9938.80	0.89	0.89	424115.45	665617.09	N 32 9 55.20 W 103 58 6.78
18734.00	69.47	69.38	69.28.89	10106.42	829.53	10075.79	0.45	0.45	424116.88	665911.87	N 32 9 55.20 W 103 58 59.67
18889.00	69.58	69.37	69.22.74	10203.52	830.57	10169.69	0.13	0.13	424117.70	666005.87	N 32 9 55.21 W 103 58 49.68
18980.00	69.25	69.72	69.25.76	9935.76	831.59	10236.61	1.09	1.09	424118.81	666072.79	N 32 9 55.22 W 103 58 48.80
18980.00	69.25	69.72	69.25.76	9935.76	831.59	10236.61	1.09	1.09	424118.81	666072.79	N 32 9 55.22 W 103 58 48.80
18980.00	69.25	69.72	69.25.76	9935.76	831.59	10236.61	1.09	1.09	424118.81	666072.79	N 32 9 55.22 W 103 58 48.80

Schlumberger

OXY



Borehole:		Well:	Field:	Structure:
Original Borehole		Oxy Corral Fly 02-01 State 21H	NM Eddy County (NAD 83)	Oxy Corral Fly 02-01 State 21H
Gravity & Magnetic Parameters				
Model: HDGM 2017	Dip: 68.94°	Date: 18-Dec-2017	Surface Location: NAD83 New Mexico State Plane, Eastern Zone, US Feet	Miscellaneous
MagDec: 7.848°	FS: 48842.52mT	Gravity FS: 998.456mgm (9.80665 Based)	Lat: N 32 9 47.38	Oxy Corral Fly 02-01 State 21H
			North: 423287.167US	TVD Ref: RKB=26.5' (3023.1ft above MSL)
			East: 85628.977US	Plan: Oxy Corral Fly 02-01 State 21H REV0 LBN 01Dec17
			Grid Conv: 0.197°	
			Scale Fact: 0.99992411	



Vertical Section (ft) Azim = 85.48° Scale = 1:180000 (ft) Origin = 0N-S, 0E-W

Oxy Corral Fly 02-01 State 21H Gyro MWD 0-18,990'