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Schlumberger

OXY Cedar Canyon 27-28 Fed 42H Gyro + MWD 0-20134' MD Survey Geodetic Report 30-015-44435 (Def Survey)



NM OIL CONSERVATION
ARTESIA DISTRICT

JAN 02 2019

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Report Date: December 03, 2018 - 02 02 PM
Client: OXY
Field: NM Eddy County (NAD 83)
Structure / Slot: OXY Cedar Canyon 27-28 Fed 42H / OXY Cedar Canyon 27-28 Fed 42H
Well: Cedar Canyon 27-28 Fed 42H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: OXY Cedar Canyon 27-28 Fed 42H Gyro + MWD 0-20134' MD
Survey Date: September 25, 2018
Tort / AHD / DDH / ERD Ratio: 233 269' / 11218 022 R / 6 722 / 1 124
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 11' 34.98725", W 103° 59' 49.27893"
Location Grid N/E Y/X: N 434127 410 RUS, E 845371 250 RUS
CRB Grid Convergence Angle: 0.1792°
Grid Scale Factor: 0.99992149
Version / Patch: 2.10.753.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 94.070° (Grid North)
Vertical Section Origin: 0.000 R, 0.000 R
TVD Reference Datum: RXB
TVD Reference Elevation: 2874.300 R above MSL
Seabed / Ground Elevation: 2947.800 R above MSL
Magnetic Declination: 6.986°
Total Gravity Field Strength: 958.4845mg (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47980.800 nT
Magnetic Dip Angle: 59.950°
Declination Date: November 02, 2018
Magnetic Declination Model: IFR
North Reference: Grid North
Grid Convergence Used: 0.1792°
Total Corr Mag North-Grid North: 6.8068°
Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azimuth (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ft)	Easting (ft)	Latitude (N/S ° ° ' '')	Longitude (E/W ° ° ' '')
RKB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	434127.41	845371.25	N 32° 11' 34.97" W 103° 59' 49.28"	
SHL	28.50	0.00	0.00	28.50	0.00	0.00	0.00	0.00	434127.41	845371.26	N 32° 11' 34.97" W 103° 59' 49.28"	
	68.69	0.13	283.92	68.69	-0.04	0.01	-0.04	0.32	434127.42	845371.22	N 32° 11' 34.97" W 103° 59' 49.28"	
	123.44	0.06	259.23	123.44	-0.14	0.02	-0.14	0.14	434127.43	845371.12	N 32° 11' 34.97" W 103° 59' 49.28"	
	210.79	0.11	168.78	210.79	-0.16	-0.07	-0.16	0.15	434127.34	845371.10	N 32° 11' 34.97" W 103° 59' 49.28"	
	299.30	0.14	83.22	299.30	-0.02	-0.16	-0.04	0.17	434127.25	845371.22	N 32° 11' 34.97" W 103° 59' 49.28"	
	392.82	0.69	30.22	392.82	0.31	0.26	0.32	0.57	434127.67	845371.58	N 32° 11' 34.97" W 103° 59' 49.28"	
	487.32	0.68	68.80	487.31	1.16	0.96	1.24	0.57	434128.37	845372.50	N 32° 11' 34.98" W 103° 59' 49.28"	
	581.81	1.04	81.21	581.89	2.53	1.68	2.68	0.20	434129.07	845373.92	N 32° 11' 34.98" W 103° 59' 49.25"	
Last Gyro	668.20	0.80	90.40	668.17	3.78	2.03	3.82	0.62	434129.44	845375.17	N 32° 11' 34.98" W 103° 59' 49.25"	
	608.00	1.93	78.34	605.92	8.98	2.58	7.16	0.84	434129.99	845378.44	N 32° 11' 34.99" W 103° 59' 49.20"	
	888.00	1.19	72.18	887.68	11.65	3.88	11.98	0.41	434131.29	845383.21	N 32° 11' 35.01" W 103° 59' 49.14"	
	1078.00	0.30	358.55	1077.85	12.49	4.40	12.83	1.28	434131.81	845384.09	N 32° 11' 35.01" W 103° 59' 49.13"	
	1261.00	1.14	188.28	1260.84	12.35	3.07	12.80	0.78	434130.48	845383.88	N 32° 11' 35.00" W 103° 59' 49.13"	
	1351.00	0.28	295.18	1350.83	12.11	2.27	12.31	1.40	434129.68	845383.67	N 32° 11' 34.99" W 103° 59' 49.14"	
	1440.00	0.14	318.76	1439.83	11.83	2.45	12.04	0.18	434129.88	845383.30	N 32° 11' 34.99" W 103° 59' 49.14"	
	1532.00	0.25	158.78	1531.83	11.83	2.34	12.04	0.42	434129.75	845383.30	N 32° 11' 34.99" W 103° 59' 49.14"	
	1624.00	0.44	242.18	1623.83	11.83	1.90	11.00	0.52	434129.40	845383.08	N 32° 11' 34.99" W 103° 59' 49.14"	
	1717.00	0.71	235.94	1716.83	10.87	1.50	11.00	0.30	434128.91	845382.28	N 32° 11' 34.98" W 103° 59' 49.15"	
	1807.00	0.98	258.98	1806.82	9.70	1.05	8.80	0.48	434128.48	845381.06	N 32° 11' 34.98" W 103° 59' 49.16"	
	1898.00	1.58	250.09	1899.75	8.33	-0.32	8.32	0.57	434127.09	845378.58	N 32° 11' 34.96" W 103° 59' 49.22"	
	2088.00	1.89	227.44	2084.70	2.78	-1.94	2.63	0.81	434125.47	845373.89	N 32° 11' 34.95" W 103° 59' 49.25"	
	2179.00	0.49	128.14	2178.68	2.03	-3.24	1.80	2.16	434124.17	845373.06	N 32° 11' 34.94" W 103° 59' 49.26"	
	2274.00	0.77	158.69	2273.68	2.55	-4.11	2.27	0.82	434123.30	845373.63	N 32° 11' 34.93" W 103° 59' 49.25"	
	2369.00	0.31	167.54	2368.67	2.82	-4.88	2.47	0.48	434122.43	845373.73	N 32° 11' 34.92" W 103° 59' 49.25"	
	2463.00	0.68	170.20	2462.67	3.06	-5.84	2.65	0.61	434121.47	845373.81	N 32° 11' 34.91" W 103° 59' 49.25"	
	2558.00	0.73	218.87	2557.68	2.89	-7.13	2.39	0.71	434120.28	845373.65	N 32° 11' 34.90" W 103° 59' 49.25"	
	2652.00	0.81	238.92	2651.65	2.02	-7.98	1.48	0.27	434119.45	845372.72	N 32° 11' 34.89" W 103° 59' 49.26"	
	2747.00	0.55	120.81	2746.65	1.89	-6.58	1.29	1.22	434118.85	845372.55	N 32° 11' 34.88" W 103° 59' 49.26"	
	2841.00	0.83	314.27	2840.65	1.80	-6.43	1.31	1.25	434118.88	845372.57	N 32° 11' 34.88" W 103° 59' 49.26"	
	3031.00	0.17	345.37	3030.64	1.01	-7.43	0.49	0.28	434118.98	845371.75	N 32° 11' 34.89" W 103° 59' 49.27"	
	3128.00	0.08	30.84	3125.64	1.00	-7.24	0.49	0.13	434120.17	845371.75	N 32° 11' 34.90" W 103° 59' 49.27"	
	3220.00	0.14	172.01	3219.64	1.05	-7.29	0.54	0.22	434120.12	845371.80	N 32° 11' 34.90" W 103° 59' 49.27"	
	3409.00	0.14	303.72	3408.64	0.90	-7.39	0.38	0.14	434120.02	845371.64	N 32° 11' 34.89" W 103° 59' 49.27"	
	3504.00	0.17	274.09	3503.64	0.68	-7.32	0.34	0.09	434120.09	845371.40	N 32° 11' 34.89" W 103° 59' 49.28"	
	3598.00	0.14	312.25	3598.64	0.43	-7.23	-0.09	0.11	434120.18	845371.17	N 32° 11' 34.90" W 103° 59' 49.28"	
	3788.00	0.07	255.87	3787.64	0.13	-7.10	-0.37	0.08	434120.31	845370.89	N 32° 11' 34.90" W 103° 59' 49.28"	
	3883.00	0.26	217.27	3882.64	-0.05	-7.30	-0.57	0.24	434120.11	845370.69	N 32° 11' 34.89" W 103° 59' 49.29"	
	3978.00	0.25	220.55	3977.64	-0.30	-7.65	-0.84	0.04	434119.78	845370.42	N 32° 11' 34.89" W 103° 59' 49.29"	
	4072.00	0.18	194.82	4071.64	-0.44	-7.82	-1.01	0.14	434119.49	845370.25	N 32° 11' 34.89" W 103° 59' 49.29"	
	4167.00	0.29	208.87	4166.64	-0.57	-8.23	-1.15	0.18	434119.16	845370.11	N 32° 11' 34.89" W 103° 59' 49.29"	
	4262.00	0.18	178.99	4261.64	-0.63	-8.60	-1.27	0.18	434118.82	845369.99	N 32° 11' 34.88" W 103° 59' 49.29"	
	4356.00	0.20	220.65	4355.64	-0.74	-8.83	-1.37	0.14	434118.56	845369.89	N 32° 11' 34.88" W 103° 59' 49.30"	
	4451.00	0.05	303.41	4450.64	-0.88	-8.95	-1.52	0.21	434118.46	845369.74	N 32° 11' 34.88" W 103° 59' 49.30"	
	4546.00	0.24	229.20	4545.64	-1.05	-9.06	-1.70	0.24	434118.35	845369.66	N 32° 11' 34.88" W 103° 59' 49.30"	
	4640.00	0.19	143.88	4639.64	-1.09	-9.32	-1.78	0.31	434118.10	845369.50	N 32° 11' 34.88" W 103° 59' 49.30"	
	4735.00	0.28	193.55	4734.63	-1.03	-9.67	-1.72	0.23	434117.74	845369.34	N 32° 11' 34.87" W 103° 59' 49.30"	
	4830.00	0.14	188.78	4829.63	-1.10	-10.00	-1.81	0.15	434117.41	845369.45	N 32° 11' 34.87" W 103° 59' 49.30"	
	4924.00	0.11	182.45	4923.63	-1.09	-10.20	-1.82	0.09	434117.21	845369.44	N 32° 11' 34.87" W 103° 59' 49.30"	
	5019.00	0.60	187.21	5018.63	-0.91	-10.77	-1.68	0.52	434116.84	845369.58	N 32° 11' 34.86" W 103° 59' 49.30"	
	5114.00	0.69	200.98	5113.63	-0.84	-11.79	-1.78	0.40	434115.82	845369.48	N 32° 11' 34.85" W 103° 59' 49.30"	
	5209.00	0.70	198.02	5208.62	-1.22	-12.68	-2.14	0.06	434114.53	845369.12	N 32° 11' 34.84" W 103° 59' 49.30"	
	5303.00	0.71	200.16	5302.61	-1.50	-13.98	-2.50	0.06	434113.43	845368.76	N 32° 11' 34.83" W 103° 59' 49.31"	
	5398.00	0.57	193.68	5397.61	-1.74	-14.99	-2.82	0.17	434112.42	845368.45	N 32° 11' 34.82" W 103° 59' 49.31"	
	5493.00	0.73	187.17	5492.60	-1.86	-16.05	-3.00	0.19	434111.38	845368.26	N 32° 11' 34.81" W 103° 59' 49.31"	
	5587.00	1.17	205.54	5586.59	-2.24	-17.51	-3.48	0.56	434109.80	845367.77	N 32° 11' 34.79" W 103° 59' 49.32"	
	5681.00	2.73	208.95	5680.53	-3.53	-20.34	-4.99	1.66	434107.08	845366.27	N 32° 11' 34.77" W 103° 59' 49.34"	
	5776.00	4.21	209.82	5775.35	-8.00	-25.34	-7.82	1.66	434102.07	845363.44	N 32° 11' 34.72" W 103° 59' 49.37"	
	5870.00	5.88	210.57	5869.99	-9.84	-32.47	-11.97	1.76	434094.95	845359.29	N 32° 11' 34.65" W 103° 59' 49.42"	
	5965.00	7.37	211.40	5963.35	-14.60	-41.84	-17.82	1.59	434085.57	845353.63	N 32° 11' 34.55" W 103° 59' 49.49"	
	6060.00	8.85	211.04	6057.40	-20.71	-53.31	-24.58	1.56	434074.11	845348.70	N 32° 11' 34.44" W 103° 59' 49.57"	
	6154.00	10.03	210.91	6150.12	-27.89	-66.53	-32.49	1.28	434060.89	845338.77	N 32° 11' 34.31" W 103° 59' 49.66"	
	6344.00	10.95	205.94	6338.95	-41.88	-98.95	-48.89	0.68	434030.47	845322.38	N 32° 11' 34.01" W 103° 59' 49.85"	
	6438.00	11.57	202.89	6429.14	-48.25	-113.68	-56.48	0.82	434013.76	845314.81	N 32° 11' 33.84" W 103° 59' 49.94"	
	6533.00	11.62	201.44	6522.20	-54.17	-131.35	-63.68	0.31	433998.07	845307.61	N 32° 11' 33.67" W 103° 59' 50.02"	
Bone Spring Intersection	6509.32	11.31	201.08	6507.00	-58.66	-145.49	-69.16	0.41	433981.93	845302.11	N 32° 11' 33.53" W 103° 59' 50.09"	
	6628.00	11.24	200.99	6615.32	-59.73	-148.90	-70.47	0.41	433978.53	845300.79	N 32° 11' 33.50" W 103° 59' 50.10"	
	6722.00	10.95	198.91	6707.70	-64.41	-165.24	-76.33	1.37	433962.19	845294.94	N 32° 11' 33.33" W 103° 59' 50.17"	
	6816.00	9.98	203.11	6800.40	-68.84	-179.83	-81.81	1.35	433947.59	845289.45	N 32° 11' 33.19" W 103° 59' 50.24"	
	6908.00	8.41	208.78	6898.20	-78.82	-205.77	-84.37	0.97	433921.83	845278.80	N 32° 11' 32.83" W 103° 59' 50.38"	
	7000.00	9.58	201.68	7001.04	-84.76	-218.07	-100.56	1.71	433906.36	845270.71	N 32° 11' 32.60" W 103° 59' 50.46"	
	7289.00	7.63	212.22	7287.81	-93.45	-244.33	-113.97	1.32	433883.10	845258.19	N 32° 11' 32.55" W 103° 59' 50.60"	
	7478.00	7.57	198.17	7455.27	-103.89	-268.94	-123.25	1.12	433860.50	845248.02	N 32° 11' 32.33" W 103° 59' 50.72"	
	7573.00	8.29	188.59	7549.								

...Cedar Canyon 27-28 Fed 42H Original Borehole VTX Cedar Canyon 27-28 Fed 42H Gyro + MWUD 0-20134' MD

Comments	MD	Incl	Altim GMD	TVD	WSEC	NS	EW	DLS	North	East	Longitude	Latitude
	7851.00	10.11	188.98	7821.22	-11.41	-34.41	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7840.00	10.01	188.98	7810.22	-11.46	-34.46	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7830.00	9.90	188.98	7800.22	-11.52	-34.52	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7820.00	9.80	188.98	7790.22	-11.57	-34.57	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7810.00	9.70	188.98	7780.22	-11.62	-34.62	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7800.00	9.60	188.98	7770.22	-11.67	-34.67	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7790.00	9.50	188.98	7760.22	-11.72	-34.72	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7780.00	9.40	188.98	7750.22	-11.77	-34.77	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7770.00	9.30	188.98	7740.22	-11.82	-34.82	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7760.00	9.20	188.98	7730.22	-11.87	-34.87	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7750.00	9.10	188.98	7720.22	-11.92	-34.92	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7740.00	9.00	188.98	7710.22	-11.97	-34.97	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7730.00	8.90	188.98	7700.22	-12.02	-35.02	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7720.00	8.80	188.98	7690.22	-12.07	-35.07	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7710.00	8.70	188.98	7680.22	-12.12	-35.12	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7700.00	8.60	188.98	7670.22	-12.17	-35.17	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7690.00	8.50	188.98	7660.22	-12.22	-35.22	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7680.00	8.40	188.98	7650.22	-12.27	-35.27	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7670.00	8.30	188.98	7640.22	-12.32	-35.32	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7660.00	8.20	188.98	7630.22	-12.37	-35.37	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7650.00	8.10	188.98	7620.22	-12.42	-35.42	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7640.00	8.00	188.98	7610.22	-12.47	-35.47	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7630.00	7.90	188.98	7600.22	-12.52	-35.52	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7620.00	7.80	188.98	7590.22	-12.57	-35.57	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7610.00	7.70	188.98	7580.22	-12.62	-35.62	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7600.00	7.60	188.98	7570.22	-12.67	-35.67	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7590.00	7.50	188.98	7560.22	-12.72	-35.72	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7580.00	7.40	188.98	7550.22	-12.77	-35.77	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7570.00	7.30	188.98	7540.22	-12.82	-35.82	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7560.00	7.20	188.98	7530.22	-12.87	-35.87	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7550.00	7.10	188.98	7520.22	-12.92	-35.92	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7540.00	7.00	188.98	7510.22	-12.97	-35.97	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7530.00	6.90	188.98	7500.22	-13.02	-36.02	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7520.00	6.80	188.98	7490.22	-13.07	-36.07	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7510.00	6.70	188.98	7480.22	-13.12	-36.12	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7500.00	6.60	188.98	7470.22	-13.17	-36.17	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7490.00	6.50	188.98	7460.22	-13.22	-36.22	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7480.00	6.40	188.98	7450.22	-13.27	-36.27	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7470.00	6.30	188.98	7440.22	-13.32	-36.32	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7460.00	6.20	188.98	7430.22	-13.37	-36.37	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7450.00	6.10	188.98	7420.22	-13.42	-36.42	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7440.00	6.00	188.98	7410.22	-13.47	-36.47	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7430.00	5.90	188.98	7400.22	-13.52	-36.52	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7420.00	5.80	188.98	7390.22	-13.57	-36.57	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7410.00	5.70	188.98	7380.22	-13.62	-36.62	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7400.00	5.60	188.98	7370.22	-13.67	-36.67	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7390.00	5.50	188.98	7360.22	-13.72	-36.72	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7380.00	5.40	188.98	7350.22	-13.77	-36.77	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7370.00	5.30	188.98	7340.22	-13.82	-36.82	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7360.00	5.20	188.98	7330.22	-13.87	-36.87	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7350.00	5.10	188.98	7320.22	-13.92	-36.92	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7340.00	5.00	188.98	7310.22	-13.97	-36.97	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7330.00	4.90	188.98	7300.22	-14.02	-37.02	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7320.00	4.80	188.98	7290.22	-14.07	-37.07	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7310.00	4.70	188.98	7280.22	-14.12	-37.12	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7300.00	4.60	188.98	7270.22	-14.17	-37.17	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7290.00	4.50	188.98	7260.22	-14.22	-37.22	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7280.00	4.40	188.98	7250.22	-14.27	-37.27	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7270.00	4.30	188.98	7240.22	-14.32	-37.32	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7260.00	4.20	188.98	7230.22	-14.37	-37.37	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7250.00	4.10	188.98	7220.22	-14.42	-37.42	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7240.00	4.00	188.98	7210.22	-14.47	-37.47	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7230.00	3.90	188.98	7200.22	-14.52	-37.52	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7220.00	3.80	188.98	7190.22	-14.57	-37.57	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7210.00	3.70	188.98	7180.22	-14.62	-37.62	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7200.00	3.60	188.98	7170.22	-14.67	-37.67	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7190.00	3.50	188.98	7160.22	-14.72	-37.72	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7180.00	3.40	188.98	7150.22	-14.77	-37.77	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7170.00	3.30	188.98	7140.22	-14.82	-37.82	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7160.00	3.20	188.98	7130.22	-14.87	-37.87	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7150.00	3.10	188.98	7120.22	-14.92	-37.92	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7140.00	3.00	188.98	7110.22	-14.97	-37.97	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7130.00	2.90	188.98	7100.22	-15.02	-38.02	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7120.00	2.80	188.98	7090.22	-15.07	-38.07	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7110.00	2.70	188.98	7080.22	-15.12	-38.12	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7100.00	2.60	188.98	7070.22	-15.17	-38.17	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7090.00	2.50	188.98	7060.22	-15.22	-38.22	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7080.00	2.40	188.98	7050.22	-15.27	-38.27	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7070.00	2.30	188.98	7040.22	-15.32	-38.32	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7060.00	2.20	188.98	7030.22	-15.37	-38.37	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7050.00	2.10	188.98	7020.22	-15.42	-38.42	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7040.00	2.00	188.98	7010.22	-15.47	-38.47	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7030.00	1.90	188.98	7000.22	-15.52	-38.52	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7020.00	1.80	188.98	6990.22	-15.57	-38.57	-136.22	171.00	433782.73	665235.05	121.11	27.42
	7010.00	1.70	188.98									

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLB (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S + ° ' ")	Longitude (E/W + ° ' ")
	19801.00	89.58	91.11	9976.94	9945.68	-732.08	9918.93	0.58	433395.39	655289.40	N 32 11 27.40	W 103 57 53.89
	19898.00	89.41	90.54	9977.78	10040.72	-733.44	10013.92	0.63	433394.02	655384.37	N 32 11 27.38	W 103 57 52.78
	19991.00	88.96	87.45	9978.22	10135.33	-731.78	10108.88	3.30	433395.69	655479.33	N 32 11 27.40	W 103 57 51.67
100' FEL Cross	20050.00	88.74	87.40	9980.58	10199.88	-728.88	10173.80	0.20	433398.67	655544.24	N 32 11 27.42	W 103 57 50.92
Final MWD	20085.00	88.69	87.38	9981.23	10228.87	-727.54	10202.77	0.20	433398.93	655573.20	N 32 11 27.44	W 103 57 50.58
Pre) to TD	20134.00	88.69	87.38	9982.35	10277.33	-725.30	10251.70	0.00	433402.17	655622.14	N 32 11 27.48	W 103 57 50.01

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 Cedar Canyon 27-28 Fed 42H Gyro + MWD 0-20134' MD
	1	26.500	26.500	Act Sns	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / OXY Cedar Canyon 27-28 Fed 42H Gyro + MWD 0-20134' MD
	1	26.500	666.200	Act Sns	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / OXY Cedar Canyon 27-28 Fed 42H Gyro +
	1	666.200	20134.000	Act Sns	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / OXY Cedar Canyon 27-28 Fed 42H Gyro +

...Cedar Canyon 27-28 Fed 42H\Original Borehole\OXY Cedar Canyon 27-28 Fed 42H Gyro + MWD 0-20134' MD

Schlumberger

OXY

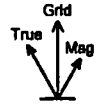


Borehole: Original Borehole Well: Cedar Canyon 27-28 Fed 42H Field: NM Eddy County (NAD 83) Structure: OXY Cedar Canyon 27-28 Fed 42H

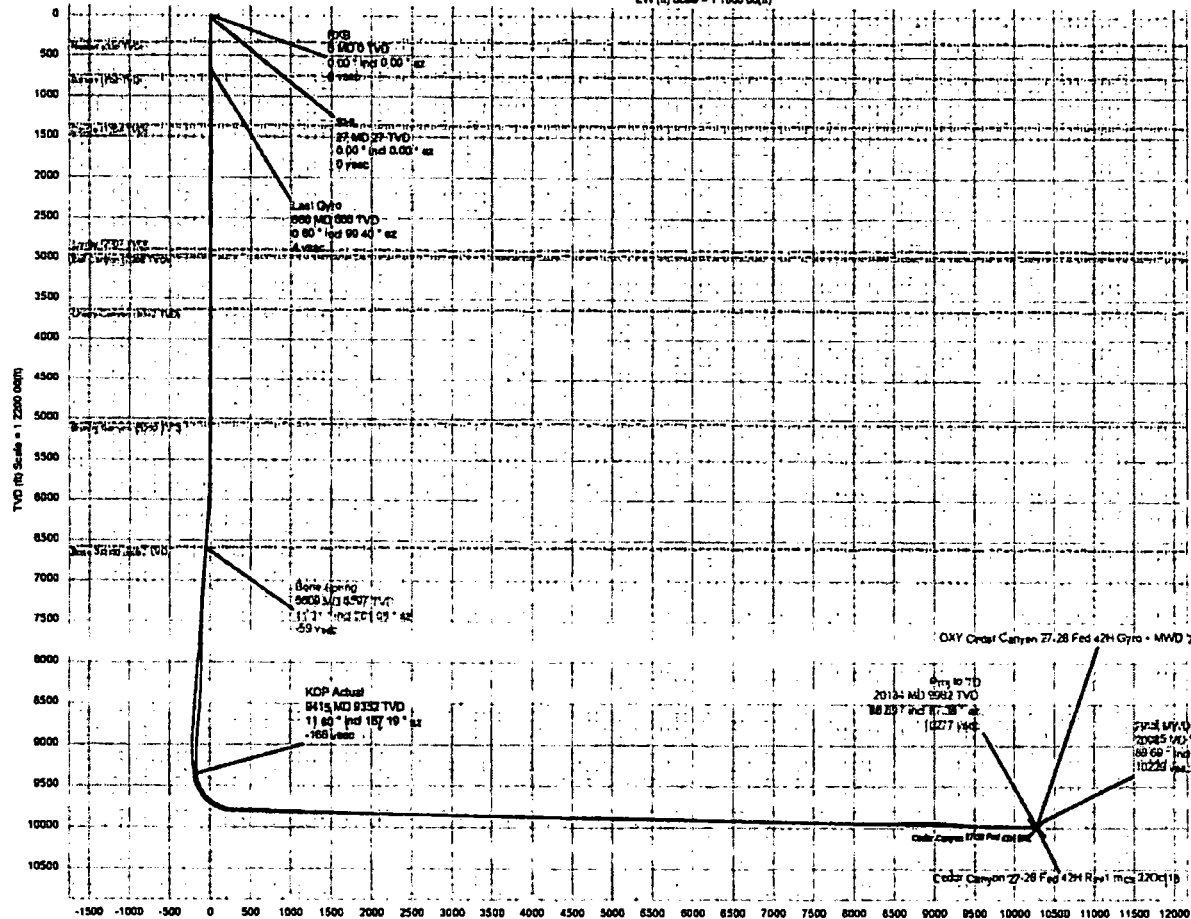
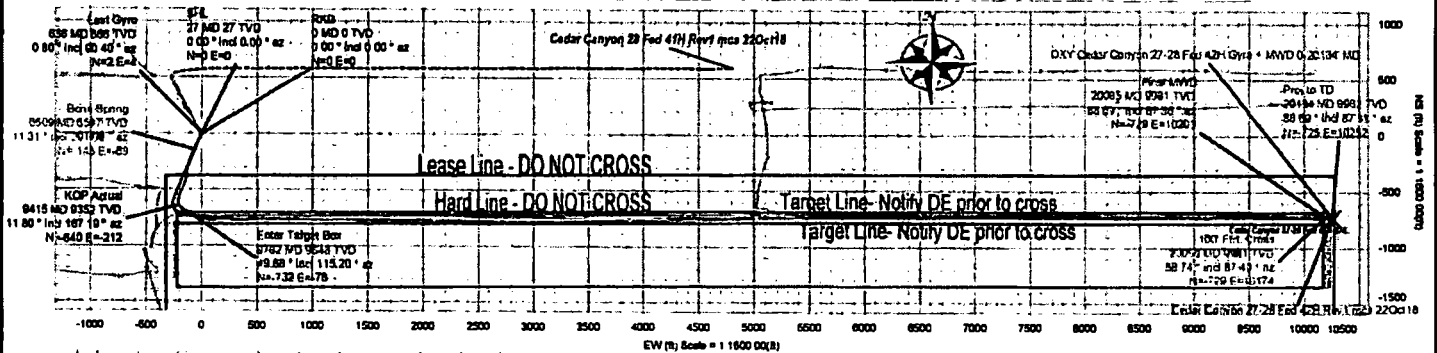
Gravity & Magnetic Parameters Model: IFR Dip: 0.00° Date: 02-Nov-2018 Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet Misc: Canyon 27-28 TVD Ref: RKB(26.5) above BSL
Mag Dec: 0.179° FS 47988 Sat Gravity FS 036.486mgals (0.00033 Gauss) Loc: N 32 11 34.87 Northing 434127.110US Grid Cont: 0.179° Plan: OXY Cedar Canyon 27-28 Fed 42H GYRO + MWD 0-20134 MD
Easting 646371.25US Scale Fact: 0.9992143

Critical Points

Critical Point	MD	DICL	AZIM	TVD	YSEC	W(°)E(-)	E(°)W(+)	CLS
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	668.20	0.80	80.40	668.17	3.78	2.03	3.82	0.82
Bone Spring	9609.32	11.31	201.08	6597.00	-58.68	-145.49	-89.18	0.41
KOP Actual	9415.00	11.80	187.19	9352.03	-168.22	-839.69	-212.18	2.91
Enter Target Box	9782.00	49.85	115.20	9648.44	-23.83	-731.68	-75.95	12.99
100' FEL Cross	20058.00	88.74	87.40	9980.58	10199.88	-728.86	10173.80	0.20
Final MWD	20085.00	88.69	87.38	9981.23	10228.67	-727.54	10202.77	0.20
Proj to TD	20134.00	88.69	87.38	9982.35	10277.33	-725.30	10251.70	0.00



Grid North
Tot Corr (M→G 8.807°)
Mag Dec (8.986°)
Grid Conv (0.179°)



Vertical Section (R) Azim = 94.67° Scale = 1:2200 DD(R) Origin = DN=3, DE=W