Schlumberger

Final Surveys - Cimarex Crawford 27-26 Fee #30H MWD 0ft-18940ft (Surcon Corrected) Survey Geodetic Report

(Def Survey)

Report Date:	December 17, 2020 - 10:58 AM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Cimarex Energy	**Vertical Section Azimuth:**	90.158 ° (Grid North)
Field:	NM Eddy County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex Crawford 27-26 Fee #30H / New Slot	**TVD Reference Datum:**	RKB
Well:	Crawford 27-26 Fee #30H	**TVD Reference Elevation:**	3364.000 ft above MSL
Borehole:	Crawford 27-26 Fee #30H	**Seabed / Ground Elevation:**	3341.000 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	7.208 °
Survey Name:	Final Surveys - Cimarex Crawford 27-26 Fee #30H MWD 0ft-18940ft (Surcon Corrected)	**Total Gravity Field Strength:**	998.4457mgn (9.80665 Based)
Survey Date:	February 28, 2020	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	263.465 ° / 11524.461 ft / 6.815 / 1.308	**Total Magnetic Field Strength:**	47712.913 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.801 °
Location Lat / Long:	N 32° 11' 12.19136", W 104° 17' 32.38554"	**Declination Date:**	March 30, 2020
Location Grid N/E Y/X:	N 431665.660 ftUS, E 554022.430 ftUS	**Magnetic Declination Model:**	HDGM 2020
CRS Grid Convergence Angle:	0.0218 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99990928	**Grid Convergence Used:**	0.0218 °
Version / Patch:	2.10.824.0	**Total Corr Mag North->Grid North:**	7.1864 °
		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 ° ' ")	Closure Azimuth (°)	Closure (ft)
SHL [2135' FSL, 915' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	431665.66	554022.43	N 32 11 12.19	W 104 17 32.39	0.00	0.00
	207.00	0.18	213.24	207.00	-0.18	-0.27	-0.18	0.09	431665.39	554022.25	N 32 11 12.19	W 104 17 32.39	213.24	0.33
	324.00	0.40	144.68	324.00	-0.04	-0.76	-0.04	0.32	431664.90	554022.39	N 32 11 12.18	W 104 17 32.39	183.23	0.76
	501.00	0.28	102.49	501.00	0.74	-1.36	0.74	0.15	431664.30	554023.17	N 32 11 12.18	W 104 17 32.38	151.50	1.54
	595.00	0.46	156.78	594.99	1.11	-1.75	1.11	0.40	431663.91	554023.54	N 32 11 12.17	W 104 17 32.37	147.67	2.07
	690.00	0.55	113.18	689.99	1.69	-2.28	1.68	0.40	431663.38	554024.11	N 32 11 12.17	W 104 17 32.37	143.67	2.83
	784.00	1.31	113.14	783.98	3.09	-2.88	3.08	0.81	431662.78	554025.51	N 32 11 12.16	W 104 17 32.35	133.09	4.22
	879.00	1.89	79.67	878.94	5.63	-3.03	5.62	1.13	431662.63	554028.05	N 32 11 12.16	W 104 17 32.32	118.31	6.39
	973.00	3.03	56.99	972.86	9.23	-1.40	9.23	1.57	431664.26	554031.66	N 32 11 12.18	W 104 17 32.28	98.61	9.34
	1066.00	3.18	65.51	1065.72	13.64	1.01	13.64	0.52	431666.67	554036.07	N 32 11 12.20	W 104 17 32.23	85.76	13.68
	1161.00	2.70	51.15	1160.60	17.77	3.51	17.78	0.92	431669.17	554040.21	N 32 11 12.23	W 104 17 32.18	78.84	18.12
	1256.00	2.13	14.73	1255.52	19.95	6.62	19.97	1.69	431672.28	554042.40	N 32 11 12.26	W 104 17 32.15	71.67	21.04
	1351.00	2.65	1.23	1350.43	20.44	10.52	20.47	0.80	431676.18	554042.90	N 32 11 12.30	W 104 17 32.15	62.79	23.01
	1446.00	1.81	341.09	1445.36	19.99	14.14	20.03	1.20	431679.80	554042.46	N 32 11 12.33	W 104 17 32.15	54.78	24.51
	1540.00	1.51	326.22	1539.32	18.81	16.57	18.86	0.56	431682.23	554041.29	N 32 11 12.36	W 104 17 32.17	48.69	25.10
	1634.00	1.73	302.42	1633.29	16.92	18.36	16.97	0.75	431684.02	554039.40	N 32 11 12.37	W 104 17 32.19	42.75	25.00
	1702.00	1.74	303.46	1701.26	15.19	19.48	15.24	0.05	431685.14	554037.67	N 32 11 12.38	W 104 17 32.21	38.05	24.74
	1804.00	1.71	294.76	1803.21	12.51	20.97	12.57	0.26	431686.63	554035.00	N 32 11 12.40	W 104 17 32.24	30.94	24.45
	1897.00	1.16	263.96	1896.18	10.31	21.45	10.37	1.00	431687.11	554032.80	N 32 11 12.40	W 104 17 32.26	25.81	23.83
	1992.00	1.77	162.89	1991.16	9.79	19.95	9.85	2.42	431685.61	554032.28	N 32 11 12.39	W 104 17 32.27	26.28	22.25
	2087.00	3.39	151.48	2086.06	11.58	16.08	11.62	1.78	431681.74	554034.05	N 32 11 12.35	W 104 17 32.25	35.86	19.84
	2181.00	4.85	144.69	2179.82	15.22	10.39	15.25	1.63	431676.05	554037.67	N 32 11 12.29	W 104 17 32.21	55.72	18.45
	2275.00	6.75	142.36	2273.33	20.91	2.78	20.92	2.04	431668.44	554043.35	N 32 11 12.22	W 104 17 32.14	82.44	21.10
	2370.00	8.66	146.29	2367.47	28.32	-7.60	28.30	2.08	431658.07	554050.72	N 32 11 12.12	W 104 17 32.06	105.02	29.30
	2465.00	10.92	145.02	2461.08	37.48	-20.92	37.43	2.39	431644.74	554059.85	N 32 11 11.98	W 104 17 31.95	119.20	42.88
	2559.00	12.26	140.34	2553.17	49.00	-35.90	48.90	1.74	431629.76	554071.33	N 32 11 11.84	W 104 17 31.82	126.28	60.66
	2653.00	11.73	140.11	2645.11	61.54	-50.91	61.40	0.57	431614.75	554083.82	N 32 11 11.69	W 104 17 31.67	129.67	79.76
	2748.00	12.11	139.08	2738.06	74.30	-65.85	74.12	0.46	431599.81	554096.54	N 32 11 11.54	W 104 17 31.52	131.62	99.15
	2842.00	11.81	138.95	2830.02	87.12	-80.56	86.89	0.32	431585.11	554109.32	N 32 11 11.39	W 104 17 31.37	132.83	118.49
	2937.00	12.41	137.65	2922.91	100.42	-95.43	100.16	0.69	431570.24	554122.58	N 32 11 11.25	W 104 17 31.22	133.62	138.34
	3031.00	11.82	137.88	3014.82	113.72	-110.04	113.42	0.63	431555.63	554135.84	N 32 11 11.10	W 104 17 31.07	134.13	158.03

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 ° ' ")	Closure Azimuth (°)	Closure (ft)
	3126.00	12.60	135.47	3107.67	127.55	-124.64	127.21	0.98	431541.03	554149.63	N 32 11 10.96	W 104 17 30.91	134.42	178.10
	3220.00	12.67	134.99	3199.39	142.07	-139.24	141.69	0.13	431526.43	554164.11	N 32 11 10.81	W 104 17 30.74	134.50	198.66
	3315.00	12.10	135.85	3292.18	156.42	-153.75	155.99	0.63	431511.92	554178.41	N 32 11 10.67	W 104 17 30.57	134.59	219.03
	3409.00	11.83	136.61	3384.14	169.94	-167.82	169.48	0.33	431497.85	554191.89	N 32 11 10.53	W 104 17 30.41	134.72	238.51
	3504.00	12.69	134.12	3476.97	184.16	-182.16	183.66	1.06	431483.51	554206.07	N 32 11 10.39	W 104 17 30.25	134.77	258.68
	3599.00	12.72	133.06	3569.64	199.33	-196.57	198.79	0.25	431469.11	554221.20	N 32 11 10.25	W 104 17 30.07	134.68	279.56
	3694.00	12.01	133.94	3662.44	214.13	-210.57	213.55	0.77	431455.11	554235.96	N 32 11 10.11	W 104 17 29.90	134.60	299.90
	3788.00	11.43	134.49	3754.48	227.85	-223.88	227.23	0.63	431441.80	554249.64	N 32 11 9.98	W 104 17 29.74	134.57	319.00
	3883.00	11.73	135.90	3847.55	241.32	-237.41	240.67	0.43	431428.27	554263.08	N 32 11 9.84	W 104 17 29.59	134.61	338.06
	3977.00	11.90	135.50	3939.55	254.80	-251.19	254.11	0.20	431414.50	554276.52	N 32 11 9.70	W 104 17 29.43	134.67	357.31
	4071.00	11.32	136.07	4031.63	268.03	-264.74	267.31	0.63	431400.94	554289.71	N 32 11 9.57	W 104 17 29.28	134.72	376.22
	4165.00	11.51	137.15	4123.77	280.85	-278.26	280.08	0.30	431387.42	554302.49	N 32 11 9.44	W 104 17 29.13	134.81	394.81
	4260.00	11.97	134.54	4216.78	294.36	-292.12	293.55	0.74	431373.56	554315.95	N 32 11 9.30	W 104 17 28.97	134.86	414.14
	4355.00	11.54	135.44	4309.79	308.08	-305.80	307.24	0.49	431359.89	554329.64	N 32 11 9.16	W 104 17 28.81	134.87	433.49
	4450.00	12.08	134.93	4402.78	321.83	-319.59	320.95	0.58	431346.10	554343.35	N 32 11 9.03	W 104 17 28.65	134.88	452.93
	4545.00	12.28	134.72	4495.64	336.08	-333.72	335.16	0.22	431331.97	554357.56	N 32 11 8.89	W 104 17 28.49	134.88	472.98
	4639.00	11.40	135.82	4587.64	349.70	-347.42	348.74	0.97	431318.27	554371.14	N 32 11 8.75	W 104 17 28.33	134.89	492.26
	4734.00	11.96	136.24	4680.67	363.09	-361.26	362.09	0.60	431304.43	554384.49	N 32 11 8.62	W 104 17 28.17	134.93	511.49
	4828.00	11.79	136.12	4772.66	376.52	-375.22	375.48	0.18	431290.48	554397.88	N 32 11 8.48	W 104 17 28.02	134.98	530.83
	4923.00	11.16	137.16	4865.76	389.53	-388.96	388.46	0.70	431276.74	554410.86	N 32 11 8.34	W 104 17 27.87	135.04	549.72
	5018.00	11.55	135.98	4958.90	402.43	-402.54	401.32	0.48	431263.16	554423.72	N 32 11 8.21	W 104 17 27.72	135.09	568.42
	5111.00	12.46	134.03	5049.87	416.15	-416.20	415.01	1.07	431249.49	554437.40	N 32 11 8.07	W 104 17 27.56	135.08	587.76
	5206.00	11.63	134.38	5142.78	430.40	-430.03	429.22	0.88	431235.67	554451.61	N 32 11 7.93	W 104 17 27.39	135.05	607.58
	5301.00	12.44	135.19	5235.69	444.50	-443.98	443.28	0.87	431221.72	554465.66	N 32 11 7.80	W 104 17 27.23	135.05	627.39
	5395.00	11.92	135.67	5327.57	458.46	-458.11	457.19	0.56	431207.59	554479.58	N 32 11 7.66	W 104 17 27.07	135.06	647.22
	5489.00	11.74	133.60	5419.58	472.20	-471.65	470.90	0.49	431194.06	554493.29	N 32 11 7.52	W 104 17 26.91	135.05	666.48
	5584.00	10.54	132.46	5512.78	485.65	-484.18	484.31	1.28	431181.53	554506.70	N 32 11 7.40	W 104 17 26.75	134.99	684.83
	5679.00	11.08	130.90	5606.10	498.99	-496.02	497.62	0.65	431169.68	554520.01	N 32 11 7.28	W 104 17 26.60	134.91	702.61
	5773.00	12.28	130.45	5698.15	513.46	-508.42	512.06	1.28	431157.29	554534.44	N 32 11 7.16	W 104 17 26.43	134.80	721.59
	5869.00	13.62	134.50	5791.71	529.33	-522.97	527.89	1.69	431142.74	554550.27	N 32 11 7.01	W 104 17 26.25	134.73	743.08
	5963.00	13.20	136.00	5883.15	544.72	-538.45	543.24	0.58	431127.26	554565.62	N 32 11 6.86	W 104 17 26.07	134.75	764.87
	6058.00	10.31	137.69	5976.14	558.02	-552.54	556.50	3.06	431113.17	554578.88	N 32 11 6.72	W 104 17 25.91	134.80	784.21
	6152.00	8.57	142.15	6068.87	568.01	-564.29	566.46	2.01	431101.42	554588.84	N 32 11 6.61	W 104 17 25.80	134.89	799.56
	6246.00	6.63	142.94	6162.04	575.61	-574.15	574.03	2.07	431091.56	554596.41	N 32 11 6.51	W 104 17 25.71	135.01	811.89
	6341.00	6.08	141.35	6256.45	582.08	-582.46	580.48	0.61	431083.26	554602.85	N 32 11 6.43	W 104 17 25.63	135.10	822.32
	6435.00	5.51	137.18	6349.97	588.28	-589.66	586.65	0.75	431076.06	554609.03	N 32 11 6.35	W 104 17 25.56	135.15	831.78
	6529.00	4.43	142.81	6443.62	593.56	-595.86	591.91	1.26	431069.86	554614.29	N 32 11 6.29	W 104 17 25.50	135.19	839.89
	6622.00	4.29	148.60	6536.35	597.55	-601.69	595.90	0.50	431064.03	554618.27	N 32 11 6.24	W 104 17 25.45	135.28	846.83
	6716.00	5.83	146.22	6629.98	602.06	-608.66	600.38	1.65	431057.06	554622.76	N 32 11 6.17	W 104 17 25.40	135.39	854.94
	6810.00	6.10	149.04	6723.47	607.31	-616.91	605.61	0.42	431048.81	554627.98	N 32 11 6.08	W 104 17 25.34	135.53	864.49
	6905.00	5.93	133.84	6817.96	613.46	-624.64	611.74	1.68	431041.08	554634.12	N 32 11 6.01	W 104 17 25.27	135.60	874.30
	6999.00	6.66	127.67	6911.39	621.30	-631.33	619.56	1.06	431034.39	554641.93	N 32 11 5.94	W 104 17 25.18	135.54	884.55
	7093.00	5.98	127.04	7004.82	629.54	-637.61	627.79	0.73	431028.11	554650.16	N 32 11 5.88	W 104 17 25.08	135.44	894.80
	7187.00	5.03	137.41	7098.39	636.25	-643.60	634.48	1.46	431022.12	554656.85	N 32 11 5.82	W 104 17 25.01	135.41	903.76
	7282.00	4.30	131.84	7193.07	641.74	-649.04	639.95	0.90	431016.68	554662.33	N 32 11 5.77	W 104 17 24.94	135.40	911.48
	7376.00	4.18	121.65	7286.81	647.30	-653.19	645.50	0.81	431012.53	554667.87	N 32 11 5.73	W 104 17 24.88	135.34	918.32
	7471.00	3.46	121.81	7381.60	652.69	-656.51	650.88	0.76	431009.21	554673.25	N 32 11 5.69	W 104 17 24.82	135.25	924.48
	7566.00	5.05	135.43	7476.34	658.07	-661.00	656.25	1.97	431004.72	554678.62	N 32 11 5.65	W 104 17 24.75	135.21	931.45
	7660.00	6.43	141.06	7569.87	664.30	-668.05	662.46	1.58	430997.68	554684.83	N 32 11 5.58	W 104 17 24.68	135.24	940.82
	7755.00	5.30	142.33	7664.37	670.35	-675.66	668.49	1.20	430990.07	554690.86	N 32 11 5.50	W 104 17 24.61	135.31	950.47
	7850.00	4.65	147.94	7759.01	675.09	-682.39	673.21	0.85	430983.33	554695.58	N 32 11 5.44	W 104 17 24.56	135.39	958.58
	7943.00	3.60	150.89	7851.77	678.53	-688.14	676.63	1.15	430977.58	554699.00	N 32 11 5.38	W 104 17 24.52	135.48	965.08
	8037.00	2.77	155.35	7945.62	680.93	-692.78	679.02	0.92	430972.94	554701.38	N 32 11 5.33	W 104 17 24.49	135.57	970.06
	8117.00	2.40	167.34	8025.54	682.11	-696.17	680.19	0.82	430969.55	554702.56	N 32 11 5.30	W 104 17 24.47	135.67	973.30
First SLB Survey	8181.00	2.93	141.44	8089.47	683.43	-698.76	681.50	2.03	430966.96	554703.87	N 32 11 5.27	W 104 17 24.46	135.72	976.07
KOP [1447' FSL, 247' FWL]]	*8186.00*	*3.23*	*132.59*	*8094.47*	*683.61*	*-698.96*	*681.69*	*11.20*	*430966.77*	*554704.05*	*N 32 11 5.27*	*W 104 17 24.46*	*135.72*	*976.34*
	8213.00	5.58	106.70	8121.39	685.43	-699.85	683.50	11.20	430965.88	554705.87	N 32 11 5.26	W 104 17 24.44	135.68	978.25
	8244.00	9.79	93.93	8152.10	689.51	-700.46	687.58	14.57	430965.26	554709.95	N 32 11 5.26	W 104 17 24.39	135.53	981.54
	8276.00	13.88	91.02	8183.42	696.06	-700.72	694.13	12.91	430965.01	554716.50	N 32 11 5.25	W 104 17 24.31	135.27	986.32

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 ° ' ")	Closure Azimuth (°)	Closure (ft)
	8307.00	18.64	88.72	8213.17	704.74	-700.67	702.81	15.49	430965.05	554725.17	N 32 11 5.26	W 104 17 24.21	134.91	992.41
	8338.00	23.33	89.43	8242.11	715.84	-700.50	713.91	15.15	430965.22	554736.27	N 32 11 5.26	W 104 17 24.08	134.46	1000.18
	8370.00	26.39	93.25	8271.14	729.28	-700.84	727.35	10.79	430964.88	554749.71	N 32 11 5.25	W 104 17 23.93	133.94	1010.06
	8417.00	30.28	97.49	8312.50	751.47	-702.98	749.54	9.31	430962.75	554771.90	N 32 11 5.23	W 104 17 23.67	133.16	1027.61
	8465.00	33.89	96.89	8353.17	776.77	-706.16	774.83	7.55	430959.56	554797.19	N 32 11 5.20	W 104 17 23.37	132.35	1048.34
	8512.00	39.25	94.59	8390.90	804.63	-708.93	802.68	11.77	430956.80	554825.03	N 32 11 5.17	W 104 17 23.05	131.45	1070.92
	8560.00	44.58	91.78	8426.61	836.64	-710.67	834.68	11.77	430955.06	554857.03	N 32 11 5.16	W 104 17 22.68	130.41	1096.24
	8607.00	49.30	90.72	8458.69	870.96	-711.40	869.00	10.18	430954.32	554891.35	N 32 11 5.15	W 104 17 22.28	129.31	1123.06
	8654.00	54.44	89.25	8487.70	907.92	-711.38	905.96	11.21	430954.35	554928.30	N 32 11 5.15	W 104 17 21.85	128.14	1151.87
Section Line 28-27 Crossing	*8681.30*	*58.26*	*89.22*	*8502.83*	*930.63*	*-711.07*	*928.68*	*14.00*	*430954.65*	*554951.02*	*N 32 11 5.15*	*W 104 17 21.58*	*127.44*	*1169.64*
	8701.00	61.02	89.20	8512.78	947.63	-710.84	945.67	14.00	430954.89	554968.01	N 32 11 5.15	W 104 17 21.39	126.93	1183.04
	8749.00	67.45	89.53	8533.64	990.83	-710.36	988.87	13.41	430955.36	555011.21	N 32 11 5.16	W 104 17 20.88	125.69	1217.57
	8796.00	74.24	89.24	8549.05	1035.20	-709.88	1033.24	14.46	430955.84	555055.58	N 32 11 5.16	W 104 17 20.37	124.49	1253.61
	8844.00	80.32	86.27	8559.62	1081.95	-708.04	1080.00	14.03	430957.69	555102.33	N 32 11 5.18	W 104 17 19.82	123.25	1291.40
	8859.00	81.81	84.93	8561.95	1096.72	-706.90	1094.77	13.29	430958.83	555117.10	N 32 11 5.19	W 104 17 19.65	122.85	1303.17
	8938.00	87.14	81.42	8569.55	1174.73	-697.55	1172.81	8.07	430968.18	555195.13	N 32 11 5.28	W 104 17 18.74	120.74	1364.57
	8990.00	86.96	81.04	8572.23	1226.03	-689.63	1224.13	0.81	430976.09	555246.45	N 32 11 5.36	W 104 17 18.14	119.40	1405.02
First Take Point [1461' FSL, 340' FWL]	*9035.00*	*86.84*	*81.65*	*8574.66*	*1270.43*	*-682.87*	*1268.55*	*1.39*	*430982.85*	*555290.87*	*N 32 11 5.43*	*W 104 17 17.63*	*118.29*	*1440.67*
	9084.00	86.70	82.32	8577.43	1318.86	-676.05	1317.00	1.39	430989.67	555339.31	N 32 11 5.50	W 104 17 17.06	117.17	1480.38
	9178.00	89.23	85.33	8580.76	1412.21	-665.95	1410.38	4.18	430999.77	555432.68	N 32 11 5.60	W 104 17 15.98	115.28	1559.70
	9270.00	88.70	86.70	8582.43	1503.95	-659.56	1502.14	1.60	431006.16	555524.43	N 32 11 5.66	W 104 17 14.91	113.71	1640.56
	9365.00	88.70	87.11	8584.58	1598.77	-654.43	1596.97	0.43	431011.29	555619.26	N 32 11 5.71	W 104 17 13.81	112.28	1725.86
	9460.00	88.69	87.64	8586.74	1693.64	-650.08	1691.85	0.56	431015.64	555714.12	N 32 11 5.75	W 104 17 12.70	111.02	1812.44
	9543.00	86.72	88.55	8590.07	1776.51	-647.32	1774.73	2.61	431018.40	555797.00	N 32 11 5.78	W 104 17 11.74	110.04	1889.10
	9638.00	86.32	90.76	8595.84	1871.32	-646.75	1869.55	2.36	431018.97	555891.81	N 32 11 5.78	W 104 17 10.63	109.08	1978.26
	9732.00	87.84	90.99	8600.62	1965.19	-648.18	1963.41	1.64	431017.54	555985.66	N 32 11 5.77	W 104 17 9.54	108.27	2067.64
	9826.00	89.12	91.13	8603.12	2059.15	-649.92	2057.36	1.37	431015.80	556079.60	N 32 11 5.75	W 104 17 8.45	107.53	2157.58
	9921.00	89.17	91.22	8604.53	2154.12	-651.87	2152.33	0.11	431013.85	556174.56	N 32 11 5.73	W 104 17 7.34	106.85	2248.88
	10015.00	88.94	91.13	8606.09	2248.09	-653.80	2246.30	0.26	431011.92	556268.52	N 32 11 5.71	W 104 17 6.25	106.23	2339.51
	10110.00	90.49	91.51	8606.56	2343.07	-655.99	2341.27	1.68	431009.73	556363.48	N 32 11 5.69	W 104 17 5.15	105.65	2431.43
	10204.00	90.80	91.13	8605.50	2437.04	-658.15	2435.24	0.52	431007.57	556457.44	N 32 11 5.67	W 104 17 4.05	105.12	2522.61
	10299.00	90.83	90.29	8604.15	2532.03	-659.33	2530.22	0.88	431006.39	556552.42	N 32 11 5.66	W 104 17 2.95	104.61	2614.71
	10394.00	89.24	92.17	8604.09	2627.00	-661.37	2625.19	2.59	431004.35	556647.38	N 32 11 5.64	W 104 17 1.84	104.14	2707.22
	10488.00	89.28	91.62	8605.30	2720.95	-664.48	2719.13	0.59	431001.25	556741.31	N 32 11 5.60	W 104 17 0.75	103.73	2799.14
	10582.00	89.38	91.05	8606.40	2814.93	-666.67	2813.10	0.62	430999.06	556835.27	N 32 11 5.58	W 104 16 59.66	103.33	2891.02
	10674.00	89.43	90.73	8607.36	2906.91	-668.09	2905.08	0.35	430997.63	556927.24	N 32 11 5.57	W 104 16 58.59	102.95	2980.92
	10769.00	89.74	90.78	8608.05	3001.91	-669.35	3000.07	0.33	430996.38	557022.22	N 32 11 5.56	W 104 16 57.48	102.58	3073.83
	10864.00	89.85	90.88	8608.39	3096.90	-670.72	3095.06	0.16	430995.00	557117.20	N 32 11 5.54	W 104 16 56.38	102.23	3166.90
	10958.00	89.70	91.38	8608.76	3190.88	-672.58	3189.04	0.56	430993.15	557211.18	N 32 11 5.52	W 104 16 55.28	101.91	3259.19
	11053.00	89.59	91.48	8609.34	3285.86	-674.95	3284.01	0.16	430990.78	557306.14	N 32 11 5.50	W 104 16 54.18	101.61	3352.65
	11148.00	89.55	91.84	8610.06	3380.82	-677.70	3378.97	0.38	430988.02	557401.08	N 32 11 5.47	W 104 16 53.07	101.34	3446.26
	11242.00	89.68	92.17	8610.69	3474.77	-680.99	3472.91	0.38	430984.74	557495.02	N 32 11 5.44	W 104 16 51.98	101.09	3539.04
	11337.00	88.83	90.86	8611.92	3569.73	-683.50	3567.86	1.64	430982.22	557589.96	N 32 11 5.41	W 104 16 50.87	100.84	3632.74
	11431.00	88.42	90.22	8614.18	3663.71	-684.39	3661.83	0.81	430981.34	557683.92	N 32 11 5.40	W 104 16 49.78	100.59	3725.24
	11525.00	88.91	90.29	8616.37	3757.68	-684.80	3755.80	0.53	430980.92	557777.89	N 32 11 5.40	W 104 16 48.69	100.33	3817.73
	11620.00	89.20	90.14	8617.94	3852.67	-685.16	3850.79	0.34	430980.56	557872.86	N 32 11 5.39	W 104 16 47.58	100.09	3911.27
	11714.00	89.55	90.20	8618.96	3946.66	-685.44	3944.79	0.38	430980.28	557966.85	N 32 11 5.39	W 104 16 46.49	99.86	4003.89
	11808.00	88.66	90.66	8620.43	4040.65	-686.14	4038.77	1.07	430979.58	558060.83	N 32 11 5.38	W 104 16 45.39	99.64	4096.64
	11902.00	88.78	90.74	8622.53	4134.62	-687.29	4132.74	0.15	430978.43	558154.79	N 32 11 5.37	W 104 16 44.30	99.44	4189.50
	11997.00	88.46	90.04	8624.82	4229.59	-687.94	4227.71	0.81	430977.79	558249.75	N 32 11 5.37	W 104 16 43.20	99.24	4283.31
	12091.00	88.26	90.09	8627.51	4323.55	-688.05	4321.67	0.22	430977.68	558343.70	N 32 11 5.36	W 104 16 42.10	99.05	4376.10
	12186.00	88.24	89.89	8630.41	4418.51	-688.03	4416.63	0.21	430977.70	558438.65	N 32 11 5.36	W 104 16 41.00	98.85	4469.90
	12280.00	88.76	89.70	8632.87	4512.47	-687.69	4510.59	0.59	430978.03	558532.60	N 32 11 5.37	W 104 16 39.90	98.67	4562.71
	12374.00	89.18	91.07	8634.56	4606.45	-688.32	4604.57	1.52	430977.40	558626.58	N 32 11 5.36	W 104 16 38.81	98.50	4655.74
	12469.00	89.78	91.68	8635.42	4701.43	-690.60	4699.54	0.90	430975.12	558721.53	N 32 11 5.34	W 104 16 37.71	98.36	4750.01
	12564.00	90.16	91.39	8635.47	4796.40	-693.15	4794.51	0.50	430972.58	558816.49	N 32 11 5.31	W 104 16 36.60	98.23	4844.35
	12659.00	89.70	90.98	8635.59	4891.38	-695.11	4889.49	0.65	430970.61	558911.46	N 32 11 5.29	W 104 16 35.50	98.09	4938.65
	12752.00	90.22	90.67	8635.65	4984.38	-696.45	4982.48	0.65	430969.27	559004.44	N 32 11 5.28	W 104 16 34.41	97.96	5030.92
	12847.00	90.39	89.75	8635.15	5079.37	-696.80	5077.47	0.98	430968.92	559099.43	N 32 11 5.27	W 104 16 33.31	97.81	5125.06

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 ° ' ")	Closure Azimuth (°)	Closure (ft)
	12941.00	89.13	89.85	8635.54	5173.37	-696.47	5171.47	1.34	430969.25	559193.42	N 32 11 5.28	W 104 16 32.22	97.67	5218.16
	13036.00	89.13	89.53	8636.98	5268.36	-695.96	5266.46	0.34	430969.77	559288.40	N 32 11 5.28	W 104 16 31.11	97.53	5312.24
	13130.00	87.43	89.66	8639.80	5362.31	-695.29	5360.41	1.81	430970.43	559382.34	N 32 11 5.29	W 104 16 30.02	97.39	5405.31
	13224.00	87.13	89.45	8644.27	5456.19	-694.56	5454.30	0.39	430971.16	559476.22	N 32 11 5.29	W 104 16 28.92	97.26	5498.35
	13319.00	87.51	89.51	8648.71	5551.08	-693.70	5549.19	0.40	430972.02	559571.11	N 32 11 5.30	W 104 16 27.82	97.13	5592.38
	13414.00	87.75	89.03	8652.64	5645.99	-692.49	5644.10	0.56	430973.23	559666.01	N 32 11 5.31	W 104 16 26.72	96.99	5686.43
	13509.00	87.60	89.29	8656.49	5740.90	-691.10	5739.01	0.32	430974.62	559760.91	N 32 11 5.33	W 104 16 25.61	96.87	5780.48
	13603.00	87.10	90.32	8660.84	5834.79	-690.78	5832.91	1.22	430974.94	559854.80	N 32 11 5.33	W 104 16 24.52	96.75	5873.67
	13698.00	86.91	89.92	8665.80	5929.66	-690.98	5927.78	0.47	430974.74	559949.66	N 32 11 5.33	W 104 16 23.41	96.65	5967.92
	13793.00	87.28	89.02	8670.61	6024.53	-690.10	6022.65	1.02	430975.62	560044.53	N 32 11 5.33	W 104 16 22.31	96.54	6062.06
	13888.00	87.70	91.54	8674.78	6119.43	-690.57	6117.55	2.69	430975.16	560139.42	N 32 11 5.33	W 104 16 21.21	96.44	6156.41
	13982.00	88.30	91.34	8678.06	6213.35	-692.93	6211.47	0.67	430972.80	560233.32	N 32 11 5.31	W 104 16 20.11	96.37	6250.00
Section Line 27-26 Crossing [1311' FSL]	*14005.70*	*88.29*	*91.33*	*8678.76*	*6237.04*	*-693.48*	*6235.15*	*0.07*	*430972.24*	*560257.00*	*N 32 11 5.30*	*W 104 16 19.84*	*96.35*	*6273.60*
	14077.00	88.27	91.28	8680.90	6308.29	-695.10	6306.40	0.07	430970.62	560328.24	N 32 11 5.28	W 104 16 19.01	96.29	6344.59
	14172.00	88.70	91.43	8683.41	6403.24	-697.35	6401.34	0.48	430968.38	560423.18	N 32 11 5.26	W 104 16 17.90	96.22	6439.21
	14267.00	89.80	91.08	8684.65	6498.21	-699.43	6496.31	1.22	430966.30	560518.13	N 32 11 5.24	W 104 16 16.80	96.15	6533.85
	14361.00	90.05	91.47	8684.78	6592.19	-701.52	6590.28	0.49	430964.21	560612.10	N 32 11 5.22	W 104 16 15.71	96.08	6627.51
	14457.00	88.00	90.58	8686.41	6688.16	-703.23	6686.25	2.33	430962.49	560708.06	N 32 11 5.20	W 104 16 14.59	96.00	6723.13
	14551.00	88.45	91.56	8689.32	6782.10	-704.99	6780.18	1.15	430960.74	560801.99	N 32 11 5.18	W 104 16 13.50	95.94	6816.74
	14645.00	88.03	90.32	8692.21	6876.05	-706.53	6874.13	1.39	430959.20	560895.92	N 32 11 5.17	W 104 16 12.40	95.87	6910.34
	14739.00	86.57	89.13	8696.64	6969.94	-706.08	6968.02	2.00	430959.65	560989.80	N 32 11 5.17	W 104 16 11.31	95.79	7003.70
	14833.00	86.48	88.72	8702.34	7063.74	-704.32	7061.83	0.45	430961.41	561083.60	N 32 11 5.19	W 104 16 10.22	95.70	7096.86
	14928.00	88.43	89.37	8706.55	7158.62	-702.74	7156.71	2.16	430962.99	561178.48	N 32 11 5.20	W 104 16 9.12	95.61	7191.13
	15022.00	86.64	89.91	8710.60	7252.53	-702.15	7250.62	1.99	430963.58	561272.38	N 32 11 5.21	W 104 16 8.02	95.53	7284.54
	15118.00	86.63	89.97	8716.23	7348.36	-702.05	7346.46	0.06	430963.68	561368.20	N 32 11 5.21	W 104 16 6.91	95.46	7379.92
	15213.00	86.18	89.46	8722.19	7443.17	-701.58	7441.27	0.72	430964.15	561463.01	N 32 11 5.21	W 104 16 5.80	95.39	7474.27
	15307.00	86.35	90.11	8728.31	7536.97	-701.22	7535.07	0.71	430964.50	561556.80	N 32 11 5.22	W 104 16 4.71	95.32	7567.62
	15401.00	86.87	89.81	8733.87	7630.81	-701.16	7628.90	0.64	430964.57	561650.62	N 32 11 5.22	W 104 16 3.62	95.25	7661.05
	15496.00	88.15	90.80	8738.00	7725.71	-701.66	7723.81	1.70	430964.06	561745.52	N 32 11 5.21	W 104 16 2.52	95.19	7755.61
	15591.00	88.55	90.37	8740.73	7820.67	-702.63	7818.76	0.62	430963.09	561840.47	N 32 11 5.20	W 104 16 1.41	95.14	7850.27
	15686.00	89.73	90.33	8742.16	7915.66	-703.21	7913.75	1.24	430962.51	561935.44	N 32 11 5.19	W 104 16 0.31	95.08	7944.93
	15780.00	90.38	90.40	8742.07	8009.66	-703.81	8007.75	0.70	430961.91	562029.43	N 32 11 5.19	W 104 15 59.21	95.02	8038.62
	15875.00	91.19	90.98	8740.77	8104.64	-704.96	8102.73	1.05	430960.77	562124.41	N 32 11 5.18	W 104 15 58.11	94.97	8133.34
	15969.00	92.34	91.10	8737.87	8198.58	-706.66	8196.67	1.23	430959.06	562218.34	N 32 11 5.16	W 104 15 57.02	94.93	8227.07
	16064.00	88.37	90.41	8737.28	8293.56	-707.91	8291.64	4.24	430957.81	562313.30	N 32 11 5.14	W 104 15 55.91	94.88	8321.80
	16158.00	88.95	90.56	8739.48	8387.53	-708.71	8385.61	0.64	430957.02	562407.26	N 32 11 5.14	W 104 15 54.82	94.83	8415.50
	16253.00	87.12	92.17	8742.74	8482.45	-710.97	8480.52	2.56	430954.76	562502.16	N 32 11 5.11	W 104 15 53.71	94.79	8510.27
	16348.00	87.80	91.41	8746.95	8577.31	-713.93	8575.38	1.07	430951.79	562597.01	N 32 11 5.08	W 104 15 52.61	94.76	8605.04
	16442.00	86.97	90.92	8751.24	8671.20	-715.84	8669.26	1.03	430949.88	562690.88	N 32 11 5.06	W 104 15 51.52	94.72	8698.76
	16536.00	87.28	91.13	8755.95	8765.07	-717.52	8763.12	0.40	430948.20	562784.74	N 32 11 5.05	W 104 15 50.42	94.68	8792.45
	16631.00	87.16	90.80	8760.56	8859.95	-719.12	8858.00	0.37	430946.61	562879.61	N 32 11 5.03	W 104 15 49.32	94.64	8887.14
	16725.00	87.25	90.15	8765.14	8953.84	-719.90	8951.88	0.70	430945.83	562973.48	N 32 11 5.02	W 104 15 48.23	94.60	8980.78
	16819.00	88.12	89.99	8768.94	9047.76	-720.01	9045.81	0.94	430945.71	563067.40	N 32 11 5.02	W 104 15 47.13	94.55	9074.42
	16913.00	88.41	89.45	8771.79	9141.71	-719.56	9139.76	0.65	430946.17	563161.34	N 32 11 5.02	W 104 15 46.04	94.50	9168.04
	17008.00	88.17	89.26	8774.62	9236.66	-718.49	9234.71	0.32	430947.24	563256.29	N 32 11 5.03	W 104 15 44.94	94.45	9262.62
	17102.00	88.36	88.54	8777.47	9330.59	-716.68	9328.65	0.79	430949.04	563350.22	N 32 11 5.05	W 104 15 43.84	94.39	9356.14
	17196.00	89.62	88.77	8779.12	9424.54	-714.48	9422.61	1.36	430951.25	563444.17	N 32 11 5.07	W 104 15 42.75	94.34	9449.66
	17290.00	90.51	89.05	8779.02	9518.52	-712.69	9516.59	0.99	430953.04	563538.14	N 32 11 5.09	W 104 15 41.66	94.28	9543.24
	17384.00	89.70	89.46	8778.85	9612.51	-711.47	9610.58	0.97	430954.26	563632.12	N 32 11 5.10	W 104 15 40.56	94.23	9636.88
	17479.00	89.65	89.61	8779.38	9707.50	-710.70	9705.58	0.17	430955.03	563727.11	N 32 11 5.11	W 104 15 39.46	94.19	9731.56
	17573.00	89.86	89.60	8779.79	9801.50	-710.05	9799.57	0.22	430955.68	563821.10	N 32 11 5.11	W 104 15 38.36	94.14	9825.26
	17668.00	89.94	89.15	8779.95	9896.49	-709.01	9894.57	0.48	430956.71	563916.08	N 32 11 5.12	W 104 15 37.26	94.10	9919.94
	17762.00	89.65	89.46	8780.29	9990.47	-707.87	9988.56	0.45	430957.86	564010.06	N 32 11 5.13	W 104 15 36.17	94.05	10013.61
	17856.00	88.70	90.88	8781.64	10084.46	-708.15	10082.55	1.82	430957.58	564104.04	N 32 11 5.13	W 104 15 35.07	94.02	10107.38
	17951.00	86.72	90.58	8785.44	10179.38	-709.36	10177.46	2.11	430956.37	564198.94	N 32 11 5.12	W 104 15 33.97	93.99	10202.15
	18046.00	87.68	90.41	8790.08	10274.26	-710.18	10272.34	1.03	430955.55	564293.82	N 32 11 5.11	W 104 15 32.86	93.95	10296.86
	18140.00	88.31	89.70	8793.37	10368.20	-710.27	10366.28	1.01	430955.46	564387.75	N 32 11 5.11	W 104 15 31.77	93.92	10390.59
	18235.00	88.90	89.05	8795.68	10463.16	-709.23	10461.25	0.92	430956.49	564482.71	N 32 11 5.12	W 104 15 30.67	93.88	10485.26
	18330.00	89.28	88.83	8797.19	10558.13	-707.48	10556.22	0.46	430958.25	564577.67	N 32 11 5.13	W 104 15 29.56	93.83	10579.90
	18424.00	89.48	89.60	8798.21	10652.11	-706.19	10650.20	0.85	430959.54	564671.65	N 32 11 5.15	W 104 15 28.47	93.79	10673.59

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 ° ' ")	Closure Azimuth (°)	Closure (ft)
	18518.00	87.54	89.28	8800.65	10746.07	-705.27	10744.16	2.09	430960.46	564765.60	N 32 11 5.15	W 104 15 27.37	93.76	10767.29
	18612.00	87.57	88.59	8804.66	10839.96	-703.52	10838.06	0.73	430962.20	564859.49	N 32 11 5.17	W 104 15 26.28	93.71	10860.87
	18706.00	88.10	90.65	8808.21	10933.88	-702.90	10931.99	2.26	430962.82	564953.40	N 32 11 5.18	W 104 15 25.19	93.68	10954.56
	18801.00	89.00	90.36	8810.62	11028.85	-703.74	11026.95	1.00	430961.99	565048.36	N 32 11 5.17	W 104 15 24.08	93.65	11049.38
Final Survey	18877.00	89.44	90.30	8811.65	11104.84	-704.18	11102.94	0.58	430961.55	565124.34	N 32 11 5.16	W 104 15 23.20	93.63	11125.25
Last Take Point [1398' FSL, 375' FEL]	*18895.00*	*89.44*	*90.30*	*8811.83*	*11122.84*	*-704.27*	*11120.94*	*0.00*	*430961.46*	*565142.34*	*N 32 11 5.16*	*W 104 15 22.99*	*93.62*	*11143.22*
TD, PTB [1399' FSL, 330' FEL]	18940.00	89.44	90.30	8812.27	11167.84	-704.51	11165.94	0.00	430961.22	565187.33	N 32 11 5.16	W 104 15 22.47	93.61	11188.14

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	23.000	1/98.425	17.500	13.375	NAL_MWD_IFR1+MS-Depth Only	Crawford 27-26 Fee #30H / Final Surveys - Cimarex Crawford 27-26 Fee #30H MWD 0ft-18940ft
	1	23.000	23.000	Act Stns	17.500	13.375	NAL_MWD_IFR1+MS-Depth Only	Crawford 27-26 Fee #30H / Final Surveys - Cimarex Crawford 27-26 Fee #30H MWD 0ft-18940ft
	1	23.000	407.000	Act Stns	17.500	13.375	NAL_MWD_IFR1+MS	Crawford 27-26 Fee #30H / Final Surveys - Cimarex Crawford 27-26
	1	407.000	1780.000	Act Stns	12.250	9.625	NAL_MWD_IFR1+MS	Crawford 27-26 Fee #30H / Final Surveys - Cimarex Crawford 27-26
	1	1780.000	8997.000	Act Stns	8.750	7.000	NAL_MWD_IFR1+MS	Crawford 27-26 Fee #30H / Final Surveys - Cimarex Crawford 27-26
	1	8997.000	18940.000	Act Stns	8.500	7.000	NAL_MWD_IFR1+MS	Crawford 27-26 Fee #30H / Final Surveys - Cimarex Crawford 27-26

Schlumberger

Cimarex Energy

Final PvA

CIMAREX

Borehole:	Well:	Field:	Structure:
Crawford 27-26 Fee #30H	Crawford 27-26 Fee #30H	NM Eddy County (NAD 83)	Cimarex Crawford 27-26 Fee #30H

Gravity & Magnetic Parameters

Model:	HDGM 2020	Dip:	59.801°	Date:	30-Mar-2020
MagDec:	7.208°	FS:	47712.913nT	Gravity FS:	998.446mgn (9.80665 Based)

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

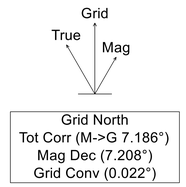
Lat:	N 32 11 12.19	Northing:	431665.66ftUS	Grid Conv:	0.0218°
Lon:	W 104 17 32.39	Easting:	554022.43ftUS	Scale Fact:	0.99990928

Miscellaneous

Slot:	New Slot	TVD Ref:	RKB(3364ft above MSL)
Plan:	Final Surveys - Cimarex Crawford 27-26 Fee #30H MWD 0ft-18940ft (Surcon Corrected)		

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL [2135' FSL, 915' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
First SLB Survey	8181.00	2.93	141.44	8089.47	683.43	-698.76	681.50	2.03
KOP [1447' FSL, 247' FWL]]	8186.00	3.23	132.59	8094.47	683.61	-698.96	681.69	11.20
Section Line 28-27 Crossing	8681.30	58.26	89.22	8502.83	930.63	-711.07	928.68	14.00
First Take Point [1461' FSL, 340' FWL]	9035.00	86.84	81.65	8574.66	1270.43	-682.87	1268.55	1.39
Section Line 27-26 Crossing [1311' FSL]	14005.70	88.29	91.33	8678.76	6237.04	-693.48	6235.15	0.07
Final Survey	18877.00	89.44	90.30	8811.65	11104.84	-704.18	11102.94	0.58
Last Take Point [1398' FSL, 375' FEL]	18895.00	89.44	90.30	8811.83	11122.84	-704.27	11120.94	0.00
TD, PTB [1399' FSL, 330' FEL]	18940.00	89.44	90.30	8812.27	11167.84	-704.51	11165.94	0.00



D E C **CONTROLLED**

Plan ref	Final Surveys - Cimarex Crawford 27-26 Fee #30H MWD 0ft-18940ft (Surcon Corrected)
Drawing ref	
Copy number	of 3
Date	17-Dec-2020

1	Client	
2	Client	
3	Office	
4	Office	

Copy number for