



Cimarex Red Tank 3 Federal Com #14H Rev0 RM 6June18 Proposal

Geodetic Report

(Non-Def Plan)



Report Date: June 06, 2018 - 08:59 AM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Red Tank 3 Federal Com #14H / Cimarex Red Tank 4 Federal #14H
Well: Cimarex Red Tank 3 Federal Com #14H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Red Tank 3 Federal Com #14H Rev0 RM 6June18
Survey Date: June 06, 2018
Tort / AHD / DDI / ERD Ratio: 106.781 ° / 5487.278 ft / 5.935 / 0.576
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 19' 38.34074", W 103° 40' 21.80726"
Location Grid N/E Y/X: N 483439.110 ftUS, E 745389.560 ftUS
CRS Grid Convergence Angle: 0.3533 °
Grid Scale Factor: 0.99995678
Version / Patch: 2.10.715.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 359.662 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3716.200 ft above MSL
Seabed / Ground Elevation: 3690.200 ft above MSL
Magnetic Declination: 6.861 °
Total Gravity Field Strength: 998.4418mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 48102.925 nT
Magnetic Dip Angle: 60.096 °
Declination Date: June 06, 2018
Magnetic Declination Model: HDGM 2018
North Reference: Grid North
Grid Convergence Used: 0.3533 °
Total Corr Mag North->Grid North: 6.5073 °
Local Coord Referenced To: Structure Reference Point

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 ° ' ")
SHL [330' FSL, 508' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	483439.11	745389.56	N 32 19 38.34 W 103 40 21.81	
	100.00	0.00	89.44	100.00	0.00	0.00	0.00	0.00	483439.11	745389.56	N 32 19 38.34 W 103 40 21.81	
	200.00	0.00	89.44	200.00	0.00	0.00	0.00	0.00	483439.11	745389.56	N 32 19 38.34 W 103 40 21.81	
	300.00	0.00	89.44	300.00	0.00	0.00	0.00	0.00	483439.11	745389.56	N 32 19 38.34 W 103 40 21.81	
	400.00	0.00	89.44	400.00	0.00	0.00	0.00	0.00	483439.11	745389.56	N 32 19 38.34 W 103 40 21.81	
	500.00	0.00	89.44	500.00	0.00	0.00	0.00	0.00	483439.11	745389.56	N 32 19 38.34 W 103 40 21.81	
	600.00	0.00	89.44	600.00	0.00	0.00	0.00	0.00	483439.11	745389.56	N 32 19 38.34 W 103 40 21.81	
	700.00	0.00	89.44	700.00	0.00	0.00	0.00	0.00	483439.11	745389.56	N 32 19 38.34 W 103 40 21.81	
	800.00	0.00	89.44	800.00	0.00	0.00	0.00	0.00	483439.11	745389.56	N 32 19 38.34 W 103 40 21.81	
	900.00	0.00	89.44	900.00	0.00	0.00	0.00	0.00	483439.11	745389.56	N 32 19 38.34 W 103 40 21.81	
Rustler	980.00	0.00	89.44	980.00	0.00	0.00	0.00	0.00	483439.11	745389.56	N 32 19 38.34 W 103 40 21.81	
	1000.00	0.00	89.44	1000.00	0.00	0.00	0.00	0.00	483439.11	745389.56	N 32 19 38.34 W 103 40 21.81	
	1100.00	0.00	89.44	1100.00	0.00	0.00	0.00	0.00	483439.11	745389.56	N 32 19 38.34 W 103 40 21.81	
	1200.00	0.00	89.44	1200.00	0.00	0.00	0.00	0.00	483439.11	745389.56	N 32 19 38.34 W 103 40 21.81	
	1300.00	0.00	89.44	1300.00	0.00	0.00	0.00	0.00	483439.11	745389.56	N 32 19 38.34 W 103 40 21.81	
	1400.00	0.00	89.44	1400.00	0.00	0.00	0.00	0.00	483439.11	745389.56	N 32 19 38.34 W 103 40 21.81	
Nudge 2°/100' DLS	1500.00	0.00	89.44	1500.00	0.00	0.00	0.00	0.00	483439.11	745389.56	N 32 19 38.34 W 103 40 21.81	
	1600.00	2.00	89.44	1599.98	0.01	0.02	1.75	2.00	483439.13	745391.30	N 32 19 38.34 W 103 40 21.79	
	1700.00	4.00	89.44	1699.84	0.03	0.07	6.98	2.00	483439.18	745396.54	N 32 19 38.34 W 103 40 21.73	
	1800.00	6.00	89.44	1799.45	0.06	0.15	15.69	2.00	483439.26	745405.25	N 32 19 38.34 W 103 40 21.62	
	1900.00	8.00	89.44	1898.70	0.11	0.27	27.88	2.00	483439.38	745417.44	N 32 19 38.34 W 103 40 21.48	
Hold Nudge	1919.53	8.39	89.44	1918.03	0.12	0.30	30.66	2.00	483439.41	745420.22	N 32 19 38.34 W 103 40 21.45	
	2000.00	8.39	89.44	1997.64	0.16	0.41	42.40	0.00	483439.52	745431.96	N 32 19 38.34 W 103 40 21.31	
	2100.00	8.39	89.44	2096.57	0.22	0.56	57.00	0.00	483439.67	745446.55	N 32 19 38.34 W 103 40 21.14	
	2200.00	8.39	89.44	2195.50	0.28	0.70	71.59	0.00	483439.81	745461.14	N 32 19 38.34 W 103 40 20.97	

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 ° ' ")
	2300.00	8.39	89.44	2294.43	0.33	0.84	86.18	0.00	483439.95	745475.73	N 32 19 38.34	W 103 40 20.80
	2400.00	8.39	89.44	2393.36	0.39	0.98	100.77	0.00	483440.09	745490.33	N 32 19 38.34	W 103 40 20.63
	2500.00	8.39	89.44	2492.29	0.45	1.13	115.36	0.00	483440.24	745504.92	N 32 19 38.34	W 103 40 20.46
	2600.00	8.39	89.44	2591.22	0.50	1.27	129.95	0.00	483440.38	745519.51	N 32 19 38.35	W 103 40 20.29
	2700.00	8.39	89.44	2690.15	0.56	1.41	144.54	0.00	483440.52	745534.10	N 32 19 38.35	W 103 40 20.12
	2800.00	8.39	89.44	2789.08	0.62	1.56	159.14	0.00	483440.67	745548.69	N 32 19 38.35	W 103 40 19.95
	2900.00	8.39	89.44	2888.01	0.67	1.70	173.73	0.00	483440.81	745563.28	N 32 19 38.35	W 103 40 19.78
	3000.00	8.39	89.44	2986.94	0.73	1.84	188.32	0.00	483440.95	745577.87	N 32 19 38.35	W 103 40 19.61
	3100.00	8.39	89.44	3085.87	0.79	1.98	202.91	0.00	483441.09	745592.46	N 32 19 38.35	W 103 40 19.44
	3200.00	8.39	89.44	3184.80	0.84	2.13	217.50	0.00	483441.24	745607.05	N 32 19 38.35	W 103 40 19.27
	3300.00	8.39	89.44	3283.73	0.90	2.27	232.09	0.00	483441.38	745621.64	N 32 19 38.35	W 103 40 19.10
	3400.00	8.39	89.44	3382.66	0.96	2.41	246.68	0.00	483441.52	745636.23	N 32 19 38.35	W 103 40 18.93
Castille	3437.75	8.39	89.44	3420.00	0.98	2.46	252.19	0.00	483441.57	745641.74	N 32 19 38.35	W 103 40 18.87
	3500.00	8.39	89.44	3481.59	1.01	2.55	261.27	0.00	483441.66	745650.82	N 32 19 38.35	W 103 40 18.76
	3600.00	8.39	89.44	3580.51	1.07	2.70	275.87	0.00	483441.81	745665.41	N 32 19 38.35	W 103 40 18.59
	3700.00	8.39	89.44	3679.44	1.13	2.84	290.46	0.00	483441.95	745680.00	N 32 19 38.35	W 103 40 18.42
	3800.00	8.39	89.44	3778.37	1.18	2.98	305.05	0.00	483442.09	745694.60	N 32 19 38.35	W 103 40 18.25
	3900.00	8.39	89.44	3877.30	1.24	3.12	319.64	0.00	483442.23	745709.19	N 32 19 38.35	W 103 40 18.08
	4000.00	8.39	89.44	3976.23	1.30	3.27	334.23	0.00	483442.38	745723.78	N 32 19 38.35	W 103 40 17.91
	4100.00	8.39	89.44	4075.16	1.35	3.41	348.82	0.00	483442.52	745738.37	N 32 19 38.35	W 103 40 17.74
	4200.00	8.39	89.44	4174.09	1.41	3.55	363.41	0.00	483442.66	745752.96	N 32 19 38.35	W 103 40 17.57
	4300.00	8.39	89.44	4273.02	1.46	3.69	378.01	0.00	483442.80	745767.55	N 32 19 38.35	W 103 40 17.40
	4400.00	8.39	89.44	4371.95	1.52	3.84	392.60	0.00	483442.95	745782.14	N 32 19 38.35	W 103 40 17.23
	4500.00	8.39	89.44	4470.88	1.58	3.98	407.19	0.00	483443.09	745796.73	N 32 19 38.36	W 103 40 17.06
	4600.00	8.39	89.44	4569.81	1.63	4.12	421.78	0.00	483443.23	745811.32	N 32 19 38.36	W 103 40 16.89
Lamar	4660.84	8.39	89.44	4630.00	1.67	4.21	430.66	0.00	483443.32	745820.20	N 32 19 38.36	W 103 40 16.79
	4700.00	8.39	89.44	4668.74	1.69	4.27	436.37	0.00	483443.37	745825.91	N 32 19 38.36	W 103 40 16.72
Bell Canyon	4701.27	8.39	89.44	4670.00	1.69	4.27	436.56	0.00	483443.38	745826.10	N 32 19 38.36	W 103 40 16.72
	4800.00	8.39	89.44	4767.67	1.75	4.41	450.96	0.00	483443.52	745840.50	N 32 19 38.36	W 103 40 16.55
	4900.00	8.39	89.44	4866.60	1.80	4.55	465.55	0.00	483443.66	745855.09	N 32 19 38.36	W 103 40 16.38
	5000.00	8.39	89.44	4965.53	1.86	4.69	480.15	0.00	483443.80	745869.68	N 32 19 38.36	W 103 40 16.21
	5100.00	8.39	89.44	5064.46	1.92	4.84	494.74	0.00	483443.95	745884.27	N 32 19 38.36	W 103 40 16.04
	5200.00	8.39	89.44	5163.39	1.97	4.98	509.33	0.00	483444.09	745898.87	N 32 19 38.36	W 103 40 15.87
	5300.00	8.39	89.44	5262.32	2.03	5.12	523.92	0.00	483444.23	745913.46	N 32 19 38.36	W 103 40 15.70
	5400.00	8.39	89.44	5361.25	2.09	5.26	538.51	0.00	483444.37	745928.05	N 32 19 38.36	W 103 40 15.53
	5500.00	8.39	89.44	5460.18	2.14	5.41	553.10	0.00	483444.52	745942.64	N 32 19 38.36	W 103 40 15.36
	5600.00	8.39	89.44	5559.11	2.20	5.55	567.69	0.00	483444.66	745957.23	N 32 19 38.36	W 103 40 15.19
	5700.00	8.39	89.44	5658.04	2.26	5.69	582.28	0.00	483444.80	745971.82	N 32 19 38.36	W 103 40 15.02
Cherry Canyon	5701.98	8.39	89.44	5660.00	2.26	5.69	582.57	0.00	483444.80	745972.11	N 32 19 38.36	W 103 40 15.02
	5800.00	8.39	89.44	5756.97	2.31	5.83	596.88	0.00	483444.94	745986.41	N 32 19 38.36	W 103 40 14.85
	5900.00	8.39	89.44	5855.90	2.37	5.98	611.47	0.00	483445.09	746001.00	N 32 19 38.36	W 103 40 14.68
	6000.00	8.39	89.44	5954.83	2.43	6.12	626.06	0.00	483445.23	746015.59	N 32 19 38.36	W 103 40 14.51
	6100.00	8.39	89.44	6053.76	2.48	6.26	640.65	0.00	483445.37	746030.18	N 32 19 38.36	W 103 40 14.34
	6200.00	8.39	89.44	6152.69	2.54	6.40	655.24	0.00	483445.51	746044.77	N 32 19 38.36	W 103 40 14.17
	6300.00	8.39	89.44	6251.61	2.60	6.55	669.83	0.00	483445.66	746059.36	N 32 19 38.36	W 103 40 14.00
	6400.00	8.39	89.44	6350.54	2.65	6.69	684.42	0.00	483445.80	746073.95	N 32 19 38.37	W 103 40 13.83
	6500.00	8.39	89.44	6449.47	2.71	6.83	699.02	0.00	483445.94	746088.54	N 32 19 38.37	W 103 40 13.66
	6600.00	8.39	89.44	6548.40	2.77	6.97	713.61	0.00	483446.08	746103.14	N 32 19 38.37	W 103 40 13.49
	6700.00	8.39	89.44	6647.33	2.82	7.12	728.20	0.00	483446.23	746117.73	N 32 19 38.37	W 103 40 13.32
	6800.00	8.39	89.44	6746.26	2.88	7.26	742.79	0.00	483446.37	746132.32	N 32 19 38.37	W 103 40 13.15
Brushy Canyon	6889.70	8.39	89.44	6835.00	2.93	7.39	755.88	0.00	483446.50	746145.40	N 32 19 38.37	W 103 40 13.00
	6900.00	8.39	89.44	6845.19	2.93	7.40	757.38	0.00	483446.51	746146.91	N 32 19 38.37	W 103 40 12.98
	7000.00	8.39	89.44	6944.12	2.99	7.55	771.97	0.00	483446.66	746161.50	N 32 19 38.37	W 103 40 12.81
	7100.00	8.39	89.44	7043.05	3.05	7.69	786.56	0.00	483446.80	746176.09	N 32 19 38.37	W 103 40 12.64
	7200.00	8.39	89.44	7141.98	3.10	7.83	801.16	0.00	483446.94	746190.68	N 32 19 38.37	W 103 40 12.47
	7300.00	8.39	89.44	7240.91	3.16	7.97	815.75	0.00	483447.08	746205.27	N 32 19 38.37	W 103 40 12.30
	7400.00	8.39	89.44	7339.84	3.22	8.12	830.34	0.00	483447.23	746219.86	N 32 19 38.37	W 103 40 12.13
	7500.00	8.39	89.44	7438.77	3.27	8.26	844.93	0.00	483447.37	746234.45	N 32 19 38.37	W 103 40 11.96
Drop to Vertical	7561.89	8.39	89.44	7500.00	3.31	8.35	853.96	0.00	483447.46	746243.48	N 32 19 38.37	W 103 40 11.85

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 ° ' ")
	7600.00	7.63	89.44	7537.74	3.33	8.40	859.27	2.00	483447.51	746248.79	N 32 19 38.37	W 103 40 11.79
	7700.00	5.63	89.44	7637.06	3.37	8.51	870.81	2.00	483447.62	746260.33	N 32 19 38.37	W 103 40 11.66
	7800.00	3.63	89.44	7736.73	3.41	8.59	878.88	2.00	483447.70	746268.40	N 32 19 38.37	W 103 40 11.56
	7900.00	1.63	89.44	7836.62	3.42	8.64	883.47	2.00	483447.74	746272.99	N 32 19 38.37	W 103 40 11.51
Hold Vertical	7981.42	0.00	89.44	7918.03	3.43	8.65	884.62	2.00	483447.76	746274.14	N 32 19 38.37	W 103 40 11.50
	8000.00	0.00	89.44	7936.61	3.43	8.65	884.62	0.00	483447.76	746274.14	N 32 19 38.37	W 103 40 11.50
	8100.00	0.00	89.44	8036.61	3.43	8.65	884.62	0.00	483447.76	746274.14	N 32 19 38.37	W 103 40 11.50
	8200.00	0.00	89.44	8136.61	3.43	8.65	884.62	0.00	483447.76	746274.14	N 32 19 38.37	W 103 40 11.50
	8300.00	0.00	89.44	8236.61	3.43	8.65	884.62	0.00	483447.76	746274.14	N 32 19 38.37	W 103 40 11.50
	8400.00	0.00	89.44	8336.61	3.43	8.65	884.62	0.00	483447.76	746274.14	N 32 19 38.37	W 103 40 11.50
	8500.00	0.00	89.44	8436.61	3.43	8.65	884.62	0.00	483447.76	746274.14	N 32 19 38.37	W 103 40 11.50
	8600.00	0.00	89.44	8536.61	3.43	8.65	884.62	0.00	483447.76	746274.14	N 32 19 38.37	W 103 40 11.50
BSGL	8628.39	0.00	89.44	8565.00	3.43	8.65	884.62	0.00	483447.76	746274.14	N 32 19 38.37	W 103 40 11.50
	8700.00	0.00	89.44	8636.61	3.43	8.65	884.62	0.00	483447.76	746274.14	N 32 19 38.37	W 103 40 11.50
Leonard Shale	8723.39	0.00	89.44	8660.00	3.43	8.65	884.62	0.00	483447.76	746274.14	N 32 19 38.37	W 103 40 11.50
	8800.00	0.00	89.44	8736.61	3.43	8.65	884.62	0.00	483447.76	746274.14	N 32 19 38.37	W 103 40 11.50
	8900.00	0.00	89.44	8836.61	3.43	8.65	884.62	0.00	483447.76	746274.14	N 32 19 38.37	W 103 40 11.50
	9000.00	0.00	89.44	8936.61	3.43	8.65	884.62	0.00	483447.76	746274.14	N 32 19 38.37	W 103 40 11.50
	9100.00	0.00	89.44	9036.61	3.43	8.65	884.62	0.00	483447.76	746274.14	N 32 19 38.37	W 103 40 11.50
KOP - Build 12°/100' DLS	9110.93	0.00	89.44	9047.54	3.43	8.65	884.62	0.00	483447.76	746274.14	N 32 19 38.37	W 103 40 11.50
Avalon	9113.39	0.30	359.66	9050.00	3.43	8.65	884.62	12.00	483447.76	746274.14	N 32 19 38.37	W 103 40 11.50
	9200.00	10.69	359.66	9136.09	11.71	16.93	884.57	12.00	483456.04	746274.09	N 32 19 38.45	W 103 40 11.50
	9300.00	22.69	359.66	9231.71	40.38	45.60	884.41	12.00	483484.70	746273.93	N 32 19 38.74	W 103 40 11.50
	9400.00	34.69	359.66	9319.27	88.30	93.51	884.12	12.00	483532.62	746273.64	N 32 19 39.21	W 103 40 11.50
	9500.00	46.69	359.66	9394.96	153.37	158.59	883.74	12.00	483597.69	746273.26	N 32 19 39.86	W 103 40 11.50
	9600.00	58.69	359.66	9455.46	232.76	237.98	883.27	12.00	483677.08	746272.79	N 32 19 40.64	W 103 40 11.50
	9700.00	70.69	359.66	9498.14	323.00	328.21	882.74	12.00	483767.31	746272.26	N 32 19 41.53	W 103 40 11.50
	9800.00	82.69	359.66	9521.12	420.13	425.34	882.16	12.00	483864.43	746271.68	N 32 19 42.50	W 103 40 11.50
Landing Point	9860.93	90.00	359.66	9525.00	480.89	486.10	881.81	12.00	483925.19	746271.33	N 32 19 43.10	W 103 40 11.50
	9900.00	90.00	359.66	9525.00	519.97	525.18	881.58	0.00	483964.26	746271.10	N 32 19 43.48	W 103 40 11.50
	10000.00	90.00	359.66	9525.00	619.97	625.18	880.99	0.00	484064.26	746270.51	N 32 19 44.47	W 103 40 11.50
	10100.00	90.00	359.66	9525.00	719.97	725.17	880.40	0.00	484164.25	746269.92	N 32 19 45.46	W 103 40 11.50
	10200.00	90.00	359.66	9525.00	819.97	825.17	879.81	0.00	484264.24	746269.33	N 32 19 46.45	W 103 40 11.49
	10300.00	90.00	359.66	9525.00	919.97	925.17	879.22	0.00	484364.24	746268.74	N 32 19 47.44	W 103 40 11.49
	10400.00	90.00	359.66	9525.00	1019.97	1025.17	878.63	0.00	484464.23	746268.15	N 32 19 48.43	W 103 40 11.49
	10500.00	90.00	359.66	9525.00	1119.97	1125.17	878.04	0.00	484564.23	746267.56	N 32 19 49.42	W 103 40 11.49
	10600.00	90.00	359.66	9525.00	1219.97	1225.16	877.45	0.00	484664.22	746266.97	N 32 19 50.41	W 103 40 11.49
	10700.00	90.00	359.66	9525.00	1319.97	1325.16	876.86	0.00	484764.21	746266.38	N 32 19 51.40	W 103 40 11.49
	10800.00	90.00	359.66	9525.00	1419.97	1425.16	876.27	0.00	484864.21	746265.79	N 32 19 52.39	W 103 40 11.49
	10900.00	90.00	359.66	9525.00	1519.97	1525.16	875.68	0.00	484964.20	746265.20	N 32 19 53.38	W 103 40 11.49
	11000.00	90.00	359.66	9525.00	1619.97	1625.16	875.09	0.00	485064.19	746264.61	N 32 19 54.37	W 103 40 11.49
	11100.00	90.00	359.66	9525.00	1719.97	1725.16	874.50	0.00	485164.19	746264.02	N 32 19 55.36	W 103 40 11.49
	11200.00	90.00	359.66	9525.00	1819.97	1825.15	873.91	0.00	485264.18	746263.43	N 32 19 56.35	W 103 40 11.49
	11300.00	90.00	359.66	9525.00	1919.97	1925.15	873.32	0.00	485364.18	746262.84	N 32 19 57.34	W 103 40 11.49
	11400.00	90.00	359.66	9525.00	2019.97	2025.15	872.73	0.00	485464.17	746262.25	N 32 19 58.33	W 103 40 11.49
	11500.00	90.00	359.66	9525.00	2119.97	2125.15	872.14	0.00	485564.16	746261.66	N 32 19 59.32	W 103 40 11.49
	11600.00	90.00	359.66	9525.00	2219.97	2225.15	871.55	0.00	485664.16	746261.07	N 32 20 0.30	W 103 40 11.49
	11700.00	90.00	359.66	9525.00	2319.97	2325.15	870.96	0.00	485764.15	746260.48	N 32 20 1.29	W 103 40 11.49
	11800.00	90.00	359.66	9525.00	2419.97	2425.14	870.37	0.00	485864.14	746259.89	N 32 20 2.28	W 103 40 11.49
	11900.00	90.00	359.66	9525.00	2519.97	2525.14	869.78	0.00	485964.14	746259.30	N 32 20 3.27	W 103 40 11.49
	12000.00	90.00	359.66	9525.00	2619.97	2625.14	869.19	0.00	486064.13	746258.71	N 32 20 4.26	W 103 40 11.49
	12100.00	90.00	359.66	9525.00	2719.97	2725.14	868.60	0.00	486164.13	746258.12	N 32 20 5.25	W 103 40 11.49
	12200.00	90.00	359.66	9525.00	2819.97	2825.14	868.01	0.00	486264.12	746257.53	N 32 20 6.24	W 103 40 11.49
	12300.00	90.00	359.66	9525.00	2919.97	2925.14	867.42	0.00	486364.11	746256.94	N 32 20 7.23	W 103 40 11.49
	12400.00	90.00	359.66	9525.00	3019.97	3025.13	866.83	0.00	486464.11	746256.35	N 32 20 8.22	W 103 40 11.49
	12500.00	90.00	359.66	9525.00	3119.97	3125.13	866.24	0.00	486564.10	746255.76	N 32 20 9.21	W 103 40 11.49
	12600.00	90.00	359.66	9525.00	3219.97	3225.13	865.65	0.00	486664.09	746255.17	N 32 20 10.20	W 103 40 11.49
	12700.00	90.00	359.66	9525.00	3319.97	3325.13	865.06	0.00	486764.09	746254.58	N 32 20 11.19	W 103 40 11.49

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 ° ' ")
	12800.00	90.00	359.66	9525.00	3419.97	3425.13	864.47	0.00	486864.08	746253.99	N 32 20 12.18	W 103 40 11.49
	12900.00	90.00	359.66	9525.00	3519.97	3525.12	863.88	0.00	486964.08	746253.40	N 32 20 13.17	W 103 40 11.49
	13000.00	90.00	359.66	9525.00	3619.97	3625.12	863.29	0.00	487064.07	746252.81	N 32 20 14.16	W 103 40 11.49
	13100.00	90.00	359.66	9525.00	3719.97	3725.12	862.70	0.00	487164.06	746252.22	N 32 20 15.15	W 103 40 11.48
	13200.00	90.00	359.66	9525.00	3819.97	3825.12	862.11	0.00	487264.06	746251.63	N 32 20 16.14	W 103 40 11.48
	13300.00	90.00	359.66	9525.00	3919.97	3925.12	861.52	0.00	487364.05	746251.04	N 32 20 17.13	W 103 40 11.48
	13400.00	90.00	359.66	9525.00	4019.97	4025.12	860.93	0.00	487464.04	746250.45	N 32 20 18.12	W 103 40 11.48
	13500.00	90.00	359.66	9525.00	4119.97	4125.11	860.34	0.00	487564.04	746249.86	N 32 20 19.11	W 103 40 11.48
	13600.00	90.00	359.66	9525.00	4219.97	4225.11	859.75	0.00	487664.03	746249.27	N 32 20 20.09	W 103 40 11.48
	13700.00	90.00	359.66	9525.00	4319.97	4325.11	859.16	0.00	487764.03	746248.68	N 32 20 21.08	W 103 40 11.48
	13800.00	90.00	359.66	9525.00	4419.97	4425.11	858.57	0.00	487864.02	746248.09	N 32 20 22.07	W 103 40 11.48
	13900.00	90.00	359.66	9525.00	4519.97	4525.11	857.98	0.00	487964.01	746247.50	N 32 20 23.06	W 103 40 11.48
Cimarex Red Tank 3 Federal Com #14H - PBHL [330' FNL, 380' FWL]	13986.07	90.00	359.66	9525.00	4606.04	4611.18	857.47	0.00	488050.08	746246.99	N 32 20 23.91	W 103 40 11.48

Survey Type: Non-Def Plan

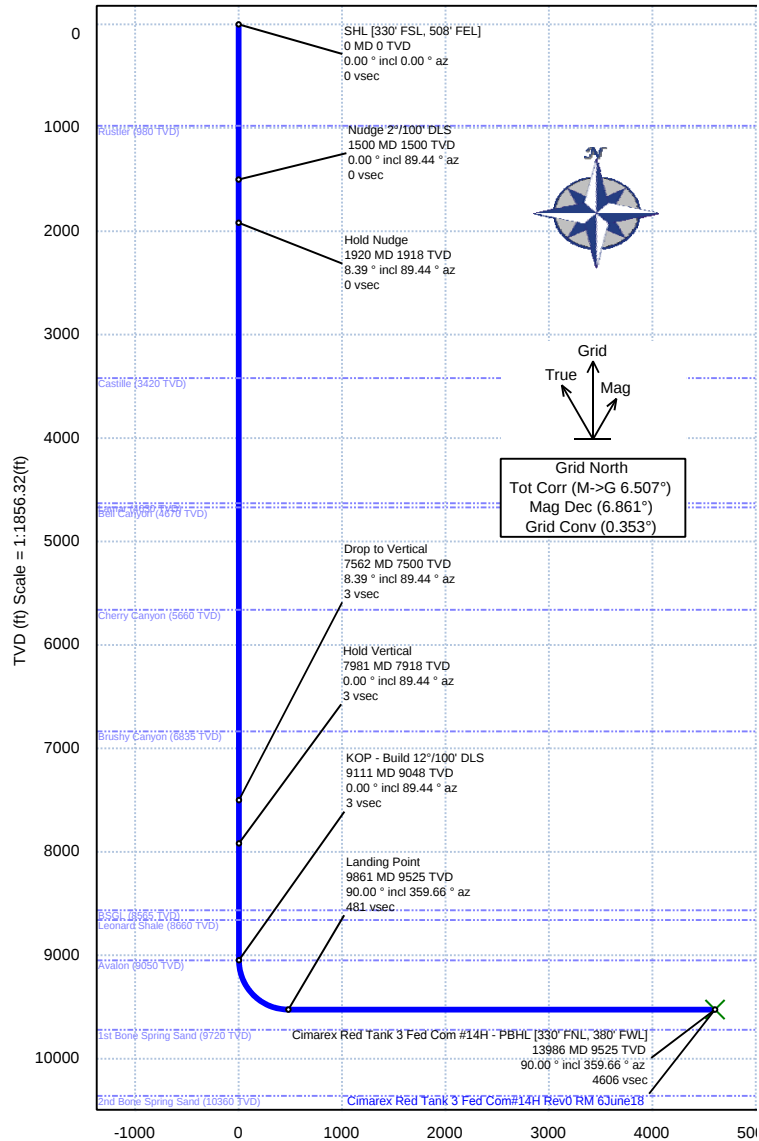
Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	26.000	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS-Depth Only	Original Borehole / Cimarex Red Tank 3 Federal Com #14H Rev0 RM 6June18
	1	26.000	13986.073	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS	Original Borehole / Cimarex Red Tank 3 Federal Com #14H Rev0

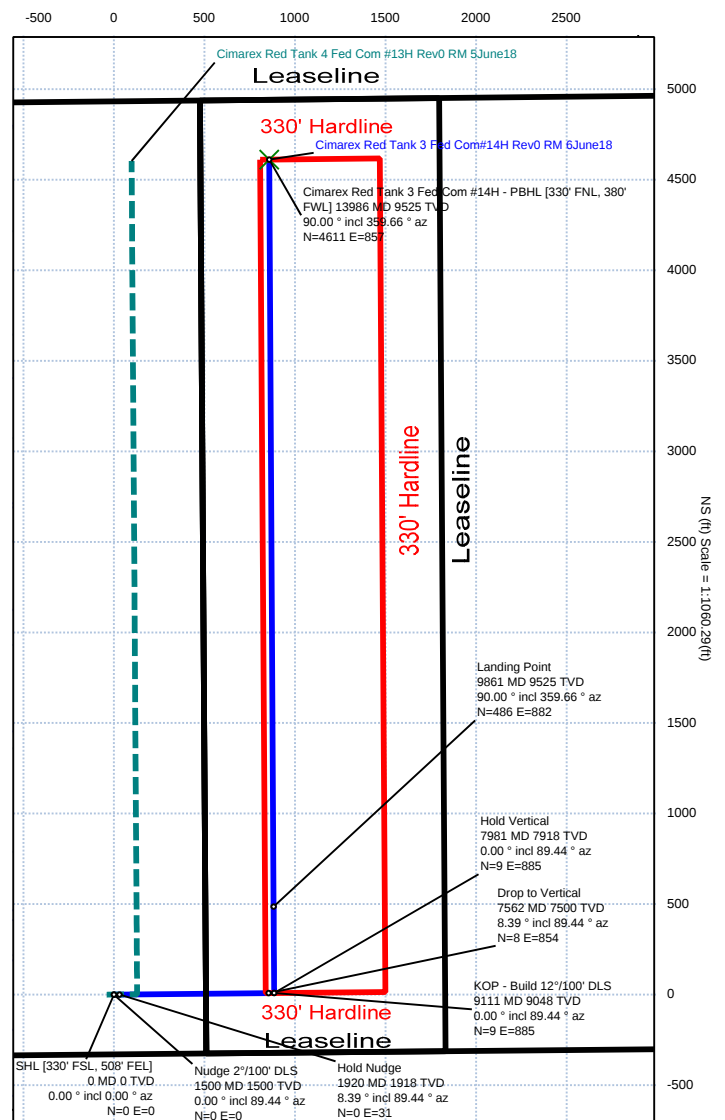
Borehole:	Well:	Field:	Structure:
Original Borehole	Cimarex Red Tank 3 Fed Com #14H	NM Lea County (NAD 83)	Cimarex Red Tank 3 Fed Com #14H

Gravity & Magnetic Parameters				Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet				Miscellaneous			
Model:	HDM 2018	Dip:	60.096°	Date:	06-Jun-2018	Lat:	N 32 19 38.34	Northing:	483439.111US	Grid Conv:	0.3533°
MagDec:	6.861°	FS:	48102.925nT	Gravity FS:	998.442mgm (8.80665 Based)	Lon:	W 103 40 21.81	Easting:	745389.56ftUS	Scale Fact:	0.9995678
								Slot: Tank 3 Fed Com TVD Ref: RKB(3716.2ft above MSL)			
								Plan: #14H Cimarex Red Tank 3 Fed Com #14H Rev0 RM 6June18			

EW (ft) Scale = 1:1060.29(ft)



Vertical Section (ft) Azim = 359.66° Scale = 1:1856.32(ft) Origin = 0N/-S, 0E/-W



Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL [330° FSL, 508' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rustler	980.00	0.00	89.44	980.00	0.00	0.00	0.00	0.00
Nudge 2°/100' DLS	1500.00	0.00	89.44	1500.00	0.00	0.00	0.00	0.00
Hold Nudge	1919.53	8.39	89.44	1918.03	0.12	0.30	30.66	2.00
Castille	3437.75	8.39	89.44	3420.00	0.98	2.46	252.19	0.00
Lamar	4660.84	8.39	89.44	4630.00	1.67	4.21	430.66	0.00
Bell Canyon	4701.27	8.39	89.44	4670.00	1.69	4.27	436.56	0.00
Cherry Canyon	5701.98	8.39	89.44	5660.00	2.26	5.69	582.57	0.00
Brushy Canyon	6889.70	8.39	89.44	6835.00	2.93	7.39	755.88	0.00
Drop to Vertical	7561.89	8.39	89.44	7500.00	3.31	8.35	853.96	0.00
Hold Vertical	7981.42	0.00	89.44	7918.03	3.43	8.65	884.62	2.00
BSGL	8628.39	0.00	89.44	8565.00	3.43	8.65	884.62	0.00
Leonard Shale	8723.39	0.00	89.44	8660.00	3.43	8.65	884.62	0.00
KOP - Build 12°/100' DLS	9110.93	0.00	89.44	9047.54	3.43	8.65	884.62	0.00
Avalon	9113.39	0.30	359.66	9050.00	3.43	8.65	884.62	12.00
Landing Point	9860.93	90.00	359.66	9525.00	480.89	486.10	881.81	12.00
Cimarex Red Tank 3 Fed Com #14H - PBHL	13986.07	90.00	359.66	9525.00	4606.04	4611.18	857.47	0.00
330° FNL, 380° FWL				9720.00				
1st Bone Spring Sand				10360.00				
2nd Bone Spring Sand				11530.00				
3rd Bone Spring Sand				11900.00				
Wolfcamp								

Cimarex Red Tank 3 Federal #14H Rev0 RM 6June18 Anti-Collision Summary Report

Analysis Date-24hr Time: June 06, 2018 - 09:00

Client: Cimarex

Field: NM Lea County (NAD 83)

Structure: Cimarex Red Tank 3 Federal #14H

Slot: Cimarex Red Tank 3 Federal #14H

Well: Cimarex Red Tank 3 Federal #14H

Borehole: Original Borehole

Scan MD Range: 0.00ft ~ 13986.07ft

Analysis Method: 3D Least Distance

Reference Trajectory: Cimarex Red Tank 3 Federal #14H Rev0 RM 6June18 (Non-Def Plan)

Depth Interval: Every 10.00 Measured Depth (ft)

Rule Set: NAL Procedure: D&M AntiCollision Standard S002

Min Pts: All local minima indicated.

Version / Patch: 2.10.715.0

Database \ Project: US1153APP452.dir.slb.com\drilling-NM Lea County 2.10

Trajectory Error Model: ISCWSA0 3-D 95.000% Confidence 2.7955 sigma, for subject well. For offset wells, error model version is specified with each well respectively.

Offset Trajectories Summary

Offset Selection Criteria

Wellhead distance scan: Not performed!

Selection filters: Definitive Surveys - Definitive Plans - Definitive surveys exclude definitive plans

- All Non-Def Surveys when no Def-Survey is set in a borehole - All Non-Def Plans when no Def-Plan is set in a borehole

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		

Results highlighted: Sep-Factor separation <= 1.50 ft

 Cimarex Red Tank 3 Federal
#13H Rev0 RM 5June18 (Non-Def Plan)

Warning Alert

40.02	32.52	37.52	7.50	N/A	MAS = 9.91 (m)	0.00	0.00	CtCt<=15m<15.00	Enter Alert
40.02	32.52	37.52	7.50	12063.37	MAS = 9.91 (m)	26.00	26.00		WRP
40.02	32.52	28.49	7.50	4.15	MAS = 9.91 (m)	1500.00	1500.00		MinPts
40.04	32.52	28.46	7.52	4.13	MAS = 9.91 (m)	1510.00	1510.00		MINPT-O-EOU
40.65	32.52	28.83	8.13	4.09	MAS = 9.91 (m)	1560.00	1560.00		MinPt-O-SF
52.74	32.52	40.11	20.22	4.96	MAS = 9.91 (m)	1770.00	1769.60	OSF>5.00	Exit Alert
360.83	38.46	334.36	322.37	14.95	OSF1.50	5010.00	4975.42		MinPt-O-SF
756.67	66.49	711.51	690.18	17.68	OSF1.50	9120.00	9056.61		MinPt-CtCt
759.89	173.07	643.67	586.81	6.66	OSF1.50	13986.07	9525.00		MinPts