

Cimarex Triste Draw 25 Federal #14H Rev0 RM 22Mar17 Proposal

Geodetic Report

(Non-Def Plan)



Report Date: March 23, 2017 - 09:02 AM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Triste Draw 25 Federal #14H / Cimarex Triste Draw 25 Federal #14H
Well: Cimarex Triste Draw 25 Federal #14H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Triste Draw 25 Federal #14H Rev0 RM 22Mar17
Survey Date: March 22, 2017
Tort / AHD / DDI / ERD Ratio: 110.731 ° / 4472.296 ft / 5.856 / 0.473
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 16' 11.98521", W 103° 37' 44.92140"
Location Grid N/E Y/X: N 462671.640 ftUS, E 758987.810 ftUS
CRS Grid Convergence Angle: 0.3760 °
Grid Scale Factor: 0.99996335
Version / Patch: 2.10.254.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 355.946 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3710.300 ft above MSL
Seabed / Ground Elevation: 3690.300 ft above MSL
Magnetic Declination: 6.913 °
Total Gravity Field Strength: 998.4370mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 48196.601 nT
Magnetic Dip Angle: 60.075 °
Declination Date: March 22, 2017
Magnetic Declination Model: HDGM 2016
North Reference: Grid North
Grid Convergence Used: 0.3760 °
Total Corr Mag North->Grid North: 6.5373 °
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 [560' FSL, 2390' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	462671.64	758987.81	N 32 16 11.99 W 103 37 44.92	
	100.00	0.00	324.70	100.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W 103 37 44.92	
	200.00	0.00	324.70	200.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W 103 37 44.92	
	300.00	0.00	324.70	300.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W 103 37 44.92	
	400.00	0.00	324.70	400.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W 103 37 44.92	
	500.00	0.00	324.70	500.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W 103 37 44.92	
	600.00	0.00	324.70	600.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W 103 37 44.92	
	700.00	0.00	324.70	700.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W 103 37 44.92	
	800.00	0.00	324.70	800.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W 103 37 44.92	
	900.00	0.00	324.70	900.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W 103 37 44.92	
	1000.00	0.00	324.70	1000.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W 103 37 44.92	
	1100.00	0.00	324.70	1100.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W 103 37 44.92	
	1200.00	0.00	324.70	1200.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W 103 37 44.92	
	1300.00	0.00	324.70	1300.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W 103 37 44.92	
	1400.00	0.00	324.70	1400.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W 103 37 44.92	
	1500.00	0.00	324.70	1500.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W 103 37 44.92	
	1600.00	0.00	324.70	1600.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W 103 37 44.92	
	1700.00	0.00	324.70	1700.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W 103 37 44.92	
	1800.00	0.00	324.70	1800.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W 103 37 44.92	
	1900.00	0.00	324.70	1900.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W 103 37 44.92	
	2000.00	0.00	324.70	2000.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W 103 37 44.92	
	2100.00	0.00	324.70	2100.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W 103 37 44.92	
	2200.00	0.00	324.70	2200.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W 103 37 44.92	
	2300.00	0.00	324.70	2300.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W 103 37 44.92	
	2400.00	0.00	324.70	2400.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W 103 37 44.92	
	2500.00	0.00	324.70	2500.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W 103 37 44.92	

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 ° ' ")
	8500.00	0.00	324.70	8500.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W	103 37 44.92
	8600.00	0.00	324.70	8600.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W	103 37 44.92
	8700.00	0.00	324.70	8700.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W	103 37 44.92
	8800.00	0.00	324.70	8800.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W	103 37 44.92
Bone Spring	8830.00	0.00	324.70	8830.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W	103 37 44.92
	8900.00	0.00	324.70	8900.00	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W	103 37 44.92
KOP - Build 12"/100' DLS	8944.04	0.00	324.70	8944.04	0.00	0.00	0.00	0.00	462671.64	758987.81	N 32 16 11.99 W	103 37 44.92
	9000.00	6.72	324.70	8999.87	2.80	2.67	-1.89	12.00	462674.31	758985.92	N 32 16 12.01 W	103 37 44.94
	9100.00	18.72	324.70	9097.24	21.58	20.60	-14.59	12.00	462692.24	758973.22	N 32 16 12.19 W	103 37 45.09
	9200.00	30.72	324.70	9187.92	57.26	54.67	-38.71	12.00	462726.30	758949.11	N 32 16 12.53 W	103 37 45.37
	9300.00	42.72	324.70	9267.93	108.28	103.37	-73.19	12.00	462775.00	758914.62	N 32 16 13.01 W	103 37 45.77
	9400.00	54.72	324.70	9333.79	172.41	164.58	-116.53	12.00	462836.22	758871.28	N 32 16 13.62 W	103 37 46.27
	9500.00	66.72	324.70	9382.62	246.84	235.64	-166.84	12.00	462907.27	758820.98	N 32 16 14.33 W	103 37 46.85
Build & Turn 12"/100' DLS	9544.04	72.00	324.70	9398.14	282.07	269.26	-190.65	12.00	462940.89	758797.17	N 32 16 14.66 W	103 37 47.12
	9600.00	74.82	331.06	9414.13	329.37	314.66	-219.12	12.00	462986.29	758768.69	N 32 16 15.11 W	103 37 47.45
	9700.00	80.27	342.02	9435.75	421.31	404.09	-257.83	12.00	463075.72	758729.99	N 32 16 16.00 W	103 37 47.89
	9800.00	86.05	352.61	9447.69	519.29	500.78	-279.54	12.00	463172.41	758708.28	N 32 16 16.96 W	103 37 48.14
Landing Point	9866.80	90.00	359.59	9450.00	586.00	567.34	-284.07	12.00	463238.96	758703.75	N 32 16 17.62 W	103 37 48.19
	9900.00	90.00	359.59	9450.00	619.13	600.54	-284.31	0.00	463272.15	758703.51	N 32 16 17.95 W	103 37 48.19
	10000.00	90.00	359.59	9450.00	718.93	700.53	-285.02	0.00	463372.15	758702.80	N 32 16 18.94 W	103 37 48.19
	10100.00	90.00	359.59	9450.00	818.73	800.53	-285.73	0.00	463472.14	758702.09	N 32 16 19.92 W	103 37 48.19
	10200.00	90.00	359.59	9450.00	918.53	900.53	-286.45	0.00	463572.13	758701.38	N 32 16 20.91 W	103 37 48.19
	10300.00	90.00	359.59	9450.00	1018.32	1000.53	-287.16	0.00	463672.13	758700.66	N 32 16 21.90 W	103 37 48.19
	10400.00	90.00	359.59	9450.00	1118.12	1100.52	-287.87	0.00	463772.12	758699.95	N 32 16 22.89 W	103 37 48.19
	10500.00	90.00	359.59	9450.00	1217.92	1200.52	-288.58	0.00	463872.11	758699.24	N 32 16 23.88 W	103 37 48.19
	10600.00	90.00	359.59	9450.00	1317.72	1300.52	-289.30	0.00	463972.11	758698.53	N 32 16 24.87 W	103 37 48.19
	10700.00	90.00	359.59	9450.00	1417.51	1400.52	-290.01	0.00	464072.10	758697.81	N 32 16 25.86 W	103 37 48.19
	10800.00	90.00	359.59	9450.00	1517.31	1500.51	-290.72	0.00	464172.09	758697.10	N 32 16 26.85 W	103 37 48.19
	10900.00	90.00	359.59	9450.00	1617.11	1600.51	-291.43	0.00	464272.09	758696.39	N 32 16 27.84 W	103 37 48.19
	11000.00	90.00	359.59	9450.00	1716.91	1700.51	-292.14	0.00	464372.08	758695.68	N 32 16 28.83 W	103 37 48.19
	11100.00	90.00	359.59	9450.00	1816.70	1800.50	-292.86	0.00	464472.08	758694.96	N 32 16 29.82 W	103 37 48.19
	11200.00	90.00	359.59	9450.00	1916.50	1900.50	-293.57	0.00	464572.07	758694.25	N 32 16 30.81 W	103 37 48.20
	11300.00	90.00	359.59	9450.00	2016.30	2000.50	-294.28	0.00	464672.06	758693.54	N 32 16 31.80 W	103 37 48.20
	11400.00	90.00	359.59	9450.00	2116.10	2100.50	-294.99	0.00	464772.06	758692.83	N 32 16 32.79 W	103 37 48.20
	11500.00	90.00	359.59	9450.00	2215.89	2200.49	-295.71	0.00	464872.05	758692.11	N 32 16 33.78 W	103 37 48.20
	11600.00	90.00	359.59	9450.00	2315.69	2300.49	-296.42	0.00	464972.04	758691.40	N 32 16 34.77 W	103 37 48.20
	11700.00	90.00	359.59	9450.00	2415.49	2400.49	-297.13	0.00	465072.04	758690.69	N 32 16 35.76 W	103 37 48.20
	11800.00	90.00	359.59	9450.00	2515.29	2500.49	-297.84	0.00	465172.03	758689.98	N 32 16 36.75 W	103 37 48.20
	11900.00	90.00	359.59	9450.00	2615.09	2600.48	-298.56	0.00	465272.02	758689.27	N 32 16 37.74 W	103 37 48.20
	12000.00	90.00	359.59	9450.00	2714.88	2700.48	-299.27	0.00	465372.02	758688.55	N 32 16 38.73 W	103 37 48.20
	12100.00	90.00	359.59	9450.00	2814.68	2800.48	-299.98	0.00	465472.01	758687.84	N 32 16 39.72 W	103 37 48.20
	12200.00	90.00	359.59	9450.00	2914.48	2900.48	-300.69	0.00	465572.00	758687.13	N 32 16 40.70 W	103 37 48.20
	12300.00	90.00	359.59	9450.00	3014.28	3000.47	-301.41	0.00	465672.00	758686.42	N 32 16 41.69 W	103 37 48.20
	12400.00	90.00	359.59	9450.00	3114.07	3100.47	-302.12	0.00	465771.99	758685.70	N 32 16 42.68 W	103 37 48.20
	12500.00	90.00	359.59	9450.00	3213.87	3200.47	-302.83	0.00	465871.99	758684.99	N 32 16 43.67 W	103 37 48.20
	12600.00	90.00	359.59	9450.00	3313.67	3300.47	-303.54	0.00	465971.98	758684.28	N 32 16 44.66 W	103 37 48.20
	12700.00	90.00	359.59	9450.00	3413.47	3400.46	-304.26	0.00	466071.97	758683.57	N 32 16 45.65 W	103 37 48.21
	12800.00	90.00	359.59	9450.00	3513.26	3500.46	-304.97	0.00	466171.97	758682.85	N 32 16 46.64 W	103 37 48.21
	12900.00	90.00	359.59	9450.00	3613.06	3600.46	-305.68	0.00	466271.96	758682.14	N 32 16 47.63 W	103 37 48.21
	13000.00	90.00	359.59	9450.00	3712.86	3700.46	-306.39	0.00	466371.95	758681.43	N 32 16 48.62 W	103 37 48.21
	13100.00	90.00	359.59	9450.00	3812.66	3800.45	-307.10	0.00	466471.95	758680.72	N 32 16 49.61 W	103 37 48.21
	13200.00	90.00	359.59	9450.00	3912.45	3900.45	-307.82	0.00	466571.94	758680.00	N 32 16 50.60 W	103 37 48.21
	13300.00	90.00	359.59	9450.00	4012.25	4000.45	-308.53	0.00	466671.93	758679.29	N 32 16 51.59 W	103 37 48.21
	13400.00	90.00	359.59	9450.00	4112.05	4100.45	-309.24	0.00	466771.93	758678.58	N 32 16 52.58 W	103 37 48.21
	13500.00	90.00	359.59	9450.00	4211.85	4200.44	-309.95	0.00	466871.92	758677.87	N 32 16 53.57 W	103 37 48.21
	13600.00	90.00	359.59	9450.00	4311.64	4300.44	-310.67	0.00	466971.92	758677.16	N 32 16 54.56 W	103 37 48.21

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 ° ' ")
Cimarex Triste Draw 25 Federal #14H - PBHL [330' FNL, 2110' FWL]	13691.97	90.00	359.59	9450.00	4403.43	4392.41	-311.32	0.00	467063.88	758676.50	N 32 16 55.47 W	103 37 48.21

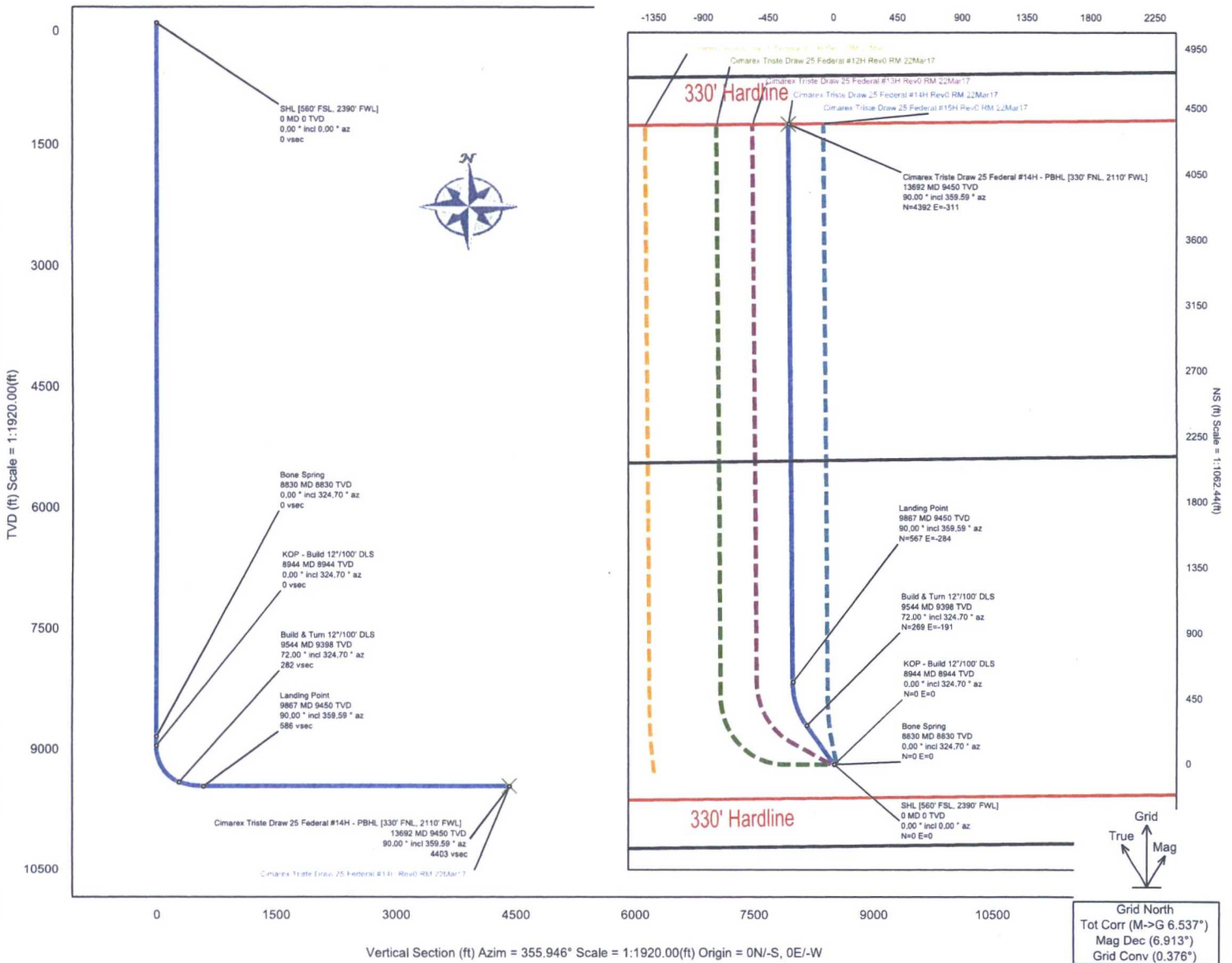
Survey Type: Non-Def Plan

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	20.000	1/100.000	30.000	30.000		NAL_MWD_PLUS_0.5_DEG- Depth Only	Original Borehole / Cimarex Triste Draw 25 Federal #14H Rev0 RM 22Mar17
	1	20.000	13691.971	1/100.000	30.000	30.000		NAL_MWD_PLUS_0.5_DEG	Original Borehole / Cimarex Triste Draw 25 Federal #14H

Borehole:	Well:	Field:	Structure:
Original Borehole	Cimarex Triste Draw 25 Federal #14H	NM Lea County (NAD 83)	Cimarex Triste Draw 25 Federal #14H
Gravity & Magnetic Parameters			
Model: HDGM 2016	Dip: 60.675°	Date: 22-Mar-2017	Surface Location: NAD83 New Mexico State Plane, Eastern Zone, US Feet
MagDec: 6.913°	FS: 48196.601nT	Gravity FS: 998.437mgm (8.80665 Based)	Lat: N 32 16 11.99 Northing: 462671.64NUS Grid Conv: 0.376°
			Lon: W 103 37 44.92 Easting: 758987.81NUS Scale Fact: 0.99996335
Miscellaneous			
			Slot: Cimarex Triste Draw 25 Federal #14H Rev0 RM 22Mar17
			Plan: Cimarex Triste Draw 25 Federal #14H Rev0 RM 22Mar17

EW (ft) Scale = 1:1062.44(ft)



Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL [560' FSL, 2390' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Bone Spring	8830.00	0.00	324.70	8830.00	0.00	0.00	0.00	0.00
KOP - Build 12°/100' DLS	8944.04	0.00	324.70	8944.04	0.00	0.00	0.00	0.00
Build & Turn 12°/100' DLS	9544.04	72.00	324.70	9398.14	282.07	269.26	-190.65	12.00
Landing Point	9866.80	90.00	359.59	9450.00	586.00	567.34	-284.07	12.00
Cimarex Triste Draw 25 Federal #14H - PBHL [330' FNL, 2110' FWL]	13691.97	90.00	359.59	9450.00	4403.43	4392.41	-311.32	0.00