

Cimarex Triste Draw 25 Federal #13H Rev0 RM 22Mar17 Proposal
Geodetic Report
 (Non-Def Plan)



Report Date: March 23, 2017 - 08:56 AM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Triste Draw 25 Federal #13H / Cimarex Triste Draw 25 Federal #13H
Well: Cimarex Triste Draw 25 Federal #13H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Triste Draw 25 Federal #13H Rev0 RM 22Mar17
Survey Date: March 22, 2017
Tort / AHD / DDI / ERD Ratio: 132.430 ° / 4638.084 ft / 5.948 / 0.472
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 16' 11.98413", W 103° 37' 45.15435"
Location Grid N/E Y/X: N 462671.400 ftUS, E 758967.810 ftUS
CRS Grid Convergence Angle: 0.3760 °
Grid Scale Factor: 0.99996334
Version / Patch: 2.10.254.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 352.971 ° (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: 3690.200 ft above MSL
Magnetic Declination: 6.913 °
Total Gravity Field Strength: 998.4370mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 48196.600 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: 6.5374 °
Local Coord Referenced To: Structure Reference Point

HOBBS OCD
 SEP 11 2017
RECEIVED

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, 2370' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	100.00	0.00	299.10	100.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	200.00	0.00	299.10	200.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	300.00	0.00	299.10	300.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	400.00	0.00	299.10	400.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	500.00	0.00	299.10	500.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	600.00	0.00	299.10	600.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	700.00	0.00	299.10	700.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	800.00	0.00	299.10	800.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	900.00	0.00	299.10	900.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	1000.00	0.00	299.10	1000.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	1100.00	0.00	299.10	1100.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	1200.00	0.00	299.10	1200.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	1300.00	0.00	299.10	1300.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	1400.00	0.00	299.10	1400.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	1500.00	0.00	299.10	1500.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	1600.00	0.00	299.10	1600.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	1700.00	0.00	299.10	1700.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	1800.00	0.00	299.10	1800.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	1900.00	0.00	299.10	1900.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	2000.00	0.00	299.10	2000.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	2100.00	0.00	299.10	2100.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	2200.00	0.00	299.10	2200.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	2300.00	0.00	299.10	2300.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	2400.00	0.00	299.10	2400.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	2500.00	0.00	299.10	2500.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	

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 ° ' ")
Bone Spring	8500.00	0.00	299.10	8500.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	8600.00	0.00	299.10	8600.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	8700.00	0.00	299.10	8700.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	8800.00	0.00	299.10	8800.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	8830.00	0.00	299.10	8830.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	8900.00	0.00	299.10	8900.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	9000.00	0.00	299.10	9000.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	9100.00	0.00	299.10	9100.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
KOP - Build 12°/100' DLS	9200.00	0.00	299.10	9200.00	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
Build & Turn 12°/100' DLS	9282.37	0.00	299.10	9282.37	0.00	0.00	0.00	0.00	462671.40	758967.81	N 32 16 11.98 W 103 37 45.15	
	9300.00	2.12	299.10	9300.00	0.19	0.16	-0.28	12.00	462671.56	758967.53	N 32 16 11.99 W 103 37 45.16	
	9400.00	14.12	299.10	9398.81	8.50	7.01	-12.60	12.00	462678.41	758955.21	N 32 16 12.05 W 103 37 45.30	
	9500.00	26.12	299.10	9492.54	28.74	23.71	-42.59	12.00	462695.11	758925.22	N 32 16 12.22 W 103 37 45.65	
	9600.00	38.12	299.10	9577.09	60.03	49.51	-88.96	12.00	462720.91	758878.85	N 32 16 12.48 W 103 37 46.19	
	9700.00	50.12	299.10	9648.75	101.00	83.31	-149.67	12.00	462754.70	758818.14	N 32 16 12.82 W 103 37 46.89	
	9800.00	62.12	299.10	9704.40	149.85	123.61	-222.08	12.00	462795.00	758745.74	N 32 16 13.22 W 103 37 47.73	
	9865.70	70.00	299.10	9731.04	185.23	152.79	-274.51	12.00	462824.18	758693.31	N 32 16 13.51 W 103 37 48.34	
Landing Point	9900.00	70.83	303.38	9742.54	205.24	169.54	-302.12	12.00	462840.94	758665.70	N 32 16 13.68 W 103 37 48.66	
	10000.00	73.80	315.59	9773.02	274.26	230.05	-375.43	12.00	462901.44	758592.39	N 32 16 14.28 W 103 37 49.51	
	10100.00	77.44	327.40	9797.94	356.73	305.73	-435.55	12.00	462977.12	758532.27	N 32 16 15.04 W 103 37 50.20	
	10200.00	81.58	338.85	9816.20	449.06	393.29	-479.85	12.00	463064.68	758487.97	N 32 16 15.91 W 103 37 50.71	
	10300.00	86.04	350.06	9827.02	547.20	488.90	-506.40	12.00	463160.29	758461.43	N 32 16 16.85 W 103 37 51.01	
	10385.95	90.00	359.59	9830.00	632.94	574.34	-514.13	12.00	463245.72	758453.70	N 32 16 17.70 W 103 37 51.10	
	10400.00	90.00	359.59	9830.00	646.89	588.39	-514.23	0.00	463259.77	758453.60	N 32 16 17.84 W 103 37 51.10	
	10500.00	90.00	359.59	9830.00	746.22	688.39	-514.94	0.00	463359.76	758452.89	N 32 16 18.83 W 103 37 51.10	
	10600.00	90.00	359.59	9830.00	845.56	788.38	-515.65	0.00	463459.75	758452.18	N 32 16 19.82 W 103 37 51.10	
	10700.00	90.00	359.59	9830.00	944.89	888.38	-516.36	0.00	463559.75	758451.47	N 32 16 20.81 W 103 37 51.10	
	10800.00	90.00	359.59	9830.00	1044.22	988.38	-517.08	0.00	463659.74	758450.75	N 32 16 21.80 W 103 37 51.10	
	10900.00	90.00	359.59	9830.00	1143.56	1088.38	-517.79	0.00	463759.73	758450.04	N 32 16 22.79 W 103 37 51.10	
	11000.00	90.00	359.59	9830.00	1242.89	1188.37	-518.50	0.00	463859.73	758449.33	N 32 16 23.78 W 103 37 51.10	
	11100.00	90.00	359.59	9830.00	1342.22	1288.37	-519.21	0.00	463959.72	758448.62	N 32 16 24.77 W 103 37 51.10	
	11200.00	90.00	359.59	9830.00	1441.56	1388.37	-519.92	0.00	464059.71	758447.91	N 32 16 25.76 W 103 37 51.10	
	11300.00	90.00	359.59	9830.00	1540.89	1488.37	-520.63	0.00	464159.71	758447.20	N 32 16 26.75 W 103 37 51.10	
	11400.00	90.00	359.59	9830.00	1640.22	1588.36	-521.34	0.00	464259.70	758446.49	N 32 16 27.73 W 103 37 51.10	
	11500.00	90.00	359.59	9830.00	1739.55	1688.36	-522.06	0.00	464359.70	758445.77	N 32 16 28.72 W 103 37 51.11	
	11600.00	90.00	359.59	9830.00	1838.89	1788.36	-522.77	0.00	464459.69	758445.06	N 32 16 29.71 W 103 37 51.11	
	11700.00	90.00	359.59	9830.00	1938.22	1888.36	-523.48	0.00	464559.68	758444.35	N 32 16 30.70 W 103 37 51.11	
	11800.00	90.00	359.59	9830.00	2037.55	1988.35	-524.19	0.00	464659.68	758443.64	N 32 16 31.69 W 103 37 51.11	
	11900.00	90.00	359.59	9830.00	2136.89	2088.35	-524.90	0.00	464759.67	758442.93	N 32 16 32.68 W 103 37 51.11	
	12000.00	90.00	359.59	9830.00	2236.22	2188.35	-525.61	0.00	464859.66	758442.22	N 32 16 33.67 W 103 37 51.11	
	12100.00	90.00	359.59	9830.00	2335.55	2288.35	-526.32	0.00	464959.66	758441.51	N 32 16 34.66 W 103 37 51.11	
	12200.00	90.00	359.59	9830.00	2434.89	2388.34	-527.04	0.00	465059.65	758440.79	N 32 16 35.65 W 103 37 51.11	
	12300.00	90.00	359.59	9830.00	2534.22	2488.34	-527.75	0.00	465159.64	758440.08	N 32 16 36.64 W 103 37 51.11	
	12400.00	90.00	359.59	9830.00	2633.55	2588.34	-528.46	0.00	465259.64	758439.37	N 32 16 37.63 W 103 37 51.11	
	12500.00	90.00	359.59	9830.00	2732.88	2688.34	-529.17	0.00	465359.63	758438.66	N 32 16 38.62 W 103 37 51.11	
	12600.00	90.00	359.59	9830.00	2832.22	2788.33	-529.88	0.00	465459.62	758437.95	N 32 16 39.61 W 103 37 51.11	
	12700.00	90.00	359.59	9830.00	2931.55	2888.33	-530.59	0.00	465559.62	758437.24	N 32 16 40.60 W 103 37 51.11	
	12800.00	90.00	359.59	9830.00	3030.88	2988.33	-531.31	0.00	465659.61	758436.52	N 32 16 41.59 W 103 37 51.11	
	12900.00	90.00	359.59	9830.00	3130.22	3088.33	-532.02	0.00	465759.61	758435.81	N 32 16 42.58 W 103 37 51.11	
	13000.00	90.00	359.59	9830.00	3229.55	3188.32	-532.73	0.00	465859.60	758435.10	N 32 16 43.57 W 103 37 51.12	
	13100.00	90.00	359.59	9830.00	3328.88	3288.32	-533.44	0.00	465959.59	758434.39	N 32 16 44.56 W 103 37 51.12	
	13200.00	90.00	359.59	9830.00	3428.22	3388.32	-534.15	0.00	466059.59	758433.68	N 32 16 45.55 W 103 37 51.12	
	13300.00	90.00	359.59	9830.00	3527.55	3488.31	-534.86	0.00	466159.58	758432.97	N 32 16 46.54 W 103 37 51.12	
	13400.00	90.00	359.59	9830.00	3626.88	3588.31	-535.57	0.00	466259.57	758432.26	N 32 16 47.52 W 103 37 51.12	
	13500.00	90.00	359.59	9830.00	3726.22	3688.31	-536.29	0.00	466359.57	758431.54	N 32 16 48.51 W 103 37 51.12	
	13600.00	90.00	359.59	9830.00	3825.55	3788.31	-537.00	0.00	466459.56	758430.83	N 32 16 49.50 W 103 37 51.12	
	13700.00	90.00	359.59	9830.00	3924.88	3888.30	-537.71	0.00	466559.55	758430.12	N 32 16 50.49 W 103 37 51.12	

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 ° ' ")
	13800.00	90.00	359.59	9830.00	4024.21	3988.30	-538.42	0.00	466659.55	758429.41	N 32 16 51.48 W	103 37 51.12
	13900.00	90.00	359.59	9830.00	4123.55	4088.30	-539.13	0.00	466759.54	758428.70	N 32 16 52.47 W	103 37 51.12
	14000.00	90.00	359.59	9830.00	4222.88	4188.30	-539.84	0.00	466859.54	758427.99	N 32 16 53.46 W	103 37 51.12
	14100.00	90.00	359.59	9830.00	4322.21	4288.29	-540.56	0.00	466959.53	758427.28	N 32 16 54.45 W	103 37 51.12
	14200.00	90.00	359.59	9830.00	4421.55	4388.29	-541.27	0.00	467059.52	758426.56	N 32 16 55.44 W	103 37 51.12
Cimarex Triste Draw 25 Federal #13H - PBHL [330' FNL, 1860' FWL]	14201.94	90.00	359.59	9830.00	4423.47	4390.23	-541.28	0.00	467061.46	758426.55	N 32 16 55.46 W	103 37 51.12

Survey Type: Non-Def Plan

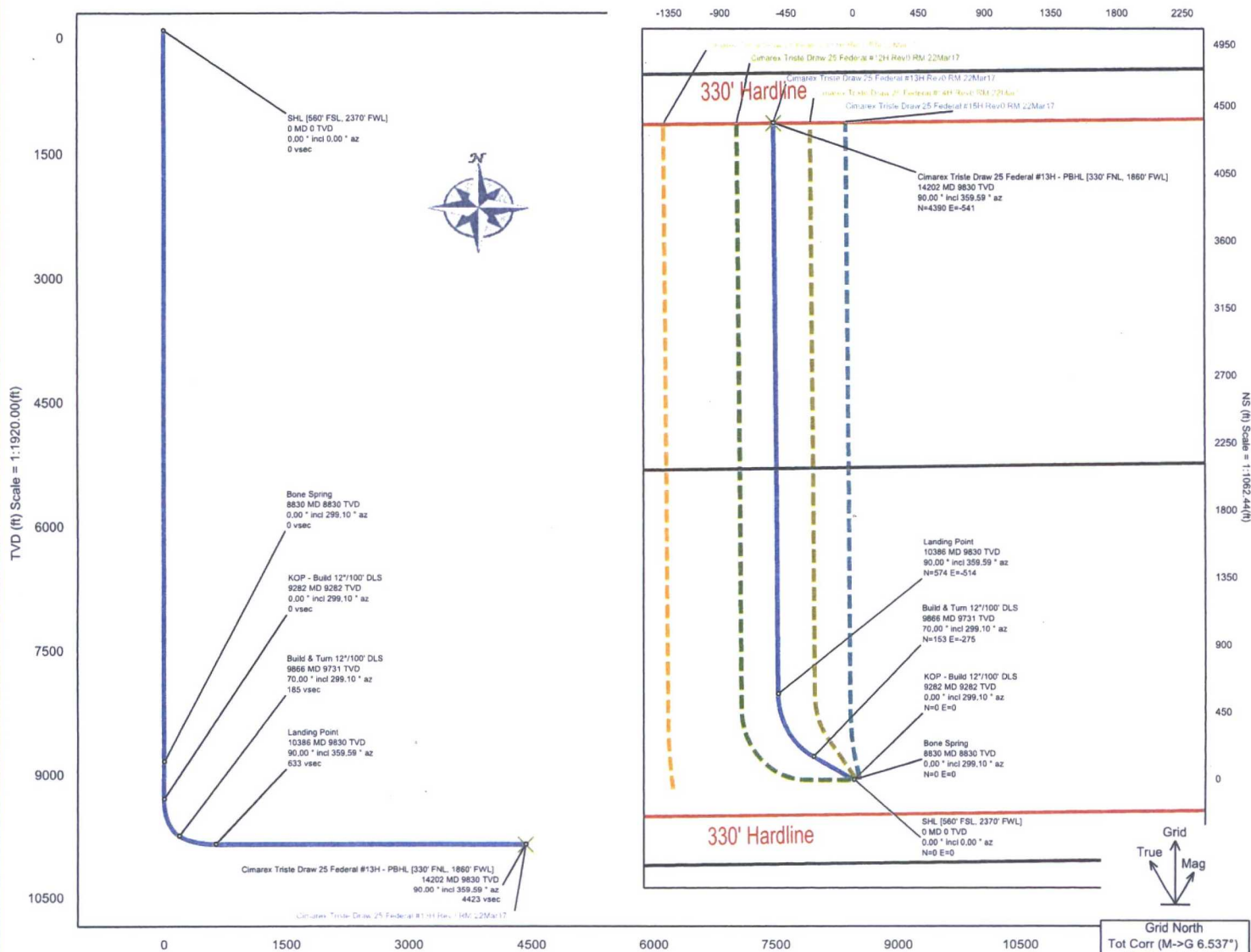
Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

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	20.100	1/100.000	30.000	30.000		NAL_MWD_PLUS_0.5_DEG- Depth Only	Original Borehole / Cimarex Triste Draw 25 Federal #13H Rev0 RM 22Mar17
	1	20.100	14201.938	1/100.000	30.000	30.000		NAL_MWD_PLUS_0.5_DEG	Original Borehole / Cimarex Triste Draw 25 Federal #13H

Borehole:	Well:	Field:	Structure:
Original Borehole	Cimarex Triste Draw 25 Federal #13H	NM Lea County (NAD 83)	Cimarex Triste Draw 25 Federal #13H

Gravity & Magnetic Parameters				Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet				Miscellaneous			
Model:	HDGM 2016	Dip:	60.075°	Date:	22-Mar-2017	Lat:	N 32 16 11.98	Northing:	462671.4NUS	Grid Conv:	0.376°
MagDec:	6.913°	FS:	48196.6nT	Gravity FS:	998.437mgm (8.80665 Based)	Lon:	W 103 37 45.15	Easting:	758967.81NUS	Scale Fact:	0.99996334
								Slot: Cimarex Triste Draw 25 Federal #13H Rev0 RM 22Mar17			
								Plan: Cimarex Triste Draw 25 Federal #13H 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, 2370' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Bone Spring	8830.00	0.00	299.10	8830.00	0.00	0.00	0.00	0.00
KOP - Build 12°/100' DLS	9282.37	0.00	299.10	9282.37	0.00	0.00	0.00	0.00
Build & Turn 12°/100' DLS	9865.70	70.00	299.10	9731.04	185.23	152.79	-274.51	12.00
Landing Point	10385.95	90.00	359.59	9830.00	632.94	574.34	-514.13	12.00
Cimarex Triste Draw 25 Federal #13H - PBHL [330' FNL, 1860' FWL]	14201.94	90.00	359.59	9830.00	4423.47	4390.23	-541.28	0.00