



Cimarex Triste Draw 25 Federal #12H Rev0 RM 22Mar17 Proposal Geodetic Report (Non-Def Plan)



Report Date: March 23, 2017 - 08:48 AM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Triste Draw 25 Federal #12H / Cimarex Triste Draw 25 Federal #12H
Well: Cimarex Triste Draw 25 Federal #12H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Triste Draw 25 Federal #12H Rev0 RM 22Mar17
Survey Date: March 22, 2017
Tort / AHD / DDI / ERD Ratio: 157.726 ° / 4933.458 ft / 6.064 / 0.522
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 16' 11.98434", W 103° 37' 45.38706"
Location Grid N/E Y/X: N 462671.290 ftUS, E 758947.830 ftUS
CRS Grid Convergence Angle: 0.3759 °
Grid Scale Factor: 0.99996333
Version / Patch: 2.10.254.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 350.031 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3710.200 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: 48196.599 nT
Magnetic Dip Angle: 60.075 °
Declination Date: March 22, 2017
Magnetic Declination Model: HDGM 2016
North Reference: Grid North
Grid Convergence Used: 0.3759 °
Total Corr Mag North->Grid North: 6.5375 °
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, 2350' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	462671.29	758947.83	N 32 16 11.98	W 103 37 45.39
	100.00	0.00	270.00	100.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98	W 103 37 45.39
	200.00	0.00	270.00	200.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98	W 103 37 45.39
	300.00	0.00	270.00	300.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98	W 103 37 45.39
	400.00	0.00	270.00	400.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98	W 103 37 45.39
	500.00	0.00	270.00	500.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98	W 103 37 45.39
	600.00	0.00	270.00	600.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98	W 103 37 45.39
	700.00	0.00	270.00	700.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98	W 103 37 45.39
	800.00	0.00	270.00	800.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98	W 103 37 45.39
	900.00	0.00	270.00	900.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98	W 103 37 45.39
	1000.00	0.00	270.00	1000.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98	W 103 37 45.39
	1100.00	0.00	270.00	1100.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98	W 103 37 45.39
	1200.00	0.00	270.00	1200.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98	W 103 37 45.39
	1300.00	0.00	270.00	1300.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98	W 103 37 45.39
	1400.00	0.00	270.00	1400.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98	W 103 37 45.39
	1500.00	0.00	270.00	1500.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98	W 103 37 45.39
	1600.00	0.00	270.00	1600.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98	W 103 37 45.39
	1700.00	0.00	270.00	1700.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98	W 103 37 45.39
	1800.00	0.00	270.00	1800.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98	W 103 37 45.39
	1900.00	0.00	270.00	1900.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98	W 103 37 45.39
	2000.00	0.00	270.00	2000.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98	W 103 37 45.39
	2100.00	0.00	270.00	2100.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98	W 103 37 45.39
	2200.00	0.00	270.00	2200.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98	W 103 37 45.39
	2300.00	0.00	270.00	2300.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98	W 103 37 45.39
	2400.00	0.00	270.00	2400.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98	W 103 37 45.39
	2500.00	0.00	270.00	2500.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98	W 103 37 45.39

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	270.00	8500.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98 W	103 37 45.39
	8600.00	0.00	270.00	8600.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98 W	103 37 45.39
	8700.00	0.00	270.00	8700.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98 W	103 37 45.39
	8800.00	0.00	270.00	8800.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98 W	103 37 45.39
Bone Spring KOP - Build 12°/100' DLS	8830.00	0.00	270.00	8830.00	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98 W	103 37 45.39
	8830.14	0.00	270.00	8830.14	0.00	0.00	0.00	0.00	462671.29	758947.83	N 32 16 11.98 W	103 37 45.39
	8900.00	8.38	270.00	8899.75	0.88	0.00	-5.10	12.00	462671.29	758942.73	N 32 16 11.98 W	103 37 45.45
	9000.00	20.38	270.00	8996.44	5.18	0.00	-29.90	12.00	462671.29	758917.93	N 32 16 11.99 W	103 37 45.74
	9100.00	32.38	270.00	9085.86	12.85	0.00	-74.25	12.00	462671.29	758873.58	N 32 16 11.99 W	103 37 46.25
	9200.00	44.38	270.00	9164.10	23.58	0.00	-136.23	12.00	462671.29	758811.60	N 32 16 11.99 W	103 37 46.97
	9300.00	56.38	270.00	9227.75	36.89	0.00	-213.12	12.00	462671.29	758734.72	N 32 16 12.00 W	103 37 47.87
Build & Turn 12°/100' DLS	9397.72	68.11	270.00	9273.18	51.84	0.00	-299.45	12.00	462671.29	758648.39	N 32 16 12.00 W	103 37 48.87
	9400.00	68.11	270.29	9274.03	52.21	0.01	-301.57	12.00	462671.30	758646.28	N 32 16 12.00 W	103 37 48.90
	9500.00	68.67	283.19	9310.99	78.89	10.91	-393.64	12.00	462682.20	758554.20	N 32 16 12.12 W	103 37 49.97
	9600.00	70.19	295.91	9346.25	124.95	42.21	-481.62	12.00	462713.50	758466.22	N 32 16 12.43 W	103 37 50.99
	9700.00	72.60	308.32	9378.27	188.36	92.53	-561.67	12.00	462763.82	758386.19	N 32 16 12.94 W	103 37 51.92
	9800.00	75.74	320.36	9405.64	266.37	159.67	-630.27	12.00	462830.96	758317.59	N 32 16 13.61 W	103 37 52.72
	9900.00	79.47	332.04	9427.16	355.56	240.71	-684.43	12.00	462911.99	758263.42	N 32 16 14.41 W	103 37 53.34
	10000.00	83.62	343.43	9441.91	452.02	332.09	-721.79	12.00	463003.36	758226.07	N 32 16 15.32 W	103 37 53.77
Landing Point	10100.00	88.01	354.63	9449.23	551.56	429.82	-740.71	12.00	463101.09	758207.14	N 32 16 16.29 W	103 37 53.98
	10144.52	90.00	359.59	9450.00	595.72	474.26	-742.96	12.00	463145.53	758204.90	N 32 16 16.73 W	103 37 54.00
	10200.00	90.00	359.59	9450.00	650.43	529.74	-743.36	0.00	463201.01	758204.50	N 32 16 17.27 W	103 37 54.00
	10300.00	90.00	359.59	9450.00	749.04	629.74	-744.08	0.00	463301.00	758203.77	N 32 16 18.26 W	103 37 54.00
	10400.00	90.00	359.59	9450.00	847.65	729.73	-744.81	0.00	463400.99	758203.05	N 32 16 19.25 W	103 37 54.01
	10500.00	90.00	359.59	9450.00	946.26	829.73	-745.53	0.00	463500.99	758202.33	N 32 16 20.24 W	103 37 54.01
	10600.00	90.00	359.59	9450.00	1044.88	929.73	-746.25	0.00	463600.98	758201.61	N 32 16 21.23 W	103 37 54.01
	10700.00	90.00	359.59	9450.00	1143.49	1029.73	-746.98	0.00	463700.98	758200.88	N 32 16 22.22 W	103 37 54.01
	10800.00	90.00	359.59	9450.00	1242.10	1129.72	-747.70	0.00	463800.97	758200.16	N 32 16 23.21 W	103 37 54.01
	10900.00	90.00	359.59	9450.00	1340.72	1229.72	-748.42	0.00	463900.96	758199.44	N 32 16 24.20 W	103 37 54.01
	11000.00	90.00	359.59	9450.00	1439.33	1329.72	-749.14	0.00	464000.96	758198.71	N 32 16 25.19 W	103 37 54.01
	11100.00	90.00	359.59	9450.00	1537.94	1429.71	-749.87	0.00	464100.95	758197.99	N 32 16 26.18 W	103 37 54.01
	11200.00	90.00	359.59	9450.00	1636.55	1529.71	-750.59	0.00	464200.94	758197.27	N 32 16 27.17 W	103 37 54.01
	11300.00	90.00	359.59	9450.00	1735.17	1629.71	-751.31	0.00	464300.94	758196.55	N 32 16 28.16 W	103 37 54.01
	11400.00	90.00	359.59	9450.00	1833.78	1729.71	-752.04	0.00	464400.93	758195.82	N 32 16 29.15 W	103 37 54.01
	11500.00	90.00	359.59	9450.00	1932.39	1829.70	-752.76	0.00	464500.92	758195.10	N 32 16 30.14 W	103 37 54.01
	11600.00	90.00	359.59	9450.00	2031.00	1929.70	-753.48	0.00	464600.92	758194.38	N 32 16 31.13 W	103 37 54.02
	11700.00	90.00	359.59	9450.00	2129.62	2029.70	-754.20	0.00	464700.91	758193.66	N 32 16 32.12 W	103 37 54.02
	11800.00	90.00	359.59	9450.00	2228.23	2129.70	-754.93	0.00	464800.90	758192.93	N 32 16 33.11 W	103 37 54.02
	11900.00	90.00	359.59	9450.00	2326.84	2229.69	-755.65	0.00	464900.90	758192.21	N 32 16 34.10 W	103 37 54.02
	12000.00	90.00	359.59	9450.00	2425.46	2329.69	-756.37	0.00	465000.89	758191.49	N 32 16 35.09 W	103 37 54.02
	12100.00	90.00	359.59	9450.00	2524.07	2429.69	-757.10	0.00	465100.88	758190.76	N 32 16 36.07 W	103 37 54.02
	12200.00	90.00	359.59	9450.00	2622.68	2529.69	-757.82	0.00	465200.88	758190.04	N 32 16 37.06 W	103 37 54.02
	12300.00	90.00	359.59	9450.00	2721.29	2629.68	-758.54	0.00	465300.87	758189.32	N 32 16 38.05 W	103 37 54.02
	12400.00	90.00	359.59	9450.00	2819.91	2729.68	-759.26	0.00	465400.87	758188.60	N 32 16 39.04 W	103 37 54.02
	12500.00	90.00	359.59	9450.00	2918.52	2829.68	-759.99	0.00	465500.86	758187.87	N 32 16 40.03 W	103 37 54.02
	12600.00	90.00	359.59	9450.00	3017.13	2929.68	-760.71	0.00	465600.85	758187.15	N 32 16 41.02 W	103 37 54.02
	12700.00	90.00	359.59	9450.00	3115.74	3029.67	-761.43	0.00	465700.85	758186.43	N 32 16 42.01 W	103 37 54.02
	12800.00	90.00	359.59	9450.00	3214.36	3129.67	-762.15	0.00	465800.84	758185.70	N 32 16 43.00 W	103 37 54.02
	12900.00	90.00	359.59	9450.00	3312.97	3229.67	-762.88	0.00	465900.83	758184.98	N 32 16 43.99 W	103 37 54.03
	13000.00	90.00	359.59	9450.00	3411.58	3329.67	-763.60	0.00	466000.83	758184.26	N 32 16 44.98 W	103 37 54.03
	13100.00	90.00	359.59	9450.00	3510.20	3429.66	-764.32	0.00	466100.82	758183.54	N 32 16 45.97 W	103 37 54.03
	13200.00	90.00	359.59	9450.00	3608.81	3529.66	-765.05	0.00	466200.81	758182.81	N 32 16 46.96 W	103 37 54.03
	13300.00	90.00	359.59	9450.00	3707.42	3629.66	-765.77	0.00	466300.81	758182.09	N 32 16 47.95 W	103 37 54.03
	13400.00	90.00	359.59	9450.00	3806.03	3729.65	-766.49	0.00	466400.80	758181.37	N 32 16 48.94 W	103 37 54.03
	13500.00	90.00	359.59	9450.00	3904.65	3829.65	-767.21	0.00	466500.79	758180.65	N 32 16 49.93 W	103 37 54.03
	13600.00	90.00	359.59	9450.00	4003.26	3929.65	-767.94	0.00	466600.79	758179.92	N 32 16 50.92 W	103 37 54.03
	13700.00	90.00	359.59	9450.00	4101.87	4029.65	-768.66	0.00	466700.78	758179.20	N 32 16 51.91 W	103 37 54.03

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 ° ' ")
	13800.00	90.00	359.59	9450.00	4200.48	4129.64	-769.38	0.00	466800.77	758178.48	N 32 16 52.90 W 103 37 54.03	
	13900.00	90.00	359.59	9450.00	4299.10	4229.64	-770.11	0.00	466900.77	758177.75	N 32 16 53.89 W 103 37 54.03	
	14000.00	90.00	359.59	9450.00	4397.71	4329.64	-770.83	0.00	467000.76	758177.03	N 32 16 54.88 W 103 37 54.03	
Cimarex Triste Draw 25 Federal #12H - PBHL [330' FNL, 1610' FWL]	14058.28	90.00	359.59	9450.00	4455.18	4387.92	-771.25	0.00	467059.04	758176.61	N 32 16 55.45 W 103 37 54.04	

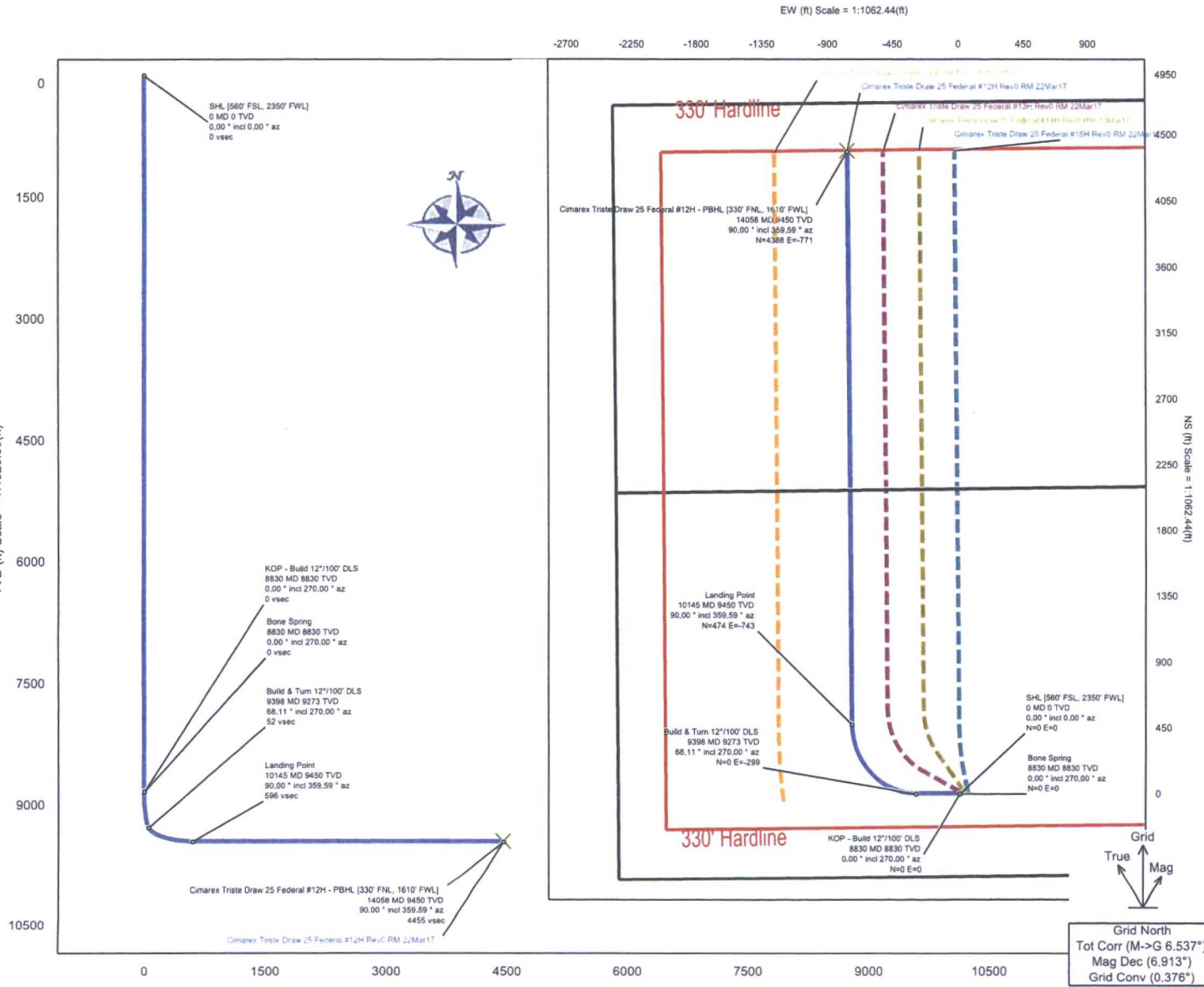
Survey Type: Non-Def Plan

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 #12H Rev0 RM 22Mar17
	1	20.000	14058.282	1/100.000	30.000	30.000		NAL_MWD_PLUS_0.5_DEG	Original Borehole / Cimarex Triste Draw 25 Federal #12H

Borehole: Original Borehole	Well: Cimarex Triste Draw 25 Federal #12H	Field: NM Lea County (NAD 83)	Structure: Cimarex Triste Draw 25 Federal #12H
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Gravity & Magnetic Parameters		Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet		Miscellaneous	
Model: HDGM 2016	Dip: 66.075°	Date: 22-Mar-2017	Lat: N 32 16 11.98	Northing: 462671.29RUS	Grid Conv: 0.3759°
MagDec: 6.913°	FS: 48196.59nT	Gravity FS: 998.437mgn (9.80665 Based)	Lon: W 103 37 45.39	Easting: 758947.83RUS	Scale Fact: 0.99996333
				Plan: Cimarex Triste Draw 25 Federal #12H Rev0 RM 22Mar17	



Critical Points								
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL [560' FSL, 2350' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Bone Spring	8830.00	0.00	270.00	8830.00	0.00	0.00	0.00	0.00
KOP - Build 12°/100' DLS	8830.14	0.00	270.00	8830.14	0.00	0.00	0.00	0.00
Build & Turn 12°/100' DLS	9397.72	68.11	270.00	9273.18	51.84	0.00	-299.45	12.00
Landing Point	10144.52	90.00	359.59	9450.00	595.72	474.26	-742.96	12.00
Cimarex Triste Draw 25 Federal #12H - PBHL [330' FNL, 1610' FWL]	14058.28	90.00	359.59	9450.00	4455.18	4387.92	-771.25	0.00

Grid North
Tot Corr (M->G 6.537°)
Mag Dec (6.913°)
Grid Conv (0.376°)