



Cimarex Chief 30 State #7H ST01 OPB 25-Aug-16 Proposal Report

(Non-Def Plan)

Report Date: August 25, 2016 - 03:27 PM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Chief 30 State #7H / Cimarex Chief 30 State #7H
Well: Chief 30 State #7H
Borehole: ST01
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Chief 30 State #7H ST01 OPB 25-Aug-16
Survey Date: August 25, 2016
Tort / AHD / DDI / ERD Ratio: 90.000 ° / 4653.906 ft / 5.764 / 0.404
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 33' 1.99477", W 103° 29' 40.06434"
Location Grid N/E Y/X: N 565040.390 ftUS, E 799815.590 ftUS
CRS Grid Convergence Angle: 0.4514 °
Grid Scale Factor: 0.9999856
Version / Patch: 2.9.370.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 179.541 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: Unknown
TVD Reference Elevation: 3700.700 ft above MSL
Seabed / Ground Elevation: 3700.700 ft above MSL
Magnetic Declination: 6.821 °
Total Gravity Field Strength: 998.5005mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 48383.299 nT
Magnetic Dip Angle: 60.560 °
Declination Date: August 25, 2016
Magnetic Declination Model: HDGM 2016
North Reference: Grid North
Grid Convergence Used: 0.4514 °
Total Corr Mag North->Grid North: 6.3701 °
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 [1980' FEL, 300' FNL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	100.00	0.00	179.54	100.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	200.00	0.00	179.54	200.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	300.00	0.00	179.54	300.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	400.00	0.00	179.54	400.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	500.00	0.00	179.54	500.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	600.00	0.00	179.54	600.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	700.00	0.00	179.54	700.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	800.00	0.00	179.54	800.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	900.00	0.00	179.54	900.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	1000.00	0.00	179.54	1000.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	1100.00	0.00	179.54	1100.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	1200.00	0.00	179.54	1200.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	1300.00	0.00	179.54	1300.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	1400.00	0.00	179.54	1400.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	1500.00	0.00	179.54	1500.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	1600.00	0.00	179.54	1600.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	1700.00	0.00	179.54	1700.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	1800.00	0.00	179.54	1800.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	1900.00	0.00	179.54	1900.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	2000.00	0.00	179.54	2000.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	2100.00	0.00	179.54	2100.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	2200.00	0.00	179.54	2200.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	2300.00	0.00	179.54	2300.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	2400.00	0.00	179.54	2400.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	2500.00	0.00	179.54	2500.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	2600.00	0.00	179.54	2600.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06
	2700.00	0.00	179.54	2700.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N 32 33 1.99	W 103 29 40.06

8/25/2016 4:00 PM Page 2 of 4

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 ° ' ")	
	8700.00	0.00	179.54	8700.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N	32 33	1.99	W 103 29 40.06
	8800.00	0.00	179.54	8800.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N	32 33	1.99	W 103 29 40.06
	8900.00	0.00	179.54	8900.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N	32 33	1.99	W 103 29 40.06
	9000.00	0.00	179.54	9000.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N	32 33	1.99	W 103 29 40.06
	9100.00	0.00	179.54	9100.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N	32 33	1.99	W 103 29 40.06
	9200.00	0.00	179.54	9200.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N	32 33	1.99	W 103 29 40.06
	9300.00	0.00	179.54	9300.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N	32 33	1.99	W 103 29 40.06
	9400.00	0.00	179.54	9400.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N	32 33	1.99	W 103 29 40.06
	9500.00	0.00	179.54	9500.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N	32 33	1.99	W 103 29 40.06
	9600.00	0.00	179.54	9600.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N	32 33	1.99	W 103 29 40.06
	9700.00	0.00	179.54	9700.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N	32 33	1.99	W 103 29 40.06
	9800.00	0.00	179.54	9800.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N	32 33	1.99	W 103 29 40.06
	9900.00	0.00	179.54	9900.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N	32 33	1.99	W 103 29 40.06
	10000.00	0.00	179.54	10000.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N	32 33	1.99	W 103 29 40.06
	10100.00	0.00	179.54	10100.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N	32 33	1.99	W 103 29 40.06
	10200.00	0.00	179.54	10200.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N	32 33	1.99	W 103 29 40.06
	10300.00	0.00	179.54	10300.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N	32 33	1.99	W 103 29 40.06
	10400.00	0.00	179.54	10400.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N	32 33	1.99	W 103 29 40.06
	10500.00	0.00	179.54	10500.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N	32 33	1.99	W 103 29 40.06
	10600.00	0.00	179.54	10600.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N	32 33	1.99	W 103 29 40.06
	10700.00	0.00	179.54	10700.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N	32 33	1.99	W 103 29 40.06
	10800.00	0.00	179.54	10800.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N	32 33	1.99	W 103 29 40.06
	10900.00	0.00	179.54	10900.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N	32 33	1.99	W 103 29 40.06
	11000.00	0.00	179.54	11000.00	0.00	0.00	0.00	0.00	565040.39	799815.59	N	32 33	1.99	W 103 29 40.06
Build 12"/100' DLS	11042.54	0.00	179.54	11042.54	0.00	0.00	0.00	0.00	565040.39	799815.59	N	32 33	1.99	W 103 29 40.06
	11100.00	6.90	179.54	11099.86	3.45	-3.45	0.03	12.00	565036.94	799815.62	N	32 33	1.96	W 103 29 40.06
	11200.00	18.90	179.54	11197.16	25.73	-25.73	0.21	12.00	565014.66	799815.80	N	32 33	1.74	W 103 29 40.06
	11300.00	30.90	179.54	11287.70	67.75	-67.75	0.54	12.00	564972.64	799816.13	N	32 33	1.32	W 103 29 40.06
	11400.00	42.90	179.54	11367.53	127.68	-127.67	1.02	12.00	564912.72	799816.61	N	32 33	0.73	W 103 29 40.06
	11500.00	54.90	179.54	11433.15	202.89	-202.88	1.62	12.00	564837.51	799817.21	N	32 32	59.99	W 103 29 40.06
	11600.00	66.90	179.54	11481.70	290.11	-290.10	2.32	12.00	564750.30	799817.91	N	32 32	59.12	W 103 29 40.06
Landing Point	11700.00	78.90	179.54	11511.06	385.51	-385.50	3.09	12.00	564654.90	799818.68	N	32 32	58.18	W 103 29 40.06
	11792.54	90.00	179.54	11520.00	477.46	-477.45	3.82	12.00	564562.95	799819.41	N	32 32	57.27	W 103 29 40.06
	11800.00	90.00	179.54	11520.00	484.93	-484.91	3.88	0.00	564555.48	799819.47	N	32 32	57.20	W 103 29 40.06
	11900.00	90.00	179.54	11520.00	584.93	-584.91	4.68	0.00	564455.49	799820.27	N	32 32	56.21	W 103 29 40.06
	12000.00	90.00	179.54	11520.00	684.93	-684.91	5.49	0.00	564355.49	799821.08	N	32 32	55.22	W 103 29 40.06
	12100.00	90.00	179.54	11520.00	784.93	-784.90	6.29	0.00	564255.50	799821.88	N	32 32	54.23	W 103 29 40.06
	12200.00	90.00	179.54	11520.00	884.93	-884.90	7.09	0.00	564155.50	799822.68	N	32 32	53.24	W 103 29 40.06
	12300.00	90.00	179.54	11520.00	984.93	-984.90	7.89	0.00	564055.51	799823.48	N	32 32	52.25	W 103 29 40.06
	12400.00	90.00	179.54	11520.00	1084.93	-1084.89	8.69	0.00	563955.51	799824.28	N	32 32	51.26	W 103 29 40.06
	12500.00	90.00	179.54	11520.00	1184.93	-1184.89	9.49	0.00	563855.52	799825.08	N	32 32	50.27	W 103 29 40.06
	12600.00	90.00	179.54	11520.00	1284.93	-1284.89	10.29	0.00	563755.52	799825.88	N	32 32	49.28	W 103 29 40.06
	12700.00	90.00	179.54	11520.00	1384.93	-1384.89	11.09	0.00	563655.53	799826.68	N	32 32	48.29	W 103 29 40.06
	12800.00	90.00	179.54	11520.00	1484.93	-1484.88	11.89	0.00	563555.53	799827.48	N	32 32	47.30	W 103 29 40.06
	12900.00	90.00	179.54	11520.00	1584.93	-1584.88	12.69	0.00	563455.54	799828.28	N	32 32	46.31	W 103 29 40.06
	13000.00	90.00	179.54	11520.00	1684.93	-1684.88	13.49	0.00	563355.54	799829.08	N	32 32	45.32	W 103 29 40.06
	13100.00	90.00	179.54	11520.00	1784.93	-1784.87	14.29	0.00	563255.55	799829.88	N	32 32	44.33	W 103 29 40.06
	13200.00	90.00	179.54	11520.00	1884.93	-1884.87	15.10	0.00	563155.55	799830.69	N	32 32	43.34	W 103 29 40.06
	13300.00	90.00	179.54	11520.00	1984.93	-1984.87	15.90	0.00	563055.56	799831.49	N	32 32	42.35	W 103 29 40.06
	13400.00	90.00	179.54	11520.00	2084.93	-2084.86	16.70	0.00	562955.56	799832.29	N	32 32	41.37	W 103 29 40.06
	13500.00	90.00	179.54	11520.00	2184.93	-2184.86	17.50	0.00	562855.57	799833.09	N	32 32	40.38	W 103 29 40.06
	13600.00	90.00	179.54	11520.00	2284.93	-2284.86	18.30	0.00	562755.57	799833.89	N	32 32	39.39	W 103 29 40.06
	13700.00	90.00	179.54	11520.00	2384.93	-2384.85	19.10	0.00	562655.58	799834.69	N	32 32	38.40	W 103 29 40.06
	13800.00	90.00	179.54	11520.00	2484.93	-2484.85	19.90	0.00	562555.58	799835.49	N	32 32	37.41	W 103 29 40.06
	13900.00	90.00	179.54	11520.00	2584.93	-2584.85	20.70	0.00	562455.59	799836.29	N	32 32	36.42	W 103 29 40.06
	14000.00	90.00	179.54	11520.00	2684.93	-2684.84	21.50	0.00	562355.59	799837.09	N	32 32	35.43	W 103 29 40.06
	14100.00	90.00	179.54	11520.00	2784.93	-2784.84	22.30	0.00	562255.60	799837.89	N	32 32	34.44	W 103 29 40.06
	14200.00	90.00	179.54	11520.00	2884.93	-2884.84	23.10	0.00	562155.60	799838.69	N	32 32	33.45	W 103 29 40.06

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 ° ' ")
	14300.00	90.00	179.54	11520.00	2984.93	-2984.83	23.90	0.00	562055.61	799839.49	N 32 32 32.46	W 103 29 40.06
	14400.00	90.00	179.54	11520.00	3084.93	-3084.83	24.71	0.00	561955.61	799840.30	N 32 32 31.47	W 103 29 40.06
	14500.00	90.00	179.54	11520.00	3184.93	-3184.83	25.51	0.00	561855.61	799841.10	N 32 32 30.48	W 103 29 40.06
	14600.00	90.00	179.54	11520.00	3284.93	-3284.82	26.31	0.00	561755.62	799841.90	N 32 32 29.49	W 103 29 40.06
	14700.00	90.00	179.54	11520.00	3384.93	-3384.82	27.11	0.00	561655.62	799842.70	N 32 32 28.50	W 103 29 40.06
	14800.00	90.00	179.54	11520.00	3484.93	-3484.82	27.91	0.00	561555.63	799843.50	N 32 32 27.51	W 103 29 40.06
	14900.00	90.00	179.54	11520.00	3584.93	-3584.81	28.71	0.00	561455.63	799844.30	N 32 32 26.52	W 103 29 40.06
	15000.00	90.00	179.54	11520.00	3684.93	-3684.81	29.51	0.00	561355.64	799845.10	N 32 32 25.53	W 103 29 40.06
	15100.00	90.00	179.54	11520.00	3784.93	-3784.81	30.31	0.00	561255.64	799845.90	N 32 32 24.54	W 103 29 40.06
	15200.00	90.00	179.54	11520.00	3884.93	-3884.81	31.11	0.00	561155.65	799846.70	N 32 32 23.55	W 103 29 40.06
	15300.00	90.00	179.54	11520.00	3984.93	-3984.80	31.91	0.00	561055.65	799847.50	N 32 32 22.57	W 103 29 40.06
	15400.00	90.00	179.54	11520.00	4084.93	-4084.80	32.71	0.00	560955.66	799848.30	N 32 32 21.58	W 103 29 40.06
	15500.00	90.00	179.54	11520.00	4184.93	-4184.80	33.51	0.00	560855.66	799849.10	N 32 32 20.59	W 103 29 40.06
	15600.00	90.00	179.54	11520.00	4284.93	-4284.79	34.32	0.00	560755.67	799849.91	N 32 32 19.60	W 103 29 40.06
	15700.00	90.00	179.54	11520.00	4384.93	-4384.79	35.12	0.00	560655.67	799850.71	N 32 32 18.61	W 103 29 40.06
	15800.00	90.00	179.54	11520.00	4484.93	-4484.79	35.92	0.00	560555.68	799851.51	N 32 32 17.62	W 103 29 40.06
	15900.00	90.00	179.54	11520.00	4584.93	-4584.78	36.72	0.00	560455.68	799852.31	N 32 32 16.63	W 103 29 40.06
Cimarex Chief 30 State #7H - PBHL [1980' FEL, 330' FSL]	15968.98	90.00	179.54	11520.00	4653.91	-4653.76	37.27	0.00	560386.71	799852.86	N 32 32 15.95	W 103 29 40.06

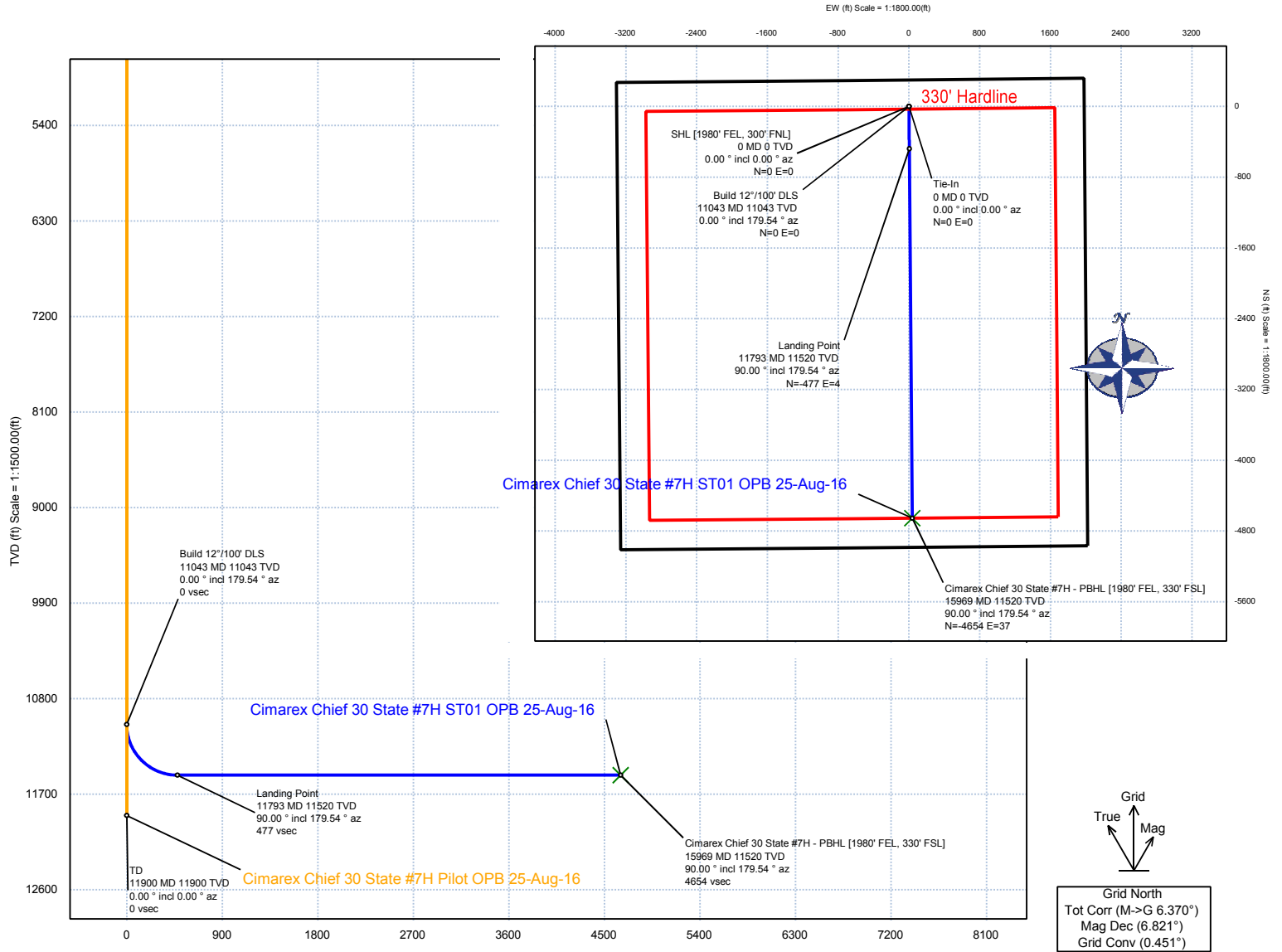
Survey Type: Non-Def Plan

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	15968.976	1/100.000	30.000	30.000		NAL_MWD_PLUS_0.5_DEG	ST01 / Cimarex Chief 30 State #7H ST01 OPB 25-Aug-16

Borehole:	Well:	Field:	Structure:
ST01	Chief 30 State #7H	NM Lea County (NAD 83)	TBD

Gravity & Magnetic Parameters				Surface Location				Miscellaneous			
Model:	HDGM	Dip:	60.56°	Date:	25-Aug-2016	Lat:	N 32 33 1.99	Northing:	565040.39ftU	Grid Conv:	0.4514°
MagDec:	6.821°	FS:	48383.299n	Gravity FS:	998.501mgn (9.80665 Based)	Lon:	W 103 29 40.06	Easting:	799815.59ftU	Scale Fact:	0.9999856
								Slot: Chief 30			
								State #7H			
								TVD Ref: Unknown(3700.7ft above MSL)			
								Plan: Chief 30 State #7H ST01 OPB 25-Aug-16			



Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL [1980' FEL, 300' FNL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Build 12"/100' DLS	11042.54	0.00	179.54	11042.54	0.00	0.00	0.00	0.00
Landing Point	11792.54	90.00	179.54	11520.00	477.46	-477.45	3.82	12.00
Cimarex Chief 30 State #7H - PBHL [1980' FEL, 330' FSL]	15968.98	90.00	179.54	11520.00	4653.91	-4653.76	37.27	0.00