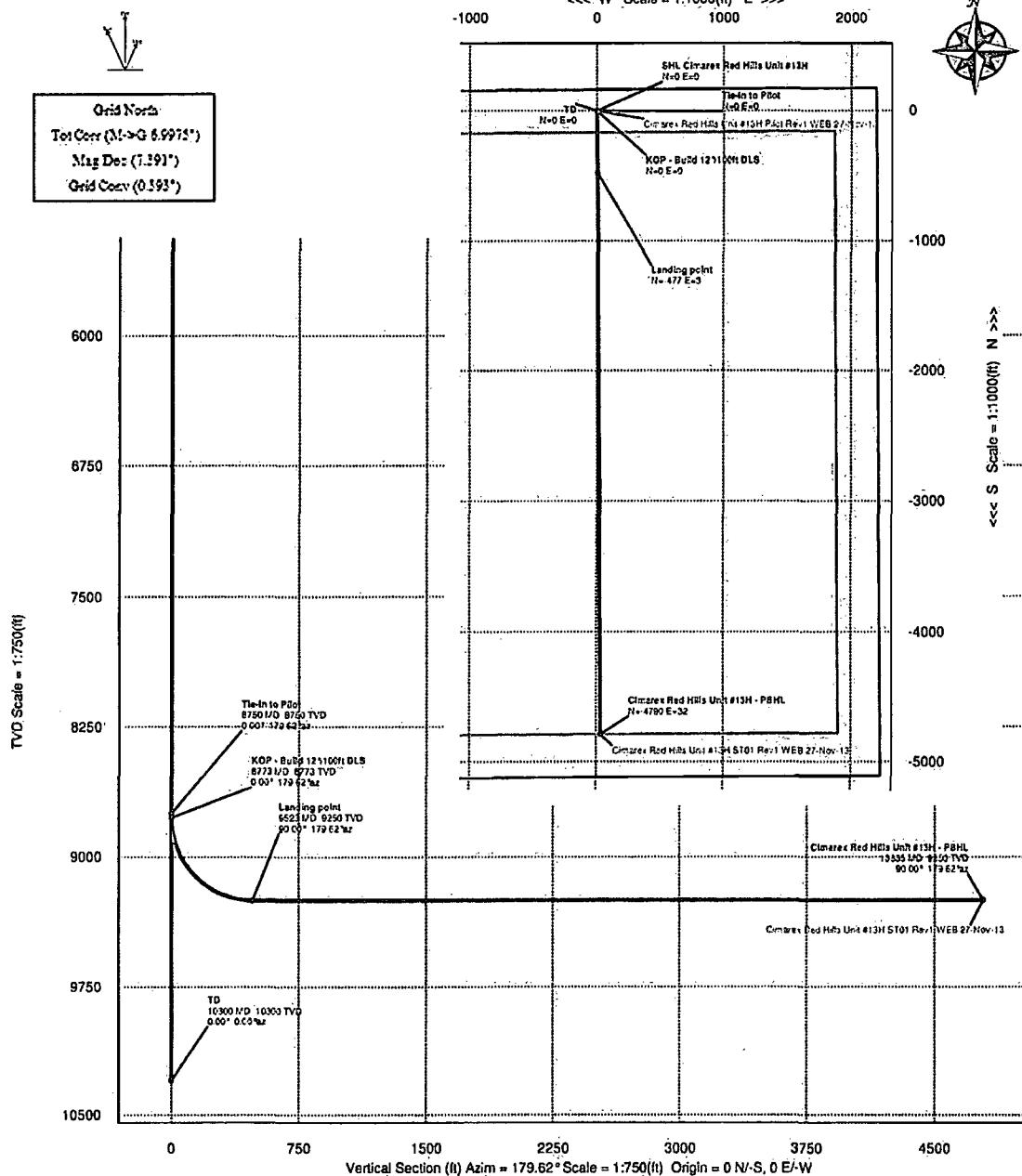




Cimarex Energy

PATHFINDER
A Schlumberger Company

WELL	Red Hills Unit #13H	FIELD	NM Lea County	STRUCTURE	TBD
Magnetic Parameters Mag Dec 800W 2013	DC 55.83° Mag Dec 7.391°	DC 55.83° Mag Dec 7.391°	DC 55.83° Mag Dec 7.391°	DC 55.83° Mag Dec 7.391°	DC 55.83° Mag Dec 7.391°



Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
Tie-in to Pilot	8750.00	0.00	179.62	8750.00	0.00	0.00	0.00	
KOP - Build 12°/100ft DLS	8772.50	0.00	179.62	8772.50	0.00	0.00	0.00	0.00
Landing point	9522.56	90.00	179.62	9250.00	477.50	-477.49	3.17	12.00
Cimarex Red Hills Unit #13H - PBHL	13835.11	90.00	179.62	9250.00	4790.06	-4789.96	31.60	0.00

FEB 28 2014



Cimarex Red Hills Unit #13H ST01 Rev1 WEB 27-Nov-13 Proposal Report
100' Interpolated
 (Non-Def Plan)



Report Date: November 27, 2013 - 06:37 PM
 Client: Cimarex Energy
 Field: NM Lea County (NAD 83)
 Structure / Slot: TBD / Red Hills Unit #13H
 Well: Red Hills Unit #13H
 Borehole: ST01
 UWI / API#: Unknown / Unknown
 Survey Name: Cimarex Red Hills Unit #13H ST01 Rev1 WEB 27-Nov-13
 Survey Date: November 27, 2013
 Tort / AHD / DDI / ERD Ratio: 90.004 * / 4790.059 ft / 5.809 / 0.518
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 5' 37.94939", W 103° 35' 34.36368"
 Location Grid N/E Y/X: N 398675.700 RUS, E 770638.200 RUS
 CRS Grid Convergence Angle: 0.3934 *
 Grid Scale Factor: 0.99996931

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 179.622 * (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: Ground Level
 TVD Reference Elevation: 3403.000 ft above MSL
 Seabed / Ground Elevation: 3403.000 ft above MSL
 Magnetic Declination: 7.391 *
 Total Gravity Field Strength: 998.4766mgn (9.80665 Based)
 Total Magnetic Field Strength: 48274.859 nT
 Magnetic Dip Angle: 59.987 *
 Declination Date: November 27, 2013
 Magnetic Declination Model: BGGM 2013
 North Reference: Grid North
 Grid Convergence Used: 0.3934 *
 Total Corr Mag North->Grid North: 6.9975 *
 Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (RUS)	Easting (RUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')	Closure (ft)	Closure Azimuth (°)	DLS (*/100ft)
SHL Cimarex Red Hills Unit #13H	0.00	0.00	0.00	0.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	N/A
	100.00	0.00	179.62	100.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	200.00	0.00	179.62	200.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	300.00	0.00	179.62	300.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	400.00	0.00	179.62	400.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	500.00	0.00	179.62	500.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	600.00	0.00	179.62	600.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	700.00	0.00	179.62	700.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	800.00	0.00	179.62	800.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	900.00	0.00	179.62	900.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	1000.00	0.00	179.62	1000.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	1100.00	0.00	179.62	1100.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	1200.00	0.00	179.62	1200.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	1300.00	0.00	179.62	1300.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	1400.00	0.00	179.62	1400.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	1500.00	0.00	179.62	1500.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	1600.00	0.00	179.62	1600.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	1700.00	0.00	179.62	1700.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	1800.00	0.00	179.62	1800.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	1900.00	0.00	179.62	1900.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	2000.00	0.00	179.62	2000.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	2100.00	0.00	179.62	2100.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	2200.00	0.00	179.62	2200.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	2300.00	0.00	179.62	2300.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	2400.00	0.00	179.62	2400.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	2500.00	0.00	179.62	2500.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	2600.00	0.00	179.62	2600.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	2700.00	0.00	179.62	2700.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	2800.00	0.00	179.62	2800.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00
	2900.00	0.00	179.62	2900.00	0.00	0.00	0.00	398675.70	770638.20	N 32° 5' 37.95"	W 103° 35' 34.36"	0.00	0.00	0.00

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Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ° °)	Longitude (E/W ° ° °)	Closure (ft)	Closure Azimuth (°)	DLS (*100ft)
Tie-in to Pilot KOP - Build 12"/100ft DLS	8500.00	0.00	179.62	8500.00	0.00	0.00	0.00	398675.70	770638.20	N 32 5 37.95	W 103 35 34.36	0.00	0.00	0.00
	8600.00	0.00	179.62	8600.00	0.00	0.00	0.00	398675.70	770638.20	N 32 5 37.95	W 103 35 34.36	0.00	0.00	0.00
	8700.00	0.00	179.62	8700.00	0.00	0.00	0.00	398675.70	770638.20	N 32 5 37.95	W 103 35 34.36	0.00	0.00	0.00
	8750.00	0.00	179.62	8750.00	0.00	0.00	0.00	398675.70	770638.20	N 32 5 37.95	W 103 35 34.36	0.00	0.00	0.00
	8772.50	0.00	179.62	8772.50	0.00	0.00	0.00	398675.70	770638.20	N 32 5 37.95	W 103 35 34.36	0.00	0.00	0.00
Landing point	8800.00	3.30	179.62	8799.98	0.79	-0.79	0.01	398674.91	770638.21	N 32 5 37.94	W 103 35 34.36	0.79	179.62	12.00
	8900.00	15.30	179.62	8898.49	16.92	-16.92	0.11	398658.78	770638.31	N 32 5 37.78	W 103 35 34.36	16.92	179.62	12.00
	9000.00	27.30	179.62	8991.49	53.18	-53.18	0.35	398622.53	770638.55	N 32 5 37.42	W 103 35 34.36	53.18	179.62	12.00
	9100.00	39.30	179.62	9074.92	107.98	-107.97	0.72	398567.73	770638.92	N 32 5 36.88	W 103 35 34.36	107.98	179.62	12.00
	9200.00	51.30	179.62	9145.14	178.92	-178.92	1.19	398496.79	770639.39	N 32 5 36.18	W 103 35 34.36	178.92	179.62	12.00
	9300.00	63.30	179.62	9199.07	282.92	-262.91	1.74	398412.80	770639.94	N 32 5 35.35	W 103 35 34.36	262.92	179.62	12.00
	9400.00	75.29	179.62	9234.36	356.29	-356.28	2.36	398319.43	770640.55	N 32 5 34.42	W 103 35 34.36	356.29	179.62	12.00
	9500.00	87.29	179.62	9249.47	454.95	-454.94	3.02	398220.77	770641.22	N 32 5 33.45	W 103 35 34.36	454.95	179.62	12.00
	9522.55	90.00	179.62	9250.00	477.50	-477.49	3.17	398198.23	770641.37	N 32 5 33.22	W 103 35 34.36	477.50	179.62	12.00
	9600.00	90.00	179.62	9250.00	554.94	-554.93	3.68	398120.79	770641.68	N 32 5 32.46	W 103 35 34.37	554.94	179.62	0.00
	9700.00	90.00	179.62	9250.00	654.94	-654.93	4.34	398020.79	770642.54	N 32 5 31.47	W 103 35 34.37	654.94	179.62	0.00
	9800.00	90.00	179.62	9250.00	754.94	-754.93	5.01	397920.80	770643.21	N 32 5 30.48	W 103 35 34.37	754.94	179.62	0.00
	9900.00	90.00	179.62	9250.00	854.94	-854.93	5.67	397820.80	770643.87	N 32 5 29.49	W 103 35 34.37	854.94	179.62	0.00
	10000.00	90.00	179.62	9250.00	954.94	-954.92	6.33	397720.81	770644.53	N 32 5 28.50	W 103 35 34.37	954.94	179.62	0.00
	10100.00	90.00	179.62	9250.00	1054.94	-1054.92	6.99	397620.81	770645.19	N 32 5 27.51	W 103 35 34.37	1054.94	179.62	0.00
	10200.00	90.00	179.62	9250.00	1154.94	-1154.92	7.66	397520.82	770645.86	N 32 5 26.52	W 103 35 34.37	1154.94	179.62	0.00
	10300.00	90.00	179.62	9250.00	1254.94	-1254.92	8.32	397420.82	770646.52	N 32 5 25.53	W 103 35 34.37	1254.94	179.62	0.00
	10400.00	90.00	179.62	9250.00	1354.94	-1354.92	8.98	397320.83	770647.18	N 32 5 24.54	W 103 35 34.37	1354.94	179.62	0.00
	10500.00	90.00	179.62	9250.00	1454.94	-1454.91	9.64	397220.83	770647.84	N 32 5 23.55	W 103 35 34.37	1454.94	179.62	0.00
	10600.00	90.00	179.62	9250.00	1554.94	-1554.91	10.30	397120.84	770648.50	N 32 5 22.56	W 103 35 34.37	1554.94	179.62	0.00
	10700.00	90.00	179.62	9250.00	1654.94	-1654.91	10.96	397020.85	770649.16	N 32 5 21.57	W 103 35 34.37	1654.94	179.62	0.00
	10800.00	90.00	179.62	9250.00	1754.94	-1754.91	11.62	396920.85	770649.82	N 32 5 20.58	W 103 35 34.37	1754.94	179.62	0.00
	10900.00	90.00	179.62	9250.00	1854.94	-1854.90	12.29	396820.86	770650.48	N 32 5 19.59	W 103 35 34.37	1854.94	179.62	0.00
	11000.00	90.00	179.62	9250.00	1954.94	-1954.90	12.95	396720.86	770651.15	N 32 5 18.60	W 103 35 34.37	1954.94	179.62	0.00
	11100.00	90.00	179.62	9250.00	2054.94	-2054.90	13.61	396620.87	770651.81	N 32 5 17.61	W 103 35 34.37	2054.94	179.62	0.00
	11200.00	90.00	179.62	9250.00	2154.94	-2154.90	14.27	396520.87	770652.47	N 32 5 16.63	W 103 35 34.37	2154.94	179.62	0.00
	11300.00	90.00	179.62	9250.00	2254.94	-2254.90	14.93	396420.88	770653.13	N 32 5 15.64	W 103 35 34.37	2254.94	179.62	0.00
	11400.00	90.00	179.62	9250.00	2354.94	-2354.89	15.59	396320.88	770653.79	N 32 5 14.65	W 103 35 34.37	2354.94	179.62	0.00
	11500.00	90.00	179.62	9250.00	2454.94	-2454.89	16.25	396220.89	770654.45	N 32 5 13.66	W 103 35 34.37	2454.94	179.62	0.00
	11600.00	90.00	179.62	9250.00	2554.94	-2554.89	16.91	396120.89	770655.11	N 32 5 12.67	W 103 35 34.37	2554.94	179.62	0.00
	11700.00	90.00	179.62	9250.00	2654.94	-2654.89	17.57	396020.90	770655.76	N 32 5 11.68	W 103 35 34.37	2654.94	179.62	0.00
	11800.00	90.00	179.62	9250.00	2754.94	-2754.88	18.22	395920.91	770656.42	N 32 5 10.69	W 103 35 34.37	2754.94	179.62	0.00
	11900.00	90.00	179.62	9250.00	2854.94	-2854.88	18.88	395820.91	770657.08	N 32 5 9.70	W 103 35 34.37	2854.94	179.62	0.00
	12000.00	90.00	179.62	9250.00	2954.94	-2954.88	19.54	395720.92	770657.74	N 32 5 8.71	W 103 35 34.37	2954.94	179.62	0.00
	12100.00	90.00	179.62	9250.00	3054.94	-3054.88	20.20	395620.92	770658.40	N 32 5 7.72	W 103 35 34.37	3054.94	179.62	0.00
	12200.00	90.00	179.62	9250.00	3154.94	-3154.88	20.86	395520.93	770659.06	N 32 5 6.73	W 103 35 34.37	3154.94	179.62	0.00
	12300.00	90.00	179.62	9250.00	3254.94	-3254.87	21.52	395420.93	770659.72	N 32 5 5.74	W 103 35 34.37	3254.94	179.62	0.00
	12400.00	90.00	179.62	9250.00	3354.94	-3354.87	22.18	395320.94	770660.38	N 32 5 4.75	W 103 35 34.37	3354.94	179.62	0.00
	12500.00	90.00	179.62	9250.00	3454.94	-3454.87	22.83	395220.94	770661.03	N 32 5 3.76	W 103 35 34.37	3454.94	179.62	0.00
	12600.00	90.00	179.62	9250.00	3554.94	-3554.87	23.49	395120.95	770661.69	N 32 5 2.77	W 103 35 34.37	3554.94	179.62	0.00
	12700.00	90.00	179.62	9250.00	3654.94	-3654.86	24.15	395020.95	770662.35	N 32 5 1.78	W 103 35 34.37	3654.94	179.62	0.00
	12800.00	90.00	179.62	9250.00	3754.94	-3754.86	24.81	394920.96	770663.01	N 32 5 0.79	W 103 35 34.37	3754.94	179.62	0.00
	12900.00	90.00	179.62	9250.00	3854.94	-3854.86	25.46	394820.97	770663.66	N 32 4 59.80	W 103 35 34.38	3854.94	179.62	0.00
	13000.00	90.00	179.62	9250.00	3954.94	-3954.86	26.12	394720.97	770664.32	N 32 4 58.81	W 103 35 34.38	3954.94	179.62	0.00
	13100.00	90.00	179.62	9250.00	4054.94	-4054.86	26.78	394620.98	770664.98	N 32 4 57.82	W 103 35 34.38	4054.94	179.62	0.00
	13200.00	90.00	179.62	9250.00	4154.94	-4154.85	27.43	394520.98	770665.63	N 32 4 56.83	W 103 35 34.38	4154.94	179.62	0.00
	13300.00	90.00	179.62	9250.00	4254.94	-4254.85	28.09	394420.99	770666.29	N 32 4 55.85	W 103 35 34.38	4254.94	179.62	0.00
	13400.00	90.00	179.62	9250.00	4354.94	-4354.85	28.75	394320.99	770666.95	N 32 4 54.86	W 103 35 34.38	4354.94	179.62	0.00
	13500.00	90.00	179.62	9250.00	4454.94	-4454.85	29.40	394221.00	770667.60	N 32 4 53.87	W 103 35 34.38	4454.94	179.62	0.00

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	Closure (ft)	Closure Azimuth (°)	DLS (ft/100ft)
	13600.00	90.00	179.62	9250.00	4554.94	-4554.85	30.06	394121.00	770668.26	N 32 4 52.88	W 103 35 34.38	4554.94	179.62	0.00
	13700.00	90.00	179.62	9250.00	4654.94	-4654.84	30.72	394021.01	770668.91	N 32 4 51.89	W 103 35 34.38	4654.94	179.62	0.00
	13800.00	90.00	179.62	9250.00	4754.94	-4754.84	31.37	393921.01	770669.57	N 32 4 50.90	W 103 35 34.38	4754.94	179.62	0.00
Cimarex Red Hills Unit #13H - PBHL	13835.11	90.00	179.62	9250.00	4790.06	-4789.96	31.60	393885.90	770669.80	N 32 4 50.55	W 103 35 34.38	4790.06	179.62	0.00

Survey Type: Non-Def Plan

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

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	8750.000	1/100.000	30.000	30.000	SLB_MWD-POOR	Pilot Hole / Cimarex Red Hills Unit #13H Pilot Rev1 WEB 27-Nov-13
	8750.000	8772.500	1/100.000	30.000	30.000	SLB_MWD-POOR	ST01 / Cimarex Red Hills Unit #13H ST01 Rev1 WEB 27-Nov-
	8772.500	13835.115	1/100.000	30.000	30.000	SLB_MWD-STD	ST01 / Cimarex Red Hills Unit #13H ST01 Rev1 WEB 27-Nov-