

Cimarex Adams State Com 15H Rev0 06Mar19 Proposal Geodetic Report

(Def Plan)

Report Date: March 07, 2019 - 11:25 AM
 Client: Cimarex Energy
 Field: NM Lea County (NAD 83)
 Structure / Slot: Cimarex Adams State Com 15H / New Slot
 Well: Adams State Com 15H
 Borehole: Adams State Com 15H
 UWI / API#: Unknown / Unknown
 Survey Name: Cimarex Adams State Com 15H Rev0 06Mar19
 Survey Date: March 07, 2019
 Tort / AMD / DDI / ERD Ratio: 100.670 * / 7278.814 ft / 8.064 / 0.828
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 30' 22.14045", W 103° 36' 23.53226"
 Location Grid N/E Y/X: N 548631.850 ftUS, E 765391.880 ftUS
 CRS Grid Convergence Angle: 0.3906 *
 Grid Scale Factor: 0.99996658
 Version / Patch: 2.10.753.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 179.560 * (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB
 Seabed / Ground Elevation: 3828.200 ft above MSL
 Magnetic Declination: 6.686 *
 Total Gravity Field Strength: 998.4738mgn (9.80665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 48148.443 nT
 Magnetic Dip Angle: 60.359 *
 Declination Date: March 07, 2019
 Magnetic Declination Model: HDGM 2019
 North Reference: Grid North
 Grid Convergence Used: 0.3906 *
 Total Corr Mag North-Grid North: 6.2957 *
 Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azlm Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
SHL [1996' FSL, 1031' FEL]	0.00	0.00	177.89	0.00	0.00	0.00	0.00	N/A	548631.85	765391.88	N 32 30 22.14	W 103 36 23.53
	100.00	0.00	90.00	100.00	0.00	0.00	0.00	0.00	548631.85	765391.88	N 32 30 22.14	W 103 36 23.53
	200.00	0.00	90.00	200.00	0.00	0.00	0.00	0.00	548631.85	765391.88	N 32 30 22.14	W 103 36 23.53
	300.00	0.00	90.00	300.00	0.00	0.00	0.00	0.00	548631.85	765391.88	N 32 30 22.14	W 103 36 23.53
	400.00	0.00	90.00	400.00	0.00	0.00	0.00	0.00	548631.85	765391.88	N 32 30 22.14	W 103 36 23.53
	500.00	0.00	90.00	500.00	0.00	0.00	0.00	0.00	548631.85	765391.88	N 32 30 22.14	W 103 36 23.53
	600.00	0.00	90.00	600.00	0.00	0.00	0.00	0.00	548631.85	765391.88	N 32 30 22.14	W 103 36 23.53
	700.00	0.00	90.00	700.00	0.00	0.00	0.00	0.00	548631.85	765391.88	N 32 30 22.14	W 103 36 23.53
	800.00	0.00	90.00	800.00	0.00	0.00	0.00	0.00	548631.85	765391.88	N 32 30 22.14	W 103 36 23.53
	900.00	0.00	90.00	900.00	0.00	0.00	0.00	0.00	548631.85	765391.88	N 32 30 22.14	W 103 36 23.53
	1000.00	0.00	90.00	1000.00	0.00	0.00	0.00	0.00	548631.85	765391.88	N 32 30 22.14	W 103 36 23.53
	1100.00	0.00	90.00	1100.00	0.00	0.00	0.00	0.00	548631.85	765391.88	N 32 30 22.14	W 103 36 23.53
	1200.00	0.00	90.00	1200.00	0.00	0.00	0.00	0.00	548631.85	765391.88	N 32 30 22.14	W 103 36 23.53
	1300.00	0.00	90.00	1300.00	0.00	0.00	0.00	0.00	548631.85	765391.88	N 32 30 22.14	W 103 36 23.53
	1400.00	0.00	90.00	1400.00	0.00	0.00	0.00	0.00	548631.85	765391.88	N 32 30 22.14	W 103 36 23.53
	1500.00	0.00	90.00	1500.00	0.00	0.00	0.00	0.00	548631.85	765391.88	N 32 30 22.14	W 103 36 23.53
	1600.00	0.00	90.00	1600.00	0.00	0.00	0.00	0.00	548631.85	765391.88	N 32 30 22.14	W 103 36 23.53
Rustler	1605.00	0.00	90.00	1605.00	0.00	0.00	0.00	0.00	548631.85	765391.88	N 32 30 22.14	W 103 36 23.53
Top Salt	1700.00	0.00	90.00	1700.00	0.00	0.00	0.00	0.00	548631.85	765391.88	N 32 30 22.14	W 103 36 23.53
	1800.00	0.00	90.00	1800.00	0.00	0.00	0.00	0.00	548631.85	765391.88	N 32 30 22.14	W 103 36 23.53
	1900.00	0.00	90.00	1900.00	0.00	0.00	0.00	0.00	548631.85	765391.88	N 32 30 22.14	W 103 36 23.53
Nudge 2"/100' DLS	2000.00	0.00	90.00	2000.00	0.00	0.00	0.00	0.00	548631.85	765391.88	N 32 30 22.14	W 103 36 23.53
	2100.00	2.00	90.00	2099.98	0.01	0.00	1.75	2.00	548631.85	765393.63	N 32 30 22.14	W 103 36 23.51
	2200.00	4.00	90.00	2199.84	0.05	0.00	8.98	2.00	548631.85	765398.86	N 32 30 22.14	W 103 36 23.45
Hold Nudge	2294.95	5.90	90.00	2294.43	0.12	0.00	15.17	2.00	548631.85	765407.05	N 32 30 22.14	W 103 36 23.36
	2300.00	5.90	90.00	2299.45	0.12	0.00	15.69	0.00	548631.85	765407.57	N 32 30 22.14	W 103 36 23.35
	2400.00	5.90	90.00	2398.92	0.20	0.00	25.97	0.00	548631.85	765417.85	N 32 30 22.14	W 103 36 23.23
	2500.00	5.90	90.00	2498.39	0.28	0.00	36.24	0.00	548631.85	765428.12	N 32 30 22.14	W 103 36 23.11
	2600.00	5.90	90.00	2597.86	0.36	0.00	46.52	0.00	548631.85	765438.40	N 32 30 22.14	W 103 36 22.99
	2700.00	5.90	90.00	2697.33	0.44	0.00	56.80	0.00	548631.85	765448.68	N 32 30 22.14	W 103 36 22.87
	2800.00	5.90	90.00	2796.80	0.52	0.00	67.08	0.00	548631.85	765458.95	N 32 30 22.14	W 103 36 22.75
	2900.00	5.90	90.00	2896.28	0.59	0.00	77.35	0.00	548631.85	765469.23	N 32 30 22.14	W 103 36 22.63
	3000.00	5.90	90.00	2995.75	0.67	0.00	87.63	0.00	548631.85	765479.51	N 32 30 22.13	W 103 36 22.51
	3100.00	5.90	90.00	3095.22	0.75	0.00	97.91	0.00	548631.85	765489.79	N 32 30 22.13	W 103 36 22.39
	3200.00	5.90	90.00	3194.69	0.83	0.00	108.19	0.00	548631.85	765500.06	N 32 30 22.13	W 103 36 22.27
	3300.00	5.90	90.00	3294.16	0.91	0.00	118.46	0.00	548631.85	765510.34	N 32 30 22.13	W 103 36 22.15
	3400.00	5.90	90.00	3393.63	0.99	0.00	128.74	0.00	548631.85	765520.62	N 32 30 22.13	W 103 36 22.03
	3500.00	5.90	90.00	3493.10	1.07	0.00	139.02	0.00	548631.85	765530.89	N 32 30 22.13	W 103 36 21.91
	3600.00	5.90	90.00	3592.57	1.15	0.00	149.30	0.00	548631.85	765541.17	N 32 30 22.13	W 103 36 21.79
Base Salt	3687.90	5.90	90.00	3680.00	1.22	0.00	158.33	0.00	548631.85	765550.20	N 32 30 22.13	W 103 36 21.68
	3700.00	5.90	90.00	3692.04	1.23	0.00	159.57	0.00	548631.85	765551.45	N 32 30 22.13	W 103 36 21.67
	3800.00	5.90	90.00	3791.51	1.30	0.00	168.85	0.00	548631.85	765561.73	N 32 30 22.13	W 103 36 21.55
Yates	3866.84	5.90	90.00	3858.00	1.36	0.00	176.72	0.00	548631.85	765568.60	N 32 30 22.13	W 103 36 21.47
	3900.00	5.90	90.00	3890.98	1.38	0.00	180.13	0.00	548631.85	765572.00	N 32 30 22.13	W 103 36 21.43
	4000.00	5.90	90.00	3990.45	1.46	0.00	190.41	0.00	548631.85	765582.28	N 32 30 22.13	W 103 36 21.31
Drop to Vertical 220/100' DLS	4009.60	5.90	90.00	4000.00	1.47	0.00	191.39	0.00	548631.85	765583.27	N 32 30 22.13	W 103 36 21.30
	4100.00	4.09	90.00	4090.05	1.53	0.00	199.26	2.00	548631.85	765591.14	N 32 30 22.13	W 103 36 21.21
	4200.00	2.09	90.00	4189.90	1.57	0.00	204.66	2.00	548631.85	765596.53	N 32 30 22.13	W 103 36 21.14
Capitan	4260.12	0.89	90.00	4250.00	1.58	0.00	206.22	2.00	548631.85	765598.09	N 32 30 22.13	W 103 36 21.12
	4300.00	0.09	90.00	4289.88	1.59	0.00	206.56	2.00	548631.85	765598.43	N 32 30 22.13	W 103 36 21.12
Hold Vertical	4304.55	0.00	90.00	4294.43	1.59	0.00	206.56	2.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	4400.00	0.00	90.00	4389.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	4500.00	0.00	90.00	4489.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	4600.00	0.00	90.00	4589.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	4700.00	0.00	90.00	4689.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	4800.00	0.00	90.00	4789.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	4900.00	0.00	90.00	4889.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	5000.00	0.00	90.00	4989.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	5100.00	0.00	90.00	5089.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	5200.00	0.00	90.00	5189.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	5300.00	0.00	90.00	5289.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	5400.00	0.00	90.00	5389.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
Delaware Sands	5456.12	0.00	90.00	5448.00	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	5500.00	0.00	90.00	5489.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	5600.00	0.00	90.00	5589.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	5700.00	0.00	90.00	5689.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	5800.00	0.00	90.00	5789.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	5900.00	0.00	90.00	5889.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	6000.00	0.00	90.00	5989.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	6100.00	0.00	90.00	6089.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	6200.00	0.00	90.00	6189.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	6300.00	0.00	90.00	6289.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	6400.00	0.00	90.00	6389.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS f/100ft	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	6500.00	0.00	90.00	6489.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	6600.00	0.00	90.00	6589.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	6700.00	0.00	90.00	6689.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	6800.00	0.00	90.00	6789.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	6900.00	0.00	90.00	6889.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	7000.00	0.00	90.00	6989.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	7100.00	0.00	90.00	7089.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	7200.00	0.00	90.00	7189.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	7300.00	0.00	90.00	7289.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	7400.00	0.00	90.00	7389.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	7500.00	0.00	90.00	7489.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	7600.00	0.00	90.00	7589.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	7700.00	0.00	90.00	7689.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	7800.00	0.00	90.00	7789.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	7900.00	0.00	90.00	7889.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	8000.00	0.00	90.00	7989.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	8100.00	0.00	90.00	8089.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	8200.00	0.00	90.00	8189.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	8300.00	0.00	90.00	8289.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	8400.00	0.00	90.00	8389.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	8500.00	0.00	90.00	8489.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	8600.00	0.00	90.00	8589.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	8700.00	0.00	90.00	8689.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	8800.00	0.00	90.00	8789.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	8900.00	0.00	90.00	8889.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	9000.00	0.00	90.00	8989.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	9100.00	0.00	90.00	9089.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	9200.00	0.00	90.00	9189.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	9300.00	0.00	90.00	9289.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	9400.00	0.00	90.00	9389.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	9500.00	0.00	90.00	9489.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	9600.00	0.00	90.00	9589.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	9700.00	0.00	90.00	9689.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	9800.00	0.00	90.00	9789.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
1st BS Sand	9833.12	0.00	90.00	9823.00	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	9900.00	0.00	90.00	9889.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	10000.00	0.00	90.00	9989.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	10100.00	0.00	90.00	10089.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	10200.00	0.00	90.00	10189.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	10300.00	0.00	90.00	10289.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
2nd BS Sand	10388.12	0.00	90.00	10378.00	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	10400.00	0.00	90.00	10389.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	10500.00	0.00	90.00	10489.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	10600.00	0.00	90.00	10589.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	10700.00	0.00	90.00	10689.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	10800.00	0.00	90.00	10789.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	10900.00	0.00	90.00	10889.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	11000.00	0.00	90.00	10989.88	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
KOP - Build 12"/100' DLS	11032.75	0.00	90.00	11022.63	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
	11100.00	8.07	179.56	11089.66	6.31	-4.73	206.60	12.00	548627.12	765598.47	N 32 30 22.08	W 103 36 21.12
	11200.00	20.07	179.56	11186.48	30.58	-28.99	206.79	12.00	548602.86	765598.66	N 32 30 21.84	W 103 36 21.12
	11300.00	32.07	179.56	11276.14	74.45	-72.86	207.12	12.00	548558.99	765599.00	N 32 30 21.41	W 103 36 21.12
3rd BS Sand	11316.54	34.05	179.56	11290.00	83.47	-81.88	207.19	12.00	548549.97	765599.07	N 32 30 21.32	W 103 36 21.12
	11400.00	44.07	179.56	11354.72	136.00	-134.41	207.60	12.00	548497.45	765599.47	N 32 30 20.80	W 103 36 21.12
	11500.00	56.07	179.56	11418.79	212.54	-210.95	208.18	12.00	548420.91	765600.06	N 32 30 20.04	W 103 36 21.12
	11600.00	68.07	179.56	11465.54	300.73	-299.14	208.86	12.00	548332.72	765600.73	N 32 30 19.17	W 103 36 21.12
	11700.00	80.07	179.56	11492.94	396.72	-395.12	209.60	12.00	548236.75	765601.47	N 32 30 18.22	W 103 36 21.12
Target Zone Landing Point	11773.35	88.87	179.56	11500.00	469.65	-468.05	210.16	12.00	548163.81	765602.03	N 32 30 17.50	W 103 36 21.12
	11800.00	88.87	179.56	11500.52	496.30	-494.70	210.36	0.00	548137.17	765602.24	N 32 30 17.23	W 103 36 21.12
	11900.00	88.87	179.56	11502.49	596.28	-594.67	211.13	0.00	548037.20	765603.00	N 32 30 16.24	W 103 36 21.11
	12000.00	88.87	179.56	11504.46	696.26	-694.65	211.90	0.00	547937.22	765603.77	N 32 30 15.25	W 103 36 21.11
	12100.00	88.87	179.56	11506.43	796.24	-794.63	212.67	0.00	547837.25	765604.54	N 32 30 14.26	W 103 36 21.11
	12200.00	88.87	179.56	11508.40	896.22	-894.61	213.43	0.00	547737.27	765605.31	N 32 30 13.27	W 103 36 21.11
	12300.00	88.87	179.56	11510.37	996.20	-994.59	214.20	0.00	547637.30	765606.07	N 32 30 12.29	W 103 36 21.11
	12400.00	88.87	179.56	11512.33	1096.18	-1094.56	214.97	0.00	547537.33	765606.84	N 32 30 11.30	W 103 36 21.11
	12500.00	88.87	179.56	11514.30	1196.16	-1194.54	215.74	0.00	547437.35	765607.61	N 32 30 10.31	W 103 36 21.11
	12600.00	88.87	179.56	11516.27	1296.14	-1294.52	216.50	0.00	547337.38	765608.38	N 32 30 9.32	W 103 36 21.11
	12700.00	88.87	179.56	11518.24	1396.12	-1394.50	217.27	0.00	547237.40	765609.14	N 32 30 8.33	W 103 36 21.11
	12800.00	88.87	179.56	11520.21	1496.10	-1494.47	218.04	0.00	547137.43	765609.91	N 32 30 7.34	W 103 36 21.11
	12900.00	88.87	179.56	11522.17	1596.08	-1594.45	218.81	0.00	547037.46	765610.68	N 32 30 6.35	W 103 36 21.10
	13000.00	88.87	179.56	11524.14	1696.07	-1694.43	219.58	0.00	546937.48	765611.45	N 32 30 5.36	W 103 36 21.10
	13100.00	88.87	179.56	11526.11	1796.05	-1794.41	220.34	0.00	546837.51	765612.22	N 32 30 4.37	W 103 36 21.10
	13200.00	88.87	179.56	11528.08	1896.03	-1894.38	221.11	0.00	546737.53	765612.99	N 32 30 3.38	W 103 36 21.10
	13300.00	88.87	179.56	11530.05	1996.01	-1894.36	221.88	0.00	546637.56	765613.75	N 32 30 2.39	W 103 36 21.10
	13400.00	88.87	179.56	11532.02	2095.99	-2094.34	222.65	0.00	546537.58	765614.52	N 32 30 1.40	W 103 36 21.10
	13500.00	88.87	179.56	11533.99	2195.97	-2194.32	223.41	0.00	546437.61	765615.29	N 32 30 0.41	W 103 36 21.10
	13600.00	88.87	179.56	11535.95	2295.95	-2294.29	224.18	0.00	546337.64	765616.05	N 32 29 59.42	W 103 36 21.10
	13700.00	88.87	179.56	11537.9								

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 ° ' ")
	16600.00	88.87	179.56	11594.89	5295.37	-5293.63	247.21	0.00	543338.41	765639.09	N 32 29 29.75	W 103 36 21.07
	16700.00	88.87	179.56	11596.96	5395.35	-5393.60	247.98	0.00	543238.44	765639.85	N 32 29 28.76	W 103 36 21.07
	16800.00	88.87	179.56	11598.93	5495.33	-5493.58	248.75	0.00	543138.48	765640.82	N 32 29 27.77	W 103 36 21.07
	16900.00	88.87	179.56	11600.90	5595.31	-5593.56	249.52	0.00	543038.49	765641.39	N 32 29 26.78	W 103 36 21.06
	17000.00	88.87	179.56	11602.87	5695.29	-5693.54	250.29	0.00	542938.52	765642.16	N 32 29 25.79	W 103 36 21.06
	17100.00	88.87	179.56	11604.84	5795.27	-5793.51	251.05	0.00	542838.54	765642.92	N 32 29 24.80	W 103 36 21.06
	17200.00	88.87	179.56	11606.80	5895.25	-5893.49	251.82	0.00	542738.57	765643.69	N 32 29 23.81	W 103 36 21.06
	17300.00	88.87	179.56	11608.77	5995.23	-5993.47	252.59	0.00	542638.59	765644.46	N 32 29 22.82	W 103 36 21.06
	17400.00	88.87	179.56	11610.74	6095.21	-6093.45	253.36	0.00	542538.62	765645.23	N 32 29 21.83	W 103 36 21.06
	17500.00	88.87	179.56	11612.71	6195.19	-6193.42	254.12	0.00	542438.64	765645.99	N 32 29 20.84	W 103 36 21.06
	17600.00	88.87	179.56	11614.68	6295.17	-6293.40	254.89	0.00	542338.67	765646.76	N 32 29 19.85	W 103 36 21.06
	17700.00	88.87	179.56	11616.64	6395.15	-6393.38	255.66	0.00	542238.70	765647.53	N 32 29 18.86	W 103 36 21.06
	17800.00	88.87	179.56	11618.61	6495.14	-6493.36	256.43	0.00	542138.72	765648.30	N 32 29 17.87	W 103 36 21.06
	17900.00	88.87	179.56	11620.58	6595.12	-6593.34	257.19	0.00	542038.75	765649.07	N 32 29 16.89	W 103 36 21.05
	18000.00	88.87	179.56	11622.55	6695.10	-6693.31	257.96	0.00	541938.77	765649.83	N 32 29 15.90	W 103 36 21.05
	18100.00	88.87	179.56	11624.52	6795.08	-6793.29	258.73	0.00	541838.80	765650.60	N 32 29 14.91	W 103 36 21.05
	18200.00	88.87	179.56	11626.48	6895.06	-6893.27	259.50	0.00	541738.83	765651.37	N 32 29 13.92	W 103 36 21.05
	18300.00	88.87	179.56	11628.45	6995.04	-6993.25	260.27	0.00	541638.85	765652.14	N 32 29 12.93	W 103 36 21.05

Cimarex Adams
State Com 15H -
PBHL [100' FSL,
825' FEL]

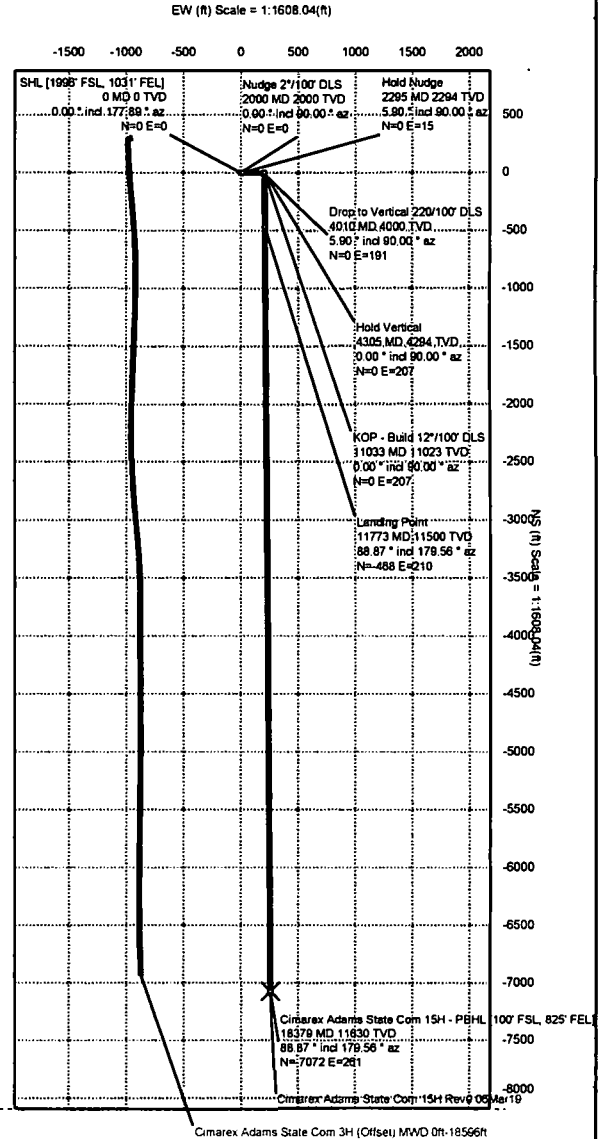
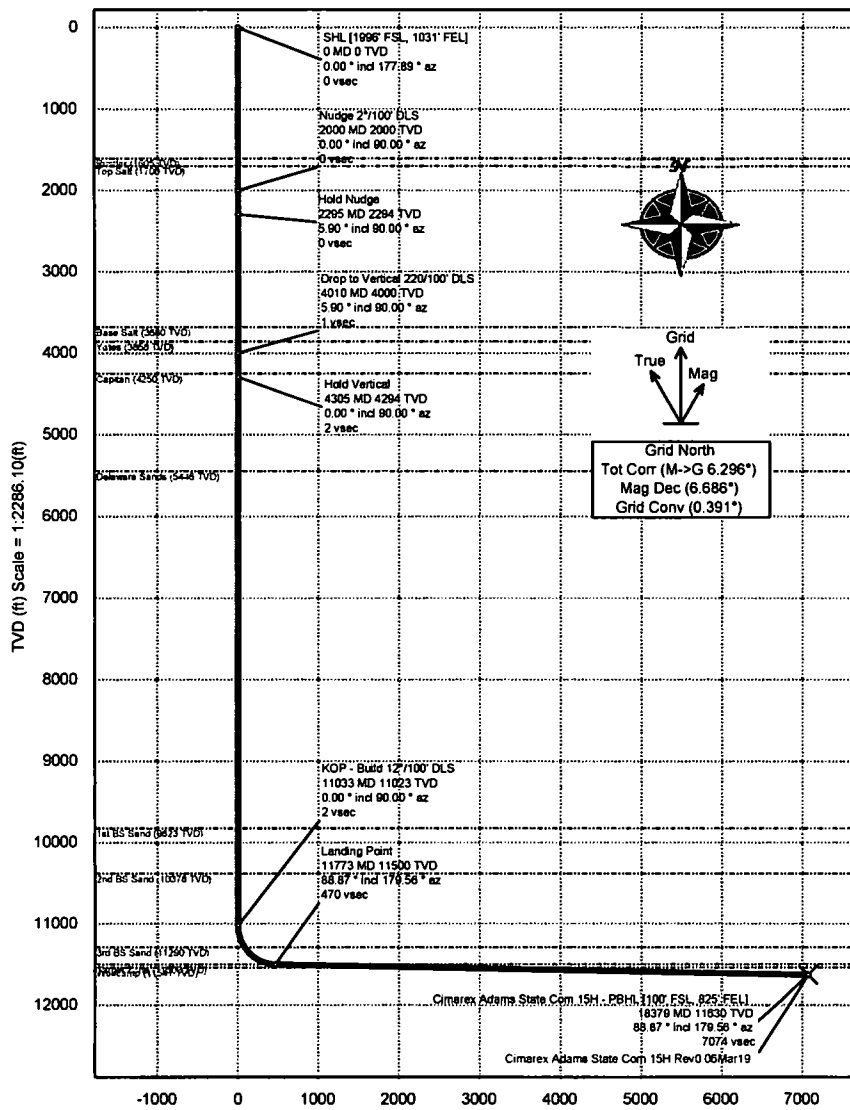
18378.61 88.87 179.56 11630.00 7073.64 -7071.84 260.87 0.00 541560.26 765652.74 N 32 29 12.15 W 103 36 21.05

Survey Type: 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	26.000	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS-Depth Only	Adams State Com 15H / Cimarex Adams State Com 15H Rev0 06Mar19
	1	26.000	18378.613	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS	Adams State Com 15H / Cimarex Adams State Com 15H Rev0

Borehole:		Well:		Field:		Structure:	
Adams State Com 15H		Adams State Com 15H		NM Lea County (NAD 83)		Cimarex Adams State Com 15H	
Gravity & Magnetic Parameters				Surface Location		Miscellaneous	
Model: HDGM 2019	Dip: 60.353°	Date: 07-Mar-2019	NAD83 New Mexico State Plane, Eastern Zone, US Feet		Lat: N 33 30 22.14	Northings: 548831.857US	Grid Conv: 0.3908°
MagDec: 6.686°	FS: 48148.443nT	Gravity FS: 989.474mg (9.80665 Based)	Lon: W 103 34 23.53		Easting: 745391.827US	Scale Fact: 0.99996458	Spot: New Spot
						TVD Ref: RKB(3429.2ft above MSL)	
						Plan: Cimarex Adams State Com 15H Rev0 06Mar19	



Vertical Section (ft) Azim = 179.56° Scale = 1:2286.10(ft) Origin = 0N/-S, 0E/-W

Critical Points								
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL (1996' FSL, 1031' FEL)	0.00	0.00	177.89	0.00	0.00	0.00	0.00	0.00
Rustler	1605.00	0.00	90.00	1605.00	0.00	0.00	0.00	0.00
Top Salt	1700.00	0.00	90.00	1700.00	0.00	0.00	0.00	0.00
Nudge 2°/100' DLS	2000.00	0.00	90.00	2000.00	0.00	0.00	0.00	0.00
Hold Nudge	2294.95	5.90	90.00	2294.43	0.12	0.00	15.17	2.00
Base Salt	3687.80	5.90	90.00	3680.00	1.22	0.00	158.33	0.00
Yates	3868.84	5.90	90.00	3858.00	1.36	0.00	176.72	0.00
Drop to Vertical 220°/100' DLS	4009.60	5.90	90.00	4000.00	1.47	0.00	191.39	0.00
Captain	4260.12	0.89	90.00	4250.00	1.58	0.00	206.22	2.00
Hold Vertical	4304.55	0.00	90.00	4294.43	1.59	0.00	206.56	2.00
Delaware Sands	5456.12	0.00	90.00	5446.00	1.59	0.00	206.56	0.00
1st BS Sand	8823.12	0.00	90.00	8823.00	1.59	0.00	206.56	0.00
2nd BS Sand	10388.12	0.00	90.00	10378.00	1.59	0.00	206.56	0.00
KOP - Build 12°/100' DLS	11032.75	0.00	90.00	11022.63	1.59	0.00	206.56	0.00
3rd BS Sand	11316.54	34.05	179.56	11290.00	83.47	-81.68	207.19	12.00
Target Zone	11773.35	88.87	179.56	11500.00	469.65	-468.05	210.16	12.00
Landing Point	11773.35	88.87	179.56	11500.00	469.65	-468.05	210.16	12.00
Wolfcamp	13856.55	88.87	179.56	11541.00	2552.45	-2550.79	226.15	0.00
Cimarex Adams State Com 15H - PBHL (100' FSL, 825' FEL)	18379.61	88.87	179.56	11630.00	7073.64	-7071.84	260.87	0.00

Cimarex Adams State Com 15H Rev0 06Mar19 Proposal Geodetic Report

(Def Plan)

Report Date: March 07, 2019 - 11:26 AM
 Client: Cimarex Energy
 Field: NM Lea County (NAD 83)
 Structure / Slot: Cimarex Adams State Com 15H / New Slot
 Well: Adams State Com 15H
 Borehole: Adams State Com 15H
 UWI / API#: Unknown / Unknown
 Survey Name: Cimarex Adams State Com 15H Rev0 06Mar19
 Survey Date: March 07, 2019
 Tort / AHD / DDI / ERD Ratio: 100.670 * / 7278.614 ft / 6.064 / 0.626
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 30' 22.14045", W 103° 36' 23.53226"
 Location Grid N/E Y/X: N 548631.850 RUS, E 765391.880 RUS
 CRS Grid Convergence Angle: 0.3906 *
 Grid Scale Factor: 0.99996658
 Version / Patch: 2.10.753.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 179.560 * (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB
 TVD Reference Elevation: 3828.200 ft above MSL
 Seabed / Ground Elevation: 3802.200 ft above MSL
 Magnetic Declination: 6.688 *
 Total Gravity Field Strength: 998.4738mgm (9.80665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 48148.443 nT
 Magnetic Dip Angle: 60.359 *
 Declination Date: March 07, 2019
 Magnetic Declination Model: HDGM 2019
 North Reference: Grid North
 Grid Convergence Used: 0.3906 *
 Total Corr Mag North->Grid
 North: 6.2957 *
 Local Coord Referenced To: Well Head

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 [1996' FSL, 1031' FEL]	0.00	0.00	177.89	0.00	0.00	0.00	0.00	N/A	548631.85	765391.88	N 32 30 22.14	W 103 36 23.53
Nudge 2"/100'	2000.00	0.00	90.00	2000.00	0.00	0.00	0.00	0.00	548631.85	765391.88	N 32 30 22.14	W 103 36 23.53
DLS	2294.95	5.90	90.00	2294.43	0.12	0.00	15.17	2.00	548631.85	765407.05	N 32 30 22.14	W 103 36 23.36
Hold Nudge	4009.60	5.90	90.00	4000.00	1.47	0.00	191.39	0.00	548631.85	765583.27	N 32 30 22.13	W 103 36 21.30
Drop to Vertical	4304.55	0.00	90.00	4294.43	1.59	0.00	206.56	2.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
220/100' DLS	11032.75	0.00	90.00	11022.63	1.59	0.00	206.56	0.00	548631.85	765598.44	N 32 30 22.13	W 103 36 21.12
Hold Vertical	11773.35	88.87	179.56	11500.00	469.65	-468.05	210.16	12.00	548163.81	765602.03	N 32 30 17.50	W 103 36 21.12
KOP - Build												
12"/100' DLS												
Landing Point												
Cimarex Adams State Com 15H - PBHL [100' FSL, 825' FEL]	18378.61	88.87	179.56	11630.00	7073.64	-7071.84	260.87	0.00	541560.26	765652.74	N 32 28 12.15	W 103 36 21.05

Survey Type: 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	26.000	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS-Depth Only	Adams State Com 15H / Cimarex Adams State Com 15H Rev0 06Mar19
	1	26.000	18378.613	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS	Adams State Com 15H / Cimarex Adams State Com 15H Rev0

Cimarex Adams State Com 15H Rev0 06Mar19 Anti-Collision Summary Report

Analysis Date-24hr Time: March 07, 2019 - 11:28
 Client: Cimarex Energy
 Field: NM Lea County (NAD 83)
 Structure: Cimarex Adams State Com 15H
 Slot: New Slot
 Well: Adams State Com 15H
 Borehole: Adams State Com 15H
 Scan MD Range: 0.00ft - 18378.61ft

Analysis Method: 3D Least Distance
 Reference Trajectory: Cimarex Adams State Com 15H Rev0 06Mar19 (Def Plan)
 Depth Interval: Every 10.00 Measured Depth (ft)
 Rule Set: NAL Procedure: D&M AntiCollision Standard S002
 Min Pts: All local minima indicated.
 Version / Patch: 2.10.753.0
 Database / Project: US1153APP452.dir.slb.com/drilling-NM Lea County 2.10

Trajectory Error Model: ISCWSA0 3-D 95.000% Confidence 2.7955 sigma, for subject well. For offset wells, error model version is specified with each well respectively.

Offset Trajectories Summary

Offset Selection Criteria

Wellhead distance scan: Restricted within 59389.11 ft
 Selection filters: Definitive Surveys - Definitive Plans - Definitive surveys exclude definitive plans
 - All Non-Def Surveys when no Def-Survey is set in a borehole - All Non-Def Plans when no Def-Plan is set in a borehole

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Cl-Cl (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		

Results highlighted: Sep-Factor separation <= 1.50 ft

Cimarex Adams State Com 3H
 (Offset) MWD 0R-18596ft (Def Survey)

999.42	32.81	996.92	966.61	N/A	MAS = 10.00 (m)	0.00	0.00						Surface
999.35	32.81	996.86	966.57	N/A	MAS = 10.00 (m)	26.00	26.00						MinPts
999.46	32.81	996.80	966.65	6162.43	MAS = 10.00 (m)	80.00	80.00						MINPT-O-EQU
999.58	32.81	996.81	966.77	3695.35	MAS = 10.00 (m)	110.00	110.00						MINPT-O-EQU
1001.34	32.81	996.97	966.53	536.25	MAS = 10.00 (m)	470.00	470.00						MINPT-O-EQU
1002.05	32.81	996.95	969.24	389.58	MAS = 10.00 (m)	630.00	630.00						MINPT-O-EQU
1003.56	32.81	997.00	970.76	246.39	MAS = 10.00 (m)	940.00	940.00						MINPT-O-EQU
1005.24	32.81	996.77	972.43	167.76	MAS = 10.00 (m)	1380.00	1380.00						MINPT-O-EQU
1010.62	32.81	999.43	977.81	118.03	MAS = 10.00 (m)	2000.00	2000.00						MINPT-O-EQU
1012.47	32.81	1001.05	979.66	113.25	MAS = 10.00 (m)	2100.00	2099.98						MinPt-O-SF
1026.30	32.81	1014.80	993.49	113.77	MAS = 10.00 (m)	2300.00	2299.45						MinPt-O-SF
1173.65	32.81	1158.49	1140.84	92.52	MAS = 10.00 (m)	4009.60	4000.00						MinPt-O-SF
1217.67	32.81	1196.91	1185.05	65.86	MAS = 10.00 (m)	6030.00	6019.88						MinPts
1218.46	32.81	1196.01	1185.68	60.94	MAS = 10.00 (m)	6430.00	6419.88						MINPT-O-EQU
1219.02	33.08	1196.13	1185.93	59.67	OSF1.50	6550.00	6539.88						MinPt-O-ADP
1222.56	37.97	1196.41	1184.58	51.59	OSF1.50	7360.00	7349.88						MinPt-CICI
1220.45	45.16	1189.51	1175.29	42.82	OSF1.50	8520.00	8509.88						MinPt-CICI
1213.95	51.48	1178.81	1162.49	37.10	OSF1.50	9500.00	9489.88						MinPt-CICI
1214.03	51.66	1178.75	1162.37	36.96	OSF1.50	9530.00	9519.88						MINPT-O-EQU
1214.08	51.73	1178.76	1162.35	36.92	OSF1.50	9540.00	9529.88						MinPt-O-ADP
1225.25	59.01	1185.08	1168.24	32.48	OSF1.50	10680.00	10649.88						MinPt-CICI
1225.56	59.73	1184.91	1168.83	32.06	OSF1.50	10770.00	10759.88						MINPT-O-EQU
1224.59	61.44	1182.80	1163.15	31.10	OSF1.50	11040.00	11029.88						MinPt-O-SF
1224.56	61.44	1182.76	1163.14	31.10	OSF1.50	11050.00	11039.87						MinPts
1132.05	82.11	1076.48	1049.94	21.28	OSF1.50	12100.00	11908.43						MinPt-CICI
1135.71	91.13	1074.13	1044.59	19.18	OSF1.50	12360.00	11511.55						MINPT-O-EQU
1142.51	100.54	1074.65	1041.97	17.44	OSF1.50	12590.00	11516.07						MinPt-O-ADP
1151.33	108.83	1077.94	1042.45	16.21	OSF1.50	12790.00	11520.01						MinPt-O-ADP
1152.20	109.72	1078.23	1042.45	16.06	OSF1.50	12810.00	11520.40						MinPt-O-ADP
1156.59	114.44	1079.45	1042.15	15.46	OSF1.50	12910.00	11522.37						MinPt-O-ADP
1170.82	125.95	1096.00	1044.83	14.19	OSF1.50	13160.00	11527.29						MINPT-O-EQU
1174.60	130.07	1097.05	1044.53	13.78	OSF1.50	13240.00	11528.87						MinPt-O-ADP
1114.95	220.73	966.97	894.23	7.65	OSF1.50	14920.00	11561.83						MinPt-CICI
1117.05	243.42	953.97	873.66	6.94	OSF1.50	15340.00	11570.20						MinPt-CICI
1118.75	260.78	942.07	855.96	6.47	OSF1.50	15680.00	11576.49						MinPt-CICI
1119.75	284.76	829.12	836.03	5.94	OSF1.50	16100.00	11585.15						MinPt-CICI
1122.99	300.51	821.82	822.48	5.64	OSF1.50	16420.00	11591.45						MINPT-O-EQU
1137.15	342.96	907.67	794.19	5.00	OSF1.50	17190.00	11606.61						Enter Alert
1133.85	401.73	865.23	732.15	4.25	OSF1.50	18240.00	11627.27						MinPts
1142.68	389.27	875.67	743.61	4.31	OSF1.50	18378.61	11630.00						TD

OSF<5.00

Cimarex Energy Co., Adams State Com 15H

1. Geological Formations

TVD of target 11,630
MD at TD 18,379

Pilot Hole TD N/A
Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	1605	N/A	
Top Salt	1700	N/A	
Base Salt	3680	N/A	
Yates	3858	N/A	
Capitan	4250	N/A	
Delaware Sands	5446	Hydrocarbons	
1st Bone Spring	9823	Hydrocarbons	
2nd Bone Spring	10378	Hydrocarbons	
3rd Bone Spring	11290	Hydrocarbons	

2. Casing Program

Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17 1/2	0	1655	1655	13-3/8"	54.50	J-55	BT&C	1.49	3.62	9.46
12 1/4	0	5426	5426	9-5/8"	40.00	J-55	LT&C	1.25	1.37	2.40
8 3/4	0	11033	11033	5-1/2"	17.00	L-80	LT&C	1.22	1.50	1.71
8 3/4	11033	18379	11630	5-1/2"	17.00	L-80	BT&C	1.16	1.42	39.12
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet

TVD was used on all calculations.

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Cimarex Energy Co., Adams State Com 15H

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	N
Is well within the designated 4 string boundary.	N
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	N
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	N
Is 2nd string set 100' to 600' below the base of salt?	N
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	N
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	N
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	N
Is AC Report included?	N

3. Cementing Program

Casing	# Sks	Wt. lb/gal	Yld ft3/sack	H2O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	802	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	215	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate	1013	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
	292	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Production	501	10.30	3.64	22.18		Lead: Tuned Light + LCM
	1571	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS

Casing String	TOC	% Excess
Surface	0	45
Intermediate	0	51
Production	5226	17

4. Pressure Control Equipment

A variance is requested for the use of a diverter on the surface casing. See attached for schematic.					
BOP Installed and tested before drilling which hole?	Size	Min Required WP	Type		Tested To
12 1/4	13 5/8	2M	Annular	X	50% of working pressure
			Blind Ram		2M
			Pipe Ram		
			Double Ram	X	
			Other		
8 3/4	13 5/8	3M	Annular	X	50% of working pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	X	
			Other		

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.				
X	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.				
N	Are anchors required by manufacturer?				

5. Mud Program

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 1655'	FW Spud Mud	8.30 - 8.80	30-32	N/C
1655' to 5426'	Brine Water	9.70 - 10.20	30-32	N/C
5426' to 18379'	FW/Cut Brine	8.50 - 9.00	30-32	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
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6. Logging and Testing Procedures

Logging, Coring and Testing	
X	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No logs are planned based on well control or offset log information.
	Drill stem test?
	Coring?

Additional Logs Planned	Interval
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7. Drilling Conditions

Condition	
BH Pressure at deepest TVD	5442 psi
Abnormal Temperature	No

Hydrogen Sulfide (H₂S) monitors will be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.

X	H ₂ S is present
X	H ₂ S plan is attached

8. Other Facets of Operation**9. Wellhead**

A multi-bowl wellhead system will be utilized.

After running the 13-3/8" surface casing, a 13 5/8" BOP/BOPE system with a minimum working pressure of 3000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 3000 psi test. Annular will be tested to 50% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2.

The multi-bowl wellhead will be installed by vendor's representative. A copy of the installation instructions has been sent to the BLM field office.

The wellhead will be installed by a third-party welder while being monitored by the wellhead vendor representative.

All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type.

A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 3000 psi.

The surface casing string will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater.

The casing string utilizing steel body pack-off will be tested to 70% of casing burst.

If well conditions dictate conventional slips will be set and BOPE will be tested to appropriate pressures based on permitted pressure requirements.