

## Harvey 7-63-23-5653CDE R0 mdv 08Nov16 Proposal Geodetic Report

## (Def Plan)

**Report Date:** November 08, 2016 - 12:41 PM  
**Client:** Crescent Point Energy  
**Field:** CO, Weld County (NAD 83 NZ)  
**Structure / Slot:** Crescent Point 24-07N-63W (Harvey 7-63-23 Pad) / Harvey 7-63-23-5653CDE  
**Well:** Harvey 7-63-23-5653CDE  
**Borehole:** Original Hole  
**UWI / API#:** Unknown / Unknown  
**Survey Name:** Harvey 7-63-23-5653CDE R0 mdv 08Nov16  
**Survey Date:** November 08, 2016  
**Tort / AHD / DDI / ERD Ratio:** 93.176 ° / 8151.930 ft / 6.198 / 1.194  
**Coordinate Reference System:** NAD83 Colorado State Plane, Northern Zone, US Feet  
**Location Lat / Long:** N 40° 33' 12.42720", W 104° 23' 32.38800"  
**Location Grid N/E Y/X:** N 1446385.873 ftUS, E 3307791.255 ftUS  
**CRS Grid Convergence Angle:** 0.7157 °  
**Grid Scale Factor:** 0.99997077  
**Version / Patch:** 2.10.254.0

**Survey / DLS Computation:** Minimum Curvature / Lubinski  
**Vertical Section Azimuth:** 272.964 ° (Grid North)  
**Vertical Section Origin:** 0.000 ft, 0.000 ft  
**TVD Reference Datum:** KB 20.2ft  
**TVD Reference Elevation:** 4806.500 ft above MSL  
**Seabed / Ground Elevation:** 4786.300 ft above MSL  
**Magnetic Declination:** 8.088 °  
**Total Gravity Field Strength:** 999.0697mgn (9.80665 Based)  
**Gravity Model:** GARM  
**Total Magnetic Field Strength:** 52414.992 nT  
**Magnetic Dip Angle:** 67.016 °  
**Declination Date:** November 08, 2016  
**Magnetic Declination Model:** HDGM 2016  
**North Reference:** Grid North  
**Grid Convergence Used:** 0.7157 °  
**Total Corr Mag North->Grid North:** 7.3719 °  
**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 (°)	Longitude (°)
Surface	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	1446385.87	3307791.26	40.553452	-104.392330
	100.00	0.00	325.23	100.00	0.00	0.00	0.00	0.00	1446385.87	3307791.26	40.553452	-104.392330
	200.00	0.00	325.23	200.00	0.00	0.00	0.00	0.00	1446385.87	3307791.26	40.553452	-104.392330
	300.00	0.00	325.23	300.00	0.00	0.00	0.00	0.00	1446385.87	3307791.26	40.553452	-104.392330
	400.00	0.00	325.23	400.00	0.00	0.00	0.00	0.00	1446385.87	3307791.26	40.553452	-104.392330
	500.00	0.00	325.23	500.00	0.00	0.00	0.00	0.00	1446385.87	3307791.26	40.553452	-104.392330
	600.00	0.00	325.23	600.00	0.00	0.00	0.00	0.00	1446385.87	3307791.26	40.553452	-104.392330
	700.00	0.00	325.23	700.00	0.00	0.00	0.00	0.00	1446385.87	3307791.26	40.553452	-104.392330
	800.00	0.00	325.23	800.00	0.00	0.00	0.00	0.00	1446385.87	3307791.26	40.553452	-104.392330
	900.00	0.00	325.23	900.00	0.00	0.00	0.00	0.00	1446385.87	3307791.26	40.553452	-104.392330
	1000.00	0.00	325.23	1000.00	0.00	0.00	0.00	0.00	1446385.87	3307791.26	40.553452	-104.392330
	1100.00	0.00	325.23	1100.00	0.00	0.00	0.00	0.00	1446385.87	3307791.26	40.553452	-104.392330
	1200.00	0.00	325.23	1200.00	0.00	0.00	0.00	0.00	1446385.87	3307791.26	40.553452	-104.392330
	1300.00	0.00	325.23	1300.00	0.00	0.00	0.00	0.00	1446385.87	3307791.26	40.553452	-104.392330
	1400.00	0.00	325.23	1400.00	0.00	0.00	0.00	0.00	1446385.87	3307791.26	40.553452	-104.392330
KOP, Build 1.5 DLS	1500.00	0.00	325.23	1500.00	0.00	0.00	0.00	0.00	1446385.87	3307791.26	40.553452	-104.392330
	1600.00	1.50	325.23	1599.99	0.80	1.08	-0.75	1.50	1446386.95	3307790.51	40.553455	-104.392333
	1700.00	3.00	325.23	1699.91	3.20	4.30	-2.99	1.50	1446390.17	3307788.27	40.553464	-104.392341
	1800.00	4.50	325.23	1799.69	7.21	9.67	-6.72	1.50	1446395.55	3307784.54	40.553479	-104.392354
	1900.00	6.00	325.23	1899.27	12.81	17.19	-11.93	1.50	1446403.06	3307779.32	40.553500	-104.392372
Hold	1977.48	7.16	325.23	1976.24	18.24	24.48	-17.00	1.50	1446410.36	3307774.26	40.553520	-104.392390
	2000.00	7.16	325.23	1998.58	19.96	26.79	-18.60	0.00	1446412.66	3307772.66	40.553526	-104.392396
	2100.00	7.16	325.23	2097.80	27.59	37.03	-25.71	0.00	1446422.90	3307765.55	40.553555	-104.392421
	2200.00	7.16	325.23	2197.02	35.22	47.27	-32.82	0.00	1446433.14	3307758.44	40.553583	-104.392446
	2300.00	7.16	325.23	2296.24	42.85	57.51	-39.93	0.00	1446443.39	3307751.33	40.553611	-104.392471
	2400.00	7.16	325.23	2395.46	50.48	67.76	-47.04	0.00	1446453.63	3307744.22	40.553640	-104.392496
	2500.00	7.16	325.23	2494.68	58.11	78.00	-54.15	0.00	1446463.87	3307737.11	40.553668	-104.392521
	2600.00	7.16	325.23	2593.90	65.74	88.24	-61.26	0.00	1446474.11	3307730.00	40.553696	-104.392546
	2700.00	7.16	325.23	2693.12	73.37	98.48	-68.37	0.00	1446484.35	3307722.89	40.553725	-104.392572
	2800.00	7.16	325.23	2792.34	81.00	108.72	-75.48	0.00	1446494.59	3307715.77	40.553753	-104.392597
	2900.00	7.16	325.23	2891.56	88.63	118.96	-82.59	0.00	1446504.83	3307708.66	40.553781	-104.392622
	3000.00	7.16	325.23	2990.78	96.27	129.21	-89.70	0.00	1446515.07	3307701.55	40.553810	-104.392647
	3100.00	7.16	325.23	3090.00	103.90	139.45	-96.81	0.00	1446525.32	3307694.44	40.553838	-104.392672
	3200.00	7.16	325.23	3189.22	111.53	149.69	-103.92	0.00	1446535.56	3307687.33	40.553866	-104.392697
	3300.00	7.16	325.23	3288.44	119.16	159.93	-111.04	0.00	1446545.80	3307680.22	40.553895	-104.392722
	3400.00	7.16	325.23	3387.66	126.79	170.17	-118.15	0.00	1446556.04	3307673.11	40.553923	-104.392747
	3500.00	7.16	325.23	3486.88	134.42	180.41	-125.26	0.00	1446566.28	3307666.00	40.553951	-104.392773
	3600.00	7.16	325.23	3586.10	142.05	190.66	-132.37	0.00	1446576.52	3307658.89	40.553980	-104.392798
	3700.00	7.16	325.23	3685.32	149.68	200.90	-139.48	0.00	1446586.76	3307651.78	40.554008	-104.392823
	3800.00	7.16	325.23	3784.54	157.31	211.14	-146.59	0.00	1446597.01	3307644.67	40.554037	-104.392848
	3900.00	7.16	325.23	3883.76	164.94	221.38	-153.70	0.00	1446607.25	3307637.56	40.554065	-104.392873
	4000.00	7.16	325.23	3982.98	172.57	231.62	-160.81	0.00	1446617.49	3307630.45	40.554093	-104.392898
	4100.00	7.16	325.23	4082.20	180.20	241.86	-167.92	0.00	1446627.73	3307623.34	40.554122	-104.392923
	4200.00	7.16	325.23	4181.42	187.83	252.10	-175.03	0.00	1446637.97	3307616.23	40.554150	-104.392948
	4300.00	7.16	325.23	4280.63	195.46	262.35	-182.14	0.00	1446648.21	3307609.12	40.554178	-104.392974
	4400.00	7.16	325.23	4379.85	203.09	272.59	-189.25	0.00	1446658.45	3307602.01	40.554207	-104.392999
	4500.00	7.16	325.23	4479.07	210.72	282.83	-196.36	0.00	1446668.69	3307594.90	40.554235	-104.393024
	4600.00	7.16	325.23	4578.29	218.36	293.07	-203.47	0.00	1446678.94	3307587.79	40.554263	-104.393049
	4700.00	7.16	325.23	4677.51	225.99	303.31	-210.58	0.00	1446689.18	3307580.68	40.554292	-104.393074
	4800.00	7.16	325.23	4776.73	233.62	313.55	-217.69	0.00	1446699.42	3307573.57	40.554320	-104.393099
	4900.00	7.16	325.23	4875.95	241.25	323.80	-224.80	0.00	1446709.66	3307566.46	40.554348	-104.393124
	5000.00	7.16	325.23	4975.17	248.88	334.04	-231.91	0.00	1446719.90	3307559.35	40.554377	-104.393149
	5100.00	7.16	325.23	5074.39	256.51	344.28	-239.02	0.00	1446730.14	3307552.24	40.554405	-104.393175
	5200.00	7.16	325.23	5173.61	264.14	354.52	-246.13	0.00	1446740.38	3307545.13	40.554433	-104.393200
	5300.00	7.16	325.23	5272.83	271.77	364.76	-253.25	0.00	1446750.62	3307538.02	40.554462	-104.393225
	5400.00	7.16	325.23	5372.05	279.40	375.00	-260.36	0.00	1446760.87	3307530.91	40.554490	-104.393250
	5500.00	7.16	325.23	5471.27	287.03	385.25	-267.47	0.00	1446771.11	3307523.80	40.554519	-104.393275
	5600.00	7.16	325.23	5570.49	294.66	395.49	-274.58	0.00	1446781.35	3307516.69	40.554547	-104.393300
	5700.00	7.16	325.23	5669.71	302.29	405.73	-281.69	0.00	1446791.59	3307509.58	40.554575	-104.393325
	5800.00	7.16	325.23	5768.93	309.92	415.97	-288.80	0.00	1446801.83	3307502.47	40.554604	-104.393350
	5900.00	7.16	325.23	5868.15	317.55	426.21	-295.91	0.00	1446812.07	3307495.36	40.554632	-104.393376
	6000.00	7.16	325.23	5967.37	325.18	436.45	-303.02	0.00	1446822.31	3307488.25	40.554660	-104.393401
	6100.00	7.16	325.23	6066.59	332.81	446.70	-310.13	0.00	1446832.56	3307481.14	40.554689	-104.393426
	6200.00	7.16	325.23	6165.81	340.45	456.94	-317.24	0.00	1446842.80	3307474.03	40.554717	-104.393451
	6300.00	7.16	325.23	6265.03	348.08	467.18	-324.35	0.00	1446853.04	3307466.92	40.554745	-104.393476
KOP, Build/Turn 10 DLS	6333.48	7.16	325.23	6298.25	350.63	470.61	-326.73	0.00	1446856.47	3307464.53	40.554755	-104.393485
	6400.00	12.17	298.03	6363.83	359.53	477.32	-335.30	10.00	1446863.18	3307455.97	40.554774	-104.393515
	6500.00	21.44	284.52	6459.49	387.06	486.88	-362.37	10.00	1446872.74	3307428.90	40.554801	-104.393612
	6600.00	31.16	279.05	6549.05	430.81	495.55	-405.72	10.00	1446881.41	3307385.55	40.554826	-104.393768
Niobrara A Chalk	6602.87	31.44	278.94	6551.50	432.29	495.79	-407.20	10.00	1446881.65	3307384.07	40.554827	-104.393773
Nio A Marl	6608.75	32.01	278.72	6556.50	435.37	496.26	-410.25	10.00	1446882.12	3307381.02	40.554828	-104.393784
Nio B Chalk	6632.65	34.36	277.89	6576.50	448.39	498.15	-423.19	10.00	1446884.01	3307368.07	40.554834	-104.393830
	6700.00	41.00	276.01	6629.78	489.43	503.08	-464.04	10.00	1446888.93	3307327.23	40.554849	-104.393977

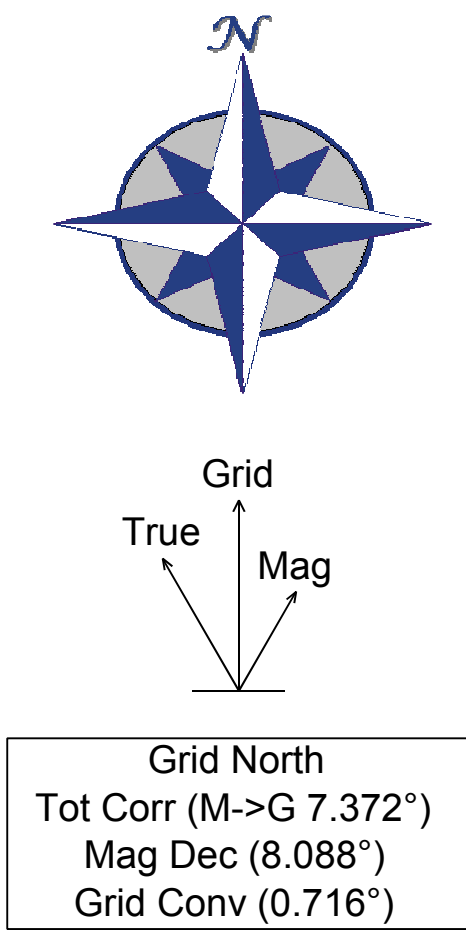
Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (°)	Longitude (°)
Nio B Marl	6772.68	48.18	274.47	6681.50	540.38	507.69	-514.81	10.00	1446893.55	3307276.46	40.554863	-104.394160
Nio C Chalk	6795.69	50.46	274.05	6696.50	557.83	508.98	-532.22	10.00	1446894.84	3307259.05	40.554867	-104.394222
	6800.00	50.89	273.98	6699.23	561.16	509.22	-535.54	10.00	1446895.08	3307255.73	40.554868	-104.394234
Nio C Marl	6872.85	58.12	272.84	6741.50	620.43	512.71	-594.71	10.00	1446898.57	3307196.57	40.554880	-104.394447
	6900.00	60.81	272.46	6755.29	643.81	513.79	-618.07	10.00	1446899.65	3307173.21	40.554883	-104.394531
	7000.00	70.75	271.20	6796.27	734.87	516.66	-709.10	10.00	1446902.52	3307082.17	40.554894	-104.394858
	7100.00	80.69	270.10	6820.91	831.58	517.74	-805.88	10.00	1446903.60	3306985.40	40.554901	-104.395207
Codell	7117.66	82.45	269.91	6823.50	849.03	517.74	-823.36	10.00	1446903.60	3306967.92	40.554901	-104.395269
Landing Point, Hold to TD	7193.62	90.00	269.12	6828.50	924.63	517.09	-899.09	10.00	1446902.95	3306892.20	40.554902	-104.395542
7" Casing Point	7194.00	90.00	269.12	6828.50	925.01	517.09	-899.47	0.00	1446902.94	3306891.81	40.554902	-104.395543
	7200.00	90.00	269.12	6828.50	930.99	516.99	-905.47	0.00	1446902.85	3306885.82	40.554902	-104.395565
	7300.00	90.00	269.12	6828.50	1030.77	515.45	-1005.46	0.00	1446901.31	3306785.83	40.554901	-104.395925
	7400.00	90.00	269.12	6828.50	1130.54	513.91	-1105.44	0.00	1446899.76	3306685.85	40.554900	-104.396285
	7500.00	90.00	269.12	6828.50	1230.32	512.36	-1205.43	0.00	1446898.22	3306585.86	40.554899	-104.396645
	7600.00	90.00	269.12	6828.50	1330.09	510.82	-1305.42	0.00	1446896.68	3306485.88	40.554899	-104.397004
	7700.00	90.00	269.12	6828.50	1429.86	509.28	-1405.41	0.00	1446895.13	3306385.89	40.554898	-104.397364
	7800.00	90.00	269.12	6828.50	1529.64	507.73	-1505.40	0.00	1446893.59	3306285.91	40.554897	-104.397724
	7900.00	90.00	269.12	6828.50	1629.41	506.19	-1605.38	0.00	1446892.05	3306185.92	40.554896	-104.398084
	8000.00	90.00	269.12	6828.50	1729.19	504.65	-1705.37	0.00	1446890.50	3306085.94	40.554895	-104.398444
	8100.00	90.00	269.12	6828.50	1828.96	503.10	-1805.36	0.00	1446888.96	3305985.95	40.554895	-104.398804
	8200.00	90.00	269.12	6828.50	1928.74	501.56	-1905.35	0.00	1446887.42	3305885.97	40.554894	-104.399164
	8300.00	90.00	269.12	6828.50	2028.51	500.02	-2005.34	0.00	1446885.87	3305785.98	40.554893	-104.399523
	8400.00	90.00	269.12	6828.50	2128.29	498.47	-2105.33	0.00	1446884.33	3305686.00	40.554892	-104.399883
	8500.00	90.00	269.12	6828.50	2228.06	496.93	-2205.31	0.00	1446882.79	3305586.01	40.554891	-104.400243
	8600.00	90.00	269.12	6828.50	2327.84	495.39	-2305.30	0.00	1446881.24	3305486.03	40.554890	-104.400603
	8700.00	90.00	269.12	6828.50	2427.61	493.84	-2405.29	0.00	1446879.70	3305386.04	40.554890	-104.400963
	8800.00	90.00	269.12	6828.50	2527.38	492.30	-2505.28	0.00	1446878.16	3305286.06	40.554889	-104.401323
	8900.00	90.00	269.12	6828.50	2627.16	490.75	-2605.27	0.00	1446876.61	3305186.07	40.554888	-104.401683
	9000.00	90.00	269.12	6828.50	2726.93	489.21	-2705.25	0.00	1446875.07	3305086.09	40.554887	-104.402042
	9100.00	90.00	269.12	6828.50	2826.71	487.67	-2805.24	0.00	1446873.53	3304986.10	40.554886	-104.402402
	9200.00	90.00	269.12	6828.50	2926.48	486.12	-2905.23	0.00	1446871.98	3304886.12	40.554885	-104.402762
	9300.00	90.00	269.12	6828.50	3026.26	484.58	-3005.22	0.00	1446870.44	3304786.13	40.554884	-104.403122
	9400.00	90.00	269.12	6828.50	3126.03	483.04	-3105.21	0.00	1446868.90	3304686.15	40.554884	-104.403482
	9500.00	90.00	269.12	6828.50	3225.81	481.49	-3205.19	0.00	1446867.35	3304586.16	40.554883	-104.403842
	9600.00	90.00	269.12	6828.50	3325.58	479.95	-3305.18	0.00	1446865.81	3304486.18	40.554882	-104.404202
	9700.00	90.00	269.12	6828.50	3425.35	478.41	-3405.17	0.00	1446864.27	3304386.19	40.554881	-104.404562
	9800.00	90.00	269.12	6828.50	3525.13	476.86	-3505.16	0.00	1446862.72	3304286.21	40.554880	-104.404921
	9900.00	90.00	269.12	6828.50	3624.90	475.32	-3605.15	0.00	1446861.18	3304186.22	40.554879	-104.405281
	10000.00	90.00	269.12	6828.50	3724.68	473.78	-3705.13	0.00	1446859.64	3304086.24	40.554879	-104.405641
	10100.00	90.00	269.12	6828.50	3824.45	472.23	-3805.12	0.00	1446858.09	3303986.25	40.554878	-104.406001
	10200.00	90.00	269.12	6828.50	3924.23	470.69	-3905.11	0.00	1446856.55	3303886.27	40.554877	-104.406361
	10300.00	90.00	269.12	6828.50	4024.00	469.15	-4005.10	0.00	1446855.00	3303786.28	40.554876	-104.406721
	10400.00	90.00	269.12	6828.50	4123.78	467.60	-4105.09	0.00	1446853.46	3303686.30	40.554875	-104.407081
	10500.00	90.00	269.12	6828.50	4223.55	466.06	-4205.07	0.00	1446851.92	3303586.31	40.554874	-104.407440
	10600.00	90.00	269.12	6828.50	4323.32	464.52	-4305.06	0.00	1446850.37	3303486.33	40.554873	-104.407800
	10700.00	90.00	269.12	6828.50	4423.10	462.97	-4405.05	0.00	1446848.83	3303386.34	40.554873	-104.408160
	10800.00	90.00	269.12	6828.50	4522.87	461.43	-4505.04	0.00	1446847.29	3303286.36	40.554872	-104.408520
	10900.00	90.00	269.12	6828.50	4622.65	459.89	-4605.03	0.00	1446845.74	3303186.37	40.554871	-104.408880
	11000.00	90.00	269.12	6828.50	4722.42	458.34	-4705.02	0.00	1446844.20	3303086.39	40.554870	-104.409240
	11100.00	90.00	269.12	6828.50	4822.20	456.80	-4805.00	0.00	1446842.66	3302986.40	40.554869	-104.409600
	11200.00	90.00	269.12	6828.50	4921.97	455.25	-4904.99	0.00	1446841.11	3302886.42	40.554868	-104.409959
	11300.00	90.00	269.12	6828.50	5021.75	453.71	-5004.98	0.00	1446839.57	3302786.43	40.554867	-104.410319
	11400.00	90.00	269.12	6828.50	5121.52	452.17	-5104.97	0.00	1446838.03	3302686.45	40.554867	-104.410679
	11500.00	90.00	269.12	6828.50	5221.29	450.62	-5204.96	0.00	1446836.48	3302586.46	40.554866	-104.411039
	11600.00	90.00	269.12	6828.50	5321.07	449.08	-5304.94	0.00	1446834.94	3302486.48	40.554865	-104.411399
	11700.00	90.00	269.12	6828.50	5420.84	447.54	-5404.93	0.00	1446833.40	3302386.49	40.554864	-104.411759
	11800.00	90.00	269.12	6828.50	5520.62	445.99	-5504.92	0.00	1446831.85	3302286.51	40.554863	-104.412119
	11900.00	90.00	269.12	6828.50	5620.39	444.45	-5604.91	0.00	1446830.31	3302186.52	40.554862	-104.412479
	12000.00	90.00	269.12	6828.50	5720.17	442.91	-5704.90	0.00	1446828.77	3302086.54	40.554861	-104.412838
	12100.00	90.00	269.12	6828.50	5819.94	441.36	-5804.88	0.00	1446827.22	3301986.55	40.554861	-104.413198
	12200.00	90.00	269.12	6828.50	5919.72	439.82	-5904.87	0.00	1446825.68	3301886.57	40.554860	-104.413558
	12300.00	90.00	269.12	6828.50	6019.49	438.28	-6004.86	0.00	1446824.14	3301786.58	40.554859	-104.413918
	12400.00	90.00	269.12	6828.50	6119.27	436.73	-6104.85	0.00	1446822.59	3301686.60	40.554858	-104.414278
	12500.00	90.00	269.12	6828.50	6219.04	435.19	-6204.84	0.00	1446821.05	3301586.61	40.554857	-104.414638
	12600.00	90.00	269.12	6828.50	6318.81	433.65	-6304.82	0.00	1446819.51	3301486.63	40.554856	-104.414998
	12700.00	90.00	269.12	6828.50	6418.59	432.10	-6404.81	0.00	1446817.96	3301386.64	40.554855	-104.415357
	12800.00	90.00	269.12	6828.50	6518.36	430.56	-6504.80	0.00	1446816.42	3301286.66	40.554854	-104.415717
	12900.00	90.00	269.12	6828.50	6618.14	429.02	-6604.79	0.00	1446814.88	3301186.67	40.554854	-104.416077
	13000.00	90.00	269.12	6828.50	6717.91	427.47	-6704.78	0.00	1446813.33	3301086.69	40.554853	-104.416437
	13100.00	90.00	269.12	6828.50	6817.69	425.93	-6804.77	0.00	1446811.79	3300986.70	40.554852	-104.416797
	13200.00	90.00	269.12	6828.50	6917.46	424.38	-6904.75	0.00	1446810.24	3300886.72	40.554851	-104.417157
	13300.00	90.00	269.12	6828.50	7017.24	422.84	-7004.74	0.00	1446808.70	3300786.73	40.554850	-104.417517
	13400.00	90.00	269.12	6828.50	7117.01	421.30	-7104.73	0.00	1446807.16	3300686.75	40.554849	-104.417877
	13500.00	90.00	269.12	6828.50	7216.78	419.75	-7204.72	0.00	1446805.61	3300586.76	40.554848	-104.418236
	13600.00	90.00	269.12	6828.50	7316.56	418.21	-7304.71	0.00	1446804.07	3300486.78	40.554847	-104.418596
	13700.00	90.00	269.12	6828.50	7416.33	416.67	-7404.69	0.00	1446802.53	3300386.79	40.554846	-104.418956
	13800.00	90.00	269.12	6828.50	7516.11	415.12	-7504.68	0.00	1446800.98	3300286.81	40.554846	-104.4193



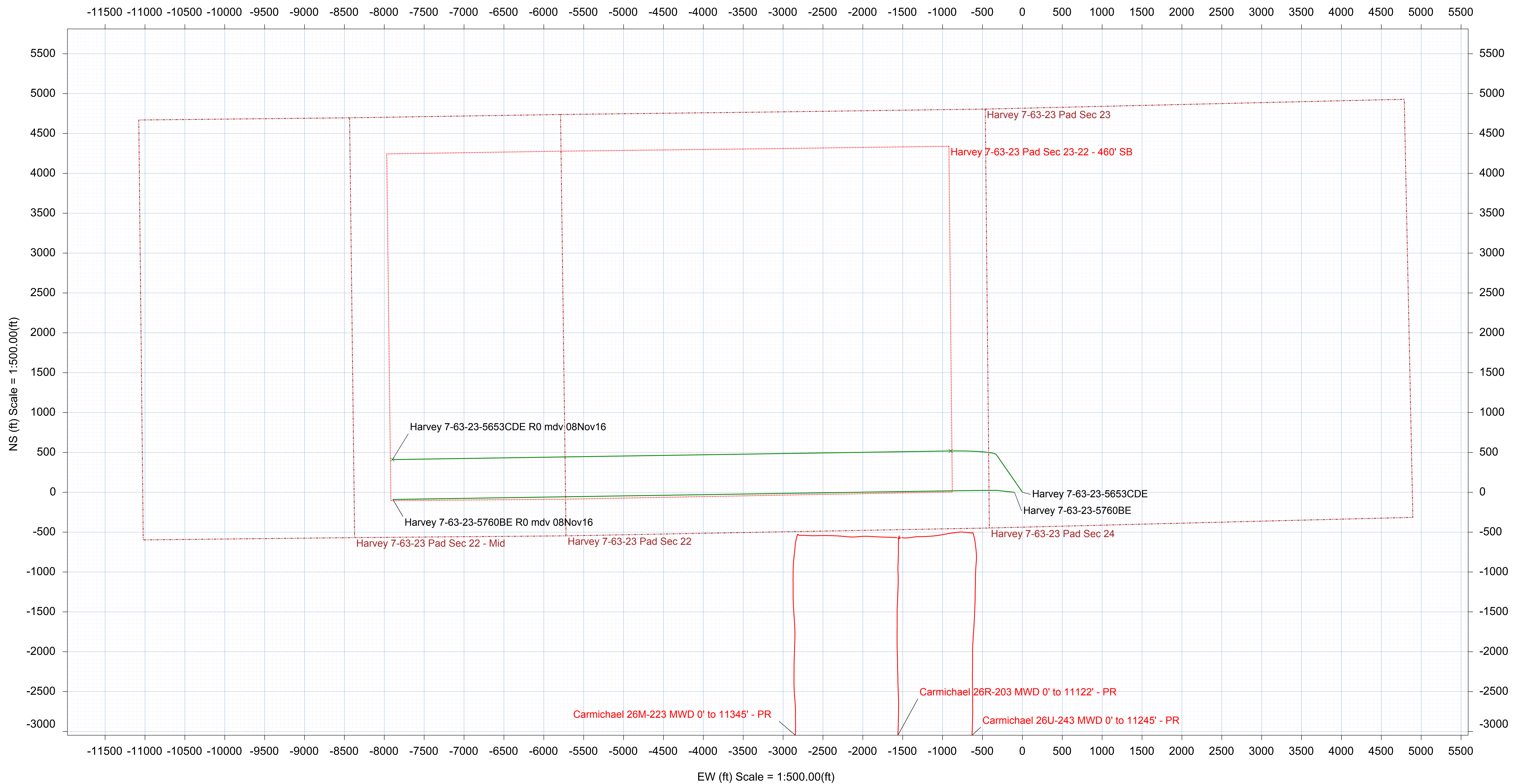
# Crescent Point Energy



Borehole:					Well:					Field:					Structure:																
Original Hole					Harvey 7-63-23-5653CDE					CO, Weld County (NAD 83 NZ)					24-07N-63W (Harvey 7-63-23 Pad)																
Gravity & Magnetic Parameters										Surface Location					NAD83 Colorado State Plane, Northern Zone, US Feet					Miscellaneous											
Model:		HDGM 2016		Dip:		67.016°		Date:		08-Nov-2016		Lat:		N 40 33 12.43		Northing:		1446385.87ftUS		Grid Conv:		0.7157°		Slot:		Harvey 7-63-23-5653CDE		TVD Ref:		KB 20.2ft(4806.5ft above MSL)	
MagDec:		8.088°		FS:		52414.992nT		Gravity FS:		999.07mgn (9.80665 Based)		Lon:		W 104 23 32.39		Easting:		3307791.26ftUS		Scale Fact:		0.99997077		Plan:		Harvey 7-63-23-5653CDE R0 mdv 08Nov16					



EOU Computation Based On  
3-D 95% Confidence  
2.79548 sigma



## Harvey 7-63-23-5653CDE R0 mdv 08Nov16 Anti-Collision Summary Report

**Analysis Date-24hr Time:** November 08, 2016 - 12:41  
**Client:** Crescent Point Energy  
**Field:** CO, Weld County (NAD 83 NZ)  
**Structure:** Crescent Point 24-07N-63W (Harvey 7-63-23 Pad)  
**Slot:** Harvey 7-63-23-5653CDE  
**Well:** Harvey 7-63-23-5653CDE  
**Borehole:** Original Hole  
**Scan MD Range:** 0.00ft ~ 14194.35ft

**Analysis Method:** 3D Least Distance  
**Reference Trajectory:** Harvey 7-63-23-5653CDE R0 mdv 08Nov16 (Def Plan)  
**Depth Interval:** Every 10.00 Measured Depth (ft)  
**Rule Set:** D&M AntiCollision Standard S002 v5.1/5.2  
**Min Pts:** All local minima indicated.  
**Version / Patch:** 2.10.254.0  
**Database \ Project:** us1164app01.dir.slb.com/drilling-CO, Weld County 2.10

**Trajectory Error Model:** ISCSWA0 3-D 95.000% Confidence 2.7955 sigma, for subject well. For offset wells, error model version is specified with each well respectively.

### Offset Selection Criteria

Wellhead distance scan: Restricted within 55204.85 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 Trajectories Summary

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

Results highlighted: Sep-Factor separation <= 0.00 ft

Harvey 7-63-23-5760BE R0 mdv 08Nov16 (Def Plan)													Warning Alert
100.04	32.81	99.06	67.23	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
100.04	32.81	99.06	67.23	N/A		MAS = 10.00 (m)	20.20	20.20				WRP	
100.04	32.81	92.22	67.23	14.50		MAS = 10.00 (m)	1500.00	1500.00				MinPts	
100.06	32.81	92.20	67.25	14.41		MAS = 10.00 (m)	1520.00	1520.00				MINPT-O-EQU	
104.52	32.81	95.46	71.71	12.83		MAS = 10.00 (m)	2010.00	2008.50				MINPT-O-EQU	
130.02	32.81	117.68	97.22	11.38		MAS = 10.00 (m)	2750.00	2742.73				MinPt-O-SF	
535.45	57.71	496.65	477.74	14.13		OSF1.50	7200.00	6828.50				MinPt-CtCt	
535.45	161.40	427.52	374.05	5.00		OSF1.50	10220.00	6828.50	OSF-5.00			Enter Alert	
535.45	353.28	299.62	182.19	2.28		OSF1.50	14194.35	6828.50				MinPts	

Carmichael 26U-243 MWD 0' to 11245' - PR (Def Survey)													Pass
1619.57	32.81	1617.76	1586.76	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
1619.46	32.81	1617.63	1586.65	93254.09		MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
1619.42	32.81	1617.60	1586.61	233121.89		MAS = 10.00 (m)	20.00	20.00				MINPT-O-EQU	
1619.42	32.81	1617.60	1586.61	250884.42		MAS = 10.00 (m)	20.20	20.20				WRP	
1619.41	32.81	1617.58	1586.61	74258.72		MAS = 10.00 (m)	30.00	30.00				MinPts	
911.83	35.70	887.42	876.13	40.29		OSF1.50	4500.00	4479.07				MinPt-CtCt	
911.92	36.00	887.32	875.92	39.93		OSF1.50	4540.00	4518.76				MINPT-O-EQU	
912.05	36.16	887.34	875.89	39.76		OSF1.50	4560.00	4538.61				MinPt-O-ADP	
977.82	44.06	947.91	933.76	34.50		OSF1.50	5860.00	5828.46				MinPt-O-SF	
7392.19	64.35	7348.79	7327.84	176.42		OSF1.50	14194.35	6828.50				TD	

Carmichael 26M-223 MWD 0' to 11345' - PR (Def Survey)													Pass
1669.31	32.81	1667.50	1636.51	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
1669.21	32.81	1667.38	1636.40	99074.49		MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
1669.16	32.81	1667.34	1636.35	247672.88		MAS = 10.00 (m)	20.00	20.00				MINPT-O-EQU	
1669.16	32.81	1667.34	1636.35	266544.12		MAS = 10.00 (m)	20.20	20.20				MinPts	
1669.20	32.81	1667.32	1636.39	23509.72		MAS = 10.00 (m)	50.00	50.00				MINPT-O-EQU	
2699.54	45.51	2668.67	2654.03	92.20		OSF1.50	5970.00	5937.60				MinPt-CtCt	
2699.57	45.64	2668.61	2653.93	91.93		OSF1.50	5990.00	5957.45				MINPT-O-EQU	
2699.61	45.70	2668.61	2653.91	91.80		OSF1.50	6000.00	5967.37				MinPt-O-ADP	
1271.27	85.75	1213.60	1185.52	22.61		OSF1.50	9150.00	6828.50				MinPt-CtCt	
1271.38	86.24	1213.39	1185.15	22.48		OSF1.50	9170.00	6828.50				MINPT-O-EQU	
1271.56	86.47	1213.41	1185.09	22.42		OSF1.50	9180.00	6828.50				MinPt-O-ADP	
1303.22	91.59	1241.66	1211.63	21.68		OSF1.50	9440.00	6828.50				MinPt-O-SF	
5194.33	81.20	5139.70	5113.13	97.74		OSF1.50	14194.35	6828.50				TD	

Carmichael 26R-203 MWD 0' to 11122' - PR (Def Survey)													Pass
1648.35	32.81	1646.53	1615.54	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
1648.24	32.81	1646.41	1615.43	96599.61		MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
1648.19	32.81	1646.37	1615.39	241485.67		MAS = 10.00 (m)	20.00	20.00				MINPT-O-EQU	
1648.19	32.81	1646.38	1615.39	259885.48		MAS = 10.00 (m)	20.20	20.20				WRP	
1644.73	32.81	1637.27	1611.92	291.09		MAS = 10.00 (m)	990.00	990.00				MINPT-O-EQU	
1643.73	32.81	1636.19	1610.92	276.93		MAS = 10.00 (m)	1100.00	1100.00				MinPt-O-SF	
1619.87	32.81	1610.58	1587.08	211.14		MAS = 10.00 (m)	2300.00	2296.24				MinPts	
1616.00	32.81	1603.72	1583.20	151.46		MAS = 10.00 (m)	3160.00	3149.53				MinPts	
1616.09	32.81	1603.63	1583.28	148.89		MAS = 10.00 (m)	3220.00	3209.06				MINPT-O-EQU	
1616.62	32.81	1603.63	1583.81	142.06		MAS = 10.00 (m)	3350.00	3338.05				MINPT-O-EQU	
1581.41	35.29	1557.35	1546.12	70.38		OSF1.50	5880.00	5848.31				MinPt-CtCt	
1581.43	35.38	1557.32	1546.08	70.24		OSF1.50	5890.00	5858.23				MINPT-O-EQU	
1581.49	35.42	1557.34	1546.07	70.10		OSF1.50	5900.00	5868.15				MinPt-O-ADP	
1624.73	37.61	1599.12	1587.12	67.69		OSF1.50	6320.00	6284.87				MinPt-O-SF	
1319.58	44.95	1289.11	1274.63	45.51		OSF1.50	7870.00	6828.50				MinPt-CtCt	
1319.65	45.08	1289.10	1274.57	45.38		OSF1.50	7880.00	6828.50				MinPts	
1447.02	54.07	1410.47	1392.95	41.25		OSF1.50	8460.00	6828.50				MinPt-O-SF	
6463.93	67.48	6418.44	6396.45	146.93		OSF1.50	14194.35	6828.50				TD	