



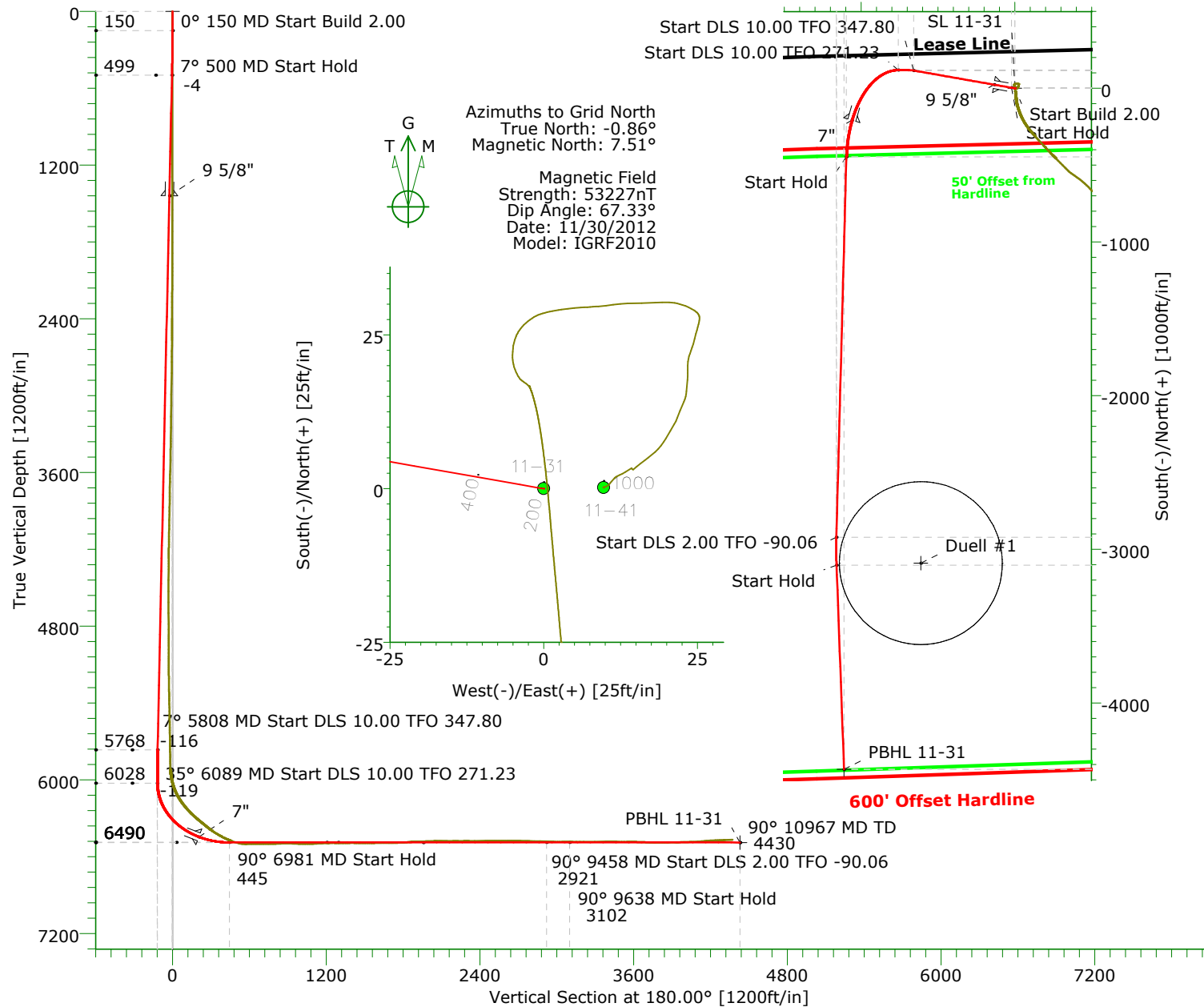
CARRIZO OIL & GAS, INC.

Field: Niobrara CONZ'83
Site: Vawter 11-31-8-61 Pad
Well: 11-31-8-61
Wellpath: Original Hole
Plan: Plan #4



CASING DETAILS

No.	TVD	MD	Name	Size
1	1440.00	1447.94	9 5/8"	9.625
2	6447.01	6733.78	7"	7.000



TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Duell #1	-5.00	-3088.89	-611.07	1491419.02	3368953.32	40°40'29.045N104°10'11.444W		Circle (Radius: 530)
SL 11-31	0.00	0.00	0.00	1494507.91	3369564.39	40°40'59.473N104°10'02.912W		Point
PBHL 11-31	6490.00	-4430.02	-1111.07	1490077.89	3368453.32	40°40'15.869N104°10'18.193W		Point

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	
3	500.00	7.00	280.00	499.13	3.71	-21.03	2.00	280.00	-3.71	
4	5807.93	7.00	280.00	5767.50	116.04	-658.08	0.00	0.00	-116.04	
5	6089.23	35.00	270.00	6027.55	119.07	-757.64	10.00	347.80	-119.07	
6	6980.62	90.00	181.50	6489.90	-445.15	-1096.15	10.00	271.23	445.15	
7	9457.55	90.00	181.50	6489.90	-2921.23	-1160.99	0.00	0.00	2921.23	
8	9638.09	90.00	177.89	6489.91	-3101.73	-1160.02	2.00	-90.06	3101.73	
9	10967.28	90.00	177.89	6490.00	-4430.02	-1111.07	0.00	0.00	4430.02	PBHL 11-31

Plan: Plan #4 (11-31-8-61/Original Hole)

Created By: Michael Cabrera Date: 12/12/2012

PRECISION DIRECTIONAL SERVICES, INC.

713.435.6250

Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC. Field: Niobrara CONZ'83 Site: Vawter 11-31-8-61 Pad Well: 11-31-8-61 Wellpath: Original Hole	Date: 12/12/2012 Co-ordinate(NE) Reference: Vertical (TVD) Reference: Section (VS) Reference: Plan:	Time: 10:04:33 Well: 11-31-8-61, Grid North 4990'GL+17"KB 5007.0 Well (0.00N,0.00E,180.00Azi) Plan #4	Page: 1
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Field: Niobrara CONZ'83			
Map System: US State Plane Coordinate System 1983		Map Zone: Colorado, Northern Zone	
Geo Datum: GRS 1980		Coordinate System: Well Centre	
Sys Datum: Mean Sea Level		Geomagnetic Model: IGRF2010	

Site: Vawter 11-31-8-61 Pad			
Weld County, CO			
Site Position:	Northing: 1494551.35 ft	Latitude: 40 40 59.900 N	
From: Map	Easting: 3369583.47 ft	Longitude: 104 10 2.656 W	
Position Uncertainty: 0.00 ft		North Reference: Grid	
Ground Level: 4990.00 ft		Grid Convergence: 0.86 deg	

Well: 11-31-8-61 offset from site		Slot Name:	
Well Position: +N/-S -43.44 ft	Northing: 1494507.91 ft	Latitude: 40 40 59.473 N	
+E/-W -19.08 ft	Easting : 3369564.39 ft	Longitude: 104 10 2.912 W	
Position Uncertainty: 0.00 ft			

Wellpath: Original Hole		Drilled From: Surface	
Current Datum: 4990'GL+17"KB	Height 5007.00 ft	Tie-on Depth: 0.00 ft	
Magnetic Data: 11/30/2012		Above System Datum: Mean Sea Level	
Field Strength: 53227 nT		Declination: 8.37 deg	
Vertical Section: Depth From (TVD)	+N/-S	Mag Dip Angle: 67.33 deg	
ft	ft	+E/-W	Direction
		ft	deg
0.00	0.00	0.00	180.00

Plan: Plan #4		Date Composed: 12/12/2012	
Principal: No		Version: 1	
		Tied-to: From Surface	

Plan Section Information										
MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	7.00	280.00	499.13	3.71	-21.03	2.00	2.00	0.00	280.00	
5807.93	7.00	280.00	5767.50	116.04	-658.08	0.00	0.00	0.00	0.00	
6089.23	35.00	270.00	6027.55	119.07	-757.64	10.00	9.95	-3.56	347.80	
6980.62	90.00	181.50	6489.90	-445.15	-1096.15	10.00	6.17	-9.93	271.23	
9457.55	90.00	181.50	6489.90	-2921.23	-1160.99	0.00	0.00	0.00	0.00	
9638.09	90.00	177.89	6489.91	-3101.73	-1160.02	2.00	0.00	-2.00	-90.06	
10967.28	90.00	177.89	6490.00	-4430.02	-1111.07	0.00	0.00	0.00	0.00	PBHL 11-31

Survey										
MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	1.00	280.00	200.00	0.08	-0.43	-0.08	2.00	2.00	0.00	
300.00	3.00	280.00	299.93	0.68	-3.87	-0.68	2.00	2.00	0.00	
400.00	5.00	280.00	399.68	1.89	-10.74	-1.89	2.00	2.00	0.00	
500.00	7.00	280.00	499.13	3.71	-21.03	-3.71	2.00	2.00	0.00	
600.00	7.00	280.00	598.38	5.82	-33.03	-5.82	0.00	0.00	0.00	
700.00	7.00	280.00	697.64	7.94	-45.03	-7.94	0.00	0.00	0.00	
800.00	7.00	280.00	796.89	10.06	-57.03	-10.06	0.00	0.00	0.00	
900.00	7.00	280.00	896.15	12.17	-69.04	-12.17	0.00	0.00	0.00	
1000.00	7.00	280.00	995.40	14.29	-81.04	-14.29	0.00	0.00	0.00	
1100.00	7.00	280.00	1094.66	16.41	-93.04	-16.41	0.00	0.00	0.00	
1200.00	7.00	280.00	1193.91	18.52	-105.04	-18.52	0.00	0.00	0.00	
1300.00	7.00	280.00	1293.17	20.64	-117.04	-20.64	0.00	0.00	0.00	

Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC. Field: Niobrara CONZ'83 Site: Vawter 11-31-8-61 Pad Well: 11-31-8-61 Wellpath: Original Hole	Date: 12/12/2012 Co-ordinate(NE) Reference: Well: 11-31-8-61, Grid North Vertical (TVD) Reference: 4990'GL+17"KB 5007.0 Section (VS) Reference: Well (0.00N,0.00E,180.00Azi) Plan: Plan #4	Page: 2
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Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
1400.00	7.00	280.00	1392.42	22.75	-129.05	-22.75	0.00	0.00	0.00	
1447.94	7.00	280.00	1440.00	23.77	-134.80	-23.77	0.00	0.00	0.00	9 5/8"
1500.00	7.00	280.00	1491.68	24.87	-141.05	-24.87	0.00	0.00	0.00	
1600.00	7.00	280.00	1590.93	26.99	-153.05	-26.99	0.00	0.00	0.00	
1700.00	7.00	280.00	1690.19	29.10	-165.05	-29.10	0.00	0.00	0.00	
1800.00	7.00	280.00	1789.44	31.22	-177.05	-31.22	0.00	0.00	0.00	
1900.00	7.00	280.00	1888.69	33.34	-189.05	-33.34	0.00	0.00	0.00	
2000.00	7.00	280.00	1987.95	35.45	-201.06	-35.45	0.00	0.00	0.00	
2100.00	7.00	280.00	2087.20	37.57	-213.06	-37.57	0.00	0.00	0.00	
2200.00	7.00	280.00	2186.46	39.68	-225.06	-39.68	0.00	0.00	0.00	
2300.00	7.00	280.00	2285.71	41.80	-237.06	-41.80	0.00	0.00	0.00	
2400.00	7.00	280.00	2384.97	43.92	-249.06	-43.92	0.00	0.00	0.00	
2500.00	7.00	280.00	2484.22	46.03	-261.07	-46.03	0.00	0.00	0.00	
2600.00	7.00	280.00	2583.48	48.15	-273.07	-48.15	0.00	0.00	0.00	
2700.00	7.00	280.00	2682.73	50.27	-285.07	-50.27	0.00	0.00	0.00	
2800.00	7.00	280.00	2781.99	52.38	-297.07	-52.38	0.00	0.00	0.00	
2900.00	7.00	280.00	2881.24	54.50	-309.07	-54.50	0.00	0.00	0.00	
3000.00	7.00	280.00	2980.50	56.61	-321.07	-56.61	0.00	0.00	0.00	
3100.00	7.00	280.00	3079.75	58.73	-333.08	-58.73	0.00	0.00	0.00	
3200.00	7.00	280.00	3179.00	60.85	-345.08	-60.85	0.00	0.00	0.00	
3300.00	7.00	280.00	3278.26	62.96	-357.08	-62.96	0.00	0.00	0.00	
3400.00	7.00	280.00	3377.51	65.08	-369.08	-65.08	0.00	0.00	0.00	
3500.00	7.00	280.00	3476.77	67.20	-381.08	-67.20	0.00	0.00	0.00	
3600.00	7.00	280.00	3576.02	69.31	-393.08	-69.31	0.00	0.00	0.00	
3700.00	7.00	280.00	3675.28	71.43	-405.09	-71.43	0.00	0.00	0.00	
3800.00	7.00	280.00	3774.53	73.54	-417.09	-73.54	0.00	0.00	0.00	
3900.00	7.00	280.00	3873.79	75.66	-429.09	-75.66	0.00	0.00	0.00	
4000.00	7.00	280.00	3973.04	77.78	-441.09	-77.78	0.00	0.00	0.00	
4100.00	7.00	280.00	4072.30	79.89	-453.09	-79.89	0.00	0.00	0.00	
4200.00	7.00	280.00	4171.55	82.01	-465.10	-82.01	0.00	0.00	0.00	
4300.00	7.00	280.00	4270.81	84.13	-477.10	-84.13	0.00	0.00	0.00	
4400.00	7.00	280.00	4370.06	86.24	-489.10	-86.24	0.00	0.00	0.00	
4500.00	7.00	280.00	4469.31	88.36	-501.10	-88.36	0.00	0.00	0.00	
4600.00	7.00	280.00	4568.57	90.47	-513.10	-90.47	0.00	0.00	0.00	
4700.00	7.00	280.00	4667.82	92.59	-525.10	-92.59	0.00	0.00	0.00	
4800.00	7.00	280.00	4767.08	94.71	-537.11	-94.71	0.00	0.00	0.00	
4900.00	7.00	280.00	4866.33	96.82	-549.11	-96.82	0.00	0.00	0.00	
5000.00	7.00	280.00	4965.59	98.94	-561.11	-98.94	0.00	0.00	0.00	
5100.00	7.00	280.00	5064.84	101.05	-573.11	-101.06	0.00	0.00	0.00	
5200.00	7.00	280.00	5164.10	103.17	-585.11	-103.17	0.00	0.00	0.00	
5300.00	7.00	280.00	5263.35	105.29	-597.12	-105.29	0.00	0.00	0.00	
5400.00	7.00	280.00	5362.61	107.40	-609.12	-107.40	0.00	0.00	0.00	
5500.00	7.00	280.00	5461.86	109.52	-621.12	-109.52	0.00	0.00	0.00	
5600.00	7.00	280.00	5561.12	111.64	-633.12	-111.64	0.00	0.00	0.00	
5700.00	7.00	280.00	5660.37	113.75	-645.12	-113.75	0.00	0.00	0.00	
5807.93	7.00	280.00	5767.50	116.04	-658.08	-116.04	0.00	0.00	0.00	
5850.00	11.15	275.40	5809.03	116.86	-664.65	-116.86	10.00	9.86	-10.93	
5900.00	16.12	273.01	5857.61	117.68	-676.40	-117.68	10.00	9.94	-4.79	
5950.00	21.10	271.72	5904.98	118.32	-692.34	-118.32	10.00	9.97	-2.57	
6000.00	26.09	270.91	5950.78	118.76	-712.34	-118.76	10.00	9.98	-1.62	
6050.00	31.08	270.34	5994.68	119.01	-736.25	-119.01	10.00	9.99	-1.13	
6089.23	35.00	270.00	6027.55	119.07	-757.64	-119.07	10.00	9.99	-0.87	
6100.00	35.04	268.12	6036.38	118.97	-763.82	-118.97	10.00	0.35	-17.42	

Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC.
Field: Niobrara CONZ'83
Site: Vawter 11-31-8-61 Pad
Well: 11-31-8-61
Wellpath: Original Hole

Date: 12/12/2012
Co-ordinate(NE) Reference: Well: 11-31-8-61, Grid North
Vertical (TVD) Reference: 4990'GL+17'KB 5007.0
Section (VS) Reference: Well (0.00N,0.00E,180.00Azi)
Plan: Plan #4

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Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
6150.00	35.59	259.52	6077.20	115.86	-792.48	-115.86	10.00	1.10	-17.21	
6200.00	36.72	251.26	6117.60	108.40	-820.96	-108.40	10.00	2.28	-16.52	
6250.00	38.40	243.53	6157.25	96.67	-849.04	-96.67	10.00	3.35	-15.47	
6300.00	40.54	236.42	6195.87	80.75	-876.49	-80.75	10.00	4.29	-14.22	
6350.00	43.08	229.95	6233.15	60.76	-903.12	-60.76	10.00	5.08	-12.93	
6400.00	45.95	224.11	6268.81	36.86	-928.72	-36.86	10.00	5.74	-11.69	
6450.00	49.09	218.83	6302.58	9.22	-953.09	-9.22	10.00	6.28	-10.56	
6500.00	52.45	214.05	6334.21	-21.94	-976.05	21.94	10.00	6.72	-9.57	
6550.00	55.99	209.69	6363.45	-56.39	-997.43	56.39	10.00	7.07	-8.72	
6600.00	59.66	205.68	6390.08	-93.86	-1017.05	93.86	10.00	7.35	-8.01	
6650.00	63.45	201.97	6413.89	-134.07	-1034.78	134.07	10.00	7.58	-7.42	
6700.00	67.33	198.50	6434.71	-176.72	-1050.48	176.72	10.00	7.76	-6.94	
6733.78	69.99	196.27	6447.01	-206.74	-1059.87	206.74	10.00	7.88	-6.61	7"
6750.00	71.28	195.22	6452.38	-221.47	-1064.02	221.47	10.00	7.94	-6.44	
6800.00	75.29	192.09	6466.77	-267.99	-1075.31	267.99	10.00	8.01	-6.26	
6850.00	79.33	189.08	6477.75	-315.92	-1084.26	315.92	10.00	8.09	-6.03	
6900.00	83.40	186.14	6485.26	-364.90	-1090.80	364.90	10.00	8.15	-5.87	
6950.00	87.49	183.26	6489.23	-414.56	-1094.88	414.56	10.00	8.18	-5.77	
6980.62	90.00	181.50	6489.90	-445.15	-1096.15	445.15	10.00	8.19	-5.74	
7000.00	90.00	181.50	6489.90	-464.52	-1096.66	464.52	0.00	0.00	0.00	
7100.00	90.00	181.50	6489.90	-564.49	-1099.27	564.49	0.00	0.00	0.00	
7200.00	90.00	181.50	6489.90	-664.45	-1101.89	664.45	0.00	0.00	0.00	
7300.00	90.00	181.50	6489.90	-764.42	-1104.51	764.42	0.00	0.00	0.00	
7400.00	90.00	181.50	6489.90	-864.38	-1107.13	864.38	0.00	0.00	0.00	
7500.00	90.00	181.50	6489.90	-964.35	-1109.74	964.35	0.00	0.00	0.00	
7600.00	90.00	181.50	6489.90	-1064.31	-1112.36	1064.31	0.00	0.00	0.00	
7700.00	90.00	181.50	6489.90	-1164.28	-1114.98	1164.28	0.00	0.00	0.00	
7800.00	90.00	181.50	6489.90	-1264.25	-1117.60	1264.25	0.00	0.00	0.00	
7900.00	90.00	181.50	6489.90	-1364.21	-1120.21	1364.21	0.00	0.00	0.00	
8000.00	90.00	181.50	6489.90	-1464.18	-1122.83	1464.18	0.00	0.00	0.00	
8100.00	90.00	181.50	6489.90	-1564.14	-1125.45	1564.14	0.00	0.00	0.00	
8200.00	90.00	181.50	6489.90	-1664.11	-1128.07	1664.11	0.00	0.00	0.00	
8300.00	90.00	181.50	6489.90	-1764.07	-1130.69	1764.07	0.00	0.00	0.00	
8400.00	90.00	181.50	6489.90	-1864.04	-1133.30	1864.04	0.00	0.00	0.00	
8500.00	90.00	181.50	6489.90	-1964.01	-1135.92	1964.01	0.00	0.00	0.00	
8600.00	90.00	181.50	6489.90	-2063.97	-1138.54	2063.97	0.00	0.00	0.00	
8700.00	90.00	181.50	6489.90	-2163.94	-1141.16	2163.94	0.00	0.00	0.00	
8800.00	90.00	181.50	6489.90	-2263.90	-1143.77	2263.90	0.00	0.00	0.00	
8900.00	90.00	181.50	6489.90	-2363.87	-1146.39	2363.87	0.00	0.00	0.00	
9000.00	90.00	181.50	6489.90	-2463.83	-1149.01	2463.83	0.00	0.00	0.00	
9100.00	90.00	181.50	6489.90	-2563.80	-1151.63	2563.80	0.00	0.00	0.00	
9200.00	90.00	181.50	6489.90	-2663.77	-1154.24	2663.77	0.00	0.00	0.00	
9300.00	90.00	181.50	6489.90	-2763.73	-1156.86	2763.73	0.00	0.00	0.00	
9400.00	90.00	181.50	6489.90	-2863.70	-1159.48	2863.70	0.00	0.00	0.00	
9457.55	90.00	181.50	6489.90	-2921.23	-1160.99	2921.23	0.00	0.00	0.00	
9500.00	90.00	180.65	6489.90	-2963.67	-1161.78	2963.67	2.00	0.00	-2.00	
9600.00	90.00	178.65	6489.90	-3063.66	-1161.17	3063.66	2.00	0.00	-2.00	
9638.09	90.00	177.89	6489.91	-3101.73	-1160.02	3101.73	2.00	0.00	-2.00	
9700.00	90.00	177.89	6489.91	-3163.60	-1157.74	3163.60	0.00	0.00	0.00	
9800.00	90.00	177.89	6489.92	-3263.54	-1154.06	3263.54	0.00	0.00	0.00	
9900.00	90.00	177.89	6489.92	-3363.47	-1150.38	3363.47	0.00	0.00	0.00	
10000.00	90.00	177.89	6489.93	-3463.40	-1146.69	3463.40	0.00	0.00	0.00	
10100.00	90.00	177.89	6489.94	-3563.33	-1143.01	3563.33	0.00	0.00	0.00	
10200.00	90.00	177.89	6489.95	-3663.26	-1139.33	3663.26	0.00	0.00	0.00	

Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC.
Field: Niobrara CONZ'83
Site: Vawter 11-31-8-61 Pad
Well: 11-31-8-61
Wellpath: Original Hole

Date: 12/12/2012
Co-ordinate(NE) Reference: Well: 11-31-8-61, Grid North
Vertical (TVD) Reference: 4990'GL+17"KB 5007.0
Section (VS) Reference: Well (0.00N,0.00E,180.00Azi)
Plan: Plan #4

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Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
10300.00	90.00	177.89	6489.95	-3763.20	-1135.65	3763.20	0.00	0.00	0.00	
10400.00	90.00	177.89	6489.96	-3863.13	-1131.96	3863.13	0.00	0.00	0.00	
10500.00	90.00	177.89	6489.97	-3963.06	-1128.28	3963.06	0.00	0.00	0.00	
10600.00	90.00	177.89	6489.97	-4062.99	-1124.60	4062.99	0.00	0.00	0.00	
10700.00	90.00	177.89	6489.98	-4162.92	-1120.91	4162.92	0.00	0.00	0.00	
10800.00	90.00	177.89	6489.99	-4262.86	-1117.23	4262.86	0.00	0.00	0.00	
10900.00	90.00	177.89	6490.00	-4362.79	-1113.55	4362.79	0.00	0.00	0.00	
10967.28	90.00	177.89	6490.00	-4430.02	-1111.07	4430.02	0.00	0.00	0.00	PBHL 11-31

Targets

Name	Description Dip.	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<---- Latitude ----> Deg Min Sec			<--- Longitude ---> Deg Min Sec		
Duell #1 -Circle (Radius: 530)			-5.00	-3088.89	-611.07	1491419.02	3368953.32	40	40	29.045 N	104	10	11.444 W
SL 11-31			0.00	0.00	0.00	1494507.91	3369564.39	40	40	59.473 N	104	10	2.912 W
PBHL 11-31			6490.00	-4430.02	-1111.07	1490077.89	3368453.32	40	40	15.869 N	104	10	18.193 W

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
1447.94	1440.00	9.625	12.250	9 5/8"
6733.78	6447.01	7.000	8.500	7"