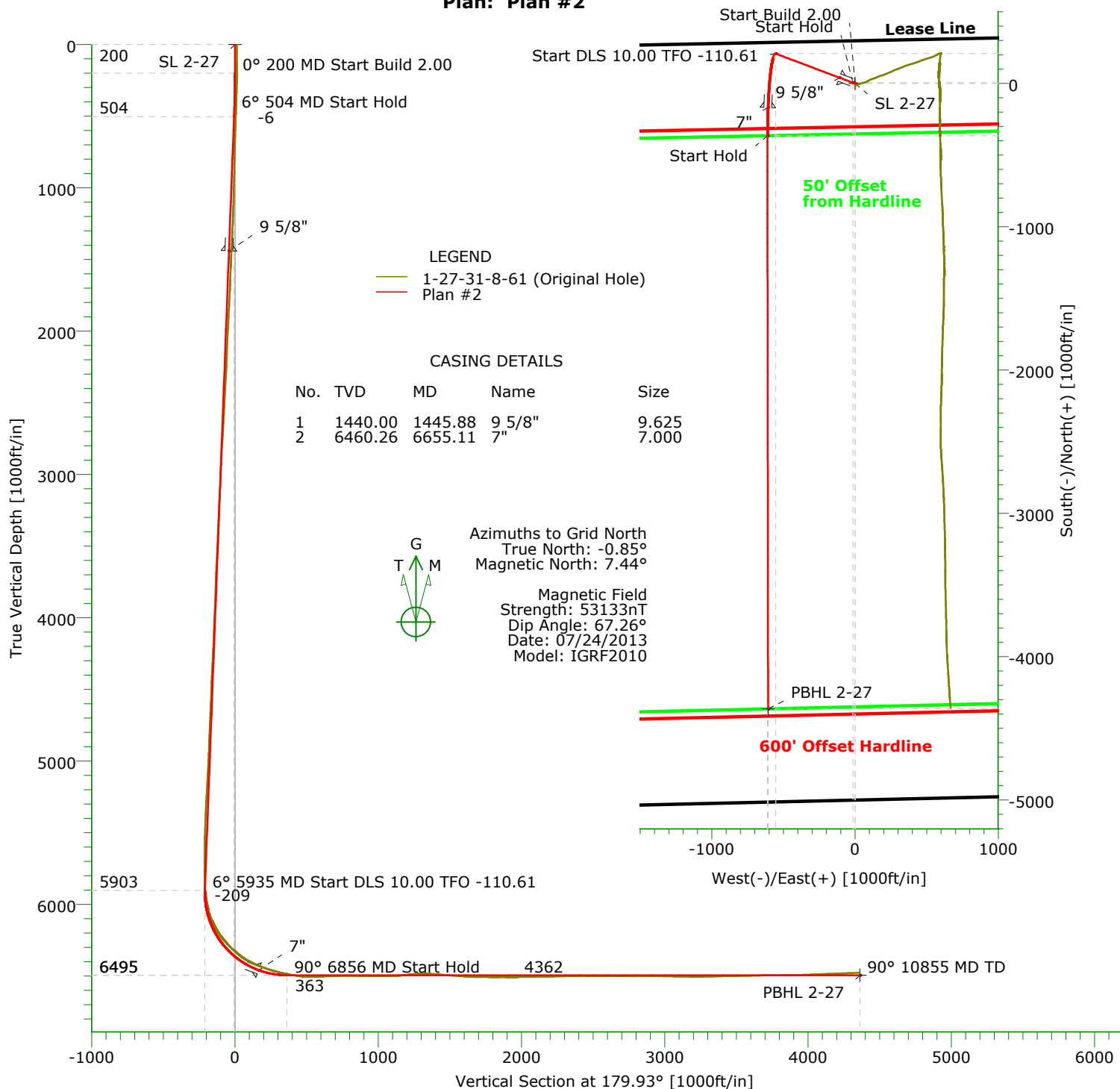




CARRIZO OIL & GAS, INC.

Field: Niobrara CONZ'83
Site: Speaker 27-31-8-61
Well: 2-27-31-8-61
Wellpath: Original Hole
Plan: Plan #2



Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC.		Date: 07/19/2013	Time: 13:24:28	Page: 1
Field: Niobrara CONZ'83		Co-ordinate(NE) Reference: Well: 2-27-31-8-61, Grid North		
Site: Speaker 27-31-8-61		Vertical (TVD) Reference: 4992'GL+17'KB 5009.0		
Well: 2-27-31-8-61		Section (VS) Reference: Well (0.00N,0.00E,179.93Azi)		
Wellpath: Original Hole		Plan: Plan #2		

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: Speaker 27-31-8-61	
Weld County, CO	
Site Position:	Northing: 1478417.98 ft
From: Map	Easting: 3364100.00 ft
Position Uncertainty: 0.00 ft	Latitude: 40 38 21.306 N
Ground Level: 4992.00 ft	Longitude: 104 11 16.922 W
	North Reference: Grid
	Grid Convergence: 0.85 deg

Well: 2-27-31-8-61		Slot Name:	
Well Position: +N/-S 0.00 ft	Northing: 1478417.98 ft	Latitude: 40 38 21.306 N	
+E/-W 0.00 ft	Easting: 3364100.00 ft	Longitude: 104 11 16.922 W	
Position Uncertainty: 0.00 ft			

Wellpath: Original Hole		Drilled From: Surface	
Current Datum: 4992'GL+17'KB	Height 5009.00 ft	Tie-on Depth: 0.00 ft	
Magnetic Data: 07/24/2013		Above System Datum: Mean Sea Level	
Field Strength: 53133 nT		Declination: 8.29 deg	
Vertical Section: Depth From (TVD)	+N/-S	Mag Dip Angle: 67.26 deg	
ft	ft	+E/-W	Direction
		ft	deg
0.00	0.00	0.00	179.93

Plan: Plan #2	Date Composed: 07/18/2013
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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
504.25	6.09	290.64	503.68	5.69	-15.11	2.00	2.00	0.00	0.00	
5934.66	6.09	290.64	5903.49	208.62	-553.80	0.00	0.00	0.00	0.00	
6856.15	90.00	179.93	6495.00	-364.01	-612.07	10.00	9.11	-12.01	-110.61	
10855.24	90.00	179.93	6495.00	-4363.10	-607.10	0.00	0.00	0.00	0.00	PBHL 2-27

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	MWD
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	MWD
300.00	2.00	290.64	299.98	0.62	-1.63	-0.62	2.00	2.00	0.00	MWD
400.00	4.00	290.64	399.84	2.46	-6.53	-2.47	2.00	2.00	0.00	MWD
504.25	6.09	290.64	503.68	5.69	-15.11	-5.71	2.00	2.00	0.00	MWD
600.00	6.09	290.64	598.89	9.27	-24.60	-9.30	0.00	0.00	0.00	MWD
700.00	6.09	290.64	698.33	13.00	-34.52	-13.05	0.00	0.00	0.00	MWD
800.00	6.09	290.64	797.76	16.74	-44.44	-16.80	0.00	0.00	0.00	MWD
900.00	6.09	290.64	897.20	20.48	-54.36	-20.55	0.00	0.00	0.00	MWD
1000.00	6.09	290.64	996.64	24.22	-64.28	-24.29	0.00	0.00	0.00	MWD
1100.00	6.09	290.64	1096.07	27.95	-74.20	-28.04	0.00	0.00	0.00	MWD
1200.00	6.09	290.64	1195.51	31.69	-84.12	-31.79	0.00	0.00	0.00	MWD
1300.00	6.09	290.64	1294.94	35.43	-94.04	-35.54	0.00	0.00	0.00	MWD
1400.00	6.09	290.64	1394.38	39.16	-103.96	-39.29	0.00	0.00	0.00	MWD

Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC.
Field: Niobrara CONZ'83
Site: Speaker 27-31-8-61
Well: 2-27-31-8-61
Wellpath: Original Hole

Date: 07/19/2013
Co-ordinate(NE) Reference: Well: 2-27-31-8-61, Grid North
Vertical (TVD) Reference: 4992'GL+17'KB 5009.0
Section (VS) Reference: Well (0.00N,0.00E,179.93Azi)
Plan: Plan #2

Page: 2

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
1445.88	6.09	290.64	1440.00	40.88	-108.51	-41.01	0.00	0.00	0.00	9 5/8"
1500.00	6.09	290.64	1493.82	42.90	-113.88	-43.04	0.00	0.00	0.00	MWD
1600.00	6.09	290.64	1593.25	46.64	-123.80	-46.79	0.00	0.00	0.00	MWD
1700.00	6.09	290.64	1692.69	50.37	-133.72	-50.54	0.00	0.00	0.00	MWD
1800.00	6.09	290.64	1792.13	54.11	-143.64	-54.29	0.00	0.00	0.00	MWD
1900.00	6.09	290.64	1891.56	57.85	-153.56	-58.04	0.00	0.00	0.00	MWD
2000.00	6.09	290.64	1991.00	61.58	-163.48	-61.78	0.00	0.00	0.00	MWD
2100.00	6.09	290.64	2090.44	65.32	-173.40	-65.53	0.00	0.00	0.00	MWD
2200.00	6.09	290.64	2189.87	69.06	-183.32	-69.28	0.00	0.00	0.00	MWD
2300.00	6.09	290.64	2289.31	72.79	-193.24	-73.03	0.00	0.00	0.00	MWD
2400.00	6.09	290.64	2388.75	76.53	-203.16	-76.78	0.00	0.00	0.00	MWD
2500.00	6.09	290.64	2488.18	80.27	-213.08	-80.53	0.00	0.00	0.00	MWD
2600.00	6.09	290.64	2587.62	84.01	-223.00	-84.28	0.00	0.00	0.00	MWD
2700.00	6.09	290.64	2687.06	87.74	-232.92	-88.03	0.00	0.00	0.00	MWD
2800.00	6.09	290.64	2786.49	91.48	-242.84	-91.78	0.00	0.00	0.00	MWD
2900.00	6.09	290.64	2885.93	95.22	-252.76	-95.52	0.00	0.00	0.00	MWD
3000.00	6.09	290.64	2985.37	98.95	-262.68	-99.27	0.00	0.00	0.00	MWD
3100.00	6.09	290.64	3084.80	102.69	-272.60	-103.02	0.00	0.00	0.00	MWD
3200.00	6.09	290.64	3184.24	106.43	-282.52	-106.77	0.00	0.00	0.00	MWD
3300.00	6.09	290.64	3283.68	110.16	-292.44	-110.52	0.00	0.00	0.00	MWD
3400.00	6.09	290.64	3383.11	113.90	-302.36	-114.27	0.00	0.00	0.00	MWD
3500.00	6.09	290.64	3482.55	117.64	-312.28	-118.02	0.00	0.00	0.00	MWD
3600.00	6.09	290.64	3581.99	121.37	-322.20	-121.77	0.00	0.00	0.00	MWD
3700.00	6.09	290.64	3681.42	125.11	-332.12	-125.52	0.00	0.00	0.00	MWD
3800.00	6.09	290.64	3780.86	128.85	-342.04	-129.27	0.00	0.00	0.00	MWD
3900.00	6.09	290.64	3880.30	132.58	-351.96	-133.01	0.00	0.00	0.00	MWD
4000.00	6.09	290.64	3979.73	136.32	-361.88	-136.76	0.00	0.00	0.00	MWD
4100.00	6.09	290.64	4079.17	140.06	-371.80	-140.51	0.00	0.00	0.00	MWD
4200.00	6.09	290.64	4178.61	143.80	-381.72	-144.26	0.00	0.00	0.00	MWD
4300.00	6.09	290.64	4278.04	147.53	-391.64	-148.01	0.00	0.00	0.00	MWD
4400.00	6.09	290.64	4377.48	151.27	-401.56	-151.76	0.00	0.00	0.00	MWD
4500.00	6.09	290.64	4476.91	155.01	-411.48	-155.51	0.00	0.00	0.00	MWD
4600.00	6.09	290.64	4576.35	158.74	-421.40	-159.26	0.00	0.00	0.00	MWD
4700.00	6.09	290.64	4675.79	162.48	-431.32	-163.01	0.00	0.00	0.00	MWD
4800.00	6.09	290.64	4775.22	166.22	-441.24	-166.76	0.00	0.00	0.00	MWD
4900.00	6.09	290.64	4874.66	169.95	-451.16	-170.50	0.00	0.00	0.00	MWD
5000.00	6.09	290.64	4974.10	173.69	-461.08	-174.25	0.00	0.00	0.00	MWD
5100.00	6.09	290.64	5073.53	177.43	-471.00	-178.00	0.00	0.00	0.00	MWD
5200.00	6.09	290.64	5172.97	181.16	-480.92	-181.75	0.00	0.00	0.00	MWD
5300.00	6.09	290.64	5272.41	184.90	-490.84	-185.50	0.00	0.00	0.00	MWD
5400.00	6.09	290.64	5371.84	188.64	-500.76	-189.25	0.00	0.00	0.00	MWD
5500.00	6.09	290.64	5471.28	192.38	-510.68	-193.00	0.00	0.00	0.00	MWD
5600.00	6.09	290.64	5570.72	196.11	-520.60	-196.75	0.00	0.00	0.00	MWD
5700.00	6.09	290.64	5670.15	199.85	-530.52	-200.50	0.00	0.00	0.00	MWD
5800.00	6.09	290.64	5769.59	203.59	-540.44	-204.25	0.00	0.00	0.00	MWD
5900.00	6.09	290.64	5869.03	207.32	-550.36	-207.99	0.00	0.00	0.00	MWD
5934.66	6.09	290.64	5903.49	208.62	-553.80	-209.29	0.00	0.00	0.00	MWD
5950.00	5.73	276.10	5918.75	208.99	-555.32	-209.66	10.00	-2.33	-94.80	MWD
6000.00	7.18	232.23	5968.46	207.34	-560.28	-208.02	10.00	2.91	-87.74	MWD
6050.00	10.96	210.91	6017.84	201.34	-565.19	-202.03	10.00	7.56	-42.65	MWD
6100.00	15.45	201.08	6066.51	191.04	-570.03	-191.73	10.00	8.97	-19.66	MWD
6150.00	20.17	195.68	6114.10	176.51	-574.76	-177.22	10.00	9.45	-10.80	MWD
6200.00	25.00	192.28	6160.26	157.88	-579.34	-158.58	10.00	9.66	-6.80	MWD
6250.00	29.88	189.92	6204.62	135.27	-583.74	-135.98	10.00	9.76	-4.71	MWD

Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC.
Field: Niobrara CONZ'83
Site: Speaker 27-31-8-61
Well: 2-27-31-8-61
Wellpath: Original Hole

Date: 07/19/2013
Co-ordinate(NE) Reference: Well: 2-27-31-8-61, Grid North
Vertical (TVD) Reference: 4992'GL+17'KB 5009.0
Section (VS) Reference: Well (0.00N,0.00E,179.93Azi)
Plan: Plan #2

Page: 3

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
6300.00	34.80	188.18	6246.85	108.86	-587.91	-109.58	10.00	9.83	-3.49	MWD
6350.00	39.73	186.82	6286.63	78.85	-591.84	-79.58	10.00	9.86	-2.72	MWD
6400.00	44.67	185.72	6323.66	45.48	-595.49	-46.21	10.00	9.89	-2.21	MWD
6450.00	49.63	184.79	6357.66	8.99	-598.84	-9.72	10.00	9.91	-1.85	MWD
6500.00	54.59	183.99	6388.36	-30.34	-601.85	29.61	10.00	9.92	-1.60	MWD
6550.00	59.55	183.29	6415.53	-72.21	-604.51	71.47	10.00	9.93	-1.41	MWD
6600.00	64.52	182.65	6438.97	-116.30	-606.79	115.56	10.00	9.94	-1.27	MWD
6650.00	69.49	182.07	6458.49	-162.28	-608.68	161.53	10.00	9.94	-1.17	MWD
6655.11	70.00	182.01	6460.26	-167.07	-608.85	166.32	10.00	9.94	-1.13	7"
6700.00	74.46	181.52	6473.96	-209.78	-610.16	209.04	10.00	9.95	-1.09	MWD
6750.00	79.44	180.99	6485.24	-258.47	-611.23	257.72	10.00	9.95	-1.05	MWD
6800.00	84.41	180.49	6492.26	-307.95	-611.87	307.20	10.00	9.95	-1.01	MWD
6850.00	89.39	179.99	6494.97	-357.86	-612.07	357.11	10.00	9.95	-1.00	MWD
6856.15	90.00	179.93	6495.00	-364.01	-612.07	363.26	10.00	9.95	-0.99	MWD
6900.00	90.00	179.93	6495.00	-407.86	-612.02	407.11	0.00	0.00	0.00	MWD
7000.00	90.00	179.93	6495.00	-507.86	-611.89	507.11	0.00	0.00	0.00	MWD
7100.00	90.00	179.93	6495.00	-607.86	-611.77	607.11	0.00	0.00	0.00	MWD
7200.00	90.00	179.93	6495.00	-707.86	-611.64	707.11	0.00	0.00	0.00	MWD
7300.00	90.00	179.93	6495.00	-807.86	-611.52	807.11	0.00	0.00	0.00	MWD
7400.00	90.00	179.93	6495.00	-907.86	-611.39	907.11	0.00	0.00	0.00	MWD
7500.00	90.00	179.93	6495.00	-1007.86	-611.27	1007.11	0.00	0.00	0.00	MWD
7600.00	90.00	179.93	6495.00	-1107.86	-611.15	1107.11	0.00	0.00	0.00	MWD
7700.00	90.00	179.93	6495.00	-1207.86	-611.02	1207.11	0.00	0.00	0.00	MWD
7800.00	90.00	179.93	6495.00	-1307.86	-610.90	1307.11	0.00	0.00	0.00	MWD
7900.00	90.00	179.93	6495.00	-1407.86	-610.77	1407.11	0.00	0.00	0.00	MWD
8000.00	90.00	179.93	6495.00	-1507.86	-610.65	1507.11	0.00	0.00	0.00	MWD
8100.00	90.00	179.93	6495.00	-1607.86	-610.52	1607.11	0.00	0.00	0.00	MWD
8200.00	90.00	179.93	6495.00	-1707.86	-610.40	1707.11	0.00	0.00	0.00	MWD
8300.00	90.00	179.93	6495.00	-1807.86	-610.28	1807.11	0.00	0.00	0.00	MWD
8400.00	90.00	179.93	6495.00	-1907.86	-610.15	1907.11	0.00	0.00	0.00	MWD
8500.00	90.00	179.93	6495.00	-2007.86	-610.03	2007.11	0.00	0.00	0.00	MWD
8600.00	90.00	179.93	6495.00	-2107.86	-609.90	2107.11	0.00	0.00	0.00	MWD
8700.00	90.00	179.93	6495.00	-2207.86	-609.78	2207.11	0.00	0.00	0.00	MWD
8800.00	90.00	179.93	6495.00	-2307.86	-609.65	2307.11	0.00	0.00	0.00	MWD
8900.00	90.00	179.93	6495.00	-2407.86	-609.53	2407.11	0.00	0.00	0.00	MWD
9000.00	90.00	179.93	6495.00	-2507.86	-609.41	2507.11	0.00	0.00	0.00	MWD
9100.00	90.00	179.93	6495.00	-2607.86	-609.28	2607.11	0.00	0.00	0.00	MWD
9200.00	90.00	179.93	6495.00	-2707.86	-609.16	2707.11	0.00	0.00	0.00	MWD
9300.00	90.00	179.93	6495.00	-2807.86	-609.03	2807.11	0.00	0.00	0.00	MWD
9400.00	90.00	179.93	6495.00	-2907.86	-608.91	2907.11	0.00	0.00	0.00	MWD
9500.00	90.00	179.93	6495.00	-3007.86	-608.78	3007.11	0.00	0.00	0.00	MWD
9600.00	90.00	179.93	6495.00	-3107.86	-608.66	3107.11	0.00	0.00	0.00	MWD
9700.00	90.00	179.93	6495.00	-3207.86	-608.54	3207.11	0.00	0.00	0.00	MWD
9800.00	90.00	179.93	6495.00	-3307.86	-608.41	3307.11	0.00	0.00	0.00	MWD
9900.00	90.00	179.93	6495.00	-3407.86	-608.29	3407.11	0.00	0.00	0.00	MWD
10000.00	90.00	179.93	6495.00	-3507.86	-608.16	3507.11	0.00	0.00	0.00	MWD
10100.00	90.00	179.93	6495.00	-3607.86	-608.04	3607.11	0.00	0.00	0.00	MWD
10200.00	90.00	179.93	6495.00	-3707.86	-607.91	3707.11	0.00	0.00	0.00	MWD
10300.00	90.00	179.93	6495.00	-3807.86	-607.79	3807.11	0.00	0.00	0.00	MWD
10400.00	90.00	179.93	6495.00	-3907.86	-607.67	3907.11	0.00	0.00	0.00	MWD
10500.00	90.00	179.93	6495.00	-4007.86	-607.54	4007.11	0.00	0.00	0.00	MWD
10600.00	90.00	179.93	6495.00	-4107.86	-607.42	4107.11	0.00	0.00	0.00	MWD
10700.00	90.00	179.93	6495.00	-4207.86	-607.29	4207.11	0.00	0.00	0.00	MWD

Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC. Field: Niobrara CONZ'83 Site: Speaker 27-31-8-61 Well: 2-27-31-8-61 Wellpath: Original Hole	Date: 07/19/2013 Co-ordinate(NE) Reference: Well: 2-27-31-8-61, Grid North Vertical (TVD) Reference: 4992'GL+17'KB 5009.0 Section (VS) Reference: Well (0.00N,0.00E,179.93Azi) Plan: Plan #2	Time: 13:24:28 Page: 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
10800.00	90.00	179.93	6495.00	-4307.86	-607.17	4307.11	0.00	0.00	0.00	MWD
10855.24	90.00	179.93	6495.00	-4363.10	-607.10	4362.36	0.00	0.00	0.00	PBHL 2-27

Targets

Name	Description Dip.	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<---- Latitude ---->			<--- Longitude --->		
SL 2-27			0.00	0.00	0.00	1478417.983364	100.00	40	38	21.306 N	104	11	16.922 W
PBHL 2-27			6495.00	-4363.10	-607.10	1474054.883363	492.90	40	37	38.285 N	104	11	25.632 W

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
1445.88	1440.00	9.625	12.250	9 5/8"
6655.11	6460.26	7.000	8.500	7"