



Wellpath: (3-27-8-61/Original Hole)

Precision Directional Services, Inc.

Survey Report

Company: CARRIZO OIL & GAS, INC.		Date: 12/04/2013	Time: 11:17:30	Page: 1
Field: Niobrara CONZ'83		Co-ordinate(NE) Reference: Well: 3-27-8-61, Grid North		
Site: Speaker 27-11-8-61 Pad		Vertical (TVD) Reference: 4999'GL+17"KB 5016.0		
Well: 3-27-8-61		Section (VS) Reference: Well (0.00N,0.00E,179.43Azi)		
Wellpath: Original Hole		Survey Calculation Method: Minimum Curvature	Db: Adapti	

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 27-11-8-61 Pad Centered on #1 Weld County, CO				
Site Position:	Northing: 1478356.89 ft	Latitude: 40 38 21.144 N		
From: Map	Easting: 3361067.22 ft	Longitude: 104 11 56.270 W		
Position Uncertainty: 0.00 ft		North Reference: Grid		
Ground Level: 4999.00 ft		Grid Convergence: 0.84 deg		

Well: 3-27-8-61				
Slot Name:				
Well Position: +N/-S 0.58 ft	Northing: 1478357.47 ft	Latitude: 40 38 21.145 N		
+E/-W 30.37 ft	Easting : 3361097.59 ft	Longitude: 104 11 55.876 W		
Position Uncertainty: 0.00 ft				

Wellpath: Original Hole				
Current Datum: 4999'GL+17"KB	Height 5016.00 ft	Drilled From: Surface		
Magnetic Data: 11/15/2013		Tie-on Depth: 0.00 ft		
Field Strength: 53099 nT		Above System Datum: Mean Sea Level		
Vertical Section: Depth From (TVD)	+N/-S	Declination: 8.25 deg		
ft	ft	Mag Dip Angle: 67.25 deg		
		+E/-W	Direction	
		ft	deg	
0.00	0.00	0.00	179.43	

Survey Program for Definitive Wellpath				
Date: 12/04/2013	Validated: No	Version: 2		
Actual From ft	To ft	Survey	Toolcode	Tool Name
148.00	11112.00	Survey #1 (148.00-11112.00)	MWD	Std MWD
11170.00	11170.00	Survey #2 (11170.00-11170.00)	Project	Projection

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	TIE LINE
148.00	0.70	81.10	148.00	0.14	0.89	-0.13	0.47	0.47	0.00	MWD
243.00	2.60	41.20	242.95	1.85	2.89	-1.82	2.22	2.00	-42.00	MWD
337.00	3.30	39.60	336.83	5.54	6.01	-5.48	0.75	0.74	-1.70	MWD
431.00	3.20	41.30	430.68	9.60	9.47	-9.50	0.15	-0.11	1.81	MWD
524.00	3.00	46.30	523.54	13.23	12.94	-13.10	0.36	-0.22	5.38	MWD
618.00	3.00	45.60	617.41	16.65	16.48	-16.48	0.04	0.00	-0.74	MWD
711.00	3.10	47.80	710.28	20.04	20.08	-19.84	0.17	0.11	2.37	MWD
805.00	3.00	44.10	804.15	23.51	23.68	-23.28	0.23	-0.11	-3.94	MWD
899.00	2.70	45.60	898.03	26.83	26.97	-26.56	0.33	-0.32	1.60	MWD
992.00	2.40	43.60	990.94	29.77	29.88	-29.47	0.34	-0.32	-2.15	MWD
1086.00	2.50	23.60	1084.86	33.08	32.06	-32.75	0.91	0.11	-21.28	MWD
1179.00	2.60	16.00	1177.76	36.96	33.45	-36.63	0.38	0.11	-8.17	MWD
1273.00	2.50	13.60	1271.67	41.00	34.52	-40.66	0.16	-0.11	-2.55	MWD
1366.00	2.70	12.30	1364.58	45.12	35.46	-44.76	0.22	0.22	-1.40	MWD
1408.00	2.70	10.90	1406.53	47.05	35.86	-46.69	0.16	0.00	-3.33	MWD
1490.00	2.60	15.30	1488.44	50.74	36.72	-50.38	0.28	-0.12	5.37	MWD
1532.00	2.70	9.30	1530.40	52.64	37.13	-52.27	0.70	0.24	-14.29	MWD
1617.00	2.70	12.70	1615.30	56.57	37.89	-56.19	0.19	0.00	4.00	MWD
1703.00	2.80	18.50	1701.20	60.54	39.00	-60.14	0.34	0.12	6.74	MWD
1788.00	3.20	15.80	1786.09	64.79	40.31	-64.38	0.50	0.47	-3.18	MWD
1873.00	2.90	16.40	1870.97	69.13	41.56	-68.72	0.35	-0.35	0.71	MWD

Precision Directional Services, Inc.

Survey Report

Company: CARRIZO OIL & GAS, INC. Field: Niobrara CONZ'83 Site: Speaker 27-11-8-61 Pad Well: 3-27-8-61 Wellpath: Original Hole	Date: 12/04/2013 Time: 11:17:30 Page: 2 Co-ordinate(NE) Reference: Well: 3-27-8-61, Grid North Vertical (TVD) Reference: 4999'GL+17"KB 5016.0 Section (VS) Reference: Well (0.00N,0.00E,179.43Azi) Survey Calculation Method: Minimum Curvature Db: Adapti
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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
1959.00	2.60	17.60	1956.87	73.08	42.76	-72.65	0.36	-0.35	1.40	MWD
2044.00	2.50	17.30	2041.78	76.69	43.90	-76.25	0.12	-0.12	-0.35	MWD
2129.00	2.30	20.40	2126.71	80.06	45.04	-79.60	0.28	-0.24	3.65	MWD
2214.00	3.10	23.80	2211.61	83.76	46.57	-83.29	0.96	0.94	4.00	MWD
2299.00	3.20	18.70	2296.48	88.11	48.25	-87.62	0.35	0.12	-6.00	MWD
2384.00	3.20	22.20	2381.35	92.55	49.91	-92.05	0.23	0.00	4.12	MWD
2470.00	2.60	21.10	2467.24	96.59	51.52	-96.08	0.70	-0.70	-1.28	MWD
2555.00	2.40	13.90	2552.16	100.12	52.64	-99.59	0.44	-0.24	-8.47	MWD
2640.00	3.30	24.30	2637.06	104.08	54.08	-103.53	1.22	1.06	12.24	MWD
2726.00	3.20	32.70	2722.92	108.35	56.39	-107.79	0.57	-0.12	9.77	MWD
2811.00	3.30	28.30	2807.78	112.50	58.83	-111.91	0.32	0.12	-5.18	MWD
2896.00	3.30	32.40	2892.64	116.72	61.30	-116.11	0.28	0.00	4.82	MWD
2981.00	3.40	31.00	2977.50	120.95	63.91	-120.31	0.15	0.12	-1.65	MWD
3067.00	3.30	26.40	3063.35	125.35	66.33	-124.69	0.33	-0.12	-5.35	MWD
3152.00	3.90	31.10	3148.18	130.02	68.91	-129.33	0.79	0.71	5.53	MWD
3237.00	3.20	30.10	3233.02	134.55	71.59	-133.83	0.83	-0.82	-1.18	MWD
3323.00	2.00	25.00	3318.93	137.98	73.43	-137.25	1.42	-1.40	-5.93	MWD
3408.00	0.40	14.60	3403.91	139.61	74.13	-138.87	1.89	-1.88	-12.24	MWD
3493.00	1.60	37.80	3488.89	140.84	74.93	-140.09	1.46	1.41	27.29	MWD
3578.00	3.30	35.00	3573.81	143.78	77.06	-143.01	2.00	2.00	-3.29	MWD
3664.00	4.10	32.00	3659.63	148.42	80.11	-147.61	0.96	0.93	-3.49	MWD
3749.00	4.30	26.90	3744.40	153.83	83.17	-153.00	0.50	0.24	-6.00	MWD
3834.00	4.20	34.30	3829.17	159.25	86.36	-158.38	0.66	-0.12	8.71	MWD
3919.00	4.20	39.10	3913.94	164.23	90.08	-163.33	0.41	0.00	5.65	MWD
4005.00	4.10	41.70	3999.72	168.97	94.11	-168.03	0.25	-0.12	3.02	MWD
4090.00	4.30	39.80	4084.49	173.69	98.17	-172.71	0.29	0.24	-2.24	MWD
4175.00	4.30	39.40	4169.25	178.60	102.23	-177.58	0.04	0.00	-0.47	MWD
4260.00	3.90	35.90	4254.03	183.41	105.95	-182.34	0.55	-0.47	-4.12	MWD
4346.00	3.90	32.20	4339.83	188.25	109.22	-187.15	0.29	0.00	-4.30	MWD
4431.00	3.70	29.70	4424.65	193.08	112.12	-191.95	0.31	-0.24	-2.94	MWD
4516.00	4.00	29.00	4509.45	198.05	114.92	-196.90	0.36	0.35	-0.82	MWD
4602.00	3.80	29.90	4595.25	203.15	117.79	-201.97	0.24	-0.23	1.05	MWD
4687.00	3.80	25.70	4680.07	208.13	120.42	-206.92	0.33	0.00	-4.94	MWD
4772.00	3.30	38.00	4764.91	212.59	123.15	-211.36	1.07	-0.59	14.47	MWD
4857.00	2.90	39.20	4849.78	216.19	126.01	-214.92	0.48	-0.47	1.41	MWD
4943.00	2.70	42.70	4935.68	219.36	128.76	-218.07	0.31	-0.23	4.07	MWD
5028.00	2.00	35.20	5020.61	222.05	130.97	-220.73	0.90	-0.82	-8.82	MWD
5113.00	1.80	35.20	5105.56	224.35	132.60	-223.02	0.24	-0.24	0.00	MWD
5198.00	1.30	48.40	5190.53	226.08	134.09	-224.73	0.72	-0.59	15.53	MWD
5284.00	1.10	26.20	5276.51	227.47	135.18	-226.11	0.58	-0.23	-25.81	MWD
5369.00	1.00	28.20	5361.50	228.85	135.89	-227.49	0.13	-0.12	2.35	MWD
5454.00	0.60	26.70	5446.49	229.90	136.44	-228.54	0.47	-0.47	-1.76	MWD
5539.00	0.40	344.20	5531.48	230.59	136.56	-229.22	0.48	-0.24	-50.00	MWD
5625.00	2.30	11.10	5617.46	232.57	136.81	-231.20	2.27	2.21	31.28	MWD
5710.00	1.70	5.10	5702.40	235.50	137.25	-234.12	0.75	-0.71	-7.06	MWD
5795.00	1.10	4.10	5787.38	237.57	137.42	-236.19	0.71	-0.71	-1.18	MWD
5838.00	1.20	350.00	5830.37	238.42	137.38	-237.05	0.70	0.23	-32.79	MWD
5874.00	1.20	344.90	5866.36	239.16	137.21	-237.78	0.30	0.00	-14.17	MWD
5916.00	1.10	355.50	5908.35	239.99	137.07	-238.61	0.56	-0.24	25.24	MWD
5960.00	1.80	174.40	5952.35	239.72	137.10	-238.34	6.59	1.59	406.59	MWD
6002.00	6.90	172.50	5994.21	236.56	137.49	-235.18	12.15	12.14	-4.52	MWD
6045.00	11.70	170.00	6036.64	229.70	138.59	-228.31	11.20	11.16	-5.81	MWD
6088.00	16.70	173.30	6078.31	219.26	140.07	-217.86	11.77	11.63	7.67	MWD

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Survey Report

Company: CARRIZO OIL & GAS, INC. Field: Niobrara CONZ'83 Site: Speaker 27-11-8-61 Pad Well: 3-27-8-61 Wellpath: Original Hole	Date: 12/04/2013 Co-ordinate(NE) Reference: Well: 3-27-8-61, Grid North Vertical (TVD) Reference: 4999'GL+17"KB 5016.0 Section (VS) Reference: Well (0.00N,0.00E,179.43Azi) Survey Calculation Method: Minimum Curvature	Time: 11:17:30 Page: 3 Db: Adapti
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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
6130.00	20.80	173.90	6118.07	205.85	141.57	-204.43	9.77	9.76	1.43	MWD
6173.00	25.30	172.30	6157.63	189.14	143.61	-187.71	10.57	10.47	-3.72	MWD
6216.00	29.00	170.70	6195.89	169.75	146.53	-168.28	8.77	8.60	-3.72	MWD
6258.00	32.40	170.40	6231.99	148.60	150.05	-147.10	8.10	8.10	-0.71	MWD
6301.00	35.20	169.10	6267.72	125.06	154.31	-123.52	6.72	6.51	-3.02	MWD
6343.00	37.70	170.20	6301.50	100.52	158.79	-98.93	6.15	5.95	2.62	MWD
6386.00	41.70	174.40	6334.59	73.31	162.43	-71.69	11.20	9.30	9.77	MWD
6429.00	45.90	176.70	6365.62	43.65	164.71	-42.01	10.44	9.77	5.35	MWD
6471.00	49.90	176.50	6393.77	12.55	166.56	-10.89	9.53	9.52	-0.48	MWD
6483.00	51.18	176.70	6401.40	3.30	167.11	-1.64	10.77	10.69	1.70	300' entry
6514.00	54.50	177.20	6420.12	-21.37	168.42	23.04	10.77	10.70	1.60	MWD
6557.00	58.80	177.40	6443.75	-57.24	170.11	58.93	10.01	10.00	0.47	MWD
6602.00	63.40	177.70	6465.50	-96.59	171.79	98.29	10.24	10.22	0.67	MWD
6679.00	70.70	177.60	6495.50	-167.39	174.70	169.12	9.48	9.48	-0.13	MWD
6727.00	75.20	177.40	6509.57	-213.22	176.70	214.97	9.38	9.37	-0.42	MWD
6770.00	78.40	176.30	6519.39	-255.02	179.00	256.78	7.85	7.44	-2.56	MWD
6813.00	82.90	176.00	6526.37	-297.34	181.85	299.13	10.49	10.47	-0.70	MWD
6855.00	88.50	176.50	6529.52	-339.11	184.59	340.93	13.39	13.33	1.19	MWD
6898.00	90.50	179.00	6529.89	-382.07	186.28	383.91	7.45	4.65	5.81	MWD
6941.00	91.30	180.20	6529.22	-425.07	186.58	426.90	3.35	1.86	2.79	MWD
6983.00	91.40	180.00	6528.23	-467.05	186.50	468.89	0.53	0.24	-0.48	MWD
7026.00	91.70	179.50	6527.07	-510.04	186.69	511.87	1.36	0.70	-1.16	MWD
7068.00	90.30	180.00	6526.33	-552.03	186.88	553.86	3.54	-3.33	1.19	MWD
7111.00	90.00	179.30	6526.22	-595.03	187.14	596.86	1.77	-0.70	-1.63	MWD
7154.00	89.30	180.00	6526.48	-638.03	187.40	639.86	2.30	-1.63	1.63	MWD
7197.00	88.30	178.80	6527.38	-681.01	187.85	682.85	3.63	-2.33	-2.79	MWD
7239.00	88.20	178.40	6528.67	-722.98	188.88	724.82	0.98	-0.24	-0.95	MWD
7282.00	87.70	177.20	6530.21	-765.92	190.53	767.78	3.02	-1.16	-2.79	MWD
7324.00	87.50	176.70	6531.96	-807.82	192.76	809.70	1.28	-0.48	-1.19	MWD
7367.00	89.30	177.20	6533.16	-850.74	195.05	852.64	4.34	4.19	1.16	MWD
7409.00	89.30	177.20	6533.68	-892.69	197.10	894.61	0.00	0.00	0.00	MWD
7452.00	89.30	176.50	6534.20	-935.62	199.46	937.56	1.63	0.00	-1.63	MWD
7494.00	90.70	177.40	6534.20	-977.56	201.69	979.52	3.96	3.33	2.14	MWD
7537.00	91.30	178.80	6533.45	-1020.53	203.12	1022.50	3.54	1.40	3.26	MWD
7579.00	91.10	179.90	6532.57	-1062.52	203.60	1064.49	2.66	-0.48	2.62	MWD
7622.00	90.50	178.80	6531.97	-1105.51	204.08	1107.49	2.91	-1.40	-2.56	MWD
7665.00	90.30	179.90	6531.67	-1148.51	204.57	1150.48	2.60	-0.47	2.56	MWD
7707.00	90.90	181.40	6531.23	-1190.50	204.10	1192.47	3.85	1.43	3.57	MWD
7750.00	91.10	180.60	6530.48	-1233.49	203.35	1235.45	1.92	0.47	-1.86	MWD
7793.00	90.30	181.40	6529.96	-1276.48	202.59	1278.43	2.63	-1.86	1.86	MWD
7836.00	89.80	180.20	6529.92	-1319.47	201.99	1321.41	3.02	-1.16	-2.79	MWD
7878.00	89.30	181.30	6530.25	-1361.46	201.44	1363.40	2.88	-1.19	2.62	MWD
7921.00	88.70	180.20	6531.00	-1404.45	200.88	1406.38	2.91	-1.40	-2.56	MWD
7963.00	88.90	181.10	6531.88	-1446.44	200.41	1448.36	2.19	0.48	2.14	MWD
8006.00	88.90	181.80	6532.70	-1489.42	199.32	1491.33	1.63	0.00	1.63	MWD
8049.00	88.50	181.30	6533.68	-1532.39	198.15	1534.29	1.49	-0.93	-1.16	MWD
8091.00	89.80	182.50	6534.30	-1574.36	196.76	1576.24	4.21	3.10	2.86	MWD
8134.00	89.70	182.00	6534.49	-1617.33	195.07	1619.19	1.19	-0.23	-1.16	MWD
8177.00	90.40	182.00	6534.45	-1660.30	193.57	1662.15	1.63	1.63	0.00	MWD
8219.00	91.40	183.00	6533.79	-1702.26	191.74	1704.08	3.37	2.38	2.38	MWD
8262.00	91.60	182.30	6532.67	-1745.20	189.75	1747.00	1.69	0.47	-1.63	MWD
8304.00	91.70	182.30	6531.46	-1787.14	188.07	1788.93	0.24	0.24	0.00	MWD
8347.00	91.90	181.80	6530.11	-1830.10	186.53	1831.86	1.25	0.47	-1.16	MWD
8390.00	89.30	181.30	6529.66	-1873.07	185.37	1874.82	6.16	-6.05	-1.16	MWD

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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
8432.00	88.40	178.80	6530.50	-1915.06	185.33	1916.81	6.33	-2.14	-5.95	MWD
8475.00	87.90	178.30	6531.89	-1958.02	186.42	1959.78	1.64	-1.16	-1.16	MWD
8518.00	89.00	179.90	6533.05	-2001.00	187.09	2002.76	4.51	2.56	3.72	MWD
8560.00	89.10	179.50	6533.75	-2043.00	187.31	2044.76	0.98	0.24	-0.95	MWD
8603.00	89.00	179.00	6534.46	-2085.99	187.88	2087.75	1.19	-0.23	-1.16	MWD
8646.00	89.00	180.20	6535.21	-2128.98	188.18	2130.74	2.79	0.00	2.79	MWD
8688.00	90.80	181.30	6535.29	-2170.97	187.63	2172.73	5.02	4.29	2.62	MWD
8731.00	91.00	181.30	6534.61	-2213.95	186.65	2215.70	0.47	0.47	0.00	MWD
8774.00	90.70	181.30	6533.97	-2256.94	185.68	2258.67	0.70	-0.70	0.00	MWD
8816.00	90.70	180.90	6533.46	-2298.93	184.87	2300.65	0.95	0.00	-0.95	MWD
8859.00	90.50	180.20	6533.01	-2341.92	184.46	2343.64	1.69	-0.47	-1.63	MWD
8901.00	90.80	180.40	6532.53	-2383.92	184.24	2385.63	0.86	0.71	0.48	MWD
8944.00	90.70	179.50	6531.97	-2426.92	184.28	2428.63	2.11	-0.23	-2.09	MWD
8987.00	90.80	179.90	6531.41	-2469.91	184.50	2471.62	0.96	0.23	0.93	MWD
9029.00	90.40	178.30	6530.97	-2511.90	185.16	2513.62	3.93	-0.95	-3.81	MWD
9072.00	90.10	177.00	6530.78	-2554.86	186.92	2556.60	3.10	-0.70	-3.02	MWD
9115.00	90.50	178.10	6530.55	-2597.82	188.76	2599.57	2.72	0.93	2.56	MWD
9157.00	90.70	177.40	6530.11	-2639.79	190.41	2641.55	1.73	0.48	-1.67	MWD
9200.00	89.70	176.20	6529.96	-2682.72	192.81	2684.51	3.63	-2.33	-2.79	MWD
9242.00	90.40	177.20	6529.93	-2724.65	195.23	2726.46	2.91	1.67	2.38	MWD
9285.00	89.10	179.30	6530.11	-2767.63	196.54	2769.44	5.74	-3.02	4.88	MWD
9328.00	88.90	177.70	6530.87	-2810.60	197.67	2812.43	3.75	-0.47	-3.72	MWD
9370.00	88.60	176.70	6531.78	-2852.54	199.72	2854.39	2.49	-0.71	-2.38	MWD
9413.00	89.20	176.30	6532.61	-2895.45	202.34	2897.32	1.68	1.40	-0.93	MWD
9456.00	89.70	178.60	6533.02	-2938.41	204.26	2940.29	5.47	1.16	5.35	MWD
9498.00	89.80	178.30	6533.20	-2980.39	205.39	2982.29	0.75	0.24	-0.71	MWD
9541.00	88.90	179.70	6533.69	-3023.38	206.14	3025.28	3.87	-2.09	3.26	MWD
9583.00	88.90	179.00	6534.50	-3065.37	206.62	3067.27	1.67	0.00	-1.67	MWD
9626.00	88.90	178.10	6535.32	-3108.35	207.71	3110.26	2.09	0.00	-2.09	MWD
9669.00	89.20	178.10	6536.04	-3151.32	209.13	3153.24	0.70	0.70	0.00	MWD
9711.00	89.30	177.60	6536.59	-3193.28	210.71	3195.22	1.21	0.24	-1.19	MWD
9754.00	89.20	176.90	6537.15	-3236.23	212.77	3238.19	1.64	-0.23	-1.63	MWD
9797.00	89.90	178.60	6537.49	-3279.19	214.46	3281.17	4.28	1.63	3.95	MWD
9839.00	90.70	178.80	6537.27	-3321.18	215.41	3323.16	1.96	1.90	0.48	MWD
9882.00	90.90	178.10	6536.67	-3364.16	216.57	3366.15	1.69	0.47	-1.63	MWD
9925.00	88.80	179.50	6536.78	-3407.15	217.47	3409.14	5.87	-4.88	3.26	MWD
9967.00	88.60	179.10	6537.73	-3449.14	217.99	3451.13	1.06	-0.48	-0.95	MWD
10010.00	89.30	180.00	6538.52	-3492.13	218.33	3494.13	2.65	1.63	2.09	MWD
10053.00	89.30	179.70	6539.04	-3535.12	218.44	3537.12	0.70	0.00	-0.70	MWD
10095.00	89.40	181.30	6539.52	-3577.12	218.07	3579.11	3.82	0.24	3.81	MWD
10138.00	89.80	181.40	6539.82	-3620.10	217.06	3622.08	0.96	0.93	0.23	MWD
10180.00	91.20	182.10	6539.45	-3662.08	215.78	3664.05	3.73	3.33	1.67	MWD
10223.00	91.50	181.80	6538.44	-3705.04	214.31	3706.99	0.99	0.70	-0.70	MWD
10266.00	91.50	181.10	6537.32	-3748.02	213.23	3749.95	1.63	0.00	-1.63	MWD
10308.00	88.90	180.90	6537.17	-3790.01	212.49	3791.93	6.21	-6.19	-0.48	MWD
10351.00	88.70	180.60	6538.07	-3832.99	211.93	3834.91	0.84	-0.47	-0.70	MWD
10394.00	89.10	180.70	6538.90	-3875.98	211.44	3877.89	0.96	0.93	0.23	MWD
10436.00	90.20	182.10	6539.15	-3917.97	210.42	3919.87	4.24	2.62	3.33	MWD
10479.00	90.60	181.80	6538.85	-3960.94	208.95	3962.82	1.16	0.93	-0.70	MWD
10521.00	90.50	181.60	6538.45	-4002.92	207.71	4004.79	0.53	-0.24	-0.48	MWD
10564.00	90.60	181.80	6538.04	-4045.90	206.43	4047.75	0.52	0.23	0.47	MWD
10607.00	90.70	181.60	6537.55	-4088.88	205.16	4090.72	0.52	0.23	-0.47	MWD
10649.00	90.50	181.30	6537.11	-4130.86	204.09	4132.69	0.86	-0.48	-0.71	MWD

Precision Directional Services, Inc.

Survey Report

Company: CARRIZO OIL & GAS, INC. Field: Niobrara CONZ'83 Site: Speaker 27-11-8-61 Pad Well: 3-27-8-61 Wellpath: Original Hole	Date: 12/04/2013 Time: 11:17:30 Page: 5 Co-ordinate(NE) Reference: Well: 3-27-8-61, Grid North Vertical (TVD) Reference: 4999'GL+17'KB 5016.0 Section (VS) Reference: Well (0.00N,0.00E,179.43Azi) Survey Calculation Method: Minimum Curvature Db: Adapti
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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
10692.00	91.00	180.70	6536.55	-4173.85	203.34	4175.67	1.82	1.16	-1.40	MWD
10735.00	91.10	180.20	6535.76	-4216.84	203.00	4218.65	1.19	0.23	-1.16	MWD
10777.00	91.50	179.50	6534.80	-4258.83	203.11	4260.64	1.92	0.95	-1.67	MWD
10820.00	90.00	179.10	6534.24	-4301.82	203.64	4303.64	3.61	-3.49	-0.93	MWD
10863.00	90.00	178.30	6534.24	-4344.81	204.62	4346.63	1.86	0.00	-1.86	MWD
10905.00	90.50	177.70	6534.06	-4386.79	206.08	4388.62	1.86	1.19	-1.43	MWD
10948.00	90.70	177.60	6533.61	-4429.75	207.84	4431.60	0.52	0.47	-0.23	MWD
10991.00	89.90	179.00	6533.38	-4472.73	209.12	4474.58	3.75	-1.86	3.26	MWD
11033.00	90.00	179.50	6533.42	-4514.72	209.67	4516.58	1.21	0.24	1.19	MWD
11076.00	89.50	181.30	6533.61	-4557.72	209.37	4559.58	4.34	-1.16	4.19	MWD
11112.00	89.80	182.00	6533.83	-4593.70	208.33	4595.55	2.12	0.83	1.94	MWD
11170.00	89.80	182.00	6534.03	-4651.67	206.31	4653.49	0.00	0.00	0.00	Project

Annotation

MD ft	TVD ft	
6483.00	6401.40	300' entry