



		TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SL 2-36	0.00	0.00	0.00	1504972.35	3374387.12	40°42'42.143N	104°08'58.251W	Point
600' entry 2-36	6396.04	-287.25	418.00	1504685.10	3374805.12	40°42'39.242N	104°08'52.880W	Point
PBHL 2-36	6403.00	-4160.37	764.04	1500811.98	3375151.16	40°42'00.923N	104°08'49.155W	Point
BHL 2-36	6404.47	-4159.68	772.49	1500812.67	3375159.61	40°42'00.928N	104°08'49.045W	Point

# Precision Directional Services, Inc.

## Survey Report

<b>Company:</b> CARRIZO OIL & GAS, INC. <b>Field:</b> Niobrara CONZ'83 <b>Site:</b> State 2-36-9-61 Pad <b>Well:</b> 2-36-9-61 <b>Wellpath:</b> Original Hole	<b>Date:</b> 10/03/2013 <b>Co-ordinate(NE) Reference:</b> <b>Vertical (TVD) Reference:</b> <b>Section (VS) Reference:</b> <b>Survey Calculation Method:</b>	<b>Time:</b> 11:06:49 Well: 2-36-9-61, Grid North 4932'GL+17'KB 4949.0 Well (0.00N,0.00E,174.89Azi) Minimum Curvature	<b>Page:</b> 1 <b>Db:</b> Adapti
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<b>Field:</b> Niobrara CONZ'83  <b>Map System:</b> US State Plane Coordinate System 1983 <b>Geo Datum:</b> GRS 1980 <b>Sys Datum:</b> Mean Sea Level	<b>Map Zone:</b> Colorado, Northern Zone <b>Coordinate System:</b> Well Centre <b>Geomagnetic Model:</b> IGRF2010
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<b>Site:</b> State 2-36-9-61 Pad  Weld County, CO <b>Site Position:</b> <b>From:</b> Map <b>Position Uncertainty:</b> 0.00 ft <b>Ground Level:</b> 4932.00 ft	<b>Northing:</b> 1504982.85 ft <b>Easting:</b> 3374728.13 ft  <b>Latitude:</b> 40 42 42.195 N <b>Longitude:</b> 104 8 53.821 W <b>North Reference:</b> Grid <b>Grid Convergence:</b> 0.87 deg
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<b>Well:</b> 2-36-9-61 302'FNL1041'FEL adj 6-28 <b>Well Position:</b> +N/-S -10.50 ft +E/-W -341.01 ft <b>Position Uncertainty:</b> 0.00 ft	<b>Slot Name:</b> 2-36  <b>Latitude:</b> 40 42 42.143 N <b>Longitude:</b> 104 8 58.251 W
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<b>Wellpath:</b> Original Hole  <b>Current Datum:</b> 4932'GL+17'KB <b>Magnetic Data:</b> 09/17/2013 <b>Field Strength:</b> 53159 nT <b>Vertical Section:</b> Depth From (TVD) ft	<b>Drilled From:</b> Surface <b>Tie-on Depth:</b> 0.00 ft <b>Above System Datum:</b> Mean Sea Level <b>Declination:</b> 8.25 deg <b>Mag Dip Angle:</b> 67.32 deg <b>+E/-W</b> ft <b>Direction</b> deg
0.00	0.00

  

<b>Survey Program for Definitive Wellpath</b>			
<b>Date:</b> 09/30/2013	<b>Validated:</b> No	<b>Version:</b> 2	
<b>Actual From</b> ft	<b>To</b> ft	<b>Survey</b>	<b>Toolcode</b> <b>Tool Name</b>
144.00	10499.00	Survey #1 (144.00-10499.00)	MWD      Std MWD
10556.00	10556.00	Survey #2 (10556.00-10556.00)	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
144.00	0.30	192.10	144.00	-0.37	-0.08	0.36	0.21	0.21	0.00	MWD
238.00	0.70	164.40	238.00	-1.16	0.02	1.16	0.49	0.43	-29.47	MWD
332.00	2.00	67.30	331.98	-1.08	1.69	1.23	2.34	1.38	-103.30	MWD
425.00	2.60	62.20	424.90	0.53	5.05	-0.08	0.68	0.65	-5.48	MWD
519.00	2.60	62.80	518.80	2.50	8.84	-1.70	0.03	0.00	0.64	MWD
613.00	3.30	57.70	612.68	4.92	13.02	-3.74	0.79	0.74	-5.43	MWD
706.00	4.30	59.40	705.47	8.12	18.28	-6.46	1.08	1.08	1.83	MWD
800.00	4.60	58.50	799.19	11.89	24.53	-9.65	0.33	0.32	-0.96	MWD
894.00	4.60	53.80	892.89	16.08	30.79	-13.28	0.40	0.00	-5.00	MWD
988.00	4.60	56.20	986.58	20.40	36.96	-17.03	0.20	0.00	2.55	MWD
1082.00	4.50	51.50	1080.29	24.80	42.98	-20.87	0.41	-0.11	-5.00	MWD
1175.00	4.50	54.80	1173.00	29.17	48.82	-24.71	0.28	0.00	3.55	MWD
1269.00	4.60	54.70	1266.71	33.47	54.90	-28.45	0.11	0.11	-0.11	MWD
1362.00	4.70	51.90	1359.40	37.98	60.95	-32.40	0.27	0.11	-3.01	MWD
1428.00	4.70	53.60	1425.18	41.25	65.25	-35.28	0.21	0.00	2.58	MWD
1519.00	4.80	58.00	1515.87	45.48	71.48	-38.94	0.42	0.11	4.84	MWD
1604.00	5.00	61.20	1600.55	49.15	77.74	-42.03	0.40	0.24	3.76	MWD
1689.00	5.50	61.90	1685.20	52.86	84.58	-45.11	0.59	0.59	0.82	MWD
1774.00	5.70	62.20	1769.79	56.74	91.91	-48.33	0.24	0.24	0.35	MWD
1860.00	5.60	64.20	1855.37	60.56	99.46	-51.46	0.26	-0.12	2.33	MWD
1945.00	5.50	63.10	1939.98	64.21	106.83	-54.44	0.17	-0.12	-1.29	MWD

# Precision Directional Services, Inc.

## Survey Report

**Company:** CARRIZO OIL & GAS, INC.  
**Field:** Niobrara CONZ'83  
**Site:** State 2-36-9-61 Pad  
**Well:** 2-36-9-61  
**Wellpath:** Original Hole

**Date:** 10/03/2013 **Time:** 11:06:49 **Page:** 2  
**Co-ordinate(NE) Reference:** Well: 2-36-9-61, Grid North  
**Vertical (TVD) Reference:** 4932'GL+17"KB 4949.0  
**Section (VS) Reference:** Well (0.00N,0.00E,174.89Azi)  
**Survey Calculation Method:** Minimum Curvature **Db:** Adapti

### 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
2030.00	5.40	63.30	2024.59	67.85	114.04	-57.42	0.12	-0.12	0.24	MWD
2115.00	5.50	64.30	2109.21	71.41	121.28	-60.33	0.16	0.12	1.18	MWD
2201.00	4.50	54.30	2194.88	75.17	127.73	-63.49	1.54	-1.16	-11.63	MWD
2286.00	4.20	52.00	2279.64	79.03	132.90	-66.88	0.41	-0.35	-2.71	MWD
2371.00	4.30	50.30	2364.40	82.98	137.80	-70.38	0.19	0.12	-2.00	MWD
2457.00	4.00	51.90	2450.18	86.89	142.64	-73.84	0.37	-0.35	1.86	MWD
2542.00	3.80	51.70	2534.98	90.47	147.18	-77.00	0.24	-0.24	-0.24	MWD
2627.00	3.60	49.70	2619.80	93.94	151.43	-80.08	0.28	-0.24	-2.35	MWD
2713.00	3.60	47.50	2705.63	97.51	155.48	-83.27	0.16	0.00	-2.56	MWD
2798.00	3.50	47.60	2790.47	101.06	159.36	-86.47	0.12	-0.12	0.12	MWD
2883.00	3.50	46.10	2875.31	104.61	163.15	-89.66	0.11	0.00	-1.76	MWD
2968.00	3.30	44.30	2960.16	108.16	166.73	-92.88	0.27	-0.24	-2.12	MWD
3054.00	4.70	53.30	3045.95	112.04	171.28	-96.34	1.78	1.63	10.47	MWD
3139.00	4.70	58.90	3130.67	115.92	177.05	-99.69	0.54	0.00	6.59	MWD
3224.00	4.60	62.40	3215.39	119.30	183.06	-102.52	0.35	-0.12	4.12	MWD
3309.00	4.20	64.00	3300.13	122.24	188.88	-104.93	0.49	-0.47	1.88	MWD
3395.00	4.30	67.50	3385.90	124.85	194.68	-107.02	0.32	0.12	4.07	MWD
3480.00	4.10	71.40	3470.67	127.04	200.51	-108.68	0.41	-0.24	4.59	MWD
3565.00	4.10	60.30	3555.45	129.52	206.03	-110.65	0.93	0.00	-13.06	MWD
3651.00	4.30	57.00	3641.22	132.80	211.40	-113.44	0.36	0.23	-3.84	MWD
3736.00	4.70	56.80	3725.96	136.44	216.99	-116.57	0.47	0.47	-0.24	MWD
3821.00	4.70	60.30	3810.68	140.07	222.93	-119.66	0.34	0.00	4.12	MWD
3906.00	4.90	59.10	3895.38	143.66	229.07	-122.69	0.26	0.24	-1.41	MWD
3992.00	4.80	56.10	3981.07	147.55	235.21	-126.02	0.32	-0.12	-3.49	MWD
4077.00	4.10	57.50	4065.81	151.17	240.72	-129.13	0.83	-0.82	1.65	MWD
4162.00	3.10	59.80	4150.64	153.96	245.27	-131.50	1.19	-1.18	2.71	MWD
4248.00	2.60	47.60	4236.54	156.44	248.72	-133.67	0.91	-0.58	-14.19	MWD
4333.00	1.90	38.10	4321.47	158.85	251.01	-135.86	0.93	-0.82	-11.18	MWD
4418.00	2.60	41.70	4406.41	161.40	253.17	-138.21	0.84	0.82	4.24	MWD
4503.00	3.50	26.20	4491.29	165.17	255.59	-141.75	1.43	1.06	-18.24	MWD
4589.00	4.40	27.90	4577.08	170.44	258.30	-146.76	1.06	1.05	1.98	MWD
4674.00	3.60	29.20	4661.87	175.65	261.12	-151.70	0.95	-0.94	1.53	MWD
4759.00	4.50	35.30	4746.66	180.70	264.35	-156.44	1.17	1.06	7.18	MWD
4845.00	3.90	34.30	4832.43	185.87	267.95	-161.27	0.70	-0.70	-1.16	MWD
4930.00	3.60	48.50	4917.25	190.03	271.58	-165.08	1.14	-0.35	16.71	MWD
5015.00	4.10	57.50	5002.06	193.43	276.14	-168.07	0.92	0.59	10.59	MWD
5100.00	3.70	58.40	5086.86	196.50	281.04	-170.69	0.48	-0.47	1.06	MWD
5186.00	3.60	62.20	5172.69	199.21	285.79	-172.97	0.30	-0.12	4.42	MWD
5271.00	3.10	67.50	5257.54	201.34	290.27	-174.68	0.69	-0.59	6.24	MWD
5356.00	3.40	66.10	5342.40	203.24	294.70	-176.18	0.37	0.35	-1.65	MWD
5442.00	3.20	63.50	5428.26	205.34	299.18	-177.88	0.29	-0.23	-3.02	MWD
5527.00	3.70	62.80	5513.11	207.65	303.74	-179.77	0.59	0.59	-0.82	MWD
5612.00	3.10	67.30	5597.96	209.79	308.30	-181.50	0.77	-0.71	5.29	MWD
5697.00	2.30	73.30	5682.86	211.17	312.06	-182.54	1.00	-0.94	7.06	MWD
5740.00	1.90	74.40	5725.83	211.61	313.57	-182.84	0.93	-0.93	2.56	MWD
5792.00	2.50	109.70	5777.80	211.46	315.47	-182.52	2.79	1.15	67.88	MWD
5834.00	7.60	138.30	5819.63	209.08	318.18	-179.91	13.18	12.14	68.10	MWD
5877.00	13.10	138.20	5861.91	203.32	323.32	-173.71	12.79	12.79	-0.23	MWD
5920.00	17.70	143.80	5903.36	194.40	330.44	-164.20	11.23	10.70	13.02	MWD
5962.00	21.40	152.40	5942.94	182.45	337.76	-151.64	11.14	8.81	20.48	MWD
6005.00	24.20	160.80	5982.58	167.17	344.30	-135.84	9.97	6.51	19.53	MWD
6048.00	25.50	166.30	6021.61	149.85	349.39	-118.14	6.16	3.02	12.79	MWD
6090.00	25.20	166.50	6059.56	132.37	353.62	-100.35	0.74	-0.71	0.48	MWD

# Precision Directional Services, Inc.

## Survey Report

<b>Company:</b> CARRIZO OIL & GAS, INC. <b>Field:</b> Niobrara CONZ'83 <b>Site:</b> State 2-36-9-61 Pad <b>Well:</b> 2-36-9-61 <b>Wellpath:</b> Original Hole	<b>Date:</b> 10/03/2013 <b>Time:</b> 11:06:49 <b>Page:</b> 3 <b>Co-ordinate(NE) Reference:</b> Well: 2-36-9-61, Grid North <b>Vertical (TVD) Reference:</b> 4932'GL+17"KB 4949.0 <b>Section (VS) Reference:</b> Well (0.00N,0.00E,174.89Azi) <b>Survey Calculation Method:</b> Minimum Curvature <b>Db:</b> 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
6134.00	24.30	164.00	6099.52	114.56	358.30	-82.19	3.14	-2.05	-5.68	MWD
6177.00	27.40	167.50	6138.22	96.39	362.88	-63.69	8.03	7.21	8.14	MWD
6220.00	32.50	168.20	6175.46	75.41	367.39	-42.39	11.89	11.86	1.63	MWD
6263.00	36.20	172.40	6210.96	51.51	371.43	-18.22	10.21	8.60	9.77	MWD
6306.00	41.30	172.60	6244.49	24.83	374.94	8.66	11.86	11.86	0.47	MWD
6348.00	47.50	170.70	6274.48	-4.22	379.23	37.98	15.10	14.76	-4.52	MWD
6391.00	53.60	169.30	6301.79	-36.90	385.01	71.05	14.41	14.19	-3.26	MWD
6433.00	59.00	169.50	6325.09	-71.24	391.44	105.82	12.86	12.86	0.48	MWD
6454.00	60.90	169.60	6335.60	-89.11	394.73	123.92	9.06	9.05	0.48	MWD
6471.00	63.00	170.30	6343.60	-103.88	397.35	138.86	12.88	12.35	4.12	MWD
6531.00	70.30	171.60	6367.36	-158.25	405.99	193.78	12.33	12.17	2.17	MWD
6562.00	74.30	172.80	6376.78	-187.50	410.00	223.27	13.42	12.90	3.87	MWD
6605.00	79.50	175.80	6386.53	-229.16	414.14	265.13	13.87	12.09	6.98	MWD
6647.00	81.20	176.50	6393.57	-270.47	416.92	306.53	4.37	4.05	1.67	MWD
6664.00	82.11	176.14	6396.04	-287.25	418.00	323.34	5.74	5.35	-2.10	600' entry
6690.00	83.50	175.60	6399.29	-312.98	419.86	349.13	5.74	5.35	-2.09	MWD
6733.00	88.20	176.00	6402.40	-355.74	423.00	392.00	10.97	10.93	0.93	MWD
6775.00	89.00	175.40	6403.43	-397.61	426.15	433.98	2.38	1.90	-1.43	MWD
6818.00	90.30	175.40	6403.69	-440.47	429.59	476.98	3.02	3.02	0.00	MWD
6861.00	90.30	175.10	6403.47	-483.32	433.16	519.98	0.70	0.00	-0.70	MWD
6903.00	90.20	174.50	6403.28	-525.15	436.96	561.98	1.45	-0.24	-1.43	MWD
6946.00	90.00	174.00	6403.21	-567.93	441.27	604.98	1.25	-0.47	-1.16	MWD
6988.00	89.60	173.70	6403.36	-609.69	445.77	646.97	1.19	-0.95	-0.71	MWD
7031.00	89.60	173.80	6403.66	-652.43	450.45	689.96	0.23	0.00	0.23	MWD
7074.00	88.80	174.20	6404.26	-695.19	454.95	732.95	2.08	-1.86	0.93	MWD
7116.00	88.70	173.70	6405.17	-736.95	459.37	774.93	1.21	-0.24	-1.19	MWD
7159.00	90.70	174.90	6405.40	-779.73	463.64	817.93	5.42	4.65	2.79	MWD
7202.00	90.60	174.20	6404.91	-822.53	467.72	860.92	1.64	-0.23	-1.63	MWD
7244.00	90.00	174.20	6404.69	-864.32	471.97	902.92	1.43	-1.43	0.00	MWD
7287.00	89.60	173.30	6404.84	-907.06	476.65	945.91	2.29	-0.93	-2.09	MWD
7330.00	89.80	173.70	6405.07	-949.78	481.52	988.90	1.04	0.47	0.93	MWD
7372.00	90.80	175.80	6404.85	-991.61	485.36	1030.89	5.54	2.38	5.00	MWD
7415.00	90.90	174.90	6404.21	-1034.46	488.85	1073.89	2.11	0.23	-2.09	MWD
7458.00	91.20	174.40	6403.42	-1077.26	492.85	1116.88	1.36	0.70	-1.16	MWD
7500.00	91.60	173.80	6402.39	-1119.03	497.17	1158.86	1.72	0.95	-1.43	MWD
7543.00	91.70	175.30	6401.16	-1161.82	501.25	1201.84	3.49	0.23	3.49	MWD
7586.00	91.90	174.70	6399.80	-1204.63	505.00	1244.82	1.47	0.47	-1.40	MWD
7628.00	91.40	175.10	6398.60	-1246.45	508.73	1286.80	1.52	-1.19	0.95	MWD
7671.00	91.10	174.70	6397.66	-1289.27	512.55	1329.79	1.16	-0.70	-0.93	MWD
7714.00	89.80	175.10	6397.32	-1332.09	516.37	1372.79	3.16	-3.02	0.93	MWD
7756.00	88.80	174.50	6397.83	-1373.92	520.18	1414.79	2.78	-2.38	-1.43	MWD
7799.00	88.60	174.50	6398.81	-1416.71	524.30	1457.78	0.47	-0.47	0.00	MWD
7842.00	88.50	174.20	6399.90	-1459.48	528.53	1500.76	0.74	-0.23	-0.70	MWD
7884.00	88.40	174.40	6401.03	-1501.26	532.70	1542.74	0.53	-0.24	0.48	MWD
7927.00	87.90	174.20	6402.42	-1544.03	536.97	1585.72	1.25	-1.16	-0.47	MWD
7970.00	87.90	174.40	6404.00	-1586.79	541.24	1628.69	0.46	0.00	0.47	MWD
8012.00	87.80	174.40	6405.57	-1628.56	545.33	1670.66	0.24	-0.24	0.00	MWD
8055.00	87.50	176.50	6407.34	-1671.38	548.74	1713.61	4.93	-0.70	4.88	MWD
8098.00	87.60	176.70	6409.17	-1714.27	551.29	1756.56	0.52	0.23	0.47	MWD
8140.00	89.90	176.80	6410.09	-1756.19	553.67	1798.52	5.48	5.48	0.24	MWD
8183.00	89.50	176.00	6410.31	-1799.10	556.37	1841.50	2.08	-0.93	-1.86	MWD
8226.00	89.40	176.50	6410.73	-1842.01	559.18	1884.49	1.19	-0.23	1.16	MWD
8268.00	89.50	176.70	6411.13	-1883.93	561.67	1926.47	0.53	0.24	0.48	MWD
8311.00	89.40	176.70	6411.54	-1926.86	564.15	1969.45	0.23	-0.23	0.00	MWD

# Precision Directional Services, Inc.

## Survey Report

<b>Company:</b> CARRIZO OIL & GAS, INC. <b>Field:</b> Niobrara CONZ'83 <b>Site:</b> State 2-36-9-61 Pad <b>Well:</b> 2-36-9-61 <b>Wellpath:</b> Original Hole	<b>Date:</b> 10/03/2013 <b>Time:</b> 11:06:49 <b>Page:</b> 4 <b>Co-ordinate(NE) Reference:</b> Well: 2-36-9-61, Grid North <b>Vertical (TVD) Reference:</b> 4932'GL+17"KB 4949.0 <b>Section (VS) Reference:</b> Well (0.00N,0.00E,174.89Azi) <b>Survey Calculation Method:</b> Minimum Curvature <b>Db:</b> 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
8353.00	89.20	176.30	6412.06	-1968.78	566.71	2011.43	1.06	-0.48	-0.95	MWD
8396.00	90.10	174.90	6412.32	-2011.65	570.01	2054.42	3.87	2.09	-3.26	MWD
8439.00	90.40	176.30	6412.13	-2054.52	573.31	2097.42	3.33	0.70	3.26	MWD
8481.00	90.10	180.00	6411.95	-2096.49	574.67	2139.34	8.84	-0.71	8.81	MWD
8524.00	90.10	184.00	6411.87	-2139.45	573.17	2182.00	9.30	0.00	9.30	MWD
8567.00	91.30	182.10	6411.35	-2182.39	570.88	2224.56	5.23	2.79	-4.42	MWD
8609.00	92.40	177.90	6409.99	-2224.35	570.88	2266.36	10.33	2.62	-10.00	MWD
8652.00	92.70	174.20	6408.08	-2267.20	573.84	2309.30	8.62	0.70	-8.60	MWD
8694.00	93.20	173.80	6405.92	-2308.92	578.22	2351.24	1.52	1.19	-0.95	MWD
8737.00	91.50	173.10	6404.15	-2351.60	583.12	2394.19	4.27	-3.95	-1.63	MWD
8780.00	92.00	173.00	6402.84	-2394.26	588.32	2437.15	1.19	1.16	-0.23	MWD
8822.00	90.20	172.60	6402.03	-2435.92	593.58	2479.11	4.39	-4.29	-0.95	MWD
8865.00	89.70	172.30	6402.07	-2478.55	599.23	2522.07	1.36	-1.16	-0.70	MWD
8907.00	89.80	172.40	6402.25	-2520.17	604.83	2564.03	0.34	0.24	0.24	MWD
8950.00	90.20	173.30	6402.25	-2562.84	610.18	2607.00	2.29	0.93	2.09	MWD
8993.00	90.40	172.30	6402.03	-2605.50	615.57	2649.97	2.37	0.47	-2.33	MWD
9035.00	89.90	170.90	6401.92	-2647.05	621.70	2691.90	3.54	-1.19	-3.33	MWD
9078.00	90.10	171.70	6401.92	-2689.55	628.21	2734.82	1.92	0.47	1.86	MWD
9121.00	89.90	172.30	6401.92	-2732.13	634.19	2777.76	1.47	-0.47	1.40	MWD
9163.00	90.00	171.90	6401.96	-2773.74	639.96	2819.71	0.98	0.24	-0.95	MWD
9206.00	88.70	173.70	6402.44	-2816.39	645.35	2862.68	5.16	-3.02	4.19	MWD
9249.00	88.50	173.80	6403.49	-2859.12	650.03	2905.66	0.52	-0.47	0.23	MWD
9291.00	89.90	174.00	6404.08	-2900.88	654.49	2947.64	3.37	3.33	0.48	MWD
9334.00	89.40	173.10	6404.34	-2943.61	659.32	2990.63	2.39	-1.16	-2.09	MWD
9376.00	89.20	172.40	6404.86	-2985.27	664.62	3032.60	1.73	-0.48	-1.67	MWD
9419.00	89.50	174.00	6405.34	-3027.96	669.72	3075.58	3.79	0.70	3.72	MWD
9462.00	90.00	173.70	6405.53	-3070.71	674.32	3118.57	1.36	1.16	-0.70	MWD
9504.00	91.00	174.00	6405.17	-3112.47	678.82	3160.56	2.49	2.38	0.71	MWD
9547.00	91.50	173.80	6404.23	-3155.21	683.39	3203.54	1.25	1.16	-0.47	MWD
9590.00	92.00	173.30	6402.91	-3197.92	688.22	3246.51	1.64	1.16	-1.16	MWD
9632.00	90.50	175.40	6402.00	-3239.70	692.35	3288.49	6.14	-3.57	5.00	MWD
9675.00	90.00	173.70	6401.81	-3282.51	696.44	3331.49	4.12	-1.16	-3.95	MWD
9718.00	90.00	172.40	6401.81	-3325.19	701.64	3374.47	3.02	0.00	-3.02	MWD
9760.00	90.60	172.40	6401.59	-3366.82	707.19	3416.43	1.43	1.43	0.00	MWD
9803.00	90.30	175.10	6401.25	-3409.56	711.87	3459.41	6.32	-0.70	6.28	MWD
9845.00	90.80	175.30	6400.85	-3451.41	715.39	3501.41	1.28	1.19	0.48	MWD
9888.00	91.50	174.90	6399.99	-3494.24	719.06	3544.40	1.87	1.63	-0.93	MWD
9931.00	89.90	175.60	6399.46	-3537.09	722.62	3587.40	4.06	-3.72	1.63	MWD
9973.00	90.70	176.70	6399.24	-3579.00	725.44	3629.39	3.24	1.90	2.62	MWD
10016.00	90.30	175.60	6398.87	-3621.90	728.33	3672.37	2.72	-0.93	-2.56	MWD
10059.00	88.00	173.80	6399.50	-3664.70	732.30	3715.36	6.79	-5.35	-4.19	MWD
10101.00	87.80	173.50	6401.04	-3706.42	736.94	3757.32	0.86	-0.48	-0.71	MWD
10144.00	87.80	173.10	6402.69	-3749.09	741.95	3800.28	0.93	0.00	-0.93	MWD
10186.00	87.60	172.60	6404.38	-3790.73	747.18	3842.22	1.28	-0.48	-1.19	MWD
10229.00	87.80	175.80	6406.11	-3833.47	751.52	3885.17	7.45	0.47	7.44	MWD
10272.00	87.80	175.60	6407.76	-3876.32	754.74	3928.14	0.46	0.00	-0.47	MWD
10314.00	89.40	176.50	6408.78	-3918.21	757.63	3970.11	4.37	3.81	2.14	MWD
10357.00	90.00	177.20	6409.01	-3961.14	759.99	4013.09	2.14	1.40	1.63	MWD
10400.00	91.30	176.80	6408.52	-4004.08	762.25	4056.05	3.16	3.02	-0.93	MWD
10442.00	91.70	176.70	6407.42	-4045.99	764.63	4098.02	0.98	0.95	-0.24	MWD
10485.00	91.50	176.10	6406.22	-4088.89	767.32	4140.99	1.47	-0.47	-1.40	MWD
10499.00	91.40	175.80	6405.87	-4102.85	768.31	4154.98	2.26	-0.71	-2.14	MWD
10556.00	91.40	175.80	6404.47	-4159.68	772.49	4211.95	0.00	0.00	0.00	Project

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## Survey Report

**Company:** CARRIZO OIL & GAS, INC.  
**Field:** Niobrara CONZ'83  
**Site:** State 2-36-9-61 Pad  
**Well:** 2-36-9-61  
**Wellpath:** Original Hole

**Date:** 10/03/2013  
**Co-ordinate(NE) Reference:** Well: 2-36-9-61, Grid North  
**Vertical (TVD) Reference:** 4932'GL+17'KB 4949.0  
**Section (VS) Reference:** Well (0.00N,0.00E,174.89Azi)  
**Survey Calculation Method:** Minimum Curvature  
**Page:** 5  
**Db:** Adapti

### Annotation

MD ft	TVD ft	
6664.00	6396.04	600' entry