



# Precision Directional Services, Inc.

## Planning Report

<b>Company:</b> CARRIZO OIL & GAS, INC. <b>Field:</b> Niobrara CONZ'83 <b>Site:</b> Sievers 1-3-7-62 Pad <b>Well:</b> 1-3-7-62 <b>Wellpath:</b> Original Hole	<b>Date:</b> 12/04/2012 <b>Co-ordinate(NE) Reference:</b> <b>Vertical (TVD) Reference:</b> <b>Section (VS) Reference:</b> <b>Plan:</b>	<b>Time:</b> 11:35:07 Well: 1-3-7-62, Grid North 4890'GL+17"KB 4907.0 Well (0.00N,0.00E,359.19Azi) Plan #1	<b>Page:</b> 1
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<b>Field:</b> Niobrara CONZ'83			
<b>Map System:</b> US State Plane Coordinate System 1983		<b>Map Zone:</b> Colorado, Northern Zone	
<b>Geo Datum:</b> GRS 1980		<b>Coordinate System:</b> Well Centre	
<b>Sys Datum:</b> Mean Sea Level		<b>Geomagnetic Model:</b> IGRF2010	

  

<b>Site:</b> Sievers 1-3-7-62 Pad			
Weld County, CO			
<b>Site Position:</b>	<b>Northing:</b> 1462387.07 ft	<b>Latitude:</b> 40 35 47.311 N	
<b>From:</b> Map	<b>Easting:</b> 3332645.89 ft	<b>Longitude:</b> 104 18 7.706 W	
<b>Position Uncertainty:</b> 0.00 ft		<b>North Reference:</b> Grid	
<b>Ground Level:</b> 4890.00 ft		<b>Grid Convergence:</b> 0.77 deg	

  

<b>Well:</b> 1-3-7-62		<b>Slot Name:</b>	
<b>Well Position:</b> +N/-S 0.00 ft	<b>Northing:</b> 1462387.07 ft	<b>Latitude:</b> 40 35 47.311 N	
+E/-W 0.00 ft	<b>Easting :</b> 3332645.89 ft	<b>Longitude:</b> 104 18 7.706 W	
<b>Position Uncertainty:</b> 0.00 ft			

  

<b>Wellpath:</b> Original Hole		<b>Drilled From:</b> Surface	
<b>Current Datum:</b> 4890'GL+17"KB	<b>Height</b> 4907.00 ft	<b>Tie-on Depth:</b> 0.00 ft	
<b>Magnetic Data:</b> 12/04/2012		<b>Above System Datum:</b> Mean Sea Level	
<b>Field Strength:</b> 53167 nT		<b>Declination:</b> 8.43 deg	
<b>Vertical Section:</b> Depth From (TVD)	+N/-S	<b>Mag Dip Angle:</b> 67.23 deg	
ft	ft	+E/-W	<b>Direction</b>
		ft	deg
0.00	0.00	0.00	359.19

  

<b>Plan:</b> Plan #1	<b>Date Composed:</b> 12/04/2012
<b>Principal:</b> No	<b>Version:</b> 1
	<b>Tied-to:</b> 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	
457.59	6.15	105.52	456.99	-4.41	15.89	2.00	2.00	0.00	0.00	
6107.03	6.15	105.52	6073.91	-166.42	599.22	0.00	0.00	0.00	0.00	
7024.30	90.00	359.19	6661.00	407.08	651.82	10.00	9.14	-11.59	-106.24	
11021.92	90.00	359.19	6661.00	4404.30	595.17	0.00	0.00	0.00	0.00	PBHL 1-3

  

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
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	1.00	105.52	200.00	-0.12	0.42	-0.12	2.00	2.00	0.00	
300.00	3.00	105.52	299.93	-1.05	3.78	-1.10	2.00	2.00	0.00	
400.00	5.00	105.52	399.68	-2.92	10.50	-3.07	2.00	2.00	0.00	
457.59	6.15	105.52	456.99	-4.41	15.89	-4.64	2.00	2.00	0.00	
500.00	6.15	105.52	499.17	-5.63	20.27	-5.92	0.00	0.00	0.00	
600.00	6.15	105.52	598.59	-8.50	30.60	-8.93	0.00	0.00	0.00	
700.00	6.15	105.52	698.01	-11.37	40.92	-11.94	0.00	0.00	0.00	
800.00	6.15	105.52	797.44	-14.23	51.25	-14.96	0.00	0.00	0.00	
900.00	6.15	105.52	896.86	-17.10	61.58	-17.97	0.00	0.00	0.00	
1000.00	6.15	105.52	996.29	-19.97	71.90	-20.98	0.00	0.00	0.00	
1100.00	6.15	105.52	1095.71	-22.84	82.23	-24.00	0.00	0.00	0.00	
1200.00	6.15	105.52	1195.13	-25.70	92.55	-27.01	0.00	0.00	0.00	
1300.00	6.15	105.52	1294.56	-28.57	102.88	-30.02	0.00	0.00	0.00	
1400.00	6.15	105.52	1393.98	-31.44	113.20	-33.04	0.00	0.00	0.00	

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## Planning Report

**Company:** CARRIZO OIL & GAS, INC.  
**Field:** Niobrara CONZ'83  
**Site:** Sievers 1-3-7-62 Pad  
**Well:** 1-3-7-62  
**Wellpath:** Original Hole

**Date:** 12/04/2012  
**Co-ordinate(NE) Reference:** Well: 1-3-7-62, Grid North  
**Vertical (TVD) Reference:** 4890'GL+17'KB 4907.0  
**Section (VS) Reference:** Well (0.00N,0.00E,359.19Azi)  
**Plan:** Plan #1

**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
1500.00	6.15	105.52	1493.41	-34.31	123.53	-36.05	0.00	0.00	0.00	
1600.00	6.15	105.52	1592.83	-37.17	133.85	-39.06	0.00	0.00	0.00	
1700.00	6.15	105.52	1692.26	-40.04	144.18	-42.08	0.00	0.00	0.00	
1800.00	6.15	105.52	1791.68	-42.91	154.50	-45.09	0.00	0.00	0.00	
1900.00	6.15	105.52	1891.10	-45.78	164.83	-48.10	0.00	0.00	0.00	
2000.00	6.15	105.52	1990.53	-48.65	175.15	-51.12	0.00	0.00	0.00	
2100.00	6.15	105.52	2089.95	-51.51	185.48	-54.13	0.00	0.00	0.00	
2200.00	6.15	105.52	2189.38	-54.38	195.80	-57.14	0.00	0.00	0.00	
2300.00	6.15	105.52	2288.80	-57.25	206.13	-60.16	0.00	0.00	0.00	
2400.00	6.15	105.52	2388.22	-60.12	216.46	-63.17	0.00	0.00	0.00	
2500.00	6.15	105.52	2487.65	-62.98	226.78	-66.18	0.00	0.00	0.00	
2600.00	6.15	105.52	2587.07	-65.85	237.11	-69.20	0.00	0.00	0.00	
2700.00	6.15	105.52	2686.50	-68.72	247.43	-72.21	0.00	0.00	0.00	
2800.00	6.15	105.52	2785.92	-71.59	257.76	-75.22	0.00	0.00	0.00	
2900.00	6.15	105.52	2885.35	-74.45	268.08	-78.24	0.00	0.00	0.00	
3000.00	6.15	105.52	2984.77	-77.32	278.41	-81.25	0.00	0.00	0.00	
3100.00	6.15	105.52	3084.19	-80.19	288.73	-84.26	0.00	0.00	0.00	
3200.00	6.15	105.52	3183.62	-83.06	299.06	-87.28	0.00	0.00	0.00	
3300.00	6.15	105.52	3283.04	-85.92	309.38	-90.29	0.00	0.00	0.00	
3400.00	6.15	105.52	3382.47	-88.79	319.71	-93.30	0.00	0.00	0.00	
3500.00	6.15	105.52	3481.89	-91.66	330.03	-96.32	0.00	0.00	0.00	
3600.00	6.15	105.52	3581.31	-94.53	340.36	-99.33	0.00	0.00	0.00	
3700.00	6.15	105.52	3680.74	-97.40	350.68	-102.34	0.00	0.00	0.00	
3800.00	6.15	105.52	3780.16	-100.26	361.01	-105.36	0.00	0.00	0.00	
3900.00	6.15	105.52	3879.59	-103.13	371.33	-108.37	0.00	0.00	0.00	
4000.00	6.15	105.52	3979.01	-106.00	381.66	-111.38	0.00	0.00	0.00	
4100.00	6.15	105.52	4078.44	-108.87	391.99	-114.40	0.00	0.00	0.00	
4200.00	6.15	105.52	4177.86	-111.73	402.31	-117.41	0.00	0.00	0.00	
4300.00	6.15	105.52	4277.28	-114.60	412.64	-120.42	0.00	0.00	0.00	
4400.00	6.15	105.52	4376.71	-117.47	422.96	-123.44	0.00	0.00	0.00	
4500.00	6.15	105.52	4476.13	-120.34	433.29	-126.45	0.00	0.00	0.00	
4600.00	6.15	105.52	4575.56	-123.20	443.61	-129.46	0.00	0.00	0.00	
4700.00	6.15	105.52	4674.98	-126.07	453.94	-132.48	0.00	0.00	0.00	
4800.00	6.15	105.52	4774.40	-128.94	464.26	-135.49	0.00	0.00	0.00	
4900.00	6.15	105.52	4873.83	-131.81	474.59	-138.50	0.00	0.00	0.00	
5000.00	6.15	105.52	4973.25	-134.67	484.91	-141.52	0.00	0.00	0.00	
5100.00	6.15	105.52	5072.68	-137.54	495.24	-144.53	0.00	0.00	0.00	
5200.00	6.15	105.52	5172.10	-140.41	505.56	-147.54	0.00	0.00	0.00	
5300.00	6.15	105.52	5271.53	-143.28	515.89	-150.56	0.00	0.00	0.00	
5400.00	6.15	105.52	5370.95	-146.15	526.21	-153.57	0.00	0.00	0.00	
5500.00	6.15	105.52	5470.37	-149.01	536.54	-156.58	0.00	0.00	0.00	
5600.00	6.15	105.52	5569.80	-151.88	546.87	-159.60	0.00	0.00	0.00	
5700.00	6.15	105.52	5669.22	-154.75	557.19	-162.61	0.00	0.00	0.00	
5800.00	6.15	105.52	5768.65	-157.62	567.52	-165.62	0.00	0.00	0.00	
5900.00	6.15	105.52	5868.07	-160.48	577.84	-168.64	0.00	0.00	0.00	
6000.00	6.15	105.52	5967.49	-163.35	588.17	-171.65	0.00	0.00	0.00	
6107.03	6.15	105.52	6073.91	-166.42	599.22	-174.87	0.00	0.00	0.00	
6150.00	6.44	65.62	6116.64	-166.04	603.63	-174.56	10.00	0.67	-92.86	
6200.00	9.59	36.93	6166.16	-161.55	608.69	-170.14	10.00	6.30	-57.37	
6250.00	13.87	23.96	6215.12	-152.74	613.63	-161.40	10.00	8.56	-25.95	
6300.00	18.51	17.19	6263.12	-139.68	618.41	-148.41	10.00	9.28	-13.54	
6350.00	23.29	13.09	6309.82	-122.46	623.00	-131.25	10.00	9.57	-8.19	
6400.00	28.15	10.34	6354.86	-101.21	627.36	-110.07	10.00	9.71	-5.51	
6450.00	33.04	8.34	6397.89	-76.11	631.45	-85.03	10.00	9.79	-4.00	

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## Planning Report

**Company:** CARRIZO OIL & GAS, INC.  
**Field:** Niobrara CONZ'83  
**Site:** Sievers 1-3-7-62 Pad  
**Well:** 1-3-7-62  
**Wellpath:** Original Hole

**Date:** 12/04/2012  
**Co-ordinate(NE) Reference:** Well: 1-3-7-62, Grid North  
**Vertical (TVD) Reference:** 4890'GL+17'KB 4907.0  
**Section (VS) Reference:** Well (0.00N,0.00E,359.19Azi)  
**Plan:** Plan #1

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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
6500.00	37.96	6.81	6438.58	-47.33	635.25	-56.31	10.00	9.84	-3.06	
6550.00	42.90	5.58	6476.63	-15.10	638.73	-24.13	10.00	9.87	-2.45	
6600.00	47.85	4.56	6511.74	20.33	641.86	11.26	10.00	9.89	-2.04	
6650.00	52.80	3.69	6543.65	58.70	644.62	49.59	10.00	9.91	-1.74	
6700.00	57.76	2.93	6572.12	99.72	646.98	90.57	10.00	9.92	-1.53	
6750.00	62.73	2.24	6596.93	143.07	648.93	133.88	10.00	9.93	-1.37	
6800.00	67.70	1.62	6617.88	188.43	650.46	179.21	10.00	9.94	-1.25	
6823.18	70.00	1.35	6626.25	210.03	651.02	200.81	10.00	9.94	-1.18	7"
6850.00	72.67	1.04	6634.83	235.44	651.55	226.20	10.00	9.94	-1.15	
6900.00	77.64	0.49	6647.64	283.75	652.19	274.50	10.00	9.94	-1.10	
6950.00	82.61	359.96	6656.21	332.99	652.38	323.73	10.00	9.95	-1.06	
7000.00	87.58	359.44	6660.49	382.79	652.11	373.53	10.00	9.95	-1.04	
7024.30	90.00	359.19	6661.00	407.08	651.82	397.82	10.00	9.95	-1.03	
7100.00	90.00	359.19	6661.00	482.77	650.75	473.53	0.00	0.00	0.00	
7200.00	90.00	359.19	6661.00	582.76	649.33	573.53	0.00	0.00	0.00	
7300.00	90.00	359.19	6661.00	682.75	647.91	673.53	0.00	0.00	0.00	
7400.00	90.00	359.19	6661.00	782.74	646.50	773.53	0.00	0.00	0.00	
7500.00	90.00	359.19	6661.00	882.73	645.08	873.53	0.00	0.00	0.00	
7600.00	90.00	359.19	6661.00	982.72	643.66	973.53	0.00	0.00	0.00	
7700.00	90.00	359.19	6661.00	1082.71	642.24	1073.53	0.00	0.00	0.00	
7800.00	90.00	359.19	6661.00	1182.70	640.83	1173.53	0.00	0.00	0.00	
7900.00	90.00	359.19	6661.00	1282.69	639.41	1273.53	0.00	0.00	0.00	
8000.00	90.00	359.19	6661.00	1382.68	637.99	1373.53	0.00	0.00	0.00	
8100.00	90.00	359.19	6661.00	1482.67	636.58	1473.53	0.00	0.00	0.00	
8200.00	90.00	359.19	6661.00	1582.66	635.16	1573.53	0.00	0.00	0.00	
8300.00	90.00	359.19	6661.00	1682.65	633.74	1673.53	0.00	0.00	0.00	
8400.00	90.00	359.19	6661.00	1782.64	632.33	1773.53	0.00	0.00	0.00	
8500.00	90.00	359.19	6661.00	1882.63	630.91	1873.53	0.00	0.00	0.00	
8600.00	90.00	359.19	6661.00	1982.62	629.49	1973.53	0.00	0.00	0.00	
8700.00	90.00	359.19	6661.00	2082.61	628.07	2073.53	0.00	0.00	0.00	
8800.00	90.00	359.19	6661.00	2182.60	626.66	2173.53	0.00	0.00	0.00	
8900.00	90.00	359.19	6661.00	2282.59	625.24	2273.53	0.00	0.00	0.00	
9000.00	90.00	359.19	6661.00	2382.58	623.82	2373.53	0.00	0.00	0.00	
9100.00	90.00	359.19	6661.00	2482.57	622.41	2473.53	0.00	0.00	0.00	
9200.00	90.00	359.19	6661.00	2582.56	620.99	2573.53	0.00	0.00	0.00	
9300.00	90.00	359.19	6661.00	2682.55	619.57	2673.53	0.00	0.00	0.00	
9400.00	90.00	359.19	6661.00	2782.54	618.15	2773.53	0.00	0.00	0.00	
9500.00	90.00	359.19	6661.00	2882.53	616.74	2873.53	0.00	0.00	0.00	
9600.00	90.00	359.19	6661.00	2982.52	615.32	2973.53	0.00	0.00	0.00	
9700.00	90.00	359.19	6661.00	3082.51	613.90	3073.53	0.00	0.00	0.00	
9800.00	90.00	359.19	6661.00	3182.50	612.49	3173.53	0.00	0.00	0.00	
9900.00	90.00	359.19	6661.00	3282.49	611.07	3273.53	0.00	0.00	0.00	
10000.00	90.00	359.19	6661.00	3382.48	609.65	3373.53	0.00	0.00	0.00	
10100.00	90.00	359.19	6661.00	3482.47	608.23	3473.53	0.00	0.00	0.00	
10200.00	90.00	359.19	6661.00	3582.46	606.82	3573.53	0.00	0.00	0.00	
10300.00	90.00	359.19	6661.00	3682.45	605.40	3673.53	0.00	0.00	0.00	
10400.00	90.00	359.19	6661.00	3782.44	603.98	3773.53	0.00	0.00	0.00	
10500.00	90.00	359.19	6661.00	3882.43	602.57	3873.53	0.00	0.00	0.00	
10600.00	90.00	359.19	6661.00	3982.42	601.15	3973.53	0.00	0.00	0.00	
10700.00	90.00	359.19	6661.00	4082.41	599.73	4073.53	0.00	0.00	0.00	
10800.00	90.00	359.19	6661.00	4182.40	598.31	4173.53	0.00	0.00	0.00	
10900.00	90.00	359.19	6661.00	4282.39	596.90	4273.53	0.00	0.00	0.00	
11000.00	90.00	359.19	6661.00	4382.38	595.48	4373.53	0.00	0.00	0.00	

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<b>Company:</b> CARRIZO OIL & GAS, INC. <b>Field:</b> Niobrara CONZ'83 <b>Site:</b> Sievers 1-3-7-62 Pad <b>Well:</b> 1-3-7-62 <b>Wellpath:</b> Original Hole	<b>Date:</b> 12/04/2012 <b>Co-ordinate(NE) Reference:</b> <b>Vertical (TVD) Reference:</b> <b>Section (VS) Reference:</b> <b>Plan:</b>	<b>Time:</b> 11:35:07 Well: 1-3-7-62, Grid North 4890'GL+17"KB 4907.0 Well (0.00N,0.00E,359.19Azi) Plan #1	<b>Page:</b> 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
11021.92	90.00	359.19	6661.00	4404.30	595.17	4395.45	0.00	0.00	0.00	PBHL 1-3

### Targets

Name	Description Dip.	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<---- Latitude ---->			<--- Longitude --->		
SL 1-3			0.00	0.00	0.00	1462387.07	3332645.89	40	35	47.311 N	104	18	7.706 W
PBHL 1-3			6661.00	4404.30	595.17	1466791.37	3333241.06	40	36	30.749 N	104	17	59.219 W

### Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
6823.18	6626.25	7.000	8.750	7"