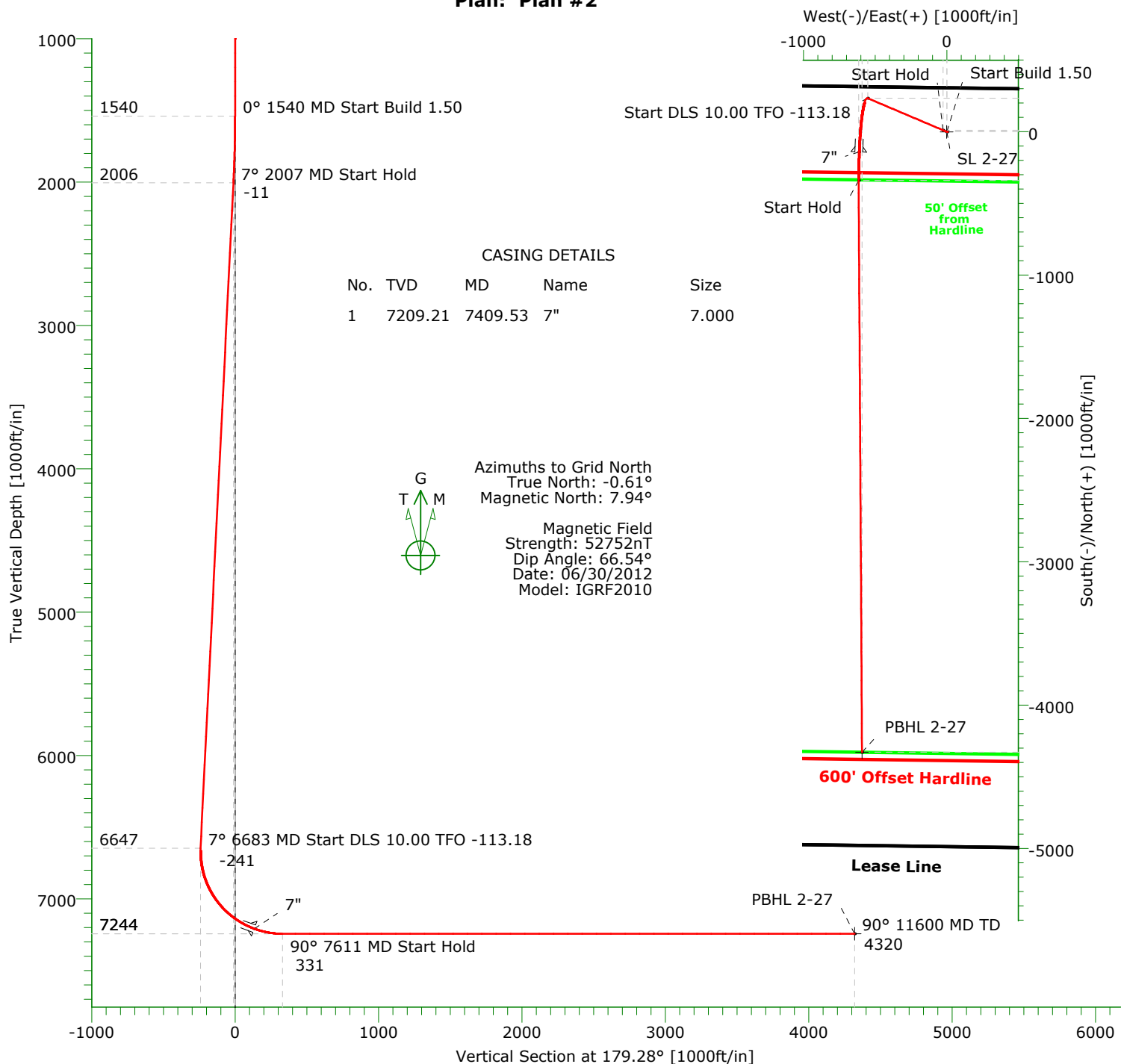




# CARRIZO OIL & GAS, INC.

Field: Niobrara COCZ'83  
Site: WEP 27 PAD  
Well: 2-27-31-3-64  
Wellpath: Original Hole  
Plan: Plan #2



## TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SL 2-27	0.00	0.00	0.00	1705644.65	3272168.45	39°46'00.517N	104°31'54.584W	Point
PBHL 2-27	7244.00	-4328.20	-591.25	1701316.45	3271577.20	39°45'17.807N	104°32'02.745W	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	1540.00	0.00	0.00	1540.00	0.00	0.00	0.00	0.00	0.00	
3	2006.67	7.00	293.00	2005.51	11.12	-26.21	1.50	293.00	-11.45	
4	6683.18	7.00	293.00	6647.16	233.81	-550.83	0.00	0.00	-240.71	
5	7610.85	90.00	179.66	7244.00	-338.86	-614.74	10.00	-113.18	331.11	
6	11600.25	90.00	179.66	7244.00	-4328.20	-591.25	0.00	0.00	4320.43	PBHL 2-27

# Precision Directional Services, Inc.

## Planning Report

<b>Company:</b> CARRIZO OIL & GAS, INC. <b>Field:</b> Niobrara COCZ'83 <b>Site:</b> WEP 27 PAD <b>Well:</b> 2-27-31-3-64 <b>Wellpath:</b> Original Hole	<b>Date:</b> 10/10/2012 <b>Co-ordinate(NE) Reference:</b> <b>Vertical (TVD) Reference:</b> <b>Section (VS) Reference:</b> <b>Plan:</b>	<b>Time:</b> 08:35:51 <b>Well:</b> 2-27-31-3-64, Grid North <b>5509'GL+17'KB</b> 5526.0 <b>Well (0.00N,0.00E,179.28Azi)</b> <b>Plan #2</b>	<b>Page:</b> 1
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<b>Field:</b> Niobrara COCZ'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, Central Zone <b>Coordinate System:</b> Well Centre <b>Geomagnetic Model:</b> IGRF2010

<b>Site:</b> WEP 27 PAD	
<b>Site Position:</b> <b>From:</b> Map <b>Position Uncertainty:</b> 0.00 ft <b>Ground Level:</b> 5509.00 ft	<b>Northing:</b> 1705711.42 ft <b>Easting:</b> 3272211.78 ft <b>Latitude:</b> 39 46 1.172 N <b>Longitude:</b> 104 31 54.020 W <b>North Reference:</b> Grid <b>Grid Convergence:</b> 0.61 deg

<b>Well:</b> 2-27-31-3-64	<b>Slot Name:</b> 2-27
<b>Well Position:</b> +N/-S -66.77 ft <b>+E/-W</b> -43.33 ft <b>Position Uncertainty:</b> 0.00 ft	<b>Northing:</b> 1705644.65 ft <b>Easting :</b> 3272168.45 ft <b>Latitude:</b> 39 46 0.517 N <b>Longitude:</b> 104 31 54.584 W

<b>Wellpath:</b> Original Hole	<b>Drilled From:</b> Surface <b>Tie-on Depth:</b> 0.00 ft <b>Above System Datum:</b> Mean Sea Level <b>Declination:</b> 8.55 deg <b>Mag Dip Angle:</b> 66.54 deg
<b>Current Datum:</b> 5509'GL+17'KB <b>Magnetic Data:</b> 06/30/2012 <b>Field Strength:</b> 52752 nT <b>Vertical Section:</b> Depth From (TVD) ft	<b>Height</b> 5526.00 ft <b>+N/-S</b> ft <b>+E/-W</b> ft <b>Direction</b> deg
0.00	0.00 0.00 179.28

<b>Plan:</b> Plan #2 <b>Principal:</b> No	<b>Date Composed:</b> 10/05/2012 <b>Version:</b> 1 <b>Tied-to:</b> From Surface
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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	
1540.00	0.00	0.00	1540.00	0.00	0.00	0.00	0.00	0.00	0.00	
2006.67	7.00	293.00	2005.51	11.12	-26.21	1.50	1.50	0.00	293.00	
6683.18	7.00	293.00	6647.16	233.81	-550.83	0.00	0.00	0.00	0.00	
7610.85	90.00	179.66	7244.00	-338.86	-614.74	10.00	8.95	-12.22	-113.18	
11600.25	90.00	179.66	7244.00	-4328.20	-591.25	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
1540.00	0.00	0.00	1540.00	0.00	0.00	0.00	0.00	0.00	0.00	
1600.00	0.90	293.00	1600.00	0.18	-0.43	-0.19	1.50	1.50	0.00	
1700.00	2.40	293.00	1699.95	1.31	-3.08	-1.35	1.50	1.50	0.00	
1800.00	3.90	293.00	1799.80	3.46	-8.14	-3.56	1.50	1.50	0.00	
1900.00	5.40	293.00	1899.47	6.62	-15.60	-6.82	1.50	1.50	0.00	
2006.67	7.00	293.00	2005.51	11.12	-26.21	-11.45	1.50	1.50	0.00	
2100.00	7.00	293.00	2098.14	15.57	-36.68	-16.03	0.00	0.00	0.00	
2200.00	7.00	293.00	2197.40	20.33	-47.90	-20.93	0.00	0.00	0.00	
2300.00	7.00	293.00	2296.65	25.09	-59.11	-25.83	0.00	0.00	0.00	
2400.00	7.00	293.00	2395.91	29.85	-70.33	-30.74	0.00	0.00	0.00	
2500.00	7.00	293.00	2495.16	34.62	-81.55	-35.64	0.00	0.00	0.00	
2600.00	7.00	293.00	2594.42	39.38	-92.77	-40.54	0.00	0.00	0.00	
2700.00	7.00	293.00	2693.67	44.14	-103.99	-45.44	0.00	0.00	0.00	
2800.00	7.00	293.00	2792.93	48.90	-115.21	-50.35	0.00	0.00	0.00	
2900.00	7.00	293.00	2892.18	53.66	-126.42	-55.25	0.00	0.00	0.00	

# Precision Directional Services, Inc.

## Planning Report

<b>Company:</b> CARRIZO OIL & GAS, INC.	<b>Date:</b> 10/10/2012	<b>Time:</b> 08:35:51	<b>Page:</b> 2
<b>Field:</b> Niobrara COCZ'83	<b>Co-ordinate(NE) Reference:</b> Well: 2-27-31-3-64, Grid North		
<b>Site:</b> WEP 27 PAD	<b>Vertical (TVD) Reference:</b> 5509'GL+17"KB 5526.0		
<b>Well:</b> 2-27-31-3-64	<b>Section (VS) Reference:</b> Well (0.00N,0.00E,179.28Azi)		
<b>Wellpath:</b> Original Hole	<b>Plan:</b> Plan #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
3000.00	7.00	293.00	2991.44	58.43	-137.64	-60.15	0.00	0.00	0.00	
3100.00	7.00	293.00	3090.69	63.19	-148.86	-65.05	0.00	0.00	0.00	
3200.00	7.00	293.00	3189.95	67.95	-160.08	-69.96	0.00	0.00	0.00	
3300.00	7.00	293.00	3289.20	72.71	-171.30	-74.86	0.00	0.00	0.00	
3400.00	7.00	293.00	3388.45	77.47	-182.51	-79.76	0.00	0.00	0.00	
3500.00	7.00	293.00	3487.71	82.23	-193.73	-84.66	0.00	0.00	0.00	
3600.00	7.00	293.00	3586.96	87.00	-204.95	-89.56	0.00	0.00	0.00	
3700.00	7.00	293.00	3686.22	91.76	-216.17	-94.47	0.00	0.00	0.00	
3800.00	7.00	293.00	3785.47	96.52	-227.39	-99.37	0.00	0.00	0.00	
3900.00	7.00	293.00	3884.73	101.28	-238.60	-104.27	0.00	0.00	0.00	
4000.00	7.00	293.00	3983.98	106.04	-249.82	-109.17	0.00	0.00	0.00	
4100.00	7.00	293.00	4083.24	110.81	-261.04	-114.08	0.00	0.00	0.00	
4200.00	7.00	293.00	4182.49	115.57	-272.26	-118.98	0.00	0.00	0.00	
4300.00	7.00	293.00	4281.75	120.33	-283.48	-123.88	0.00	0.00	0.00	
4400.00	7.00	293.00	4381.00	125.09	-294.70	-128.78	0.00	0.00	0.00	
4500.00	7.00	293.00	4480.26	129.85	-305.91	-133.69	0.00	0.00	0.00	
4600.00	7.00	293.00	4579.51	134.61	-317.13	-138.59	0.00	0.00	0.00	
4700.00	7.00	293.00	4678.76	139.38	-328.35	-143.49	0.00	0.00	0.00	
4800.00	7.00	293.00	4778.02	144.14	-339.57	-148.39	0.00	0.00	0.00	
4900.00	7.00	293.00	4877.27	148.90	-350.79	-153.30	0.00	0.00	0.00	
5000.00	7.00	293.00	4976.53	153.66	-362.00	-158.20	0.00	0.00	0.00	
5100.00	7.00	293.00	5075.78	158.42	-373.22	-163.10	0.00	0.00	0.00	
5200.00	7.00	293.00	5175.04	163.19	-384.44	-168.00	0.00	0.00	0.00	
5300.00	7.00	293.00	5274.29	167.95	-395.66	-172.91	0.00	0.00	0.00	
5400.00	7.00	293.00	5373.55	172.71	-406.88	-177.81	0.00	0.00	0.00	
5500.00	7.00	293.00	5472.80	177.47	-418.10	-182.71	0.00	0.00	0.00	
5600.00	7.00	293.00	5572.06	182.23	-429.31	-187.61	0.00	0.00	0.00	
5700.00	7.00	293.00	5671.31	186.99	-440.53	-192.52	0.00	0.00	0.00	
5800.00	7.00	293.00	5770.57	191.76	-451.75	-197.42	0.00	0.00	0.00	
5900.00	7.00	293.00	5869.82	196.52	-462.97	-202.32	0.00	0.00	0.00	
6000.00	7.00	293.00	5969.07	201.28	-474.19	-207.22	0.00	0.00	0.00	
6100.00	7.00	293.00	6068.33	206.04	-485.40	-212.13	0.00	0.00	0.00	
6200.00	7.00	293.00	6167.58	210.80	-496.62	-217.03	0.00	0.00	0.00	
6300.00	7.00	293.00	6266.84	215.57	-507.84	-221.93	0.00	0.00	0.00	
6400.00	7.00	293.00	6366.09	220.33	-519.06	-226.83	0.00	0.00	0.00	
6500.00	7.00	293.00	6465.35	225.09	-530.28	-231.73	0.00	0.00	0.00	
6600.00	7.00	293.00	6564.60	229.85	-541.49	-236.64	0.00	0.00	0.00	
6683.18	7.00	293.00	6647.16	233.81	-550.83	-240.71	0.00	0.00	0.00	
6700.00	6.52	279.26	6663.87	234.37	-552.71	-241.29	10.00	-2.84	-81.69	
6750.00	7.53	238.24	6713.52	233.10	-558.30	-240.10	10.00	2.01	-82.03	
6800.00	10.98	215.20	6762.88	227.48	-563.83	-234.55	10.00	6.90	-46.09	
6850.00	15.30	203.99	6811.57	217.56	-569.27	-224.69	10.00	8.65	-22.40	
6900.00	19.94	197.77	6859.21	203.40	-574.55	-210.60	10.00	9.28	-12.45	
6950.00	24.72	193.84	6905.45	185.12	-579.66	-192.39	10.00	9.55	-7.85	
7000.00	29.56	191.13	6949.93	162.85	-584.54	-170.19	10.00	9.69	-5.43	
7050.00	34.45	189.12	6992.32	136.77	-589.17	-144.17	10.00	9.77	-4.01	
7100.00	39.36	187.56	7032.29	107.07	-593.50	-114.52	10.00	9.82	-3.12	
7150.00	44.29	186.30	7069.54	73.99	-597.50	-81.49	10.00	9.86	-2.53	
7200.00	49.23	185.24	7103.79	37.76	-601.15	-45.31	10.00	9.88	-2.12	
7250.00	54.18	184.33	7134.76	-1.33	-604.41	-6.26	10.00	9.90	-1.82	
7300.00	59.13	183.53	7162.24	-42.99	-607.27	35.36	10.00	9.91	-1.61	
7350.00	64.09	182.80	7186.01	-86.90	-609.69	79.23	10.00	9.92	-1.45	
7400.00	69.05	182.14	7205.88	-132.72	-611.66	125.02	10.00	9.93	-1.33	
7409.53	70.00	182.01	7209.21	-141.64	-611.98	133.94	10.00	9.93	-1.28	7"

# Precision Directional Services, Inc.

## Planning Report

<b>Company:</b> CARRIZO OIL & GAS, INC. <b>Field:</b> Niobrara COCZ'83 <b>Site:</b> WEP 27 PAD <b>Well:</b> 2-27-31-3-64 <b>Wellpath:</b> Original Hole	<b>Date:</b> 10/10/2012 <b>Co-ordinate(NE) Reference:</b> <b>Vertical (TVD) Reference:</b> <b>Section (VS) Reference:</b> <b>Plan:</b>	<b>Time:</b> 08:35:51 Well: 2-27-31-3-64, Grid North 5509'GL+17"KB 5526.0 Well (0.00N,0.00E,179.28Azi) Plan #2	<b>Page:</b> 3
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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
7450.00	74.02	181.51	7221.71	-180.11	-613.16	172.39	10.00	9.93	-1.24	
7500.00	78.99	180.92	7233.38	-228.70	-614.19	220.96	10.00	9.93	-1.19	
7550.00	83.95	180.35	7240.79	-278.13	-614.74	270.38	10.00	9.94	-1.15	
7600.00	88.92	179.78	7243.90	-328.02	-614.79	320.26	10.00	9.94	-1.13	
7610.85	90.00	179.66	7244.00	-338.86	-614.74	331.11	10.00	9.94	-1.12	
7700.00	90.00	179.66	7244.00	-428.01	-614.22	420.26	0.00	0.00	0.00	
7800.00	90.00	179.66	7244.00	-528.01	-613.63	520.26	0.00	0.00	0.00	
7900.00	90.00	179.66	7244.00	-628.01	-613.04	620.26	0.00	0.00	0.00	
8000.00	90.00	179.66	7244.00	-728.01	-612.45	720.25	0.00	0.00	0.00	
8100.00	90.00	179.66	7244.00	-828.01	-611.86	820.25	0.00	0.00	0.00	
8200.00	90.00	179.66	7244.00	-928.00	-611.27	920.25	0.00	0.00	0.00	
8300.00	90.00	179.66	7244.00	-1028.00	-610.68	1020.25	0.00	0.00	0.00	
8400.00	90.00	179.66	7244.00	-1128.00	-610.09	1120.25	0.00	0.00	0.00	
8500.00	90.00	179.66	7244.00	-1228.00	-609.51	1220.24	0.00	0.00	0.00	
8600.00	90.00	179.66	7244.00	-1328.00	-608.92	1320.24	0.00	0.00	0.00	
8700.00	90.00	179.66	7244.00	-1428.00	-608.33	1420.24	0.00	0.00	0.00	
8800.00	90.00	179.66	7244.00	-1527.99	-607.74	1520.24	0.00	0.00	0.00	
8900.00	90.00	179.66	7244.00	-1627.99	-607.15	1620.23	0.00	0.00	0.00	
9000.00	90.00	179.66	7244.00	-1727.99	-606.56	1720.23	0.00	0.00	0.00	
9100.00	90.00	179.66	7244.00	-1827.99	-605.97	1820.23	0.00	0.00	0.00	
9200.00	90.00	179.66	7244.00	-1927.99	-605.38	1920.23	0.00	0.00	0.00	
9300.00	90.00	179.66	7244.00	-2027.99	-604.79	2020.23	0.00	0.00	0.00	
9400.00	90.00	179.66	7244.00	-2127.98	-604.21	2120.22	0.00	0.00	0.00	
9500.00	90.00	179.66	7244.00	-2227.98	-603.62	2220.22	0.00	0.00	0.00	
9600.00	90.00	179.66	7244.00	-2327.98	-603.03	2320.22	0.00	0.00	0.00	
9700.00	90.00	179.66	7244.00	-2427.98	-602.44	2420.22	0.00	0.00	0.00	
9800.00	90.00	179.66	7244.00	-2527.98	-601.85	2520.21	0.00	0.00	0.00	
9900.00	90.00	179.66	7244.00	-2627.97	-601.26	2620.21	0.00	0.00	0.00	
10000.00	90.00	179.66	7244.00	-2727.97	-600.67	2720.21	0.00	0.00	0.00	
10100.00	90.00	179.66	7244.00	-2827.97	-600.08	2820.21	0.00	0.00	0.00	
10200.00	90.00	179.66	7244.00	-2927.97	-599.50	2920.21	0.00	0.00	0.00	
10300.00	90.00	179.66	7244.00	-3027.97	-598.91	3020.20	0.00	0.00	0.00	
10400.00	90.00	179.66	7244.00	-3127.97	-598.32	3120.20	0.00	0.00	0.00	
10500.00	90.00	179.66	7244.00	-3227.96	-597.73	3220.20	0.00	0.00	0.00	
10600.00	90.00	179.66	7244.00	-3327.96	-597.14	3320.20	0.00	0.00	0.00	
10700.00	90.00	179.66	7244.00	-3427.96	-596.55	3420.19	0.00	0.00	0.00	
10800.00	90.00	179.66	7244.00	-3527.96	-595.96	3520.19	0.00	0.00	0.00	
10900.00	90.00	179.66	7244.00	-3627.96	-595.37	3620.19	0.00	0.00	0.00	
11000.00	90.00	179.66	7244.00	-3727.96	-594.78	3720.19	0.00	0.00	0.00	
11100.00	90.00	179.66	7244.00	-3827.95	-594.20	3820.19	0.00	0.00	0.00	
11200.00	90.00	179.66	7244.00	-3927.95	-593.61	3920.18	0.00	0.00	0.00	
11300.00	90.00	179.66	7244.00	-4027.95	-593.02	4020.18	0.00	0.00	0.00	
11400.00	90.00	179.66	7244.00	-4127.95	-592.43	4120.18	0.00	0.00	0.00	
11500.00	90.00	179.66	7244.00	-4227.95	-591.84	4220.18	0.00	0.00	0.00	
11600.25	90.00	179.66	7244.00	-4328.20	-591.25	4320.43	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 --->		
								Deg	Min	Sec	Deg	Min	Sec
SL 2-27			0.00	0.00	0.00	1705644.65	3272168.45	39	46	0.517 N	104	31	54.584 W
PBHL 2-27			7244.00	-4328.20	-591.25	1701316.45	3271577.20	39	45	17.807 N	104	32	2.745 W

# Precision Directional Services, Inc.

## Planning Report

<b>Company:</b> CARRIZO OIL & GAS, INC. <b>Field:</b> Niobrara COCZ'83 <b>Site:</b> WEP 27 PAD <b>Well:</b> 2-27-31-3-64 <b>Wellpath:</b> Original Hole	<b>Date:</b> 10/10/2012 <b>Co-ordinate(NE) Reference:</b> <b>Vertical (TVD) Reference:</b> <b>Section (VS) Reference:</b> <b>Plan:</b>	<b>Time:</b> 08:35:51 Well: 2-27-31-3-64, Grid North 5509'GL+17"KB 5526.0 Well (0.00N,0.00E,179.28Azi) Plan #2	<b>Page:</b> 4
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### Targets

Name	Description		TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<---- Latitude ---->			<--- Longitude --->		
	Dip.	Dir.						Deg	Min	Sec	Deg	Min	Sec

### Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
7409.53	7209.21	7.000	8.750	7"