

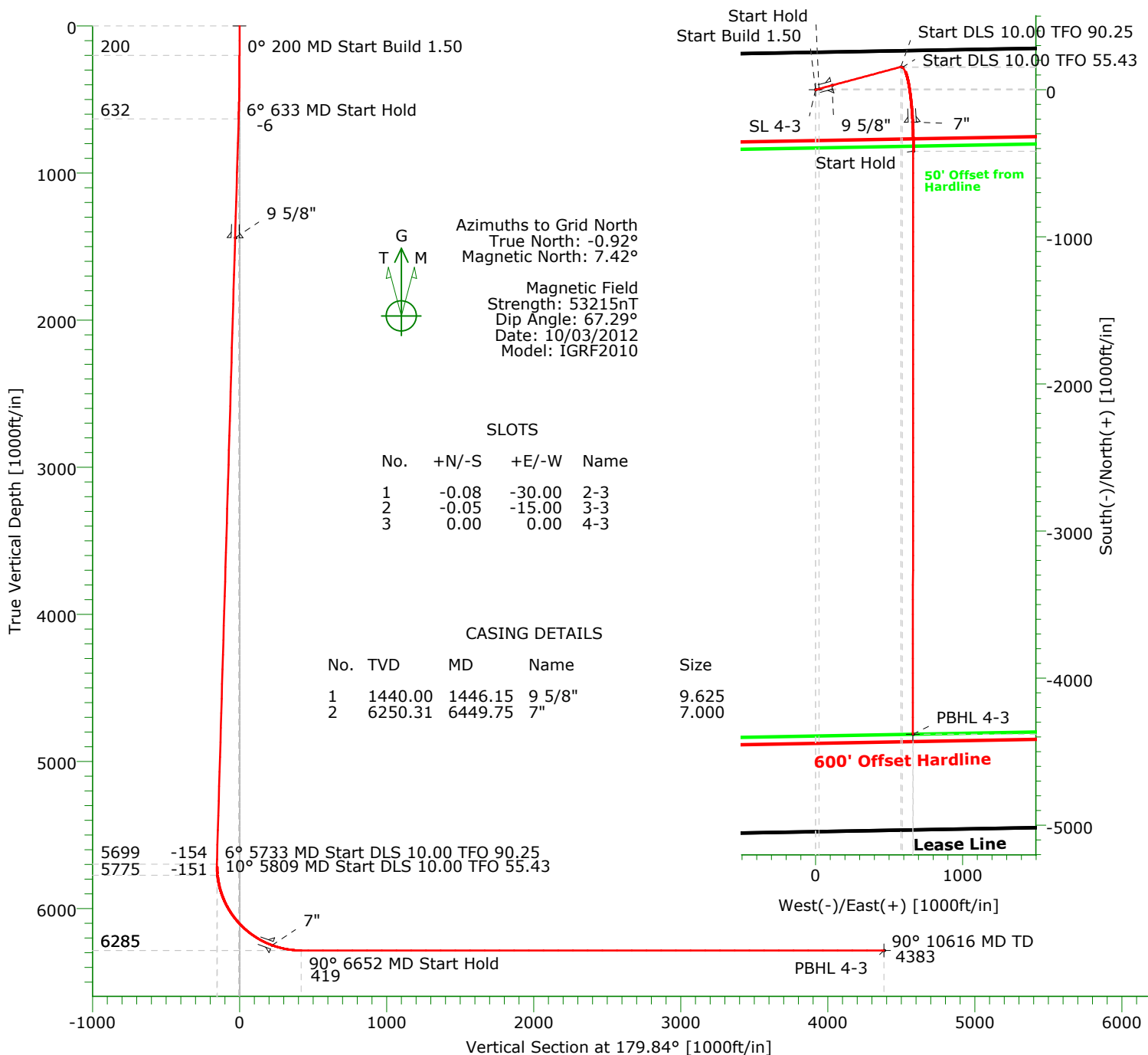


CARRIZO OIL & GAS, INC.

Field: Niobrara CONZ'83
Site: Pergamos 3-7-60 Pad
Well: 4-3-7-60
Wellpath: Original Hole
Plan: Plan #2



Precision
Directional Services



TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SL 4-3	0.00	0.00	0.00	1468499.05	3393362.50	40°36'38.855N104°04'59.443W		Point
PBHL 4-3	6285.00	-4381.14	662.91	1464117.91	3394025.41	40°35'55.463N104°04'51.758W		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	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	633.33	6.50	75.00	632.40	6.35	23.72	1.50	75.00	-6.29	
4	5732.61	6.50	75.00	5698.90	155.76	581.30	0.00	0.00	-154.14	
5	5809.05	10.00	125.00	5774.63	153.07	590.93	10.00	90.25	-151.42	
6	6651.96	90.00	180.02	6285.25	-417.11	664.48	10.00	55.43	418.96	
7	10615.99	90.00	180.02	6285.00	-4381.14	662.91	0.00	0.00	4382.97	PBHL 4-3

Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC. Field: Niobrara CONZ'83 Site: Pergamos 3-7-60 Pad Well: 4-3-7-60 Wellpath: Original Hole	Date: 10/19/2012 Co-ordinate(NE) Reference: Well: 4-3-7-60, Grid North Vertical (TVD) Reference: 4922'GL+17"KB 4939.0 Section (VS) Reference: Well (0.00N,0.00E,179.84Azi) Plan: Plan #2	Time: 11:12:01 Page: 1								
Field: Niobrara CONZ'83										
Map System: US State Plane Coordinate System 1983 Geo Datum: GRS 1980 Sys Datum: Mean Sea Level										
Map Zone: Colorado, Northern Zone Coordinate System: Well Centre Geomagnetic Model: IGRF2010										
Site: Pergamos 3-7-60 Pad Lot 4 S:3, T:7N,R60W Weld County, Co										
Site Position: From: Map Position Uncertainty: 0.00 ft Ground Level: 4922.00 ft	Northing: 1468499.00 ft Easting: 3393347.50 ft	Latitude: 40 36 38.857 N Longitude: 104 4 59.637 W North Reference: Grid Grid Convergence: 0.92 deg								
Well: 4-3-7-60										
Slot Name:										
Well Position: +N/-S 0.05 ft +E/-W 15.00 ft Position Uncertainty: 0.00 ft	Northing: 1468499.05 ft Easting : 3393362.50 ft	Latitude: 40 36 38.855 N Longitude: 104 4 59.443 W								
Wellpath: Original Hole										
Current Datum: 4922'GL+17"KB Magnetic Data: 10/03/2012 Field Strength: 53215 nT Vertical Section: Depth From (TVD) ft	Height 4939.00 ft +N/-S ft	Drilled From: Surface Tie-on Depth: 0.00 ft Above System Datum: Mean Sea Level Declination: 8.34 deg Mag Dip Angle: 67.29 deg +E/-W ft Direction deg								
0.00	0.00	0.00 179.84								
Plan: Plan #2 Principal: No										
Date Composed: 10/19/2012 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	
633.33	6.50	75.00	632.40	6.35	23.72	1.50	1.50	0.00	75.00	
5732.61	6.50	75.00	5698.90	155.76	581.30	0.00	0.00	0.00	0.00	
5809.05	10.00	125.00	5774.63	153.07	590.93	10.00	4.58	65.41	90.25	
6651.96	90.00	180.02	6285.25	-417.11	664.48	10.00	9.49	6.53	55.43	
10615.99	90.00	180.02	6285.00	-4381.14	662.91	0.00	0.00	0.00	0.00	PBHL 4-3
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
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	1.50	75.00	299.99	0.34	1.26	-0.34	1.50	1.50	0.00	
400.00	3.00	75.00	399.91	1.35	5.06	-1.34	1.50	1.50	0.00	
500.00	4.50	75.00	499.69	3.05	11.37	-3.02	1.50	1.50	0.00	
600.00	6.00	75.00	599.27	5.42	20.21	-5.36	1.50	1.50	0.00	
633.33	6.50	75.00	632.40	6.35	23.72	-6.29	1.50	1.50	0.00	
700.00	6.50	75.00	698.64	8.31	31.01	-8.22	0.00	0.00	0.00	
800.00	6.50	75.00	798.00	11.24	41.94	-11.12	0.00	0.00	0.00	
900.00	6.50	75.00	897.36	14.17	52.88	-14.02	0.00	0.00	0.00	
1000.00	6.50	75.00	996.71	17.10	63.81	-16.92	0.00	0.00	0.00	
1100.00	6.50	75.00	1096.07	20.03	74.75	-19.82	0.00	0.00	0.00	
1200.00	6.50	75.00	1195.43	22.96	85.68	-22.72	0.00	0.00	0.00	
1300.00	6.50	75.00	1294.79	25.89	96.61	-25.62	0.00	0.00	0.00	
1400.00	6.50	75.00	1394.14	28.82	107.55	-28.52	0.00	0.00	0.00	
1446.15	6.50	75.00	1440.00	30.17	112.60	-29.86	0.00	0.00	0.00	9 5/8"

Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC.
Field: Niobrara CONZ'83
Site: Pergamos 3-7-60 Pad
Well: 4-3-7-60
Wellpath: Original Hole

Date: 10/19/2012
Co-ordinate(NE) Reference: Well: 4-3-7-60, Grid North
Vertical (TVD) Reference: 4922'GL+17'KB 4939.0
Section (VS) Reference: Well (0.00N,0.00E,179.84Azi)
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
1500.00	6.50	75.00	1493.50	31.75	118.48	-31.42	0.00	0.00	0.00	
1600.00	6.50	75.00	1592.86	34.68	129.42	-34.32	0.00	0.00	0.00	
1700.00	6.50	75.00	1692.21	37.61	140.35	-37.22	0.00	0.00	0.00	
1800.00	6.50	75.00	1791.57	40.54	151.29	-40.11	0.00	0.00	0.00	
1900.00	6.50	75.00	1890.93	43.47	162.22	-43.01	0.00	0.00	0.00	
2000.00	6.50	75.00	1990.29	46.40	173.16	-45.91	0.00	0.00	0.00	
2100.00	6.50	75.00	2089.64	49.33	184.09	-48.81	0.00	0.00	0.00	
2200.00	6.50	75.00	2189.00	52.26	195.03	-51.71	0.00	0.00	0.00	
2300.00	6.50	75.00	2288.36	55.19	205.96	-54.61	0.00	0.00	0.00	
2400.00	6.50	75.00	2387.71	58.12	216.89	-57.51	0.00	0.00	0.00	
2500.00	6.50	75.00	2487.07	61.05	227.83	-60.41	0.00	0.00	0.00	
2600.00	6.50	75.00	2586.43	63.98	238.76	-63.31	0.00	0.00	0.00	
2700.00	6.50	75.00	2685.79	66.91	249.70	-66.21	0.00	0.00	0.00	
2800.00	6.50	75.00	2785.14	69.84	260.63	-69.11	0.00	0.00	0.00	
2900.00	6.50	75.00	2884.50	72.77	271.57	-72.01	0.00	0.00	0.00	
3000.00	6.50	75.00	2983.86	75.70	282.50	-74.91	0.00	0.00	0.00	
3100.00	6.50	75.00	3083.22	78.63	293.44	-77.81	0.00	0.00	0.00	
3200.00	6.50	75.00	3182.57	81.56	304.37	-80.71	0.00	0.00	0.00	
3300.00	6.50	75.00	3281.93	84.49	315.31	-83.61	0.00	0.00	0.00	
3400.00	6.50	75.00	3381.29	87.42	326.24	-86.50	0.00	0.00	0.00	
3500.00	6.50	75.00	3480.64	90.35	337.18	-89.40	0.00	0.00	0.00	
3600.00	6.50	75.00	3580.00	93.28	348.11	-92.30	0.00	0.00	0.00	
3700.00	6.50	75.00	3679.36	96.21	359.04	-95.20	0.00	0.00	0.00	
3800.00	6.50	75.00	3778.72	99.14	369.98	-98.10	0.00	0.00	0.00	
3900.00	6.50	75.00	3878.07	102.07	380.91	-101.00	0.00	0.00	0.00	
4000.00	6.50	75.00	3977.43	105.00	391.85	-103.90	0.00	0.00	0.00	
4100.00	6.50	75.00	4076.79	107.93	402.78	-106.80	0.00	0.00	0.00	
4200.00	6.50	75.00	4176.14	110.86	413.72	-109.70	0.00	0.00	0.00	
4300.00	6.50	75.00	4275.50	113.79	424.65	-112.60	0.00	0.00	0.00	
4400.00	6.50	75.00	4374.86	116.72	435.59	-115.50	0.00	0.00	0.00	
4500.00	6.50	75.00	4474.22	119.65	446.52	-118.40	0.00	0.00	0.00	
4600.00	6.50	75.00	4573.57	122.57	457.46	-121.30	0.00	0.00	0.00	
4700.00	6.50	75.00	4672.93	125.50	468.39	-124.20	0.00	0.00	0.00	
4800.00	6.50	75.00	4772.29	128.43	479.32	-127.10	0.00	0.00	0.00	
4900.00	6.50	75.00	4871.64	131.36	490.26	-130.00	0.00	0.00	0.00	
5000.00	6.50	75.00	4971.00	134.29	501.19	-132.89	0.00	0.00	0.00	
5100.00	6.50	75.00	5070.36	137.22	512.13	-135.79	0.00	0.00	0.00	
5200.00	6.50	75.00	5169.72	140.15	523.06	-138.69	0.00	0.00	0.00	
5300.00	6.50	75.00	5269.07	143.08	534.00	-141.59	0.00	0.00	0.00	
5400.00	6.50	75.00	5368.43	146.01	544.93	-144.49	0.00	0.00	0.00	
5500.00	6.50	75.00	5467.79	148.94	555.87	-147.39	0.00	0.00	0.00	
5600.00	6.50	75.00	5567.14	151.87	566.80	-150.29	0.00	0.00	0.00	
5700.00	6.50	75.00	5666.50	154.80	577.74	-153.19	0.00	0.00	0.00	
5732.61	6.50	75.00	5698.90	155.76	581.30	-154.14	0.00	0.00	0.00	
5750.00	6.72	90.03	5716.18	156.01	583.27	-154.38	10.00	1.27	86.43	
5800.00	9.33	121.36	5765.71	153.90	589.66	-152.25	10.00	5.22	62.65	
5809.05	10.00	125.00	5774.63	153.07	590.93	-151.42	10.00	7.38	40.23	
5850.00	12.77	140.43	5814.78	147.54	596.73	-145.87	10.00	6.77	37.67	
5900.00	16.89	151.61	5863.11	136.88	603.71	-135.19	10.00	8.24	22.37	
5950.00	21.38	158.37	5910.34	122.01	610.53	-120.30	10.00	8.98	13.51	
6000.00	26.05	162.83	5956.11	103.03	617.13	-101.31	10.00	9.34	8.93	
6050.00	30.82	166.01	6000.07	80.10	623.47	-78.36	10.00	9.54	6.35	
6100.00	35.65	168.40	6041.88	53.38	629.51	-51.62	10.00	9.65	4.78	

Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC.
Field: Niobrara CONZ'83
Site: Pergamos 3-7-60 Pad
Well: 4-3-7-60
Wellpath: Original Hole

Date: 10/19/2012
Co-ordinate(NE) Reference: Well: 4-3-7-60, Grid North
Vertical (TVD) Reference: 4922'GL+17"KB 4939.0
Section (VS) Reference: Well (0.00N,0.00E,179.84Azi)
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
6150.00	40.51	170.29	6081.23	23.08	635.18	-21.31	10.00	9.73	3.77	
6200.00	45.40	171.83	6117.81	-10.56	640.45	12.35	10.00	9.78	3.09	
6250.00	50.30	173.13	6151.36	-47.30	645.28	49.11	10.00	9.81	2.61	
6300.00	55.22	174.26	6181.60	-86.86	649.64	88.67	10.00	9.84	2.26	
6350.00	60.15	175.27	6208.32	-128.93	653.48	130.75	10.00	9.86	2.00	
6400.00	65.08	176.17	6231.31	-173.19	656.79	175.02	10.00	9.87	1.82	
6449.75	70.00	177.01	6250.31	-219.07	659.51	220.91	10.00	9.88	1.68	7"
6450.00	70.02	177.01	6250.40	-219.30	659.53	221.14	10.00	9.88	1.62	
6500.00	74.97	177.80	6265.43	-266.92	661.68	268.77	10.00	9.89	1.57	
6550.00	79.91	178.55	6276.30	-315.69	663.23	317.54	10.00	9.89	1.50	
6600.00	84.86	179.28	6282.92	-365.22	664.17	367.08	10.00	9.90	1.46	
6651.96	90.00	180.02	6285.25	-417.11	664.48	418.96	10.00	9.90	1.43	
6700.00	90.00	180.02	6285.25	-465.15	664.47	467.00	0.00	0.00	0.00	
6800.00	90.00	180.02	6285.24	-565.15	664.43	567.00	0.00	0.00	0.00	
6900.00	90.00	180.02	6285.23	-665.15	664.39	667.00	0.00	0.00	0.00	
7000.00	90.00	180.02	6285.23	-765.15	664.35	767.00	0.00	0.00	0.00	
7100.00	90.00	180.02	6285.22	-865.15	664.31	867.00	0.00	0.00	0.00	
7200.00	90.00	180.02	6285.22	-965.15	664.27	967.00	0.00	0.00	0.00	
7300.00	90.00	180.02	6285.21	-1065.15	664.23	1067.00	0.00	0.00	0.00	
7400.00	90.00	180.02	6285.20	-1165.15	664.19	1167.00	0.00	0.00	0.00	
7500.00	90.00	180.02	6285.20	-1265.15	664.15	1267.00	0.00	0.00	0.00	
7600.00	90.00	180.02	6285.19	-1365.15	664.11	1367.00	0.00	0.00	0.00	
7700.00	90.00	180.02	6285.18	-1465.15	664.07	1467.00	0.00	0.00	0.00	
7800.00	90.00	180.02	6285.18	-1565.15	664.03	1567.00	0.00	0.00	0.00	
7900.00	90.00	180.02	6285.17	-1665.15	663.99	1667.00	0.00	0.00	0.00	
8000.00	90.00	180.02	6285.17	-1765.15	663.95	1767.00	0.00	0.00	0.00	
8100.00	90.00	180.02	6285.16	-1865.15	663.91	1867.00	0.00	0.00	0.00	
8200.00	90.00	180.02	6285.15	-1965.15	663.87	1967.00	0.00	0.00	0.00	
8300.00	90.00	180.02	6285.15	-2065.15	663.83	2067.00	0.00	0.00	0.00	
8400.00	90.00	180.02	6285.14	-2165.15	663.79	2167.00	0.00	0.00	0.00	
8500.00	90.00	180.02	6285.13	-2265.15	663.75	2267.00	0.00	0.00	0.00	
8600.00	90.00	180.02	6285.13	-2365.15	663.71	2366.99	0.00	0.00	0.00	
8700.00	90.00	180.02	6285.12	-2465.15	663.67	2466.99	0.00	0.00	0.00	
8800.00	90.00	180.02	6285.11	-2565.15	663.63	2566.99	0.00	0.00	0.00	
8900.00	90.00	180.02	6285.11	-2665.15	663.59	2666.99	0.00	0.00	0.00	
9000.00	90.00	180.02	6285.10	-2765.15	663.55	2766.99	0.00	0.00	0.00	
9100.00	90.00	180.02	6285.10	-2865.15	663.51	2866.99	0.00	0.00	0.00	
9200.00	90.00	180.02	6285.09	-2965.15	663.47	2966.99	0.00	0.00	0.00	
9300.00	90.00	180.02	6285.08	-3065.15	663.43	3066.99	0.00	0.00	0.00	
9400.00	90.00	180.02	6285.08	-3165.15	663.39	3166.99	0.00	0.00	0.00	
9500.00	90.00	180.02	6285.07	-3265.15	663.35	3266.99	0.00	0.00	0.00	
9600.00	90.00	180.02	6285.06	-3365.15	663.31	3366.99	0.00	0.00	0.00	
9700.00	90.00	180.02	6285.06	-3465.15	663.27	3466.99	0.00	0.00	0.00	
9800.00	90.00	180.02	6285.05	-3565.15	663.23	3566.99	0.00	0.00	0.00	
9900.00	90.00	180.02	6285.05	-3665.15	663.19	3666.99	0.00	0.00	0.00	
10000.00	90.00	180.02	6285.04	-3765.15	663.15	3766.99	0.00	0.00	0.00	
10100.00	90.00	180.02	6285.03	-3865.15	663.11	3866.99	0.00	0.00	0.00	
10200.00	90.00	180.02	6285.03	-3965.15	663.08	3966.99	0.00	0.00	0.00	
10300.00	90.00	180.02	6285.02	-4065.15	663.04	4066.99	0.00	0.00	0.00	
10400.00	90.00	180.02	6285.01	-4165.15	663.00	4166.99	0.00	0.00	0.00	
10500.00	90.00	180.02	6285.01	-4265.15	662.96	4266.99	0.00	0.00	0.00	
10600.00	90.00	180.02	6285.00	-4365.15	662.92	4366.98	0.00	0.00	0.00	
10615.99	90.00	180.02	6285.00	-4381.14	662.91	4382.97	0.00	0.00	0.00	PBHL 4-3

Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC. Field: Niobrara CONZ'83 Site: Pergamos 3-7-60 Pad Well: 4-3-7-60 Wellpath: Original Hole	Date: 10/19/2012 Co-ordinate(NE) Reference: Vertical (TVD) Reference: Section (VS) Reference: Plan:	Time: 11:12:01 Well: 4-3-7-60, Grid North 4922'GL+17"KB 4939.0 Well (0.00N,0.00E,179.84Azi) Plan #2	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

Targets

Name	Description Dip. Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<--- Latitude ---> Deg Min Sec			<--- Longitude ---> Deg Min Sec		
SL 4-3		0.00	0.00	0.00	1468499.05	3393362.50	40	36	38.855 N	104	4	59.443 W
PBHL 4-3		6285.00	-4381.14	662.91	1464117.91	3394025.41	40	35	55.463 N	104	4	51.758 W

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
1446.15	1440.00	9.625	12.250	9 5/8"
6449.75	6250.31	7.000	8.500	7"