

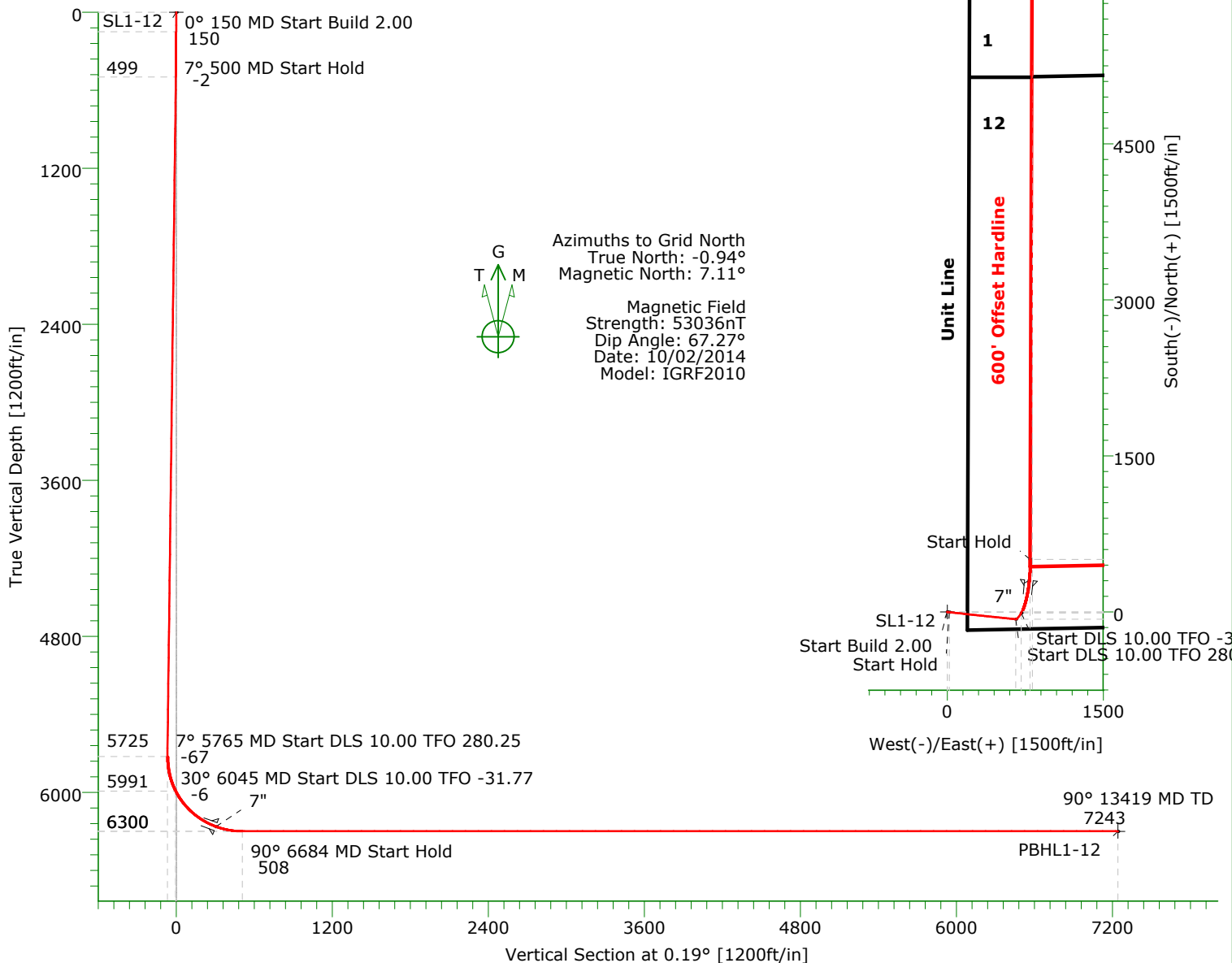


CARRIZO OIL & GAS, INC.
 Field: Niobrara CONZ'83
 Site: Sonic Star 1-12-8-60 Pad
 Well: 1-12-8-60
 Wellpath: Original Hole
 Plan: Plan #1



CASING DETAILS

No.	TVD	MD	Name	Size
1	6264.09	6476.32	7"	7.000



TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SL1-12	0.00	0.00	0.00	1490336.88	3402492.13	40°40'13.157N104°02'56.449W		Point
PBHL1-12	6300.00	7240.62	819.22	1497577.50	3403311.35	40°41'24.561N104°02'44.278W		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	150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	
3	500.00	7.00	96.00	499.13	-2.23	21.24	2.00	96.00	-2.16	
4	5765.22	7.00	96.00	5725.10	-69.30	659.39	0.00	0.00	-67.12	
5	6045.41	30.00	28.40	5990.80	-8.25	710.71	10.00	280.25	-5.89	
6	6683.98	90.00	0.19	6300.00	505.81	796.81	10.00	-31.77	508.45	
7	13418.83	90.00	0.19	6300.00	7240.62	819.22	0.00	0.00	7243.30	PBHL1-12

Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC.	Date: 09/02/2014	Time: 13:53:03	Page: 1
Field: Niobrara CONZ'83	Co-ordinate(NE) Reference: Well: 1-12-8-60, Grid North		
Site: Sonic Star 1-12-8-60 Pad	Vertical (TVD) Reference: 4998'GL+17'KB 5015.0		
Well: 1-12-8-60	Section (VS) Reference: Well (0.00N,0.00E,0.19Azi)		
Wellpath: Original Hole	Plan: Plan #1		

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: Sonic Star 1-12-8-60 Pad

Site Position:	Northing: 1490336.88 ft	Latitude: 40 40 13.157 N	
From: Map	Easting: 3402492.13 ft	Longitude: 104 2 56.449 W	
Position Uncertainty: 0.00 ft		North Reference: Grid	
Ground Level: 4998.00 ft		Grid Convergence: 0.94 deg	

Well: 1-12-8-60	Slot Name:
Well Position: +N/-S 0.00 ft	Northing: 1490336.88 ft
+E/-W 0.00 ft	Easting: 3402492.13 ft
Position Uncertainty: 0.00 ft	Latitude: 40 40 13.157 N
	Longitude: 104 2 56.449 W

Wellpath: Original Hole	Drilled From: Surface		
Current Datum: 4998'GL+17'KB	Tie-on Depth: 0.00 ft		
Magnetic Data: 10/02/2014	Above System Datum: Mean Sea Level		
Field Strength: 53036 nT	Declination: 8.05 deg		
Vertical Section: Depth From (TVD)	Mag Dip Angle: 67.27 deg		
ft	+N/-S		
	+E/-W		
	Direction		
	bearing		
0.00	0.00	0.00	0.19

Plan: Plan #1	Date Composed: 09/02/2014
Principal: No	Version: 1
	Tied-to: From Surface

Plan Section Information

MD	Incl	Azim	TVD	+N/-S	+E/-W	DLS	Build	Turn	TFO	Target
ft	deg	bearing	ft	ft	ft	deg/100ft	deg/100ft	deg/100ft	deg	
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	
500.00	7.00	96.00	499.13	-2.23	21.24	2.00	2.00	0.00	96.00	
5765.22	7.00	96.00	5725.10	-69.30	659.39	0.00	0.00	0.00	0.00	
6045.41	30.00	28.40	5990.80	-8.25	710.71	10.00	8.21	-24.13	280.25	
6683.98	90.00	0.19	6300.00	505.81	796.81	10.00	9.40	-4.42	-31.77	
13418.83	90.00	0.19	6300.00	7240.62	819.22	0.00	0.00	0.00	0.00	PBHL1-12

Survey

MD	Incl	Azim	TVD	+N/-S	+E/-W	VS	DLS	Build	Turn	Tool/Comment
ft	deg	bearing	ft	ft	ft	ft	deg/100ft	deg/100ft	deg/100ft	
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	1.00	96.00	200.00	-0.05	0.43	-0.04	2.00	2.00	0.00	
300.00	3.00	96.00	299.93	-0.41	3.90	-0.40	2.00	2.00	0.00	
400.00	5.00	96.00	399.68	-1.14	10.84	-1.10	2.00	2.00	0.00	
500.00	7.00	96.00	499.13	-2.23	21.24	-2.16	2.00	2.00	0.00	
600.00	7.00	96.00	598.38	-3.51	33.36	-3.40	0.00	0.00	0.00	
700.00	7.00	96.00	697.64	-4.78	45.48	-4.63	0.00	0.00	0.00	
800.00	7.00	96.00	796.89	-6.05	57.60	-5.86	0.00	0.00	0.00	
900.00	7.00	96.00	896.15	-7.33	69.72	-7.10	0.00	0.00	0.00	
1000.00	7.00	96.00	995.40	-8.60	81.84	-8.33	0.00	0.00	0.00	
1100.00	7.00	96.00	1094.66	-9.88	93.96	-9.56	0.00	0.00	0.00	
1200.00	7.00	96.00	1193.91	-11.15	106.08	-10.80	0.00	0.00	0.00	
1300.00	7.00	96.00	1293.17	-12.42	118.20	-12.03	0.00	0.00	0.00	
1400.00	7.00	96.00	1392.42	-13.70	130.32	-13.26	0.00	0.00	0.00	
1500.00	7.00	96.00	1491.68	-14.97	142.44	-14.50	0.00	0.00	0.00	

Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC.	Date: 09/02/2014	Time: 13:53:03	Page: 2
Field: Niobrara CONZ'83	Co-ordinate(NE) Reference: Well: 1-12-8-60, Grid North		
Site: Sonic Star 1-12-8-60 Pad	Vertical (TVD) Reference: 4998'GL+17'KB 5015.0		
Well: 1-12-8-60	Section (VS) Reference: Well (0.00N,0.00E,0.19Azi)		
Wellpath: Original Hole	Plan:	Plan #1	

Survey

MD ft	Incl deg	Azim bearing	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
1600.00	7.00	96.00	1590.93	-16.24	154.56	-15.73	0.00	0.00	0.00	
1700.00	7.00	96.00	1690.19	-17.52	166.68	-16.97	0.00	0.00	0.00	
1800.00	7.00	96.00	1789.44	-18.79	178.80	-18.20	0.00	0.00	0.00	
1900.00	7.00	96.00	1888.69	-20.07	190.92	-19.43	0.00	0.00	0.00	
2000.00	7.00	96.00	1987.95	-21.34	203.04	-20.67	0.00	0.00	0.00	
2100.00	7.00	96.00	2087.20	-22.61	215.16	-21.90	0.00	0.00	0.00	
2200.00	7.00	96.00	2186.46	-23.89	227.28	-23.13	0.00	0.00	0.00	
2300.00	7.00	96.00	2285.71	-25.16	239.40	-24.37	0.00	0.00	0.00	
2400.00	7.00	96.00	2384.97	-26.44	251.52	-25.60	0.00	0.00	0.00	
2500.00	7.00	96.00	2484.22	-27.71	263.64	-26.84	0.00	0.00	0.00	
2600.00	7.00	96.00	2583.48	-28.98	275.76	-28.07	0.00	0.00	0.00	
2700.00	7.00	96.00	2682.73	-30.26	287.88	-29.30	0.00	0.00	0.00	
2800.00	7.00	96.00	2781.99	-31.53	300.00	-30.54	0.00	0.00	0.00	
2900.00	7.00	96.00	2881.24	-32.81	312.12	-31.77	0.00	0.00	0.00	
3000.00	7.00	96.00	2980.50	-34.08	324.24	-33.00	0.00	0.00	0.00	
3100.00	7.00	96.00	3079.75	-35.35	336.36	-34.24	0.00	0.00	0.00	
3200.00	7.00	96.00	3179.00	-36.63	348.48	-35.47	0.00	0.00	0.00	
3300.00	7.00	96.00	3278.26	-37.90	360.60	-36.70	0.00	0.00	0.00	
3400.00	7.00	96.00	3377.51	-39.17	372.72	-37.94	0.00	0.00	0.00	
3500.00	7.00	96.00	3476.77	-40.45	384.84	-39.17	0.00	0.00	0.00	
3600.00	7.00	96.00	3576.02	-41.72	396.96	-40.41	0.00	0.00	0.00	
3700.00	7.00	96.00	3675.28	-43.00	409.08	-41.64	0.00	0.00	0.00	
3800.00	7.00	96.00	3774.53	-44.27	421.20	-42.87	0.00	0.00	0.00	
3900.00	7.00	96.00	3873.79	-45.54	433.32	-44.11	0.00	0.00	0.00	
4000.00	7.00	96.00	3973.04	-46.82	445.44	-45.34	0.00	0.00	0.00	
4100.00	7.00	96.00	4072.30	-48.09	457.56	-46.57	0.00	0.00	0.00	
4200.00	7.00	96.00	4171.55	-49.37	469.68	-47.81	0.00	0.00	0.00	
4300.00	7.00	96.00	4270.81	-50.64	481.80	-49.04	0.00	0.00	0.00	
4400.00	7.00	96.00	4370.06	-51.91	493.92	-50.28	0.00	0.00	0.00	
4500.00	7.00	96.00	4469.31	-53.19	506.04	-51.51	0.00	0.00	0.00	
4600.00	7.00	96.00	4568.57	-54.46	518.16	-52.74	0.00	0.00	0.00	
4700.00	7.00	96.00	4667.82	-55.74	530.28	-53.98	0.00	0.00	0.00	
4800.00	7.00	96.00	4767.08	-57.01	542.40	-55.21	0.00	0.00	0.00	
4900.00	7.00	96.00	4866.33	-58.28	554.52	-56.44	0.00	0.00	0.00	
5000.00	7.00	96.00	4965.59	-59.56	566.64	-57.68	0.00	0.00	0.00	
5100.00	7.00	96.00	5064.84	-60.83	578.76	-58.91	0.00	0.00	0.00	
5200.00	7.00	96.00	5164.10	-62.10	590.88	-60.14	0.00	0.00	0.00	
5300.00	7.00	96.00	5263.35	-63.38	603.01	-61.38	0.00	0.00	0.00	
5400.00	7.00	96.00	5362.61	-64.65	615.13	-62.61	0.00	0.00	0.00	
5500.00	7.00	96.00	5461.86	-65.93	627.25	-63.85	0.00	0.00	0.00	
5600.00	7.00	96.00	5561.12	-67.20	639.37	-65.08	0.00	0.00	0.00	
5700.00	7.00	96.00	5660.37	-68.47	651.49	-66.31	0.00	0.00	0.00	
5765.22	7.00	96.00	5725.10	-69.30	659.39	-67.12	0.00	0.00	0.00	
5800.00	8.35	71.72	5759.58	-68.73	663.90	-66.53	10.00	3.88	-69.80	
5850.00	11.90	51.29	5808.81	-64.37	671.37	-62.14	10.00	7.11	-40.86	
5900.00	16.23	40.84	5857.31	-55.85	679.97	-53.60	10.00	8.65	-20.90	
5950.00	20.85	34.81	5904.70	-43.26	689.63	-40.97	10.00	9.25	-12.06	
6000.00	25.61	30.92	5950.64	-26.67	700.27	-24.34	10.00	9.52	-7.79	
6045.41	30.00	28.40	5990.80	-8.25	710.71	-5.89	10.00	9.66	-5.54	
6050.00	30.39	27.92	5994.76	-6.22	711.80	-3.86	10.00	8.52	-10.41	
6100.00	34.75	23.36	6036.90	18.06	723.38	20.46	10.00	8.72	-9.13	
6150.00	39.24	19.71	6076.83	46.04	734.37	48.48	10.00	8.99	-7.30	
6200.00	43.83	16.71	6114.25	77.54	744.69	80.00	10.00	9.18	-6.00	

Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC.	Date: 09/02/2014	Time: 13:53:03	Page: 3
Field: Niobrara CONZ'83	Co-ordinate(NE) Reference: Well: 1-12-8-60, Grid North		
Site: Sonic Star 1-12-8-60 Pad	Vertical (TVD) Reference: 4998'GL+17'KB 5015.0		
Well: 1-12-8-60	Section (VS) Reference: Well (0.00N,0.00E,0.19Azi)		
Wellpath: Original Hole	Plan: Plan #1		

Survey

MD ft	Incl deg	Azim bearing	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
6250.00	48.48	14.17	6148.87	112.29	754.26	114.79	10.00	9.31	-5.07	
6300.00	53.19	11.98	6180.44	150.04	763.00	152.57	10.00	9.40	-4.39	
6350.00	57.92	10.04	6208.72	190.51	770.85	193.06	10.00	9.48	-3.88	
6400.00	62.69	8.29	6233.48	233.37	777.75	235.95	10.00	9.53	-3.49	
6450.00	67.47	6.69	6254.54	278.32	783.65	280.92	10.00	9.57	-3.20	
6476.32	70.00	5.89	6264.09	302.70	786.33	305.30	10.00	9.59	-3.03	7"
6500.00	72.27	5.20	6271.74	325.00	788.50	327.61	10.00	9.61	-2.94	
6550.00	77.08	3.78	6284.95	373.06	792.26	375.68	10.00	9.62	-2.83	
6600.00	81.90	2.42	6294.07	422.13	794.91	424.77	10.00	9.63	-2.73	
6650.00	86.72	1.09	6299.02	471.85	796.43	474.49	10.00	9.64	-2.66	
6683.98	90.00	0.19	6300.00	505.81	796.81	508.45	10.00	9.65	-2.64	
6700.00	90.00	0.19	6300.00	521.83	796.86	524.47	0.00	0.00	0.00	
6800.00	90.00	0.19	6300.00	621.83	797.19	624.47	0.00	0.00	0.00	
6900.00	90.00	0.19	6300.00	721.83	797.53	724.47	0.00	0.00	0.00	
7000.00	90.00	0.19	6300.00	821.83	797.86	824.47	0.00	0.00	0.00	
7100.00	90.00	0.19	6300.00	921.82	798.19	924.47	0.00	0.00	0.00	
7200.00	90.00	0.19	6300.00	1021.82	798.52	1024.47	0.00	0.00	0.00	
7300.00	90.00	0.19	6300.00	1121.82	798.86	1124.47	0.00	0.00	0.00	
7400.00	90.00	0.19	6300.00	1221.82	799.19	1224.47	0.00	0.00	0.00	
7500.00	90.00	0.19	6300.00	1321.82	799.52	1324.47	0.00	0.00	0.00	
7600.00	90.00	0.19	6300.00	1421.82	799.86	1424.47	0.00	0.00	0.00	
7700.00	90.00	0.19	6300.00	1521.82	800.19	1524.47	0.00	0.00	0.00	
7800.00	90.00	0.19	6300.00	1621.82	800.52	1624.47	0.00	0.00	0.00	
7900.00	90.00	0.19	6300.00	1721.82	800.85	1724.47	0.00	0.00	0.00	
8000.00	90.00	0.19	6300.00	1821.82	801.19	1824.47	0.00	0.00	0.00	
8100.00	90.00	0.19	6300.00	1921.82	801.52	1924.47	0.00	0.00	0.00	
8200.00	90.00	0.19	6300.00	2021.82	801.85	2024.47	0.00	0.00	0.00	
8300.00	90.00	0.19	6300.00	2121.82	802.18	2124.47	0.00	0.00	0.00	
8400.00	90.00	0.19	6300.00	2221.82	802.52	2224.47	0.00	0.00	0.00	
8500.00	90.00	0.19	6300.00	2321.82	802.85	2324.47	0.00	0.00	0.00	
8600.00	90.00	0.19	6300.00	2421.82	803.18	2424.47	0.00	0.00	0.00	
8700.00	90.00	0.19	6300.00	2521.82	803.52	2524.47	0.00	0.00	0.00	
8800.00	90.00	0.19	6300.00	2621.82	803.85	2624.47	0.00	0.00	0.00	
8900.00	90.00	0.19	6300.00	2721.81	804.18	2724.47	0.00	0.00	0.00	
9000.00	90.00	0.19	6300.00	2821.81	804.51	2824.47	0.00	0.00	0.00	
9100.00	90.00	0.19	6300.00	2921.81	804.85	2924.47	0.00	0.00	0.00	
9200.00	90.00	0.19	6300.00	3021.81	805.18	3024.47	0.00	0.00	0.00	
9300.00	90.00	0.19	6300.00	3121.81	805.51	3124.47	0.00	0.00	0.00	
9400.00	90.00	0.19	6300.00	3221.81	805.85	3224.47	0.00	0.00	0.00	
9500.00	90.00	0.19	6300.00	3321.81	806.18	3324.47	0.00	0.00	0.00	
9600.00	90.00	0.19	6300.00	3421.81	806.51	3424.47	0.00	0.00	0.00	
9700.00	90.00	0.19	6300.00	3521.81	806.84	3524.47	0.00	0.00	0.00	
9800.00	90.00	0.19	6300.00	3621.81	807.18	3624.47	0.00	0.00	0.00	
9900.00	90.00	0.19	6300.00	3721.81	807.51	3724.47	0.00	0.00	0.00	
10000.00	90.00	0.19	6300.00	3821.81	807.84	3824.47	0.00	0.00	0.00	
10100.00	90.00	0.19	6300.00	3921.81	808.17	3924.47	0.00	0.00	0.00	
10200.00	90.00	0.19	6300.00	4021.81	808.51	4024.47	0.00	0.00	0.00	
10300.00	90.00	0.19	6300.00	4121.81	808.84	4124.47	0.00	0.00	0.00	
10400.00	90.00	0.19	6300.00	4221.81	809.17	4224.47	0.00	0.00	0.00	
10500.00	90.00	0.19	6300.00	4321.81	809.51	4324.47	0.00	0.00	0.00	
10600.00	90.00	0.19	6300.00	4421.81	809.84	4424.47	0.00	0.00	0.00	
10700.00	90.00	0.19	6300.00	4521.80	810.17	4524.47	0.00	0.00	0.00	
10800.00	90.00	0.19	6300.00	4621.80	810.50	4624.47	0.00	0.00	0.00	

Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC.
Field: Niobrara CONZ'83
Site: Sonic Star 1-12-8-60 Pad
Well: 1-12-8-60
Wellpath: Original Hole

Date: 09/02/2014
Co-ordinate(NE) Reference: Well: 1-12-8-60, Grid North
Vertical (TVD) Reference: 4998'GL+17'KB 5015.0
Section (VS) Reference: Well (0.00N,0.00E,0.19Azi)
Plan: Plan #1

Page: 4

Survey

MD ft	Incl deg	Azim bearing	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
10900.00	90.00	0.19	6300.00	4721.80	810.84	4724.47	0.00	0.00	0.00	
11000.00	90.00	0.19	6300.00	4821.80	811.17	4824.47	0.00	0.00	0.00	
11100.00	90.00	0.19	6300.00	4921.80	811.50	4924.47	0.00	0.00	0.00	
11200.00	90.00	0.19	6300.00	5021.80	811.83	5024.47	0.00	0.00	0.00	
11300.00	90.00	0.19	6300.00	5121.80	812.17	5124.47	0.00	0.00	0.00	
11400.00	90.00	0.19	6300.00	5221.80	812.50	5224.47	0.00	0.00	0.00	
11500.00	90.00	0.19	6300.00	5321.80	812.83	5324.47	0.00	0.00	0.00	
11600.00	90.00	0.19	6300.00	5421.80	813.17	5424.47	0.00	0.00	0.00	
11700.00	90.00	0.19	6300.00	5521.80	813.50	5524.47	0.00	0.00	0.00	
11800.00	90.00	0.19	6300.00	5621.80	813.83	5624.47	0.00	0.00	0.00	
11900.00	90.00	0.19	6300.00	5721.80	814.16	5724.47	0.00	0.00	0.00	
12000.00	90.00	0.19	6300.00	5821.80	814.50	5824.47	0.00	0.00	0.00	
12100.00	90.00	0.19	6300.00	5921.80	814.83	5924.47	0.00	0.00	0.00	
12200.00	90.00	0.19	6300.00	6021.80	815.16	6024.47	0.00	0.00	0.00	
12300.00	90.00	0.19	6300.00	6121.80	815.49	6124.47	0.00	0.00	0.00	
12400.00	90.00	0.19	6300.00	6221.80	815.83	6224.47	0.00	0.00	0.00	
12500.00	90.00	0.19	6300.00	6321.80	816.16	6324.47	0.00	0.00	0.00	
12600.00	90.00	0.19	6300.00	6421.79	816.49	6424.47	0.00	0.00	0.00	
12700.00	90.00	0.19	6300.00	6521.79	816.83	6524.47	0.00	0.00	0.00	
12800.00	90.00	0.19	6300.00	6621.79	817.16	6624.47	0.00	0.00	0.00	
12900.00	90.00	0.19	6300.00	6721.79	817.49	6724.47	0.00	0.00	0.00	
13000.00	90.00	0.19	6300.00	6821.79	817.82	6824.47	0.00	0.00	0.00	
13100.00	90.00	0.19	6300.00	6921.79	818.16	6924.47	0.00	0.00	0.00	
13200.00	90.00	0.19	6300.00	7021.79	818.49	7024.47	0.00	0.00	0.00	
13300.00	90.00	0.19	6300.00	7121.79	818.82	7124.47	0.00	0.00	0.00	
13400.00	90.00	0.19	6300.00	7221.79	819.15	7224.47	0.00	0.00	0.00	
13418.83	90.00	0.19	6300.00	7240.62	819.22	7243.30	0.00	0.00	0.00	PBHL1-12

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		
SL1-12		0.00	0.00	0.00	1490336.88	3402492.13	40	40	13.157	N	104	2	56.449	W
PBHL1-12		6300.00	7240.62	819.22	1497577.50	3403311.35	40	41	24.561	N	104	2	44.278	W

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
6476.32	6264.09	7.000	8.750	7"