

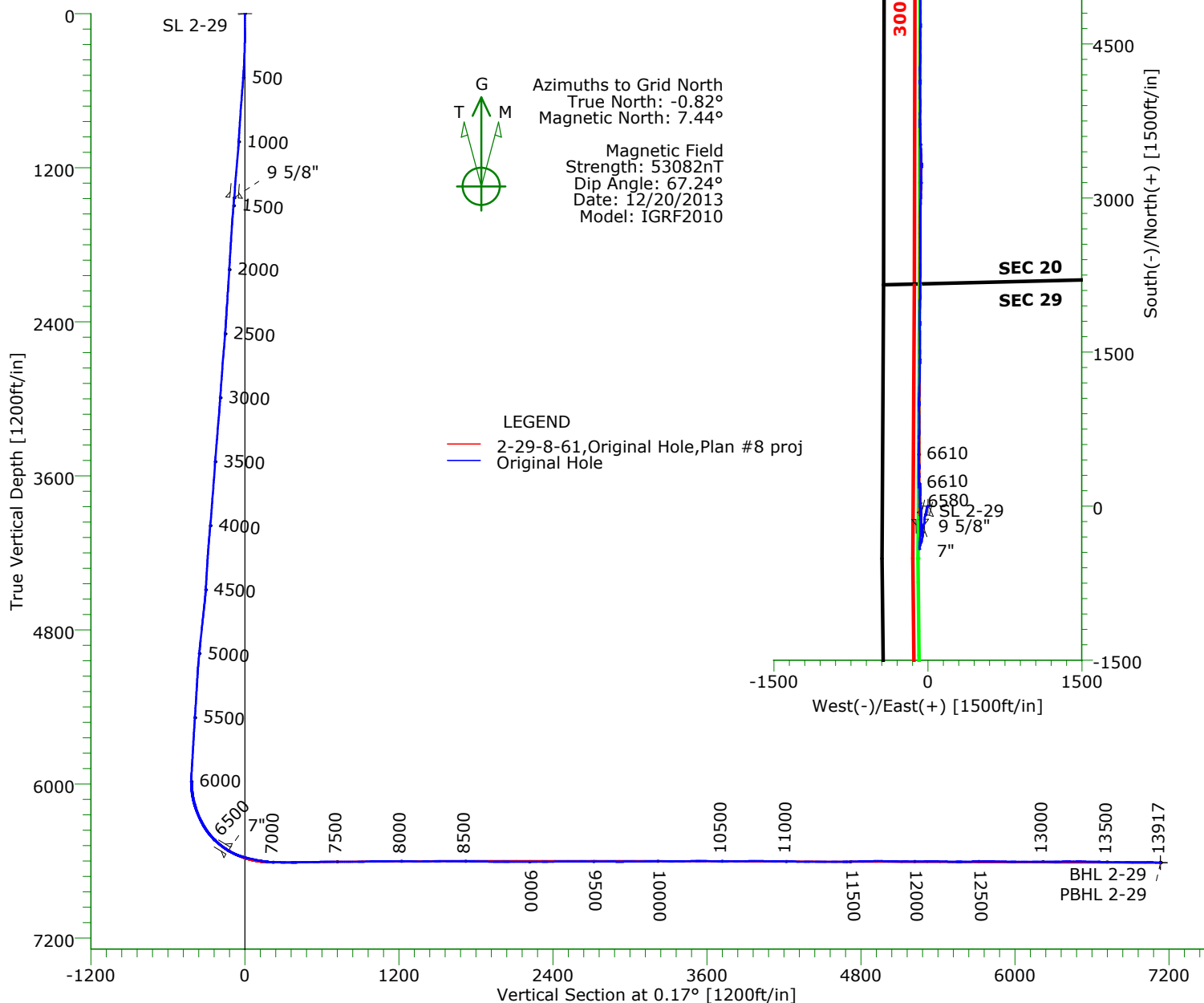


CARRIZO OIL & GAS, INC.
Field: Niobrara CONZ'83
Site: Gaffney 2-29-8-61 Pad
Well: 2-29-8-61
Wellpath: Original Hole



CASING DETAILS

No.	TVD	MD	Name	Size
1	1434.79	1438.00	9 5/8"	9.625
2	6520.16	6637.00	7"	7.000



TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SL 2-29	0.00	0.00	0.00	1476226.52	3350181.47	40°38'01.649N104°14'17.855W		Point
BHL 2-29	6612.01	7133.78	-87.91	1483360.30	3350093.56	40°39'12.146N104°14'17.679W		Point
PBHL 2-29	6615.00	7134.63	-71.72	1483361.15	3350109.75	40°39'12.152N104°14'17.468W		Point

Wellpath: (2-29-8-61/Original Hole)

Created By: Tony LoRicca

Date: 01/06/2014

PRECISION DIRECTIONAL SERVICES, INC.

713.435.6250

Precision Directional Services, Inc.

Survey Report

Company: CARRIZO OIL & GAS, INC. Field: Niobrara CONZ'83 Site: Gaffney 2-29-8-61 Pad Well: 2-29-8-61 Wellpath: Original Hole	Date: 01/06/2014 Co-ordinate(NE) Reference: Well: 2-29-8-61, Grid North Vertical (TVD) Reference: 4991'GL+17'KB 5008.0 Section (VS) Reference: Well (0.00N,0.00E,0.17Azi) Survey Calculation Method: Minimum Curvature	Time: 11:53:55 Page: 1 Db: Adapti
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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
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Site: Gaffney 2-29-8-61 Pad			
Weld County, CO			
Site Position:	Northing: 1476226.52 ft	Latitude: 40 38 1.649 N	
From: Map	Easting: 3350181.47 ft	Longitude: 104 14 17.855 W	
Position Uncertainty: 0.00 ft		North Reference: Grid	
Ground Level: 4983.00 ft		Grid Convergence: 0.82 deg	

Well: 2-29-8-61 2164FNL,443'FWL Well Position: +N/-S 0.00 ft +E/-W 0.00 ft Position Uncertainty: 0.00 ft	Slot Name: 2-29 Latitude: 40 38 1.649 N Longitude: 104 14 17.855 W
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Wellpath: Original Hole Current Datum: 4991'GL+17'KB Magnetic Data: 12/20/2013 Field Strength: 53082 nT Vertical Section: Depth From (TVD) ft	Height 5008.00 ft	Drilled From: Surface Tie-on Depth: 0.00 ft Above System Datum: Mean Sea Level Declination: 8.26 deg Mag Dip Angle: 67.24 deg +E/-W ft Direction deg
0.00	0.00	0.17

Survey Program for Definitive Wellpath			
Date: 01/06/2014	Validated: No	Version: 5	
Actual From ft	To ft	Survey	Toolcode Tool Name
112.00	13859.00	Survey #1 (112.00-13859.00)	MWD Std MWD
13917.00	13917.00	Survey #2 (13917.00-13917.00)	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
112.00	0.60	318.20	112.00	0.44	-0.39	0.44	0.54	0.54	0.00	MWD
142.00	0.80	293.10	142.00	0.64	-0.69	0.63	1.20	0.67	-83.67	MWD
235.00	1.90	225.40	234.97	-0.19	-2.38	-0.20	1.89	1.18	-72.80	MWD
327.00	2.60	224.90	326.90	-2.74	-4.94	-2.76	0.76	0.76	-0.54	MWD
418.00	3.40	206.10	417.78	-6.63	-7.59	-6.65	1.38	0.88	-20.66	MWD
510.00	4.60	187.60	509.56	-12.73	-9.27	-12.76	1.90	1.30	-20.11	MWD
601.00	4.70	189.90	600.26	-20.02	-10.40	-20.05	0.23	0.11	2.53	MWD
692.00	4.30	188.30	690.98	-27.07	-11.53	-27.11	0.46	-0.44	-1.76	MWD
784.00	4.00	188.70	782.73	-33.66	-12.51	-33.69	0.33	-0.33	0.43	MWD
875.00	3.80	193.40	873.52	-39.73	-13.69	-39.77	0.41	-0.22	5.16	MWD
966.00	3.40	191.10	964.34	-45.31	-14.91	-45.35	0.47	-0.44	-2.53	MWD
1057.00	4.80	192.50	1055.11	-51.67	-16.26	-51.72	1.54	1.54	1.54	MWD
1148.00	4.80	193.20	1145.79	-59.10	-17.95	-59.15	0.06	0.00	0.77	MWD
1239.00	4.90	193.10	1236.46	-66.59	-19.70	-66.65	0.11	0.11	-0.11	MWD
1332.00	4.60	191.00	1329.14	-74.12	-21.31	-74.18	0.37	-0.32	-2.26	MWD
1380.00	4.70	192.50	1376.99	-77.93	-22.10	-77.99	0.33	0.21	3.12	MWD
1427.00	4.70	193.90	1423.83	-81.68	-22.98	-81.74	0.24	0.00	2.98	MWD
1497.00	5.10	193.60	1493.57	-87.49	-24.40	-87.56	0.57	0.57	-0.43	MWD
1582.00	4.70	194.80	1578.26	-94.52	-26.18	-94.60	0.49	-0.47	1.41	MWD
1666.00	3.80	195.50	1662.03	-100.53	-27.81	-100.62	1.07	-1.07	0.83	MWD
1752.00	3.70	197.30	1747.85	-105.93	-29.39	-106.02	0.18	-0.12	2.09	MWD

Precision Directional Services, Inc.

Survey Report

Company: CARRIZO OIL & GAS, INC. Field: Niobrara CONZ'83 Site: Gaffney 2-29-8-61 Pad Well: 2-29-8-61 Wellpath: Original Hole	Date: 01/06/2014 Time: 11:53:55 Page: 2 Co-ordinate(NE) Reference: Well: 2-29-8-61, Grid North Vertical (TVD) Reference: 4991'GL+17"KB 5008.0 Section (VS) Reference: Well (0.00N,0.00E,0.17Azi) Survey Calculation Method: Minimum Curvature Db: 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
1837.00	3.40	183.90	1832.68	-111.06	-30.38	-111.15	1.04	-0.35	-15.76	MWD
1922.00	3.60	183.40	1917.53	-116.24	-30.71	-116.33	0.24	0.24	-0.59	MWD
2007.00	3.50	177.40	2002.36	-121.50	-30.75	-121.59	0.45	-0.12	-7.06	MWD
2093.00	3.50	172.10	2088.20	-126.72	-30.27	-126.81	0.38	0.00	-6.16	MWD
2178.00	3.80	185.20	2173.03	-132.09	-30.17	-132.18	1.04	0.35	15.41	MWD
2263.00	4.00	182.90	2257.84	-137.86	-30.57	-137.95	0.30	0.24	-2.71	MWD
2348.00	3.40	176.90	2342.66	-143.34	-30.59	-143.43	0.84	-0.71	-7.06	MWD
2433.00	3.80	191.80	2427.49	-148.61	-31.03	-148.70	1.19	0.47	17.53	MWD
2518.00	4.70	192.90	2512.26	-154.76	-32.38	-154.86	1.06	1.06	1.29	MWD
2603.00	4.90	192.40	2596.96	-161.70	-33.94	-161.80	0.24	0.24	-0.59	MWD
2688.00	4.70	196.80	2681.66	-168.58	-35.72	-168.69	0.49	-0.24	5.18	MWD
2773.00	4.60	197.80	2766.38	-175.16	-37.77	-175.27	0.15	-0.12	1.18	MWD
2858.00	4.40	197.30	2851.12	-181.52	-39.78	-181.64	0.24	-0.24	-0.59	MWD
2943.00	4.30	197.10	2935.87	-187.68	-41.69	-187.80	0.12	-0.12	-0.24	MWD
3028.00	4.00	199.60	3020.65	-193.52	-43.62	-193.65	0.41	-0.35	2.94	MWD
3113.00	4.60	194.50	3105.41	-199.61	-45.47	-199.75	0.84	0.71	-6.00	MWD
3198.00	4.80	191.30	3190.13	-206.40	-47.02	-206.54	0.39	0.24	-3.76	MWD
3284.00	4.70	192.70	3275.83	-213.36	-48.50	-213.51	0.18	-0.12	1.63	MWD
3369.00	4.80	186.00	3360.54	-220.30	-49.64	-220.44	0.66	0.12	-7.88	MWD
3454.00	4.80	180.20	3445.24	-227.39	-50.02	-227.54	0.57	0.00	-6.82	MWD
3537.00	4.00	180.60	3528.00	-233.76	-50.06	-233.91	0.96	-0.96	0.48	MWD
3622.00	4.00	179.20	3612.79	-239.69	-50.05	-239.83	0.11	0.00	-1.65	MWD
3707.00	4.20	175.80	3697.57	-245.76	-49.78	-245.90	0.37	0.24	-4.00	MWD
3791.00	4.30	177.10	3781.34	-251.97	-49.40	-252.11	0.17	0.12	1.55	MWD
3877.00	4.70	175.00	3867.08	-258.70	-48.93	-258.84	0.50	0.47	-2.44	MWD
3962.00	4.90	174.30	3951.78	-265.78	-48.26	-265.92	0.25	0.24	-0.82	MWD
4047.00	5.20	180.40	4036.45	-273.24	-47.93	-273.39	0.72	0.35	7.18	MWD
4132.00	4.50	185.30	4121.14	-280.42	-48.27	-280.56	0.96	-0.82	5.76	MWD
4216.00	4.20	194.30	4204.90	-286.68	-49.33	-286.82	0.89	-0.36	10.71	MWD
4300.00	3.60	184.10	4288.71	-292.29	-50.28	-292.44	1.09	-0.71	-12.14	MWD
4385.00	3.30	188.80	4373.56	-297.37	-50.84	-297.52	0.48	-0.35	5.53	MWD
4470.00	3.50	199.00	4458.41	-302.24	-52.06	-302.39	0.75	0.24	12.00	MWD
4555.00	5.50	199.00	4543.14	-308.55	-54.23	-308.71	2.35	2.35	0.00	MWD
4641.00	6.60	190.10	4628.66	-317.31	-56.44	-317.47	1.68	1.28	-10.35	MWD
4725.00	6.30	183.20	4712.13	-326.66	-57.55	-326.83	0.99	-0.36	-8.21	MWD
4811.00	5.90	186.90	4797.64	-335.76	-58.34	-335.93	0.65	-0.47	4.30	MWD
4896.00	5.90	189.40	4882.19	-344.41	-59.58	-344.58	0.30	0.00	2.94	MWD
4981.00	6.00	203.80	4966.74	-352.78	-62.08	-352.97	1.76	0.12	16.94	MWD
5066.00	5.50	202.70	5051.31	-360.61	-65.45	-360.80	0.60	-0.59	-1.29	MWD
5151.00	4.10	204.10	5136.01	-367.14	-68.26	-367.34	1.65	-1.65	1.65	MWD
5236.00	3.30	199.20	5220.84	-372.22	-70.31	-372.43	1.01	-0.94	-5.76	MWD
5321.00	4.00	200.80	5305.66	-377.31	-72.17	-377.52	0.83	0.82	1.88	MWD
5406.00	3.60	199.40	5390.48	-382.59	-74.10	-382.81	0.48	-0.47	-1.65	MWD
5491.00	3.90	196.20	5475.29	-387.89	-75.80	-388.11	0.43	0.35	-3.76	MWD
5576.00	3.50	193.80	5560.12	-393.18	-77.22	-393.41	0.50	-0.47	-2.82	MWD
5662.00	3.90	199.00	5645.94	-398.50	-78.80	-398.73	0.61	0.47	6.05	MWD
5747.00	3.20	193.80	5730.77	-403.53	-80.31	-403.77	0.91	-0.82	-6.12	MWD
5830.00	3.70	189.00	5813.62	-408.43	-81.28	-408.67	0.70	0.60	-5.78	MWD
5915.00	3.40	176.40	5898.46	-413.65	-81.55	-413.89	0.98	-0.35	-14.82	MWD
5932.00	3.30	172.60	5915.43	-414.64	-81.46	-414.88	1.43	-0.59	-22.35	MWD
6001.00	1.10	170.20	5984.38	-417.26	-81.09	-417.50	3.19	-3.19	-3.48	MWD
6044.00	3.30	352.70	6027.36	-416.44	-81.17	-416.68	10.23	5.12	-412.79	MWD
6086.00	7.60	358.70	6069.16	-412.47	-81.39	-412.71	10.31	10.24	14.29	MWD

Precision Directional Services, Inc.

Survey Report

Company: CARRIZO OIL & GAS, INC. Field: Niobrara CONZ'83 Site: Gaffney 2-29-8-61 Pad Well: 2-29-8-61 Wellpath: Original Hole	Date: 01/06/2014 Time: 11:53:55 Co-ordinate(NE) Reference: Well: 2-29-8-61, Grid North Vertical (TVD) Reference: 4991'GL+17'KB 5008.0 Section (VS) Reference: Well (0.00N,0.00E,0.17Azi) Survey Calculation Method: Minimum Curvature Db: 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
6129.00	11.50	4.10	6111.56	-405.34	-81.15	-405.58	9.30	9.07	12.56	MWD
6171.00	15.00	5.00	6152.43	-395.75	-80.38	-395.99	8.35	8.33	2.14	MWD
6213.00	19.20	4.60	6192.57	-383.45	-79.35	-383.68	10.00	10.00	-0.95	MWD
6255.00	22.20	1.80	6231.85	-368.63	-78.54	-368.86	7.52	7.14	-6.67	MWD
6298.00	24.60	3.90	6271.31	-351.58	-77.68	-351.81	5.91	5.58	4.88	MWD
6341.00	28.10	3.00	6309.84	-332.53	-76.54	-332.75	8.19	8.14	-2.09	MWD
6383.00	32.80	2.70	6346.04	-311.28	-75.49	-311.50	11.20	11.19	-0.71	MWD
6426.00	37.40	1.30	6381.21	-286.57	-74.64	-286.79	10.86	10.70	-3.26	MWD
6469.00	42.00	1.60	6414.28	-259.12	-73.94	-259.34	10.71	10.70	0.70	MWD
6512.00	47.10	1.30	6444.92	-228.98	-73.18	-229.19	11.87	11.86	-0.70	MWD
6554.00	51.10	0.90	6472.41	-197.24	-72.58	-197.46	9.55	9.52	-0.95	MWD
6591.00	54.30	359.70	6494.83	-167.82	-72.43	-168.03	9.02	8.65	-3.24	MWD
6672.00	62.30	358.50	6537.36	-98.97	-73.54	-99.18	9.96	9.88	-1.48	MWD
6718.00	69.50	359.40	6556.13	-57.01	-74.30	-57.23	15.75	15.65	1.96	MWD
6760.00	75.30	358.70	6568.82	-17.00	-74.97	-17.22	13.90	13.81	-1.67	MWD
6801.00	77.60	358.50	6578.43	22.84	-75.94	22.62	5.63	5.61	-0.49	MWD
6844.00	78.10	358.30	6587.48	64.86	-77.12	64.64	1.25	1.16	-0.47	MWD
6886.00	77.90	357.40	6596.21	105.92	-78.66	105.68	2.15	-0.48	-2.14	MWD
6929.00	81.10	356.40	6604.05	148.13	-80.95	147.89	7.79	7.44	-2.33	MWD
6972.00	86.40	357.20	6608.73	190.79	-83.33	190.54	12.46	12.33	1.86	MWD
7014.00	88.50	357.90	6610.60	232.71	-85.12	232.46	5.27	5.00	1.67	MWD
7057.00	88.20	357.40	6611.83	275.65	-86.89	275.40	1.36	-0.70	-1.16	MWD
7099.00	89.70	358.70	6612.60	317.62	-88.32	317.36	4.73	3.57	3.10	MWD
7142.00	90.20	358.50	6612.64	360.61	-89.37	360.34	1.25	1.16	-0.47	MWD
7185.00	91.00	1.10	6612.19	403.60	-89.52	403.33	6.33	1.86	6.05	MWD
7227.00	91.20	1.10	6611.38	445.59	-88.71	445.32	0.48	0.48	0.00	MWD
7270.00	91.50	0.80	6610.37	488.57	-88.00	488.31	0.99	0.70	-0.70	MWD
7312.00	91.50	0.40	6609.27	530.55	-87.56	530.29	0.95	0.00	-0.95	MWD
7355.00	91.20	1.30	6608.26	573.53	-86.92	573.27	2.21	-0.70	2.09	MWD
7398.00	91.50	0.80	6607.25	616.51	-86.13	616.26	1.36	0.70	-1.16	MWD
7440.00	90.50	0.80	6606.51	658.50	-85.55	658.25	2.38	-2.38	0.00	MWD
7482.00	90.00	1.50	6606.33	700.49	-84.70	700.24	2.05	-1.19	1.67	MWD
7528.00	90.00	0.10	6606.33	746.49	-84.06	746.24	3.04	0.00	-3.04	MWD
7574.00	89.80	359.90	6606.41	792.49	-84.06	792.24	0.61	-0.43	-0.43	MWD
7620.00	90.00	359.70	6606.49	838.49	-84.22	838.23	0.61	0.43	-0.43	MWD
7665.00	90.00	359.00	6606.49	883.49	-84.73	883.23	1.56	0.00	-1.56	MWD
7711.00	91.20	359.00	6606.01	929.48	-85.53	929.22	2.61	2.61	0.00	MWD
7757.00	91.10	359.20	6605.08	975.46	-86.26	975.20	0.49	-0.22	0.43	MWD
7803.00	91.30	1.50	6604.12	1021.45	-85.98	1021.19	5.02	0.43	5.00	MWD
7848.00	90.90	1.10	6603.26	1066.43	-84.96	1066.17	1.26	-0.89	-0.89	MWD
7894.00	89.70	1.60	6603.02	1112.41	-83.87	1112.16	2.83	-2.61	1.09	MWD
7940.00	90.00	1.80	6603.14	1158.39	-82.51	1158.14	0.78	0.65	0.43	MWD
7986.00	89.90	1.80	6603.18	1204.37	-81.06	1204.12	0.22	-0.22	0.00	MWD
8031.00	89.60	1.10	6603.37	1249.35	-79.92	1249.11	1.69	-0.67	-1.56	MWD
8077.00	89.30	1.10	6603.82	1295.34	-79.04	1295.10	0.65	-0.65	0.00	MWD
8123.00	89.20	0.60	6604.42	1341.33	-78.36	1341.09	1.11	-0.22	-1.09	MWD
8169.00	89.20	0.60	6605.06	1387.33	-77.88	1387.09	0.00	0.00	0.00	MWD
8214.00	91.40	0.90	6604.82	1432.32	-77.29	1432.08	4.93	4.89	0.67	MWD
8260.00	91.40	0.60	6603.70	1478.30	-76.69	1478.07	0.65	0.00	-0.65	MWD
8306.00	90.00	0.20	6603.14	1524.30	-76.36	1524.06	3.17	-3.04	-0.87	MWD
8352.00	90.00	0.10	6603.14	1570.30	-76.24	1570.06	0.22	0.00	-0.22	MWD
8397.00	89.90	359.70	6603.18	1615.30	-76.32	1615.06	0.92	-0.22	-0.89	MWD
8443.00	89.80	359.40	6603.30	1661.29	-76.68	1661.06	0.69	-0.22	-0.65	MWD
8489.00	89.90	358.80	6603.42	1707.29	-77.41	1707.05	1.32	0.22	-1.30	MWD

Precision Directional Services, Inc.

Survey Report

Company: CARRIZO OIL & GAS, INC. Field: Niobrara CONZ'83 Site: Gaffney 2-29-8-61 Pad Well: 2-29-8-61 Wellpath: Original Hole	Date: 01/06/2014 Time: 11:53:55 Co-ordinate(NE) Reference: Well: 2-29-8-61, Grid North Vertical (TVD) Reference: 4991'GL+17'KB 5008.0 Section (VS) Reference: Well (0.00N,0.00E,0.17Azi) Survey Calculation Method: Minimum Curvature Db: 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
8535.00	89.60	358.50	6603.62	1753.27	-78.49	1753.03	0.92	-0.65	-0.65	MWD
8580.00	89.10	0.60	6604.13	1798.27	-78.84	1798.03	4.80	-1.11	4.67	MWD
8626.00	88.70	0.40	6605.01	1844.26	-78.44	1844.02	0.97	-0.87	-0.43	MWD
8672.00	88.90	0.90	6605.98	1890.24	-77.92	1890.00	1.17	0.43	1.09	MWD
8718.00	89.00	1.10	6606.82	1936.23	-77.12	1935.99	0.49	0.22	0.43	MWD
8760.00	89.90	2.00	6607.22	1978.21	-75.98	1977.98	3.03	2.14	2.14	MWD
8802.00	89.10	1.30	6607.59	2020.19	-74.77	2019.96	2.53	-1.90	-1.67	MWD
8845.00	90.70	0.90	6607.66	2063.18	-73.95	2062.95	3.84	3.72	-0.93	MWD
8887.00	91.00	0.60	6607.04	2105.17	-73.40	2104.95	1.01	0.71	-0.71	MWD
8930.00	90.70	0.40	6606.40	2148.17	-73.02	2147.94	0.84	-0.70	-0.47	MWD
8973.00	90.20	0.40	6606.06	2191.16	-72.72	2190.94	1.16	-1.16	0.00	MWD
9015.00	89.90	0.40	6606.03	2233.16	-72.43	2232.94	0.71	-0.71	0.00	MWD
9058.00	89.40	0.20	6606.29	2276.16	-72.20	2275.94	1.25	-1.16	-0.47	MWD
9101.00	89.40	359.90	6606.74	2319.16	-72.17	2318.94	0.70	0.00	-0.70	MWD
9143.00	90.70	0.20	6606.70	2361.16	-72.13	2360.93	3.18	3.10	0.71	MWD
9186.00	90.80	0.20	6606.14	2404.15	-71.98	2403.93	0.23	0.23	0.00	MWD
9229.00	90.70	0.40	6605.58	2447.15	-71.75	2446.93	0.52	-0.23	0.47	MWD
9271.00	90.40	0.20	6605.18	2489.15	-71.53	2488.92	0.86	-0.71	-0.48	MWD
9314.00	90.00	0.10	6605.03	2532.15	-71.42	2531.92	0.96	-0.93	-0.23	MWD
9357.00	89.70	359.70	6605.14	2575.15	-71.50	2574.92	1.16	-0.70	-0.93	MWD
9399.00	89.40	359.50	6605.47	2617.14	-71.79	2616.92	0.86	-0.71	-0.48	MWD
9442.00	90.50	0.20	6605.51	2660.14	-71.90	2659.92	3.03	2.56	1.63	MWD
9485.00	90.30	0.10	6605.21	2703.14	-71.79	2702.92	0.52	-0.47	-0.23	MWD
9527.00	89.90	359.90	6605.13	2745.14	-71.79	2744.92	1.06	-0.95	-0.48	MWD
9570.00	89.70	359.70	6605.28	2788.14	-71.94	2787.92	0.66	-0.47	-0.47	MWD
9612.00	89.80	359.90	6605.47	2830.14	-72.09	2829.91	0.53	0.24	0.48	MWD
9655.00	89.30	0.80	6605.80	2873.14	-71.82	2872.91	2.39	-1.16	2.09	MWD
9698.00	89.70	2.30	6606.18	2916.12	-70.66	2915.90	3.61	0.93	3.49	MWD
9740.00	91.00	2.50	6605.92	2958.08	-68.90	2957.86	3.13	3.10	0.48	MWD
9783.00	90.70	2.00	6605.28	3001.04	-67.21	3000.83	1.36	-0.70	-1.16	MWD
9825.00	90.60	1.60	6604.81	3043.02	-65.89	3042.81	0.98	-0.24	-0.95	MWD
9868.00	90.60	1.60	6604.36	3086.00	-64.69	3085.79	0.00	0.00	0.00	MWD
9911.00	90.40	1.30	6603.98	3128.98	-63.61	3128.78	0.84	-0.47	-0.70	MWD
9953.00	90.10	359.70	6603.80	3170.98	-63.24	3170.78	3.88	-0.71	-3.81	MWD
9996.00	90.20	0.40	6603.69	3213.98	-63.20	3213.78	1.64	0.23	1.63	MWD
10038.00	90.20	0.60	6603.54	3255.98	-62.84	3255.78	0.48	0.00	0.48	MWD
10081.00	90.40	0.90	6603.31	3298.97	-62.27	3298.78	0.84	0.47	0.70	MWD
10124.00	90.30	358.80	6603.05	3341.97	-62.39	3341.77	4.89	-0.23	-4.88	MWD
10166.00	90.20	358.50	6602.87	3383.96	-63.37	3383.76	0.75	-0.24	-0.71	MWD
10209.00	90.70	357.80	6602.53	3426.93	-64.76	3426.73	2.00	1.16	-1.63	MWD
10251.00	90.70	357.20	6602.02	3468.89	-66.59	3468.68	1.43	0.00	-1.43	MWD
10294.00	90.90	356.70	6601.42	3511.83	-68.88	3511.61	1.25	0.47	-1.16	MWD
10336.00	89.40	357.60	6601.31	3553.77	-70.97	3553.55	4.16	-3.57	2.14	MWD
10379.00	89.30	358.80	6601.79	3596.75	-72.32	3596.52	2.80	-0.23	2.79	MWD
10421.00	89.30	358.10	6602.31	3638.73	-73.46	3638.50	1.67	0.00	-1.67	MWD
10464.00	89.10	357.90	6602.91	3681.70	-74.96	3681.46	0.66	-0.47	-0.47	MWD
10506.00	89.70	359.40	6603.35	3723.68	-75.95	3723.44	3.85	1.43	3.57	MWD
10549.00	90.80	0.80	6603.16	3766.68	-75.87	3766.44	4.14	2.56	3.26	MWD
10592.00	90.70	0.80	6602.60	3809.67	-75.27	3809.43	0.23	-0.23	0.00	MWD
10634.00	90.20	0.20	6602.27	3851.67	-74.91	3851.43	1.86	-1.19	-1.43	MWD
10677.00	90.20	0.10	6602.12	3894.67	-74.79	3894.43	0.23	0.00	-0.23	MWD
10718.00	90.30	359.70	6601.94	3935.67	-74.86	3935.43	1.01	0.24	-0.98	MWD
10761.00	89.80	359.50	6601.90	3978.67	-75.16	3978.43	1.25	-1.16	-0.47	MWD

Precision Directional Services, Inc.

Survey Report

Company: CARRIZO OIL & GAS, INC.
Field: Niobrara CONZ'83
Site: Gaffney 2-29-8-61 Pad
Well: 2-29-8-61
Wellpath: Original Hole

Date: 01/06/2014 **Time:** 11:53:55 **Page:** 5
Co-ordinate(NE) Reference: Well: 2-29-8-61, Grid North
Vertical (TVD) Reference: 4991'GL+17"KB 5008.0
Section (VS) Reference: Well (0.00N,0.00E,0.17Azi)
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
10805.00	90.00	359.20	6601.98	4022.66	-75.66	4022.42	0.82	0.45	-0.68	MWD
10845.00	89.70	358.80	6602.08	4062.66	-76.36	4062.41	1.25	-0.75	-1.00	MWD
10888.00	89.50	358.80	6602.38	4105.65	-77.26	4105.40	0.47	-0.47	0.00	MWD
10931.00	89.00	0.90	6602.95	4148.64	-77.37	4148.39	5.02	-1.16	4.88	MWD
10973.00	88.70	0.90	6603.79	4190.63	-76.72	4190.38	0.71	-0.71	0.00	MWD
11016.00	88.20	0.80	6604.95	4233.61	-76.08	4233.36	1.19	-1.16	-0.23	MWD
11058.00	89.50	1.10	6605.80	4275.59	-75.38	4275.35	3.18	3.10	0.71	MWD
11101.00	89.00	1.10	6606.36	4318.58	-74.56	4318.34	1.16	-1.16	0.00	MWD
11143.00	89.00	0.60	6607.09	4360.57	-73.93	4360.33	1.19	0.00	-1.19	MWD
11186.00	89.80	0.10	6607.54	4403.57	-73.67	4403.33	2.19	1.86	-1.16	MWD
11229.00	90.00	0.10	6607.62	4446.57	-73.60	4446.33	0.47	0.47	0.00	MWD
11271.00	90.70	359.90	6607.36	4488.56	-73.60	4488.33	1.73	1.67	-0.48	MWD
11314.00	90.10	0.10	6607.06	4531.56	-73.60	4531.32	1.47	-1.40	0.47	MWD
11356.00	90.10	0.10	6606.99	4573.56	-73.52	4573.32	0.00	0.00	0.00	MWD
11399.00	89.50	359.70	6607.14	4616.56	-73.60	4616.32	1.68	-1.40	-0.93	MWD
11442.00	89.80	359.70	6607.40	4659.56	-73.82	4659.32	0.70	0.70	0.00	MWD
11484.00	91.90	0.20	6606.78	4701.55	-73.86	4701.31	5.14	5.00	1.19	MWD
11527.00	92.30	0.10	6605.20	4744.52	-73.75	4744.28	0.96	0.93	-0.23	MWD
11569.00	92.10	359.90	6603.59	4786.49	-73.75	4786.25	0.67	-0.48	-0.48	MWD
11612.00	90.80	359.70	6602.50	4829.48	-73.90	4829.24	3.06	-3.02	-0.47	MWD
11654.00	90.30	359.70	6602.10	4871.48	-74.12	4871.23	1.19	-1.19	0.00	MWD
11697.00	90.10	359.40	6601.95	4914.47	-74.45	4914.23	0.84	-0.47	-0.70	MWD
11740.00	89.90	359.40	6601.95	4957.47	-74.90	4957.23	0.47	-0.47	0.00	MWD
11782.00	89.60	359.50	6602.13	4999.47	-75.31	4999.22	0.75	-0.71	0.24	MWD
11825.00	88.80	358.80	6602.73	5042.46	-75.95	5042.21	2.47	-1.86	-1.63	MWD
11867.00	88.00	357.90	6603.90	5084.43	-77.15	5084.17	2.87	-1.90	-2.14	MWD
11910.00	88.70	358.30	6605.14	5127.38	-78.58	5127.13	1.87	1.63	0.93	MWD
11952.00	90.50	358.30	6605.43	5169.36	-79.83	5169.10	4.29	4.29	0.00	MWD
11995.00	90.80	357.90	6604.95	5212.34	-81.25	5212.07	1.16	0.70	-0.93	MWD
12037.00	90.50	358.50	6604.47	5254.31	-82.57	5254.04	1.60	-0.71	1.43	MWD
12080.00	91.00	358.10	6603.91	5297.29	-83.85	5297.02	1.49	1.16	-0.93	MWD
12123.00	90.70	359.40	6603.27	5340.27	-84.78	5340.00	3.10	-0.70	3.02	MWD
12165.00	88.90	359.40	6603.42	5382.27	-85.22	5381.99	4.29	-4.29	0.00	MWD
12196.00	88.40	359.20	6604.15	5413.26	-85.60	5412.98	1.74	-1.61	-0.65	MWD
12239.00	88.30	358.80	6605.38	5456.23	-86.35	5455.95	0.96	-0.23	-0.93	MWD
12282.00	88.50	357.90	6606.59	5499.20	-87.59	5498.91	2.14	0.47	-2.09	MWD
12324.00	89.30	357.90	6607.39	5541.16	-89.13	5540.87	1.90	1.90	0.00	MWD
12367.00	90.20	0.60	6607.58	5584.15	-89.69	5583.86	6.62	2.09	6.28	MWD
12410.00	91.30	0.60	6607.02	5627.15	-89.24	5626.86	2.56	2.56	0.00	MWD
12452.00	91.90	0.90	6605.84	5669.13	-88.69	5668.84	1.60	1.43	0.71	MWD
12495.00	91.30	2.90	6604.64	5712.08	-87.27	5711.80	4.85	-1.40	4.65	MWD
12537.00	91.10	2.30	6603.76	5754.03	-85.36	5753.75	1.51	-0.48	-1.43	MWD
12580.00	90.00	0.90	6603.35	5797.01	-84.16	5796.74	4.14	-2.56	-3.26	MWD
12622.00	88.70	0.10	6603.83	5839.01	-83.79	5838.73	3.63	-3.10	-1.90	MWD
12665.00	88.60	359.70	6604.84	5881.99	-83.87	5881.72	0.96	-0.23	-0.93	MWD
12708.00	88.70	359.40	6605.85	5924.98	-84.21	5924.70	0.74	0.23	-0.70	MWD
12750.00	88.90	358.80	6606.73	5966.97	-84.87	5966.69	1.51	0.48	-1.43	MWD
12793.00	90.00	0.20	6607.15	6009.96	-85.24	6009.68	4.14	2.56	3.26	MWD
12835.00	90.10	0.10	6607.11	6051.96	-85.13	6051.68	0.34	0.24	-0.24	MWD
12878.00	90.30	359.70	6606.96	6094.96	-85.21	6094.68	1.04	0.47	-0.93	MWD
12921.00	90.30	359.20	6606.73	6137.96	-85.62	6137.68	1.16	0.00	-1.16	MWD
12963.00	89.30	358.80	6606.88	6179.95	-86.35	6179.67	2.56	-2.38	-0.95	MWD
13005.00	89.90	358.70	6607.17	6221.94	-87.27	6221.65	1.45	1.43	-0.24	MWD

Precision Directional Services, Inc.

Survey Report

Company: CARRIZO OIL & GAS, INC. Field: Niobrara CONZ'83 Site: Gaffney 2-29-8-61 Pad Well: 2-29-8-61 Wellpath: Original Hole	Date: 01/06/2014 Time: 11:53:55 Page: 6 Co-ordinate(NE) Reference: Well: 2-29-8-61, Grid North Vertical (TVD) Reference: 4991'GL+17'KB 5008.0 Section (VS) Reference: Well (0.00N,0.00E,0.17Azi) Survey Calculation Method: Minimum Curvature Db: 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
13048.00	90.30	359.40	6607.10	6264.93	-87.98	6264.64	1.87	0.93	1.63	MWD
13091.00	90.60	358.50	6606.76	6307.92	-88.77	6307.63	2.21	0.70	-2.09	MWD
13133.00	90.70	0.20	6606.28	6349.92	-89.25	6349.62	4.05	0.24	4.05	MWD
13176.00	91.40	0.10	6605.50	6392.91	-89.13	6392.62	1.64	1.63	-0.23	MWD
13218.00	90.20	359.90	6604.91	6434.90	-89.13	6434.61	2.90	-2.86	-0.48	MWD
13261.00	90.00	359.90	6604.83	6477.90	-89.21	6477.61	0.47	-0.47	0.00	MWD
13304.00	88.70	0.20	6605.32	6520.90	-89.17	6520.61	3.10	-3.02	0.70	MWD
13345.00	89.00	0.10	6606.15	6561.89	-89.06	6561.60	0.77	0.73	-0.24	MWD
13388.00	88.90	359.40	6606.93	6604.88	-89.25	6604.59	1.64	-0.23	-1.63	MWD
13430.00	89.10	359.00	6607.67	6646.87	-89.84	6646.58	1.06	0.48	-0.95	MWD
13473.00	88.90	0.80	6608.42	6689.86	-89.91	6689.57	4.21	-0.47	4.19	MWD
13515.00	88.80	0.20	6609.26	6731.85	-89.55	6731.56	1.45	-0.24	-1.43	MWD
13558.00	88.80	359.70	6610.16	6774.84	-89.58	6774.55	1.16	0.00	-1.16	MWD
13600.00	89.30	0.90	6610.86	6816.84	-89.36	6816.54	3.09	1.19	2.86	MWD
13643.00	89.40	0.60	6611.34	6859.83	-88.80	6859.54	0.74	0.23	-0.70	MWD
13684.00	90.10	1.60	6611.52	6900.82	-88.01	6900.53	2.98	1.71	2.44	MWD
13727.00	90.00	1.10	6611.49	6943.81	-87.00	6943.52	1.19	-0.23	-1.16	MWD
13770.00	89.80	0.60	6611.56	6986.80	-86.36	6986.52	1.25	-0.47	-1.16	MWD
13812.00	89.70	0.10	6611.74	7028.80	-86.11	7028.52	1.21	-0.24	-1.19	MWD
13859.00	89.90	358.70	6611.91	7075.80	-86.60	7075.51	3.01	0.43	-2.98	MWD
13917.00	89.90	358.70	6612.01	7133.78	-87.91	7133.49	0.00	0.00	0.00	PROJECTED to TD