



CARRIZO

CARRIZO OIL & GAS, INC.

Field: Niobrara CONZ'83

Site: Nelson Ranches 1-27-10-59 Pad

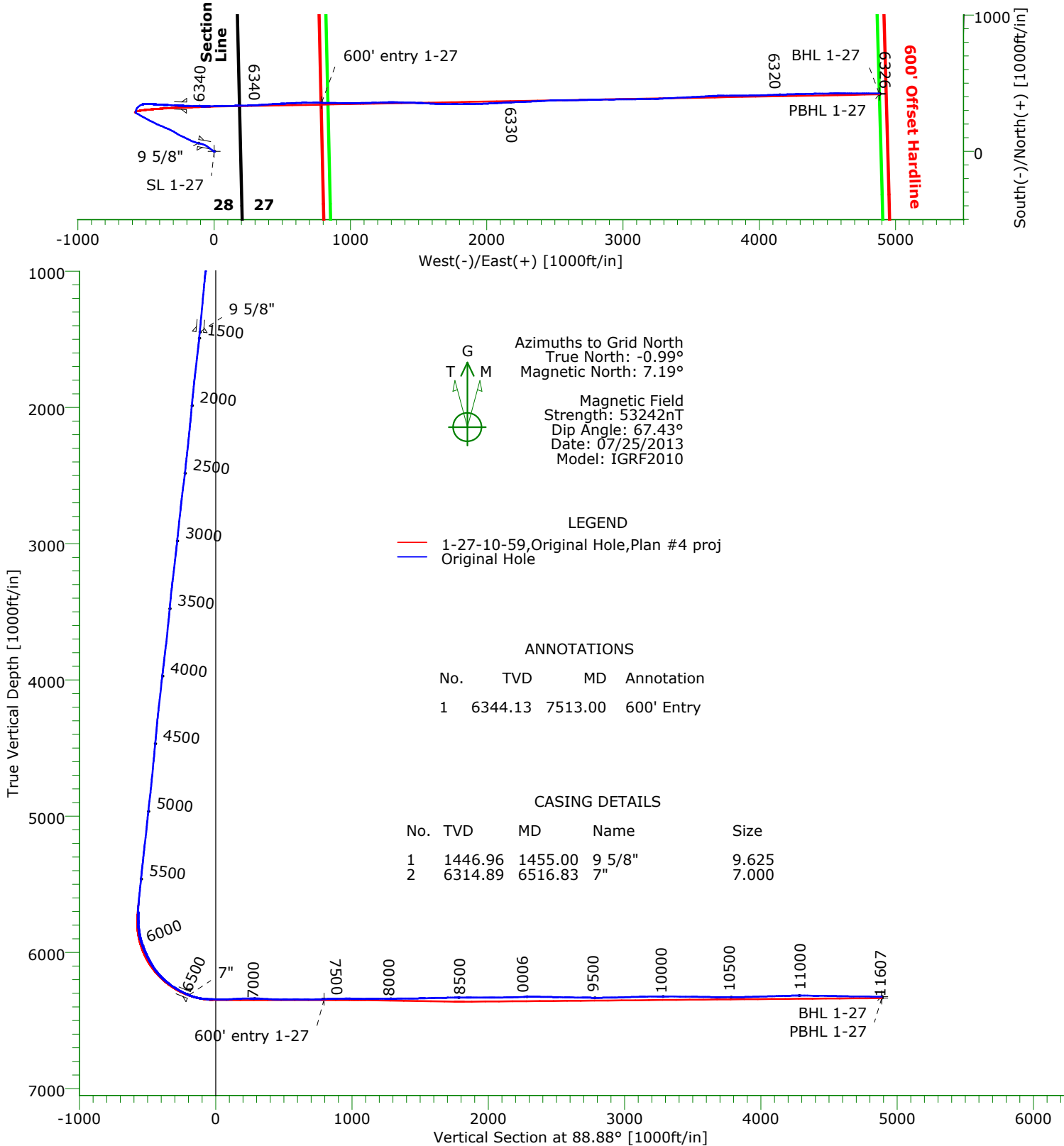
Well: 1-27-10-59

Wellpath: Original Hole



Precision

Directional Services



Precision Directional Services, Inc.

Survey Report

Company: CARRIZO OIL & GAS, INC. Field: Niobrara CONZ'83 Site: Nelson Ranches 1-27-10-59 Pad Well: 1-27-10-59 Wellpath: Original Hole	Date: 08/27/2013 Co-ordinate(NE) Reference: Well: 1-27-10-59, Grid North Vertical (TVD) Reference: 5167'GL+17'KB 5184.0 Section (VS) Reference: Well (0.00N,0.00E,88.88Azi) Survey Calculation Method: Minimum Curvature	Time: 09:13:49 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: Nelson Ranches 1-27-10-59 Pad			
Weld County, CO			
Site Position: From: Map Position Uncertainty: 0.00 ft Ground Level: 5167.00 ft	Northing: 1541002.63 ft Easting: 3422535.10 ft	Latitude: 40 48 30.396 N Longitude: 103 58 25.060 W North Reference: Grid Grid Convergence: 0.99 deg	

Well: 1-27-10-59 adjusted from site 5-16 2219'FNL,193'FEL Sec 28 Well Position: +N/-S 576.58 ft Northing: 1541579.21 ft +E/-W -578.23 ft Easting : 3421956.87 ft Position Uncertainty: 0.00 ft	Slot Name: Latitude: 40 48 36.191 N Longitude: 103 58 32.449 W
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Wellpath: Original Hole Current Datum: 5167'GL+17'KB Magnetic Data: 07/25/2013 Field Strength: 53242 nT Vertical Section: Depth From (TVD) ft	Height 5184.00 ft	Drilled From: Surface Tie-on Depth: 0.00 ft Above System Datum: Mean Sea Level Declination: 8.18 deg Mag Dip Angle: 67.43 deg +E/-W ft Direction deg
0.00	0.00	0.00 88.88

Survey Program for Definitive Wellpath					
Date: 08/27/2013		Validated: No		Version: 1	
Actual From	To	Survey	Toolcode	Tool Name	
141.00	11528.00	Survey #1 (141.00-11528.00)	MWD	Std MWD	
11607.00	11607.00	Survey #2 (11607.00-11607.00)	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
141.00	0.40	173.50	141.00	-0.49	0.06	0.05	0.28	0.28	0.00	MWD
232.00	0.60	277.20	232.00	-0.74	-0.38	-0.40	0.87	0.22	113.96	MWD
324.00	3.20	299.00	323.94	0.56	-3.11	-3.09	2.88	2.83	23.70	MWD
418.00	5.50	304.40	417.66	4.38	-9.12	-9.03	2.48	2.45	5.74	MWD
509.00	7.70	308.70	508.05	10.65	-17.47	-17.26	2.48	2.42	4.73	MWD
601.00	8.50	308.10	599.14	18.70	-27.64	-27.26	0.87	0.87	-0.65	MWD
692.00	9.00	310.10	689.08	27.44	-38.37	-37.83	0.64	0.55	2.20	MWD
783.00	8.20	301.30	779.06	35.39	-49.36	-48.66	1.69	-0.88	-9.67	MWD
875.00	7.50	299.00	870.19	41.71	-60.22	-59.39	0.83	-0.76	-2.50	MWD
966.00	7.40	298.10	960.43	47.35	-70.58	-69.65	0.17	-0.11	-0.99	MWD
1058.00	5.90	287.90	1051.81	51.60	-80.31	-79.29	2.07	-1.63	-11.09	MWD
1149.00	5.60	285.50	1142.35	54.22	-89.04	-87.96	0.42	-0.33	-2.64	MWD
1241.00	5.40	283.50	1233.93	56.43	-97.58	-96.45	0.30	-0.22	-2.17	MWD
1332.00	5.50	282.80	1324.51	58.40	-105.99	-104.83	0.13	0.11	-0.77	MWD
1400.00	5.40	278.60	1392.21	59.60	-112.33	-111.15	0.60	-0.15	-6.18	MWD
1498.00	5.60	280.90	1489.76	61.19	-121.59	-120.37	0.30	0.20	2.35	MWD
1582.00	6.70	289.80	1573.27	63.63	-130.22	-128.95	1.73	1.31	10.60	MWD
1666.00	7.20	290.70	1656.66	67.15	-139.76	-138.42	0.61	0.60	1.07	MWD
1751.00	7.50	289.00	1740.96	70.84	-149.99	-148.57	0.44	0.35	-2.00	MWD
1836.00	6.50	293.70	1825.32	74.58	-159.64	-158.15	1.35	-1.18	5.53	MWD
1921.00	6.40	291.10	1909.79	78.22	-168.46	-166.90	0.36	-0.12	-3.06	MWD

Precision Directional Services, Inc.

Survey Report

Company: CARRIZO OIL & GAS, INC.
Field: Niobrara CONZ'83
Site: Nelson Ranches 1-27-10-59 Pad
Well: 1-27-10-59
Wellpath: Original Hole

Date: 08/27/2013 **Time:** 09:13:49 **Page:** 2
Co-ordinate(NE) Reference: Well: 1-27-10-59, Grid North
Vertical (TVD) Reference: 5167'GL+17'KB 5184.0
Section (VS) Reference: Well (0.00N,0.00E,88.88Azi)
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
2006.00	6.00	296.70	1994.29	81.92	-176.85	-175.22	0.85	-0.47	6.59	MWD
2092.00	5.80	294.40	2079.83	85.73	-184.82	-183.11	0.36	-0.23	-2.67	MWD
2177.00	6.90	299.90	2164.31	90.05	-193.16	-191.36	1.48	1.29	6.47	MWD
2262.00	6.50	295.80	2248.73	94.69	-201.92	-200.03	0.73	-0.47	-4.82	MWD
2347.00	7.00	296.50	2333.14	99.10	-210.89	-208.91	0.60	0.59	0.82	MWD
2432.00	7.30	295.30	2417.48	103.72	-220.40	-218.33	0.39	0.35	-1.41	MWD
2517.00	7.40	293.70	2501.78	108.22	-230.30	-228.14	0.27	0.12	-1.88	MWD
2603.00	7.70	293.70	2587.04	112.76	-240.64	-238.39	0.35	0.35	0.00	MWD
2687.00	7.60	291.10	2670.29	117.03	-250.98	-248.64	0.43	-0.12	-3.10	MWD
2772.00	7.10	302.30	2754.60	121.86	-260.66	-258.23	1.78	-0.59	13.18	MWD
2855.00	7.20	303.40	2836.95	127.46	-269.34	-266.80	0.20	0.12	1.33	MWD
2941.00	7.50	303.90	2922.24	133.56	-278.50	-275.84	0.36	0.35	0.58	MWD
3026.00	7.70	305.80	3006.50	139.98	-287.72	-284.93	0.38	0.24	2.24	MWD
3111.00	7.40	296.70	3090.76	145.77	-297.23	-294.33	1.45	-0.35	-10.71	MWD
3199.00	7.60	296.20	3178.01	150.89	-307.52	-304.51	0.24	0.23	-0.57	MWD
3283.00	7.80	296.50	3261.25	155.89	-317.60	-314.49	0.24	0.24	0.36	MWD
3367.00	6.40	291.60	3344.61	160.15	-327.06	-323.86	1.81	-1.67	-5.83	MWD
3452.00	6.20	291.40	3429.09	163.57	-335.73	-332.47	0.24	-0.24	-0.24	MWD
3538.00	5.70	293.00	3514.63	166.93	-343.99	-340.66	0.61	-0.58	1.86	MWD
3623.00	6.50	293.70	3599.15	170.52	-352.28	-348.88	0.95	0.94	0.82	MWD
3708.00	6.70	294.80	3683.58	174.53	-361.19	-357.71	0.28	0.24	1.29	MWD
3793.00	7.20	294.60	3767.96	178.83	-370.53	-366.97	0.59	0.59	-0.24	MWD
3878.00	7.70	296.40	3852.24	183.58	-380.48	-376.81	0.65	0.59	2.12	MWD
3963.00	7.60	288.30	3936.49	187.88	-390.91	-387.17	1.27	-0.12	-9.53	MWD
4047.00	6.90	293.40	4019.82	191.62	-400.82	-397.00	1.13	-0.83	6.07	MWD
4132.00	7.00	293.70	4104.19	195.73	-410.25	-406.34	0.13	0.12	0.35	MWD
4217.00	7.10	294.10	4188.55	199.96	-419.78	-415.80	0.13	0.12	0.47	MWD
4302.00	6.50	295.60	4272.95	204.18	-428.92	-424.85	0.74	-0.71	1.76	MWD
4387.00	6.20	303.00	4357.43	208.76	-437.11	-432.94	1.02	-0.35	8.71	MWD
4472.00	6.10	295.50	4441.94	213.21	-445.03	-440.78	0.95	-0.12	-8.82	MWD
4557.00	5.70	293.90	4526.49	216.86	-452.97	-448.64	0.51	-0.47	-1.88	MWD
4643.00	6.40	296.70	4612.01	220.75	-461.16	-456.75	0.88	0.81	3.26	MWD
4727.00	6.20	296.70	4695.51	224.89	-469.39	-464.90	0.24	-0.24	0.00	MWD
4811.00	6.80	299.30	4778.97	229.36	-477.78	-473.20	0.80	0.71	3.10	MWD
4896.00	7.40	296.90	4863.31	234.30	-487.05	-482.38	0.79	0.71	-2.82	MWD
4981.00	7.20	297.90	4947.63	239.27	-496.64	-491.87	0.28	-0.24	1.18	MWD
5067.00	6.70	301.10	5032.99	244.38	-505.70	-500.82	0.74	-0.58	3.72	MWD
5152.00	7.60	297.80	5117.33	249.56	-514.92	-509.94	1.16	1.06	-3.88	MWD
5237.00	7.40	297.80	5201.60	254.74	-524.73	-519.65	0.24	-0.24	0.00	MWD
5322.00	6.60	300.60	5285.97	259.78	-533.78	-528.60	1.02	-0.94	3.29	MWD
5407.00	7.70	298.60	5370.31	264.99	-542.98	-537.70	1.33	1.29	-2.35	MWD
5492.00	6.60	301.30	5454.65	270.25	-552.15	-546.77	1.35	-1.29	3.18	MWD
5577.00	6.90	297.40	5539.06	275.14	-560.86	-555.38	0.64	0.35	-4.59	MWD
5662.00	6.20	298.50	5623.50	279.68	-569.43	-563.85	0.84	-0.82	1.29	MWD
5744.00	4.40	322.90	5705.16	284.30	-575.22	-569.55	3.47	-2.20	29.76	MWD
5787.00	8.30	1.90	5747.90	288.72	-576.11	-570.36	13.04	9.07	90.70	MWD
5829.00	13.00	11.80	5789.17	296.38	-575.04	-569.14	11.97	11.19	23.57	MWD
5872.00	15.90	20.40	5830.81	306.64	-572.00	-565.90	8.37	6.74	20.00	MWD
5914.00	18.30	33.20	5870.97	317.56	-566.38	-560.07	10.60	5.71	30.48	MWD
5957.00	20.80	48.10	5911.51	328.31	-557.00	-550.47	12.92	5.81	34.65	MWD
6000.00	23.20	59.20	5951.39	337.75	-544.03	-537.32	11.14	5.58	25.81	MWD
6042.00	24.70	72.20	5989.80	344.68	-528.56	-521.72	13.04	3.57	30.95	MWD
6085.00	26.20	84.20	6028.66	348.39	-510.55	-503.64	12.47	3.49	27.91	MWD

Precision Directional Services, Inc.

Survey Report

Company: CARRIZO OIL & GAS, INC.	Date: 08/27/2013	Time: 09:13:49	Page: 3
Field: Niobrara CONZ'83	Co-ordinate(NE) Reference: Well: 1-27-10-59, Grid North		
Site: Nelson Ranches 1-27-10-59 Pad	Vertical (TVD) Reference: 5167'GL+17'KB 5184.0		
Well: 1-27-10-59	Section (VS) Reference: Well (0.00N,0.00E,88.88Azi)		
Wellpath: Original Hole	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
6128.00	28.70	91.90	6066.82	349.00	-490.77	-483.86	10.09	5.81	17.91	MWD
6170.00	33.10	93.10	6102.85	348.05	-469.23	-462.34	10.58	10.48	2.86	MWD
6213.00	36.80	94.70	6138.09	346.36	-444.66	-437.81	8.86	8.60	3.72	MWD
6255.00	42.40	94.60	6170.44	344.19	-417.99	-411.18	13.33	13.33	-0.24	MWD
6298.00	48.60	92.60	6200.57	342.29	-387.40	-380.63	14.79	14.42	-4.65	MWD
6357.00	54.80	92.80	6237.12	340.11	-341.17	-334.46	10.51	10.51	0.34	MWD
6387.00	56.30	92.80	6254.09	338.90	-316.46	-309.78	5.00	5.00	0.00	MWD
6417.00	59.40	92.80	6270.05	337.66	-291.10	-284.44	10.33	10.33	0.00	MWD
6448.00	61.90	92.10	6285.24	336.51	-264.10	-257.47	8.30	8.06	-2.26	MWD
6478.00	63.90	92.30	6298.91	335.48	-237.42	-230.81	6.69	6.67	0.67	MWD
6509.00	66.70	91.70	6311.86	334.50	-209.27	-202.69	9.20	9.03	-1.94	MWD
6539.00	70.70	91.20	6322.76	333.80	-181.34	-174.78	13.42	13.33	-1.67	MWD
6570.00	75.40	91.20	6331.79	333.17	-151.70	-145.16	15.16	15.16	0.00	MWD
6600.00	80.50	91.60	6338.05	332.46	-122.38	-115.86	17.05	17.00	1.33	MWD
6631.00	84.80	92.10	6342.02	331.46	-91.66	-85.16	13.96	13.87	1.61	MWD
6661.00	88.90	90.70	6343.67	330.73	-61.72	-55.24	14.44	13.67	-4.67	MWD
6691.00	88.40	88.00	6344.37	331.07	-31.73	-25.25	9.15	-1.67	-9.00	MWD
6722.00	87.70	88.00	6345.43	332.15	-0.77	5.73	2.26	-2.26	0.00	MWD
6752.00	88.70	88.80	6346.37	332.99	29.21	35.71	4.27	3.33	2.67	MWD
6783.00	91.80	89.60	6346.24	333.42	60.20	66.70	10.33	10.00	2.58	MWD
6813.00	93.00	89.10	6344.98	333.76	90.17	96.68	4.33	4.00	-1.67	MWD
6844.00	93.30	88.80	6343.28	334.33	121.12	127.63	1.37	0.97	-0.97	MWD
6874.00	93.40	88.40	6341.52	335.06	151.06	157.58	1.37	0.33	-1.33	MWD
6905.00	91.70	89.50	6340.14	335.63	182.02	188.55	6.53	-5.48	3.55	MWD
6935.00	91.30	89.10	6339.36	336.00	212.01	218.53	1.89	-1.33	-1.33	MWD
6966.00	91.50	88.80	6338.60	336.57	242.99	249.52	1.16	0.65	-0.97	MWD
6996.00	89.20	88.00	6338.42	337.40	272.98	279.52	8.12	-7.67	-2.67	MWD
7026.00	87.40	87.00	6339.31	338.71	302.93	309.50	6.86	-6.00	-3.33	MWD
7057.00	86.90	85.60	6340.85	340.71	333.83	340.43	4.79	-1.61	-4.52	MWD
7087.00	86.90	86.50	6342.47	342.77	363.72	370.35	3.00	0.00	3.00	MWD
7118.00	86.80	86.30	6344.17	344.72	394.61	401.27	0.72	-0.32	-0.65	MWD
7148.00	86.50	86.50	6345.93	346.60	424.50	431.19	1.20	-1.00	0.67	MWD
7179.00	88.50	86.80	6347.28	348.41	455.41	462.14	6.52	6.45	0.97	MWD
7209.00	89.30	87.20	6347.86	349.98	485.37	492.11	2.98	2.67	1.33	MWD
7240.00	91.60	88.00	6347.61	351.27	516.34	523.10	7.86	7.42	2.58	MWD
7270.00	91.10	87.30	6346.91	352.50	546.30	553.09	2.87	-1.67	-2.33	MWD
7300.00	90.20	87.00	6346.56	353.99	576.26	583.07	3.16	-3.00	-1.00	MWD
7331.00	88.80	87.70	6346.84	355.43	607.23	614.06	5.05	-4.52	2.26	MWD
7362.00	89.30	88.20	6347.35	356.54	638.20	645.05	2.28	1.61	1.61	MWD
7404.00	90.60	90.00	6347.39	357.20	680.20	687.05	5.29	3.10	4.29	MWD
7447.00	91.40	90.00	6346.64	357.20	723.19	730.03	1.86	1.86	0.00	MWD
7490.00	92.50	90.70	6345.17	356.93	766.16	772.99	3.03	2.56	1.63	MWD
7513.00	92.72	90.48	6344.13	356.70	789.14	795.96	1.35	0.95	-0.95	600' Entry
7532.00	92.90	90.30	6343.19	356.57	808.11	814.93	1.35	0.95	-0.95	MWD
7575.00	91.20	90.70	6341.66	356.19	851.08	857.88	4.06	-3.95	0.93	MWD
7617.00	91.00	91.90	6340.85	355.24	893.06	899.84	2.90	-0.48	2.86	MWD
7660.00	91.10	91.60	6340.06	353.93	936.04	942.78	0.74	0.23	-0.70	MWD
7702.00	89.30	89.60	6339.91	353.49	978.03	984.75	6.41	-4.29	-4.76	MWD
7745.00	87.80	89.10	6341.00	353.98	1021.01	1027.74	3.68	-3.49	-1.16	MWD
7788.00	90.00	88.60	6341.83	354.84	1063.99	1070.72	5.25	5.12	-1.16	MWD
7830.00	90.70	89.50	6341.57	355.53	1105.99	1112.72	2.71	1.67	2.14	MWD
7873.00	90.40	87.90	6341.16	356.51	1148.97	1155.72	3.79	-0.70	-3.72	MWD
7915.00	90.70	88.80	6340.76	357.72	1190.95	1197.72	2.26	0.71	2.14	MWD
7958.00	90.50	88.60	6340.31	358.69	1233.94	1240.71	0.66	-0.47	-0.47	MWD

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Survey Report

Company: CARRIZO OIL & GAS, INC. Field: Niobrara CONZ'83 Site: Nelson Ranches 1-27-10-59 Pad Well: 1-27-10-59 Wellpath: Original Hole	Date: 08/27/2013 Time: 09:13:49 Page: 4 Co-ordinate(NE) Reference: Well: 1-27-10-59, Grid North Vertical (TVD) Reference: 5167'GL+17'KB 5184.0 Section (VS) Reference: Well (0.00N,0.00E,88.88Azi) 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
8000.00	90.00	87.50	6340.12	360.12	1275.91	1282.71	2.88	-1.19	-2.62	MWD
8043.00	90.30	90.90	6340.01	360.72	1318.90	1325.70	7.94	0.70	7.91	MWD
8086.00	91.10	92.40	6339.48	359.49	1361.88	1368.64	3.95	1.86	3.49	MWD
8128.00	90.70	91.70	6338.82	357.98	1403.85	1410.58	1.92	-0.95	-1.67	MWD
8171.00	90.00	90.70	6338.56	357.08	1446.83	1453.54	2.84	-1.63	-2.33	MWD
8213.00	90.80	91.00	6338.27	356.46	1488.83	1495.51	2.03	1.90	0.71	MWD
8256.00	92.10	93.50	6337.18	354.77	1531.78	1538.42	6.55	3.02	5.81	MWD
8298.00	91.80	93.50	6335.75	352.21	1573.68	1580.26	0.71	-0.71	0.00	MWD
8341.00	91.30	92.30	6334.59	350.04	1616.60	1623.14	3.02	-1.16	-2.79	MWD
8383.00	90.70	91.60	6333.86	348.61	1658.57	1665.07	2.19	-1.43	-1.67	MWD
8426.00	91.40	90.50	6333.07	347.82	1701.56	1708.03	3.03	1.63	-2.56	MWD
8468.00	91.30	90.70	6332.08	347.38	1743.54	1750.00	0.53	-0.24	0.48	MWD
8511.00	89.30	90.30	6331.85	347.00	1786.54	1792.98	4.74	-4.65	-0.93	MWD
8553.00	88.80	90.30	6332.55	346.78	1828.53	1834.96	1.19	-1.19	0.00	MWD
8596.00	90.00	88.60	6333.00	347.20	1871.53	1877.95	4.84	2.79	-3.95	MWD
8638.00	90.80	88.40	6332.71	348.30	1913.51	1919.95	1.96	1.90	-0.48	MWD
8681.00	90.30	88.20	6332.29	349.57	1956.49	1962.95	1.25	-1.16	-0.47	MWD
8723.00	89.40	87.90	6332.40	351.00	1998.46	2004.94	2.26	-2.14	-0.71	MWD
8766.00	90.70	87.30	6332.37	352.80	2041.42	2047.93	3.33	3.02	-1.40	MWD
8809.00	90.60	86.50	6331.88	355.13	2084.36	2090.90	1.87	-0.23	-1.86	MWD
8851.00	91.00	86.80	6331.29	357.58	2126.28	2132.87	1.19	0.95	0.71	MWD
8894.00	91.90	87.00	6330.20	359.91	2169.21	2175.83	2.14	2.09	0.47	MWD
8937.00	92.20	87.70	6328.67	361.89	2212.13	2218.78	1.77	0.70	1.63	MWD
8979.00	92.20	87.30	6327.05	363.72	2254.06	2260.74	0.95	0.00	-0.95	MWD
9022.00	90.30	87.90	6326.11	365.52	2297.01	2303.72	4.63	-4.42	1.40	MWD
9064.00	89.40	88.00	6326.22	367.03	2338.98	2345.71	2.16	-2.14	0.24	MWD
9107.00	89.20	87.20	6326.75	368.83	2381.94	2388.70	1.92	-0.47	-1.86	MWD
9150.00	89.00	86.80	6327.43	371.08	2424.88	2431.67	1.04	-0.47	-0.93	MWD
9192.00	88.30	86.80	6328.42	373.42	2466.80	2473.63	1.67	-1.67	0.00	MWD
9235.00	88.60	88.90	6329.58	375.03	2509.75	2516.60	4.93	0.70	4.88	MWD
9278.00	88.50	89.10	6330.67	375.78	2552.73	2559.59	0.52	-0.23	0.47	MWD
9320.00	89.40	89.60	6331.44	376.26	2594.72	2601.58	2.45	2.14	1.19	MWD
9363.00	89.70	89.80	6331.77	376.48	2637.72	2644.57	0.84	0.70	0.47	MWD
9405.00	89.50	89.50	6332.07	376.74	2679.72	2686.57	0.86	-0.48	-0.71	MWD
9448.00	88.60	87.90	6332.78	377.72	2722.70	2729.56	4.27	-2.09	-3.72	MWD
9490.00	89.30	89.10	6333.55	378.82	2764.68	2771.55	3.31	1.67	2.86	MWD
9533.00	90.70	89.30	6333.55	379.42	2807.67	2814.55	3.29	3.26	0.47	MWD
9575.00	90.10	88.80	6333.26	380.11	2849.66	2856.55	1.86	-1.43	-1.19	MWD
9618.00	90.90	88.80	6332.88	381.01	2892.65	2899.55	1.86	1.86	0.00	MWD
9659.00	91.70	89.60	6331.95	381.59	2933.64	2940.53	2.76	1.95	1.95	MWD
9701.00	92.20	89.80	6330.52	381.80	2975.61	2982.51	1.28	1.19	0.48	MWD
9743.00	91.70	89.50	6329.09	382.06	3017.59	3024.48	1.39	-1.19	-0.71	MWD
9786.00	91.80	89.10	6327.78	382.59	3060.56	3067.46	0.96	0.23	-0.93	MWD
9829.00	92.10	88.90	6326.32	383.34	3103.53	3110.43	0.84	0.70	-0.47	MWD
9871.00	90.80	89.10	6325.25	384.07	3145.51	3152.42	3.13	-3.10	0.48	MWD
9914.00	91.00	88.90	6324.58	384.82	3188.50	3195.41	0.66	0.47	-0.47	MWD
9956.00	90.60	88.60	6323.99	385.74	3230.48	3237.41	1.19	-0.95	-0.71	MWD
9999.00	90.00	87.30	6323.77	387.27	3273.46	3280.40	3.33	-1.40	-3.02	MWD
10042.00	89.30	86.80	6324.03	389.49	3316.40	3323.38	2.00	-1.63	-1.16	MWD
10084.00	89.30	87.30	6324.54	391.65	3358.34	3365.35	1.19	0.00	1.19	MWD
10126.00	89.30	87.30	6325.06	393.63	3400.29	3407.33	0.00	0.00	0.00	MWD
10168.00	89.30	87.20	6325.57	395.64	3442.24	3449.31	0.24	0.00	-0.24	MWD
10211.00	89.30	87.70	6326.09	397.55	3485.19	3492.30	1.16	0.00	1.16	MWD

Precision Directional Services, Inc.

Survey Report

Company: CARRIZO OIL & GAS, INC.
Field: Niobrara CONZ'83
Site: Nelson Ranches 1-27-10-59 Pad
Well: 1-27-10-59
Wellpath: Original Hole

Date: 08/27/2013 **Time:** 09:13:49 **Page:** 5
Co-ordinate(NE) Reference: Well: 1-27-10-59, Grid North
Vertical (TVD) Reference: 5167'GL+17'KB 5184.0
Section (VS) Reference: Well (0.00N,0.00E,88.88Azi)
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
10253.00	89.20	87.20	6326.64	399.42	3527.15	3534.28	1.21	-0.24	-1.19	MWD
10296.00	89.10	86.80	6327.28	401.67	3570.08	3577.25	0.96	-0.23	-0.93	MWD
10338.00	88.80	86.30	6328.05	404.20	3612.00	3619.21	1.39	-0.71	-1.19	MWD
10381.00	88.90	86.80	6328.91	406.79	3654.91	3662.16	1.19	0.23	1.16	MWD
10424.00	89.70	88.80	6329.44	408.44	3697.87	3705.15	5.01	1.86	4.65	MWD
10466.00	90.00	89.50	6329.55	409.06	3739.87	3747.15	1.81	0.71	1.67	MWD
10508.00	89.90	89.60	6329.59	409.39	3781.87	3789.15	0.34	-0.24	0.24	MWD
10550.00	90.70	89.80	6329.37	409.61	3823.87	3831.14	1.96	1.90	0.48	MWD
10593.00	91.50	90.20	6328.54	409.61	3866.86	3874.13	2.08	1.86	0.93	MWD
10636.00	91.80	89.30	6327.30	409.80	3909.84	3917.10	2.21	0.70	-2.09	MWD
10678.00	91.90	88.90	6325.95	410.46	3951.81	3959.08	0.98	0.24	-0.95	MWD
10721.00	91.60	88.60	6324.63	411.39	3994.78	4002.06	0.99	-0.70	-0.70	MWD
10763.00	91.50	88.20	6323.50	412.57	4036.75	4044.04	0.98	-0.24	-0.95	MWD
10806.00	91.90	88.00	6322.22	413.99	4079.71	4087.02	1.04	0.93	-0.47	MWD
10849.00	91.70	87.90	6320.87	415.53	4122.66	4129.99	0.52	-0.47	-0.23	MWD
10891.00	92.10	87.70	6319.48	417.14	4164.60	4171.96	1.06	0.95	-0.48	MWD
10934.00	90.70	88.80	6318.43	418.45	4207.57	4214.95	4.14	-3.26	2.56	MWD
10976.00	90.30	88.20	6318.06	419.55	4249.55	4256.94	1.72	-0.95	-1.43	MWD
11019.00	89.70	88.90	6318.06	420.64	4292.54	4299.94	2.14	-1.40	1.63	MWD
11061.00	89.60	88.60	6318.32	421.56	4334.53	4341.94	0.75	-0.24	-0.71	MWD
11104.00	89.60	88.20	6318.62	422.76	4377.51	4384.94	0.93	0.00	-0.93	MWD
11145.00	89.10	89.50	6319.08	423.58	4418.50	4425.93	3.40	-1.22	3.17	MWD
11188.00	89.10	89.10	6319.76	424.11	4461.49	4468.93	0.93	0.00	-0.93	MWD
11231.00	88.70	89.10	6320.58	424.78	4504.48	4511.92	0.93	-0.93	0.00	MWD
11273.00	88.50	88.60	6321.61	425.62	4546.46	4553.91	1.28	-0.48	-1.19	MWD
11316.00	89.10	89.50	6322.51	426.34	4589.44	4596.90	2.52	1.40	2.09	MWD
11359.00	89.20	90.00	6323.15	426.52	4632.43	4639.89	1.19	0.23	1.16	MWD
11401.00	89.30	90.20	6323.70	426.45	4674.43	4681.87	0.53	0.24	0.48	MWD
11444.00	89.40	90.20	6324.19	426.30	4717.43	4724.86	0.23	0.23	0.00	MWD
11486.00	89.40	90.20	6324.63	426.15	4759.43	4766.85	0.00	0.00	0.00	MWD
11528.00	89.30	90.00	6325.10	426.08	4801.42	4808.83	0.53	-0.24	-0.48	MWD
11607.00	89.30	90.00	6326.07	426.08	4880.42	4887.81	0.00	0.00	0.00	PROJECTED to TD

Annotation

MD ft	TVD ft	
7513.00	6344.13	600' Entry