



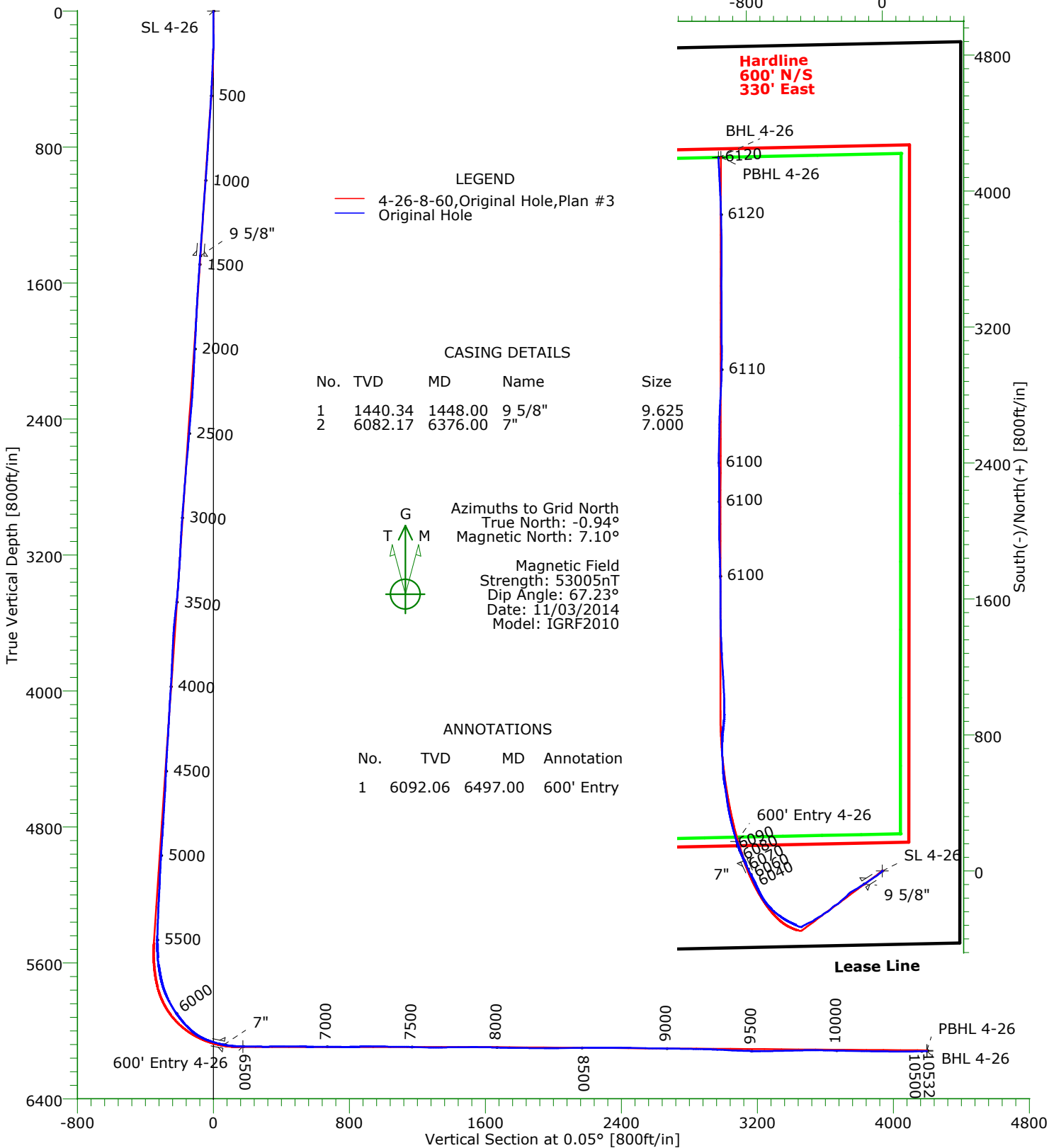
CARRIZO

CARRIZO OIL & GAS, INC.
Field: Niobrara CONZ'83
Site: Hemberger 4-26-8-60 Pad
Well: 4-26-8-60
Wellpath: Original Hole



Precision
Directional Services

West(-)/East(+) [800ft/in]
-800 0



Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SL 4-26	0.00	0.00	0.00	1474665.47	3402171.67	40°37'38.374N	104°03'03.930W	Point
600' Entry 4-26	6092.06	173.91	-857.50	1474839.38	3401314.17	40°37'40.230N	104°03'15.013W	Point
PBHL 4-26	6115.00	4198.60	-949.84	1478864.07	3401221.83	40°38'20.010N	104°03'15.360W	Point
BHL 4-26	6119.78	4197.76	-964.29	1478863.23	3401207.38	40°38'20.004N	104°03'15.547W	Point

Wellpath: (4-26-8-60/Original Hole)

Created By: Tony LoRiccio Date: 11/10/2014

PRECISION DIRECTIONAL SERVICES, INC.

713.435.6250

Precision Directional Services, Inc.

Survey Report

Company: CARRIZO OIL & GAS, INC.		Date: 11/10/2014	Time: 10:24:26	Page: 1
Field: Niobrara CONZ'83		Co-ordinate(NE) Reference: Well: 4-26-8-60, Grid North		
Site: Hemberger 4-26-8-60 Pad		Vertical (TVD) Reference: 4877' GL+17'KB 4894.0		
Well: 4-26-8-60		Section (VS) Reference: Well (0.00N,0.00E,0.05Azi)		
Wellpath: Original Hole		Survey Calculation Method: Minimum Curvature	Db: Adapti	

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: Hemberger 4-26-8-60 Pad Sec 26, T8N, R60W Weld County, CO				
Site Position:	Northing: 1474665.47 ft	Latitude: 40 37 38.374 N		
From: Map	Easting: 3402171.67 ft	Longitude: 104 3 3.930 W		
Position Uncertainty: 0.00 ft		North Reference: Grid		
Ground Level: 4877.00 ft		Grid Convergence: 0.94 deg		

Well: 4-26-8-60					Slot Name:				
Well Position:	+N/-S 0.00 ft	Northing: 1474665.47 ft	Latitude: 40 37 38.374 N						
	+E/-W 0.00 ft	Easting : 3402171.67 ft	Longitude: 104 3 3.930 W						
Position Uncertainty:	0.00 ft								

Wellpath: Original Hole				Drilled From: Surface				
Current Datum: 4877' GL+17'KB				Tie-on Depth: 0.00 ft				
Magnetic Data: 11/03/2014				Above System Datum: Mean Sea Level				
Field Strength: 53005 nT				Declination: 8.04 deg				
Vertical Section: Depth From (TVD)				Mag Dip Angle: 67.23 deg				
	ft	+N/-S ft	+E/-W ft	Direction bearing				
	0.00	0.00	0.00	0.05				

Survey Program for Definitive Wellpath					
Date: 11/10/2014		Validated: No		Version: 3	
Actual From ft	To ft	Survey	Toolcode	Tool Name	
138.00	10471.00	Survey #1 (138.00-10471.00)	MWD	Std MWD	
10532.00	10532.00	Survey #2 (10532.00-10532.00)	Project	Projection	

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	TIE LINE
138.00	0.30	342.70	138.00	0.34	-0.11	0.34	0.22	0.22	0.00	MWD
232.00	2.70	222.30	231.97	-1.06	-1.67	-1.06	3.05	2.55	-128.09	MWD
323.00	3.30	215.80	322.84	-4.77	-4.65	-4.77	0.76	0.66	-7.14	MWD
413.00	3.40	223.50	412.69	-8.80	-8.00	-8.81	0.51	0.11	8.56	MWD
505.00	5.50	231.00	504.41	-13.56	-13.30	-13.57	2.36	2.28	8.15	MWD
596.00	6.30	234.60	594.92	-19.20	-20.76	-19.21	0.97	0.88	3.96	MWD
686.00	6.10	234.00	684.40	-24.87	-28.66	-24.89	0.23	-0.22	-0.67	MWD
777.00	5.90	232.30	774.90	-30.57	-36.27	-30.60	0.29	-0.22	-1.87	MWD
868.00	7.10	236.70	865.31	-36.52	-44.67	-36.56	1.43	1.32	4.84	MWD
959.00	7.70	236.30	955.55	-42.99	-54.44	-43.03	0.66	0.66	-0.44	MWD
1049.00	7.70	236.70	1044.74	-49.64	-64.50	-49.70	0.06	0.00	0.44	MWD
1141.00	7.50	236.10	1135.93	-56.38	-74.63	-56.44	0.23	-0.22	-0.65	MWD
1232.00	7.40	238.10	1226.17	-62.78	-84.54	-62.86	0.31	-0.11	2.20	MWD
1324.00	7.30	238.40	1317.41	-68.98	-94.55	-69.06	0.12	-0.11	0.33	MWD
1414.00	7.70	237.90	1406.64	-75.18	-104.52	-75.27	0.45	0.44	-0.56	MWD
1495.00	7.60	236.70	1486.92	-81.00	-113.60	-81.10	0.23	-0.12	-1.48	MWD
1580.00	6.90	236.50	1571.24	-86.91	-122.55	-87.01	0.82	-0.82	-0.24	MWD
1664.00	6.50	237.40	1654.67	-92.25	-130.77	-92.37	0.49	-0.48	1.07	MWD
1750.00	5.30	233.20	1740.21	-97.26	-138.05	-97.38	1.48	-1.40	-4.88	MWD
1834.00	4.20	230.20	1823.92	-101.55	-143.52	-101.67	1.34	-1.31	-3.57	MWD
1920.00	6.30	242.30	1909.56	-105.76	-150.12	-105.89	2.75	2.44	14.07	MWD

Precision Directional Services, Inc.

Survey Report

Company: CARRIZO OIL & GAS, INC. Field: Niobrara CONZ'83 Site: Hemberger 4-26-8-60 Pad Well: 4-26-8-60 Wellpath: Original Hole	Date: 11/10/2014 Co-ordinate(NE) Reference: Well: 4-26-8-60, Grid North Vertical (TVD) Reference: 4877' GL+17'KB 4894.0 Section (VS) Reference: Well (0.00N,0.00E,0.05Azi) Survey Calculation Method: Minimum Curvature	Time: 10:24:26 Page: 2 Db: Adapti
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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
2004.00	6.20	242.50	1993.06	-110.00	-158.22	-110.13	0.12	-0.12	0.24	MWD
2089.00	5.30	241.80	2077.63	-113.97	-165.75	-114.11	1.06	-1.06	-0.82	MWD
2175.00	7.40	242.50	2163.10	-118.40	-174.16	-118.56	2.44	2.44	0.81	MWD
2259.00	7.60	241.90	2246.38	-123.52	-183.86	-123.68	0.26	0.24	-0.71	MWD
2344.00	7.20	225.20	2330.68	-129.92	-192.60	-130.09	2.56	-0.47	-19.65	MWD
2429.00	6.40	222.30	2415.08	-137.18	-199.57	-137.35	1.02	-0.94	-3.41	MWD
2513.00	5.80	217.90	2498.61	-143.99	-205.33	-144.17	0.91	-0.71	-5.24	MWD
2598.00	7.60	229.60	2583.03	-151.02	-212.25	-151.21	2.65	2.12	13.76	MWD
2682.00	7.50	230.00	2666.30	-158.15	-220.68	-158.34	0.13	-0.12	0.48	MWD
2767.00	7.30	229.80	2750.59	-165.20	-229.05	-165.40	0.24	-0.24	-0.24	MWD
2852.00	7.00	229.60	2834.93	-172.04	-237.12	-172.25	0.35	-0.35	-0.24	MWD
2937.00	6.60	228.60	2919.33	-178.63	-244.73	-178.84	0.49	-0.47	-1.18	MWD
3022.00	5.50	225.90	3003.86	-184.69	-251.32	-184.91	1.34	-1.29	-3.18	MWD
3107.00	4.20	220.70	3088.55	-189.89	-256.27	-190.11	1.61	-1.53	-6.12	MWD
3190.00	4.80	233.50	3171.30	-194.26	-261.05	-194.49	1.41	0.72	15.42	MWD
3275.00	7.60	242.50	3255.79	-198.97	-268.89	-199.20	3.48	3.29	10.59	MWD
3360.00	8.60	244.80	3339.94	-204.27	-279.63	-204.52	1.24	1.18	2.71	MWD
3445.00	8.20	229.50	3424.04	-210.91	-289.99	-211.17	2.66	-0.47	-18.00	MWD
3530.00	9.00	224.00	3508.09	-219.63	-299.22	-219.90	1.35	0.94	-6.47	MWD
3614.00	7.40	220.00	3591.23	-228.51	-307.26	-228.77	2.02	-1.90	-4.76	MWD
3699.00	5.90	237.00	3675.66	-235.08	-314.45	-235.35	2.89	-1.76	20.00	MWD
3784.00	5.70	241.90	3760.22	-239.45	-321.83	-239.73	0.63	-0.24	5.76	MWD
3869.00	4.80	240.70	3844.87	-243.18	-328.66	-243.46	1.07	-1.06	-1.41	MWD
3954.00	6.60	240.70	3929.44	-247.31	-336.02	-247.60	2.12	2.12	0.00	MWD
4039.00	6.50	235.60	4013.89	-252.42	-344.25	-252.72	0.69	-0.12	-6.00	MWD
4124.00	4.80	224.90	4098.48	-257.65	-350.73	-257.96	2.34	-2.00	-12.59	MWD
4209.00	5.20	236.10	4183.15	-262.32	-356.44	-262.63	1.24	0.47	13.18	MWD
4292.00	7.70	242.50	4265.62	-266.99	-364.49	-267.30	3.13	3.01	7.71	MWD
4377.00	7.30	240.90	4349.90	-272.24	-374.26	-272.57	0.53	-0.47	-1.88	MWD
4462.00	5.70	239.80	4434.35	-276.99	-382.63	-277.33	1.89	-1.88	-1.29	MWD
4547.00	4.20	238.30	4519.03	-280.75	-388.93	-281.09	1.77	-1.76	-1.76	MWD
4632.00	6.30	237.90	4603.67	-284.87	-395.53	-285.21	2.47	2.47	-0.47	MWD
4717.00	6.00	232.50	4688.18	-290.05	-403.00	-290.40	0.77	-0.35	-6.35	MWD
4802.00	5.50	229.50	4772.75	-295.40	-409.62	-295.76	0.69	-0.59	-3.53	MWD
4887.00	9.10	248.60	4857.06	-300.50	-418.98	-300.86	5.05	4.24	22.47	MWD
4972.00	9.60	245.50	4940.93	-305.89	-431.69	-306.27	0.83	0.59	-3.65	MWD
5056.00	6.70	242.30	5024.07	-311.07	-442.41	-311.46	3.49	-3.45	-3.81	MWD
5141.00	4.70	243.50	5108.65	-314.93	-449.91	-315.33	2.36	-2.35	1.41	MWD
5226.00	6.80	240.00	5193.22	-319.00	-457.39	-319.40	2.50	2.47	-4.12	MWD
5311.00	4.70	241.40	5277.78	-323.19	-464.81	-323.59	2.48	-2.47	1.65	MWD
5396.00	4.00	233.20	5362.54	-326.63	-470.24	-327.04	1.10	-0.82	-9.65	MWD
5435.00	3.40	227.00	5401.46	-328.23	-472.17	-328.65	1.85	-1.54	-15.90	MWD
5478.00	2.50	221.20	5444.40	-329.81	-473.72	-330.22	2.20	-2.09	-13.49	MWD
5520.00	4.40	264.80	5486.33	-330.64	-475.93	-331.06	7.40	4.52	103.81	MWD
5563.00	9.30	285.20	5529.01	-329.88	-480.93	-330.30	12.55	11.40	47.44	MWD
5605.00	13.60	289.20	5570.17	-327.37	-488.87	-327.79	10.41	10.24	9.52	MWD
5647.00	15.80	294.90	5610.79	-323.34	-498.72	-323.77	6.26	5.24	13.57	MWD
5689.00	20.80	295.00	5650.66	-317.77	-510.68	-318.22	11.90	11.90	0.24	MWD
5731.00	26.40	295.20	5689.13	-310.64	-525.90	-311.10	13.33	13.33	0.48	MWD
5773.00	32.20	295.40	5725.74	-301.86	-544.47	-302.33	13.81	13.81	0.48	MWD
5816.00	36.20	300.00	5761.30	-290.59	-565.83	-291.08	11.07	9.30	10.70	MWD
5859.00	39.70	304.70	5795.21	-276.41	-588.13	-276.93	10.55	8.14	10.93	MWD
5901.00	41.80	307.70	5827.03	-260.21	-610.23	-260.75	6.84	5.00	7.14	MWD

Precision Directional Services, Inc.

Survey Report

Company: CARRIZO OIL & GAS, INC. Field: Niobrara CONZ'83 Site: Hemberger 4-26-8-60 Pad Well: 4-26-8-60 Wellpath: Original Hole	Date: 11/10/2014 Time: 10:24:26 Page: 3 Co-ordinate(NE) Reference: Well: 4-26-8-60, Grid North Vertical (TVD) Reference: 4877' GL+17'KB 4894.0 Section (VS) Reference: Well (0.00N,0.00E,0.05Azi) Survey Calculation Method: Minimum Curvature Db: Adapti
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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
5944.00	42.50	310.10	5858.91	-242.09	-632.69	-242.64	4.08	1.63	5.58	MWD
5986.00	43.30	312.80	5889.68	-223.17	-654.11	-223.74	4.77	1.90	6.43	MWD
6029.00	45.30	318.90	5920.47	-201.62	-674.98	-202.21	10.94	4.65	14.19	MWD
6071.00	47.10	324.70	5949.55	-177.80	-693.70	-178.41	10.85	4.29	13.81	MWD
6114.00	48.50	329.80	5978.45	-151.02	-710.90	-151.64	9.37	3.26	11.86	MWD
6156.00	52.90	333.40	6005.05	-122.43	-726.33	-123.07	12.40	10.48	8.57	MWD
6199.00	60.80	335.30	6028.54	-90.00	-741.87	-90.64	18.74	18.37	4.42	MWD
6241.00	68.90	334.40	6046.38	-55.61	-758.02	-56.28	19.38	19.29	-2.14	MWD
6284.00	73.50	334.80	6060.23	-18.85	-775.48	-19.53	10.73	10.70	0.93	MWD
6326.00	75.40	334.90	6071.49	17.77	-792.67	17.08	4.53	4.52	0.24	MWD
6340.00	76.50	334.20	6074.89	30.04	-798.51	29.34	9.23	7.86	-5.00	MWD
6406.00	83.20	335.60	6086.52	88.84	-826.04	88.12	10.36	10.15	2.12	MWD
6452.00	86.40	339.90	6090.69	131.22	-843.38	130.49	11.62	6.96	9.35	MWD
6497.00	90.10	343.50	6092.06	173.91	-857.50	173.16	11.47	8.22	8.00	600' Entry
6581.00	88.80	345.30	6092.87	254.81	-880.08	254.04	2.64	-1.55	2.14	MWD
6666.00	90.70	348.30	6093.24	337.55	-899.49	336.76	4.18	2.24	3.53	MWD
6751.00	90.20	352.50	6092.57	421.34	-913.66	420.54	4.98	-0.59	4.94	MWD
6836.00	89.30	349.50	6092.94	505.28	-926.96	504.47	3.68	-1.06	-3.53	MWD
6921.00	90.00	357.60	6093.46	589.67	-936.50	588.85	9.56	0.82	9.53	MWD
7006.00	89.40	356.40	6093.91	674.55	-940.95	673.73	1.58	-0.71	-1.41	MWD
7090.00	89.50	0.40	6094.71	758.50	-943.29	757.67	4.76	0.12	4.76	MWD
7175.00	91.70	8.50	6093.82	843.16	-936.70	842.34	9.87	2.59	9.53	MWD
7260.00	90.10	1.70	6092.48	927.76	-929.15	926.95	8.22	-1.88	-8.00	MWD
7345.00	89.00	357.30	6093.15	1012.73	-929.89	1011.92	5.34	-1.29	-5.18	MWD
7430.00	89.80	357.10	6094.04	1097.62	-934.05	1096.81	0.97	0.94	-0.24	MWD
7514.00	88.50	356.70	6095.29	1181.49	-938.59	1180.67	1.62	-1.55	-0.48	MWD
7599.00	88.50	356.60	6097.51	1266.32	-943.55	1265.49	0.12	0.00	-0.12	MWD
7684.00	91.10	357.80	6097.81	1351.21	-947.71	1350.38	3.37	3.06	1.41	MWD
7769.00	90.60	358.50	6096.55	1436.15	-950.45	1435.32	1.01	-0.59	0.82	MWD
7854.00	90.20	359.70	6095.96	1521.14	-951.78	1520.31	1.49	-0.47	1.41	MWD
7939.00	88.80	0.40	6096.70	1606.13	-951.71	1605.30	1.84	-1.65	0.82	MWD
8024.00	88.20	359.00	6098.92	1691.10	-952.16	1690.27	1.79	-0.71	-1.65	MWD
8109.00	89.50	358.80	6100.63	1776.06	-953.79	1775.23	1.55	1.53	-0.24	MWD
8194.00	89.40	358.30	6101.44	1861.03	-955.94	1860.20	0.60	-0.12	-0.59	MWD
8280.00	89.40	358.50	6102.35	1946.99	-958.34	1946.16	0.23	0.00	0.23	MWD
8365.00	90.80	0.80	6102.20	2031.98	-958.86	2031.15	3.17	1.65	2.71	MWD
8450.00	90.80	359.50	6101.01	2116.97	-958.64	2116.14	1.53	0.00	-1.53	MWD
8535.00	91.30	358.80	6099.45	2201.95	-959.90	2201.11	1.01	0.59	-0.82	MWD
8620.00	89.60	0.80	6098.78	2286.94	-960.19	2286.10	3.09	-2.00	2.35	MWD
8705.00	89.30	358.70	6099.60	2371.93	-960.56	2371.09	2.50	-0.35	-2.47	MWD
8790.00	88.90	0.90	6100.94	2456.91	-960.86	2456.07	2.63	-0.47	2.59	MWD
8875.00	89.00	0.90	6102.49	2541.89	-959.53	2541.05	0.12	0.12	0.00	MWD
8960.00	89.30	1.10	6103.75	2626.87	-958.04	2626.03	0.42	0.35	0.24	MWD
9045.00	89.20	2.40	6104.87	2711.82	-955.45	2710.98	1.53	-0.12	1.53	MWD
9130.00	88.80	3.20	6106.35	2796.70	-951.29	2795.87	1.05	-0.47	0.94	MWD
9215.00	89.00	2.70	6107.98	2881.57	-946.92	2880.75	0.63	0.24	-0.59	MWD
9300.00	87.20	0.20	6110.80	2966.49	-944.77	2965.66	3.62	-2.12	-2.94	MWD
9385.00	87.50	0.10	6114.73	3051.40	-944.55	3050.57	0.37	0.35	-0.12	MWD
9470.00	88.00	359.00	6118.07	3136.33	-945.22	3135.50	1.42	0.59	-1.29	MWD
9555.00	90.20	0.20	6119.40	3221.31	-945.81	3220.48	2.95	2.59	1.41	MWD
9641.00	91.10	0.20	6118.43	3307.30	-945.51	3306.48	1.05	1.05	0.00	MWD
9724.00	91.40	359.40	6116.62	3390.28	-945.80	3389.45	1.03	0.36	-0.96	MWD
9809.00	91.30	0.20	6114.61	3475.26	-946.09	3474.43	0.95	-0.12	0.94	MWD
9894.00	89.10	0.60	6114.32	3560.25	-945.50	3559.42	2.63	-2.59	0.47	MWD

Precision Directional Services, Inc.

Survey Report

Company: CARRIZO OIL & GAS, INC. Field: Niobrara CONZ'83 Site: Hemberger 4-26-8-60 Pad Well: 4-26-8-60 Wellpath: Original Hole	Date: 11/10/2014 Time: 10:24:26 Page: 4 Co-ordinate(NE) Reference: Well: 4-26-8-60, Grid North Vertical (TVD) Reference: 4877' GL+17'KB 4894.0 Section (VS) Reference: Well (0.00N,0.00E,0.05Azi) Survey Calculation Method: Minimum Curvature Db: Adapti
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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
9979.00	88.80	359.90	6115.88	3645.23	-945.13	3644.41	0.90	-0.35	-0.82	MWD
10062.00	88.90	359.00	6117.54	3728.21	-945.93	3727.38	1.09	0.12	-1.08	MWD
10147.00	88.90	358.80	6119.17	3813.18	-947.56	3812.35	0.24	0.00	-0.24	MWD
10232.00	89.30	358.10	6120.51	3898.14	-949.86	3897.31	0.95	0.47	-0.82	MWD
10317.00	89.40	357.10	6121.47	3983.06	-953.42	3982.22	1.18	0.12	-1.18	MWD
10402.00	90.10	357.60	6121.84	4067.96	-957.35	4067.13	1.01	0.82	0.59	MWD
10471.00	91.20	356.70	6121.06	4136.87	-960.78	4136.03	2.06	1.59	-1.30	MWD
10532.00	91.20	356.70	6119.78	4197.76	-964.29	4196.91	0.00	0.00	0.00	PROJECTED to TD

Annotation

MD ft	TVD ft	
6497.00	6092.06	600' Entry