



CARRIZO

CARRIZO OIL & GAS, INC.

Field: Niobrara CONZ'83

Site: Speaker 27-11-8-61 Pad

Well: 3-27-11-8-61

Wellpath: Original Hole

Plan: Plan #2

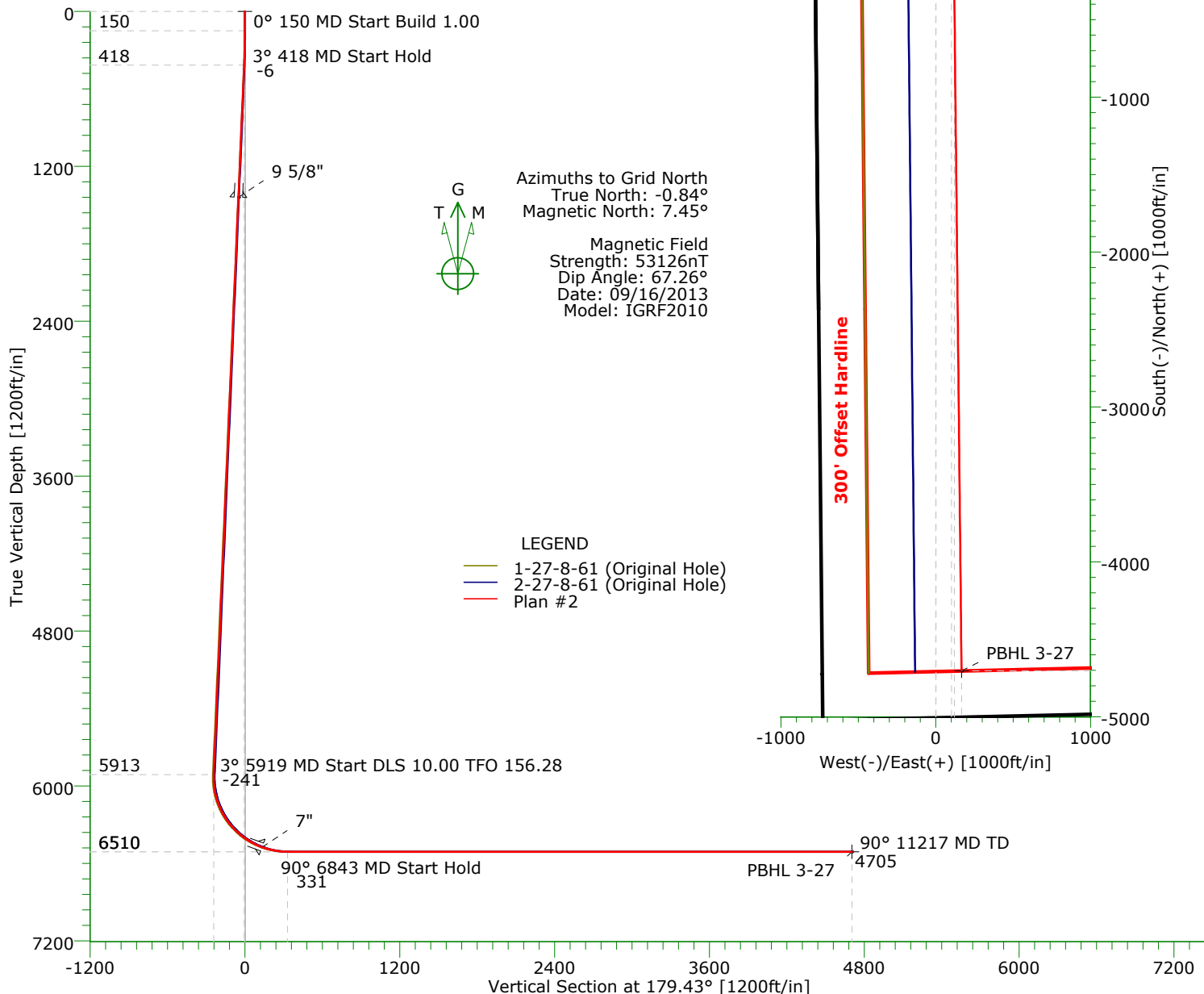


Precision

Directional Services

CASING DETAILS

| No. | TVD | MD | Name | Size |
|-----|---------|---------|--------|-------|
| 1 | 1440.00 | 1441.22 | 9 5/8" | 9.625 |
| 2 | 6475.43 | 6643.20 | 7" | 7.000 |



TARGET DETAILS

| Name | TVD | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Shape |
|-----------|---------|----------|--------|------------|------------|---------------|----------------|-------|
| SL 3-27 | 0.00 | 0.00 | 0.00 | 1478357.47 | 3361097.59 | 40°38'21.145N | 104°11'55.876W | Point |
| PBHL 3-27 | 6510.00 | -4703.31 | 167.25 | 1473654.16 | 3361264.84 | 40°37'34.650N | 104°11'54.602W | Point |

SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | DLeg | TFace | VSec | Target |
|-----|----------|-------|--------|---------|----------|--------|-------|--------|---------|-----------|
| 1 | 0.00 | 0.00 | 23.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2 | 150.00 | 0.00 | 23.26 | 150.00 | 0.00 | 0.00 | 0.00 | 23.26 | 0.00 | |
| 3 | 417.90 | 2.68 | 23.09 | 417.80 | 5.76 | 2.46 | 1.00 | 0.00 | -5.74 | |
| 4 | 5918.74 | 2.68 | 23.09 | 5912.63 | 242.28 | 103.27 | 0.00 | 0.00 | -241.24 | |
| 5 | 6843.26 | 90.00 | 179.39 | 6510.00 | -330.00 | 120.61 | 10.00 | 156.28 | 331.18 | |
| 6 | 11216.82 | 90.00 | 179.39 | 6510.00 | -4703.31 | 167.25 | 0.00 | 0.00 | 4704.74 | PBHL 3-27 |

Precision Directional Services, Inc.

Planning Report

| | | | | |
|-----------------------------------------|--|---------------------------------------------------------------|-----------------------|----------------|
| Company: CARRIZO OIL & GAS, INC. | | Date: 08/16/2013 | Time: 09:43:23 | Page: 1 |
| Field: Niobrara CONZ'83 | | Co-ordinate(NE) Reference: Well: 3-27-8-61, Grid North | | |
| Site: Speaker 27-11-8-61 Pad | | Vertical (TVD) Reference: 4999'GL+17'KB 5016.0 | | |
| Well: 3-27-8-61 | | Section (VS) Reference: Well (0.00N,0.00E,179.43Azi) | | |
| Wellpath: Original Hole | | Plan: Plan #2 | | |

| | |
|----------------------------------------------------------|------------------------------------------|
| 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: Speaker 27-11-8-61 Pad Centered on #1 Weld County, CO | |
| Site Position: | Northing: 1478356.89 ft |
| From: Map | Easting: 3361067.22 ft |
| Position Uncertainty: 0.00 ft | Latitude: 40 38 21.144 N |
| Ground Level: 4999.00 ft | Longitude: 104 11 56.270 W |
| | North Reference: Grid |
| | Grid Convergence: 0.84 deg |

| | | | |
|--------------------------------------|--------------------------------|-----------------------------------|--|
| Well: 3-27-8-61 | | Slot Name: | |
| Well Position: +N/-S 0.58 ft | Northing: 1478357.47 ft | Latitude: 40 38 21.145 N | |
| +E/-W 30.37 ft | Easting : 3361097.59 ft | Longitude: 104 11 55.876 W | |
| Position Uncertainty: 0.00 ft | | | |

| | | | |
|-------------------------------------------|--------------------------|-------------------------------------------|------------------|
| Wellpath: Original Hole | | Drilled From: Surface | |
| Current Datum: 4999'GL+17'KB | Height 5016.00 ft | Tie-on Depth: 0.00 ft | |
| Magnetic Data: 09/16/2013 | | Above System Datum: Mean Sea Level | |
| Field Strength: 53126 nT | | Declination: 8.29 deg | |
| Vertical Section: Depth From (TVD) | +N/-S | Mag Dip Angle: 67.26 deg | |
| ft | ft | +E/-W | Direction |
| | | ft | deg |
| 0.00 | 0.00 | 0.00 | 179.43 |

| | |
|----------------------|----------------------------------|
| Plan: Plan #2 | Date Composed: 08/16/2013 |
| adjusted landing TVD | Version: 1 |
| Principal: No | 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 | 23.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 150.00 | 0.00 | 23.26 | 150.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 23.26 | |
| 417.90 | 2.68 | 23.09 | 417.80 | 5.76 | 2.46 | 1.00 | 1.00 | 0.00 | 0.00 | |
| 5918.74 | 2.68 | 23.09 | 5912.63 | 242.28 | 103.27 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 6843.26 | 90.00 | 179.39 | 6510.00 | -330.00 | 120.61 | 10.00 | 9.44 | 16.91 | 156.28 | |
| 11216.82 | 90.00 | 179.39 | 6510.00 | -4703.31 | 167.25 | 0.00 | 0.00 | 0.00 | 0.00 | PBHL 3-27 |

| 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 | 23.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 100.00 | 0.00 | 23.26 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 150.00 | 0.00 | 23.26 | 150.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 200.00 | 0.50 | 23.09 | 200.00 | 0.20 | 0.09 | -0.20 | 1.00 | 1.00 | 0.00 | |
| 300.00 | 1.50 | 23.09 | 299.98 | 1.81 | 0.77 | -1.80 | 1.00 | 1.00 | 0.00 | |
| 400.00 | 2.50 | 23.09 | 399.92 | 5.02 | 2.14 | -5.00 | 1.00 | 1.00 | 0.00 | |
| 417.90 | 2.68 | 23.09 | 417.80 | 5.76 | 2.46 | -5.74 | 1.00 | 1.00 | 0.00 | |
| 500.00 | 2.68 | 23.09 | 499.81 | 9.29 | 3.96 | -9.25 | 0.00 | 0.00 | 0.00 | |
| 600.00 | 2.68 | 23.09 | 599.70 | 13.59 | 5.79 | -13.53 | 0.00 | 0.00 | 0.00 | |
| 700.00 | 2.68 | 23.09 | 699.59 | 17.89 | 7.63 | -17.81 | 0.00 | 0.00 | 0.00 | |
| 800.00 | 2.68 | 23.09 | 799.48 | 22.19 | 9.46 | -22.09 | 0.00 | 0.00 | 0.00 | |
| 900.00 | 2.68 | 23.09 | 899.38 | 26.49 | 11.29 | -26.38 | 0.00 | 0.00 | 0.00 | |
| 1000.00 | 2.68 | 23.09 | 999.27 | 30.79 | 13.12 | -30.66 | 0.00 | 0.00 | 0.00 | |
| 1100.00 | 2.68 | 23.09 | 1099.16 | 35.09 | 14.96 | -34.94 | 0.00 | 0.00 | 0.00 | |
| 1200.00 | 2.68 | 23.09 | 1199.05 | 39.39 | 16.79 | -39.22 | 0.00 | 0.00 | 0.00 | |

Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC.
Field: Niobrara CONZ'83
Site: Speaker 27-11-8-61 Pad
Well: 3-27-8-61
Wellpath: Original Hole

Date: 08/16/2013 **Time:** 09:43:23
Co-ordinate(NE) Reference: Well: 3-27-8-61, Grid North
Vertical (TVD) Reference: 4999'GL+17'KB 5016.0
Section (VS) Reference: Well (0.00N,0.00E,179.43Azi)
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 |
|----------|-------------|-------------|-----------|-------------|-------------|----------|------------------|--------------------|-------------------|--------------|
| 1300.00 | 2.68 | 23.09 | 1298.94 | 43.69 | 18.62 | -43.50 | 0.00 | 0.00 | 0.00 | 9 5/8" |
| 1400.00 | 2.68 | 23.09 | 1398.83 | 47.99 | 20.45 | -47.78 | 0.00 | 0.00 | 0.00 | |
| 1441.22 | 2.68 | 23.09 | 1440.00 | 49.76 | 21.21 | -49.55 | 0.00 | 0.00 | 0.00 | |
| 1500.00 | 2.68 | 23.09 | 1498.72 | 52.29 | 22.29 | -52.06 | 0.00 | 0.00 | 0.00 | |
| 1600.00 | 2.68 | 23.09 | 1598.61 | 56.59 | 24.12 | -56.34 | 0.00 | 0.00 | 0.00 | |
| 1700.00 | 2.68 | 23.09 | 1698.50 | 60.89 | 25.95 | -60.63 | 0.00 | 0.00 | 0.00 | |
| 1800.00 | 2.68 | 23.09 | 1798.39 | 65.19 | 27.79 | -64.91 | 0.00 | 0.00 | 0.00 | |
| 1900.00 | 2.68 | 23.09 | 1898.28 | 69.49 | 29.62 | -69.19 | 0.00 | 0.00 | 0.00 | |
| 2000.00 | 2.68 | 23.09 | 1998.17 | 73.79 | 31.45 | -73.47 | 0.00 | 0.00 | 0.00 | |
| 2100.00 | 2.68 | 23.09 | 2098.06 | 78.09 | 33.28 | -77.75 | 0.00 | 0.00 | 0.00 | |
| 2200.00 | 2.68 | 23.09 | 2197.95 | 82.39 | 35.12 | -82.03 | 0.00 | 0.00 | 0.00 | |
| 2300.00 | 2.68 | 23.09 | 2297.85 | 86.69 | 36.95 | -86.31 | 0.00 | 0.00 | 0.00 | |
| 2400.00 | 2.68 | 23.09 | 2397.74 | 90.99 | 38.78 | -90.59 | 0.00 | 0.00 | 0.00 | |
| 2500.00 | 2.68 | 23.09 | 2497.63 | 95.28 | 40.62 | -94.88 | 0.00 | 0.00 | 0.00 | |
| 2600.00 | 2.68 | 23.09 | 2597.52 | 99.58 | 42.45 | -99.16 | 0.00 | 0.00 | 0.00 | |
| 2700.00 | 2.68 | 23.09 | 2697.41 | 103.88 | 44.28 | -103.44 | 0.00 | 0.00 | 0.00 | |
| 2800.00 | 2.68 | 23.09 | 2797.30 | 108.18 | 46.11 | -107.72 | 0.00 | 0.00 | 0.00 | |
| 2900.00 | 2.68 | 23.09 | 2897.19 | 112.48 | 47.95 | -112.00 | 0.00 | 0.00 | 0.00 | |
| 3000.00 | 2.68 | 23.09 | 2997.08 | 116.78 | 49.78 | -116.28 | 0.00 | 0.00 | 0.00 | |
| 3100.00 | 2.68 | 23.09 | 3096.97 | 121.08 | 51.61 | -120.56 | 0.00 | 0.00 | 0.00 | |
| 3200.00 | 2.68 | 23.09 | 3196.86 | 125.38 | 53.44 | -124.84 | 0.00 | 0.00 | 0.00 | |
| 3300.00 | 2.68 | 23.09 | 3296.75 | 129.68 | 55.28 | -129.13 | 0.00 | 0.00 | 0.00 | |
| 3400.00 | 2.68 | 23.09 | 3396.64 | 133.98 | 57.11 | -133.41 | 0.00 | 0.00 | 0.00 | |
| 3500.00 | 2.68 | 23.09 | 3496.53 | 138.28 | 58.94 | -137.69 | 0.00 | 0.00 | 0.00 | |
| 3600.00 | 2.68 | 23.09 | 3596.42 | 142.58 | 60.78 | -141.97 | 0.00 | 0.00 | 0.00 | |
| 3700.00 | 2.68 | 23.09 | 3696.32 | 146.88 | 62.61 | -146.25 | 0.00 | 0.00 | 0.00 | |
| 3800.00 | 2.68 | 23.09 | 3796.21 | 151.18 | 64.44 | -150.53 | 0.00 | 0.00 | 0.00 | |
| 3900.00 | 2.68 | 23.09 | 3896.10 | 155.48 | 66.27 | -154.81 | 0.00 | 0.00 | 0.00 | |
| 4000.00 | 2.68 | 23.09 | 3995.99 | 159.78 | 68.11 | -159.09 | 0.00 | 0.00 | 0.00 | |
| 4100.00 | 2.68 | 23.09 | 4095.88 | 164.08 | 69.94 | -163.38 | 0.00 | 0.00 | 0.00 | |
| 4200.00 | 2.68 | 23.09 | 4195.77 | 168.38 | 71.77 | -167.66 | 0.00 | 0.00 | 0.00 | |
| 4300.00 | 2.68 | 23.09 | 4295.66 | 172.68 | 73.60 | -171.94 | 0.00 | 0.00 | 0.00 | |
| 4400.00 | 2.68 | 23.09 | 4395.55 | 176.98 | 75.44 | -176.22 | 0.00 | 0.00 | 0.00 | |
| 4500.00 | 2.68 | 23.09 | 4495.44 | 181.28 | 77.27 | -180.50 | 0.00 | 0.00 | 0.00 | |
| 4600.00 | 2.68 | 23.09 | 4595.33 | 185.58 | 79.10 | -184.78 | 0.00 | 0.00 | 0.00 | |
| 4700.00 | 2.68 | 23.09 | 4695.22 | 189.88 | 80.94 | -189.06 | 0.00 | 0.00 | 0.00 | |
| 4800.00 | 2.68 | 23.09 | 4795.11 | 194.18 | 82.77 | -193.35 | 0.00 | 0.00 | 0.00 | |
| 4900.00 | 2.68 | 23.09 | 4895.00 | 198.48 | 84.60 | -197.63 | 0.00 | 0.00 | 0.00 | |
| 5000.00 | 2.68 | 23.09 | 4994.89 | 202.78 | 86.43 | -201.91 | 0.00 | 0.00 | 0.00 | |
| 5100.00 | 2.68 | 23.09 | 5094.79 | 207.08 | 88.27 | -206.19 | 0.00 | 0.00 | 0.00 | |
| 5200.00 | 2.68 | 23.09 | 5194.68 | 211.38 | 90.10 | -210.47 | 0.00 | 0.00 | 0.00 | |
| 5300.00 | 2.68 | 23.09 | 5294.57 | 215.68 | 91.93 | -214.75 | 0.00 | 0.00 | 0.00 | |
| 5400.00 | 2.68 | 23.09 | 5394.46 | 219.98 | 93.77 | -219.03 | 0.00 | 0.00 | 0.00 | |
| 5500.00 | 2.68 | 23.09 | 5494.35 | 224.28 | 95.60 | -223.31 | 0.00 | 0.00 | 0.00 | |
| 5600.00 | 2.68 | 23.09 | 5594.24 | 228.58 | 97.43 | -227.60 | 0.00 | 0.00 | 0.00 | |
| 5700.00 | 2.68 | 23.09 | 5694.13 | 232.88 | 99.26 | -231.88 | 0.00 | 0.00 | 0.00 | |
| 5800.00 | 2.68 | 23.09 | 5794.02 | 237.18 | 101.10 | -236.16 | 0.00 | 0.00 | 0.00 | |
| 5900.00 | 2.68 | 23.09 | 5893.91 | 241.47 | 102.93 | -240.44 | 0.00 | 0.00 | 0.00 | |
| 5918.74 | 2.68 | 23.09 | 5912.63 | 242.28 | 103.27 | -241.24 | 0.00 | 0.00 | 0.00 | |
| 5950.00 | 1.27 | 121.40 | 5943.88 | 242.77 | 103.85 | -241.73 | 10.00 | -4.50 | 314.47 | |
| 6000.00 | 5.77 | 168.67 | 5993.78 | 240.02 | 104.82 | -238.96 | 10.00 | 9.01 | 94.54 | |
| 6050.00 | 10.73 | 173.69 | 6043.24 | 232.92 | 105.83 | -231.85 | 10.00 | 9.91 | 10.04 | |
| 6100.00 | 15.71 | 175.56 | 6091.90 | 221.54 | 106.87 | -220.46 | 10.00 | 9.96 | 3.73 | |
| 6150.00 | 20.70 | 176.54 | 6139.39 | 205.96 | 107.92 | -204.87 | 10.00 | 9.98 | 1.96 | |

Precision Directional Services, Inc.

Planning Report

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Site: Speaker 27-11-8-61 Pad
Well: 3-27-8-61
Wellpath: Original Hole

Date: 08/16/2013
Co-ordinate(NE) Reference: Well: 3-27-8-61, Grid North
Vertical (TVD) Reference: 4999'GL+17'KB 5016.0
Section (VS) Reference: Well (0.00N,0.00E,179.43Azi)
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 |
|----------|-------------|-------------|-----------|-------------|-------------|----------|------------------|--------------------|-------------------|--------------|
| 6200.00 | 25.69 | 177.15 | 6185.33 | 186.30 | 109.00 | -185.21 | 10.00 | 9.99 | 1.23 | |
| 6250.00 | 30.69 | 177.57 | 6229.38 | 162.71 | 110.08 | -161.61 | 10.00 | 9.99 | 0.85 | |
| 6300.00 | 35.69 | 177.89 | 6271.21 | 135.37 | 111.16 | -134.26 | 10.00 | 9.99 | 0.63 | |
| 6350.00 | 40.69 | 178.14 | 6310.50 | 104.49 | 112.22 | -103.37 | 10.00 | 10.00 | 0.49 | |
| 6400.00 | 45.68 | 178.34 | 6346.95 | 70.30 | 113.27 | -69.17 | 10.00 | 10.00 | 0.40 | |
| 6450.00 | 50.68 | 178.51 | 6380.28 | 33.06 | 114.30 | -31.92 | 10.00 | 10.00 | 0.34 | |
| 6500.00 | 55.68 | 178.65 | 6410.23 | -6.94 | 115.29 | 8.09 | 10.00 | 10.00 | 0.29 | |
| 6550.00 | 60.68 | 178.78 | 6436.58 | -49.40 | 116.24 | 50.56 | 10.00 | 10.00 | 0.26 | |
| 6600.00 | 65.68 | 178.90 | 6459.14 | -94.00 | 117.14 | 95.16 | 10.00 | 10.00 | 0.24 | |
| 6643.20 | 70.00 | 179.00 | 6475.43 | -133.99 | 117.87 | 135.16 | 10.00 | 10.00 | 0.22 | 7" |
| 6650.00 | 70.68 | 179.01 | 6477.72 | -140.40 | 117.98 | 141.56 | 10.00 | 10.00 | 0.21 | |
| 6700.00 | 75.68 | 179.11 | 6492.18 | -188.23 | 118.76 | 189.41 | 10.00 | 10.00 | 0.21 | |
| 6750.00 | 80.68 | 179.21 | 6502.43 | -237.15 | 119.48 | 238.33 | 10.00 | 10.00 | 0.20 | |
| 6800.00 | 85.67 | 179.31 | 6508.37 | -286.78 | 120.12 | 287.96 | 10.00 | 10.00 | 0.19 | |
| 6843.26 | 90.00 | 179.39 | 6510.00 | -330.00 | 120.61 | 331.18 | 10.00 | 10.00 | 0.19 | |
| 6900.00 | 90.00 | 179.39 | 6510.00 | -386.73 | 121.22 | 387.92 | 0.00 | 0.00 | 0.00 | |
| 7000.00 | 90.00 | 179.39 | 6510.00 | -486.73 | 122.28 | 487.92 | 0.00 | 0.00 | 0.00 | |
| 7100.00 | 90.00 | 179.39 | 6510.00 | -586.72 | 123.35 | 587.92 | 0.00 | 0.00 | 0.00 | |
| 7200.00 | 90.00 | 179.39 | 6510.00 | -686.71 | 124.41 | 687.92 | 0.00 | 0.00 | 0.00 | |
| 7300.00 | 90.00 | 179.39 | 6510.00 | -786.71 | 125.48 | 787.92 | 0.00 | 0.00 | 0.00 | |
| 7400.00 | 90.00 | 179.39 | 6510.00 | -886.70 | 126.55 | 887.92 | 0.00 | 0.00 | 0.00 | |
| 7500.00 | 90.00 | 179.39 | 6510.00 | -986.70 | 127.61 | 987.92 | 0.00 | 0.00 | 0.00 | |
| 7600.00 | 90.00 | 179.39 | 6510.00 | -1086.69 | 128.68 | 1087.92 | 0.00 | 0.00 | 0.00 | |
| 7700.00 | 90.00 | 179.39 | 6510.00 | -1186.69 | 129.75 | 1187.92 | 0.00 | 0.00 | 0.00 | |
| 7800.00 | 90.00 | 179.39 | 6510.00 | -1286.68 | 130.81 | 1287.92 | 0.00 | 0.00 | 0.00 | |
| 7900.00 | 90.00 | 179.39 | 6510.00 | -1386.67 | 131.88 | 1387.92 | 0.00 | 0.00 | 0.00 | |
| 8000.00 | 90.00 | 179.39 | 6510.00 | -1486.67 | 132.95 | 1487.92 | 0.00 | 0.00 | 0.00 | |
| 8100.00 | 90.00 | 179.39 | 6510.00 | -1586.66 | 134.01 | 1587.92 | 0.00 | 0.00 | 0.00 | |
| 8200.00 | 90.00 | 179.39 | 6510.00 | -1686.66 | 135.08 | 1687.92 | 0.00 | 0.00 | 0.00 | |
| 8300.00 | 90.00 | 179.39 | 6510.00 | -1786.65 | 136.14 | 1787.92 | 0.00 | 0.00 | 0.00 | |
| 8400.00 | 90.00 | 179.39 | 6510.00 | -1886.65 | 137.21 | 1887.92 | 0.00 | 0.00 | 0.00 | |
| 8500.00 | 90.00 | 179.39 | 6510.00 | -1986.64 | 138.28 | 1987.92 | 0.00 | 0.00 | 0.00 | |
| 8600.00 | 90.00 | 179.39 | 6510.00 | -2086.64 | 139.34 | 2087.92 | 0.00 | 0.00 | 0.00 | |
| 8700.00 | 90.00 | 179.39 | 6510.00 | -2186.63 | 140.41 | 2187.92 | 0.00 | 0.00 | 0.00 | |
| 8800.00 | 90.00 | 179.39 | 6510.00 | -2286.62 | 141.48 | 2287.92 | 0.00 | 0.00 | 0.00 | |
| 8900.00 | 90.00 | 179.39 | 6510.00 | -2386.62 | 142.54 | 2387.92 | 0.00 | 0.00 | 0.00 | |
| 9000.00 | 90.00 | 179.39 | 6510.00 | -2486.61 | 143.61 | 2487.92 | 0.00 | 0.00 | 0.00 | |
| 9100.00 | 90.00 | 179.39 | 6510.00 | -2586.61 | 144.68 | 2587.92 | 0.00 | 0.00 | 0.00 | |
| 9200.00 | 90.00 | 179.39 | 6510.00 | -2686.60 | 145.74 | 2687.92 | 0.00 | 0.00 | 0.00 | |
| 9300.00 | 90.00 | 179.39 | 6510.00 | -2786.60 | 146.81 | 2787.92 | 0.00 | 0.00 | 0.00 | |
| 9400.00 | 90.00 | 179.39 | 6510.00 | -2886.59 | 147.88 | 2887.92 | 0.00 | 0.00 | 0.00 | |
| 9500.00 | 90.00 | 179.39 | 6510.00 | -2986.58 | 148.94 | 2987.92 | 0.00 | 0.00 | 0.00 | |
| 9600.00 | 90.00 | 179.39 | 6510.00 | -3086.58 | 150.01 | 3087.92 | 0.00 | 0.00 | 0.00 | |
| 9700.00 | 90.00 | 179.39 | 6510.00 | -3186.57 | 151.07 | 3187.92 | 0.00 | 0.00 | 0.00 | |
| 9800.00 | 90.00 | 179.39 | 6510.00 | -3286.57 | 152.14 | 3287.92 | 0.00 | 0.00 | 0.00 | |
| 9900.00 | 90.00 | 179.39 | 6510.00 | -3386.56 | 153.21 | 3387.92 | 0.00 | 0.00 | 0.00 | |
| 10000.00 | 90.00 | 179.39 | 6510.00 | -3486.56 | 154.27 | 3487.92 | 0.00 | 0.00 | 0.00 | |
| 10100.00 | 90.00 | 179.39 | 6510.00 | -3586.55 | 155.34 | 3587.92 | 0.00 | 0.00 | 0.00 | |
| 10200.00 | 90.00 | 179.39 | 6510.00 | -3686.54 | 156.41 | 3687.92 | 0.00 | 0.00 | 0.00 | |
| 10300.00 | 90.00 | 179.39 | 6510.00 | -3786.54 | 157.47 | 3787.92 | 0.00 | 0.00 | 0.00 | |
| 10400.00 | 90.00 | 179.39 | 6510.00 | -3886.53 | 158.54 | 3887.92 | 0.00 | 0.00 | 0.00 | |
| 10500.00 | 90.00 | 179.39 | 6510.00 | -3986.53 | 159.61 | 3987.92 | 0.00 | 0.00 | 0.00 | |
| 10600.00 | 90.00 | 179.39 | 6510.00 | -4086.52 | 160.67 | 4087.92 | 0.00 | 0.00 | 0.00 | |

Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC.
Field: Niobrara CONZ'83
Site: Speaker 27-11-8-61 Pad
Well: 3-27-8-61
Wellpath: Original Hole

Date: 08/16/2013
Co-ordinate(NE) Reference: Well: 3-27-8-61, Grid North
Vertical (TVD) Reference: 4999'GL+17'KB 5016.0
Section (VS) Reference: Well (0.00N,0.00E,179.43Azi)
Plan: Plan #2

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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 |
|----------|-------------|-------------|-----------|-------------|-------------|----------|------------------|--------------------|-------------------|--------------|
| 10700.00 | 90.00 | 179.39 | 6510.00 | -4186.52 | 161.74 | 4187.92 | 0.00 | 0.00 | 0.00 | |
| 10800.00 | 90.00 | 179.39 | 6510.00 | -4286.51 | 162.80 | 4287.92 | 0.00 | 0.00 | 0.00 | |
| 10900.00 | 90.00 | 179.39 | 6510.00 | -4386.50 | 163.87 | 4387.92 | 0.00 | 0.00 | 0.00 | |
| 11000.00 | 90.00 | 179.39 | 6510.00 | -4486.50 | 164.94 | 4487.92 | 0.00 | 0.00 | 0.00 | |
| 11100.00 | 90.00 | 179.39 | 6510.00 | -4586.49 | 166.00 | 4587.92 | 0.00 | 0.00 | 0.00 | |
| 11200.00 | 90.00 | 179.39 | 6510.00 | -4686.49 | 167.07 | 4687.92 | 0.00 | 0.00 | 0.00 | |
| 11216.82 | 90.00 | 179.39 | 6510.00 | -4703.31 | 167.25 | 4704.74 | 0.00 | 0.00 | 0.00 | PBHL 3-27 |

Targets

| Name | Description Dip. | Dir. | TVD ft | +N/-S ft | +E/-W ft | Map Northing ft | Map Easting ft | <---- Latitude ----> | | | <--- Longitude ---> | | |
|-----------|---------------------|------|-----------|-------------|-------------|-----------------------|----------------------|----------------------|----|----------|---------------------|----|----------|
| SL 3-27 | | | 0.00 | 0.00 | 0.00 | 1478357.47 | 3361097.59 | 40 | 38 | 21.145 N | 104 | 11 | 55.876 W |
| PBHL 3-27 | | | 6510.00 | -4703.31 | 167.25 | 1473654.16 | 3361264.84 | 40 | 37 | 34.650 N | 104 | 11 | 54.602 W |

Casing Points

| MD ft | TVD ft | Diameter in | Hole Size in | Name |
|----------|-----------|----------------|-----------------|--------|
| 1441.22 | 1440.00 | 9.625 | 12.250 | 9 5/8" |
| 6643.20 | 6475.43 | 7.000 | 8.500 | 7" |