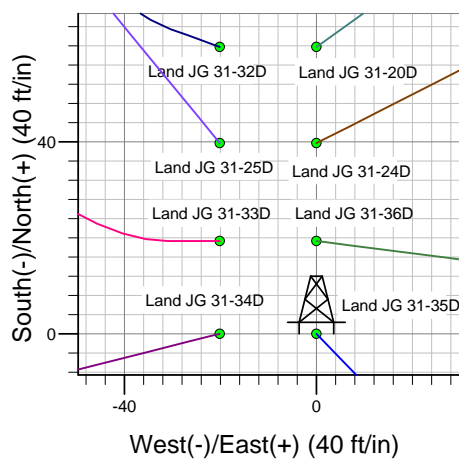
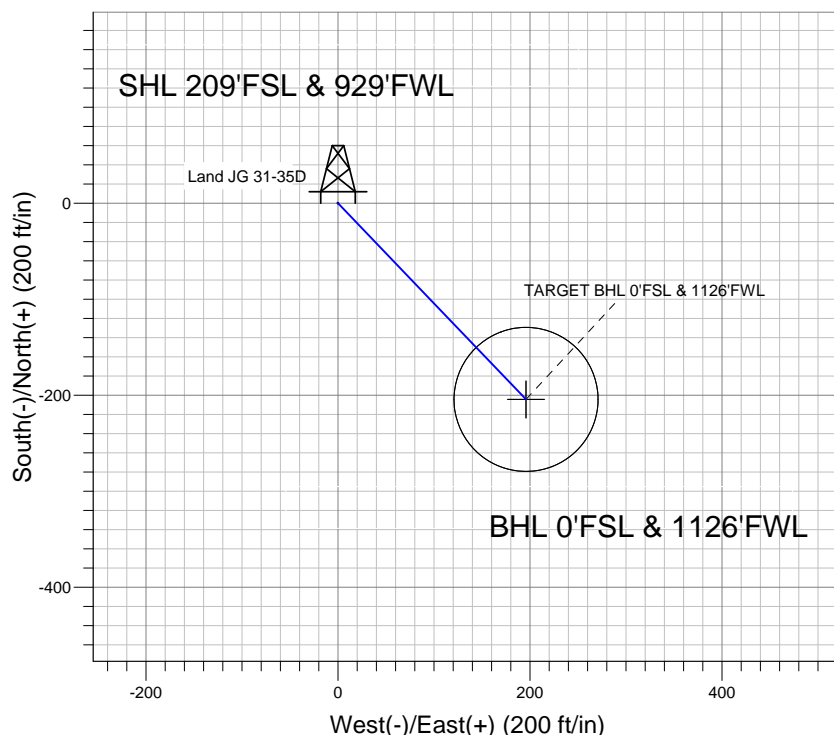
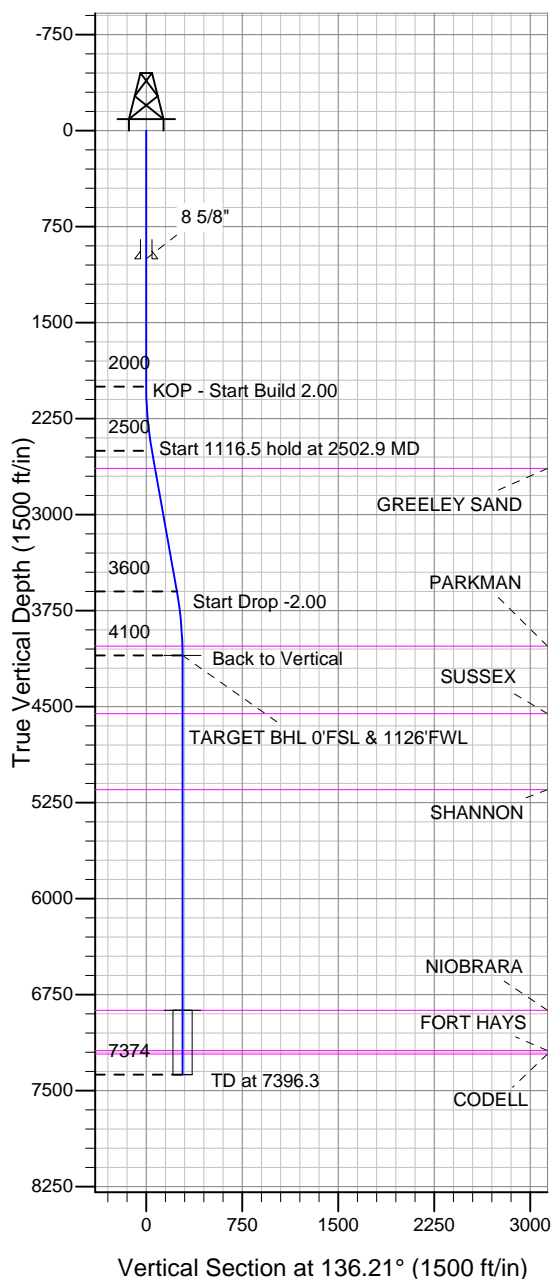


Well Name: Land JG 31-35D

Surface Location: Land JG (East) Pad Sec.31-T2N-R64W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
 Ground Elevation: 4933.0

| +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Slot |
|---|-------|------------|------------|-----------|-------------|------|
| 0.0 | 0.0 | 1276199.89 | 3251989.40 | 40.088047 | -104.599353 | |
| Original Well Elev WELL @ 4947.0ft (Original Well Elev) | | | | | | |

Great Western



Land JG (East) Pad Sec.31-T2N-R64W
 Land JG 31-35D
 Plan #1 (11-05-12)
 14:45, November 08 2012



Azimuths to True North
 Magnetic North: 8.56°

Magnetic Field
 Strength: 52837.4snT
 Dip Angle: 66.78°
 Date: 11/5/2012
 Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

| Name | TVD | +N/-S | +E/-W | Latitude | Longitude | Shape |
|--------------------------------|--------|--------|-------|-----------|-------------|-----------------------|
| TARGET BHL 0'FSL & 1126'FWL | 4100.0 | -204.4 | 195.9 | 40.087486 | -104.598653 | Point |
| TARGET CIRCLE 0'FSL & 1126'FWL | 6872.0 | -204.4 | 195.9 | 40.087486 | -104.598653 | Circle (Radius: 75.0) |

SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | DLeg | TFace | VSec | Target |
|-----|--------|-------|--------|--------|--------|-------|------|--------|-------|-----------------------------|
| 1 | 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | |
| 2 | 2000.0 | 0.00 | 0.00 | 2000.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | |
| 3 | 2502.9 | 10.06 | 136.21 | 2500.3 | -31.8 | 30.5 | 2.00 | 136.21 | 44.0 | |
| 4 | 3619.4 | 10.06 | 136.21 | 3599.7 | -172.6 | 165.4 | 0.00 | 0.00 | 239.0 | |
| 5 | 4122.3 | 0.00 | 0.00 | 4100.0 | -204.4 | 195.9 | 2.00 | 180.00 | 283.1 | TARGET BHL 0'FSL & 1126'FWL |
| 6 | 7396.3 | 0.00 | 0.00 | 7374.0 | -204.4 | 195.9 | 0.00 | 0.00 | 283.1 | |



Great Western

SEC.31-T2N-R64W

Land JG (East) Pad Sec.31-T2N-R64W

Land JG 31-35D

Wellbore #1

Plan: Plan #1 (11-05-12)

Standard Planning Report

08 November, 2012

| Plan Sections | | | | | | | | | | |
|---------------------------|--------------------|----------------|---------------------------|---------------|---------------|-----------------------------|----------------------------|---------------------------|------------|-----------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | TFO (°) | Target |
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2,000.0 | 0.00 | 0.00 | 2,000.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2,502.9 | 10.06 | 136.21 | 2,500.3 | -31.8 | 30.5 | 2.00 | 2.00 | 0.00 | 136.21 | |
| 3,619.4 | 10.06 | 136.21 | 3,599.7 | -172.6 | 165.4 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 4,122.3 | 0.00 | 0.00 | 4,100.0 | -204.4 | 195.9 | 2.00 | -2.00 | 0.00 | 180.00 | TARGET BHL 0°FS |
| 7,396.3 | 0.00 | 0.00 | 7,374.0 | -204.4 | 195.9 | 0.00 | 0.00 | 0.00 | 0.00 | |

| | | | |
|------------------|------------------------------------|-------------------------------------|--------------------------------------|
| Database: | Landmark | Local Co-ordinate Reference: | Well Land JG 31-35D |
| Company: | Great Western | TVD Reference: | WELL @ 4947.0ft (Original Well Elev) |
| Project: | SEC.31-T2N-R64W | MD Reference: | WELL @ 4947.0ft (Original Well Elev) |
| Site: | Land JG (East) Pad Sec.31-T2N-R64W | North Reference: | True |
| Well: | Land JG 31-35D | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | Plan #1 (11-05-12) | | |

| Planned Survey | | | | | | | | | |
|-------------------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 40.0 | 0.00 | 0.00 | 40.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 80.0 | 0.00 | 0.00 | 80.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 120.0 | 0.00 | 0.00 | 120.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 160.0 | 0.00 | 0.00 | 160.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 200.0 | 0.00 | 0.00 | 200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 240.0 | 0.00 | 0.00 | 240.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 280.0 | 0.00 | 0.00 | 280.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 320.0 | 0.00 | 0.00 | 320.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 360.0 | 0.00 | 0.00 | 360.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 400.0 | 0.00 | 0.00 | 400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 440.0 | 0.00 | 0.00 | 440.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 480.0 | 0.00 | 0.00 | 480.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 520.0 | 0.00 | 0.00 | 520.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 560.0 | 0.00 | 0.00 | 560.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 600.0 | 0.00 | 0.00 | 600.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 640.0 | 0.00 | 0.00 | 640.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 680.0 | 0.00 | 0.00 | 680.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 720.0 | 0.00 | 0.00 | 720.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 760.0 | 0.00 | 0.00 | 760.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 800.0 | 0.00 | 0.00 | 800.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 840.0 | 0.00 | 0.00 | 840.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 880.0 | 0.00 | 0.00 | 880.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 920.0 | 0.00 | 0.00 | 920.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 960.0 | 0.00 | 0.00 | 960.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,000.0 | 0.00 | 0.00 | 1,000.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 8 5/8" | | | | | | | | | |
| 1,040.0 | 0.00 | 0.00 | 1,040.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,080.0 | 0.00 | 0.00 | 1,080.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,120.0 | 0.00 | 0.00 | 1,120.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,160.0 | 0.00 | 0.00 | 1,160.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,200.0 | 0.00 | 0.00 | 1,200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,240.0 | 0.00 | 0.00 | 1,240.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,280.0 | 0.00 | 0.00 | 1,280.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,320.0 | 0.00 | 0.00 | 1,320.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,360.0 | 0.00 | 0.00 | 1,360.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,400.0 | 0.00 | 0.00 | 1,400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,440.0 | 0.00 | 0.00 | 1,440.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,480.0 | 0.00 | 0.00 | 1,480.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,520.0 | 0.00 | 0.00 | 1,520.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,560.0 | 0.00 | 0.00 | 1,560.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,600.0 | 0.00 | 0.00 | 1,600.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,640.0 | 0.00 | 0.00 | 1,640.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,680.0 | 0.00 | 0.00 | 1,680.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,720.0 | 0.00 | 0.00 | 1,720.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,760.0 | 0.00 | 0.00 | 1,760.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,800.0 | 0.00 | 0.00 | 1,800.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,840.0 | 0.00 | 0.00 | 1,840.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,880.0 | 0.00 | 0.00 | 1,880.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,920.0 | 0.00 | 0.00 | 1,920.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,960.0 | 0.00 | 0.00 | 1,960.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 2,000.0 | 0.00 | 0.00 | 2,000.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| KOP - Start Build 2.00 | | | | | | | | | |
| 2,040.0 | 0.80 | 136.21 | 2,040.0 | -0.2 | 0.2 | 0.3 | 2.00 | 2.00 | 0.00 |

| | | | |
|------------------|------------------------------------|-------------------------------------|--------------------------------------|
| Database: | Landmark | Local Co-ordinate Reference: | Well Land JG 31-35D |
| Company: | Great Western | TVD Reference: | WELL @ 4947.0ft (Original Well Elev) |
| Project: | SEC.31-T2N-R64W | MD Reference: | WELL @ 4947.0ft (Original Well Elev) |
| Site: | Land JG (East) Pad Sec.31-T2N-R64W | North Reference: | True |
| Well: | Land JG 31-35D | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | Plan #1 (11-05-12) | | |

| Planned Survey | | | | | | | | | |
|--------------------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 2,080.0 | 1.60 | 136.21 | 2,080.0 | -0.8 | 0.8 | 1.1 | 2.00 | 2.00 | 0.00 |
| 2,120.0 | 2.40 | 136.21 | 2,120.0 | -1.8 | 1.7 | 2.5 | 2.00 | 2.00 | 0.00 |
| 2,160.0 | 3.20 | 136.21 | 2,159.9 | -3.2 | 3.1 | 4.5 | 2.00 | 2.00 | 0.00 |
| 2,200.0 | 4.00 | 136.21 | 2,199.8 | -5.0 | 4.8 | 7.0 | 2.00 | 2.00 | 0.00 |
| 2,240.0 | 4.80 | 136.21 | 2,239.7 | -7.3 | 7.0 | 10.0 | 2.00 | 2.00 | 0.00 |
| 2,280.0 | 5.60 | 136.21 | 2,279.6 | -9.9 | 9.5 | 13.7 | 2.00 | 2.00 | 0.00 |
| 2,320.0 | 6.40 | 136.21 | 2,319.3 | -12.9 | 12.4 | 17.9 | 2.00 | 2.00 | 0.00 |
| 2,360.0 | 7.20 | 136.21 | 2,359.1 | -16.3 | 15.6 | 22.6 | 2.00 | 2.00 | 0.00 |
| 2,400.0 | 8.00 | 136.21 | 2,398.7 | -20.1 | 19.3 | 27.9 | 2.00 | 2.00 | 0.00 |
| 2,440.0 | 8.80 | 136.21 | 2,438.3 | -24.3 | 23.3 | 33.7 | 2.00 | 2.00 | 0.00 |
| 2,480.0 | 9.60 | 136.21 | 2,477.8 | -29.0 | 27.8 | 40.1 | 2.00 | 2.00 | 0.00 |
| 2,502.9 | 10.06 | 136.21 | 2,500.3 | -31.8 | 30.5 | 44.0 | 2.00 | 2.00 | 0.00 |
| Start 1116.5 hold at 2502.9 MD | | | | | | | | | |
| 2,520.0 | 10.06 | 136.21 | 2,517.2 | -33.9 | 32.5 | 47.0 | 0.00 | 0.00 | 0.00 |
| 2,560.0 | 10.06 | 136.21 | 2,556.5 | -39.0 | 37.4 | 54.0 | 0.00 | 0.00 | 0.00 |
| 2,600.0 | 10.06 | 136.21 | 2,595.9 | -44.0 | 42.2 | 61.0 | 0.00 | 0.00 | 0.00 |
| 2,640.0 | 10.06 | 136.21 | 2,635.3 | -49.1 | 47.0 | 68.0 | 0.00 | 0.00 | 0.00 |
| 2,643.7 | 10.06 | 136.21 | 2,639.0 | -49.5 | 47.5 | 68.6 | 0.00 | 0.00 | 0.00 |
| GREELEY SAND | | | | | | | | | |
| 2,680.0 | 10.06 | 136.21 | 2,674.7 | -54.1 | 51.9 | 75.0 | 0.00 | 0.00 | 0.00 |
| 2,720.0 | 10.06 | 136.21 | 2,714.1 | -59.2 | 56.7 | 81.9 | 0.00 | 0.00 | 0.00 |
| 2,760.0 | 10.06 | 136.21 | 2,753.5 | -64.2 | 61.5 | 88.9 | 0.00 | 0.00 | 0.00 |
| 2,800.0 | 10.06 | 136.21 | 2,792.9 | -69.2 | 66.4 | 95.9 | 0.00 | 0.00 | 0.00 |
| 2,840.0 | 10.06 | 136.21 | 2,832.2 | -74.3 | 71.2 | 102.9 | 0.00 | 0.00 | 0.00 |
| 2,880.0 | 10.06 | 136.21 | 2,871.6 | -79.3 | 76.0 | 109.9 | 0.00 | 0.00 | 0.00 |
| 2,920.0 | 10.06 | 136.21 | 2,911.0 | -84.4 | 80.9 | 116.9 | 0.00 | 0.00 | 0.00 |
| 2,960.0 | 10.06 | 136.21 | 2,950.4 | -89.4 | 85.7 | 123.9 | 0.00 | 0.00 | 0.00 |
| 3,000.0 | 10.06 | 136.21 | 2,989.8 | -94.5 | 90.5 | 130.8 | 0.00 | 0.00 | 0.00 |
| 3,040.0 | 10.06 | 136.21 | 3,029.2 | -99.5 | 95.4 | 137.8 | 0.00 | 0.00 | 0.00 |
| 3,080.0 | 10.06 | 136.21 | 3,068.6 | -104.6 | 100.2 | 144.8 | 0.00 | 0.00 | 0.00 |
| 3,120.0 | 10.06 | 136.21 | 3,107.9 | -109.6 | 105.0 | 151.8 | 0.00 | 0.00 | 0.00 |
| 3,160.0 | 10.06 | 136.21 | 3,147.3 | -114.6 | 109.9 | 158.8 | 0.00 | 0.00 | 0.00 |
| 3,200.0 | 10.06 | 136.21 | 3,186.7 | -119.7 | 114.7 | 165.8 | 0.00 | 0.00 | 0.00 |
| 3,240.0 | 10.06 | 136.21 | 3,226.1 | -124.7 | 119.5 | 172.8 | 0.00 | 0.00 | 0.00 |
| 3,280.0 | 10.06 | 136.21 | 3,265.5 | -129.8 | 124.4 | 179.8 | 0.00 | 0.00 | 0.00 |
| 3,320.0 | 10.06 | 136.21 | 3,304.9 | -134.8 | 129.2 | 186.7 | 0.00 | 0.00 | 0.00 |
| 3,360.0 | 10.06 | 136.21 | 3,344.2 | -139.9 | 134.0 | 193.7 | 0.00 | 0.00 | 0.00 |
| 3,400.0 | 10.06 | 136.21 | 3,383.6 | -144.9 | 138.9 | 200.7 | 0.00 | 0.00 | 0.00 |
| 3,440.0 | 10.06 | 136.21 | 3,423.0 | -149.9 | 143.7 | 207.7 | 0.00 | 0.00 | 0.00 |
| 3,480.0 | 10.06 | 136.21 | 3,462.4 | -155.0 | 148.5 | 214.7 | 0.00 | 0.00 | 0.00 |
| 3,520.0 | 10.06 | 136.21 | 3,501.8 | -160.0 | 153.4 | 221.7 | 0.00 | 0.00 | 0.00 |
| 3,560.0 | 10.06 | 136.21 | 3,541.2 | -165.1 | 158.2 | 228.7 | 0.00 | 0.00 | 0.00 |
| 3,600.0 | 10.06 | 136.21 | 3,580.6 | -170.1 | 163.1 | 235.6 | 0.00 | 0.00 | 0.00 |
| 3,619.4 | 10.06 | 136.21 | 3,599.7 | -172.6 | 165.4 | 239.0 | 0.00 | 0.00 | 0.00 |
| Start Drop -2.00 | | | | | | | | | |
| 3,640.0 | 9.65 | 136.21 | 3,620.0 | -175.1 | 167.8 | 242.6 | 2.00 | -2.00 | 0.00 |
| 3,680.0 | 8.85 | 136.21 | 3,659.4 | -179.7 | 172.3 | 249.0 | 2.00 | -2.00 | 0.00 |
| 3,720.0 | 8.05 | 136.21 | 3,699.0 | -184.0 | 176.3 | 254.9 | 2.00 | -2.00 | 0.00 |
| 3,760.0 | 7.25 | 136.21 | 3,738.6 | -187.8 | 180.0 | 260.2 | 2.00 | -2.00 | 0.00 |
| 3,800.0 | 6.45 | 136.21 | 3,778.4 | -191.3 | 183.3 | 264.9 | 2.00 | -2.00 | 0.00 |
| 3,840.0 | 5.65 | 136.21 | 3,818.1 | -194.3 | 186.2 | 269.2 | 2.00 | -2.00 | 0.00 |
| 3,880.0 | 4.85 | 136.21 | 3,858.0 | -197.0 | 188.8 | 272.8 | 2.00 | -2.00 | 0.00 |
| 3,920.0 | 4.05 | 136.21 | 3,897.8 | -199.2 | 190.9 | 275.9 | 2.00 | -2.00 | 0.00 |

| | | | |
|------------------|------------------------------------|-------------------------------------|--------------------------------------|
| Database: | Landmark | Local Co-ordinate Reference: | Well Land JG 31-35D |
| Company: | Great Western | TVD Reference: | WELL @ 4947.0ft (Original Well Elev) |
| Project: | SEC.31-T2N-R64W | MD Reference: | WELL @ 4947.0ft (Original Well Elev) |
| Site: | Land JG (East) Pad Sec.31-T2N-R64W | North Reference: | True |
| Well: | Land JG 31-35D | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | Plan #1 (11-05-12) | | |

| Planned Survey | | | | | | | | | |
|---|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 3,960.0 | 3.25 | 136.21 | 3,937.8 | -201.0 | 192.7 | 278.5 | 2.00 | -2.00 | 0.00 |
| 4,000.0 | 2.45 | 136.21 | 3,977.7 | -202.5 | 194.1 | 280.4 | 2.00 | -2.00 | 0.00 |
| 4,040.0 | 1.65 | 136.21 | 4,017.7 | -203.5 | 195.0 | 281.9 | 2.00 | -2.00 | 0.00 |
| 4,050.3 | 1.44 | 136.21 | 4,028.0 | -203.7 | 195.2 | 282.2 | 2.00 | -2.00 | 0.00 |
| PARKMAN | | | | | | | | | |
| 4,080.0 | 0.85 | 136.21 | 4,057.7 | -204.1 | 195.6 | 282.7 | 2.00 | -2.00 | 0.00 |
| 4,120.0 | 0.05 | 136.21 | 4,097.7 | -204.3 | 195.9 | 283.1 | 2.00 | -2.00 | 0.00 |
| 4,122.3 | 0.00 | 0.00 | 4,100.0 | -204.4 | 195.9 | 283.1 | 2.00 | -2.00 | 0.00 |
| Back to Vertical - TARGET BHL 0'FSL & 1126'FWL | | | | | | | | | |
| 4,160.0 | 0.00 | 0.00 | 4,137.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 4,200.0 | 0.00 | 0.00 | 4,177.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 4,240.0 | 0.00 | 0.00 | 4,217.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 4,280.0 | 0.00 | 0.00 | 4,257.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 4,320.0 | 0.00 | 0.00 | 4,297.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 4,360.0 | 0.00 | 0.00 | 4,337.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 4,400.0 | 0.00 | 0.00 | 4,377.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 4,440.0 | 0.00 | 0.00 | 4,417.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 4,480.0 | 0.00 | 0.00 | 4,457.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 4,520.0 | 0.00 | 0.00 | 4,497.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 4,560.0 | 0.00 | 0.00 | 4,537.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 4,576.3 | 0.00 | 0.00 | 4,554.0 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| SUSSEX | | | | | | | | | |
| 4,600.0 | 0.00 | 0.00 | 4,577.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 4,640.0 | 0.00 | 0.00 | 4,617.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 4,680.0 | 0.00 | 0.00 | 4,657.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 4,720.0 | 0.00 | 0.00 | 4,697.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 4,760.0 | 0.00 | 0.00 | 4,737.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 4,800.0 | 0.00 | 0.00 | 4,777.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 4,840.0 | 0.00 | 0.00 | 4,817.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 4,880.0 | 0.00 | 0.00 | 4,857.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 4,920.0 | 0.00 | 0.00 | 4,897.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 4,960.0 | 0.00 | 0.00 | 4,937.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 5,000.0 | 0.00 | 0.00 | 4,977.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 5,040.0 | 0.00 | 0.00 | 5,017.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 5,080.0 | 0.00 | 0.00 | 5,057.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 5,120.0 | 0.00 | 0.00 | 5,097.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 5,160.0 | 0.00 | 0.00 | 5,137.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 5,170.3 | 0.00 | 0.00 | 5,148.0 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| SHANNON | | | | | | | | | |
| 5,200.0 | 0.00 | 0.00 | 5,177.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 5,240.0 | 0.00 | 0.00 | 5,217.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 5,280.0 | 0.00 | 0.00 | 5,257.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 5,320.0 | 0.00 | 0.00 | 5,297.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 5,360.0 | 0.00 | 0.00 | 5,337.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 5,400.0 | 0.00 | 0.00 | 5,377.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 5,440.0 | 0.00 | 0.00 | 5,417.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 5,480.0 | 0.00 | 0.00 | 5,457.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 5,520.0 | 0.00 | 0.00 | 5,497.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 5,560.0 | 0.00 | 0.00 | 5,537.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 5,600.0 | 0.00 | 0.00 | 5,577.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 5,640.0 | 0.00 | 0.00 | 5,617.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 5,680.0 | 0.00 | 0.00 | 5,657.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 5,720.0 | 0.00 | 0.00 | 5,697.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |

| | | | |
|------------------|------------------------------------|-------------------------------------|--------------------------------------|
| Database: | Landmark | Local Co-ordinate Reference: | Well Land JG 31-35D |
| Company: | Great Western | TVD Reference: | WELL @ 4947.0ft (Original Well Elev) |
| Project: | SEC.31-T2N-R64W | MD Reference: | WELL @ 4947.0ft (Original Well Elev) |
| Site: | Land JG (East) Pad Sec.31-T2N-R64W | North Reference: | True |
| Well: | Land JG 31-35D | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | Plan #1 (11-05-12) | | |

| Planned Survey | | | | | | | | | |
|---|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 5,760.0 | 0.00 | 0.00 | 5,737.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 5,800.0 | 0.00 | 0.00 | 5,777.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 5,840.0 | 0.00 | 0.00 | 5,817.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 5,880.0 | 0.00 | 0.00 | 5,857.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 5,920.0 | 0.00 | 0.00 | 5,897.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 5,960.0 | 0.00 | 0.00 | 5,937.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 6,000.0 | 0.00 | 0.00 | 5,977.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 6,040.0 | 0.00 | 0.00 | 6,017.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 6,080.0 | 0.00 | 0.00 | 6,057.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 6,120.0 | 0.00 | 0.00 | 6,097.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 6,160.0 | 0.00 | 0.00 | 6,137.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 6,200.0 | 0.00 | 0.00 | 6,177.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 6,240.0 | 0.00 | 0.00 | 6,217.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 6,280.0 | 0.00 | 0.00 | 6,257.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 6,320.0 | 0.00 | 0.00 | 6,297.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 6,360.0 | 0.00 | 0.00 | 6,337.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 6,400.0 | 0.00 | 0.00 | 6,377.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 6,440.0 | 0.00 | 0.00 | 6,417.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 6,480.0 | 0.00 | 0.00 | 6,457.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 6,520.0 | 0.00 | 0.00 | 6,497.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 6,560.0 | 0.00 | 0.00 | 6,537.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 6,600.0 | 0.00 | 0.00 | 6,577.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 6,640.0 | 0.00 | 0.00 | 6,617.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 6,680.0 | 0.00 | 0.00 | 6,657.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 6,720.0 | 0.00 | 0.00 | 6,697.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 6,760.0 | 0.00 | 0.00 | 6,737.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 6,800.0 | 0.00 | 0.00 | 6,777.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 6,840.0 | 0.00 | 0.00 | 6,817.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 6,880.0 | 0.00 | 0.00 | 6,857.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 6,894.3 | 0.00 | 0.00 | 6,872.0 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| NIORARA - TARGET CIRCLE 0'FSL & 1126'FWL | | | | | | | | | |
| 6,920.0 | 0.00 | 0.00 | 6,897.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 6,960.0 | 0.00 | 0.00 | 6,937.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 7,000.0 | 0.00 | 0.00 | 6,977.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 7,040.0 | 0.00 | 0.00 | 7,017.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 7,080.0 | 0.00 | 0.00 | 7,057.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 7,120.0 | 0.00 | 0.00 | 7,097.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 7,160.0 | 0.00 | 0.00 | 7,137.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 7,200.0 | 0.00 | 0.00 | 7,177.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 7,209.3 | 0.00 | 0.00 | 7,187.0 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| FORT HAYS | | | | | | | | | |
| 7,236.3 | 0.00 | 0.00 | 7,214.0 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| CODELL | | | | | | | | | |
| 7,240.0 | 0.00 | 0.00 | 7,217.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 7,280.0 | 0.00 | 0.00 | 7,257.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 7,320.0 | 0.00 | 0.00 | 7,297.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 7,360.0 | 0.00 | 0.00 | 7,337.7 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| 7,396.3 | 0.00 | 0.00 | 7,374.0 | -204.4 | 195.9 | 283.1 | 0.00 | 0.00 | 0.00 |
| TD at 7396.3 | | | | | | | | | |

| Plan Annotations | | | | | |
|------------------|---------------------------|---------------------------|-------------------|---------------|--------------------------------|
| | Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates | | Comment |
| | | | +N/-S (ft) | +E/-W (ft) | |
| | 2,000.0 | 2,000.0 | 0.0 | 0.0 | KOP - Start Build 2.00 |
| | 2,502.9 | 2,500.3 | -31.8 | 30.5 | Start 1116.5 hold at 2502.9 MD |
| | 3,619.4 | 3,599.7 | -172.6 | 165.4 | Start Drop -2.00 |
| | 4,122.3 | 4,100.0 | -204.4 | 195.9 | Back to Vertical |
| | 7,396.3 | 7,374.0 | -204.4 | 195.9 | TD at 7396.3 |



Great Western

SEC.31-T2N-R64W

Land JG (East) Pad Sec.31-T2N-R64W

Land JG 31-35D

Wellbore #1

Plan #1 (11-05-12)

Anticollision Report

08 November, 2012

| | | | |
|---------------------------|------------------------------------|-------------------------------------|--------------------------------------|
| Company: | Great Western | Local Co-ordinate Reference: | Well Land JG 31-35D |
| Project: | SEC.31-T2N-R64W | TVD Reference: | WELL @ 4947.0ft (Original Well Elev) |
| Reference Site: | Land JG (East) Pad Sec.31-T2N-R64W | MD Reference: | WELL @ 4947.0ft (Original Well Elev) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Land JG 31-35D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (11-05-12) | Offset TVD Reference: | Offset Datum |

| | | | |
|-------------------------------------|---|-----------------------|---------------------|
| Reference | Plan #1 (11-05-12) | | |
| Filter type: | NO GLOBAL FILTER: Using user defined selection & filtering criteria | | |
| Interpolation Method: | Stations | Error Model: | ISCWSA |
| Depth Range: | Unlimited | Scan Method: | Closest Approach 3D |
| Results Limited by: | Maximum center-center distance of 10,000.0ft | Error Surface: | Elliptical Conic |
| Warning Levels Evaluated at: | 2.00 Sigma | | |

| | | | | |
|----------------------------|-----------------------|----------------------------------|------------------|--------------------|
| Survey Tool Program | Date 11/8/2012 | | | |
| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description |
| 0.0 | 7,396.3 | Plan #1 (11-05-12) (Wellbore #1) | MWD | MWD - Standard |

| | | | | | | |
|---|--------------------------------------|-----------------------------------|--------------------------------------|---------------------------------------|--------------------------|----------------|
| Summary | | | | | | |
| Site Name | Reference Measured Depth (ft) | Offset Measured Depth (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Separation Factor | Warning |
| Offset Well - Wellbore - Design | | | | | | |
| Land JG (East) Pad Sec.31-T2N-R64W | | | | | | |
| Land JG 31-36D - Wellbore #1 - Plan #1 (11-05-12) | 518.4 | 518.4 | 19.2 | 17.1 | 9.167 | CC, ES |
| Land JG 31-36D - Wellbore #1 - Plan #1 (11-05-12) | 600.0 | 599.8 | 19.7 | 17.2 | 8.050 | SF |
| Land JG (West) Pad Sec.31-T2N-R64W | | | | | | |
| Land JG 31-33D - Wellbore #1 - Plan #1 (11-07-12) | 400.0 | 400.0 | 27.9 | 26.3 | 17.737 | CC, ES |
| Land JG 31-33D - Wellbore #1 - Plan #1 (11-07-12) | 600.0 | 598.3 | 33.3 | 30.8 | 13.591 | SF |
| Land JG 31-34D - Wellbore #1 - Plan #1 (11-07-12) | 1,200.0 | 1,200.0 | 20.1 | 15.0 | 3.897 | CC, ES, SF |

| Offset Design | | | | | | | | | | | | | Land JG (East) Pad Sec.31-T2N-R64W - Land JG 31-36D - Wellbore #1 - Plan #1 (11-05-12) | | Offset Site Error: | | 0.0 ft |
|-----------------------|----------------|----------------|----------------|-----------------|--------|-------------------|------------------------|------------|-----------------|------------------|--------------------|-------------------|--|--|--------------------|--|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | | | Offset Well Error: | | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | | | | | |
| Measured Depth | Vertical Depth | Measured Depth | Vertical Depth | Reference | Offset | Highside Toolface | Offset Wellbore Centre | | Between Centres | Between Ellipses | Minimum Separation | Separation Factor | Warning | | | | |
| (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (°) | +N/-S (ft) | +E/-W (ft) | (ft) | (ft) | (ft) | | | | | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 19.3 | 0.0 | 19.3 | 19.3 | 0.00 | N/A | | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 0.00 | 19.3 | 0.0 | 19.3 | 19.1 | 0.22 | 85.919 | | | | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 0.00 | 19.3 | 0.0 | 19.3 | 18.6 | 0.67 | 28.640 | | | | | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.6 | 0.6 | 0.00 | 19.3 | 0.0 | 19.3 | 18.2 | 1.12 | 17.184 | | | | | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | 0.00 | 19.3 | 0.0 | 19.3 | 17.7 | 1.57 | 12.274 | | | | | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.0 | 1.0 | 5.19 | 19.1 | 1.7 | 19.2 | 17.2 | 2.01 | 9.539 | | | | | |
| 518.4 | 518.4 | 518.4 | 518.4 | 1.1 | 1.0 | 7.28 | 19.0 | 2.4 | 19.2 | 17.1 | 2.09 | 9.167 | CC, ES | | | | |
| 600.0 | 600.0 | 599.8 | 599.7 | 1.2 | 1.2 | 20.56 | 18.4 | 6.9 | 19.7 | 17.2 | 2.45 | 8.050 | SF | | | | |
| 700.0 | 700.0 | 699.2 | 698.6 | 1.5 | 1.4 | 41.77 | 17.3 | 15.5 | 23.3 | 20.4 | 2.89 | 8.054 | | | | | |
| 800.0 | 800.0 | 797.8 | 796.5 | 1.7 | 1.7 | 59.95 | 15.8 | 27.3 | 31.8 | 28.4 | 3.34 | 9.516 | | | | | |
| 900.0 | 900.0 | 895.4 | 893.0 | 1.9 | 2.0 | 71.84 | 13.9 | 42.4 | 45.2 | 41.4 | 3.81 | 11.867 | | | | | |
| 1,000.0 | 1,000.0 | 991.9 | 987.7 | 2.1 | 2.4 | 79.14 | 11.6 | 60.4 | 62.8 | 58.5 | 4.30 | 14.609 | | | | | |
| 1,100.0 | 1,100.0 | 1,087.1 | 1,080.5 | 2.4 | 2.8 | 83.74 | 8.9 | 81.3 | 84.1 | 79.3 | 4.82 | 17.467 | | | | | |
| 1,200.0 | 1,200.0 | 1,180.8 | 1,171.1 | 2.6 | 3.2 | 86.77 | 5.9 | 104.9 | 108.9 | 103.6 | 5.37 | 20.300 | | | | | |
| 1,300.0 | 1,300.0 | 1,272.7 | 1,259.3 | 2.8 | 3.7 | 88.86 | 2.6 | 130.8 | 137.1 | 131.1 | 5.95 | 23.036 | | | | | |
| 1,400.0 | 1,400.0 | 1,363.5 | 1,345.4 | 3.0 | 4.2 | 90.36 | -1.0 | 159.2 | 168.3 | 161.7 | 6.56 | 25.636 | | | | | |
| 1,500.0 | 1,500.0 | 1,458.0 | 1,434.8 | 3.3 | 4.9 | 91.48 | -4.9 | 189.8 | 200.7 | 193.5 | 7.22 | 27.815 | | | | | |
| 1,600.0 | 1,600.0 | 1,552.5 | 1,524.1 | 3.5 | 5.5 | 92.29 | -8.8 | 220.4 | 233.3 | 225.4 | 7.88 | 29.594 | | | | | |
| 1,700.0 | 1,700.0 | 1,647.0 | 1,613.5 | 3.7 | 6.1 | 92.90 | -12.7 | 251.0 | 265.8 | 257.2 | 8.56 | 31.060 | | | | | |
| 1,800.0 | 1,800.0 | 1,741.6 | 1,702.8 | 3.9 | 6.7 | 93.38 | -16.6 | 281.6 | 298.4 | 289.1 | 9.24 | 32.284 | | | | | |
| 1,900.0 | 1,900.0 | 1,836.1 | 1,792.1 | 4.2 | 7.4 | 93.77 | -20.5 | 312.2 | 331.0 | 321.0 | 9.93 | 33.319 | | | | | |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

| | | | |
|---------------------------|------------------------------------|-------------------------------------|--------------------------------------|
| Company: | Great Western | Local Co-ordinate Reference: | Well Land JG 31-35D |
| Project: | SEC.31-T2N-R64W | TVD Reference: | WELL @ 4947.0ft (Original Well Elev) |
| Reference Site: | Land JG (East) Pad Sec.31-T2N-R64W | MD Reference: | WELL @ 4947.0ft (Original Well Elev) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Land JG 31-35D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (11-05-12) | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|-----------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|-------------------|--------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | | Warning |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | | |
| 2,000.0 | 2,000.0 | 1,930.6 | 1,881.5 | 4.4 | 8.0 | 94.08 | -24.5 | 342.8 | 363.5 | 352.9 | 10.63 | 34.206 | | |
| 2,100.0 | 2,100.0 | 2,025.6 | 1,971.2 | 4.6 | 8.7 | -41.61 | -28.4 | 373.6 | 394.9 | 385.3 | 9.58 | 41.202 | | |
| 2,200.0 | 2,199.8 | 2,121.3 | 2,061.7 | 4.8 | 9.3 | -41.46 | -32.3 | 404.6 | 423.8 | 413.7 | 10.06 | 42.135 | | |
| 2,300.0 | 2,299.5 | 2,217.6 | 2,152.8 | 5.0 | 10.0 | -41.63 | -36.3 | 435.8 | 450.2 | 439.6 | 10.54 | 42.694 | | |
| 2,400.0 | 2,398.7 | 2,314.6 | 2,244.4 | 5.2 | 10.6 | -42.06 | -40.3 | 467.1 | 474.1 | 463.1 | 11.05 | 42.917 | | |
| 2,502.9 | 2,500.3 | 2,414.7 | 2,339.1 | 5.4 | 11.3 | -42.76 | -44.5 | 499.6 | 496.2 | 484.6 | 11.59 | 42.822 | | |
| 2,600.0 | 2,595.9 | 2,509.4 | 2,428.6 | 5.6 | 12.0 | -43.76 | -48.4 | 530.2 | 515.9 | 503.8 | 12.13 | 42.551 | | |
| 2,700.0 | 2,694.4 | 2,606.9 | 2,520.7 | 5.9 | 12.7 | -44.71 | -52.4 | 561.8 | 536.4 | 523.7 | 12.70 | 42.240 | | |
| 2,800.0 | 2,792.9 | 2,704.4 | 2,612.9 | 6.2 | 13.3 | -45.59 | -56.4 | 593.4 | 557.0 | 543.7 | 13.29 | 41.906 | | |
| 2,900.0 | 2,891.3 | 2,801.9 | 2,705.1 | 6.5 | 14.0 | -46.41 | -60.5 | 624.9 | 577.8 | 563.8 | 13.90 | 41.556 | | |
| 3,000.0 | 2,889.8 | 2,899.4 | 2,797.2 | 6.8 | 14.7 | -47.17 | -64.5 | 656.5 | 598.6 | 584.1 | 14.53 | 41.198 | | |
| 3,100.0 | 3,088.2 | 2,996.9 | 2,889.4 | 7.1 | 15.4 | -47.88 | -68.5 | 688.1 | 619.5 | 604.3 | 15.17 | 40.835 | | |
| 3,200.0 | 3,186.7 | 3,094.4 | 2,981.5 | 7.4 | 16.0 | -48.55 | -72.6 | 719.7 | 640.5 | 624.7 | 15.83 | 40.473 | | |
| 3,300.0 | 3,285.2 | 3,191.9 | 3,073.7 | 7.8 | 16.7 | -49.17 | -76.6 | 751.2 | 661.6 | 645.1 | 16.49 | 40.115 | | |
| 3,400.0 | 3,383.6 | 3,289.4 | 3,165.9 | 8.1 | 17.4 | -49.76 | -80.6 | 782.8 | 682.8 | 665.6 | 17.17 | 39.763 | | |
| 3,500.0 | 3,482.1 | 3,386.9 | 3,258.0 | 8.5 | 18.1 | -50.31 | -84.7 | 814.4 | 704.0 | 686.1 | 17.86 | 39.419 | | |
| 3,600.0 | 3,580.6 | 3,484.4 | 3,350.2 | 8.8 | 18.7 | -50.83 | -88.7 | 845.9 | 725.3 | 706.7 | 18.56 | 39.084 | | |
| 3,619.4 | 3,599.7 | 3,503.3 | 3,368.1 | 8.9 | 18.9 | -50.92 | -89.5 | 852.1 | 729.4 | 710.7 | 18.69 | 39.020 | | |
| 3,700.0 | 3,679.2 | 3,581.8 | 3,442.3 | 9.1 | 19.4 | -51.53 | -92.7 | 877.5 | 747.3 | 728.1 | 19.24 | 38.846 | | |
| 3,800.0 | 3,778.4 | 3,678.8 | 3,534.0 | 9.4 | 20.1 | -52.11 | -96.7 | 908.9 | 771.4 | 751.6 | 19.86 | 38.847 | | |
| 3,900.0 | 3,877.9 | 3,775.3 | 3,625.2 | 9.6 | 20.8 | -52.52 | -100.7 | 940.1 | 797.6 | 777.2 | 20.44 | 39.032 | | |
| 4,000.0 | 3,977.7 | 3,871.2 | 3,715.8 | 9.9 | 21.4 | -52.76 | -104.7 | 971.2 | 825.9 | 804.9 | 20.97 | 39.390 | | |
| 4,100.0 | 4,077.7 | 3,966.3 | 3,805.7 | 10.1 | 22.1 | -52.87 | -108.6 | 1,002.0 | 856.2 | 834.7 | 21.45 | 39.913 | | |
| 4,122.3 | 4,100.0 | 3,987.5 | 3,825.7 | 10.1 | 22.2 | 83.34 | -109.5 | 1,008.8 | 863.2 | 841.7 | 21.55 | 40.053 | | |
| 4,200.0 | 4,177.7 | 4,060.9 | 3,895.1 | 10.2 | 22.8 | 83.74 | -112.5 | 1,032.6 | 887.9 | 866.0 | 21.88 | 40.574 | | |
| 4,300.0 | 4,277.7 | 4,155.4 | 3,984.4 | 10.4 | 23.4 | 84.21 | -116.4 | 1,063.2 | 919.8 | 897.5 | 22.32 | 41.205 | | |
| 4,400.0 | 4,377.7 | 4,249.9 | 4,073.8 | 10.6 | 24.1 | 84.65 | -120.3 | 1,093.8 | 951.7 | 928.9 | 22.76 | 41.806 | | |
| 4,500.0 | 4,477.7 | 4,344.4 | 4,163.1 | 10.8 | 24.7 | 85.07 | -124.2 | 1,124.4 | 983.7 | 960.4 | 23.21 | 42.378 | | |
| 4,600.0 | 4,577.7 | 4,439.0 | 4,252.4 | 11.0 | 25.4 | 85.46 | -128.1 | 1,155.0 | 1,015.7 | 992.0 | 23.66 | 42.924 | | |
| 4,700.0 | 4,677.7 | 4,533.5 | 4,341.8 | 11.2 | 26.0 | 85.82 | -132.0 | 1,185.6 | 1,047.7 | 1,023.6 | 24.12 | 43.445 | | |
| 4,800.0 | 4,777.7 | 4,628.0 | 4,431.1 | 11.4 | 26.7 | 86.17 | -136.0 | 1,216.2 | 1,079.8 | 1,055.2 | 24.57 | 43.942 | | |
| 4,900.0 | 4,877.7 | 4,722.5 | 4,520.5 | 11.6 | 27.4 | 86.49 | -139.9 | 1,246.8 | 1,111.9 | 1,086.8 | 25.03 | 44.417 | | |
| 5,000.0 | 4,977.7 | 4,817.1 | 4,609.8 | 11.8 | 28.0 | 86.79 | -143.8 | 1,277.4 | 1,144.0 | 1,118.5 | 25.50 | 44.871 | | |
| 5,100.0 | 5,077.7 | 4,911.6 | 4,699.2 | 12.0 | 28.7 | 87.08 | -147.7 | 1,308.0 | 1,176.2 | 1,150.2 | 25.96 | 45.305 | | |
| 5,200.0 | 5,177.7 | 5,006.1 | 4,788.5 | 12.2 | 29.3 | 87.36 | -151.6 | 1,338.6 | 1,208.4 | 1,182.0 | 26.43 | 45.721 | | |
| 5,300.0 | 5,277.7 | 5,110.9 | 4,887.6 | 12.4 | 30.0 | 87.64 | -155.9 | 1,372.5 | 1,240.5 | 1,213.6 | 26.92 | 46.084 | | |
| 5,400.0 | 5,377.7 | 5,279.6 | 5,049.0 | 12.5 | 30.9 | 88.03 | -162.1 | 1,421.1 | 1,269.2 | 1,241.7 | 27.50 | 46.152 | | |
| 5,500.0 | 5,477.7 | 5,453.8 | 5,218.4 | 12.7 | 31.6 | 88.32 | -167.2 | 1,461.3 | 1,292.2 | 1,264.2 | 28.07 | 46.035 | | |
| 5,600.0 | 5,577.7 | 5,632.5 | 5,394.4 | 12.9 | 32.1 | 88.53 | -171.1 | 1,491.8 | 1,309.3 | 1,280.7 | 28.62 | 45.748 | | |
| 5,700.0 | 5,677.7 | 5,814.5 | 5,575.3 | 13.1 | 32.5 | 88.66 | -173.7 | 1,511.7 | 1,320.2 | 1,291.0 | 29.14 | 45.308 | | |
| 5,800.0 | 5,777.7 | 5,998.3 | 5,758.9 | 13.4 | 32.7 | 88.72 | -174.8 | 1,520.2 | 1,324.8 | 1,295.2 | 29.62 | 44.730 | | |
| 5,900.0 | 5,877.7 | 6,117.1 | 5,877.7 | 13.6 | 32.8 | 88.72 | -174.8 | 1,520.5 | 1,324.9 | 1,294.9 | 30.00 | 44.171 | | |
| 6,000.0 | 5,977.7 | 6,217.1 | 5,977.7 | 13.8 | 32.9 | 88.72 | -174.8 | 1,520.5 | 1,324.9 | 1,294.6 | 30.35 | 43.655 | | |
| 6,100.0 | 6,077.7 | 6,317.1 | 6,077.7 | 14.0 | 33.0 | 88.72 | -174.8 | 1,520.5 | 1,324.9 | 1,294.2 | 30.71 | 43.147 | | |
| 6,200.0 | 6,177.7 | 6,417.1 | 6,177.7 | 14.2 | 33.1 | 88.72 | -174.8 | 1,520.5 | 1,324.9 | 1,293.9 | 31.07 | 42.648 | | |
| 6,300.0 | 6,277.7 | 6,517.1 | 6,277.7 | 14.4 | 33.2 | 88.72 | -174.8 | 1,520.5 | 1,324.9 | 1,293.5 | 31.43 | 42.158 | | |
| 6,400.0 | 6,377.7 | 6,617.1 | 6,377.7 | 14.6 | 33.3 | 88.72 | -174.8 | 1,520.5 | 1,324.9 | 1,293.1 | 31.79 | 41.676 | | |
| 6,500.0 | 6,477.7 | 6,717.1 | 6,477.7 | 14.8 | 33.4 | 88.72 | -174.8 | 1,520.5 | 1,324.9 | 1,292.8 | 32.16 | 41.202 | | |
| 6,600.0 | 6,577.7 | 6,817.1 | 6,577.7 | 15.0 | 33.4 | 88.72 | -174.8 | 1,520.5 | 1,324.9 | 1,292.4 | 32.52 | 40.737 | | |
| 6,700.0 | 6,677.7 | 6,917.1 | 6,677.7 | 15.2 | 33.5 | 88.72 | -174.8 | 1,520.5 | 1,324.9 | 1,292.0 | 32.89 | 40.280 | | |
| 6,800.0 | 6,777.7 | 7,017.1 | 6,777.7 | 15.4 | 33.6 | 88.72 | -174.8 | 1,520.5 | 1,324.9 | 1,291.7 | 33.26 | 39.831 | | |
| 6,900.0 | 6,877.7 | 7,117.1 | 6,877.7 | 15.6 | 33.7 | 88.72 | -174.8 | 1,520.5 | 1,324.9 | 1,291.3 | 33.64 | 39.390 | | |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

| | | | |
|---------------------------|------------------------------------|-------------------------------------|--------------------------------------|
| Company: | Great Western | Local Co-ordinate Reference: | Well Land JG 31-35D |
| Project: | SEC.31-T2N-R64W | TVD Reference: | WELL @ 4947.0ft (Original Well Elev) |
| Reference Site: | Land JG (East) Pad Sec.31-T2N-R64W | MD Reference: | WELL @ 4947.0ft (Original Well Elev) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Land JG 31-35D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (11-05-12) | Offset TVD Reference: | Offset Datum |

| | | | | | | | | | | | | | |
|--|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|---------------------------|---------|
| Offset Design | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
| Land JG (East) Pad Sec.31-T2N-R64W - Land JG 31-36D - Wellbore #1 - Plan #1 (11-05-12) | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Survey Program: 0-MWD | | | | | | | | | | | | | |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
| 7,000.0 | 6,977.7 | 7,217.1 | 6,977.7 | 15.8 | 33.8 | 88.72 | -174.8 | 1,520.5 | 1,324.9 | 1,290.9 | 34.01 | 38.956 | |
| 7,100.0 | 7,077.7 | 7,317.1 | 7,077.7 | 16.0 | 33.9 | 88.72 | -174.8 | 1,520.5 | 1,324.9 | 1,290.5 | 34.39 | 38.531 | |
| 7,200.0 | 7,177.7 | 7,417.1 | 7,177.7 | 16.2 | 34.0 | 88.72 | -174.8 | 1,520.5 | 1,324.9 | 1,290.2 | 34.76 | 38.112 | |
| 7,300.0 | 7,277.7 | 7,517.1 | 7,277.7 | 16.5 | 34.1 | 88.72 | -174.8 | 1,520.5 | 1,324.9 | 1,289.8 | 35.14 | 37.701 | |
| 7,396.3 | 7,374.0 | 7,613.5 | 7,374.0 | 16.7 | 34.2 | 88.72 | -174.8 | 1,520.5 | 1,324.9 | 1,289.4 | 35.51 | 37.312 | |

| | | | |
|---------------------------|------------------------------------|-------------------------------------|--------------------------------------|
| Company: | Great Western | Local Co-ordinate Reference: | Well Land JG 31-35D |
| Project: | SEC.31-T2N-R64W | TVD Reference: | WELL @ 4947.0ft (Original Well Elev) |
| Reference Site: | Land JG (East) Pad Sec.31-T2N-R64W | MD Reference: | WELL @ 4947.0ft (Original Well Elev) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Land JG 31-35D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (11-05-12) | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|-----------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|-------------------|--------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | | Warning |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -46.21 | 19.3 | -20.1 | 27.9 | | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -46.21 | 19.3 | -20.1 | 27.9 | 27.7 | 0.22 | 124.160 | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -46.21 | 19.3 | -20.1 | 27.9 | 27.2 | 0.67 | 41.387 | | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.6 | 0.6 | -46.21 | 19.3 | -20.1 | 27.9 | 26.8 | 1.12 | 24.832 | | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | -46.21 | 19.3 | -20.1 | 27.9 | 26.3 | 1.57 | 17.737 CC, ES | | |
| 500.0 | 500.0 | 499.3 | 499.2 | 1.0 | 1.0 | -48.55 | 19.3 | -21.9 | 29.2 | 27.2 | 2.01 | 14.521 | | |
| 600.0 | 600.0 | 598.3 | 598.1 | 1.2 | 1.2 | -54.43 | 19.3 | -27.0 | 33.3 | 30.8 | 2.45 | 13.591 SF | | |
| 700.0 | 700.0 | 696.9 | 696.4 | 1.5 | 1.4 | -60.87 | 19.7 | -35.3 | 40.6 | 37.7 | 2.91 | 13.957 | | |
| 800.0 | 800.0 | 795.1 | 794.1 | 1.7 | 1.7 | -63.34 | 22.7 | -45.2 | 50.9 | 47.5 | 3.38 | 15.033 | | |
| 900.0 | 900.0 | 892.8 | 890.9 | 1.9 | 2.0 | -62.97 | 28.7 | -56.3 | 63.9 | 60.0 | 3.88 | 16.475 | | |
| 1,000.0 | 1,000.0 | 989.6 | 986.5 | 2.1 | 2.3 | -61.21 | 37.7 | -68.6 | 79.5 | 75.1 | 4.38 | 18.152 | | |
| 1,100.0 | 1,100.0 | 1,085.5 | 1,080.7 | 2.4 | 2.6 | -58.88 | 49.6 | -82.1 | 97.8 | 92.9 | 4.90 | 19.981 | | |
| 1,200.0 | 1,200.0 | 1,180.1 | 1,173.1 | 2.6 | 3.0 | -56.43 | 64.1 | -96.6 | 119.0 | 113.6 | 5.43 | 21.912 | | |
| 1,300.0 | 1,300.0 | 1,273.4 | 1,263.5 | 2.8 | 3.4 | -54.08 | 81.2 | -112.0 | 143.1 | 137.1 | 5.99 | 23.898 | | |
| 1,400.0 | 1,400.0 | 1,365.1 | 1,351.6 | 3.0 | 3.9 | -51.90 | 100.6 | -128.3 | 170.1 | 163.5 | 6.57 | 25.904 | | |
| 1,500.0 | 1,500.0 | 1,457.6 | 1,439.7 | 3.3 | 4.4 | -49.93 | 122.6 | -145.7 | 199.7 | 192.6 | 7.17 | 27.838 | | |
| 1,600.0 | 1,600.0 | 1,552.7 | 1,530.2 | 3.5 | 4.9 | -48.36 | 145.6 | -163.8 | 230.0 | 222.2 | 7.80 | 29.475 | | |
| 1,700.0 | 1,700.0 | 1,647.9 | 1,620.7 | 3.7 | 5.5 | -47.16 | 168.7 | -181.9 | 260.4 | 252.0 | 8.44 | 30.839 | | |
| 1,800.0 | 1,800.0 | 1,743.0 | 1,711.3 | 3.9 | 6.0 | -46.21 | 191.7 | -200.0 | 290.9 | 281.8 | 9.09 | 31.986 | | |
| 1,900.0 | 1,900.0 | 1,838.2 | 1,801.8 | 4.2 | 6.6 | -45.44 | 214.7 | -218.0 | 321.4 | 311.6 | 9.75 | 32.961 | | |
| 2,000.0 | 2,000.0 | 1,933.3 | 1,892.3 | 4.4 | 7.2 | -44.80 | 237.8 | -236.1 | 352.0 | 341.6 | 10.41 | 33.799 | | |
| 2,100.0 | 2,100.0 | 2,027.9 | 1,982.3 | 4.6 | 7.8 | 179.51 | 260.7 | -254.1 | 384.2 | 374.8 | 9.46 | 40.633 | | |
| 2,200.0 | 2,199.8 | 2,121.3 | 2,071.2 | 4.8 | 8.3 | 179.97 | 283.3 | -271.8 | 419.8 | 410.0 | 9.86 | 42.594 | | |
| 2,300.0 | 2,299.5 | 2,213.4 | 2,158.8 | 5.0 | 8.9 | -179.65 | 305.6 | -289.4 | 458.6 | 448.4 | 10.24 | 44.789 | | |
| 2,400.0 | 2,398.7 | 2,304.1 | 2,245.1 | 5.2 | 9.5 | -179.32 | 327.6 | -306.6 | 500.7 | 490.1 | 10.61 | 47.204 | | |
| 2,502.9 | 2,500.3 | 2,395.9 | 2,332.4 | 5.4 | 10.0 | -179.04 | 349.8 | -324.0 | 547.2 | 536.3 | 10.97 | 49.904 | | |
| 2,600.0 | 2,595.9 | 2,481.6 | 2,414.0 | 5.6 | 10.6 | -178.83 | 370.6 | -340.3 | 592.7 | 581.3 | 11.38 | 52.061 | | |
| 2,700.0 | 2,694.4 | 2,569.9 | 2,498.0 | 5.9 | 11.1 | -178.64 | 391.9 | -357.1 | 639.5 | 627.7 | 11.82 | 54.097 | | |
| 2,800.0 | 2,792.9 | 2,658.3 | 2,582.1 | 6.2 | 11.7 | -178.48 | 413.3 | -373.9 | 686.4 | 674.1 | 12.26 | 55.965 | | |
| 2,900.0 | 2,891.3 | 2,746.6 | 2,666.1 | 6.5 | 12.2 | -178.34 | 434.7 | -390.7 | 733.2 | 720.5 | 12.71 | 57.682 | | |
| 3,000.0 | 2,989.8 | 2,834.9 | 2,750.2 | 6.8 | 12.8 | -178.22 | 456.1 | -407.5 | 780.1 | 766.9 | 13.16 | 59.264 | | |
| 3,100.0 | 3,088.2 | 2,923.3 | 2,834.2 | 7.1 | 13.3 | -178.11 | 477.5 | -424.3 | 827.0 | 813.3 | 13.62 | 60.723 | | |
| 3,200.0 | 3,186.7 | 3,011.6 | 2,918.3 | 7.4 | 13.9 | -178.01 | 498.9 | -441.0 | 873.8 | 859.7 | 14.08 | 62.073 | | |
| 3,300.0 | 3,285.2 | 3,099.9 | 3,002.3 | 7.8 | 14.5 | -177.92 | 520.3 | -457.8 | 920.7 | 906.1 | 14.54 | 63.324 | | |
| 3,400.0 | 3,383.6 | 3,188.3 | 3,086.4 | 8.1 | 15.0 | -177.84 | 541.7 | -474.6 | 967.5 | 952.5 | 15.00 | 64.485 | | |
| 3,500.0 | 3,482.1 | 3,276.6 | 3,170.4 | 8.5 | 15.6 | -177.77 | 563.1 | -491.4 | 1,014.4 | 998.9 | 15.47 | 65.566 | | |
| 3,600.0 | 3,580.6 | 3,364.9 | 3,254.4 | 8.8 | 16.1 | -177.71 | 584.5 | -508.2 | 1,061.3 | 1,045.3 | 15.94 | 66.573 | | |
| 3,619.4 | 3,599.7 | 3,382.1 | 3,270.7 | 8.9 | 16.2 | -177.69 | 588.6 | -511.4 | 1,070.4 | 1,054.3 | 16.03 | 66.760 | | |
| 3,700.0 | 3,679.2 | 3,453.8 | 3,339.0 | 9.1 | 16.7 | -177.68 | 606.0 | -525.1 | 1,107.1 | 1,090.6 | 16.52 | 67.013 | | |
| 3,800.0 | 3,778.4 | 3,544.2 | 3,425.0 | 9.4 | 17.3 | -177.65 | 627.9 | -542.3 | 1,149.9 | 1,132.8 | 17.12 | 67.175 | | |
| 3,900.0 | 3,877.9 | 3,636.0 | 3,512.3 | 9.6 | 17.8 | -177.62 | 650.1 | -559.7 | 1,189.5 | 1,171.8 | 17.71 | 67.185 | | |
| 4,000.0 | 3,977.7 | 3,729.1 | 3,600.9 | 9.9 | 18.4 | -177.58 | 672.6 | -577.4 | 1,225.9 | 1,207.7 | 18.28 | 67.063 | | |
| 4,100.0 | 4,077.7 | 3,823.4 | 3,690.7 | 10.1 | 19.0 | -177.53 | 695.5 | -595.3 | 1,259.1 | 1,240.2 | 18.84 | 66.825 | | |
| 4,122.3 | 4,100.0 | 3,844.6 | 3,710.8 | 10.1 | 19.2 | -41.31 | 700.6 | -599.4 | 1,266.0 | 1,247.0 | 18.96 | 66.762 | | |
| 4,200.0 | 4,177.7 | 3,918.5 | 3,781.2 | 10.2 | 19.6 | -41.25 | 718.5 | -613.4 | 1,289.9 | 1,270.5 | 19.34 | 66.700 | | |
| 4,300.0 | 4,277.7 | 4,013.7 | 3,871.7 | 10.4 | 20.2 | -41.18 | 741.5 | -631.5 | 1,320.6 | 1,300.8 | 19.83 | 66.592 | | |
| 4,400.0 | 4,377.7 | 4,108.8 | 3,962.2 | 10.6 | 20.8 | -41.11 | 764.6 | -649.6 | 1,351.4 | 1,331.0 | 20.33 | 66.487 | | |
| 4,500.0 | 4,477.7 | 4,204.0 | 4,052.7 | 10.8 | 21.4 | -41.04 | 787.6 | -667.6 | 1,382.1 | 1,361.3 | 20.82 | 66.384 | | |
| 4,600.0 | 4,577.7 | 4,299.1 | 4,143.3 | 11.0 | 22.0 | -40.98 | 810.7 | -685.7 | 1,412.9 | 1,391.6 | 21.32 | 66.283 | | |
| 4,700.0 | 4,677.7 | 4,394.3 | 4,233.8 | 11.2 | 22.6 | -40.92 | 833.7 | -703.8 | 1,443.6 | 1,421.8 | 21.81 | 66.185 | | |
| 4,800.0 | 4,777.7 | 4,489.4 | 4,324.3 | 11.4 | 23.2 | -40.86 | 856.7 | -721.9 | 1,474.4 | 1,452.1 | 22.31 | 66.089 | | |
| 4,900.0 | 4,877.7 | 4,584.5 | 4,414.8 | 11.6 | 23.8 | -40.80 | 879.8 | -740.0 | 1,505.1 | 1,482.3 | 22.81 | 65.996 | | |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

| Offset Design | | | | | | | | | | | | Land JG (West) Pad Sec.31-T2N-R64W - Land JG 31-33D - Wellbore #1 - Plan #1 (11-07-12) | | Offset Site Error: 0.0 ft | |
|-----------------------|----------------|----------------|----------------|-----------------|--------|-------------------|------------------------|------------|-----------------|------------------|--------------------|--|---------|---------------------------|--|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: 0.0 ft | | | |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | Warning | | |
| Measured Depth | Vertical Depth | Measured Depth | Vertical Depth | Reference | Offset | Highside Toolface | Offset Wellbore Centre | | Between Centres | Between Ellipses | Minimum Separation | Separation Factor | | | |
| (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (°) | +N/-S (ft) | +E/-W (ft) | (ft) | (ft) | (ft) | | | | |
| 5,000.0 | 4,977.7 | 4,679.7 | 4,505.4 | 11.8 | 24.4 | -40.75 | 902.8 | -758.1 | 1,535.9 | 1,512.6 | 23.30 | 65.905 | | | |
| 5,100.0 | 5,077.7 | 4,774.8 | 4,595.9 | 12.0 | 25.0 | -40.70 | 925.9 | -776.1 | 1,566.6 | 1,542.8 | 23.80 | 65.816 | | | |
| 5,200.0 | 5,177.7 | 4,870.0 | 4,686.4 | 12.2 | 25.7 | -40.65 | 948.9 | -794.2 | 1,597.4 | 1,573.1 | 24.30 | 65.729 | | | |
| 5,300.0 | 5,277.7 | 4,965.1 | 4,776.9 | 12.4 | 26.3 | -40.60 | 971.9 | -812.3 | 1,628.1 | 1,603.3 | 24.80 | 65.644 | | | |
| 5,400.0 | 5,377.7 | 5,060.3 | 4,867.5 | 12.5 | 26.9 | -40.55 | 995.0 | -830.4 | 1,658.9 | 1,633.6 | 25.30 | 65.562 | | | |
| 5,500.0 | 5,477.7 | 5,215.4 | 5,015.6 | 12.7 | 27.7 | -40.48 | 1,031.2 | -858.8 | 1,688.9 | 1,663.0 | 25.95 | 65.078 | | | |
| 5,600.0 | 5,577.7 | 5,454.5 | 5,248.0 | 12.9 | 28.7 | -40.41 | 1,075.1 | -893.2 | 1,712.2 | 1,685.5 | 26.72 | 64.070 | | | |
| 5,700.0 | 5,677.7 | 5,701.7 | 5,492.3 | 13.1 | 29.4 | -40.36 | 1,104.3 | -916.2 | 1,727.3 | 1,699.8 | 27.44 | 62.945 | | | |
| 5,800.0 | 5,777.7 | 5,953.5 | 5,743.5 | 13.4 | 29.8 | -40.34 | 1,116.9 | -926.0 | 1,733.6 | 1,705.6 | 28.07 | 61.752 | | | |
| 5,900.0 | 5,877.7 | 6,087.6 | 5,877.7 | 13.6 | 29.9 | -40.34 | 1,117.3 | -926.4 | 1,733.9 | 1,705.4 | 28.50 | 60.846 | | | |
| 6,000.0 | 5,977.7 | 6,187.6 | 5,977.7 | 13.8 | 30.0 | -40.34 | 1,117.3 | -926.4 | 1,733.9 | 1,705.0 | 28.88 | 60.035 | | | |
| 6,100.0 | 6,077.7 | 6,287.6 | 6,077.7 | 14.0 | 30.1 | -40.34 | 1,117.3 | -926.4 | 1,733.9 | 1,704.6 | 29.27 | 59.240 | | | |
| 6,200.0 | 6,177.7 | 6,387.6 | 6,177.7 | 14.2 | 30.2 | -40.34 | 1,117.3 | -926.4 | 1,733.9 | 1,704.2 | 29.66 | 58.462 | | | |
| 6,300.0 | 6,277.7 | 6,487.6 | 6,277.7 | 14.4 | 30.3 | -40.34 | 1,117.3 | -926.4 | 1,733.9 | 1,703.8 | 30.05 | 57.701 | | | |
| 6,400.0 | 6,377.7 | 6,587.6 | 6,377.7 | 14.6 | 30.4 | -40.34 | 1,117.3 | -926.4 | 1,733.9 | 1,703.4 | 30.44 | 56.957 | | | |
| 6,500.0 | 6,477.7 | 6,687.6 | 6,477.7 | 14.8 | 30.5 | -40.34 | 1,117.3 | -926.4 | 1,733.9 | 1,703.0 | 30.84 | 56.230 | | | |
| 6,600.0 | 6,577.7 | 6,787.6 | 6,577.7 | 15.0 | 30.6 | -40.34 | 1,117.3 | -926.4 | 1,733.9 | 1,702.6 | 31.23 | 55.518 | | | |
| 6,700.0 | 6,677.7 | 6,887.6 | 6,677.7 | 15.2 | 30.7 | -40.34 | 1,117.3 | -926.4 | 1,733.9 | 1,702.2 | 31.63 | 54.822 | | | |
| 6,800.0 | 6,777.7 | 6,987.6 | 6,777.7 | 15.4 | 30.8 | -40.34 | 1,117.3 | -926.4 | 1,733.9 | 1,701.8 | 32.02 | 54.142 | | | |
| 6,900.0 | 6,877.7 | 7,087.6 | 6,877.7 | 15.6 | 30.9 | -40.34 | 1,117.3 | -926.4 | 1,733.9 | 1,701.4 | 32.42 | 53.475 | | | |
| 7,000.0 | 6,977.7 | 7,187.6 | 6,977.7 | 15.8 | 31.0 | -40.34 | 1,117.3 | -926.4 | 1,733.9 | 1,701.0 | 32.82 | 52.824 | | | |
| 7,100.0 | 7,077.7 | 7,287.6 | 7,077.7 | 16.0 | 31.1 | -40.34 | 1,117.3 | -926.4 | 1,733.9 | 1,700.6 | 33.22 | 52.186 | | | |
| 7,200.0 | 7,177.7 | 7,387.6 | 7,177.7 | 16.2 | 31.2 | -40.34 | 1,117.3 | -926.4 | 1,733.9 | 1,700.2 | 33.63 | 51.561 | | | |
| 7,300.0 | 7,277.7 | 7,487.6 | 7,277.7 | 16.5 | 31.3 | -40.34 | 1,117.3 | -926.4 | 1,733.9 | 1,699.8 | 34.03 | 50.950 | | | |
| 7,396.3 | 7,374.0 | 7,584.0 | 7,374.0 | 16.7 | 31.4 | -40.34 | 1,117.3 | -926.4 | 1,733.9 | 1,699.4 | 34.42 | 50.373 | | | |

| | | | |
|---------------------------|------------------------------------|-------------------------------------|--------------------------------------|
| Company: | Great Western | Local Co-ordinate Reference: | Well Land JG 31-35D |
| Project: | SEC.31-T2N-R64W | TVD Reference: | WELL @ 4947.0ft (Original Well Elev) |
| Reference Site: | Land JG (East) Pad Sec.31-T2N-R64W | MD Reference: | WELL @ 4947.0ft (Original Well Elev) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Land JG 31-35D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (11-05-12) | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|-----------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|-------------------|--------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | | Warning |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -90.01 | 0.0 | -20.1 | 20.1 | | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -90.01 | 0.0 | -20.1 | 20.1 | 19.9 | 0.22 | 89.630 | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -90.01 | 0.0 | -20.1 | 20.1 | 19.5 | 0.67 | 29.877 | | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.6 | 0.6 | -90.01 | 0.0 | -20.1 | 20.1 | 19.0 | 1.12 | 17.926 | | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | -90.01 | 0.0 | -20.1 | 20.1 | 18.6 | 1.57 | 12.804 | | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.0 | 1.0 | -90.01 | 0.0 | -20.1 | 20.1 | 18.1 | 2.02 | 9.959 | | |
| 600.0 | 600.0 | 600.0 | 600.0 | 1.2 | 1.2 | -90.01 | 0.0 | -20.1 | 20.1 | 17.7 | 2.47 | 8.148 | | |
| 700.0 | 700.0 | 700.0 | 700.0 | 1.5 | 1.5 | -90.01 | 0.0 | -20.1 | 20.1 | 17.2 | 2.92 | 6.895 | | |
| 800.0 | 800.0 | 800.0 | 800.0 | 1.7 | 1.7 | -90.01 | 0.0 | -20.1 | 20.1 | 16.8 | 3.37 | 5.975 | | |
| 900.0 | 900.0 | 900.0 | 900.0 | 1.9 | 1.9 | -90.01 | 0.0 | -20.1 | 20.1 | 16.3 | 3.82 | 5.272 | | |
| 1,000.0 | 1,000.0 | 1,000.0 | 1,000.0 | 2.1 | 2.1 | -90.01 | 0.0 | -20.1 | 20.1 | 15.9 | 4.27 | 4.717 | | |
| 1,100.0 | 1,100.0 | 1,100.0 | 1,100.0 | 2.4 | 2.4 | -90.01 | 0.0 | -20.1 | 20.1 | 15.4 | 4.72 | 4.268 | | |
| 1,200.0 | 1,200.0 | 1,200.0 | 1,200.0 | 2.6 | 2.6 | -90.01 | 0.0 | -20.1 | 20.1 | 15.0 | 5.17 | 3.897 CC, ES, SF | | |
| 1,300.0 | 1,300.0 | 1,299.3 | 1,299.3 | 2.8 | 2.8 | -91.12 | -0.4 | -21.8 | 21.8 | 16.2 | 5.60 | 3.898 | | |
| 1,400.0 | 1,400.0 | 1,398.3 | 1,398.2 | 3.0 | 3.0 | -93.59 | -1.7 | -26.8 | 26.9 | 20.9 | 6.02 | 4.471 | | |
| 1,500.0 | 1,500.0 | 1,496.9 | 1,496.4 | 3.3 | 3.2 | -96.13 | -3.8 | -35.0 | 35.4 | 29.0 | 6.45 | 5.495 | | |
| 1,600.0 | 1,600.0 | 1,594.8 | 1,593.5 | 3.5 | 3.4 | -98.14 | -6.6 | -46.5 | 47.4 | 40.5 | 6.89 | 6.879 | | |
| 1,700.0 | 1,700.0 | 1,691.7 | 1,689.3 | 3.7 | 3.7 | -99.59 | -10.3 | -61.0 | 62.7 | 55.4 | 7.35 | 8.542 | | |
| 1,800.0 | 1,800.0 | 1,787.6 | 1,783.4 | 3.9 | 4.0 | -100.62 | -14.7 | -78.4 | 81.4 | 73.6 | 7.82 | 10.413 | | |
| 1,900.0 | 1,900.0 | 1,882.1 | 1,875.6 | 4.2 | 4.3 | -101.35 | -19.8 | -98.5 | 103.4 | 95.1 | 8.32 | 12.431 | | |
| 2,000.0 | 2,000.0 | 1,978.8 | 1,969.6 | 4.4 | 4.7 | -101.88 | -25.4 | -120.9 | 127.3 | 118.4 | 8.84 | 14.396 | | |
| 2,100.0 | 2,100.0 | 2,075.7 | 2,063.6 | 4.6 | 5.1 | 121.69 | -31.1 | -143.4 | 152.1 | 143.0 | 9.04 | 16.824 | | |
| 2,200.0 | 2,199.8 | 2,172.0 | 2,157.1 | 4.8 | 5.5 | 122.36 | -36.8 | -165.8 | 178.7 | 169.3 | 9.44 | 18.938 | | |
| 2,300.0 | 2,299.5 | 2,267.7 | 2,250.0 | 5.0 | 5.9 | 123.54 | -42.4 | -188.0 | 207.2 | 197.4 | 9.84 | 21.065 | | |
| 2,400.0 | 2,398.7 | 2,362.6 | 2,342.2 | 5.2 | 6.3 | 125.00 | -47.9 | -210.0 | 237.8 | 227.5 | 10.25 | 23.208 | | |
| 2,502.9 | 2,500.3 | 2,459.4 | 2,436.2 | 5.4 | 6.8 | 126.65 | -53.6 | -232.5 | 271.5 | 260.9 | 10.68 | 25.430 | | |
| 2,600.0 | 2,595.9 | 2,550.2 | 2,524.3 | 5.6 | 7.2 | 128.56 | -58.9 | -253.6 | 304.7 | 293.5 | 11.13 | 27.381 | | |
| 2,700.0 | 2,694.4 | 2,643.7 | 2,615.1 | 5.9 | 7.6 | 130.15 | -64.4 | -275.3 | 339.0 | 327.4 | 11.61 | 29.210 | | |
| 2,800.0 | 2,792.9 | 2,737.2 | 2,706.0 | 6.2 | 8.1 | 131.44 | -69.9 | -297.0 | 373.6 | 361.5 | 12.10 | 30.869 | | |
| 2,900.0 | 2,891.3 | 2,830.8 | 2,796.8 | 6.5 | 8.5 | 132.51 | -75.3 | -318.7 | 408.3 | 395.7 | 12.61 | 32.376 | | |
| 3,000.0 | 2,989.8 | 2,924.3 | 2,887.6 | 6.8 | 9.0 | 133.42 | -80.8 | -340.4 | 443.1 | 430.0 | 13.13 | 33.745 | | |
| 3,100.0 | 3,088.2 | 3,017.8 | 2,978.4 | 7.1 | 9.5 | 134.19 | -86.3 | -362.1 | 478.0 | 464.3 | 13.66 | 34.992 | | |
| 3,200.0 | 3,186.7 | 3,111.4 | 3,069.2 | 7.4 | 9.9 | 134.86 | -91.8 | -383.8 | 512.9 | 498.7 | 14.20 | 36.129 | | |
| 3,300.0 | 3,285.2 | 3,204.9 | 3,160.0 | 7.8 | 10.4 | 135.45 | -97.2 | -405.5 | 547.9 | 533.2 | 14.74 | 37.167 | | |
| 3,400.0 | 3,383.6 | 3,298.4 | 3,250.9 | 8.1 | 10.9 | 135.96 | -102.7 | -427.2 | 583.0 | 567.7 | 15.29 | 38.119 | | |
| 3,500.0 | 3,482.1 | 3,392.0 | 3,341.7 | 8.5 | 11.3 | 136.42 | -108.2 | -448.9 | 618.1 | 602.2 | 15.85 | 38.992 | | |
| 3,600.0 | 3,580.6 | 3,485.5 | 3,432.5 | 8.8 | 11.8 | 136.83 | -113.7 | -470.6 | 653.2 | 636.8 | 16.41 | 39.795 | | |
| 3,619.4 | 3,599.7 | 3,503.7 | 3,450.1 | 8.9 | 11.9 | 136.90 | -114.7 | -474.9 | 660.0 | 643.5 | 16.52 | 39.944 | | |
| 3,700.0 | 3,679.2 | 3,579.4 | 3,523.6 | 9.1 | 12.3 | 137.52 | -119.2 | -492.4 | 687.6 | 670.5 | 17.02 | 40.387 | | |
| 3,800.0 | 3,778.4 | 3,674.1 | 3,615.6 | 9.4 | 12.8 | 138.05 | -124.7 | -514.4 | 719.6 | 701.9 | 17.62 | 40.848 | | |
| 3,900.0 | 3,877.9 | 3,769.6 | 3,708.3 | 9.6 | 13.3 | 138.34 | -130.3 | -536.6 | 749.1 | 730.9 | 18.19 | 41.192 | | |
| 4,000.0 | 3,977.7 | 3,865.8 | 3,801.7 | 9.9 | 13.7 | 138.43 | -136.0 | -558.9 | 776.1 | 757.4 | 18.73 | 41.438 | | |
| 4,100.0 | 4,077.7 | 3,962.6 | 3,895.7 | 10.1 | 14.2 | 138.32 | -141.6 | -581.4 | 800.7 | 781.4 | 19.24 | 41.605 | | |
| 4,122.3 | 4,100.0 | 3,984.2 | 3,916.7 | 10.1 | 14.4 | -85.51 | -142.9 | -586.4 | 805.8 | 786.4 | 19.35 | 41.634 | | |
| 4,200.0 | 4,177.7 | 4,059.7 | 3,989.9 | 10.2 | 14.7 | -85.92 | -147.3 | -603.9 | 823.5 | 803.8 | 19.71 | 41.778 | | |
| 4,300.0 | 4,277.7 | 4,156.8 | 4,084.2 | 10.4 | 15.2 | -86.43 | -153.0 | -626.4 | 846.3 | 826.1 | 20.18 | 41.946 | | |
| 4,400.0 | 4,377.7 | 4,253.9 | 4,178.5 | 10.6 | 15.7 | -86.91 | -158.7 | -649.0 | 869.2 | 848.6 | 20.64 | 42.109 | | |
| 4,500.0 | 4,477.7 | 4,350.9 | 4,272.7 | 10.8 | 16.2 | -87.36 | -164.4 | -671.5 | 892.1 | 871.0 | 21.11 | 42.267 | | |
| 4,600.0 | 4,577.7 | 4,448.0 | 4,367.0 | 11.0 | 16.7 | -87.79 | -170.1 | -694.0 | 915.1 | 893.6 | 21.57 | 42.420 | | |
| 4,700.0 | 4,677.7 | 4,545.1 | 4,461.3 | 11.2 | 17.2 | -88.20 | -175.7 | -716.6 | 938.2 | 916.1 | 22.04 | 42.569 | | |
| 4,800.0 | 4,777.7 | 4,642.2 | 4,555.6 | 11.4 | 17.7 | -88.60 | -181.4 | -739.1 | 961.3 | 938.8 | 22.51 | 42.712 | | |
| 4,900.0 | 4,877.7 | 4,739.3 | 4,649.8 | 11.6 | 18.2 | -88.97 | -187.1 | -761.6 | 984.4 | 961.4 | 22.97 | 42.851 | | |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

| Offset Design Land JG (West) Pad Sec.31-T2N-R64W - Land JG 31-34D - Wellbore #1 - Plan #1 (11-07-12) | | | | | | | | | | | | Offset Site Error: 0.0 ft | |
|--|----------------|----------------|----------------|-----------------|--------|-------------------|------------------------|------------|-----------------|------------------|--------------------|---------------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: 0.0 ft | |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | Warning |
| Measured Depth | Vertical Depth | Measured Depth | Vertical Depth | Reference | Offset | Highside Toolface | Offset Wellbore Centre | | Between Centres | Between Ellipses | Minimum Separation | Separation Factor | |
| (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (°) | +N/-S (ft) | +E/-W (ft) | (ft) | (ft) | (ft) | | |
| 5,000.0 | 4,977.7 | 4,836.4 | 4,744.1 | 11.8 | 18.7 | -89.32 | -192.8 | -784.2 | 1,007.6 | 984.1 | 23.44 | 42.985 | |
| 5,100.0 | 5,077.7 | 4,933.5 | 4,838.4 | 12.0 | 19.2 | -89.66 | -198.5 | -806.7 | 1,030.8 | 1,006.9 | 23.91 | 43.114 | |
| 5,200.0 | 5,177.7 | 5,030.6 | 4,932.6 | 12.2 | 19.7 | -89.99 | -204.2 | -829.3 | 1,054.0 | 1,029.6 | 24.38 | 43.240 | |
| 5,300.0 | 5,277.7 | 5,135.2 | 5,034.2 | 12.4 | 20.3 | -90.32 | -210.3 | -853.5 | 1,077.2 | 1,052.4 | 24.86 | 43.334 | |
| 5,400.0 | 5,377.7 | 5,290.4 | 5,186.0 | 12.5 | 20.8 | -90.73 | -218.1 | -884.4 | 1,097.3 | 1,071.9 | 25.41 | 43.185 | |
| 5,500.0 | 5,477.7 | 5,448.7 | 5,342.5 | 12.7 | 21.3 | -91.02 | -224.0 | -907.8 | 1,112.1 | 1,086.2 | 25.93 | 42.893 | |
| 5,600.0 | 5,577.7 | 5,609.2 | 5,502.2 | 12.9 | 21.6 | -91.20 | -227.8 | -922.9 | 1,121.5 | 1,095.1 | 26.43 | 42.435 | |
| 5,700.0 | 5,677.7 | 5,771.0 | 5,663.8 | 13.1 | 21.9 | -91.28 | -229.4 | -929.3 | 1,125.5 | 1,098.6 | 26.91 | 41.823 | |
| 5,800.0 | 5,777.7 | 5,884.8 | 5,777.7 | 13.4 | 22.0 | -91.28 | -229.5 | -929.5 | 1,125.7 | 1,098.3 | 27.31 | 41.214 | |
| 5,900.0 | 5,877.7 | 5,984.8 | 5,877.7 | 13.6 | 22.1 | -91.28 | -229.5 | -929.5 | 1,125.7 | 1,098.0 | 27.69 | 40.647 | |
| 6,000.0 | 5,977.7 | 6,084.8 | 5,977.7 | 13.8 | 22.2 | -91.28 | -229.5 | -929.5 | 1,125.7 | 1,097.6 | 28.08 | 40.093 | |
| 6,100.0 | 6,077.7 | 6,184.8 | 6,077.7 | 14.0 | 22.4 | -91.28 | -229.5 | -929.5 | 1,125.7 | 1,097.2 | 28.46 | 39.551 | |
| 6,200.0 | 6,177.7 | 6,284.8 | 6,177.7 | 14.2 | 22.5 | -91.28 | -229.5 | -929.5 | 1,125.7 | 1,096.8 | 28.85 | 39.021 | |
| 6,300.0 | 6,277.7 | 6,384.8 | 6,277.7 | 14.4 | 22.6 | -91.28 | -229.5 | -929.5 | 1,125.7 | 1,096.4 | 29.24 | 38.503 | |
| 6,400.0 | 6,377.7 | 6,484.8 | 6,377.7 | 14.6 | 22.7 | -91.28 | -229.5 | -929.5 | 1,125.7 | 1,096.0 | 29.63 | 37.997 | |
| 6,500.0 | 6,477.7 | 6,584.8 | 6,477.7 | 14.8 | 22.9 | -91.28 | -229.5 | -929.5 | 1,125.7 | 1,095.6 | 30.02 | 37.501 | |
| 6,600.0 | 6,577.7 | 6,684.8 | 6,577.7 | 15.0 | 23.0 | -91.28 | -229.5 | -929.5 | 1,125.7 | 1,095.3 | 30.41 | 37.017 | |
| 6,700.0 | 6,677.7 | 6,784.8 | 6,677.7 | 15.2 | 23.1 | -91.28 | -229.5 | -929.5 | 1,125.7 | 1,094.9 | 30.80 | 36.543 | |
| 6,800.0 | 6,777.7 | 6,884.8 | 6,777.7 | 15.4 | 23.3 | -91.28 | -229.5 | -929.5 | 1,125.7 | 1,094.5 | 31.20 | 36.079 | |
| 6,900.0 | 6,877.7 | 6,984.8 | 6,877.7 | 15.6 | 23.4 | -91.28 | -229.5 | -929.5 | 1,125.7 | 1,094.1 | 31.60 | 35.625 | |
| 7,000.0 | 6,977.7 | 7,084.8 | 6,977.7 | 15.8 | 23.5 | -91.28 | -229.5 | -929.5 | 1,125.7 | 1,093.7 | 32.00 | 35.181 | |
| 7,100.0 | 7,077.7 | 7,184.8 | 7,077.7 | 16.0 | 23.7 | -91.28 | -229.5 | -929.5 | 1,125.7 | 1,093.3 | 32.40 | 34.747 | |
| 7,200.0 | 7,177.7 | 7,284.8 | 7,177.7 | 16.2 | 23.8 | -91.28 | -229.5 | -929.5 | 1,125.7 | 1,092.9 | 32.80 | 34.322 | |
| 7,300.0 | 7,277.7 | 7,384.8 | 7,277.7 | 16.5 | 24.0 | -91.28 | -229.5 | -929.5 | 1,125.7 | 1,092.5 | 33.20 | 33.906 | |
| 7,396.3 | 7,374.0 | 7,481.1 | 7,374.0 | 16.7 | 24.1 | -91.28 | -229.5 | -929.5 | 1,125.7 | 1,092.1 | 33.59 | 33.514 | |

| | | | |
|---------------------------|------------------------------------|-------------------------------------|--------------------------------------|
| Company: | Great Western | Local Co-ordinate Reference: | Well Land JG 31-35D |
| Project: | SEC.31-T2N-R64W | TVD Reference: | WELL @ 4947.0ft (Original Well Elev) |
| Reference Site: | Land JG (East) Pad Sec.31-T2N-R64W | MD Reference: | WELL @ 4947.0ft (Original Well Elev) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Land JG 31-35D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (11-05-12) | Offset TVD Reference: | Offset Datum |

Reference Depths are relative to WELL @ 4947.0ft (Original Well Elev) Coordinates are relative to: Land JG 31-35D
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.58°



| | | | |
|---------------------------|------------------------------------|-------------------------------------|--------------------------------------|
| Company: | Great Western | Local Co-ordinate Reference: | Well Land JG 31-35D |
| Project: | SEC.31-T2N-R64W | TVD Reference: | WELL @ 4947.0ft (Original Well Elev) |
| Reference Site: | Land JG (East) Pad Sec.31-T2N-R64W | MD Reference: | WELL @ 4947.0ft (Original Well Elev) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Land JG 31-35D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (11-05-12) | Offset TVD Reference: | Offset Datum |

Reference Depths are relative to WELL @ 4947.0ft (Original Well Elev) Coordinates are relative to: Land JG 31-35D
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
 Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.58°

