



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_JESSER 18-2 PAD

P_BROWN 5-2S

P_BROWN 5-2S

Plan: PLAN #1 3-16-10 RHS

Standard Planning Report

16 March, 2010

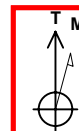




Project: COLORADO NORTHERN ZONE - 83
 Site: WELD_JESSER 18-2 PAD
 Well: P_BROWN 5-2S
 Wellbore: P_BROWN 5-2S
 Section: SECTION 2 T1N R66W
 SHL: 1178 FNL 1132 FWL
 Design: PLAN #1 3-16-10 RHS
 Latitude: 40° 5' 2.655 N
 Longitude: 104° 44' 58.740 W
 GL: 5143.00
 KB: WELL @ 5158.00ft (Original Well Elev)



Weatherford®



Azimuths to True North
 Magnetic North: 8.99°
 Magnetic Field
 Strength: 53095.8nT
 Dip Angle: 66.84°
 Date: 3/16/2010
 Model: IGRF2010

| FORMATION TOP DETAILS | | |
|-----------------------|---------|-----------|
| TVDPath | MDPath | Formation |
| 4296.00 | 4388.00 | PARKMAN |
| 4786.00 | 4897.71 | SUSSEX |

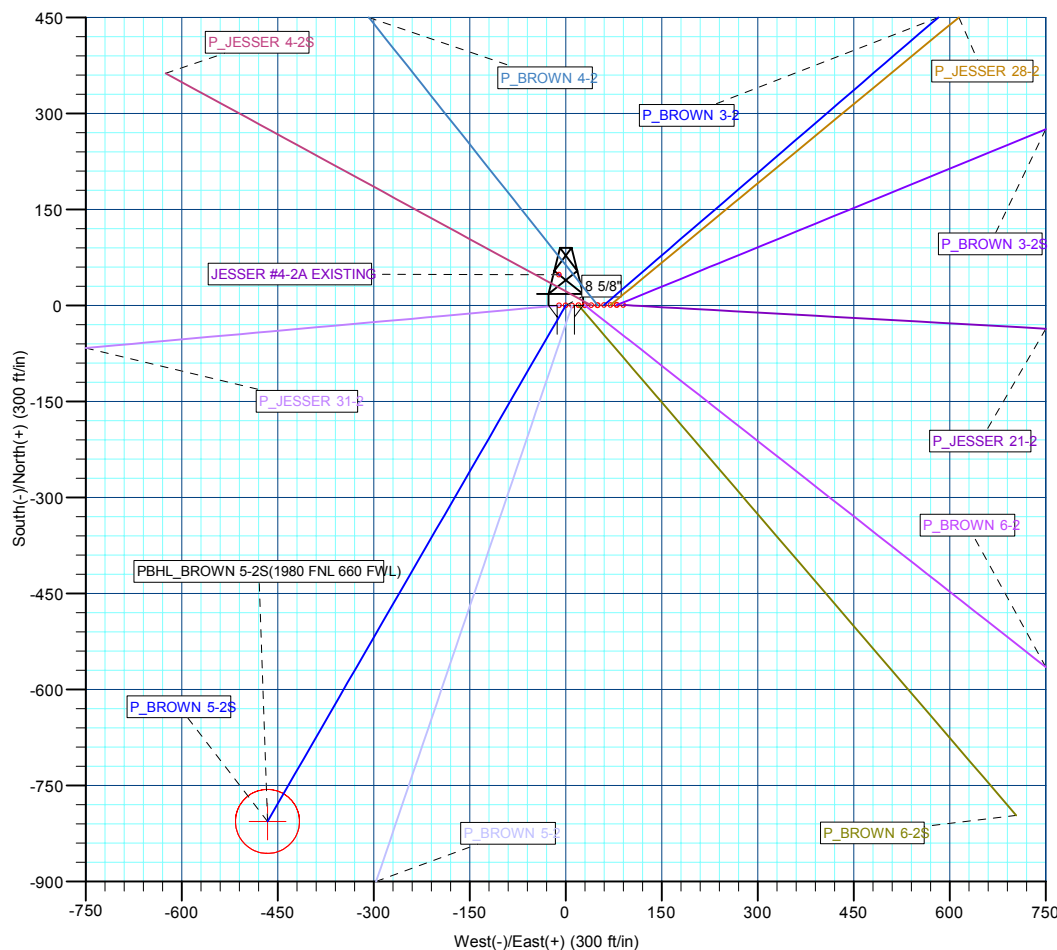
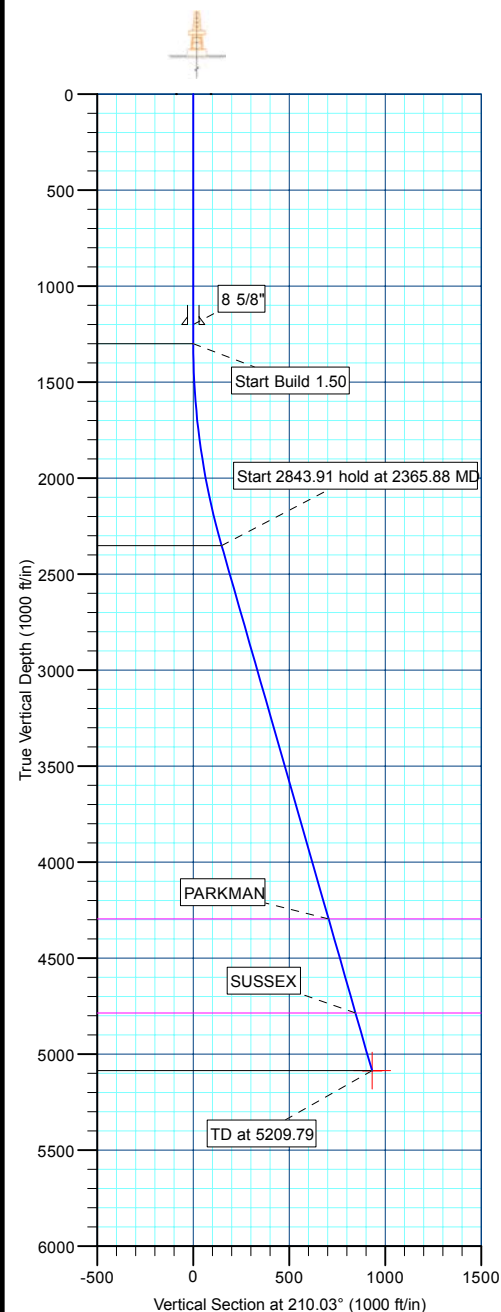
| CASING DETAILS | | | |
|----------------|---------|--------|------|
| TVD | MD | Name | Size |
| 1200.00 | 1200.00 | 8 5/8" | 8.62 |

| SECTION DETAILS | | | | | | | | | |
|-----------------|-------|--------|---------|---------|---------|------|--------|--------|----------------------------------|
| MD | Inc | Azi | TVD | +N/-S | +E/-W | DLeg | TFace | VSec | Annotation |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1300.00 | 0.00 | 0.00 | 1300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | Start Build 1.50 |
| 2365.88 | 15.99 | 210.03 | 2352.10 | -127.92 | -73.93 | 1.50 | 210.03 | 147.75 | Start 2843.91 hold at 2365.88 MD |
| 5209.79 | 15.99 | 210.03 | 5086.00 | -806.13 | -465.90 | 0.00 | 0.00 | 931.07 | TD at 5209.79 |

| WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG) | | | | | | |
|---|---------|---------|---------|-----------------|------------------|------------------------|
| Name | TVD | +N/-S | +E/-W | Latitude | Longitude | Shape |
| PBHL | 5086.00 | -806.13 | -465.90 | 40° 4' 54.689 N | 104° 45' 4.734 W | Circle (Radius: 50.00) |

| WELL DETAILS: P_BROWN 5-2S | | | | | | |
|----------------------------|-------|------------|--------------------------|---------------------|-------------------|------|
| +N/-S | +E/-W | Northing | Ground Level: Easting | 5143.00 Latitude | Longitude | Slot |
| 0.00 | 0.00 | 1274360.11 | 3209951.60 | 40° 5' 2.655 N | 104° 44' 58.740 W | |

| LEGEND | |
|--|--|
| JESSER #4-2A EXISTING, JESSER #4-2A EXISTING, JESSER #4-2A EXISTING V0 | |
| P_BROWN 3-2, P_BROWN 3-2, PLAN #1 3-16-10 RHS V0 | |
| P_BROWN 3-2S, P_BROWN 3-2S, PLAN #1 3-16-10 RHS V0 | |
| P_BROWN 4-2, P_BROWN 4-2, PLAN #1 3-16-10 RHS V0 | |
| P_BROWN 5-2, P_BROWN 5-2, PLAN #1 3-16-10 RHS V0 | |
| P_BROWN 6-2, P_BROWN 6-2, PLAN #1 3-16-10 RHS V0 | |
| P_BROWN 6-2S, P_BROWN 6-2S, PLAN #1 3-16-10 RHS V0 | |
| P_JESSER 21-2, P_JESSER 21-2, PLAN #1 3-16-10 RHS V0 | |
| P_JESSER 28-2, P_JESSER 28-2, PLAN #1 3-16-10 RHS V0 | |
| P_JESSER 31-2, P_JESSER 31-2, PLAN #1 3-16-10 RHS V0 | |
| P_JESSER 4-2S, P_JESSER 4-2S, PLAN #1 3-16-10 RHS V0 | |
| PLAN #1 3-16-10 RHS | |



| | |
|---|----------------------------|
| Plan: PLAN #1 3-16-10 RHS (P_BROWN 5-2S/P_BROWN 5-2S) | |
| Created By: Robert H. Scott | Date: 15:32, March 16 2010 |

| | | | |
|------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Database: | EDM 2003.21 Single User Db | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Company: | US ROCKIES REGION PLANNING | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Project: | COLORADO NORTHERN ZONE - 83 | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site: | WELD_JESSER 18-2 PAD | North Reference: | True |
| Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | P_BROWN 5-2S | | |
| Design: | PLAN #1 3-16-10 RHS | | |

| | | | |
|--------------------|--|----------------------|----------------|
| Project | COLORADO NORTHERN ZONE - 83, KERR MCGEE OIL & GAS ONSHORE LP | | |
| Map System: | US State Plane 1983 | System Datum: | Mean Sea Level |
| Geo Datum: | North American Datum 1983 | | |
| Map Zone: | Colorado Northern Zone | | |

| | | | | | |
|-----------------------|----------|--|-----------------|-------------------|-------------------|
| Site | | WELD_JESSER 18-2 PAD, SECTION 2 T1N R66W | | | |
| Site Position: | | Northing: | 1,274,361.36 ft | Latitude: | 40° 5' 2.663 N |
| From: | Lat/Long | Easting: | 3,210,011.75 ft | Longitude: | 104° 44' 57.966 W |
| Position Uncertainty: | 0.00 ft | Slot Radius: | in | Grid Convergence: | 0.48 ° |

| | | | | | | |
|----------------------|--------------|-----------|---------------------|-----------------|---------------|-------------------|
| Well | P_BROWN 5-2S | | | | | |
| Well Position | +N/-S | -0.75 ft | Northing: | 1,274,360.11 ft | Latitude: | 40° 5' 2.655 N |
| | +E/-W | -60.16 ft | Easting: | 3,209,951.60 ft | Longitude: | 104° 44' 58.740 W |
| Position Uncertainty | | 0.00 ft | Wellhead Elevation: | ft | Ground Level: | 5,143.00 ft |

| | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | P_BROWN 5-2S | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2010 | 3/16/2010 | 9.00 | 66.84 | 53,096 |

| | | | | |
|--------------------------|------------------------------|-------------------|----------------------|----------------------|
| Design | PLAN #1 3-16-10 RHS | | | |
| Audit Notes: | | | | |
| Version: | Phase: | PLAN | Tie On Depth: | 0.00 |
| Vertical Section: | Depth From (TVD) (ft) | +N/-S (ft) | +E/-W (ft) | Direction (°) |
| | 0.00 | 0.00 | 0.00 | 210.03 |

| 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 |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,300.00 | 0.00 | 0.00 | 1,300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2,365.88 | 15.99 | 210.03 | 2,352.10 | -127.92 | -73.93 | 1.50 | 1.50 | 0.00 | 210.03 | |
| 5,209.79 | 15.99 | 210.03 | 5,086.00 | -806.13 | -465.90 | 0.00 | 0.00 | 0.00 | 0.00 | PBHL_BROWN 5-2 |

| | | | |
|------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Database: | EDM 2003.21 Single User Db | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Company: | US ROCKIES REGION PLANNING | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Project: | COLORADO NORTHERN ZONE - 83 | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site: | WELD_JESSER 18-2 PAD | North Reference: | True |
| Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | P_BROWN 5-2S | | |
| Design: | PLAN #1 3-16-10 RHS | | |

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) |
|--|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| Start Build 1.50 | | | | | | | | | |
| 1,300.00 | 0.00 | 0.00 | 1,300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,400.00 | 1.50 | 210.03 | 1,399.99 | -1.13 | -0.65 | 1.31 | 1.50 | 1.50 | 0.00 |
| 1,500.00 | 3.00 | 210.03 | 1,499.91 | -4.53 | -2.62 | 5.23 | 1.50 | 1.50 | 0.00 |
| 1,600.00 | 4.50 | 210.03 | 1,599.69 | -10.19 | -5.89 | 11.77 | 1.50 | 1.50 | 0.00 |
| 1,700.00 | 6.00 | 210.03 | 1,699.27 | -18.12 | -10.47 | 20.92 | 1.50 | 1.50 | 0.00 |
| 1,800.00 | 7.50 | 210.03 | 1,798.57 | -28.29 | -16.35 | 32.68 | 1.50 | 1.50 | 0.00 |
| 1,900.00 | 9.00 | 210.03 | 1,897.54 | -40.72 | -23.53 | 47.03 | 1.50 | 1.50 | 0.00 |
| 2,000.00 | 10.50 | 210.03 | 1,996.09 | -55.38 | -32.01 | 63.96 | 1.50 | 1.50 | 0.00 |
| 2,100.00 | 12.00 | 210.03 | 2,094.16 | -72.27 | -41.77 | 83.47 | 1.50 | 1.50 | 0.00 |
| 2,200.00 | 13.50 | 210.03 | 2,191.70 | -91.38 | -52.81 | 105.54 | 1.50 | 1.50 | 0.00 |
| 2,300.00 | 15.00 | 210.03 | 2,288.62 | -112.69 | -65.13 | 130.15 | 1.50 | 1.50 | 0.00 |
| Start 2843.91 hold at 2365.88 MD | | | | | | | | | |
| 2,365.88 | 15.99 | 210.03 | 2,352.10 | -127.92 | -73.93 | 147.75 | 1.50 | 1.50 | 0.00 |
| 2,400.00 | 15.99 | 210.03 | 2,384.90 | -136.06 | -78.64 | 157.15 | 0.00 | 0.00 | 0.00 |
| 2,500.00 | 15.99 | 210.03 | 2,481.03 | -159.91 | -92.42 | 184.69 | 0.00 | 0.00 | 0.00 |
| 2,600.00 | 15.99 | 210.03 | 2,577.16 | -183.76 | -106.20 | 212.24 | 0.00 | 0.00 | 0.00 |
| 2,700.00 | 15.99 | 210.03 | 2,673.30 | -207.60 | -119.98 | 239.78 | 0.00 | 0.00 | 0.00 |
| 2,800.00 | 15.99 | 210.03 | 2,769.43 | -231.45 | -133.77 | 267.33 | 0.00 | 0.00 | 0.00 |
| 2,900.00 | 15.99 | 210.03 | 2,865.56 | -255.30 | -147.55 | 294.87 | 0.00 | 0.00 | 0.00 |
| 3,000.00 | 15.99 | 210.03 | 2,961.69 | -279.15 | -161.33 | 322.41 | 0.00 | 0.00 | 0.00 |
| 3,100.00 | 15.99 | 210.03 | 3,057.82 | -302.99 | -175.11 | 349.96 | 0.00 | 0.00 | 0.00 |
| 3,200.00 | 15.99 | 210.03 | 3,153.96 | -326.84 | -188.90 | 377.50 | 0.00 | 0.00 | 0.00 |
| 3,300.00 | 15.99 | 210.03 | 3,250.09 | -350.69 | -202.68 | 405.05 | 0.00 | 0.00 | 0.00 |
| 3,400.00 | 15.99 | 210.03 | 3,346.22 | -374.54 | -216.46 | 432.59 | 0.00 | 0.00 | 0.00 |
| 3,500.00 | 15.99 | 210.03 | 3,442.35 | -398.38 | -230.24 | 460.13 | 0.00 | 0.00 | 0.00 |
| 3,600.00 | 15.99 | 210.03 | 3,538.48 | -422.23 | -244.03 | 487.68 | 0.00 | 0.00 | 0.00 |
| 3,700.00 | 15.99 | 210.03 | 3,634.62 | -446.08 | -257.81 | 515.22 | 0.00 | 0.00 | 0.00 |
| 3,800.00 | 15.99 | 210.03 | 3,730.75 | -469.93 | -271.59 | 542.76 | 0.00 | 0.00 | 0.00 |
| 3,900.00 | 15.99 | 210.03 | 3,826.88 | -493.77 | -285.37 | 570.31 | 0.00 | 0.00 | 0.00 |
| 4,000.00 | 15.99 | 210.03 | 3,923.01 | -517.62 | -299.16 | 597.85 | 0.00 | 0.00 | 0.00 |
| 4,100.00 | 15.99 | 210.03 | 4,019.14 | -541.47 | -312.94 | 625.40 | 0.00 | 0.00 | 0.00 |
| 4,200.00 | 15.99 | 210.03 | 4,115.27 | -565.32 | -326.72 | 652.94 | 0.00 | 0.00 | 0.00 |
| 4,300.00 | 15.99 | 210.03 | 4,211.41 | -589.16 | -340.50 | 680.48 | 0.00 | 0.00 | 0.00 |
| PARKMAN | | | | | | | | | |
| 4,388.00 | 15.99 | 210.03 | 4,296.00 | -610.15 | -352.63 | 704.72 | 0.00 | 0.00 | 0.00 |
| 4,400.00 | 15.99 | 210.03 | 4,307.54 | -613.01 | -354.29 | 708.03 | 0.00 | 0.00 | 0.00 |
| 4,500.00 | 15.99 | 210.03 | 4,403.67 | -636.86 | -368.07 | 735.57 | 0.00 | 0.00 | 0.00 |
| 4,600.00 | 15.99 | 210.03 | 4,499.80 | -660.71 | -381.85 | 763.12 | 0.00 | 0.00 | 0.00 |
| 4,700.00 | 15.99 | 210.03 | 4,595.93 | -684.55 | -395.64 | 790.66 | 0.00 | 0.00 | 0.00 |
| 4,800.00 | 15.99 | 210.03 | 4,692.07 | -708.40 | -409.42 | 818.20 | 0.00 | 0.00 | 0.00 |
| SUSSEX | | | | | | | | | |
| 4,897.71 | 15.99 | 210.03 | 4,786.00 | -731.70 | -422.89 | 845.12 | 0.00 | 0.00 | 0.00 |
| 4,900.00 | 15.99 | 210.03 | 4,788.20 | -732.25 | -423.20 | 845.75 | 0.00 | 0.00 | 0.00 |
| 5,000.00 | 15.99 | 210.03 | 4,884.33 | -756.10 | -436.98 | 873.29 | 0.00 | 0.00 | 0.00 |
| 5,100.00 | 15.99 | 210.03 | 4,980.46 | -779.94 | -450.77 | 900.83 | 0.00 | 0.00 | 0.00 |
| 5,200.00 | 15.99 | 210.03 | 5,076.59 | -803.79 | -464.55 | 928.38 | 0.00 | 0.00 | 0.00 |
| TD at 5209.79 - PBHL_BROWN 5-2S(1980 FNL 660 FWL) | | | | | | | | | |
| 5,209.79 | 15.99 | 210.03 | 5,086.00 | -806.13 | -465.90 | 931.07 | 0.00 | 0.00 | 0.00 |

| | | | |
|------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Database: | EDM 2003.21 Single User Db | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Company: | US ROCKIES REGION PLANNING | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Project: | COLORADO NORTHERN ZONE - 83 | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site: | WELD_JESSER 18-2 PAD | North Reference: | True |
| Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | P_BROWN 5-2S | | |
| Design: | PLAN #1 3-16-10 RHS | | |

| Design Targets | | | | | | | | | |
|--|---------------|--------------|----------|------------|------------|---------------|--------------|-----------------|------------------|
| Target Name | | | | | | | | | |
| - hit/miss target | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (ft) | Easting (ft) | Latitude | Longitude |
| - Shape | | | | | | | | | |
| PBHL_BROWN 5-2S(- plan hits target center - Circle (radius 50.00) | 0.00 | 0.00 | 5,086.00 | -806.13 | -465.90 | 1,273,550.07 | 3,209,492.54 | 40° 4' 54.689 N | 104° 45' 4.734 W |

| Casing Points | | | | | |
|---------------------|---------------------|--------|----------------------|--------------------|--|
| Measured Depth (ft) | Vertical Depth (ft) | Name | Casing Diameter (in) | Hole Diameter (in) | |
| 1,200.00 | 1,200.00 | 8 5/8" | 8.62 | 11.00 | |

| Formations | | | | | | |
|---------------------|---------------------|---------|-----------|---------|-------------------|--|
| Measured Depth (ft) | Vertical Depth (ft) | Name | Lithology | Dip (°) | Dip Direction (°) | |
| 4,388.00 | 4,296.00 | PARKMAN | | | | |
| 4,897.71 | 4,786.00 | SUSSEX | | | | |

| Plan Annotations | | | | | |
|---------------------|---------------------|------------|------------|----------------------------------|--|
| Measured Depth (ft) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Comment | |
| 1,300.00 | 1,300.00 | 0.00 | 0.00 | Start Build 1.50 | |
| 2,365.88 | 2,352.10 | -127.92 | -73.93 | Start 2843.91 hold at 2365.88 MD | |
| 5,209.79 | 5,086.00 | -806.13 | -465.90 | TD at 5209.79 | |



US ROCKIES REGION PLANNING

**COLORADO NORTHERN ZONE - 83
WELD_JESSER 18-2 PAD
P_BROWN 5-2S**

**P_BROWN 5-2S
PLAN #1 3-16-10 RHS**

Anticollision Report

16 March, 2010



| | | | |
|---------------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Reference Site: | WELD_JESSER 18-2 PAD | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site Error: | 0.00ft | North Reference: | True |
| Reference Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | P_BROWN 5-2S | Database: | EDM 2003.21 Single User Db |
| Reference Design: | PLAN #1 3-16-10 RHS | Offset TVD Reference: | Offset Datum |

| | | | |
|-------------------------------------|---|-----------------------|---------------------|
| Reference | PLAN #1 3-16-10 RHS | | |
| Filter type: | NO GLOBAL FILTER: Using user defined selection & filtering criteria | | |
| Interpolation Method: | Stations | Error Model: | ISCWSA |
| Depth Range: | 0.00 to 20,000.00ft | Scan Method: | Closest Approach 3D |
| Results Limited by: | Maximum center-center distance of 10,000.00ft | Error Surface: | Elliptical Conic |
| Warning Levels Evaluated at: | 2.00 Sigma | | |

| | | | | |
|----------------------------|----------------|------------------------------------|------------------|--------------------|
| Survey Tool Program | Date | 3/16/2010 | | |
| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description |
| 0.00 | 5,209.79 | PLAN #1 3-16-10 RHS (P_BROWN 5-2S) | 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 | | | | | | |
| WELD_JESSER 18-2 PAD | | | | | | |
| JESSER #4-2A EXISTING - JESSER #4-2A EXISTING - | 1,300.00 | 1,279.00 | 49.17 | -2.78 | 0.947 | Level 1, CC |
| JESSER #4-2A EXISTING - JESSER #4-2A EXISTING - | 1,500.00 | 1,478.91 | 53.17 | -7.11 | 0.882 | Level 1, ES, SF |
| P_BROWN 3-2 - P_BROWN 3-2 - PLAN #1 3-16-10 RHS | 1,300.00 | 1,300.00 | 60.16 | 54.58 | 10.771 | CC, ES |
| P_BROWN 3-2 - P_BROWN 3-2 - PLAN #1 3-16-10 RHS | 1,400.00 | 1,398.33 | 62.19 | 56.19 | 10.368 | SF |
| P_BROWN 3-2S - P_BROWN 3-2S - PLAN #1 3-16-10 F | 1,300.00 | 1,300.00 | 80.03 | 74.44 | 14.328 | CC, ES |
| P_BROWN 3-2S - P_BROWN 3-2S - PLAN #1 3-16-10 F | 1,400.00 | 1,398.03 | 81.90 | 75.91 | 13.664 | SF |
| P_BROWN 4-2 - P_BROWN 4-2 - PLAN #1 3-16-10 RHS | 1,480.04 | 1,481.59 | 49.39 | 43.07 | 7.813 | CC |
| P_BROWN 4-2 - P_BROWN 4-2 - PLAN #1 3-16-10 RHS | 1,500.00 | 1,501.62 | 49.43 | 43.03 | 7.723 | ES |
| P_BROWN 4-2 - P_BROWN 4-2 - PLAN #1 3-16-10 RHS | 1,600.00 | 1,601.38 | 51.53 | 44.73 | 7.575 | SF |
| P_BROWN 5-2 - P_BROWN 5-2 - PLAN #1 3-16-10 RHS | 1,300.00 | 1,300.00 | 10.07 | 4.49 | 1.803 | CC |
| P_BROWN 5-2 - P_BROWN 5-2 - PLAN #1 3-16-10 RHS | 1,400.00 | 1,400.11 | 10.18 | 4.20 | 1.703 | ES |
| P_BROWN 5-2 - P_BROWN 5-2 - PLAN #1 3-16-10 RHS | 1,500.00 | 1,500.17 | 10.65 | 4.32 | 1.683 | SF |
| P_BROWN 6-2 - P_BROWN 6-2 - PLAN #1 3-16-10 RHS | 1,300.00 | 1,300.00 | 29.94 | 24.36 | 5.361 | CC, ES |
| P_BROWN 6-2 - P_BROWN 6-2 - PLAN #1 3-16-10 RHS | 1,400.00 | 1,399.15 | 31.96 | 25.98 | 5.343 | SF |
| P_BROWN 6-2S - P_BROWN 6-2S - PLAN #1 3-16-10 F | 1,300.00 | 1,300.00 | 20.15 | 14.56 | 3.608 | CC, ES, SF |
| P_JESSER 21-2 - P_JESSER 21-2 - PLAN #1 3-16-10 R | 1,300.00 | 1,300.00 | 90.10 | 84.52 | 16.131 | CC, ES |
| P_JESSER 21-2 - P_JESSER 21-2 - PLAN #1 3-16-10 R | 1,400.00 | 1,396.89 | 92.46 | 86.47 | 15.447 | SF |
| P_JESSER 28-2 - P_JESSER 28-2 - PLAN #1 3-16-10 R | 1,300.00 | 1,300.00 | 69.96 | 64.37 | 12.525 | CC, ES |
| P_JESSER 28-2 - P_JESSER 28-2 - PLAN #1 3-16-10 R | 1,400.00 | 1,398.05 | 71.99 | 65.99 | 12.004 | SF |
| P_JESSER 31-2 - P_JESSER 31-2 - PLAN #1 3-16-10 R | 1,300.00 | 1,300.00 | 10.07 | 4.49 | 1.803 | CC, ES, SF |
| P_JESSER 4-2S - P_JESSER 4-2S - PLAN #1 3-16-10 F | 1,540.15 | 1,541.90 | 38.58 | 32.03 | 5.892 | CC, ES |
| P_JESSER 4-2S - P_JESSER 4-2S - PLAN #1 3-16-10 F | 1,600.00 | 1,601.85 | 39.04 | 32.25 | 5.756 | SF |

| | | | | | | | | | | | | | | |
|---------------------------------|---------------------------|---|---------------------------|-----------------------|--------------------|-----------------------------|---|--------|---------------|----------------------------|-----------------------------|-------------------------------|---------|----------------------|
| Offset Design | | WELD_JESSER 18-2 PAD - JESSER #4-2A EXISTING - JESSER #4-2A EXISTING - JESSER #4-2A E | | | | | | | | | | Offset Site Error: | | 0.00 ft |
| Survey Program: | | 0-UNKNOWN | | | | | | | | | | Offset Well Error: | | 0.00 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | Warning | |
| Measured Depth 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 |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -12.15 | 48.07 | -10.35 | 53.47 | | | | | |
| 100.00 | 100.00 | 79.00 | 79.00 | 0.10 | 1.58 | -12.15 | 48.07 | -10.35 | 49.17 | 47.50 | 1.68 | 29.348 | | |
| 200.00 | 200.00 | 179.00 | 179.00 | 0.32 | 5.16 | -12.15 | 48.07 | -10.35 | 49.17 | 43.69 | 5.48 | 8.973 | | |
| 300.00 | 300.00 | 279.00 | 279.00 | 0.55 | 9.16 | -12.15 | 48.07 | -10.35 | 49.17 | 39.47 | 9.71 | 5.067 | | |
| 400.00 | 400.00 | 379.00 | 379.00 | 0.77 | 13.16 | -12.15 | 48.07 | -10.35 | 49.17 | 35.24 | 13.93 | 3.530 | | |
| 500.00 | 500.00 | 479.00 | 479.00 | 0.99 | 17.16 | -12.15 | 48.07 | -10.35 | 49.17 | 31.02 | 18.15 | 2.709 | | |

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

| | | | |
|---------------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Reference Site: | WELD_JESSER 18-2 PAD | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site Error: | 0.00ft | North Reference: | True |
| Reference Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | P_BROWN 5-2S | Database: | EDM 2003.21 Single User Db |
| Reference Design: | PLAN #1 3-16-10 RHS | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | Offset Site Error: | 0.00 ft |
|---------------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|-----------------------|---------|
| Survey Program: 0-UNKNOWN | | | | | | | | | | | | Offset Well Error: | 0.00 ft |
| 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 |
| 600.00 | 600.00 | 579.00 | 579.00 | 1.22 | 21.16 | -12.15 | 48.07 | -10.35 | 49.17 | 26.79 | 22.38 | 2.197 | |
| 700.00 | 700.00 | 679.00 | 679.00 | 1.44 | 25.16 | -12.15 | 48.07 | -10.35 | 49.17 | 22.57 | 26.60 | 1.848 | |
| 800.00 | 800.00 | 779.00 | 779.00 | 1.67 | 29.16 | -12.15 | 48.07 | -10.35 | 49.17 | 18.35 | 30.83 | 1.595 | |
| 900.00 | 900.00 | 879.00 | 879.00 | 1.89 | 33.16 | -12.15 | 48.07 | -10.35 | 49.17 | 14.12 | 35.05 | 1.403 Level 3 | |
| 1,000.00 | 1,000.00 | 979.00 | 979.00 | 2.12 | 37.16 | -12.15 | 48.07 | -10.35 | 49.17 | 9.90 | 39.28 | 1.252 Level 3 | |
| 1,100.00 | 1,100.00 | 1,079.00 | 1,079.00 | 2.34 | 41.16 | -12.15 | 48.07 | -10.35 | 49.17 | 5.67 | 43.50 | 1.130 Level 2 | |
| 1,200.00 | 1,200.00 | 1,179.00 | 1,179.00 | 2.57 | 45.16 | -12.15 | 48.07 | -10.35 | 49.17 | 1.45 | 47.73 | 1.030 Level 2 | |
| 1,300.00 | 1,300.00 | 1,279.00 | 1,279.00 | 2.79 | 49.16 | -12.15 | 48.07 | -10.35 | 49.17 | -2.78 | 51.95 | 0.947 Level 1, CC | |
| 1,400.00 | 1,399.99 | 1,378.99 | 1,378.99 | 2.99 | 53.16 | 138.82 | 48.07 | -10.35 | 50.15 | -5.99 | 56.14 | 0.893 Level 1 | |
| 1,500.00 | 1,499.91 | 1,478.91 | 1,478.91 | 3.17 | 57.16 | 141.57 | 48.07 | -10.35 | 53.17 | -7.11 | 60.28 | 0.882 Level 1, ES, SF | |
| 1,600.00 | 1,599.69 | 1,578.69 | 1,578.69 | 3.35 | 61.15 | 145.51 | 48.07 | -10.35 | 58.44 | -5.95 | 64.38 | 0.908 Level 1 | |
| 1,700.00 | 1,699.27 | 1,678.27 | 1,678.27 | 3.55 | 65.13 | 149.94 | 48.07 | -10.35 | 66.19 | -2.23 | 68.42 | 0.967 Level 1 | |
| 1,800.00 | 1,798.57 | 1,777.57 | 1,777.57 | 3.77 | 69.10 | 154.27 | 48.07 | -10.35 | 76.60 | 4.22 | 72.38 | 1.058 Level 2 | |
| 1,900.00 | 1,897.54 | 1,876.54 | 1,876.54 | 4.01 | 73.06 | 158.17 | 48.07 | -10.35 | 89.76 | 13.51 | 76.25 | 1.177 Level 2 | |
| 2,000.00 | 1,996.09 | 1,975.09 | 1,975.09 | 4.28 | 77.00 | 161.51 | 48.07 | -10.35 | 105.69 | 25.67 | 80.02 | 1.321 Level 3 | |
| 2,100.00 | 2,094.16 | 2,073.16 | 2,073.16 | 4.59 | 80.93 | 164.28 | 48.07 | -10.35 | 124.37 | 40.70 | 83.68 | 1.486 Level 3 | |
| 2,200.00 | 2,191.70 | 2,170.70 | 2,170.70 | 4.93 | 84.83 | 166.55 | 48.07 | -10.35 | 145.77 | 58.55 | 87.22 | 1.671 | |
| 2,300.00 | 2,288.62 | 2,267.62 | 2,267.62 | 5.32 | 88.70 | 168.40 | 48.07 | -10.35 | 169.83 | 79.20 | 90.64 | 1.874 | |
| 2,365.88 | 2,352.10 | 2,331.10 | 2,331.10 | 5.60 | 91.24 | 169.44 | 48.07 | -10.35 | 187.13 | 94.31 | 92.82 | 2.016 | |
| 2,400.00 | 2,384.90 | 2,363.90 | 2,363.90 | 5.75 | 92.56 | 169.94 | 48.07 | -10.35 | 196.39 | 102.23 | 94.15 | 2.086 | |
| 2,500.00 | 2,481.03 | 2,460.03 | 2,460.03 | 6.21 | 96.40 | 171.17 | 48.07 | -10.35 | 223.59 | 125.52 | 98.07 | 2.280 | |
| 2,600.00 | 2,577.16 | 2,556.16 | 2,556.16 | 6.68 | 100.25 | 172.14 | 48.07 | -10.35 | 250.86 | 148.86 | 102.00 | 2.459 | |
| 2,700.00 | 2,673.30 | 2,652.30 | 2,652.30 | 7.18 | 104.09 | 172.91 | 48.07 | -10.35 | 278.19 | 172.25 | 105.94 | 2.626 | |
| 2,800.00 | 2,769.43 | 2,748.43 | 2,748.43 | 7.68 | 107.94 | 173.55 | 48.07 | -10.35 | 305.56 | 195.67 | 109.88 | 2.781 | |
| 2,900.00 | 2,865.56 | 2,844.56 | 2,844.56 | 8.19 | 111.78 | 174.08 | 48.07 | -10.35 | 332.95 | 219.12 | 113.84 | 2.925 | |
| 3,000.00 | 2,961.69 | 2,940.69 | 2,940.69 | 8.71 | 115.63 | 174.53 | 48.07 | -10.35 | 360.37 | 242.58 | 117.79 | 3.059 | |
| 3,100.00 | 3,057.82 | 3,036.82 | 3,036.82 | 9.24 | 119.47 | 174.92 | 48.07 | -10.35 | 387.81 | 266.06 | 121.75 | 3.185 | |
| 3,200.00 | 3,153.96 | 3,132.96 | 3,132.96 | 9.77 | 123.32 | 175.26 | 48.07 | -10.35 | 415.26 | 289.54 | 125.71 | 3.303 | |
| 3,300.00 | 3,250.09 | 3,229.09 | 3,229.09 | 10.31 | 127.16 | 175.55 | 48.07 | -10.35 | 442.72 | 313.04 | 129.68 | 3.414 | |
| 3,400.00 | 3,346.22 | 3,325.22 | 3,325.22 | 10.85 | 131.01 | 175.81 | 48.07 | -10.35 | 470.19 | 336.54 | 133.65 | 3.518 | |
| 3,500.00 | 3,442.35 | 3,421.35 | 3,421.35 | 11.39 | 134.85 | 176.04 | 48.07 | -10.35 | 497.67 | 360.05 | 137.62 | 3.616 | |
| 3,600.00 | 3,538.48 | 3,517.48 | 3,517.48 | 11.94 | 138.70 | 176.25 | 48.07 | -10.35 | 525.16 | 383.57 | 141.59 | 3.709 | |
| 3,700.00 | 3,634.62 | 3,613.62 | 3,613.62 | 12.49 | 142.54 | 176.44 | 48.07 | -10.35 | 552.65 | 407.09 | 145.56 | 3.797 | |
| 3,800.00 | 3,730.75 | 3,709.75 | 3,709.75 | 13.04 | 146.39 | 176.61 | 48.07 | -10.35 | 580.15 | 430.61 | 149.54 | 3.880 | |
| 3,900.00 | 3,826.88 | 3,805.88 | 3,805.88 | 13.59 | 150.24 | 176.76 | 48.07 | -10.35 | 607.65 | 454.13 | 153.51 | 3.958 | |
| 4,000.00 | 3,923.01 | 3,902.01 | 3,902.01 | 14.15 | 154.08 | 176.90 | 48.07 | -10.35 | 635.15 | 477.66 | 157.49 | 4.033 | |
| 4,100.00 | 4,019.14 | 3,998.14 | 3,998.14 | 14.70 | 157.93 | 177.03 | 48.07 | -10.35 | 662.66 | 501.19 | 161.47 | 4.104 | |
| 4,200.00 | 4,115.27 | 4,094.27 | 4,094.27 | 15.26 | 161.77 | 177.15 | 48.07 | -10.35 | 690.17 | 524.72 | 165.45 | 4.172 | |
| 4,300.00 | 4,211.41 | 4,190.41 | 4,190.41 | 15.82 | 165.62 | 177.26 | 48.07 | -10.35 | 717.68 | 548.26 | 169.43 | 4.236 | |
| 4,400.00 | 4,307.54 | 4,286.54 | 4,286.54 | 16.38 | 169.46 | 177.36 | 48.07 | -10.35 | 745.20 | 571.79 | 173.41 | 4.297 | |
| 4,500.00 | 4,403.67 | 4,382.67 | 4,382.67 | 16.94 | 173.31 | 177.45 | 48.07 | -10.35 | 772.72 | 595.33 | 177.39 | 4.356 | |
| 4,600.00 | 4,499.80 | 4,478.80 | 4,478.80 | 17.51 | 177.15 | 177.54 | 48.07 | -10.35 | 800.24 | 618.86 | 181.37 | 4.412 | |
| 4,700.00 | 4,595.93 | 4,574.93 | 4,574.93 | 18.07 | 181.00 | 177.62 | 48.07 | -10.35 | 827.76 | 642.40 | 185.36 | 4.466 | |
| 4,800.00 | 4,692.07 | 4,671.07 | 4,671.07 | 18.63 | 184.84 | 177.70 | 48.07 | -10.35 | 855.28 | 665.94 | 189.34 | 4.517 | |
| 4,900.00 | 4,788.20 | 4,767.20 | 4,767.20 | 19.20 | 188.69 | 177.77 | 48.07 | -10.35 | 882.81 | 689.48 | 193.33 | 4.566 | |
| 5,000.00 | 4,884.33 | 4,863.33 | 4,863.33 | 19.76 | 192.53 | 177.84 | 48.07 | -10.35 | 910.33 | 713.02 | 197.31 | 4.614 | |
| 5,100.00 | 4,980.46 | 4,959.46 | 4,959.46 | 20.33 | 196.38 | 177.90 | 48.07 | -10.35 | 937.86 | 736.56 | 201.30 | 4.659 | |
| 5,209.79 | 5,086.00 | 5,065.00 | 5,065.00 | 20.95 | 200.60 | 177.97 | 48.07 | -10.35 | 968.08 | 762.40 | 205.67 | 4.707 | |

| | | | |
|---------------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Reference Site: | WELD_JESSER 18-2 PAD | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site Error: | 0.00ft | North Reference: | True |
| Reference Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | P_BROWN 5-2S | Database: | EDM 2003.21 Single User Db |
| Reference Design: | PLAN #1 3-16-10 RHS | Offset TVD Reference: | Offset Datum |

| Offset Design WELD_JESSER 18-2 PAD - P_BROWN 3-2 - P_BROWN 3-2 - PLAN #1 3-16-10 RHS | | | | | | | | | | | | Offset Site Error: | 0.00 ft |
|--|---------------------|---------------------|---------------------|----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|--------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.00 ft |
| 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 |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 89.29 | 0.75 | 60.16 | 60.16 | | | | |
| 100.00 | 100.00 | 100.00 | 100.00 | 0.10 | 0.10 | 89.29 | 0.75 | 60.16 | 60.16 | 59.97 | 0.19 | 314.908 | |
| 200.00 | 200.00 | 200.00 | 200.00 | 0.32 | 0.32 | 89.29 | 0.75 | 60.16 | 60.16 | 59.52 | 0.64 | 93.920 | |
| 300.00 | 300.00 | 300.00 | 300.00 | 0.55 | 0.55 | 89.29 | 0.75 | 60.16 | 60.16 | 59.07 | 1.09 | 55.190 | |
| 400.00 | 400.00 | 400.00 | 400.00 | 0.77 | 0.77 | 89.29 | 0.75 | 60.16 | 60.16 | 58.62 | 1.54 | 39.076 | |
| 500.00 | 500.00 | 500.00 | 500.00 | 0.99 | 0.99 | 89.29 | 0.75 | 60.16 | 60.16 | 58.17 | 1.99 | 30.245 | |
| 600.00 | 600.00 | 600.00 | 600.00 | 1.22 | 1.22 | 89.29 | 0.75 | 60.16 | 60.16 | 57.72 | 2.44 | 24.670 | |
| 700.00 | 700.00 | 700.00 | 700.00 | 1.44 | 1.44 | 89.29 | 0.75 | 60.16 | 60.16 | 57.28 | 2.89 | 20.830 | |
| 800.00 | 800.00 | 800.00 | 800.00 | 1.67 | 1.67 | 89.29 | 0.75 | 60.16 | 60.16 | 56.83 | 3.34 | 18.025 | |
| 900.00 | 900.00 | 900.00 | 900.00 | 1.89 | 1.89 | 89.29 | 0.75 | 60.16 | 60.16 | 56.38 | 3.79 | 15.886 | |
| 1,000.00 | 1,000.00 | 1,000.00 | 1,000.00 | 2.12 | 2.12 | 89.29 | 0.75 | 60.16 | 60.16 | 55.93 | 4.24 | 14.200 | |
| 1,100.00 | 1,100.00 | 1,100.00 | 1,100.00 | 2.34 | 2.34 | 89.29 | 0.75 | 60.16 | 60.16 | 55.48 | 4.69 | 12.838 | |
| 1,200.00 | 1,200.00 | 1,200.00 | 1,200.00 | 2.57 | 2.57 | 89.29 | 0.75 | 60.16 | 60.16 | 55.03 | 5.14 | 11.714 | |
| 1,300.00 | 1,300.00 | 1,300.00 | 1,300.00 | 2.79 | 2.79 | 89.29 | 0.75 | 60.16 | 60.16 | 54.58 | 5.59 | 10.771 CC, ES | |
| 1,400.00 | 1,399.99 | 1,398.33 | 1,398.31 | 2.99 | 3.01 | -122.73 | 1.85 | 61.44 | 62.19 | 56.19 | 6.00 | 10.368 SF | |
| 1,500.00 | 1,499.91 | 1,496.10 | 1,495.95 | 3.17 | 3.22 | -127.95 | 5.12 | 65.24 | 68.66 | 62.28 | 6.38 | 10.761 | |
| 1,600.00 | 1,599.69 | 1,592.80 | 1,592.29 | 3.35 | 3.44 | -134.61 | 10.50 | 71.49 | 80.44 | 73.68 | 6.77 | 11.890 | |
| 1,700.00 | 1,699.27 | 1,687.91 | 1,686.73 | 3.55 | 3.67 | -141.06 | 17.85 | 80.03 | 98.19 | 91.04 | 7.15 | 13.733 | |
| 1,800.00 | 1,798.57 | 1,780.96 | 1,778.71 | 3.77 | 3.91 | -146.45 | 27.03 | 90.68 | 122.11 | 114.58 | 7.53 | 16.212 | |
| 1,900.00 | 1,897.54 | 1,871.54 | 1,867.75 | 4.01 | 4.17 | -150.63 | 37.82 | 103.22 | 152.06 | 144.15 | 7.91 | 19.224 | |
| 2,000.00 | 1,996.09 | 1,959.26 | 1,953.45 | 4.28 | 4.45 | -153.77 | 50.02 | 117.39 | 187.74 | 179.46 | 8.28 | 22.669 | |
| 2,100.00 | 2,094.16 | 2,048.82 | 2,040.52 | 4.59 | 4.77 | -156.24 | 63.73 | 133.31 | 228.09 | 219.43 | 8.66 | 26.337 | |
| 2,200.00 | 2,191.70 | 2,138.70 | 2,127.87 | 4.93 | 5.10 | -158.15 | 77.54 | 149.35 | 271.06 | 262.02 | 9.04 | 29.979 | |
| 2,300.00 | 2,288.62 | 2,227.43 | 2,214.10 | 5.32 | 5.45 | -159.64 | 91.17 | 165.18 | 316.47 | 307.05 | 9.42 | 33.584 | |
| 2,365.88 | 2,352.10 | 2,285.21 | 2,270.26 | 5.60 | 5.69 | -160.47 | 100.05 | 175.50 | 347.68 | 338.01 | 9.67 | 35.937 | |
| 2,400.00 | 2,384.90 | 2,315.00 | 2,299.22 | 5.75 | 5.81 | -160.94 | 104.62 | 180.81 | 364.12 | 354.30 | 9.83 | 37.059 | |
| 2,500.00 | 2,481.03 | 2,402.31 | 2,384.07 | 6.21 | 6.17 | -162.10 | 118.04 | 196.39 | 412.39 | 402.12 | 10.27 | 40.141 | |
| 2,600.00 | 2,577.16 | 2,489.61 | 2,468.92 | 6.68 | 6.55 | -163.02 | 131.45 | 211.97 | 460.77 | 450.04 | 10.73 | 42.938 | |
| 2,700.00 | 2,673.30 | 2,576.92 | 2,553.77 | 7.18 | 6.93 | -163.76 | 144.86 | 227.55 | 509.22 | 498.02 | 11.20 | 45.484 | |
| 2,800.00 | 2,769.43 | 2,664.22 | 2,638.62 | 7.68 | 7.32 | -164.38 | 158.28 | 243.13 | 557.72 | 546.05 | 11.67 | 47.807 | |
| 2,900.00 | 2,865.56 | 2,751.53 | 2,723.47 | 8.19 | 7.71 | -164.90 | 171.69 | 258.71 | 606.26 | 594.12 | 12.14 | 49.932 | |
| 3,000.00 | 2,961.69 | 2,838.84 | 2,808.32 | 8.71 | 8.10 | -165.34 | 185.11 | 274.29 | 654.84 | 642.22 | 12.62 | 51.880 | |
| 3,100.00 | 3,057.82 | 2,926.14 | 2,893.17 | 9.24 | 8.50 | -165.72 | 198.52 | 289.87 | 703.44 | 690.34 | 13.11 | 53.670 | |
| 3,200.00 | 3,153.96 | 3,013.45 | 2,978.02 | 9.77 | 8.91 | -166.05 | 211.93 | 305.45 | 752.07 | 738.47 | 13.60 | 55.319 | |
| 3,300.00 | 3,250.09 | 3,100.75 | 3,062.87 | 10.31 | 9.31 | -166.34 | 225.35 | 321.03 | 800.71 | 786.62 | 14.09 | 56.842 | |
| 3,400.00 | 3,346.22 | 3,188.06 | 3,147.72 | 10.85 | 9.72 | -166.60 | 238.76 | 336.61 | 849.36 | 834.78 | 14.58 | 58.249 | |
| 3,500.00 | 3,442.35 | 3,275.36 | 3,232.57 | 11.39 | 10.13 | -166.83 | 252.17 | 352.18 | 898.03 | 882.95 | 15.08 | 59.555 | |
| 3,600.00 | 3,538.48 | 3,362.67 | 3,317.42 | 11.94 | 10.54 | -167.04 | 265.59 | 367.76 | 946.70 | 931.13 | 15.58 | 60.769 | |
| 3,700.00 | 3,634.62 | 3,449.97 | 3,402.27 | 12.49 | 10.96 | -167.22 | 279.00 | 383.34 | 995.39 | 979.31 | 16.08 | 61.900 | |
| 3,800.00 | 3,730.75 | 3,537.28 | 3,487.12 | 13.04 | 11.37 | -167.39 | 292.41 | 398.92 | 1,044.08 | 1,027.50 | 16.58 | 62.955 | |
| 3,900.00 | 3,826.88 | 3,624.58 | 3,571.97 | 13.59 | 11.79 | -167.54 | 305.83 | 414.50 | 1,092.78 | 1,075.69 | 17.09 | 63.943 | |
| 4,000.00 | 3,923.01 | 3,711.89 | 3,656.82 | 14.15 | 12.20 | -167.69 | 319.24 | 430.08 | 1,141.48 | 1,123.89 | 17.60 | 64.867 | |
| 4,100.00 | 4,019.14 | 3,799.19 | 3,741.67 | 14.70 | 12.62 | -167.81 | 332.65 | 445.66 | 1,190.19 | 1,172.09 | 18.11 | 65.735 | |
| 4,200.00 | 4,115.27 | 3,886.50 | 3,826.52 | 15.26 | 13.04 | -167.93 | 346.07 | 461.24 | 1,238.90 | 1,220.29 | 18.62 | 66.550 | |
| 4,300.00 | 4,211.41 | 3,973.80 | 3,911.37 | 15.82 | 13.46 | -168.04 | 359.48 | 476.82 | 1,287.62 | 1,268.49 | 19.13 | 67.318 | |
| 4,400.00 | 4,307.54 | 4,061.11 | 3,996.22 | 16.38 | 13.88 | -168.15 | 372.89 | 492.40 | 1,336.34 | 1,316.70 | 19.64 | 68.042 | |
| 4,500.00 | 4,403.67 | 4,148.42 | 4,081.07 | 16.94 | 14.31 | -168.24 | 386.31 | 507.98 | 1,385.06 | 1,364.91 | 20.15 | 68.725 | |
| 4,600.00 | 4,499.80 | 4,235.72 | 4,165.92 | 17.51 | 14.73 | -168.33 | 399.72 | 523.56 | 1,433.79 | 1,413.12 | 20.67 | 69.372 | |
| 4,700.00 | 4,595.93 | 4,323.03 | 4,250.77 | 18.07 | 15.15 | -168.41 | 413.13 | 539.14 | 1,482.52 | 1,461.33 | 21.18 | 69.984 | |
| 4,800.00 | 4,692.07 | 4,410.33 | 4,335.62 | 18.63 | 15.58 | -168.49 | 426.55 | 554.72 | 1,531.25 | 1,509.55 | 21.70 | 70.565 | |
| 4,900.00 | 4,788.20 | 4,497.64 | 4,420.47 | 19.20 | 16.00 | -168.56 | 439.96 | 570.30 | 1,579.98 | 1,557.76 | 22.22 | 71.116 | |
| 5,000.00 | 4,884.33 | 4,584.94 | 4,505.33 | 19.76 | 16.43 | -168.63 | 453.37 | 585.87 | 1,628.71 | 1,605.98 | 22.73 | 71.639 | |

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

| | | | |
|---------------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Reference Site: | WELD_JESSER 18-2 PAD | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site Error: | 0.00ft | North Reference: | True |
| Reference Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | P_BROWN 5-2S | Database: | EDM 2003.21 Single User Db |
| Reference Design: | PLAN #1 3-16-10 RHS | Offset TVD Reference: | Offset Datum |

| Offset Design WELD_JESSER 18-2 PAD - P_BROWN 3-2 - P_BROWN 3-2 - PLAN #1 3-16-10 RHS | | | | | | | | | | | | Offset Site Error: | 0.00 ft |
|---|------------------------|------------------------|------------------------|-------------------|----------------|--------------------------|---|---------------|-------------------------|--------------------------|----------------------------|---------------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.00 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 | |
| 5,100.00 | 4,980.46 | 4,672.25 | 4,590.18 | 20.33 | 16.85 | -168.69 | 466.79 | 601.45 | 1,677.45 | 1,654.19 | 23.25 | 72.138 | |
| 5,209.79 | 5,086.00 | 4,768.10 | 4,683.33 | 20.95 | 17.32 | -168.76 | 481.51 | 618.56 | 1,730.95 | 1,707.13 | 23.82 | 72.658 | |

| | | | |
|---------------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Reference Site: | WELD_JESSER 18-2 PAD | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site Error: | 0.00ft | North Reference: | True |
| Reference Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | P_BROWN 5-2S | Database: | EDM 2003.21 Single User Db |
| Reference Design: | PLAN #1 3-16-10 RHS | Offset TVD Reference: | Offset Datum |

| Offset Design WELD_JESSER 18-2 PAD - P_BROWN 3-2S - P_BROWN 3-2S - PLAN #1 3-16-10 RHS | | | | | | | | | | | | Offset Site Error: | 0.00 ft |
|--|------------------------|------------------------|------------------------|-------------------|----------------|-----------------------------|------------------------|---------------|----------------------------|-----------------------------|-------------------------------|----------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.00 ft |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre | | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
| | | | | | | | +N/-S (ft) | +E/-W (ft) | | | | | |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 89.49 | 0.72 | 80.03 | 80.03 | | | | |
| 100.00 | 100.00 | 100.00 | 100.00 | 0.10 | 0.10 | 89.49 | 0.72 | 80.03 | 80.03 | 79.84 | 0.19 | 418.885 | |
| 200.00 | 200.00 | 200.00 | 200.00 | 0.32 | 0.32 | 89.49 | 0.72 | 80.03 | 80.03 | 79.39 | 0.64 | 124.931 | |
| 300.00 | 300.00 | 300.00 | 300.00 | 0.55 | 0.55 | 89.49 | 0.72 | 80.03 | 80.03 | 78.94 | 1.09 | 73.413 | |
| 400.00 | 400.00 | 400.00 | 400.00 | 0.77 | 0.77 | 89.49 | 0.72 | 80.03 | 80.03 | 78.49 | 1.54 | 51.978 | |
| 500.00 | 500.00 | 500.00 | 500.00 | 0.99 | 0.99 | 89.49 | 0.72 | 80.03 | 80.03 | 78.04 | 1.99 | 40.232 | |
| 600.00 | 600.00 | 600.00 | 600.00 | 1.22 | 1.22 | 89.49 | 0.72 | 80.03 | 80.03 | 77.59 | 2.44 | 32.816 | |
| 700.00 | 700.00 | 700.00 | 700.00 | 1.44 | 1.44 | 89.49 | 0.72 | 80.03 | 80.03 | 77.14 | 2.89 | 27.708 | |
| 800.00 | 800.00 | 800.00 | 800.00 | 1.67 | 1.67 | 89.49 | 0.72 | 80.03 | 80.03 | 76.69 | 3.34 | 23.977 | |
| 900.00 | 900.00 | 900.00 | 900.00 | 1.89 | 1.89 | 89.49 | 0.72 | 80.03 | 80.03 | 76.24 | 3.79 | 21.131 | |
| 1,000.00 | 1,000.00 | 1,000.00 | 1,000.00 | 2.12 | 2.12 | 89.49 | 0.72 | 80.03 | 80.03 | 75.79 | 4.24 | 18.889 | |
| 1,100.00 | 1,100.00 | 1,100.00 | 1,100.00 | 2.34 | 2.34 | 89.49 | 0.72 | 80.03 | 80.03 | 75.34 | 4.69 | 17.077 | |
| 1,200.00 | 1,200.00 | 1,200.00 | 1,200.00 | 2.57 | 2.57 | 89.49 | 0.72 | 80.03 | 80.03 | 74.89 | 5.14 | 15.582 | |
| 1,300.00 | 1,300.00 | 1,300.00 | 1,300.00 | 2.79 | 2.79 | 89.49 | 0.72 | 80.03 | 80.03 | 74.44 | 5.59 | 14.328 CC, ES | |
| 1,400.00 | 1,399.99 | 1,398.03 | 1,398.02 | 2.99 | 3.01 | -121.61 | 1.19 | 81.19 | 81.90 | 75.91 | 5.99 | 13.664 SF | |
| 1,500.00 | 1,499.91 | 1,495.71 | 1,495.63 | 3.17 | 3.21 | -124.55 | 2.62 | 84.66 | 87.68 | 81.31 | 6.37 | 13.763 | |
| 1,600.00 | 1,599.69 | 1,592.70 | 1,592.41 | 3.35 | 3.42 | -128.62 | 4.97 | 90.40 | 97.75 | 90.99 | 6.75 | 14.475 | |
| 1,700.00 | 1,699.27 | 1,688.64 | 1,687.97 | 3.55 | 3.64 | -133.03 | 8.21 | 98.30 | 112.48 | 105.34 | 7.14 | 15.757 | |
| 1,800.00 | 1,798.57 | 1,783.24 | 1,781.95 | 3.77 | 3.87 | -137.17 | 12.29 | 108.27 | 132.12 | 124.59 | 7.53 | 17.550 | |
| 1,900.00 | 1,897.54 | 1,876.17 | 1,873.99 | 4.01 | 4.11 | -140.75 | 17.16 | 120.16 | 156.69 | 148.77 | 7.92 | 19.787 | |
| 2,000.00 | 1,996.09 | 1,967.17 | 1,963.79 | 4.28 | 4.36 | -143.70 | 22.75 | 133.80 | 186.12 | 177.81 | 8.31 | 22.392 | |
| 2,100.00 | 2,094.16 | 2,055.99 | 2,051.06 | 4.59 | 4.64 | -146.06 | 28.99 | 149.03 | 220.26 | 211.55 | 8.71 | 25.295 | |
| 2,200.00 | 2,191.70 | 2,142.38 | 2,135.57 | 4.93 | 4.93 | -147.92 | 35.79 | 165.63 | 258.92 | 249.81 | 9.11 | 28.435 | |
| 2,300.00 | 2,288.62 | 2,226.17 | 2,217.12 | 5.32 | 5.23 | -149.38 | 43.08 | 183.42 | 301.91 | 292.40 | 9.51 | 31.757 | |
| 2,365.88 | 2,352.10 | 2,279.86 | 2,269.15 | 5.60 | 5.44 | -150.16 | 48.11 | 195.69 | 332.51 | 322.73 | 9.77 | 34.021 | |
| 2,400.00 | 2,384.90 | 2,307.25 | 2,295.61 | 5.75 | 5.55 | -150.64 | 50.78 | 202.20 | 348.93 | 339.00 | 9.93 | 35.146 | |
| 2,500.00 | 2,481.03 | 2,386.32 | 2,371.73 | 6.21 | 5.90 | -151.78 | 58.89 | 222.00 | 398.35 | 387.96 | 10.39 | 38.344 | |
| 2,600.00 | 2,577.16 | 2,465.23 | 2,447.25 | 6.68 | 6.27 | -152.63 | 67.57 | 243.19 | 449.57 | 438.71 | 10.86 | 41.393 | |
| 2,700.00 | 2,673.30 | 2,550.58 | 2,528.76 | 7.18 | 6.69 | -153.36 | 77.16 | 266.60 | 501.42 | 490.06 | 11.36 | 44.140 | |
| 2,800.00 | 2,769.43 | 2,635.93 | 2,610.28 | 7.68 | 7.13 | -153.95 | 86.75 | 290.01 | 553.32 | 541.46 | 11.87 | 46.626 | |
| 2,900.00 | 2,865.56 | 2,721.28 | 2,691.80 | 8.19 | 7.58 | -154.44 | 96.34 | 313.42 | 605.26 | 592.87 | 12.38 | 48.877 | |
| 3,000.00 | 2,961.69 | 2,806.63 | 2,773.31 | 8.71 | 8.04 | -154.85 | 105.94 | 336.83 | 657.22 | 644.31 | 12.91 | 50.918 | |
| 3,100.00 | 3,057.82 | 2,891.98 | 2,854.83 | 9.24 | 8.50 | -155.20 | 115.53 | 360.24 | 709.21 | 695.77 | 13.44 | 52.774 | |
| 3,200.00 | 3,153.96 | 2,977.34 | 2,936.34 | 9.77 | 8.97 | -155.51 | 125.12 | 383.65 | 761.21 | 747.23 | 13.98 | 54.464 | |
| 3,300.00 | 3,250.09 | 3,062.69 | 3,017.86 | 10.31 | 9.45 | -155.77 | 134.71 | 407.06 | 813.22 | 798.70 | 14.52 | 56.011 | |
| 3,400.00 | 3,346.22 | 3,148.04 | 3,099.37 | 10.85 | 9.93 | -156.00 | 144.30 | 430.47 | 865.25 | 850.18 | 15.07 | 57.428 | |
| 3,500.00 | 3,442.35 | 3,233.39 | 3,180.89 | 11.39 | 10.42 | -156.21 | 153.90 | 453.88 | 917.28 | 901.66 | 15.62 | 58.731 | |
| 3,600.00 | 3,538.48 | 3,318.74 | 3,262.40 | 11.94 | 10.91 | -156.39 | 163.49 | 477.29 | 969.32 | 953.15 | 16.17 | 59.932 | |
| 3,700.00 | 3,634.62 | 3,404.09 | 3,343.92 | 12.49 | 11.40 | -156.56 | 173.08 | 500.70 | 1,021.37 | 1,004.64 | 16.73 | 61.040 | |
| 3,800.00 | 3,730.75 | 3,489.44 | 3,425.43 | 13.04 | 11.90 | -156.71 | 182.67 | 524.11 | 1,073.43 | 1,056.13 | 17.30 | 62.065 | |
| 3,900.00 | 3,826.88 | 3,574.79 | 3,506.95 | 13.59 | 12.40 | -156.85 | 192.27 | 547.52 | 1,125.49 | 1,107.63 | 17.86 | 63.016 | |
| 4,000.00 | 3,923.01 | 3,660.14 | 3,588.46 | 14.15 | 12.90 | -156.97 | 201.86 | 570.93 | 1,177.55 | 1,159.13 | 18.43 | 63.899 | |
| 4,100.00 | 4,019.14 | 3,745.50 | 3,669.98 | 14.70 | 13.40 | -157.08 | 211.45 | 594.35 | 1,229.62 | 1,210.62 | 19.00 | 64.722 | |
| 4,200.00 | 4,115.27 | 3,830.85 | 3,751.49 | 15.26 | 13.90 | -157.19 | 221.04 | 617.76 | 1,281.69 | 1,262.12 | 19.57 | 65.490 | |
| 4,300.00 | 4,211.41 | 3,916.20 | 3,833.01 | 15.82 | 14.41 | -157.28 | 230.63 | 641.17 | 1,333.77 | 1,313.62 | 20.14 | 66.208 | |
| 4,400.00 | 4,307.54 | 4,001.55 | 3,914.52 | 16.38 | 14.92 | -157.37 | 240.23 | 664.58 | 1,385.84 | 1,365.12 | 20.72 | 66.881 | |
| 4,500.00 | 4,403.67 | 4,086.90 | 3,996.04 | 16.94 | 15.42 | -157.45 | 249.82 | 687.99 | 1,437.92 | 1,416.62 | 21.30 | 67.512 | |
| 4,600.00 | 4,499.80 | 4,172.25 | 4,077.56 | 17.51 | 15.93 | -157.53 | 259.41 | 711.40 | 1,490.00 | 1,468.12 | 21.88 | 68.104 | |
| 4,700.00 | 4,595.93 | 4,257.60 | 4,159.07 | 18.07 | 16.44 | -157.60 | 269.00 | 734.81 | 1,542.08 | 1,519.63 | 22.46 | 68.662 | |
| 4,800.00 | 4,692.07 | 4,342.95 | 4,240.59 | 18.63 | 16.95 | -157.67 | 278.59 | 758.22 | 1,594.17 | 1,571.13 | 23.04 | 69.188 | |
| 4,900.00 | 4,788.20 | 4,428.30 | 4,322.10 | 19.20 | 17.47 | -157.73 | 288.19 | 781.63 | 1,646.25 | 1,622.63 | 23.62 | 69.685 | |
| 5,000.00 | 4,884.33 | 4,513.66 | 4,403.62 | 19.76 | 17.98 | -157.79 | 297.78 | 805.04 | 1,698.34 | 1,674.13 | 24.21 | 70.154 | |

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

| | | | |
|---------------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Reference Site: | WELD_JESSER 18-2 PAD | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site Error: | 0.00ft | North Reference: | True |
| Reference Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | P_BROWN 5-2S | Database: | EDM 2003.21 Single User Db |
| Reference Design: | PLAN #1 3-16-10 RHS | Offset TVD Reference: | Offset Datum |

| Offset Design WELD_JESSER 18-2 PAD - P_BROWN 3-2S - P_BROWN 3-2S - PLAN #1 3-16-10 RHS | | | | | | | | | | | | Offset Site Error: | 0.00 ft |
|---|------------------------|------------------------|------------------------|-------------------|----------------|--------------------------|---|---------------|-------------------------|--------------------------|----------------------------|---------------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.00 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 | |
| 5,100.00 | 4,980.46 | 4,599.01 | 4,485.13 | 20.33 | 18.49 | -157.85 | 307.37 | 828.45 | 1,750.43 | 1,725.64 | 24.79 | 70.599 | |
| 5,209.79 | 5,086.00 | 4,692.71 | 4,574.62 | 20.95 | 19.06 | -157.90 | 317.90 | 854.15 | 1,807.62 | 1,782.18 | 25.44 | 71.060 | |

| | | | |
|---------------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Reference Site: | WELD_JESSER 18-2 PAD | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site Error: | 0.00ft | North Reference: | True |
| Reference Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | P_BROWN 5-2S | Database: | EDM 2003.21 Single User Db |
| Reference Design: | PLAN #1 3-16-10 RHS | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | Offset Site Error: | 0.00 ft |
|-----------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|--------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.00 ft |
| 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 |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 89.58 | 0.36 | 50.09 | 50.09 | | | | |
| 100.00 | 100.00 | 100.00 | 100.00 | 0.10 | 0.10 | 89.58 | 0.36 | 50.09 | 50.09 | 49.90 | 0.19 | 262.166 | |
| 200.00 | 200.00 | 200.00 | 200.00 | 0.32 | 0.32 | 89.58 | 0.36 | 50.09 | 50.09 | 49.45 | 0.64 | 78.190 | |
| 300.00 | 300.00 | 300.00 | 300.00 | 0.55 | 0.55 | 89.58 | 0.36 | 50.09 | 50.09 | 49.00 | 1.09 | 45.947 | |
| 400.00 | 400.00 | 400.00 | 400.00 | 0.77 | 0.77 | 89.58 | 0.36 | 50.09 | 50.09 | 48.55 | 1.54 | 32.532 | |
| 500.00 | 500.00 | 500.00 | 500.00 | 0.99 | 0.99 | 89.58 | 0.36 | 50.09 | 50.09 | 48.10 | 1.99 | 25.180 | |
| 600.00 | 600.00 | 600.00 | 600.00 | 1.22 | 1.22 | 89.58 | 0.36 | 50.09 | 50.09 | 47.65 | 2.44 | 20.538 | |
| 700.00 | 700.00 | 700.00 | 700.00 | 1.44 | 1.44 | 89.58 | 0.36 | 50.09 | 50.09 | 47.20 | 2.89 | 17.342 | |
| 800.00 | 800.00 | 800.00 | 800.00 | 1.67 | 1.67 | 89.58 | 0.36 | 50.09 | 50.09 | 46.75 | 3.34 | 15.006 | |
| 900.00 | 900.00 | 900.00 | 900.00 | 1.89 | 1.89 | 89.58 | 0.36 | 50.09 | 50.09 | 46.30 | 3.79 | 13.225 | |
| 1,000.00 | 1,000.00 | 1,000.00 | 1,000.00 | 2.12 | 2.12 | 89.58 | 0.36 | 50.09 | 50.09 | 45.85 | 4.24 | 11.822 | |
| 1,100.00 | 1,100.00 | 1,100.00 | 1,100.00 | 2.34 | 2.34 | 89.58 | 0.36 | 50.09 | 50.09 | 45.40 | 4.69 | 10.688 | |
| 1,200.00 | 1,200.00 | 1,200.00 | 1,200.00 | 2.57 | 2.57 | 89.58 | 0.36 | 50.09 | 50.09 | 44.95 | 5.14 | 9.752 | |
| 1,300.00 | 1,300.00 | 1,300.00 | 1,300.00 | 2.79 | 2.79 | 89.58 | 0.36 | 50.09 | 50.09 | 44.50 | 5.59 | 8.967 | |
| 1,400.00 | 1,399.99 | 1,401.02 | 1,401.00 | 2.99 | 3.02 | -123.38 | 1.76 | 48.98 | 49.73 | 43.72 | 6.01 | 8.280 | |
| 1,480.04 | 1,479.97 | 1,481.59 | 1,481.47 | 3.13 | 3.20 | -130.02 | 4.87 | 46.51 | 49.39 | 43.07 | 6.32 | 7.813 CC | |
| 1,500.00 | 1,499.91 | 1,501.62 | 1,501.45 | 3.17 | 3.24 | -132.26 | 5.92 | 45.67 | 49.43 | 43.03 | 6.40 | 7.723 ES | |
| 1,600.00 | 1,599.69 | 1,601.38 | 1,600.83 | 3.35 | 3.47 | -146.46 | 12.76 | 40.23 | 51.53 | 44.73 | 6.80 | 7.575 SF | |
| 1,700.00 | 1,699.27 | 1,699.91 | 1,698.62 | 3.55 | 3.71 | -162.92 | 22.18 | 32.74 | 59.09 | 51.87 | 7.21 | 8.191 | |
| 1,800.00 | 1,798.57 | 1,796.84 | 1,794.36 | 3.77 | 3.96 | -177.48 | 34.00 | 23.34 | 73.99 | 66.35 | 7.63 | 9.693 | |
| 1,900.00 | 1,897.54 | 1,892.64 | 1,888.50 | 4.01 | 4.24 | 171.79 | 47.86 | 12.33 | 95.98 | 87.91 | 8.07 | 11.900 | |
| 2,000.00 | 1,996.09 | 1,988.25 | 1,982.40 | 4.28 | 4.54 | 165.19 | 61.97 | 1.10 | 122.70 | 114.19 | 8.51 | 14.420 | |
| 2,100.00 | 2,094.16 | 2,083.22 | 2,075.66 | 4.59 | 4.85 | 161.20 | 76.00 | -10.05 | 152.75 | 143.79 | 8.96 | 17.047 | |
| 2,200.00 | 2,191.70 | 2,177.48 | 2,168.22 | 4.93 | 5.18 | 158.73 | 89.92 | -21.11 | 185.53 | 176.11 | 9.42 | 19.691 | |
| 2,300.00 | 2,288.62 | 2,270.95 | 2,260.02 | 5.32 | 5.50 | 157.20 | 103.72 | -32.09 | 220.77 | 210.88 | 9.89 | 22.312 | |
| 2,365.88 | 2,352.10 | 2,332.08 | 2,320.05 | 5.60 | 5.72 | 156.52 | 112.75 | -39.27 | 245.26 | 235.04 | 10.21 | 24.016 | |
| 2,400.00 | 2,384.90 | 2,363.65 | 2,351.05 | 5.75 | 5.84 | 156.32 | 117.41 | -42.97 | 258.19 | 247.80 | 10.40 | 24.830 | |
| 2,500.00 | 2,481.03 | 2,456.15 | 2,441.89 | 6.21 | 6.17 | 155.83 | 131.07 | -53.83 | 296.12 | 285.17 | 10.95 | 27.033 | |
| 2,600.00 | 2,577.16 | 2,548.65 | 2,532.73 | 6.68 | 6.52 | 155.45 | 144.73 | -64.69 | 334.06 | 322.54 | 11.52 | 28.993 | |
| 2,700.00 | 2,673.30 | 2,641.15 | 2,623.58 | 7.18 | 6.87 | 155.14 | 158.39 | -75.55 | 372.02 | 359.91 | 12.10 | 30.743 | |
| 2,800.00 | 2,769.43 | 2,733.65 | 2,714.42 | 7.68 | 7.22 | 154.90 | 172.05 | -86.41 | 409.97 | 397.29 | 12.69 | 32.310 | |
| 2,900.00 | 2,865.56 | 2,826.16 | 2,805.26 | 8.19 | 7.57 | 154.69 | 185.71 | -97.27 | 447.94 | 434.65 | 13.28 | 33.718 | |
| 3,000.00 | 2,961.69 | 2,918.66 | 2,896.10 | 8.71 | 7.93 | 154.52 | 199.37 | -108.13 | 485.91 | 472.02 | 13.89 | 34.989 | |
| 3,100.00 | 3,057.82 | 3,011.16 | 2,986.94 | 9.24 | 8.29 | 154.37 | 213.03 | -118.99 | 523.88 | 509.38 | 14.50 | 36.139 | |
| 3,200.00 | 3,153.96 | 3,103.66 | 3,077.78 | 9.77 | 8.66 | 154.24 | 226.68 | -129.85 | 561.85 | 546.74 | 15.11 | 37.184 | |
| 3,300.00 | 3,250.09 | 3,196.17 | 3,168.62 | 10.31 | 9.02 | 154.13 | 240.34 | -140.71 | 599.83 | 584.10 | 15.73 | 38.136 | |
| 3,400.00 | 3,346.22 | 3,288.67 | 3,259.46 | 10.85 | 9.39 | 154.03 | 254.00 | -151.57 | 637.81 | 621.46 | 16.35 | 39.006 | |
| 3,500.00 | 3,442.35 | 3,381.17 | 3,350.31 | 11.39 | 9.76 | 153.95 | 267.66 | -162.44 | 675.79 | 658.81 | 16.98 | 39.804 | |
| 3,600.00 | 3,538.48 | 3,473.67 | 3,441.15 | 11.94 | 10.13 | 153.87 | 281.32 | -173.30 | 713.77 | 696.16 | 17.61 | 40.538 | |
| 3,700.00 | 3,634.62 | 3,566.18 | 3,531.99 | 12.49 | 10.50 | 153.80 | 294.98 | -184.16 | 751.75 | 733.51 | 18.24 | 41.214 | |
| 3,800.00 | 3,730.75 | 3,658.68 | 3,622.83 | 13.04 | 10.88 | 153.73 | 308.64 | -195.02 | 789.73 | 770.86 | 18.88 | 41.840 | |
| 3,900.00 | 3,826.88 | 3,751.18 | 3,713.67 | 13.59 | 11.25 | 153.68 | 322.30 | -205.88 | 827.72 | 808.21 | 19.51 | 42.420 | |
| 4,000.00 | 3,923.01 | 3,843.68 | 3,804.51 | 14.15 | 11.62 | 153.62 | 335.96 | -216.74 | 865.70 | 845.55 | 20.15 | 42.958 | |
| 4,100.00 | 4,019.14 | 3,936.19 | 3,895.35 | 14.70 | 12.00 | 153.58 | 349.62 | -227.60 | 903.69 | 882.89 | 20.79 | 43.460 | |
| 4,200.00 | 4,115.27 | 4,028.69 | 3,986.20 | 15.26 | 12.37 | 153.53 | 363.28 | -238.46 | 941.67 | 920.24 | 21.44 | 43.928 | |
| 4,300.00 | 4,211.41 | 4,121.19 | 4,077.04 | 15.82 | 12.75 | 153.49 | 376.94 | -249.32 | 979.66 | 957.58 | 22.08 | 44.366 | |
| 4,400.00 | 4,307.54 | 4,213.69 | 4,167.88 | 16.38 | 13.13 | 153.45 | 390.60 | -260.18 | 1,017.64 | 994.92 | 22.73 | 44.776 | |
| 4,500.00 | 4,403.67 | 4,306.19 | 4,258.72 | 16.94 | 13.51 | 153.42 | 404.26 | -271.04 | 1,055.63 | 1,032.26 | 23.38 | 45.160 | |
| 4,600.00 | 4,499.80 | 4,398.70 | 4,349.56 | 17.51 | 13.89 | 153.39 | 417.92 | -281.90 | 1,093.62 | 1,069.59 | 24.02 | 45.522 | |
| 4,700.00 | 4,595.93 | 4,491.20 | 4,440.40 | 18.07 | 14.26 | 153.36 | 431.58 | -292.76 | 1,131.60 | 1,106.93 | 24.67 | 45.863 | |
| 4,800.00 | 4,692.07 | 4,583.70 | 4,531.24 | 18.63 | 14.64 | 153.33 | 445.24 | -303.62 | 1,169.59 | 1,144.27 | 25.32 | 46.184 | |
| 4,900.00 | 4,788.20 | 4,676.20 | 4,622.08 | 19.20 | 15.02 | 153.30 | 458.90 | -314.48 | 1,207.58 | 1,181.60 | 25.98 | 46.488 | |

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

| | | | |
|---------------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Reference Site: | WELD_JESSER 18-2 PAD | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site Error: | 0.00ft | North Reference: | True |
| Reference Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | P_BROWN 5-2S | Database: | EDM 2003.21 Single User Db |
| Reference Design: | PLAN #1 3-16-10 RHS | Offset TVD Reference: | Offset Datum |

| Offset Design WELD_JESSER 18-2 PAD - P_BROWN 4-2 - P_BROWN 4-2 - PLAN #1 3-16-10 RHS | | | | | | | | | | | | Offset Site Error: | 0.00 ft |
|---|------------------------|------------------------|------------------------|-------------------|----------------|-----------------------------|---|---------------|----------------------------|-----------------------------|-------------------------------|---------------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.00 ft |
| 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 |
| 5,000.00 | 4,884.33 | 4,768.71 | 4,712.93 | 19.76 | 15.40 | 153.28 | 472.56 | -325.34 | 1,245.57 | 1,218.94 | 26.63 | 46.775 | |
| 5,100.00 | 4,980.46 | 4,861.21 | 4,803.77 | 20.33 | 15.79 | 153.25 | 486.22 | -336.20 | 1,283.56 | 1,256.27 | 27.28 | 47.047 | |
| 5,209.79 | 5,086.00 | 4,962.76 | 4,903.50 | 20.95 | 16.20 | 153.23 | 501.21 | -348.12 | 1,325.26 | 1,297.26 | 28.00 | 47.329 | |

| | | | |
|---------------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Reference Site: | WELD_JESSER 18-2 PAD | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site Error: | 0.00ft | North Reference: | True |
| Reference Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | P_BROWN 5-2S | Database: | EDM 2003.21 Single User Db |
| Reference Design: | PLAN #1 3-16-10 RHS | Offset TVD Reference: | Offset Datum |

| Offset Design WELD_JESSER 18-2 PAD - P_BROWN 5-2 - P_BROWN 5-2 - PLAN #1 3-16-10 RHS | | | | | | | | | | | | Offset Site Error: | 0.00 ft |
|--|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|--------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.00 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 | |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 90.02 | 0.00 | 10.07 | 10.07 | | | | |
| 100.00 | 100.00 | 100.00 | 100.00 | 0.10 | 0.10 | 90.02 | 0.00 | 10.07 | 10.07 | 9.88 | 0.19 | 52.725 | |
| 200.00 | 200.00 | 200.00 | 200.00 | 0.32 | 0.32 | 90.02 | 0.00 | 10.07 | 10.07 | 9.43 | 0.64 | 15.725 | |
| 300.00 | 300.00 | 300.00 | 300.00 | 0.55 | 0.55 | 90.02 | 0.00 | 10.07 | 10.07 | 8.98 | 1.09 | 9.240 | |
| 400.00 | 400.00 | 400.00 | 400.00 | 0.77 | 0.77 | 90.02 | 0.00 | 10.07 | 10.07 | 8.53 | 1.54 | 6.542 | |
| 500.00 | 500.00 | 500.00 | 500.00 | 0.99 | 0.99 | 90.02 | 0.00 | 10.07 | 10.07 | 8.08 | 1.99 | 5.064 | |
| 600.00 | 600.00 | 600.00 | 600.00 | 1.22 | 1.22 | 90.02 | 0.00 | 10.07 | 10.07 | 7.63 | 2.44 | 4.131 | |
| 700.00 | 700.00 | 700.00 | 700.00 | 1.44 | 1.44 | 90.02 | 0.00 | 10.07 | 10.07 | 7.18 | 2.89 | 3.488 | |
| 800.00 | 800.00 | 800.00 | 800.00 | 1.67 | 1.67 | 90.02 | 0.00 | 10.07 | 10.07 | 6.74 | 3.34 | 3.018 | |
| 900.00 | 900.00 | 900.00 | 900.00 | 1.89 | 1.89 | 90.02 | 0.00 | 10.07 | 10.07 | 6.29 | 3.79 | 2.660 | |
| 1,000.00 | 1,000.00 | 1,000.00 | 1,000.00 | 2.12 | 2.12 | 90.02 | 0.00 | 10.07 | 10.07 | 5.84 | 4.24 | 2.378 | |
| 1,100.00 | 1,100.00 | 1,100.00 | 1,100.00 | 2.34 | 2.34 | 90.02 | 0.00 | 10.07 | 10.07 | 5.39 | 4.69 | 2.149 | |
| 1,200.00 | 1,200.00 | 1,200.00 | 1,200.00 | 2.57 | 2.57 | 90.02 | 0.00 | 10.07 | 10.07 | 4.94 | 5.14 | 1.961 | |
| 1,300.00 | 1,300.00 | 1,300.00 | 1,300.00 | 2.79 | 2.79 | 90.02 | 0.00 | 10.07 | 10.07 | 4.49 | 5.59 | 1.803 CC | |
| 1,400.00 | 1,399.99 | 1,400.11 | 1,400.09 | 2.99 | 2.99 | -117.06 | -1.66 | 9.51 | 10.18 | 4.20 | 5.98 | 1.703 ES | |
| 1,500.00 | 1,499.91 | 1,500.17 | 1,500.01 | 3.17 | 3.16 | -108.71 | -6.62 | 7.82 | 10.65 | 4.32 | 6.33 | 1.683 SF | |
| 1,600.00 | 1,599.69 | 1,600.14 | 1,599.60 | 3.35 | 3.35 | -96.74 | -14.88 | 5.01 | 11.87 | 5.17 | 6.70 | 1.771 | |
| 1,700.00 | 1,699.27 | 1,700.00 | 1,698.70 | 3.55 | 3.56 | -84.21 | -26.40 | 1.09 | 14.23 | 7.12 | 7.11 | 2.002 | |
| 1,800.00 | 1,798.57 | 1,799.66 | 1,797.13 | 3.77 | 3.79 | -73.59 | -41.15 | -3.93 | 17.94 | 10.39 | 7.55 | 2.376 | |
| 1,900.00 | 1,897.54 | 1,899.12 | 1,894.77 | 4.01 | 4.06 | -65.58 | -59.10 | -10.03 | 22.97 | 14.96 | 8.02 | 2.866 | |
| 2,000.00 | 1,996.09 | 1,998.59 | 1,991.75 | 4.28 | 4.38 | -60.18 | -80.00 | -17.15 | 29.08 | 20.56 | 8.52 | 3.414 | |
| 2,100.00 | 2,094.16 | 2,098.44 | 2,088.97 | 4.59 | 4.73 | -59.53 | -101.56 | -24.48 | 34.41 | 25.32 | 9.08 | 3.788 | |
| 2,200.00 | 2,191.70 | 2,198.34 | 2,186.23 | 4.93 | 5.10 | -62.40 | -123.14 | -31.83 | 38.46 | 28.71 | 9.75 | 3.945 | |
| 2,300.00 | 2,288.62 | 2,298.21 | 2,283.47 | 5.32 | 5.49 | -67.99 | -144.71 | -39.17 | 41.55 | 31.00 | 10.54 | 3.941 | |
| 2,365.88 | 2,352.10 | 2,363.96 | 2,347.48 | 5.60 | 5.76 | -73.00 | -158.91 | -44.00 | 43.33 | 32.19 | 11.15 | 3.888 | |
| 2,400.00 | 2,384.90 | 2,398.00 | 2,380.63 | 5.75 | 5.90 | -75.81 | -166.27 | -46.50 | 44.31 | 32.84 | 11.47 | 3.862 | |
| 2,500.00 | 2,481.03 | 2,497.76 | 2,477.75 | 6.21 | 6.32 | -83.30 | -187.82 | -53.83 | 47.73 | 35.28 | 12.45 | 3.835 | |
| 2,600.00 | 2,577.16 | 2,597.52 | 2,574.88 | 6.68 | 6.74 | -89.69 | -209.36 | -61.16 | 51.86 | 38.44 | 13.41 | 3.866 | |
| 2,700.00 | 2,673.30 | 2,697.28 | 2,672.01 | 7.18 | 7.18 | -95.10 | -230.91 | -68.50 | 56.53 | 42.17 | 14.36 | 3.937 | |
| 2,800.00 | 2,769.43 | 2,797.04 | 2,769.14 | 7.68 | 7.62 | -99.64 | -252.46 | -75.83 | 61.63 | 46.35 | 15.28 | 4.033 | |
| 2,900.00 | 2,865.56 | 2,896.80 | 2,866.27 | 8.19 | 8.07 | -103.47 | -274.01 | -83.16 | 67.05 | 50.87 | 16.19 | 4.143 | |
| 3,000.00 | 2,961.69 | 2,996.56 | 2,963.40 | 8.71 | 8.52 | -106.72 | -295.55 | -90.49 | 72.73 | 55.66 | 17.07 | 4.260 | |
| 3,100.00 | 3,057.82 | 3,096.32 | 3,060.53 | 9.24 | 8.98 | -109.49 | -317.10 | -97.82 | 78.61 | 60.66 | 17.95 | 4.380 | |
| 3,200.00 | 3,153.96 | 3,196.08 | 3,157.66 | 9.77 | 9.44 | -111.87 | -338.65 | -105.16 | 84.65 | 65.83 | 18.82 | 4.499 | |
| 3,300.00 | 3,250.09 | 3,295.84 | 3,254.79 | 10.31 | 9.90 | -113.93 | -360.20 | -112.49 | 90.81 | 71.14 | 19.68 | 4.615 | |
| 3,400.00 | 3,346.22 | 3,395.60 | 3,351.92 | 10.85 | 10.36 | -115.73 | -381.75 | -119.82 | 97.08 | 76.55 | 20.53 | 4.729 | |
| 3,500.00 | 3,442.35 | 3,495.36 | 3,449.04 | 11.39 | 10.83 | -117.31 | -403.29 | -127.15 | 103.43 | 82.04 | 21.38 | 4.837 | |
| 3,600.00 | 3,538.48 | 3,595.12 | 3,546.17 | 11.94 | 11.30 | -118.70 | -424.84 | -134.48 | 109.84 | 87.61 | 22.23 | 4.941 | |
| 3,700.00 | 3,634.62 | 3,694.88 | 3,643.30 | 12.49 | 11.77 | -119.94 | -446.39 | -141.82 | 116.32 | 93.24 | 23.07 | 5.041 | |
| 3,800.00 | 3,730.75 | 3,794.64 | 3,740.43 | 13.04 | 12.24 | -121.05 | -467.94 | -149.15 | 122.84 | 98.92 | 23.92 | 5.136 | |
| 3,900.00 | 3,826.88 | 3,894.41 | 3,837.56 | 13.59 | 12.72 | -122.05 | -489.49 | -156.48 | 129.41 | 104.64 | 24.76 | 5.226 | |
| 4,000.00 | 3,923.01 | 3,994.17 | 3,934.69 | 14.15 | 13.19 | -122.95 | -511.03 | -163.81 | 136.01 | 110.40 | 25.61 | 5.312 | |
| 4,100.00 | 4,019.14 | 4,093.93 | 4,031.82 | 14.70 | 13.67 | -123.76 | -532.58 | -171.14 | 142.64 | 116.19 | 26.45 | 5.393 | |
| 4,200.00 | 4,115.27 | 4,193.69 | 4,128.95 | 15.26 | 14.15 | -124.51 | -554.13 | -178.48 | 149.29 | 122.00 | 27.29 | 5.471 | |
| 4,300.00 | 4,211.41 | 4,293.45 | 4,226.08 | 15.82 | 14.62 | -125.19 | -575.68 | -185.81 | 155.97 | 127.84 | 28.13 | 5.544 | |
| 4,400.00 | 4,307.54 | 4,393.21 | 4,323.21 | 16.38 | 15.10 | -125.81 | -597.22 | -193.14 | 162.67 | 133.70 | 28.97 | 5.615 | |
| 4,500.00 | 4,403.67 | 4,492.97 | 4,420.33 | 16.94 | 15.58 | -126.39 | -618.77 | -200.47 | 169.39 | 139.58 | 29.82 | 5.681 | |
| 4,600.00 | 4,499.80 | 4,592.73 | 4,517.46 | 17.51 | 16.06 | -126.92 | -640.32 | -207.80 | 176.13 | 145.47 | 30.66 | 5.745 | |
| 4,700.00 | 4,595.93 | 4,692.49 | 4,614.59 | 18.07 | 16.54 | -127.41 | -661.87 | -215.14 | 182.87 | 151.37 | 31.50 | 5.806 | |
| 4,800.00 | 4,692.07 | 4,792.25 | 4,711.72 | 18.63 | 17.02 | -127.87 | -683.42 | -222.47 | 189.63 | 157.29 | 32.34 | 5.864 | |
| 4,900.00 | 4,788.20 | 4,892.01 | 4,808.85 | 19.20 | 17.50 | -128.29 | -704.96 | -229.80 | 196.40 | 163.22 | 33.18 | 5.919 | |
| 5,000.00 | 4,884.33 | 4,991.77 | 4,905.98 | 19.76 | 17.99 | -128.69 | -726.51 | -237.13 | 203.18 | 169.16 | 34.02 | 5.972 | |

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

| | | | |
|---------------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Reference Site: | WELD_JESSER 18-2 PAD | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site Error: | 0.00ft | North Reference: | True |
| Reference Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | P_BROWN 5-2S | Database: | EDM 2003.21 Single User Db |
| Reference Design: | PLAN #1 3-16-10 RHS | Offset TVD Reference: | Offset Datum |

| Offset Design WELD_JESSER 18-2 PAD - P_BROWN 5-2 - P_BROWN 5-2 - PLAN #1 3-16-10 RHS | | | | | | | | | | | | Offset Site Error: | 0.00 ft |
|---|------------------------|------------------------|------------------------|-------------------|----------------|-----------------------------|---|---------------|----------------------------|-----------------------------|-------------------------------|---------------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.00 ft |
| 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 |
| 5,100.00 | 4,980.46 | 5,091.53 | 5,003.11 | 20.33 | 18.47 | -129.06 | -748.06 | -244.46 | 209.98 | 175.11 | 34.87 | 6.022 | |
| 5,209.79 | 5,086.00 | 5,201.05 | 5,109.74 | 20.95 | 19.00 | -129.44 | -771.72 | -252.51 | 217.44 | 181.65 | 35.79 | 6.075 | |

| | | | |
|---------------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Reference Site: | WELD_JESSER 18-2 PAD | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site Error: | 0.00ft | North Reference: | True |
| Reference Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | P_BROWN 5-2S | Database: | EDM 2003.21 Single User Db |
| Reference Design: | PLAN #1 3-16-10 RHS | Offset TVD Reference: | Offset Datum |

| Offset Design WELD_JESSER 18-2 PAD - P_BROWN 6-2 - P_BROWN 6-2 - PLAN #1 3-16-10 RHS | | | | | | | | | | | | Offset Site Error: | 0.00 ft |
|--|---------------------|---------------------|---------------------|----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|--------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.00 ft |
| 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 |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 89.30 | 0.36 | 29.94 | 29.94 | | | | |
| 100.00 | 100.00 | 100.00 | 100.00 | 0.10 | 0.10 | 89.30 | 0.36 | 29.94 | 29.94 | 29.75 | 0.19 | 156.721 | |
| 200.00 | 200.00 | 200.00 | 200.00 | 0.32 | 0.32 | 89.30 | 0.36 | 29.94 | 29.94 | 29.30 | 0.64 | 46.741 | |
| 300.00 | 300.00 | 300.00 | 300.00 | 0.55 | 0.55 | 89.30 | 0.36 | 29.94 | 29.94 | 28.85 | 1.09 | 27.467 | |
| 400.00 | 400.00 | 400.00 | 400.00 | 0.77 | 0.77 | 89.30 | 0.36 | 29.94 | 29.94 | 28.40 | 1.54 | 19.447 | |
| 500.00 | 500.00 | 500.00 | 500.00 | 0.99 | 0.99 | 89.30 | 0.36 | 29.94 | 29.94 | 27.95 | 1.99 | 15.052 | |
| 600.00 | 600.00 | 600.00 | 600.00 | 1.22 | 1.22 | 89.30 | 0.36 | 29.94 | 29.94 | 27.50 | 2.44 | 12.278 | |
| 700.00 | 700.00 | 700.00 | 700.00 | 1.44 | 1.44 | 89.30 | 0.36 | 29.94 | 29.94 | 27.05 | 2.89 | 10.367 | |
| 800.00 | 800.00 | 800.00 | 800.00 | 1.67 | 1.67 | 89.30 | 0.36 | 29.94 | 29.94 | 26.60 | 3.34 | 8.971 | |
| 900.00 | 900.00 | 900.00 | 900.00 | 1.89 | 1.89 | 89.30 | 0.36 | 29.94 | 29.94 | 26.15 | 3.79 | 7.906 | |
| 1,000.00 | 1,000.00 | 1,000.00 | 1,000.00 | 2.12 | 2.12 | 89.30 | 0.36 | 29.94 | 29.94 | 25.70 | 4.24 | 7.067 | |
| 1,100.00 | 1,100.00 | 1,100.00 | 1,100.00 | 2.34 | 2.34 | 89.30 | 0.36 | 29.94 | 29.94 | 25.26 | 4.69 | 6.389 | |
| 1,200.00 | 1,200.00 | 1,200.00 | 1,200.00 | 2.57 | 2.57 | 89.30 | 0.36 | 29.94 | 29.94 | 24.81 | 5.14 | 5.830 | |
| 1,300.00 | 1,300.00 | 1,300.00 | 1,300.00 | 2.79 | 2.79 | 89.30 | 0.36 | 29.94 | 29.94 | 24.36 | 5.59 | 5.361 CC, ES | |
| 1,400.00 | 1,399.99 | 1,399.15 | 1,399.13 | 2.99 | 2.99 | -120.77 | -0.69 | 31.29 | 31.96 | 25.98 | 5.98 | 5.343 SF | |
| 1,500.00 | 1,499.91 | 1,498.03 | 1,497.87 | 3.17 | 3.18 | -120.87 | -3.86 | 35.32 | 38.00 | 31.66 | 6.34 | 5.997 | |
| 1,600.00 | 1,599.69 | 1,596.38 | 1,595.85 | 3.35 | 3.38 | -120.96 | -9.09 | 41.99 | 48.05 | 41.34 | 6.71 | 7.166 | |
| 1,700.00 | 1,699.27 | 1,693.95 | 1,692.71 | 3.55 | 3.59 | -121.00 | -16.33 | 51.21 | 62.06 | 54.97 | 7.09 | 8.750 | |
| 1,800.00 | 1,798.57 | 1,790.49 | 1,788.09 | 3.77 | 3.83 | -120.98 | -25.50 | 62.89 | 79.98 | 72.48 | 7.50 | 10.659 | |
| 1,900.00 | 1,897.54 | 1,885.77 | 1,881.70 | 4.01 | 4.10 | -120.90 | -36.48 | 76.89 | 101.75 | 93.80 | 7.95 | 12.799 | |
| 2,000.00 | 1,996.09 | 1,979.59 | 1,973.23 | 4.28 | 4.41 | -120.78 | -49.17 | 93.05 | 127.28 | 118.85 | 8.44 | 15.089 | |
| 2,100.00 | 2,094.16 | 2,075.28 | 2,066.19 | 4.59 | 4.76 | -120.97 | -63.18 | 110.91 | 155.49 | 146.51 | 8.97 | 17.327 | |
| 2,200.00 | 2,191.70 | 2,170.76 | 2,158.95 | 4.93 | 5.13 | -121.69 | -77.17 | 128.74 | 185.02 | 175.47 | 9.55 | 19.366 | |
| 2,300.00 | 2,288.62 | 2,265.74 | 2,251.21 | 5.32 | 5.52 | -122.70 | -91.08 | 146.47 | 215.96 | 205.78 | 10.18 | 21.222 | |
| 2,365.88 | 2,352.10 | 2,328.00 | 2,311.69 | 5.60 | 5.79 | -123.45 | -100.21 | 158.09 | 237.14 | 226.53 | 10.61 | 22.355 | |
| 2,400.00 | 2,384.90 | 2,360.18 | 2,342.95 | 5.75 | 5.92 | -123.98 | -104.92 | 164.10 | 248.29 | 237.45 | 10.85 | 22.893 | |
| 2,500.00 | 2,481.03 | 2,454.48 | 2,434.56 | 6.21 | 6.34 | -125.28 | -118.74 | 181.70 | 281.06 | 269.50 | 11.56 | 24.313 | |
| 2,600.00 | 2,577.16 | 2,548.79 | 2,526.18 | 6.68 | 6.76 | -126.31 | -132.55 | 199.31 | 313.94 | 301.64 | 12.30 | 25.532 | |
| 2,700.00 | 2,673.30 | 2,643.10 | 2,617.79 | 7.18 | 7.19 | -127.14 | -146.37 | 216.91 | 346.89 | 333.84 | 13.05 | 26.585 | |
| 2,800.00 | 2,769.43 | 2,737.40 | 2,709.40 | 7.68 | 7.63 | -127.83 | -160.19 | 234.52 | 379.89 | 366.07 | 13.82 | 27.497 | |
| 2,900.00 | 2,865.56 | 2,831.71 | 2,801.02 | 8.19 | 8.08 | -128.41 | -174.00 | 252.12 | 412.93 | 398.34 | 14.59 | 28.294 | |
| 3,000.00 | 2,961.69 | 2,926.02 | 2,892.63 | 8.71 | 8.53 | -128.91 | -187.82 | 269.73 | 446.01 | 430.63 | 15.38 | 28.994 | |
| 3,100.00 | 3,057.82 | 3,020.32 | 2,984.24 | 9.24 | 8.98 | -129.33 | -201.64 | 287.33 | 479.11 | 462.93 | 16.18 | 29.612 | |
| 3,200.00 | 3,153.96 | 3,114.63 | 3,075.85 | 9.77 | 9.43 | -129.70 | -215.45 | 304.94 | 512.23 | 495.25 | 16.98 | 30.161 | |
| 3,300.00 | 3,250.09 | 3,208.94 | 3,167.47 | 10.31 | 9.89 | -130.03 | -229.27 | 322.54 | 545.37 | 527.58 | 17.79 | 30.651 | |
| 3,400.00 | 3,346.22 | 3,303.24 | 3,259.08 | 10.85 | 10.35 | -130.32 | -243.09 | 340.15 | 578.52 | 559.92 | 18.61 | 31.091 | |
| 3,500.00 | 3,442.35 | 3,397.55 | 3,350.69 | 11.39 | 10.82 | -130.58 | -256.90 | 357.76 | 611.69 | 592.26 | 19.43 | 31.488 | |
| 3,600.00 | 3,538.48 | 3,491.86 | 3,442.31 | 11.94 | 11.28 | -130.81 | -270.72 | 375.36 | 644.86 | 624.61 | 20.25 | 31.848 | |
| 3,700.00 | 3,634.62 | 3,586.16 | 3,533.92 | 12.49 | 11.75 | -131.02 | -284.54 | 392.97 | 678.05 | 656.97 | 21.07 | 32.175 | |
| 3,800.00 | 3,730.75 | 3,680.47 | 3,625.53 | 13.04 | 12.22 | -131.20 | -298.35 | 410.57 | 711.24 | 689.33 | 21.90 | 32.474 | |
| 3,900.00 | 3,826.88 | 3,774.78 | 3,717.14 | 13.59 | 12.69 | -131.38 | -312.17 | 428.18 | 744.43 | 721.70 | 22.73 | 32.748 | |
| 4,000.00 | 3,923.01 | 3,869.08 | 3,808.76 | 14.15 | 13.16 | -131.53 | -325.98 | 445.78 | 777.63 | 754.07 | 23.56 | 33.001 | |
| 4,100.00 | 4,019.14 | 3,963.39 | 3,900.37 | 14.70 | 13.63 | -131.68 | -339.80 | 463.39 | 810.84 | 786.44 | 24.40 | 33.234 | |
| 4,200.00 | 4,115.27 | 4,057.70 | 3,991.98 | 15.26 | 14.11 | -131.81 | -353.62 | 480.99 | 844.05 | 818.82 | 25.23 | 33.450 | |
| 4,300.00 | 4,211.41 | 4,152.00 | 4,083.59 | 15.82 | 14.58 | -131.94 | -367.43 | 498.60 | 877.27 | 851.20 | 26.07 | 33.651 | |
| 4,400.00 | 4,307.54 | 4,246.31 | 4,175.21 | 16.38 | 15.06 | -132.05 | -381.25 | 516.20 | 910.48 | 883.58 | 26.91 | 33.838 | |
| 4,500.00 | 4,403.67 | 4,340.62 | 4,266.82 | 16.94 | 15.53 | -132.16 | -395.07 | 533.81 | 943.70 | 915.96 | 27.75 | 34.013 | |
| 4,600.00 | 4,499.80 | 4,434.92 | 4,358.43 | 17.51 | 16.01 | -132.25 | -408.88 | 551.41 | 976.93 | 948.34 | 28.58 | 34.177 | |
| 4,700.00 | 4,595.93 | 4,529.23 | 4,450.05 | 18.07 | 16.49 | -132.35 | -422.70 | 569.02 | 1,010.15 | 980.73 | 29.42 | 34.331 | |
| 4,800.00 | 4,692.07 | 4,623.54 | 4,541.66 | 18.63 | 16.96 | -132.43 | -436.52 | 586.63 | 1,043.38 | 1,013.12 | 30.26 | 34.476 | |
| 4,900.00 | 4,788.20 | 4,717.84 | 4,633.27 | 19.20 | 17.44 | -132.51 | -450.33 | 604.23 | 1,076.61 | 1,045.51 | 31.10 | 34.613 | |
| 5,000.00 | 4,884.33 | 4,812.15 | 4,724.88 | 19.76 | 17.92 | -132.59 | -464.15 | 621.84 | 1,109.84 | 1,077.90 | 31.95 | 34.742 | |

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

| | | | |
|---------------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Reference Site: | WELD_JESSER 18-2 PAD | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site Error: | 0.00ft | North Reference: | True |
| Reference Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | P_BROWN 5-2S | Database: | EDM 2003.21 Single User Db |
| Reference Design: | PLAN #1 3-16-10 RHS | Offset TVD Reference: | Offset Datum |

| Offset Design WELD_JESSER 18-2 PAD - P_BROWN 6-2 - P_BROWN 6-2 - PLAN #1 3-16-10 RHS | | | | | | | | | | | | Offset Site Error: | 0.00 ft |
|---|------------------------|------------------------|------------------------|-------------------|----------------|--------------------------|---|---------------|-------------------------|--------------------------|----------------------------|---------------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.00 ft |
| 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 |
| 5,100.00 | 4,980.46 | 4,906.46 | 4,816.50 | 20.33 | 18.40 | -132.66 | -477.97 | 639.44 | 1,143.08 | 1,110.29 | 32.79 | 34.865 | |
| 5,209.79 | 5,086.00 | 5,009.99 | 4,917.07 | 20.95 | 18.93 | -132.74 | -493.14 | 658.77 | 1,179.56 | 1,145.86 | 33.71 | 34.992 | |

| | | | |
|---------------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Reference Site: | WELD_JESSER 18-2 PAD | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site Error: | 0.00ft | North Reference: | True |
| Reference Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | P_BROWN 5-2S | Database: | EDM 2003.21 Single User Db |
| Reference Design: | PLAN #1 3-16-10 RHS | Offset TVD Reference: | Offset Datum |

| Offset Design WELD_JESSER 18-2 PAD - P_BROWN 6-2S - P_BROWN 6-2S - PLAN #1 3-16-10 RHS | | | | | | | | | | | | Offset Site Error: 0.00 ft | | |
|--|----------------|----------------|----------------|-----------------|--------|-------------------|------------------------|------------|-----------------|------------------|--------------------|----------------------------|------------|---------|
| Survey Program: 0-MWMD | | | | | | | | | | | | Offset Well Error: 0.00 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) | | | |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 88.96 | 0.36 | 20.15 | 20.15 | | | | | |
| 100.00 | 100.00 | 100.00 | 100.00 | 0.10 | 0.10 | 88.96 | 0.36 | 20.15 | 20.15 | 19.96 | 0.19 | 105.467 | | |
| 200.00 | 200.00 | 200.00 | 200.00 | 0.32 | 0.32 | 88.96 | 0.36 | 20.15 | 20.15 | 19.51 | 0.64 | 31.455 | | |
| 300.00 | 300.00 | 300.00 | 300.00 | 0.55 | 0.55 | 88.96 | 0.36 | 20.15 | 20.15 | 19.06 | 1.09 | 18.484 | | |
| 400.00 | 400.00 | 400.00 | 400.00 | 0.77 | 0.77 | 88.96 | 0.36 | 20.15 | 20.15 | 18.61 | 1.54 | 13.087 | | |
| 500.00 | 500.00 | 500.00 | 500.00 | 0.99 | 0.99 | 88.96 | 0.36 | 20.15 | 20.15 | 18.16 | 1.99 | 10.130 | | |
| 600.00 | 600.00 | 600.00 | 600.00 | 1.22 | 1.22 | 88.96 | 0.36 | 20.15 | 20.15 | 17.71 | 2.44 | 8.262 | | |
| 700.00 | 700.00 | 700.00 | 700.00 | 1.44 | 1.44 | 88.96 | 0.36 | 20.15 | 20.15 | 17.26 | 2.89 | 6.976 | | |
| 800.00 | 800.00 | 800.00 | 800.00 | 1.67 | 1.67 | 88.96 | 0.36 | 20.15 | 20.15 | 16.81 | 3.34 | 6.037 | | |
| 900.00 | 900.00 | 900.00 | 900.00 | 1.89 | 1.89 | 88.96 | 0.36 | 20.15 | 20.15 | 16.36 | 3.79 | 5.320 | | |
| 1,000.00 | 1,000.00 | 1,000.00 | 1,000.00 | 2.12 | 2.12 | 88.96 | 0.36 | 20.15 | 20.15 | 15.91 | 4.24 | 4.756 | | |
| 1,100.00 | 1,100.00 | 1,100.00 | 1,100.00 | 2.34 | 2.34 | 88.96 | 0.36 | 20.15 | 20.15 | 15.46 | 4.69 | 4.300 | | |
| 1,200.00 | 1,200.00 | 1,200.00 | 1,200.00 | 2.57 | 2.57 | 88.96 | 0.36 | 20.15 | 20.15 | 15.01 | 5.14 | 3.923 | | |
| 1,300.00 | 1,300.00 | 1,300.00 | 1,300.00 | 2.79 | 2.79 | 88.96 | 0.36 | 20.15 | 20.15 | 14.56 | 5.59 | 3.608 | CC, ES, SF | |
| 1,400.00 | 1,399.99 | 1,399.64 | 1,399.63 | 2.99 | 2.99 | -121.35 | -0.62 | 20.99 | 21.66 | 15.68 | 5.98 | 3.621 | | |
| 1,500.00 | 1,499.91 | 1,499.15 | 1,499.06 | 3.17 | 3.17 | -122.00 | -3.57 | 23.53 | 26.18 | 19.84 | 6.33 | 4.134 | | |
| 1,600.00 | 1,599.69 | 1,598.38 | 1,598.08 | 3.35 | 3.36 | -122.69 | -8.48 | 27.73 | 33.71 | 27.01 | 6.70 | 5.032 | | |
| 1,700.00 | 1,699.27 | 1,697.21 | 1,696.50 | 3.55 | 3.56 | -123.23 | -15.30 | 33.58 | 44.23 | 37.15 | 7.08 | 6.244 | | |
| 1,800.00 | 1,798.57 | 1,795.51 | 1,794.12 | 3.77 | 3.78 | -123.60 | -23.99 | 41.05 | 57.73 | 50.24 | 7.49 | 7.706 | | |
| 1,900.00 | 1,897.54 | 1,893.15 | 1,890.77 | 4.01 | 4.02 | -123.82 | -34.52 | 50.08 | 74.18 | 66.25 | 7.93 | 9.351 | | |
| 2,000.00 | 1,996.09 | 1,990.01 | 1,986.26 | 4.28 | 4.29 | -123.94 | -46.81 | 60.62 | 93.54 | 85.13 | 8.41 | 11.118 | | |
| 2,100.00 | 2,094.16 | 2,085.97 | 2,080.44 | 4.59 | 4.58 | -123.97 | -60.79 | 72.62 | 115.78 | 106.84 | 8.94 | 12.950 | | |
| 2,200.00 | 2,191.70 | 2,180.93 | 2,173.14 | 4.93 | 4.91 | -123.94 | -76.39 | 86.00 | 140.85 | 131.33 | 9.52 | 14.795 | | |
| 2,300.00 | 2,288.62 | 2,274.78 | 2,264.24 | 5.32 | 5.27 | -123.85 | -93.52 | 100.70 | 168.70 | 158.55 | 10.16 | 16.611 | | |
| 2,365.88 | 2,352.10 | 2,335.96 | 2,323.31 | 5.60 | 5.53 | -123.77 | -105.60 | 111.07 | 188.55 | 177.95 | 10.61 | 17.774 | | |
| 2,400.00 | 2,384.90 | 2,367.47 | 2,353.63 | 5.75 | 5.67 | -123.83 | -112.10 | 116.65 | 199.22 | 188.36 | 10.86 | 18.345 | | |
| 2,500.00 | 2,481.03 | 2,459.22 | 2,441.51 | 6.21 | 6.10 | -123.64 | -132.11 | 133.81 | 231.34 | 219.71 | 11.63 | 19.892 | | |
| 2,600.00 | 2,577.16 | 2,551.27 | 2,529.06 | 6.68 | 6.58 | -123.10 | -153.69 | 152.33 | 264.69 | 252.24 | 12.45 | 21.266 | | |
| 2,700.00 | 2,673.30 | 2,645.41 | 2,618.44 | 7.18 | 7.09 | -122.60 | -176.12 | 171.57 | 298.34 | 285.03 | 13.31 | 22.418 | | |
| 2,800.00 | 2,769.43 | 2,739.55 | 2,707.82 | 7.68 | 7.62 | -122.19 | -198.54 | 190.81 | 332.01 | 317.82 | 14.19 | 23.396 | | |
| 2,900.00 | 2,865.56 | 2,833.69 | 2,797.20 | 8.19 | 8.17 | -121.86 | -220.96 | 210.05 | 365.69 | 350.60 | 15.09 | 24.231 | | |
| 3,000.00 | 2,961.69 | 2,927.82 | 2,886.58 | 8.71 | 8.72 | -121.59 | -243.38 | 229.29 | 399.39 | 383.38 | 16.01 | 24.949 | | |
| 3,100.00 | 3,057.82 | 3,021.96 | 2,975.96 | 9.24 | 9.28 | -121.36 | -265.81 | 248.53 | 433.08 | 416.15 | 16.94 | 25.570 | | |
| 3,200.00 | 3,153.96 | 3,116.10 | 3,065.34 | 9.77 | 9.85 | -121.16 | -288.23 | 267.77 | 466.79 | 448.91 | 17.88 | 26.112 | | |
| 3,300.00 | 3,250.09 | 3,210.24 | 3,154.72 | 10.31 | 10.42 | -120.99 | -310.65 | 287.01 | 500.49 | 481.67 | 18.82 | 26.587 | | |
| 3,400.00 | 3,346.22 | 3,304.38 | 3,244.10 | 10.85 | 11.00 | -120.84 | -333.07 | 306.25 | 534.21 | 514.43 | 19.78 | 27.006 | | |
| 3,500.00 | 3,442.35 | 3,398.51 | 3,333.49 | 11.39 | 11.59 | -120.71 | -355.50 | 325.49 | 567.92 | 547.18 | 20.74 | 27.379 | | |
| 3,600.00 | 3,538.48 | 3,492.65 | 3,422.87 | 11.94 | 12.18 | -120.59 | -377.92 | 344.73 | 601.64 | 579.93 | 21.71 | 27.711 | | |
| 3,700.00 | 3,634.62 | 3,586.79 | 3,512.25 | 12.49 | 12.77 | -120.49 | -400.34 | 363.97 | 635.36 | 612.67 | 22.68 | 28.009 | | |
| 3,800.00 | 3,730.75 | 3,680.93 | 3,601.63 | 13.04 | 13.36 | -120.39 | -422.77 | 383.21 | 669.08 | 645.42 | 23.66 | 28.278 | | |
| 3,900.00 | 3,826.88 | 3,775.06 | 3,691.01 | 13.59 | 13.96 | -120.31 | -445.19 | 402.45 | 702.80 | 678.16 | 24.64 | 28.522 | | |
| 4,000.00 | 3,923.01 | 3,869.20 | 3,780.39 | 14.15 | 14.56 | -120.23 | -467.61 | 421.69 | 736.52 | 710.90 | 25.62 | 28.744 | | |
| 4,100.00 | 4,019.14 | 3,963.34 | 3,869.77 | 14.70 | 15.16 | -120.16 | -490.03 | 440.93 | 770.24 | 743.64 | 26.61 | 28.947 | | |
| 4,200.00 | 4,115.27 | 4,057.48 | 3,959.15 | 15.26 | 15.76 | -120.09 | -512.46 | 460.17 | 803.97 | 776.37 | 27.60 | 29.133 | | |
| 4,300.00 | 4,211.41 | 4,151.62 | 4,048.53 | 15.82 | 16.36 | -120.04 | -534.88 | 479.41 | 837.70 | 809.11 | 28.59 | 29.304 | | |
| 4,400.00 | 4,307.54 | 4,245.75 | 4,137.92 | 16.38 | 16.97 | -119.98 | -557.30 | 498.65 | 871.42 | 841.85 | 29.58 | 29.463 | | |
| 4,500.00 | 4,403.67 | 4,339.89 | 4,227.30 | 16.94 | 17.57 | -119.93 | -579.72 | 517.89 | 905.15 | 874.58 | 30.57 | 29.609 | | |
| 4,600.00 | 4,499.80 | 4,434.03 | 4,316.68 | 17.51 | 18.18 | -119.88 | -602.15 | 537.13 | 938.88 | 907.31 | 31.56 | 29.746 | | |
| 4,700.00 | 4,595.93 | 4,528.17 | 4,406.06 | 18.07 | 18.79 | -119.84 | -624.57 | 556.37 | 972.61 | 940.05 | 32.56 | 29.873 | | |
| 4,800.00 | 4,692.07 | 4,622.30 | 4,495.44 | 18.63 | 19.39 | -119.80 | -646.99 | 575.61 | 1,006.33 | 972.78 | 33.55 | 29.992 | | |
| 4,900.00 | 4,788.20 | 4,716.44 | 4,584.82 | 19.20 | 20.00 | -119.76 | -669.42 | 594.85 | 1,040.06 | 1,005.51 | 34.55 | 30.103 | | |
| 5,000.00 | 4,884.33 | 4,810.58 | 4,674.20 | 19.76 | 20.61 | -119.72 | -691.84 | 614.09 | 1,073.79 | 1,038.25 | 35.55 | 30.208 | | |

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

| | | | |
|---------------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Reference Site: | WELD_JESSER 18-2 PAD | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site Error: | 0.00ft | North Reference: | True |
| Reference Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | P_BROWN 5-2S | Database: | EDM 2003.21 Single User Db |
| Reference Design: | PLAN #1 3-16-10 RHS | Offset TVD Reference: | Offset Datum |

| Offset Design WELD_JESSER 18-2 PAD - P_BROWN 6-2S - P_BROWN 6-2S - PLAN #1 3-16-10 RHS | | | | | | | | | | | | Offset Site Error: | 0.00 ft |
|---|------------------------|------------------------|------------------------|-------------------|----------------|--------------------------|---|---------------|-------------------------|--------------------------|----------------------------|---------------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.00 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 | |
| 5,100.00 | 4,980.46 | 4,904.72 | 4,763.58 | 20.33 | 21.22 | -119.69 | -714.26 | 633.33 | 1,107.52 | 1,070.98 | 36.54 | 30.306 | |
| 5,209.79 | 5,086.00 | 5,008.07 | 4,861.71 | 20.95 | 21.89 | -119.66 | -738.88 | 654.45 | 1,144.55 | 1,106.91 | 37.64 | 30.408 | |

| | | | |
|---------------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Reference Site: | WELD_JESSER 18-2 PAD | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site Error: | 0.00ft | North Reference: | True |
| Reference Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | P_BROWN 5-2S | Database: | EDM 2003.21 Single User Db |
| Reference Design: | PLAN #1 3-16-10 RHS | Offset TVD Reference: | Offset Datum |

| Offset Design WELD_JESSER 18-2 PAD - P_JESSER 21-2 - P_JESSER 21-2 - PLAN #1 3-16-10 RHS | | | | | | | | | | | | Offset Site Error: | 0.00 ft |
|--|------------------------|------------------------|------------------------|-------------------|----------------|---|---|---------------|----------------------------|-----------------------------|-------------------------------|----------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.00 ft |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Semi Major Axis Highside Tooface (") | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 89.54 | 0.73 | 90.10 | 90.10 | | | | |
| 100.00 | 100.00 | 100.00 | 100.00 | 0.10 | 0.10 | 89.54 | 0.73 | 90.10 | 90.10 | 89.91 | 0.19 | 471.608 | |
| 200.00 | 200.00 | 200.00 | 200.00 | 0.32 | 0.32 | 89.54 | 0.73 | 90.10 | 90.10 | 89.46 | 0.64 | 140.655 | |
| 300.00 | 300.00 | 300.00 | 300.00 | 0.55 | 0.55 | 89.54 | 0.73 | 90.10 | 90.10 | 89.01 | 1.09 | 82.653 | |
| 400.00 | 400.00 | 400.00 | 400.00 | 0.77 | 0.77 | 89.54 | 0.73 | 90.10 | 90.10 | 88.56 | 1.54 | 58.521 | |
| 500.00 | 500.00 | 500.00 | 500.00 | 0.99 | 0.99 | 89.54 | 0.73 | 90.10 | 90.10 | 88.11 | 1.99 | 45.296 | |
| 600.00 | 600.00 | 600.00 | 600.00 | 1.22 | 1.22 | 89.54 | 0.73 | 90.10 | 90.10 | 87.66 | 2.44 | 36.946 | |
| 700.00 | 700.00 | 700.00 | 700.00 | 1.44 | 1.44 | 89.54 | 0.73 | 90.10 | 90.10 | 87.21 | 2.89 | 31.196 | |
| 800.00 | 800.00 | 800.00 | 800.00 | 1.67 | 1.67 | 89.54 | 0.73 | 90.10 | 90.10 | 86.76 | 3.34 | 26.994 | |
| 900.00 | 900.00 | 900.00 | 900.00 | 1.89 | 1.89 | 89.54 | 0.73 | 90.10 | 90.10 | 86.31 | 3.79 | 23.790 | |
| 1,000.00 | 1,000.00 | 1,000.00 | 1,000.00 | 2.12 | 2.12 | 89.54 | 0.73 | 90.10 | 90.10 | 85.86 | 4.24 | 21.266 | |
| 1,100.00 | 1,100.00 | 1,100.00 | 1,100.00 | 2.34 | 2.34 | 89.54 | 0.73 | 90.10 | 90.10 | 85.42 | 4.69 | 19.226 | |
| 1,200.00 | 1,200.00 | 1,200.00 | 1,200.00 | 2.57 | 2.57 | 89.54 | 0.73 | 90.10 | 90.10 | 84.97 | 5.14 | 17.543 | |
| 1,300.00 | 1,300.00 | 1,300.00 | 1,300.00 | 2.79 | 2.79 | 89.54 | 0.73 | 90.10 | 90.10 | 84.52 | 5.59 | 16.131 CC, ES | |
| 1,400.00 | 1,399.99 | 1,396.89 | 1,396.87 | 2.99 | 3.00 | -121.07 | 0.64 | 91.73 | 92.46 | 86.47 | 5.99 | 15.447 SF | |
| 1,500.00 | 1,499.91 | 1,493.38 | 1,493.23 | 3.17 | 3.19 | -122.65 | 0.36 | 96.61 | 99.58 | 93.23 | 6.35 | 15.682 | |
| 1,600.00 | 1,599.69 | 1,589.06 | 1,588.57 | 3.35 | 3.40 | -124.80 | -0.08 | 104.65 | 111.56 | 104.83 | 6.72 | 16.597 | |
| 1,700.00 | 1,699.27 | 1,683.58 | 1,682.43 | 3.55 | 3.62 | -127.10 | -0.70 | 115.70 | 128.47 | 121.37 | 7.10 | 18.091 | |
| 1,800.00 | 1,798.57 | 1,776.55 | 1,774.36 | 3.77 | 3.86 | -129.25 | -1.48 | 129.58 | 150.34 | 142.85 | 7.49 | 20.067 | |
| 1,900.00 | 1,897.54 | 1,867.67 | 1,863.96 | 4.01 | 4.12 | -131.09 | -2.40 | 146.07 | 177.09 | 169.19 | 7.89 | 22.432 | |
| 2,000.00 | 1,996.09 | 1,956.63 | 1,950.90 | 4.28 | 4.41 | -132.59 | -3.45 | 164.90 | 208.60 | 200.29 | 8.31 | 25.098 | |
| 2,100.00 | 2,094.16 | 2,043.17 | 2,034.86 | 4.59 | 4.72 | -133.77 | -4.62 | 185.80 | 244.71 | 235.96 | 8.75 | 27.982 | |
| 2,200.00 | 2,191.70 | 2,127.07 | 2,115.63 | 4.93 | 5.07 | -134.67 | -5.88 | 208.48 | 285.25 | 276.05 | 9.20 | 31.011 | |
| 2,300.00 | 2,288.62 | 2,208.15 | 2,193.02 | 5.32 | 5.45 | -135.32 | -7.23 | 232.62 | 330.02 | 320.35 | 9.67 | 34.124 | |
| 2,365.88 | 2,352.10 | 2,262.50 | 2,244.53 | 5.60 | 5.73 | -135.68 | -8.20 | 249.93 | 361.65 | 351.64 | 10.00 | 36.158 | |
| 2,400.00 | 2,384.90 | 2,292.20 | 2,272.65 | 5.75 | 5.88 | -136.07 | -8.73 | 259.46 | 378.32 | 368.12 | 10.19 | 37.117 | |
| 2,500.00 | 2,481.03 | 2,379.23 | 2,355.05 | 6.21 | 6.36 | -137.02 | -10.29 | 287.41 | 427.23 | 416.46 | 10.77 | 39.673 | |
| 2,600.00 | 2,577.16 | 2,466.25 | 2,437.45 | 6.68 | 6.85 | -137.77 | -11.86 | 315.35 | 476.21 | 464.85 | 11.37 | 41.901 | |
| 2,700.00 | 2,673.30 | 2,553.28 | 2,519.86 | 7.18 | 7.35 | -138.39 | -13.42 | 343.30 | 525.25 | 513.27 | 11.98 | 43.847 | |
| 2,800.00 | 2,769.43 | 2,640.30 | 2,602.26 | 7.68 | 7.87 | -138.90 | -14.98 | 371.25 | 574.32 | 561.71 | 12.61 | 45.552 | |
| 2,900.00 | 2,865.56 | 2,727.33 | 2,684.66 | 8.19 | 8.40 | -139.33 | -16.54 | 399.19 | 623.42 | 610.17 | 13.25 | 47.052 | |
| 3,000.00 | 2,961.69 | 2,814.36 | 2,767.06 | 8.71 | 8.93 | -139.70 | -18.10 | 427.14 | 672.55 | 658.65 | 13.90 | 48.377 | |
| 3,100.00 | 3,057.82 | 2,901.38 | 2,849.46 | 9.24 | 9.47 | -140.02 | -19.66 | 455.08 | 721.69 | 707.13 | 14.56 | 49.552 | |
| 3,200.00 | 3,153.96 | 2,988.41 | 2,931.87 | 9.77 | 10.02 | -140.29 | -21.22 | 483.03 | 770.85 | 755.62 | 15.24 | 50.597 | |
| 3,300.00 | 3,250.09 | 3,075.43 | 3,014.27 | 10.31 | 10.57 | -140.54 | -22.79 | 510.98 | 820.02 | 804.11 | 15.91 | 51.531 | |
| 3,400.00 | 3,346.22 | 3,162.46 | 3,096.67 | 10.85 | 11.12 | -140.75 | -24.35 | 538.92 | 869.20 | 852.61 | 16.60 | 52.370 | |
| 3,500.00 | 3,442.35 | 3,249.49 | 3,179.07 | 11.39 | 11.68 | -140.95 | -25.91 | 566.87 | 918.39 | 901.11 | 17.29 | 53.126 | |
| 3,600.00 | 3,538.48 | 3,336.51 | 3,261.47 | 11.94 | 12.24 | -141.12 | -27.47 | 594.82 | 967.59 | 949.61 | 17.98 | 53.809 | |
| 3,700.00 | 3,634.62 | 3,423.54 | 3,343.88 | 12.49 | 12.80 | -141.28 | -29.03 | 622.76 | 1,016.79 | 998.11 | 18.68 | 54.429 | |
| 3,800.00 | 3,730.75 | 3,510.56 | 3,426.28 | 13.04 | 13.37 | -141.42 | -30.59 | 650.71 | 1,066.00 | 1,046.62 | 19.38 | 54.993 | |
| 3,900.00 | 3,826.88 | 3,597.59 | 3,508.68 | 13.59 | 13.93 | -141.55 | -32.15 | 678.65 | 1,115.21 | 1,095.12 | 20.09 | 55.509 | |
| 4,000.00 | 3,923.01 | 3,684.62 | 3,591.08 | 14.15 | 14.50 | -141.67 | -33.71 | 706.60 | 1,164.43 | 1,143.63 | 20.80 | 55.980 | |
| 4,100.00 | 4,019.14 | 3,771.64 | 3,673.48 | 14.70 | 15.07 | -141.78 | -35.28 | 734.55 | 1,213.65 | 1,192.13 | 21.51 | 56.414 | |
| 4,200.00 | 4,115.27 | 3,858.67 | 3,755.89 | 15.26 | 15.65 | -141.88 | -36.84 | 762.49 | 1,262.87 | 1,240.64 | 22.23 | 56.813 | |
| 4,300.00 | 4,211.41 | 3,945.69 | 3,838.29 | 15.82 | 16.22 | -141.97 | -38.40 | 790.44 | 1,312.10 | 1,289.15 | 22.95 | 57.181 | |
| 4,400.00 | 4,307.54 | 4,032.72 | 3,920.69 | 16.38 | 16.79 | -142.06 | -39.96 | 818.39 | 1,361.32 | 1,337.66 | 23.67 | 57.522 | |
| 4,500.00 | 4,403.67 | 4,119.75 | 4,003.09 | 16.94 | 17.37 | -142.14 | -41.52 | 846.33 | 1,410.55 | 1,386.17 | 24.39 | 57.839 | |
| 4,600.00 | 4,499.80 | 4,206.77 | 4,085.49 | 17.51 | 17.94 | -142.21 | -43.08 | 874.28 | 1,459.79 | 1,434.68 | 25.11 | 58.133 | |
| 4,700.00 | 4,595.93 | 4,293.80 | 4,167.90 | 18.07 | 18.52 | -142.28 | -44.64 | 902.22 | 1,509.02 | 1,483.18 | 25.84 | 58.407 | |
| 4,800.00 | 4,692.07 | 4,380.82 | 4,250.30 | 18.63 | 19.10 | -142.35 | -46.21 | 930.17 | 1,558.26 | 1,531.69 | 26.56 | 58.663 | |
| 4,900.00 | 4,788.20 | 4,467.85 | 4,332.70 | 19.20 | 19.67 | -142.41 | -47.77 | 958.12 | 1,607.49 | 1,580.20 | 27.29 | 58.903 | |
| 5,000.00 | 4,884.33 | 4,554.88 | 4,415.10 | 19.76 | 20.25 | -142.47 | -49.33 | 986.06 | 1,656.73 | 1,628.71 | 28.02 | 59.127 | |

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

| | | | |
|---------------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Reference Site: | WELD_JESSER 18-2 PAD | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site Error: | 0.00ft | North Reference: | True |
| Reference Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | P_BROWN 5-2S | Database: | EDM 2003.21 Single User Db |
| Reference Design: | PLAN #1 3-16-10 RHS | Offset TVD Reference: | Offset Datum |

| Offset Design WELD_JESSER 18-2 PAD - P_JESSER 21-2 - P_JESSER 21-2 - PLAN #1 3-16-10 RHS | | | | | | | | | | | | Offset Site Error: | 0.00 ft |
|---|---------------------|---------------------|---------------------|----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|---------------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.00 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 | |
| 5,100.00 | 4,980.46 | 4,641.90 | 4,497.50 | 20.33 | 20.83 | -142.52 | -50.89 | 1,014.01 | 1,705.97 | 1,677.22 | 28.75 | 59.338 | |
| 5,209.79 | 5,086.00 | 4,737.44 | 4,587.97 | 20.95 | 21.47 | -142.58 | -52.60 | 1,044.69 | 1,760.03 | 1,730.48 | 29.55 | 59.554 | |

| | | | |
|---------------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Reference Site: | WELD_JESSER 18-2 PAD | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site Error: | 0.00ft | North Reference: | True |
| Reference Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | P_BROWN 5-2S | Database: | EDM 2003.21 Single User Db |
| Reference Design: | PLAN #1 3-16-10 RHS | Offset TVD Reference: | Offset Datum |

| Offset Design WELD_JESSER 18-2 PAD - P_JESSER 28-2 - P_JESSER 28-2 - PLAN #1 3-16-10 RHS | | | | | | | | | | | | Offset Site Error: | 0.00 ft |
|--|---------------------|---------------------|---------------------|----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|--------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.00 ft |
| 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 |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 89.41 | 0.72 | 69.95 | 69.96 | | | | |
| 100.00 | 100.00 | 100.00 | 100.00 | 0.10 | 0.10 | 89.41 | 0.72 | 69.95 | 69.96 | 69.76 | 0.19 | 366.163 | |
| 200.00 | 200.00 | 200.00 | 200.00 | 0.32 | 0.32 | 89.41 | 0.72 | 69.95 | 69.96 | 69.32 | 0.64 | 109.206 | |
| 300.00 | 300.00 | 300.00 | 300.00 | 0.55 | 0.55 | 89.41 | 0.72 | 69.95 | 69.96 | 68.87 | 1.09 | 64.173 | |
| 400.00 | 400.00 | 400.00 | 400.00 | 0.77 | 0.77 | 89.41 | 0.72 | 69.95 | 69.96 | 68.42 | 1.54 | 45.436 | |
| 500.00 | 500.00 | 500.00 | 500.00 | 0.99 | 0.99 | 89.41 | 0.72 | 69.95 | 69.96 | 67.97 | 1.99 | 35.168 | |
| 600.00 | 600.00 | 600.00 | 600.00 | 1.22 | 1.22 | 89.41 | 0.72 | 69.95 | 69.96 | 67.52 | 2.44 | 28.686 | |
| 700.00 | 700.00 | 700.00 | 700.00 | 1.44 | 1.44 | 89.41 | 0.72 | 69.95 | 69.96 | 67.07 | 2.89 | 24.221 | |
| 800.00 | 800.00 | 800.00 | 800.00 | 1.67 | 1.67 | 89.41 | 0.72 | 69.95 | 69.96 | 66.62 | 3.34 | 20.959 | |
| 900.00 | 900.00 | 900.00 | 900.00 | 1.89 | 1.89 | 89.41 | 0.72 | 69.95 | 69.96 | 66.17 | 3.79 | 18.471 | |
| 1,000.00 | 1,000.00 | 1,000.00 | 1,000.00 | 2.12 | 2.12 | 89.41 | 0.72 | 69.95 | 69.96 | 65.72 | 4.24 | 16.511 | |
| 1,100.00 | 1,100.00 | 1,100.00 | 1,100.00 | 2.34 | 2.34 | 89.41 | 0.72 | 69.95 | 69.96 | 65.27 | 4.69 | 14.928 | |
| 1,200.00 | 1,200.00 | 1,200.00 | 1,200.00 | 2.57 | 2.57 | 89.41 | 0.72 | 69.95 | 69.96 | 64.82 | 5.14 | 13.621 | |
| 1,300.00 | 1,300.00 | 1,300.00 | 1,300.00 | 2.79 | 2.79 | 89.41 | 0.72 | 69.95 | 69.96 | 64.37 | 5.59 | 12.525 CC, ES | |
| 1,400.00 | 1,399.99 | 1,398.05 | 1,398.03 | 2.99 | 3.01 | -122.31 | 1.78 | 71.25 | 71.99 | 65.99 | 6.00 | 12.004 SF | |
| 1,500.00 | 1,499.91 | 1,495.55 | 1,495.40 | 3.17 | 3.22 | -126.82 | 4.96 | 75.10 | 78.42 | 72.04 | 6.38 | 12.294 | |
| 1,600.00 | 1,599.69 | 1,591.98 | 1,591.48 | 3.35 | 3.44 | -132.77 | 10.18 | 81.42 | 90.03 | 83.27 | 6.76 | 13.311 | |
| 1,700.00 | 1,699.27 | 1,686.85 | 1,685.67 | 3.55 | 3.67 | -138.78 | 17.32 | 90.06 | 107.46 | 100.31 | 7.15 | 15.031 | |
| 1,800.00 | 1,798.57 | 1,779.67 | 1,777.43 | 3.77 | 3.91 | -144.02 | 26.23 | 100.84 | 130.97 | 123.44 | 7.53 | 17.389 | |
| 1,900.00 | 1,897.54 | 1,870.04 | 1,866.28 | 4.01 | 4.17 | -148.23 | 36.71 | 113.54 | 160.50 | 152.59 | 7.91 | 20.287 | |
| 2,000.00 | 1,996.09 | 1,957.58 | 1,951.82 | 4.28 | 4.45 | -151.48 | 48.56 | 127.89 | 195.78 | 187.49 | 8.29 | 23.628 | |
| 2,100.00 | 2,094.16 | 2,041.98 | 2,033.71 | 4.59 | 4.75 | -153.96 | 61.56 | 143.63 | 236.51 | 227.85 | 8.66 | 27.323 | |
| 2,200.00 | 2,191.70 | 2,122.99 | 2,111.72 | 4.93 | 5.07 | -155.84 | 75.47 | 160.48 | 282.36 | 273.34 | 9.02 | 31.300 | |
| 2,300.00 | 2,288.62 | 2,200.00 | 2,185.27 | 5.32 | 5.41 | -157.25 | 89.99 | 178.07 | 333.02 | 323.64 | 9.38 | 35.505 | |
| 2,365.88 | 2,352.10 | 2,249.39 | 2,232.10 | 5.60 | 5.66 | -158.00 | 99.97 | 190.15 | 368.88 | 359.26 | 9.62 | 38.348 | |
| 2,400.00 | 2,384.90 | 2,274.18 | 2,255.51 | 5.75 | 5.79 | -158.45 | 105.17 | 196.45 | 388.08 | 378.32 | 9.76 | 39.765 | |
| 2,500.00 | 2,481.03 | 2,345.17 | 2,322.14 | 6.21 | 6.17 | -159.55 | 120.77 | 215.34 | 445.81 | 435.63 | 10.18 | 43.813 | |
| 2,600.00 | 2,577.16 | 2,413.70 | 2,385.86 | 6.68 | 6.57 | -160.38 | 136.83 | 234.78 | 505.61 | 495.02 | 10.59 | 47.733 | |
| 2,700.00 | 2,673.30 | 2,479.82 | 2,446.75 | 7.18 | 7.00 | -161.02 | 153.23 | 254.65 | 567.34 | 556.33 | 11.01 | 51.510 | |
| 2,800.00 | 2,769.43 | 2,545.30 | 2,506.46 | 7.68 | 7.44 | -161.54 | 170.35 | 275.38 | 630.87 | 619.43 | 11.44 | 55.148 | |
| 2,900.00 | 2,865.56 | 2,621.83 | 2,575.98 | 8.19 | 7.99 | -162.03 | 190.72 | 300.05 | 695.08 | 683.19 | 11.90 | 58.421 | |
| 3,000.00 | 2,961.69 | 2,698.36 | 2,645.50 | 8.71 | 8.54 | -162.44 | 211.10 | 324.73 | 759.32 | 746.96 | 12.36 | 61.431 | |
| 3,100.00 | 3,057.82 | 2,774.90 | 2,715.02 | 9.24 | 9.12 | -162.79 | 231.47 | 349.40 | 823.58 | 810.75 | 12.83 | 64.176 | |
| 3,200.00 | 3,153.96 | 2,851.43 | 2,784.54 | 9.77 | 9.70 | -163.09 | 251.85 | 374.08 | 887.86 | 874.55 | 13.31 | 66.704 | |
| 3,300.00 | 3,250.09 | 2,927.96 | 2,854.06 | 10.31 | 10.28 | -163.34 | 272.22 | 398.75 | 952.14 | 938.35 | 13.79 | 69.036 | |
| 3,400.00 | 3,346.22 | 3,004.50 | 2,923.59 | 10.85 | 10.88 | -163.57 | 292.60 | 423.43 | 1,016.44 | 1,002.16 | 14.28 | 71.189 | |
| 3,500.00 | 3,442.35 | 3,081.03 | 2,993.11 | 11.39 | 11.48 | -163.77 | 312.97 | 448.10 | 1,080.74 | 1,065.97 | 14.77 | 73.172 | |
| 3,600.00 | 3,538.48 | 3,157.56 | 3,062.63 | 11.94 | 12.08 | -163.94 | 333.35 | 472.78 | 1,145.05 | 1,129.79 | 15.27 | 75.009 | |
| 3,700.00 | 3,634.62 | 3,234.09 | 3,132.15 | 12.49 | 12.69 | -164.10 | 353.72 | 497.45 | 1,209.37 | 1,193.61 | 15.76 | 76.717 | |
| 3,800.00 | 3,730.75 | 3,310.63 | 3,201.67 | 13.04 | 13.31 | -164.24 | 374.10 | 522.13 | 1,273.69 | 1,257.43 | 16.27 | 78.306 | |
| 3,900.00 | 3,826.88 | 3,387.16 | 3,271.20 | 13.59 | 13.92 | -164.37 | 394.47 | 546.80 | 1,338.02 | 1,321.25 | 16.77 | 79.784 | |
| 4,000.00 | 3,923.01 | 3,463.69 | 3,340.72 | 14.15 | 14.54 | -164.48 | 414.85 | 571.48 | 1,402.35 | 1,385.07 | 17.28 | 81.162 | |
| 4,100.00 | 4,019.14 | 3,540.23 | 3,410.24 | 14.70 | 15.16 | -164.59 | 435.22 | 596.15 | 1,466.68 | 1,448.89 | 17.79 | 82.451 | |
| 4,200.00 | 4,115.27 | 3,616.76 | 3,479.76 | 15.26 | 15.78 | -164.69 | 455.60 | 620.83 | 1,531.01 | 1,512.71 | 18.30 | 83.659 | |
| 4,300.00 | 4,211.41 | 3,693.29 | 3,549.28 | 15.82 | 16.41 | -164.78 | 475.98 | 645.50 | 1,595.35 | 1,576.53 | 18.81 | 84.792 | |
| 4,400.00 | 4,307.54 | 3,769.82 | 3,618.80 | 16.38 | 17.03 | -164.86 | 496.35 | 670.18 | 1,659.69 | 1,640.36 | 19.33 | 85.854 | |
| 4,500.00 | 4,403.67 | 3,846.36 | 3,688.33 | 16.94 | 17.66 | -164.93 | 516.73 | 694.85 | 1,724.03 | 1,704.18 | 19.85 | 86.854 | |
| 4,600.00 | 4,499.80 | 3,922.89 | 3,757.85 | 17.51 | 18.29 | -165.00 | 537.10 | 719.53 | 1,788.37 | 1,768.00 | 20.37 | 87.797 | |
| 4,700.00 | 4,595.93 | 3,999.42 | 3,827.37 | 18.07 | 18.92 | -165.07 | 557.48 | 744.20 | 1,852.72 | 1,831.83 | 20.89 | 88.687 | |
| 4,800.00 | 4,692.07 | 4,075.95 | 3,896.89 | 18.63 | 19.55 | -165.13 | 577.85 | 768.88 | 1,917.06 | 1,895.65 | 21.41 | 89.526 | |
| 4,900.00 | 4,788.20 | 4,152.49 | 3,966.41 | 19.20 | 20.18 | -165.19 | 598.23 | 793.55 | 1,981.41 | 1,959.47 | 21.94 | 90.321 | |
| 5,000.00 | 4,884.33 | 4,229.02 | 4,035.93 | 19.76 | 20.81 | -165.24 | 618.60 | 818.23 | 2,045.76 | 2,023.29 | 22.46 | 91.073 | |

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

| | | | |
|---------------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Reference Site: | WELD_JESSER 18-2 PAD | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site Error: | 0.00ft | North Reference: | True |
| Reference Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | P_BROWN 5-2S | Database: | EDM 2003.21 Single User Db |
| Reference Design: | PLAN #1 3-16-10 RHS | Offset TVD Reference: | Offset Datum |

| Offset Design WELD_JESSER 18-2 PAD - P_JESSER 28-2 - P_JESSER 28-2 - PLAN #1 3-16-10 RHS | | | | | | | | | | | | Offset Site Error: | 0.00 ft |
|---|---------------------|---------------------|---------------------|----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|---------------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.00 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 | |
| 5,100.00 | 4,980.46 | 4,305.55 | 4,105.46 | 20.33 | 21.45 | -165.29 | 638.98 | 842.90 | 2,110.11 | 2,087.12 | 22.99 | 91.788 | |
| 5,209.79 | 5,086.00 | 4,389.58 | 4,181.78 | 20.95 | 22.14 | -165.35 | 661.35 | 869.99 | 2,180.75 | 2,157.18 | 23.57 | 92.530 | |

| | | | |
|---------------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Reference Site: | WELD_JESSER 18-2 PAD | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site Error: | 0.00ft | North Reference: | True |
| Reference Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | P_BROWN 5-2S | Database: | EDM 2003.21 Single User Db |
| Reference Design: | PLAN #1 3-16-10 RHS | Offset TVD Reference: | Offset Datum |

| Offset Design WELD_JESSER 18-2 PAD - P_JESSER 31-2 - P_JESSER 31-2 - PLAN #1 3-16-10 RHS | | | | | | | | | | | | Offset Site Error: | 0.00 ft |
|--|---------------------|---------------------|---------------------|----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|--------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.00 ft |
| 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 |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -90.00 | 0.00 | -10.07 | 10.07 | | | | |
| 100.00 | 100.00 | 100.00 | 100.00 | 0.10 | 0.10 | -90.00 | 0.00 | -10.07 | 10.07 | 9.88 | 0.19 | 52.725 | |
| 200.00 | 200.00 | 200.00 | 200.00 | 0.32 | 0.32 | -90.00 | 0.00 | -10.07 | 10.07 | 9.43 | 0.64 | 15.725 | |
| 300.00 | 300.00 | 300.00 | 300.00 | 0.55 | 0.55 | -90.00 | 0.00 | -10.07 | 10.07 | 8.98 | 1.09 | 9.240 | |
| 400.00 | 400.00 | 400.00 | 400.00 | 0.77 | 0.77 | -90.00 | 0.00 | -10.07 | 10.07 | 8.53 | 1.54 | 6.542 | |
| 500.00 | 500.00 | 500.00 | 500.00 | 0.99 | 0.99 | -90.00 | 0.00 | -10.07 | 10.07 | 8.08 | 1.99 | 5.064 | |
| 600.00 | 600.00 | 600.00 | 600.00 | 1.22 | 1.22 | -90.00 | 0.00 | -10.07 | 10.07 | 7.63 | 2.44 | 4.131 | |
| 700.00 | 700.00 | 700.00 | 700.00 | 1.44 | 1.44 | -90.00 | 0.00 | -10.07 | 10.07 | 7.18 | 2.89 | 3.488 | |
| 800.00 | 800.00 | 800.00 | 800.00 | 1.67 | 1.67 | -90.00 | 0.00 | -10.07 | 10.07 | 6.74 | 3.34 | 3.018 | |
| 900.00 | 900.00 | 900.00 | 900.00 | 1.89 | 1.89 | -90.00 | 0.00 | -10.07 | 10.07 | 6.29 | 3.79 | 2.660 | |
| 1,000.00 | 1,000.00 | 1,000.00 | 1,000.00 | 2.12 | 2.12 | -90.00 | 0.00 | -10.07 | 10.07 | 5.84 | 4.24 | 2.378 | |
| 1,100.00 | 1,100.00 | 1,100.00 | 1,100.00 | 2.34 | 2.34 | -90.00 | 0.00 | -10.07 | 10.07 | 5.39 | 4.69 | 2.149 | |
| 1,200.00 | 1,200.00 | 1,200.00 | 1,200.00 | 2.57 | 2.57 | -90.00 | 0.00 | -10.07 | 10.07 | 4.94 | 5.14 | 1.961 | |
| 1,300.00 | 1,300.00 | 1,300.00 | 1,300.00 | 2.79 | 2.79 | -90.00 | 0.00 | -10.07 | 10.07 | 4.49 | 5.59 | 1.803 CC, ES, SF | |
| 1,400.00 | 1,399.99 | 1,399.63 | 1,399.61 | 2.99 | 3.00 | 64.95 | -0.15 | -11.80 | 11.19 | 5.20 | 5.99 | 1.868 | |
| 1,500.00 | 1,499.91 | 1,499.10 | 1,498.94 | 3.17 | 3.20 | 75.07 | -0.62 | -16.96 | 14.90 | 8.54 | 6.36 | 2.341 | |
| 1,600.00 | 1,599.69 | 1,598.27 | 1,597.73 | 3.35 | 3.42 | 83.75 | -1.39 | -25.52 | 21.61 | 14.86 | 6.75 | 3.200 | |
| 1,700.00 | 1,699.27 | 1,696.99 | 1,695.72 | 3.55 | 3.65 | 89.45 | -2.45 | -37.43 | 31.38 | 24.21 | 7.16 | 4.379 | |
| 1,800.00 | 1,798.57 | 1,795.12 | 1,792.66 | 3.77 | 3.90 | 92.97 | -3.81 | -52.58 | 44.12 | 36.51 | 7.61 | 5.798 | |
| 1,900.00 | 1,897.54 | 1,892.52 | 1,888.30 | 4.01 | 4.19 | 95.17 | -5.46 | -70.88 | 59.76 | 51.66 | 8.10 | 7.381 | |
| 2,000.00 | 1,996.09 | 1,989.06 | 1,982.43 | 4.28 | 4.52 | 96.56 | -7.37 | -92.21 | 78.21 | 69.57 | 8.64 | 9.055 | |
| 2,100.00 | 2,094.16 | 2,086.54 | 2,076.98 | 4.59 | 4.89 | 97.93 | -9.49 | -115.88 | 98.64 | 89.39 | 9.24 | 10.674 | |
| 2,200.00 | 2,191.70 | 2,184.22 | 2,171.70 | 4.93 | 5.29 | 99.96 | -11.63 | -139.65 | 119.59 | 109.68 | 9.91 | 12.068 | |
| 2,300.00 | 2,288.62 | 2,281.67 | 2,266.19 | 5.32 | 5.70 | 102.35 | -13.75 | -163.36 | 141.21 | 130.57 | 10.64 | 13.274 | |
| 2,365.88 | 2,352.10 | 2,345.70 | 2,328.28 | 5.60 | 5.98 | 104.02 | -15.15 | -178.95 | 155.92 | 144.77 | 11.15 | 13.984 | |
| 2,400.00 | 2,384.90 | 2,378.83 | 2,360.41 | 5.75 | 6.13 | 104.97 | -15.88 | -187.01 | 163.67 | 152.25 | 11.43 | 14.324 | |
| 2,500.00 | 2,481.03 | 2,475.93 | 2,454.56 | 6.21 | 6.57 | 107.29 | -18.00 | -210.64 | 186.59 | 174.34 | 12.25 | 15.227 | |
| 2,600.00 | 2,577.16 | 2,573.02 | 2,548.71 | 6.68 | 7.02 | 109.10 | -20.12 | -234.26 | 209.73 | 196.63 | 13.10 | 16.005 | |
| 2,700.00 | 2,673.30 | 2,670.11 | 2,642.86 | 7.18 | 7.48 | 110.56 | -22.24 | -257.89 | 233.04 | 219.06 | 13.97 | 16.678 | |
| 2,800.00 | 2,769.43 | 2,767.21 | 2,737.01 | 7.68 | 7.95 | 111.75 | -24.36 | -281.52 | 256.46 | 241.60 | 14.86 | 17.263 | |
| 2,900.00 | 2,865.56 | 2,864.30 | 2,831.16 | 8.19 | 8.42 | 112.74 | -26.48 | -305.15 | 279.97 | 264.21 | 15.75 | 17.775 | |
| 3,000.00 | 2,961.69 | 2,961.39 | 2,925.31 | 8.71 | 8.89 | 113.58 | -28.60 | -328.77 | 303.54 | 286.88 | 16.65 | 18.225 | |
| 3,100.00 | 3,057.82 | 3,058.49 | 3,019.46 | 9.24 | 9.37 | 114.29 | -30.71 | -352.40 | 327.17 | 309.60 | 17.57 | 18.623 | |
| 3,200.00 | 3,153.96 | 3,155.58 | 3,113.61 | 9.77 | 9.85 | 114.91 | -32.83 | -376.03 | 350.84 | 332.35 | 18.49 | 18.977 | |
| 3,300.00 | 3,250.09 | 3,252.67 | 3,207.77 | 10.31 | 10.34 | 115.45 | -34.95 | -399.66 | 374.54 | 355.13 | 19.41 | 19.294 | |
| 3,400.00 | 3,346.22 | 3,349.77 | 3,301.92 | 10.85 | 10.83 | 115.93 | -37.07 | -423.28 | 398.27 | 377.93 | 20.34 | 19.578 | |
| 3,500.00 | 3,442.35 | 3,446.86 | 3,396.07 | 11.39 | 11.32 | 116.36 | -39.19 | -446.91 | 422.02 | 400.75 | 21.28 | 19.835 | |
| 3,600.00 | 3,538.48 | 3,543.95 | 3,490.22 | 11.94 | 11.81 | 116.73 | -41.31 | -470.54 | 445.80 | 423.58 | 22.22 | 20.065 | |
| 3,700.00 | 3,634.62 | 3,641.04 | 3,584.37 | 12.49 | 12.30 | 117.07 | -43.43 | -494.16 | 469.59 | 446.42 | 23.16 | 20.272 | |
| 3,800.00 | 3,730.75 | 3,738.14 | 3,678.52 | 13.04 | 12.80 | 117.38 | -45.55 | -517.79 | 493.39 | 469.28 | 24.11 | 20.461 | |
| 3,900.00 | 3,826.88 | 3,835.23 | 3,772.67 | 13.59 | 13.29 | 117.66 | -47.67 | -541.42 | 517.21 | 492.14 | 25.07 | 20.634 | |
| 4,000.00 | 3,923.01 | 3,932.32 | 3,866.82 | 14.15 | 13.79 | 117.92 | -49.79 | -565.05 | 541.03 | 515.01 | 26.02 | 20.793 | |
| 4,100.00 | 4,019.14 | 4,029.42 | 3,960.97 | 14.70 | 14.29 | 118.15 | -51.91 | -588.67 | 564.87 | 537.89 | 26.98 | 20.939 | |
| 4,200.00 | 4,115.27 | 4,126.51 | 4,055.12 | 15.26 | 14.79 | 118.36 | -54.03 | -612.30 | 588.71 | 560.78 | 27.94 | 21.074 | |
| 4,300.00 | 4,211.41 | 4,223.60 | 4,149.27 | 15.82 | 15.29 | 118.56 | -56.15 | -635.93 | 612.57 | 583.67 | 28.90 | 21.199 | |
| 4,400.00 | 4,307.54 | 4,320.70 | 4,243.42 | 16.38 | 15.79 | 118.74 | -58.27 | -659.56 | 636.42 | 606.57 | 29.86 | 21.315 | |
| 4,500.00 | 4,403.67 | 4,417.79 | 4,337.57 | 16.94 | 16.29 | 118.91 | -60.39 | -683.18 | 660.29 | 629.47 | 30.82 | 21.423 | |
| 4,600.00 | 4,499.80 | 4,514.88 | 4,431.72 | 17.51 | 16.79 | 119.07 | -62.51 | -706.81 | 684.15 | 652.37 | 31.79 | 21.524 | |
| 4,700.00 | 4,595.93 | 4,611.98 | 4,525.87 | 18.07 | 17.30 | 119.22 | -64.63 | -730.44 | 708.03 | 675.28 | 32.75 | 21.618 | |
| 4,800.00 | 4,692.07 | 4,709.07 | 4,620.02 | 18.63 | 17.80 | 119.36 | -66.75 | -754.07 | 731.91 | 698.19 | 33.72 | 21.706 | |
| 4,900.00 | 4,788.20 | 4,806.16 | 4,714.17 | 19.20 | 18.30 | 119.48 | -68.87 | -777.69 | 755.79 | 721.10 | 34.69 | 21.788 | |
| 5,000.00 | 4,884.33 | 4,903.25 | 4,808.32 | 19.76 | 18.81 | 119.61 | -70.99 | -801.32 | 779.67 | 744.01 | 35.66 | 21.866 | |

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

| | | | |
|---------------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Reference Site: | WELD_JESSER 18-2 PAD | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site Error: | 0.00ft | North Reference: | True |
| Reference Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | P_BROWN 5-2S | Database: | EDM 2003.21 Single User Db |
| Reference Design: | PLAN #1 3-16-10 RHS | Offset TVD Reference: | Offset Datum |

| Offset Design WELD_JESSER 18-2 PAD - P_JESSER 31-2 - P_JESSER 31-2 - PLAN #1 3-16-10 RHS | | | | | | | | | | | | Offset Site Error: | 0.00 ft |
|---|------------------------|------------------------|------------------------|-------------------|----------------|-----------------------------|---|---------------|----------------------------|-----------------------------|-------------------------------|---------------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.00 ft |
| 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 |
| 5,100.00 | 4,980.46 | 5,000.35 | 4,902.47 | 20.33 | 19.31 | 119.72 | -73.11 | -824.95 | 803.56 | 766.93 | 36.63 | 21.939 | |
| 5,209.79 | 5,086.00 | 5,106.94 | 5,005.84 | 20.95 | 19.87 | 119.84 | -75.44 | -850.89 | 829.79 | 792.09 | 37.69 | 22.015 | |

| | | | |
|---------------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Reference Site: | WELD_JESSER 18-2 PAD | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site Error: | 0.00ft | North Reference: | True |
| Reference Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | P_BROWN 5-2S | Database: | EDM 2003.21 Single User Db |
| Reference Design: | PLAN #1 3-16-10 RHS | Offset TVD Reference: | Offset Datum |

| Offset Design WELD_JESSER 18-2 PAD - P_JESSER 4-2S - P_JESSER 4-2S - PLAN #1 3-16-10 RHS | | | | | | | | | | | | Offset Site Error: | 0.00 ft |
|--|---------------------|---------------------|---------------------|----------------|-------------|--|--------------------------------------|------------|----------------------|-----------------------|-------------------------|--------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.00 ft |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Semi Major Axis Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 89.48 | 0.36 | 40.01 | 40.01 | | | | |
| 100.00 | 100.00 | 100.00 | 100.00 | 0.10 | 0.10 | 89.48 | 0.36 | 40.01 | 40.01 | 39.82 | 0.19 | 209.443 | |
| 200.00 | 200.00 | 200.00 | 200.00 | 0.32 | 0.32 | 89.48 | 0.36 | 40.01 | 40.01 | 39.37 | 0.64 | 62.465 | |
| 300.00 | 300.00 | 300.00 | 300.00 | 0.55 | 0.55 | 89.48 | 0.36 | 40.01 | 40.01 | 38.92 | 1.09 | 36.706 | |
| 400.00 | 400.00 | 400.00 | 400.00 | 0.77 | 0.77 | 89.48 | 0.36 | 40.01 | 40.01 | 38.47 | 1.54 | 25.989 | |
| 500.00 | 500.00 | 500.00 | 500.00 | 0.99 | 0.99 | 89.48 | 0.36 | 40.01 | 40.01 | 38.03 | 1.99 | 20.116 | |
| 600.00 | 600.00 | 600.00 | 600.00 | 1.22 | 1.22 | 89.48 | 0.36 | 40.01 | 40.01 | 37.58 | 2.44 | 16.408 | |
| 700.00 | 700.00 | 700.00 | 700.00 | 1.44 | 1.44 | 89.48 | 0.36 | 40.01 | 40.01 | 37.13 | 2.89 | 13.854 | |
| 800.00 | 800.00 | 800.00 | 800.00 | 1.67 | 1.67 | 89.48 | 0.36 | 40.01 | 40.01 | 36.68 | 3.34 | 11.988 | |
| 900.00 | 900.00 | 900.00 | 900.00 | 1.89 | 1.89 | 89.48 | 0.36 | 40.01 | 40.01 | 36.23 | 3.79 | 10.565 | |
| 1,000.00 | 1,000.00 | 1,000.00 | 1,000.00 | 2.12 | 2.12 | 89.48 | 0.36 | 40.01 | 40.01 | 35.78 | 4.24 | 9.444 | |
| 1,100.00 | 1,100.00 | 1,100.00 | 1,100.00 | 2.34 | 2.34 | 89.48 | 0.36 | 40.01 | 40.01 | 35.33 | 4.69 | 8.538 | |
| 1,200.00 | 1,200.00 | 1,200.00 | 1,200.00 | 2.57 | 2.57 | 89.48 | 0.36 | 40.01 | 40.01 | 34.88 | 5.14 | 7.791 | |
| 1,300.00 | 1,300.00 | 1,300.00 | 1,300.00 | 2.79 | 2.79 | 89.48 | 0.36 | 40.01 | 40.01 | 34.43 | 5.59 | 7.164 | |
| 1,400.00 | 1,399.99 | 1,400.89 | 1,400.88 | 2.99 | 3.01 | -123.14 | 1.00 | 38.84 | 39.57 | 33.56 | 6.00 | 6.592 | |
| 1,500.00 | 1,499.91 | 1,501.57 | 1,501.48 | 3.17 | 3.23 | -131.17 | 2.91 | 35.34 | 38.72 | 32.33 | 6.39 | 6.060 | |
| 1,540.15 | 1,539.99 | 1,541.90 | 1,541.73 | 3.24 | 3.32 | -135.99 | 4.03 | 33.29 | 38.58 | 32.03 | 6.55 | 5.892 CC, ES | |
| 1,600.00 | 1,599.69 | 1,601.85 | 1,601.54 | 3.35 | 3.45 | -144.72 | 6.07 | 29.55 | 39.04 | 32.25 | 6.78 | 5.756 SF | |
| 1,700.00 | 1,699.27 | 1,701.53 | 1,700.79 | 3.55 | 3.68 | -161.79 | 10.45 | 21.50 | 42.90 | 35.72 | 7.18 | 5.973 | |
| 1,800.00 | 1,798.57 | 1,800.40 | 1,798.97 | 3.77 | 3.92 | -178.08 | 16.03 | 11.27 | 52.23 | 44.63 | 7.60 | 6.874 | |
| 1,900.00 | 1,897.54 | 1,898.30 | 1,895.86 | 4.01 | 4.18 | -169.31 | 22.74 | -1.05 | 67.34 | 59.31 | 8.03 | 8.383 | |
| 2,000.00 | 1,996.09 | 1,995.04 | 1,991.21 | 4.28 | 4.46 | 160.44 | 30.54 | -15.36 | 87.65 | 79.16 | 8.50 | 10.314 | |
| 2,100.00 | 2,094.16 | 2,090.46 | 2,084.83 | 4.59 | 4.77 | 154.28 | 39.37 | -31.55 | 112.49 | 103.49 | 8.99 | 12.507 | |
| 2,200.00 | 2,191.70 | 2,185.02 | 2,177.16 | 4.93 | 5.09 | 149.95 | 49.13 | -49.47 | 141.30 | 131.78 | 9.52 | 14.840 | |
| 2,300.00 | 2,288.62 | 2,279.69 | 2,269.50 | 5.32 | 5.45 | 147.29 | 59.12 | -67.80 | 172.89 | 162.81 | 10.08 | 17.153 | |
| 2,365.88 | 2,352.10 | 2,341.71 | 2,329.99 | 5.60 | 5.68 | 146.19 | 65.67 | -79.80 | 194.94 | 184.48 | 10.46 | 18.639 | |
| 2,400.00 | 2,384.90 | 2,373.75 | 2,361.25 | 5.75 | 5.81 | 145.84 | 69.05 | -86.01 | 206.60 | 195.92 | 10.67 | 19.354 | |
| 2,500.00 | 2,481.03 | 2,467.67 | 2,452.85 | 6.21 | 6.18 | 145.02 | 78.96 | -104.19 | 240.81 | 229.49 | 11.32 | 21.268 | |
| 2,600.00 | 2,577.16 | 2,561.59 | 2,544.46 | 6.68 | 6.56 | 144.40 | 88.87 | -122.38 | 275.05 | 263.07 | 11.99 | 22.942 | |
| 2,700.00 | 2,673.30 | 2,655.51 | 2,636.07 | 7.18 | 6.95 | 143.92 | 98.78 | -140.56 | 309.32 | 296.65 | 12.67 | 24.411 | |
| 2,800.00 | 2,769.43 | 2,749.42 | 2,727.67 | 7.68 | 7.35 | 143.54 | 108.69 | -158.74 | 343.60 | 330.24 | 13.37 | 25.705 | |
| 2,900.00 | 2,865.56 | 2,843.34 | 2,819.28 | 8.19 | 7.75 | 143.22 | 118.60 | -176.93 | 377.89 | 363.82 | 14.07 | 26.850 | |
| 3,000.00 | 2,961.69 | 2,937.26 | 2,910.89 | 8.71 | 8.16 | 142.96 | 128.51 | -195.11 | 412.20 | 397.40 | 14.79 | 27.868 | |
| 3,100.00 | 3,057.82 | 3,031.18 | 3,002.49 | 9.24 | 8.57 | 142.74 | 138.42 | -213.30 | 446.50 | 430.99 | 15.52 | 28.775 | |
| 3,200.00 | 3,153.96 | 3,125.10 | 3,094.10 | 9.77 | 8.99 | 142.55 | 148.33 | -231.48 | 480.82 | 464.57 | 16.25 | 29.589 | |
| 3,300.00 | 3,250.09 | 3,219.01 | 3,185.70 | 10.31 | 9.41 | 142.38 | 158.24 | -249.66 | 515.13 | 498.14 | 16.99 | 30.321 | |
| 3,400.00 | 3,346.22 | 3,312.93 | 3,277.31 | 10.85 | 9.83 | 142.24 | 168.15 | -267.85 | 549.45 | 531.72 | 17.73 | 30.983 | |
| 3,500.00 | 3,442.35 | 3,406.85 | 3,368.92 | 11.39 | 10.25 | 142.11 | 178.06 | -286.03 | 583.77 | 565.29 | 18.48 | 31.583 | |
| 3,600.00 | 3,538.48 | 3,500.77 | 3,460.52 | 11.94 | 10.68 | 142.00 | 187.97 | -304.21 | 618.10 | 598.86 | 19.24 | 32.129 | |
| 3,700.00 | 3,634.62 | 3,594.69 | 3,552.13 | 12.49 | 11.10 | 141.90 | 197.88 | -322.40 | 652.43 | 632.43 | 20.00 | 32.628 | |
| 3,800.00 | 3,730.75 | 3,688.60 | 3,643.74 | 13.04 | 11.53 | 141.80 | 207.79 | -340.58 | 686.75 | 666.00 | 20.76 | 33.084 | |
| 3,900.00 | 3,826.88 | 3,782.52 | 3,735.34 | 13.59 | 11.96 | 141.72 | 217.70 | -358.77 | 721.08 | 699.56 | 21.52 | 33.504 | |
| 4,000.00 | 3,923.01 | 3,876.44 | 3,826.95 | 14.15 | 12.39 | 141.65 | 227.61 | -376.95 | 755.42 | 733.13 | 22.29 | 33.891 | |
| 4,100.00 | 4,019.14 | 3,970.36 | 3,918.55 | 14.70 | 12.82 | 141.58 | 237.52 | -395.13 | 789.75 | 766.69 | 23.06 | 34.248 | |
| 4,200.00 | 4,115.27 | 4,064.27 | 4,010.16 | 15.26 | 13.26 | 141.51 | 247.43 | -413.32 | 824.08 | 800.25 | 23.83 | 34.580 | |
| 4,300.00 | 4,211.41 | 4,158.19 | 4,101.77 | 15.82 | 13.69 | 141.46 | 257.34 | -431.50 | 858.41 | 833.81 | 24.61 | 34.887 | |
| 4,400.00 | 4,307.54 | 4,252.11 | 4,193.37 | 16.38 | 14.13 | 141.40 | 267.25 | -449.68 | 892.75 | 867.37 | 25.38 | 35.174 | |
| 4,500.00 | 4,403.67 | 4,346.03 | 4,284.98 | 16.94 | 14.56 | 141.35 | 277.16 | -467.87 | 927.08 | 900.93 | 26.16 | 35.441 | |
| 4,600.00 | 4,499.80 | 4,439.95 | 4,376.58 | 17.51 | 15.00 | 141.31 | 287.07 | -486.05 | 961.42 | 934.48 | 26.94 | 35.691 | |
| 4,700.00 | 4,595.93 | 4,533.86 | 4,468.19 | 18.07 | 15.44 | 141.27 | 296.98 | -504.24 | 995.76 | 968.04 | 27.72 | 35.924 | |
| 4,800.00 | 4,692.07 | 4,627.78 | 4,559.80 | 18.63 | 15.88 | 141.23 | 306.89 | -522.42 | 1,030.09 | 1,001.59 | 28.50 | 36.144 | |
| 4,900.00 | 4,788.20 | 4,721.70 | 4,651.40 | 19.20 | 16.32 | 141.19 | 316.80 | -540.60 | 1,064.43 | 1,035.15 | 29.28 | 36.350 | |

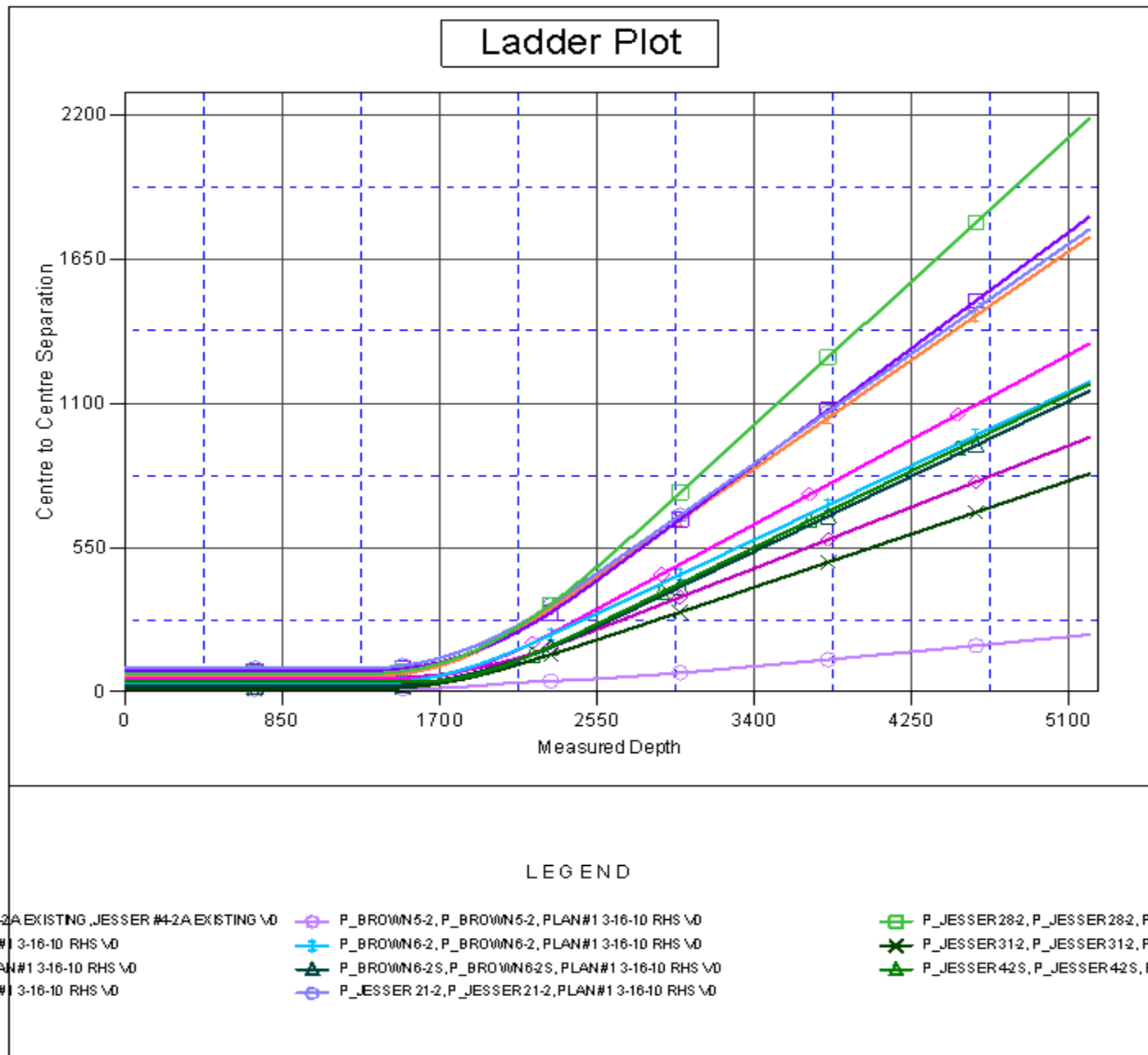
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

| | | | |
|---------------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Reference Site: | WELD_JESSER 18-2 PAD | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site Error: | 0.00ft | North Reference: | True |
| Reference Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | P_BROWN 5-2S | Database: | EDM 2003.21 Single User Db |
| Reference Design: | PLAN #1 3-16-10 RHS | Offset TVD Reference: | Offset Datum |

| Offset Design WELD_JESSER 18-2 PAD - P_JESSER 4-2S - P_JESSER 4-2S - PLAN #1 3-16-10 RHS | | | | | | | | | | | | Offset Site Error: | 0.00 ft |
|---|------------------------|------------------------|------------------------|-------------------|----------------|-----------------------------|---|---------------|----------------------------|-----------------------------|-------------------------------|---------------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.00 ft |
| 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 |
| 5,000.00 | 4,884.33 | 4,815.62 | 4,743.01 | 19.76 | 16.75 | 141.15 | 326.71 | -558.79 | 1,098.77 | 1,068.70 | 30.07 | 36.545 | |
| 5,100.00 | 4,980.46 | 4,909.53 | 4,834.62 | 20.33 | 17.19 | 141.12 | 336.62 | -576.97 | 1,133.10 | 1,102.25 | 30.85 | 36.728 | |
| 5,209.79 | 5,086.00 | 5,012.64 | 4,935.19 | 20.95 | 17.68 | 141.09 | 347.50 | -596.93 | 1,170.80 | 1,139.09 | 31.71 | 36.917 | |

| | | | |
|---------------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Reference Site: | WELD_JESSER 18-2 PAD | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site Error: | 0.00ft | North Reference: | True |
| Reference Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | P_BROWN 5-2S | Database: | EDM 2003.21 Single User Db |
| Reference Design: | PLAN #1 3-16-10 RHS | Offset TVD Reference: | Offset Datum |

Reference Depths are relative to WELL @ 5158.00ft (Original Well Elev) Coordinates are relative to: P_BROWN 5-2S
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is 105° 30' 0.000 W ° Grid Convergence at Surface is: 0.48°



| | | | |
|---------------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well P_BROWN 5-2S |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Reference Site: | WELD_JESSER 18-2 PAD | MD Reference: | WELL @ 5158.00ft (Original Well Elev) |
| Site Error: | 0.00ft | North Reference: | True |
| Reference Well: | P_BROWN 5-2S | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | P_BROWN 5-2S | Database: | EDM 2003.21 Single User Db |
| Reference Design: | PLAN #1 3-16-10 RHS | Offset TVD Reference: | Offset Datum |

Reference Depths are relative to WELL @ 5158.00ft (Original Well Elev) Coordinates are relative to: P_BROWN 5-2S
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is 105° 30' 0.000 W ° Grid Convergence at Surface is: 0.48°

