# PETROLEUM DEVELOPMENT CORP DJ Basin

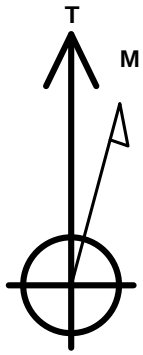
Well Name: **Bihain 26F-232**
Surface Location: Bihain 5N64W26GK Pad Sec.26-T5N-R64W
North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
Ground Elevation: 4604.0

| +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Slot |
|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 1379552.96 | 3271716.10 | 40.371173 | -104.524790 | |

RKB - 13' WELL @ 4617.0ft (RKB - 13')

## DESIGN TARGET DETAILS

| Name | TVD | +N/-S | +E/-W | Shape |
|---|---|---|---|---|
| SHL 2350'FNL & 450'FWL, Sec.26 | 1.0 | 0.0 | 0.0 | Point |
| BHL 1645'FNL & 2140'FWL, Sec.25 | 6518.0 | 654.9 | 6965.6 | Point |



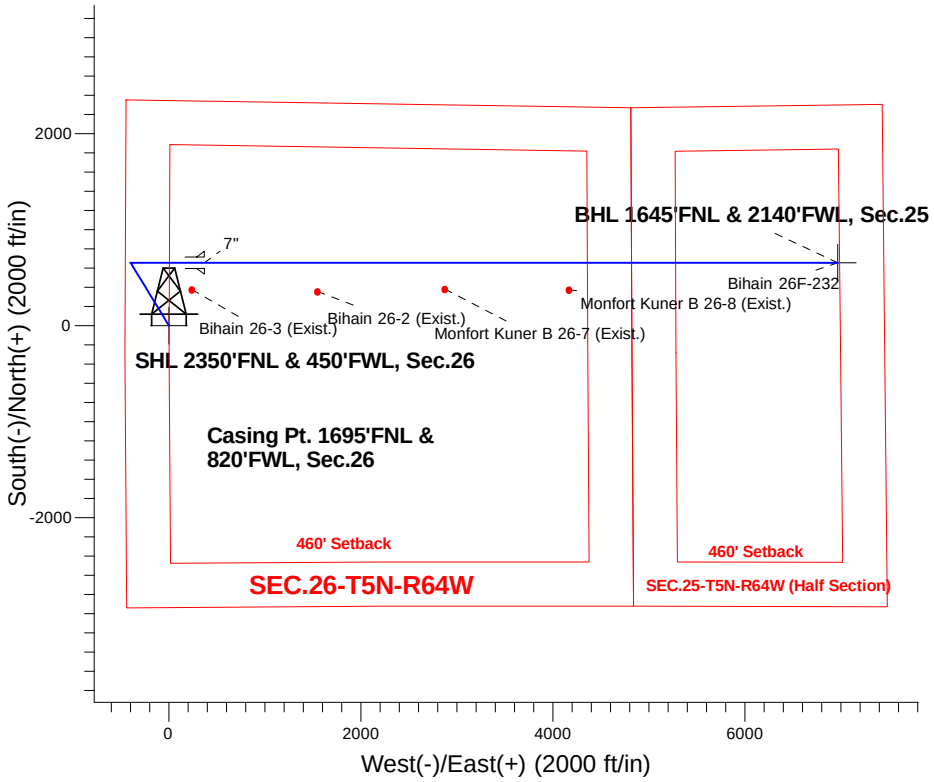

Azimuths to True North
Magnetic North: 8.14°

Magnetic Field
Strength: 52680.9snT
Dip Angle: 66.91°
Date: 11/2/2015
Model: IGRF2010

Bihain 5N64W26GK Pad Sec.26-T5N-R64W
Bihain 26F-232
Plan #1 (11-2-15)
14:09, November 04 2015

## ANNOTATIONS

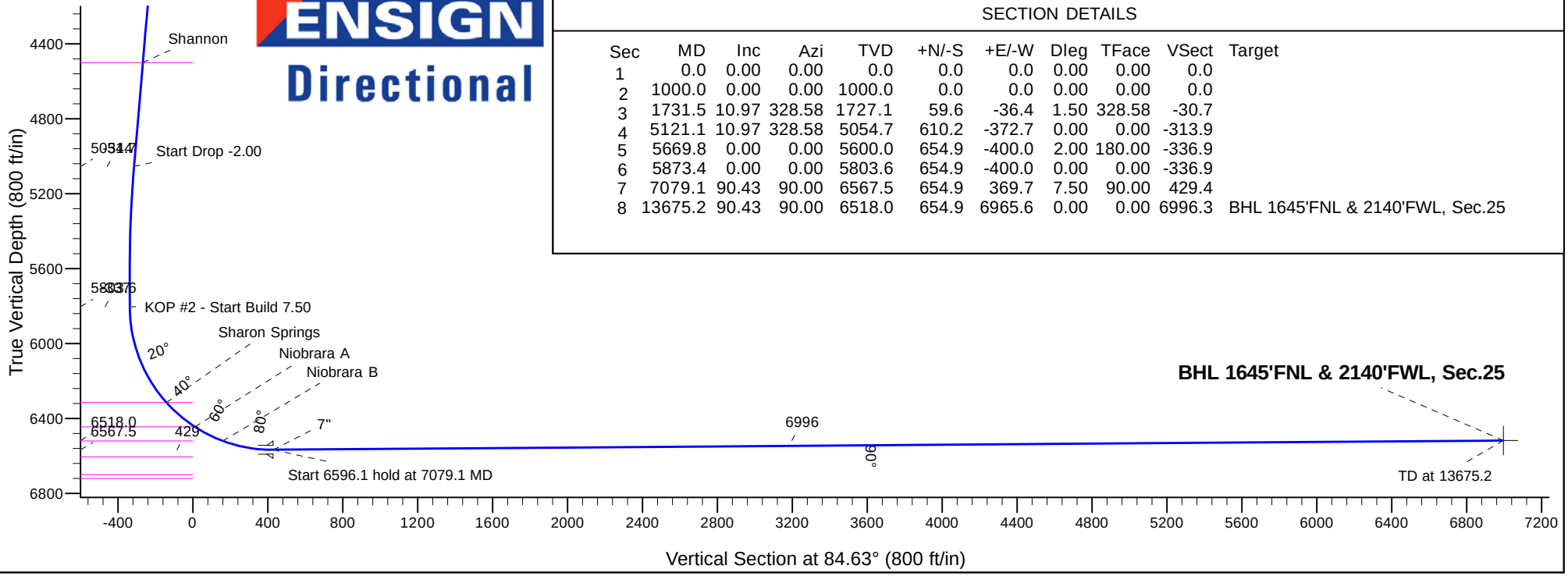
| TVD | MD | Annotation |
|---|---|---|
| 1000.0 | 1000.0 | KOP - Start Build 1.50 |
| 5054.7 | 5121.1 | Start Drop -2.00 |
| 5803.6 | 5873.4 | KOP #2 - Start Build 7.50 |
| 6567.5 | 7079.1 | Start 6596.1 hold at 7079.1 MD |
| 6518.0 | 13675.2 | TD at 13675.2 |




ENSIGN Directional

## SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | DIeg | TFace | VSect | Target |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | |
| 2 | 1000.0 | 0.00 | 0.00 | 1000.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | |
| 3 | 1731.5 | 10.97 | 328.58 | 1727.1 | 59.6 | -36.4 | 1.50 | 328.58 | -30.7 | |
| 4 | 5121.1 | 10.97 | 328.58 | 5054.7 | 610.2 | -372.7 | 0.00 | 0.00 | -313.9 | |
| 5 | 5669.8 | 0.00 | 0.00 | 5600.0 | 654.9 | -400.0 | 2.00 | 180.00 | -336.9 | |
| 6 | 5873.4 | 0.00 | 0.00 | 5803.6 | 654.9 | -400.0 | 0.00 | 0.00 | -336.9 | |
| 7 | 7079.1 | 90.43 | 90.00 | 6567.5 | 654.9 | 369.7 | 7.50 | 90.00 | 429.4 | |
| 8 | 13675.2 | 90.43 | 90.00 | 6518.0 | 654.9 | 6965.6 | 0.00 | 0.00 | 6996.3 | BHL 1645'FNL & 2140'FWL, Sec.25 |



ENSIGN Directional

# PETROLEUM DEVELOPMENT CORP DJ Basin

**SEC.26-T5N-R64W**
**Bihain 5N64W26GK Pad Sec.26-T5N-R64W**
**Bihain 26F-232**

**Wellbore #1**

**Plan: Plan #1 (11-2-15)**

# Standard Planning Report

**04 November, 2015**

PDC ENERGY
Growing E&P Value

| | | | |
|---|---|---|---|
| **Database:** | US_EDM | **Local Co-ordinate Reference:** | Well Bihain 26F-232 |
| **Company:** | PETROLEUM DEVELOPMENT CORP DJ Basin | **TVD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Project:** | SEC.26-T5N-R64W | **MD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Site:** | Bihain 5N64W26GK Pad Sec.26-T5N-R64W | **North Reference:** | True |
| **Well:** | Bihain 26F-232 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Plan #1 (11-2-15) | | |

**Project** SEC.26-T5N-R64W, Weld County, CO

| | | | |
|---|---|---|---|
| **Map System:** | US State Plane 1983 | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | North American Datum 1983 | | Using Well Reference Point |
| **Map Zone:** | Colorado Northern Zone | | Using geodetic scale factor |

**Site** Bihain 5N64W26GK Pad Sec.26-T5N-R64W

| | | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 1,379,524.57 usft | **Latitude:** | 40.371094 |
| **From:** | Lat/Long | **Easting:** | 3,271,750.97 usft | **Longitude:** | -104.524666 |
| **Position Uncertainty:** | 0.0 ft | **Slot Radius:** | 13-3/16 " | **Grid Convergence:** | 0.63 ° |

**Well** Bihain 26F-232

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 28.8 ft | **Northing:** | 1,379,552.96 usft | **Latitude:** | 40.371173 |
| | **+E/-W** | -34.6 ft | **Easting:** | 3,271,716.10 usft | **Longitude:** | -104.524790 |
| **Position Uncertainty** | | 0.0 ft | **Wellhead Elevation:** | 0.0 ft | **Ground Level:** | 4,604.0 ft |

**Wellbore** Wellbore #1

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|---|---|---|---|---|---|
| | IGRF2010 | 11/2/2015 | 8.14 | 66.91 | 52,681 |

**Design** Plan #1 (11-2-15)

**Audit Notes:**

| | | | | | |
|---|---|---|---|---|---|
| **Version:** | | **Phase:** | PROTOTYPE | **Tie On Depth:** | 0.0 |

| Vertical Section: | Depth From (TVD) (ft) | +N/-S (ft) | +E/-W (ft) | Direction (°) |
|---|---|---|---|---|
| | 0.0 | 0.0 | 0.0 | 84.63 |

**Plan Sections**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | TFO (°) | Target |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,000.0 | 0.00 | 0.00 | 1,000.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,731.5 | 10.97 | 328.58 | 1,727.1 | 59.6 | -36.4 | 1.50 | 1.50 | 0.00 | 328.58 | |
| 5,121.1 | 10.97 | 328.58 | 5,054.7 | 610.2 | -372.7 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5,669.8 | 0.00 | 0.00 | 5,600.0 | 654.9 | -400.0 | 2.00 | -2.00 | 0.00 | 180.00 | |
| 5,873.4 | 0.00 | 0.00 | 5,803.6 | 654.9 | -400.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 7,079.1 | 90.43 | 90.00 | 6,567.5 | 654.9 | 369.7 | 7.50 | 7.50 | 0.00 | 90.00 | |
| 13,675.2 | 90.43 | 90.00 | 6,518.0 | 654.9 | 6,965.6 | 0.00 | 0.00 | 0.00 | 0.00 | BHL 1645'FNL & 214( |

| | | | |
|---|---|---|---|
| **Database:** | US_EDM | **Local Co-ordinate Reference:** | Well Bihain 26F-232 |
| **Company:** | PETROLEUM DEVELOPMENT CORP DJ Basin | **TVD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Project:** | SEC.26-T5N-R64W | **MD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Site:** | Bihain 5N64W26GK Pad Sec.26-T5N-R64W | **North Reference:** | True |
| **Well:** | Bihain 26F-232 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Plan #1 (11-2-15) | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1.0 | 0.00 | 0.00 | 1.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| **SHL 2350'FNL & 450'FWL, Sec.26** | | | | | | | | | |
| 100.0 | 0.00 | 0.00 | 100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 200.0 | 0.00 | 0.00 | 200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 300.0 | 0.00 | 0.00 | 300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 400.0 | 0.00 | 0.00 | 400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 500.0 | 0.00 | 0.00 | 500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 600.0 | 0.00 | 0.00 | 600.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 700.0 | 0.00 | 0.00 | 700.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 800.0 | 0.00 | 0.00 | 800.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 900.0 | 0.00 | 0.00 | 900.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,000.0 | 0.00 | 0.00 | 1,000.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| **KOP - Start Build 1.50** | | | | | | | | | |
| 1,100.0 | 1.50 | 328.58 | 1,100.0 | 1.1 | -0.7 | -0.6 | 1.50 | 1.50 | 0.00 |
| 1,200.0 | 3.00 | 328.58 | 1,199.9 | 4.5 | -2.7 | -2.3 | 1.50 | 1.50 | 0.00 |
| 1,300.0 | 4.50 | 328.58 | 1,299.7 | 10.0 | -6.1 | -5.2 | 1.50 | 1.50 | 0.00 |
| 1,400.0 | 6.00 | 328.58 | 1,399.3 | 17.9 | -10.9 | -9.2 | 1.50 | 1.50 | 0.00 |
| 1,500.0 | 7.50 | 328.58 | 1,498.6 | 27.9 | -17.0 | -14.3 | 1.50 | 1.50 | 0.00 |
| 1,600.0 | 9.00 | 328.58 | 1,597.5 | 40.1 | -24.5 | -20.6 | 1.50 | 1.50 | 0.00 |
| 1,700.0 | 10.50 | 328.58 | 1,696.1 | 54.6 | -33.3 | -28.1 | 1.50 | 1.50 | 0.00 |
| 1,731.5 | 10.97 | 328.58 | 1,727.1 | 59.6 | -36.4 | -30.7 | 1.50 | 1.50 | 0.00 |
| 1,800.0 | 10.97 | 328.58 | 1,794.3 | 70.7 | -43.2 | -36.4 | 0.00 | 0.00 | 0.00 |
| 1,900.0 | 10.97 | 328.58 | 1,892.5 | 87.0 | -53.1 | -44.7 | 0.00 | 0.00 | 0.00 |
| 2,000.0 | 10.97 | 328.58 | 1,990.6 | 103.2 | -63.0 | -53.1 | 0.00 | 0.00 | 0.00 |
| 2,100.0 | 10.97 | 328.58 | 2,088.8 | 119.5 | -73.0 | -61.5 | 0.00 | 0.00 | 0.00 |
| 2,200.0 | 10.97 | 328.58 | 2,187.0 | 135.7 | -82.9 | -69.8 | 0.00 | 0.00 | 0.00 |
| 2,300.0 | 10.97 | 328.58 | 2,285.1 | 151.9 | -92.8 | -78.2 | 0.00 | 0.00 | 0.00 |
| 2,400.0 | 10.97 | 328.58 | 2,383.3 | 168.2 | -102.7 | -86.5 | 0.00 | 0.00 | 0.00 |
| 2,500.0 | 10.97 | 328.58 | 2,481.5 | 184.4 | -112.6 | -94.9 | 0.00 | 0.00 | 0.00 |
| 2,600.0 | 10.97 | 328.58 | 2,579.7 | 200.7 | -122.6 | -103.2 | 0.00 | 0.00 | 0.00 |
| 2,700.0 | 10.97 | 328.58 | 2,677.8 | 216.9 | -132.5 | -111.6 | 0.00 | 0.00 | 0.00 |
| 2,800.0 | 10.97 | 328.58 | 2,776.0 | 233.2 | -142.4 | -120.0 | 0.00 | 0.00 | 0.00 |
| 2,900.0 | 10.97 | 328.58 | 2,874.2 | 249.4 | -152.3 | -128.3 | 0.00 | 0.00 | 0.00 |
| 3,000.0 | 10.97 | 328.58 | 2,972.3 | 265.6 | -162.3 | -136.7 | 0.00 | 0.00 | 0.00 |
| 3,100.0 | 10.97 | 328.58 | 3,070.5 | 281.9 | -172.2 | -145.0 | 0.00 | 0.00 | 0.00 |
| 3,200.0 | 10.97 | 328.58 | 3,168.7 | 298.1 | -182.1 | -153.4 | 0.00 | 0.00 | 0.00 |
| 3,300.0 | 10.97 | 328.58 | 3,266.9 | 314.4 | -192.0 | -161.7 | 0.00 | 0.00 | 0.00 |
| 3,400.0 | 10.97 | 328.58 | 3,365.0 | 330.6 | -201.9 | -170.1 | 0.00 | 0.00 | 0.00 |
| 3,435.6 | 10.97 | 328.58 | 3,400.0 | 336.4 | -205.5 | -173.1 | 0.00 | 0.00 | 0.00 |
| **Parkman** | | | | | | | | | |
| 3,500.0 | 10.97 | 328.58 | 3,463.2 | 346.9 | -211.9 | -178.5 | 0.00 | 0.00 | 0.00 |
| 3,600.0 | 10.97 | 328.58 | 3,561.4 | 363.1 | -221.8 | -186.8 | 0.00 | 0.00 | 0.00 |
| 3,700.0 | 10.97 | 328.58 | 3,659.5 | 379.4 | -231.7 | -195.2 | 0.00 | 0.00 | 0.00 |
| 3,800.0 | 10.97 | 328.58 | 3,757.7 | 395.6 | -241.6 | -203.5 | 0.00 | 0.00 | 0.00 |
| 3,900.0 | 10.97 | 328.58 | 3,855.9 | 411.8 | -251.5 | -211.9 | 0.00 | 0.00 | 0.00 |
| 4,000.0 | 10.97 | 328.58 | 3,954.1 | 428.1 | -261.5 | -220.2 | 0.00 | 0.00 | 0.00 |
| 4,100.0 | 10.97 | 328.58 | 4,052.2 | 444.3 | -271.4 | -228.6 | 0.00 | 0.00 | 0.00 |
| 4,153.7 | 10.97 | 328.58 | 4,105.0 | 453.1 | -276.7 | -233.1 | 0.00 | 0.00 | 0.00 |
| **Sussex** | | | | | | | | | |
| 4,200.0 | 10.97 | 328.58 | 4,150.4 | 460.6 | -281.3 | -237.0 | 0.00 | 0.00 | 0.00 |
| 4,300.0 | 10.97 | 328.58 | 4,248.6 | 476.8 | -291.2 | -245.3 | 0.00 | 0.00 | 0.00 |
| 4,400.0 | 10.97 | 328.58 | 4,346.8 | 493.1 | -301.2 | -253.7 | 0.00 | 0.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | US_EDM | **Local Co-ordinate Reference:** | Well Bihain 26F-232 |
| **Company:** | PETROLEUM DEVELOPMENT CORP DJ Basin | **TVD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Project:** | SEC.26-T5N-R64W | **MD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Site:** | Bihain 5N64W26GK Pad Sec.26-T5N-R64W | **North Reference:** | True |
| **Well:** | Bihain 26F-232 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Plan #1 (11-2-15) | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 4,500.0 | 10.97 | 328.58 | 4,444.9 | 509.3 | -311.1 | -262.0 | 0.00 | 0.00 | 0.00 |
| 4,556.1 | 10.97 | 328.58 | 4,500.0 | 518.4 | -316.6 | -266.7 | 0.00 | 0.00 | 0.00 |
| **Shannon** | | | | | | | | | |
| 4,600.0 | 10.97 | 328.58 | 4,543.1 | 525.5 | -321.0 | -270.4 | 0.00 | 0.00 | 0.00 |
| 4,700.0 | 10.97 | 328.58 | 4,641.3 | 541.8 | -330.9 | -278.7 | 0.00 | 0.00 | 0.00 |
| 4,800.0 | 10.97 | 328.58 | 4,739.4 | 558.0 | -340.8 | -287.1 | 0.00 | 0.00 | 0.00 |
| 4,900.0 | 10.97 | 328.58 | 4,837.6 | 574.3 | -350.8 | -295.5 | 0.00 | 0.00 | 0.00 |
| 5,000.0 | 10.97 | 328.58 | 4,935.8 | 590.5 | -360.7 | -303.8 | 0.00 | 0.00 | 0.00 |
| 5,100.0 | 10.97 | 328.58 | 5,034.0 | 606.8 | -370.6 | -312.2 | 0.00 | 0.00 | 0.00 |
| 5,121.1 | 10.97 | 328.58 | 5,054.7 | 610.2 | -372.7 | -313.9 | 0.00 | 0.00 | 0.00 |
| **Start Drop -2.00** | | | | | | | | | |
| 5,200.0 | 9.40 | 328.58 | 5,132.3 | 622.1 | -380.0 | -320.1 | 2.00 | -2.00 | 0.00 |
| 5,300.0 | 7.40 | 328.58 | 5,231.2 | 634.6 | -387.6 | -326.5 | 2.00 | -2.00 | 0.00 |
| 5,400.0 | 5.40 | 328.58 | 5,330.6 | 644.1 | -393.4 | -331.4 | 2.00 | -2.00 | 0.00 |
| 5,500.0 | 3.40 | 328.58 | 5,430.3 | 650.6 | -397.4 | -334.7 | 2.00 | -2.00 | 0.00 |
| 5,600.0 | 1.40 | 328.58 | 5,530.2 | 654.2 | -399.6 | -336.6 | 2.00 | -2.00 | 0.00 |
| 5,669.8 | 0.00 | 0.00 | 5,600.0 | 654.9 | -400.0 | -336.9 | 2.00 | -2.00 | 0.00 |
| 5,700.0 | 0.00 | 0.00 | 5,630.2 | 654.9 | -400.0 | -336.9 | 0.00 | 0.00 | 0.00 |
| 5,800.0 | 0.00 | 0.00 | 5,730.2 | 654.9 | -400.0 | -336.9 | 0.00 | 0.00 | 0.00 |
| 5,873.4 | 0.00 | 0.00 | 5,803.6 | 654.9 | -400.0 | -336.9 | 0.00 | 0.00 | 0.00 |
| **KOP #2 - Start Build 7.50** | | | | | | | | | |
| 5,900.0 | 2.00 | 90.00 | 5,830.2 | 654.9 | -399.5 | -336.5 | 7.51 | 7.51 | 0.00 |
| 6,000.0 | 9.50 | 90.00 | 5,929.6 | 654.9 | -389.5 | -326.5 | 7.50 | 7.50 | 0.00 |
| 6,100.0 | 17.00 | 90.00 | 6,026.9 | 654.9 | -366.6 | -303.7 | 7.50 | 7.50 | 0.00 |
| 6,200.0 | 24.50 | 90.00 | 6,120.4 | 654.9 | -331.2 | -268.5 | 7.50 | 7.50 | 0.00 |
| 6,300.0 | 32.00 | 90.00 | 6,208.4 | 654.9 | -283.9 | -221.4 | 7.50 | 7.50 | 0.00 |
| 6,400.0 | 39.50 | 90.00 | 6,289.5 | 654.9 | -225.6 | -163.3 | 7.50 | 7.50 | 0.00 |
| 6,433.7 | 42.02 | 90.00 | 6,315.0 | 654.9 | -203.6 | -141.4 | 7.50 | 7.50 | 0.00 |
| **Sharon Springs** | | | | | | | | | |
| 6,500.0 | 47.00 | 90.00 | 6,362.3 | 654.9 | -157.1 | -95.1 | 7.50 | 7.50 | 0.00 |
| 6,600.0 | 54.50 | 90.00 | 6,425.5 | 654.9 | -79.7 | -18.0 | 7.50 | 7.50 | 0.00 |
| 6,634.7 | 57.10 | 90.00 | 6,445.0 | 654.9 | -51.0 | 10.5 | 7.50 | 7.50 | 0.00 |
| **Niobrara A** | | | | | | | | | |
| 6,700.0 | 62.00 | 90.00 | 6,478.1 | 654.9 | 5.3 | 66.6 | 7.50 | 7.50 | 0.00 |
| 6,800.0 | 69.50 | 90.00 | 6,519.1 | 654.9 | 96.4 | 157.3 | 7.50 | 7.50 | 0.00 |
| 6,802.5 | 69.68 | 90.00 | 6,520.0 | 654.9 | 98.7 | 159.6 | 7.50 | 7.50 | 0.00 |
| **Niobrara B** | | | | | | | | | |
| 6,900.0 | 77.00 | 90.00 | 6,547.9 | 654.9 | 192.1 | 252.5 | 7.50 | 7.50 | 0.00 |
| 7,000.0 | 84.50 | 90.00 | 6,564.0 | 654.9 | 290.7 | 350.7 | 7.50 | 7.50 | 0.00 |
| 7,079.1 | 90.43 | 90.00 | 6,567.5 | 654.9 | 369.7 | 429.4 | 7.50 | 7.50 | 0.00 |
| **Start 6596.1 hold at 7079.1 MD - 7"** | | | | | | | | | |
| 7,100.0 | 90.43 | 90.00 | 6,567.3 | 654.9 | 390.6 | 450.2 | 0.00 | 0.00 | 0.00 |
| 7,200.0 | 90.43 | 90.00 | 6,566.6 | 654.9 | 490.6 | 549.7 | 0.00 | 0.00 | 0.00 |
| 7,300.0 | 90.43 | 90.00 | 6,565.8 | 654.9 | 590.6 | 649.3 | 0.00 | 0.00 | 0.00 |
| 7,400.0 | 90.43 | 90.00 | 6,565.1 | 654.9 | 690.6 | 748.8 | 0.00 | 0.00 | 0.00 |
| 7,500.0 | 90.43 | 90.00 | 6,564.3 | 654.9 | 790.6 | 848.4 | 0.00 | 0.00 | 0.00 |
| 7,600.0 | 90.43 | 90.00 | 6,563.6 | 654.9 | 890.6 | 948.0 | 0.00 | 0.00 | 0.00 |
| 7,700.0 | 90.43 | 90.00 | 6,562.8 | 654.9 | 990.6 | 1,047.5 | 0.00 | 0.00 | 0.00 |
| 7,800.0 | 90.43 | 90.00 | 6,562.1 | 654.9 | 1,090.6 | 1,147.1 | 0.00 | 0.00 | 0.00 |
| 7,900.0 | 90.43 | 90.00 | 6,561.3 | 654.9 | 1,190.6 | 1,246.6 | 0.00 | 0.00 | 0.00 |
| 8,000.0 | 90.43 | 90.00 | 6,560.6 | 654.9 | 1,290.6 | 1,346.2 | 0.00 | 0.00 | 0.00 |
| 8,100.0 | 90.43 | 90.00 | 6,559.8 | 654.9 | 1,390.6 | 1,445.8 | 0.00 | 0.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | US_EDM | **Local Co-ordinate Reference:** | Well Bihain 26F-232 |
| **Company:** | PETROLEUM DEVELOPMENT CORP DJ Basin | **TVD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Project:** | SEC.26-T5N-R64W | **MD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Site:** | Bihain 5N64W26GK Pad Sec.26-T5N-R64W | **North Reference:** | True |
| **Well:** | Bihain 26F-232 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Plan #1 (11-2-15) | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 8,200.0 | 90.43 | 90.00 | 6,559.1 | 654.9 | 1,490.6 | 1,545.3 | 0.00 | 0.00 | 0.00 |
| 8,300.0 | 90.43 | 90.00 | 6,558.3 | 654.9 | 1,590.5 | 1,644.9 | 0.00 | 0.00 | 0.00 |
| 8,400.0 | 90.43 | 90.00 | 6,557.6 | 654.9 | 1,690.5 | 1,744.4 | 0.00 | 0.00 | 0.00 |
| 8,500.0 | 90.43 | 90.00 | 6,556.8 | 654.9 | 1,790.5 | 1,844.0 | 0.00 | 0.00 | 0.00 |
| 8,600.0 | 90.43 | 90.00 | 6,556.1 | 654.9 | 1,890.5 | 1,943.5 | 0.00 | 0.00 | 0.00 |
| 8,700.0 | 90.43 | 90.00 | 6,555.3 | 654.9 | 1,990.5 | 2,043.1 | 0.00 | 0.00 | 0.00 |
| 8,800.0 | 90.43 | 90.00 | 6,554.6 | 654.9 | 2,090.5 | 2,142.7 | 0.00 | 0.00 | 0.00 |
| 8,900.0 | 90.43 | 90.00 | 6,553.8 | 654.9 | 2,190.5 | 2,242.2 | 0.00 | 0.00 | 0.00 |
| 9,000.0 | 90.43 | 90.00 | 6,553.1 | 654.9 | 2,290.5 | 2,341.8 | 0.00 | 0.00 | 0.00 |
| 9,100.0 | 90.43 | 90.00 | 6,552.3 | 654.9 | 2,390.5 | 2,441.3 | 0.00 | 0.00 | 0.00 |
| 9,200.0 | 90.43 | 90.00 | 6,551.6 | 654.9 | 2,490.5 | 2,540.9 | 0.00 | 0.00 | 0.00 |
| 9,300.0 | 90.43 | 90.00 | 6,550.8 | 654.9 | 2,590.5 | 2,640.5 | 0.00 | 0.00 | 0.00 |
| 9,400.0 | 90.43 | 90.00 | 6,550.1 | 654.9 | 2,690.5 | 2,740.0 | 0.00 | 0.00 | 0.00 |
| 9,500.0 | 90.43 | 90.00 | 6,549.3 | 654.9 | 2,790.5 | 2,839.6 | 0.00 | 0.00 | 0.00 |
| 9,600.0 | 90.43 | 90.00 | 6,548.6 | 654.9 | 2,890.5 | 2,939.1 | 0.00 | 0.00 | 0.00 |
| 9,700.0 | 90.43 | 90.00 | 6,547.8 | 654.9 | 2,990.5 | 3,038.7 | 0.00 | 0.00 | 0.00 |
| 9,800.0 | 90.43 | 90.00 | 6,547.1 | 654.9 | 3,090.5 | 3,138.2 | 0.00 | 0.00 | 0.00 |
| 9,900.0 | 90.43 | 90.00 | 6,546.3 | 654.9 | 3,190.5 | 3,237.8 | 0.00 | 0.00 | 0.00 |
| 10,000.0 | 90.43 | 90.00 | 6,545.6 | 654.9 | 3,290.5 | 3,337.4 | 0.00 | 0.00 | 0.00 |
| 10,100.0 | 90.43 | 90.00 | 6,544.8 | 654.9 | 3,390.5 | 3,436.9 | 0.00 | 0.00 | 0.00 |
| 10,200.0 | 90.43 | 90.00 | 6,544.1 | 654.9 | 3,490.5 | 3,536.5 | 0.00 | 0.00 | 0.00 |
| 10,300.0 | 90.43 | 90.00 | 6,543.3 | 654.9 | 3,590.5 | 3,636.0 | 0.00 | 0.00 | 0.00 |
| 10,400.0 | 90.43 | 90.00 | 6,542.6 | 654.9 | 3,690.5 | 3,735.6 | 0.00 | 0.00 | 0.00 |
| 10,500.0 | 90.43 | 90.00 | 6,541.8 | 654.9 | 3,790.5 | 3,835.2 | 0.00 | 0.00 | 0.00 |
| 10,600.0 | 90.43 | 90.00 | 6,541.1 | 654.9 | 3,890.5 | 3,934.7 | 0.00 | 0.00 | 0.00 |
| 10,700.0 | 90.43 | 90.00 | 6,540.3 | 654.9 | 3,990.5 | 4,034.3 | 0.00 | 0.00 | 0.00 |
| 10,800.0 | 90.43 | 90.00 | 6,539.6 | 654.9 | 4,090.5 | 4,133.8 | 0.00 | 0.00 | 0.00 |
| 10,900.0 | 90.43 | 90.00 | 6,538.8 | 654.9 | 4,190.5 | 4,233.4 | 0.00 | 0.00 | 0.00 |
| 11,000.0 | 90.43 | 90.00 | 6,538.1 | 654.9 | 4,290.5 | 4,332.9 | 0.00 | 0.00 | 0.00 |
| 11,100.0 | 90.43 | 90.00 | 6,537.3 | 654.9 | 4,390.5 | 4,432.5 | 0.00 | 0.00 | 0.00 |
| 11,200.0 | 90.43 | 90.00 | 6,536.6 | 654.9 | 4,490.5 | 4,532.1 | 0.00 | 0.00 | 0.00 |
| 11,300.0 | 90.43 | 90.00 | 6,535.8 | 654.9 | 4,590.5 | 4,631.6 | 0.00 | 0.00 | 0.00 |
| 11,400.0 | 90.43 | 90.00 | 6,535.1 | 654.9 | 4,690.5 | 4,731.2 | 0.00 | 0.00 | 0.00 |
| 11,500.0 | 90.43 | 90.00 | 6,534.3 | 654.9 | 4,790.5 | 4,830.7 | 0.00 | 0.00 | 0.00 |
| 11,600.0 | 90.43 | 90.00 | 6,533.6 | 654.9 | 4,890.5 | 4,930.3 | 0.00 | 0.00 | 0.00 |
| 11,700.0 | 90.43 | 90.00 | 6,532.8 | 654.9 | 4,990.5 | 5,029.8 | 0.00 | 0.00 | 0.00 |
| 11,800.0 | 90.43 | 90.00 | 6,532.1 | 654.9 | 5,090.5 | 5,129.4 | 0.00 | 0.00 | 0.00 |
| 11,900.0 | 90.43 | 90.00 | 6,531.3 | 654.9 | 5,190.4 | 5,229.0 | 0.00 | 0.00 | 0.00 |
| 12,000.0 | 90.43 | 90.00 | 6,530.6 | 654.9 | 5,290.4 | 5,328.5 | 0.00 | 0.00 | 0.00 |
| 12,100.0 | 90.43 | 90.00 | 6,529.8 | 654.9 | 5,390.4 | 5,428.1 | 0.00 | 0.00 | 0.00 |
| 12,200.0 | 90.43 | 90.00 | 6,529.1 | 654.9 | 5,490.4 | 5,527.6 | 0.00 | 0.00 | 0.00 |
| 12,300.0 | 90.43 | 90.00 | 6,528.3 | 654.9 | 5,590.4 | 5,627.2 | 0.00 | 0.00 | 0.00 |
| 12,400.0 | 90.43 | 90.00 | 6,527.6 | 654.9 | 5,690.4 | 5,726.8 | 0.00 | 0.00 | 0.00 |
| 12,500.0 | 90.43 | 90.00 | 6,526.8 | 654.9 | 5,790.4 | 5,826.3 | 0.00 | 0.00 | 0.00 |
| 12,600.0 | 90.43 | 90.00 | 6,526.1 | 654.9 | 5,890.4 | 5,925.9 | 0.00 | 0.00 | 0.00 |
| 12,700.0 | 90.43 | 90.00 | 6,525.3 | 654.9 | 5,990.4 | 6,025.4 | 0.00 | 0.00 | 0.00 |
| 12,800.0 | 90.43 | 90.00 | 6,524.6 | 654.9 | 6,090.4 | 6,125.0 | 0.00 | 0.00 | 0.00 |
| 12,900.0 | 90.43 | 90.00 | 6,523.8 | 654.9 | 6,190.4 | 6,224.5 | 0.00 | 0.00 | 0.00 |
| 13,000.0 | 90.43 | 90.00 | 6,523.1 | 654.9 | 6,290.4 | 6,324.1 | 0.00 | 0.00 | 0.00 |
| 13,100.0 | 90.43 | 90.00 | 6,522.3 | 654.9 | 6,390.4 | 6,423.7 | 0.00 | 0.00 | 0.00 |
| 13,200.0 | 90.43 | 90.00 | 6,521.6 | 654.9 | 6,490.4 | 6,523.2 | 0.00 | 0.00 | 0.00 |
| 13,300.0 | 90.43 | 90.00 | 6,520.8 | 654.9 | 6,590.4 | 6,622.8 | 0.00 | 0.00 | 0.00 |
| 13,400.0 | 90.43 | 90.00 | 6,520.1 | 654.9 | 6,690.4 | 6,722.3 | 0.00 | 0.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | US_EDM | **Local Co-ordinate Reference:** | Well Bihain 26F-232 |
| **Company:** | PETROLEUM DEVELOPMENT CORP DJ Basin | **TVD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Project:** | SEC.26-T5N-R64W | **MD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Site:** | Bihain 5N64W26GK Pad Sec.26-T5N-R64W | **North Reference:** | True |
| **Well:** | Bihain 26F-232 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Plan #1 (11-2-15) | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 13,500.0 | 90.43 | 90.00 | 6,519.3 | 654.9 | 6,790.4 | 6,821.9 | 0.00 | 0.00 | 0.00 |
| 13,600.0 | 90.43 | 90.00 | 6,518.6 | 654.9 | 6,890.4 | 6,921.5 | 0.00 | 0.00 | 0.00 |
| 13,675.2 | 90.43 | 90.00 | 6,518.0 | 654.9 | 6,965.6 | 6,996.3 | 0.00 | 0.00 | 0.00 |
| **TD at 13675.2 - BHL 1645'FNL & 2140'FWL, Sec.25** | | | | | | | | | |

**Design Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| SHL 2350'FNL & 450'FW<br>- plan hits target center<br>- Point | 0.00 | 0.00 | 1.0 | 0.0 | 0.0 | 1,379,552.97 | 3,271,716.10 | 40.371173 | -104.524790 |
| BHL 1645'FNL & 2140'F<br>- plan hits target center<br>- Point | 0.00 | 0.00 | 6,518.0 | 654.9 | 6,965.6 | 1,380,284.42 | 3,278,673.74 | 40.372968 | -104.499791 |

**Casing Points**

| Measured Depth (ft) | Vertical Depth (ft) | Name | Casing Diameter (") | Hole Diameter (") |
|---|---|---|---|---|
| 7,079.1 | 6,567.5 | 7" | 7 | 8-3/4 |

**Formations**

| Measured Depth (ft) | Vertical Depth (ft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---|---|---|---|---|---|
| 3,435.6 | 3,400.0 | Parkman | | 0.00 | |
| 4,153.7 | 4,105.0 | Sussex | | 0.00 | |
| 4,556.1 | 4,500.0 | Shannon | | 0.00 | |
| 6,433.7 | 6,315.0 | Sharon Springs | | 0.00 | |
| 6,634.7 | 6,445.0 | Niobrara A | | 0.00 | |
| 6,802.5 | 6,520.0 | Niobrara B | | 0.00 | |

**Plan Annotations**

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates +N/-S (ft) | Local Coordinates +E/-W (ft) | Comment |
|---|---|---|---|---|
| 1,000.0 | 1,000.0 | 0.0 | 0.0 | KOP - Start Build 1.50 |
| 5,121.1 | 5,054.7 | 610.2 | -372.7 | Start Drop -2.00 |
| 5,873.4 | 5,803.6 | 654.9 | -400.0 | KOP #2 - Start Build 7.50 |
| 7,079.1 | 6,567.5 | 654.9 | 369.7 | Start 6596.1 hold at 7079.1 MD |
| 13,675.2 | 6,518.0 | 654.9 | 6,965.6 | TD at 13675.2 |

ENSIGN Directional

# PETROLEUM DEVELOPMENT CORP DJ Basin

**SEC.26-T5N-R64W**
**Bihain 5N64W26GK Pad Sec.26-T5N-R64W**
**Bihain 26F-232**

**Wellbore #1**
**Plan #1 (11-2-15)**

# Anticollision Report

**04 November, 2015**

PDC ENERGY
Growing E&P Value

| | | | |
|---|---|---|---|
| **Company:** | PETROLEUM DEVELOPMENT CORP DJ Basin | **Local Co-ordinate Reference:** | Well Bihain 26F-232 |
| **Project:** | SEC.26-T5N-R64W | **TVD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Reference Site:** | Bihain 5N64W26GK Pad Sec.26-T5N-R64W | **MD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | Bihain 26F-232 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | Plan #1 (11-2-15) | **Offset TVD Reference:** | Offset Datum |

**Reference** Plan #1 (11-2-15)

| | | | |
|---|---|---|---|
| **Filter type:** | NO GLOBAL FILTER: Using user defined selection & filtering criteria | | |
| **Interpolation Method:** | Stations | **Error Model:** | ISCWSA |
| **Depth Range:** | Unlimited | **Scan Method:** | Closest Approach 3D |
| **Results Limited by:** | Maximum center-center distance of 1,000.0 ft | **Error Surface:** | Elliptical Conic |
| **Warning Levels Evaluated at:** | 2.00 **Sigma** | **Casing Method:** | Not applied |

**Survey Tool Program** **Date** 11/4/2015

| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description |
|---|---|---|---|---|
| 0.0 | 13,675.2 | Plan #1 (11-2-15) (Wellbore #1) | MWD | MWD - Standard |

**Summary**

| Site Name / Offset Well - Wellbore - Design | Reference Measured Depth (ft) | Offset Measured Depth (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|
| Bihain 5N64W26GK Pad Sec.26-T5N-R64W | | | | | | |
| Bihain 26F-332 - Wellbore #1 - Plan #1 (11-2-15) | 1,000.0 | 1,000.0 | 15.1 | 10.8 | 3.530 | CC |
| Bihain 26F-332 - Wellbore #1 - Plan #1 (11-2-15) | 13,675.2 | 13,719.3 | 250.1 | -138.3 | 0.644 | Level 1, ES, SF |
| Bihain 26G-212 - Wellbore #1 - Plan #1 (11-2-15) | 1,000.0 | 1,000.0 | 30.1 | 25.9 | 7.055 | CC, ES |
| Bihain 26G-212 - Wellbore #1 - Plan #1 (11-2-15) | 13,675.2 | 13,637.1 | 525.1 | 122.8 | 1.305 | Level 3, SF |
| Bihain 26G-312 - Wellbore #1 - Plan #1 (11-2-15) | 1,000.0 | 1,000.0 | 45.0 | 40.7 | 10.529 | CC, ES |
| Bihain 26G-312 - Wellbore #1 - Plan #1 (11-2-15) | 13,675.2 | 13,705.3 | 759.8 | 358.7 | 1.894 | SF |
| Existing Wells Pad Sec.26-T5N-R64W | | | | | | |
| Bihain 26-2 (Exist.) - Wellbore #1 - Wellbore #1 | 8,254.8 | 6,538.7 | 299.3 | 117.5 | 1.646 | CC, ES, SF |
| Bihain 26-3 (Exist.) - Wellbore #1 - Wellbore #1 | 6,946.5 | 6,539.0 | 278.2 | 127.3 | 1.844 | CC |
| Bihain 26-3 (Exist.) - Wellbore #1 - Wellbore #1 | 6,950.0 | 6,539.6 | 278.2 | 127.3 | 1.843 | ES, SF |
| Monfort Kuner B 26-7 (Exist.) - Wellbore #1 - Wellbore #1 | 9,582.5 | 6,524.7 | 271.9 | 54.2 | 1.249 | Level 2, CC, ES |
| Monfort Kuner B 26-7 (Exist.) - Wellbore #1 - Wellbore #1 | 9,600.0 | 6,524.6 | 272.4 | 54.3 | 1.249 | Level 2, SF |
| Monfort Kuner B 26-8 (Exist.) - Wellbore #1 - Wellbore #1 | 10,874.0 | 6,512.0 | 279.7 | 26.5 | 1.105 | Level 2, CC, ES, SF |

**Offset Design** Bihain 5N64W26GK Pad Sec.26-T5N-R64W - Bihain 26F-332 - Wellbore #1 - Plan #1 (11-2-15)

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD **Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 130.73 | -9.8 | 11.4 | 15.1 | 15.1 | 0.00 | N/A | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 130.73 | -9.8 | 11.4 | 15.1 | 14.9 | 0.22 | 67.072 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 130.73 | -9.8 | 11.4 | 15.1 | 14.4 | 0.67 | 22.357 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.6 | 0.6 | 130.73 | -9.8 | 11.4 | 15.1 | 14.0 | 1.12 | 13.414 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | 130.73 | -9.8 | 11.4 | 15.1 | 13.5 | 1.57 | 9.582 | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.0 | 1.0 | 130.73 | -9.8 | 11.4 | 15.1 | 13.1 | 2.02 | 7.452 | |
| 600.0 | 600.0 | 600.0 | 600.0 | 1.2 | 1.2 | 130.73 | -9.8 | 11.4 | 15.1 | 12.6 | 2.47 | 6.097 | |
| 700.0 | 700.0 | 700.0 | 700.0 | 1.5 | 1.5 | 130.73 | -9.8 | 11.4 | 15.1 | 12.2 | 2.92 | 5.159 | |
| 800.0 | 800.0 | 800.0 | 800.0 | 1.7 | 1.7 | 130.73 | -9.8 | 11.4 | 15.1 | 11.7 | 3.37 | 4.471 | |
| 900.0 | 900.0 | 900.0 | 900.0 | 1.9 | 1.9 | 130.73 | -9.8 | 11.4 | 15.1 | 11.3 | 3.82 | 3.945 | |
| 1,000.0 | 1,000.0 | 1,000.0 | 1,000.0 | 2.1 | 2.1 | 130.73 | -9.8 | 11.4 | 15.1 | 10.8 | 4.27 | 3.530 | CC |
| 1,100.0 | 1,100.0 | 1,100.0 | 1,100.0 | 2.4 | 2.4 | 163.55 | -9.8 | 11.4 | 16.3 | 11.6 | 4.72 | 3.460 | |
| 1,200.0 | 1,199.9 | 1,199.9 | 1,199.9 | 2.6 | 2.6 | 166.70 | -9.8 | 11.4 | 20.1 | 15.0 | 5.16 | 3.897 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PETROLEUM DEVELOPMENT CORP DJ Basin | **Local Co-ordinate Reference:** | Well Bihain 26F-232 |
| **Project:** | SEC.26-T5N-R64W | **TVD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Reference Site:** | Bihain 5N64W26GK Pad Sec.26-T5N-R64W | **MD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | Bihain 26F-232 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | Plan #1 (11-2-15) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Bihain 5N64W26GK Pad Sec.26-T5N-R64W - Bihain 26F-332 - Wellbore #1 - Plan #1 (11-2-15)

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,300.0 | 1,299.7 | 1,300.4 | 1,300.4 | 2.8 | 2.8 | 170.09 | -8.9 | 10.5 | 25.2 | 19.6 | 5.60 | 4.501 | |
| 1,400.0 | 1,399.3 | 1,400.9 | 1,400.9 | 3.0 | 3.0 | 173.44 | -6.0 | 7.7 | 30.4 | 24.3 | 6.04 | 5.028 | |
| 1,500.0 | 1,498.6 | 1,501.7 | 1,501.3 | 3.3 | 3.3 | 176.75 | -1.3 | 3.1 | 35.6 | 29.1 | 6.47 | 5.495 | |
| 1,600.0 | 1,597.5 | 1,602.5 | 1,601.7 | 3.6 | 3.5 | -179.98 | 5.4 | -3.3 | 40.9 | 34.0 | 6.91 | 5.920 | |
| 1,700.0 | 1,696.1 | 1,703.4 | 1,702.0 | 3.9 | 3.7 | -176.75 | 14.0 | -11.6 | 46.4 | 39.1 | 7.36 | 6.313 | |
| 1,731.5 | 1,727.1 | 1,735.3 | 1,733.5 | 4.0 | 3.8 | -175.74 | 17.1 | -14.6 | 48.2 | 40.7 | 7.50 | 6.430 | |
| 1,800.0 | 1,794.3 | 1,804.3 | 1,801.8 | 4.2 | 4.0 | -173.52 | 24.4 | -21.7 | 51.6 | 43.7 | 7.83 | 6.589 | |
| 1,900.0 | 1,892.5 | 1,904.2 | 1,900.5 | 4.5 | 4.3 | -170.54 | 35.5 | -32.5 | 56.0 | 47.7 | 8.32 | 6.732 | |
| 2,000.0 | 1,990.6 | 2,004.1 | 1,999.1 | 4.9 | 4.6 | -168.01 | 46.6 | -43.2 | 60.6 | 51.8 | 8.83 | 6.862 | |
| 2,100.0 | 2,088.8 | 2,103.9 | 2,097.8 | 5.2 | 4.9 | -165.84 | 57.7 | -53.9 | 65.3 | 55.9 | 9.35 | 6.977 | |
| 2,200.0 | 2,187.0 | 2,203.8 | 2,196.5 | 5.6 | 5.2 | -163.96 | 68.8 | -64.6 | 70.0 | 60.1 | 9.89 | 7.078 | |
| 2,300.0 | 2,285.1 | 2,303.6 | 2,295.1 | 6.0 | 5.5 | -162.32 | 79.8 | -75.4 | 74.8 | 64.4 | 10.44 | 7.167 | |
| 2,400.0 | 2,383.3 | 2,403.5 | 2,393.8 | 6.4 | 5.9 | -160.88 | 90.9 | -86.1 | 79.7 | 68.7 | 11.00 | 7.244 | |
| 2,500.0 | 2,481.5 | 2,503.4 | 2,492.5 | 6.8 | 6.2 | -159.61 | 102.0 | -96.8 | 84.6 | 73.1 | 11.57 | 7.312 | |
| 2,600.0 | 2,579.7 | 2,603.2 | 2,591.1 | 7.2 | 6.5 | -158.48 | 113.1 | -107.5 | 89.6 | 77.4 | 12.16 | 7.370 | |
| 2,700.0 | 2,677.8 | 2,703.1 | 2,689.8 | 7.6 | 6.9 | -157.46 | 124.2 | -118.3 | 94.6 | 81.8 | 12.74 | 7.421 | |
| 2,800.0 | 2,776.0 | 2,803.0 | 2,788.5 | 8.0 | 7.2 | -156.55 | 135.3 | -129.0 | 99.6 | 86.2 | 13.34 | 7.466 | |
| 2,900.0 | 2,874.2 | 2,902.8 | 2,887.1 | 8.4 | 7.5 | -155.73 | 146.3 | -139.7 | 104.6 | 90.7 | 13.94 | 7.505 | |
| 3,000.0 | 2,972.3 | 3,002.7 | 2,985.8 | 8.8 | 7.9 | -154.98 | 157.4 | -150.4 | 109.7 | 95.1 | 14.55 | 7.539 | |
| 3,100.0 | 3,070.5 | 3,102.5 | 3,084.4 | 9.2 | 8.2 | -154.29 | 168.5 | -161.2 | 114.8 | 99.6 | 15.16 | 7.569 | |
| 3,200.0 | 3,168.7 | 3,202.4 | 3,183.1 | 9.6 | 8.6 | -153.67 | 179.6 | -171.9 | 119.8 | 104.1 | 15.78 | 7.595 | |
| 3,300.0 | 3,266.9 | 3,302.3 | 3,281.8 | 10.0 | 8.9 | -153.10 | 190.7 | -182.6 | 124.9 | 108.5 | 16.40 | 7.619 | |
| 3,400.0 | 3,365.0 | 3,402.1 | 3,380.4 | 10.4 | 9.3 | -152.57 | 201.8 | -193.4 | 130.1 | 113.0 | 17.02 | 7.639 | |
| 3,500.0 | 3,463.2 | 3,502.0 | 3,479.1 | 10.8 | 9.6 | -152.08 | 212.8 | -204.1 | 135.2 | 117.5 | 17.65 | 7.658 | |
| 3,600.0 | 3,561.4 | 3,601.9 | 3,577.8 | 11.2 | 10.0 | -151.63 | 223.9 | -214.8 | 140.3 | 122.0 | 18.28 | 7.674 | |
| 3,700.0 | 3,659.5 | 3,701.7 | 3,676.4 | 11.6 | 10.3 | -151.21 | 235.0 | -225.5 | 145.5 | 126.5 | 18.92 | 7.689 | |
| 3,800.0 | 3,757.7 | 3,801.6 | 3,775.1 | 12.0 | 10.7 | -150.81 | 246.1 | -236.3 | 150.6 | 131.0 | 19.55 | 7.702 | |
| 3,900.0 | 3,855.9 | 3,901.4 | 3,873.8 | 12.4 | 11.0 | -150.45 | 257.2 | -247.0 | 155.8 | 135.6 | 20.19 | 7.713 | |
| 4,000.0 | 3,954.1 | 4,001.3 | 3,972.4 | 12.9 | 11.4 | -150.10 | 268.3 | -257.7 | 160.9 | 140.1 | 20.83 | 7.724 | |
| 4,100.0 | 4,052.2 | 4,101.2 | 4,071.1 | 13.3 | 11.8 | -149.78 | 279.3 | -268.4 | 166.1 | 144.6 | 21.48 | 7.733 | |
| 4,200.0 | 4,150.4 | 4,201.0 | 4,169.8 | 13.7 | 12.1 | -149.48 | 290.4 | -279.2 | 171.3 | 149.1 | 22.12 | 7.742 | |
| 4,300.0 | 4,248.6 | 4,300.9 | 4,268.4 | 14.1 | 12.5 | -149.20 | 301.5 | -289.9 | 176.4 | 153.7 | 22.77 | 7.750 | |
| 4,400.0 | 4,346.8 | 4,400.8 | 4,367.1 | 14.5 | 12.8 | -148.93 | 312.6 | -300.6 | 181.6 | 158.2 | 23.41 | 7.757 | |
| 4,500.0 | 4,444.9 | 4,500.6 | 4,465.7 | 14.9 | 13.2 | -148.67 | 323.7 | -311.3 | 186.8 | 162.7 | 24.06 | 7.763 | |
| 4,600.0 | 4,543.1 | 4,600.5 | 4,564.4 | 15.3 | 13.6 | -148.44 | 334.8 | -322.1 | 192.0 | 167.3 | 24.71 | 7.769 | |
| 4,700.0 | 4,641.3 | 4,700.3 | 4,663.1 | 15.8 | 13.9 | -148.21 | 345.8 | -332.8 | 197.2 | 171.8 | 25.36 | 7.774 | |
| 4,800.0 | 4,739.4 | 4,800.2 | 4,761.7 | 16.2 | 14.3 | -147.99 | 356.9 | -343.5 | 202.4 | 176.3 | 26.01 | 7.779 | |
| 4,900.0 | 4,837.6 | 4,900.1 | 4,860.4 | 16.6 | 14.6 | -147.79 | 368.0 | -354.2 | 207.5 | 180.9 | 26.67 | 7.783 | |
| 5,000.0 | 4,935.8 | 4,999.9 | 4,959.1 | 17.0 | 15.0 | -147.59 | 379.1 | -365.0 | 212.7 | 185.4 | 27.32 | 7.787 | |
| 5,100.0 | 5,034.0 | 5,099.6 | 5,057.5 | 17.4 | 15.4 | -147.41 | 390.2 | -375.7 | 217.9 | 190.0 | 27.97 | 7.791 | |
| 5,121.1 | 5,054.7 | 5,119.8 | 5,077.5 | 17.5 | 15.4 | -147.39 | 392.4 | -377.8 | 219.1 | 191.0 | 28.10 | 7.798 | |
| 5,200.0 | 5,132.3 | 5,194.5 | 5,151.5 | 17.8 | 15.6 | -147.43 | 399.6 | -384.8 | 223.4 | 194.9 | 28.53 | 7.831 | |
| 5,300.0 | 5,231.2 | 5,289.1 | 5,245.6 | 18.1 | 15.9 | -147.58 | 406.7 | -391.7 | 228.3 | 199.4 | 28.93 | 7.891 | |
| 5,400.0 | 5,330.6 | 5,383.6 | 5,339.8 | 18.3 | 16.1 | -147.83 | 411.6 | -396.5 | 232.6 | 203.4 | 29.27 | 7.948 | |
| 5,500.0 | 5,430.3 | 5,478.0 | 5,434.2 | 18.5 | 16.2 | -148.16 | 414.3 | -399.1 | 236.3 | 206.8 | 29.53 | 8.004 | |
| 5,600.0 | 5,530.2 | 5,574.1 | 5,530.2 | 18.7 | 16.4 | -148.57 | 414.9 | -399.6 | 239.3 | 209.6 | 29.73 | 8.049 | |
| 5,669.8 | 5,600.0 | 5,643.8 | 5,600.0 | 18.8 | 16.5 | 179.90 | 414.9 | -399.6 | 240.0 | 208.0 | 32.08 | 7.482 | |
| 5,700.0 | 5,630.2 | 5,674.1 | 5,630.2 | 18.8 | 16.5 | 179.90 | 414.9 | -399.6 | 240.0 | 207.9 | 32.18 | 7.459 | |
| 5,800.0 | 5,730.2 | 5,774.1 | 5,730.2 | 19.0 | 16.7 | 179.90 | 414.9 | -399.6 | 240.0 | 207.5 | 32.51 | 7.383 | |
| 5,873.4 | 5,803.6 | 5,847.4 | 5,803.6 | 19.1 | 16.8 | 179.90 | 414.9 | -399.6 | 240.0 | 207.3 | 32.76 | 7.328 | |
| 5,898.8 | 5,829.0 | 5,872.9 | 5,829.0 | 19.1 | 16.8 | 90.00 | 414.9 | -399.6 | 240.0 | 209.3 | 30.73 | 7.810 | |

| | | | |
|---|---|---|---|
| **Company:** | PETROLEUM DEVELOPMENT CORP DJ Basin | **Local Co-ordinate Reference:** | Well Bihain 26F-232 |
| **Project:** | SEC.26-T5N-R64W | **TVD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Reference Site:** | Bihain 5N64W26GK Pad Sec.26-T5N-R64W | **MD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | Bihain 26F-232 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | Plan #1 (11-2-15) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Bihain 5N64W26GK Pad Sec.26-T5N-R64W - Bihain 26F-332 - Wellbore #1 - Plan #1 (11-2-15)

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,900.0 | 5,830.2 | 5,874.0 | 5,830.2 | 19.1 | 16.8 | 90.01 | 414.9 | -399.6 | 240.0 | 209.3 | 30.74 | 7.809 | |
| 5,950.0 | 5,880.1 | 5,924.0 | 5,880.1 | 19.1 | 16.9 | 90.81 | 414.9 | -399.5 | 240.1 | 209.1 | 31.01 | 7.742 | |
| 6,000.0 | 5,929.6 | 5,974.1 | 5,930.2 | 19.2 | 17.0 | 91.89 | 414.9 | -397.5 | 240.2 | 208.9 | 31.28 | 7.679 | |
| 6,050.0 | 5,978.6 | 6,024.6 | 5,980.4 | 19.2 | 17.0 | 92.97 | 414.9 | -392.1 | 240.4 | 208.9 | 31.50 | 7.631 | |
| 6,100.0 | 6,026.9 | 6,075.4 | 6,030.4 | 19.2 | 17.0 | 94.04 | 414.9 | -383.3 | 240.6 | 209.0 | 31.67 | 7.598 | |
| 6,150.0 | 6,074.2 | 6,126.5 | 6,080.0 | 19.2 | 17.0 | 95.10 | 414.9 | -371.2 | 241.0 | 209.2 | 31.80 | 7.578 | |
| 6,200.0 | 6,120.4 | 6,177.9 | 6,129.0 | 19.1 | 17.0 | 96.13 | 414.9 | -355.6 | 241.4 | 209.5 | 31.89 | 7.572 | |
| 6,250.0 | 6,165.1 | 6,229.6 | 6,177.1 | 19.1 | 17.0 | 97.13 | 414.9 | -336.7 | 241.9 | 210.0 | 31.94 | 7.575 | |
| 6,300.0 | 6,208.4 | 6,281.6 | 6,224.1 | 19.1 | 17.0 | 98.11 | 414.9 | -314.4 | 242.5 | 210.5 | 31.96 | 7.587 | |
| 6,350.0 | 6,249.9 | 6,333.9 | 6,269.8 | 19.0 | 16.9 | 99.04 | 414.9 | -288.8 | 243.1 | 211.1 | 31.97 | 7.603 | |
| 6,400.0 | 6,289.5 | 6,386.5 | 6,313.8 | 18.9 | 16.9 | 99.93 | 414.9 | -260.0 | 243.7 | 211.7 | 31.99 | 7.618 | |
| 6,450.0 | 6,327.0 | 6,439.5 | 6,355.9 | 18.9 | 16.8 | 100.78 | 414.9 | -228.0 | 244.4 | 212.3 | 32.04 | 7.627 | |
| 6,500.0 | 6,362.3 | 6,492.6 | 6,396.0 | 18.8 | 16.8 | 101.58 | 414.9 | -193.0 | 245.0 | 212.9 | 32.14 | 7.624 | |
| 6,550.0 | 6,395.2 | 6,546.1 | 6,433.7 | 18.8 | 16.8 | 102.32 | 414.9 | -155.2 | 245.7 | 213.4 | 32.33 | 7.602 | |
| 6,600.0 | 6,425.5 | 6,599.8 | 6,468.8 | 18.7 | 16.8 | 103.01 | 414.9 | -114.5 | 246.4 | 213.8 | 32.62 | 7.553 | |
| 6,650.0 | 6,453.2 | 6,653.8 | 6,501.1 | 18.7 | 16.8 | 103.64 | 414.9 | -71.3 | 247.0 | 214.0 | 33.06 | 7.473 | |
| 6,700.0 | 6,478.1 | 6,707.9 | 6,530.4 | 18.6 | 16.9 | 104.20 | 414.9 | -25.8 | 247.6 | 214.0 | 33.65 | 7.358 | |
| 6,750.0 | 6,500.1 | 6,762.3 | 6,556.5 | 18.6 | 17.1 | 104.70 | 414.9 | 21.9 | 248.2 | 213.7 | 34.43 | 7.207 | |
| 6,800.0 | 6,519.1 | 6,816.8 | 6,579.1 | 18.5 | 17.6 | 105.14 | 414.9 | 71.5 | 248.7 | 213.3 | 35.41 | 7.024 | |
| 6,850.0 | 6,535.1 | 6,871.5 | 6,598.3 | 18.6 | 18.2 | 105.50 | 414.9 | 122.7 | 249.1 | 212.5 | 36.57 | 6.811 | |
| 6,900.0 | 6,547.9 | 6,926.3 | 6,613.8 | 19.4 | 19.0 | 105.80 | 414.9 | 175.3 | 249.5 | 211.5 | 37.93 | 6.577 | |
| 6,950.0 | 6,557.6 | 6,981.2 | 6,625.4 | 20.2 | 19.8 | 106.02 | 414.9 | 228.9 | 249.7 | 210.3 | 39.47 | 6.327 | |
| 7,000.0 | 6,564.0 | 7,036.2 | 6,633.2 | 21.1 | 20.8 | 106.17 | 414.9 | 283.3 | 249.9 | 208.8 | 41.17 | 6.070 | |
| 7,050.0 | 6,567.2 | 7,091.2 | 6,637.1 | 22.0 | 21.8 | 106.25 | 414.9 | 338.2 | 250.0 | 207.0 | 43.01 | 5.813 | |
| 7,079.1 | 6,567.5 | 7,123.3 | 6,637.5 | 22.6 | 22.4 | 106.26 | 414.9 | 370.2 | 250.0 | 205.9 | 44.14 | 5.665 | |
| 7,100.0 | 6,567.3 | 7,144.2 | 6,637.4 | 23.0 | 22.8 | 106.26 | 414.9 | 391.1 | 250.0 | 205.1 | 44.92 | 5.566 | |
| 7,200.0 | 6,566.6 | 7,244.2 | 6,636.6 | 25.1 | 24.8 | 106.26 | 414.9 | 491.1 | 250.0 | 201.2 | 48.83 | 5.121 | |
| 7,300.0 | 6,565.8 | 7,344.2 | 6,635.8 | 27.3 | 27.0 | 106.26 | 414.9 | 591.1 | 250.0 | 197.1 | 52.99 | 4.719 | |
| 7,400.0 | 6,565.1 | 7,444.2 | 6,635.1 | 29.6 | 29.3 | 106.26 | 414.9 | 691.1 | 250.0 | 192.7 | 57.36 | 4.359 | |
| 7,500.0 | 6,564.3 | 7,544.2 | 6,634.3 | 31.9 | 31.7 | 106.26 | 414.9 | 791.1 | 250.0 | 188.1 | 61.90 | 4.040 | |
| 7,600.0 | 6,563.6 | 7,644.2 | 6,633.6 | 34.4 | 34.1 | 106.26 | 414.9 | 891.1 | 250.0 | 183.5 | 66.57 | 3.756 | |
| 7,700.0 | 6,562.8 | 7,744.2 | 6,632.8 | 36.9 | 36.6 | 106.26 | 414.9 | 991.1 | 250.0 | 178.7 | 71.34 | 3.505 | |
| 7,800.0 | 6,562.1 | 7,844.2 | 6,632.1 | 39.4 | 39.1 | 106.26 | 414.9 | 1,091.1 | 250.0 | 173.8 | 76.20 | 3.281 | |
| 7,900.0 | 6,561.3 | 7,944.2 | 6,631.3 | 42.0 | 41.7 | 106.26 | 414.9 | 1,191.1 | 250.0 | 168.9 | 81.13 | 3.082 | |
| 8,000.0 | 6,560.6 | 8,044.2 | 6,630.6 | 44.5 | 44.3 | 106.26 | 414.9 | 1,291.1 | 250.0 | 163.9 | 86.12 | 2.904 | |
| 8,100.0 | 6,559.8 | 8,144.2 | 6,629.8 | 47.2 | 46.9 | 106.26 | 414.9 | 1,391.1 | 250.0 | 158.9 | 91.16 | 2.743 | |
| 8,200.0 | 6,559.1 | 8,244.2 | 6,629.1 | 49.8 | 49.5 | 106.26 | 414.9 | 1,491.1 | 250.0 | 153.8 | 96.23 | 2.598 | |
| 8,300.0 | 6,558.3 | 8,344.2 | 6,628.3 | 52.4 | 52.2 | 106.26 | 414.9 | 1,591.1 | 250.0 | 148.7 | 101.35 | 2.467 | |
| 8,400.0 | 6,557.6 | 8,444.2 | 6,627.6 | 55.1 | 54.9 | 106.26 | 414.9 | 1,691.1 | 250.0 | 143.6 | 106.49 | 2.348 | |
| 8,500.0 | 6,556.8 | 8,544.2 | 6,626.8 | 57.8 | 57.6 | 106.26 | 414.9 | 1,791.1 | 250.0 | 138.4 | 111.66 | 2.239 | |
| 8,600.0 | 6,556.1 | 8,644.2 | 6,626.1 | 60.5 | 60.3 | 106.26 | 414.9 | 1,891.1 | 250.1 | 133.2 | 116.85 | 2.140 | |
| 8,700.0 | 6,555.3 | 8,744.2 | 6,625.3 | 63.2 | 63.0 | 106.26 | 414.9 | 1,991.1 | 250.1 | 128.0 | 122.06 | 2.049 | |
| 8,800.0 | 6,554.6 | 8,844.2 | 6,624.6 | 65.9 | 65.7 | 106.26 | 414.9 | 2,091.1 | 250.1 | 122.8 | 127.28 | 1.965 | |
| 8,900.0 | 6,553.8 | 8,944.2 | 6,623.8 | 68.6 | 68.4 | 106.26 | 414.9 | 2,191.1 | 250.1 | 117.5 | 132.53 | 1.887 | |
| 9,000.0 | 6,553.1 | 9,044.2 | 6,623.1 | 71.3 | 71.1 | 106.26 | 414.9 | 2,291.1 | 250.1 | 112.3 | 137.78 | 1.815 | |
| 9,100.0 | 6,552.3 | 9,144.2 | 6,622.3 | 74.1 | 73.9 | 106.26 | 414.9 | 2,391.1 | 250.1 | 107.0 | 143.05 | 1.748 | |
| 9,200.0 | 6,551.6 | 9,244.2 | 6,621.6 | 76.8 | 76.6 | 106.26 | 414.9 | 2,491.0 | 250.1 | 101.7 | 148.32 | 1.686 | |
| 9,300.0 | 6,550.8 | 9,344.2 | 6,620.8 | 79.5 | 79.3 | 106.26 | 414.9 | 2,591.0 | 250.1 | 96.4 | 153.61 | 1.628 | |
| 9,400.0 | 6,550.1 | 9,444.2 | 6,620.1 | 82.3 | 82.1 | 106.26 | 414.9 | 2,691.0 | 250.1 | 91.1 | 158.91 | 1.574 | |
| 9,500.0 | 6,549.3 | 9,544.2 | 6,619.3 | 85.0 | 84.8 | 106.26 | 414.9 | 2,791.0 | 250.1 | 85.8 | 164.21 | 1.523 | |
| 9,600.0 | 6,548.6 | 9,644.2 | 6,618.6 | 87.8 | 87.6 | 106.26 | 414.9 | 2,891.0 | 250.1 | 80.5 | 169.52 | 1.475 | Level 3 |

| | | | |
|---|---|---|---|
| **Company:** | PETROLEUM DEVELOPMENT CORP DJ Basin | **Local Co-ordinate Reference:** | Well Bihain 26F-232 |
| **Project:** | SEC.26-T5N-R64W | **TVD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Reference Site:** | Bihain 5N64W26GK Pad Sec.26-T5N-R64W | **MD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | Bihain 26F-232 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | Plan #1 (11-2-15) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Bihain 5N64W26GK Pad Sec.26-T5N-R64W - Bihain 26F-332 - Wellbore #1 - Plan #1 (11-2-15)

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9,700.0 | 6,547.8 | 9,744.2 | 6,617.8 | 90.6 | 90.4 | 106.26 | 414.9 | 2,991.0 | 250.1 | 75.2 | 174.84 | 1.430 | Level 3 |
| 9,800.0 | 6,547.1 | 9,844.2 | 6,617.1 | 93.3 | 93.1 | 106.26 | 414.9 | 3,091.0 | 250.1 | 69.9 | 180.16 | 1.388 | Level 3 |
| 9,900.0 | 6,546.3 | 9,944.2 | 6,616.3 | 96.1 | 95.9 | 106.26 | 414.9 | 3,191.0 | 250.1 | 64.6 | 185.49 | 1.348 | Level 3 |
| 10,000.0 | 6,545.6 | 10,044.2 | 6,615.6 | 98.8 | 98.7 | 106.26 | 414.9 | 3,291.0 | 250.1 | 59.2 | 190.82 | 1.310 | Level 3 |
| 10,100.0 | 6,544.8 | 10,144.2 | 6,614.8 | 101.6 | 101.4 | 106.26 | 414.9 | 3,391.0 | 250.1 | 53.9 | 196.16 | 1.275 | Level 3 |
| 10,200.0 | 6,544.1 | 10,244.2 | 6,614.1 | 104.4 | 104.2 | 106.26 | 414.9 | 3,491.0 | 250.1 | 48.6 | 201.50 | 1.241 | Level 2 |
| 10,300.0 | 6,543.3 | 10,344.2 | 6,613.3 | 107.2 | 107.0 | 106.26 | 414.9 | 3,591.0 | 250.1 | 43.2 | 206.84 | 1.209 | Level 2 |
| 10,400.0 | 6,542.6 | 10,444.2 | 6,612.6 | 109.9 | 109.8 | 106.26 | 414.9 | 3,691.0 | 250.1 | 37.9 | 212.19 | 1.178 | Level 2 |
| 10,500.0 | 6,541.8 | 10,544.2 | 6,611.8 | 112.7 | 112.5 | 106.26 | 414.9 | 3,791.0 | 250.1 | 32.5 | 217.54 | 1.149 | Level 2 |
| 10,600.0 | 6,541.1 | 10,644.2 | 6,611.1 | 115.5 | 115.3 | 106.26 | 414.9 | 3,891.0 | 250.1 | 27.2 | 222.90 | 1.122 | Level 2 |
| 10,700.0 | 6,540.3 | 10,744.2 | 6,610.3 | 118.3 | 118.1 | 106.26 | 414.9 | 3,991.0 | 250.1 | 21.8 | 228.26 | 1.096 | Level 2 |
| 10,800.0 | 6,539.6 | 10,844.2 | 6,609.6 | 121.0 | 120.9 | 106.26 | 414.9 | 4,091.0 | 250.1 | 16.4 | 233.62 | 1.070 | Level 2 |
| 10,900.0 | 6,538.8 | 10,944.2 | 6,608.8 | 123.8 | 123.7 | 106.26 | 414.9 | 4,191.0 | 250.1 | 11.1 | 238.98 | 1.046 | Level 2 |
| 11,000.0 | 6,538.1 | 11,044.2 | 6,608.1 | 126.6 | 126.4 | 106.26 | 414.9 | 4,291.0 | 250.1 | 5.7 | 244.34 | 1.023 | Level 2 |
| 11,100.0 | 6,537.3 | 11,144.2 | 6,607.3 | 129.4 | 129.2 | 106.26 | 414.9 | 4,391.0 | 250.1 | 0.4 | 249.71 | 1.001 | Level 2 |
| 11,200.0 | 6,536.6 | 11,244.2 | 6,606.6 | 132.2 | 132.0 | 106.26 | 414.9 | 4,491.0 | 250.1 | -5.0 | 255.08 | 0.980 | Level 1 |
| 11,300.0 | 6,535.8 | 11,344.2 | 6,605.8 | 135.0 | 134.8 | 106.26 | 414.9 | 4,591.0 | 250.1 | -10.4 | 260.45 | 0.960 | Level 1 |
| 11,400.0 | 6,535.1 | 11,444.2 | 6,605.1 | 137.7 | 137.6 | 106.26 | 414.9 | 4,691.0 | 250.1 | -15.8 | 265.82 | 0.941 | Level 1 |
| 11,500.0 | 6,534.3 | 11,544.2 | 6,604.3 | 140.5 | 140.4 | 106.26 | 414.9 | 4,791.0 | 250.1 | -21.1 | 271.20 | 0.922 | Level 1 |
| 11,600.0 | 6,533.6 | 11,644.2 | 6,603.6 | 143.3 | 143.2 | 106.26 | 414.9 | 4,891.0 | 250.1 | -26.5 | 276.57 | 0.904 | Level 1 |
| 11,700.0 | 6,532.8 | 11,744.2 | 6,602.8 | 146.1 | 146.0 | 106.26 | 414.9 | 4,991.0 | 250.1 | -31.9 | 281.95 | 0.887 | Level 1 |
| 11,800.0 | 6,532.1 | 11,844.2 | 6,602.1 | 148.9 | 148.8 | 106.26 | 414.9 | 5,091.0 | 250.1 | -37.3 | 287.33 | 0.870 | Level 1 |
| 11,900.0 | 6,531.3 | 11,944.2 | 6,601.3 | 151.7 | 151.5 | 106.26 | 414.9 | 5,191.0 | 250.1 | -42.6 | 292.71 | 0.854 | Level 1 |
| 12,000.0 | 6,530.6 | 12,044.2 | 6,600.6 | 154.5 | 154.3 | 106.26 | 414.9 | 5,291.0 | 250.1 | -48.0 | 298.09 | 0.839 | Level 1 |
| 12,100.0 | 6,529.8 | 12,144.2 | 6,599.8 | 157.3 | 157.1 | 106.26 | 414.9 | 5,391.0 | 250.1 | -53.4 | 303.47 | 0.824 | Level 1 |
| 12,200.0 | 6,529.1 | 12,244.2 | 6,599.1 | 160.1 | 159.9 | 106.26 | 414.9 | 5,491.0 | 250.1 | -58.8 | 308.85 | 0.810 | Level 1 |
| 12,300.0 | 6,528.3 | 12,344.2 | 6,598.3 | 162.9 | 162.7 | 106.26 | 414.8 | 5,591.0 | 250.1 | -64.2 | 314.24 | 0.796 | Level 1 |
| 12,400.0 | 6,527.6 | 12,444.2 | 6,597.6 | 165.7 | 165.5 | 106.26 | 414.8 | 5,691.0 | 250.1 | -69.6 | 319.62 | 0.782 | Level 1 |
| 12,500.0 | 6,526.8 | 12,544.2 | 6,596.8 | 168.5 | 168.3 | 106.26 | 414.8 | 5,791.0 | 250.1 | -74.9 | 325.01 | 0.769 | Level 1 |
| 12,600.0 | 6,526.1 | 12,644.2 | 6,596.1 | 171.3 | 171.1 | 106.26 | 414.8 | 5,891.0 | 250.1 | -80.3 | 330.40 | 0.757 | Level 1 |
| 12,700.0 | 6,525.3 | 12,744.2 | 6,595.3 | 174.0 | 173.9 | 106.26 | 414.8 | 5,991.0 | 250.1 | -85.7 | 335.79 | 0.745 | Level 1 |
| 12,800.0 | 6,524.6 | 12,844.2 | 6,594.6 | 176.8 | 176.7 | 106.26 | 414.8 | 6,090.9 | 250.1 | -91.1 | 341.17 | 0.733 | Level 1 |
| 12,900.0 | 6,523.8 | 12,944.2 | 6,593.8 | 179.6 | 179.5 | 106.26 | 414.8 | 6,190.9 | 250.1 | -96.5 | 346.56 | 0.722 | Level 1 |
| 13,000.0 | 6,523.1 | 13,044.2 | 6,593.1 | 182.4 | 182.3 | 106.26 | 414.8 | 6,290.9 | 250.1 | -101.9 | 351.96 | 0.711 | Level 1 |
| 13,100.0 | 6,522.3 | 13,144.2 | 6,592.3 | 185.2 | 185.1 | 106.26 | 414.8 | 6,390.9 | 250.1 | -107.3 | 357.35 | 0.700 | Level 1 |
| 13,200.0 | 6,521.6 | 13,244.2 | 6,591.6 | 188.0 | 187.9 | 106.26 | 414.8 | 6,490.9 | 250.1 | -112.7 | 362.74 | 0.689 | Level 1 |
| 13,300.0 | 6,520.8 | 13,344.2 | 6,590.8 | 190.8 | 190.7 | 106.26 | 414.8 | 6,590.9 | 250.1 | -118.1 | 368.13 | 0.679 | Level 1 |
| 13,400.0 | 6,520.1 | 13,444.2 | 6,590.1 | 193.6 | 193.5 | 106.26 | 414.8 | 6,690.9 | 250.1 | -123.4 | 373.52 | 0.670 | Level 1 |
| 13,500.0 | 6,519.3 | 13,544.2 | 6,589.3 | 196.4 | 196.3 | 106.26 | 414.8 | 6,790.9 | 250.1 | -128.8 | 378.92 | 0.660 | Level 1 |
| 13,600.0 | 6,518.6 | 13,644.2 | 6,588.6 | 199.2 | 199.1 | 106.26 | 414.8 | 6,890.9 | 250.1 | -134.2 | 384.31 | 0.651 | Level 1 |
| 13,675.2 | 6,518.0 | 13,719.3 | 6,588.0 | 201.3 | 201.2 | 106.26 | 414.8 | 6,966.1 | 250.1 | -138.3 | 388.37 | 0.644 | Level 1, ES, SF |

| | | | |
|---|---|---|---|
| **Company:** | PETROLEUM DEVELOPMENT CORP DJ Basin | **Local Co-ordinate Reference:** | Well Bihain 26F-232 |
| **Project:** | SEC.26-T5N-R64W | **TVD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Reference Site:** | Bihain 5N64W26GK Pad Sec.26-T5N-R64W | **MD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | Bihain 26F-232 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | Plan #1 (11-2-15) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Bihain 5N64W26GK Pad Sec.26-T5N-R64W - Bihain 26G-212 - Wellbore #1 - Plan #1 (11-2-15)

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 129.86 | -19.3 | 23.1 | 30.1 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 129.86 | -19.3 | 23.1 | 30.1 | 29.9 | 0.22 | 134.041 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 129.86 | -19.3 | 23.1 | 30.1 | 29.5 | 0.67 | 44.680 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.6 | 0.6 | 129.86 | -19.3 | 23.1 | 30.1 | 29.0 | 1.12 | 26.808 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | 129.86 | -19.3 | 23.1 | 30.1 | 28.6 | 1.57 | 19.149 | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.0 | 1.0 | 129.86 | -19.3 | 23.1 | 30.1 | 28.1 | 2.02 | 14.893 | |
| 600.0 | 600.0 | 600.0 | 600.0 | 1.2 | 1.2 | 129.86 | -19.3 | 23.1 | 30.1 | 27.7 | 2.47 | 12.186 | |
| 700.0 | 700.0 | 700.0 | 700.0 | 1.5 | 1.5 | 129.86 | -19.3 | 23.1 | 30.1 | 27.2 | 2.92 | 10.311 | |
| 800.0 | 800.0 | 800.0 | 800.0 | 1.7 | 1.7 | 129.86 | -19.3 | 23.1 | 30.1 | 26.8 | 3.37 | 8.936 | |
| 900.0 | 900.0 | 900.0 | 900.0 | 1.9 | 1.9 | 129.86 | -19.3 | 23.1 | 30.1 | 26.3 | 3.82 | 7.885 | |
| 1,000.0 | 1,000.0 | 1,000.0 | 1,000.0 | 2.1 | 2.1 | 129.86 | -19.3 | 23.1 | 30.1 | 25.9 | 4.27 | 7.055 | CC, ES |
| 1,100.0 | 1,100.0 | 1,100.0 | 1,100.0 | 2.4 | 2.4 | 162.04 | -19.3 | 23.1 | 31.4 | 26.7 | 4.72 | 6.649 | |
| 1,200.0 | 1,199.9 | 1,199.9 | 1,199.9 | 2.6 | 2.6 | 164.00 | -19.3 | 23.1 | 35.1 | 30.0 | 5.16 | 6.803 | |
| 1,300.0 | 1,299.7 | 1,299.7 | 1,299.7 | 2.8 | 2.8 | 166.47 | -19.3 | 23.1 | 41.5 | 35.8 | 5.61 | 7.393 | |
| 1,400.0 | 1,399.3 | 1,399.3 | 1,399.3 | 3.0 | 3.0 | 168.87 | -19.3 | 23.1 | 50.4 | 44.3 | 6.05 | 8.332 | |
| 1,500.0 | 1,498.6 | 1,498.6 | 1,498.6 | 3.3 | 3.3 | 170.94 | -19.3 | 23.1 | 62.0 | 55.5 | 6.49 | 9.552 | |
| 1,600.0 | 1,597.5 | 1,597.5 | 1,597.5 | 3.6 | 3.5 | 172.62 | -19.3 | 23.1 | 76.2 | 69.3 | 6.92 | 11.003 | |
| 1,700.0 | 1,696.1 | 1,697.4 | 1,697.4 | 3.9 | 3.7 | 174.23 | -19.0 | 22.3 | 92.3 | 85.0 | 7.35 | 12.562 | |
| 1,731.5 | 1,727.1 | 1,728.9 | 1,728.9 | 4.0 | 3.8 | 174.78 | -18.8 | 21.8 | 97.7 | 90.2 | 7.48 | 13.055 | |
| 1,800.0 | 1,794.3 | 1,797.4 | 1,797.4 | 4.2 | 3.9 | 175.99 | -18.2 | 19.9 | 109.1 | 101.3 | 7.78 | 14.021 | |
| 1,900.0 | 1,892.5 | 1,897.8 | 1,897.6 | 4.5 | 4.1 | 177.77 | -16.7 | 15.8 | 124.6 | 116.4 | 8.22 | 15.156 | |
| 2,000.0 | 1,990.6 | 1,998.5 | 1,998.2 | 4.9 | 4.3 | 179.61 | -14.7 | 10.1 | 138.9 | 130.3 | 8.68 | 16.011 | |
| 2,100.0 | 2,088.8 | 2,099.5 | 2,098.9 | 5.2 | 4.6 | -178.46 | -12.1 | 2.6 | 152.0 | 142.9 | 9.14 | 16.628 | |
| 2,200.0 | 2,187.0 | 2,200.7 | 2,199.6 | 5.6 | 4.8 | -176.41 | -8.8 | -6.5 | 163.9 | 154.3 | 9.62 | 17.042 | |
| 2,300.0 | 2,285.1 | 2,302.1 | 2,300.3 | 6.0 | 5.1 | -174.24 | -5.0 | -17.4 | 174.8 | 164.7 | 10.11 | 17.282 | |
| 2,400.0 | 2,383.3 | 2,403.6 | 2,400.9 | 6.4 | 5.3 | -171.92 | -0.6 | -29.9 | 184.6 | 174.0 | 10.63 | 17.372 | |
| 2,500.0 | 2,481.5 | 2,504.2 | 2,500.5 | 6.8 | 5.6 | -169.49 | 4.3 | -43.9 | 193.7 | 182.5 | 11.17 | 17.348 | |
| 2,600.0 | 2,579.7 | 2,603.5 | 2,598.6 | 7.2 | 5.9 | -167.24 | 9.3 | -58.0 | 202.9 | 191.1 | 11.72 | 17.309 | |
| 2,700.0 | 2,677.8 | 2,702.7 | 2,696.8 | 7.6 | 6.2 | -165.19 | 14.3 | -72.0 | 212.3 | 200.0 | 12.29 | 17.273 | |
| 2,800.0 | 2,776.0 | 2,802.0 | 2,794.9 | 8.0 | 6.5 | -163.31 | 19.2 | -86.1 | 222.0 | 209.1 | 12.88 | 17.238 | |
| 2,900.0 | 2,874.2 | 2,901.3 | 2,893.0 | 8.4 | 6.8 | -161.59 | 24.2 | -100.2 | 231.9 | 218.4 | 13.48 | 17.205 | |
| 3,000.0 | 2,972.3 | 3,000.6 | 2,991.2 | 8.8 | 7.1 | -160.02 | 29.2 | -114.2 | 242.0 | 227.9 | 14.09 | 17.172 | |
| 3,100.0 | 3,070.5 | 3,099.8 | 3,089.3 | 9.2 | 7.4 | -158.57 | 34.1 | -128.3 | 252.3 | 237.6 | 14.72 | 17.140 | |
| 3,200.0 | 3,168.7 | 3,199.1 | 3,187.5 | 9.6 | 7.7 | -157.23 | 39.1 | -142.4 | 262.7 | 247.4 | 15.36 | 17.109 | |
| 3,300.0 | 3,266.9 | 3,298.4 | 3,285.6 | 10.0 | 8.0 | -156.00 | 44.1 | -156.5 | 273.3 | 257.3 | 16.00 | 17.078 | |
| 3,400.0 | 3,365.0 | 3,397.7 | 3,383.8 | 10.4 | 8.4 | -154.85 | 49.0 | -170.5 | 283.9 | 267.3 | 16.65 | 17.049 | |
| 3,500.0 | 3,463.2 | 3,496.9 | 3,481.9 | 10.8 | 8.7 | -153.79 | 54.0 | -184.6 | 294.7 | 277.4 | 17.31 | 17.021 | |
| 3,600.0 | 3,561.4 | 3,596.2 | 3,580.1 | 11.2 | 9.0 | -152.81 | 59.0 | -198.7 | 305.6 | 287.6 | 17.98 | 16.994 | |
| 3,700.0 | 3,659.5 | 3,695.5 | 3,678.2 | 11.6 | 9.4 | -151.89 | 63.9 | -212.7 | 316.5 | 297.9 | 18.65 | 16.969 | |
| 3,800.0 | 3,757.7 | 3,794.8 | 3,776.4 | 12.0 | 9.7 | -151.04 | 68.9 | -226.8 | 327.6 | 308.2 | 19.33 | 16.944 | |
| 3,900.0 | 3,855.9 | 3,894.0 | 3,874.5 | 12.4 | 10.0 | -150.24 | 73.9 | -240.9 | 338.6 | 318.6 | 20.01 | 16.921 | |
| 4,000.0 | 3,954.1 | 3,993.3 | 3,972.7 | 12.9 | 10.4 | -149.49 | 78.8 | -255.0 | 349.8 | 329.1 | 20.70 | 16.899 | |
| 4,100.0 | 4,052.2 | 4,092.6 | 4,070.8 | 13.3 | 10.7 | -148.79 | 83.8 | -269.0 | 361.0 | 339.6 | 21.39 | 16.878 | |
| 4,200.0 | 4,150.4 | 4,191.9 | 4,169.0 | 13.7 | 11.0 | -148.13 | 88.8 | -283.1 | 372.3 | 350.2 | 22.08 | 16.859 | |
| 4,300.0 | 4,248.6 | 4,291.1 | 4,267.1 | 14.1 | 11.4 | -147.50 | 93.7 | -297.2 | 383.6 | 360.8 | 22.78 | 16.840 | |
| 4,400.0 | 4,346.8 | 4,390.4 | 4,365.3 | 14.5 | 11.7 | -146.92 | 98.7 | -311.2 | 394.9 | 371.4 | 23.48 | 16.823 | |
| 4,500.0 | 4,444.9 | 4,489.7 | 4,463.4 | 14.9 | 12.1 | -146.36 | 103.7 | -325.3 | 406.3 | 382.1 | 24.18 | 16.806 | |
| 4,600.0 | 4,543.1 | 4,589.0 | 4,561.6 | 15.3 | 12.4 | -145.84 | 108.6 | -339.4 | 417.7 | 392.8 | 24.88 | 16.790 | |
| 4,700.0 | 4,641.3 | 4,688.2 | 4,659.7 | 15.8 | 12.8 | -145.35 | 113.6 | -353.5 | 429.2 | 403.6 | 25.58 | 16.775 | |
| 4,800.0 | 4,739.4 | 4,787.5 | 4,757.9 | 16.2 | 13.1 | -144.88 | 118.6 | -367.5 | 440.7 | 414.4 | 26.29 | 16.761 | |
| 4,900.0 | 4,837.6 | 4,883.2 | 4,852.6 | 16.6 | 13.4 | -144.60 | 123.0 | -379.9 | 452.5 | 425.6 | 26.92 | 16.809 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PETROLEUM DEVELOPMENT CORP DJ Basin | **Local Co-ordinate Reference:** | Well Bihain 26F-232 |
| **Project:** | SEC.26-T5N-R64W | **TVD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Reference Site:** | Bihain 5N64W26GK Pad Sec.26-T5N-R64W | **MD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | Bihain 26F-232 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | Plan #1 (11-2-15) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Bihain 5N64W26GK Pad Sec.26-T5N-R64W - Bihain 26G-212 - Wellbore #1 - Plan #1 (11-2-15)

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,000.0 | 4,935.8 | 4,978.2 | 4,947.1 | 17.0 | 13.6 | -144.71 | 126.3 | -389.3 | 465.3 | 437.8 | 27.45 | 16.949 | |
| 5,100.0 | 5,034.0 | 5,072.8 | 5,041.5 | 17.4 | 13.8 | -145.18 | 128.5 | -395.7 | 479.0 | 451.0 | 27.91 | 17.160 | |
| 5,121.1 | 5,054.7 | 5,092.8 | 5,061.4 | 17.5 | 13.9 | -145.32 | 128.9 | -396.7 | 482.0 | 454.0 | 28.00 | 17.212 | |
| 5,200.0 | 5,132.3 | 5,167.0 | 5,135.6 | 17.8 | 14.0 | -146.03 | 129.8 | -399.2 | 492.7 | 464.4 | 28.31 | 17.406 | |
| 5,300.0 | 5,231.2 | 5,262.7 | 5,231.2 | 18.1 | 14.1 | -146.97 | 130.0 | -399.9 | 504.7 | 476.1 | 28.61 | 17.641 | |
| 5,400.0 | 5,330.6 | 5,362.1 | 5,330.6 | 18.3 | 14.3 | -147.75 | 130.0 | -399.9 | 514.1 | 485.2 | 28.91 | 17.783 | |
| 5,500.0 | 5,430.3 | 5,461.8 | 5,430.3 | 18.5 | 14.5 | -148.26 | 130.0 | -399.9 | 520.6 | 491.4 | 29.21 | 17.825 | |
| 5,600.0 | 5,530.2 | 5,561.7 | 5,530.2 | 18.7 | 14.7 | -148.54 | 130.0 | -399.9 | 524.2 | 494.7 | 29.49 | 17.774 | |
| 5,669.8 | 5,600.0 | 5,631.4 | 5,600.0 | 18.8 | 14.8 | 179.99 | 130.0 | -399.9 | 524.9 | 494.9 | 30.02 | 17.484 | |
| 5,700.0 | 5,630.2 | 5,661.7 | 5,630.2 | 18.8 | 14.8 | 179.99 | 130.0 | -399.9 | 524.9 | 494.8 | 30.13 | 17.423 | |
| 5,800.0 | 5,730.2 | 5,761.7 | 5,730.2 | 19.0 | 15.0 | 179.99 | 130.0 | -399.9 | 524.9 | 494.4 | 30.49 | 17.218 | |
| 5,873.4 | 5,803.6 | 5,835.0 | 5,803.6 | 19.1 | 15.2 | 179.99 | 130.0 | -399.9 | 524.9 | 494.2 | 30.75 | 17.070 | |
| 5,884.2 | 5,814.4 | 5,845.8 | 5,814.4 | 19.1 | 15.2 | 89.99 | 130.0 | -399.8 | 524.9 | 494.5 | 30.46 | 17.235 | |
| 5,900.0 | 5,830.2 | 5,861.7 | 5,830.2 | 19.1 | 15.2 | 89.99 | 130.0 | -399.4 | 524.9 | 494.4 | 30.50 | 17.209 | |
| 5,950.0 | 5,880.1 | 5,911.6 | 5,880.1 | 19.1 | 15.3 | 89.99 | 130.0 | -396.1 | 524.9 | 494.3 | 30.61 | 17.146 | |
| 6,000.0 | 5,929.6 | 5,961.6 | 5,929.6 | 19.2 | 15.3 | 89.99 | 130.0 | -389.5 | 524.9 | 494.2 | 30.69 | 17.106 | |
| 6,050.0 | 5,978.6 | 6,011.6 | 5,978.6 | 19.2 | 15.3 | 90.00 | 130.0 | -379.6 | 524.9 | 494.2 | 30.72 | 17.087 | |
| 6,100.0 | 6,026.9 | 6,061.6 | 6,026.9 | 19.2 | 15.3 | 90.00 | 130.0 | -366.6 | 524.9 | 494.2 | 30.72 | 17.085 | |
| 6,150.0 | 6,074.2 | 6,111.6 | 6,074.2 | 19.2 | 15.3 | 90.00 | 130.0 | -350.5 | 524.9 | 494.2 | 30.70 | 17.096 | |
| 6,200.0 | 6,120.4 | 6,161.6 | 6,120.4 | 19.1 | 15.3 | 90.00 | 130.0 | -331.3 | 524.9 | 494.2 | 30.67 | 17.113 | |
| 6,250.0 | 6,165.1 | 6,211.6 | 6,165.2 | 19.1 | 15.3 | 90.01 | 130.0 | -309.1 | 524.9 | 494.3 | 30.64 | 17.130 | |
| 6,300.0 | 6,208.4 | 6,261.6 | 6,208.4 | 19.1 | 15.2 | 90.01 | 130.0 | -284.0 | 524.9 | 494.3 | 30.63 | 17.138 | |
| 6,350.0 | 6,249.9 | 6,311.7 | 6,250.0 | 19.0 | 15.2 | 90.01 | 130.0 | -256.2 | 524.9 | 494.3 | 30.65 | 17.128 | |
| 6,400.0 | 6,289.5 | 6,361.7 | 6,289.6 | 18.9 | 15.3 | 90.02 | 130.0 | -225.7 | 524.9 | 494.2 | 30.72 | 17.089 | |
| 6,450.0 | 6,327.0 | 6,411.7 | 6,327.1 | 18.9 | 15.3 | 90.02 | 130.0 | -192.6 | 524.9 | 494.0 | 30.86 | 17.009 | |
| 6,500.0 | 6,362.3 | 6,461.7 | 6,362.4 | 18.8 | 15.4 | 90.02 | 130.0 | -157.2 | 524.9 | 493.8 | 31.10 | 16.877 | |
| 6,550.0 | 6,395.2 | 6,511.7 | 6,395.3 | 18.8 | 15.6 | 90.02 | 130.0 | -119.6 | 524.9 | 493.4 | 31.46 | 16.684 | |
| 6,600.0 | 6,425.5 | 6,561.7 | 6,425.7 | 18.7 | 15.8 | 90.03 | 130.0 | -79.8 | 524.9 | 493.0 | 31.96 | 16.425 | |
| 6,650.0 | 6,453.2 | 6,611.7 | 6,453.4 | 18.7 | 16.1 | 90.03 | 130.0 | -38.2 | 524.9 | 492.3 | 32.61 | 16.098 | |
| 6,700.0 | 6,478.1 | 6,661.7 | 6,478.3 | 18.6 | 16.5 | 90.03 | 130.0 | 5.1 | 524.9 | 491.5 | 33.42 | 15.706 | |
| 6,750.0 | 6,500.1 | 6,711.8 | 6,500.4 | 18.6 | 17.0 | 90.03 | 130.0 | 50.0 | 524.9 | 490.5 | 34.41 | 15.256 | |
| 6,800.0 | 6,519.1 | 6,761.8 | 6,519.4 | 18.5 | 17.6 | 90.03 | 130.0 | 96.3 | 524.9 | 489.4 | 35.56 | 14.760 | |
| 6,850.0 | 6,535.1 | 6,811.8 | 6,535.4 | 18.6 | 18.3 | 90.04 | 130.0 | 143.7 | 524.9 | 488.0 | 36.88 | 14.232 | |
| 6,900.0 | 6,547.9 | 6,861.8 | 6,548.3 | 19.4 | 19.0 | 90.04 | 130.0 | 192.0 | 524.9 | 486.6 | 38.36 | 13.685 | |
| 6,950.0 | 6,557.6 | 6,911.9 | 6,557.9 | 20.2 | 19.8 | 90.04 | 130.0 | 241.1 | 524.9 | 484.9 | 39.97 | 13.134 | |
| 7,000.0 | 6,564.0 | 6,961.9 | 6,564.4 | 21.1 | 20.7 | 90.04 | 130.0 | 290.7 | 524.9 | 483.2 | 41.70 | 12.588 | |
| 7,050.0 | 6,567.2 | 7,011.9 | 6,567.5 | 22.0 | 21.6 | 90.04 | 130.0 | 340.6 | 524.9 | 481.4 | 43.53 | 12.059 | |
| 7,079.1 | 6,567.5 | 7,041.0 | 6,567.9 | 22.6 | 22.2 | 90.04 | 130.0 | 369.7 | 524.9 | 480.3 | 44.63 | 11.762 | |
| 7,100.0 | 6,567.3 | 7,061.9 | 6,567.7 | 23.0 | 22.6 | 90.04 | 130.0 | 390.6 | 524.9 | 479.5 | 45.44 | 11.551 | |
| 7,200.0 | 6,566.6 | 7,161.9 | 6,566.8 | 25.1 | 24.6 | 90.02 | 130.0 | 490.6 | 524.9 | 475.4 | 49.52 | 10.599 | |
| 7,300.0 | 6,565.8 | 7,261.9 | 6,565.9 | 27.3 | 26.8 | 90.00 | 130.0 | 590.6 | 524.9 | 471.0 | 53.87 | 9.744 | |
| 7,400.0 | 6,565.1 | 7,361.9 | 6,565.0 | 29.6 | 29.1 | 89.99 | 130.0 | 690.6 | 524.9 | 466.5 | 58.44 | 8.983 | |
| 7,500.0 | 6,564.3 | 7,461.9 | 6,564.1 | 31.9 | 31.5 | 89.97 | 130.0 | 790.6 | 524.9 | 461.7 | 63.17 | 8.309 | |
| 7,600.0 | 6,563.6 | 7,561.9 | 6,563.2 | 34.4 | 33.9 | 89.95 | 130.0 | 890.6 | 524.9 | 456.9 | 68.04 | 7.715 | |
| 7,700.0 | 6,562.8 | 7,661.9 | 6,562.3 | 36.9 | 36.4 | 89.94 | 130.0 | 990.6 | 524.9 | 451.9 | 73.02 | 7.189 | |
| 7,800.0 | 6,562.1 | 7,761.9 | 6,561.3 | 39.4 | 39.0 | 89.92 | 130.0 | 1,090.6 | 524.9 | 446.8 | 78.09 | 6.722 | |
| 7,900.0 | 6,561.3 | 7,861.9 | 6,560.4 | 42.0 | 41.5 | 89.90 | 130.0 | 1,190.5 | 524.9 | 441.7 | 83.22 | 6.307 | |
| 8,000.0 | 6,560.6 | 7,961.9 | 6,559.5 | 44.5 | 44.1 | 89.88 | 130.0 | 1,290.5 | 524.9 | 436.5 | 88.42 | 5.937 | |
| 8,100.0 | 6,559.8 | 8,061.9 | 6,558.6 | 47.2 | 46.8 | 89.87 | 130.0 | 1,390.5 | 524.9 | 431.3 | 93.66 | 5.604 | |
| 8,200.0 | 6,559.1 | 8,161.9 | 6,557.7 | 49.8 | 49.4 | 89.85 | 130.0 | 1,490.5 | 524.9 | 426.0 | 98.95 | 5.305 | |
| 8,300.0 | 6,558.3 | 8,261.9 | 6,556.8 | 52.4 | 52.1 | 89.83 | 130.0 | 1,590.5 | 524.9 | 420.7 | 104.27 | 5.034 | |

| | | | |
|---|---|---|---|
| **Company:** | PETROLEUM DEVELOPMENT CORP DJ Basin | **Local Co-ordinate Reference:** | Well Bihain 26F-232 |
| **Project:** | SEC.26-T5N-R64W | **TVD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Reference Site:** | Bihain 5N64W26GK Pad Sec.26-T5N-R64W | **MD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | Bihain 26F-232 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | Plan #1 (11-2-15) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Bihain 5N64W26GK Pad Sec.26-T5N-R64W - Bihain 26G-212 - Wellbore #1 - Plan #1 (11-2-15)

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8,400.0 | 6,557.6 | 8,361.9 | 6,555.9 | 55.1 | 54.8 | 89.82 | 130.0 | 1,690.5 | 524.9 | 415.3 | 109.62 | 4.789 | |
| 8,500.0 | 6,556.8 | 8,461.9 | 6,555.0 | 57.8 | 57.4 | 89.80 | 130.0 | 1,790.5 | 524.9 | 409.9 | 114.99 | 4.565 | |
| 8,600.0 | 6,556.1 | 8,561.9 | 6,554.1 | 60.5 | 60.1 | 89.78 | 130.0 | 1,890.5 | 524.9 | 404.5 | 120.39 | 4.360 | |
| 8,700.0 | 6,555.3 | 8,661.9 | 6,553.2 | 63.2 | 62.9 | 89.76 | 130.0 | 1,990.5 | 524.9 | 399.1 | 125.81 | 4.172 | |
| 8,800.0 | 6,554.6 | 8,761.9 | 6,552.3 | 65.9 | 65.6 | 89.75 | 130.0 | 2,090.5 | 524.9 | 393.7 | 131.24 | 4.000 | |
| 8,900.0 | 6,553.8 | 8,861.9 | 6,551.4 | 68.6 | 68.3 | 89.73 | 130.0 | 2,190.5 | 524.9 | 388.2 | 136.69 | 3.840 | |
| 9,000.0 | 6,553.1 | 8,961.9 | 6,550.5 | 71.3 | 71.0 | 89.71 | 130.0 | 2,290.5 | 524.9 | 382.8 | 142.16 | 3.693 | |
| 9,100.0 | 6,552.3 | 9,061.9 | 6,549.5 | 74.1 | 73.8 | 89.70 | 130.0 | 2,390.5 | 524.9 | 377.3 | 147.63 | 3.556 | |
| 9,200.0 | 6,551.6 | 9,161.9 | 6,548.6 | 76.8 | 76.5 | 89.68 | 130.0 | 2,490.5 | 524.9 | 371.8 | 153.11 | 3.428 | |
| 9,300.0 | 6,550.8 | 9,261.9 | 6,547.7 | 79.5 | 79.3 | 89.66 | 130.0 | 2,590.5 | 524.9 | 366.3 | 158.61 | 3.310 | |
| 9,400.0 | 6,550.1 | 9,361.9 | 6,546.8 | 82.3 | 82.0 | 89.64 | 130.0 | 2,690.5 | 524.9 | 360.8 | 164.11 | 3.199 | |
| 9,500.0 | 6,549.3 | 9,461.9 | 6,545.9 | 85.0 | 84.8 | 89.63 | 130.0 | 2,790.5 | 524.9 | 355.3 | 169.62 | 3.095 | |
| 9,600.0 | 6,548.6 | 9,561.9 | 6,545.0 | 87.8 | 87.5 | 89.61 | 130.0 | 2,890.5 | 524.9 | 349.8 | 175.14 | 2.997 | |
| 9,700.0 | 6,547.8 | 9,661.9 | 6,544.1 | 90.6 | 90.3 | 89.59 | 130.0 | 2,990.5 | 525.0 | 344.3 | 180.66 | 2.906 | |
| 9,800.0 | 6,547.1 | 9,761.9 | 6,543.2 | 93.3 | 93.1 | 89.58 | 130.0 | 3,090.5 | 525.0 | 338.8 | 186.19 | 2.819 | |
| 9,900.0 | 6,546.3 | 9,861.9 | 6,542.3 | 96.1 | 95.8 | 89.56 | 130.0 | 3,190.5 | 525.0 | 333.2 | 191.72 | 2.738 | |
| 10,000.0 | 6,545.6 | 9,961.9 | 6,541.4 | 98.8 | 98.6 | 89.54 | 130.0 | 3,290.5 | 525.0 | 327.7 | 197.26 | 2.661 | |
| 10,100.0 | 6,544.8 | 10,061.9 | 6,540.5 | 101.6 | 101.4 | 89.52 | 130.0 | 3,390.5 | 525.0 | 322.2 | 202.81 | 2.588 | |
| 10,200.0 | 6,544.1 | 10,161.9 | 6,539.6 | 104.4 | 104.2 | 89.51 | 130.0 | 3,490.5 | 525.0 | 316.6 | 208.35 | 2.520 | |
| 10,300.0 | 6,543.3 | 10,261.9 | 6,538.7 | 107.2 | 106.9 | 89.49 | 130.0 | 3,590.4 | 525.0 | 311.1 | 213.90 | 2.454 | |
| 10,400.0 | 6,542.6 | 10,361.9 | 6,537.7 | 109.9 | 109.7 | 89.47 | 130.0 | 3,690.4 | 525.0 | 305.5 | 219.46 | 2.392 | |
| 10,500.0 | 6,541.8 | 10,461.9 | 6,536.8 | 112.7 | 112.5 | 89.46 | 130.0 | 3,790.4 | 525.0 | 300.0 | 225.01 | 2.333 | |
| 10,600.0 | 6,541.1 | 10,561.9 | 6,535.9 | 115.5 | 115.3 | 89.44 | 130.0 | 3,890.4 | 525.0 | 294.4 | 230.58 | 2.277 | |
| 10,700.0 | 6,540.3 | 10,661.9 | 6,535.0 | 118.3 | 118.0 | 89.42 | 130.0 | 3,990.4 | 525.0 | 288.8 | 236.14 | 2.223 | |
| 10,800.0 | 6,539.6 | 10,761.9 | 6,534.1 | 121.0 | 120.8 | 89.40 | 130.0 | 4,090.4 | 525.0 | 283.3 | 241.70 | 2.172 | |
| 10,900.0 | 6,538.8 | 10,861.9 | 6,533.2 | 123.8 | 123.6 | 89.39 | 130.0 | 4,190.4 | 525.0 | 277.7 | 247.27 | 2.123 | |
| 11,000.0 | 6,538.1 | 10,961.9 | 6,532.3 | 126.6 | 126.4 | 89.37 | 130.0 | 4,290.4 | 525.0 | 272.1 | 252.84 | 2.076 | |
| 11,100.0 | 6,537.3 | 11,061.9 | 6,531.4 | 129.4 | 129.2 | 89.35 | 130.0 | 4,390.4 | 525.0 | 266.6 | 258.41 | 2.032 | |
| 11,200.0 | 6,536.6 | 11,161.9 | 6,530.5 | 132.2 | 132.0 | 89.34 | 130.0 | 4,490.4 | 525.0 | 261.0 | 263.99 | 1.989 | |
| 11,300.0 | 6,535.8 | 11,261.9 | 6,529.6 | 135.0 | 134.8 | 89.32 | 130.0 | 4,590.4 | 525.0 | 255.4 | 269.56 | 1.948 | |
| 11,400.0 | 6,535.1 | 11,361.9 | 6,528.7 | 137.7 | 137.6 | 89.30 | 130.0 | 4,690.4 | 525.0 | 249.9 | 275.14 | 1.908 | |
| 11,500.0 | 6,534.3 | 11,461.9 | 6,527.8 | 140.5 | 140.3 | 89.28 | 130.0 | 4,790.4 | 525.0 | 244.3 | 280.72 | 1.870 | |
| 11,600.0 | 6,533.6 | 11,561.9 | 6,526.9 | 143.3 | 143.1 | 89.27 | 130.0 | 4,890.4 | 525.0 | 238.7 | 286.30 | 1.834 | |
| 11,700.0 | 6,532.8 | 11,661.9 | 6,525.9 | 146.1 | 145.9 | 89.25 | 130.0 | 4,990.4 | 525.0 | 233.1 | 291.88 | 1.799 | |
| 11,800.0 | 6,532.1 | 11,761.9 | 6,525.0 | 148.9 | 148.7 | 89.23 | 130.0 | 5,090.4 | 525.0 | 227.5 | 297.46 | 1.765 | |
| 11,900.0 | 6,531.3 | 11,861.9 | 6,524.1 | 151.7 | 151.5 | 89.22 | 130.0 | 5,190.4 | 525.0 | 222.0 | 303.05 | 1.732 | |
| 12,000.0 | 6,530.6 | 11,961.9 | 6,523.2 | 154.5 | 154.3 | 89.20 | 130.0 | 5,290.4 | 525.0 | 216.4 | 308.63 | 1.701 | |
| 12,100.0 | 6,529.8 | 12,061.9 | 6,522.3 | 157.3 | 157.1 | 89.18 | 130.0 | 5,390.4 | 525.0 | 210.8 | 314.22 | 1.671 | |
| 12,200.0 | 6,529.1 | 12,161.9 | 6,521.4 | 160.1 | 159.9 | 89.16 | 130.0 | 5,490.4 | 525.0 | 205.2 | 319.81 | 1.642 | |
| 12,300.0 | 6,528.3 | 12,261.9 | 6,520.5 | 162.9 | 162.7 | 89.15 | 130.0 | 5,590.4 | 525.0 | 199.6 | 325.39 | 1.613 | |
| 12,400.0 | 6,527.6 | 12,361.9 | 6,519.6 | 165.7 | 165.5 | 89.13 | 130.0 | 5,690.4 | 525.0 | 194.0 | 330.98 | 1.586 | |
| 12,500.0 | 6,526.8 | 12,461.9 | 6,518.7 | 168.5 | 168.3 | 89.11 | 130.0 | 5,790.4 | 525.0 | 188.5 | 336.57 | 1.560 | |
| 12,600.0 | 6,526.1 | 12,561.9 | 6,517.8 | 171.3 | 171.1 | 89.10 | 130.0 | 5,890.4 | 525.0 | 182.9 | 342.16 | 1.534 | |
| 12,700.0 | 6,525.3 | 12,661.9 | 6,516.9 | 174.0 | 173.9 | 89.08 | 130.0 | 5,990.3 | 525.0 | 177.3 | 347.75 | 1.510 | |
| 12,800.0 | 6,524.6 | 12,761.9 | 6,516.0 | 176.8 | 176.7 | 89.06 | 130.0 | 6,090.3 | 525.0 | 171.7 | 353.35 | 1.486 | Level 3 |
| 12,900.0 | 6,523.8 | 12,861.9 | 6,515.1 | 179.6 | 179.5 | 89.04 | 130.0 | 6,190.3 | 525.0 | 166.1 | 358.94 | 1.463 | Level 3 |
| 13,000.0 | 6,523.1 | 12,961.9 | 6,514.1 | 182.4 | 182.3 | 89.03 | 130.0 | 6,290.3 | 525.0 | 160.5 | 364.53 | 1.440 | Level 3 |
| 13,100.0 | 6,522.3 | 13,061.9 | 6,513.2 | 185.2 | 185.1 | 89.01 | 130.0 | 6,390.3 | 525.0 | 154.9 | 370.13 | 1.419 | Level 3 |
| 13,200.0 | 6,521.6 | 13,161.9 | 6,512.3 | 188.0 | 187.9 | 88.99 | 130.0 | 6,490.3 | 525.0 | 149.3 | 375.72 | 1.397 | Level 3 |
| 13,300.0 | 6,520.8 | 13,261.9 | 6,511.4 | 190.8 | 190.7 | 88.98 | 130.0 | 6,590.3 | 525.1 | 143.7 | 381.32 | 1.377 | Level 3 |
| 13,400.0 | 6,520.1 | 13,361.9 | 6,510.5 | 193.6 | 193.5 | 88.96 | 130.0 | 6,690.3 | 525.1 | 138.1 | 386.91 | 1.357 | Level 3 |

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|---|---|---|---|
| **Company:** | PETROLEUM DEVELOPMENT CORP DJ Basin | **Local Co-ordinate Reference:** | Well Bihain 26F-232 |
| **Project:** | SEC.26-T5N-R64W | **TVD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Reference Site:** | Bihain 5N64W26GK Pad Sec.26-T5N-R64W | **MD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | Bihain 26F-232 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | Plan #1 (11-2-15) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Bihain 5N64W26GK Pad Sec.26-T5N-R64W - Bihain 26G-212 - Wellbore #1 - Plan #1 (11-2-15)

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13,500.0 | 6,519.3 | 13,461.9 | 6,509.6 | 196.4 | 196.3 | 88.94 | 130.0 | 6,790.3 | 525.1 | 132.5 | 392.51 | 1.338 | Level 3 |
| 13,600.0 | 6,518.6 | 13,561.9 | 6,508.7 | 199.2 | 199.1 | 88.92 | 130.0 | 6,890.3 | 525.1 | 127.0 | 398.11 | 1.319 | Level 3 |
| 13,675.2 | 6,518.0 | 13,637.1 | 6,508.0 | 201.3 | 201.2 | 88.91 | 130.0 | 6,965.5 | 525.1 | 122.8 | 402.31 | 1.305 | Level 3, SF |

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|---|---|---|---|
| **Company:** | PETROLEUM DEVELOPMENT CORP DJ Basin | **Local Co-ordinate Reference:** | Well Bihain 26F-232 |
| **Project:** | SEC.26-T5N-R64W | **TVD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Reference Site:** | Bihain 5N64W26GK Pad Sec.26-T5N-R64W | **MD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | Bihain 26F-232 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | Plan #1 (11-2-15) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Bihain 5N64W26GK Pad Sec.26-T5N-R64W - Bihain 26G-312 - Wellbore #1 - Plan #1 (11-2-15)

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 129.79 | -28.8 | 34.6 | 45.0 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 129.79 | -28.8 | 34.6 | 45.0 | 44.7 | 0.22 | 200.054 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 129.79 | -28.8 | 34.6 | 45.0 | 44.3 | 0.67 | 66.685 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.6 | 0.6 | 129.79 | -28.8 | 34.6 | 45.0 | 43.8 | 1.12 | 40.011 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | 129.79 | -28.8 | 34.6 | 45.0 | 43.4 | 1.57 | 28.579 | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.0 | 1.0 | 129.79 | -28.8 | 34.6 | 45.0 | 42.9 | 2.02 | 22.228 | |
| 600.0 | 600.0 | 600.0 | 600.0 | 1.2 | 1.2 | 129.79 | -28.8 | 34.6 | 45.0 | 42.5 | 2.47 | 18.187 | |
| 700.0 | 700.0 | 700.0 | 700.0 | 1.5 | 1.5 | 129.79 | -28.8 | 34.6 | 45.0 | 42.0 | 2.92 | 15.389 | |
| 800.0 | 800.0 | 800.0 | 800.0 | 1.7 | 1.7 | 129.79 | -28.8 | 34.6 | 45.0 | 41.6 | 3.37 | 13.337 | |
| 900.0 | 900.0 | 900.0 | 900.0 | 1.9 | 1.9 | 129.79 | -28.8 | 34.6 | 45.0 | 41.1 | 3.82 | 11.768 | |
| 1,000.0 | 1,000.0 | 1,000.0 | 1,000.0 | 2.1 | 2.1 | 129.79 | -28.8 | 34.6 | 45.0 | 40.7 | 4.27 | 10.529 | CC, ES |
| 1,100.0 | 1,100.0 | 1,100.0 | 1,100.0 | 2.4 | 2.4 | 161.72 | -28.8 | 34.6 | 46.2 | 41.5 | 4.72 | 9.793 | |
| 1,200.0 | 1,199.9 | 1,199.9 | 1,199.9 | 2.6 | 2.6 | 163.12 | -28.8 | 34.6 | 49.9 | 44.8 | 5.16 | 9.674 | |
| 1,300.0 | 1,299.7 | 1,299.7 | 1,299.7 | 2.8 | 2.8 | 165.03 | -28.8 | 34.6 | 56.2 | 50.6 | 5.61 | 10.030 | |
| 1,400.0 | 1,399.3 | 1,399.3 | 1,399.3 | 3.0 | 3.0 | 167.08 | -28.8 | 34.6 | 65.1 | 59.1 | 6.05 | 10.767 | |
| 1,500.0 | 1,498.6 | 1,498.6 | 1,498.6 | 3.3 | 3.3 | 169.01 | -28.8 | 34.6 | 76.6 | 70.1 | 6.49 | 11.811 | |
| 1,600.0 | 1,597.5 | 1,597.5 | 1,597.5 | 3.6 | 3.5 | 170.70 | -28.8 | 34.6 | 90.8 | 83.8 | 6.92 | 13.108 | |
| 1,700.0 | 1,696.1 | 1,696.1 | 1,696.1 | 3.9 | 3.7 | 172.13 | -28.8 | 34.6 | 107.5 | 100.2 | 7.36 | 14.614 | |
| 1,731.5 | 1,727.1 | 1,727.1 | 1,727.1 | 4.0 | 3.8 | 172.52 | -28.8 | 34.6 | 113.3 | 105.8 | 7.49 | 15.126 | |
| 1,800.0 | 1,794.3 | 1,794.3 | 1,794.3 | 4.2 | 3.9 | 173.29 | -28.8 | 34.6 | 126.3 | 118.5 | 7.80 | 16.186 | |
| 1,900.0 | 1,892.5 | 1,892.5 | 1,892.5 | 4.5 | 4.1 | 174.17 | -28.8 | 34.6 | 145.2 | 136.9 | 8.25 | 17.589 | |
| 2,000.0 | 1,990.6 | 1,990.6 | 1,990.6 | 4.9 | 4.4 | 174.84 | -28.8 | 34.6 | 164.1 | 155.4 | 8.71 | 18.843 | |
| 2,100.0 | 2,088.8 | 2,090.1 | 2,090.1 | 5.2 | 4.6 | 175.59 | -28.9 | 33.9 | 182.8 | 173.6 | 9.16 | 19.962 | |
| 2,200.0 | 2,187.0 | 2,189.8 | 2,189.8 | 5.6 | 4.8 | 176.64 | -29.3 | 31.5 | 200.8 | 191.2 | 9.59 | 20.928 | |
| 2,300.0 | 2,285.1 | 2,289.7 | 2,289.6 | 6.0 | 5.0 | 177.95 | -30.0 | 27.3 | 218.1 | 208.0 | 10.03 | 21.734 | |
| 2,400.0 | 2,383.3 | 2,389.7 | 2,389.4 | 6.4 | 5.2 | 179.46 | -31.0 | 21.5 | 234.8 | 224.3 | 10.48 | 22.399 | |
| 2,500.0 | 2,481.5 | 2,489.7 | 2,489.1 | 6.8 | 5.4 | -178.86 | -32.3 | 13.9 | 251.1 | 240.1 | 10.94 | 22.942 | |
| 2,600.0 | 2,579.7 | 2,589.6 | 2,588.6 | 7.2 | 5.6 | -177.03 | -33.8 | 4.7 | 266.9 | 255.5 | 11.42 | 23.379 | |
| 2,700.0 | 2,677.8 | 2,689.5 | 2,687.8 | 7.6 | 5.8 | -175.07 | -35.7 | -6.3 | 282.5 | 270.6 | 11.91 | 23.723 | |
| 2,800.0 | 2,776.0 | 2,789.1 | 2,786.6 | 8.0 | 6.1 | -173.00 | -37.8 | -18.9 | 298.0 | 285.5 | 12.42 | 23.985 | |
| 2,900.0 | 2,874.2 | 2,887.6 | 2,884.1 | 8.4 | 6.3 | -170.94 | -40.1 | -32.6 | 313.5 | 300.5 | 12.96 | 24.195 | |
| 3,000.0 | 2,972.3 | 2,985.8 | 2,981.3 | 8.8 | 6.6 | -169.08 | -42.4 | -46.2 | 329.3 | 315.8 | 13.50 | 24.387 | |
| 3,100.0 | 3,070.5 | 3,084.0 | 3,078.5 | 9.2 | 6.9 | -167.39 | -44.7 | -59.9 | 345.5 | 331.4 | 14.07 | 24.562 | |
| 3,200.0 | 3,168.7 | 3,182.2 | 3,175.7 | 9.6 | 7.1 | -165.85 | -47.0 | -73.5 | 361.9 | 347.3 | 14.64 | 24.722 | |
| 3,300.0 | 3,266.9 | 3,280.3 | 3,273.0 | 10.0 | 7.4 | -164.44 | -49.3 | -87.2 | 378.6 | 363.3 | 15.22 | 24.867 | |
| 3,400.0 | 3,365.0 | 3,378.5 | 3,370.2 | 10.4 | 7.7 | -163.15 | -51.6 | -100.8 | 395.4 | 379.6 | 15.82 | 25.001 | |
| 3,500.0 | 3,463.2 | 3,476.7 | 3,467.4 | 10.8 | 8.0 | -161.96 | -53.9 | -114.5 | 412.5 | 396.1 | 16.42 | 25.123 | |
| 3,600.0 | 3,561.4 | 3,574.9 | 3,564.6 | 11.2 | 8.3 | -160.87 | -56.3 | -128.1 | 429.7 | 412.7 | 17.03 | 25.235 | |
| 3,700.0 | 3,659.5 | 3,673.1 | 3,661.8 | 11.6 | 8.6 | -159.87 | -58.6 | -141.8 | 447.1 | 429.4 | 17.64 | 25.338 | |
| 3,800.0 | 3,757.7 | 3,771.3 | 3,759.0 | 12.0 | 8.9 | -158.94 | -60.9 | -155.4 | 464.5 | 446.3 | 18.27 | 25.433 | |
| 3,900.0 | 3,855.9 | 3,869.5 | 3,856.2 | 12.4 | 9.2 | -158.07 | -63.2 | -169.1 | 482.1 | 463.2 | 18.89 | 25.521 | |
| 4,000.0 | 3,954.1 | 3,967.7 | 3,953.4 | 12.9 | 9.5 | -157.27 | -65.5 | -182.7 | 499.8 | 480.3 | 19.52 | 25.602 | |
| 4,100.0 | 4,052.2 | 4,065.9 | 4,050.6 | 13.3 | 9.8 | -156.52 | -67.8 | -196.4 | 517.6 | 497.4 | 20.16 | 25.678 | |
| 4,200.0 | 4,150.4 | 4,164.0 | 4,147.8 | 13.7 | 10.2 | -155.82 | -70.1 | -210.0 | 535.4 | 514.6 | 20.79 | 25.749 | |
| 4,300.0 | 4,248.6 | 4,262.2 | 4,245.0 | 14.1 | 10.5 | -155.17 | -72.4 | -223.7 | 553.4 | 531.9 | 21.43 | 25.816 | |
| 4,400.0 | 4,346.8 | 4,360.4 | 4,342.3 | 14.5 | 10.8 | -154.55 | -74.7 | -237.3 | 571.4 | 549.3 | 22.08 | 25.878 | |
| 4,500.0 | 4,444.9 | 4,458.6 | 4,439.5 | 14.9 | 11.1 | -153.98 | -77.0 | -251.0 | 589.4 | 566.7 | 22.73 | 25.936 | |
| 4,600.0 | 4,543.1 | 4,556.8 | 4,536.7 | 15.3 | 11.4 | -153.44 | -79.3 | -264.6 | 607.5 | 584.1 | 23.37 | 25.991 | |
| 4,700.0 | 4,641.3 | 4,655.0 | 4,633.9 | 15.8 | 11.8 | -152.93 | -81.6 | -278.3 | 625.7 | 601.6 | 24.02 | 26.043 | |
| 4,800.0 | 4,739.4 | 4,753.2 | 4,731.1 | 16.2 | 12.1 | -152.45 | -83.9 | -291.9 | 643.9 | 619.2 | 24.68 | 26.092 | |
| 4,900.0 | 4,837.6 | 4,851.4 | 4,828.3 | 16.6 | 12.4 | -151.99 | -86.2 | -305.6 | 662.1 | 636.8 | 25.33 | 26.138 | |

| | | | |
|---|---|---|---|
| **Company:** | PETROLEUM DEVELOPMENT CORP DJ Basin | **Local Co-ordinate Reference:** | Well Bihain 26F-232 |
| **Project:** | SEC.26-T5N-R64W | **TVD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Reference Site:** | Bihain 5N64W26GK Pad Sec.26-T5N-R64W | **MD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | Bihain 26F-232 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | Plan #1 (11-2-15) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Bihain 5N64W26GK Pad Sec.26-T5N-R64W - Bihain 26G-312 - Wellbore #1 - Plan #1 (11-2-15)

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,000.0 | 4,935.8 | 4,949.6 | 4,925.5 | 17.0 | 12.7 | -151.56 | -88.5 | -319.2 | 680.4 | 654.4 | 25.99 | 26.182 | |
| 5,100.0 | 5,034.0 | 5,047.8 | 5,022.7 | 17.4 | 13.1 | -151.15 | -90.8 | -332.8 | 698.7 | 672.1 | 26.64 | 26.224 | |
| 5,121.1 | 5,054.7 | 5,068.5 | 5,043.3 | 17.5 | 13.1 | -151.07 | -91.3 | -335.7 | 702.6 | 675.8 | 26.78 | 26.233 | |
| 5,200.0 | 5,132.3 | 5,146.1 | 5,120.1 | 17.8 | 13.4 | -150.86 | -93.1 | -346.5 | 716.1 | 688.8 | 27.32 | 26.214 | |
| 5,300.0 | 5,231.2 | 5,244.8 | 5,217.8 | 18.1 | 13.7 | -150.46 | -95.5 | -360.2 | 730.7 | 702.7 | 27.94 | 26.150 | |
| 5,400.0 | 5,330.6 | 5,344.5 | 5,316.5 | 18.3 | 14.0 | -149.92 | -97.8 | -374.0 | 742.2 | 713.7 | 28.53 | 26.015 | |
| 5,500.0 | 5,430.3 | 5,447.8 | 5,419.1 | 18.5 | 14.3 | -149.40 | -99.8 | -385.8 | 750.6 | 721.5 | 29.03 | 25.858 | |
| 5,600.0 | 5,530.2 | 5,551.8 | 5,522.8 | 18.7 | 14.5 | -148.99 | -101.2 | -394.0 | 755.4 | 726.0 | 29.43 | 25.670 | |
| 5,669.8 | 5,600.0 | 5,624.6 | 5,595.5 | 18.8 | 14.7 | 179.82 | -101.8 | -397.6 | 756.7 | 726.9 | 29.77 | 25.418 | |
| 5,700.0 | 5,630.2 | 5,656.2 | 5,627.0 | 18.8 | 14.7 | 179.89 | -101.9 | -398.5 | 756.8 | 727.0 | 29.87 | 25.342 | |
| 5,800.0 | 5,730.2 | 5,759.4 | 5,730.2 | 19.0 | 14.9 | 179.96 | -102.1 | -399.4 | 757.0 | 726.8 | 30.21 | 25.059 | |
| 5,873.4 | 5,803.6 | 5,832.7 | 5,803.6 | 19.1 | 15.0 | 179.96 | -102.1 | -399.4 | 757.0 | 726.5 | 30.47 | 24.846 | |
| 5,900.0 | 5,830.2 | 5,859.4 | 5,830.2 | 19.1 | 15.1 | 89.99 | -102.1 | -399.4 | 757.0 | 726.5 | 30.49 | 24.830 | |
| 5,902.3 | 5,832.5 | 5,861.7 | 5,832.5 | 19.1 | 15.1 | 90.00 | -102.1 | -399.4 | 757.0 | 726.5 | 30.49 | 24.824 | |
| 5,950.0 | 5,880.1 | 5,909.3 | 5,880.1 | 19.1 | 15.2 | 90.25 | -102.1 | -399.4 | 757.0 | 726.3 | 30.65 | 24.698 | |
| 6,000.0 | 5,929.6 | 5,959.4 | 5,930.2 | 19.2 | 15.2 | 90.60 | -102.1 | -397.4 | 757.0 | 726.2 | 30.78 | 24.595 | |
| 6,050.0 | 5,978.6 | 6,009.9 | 5,980.4 | 19.2 | 15.3 | 90.94 | -102.1 | -392.1 | 757.1 | 726.2 | 30.86 | 24.530 | |
| 6,100.0 | 6,026.9 | 6,060.7 | 6,030.4 | 19.2 | 15.3 | 91.29 | -102.1 | -383.3 | 757.2 | 726.3 | 30.91 | 24.496 | |
| 6,150.0 | 6,074.2 | 6,111.7 | 6,080.0 | 19.2 | 15.3 | 91.63 | -102.1 | -371.2 | 757.3 | 726.4 | 30.92 | 24.488 | |
| 6,200.0 | 6,120.4 | 6,163.1 | 6,129.0 | 19.1 | 15.3 | 91.96 | -102.1 | -355.7 | 757.4 | 726.5 | 30.92 | 24.500 | |
| 6,250.0 | 6,165.1 | 6,214.9 | 6,177.2 | 19.1 | 15.3 | 92.29 | -102.1 | -336.9 | 757.6 | 726.7 | 30.89 | 24.522 | |
| 6,300.0 | 6,208.4 | 6,266.9 | 6,224.2 | 19.1 | 15.2 | 92.60 | -102.1 | -314.6 | 757.8 | 726.9 | 30.87 | 24.545 | |
| 6,350.0 | 6,249.9 | 6,319.2 | 6,269.9 | 19.0 | 15.2 | 92.91 | -102.1 | -289.1 | 758.0 | 727.1 | 30.87 | 24.555 | |
| 6,400.0 | 6,289.5 | 6,371.9 | 6,313.9 | 18.9 | 15.2 | 93.20 | -102.1 | -260.3 | 758.2 | 727.3 | 30.90 | 24.535 | |
| 6,450.0 | 6,327.0 | 6,424.8 | 6,356.1 | 18.9 | 15.2 | 93.48 | -102.1 | -228.4 | 758.4 | 727.4 | 30.99 | 24.469 | |
| 6,500.0 | 6,362.3 | 6,478.0 | 6,396.2 | 18.8 | 15.3 | 93.75 | -102.1 | -193.4 | 758.6 | 727.4 | 31.17 | 24.337 | |
| 6,550.0 | 6,395.2 | 6,531.5 | 6,434.0 | 18.8 | 15.4 | 94.00 | -102.1 | -155.5 | 758.8 | 727.4 | 31.46 | 24.123 | |
| 6,600.0 | 6,425.5 | 6,585.3 | 6,469.2 | 18.7 | 15.6 | 94.23 | -102.1 | -114.9 | 759.1 | 727.2 | 31.88 | 23.812 | |
| 6,650.0 | 6,453.2 | 6,639.3 | 6,501.5 | 18.7 | 15.9 | 94.44 | -102.1 | -71.7 | 759.3 | 726.8 | 32.45 | 23.396 | |
| 6,700.0 | 6,478.1 | 6,693.5 | 6,530.9 | 18.6 | 16.2 | 94.63 | -102.1 | -26.1 | 759.5 | 726.3 | 33.20 | 22.874 | |
| 6,750.0 | 6,500.1 | 6,747.9 | 6,557.0 | 18.6 | 16.7 | 94.80 | -102.1 | 21.6 | 759.7 | 725.5 | 34.14 | 22.254 | |
| 6,800.0 | 6,519.1 | 6,802.5 | 6,579.7 | 18.5 | 17.2 | 94.95 | -102.1 | 71.2 | 759.8 | 724.6 | 35.26 | 21.548 | |
| 6,850.0 | 6,535.1 | 6,857.2 | 6,598.9 | 18.6 | 17.9 | 95.08 | -102.1 | 122.4 | 760.0 | 723.4 | 36.58 | 20.776 | |
| 6,900.0 | 6,547.9 | 6,912.1 | 6,614.4 | 19.4 | 18.7 | 95.18 | -102.1 | 175.0 | 760.1 | 722.0 | 38.07 | 19.964 | |
| 6,950.0 | 6,557.6 | 6,967.0 | 6,626.1 | 20.2 | 19.6 | 95.26 | -102.1 | 228.7 | 760.2 | 720.5 | 39.72 | 19.136 | |
| 7,000.0 | 6,564.0 | 7,022.1 | 6,634.0 | 21.1 | 20.5 | 95.31 | -102.1 | 283.2 | 760.2 | 718.7 | 41.52 | 18.312 | |
| 7,050.0 | 6,567.2 | 7,077.2 | 6,637.8 | 22.0 | 21.5 | 95.34 | -102.1 | 338.1 | 760.3 | 716.9 | 43.42 | 17.509 | |
| 7,079.1 | 6,567.5 | 7,109.2 | 6,638.3 | 22.6 | 22.1 | 95.34 | -102.1 | 370.2 | 760.3 | 715.7 | 44.57 | 17.057 | |
| 7,100.0 | 6,567.3 | 7,130.2 | 6,638.1 | 23.0 | 22.5 | 95.34 | -102.1 | 391.2 | 760.3 | 714.9 | 45.39 | 16.751 | |
| 7,200.0 | 6,566.6 | 7,230.2 | 6,637.3 | 25.1 | 24.6 | 95.33 | -102.1 | 491.2 | 760.3 | 710.8 | 49.43 | 15.379 | |
| 7,300.0 | 6,565.8 | 7,330.2 | 6,636.4 | 27.3 | 26.7 | 95.33 | -102.1 | 591.2 | 760.3 | 706.5 | 53.75 | 14.143 | |
| 7,400.0 | 6,565.1 | 7,430.2 | 6,635.6 | 29.6 | 29.0 | 95.32 | -102.1 | 691.2 | 760.3 | 702.0 | 58.29 | 13.042 | |
| 7,500.0 | 6,564.3 | 7,530.2 | 6,634.8 | 31.9 | 31.4 | 95.31 | -102.1 | 791.2 | 760.3 | 697.3 | 63.00 | 12.067 | |
| 7,600.0 | 6,563.6 | 7,630.2 | 6,633.9 | 34.4 | 33.8 | 95.31 | -102.1 | 891.2 | 760.2 | 692.4 | 67.85 | 11.205 | |
| 7,700.0 | 6,562.8 | 7,730.2 | 6,633.1 | 36.9 | 36.3 | 95.30 | -102.1 | 991.2 | 760.2 | 687.4 | 72.80 | 10.442 | |
| 7,800.0 | 6,562.1 | 7,830.2 | 6,632.2 | 39.4 | 38.8 | 95.29 | -102.1 | 1,091.1 | 760.2 | 682.4 | 77.84 | 9.766 | |
| 7,900.0 | 6,561.3 | 7,930.2 | 6,631.4 | 42.0 | 41.4 | 95.29 | -102.1 | 1,191.1 | 760.2 | 677.3 | 82.96 | 9.164 | |
| 8,000.0 | 6,560.6 | 8,030.2 | 6,630.6 | 44.5 | 44.0 | 95.28 | -102.1 | 1,291.1 | 760.2 | 672.1 | 88.13 | 8.626 | |
| 8,100.0 | 6,559.8 | 8,130.2 | 6,629.7 | 47.2 | 46.6 | 95.27 | -102.1 | 1,391.1 | 760.2 | 666.9 | 93.35 | 8.144 | |
| 8,200.0 | 6,559.1 | 8,230.2 | 6,628.9 | 49.8 | 49.3 | 95.27 | -102.1 | 1,491.1 | 760.2 | 661.6 | 98.61 | 7.709 | |
| 8,300.0 | 6,558.3 | 8,330.2 | 6,628.1 | 52.4 | 51.9 | 95.26 | -102.1 | 1,591.1 | 760.2 | 656.3 | 103.91 | 7.316 | |

| | | | |
|---|---|---|---|
| **Company:** | PETROLEUM DEVELOPMENT CORP DJ Basin | **Local Co-ordinate Reference:** | Well Bihain 26F-232 |
| **Project:** | SEC.26-T5N-R64W | **TVD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Reference Site:** | Bihain 5N64W26GK Pad Sec.26-T5N-R64W | **MD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | Bihain 26F-232 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | Plan #1 (11-2-15) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Bihain 5N64W26GK Pad Sec.26-T5N-R64W - Bihain 26G-312 - Wellbore #1 - Plan #1 (11-2-15)

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8,400.0 | 6,557.6 | 8,430.2 | 6,627.2 | 55.1 | 54.6 | 95.26 | -102.1 | 1,691.1 | 760.2 | 650.9 | 109.24 | 6.959 | |
| 8,500.0 | 6,556.8 | 8,530.2 | 6,626.4 | 57.8 | 57.3 | 95.25 | -102.1 | 1,791.1 | 760.2 | 645.6 | 114.60 | 6.634 | |
| 8,600.0 | 6,556.1 | 8,630.2 | 6,625.5 | 60.5 | 60.0 | 95.24 | -102.1 | 1,891.1 | 760.2 | 640.2 | 119.97 | 6.336 | |
| 8,700.0 | 6,555.3 | 8,730.2 | 6,624.7 | 63.2 | 62.7 | 95.24 | -102.1 | 1,991.1 | 760.2 | 634.8 | 125.37 | 6.063 | |
| 8,800.0 | 6,554.6 | 8,830.2 | 6,623.9 | 65.9 | 65.4 | 95.23 | -102.1 | 2,091.1 | 760.2 | 629.4 | 130.79 | 5.812 | |
| 8,900.0 | 6,553.8 | 8,930.2 | 6,623.0 | 68.6 | 68.2 | 95.22 | -102.1 | 2,191.1 | 760.2 | 623.9 | 136.21 | 5.581 | |
| 9,000.0 | 6,553.1 | 9,030.2 | 6,622.2 | 71.3 | 70.9 | 95.22 | -102.1 | 2,291.1 | 760.1 | 618.5 | 141.66 | 5.366 | |
| 9,100.0 | 6,552.3 | 9,130.2 | 6,621.4 | 74.1 | 73.6 | 95.21 | -102.1 | 2,391.1 | 760.1 | 613.0 | 147.11 | 5.167 | |
| 9,200.0 | 6,551.6 | 9,230.2 | 6,620.5 | 76.8 | 76.4 | 95.20 | -102.1 | 2,491.1 | 760.1 | 607.6 | 152.58 | 4.982 | |
| 9,300.0 | 6,550.8 | 9,330.2 | 6,619.7 | 79.5 | 79.1 | 95.20 | -102.1 | 2,591.1 | 760.1 | 602.1 | 158.05 | 4.809 | |
| 9,400.0 | 6,550.1 | 9,430.2 | 6,618.8 | 82.3 | 81.9 | 95.19 | -102.1 | 2,691.1 | 760.1 | 596.6 | 163.53 | 4.648 | |
| 9,500.0 | 6,549.3 | 9,530.2 | 6,618.0 | 85.0 | 84.6 | 95.18 | -102.1 | 2,791.1 | 760.1 | 591.1 | 169.03 | 4.497 | |
| 9,600.0 | 6,548.6 | 9,630.2 | 6,617.2 | 87.8 | 87.4 | 95.18 | -102.1 | 2,891.1 | 760.1 | 585.6 | 174.52 | 4.355 | |
| 9,700.0 | 6,547.8 | 9,730.2 | 6,616.3 | 90.6 | 90.2 | 95.17 | -102.1 | 2,991.1 | 760.1 | 580.1 | 180.03 | 4.222 | |
| 9,800.0 | 6,547.1 | 9,830.2 | 6,615.5 | 93.3 | 92.9 | 95.16 | -102.1 | 3,091.1 | 760.1 | 574.6 | 185.54 | 4.097 | |
| 9,900.0 | 6,546.3 | 9,930.2 | 6,614.6 | 96.1 | 95.7 | 95.16 | -102.1 | 3,191.1 | 760.1 | 569.0 | 191.06 | 3.978 | |
| 10,000.0 | 6,545.6 | 10,030.2 | 6,613.8 | 98.8 | 98.5 | 95.15 | -102.1 | 3,291.1 | 760.1 | 563.5 | 196.58 | 3.867 | |
| 10,100.0 | 6,544.8 | 10,130.2 | 6,613.0 | 101.6 | 101.2 | 95.14 | -102.1 | 3,391.1 | 760.1 | 558.0 | 202.10 | 3.761 | |
| 10,200.0 | 6,544.1 | 10,230.2 | 6,612.1 | 104.4 | 104.0 | 95.14 | -102.1 | 3,491.1 | 760.1 | 552.4 | 207.63 | 3.661 | |
| 10,300.0 | 6,543.3 | 10,330.2 | 6,611.3 | 107.2 | 106.8 | 95.13 | -102.1 | 3,591.1 | 760.1 | 546.9 | 213.16 | 3.566 | |
| 10,400.0 | 6,542.6 | 10,430.2 | 6,610.5 | 109.9 | 109.6 | 95.12 | -102.1 | 3,691.1 | 760.0 | 541.3 | 218.70 | 3.475 | |
| 10,500.0 | 6,541.8 | 10,530.2 | 6,609.6 | 112.7 | 112.3 | 95.12 | -102.1 | 3,791.1 | 760.0 | 535.8 | 224.24 | 3.389 | |
| 10,600.0 | 6,541.1 | 10,630.2 | 6,608.8 | 115.5 | 115.1 | 95.11 | -102.1 | 3,891.0 | 760.0 | 530.2 | 229.79 | 3.308 | |
| 10,700.0 | 6,540.3 | 10,730.2 | 6,607.9 | 118.3 | 117.9 | 95.10 | -102.1 | 3,991.0 | 760.0 | 524.7 | 235.33 | 3.230 | |
| 10,800.0 | 6,539.6 | 10,830.2 | 6,607.1 | 121.0 | 120.7 | 95.10 | -102.1 | 4,091.0 | 760.0 | 519.1 | 240.88 | 3.155 | |
| 10,900.0 | 6,538.8 | 10,930.2 | 6,606.3 | 123.8 | 123.5 | 95.09 | -102.1 | 4,191.0 | 760.0 | 513.6 | 246.43 | 3.084 | |
| 11,000.0 | 6,538.1 | 11,030.2 | 6,605.4 | 126.6 | 126.3 | 95.08 | -102.1 | 4,291.0 | 760.0 | 508.0 | 251.99 | 3.016 | |
| 11,100.0 | 6,537.3 | 11,130.2 | 6,604.6 | 129.4 | 129.0 | 95.08 | -102.1 | 4,391.0 | 760.0 | 502.5 | 257.54 | 2.951 | |
| 11,200.0 | 6,536.6 | 11,230.2 | 6,603.8 | 132.2 | 131.8 | 95.07 | -102.1 | 4,491.0 | 760.0 | 496.9 | 263.10 | 2.889 | |
| 11,300.0 | 6,535.8 | 11,330.2 | 6,602.9 | 135.0 | 134.6 | 95.07 | -102.1 | 4,591.0 | 760.0 | 491.3 | 268.66 | 2.829 | |
| 11,400.0 | 6,535.1 | 11,430.2 | 6,602.1 | 137.7 | 137.4 | 95.06 | -102.1 | 4,691.0 | 760.0 | 485.8 | 274.22 | 2.771 | |
| 11,500.0 | 6,534.3 | 11,530.2 | 6,601.2 | 140.5 | 140.2 | 95.05 | -102.1 | 4,791.0 | 760.0 | 480.2 | 279.79 | 2.716 | |
| 11,600.0 | 6,533.6 | 11,630.2 | 6,600.4 | 143.3 | 143.0 | 95.05 | -102.1 | 4,891.0 | 760.0 | 474.6 | 285.35 | 2.663 | |
| 11,700.0 | 6,532.8 | 11,730.2 | 6,599.6 | 146.1 | 145.8 | 95.04 | -102.1 | 4,991.0 | 760.0 | 469.0 | 290.92 | 2.612 | |
| 11,800.0 | 6,532.1 | 11,830.2 | 6,598.7 | 148.9 | 148.6 | 95.03 | -102.1 | 5,091.0 | 760.0 | 463.5 | 296.49 | 2.563 | |
| 11,900.0 | 6,531.3 | 11,930.2 | 6,597.9 | 151.7 | 151.4 | 95.03 | -102.1 | 5,191.0 | 759.9 | 457.9 | 302.05 | 2.516 | |
| 12,000.0 | 6,530.6 | 12,030.2 | 6,597.1 | 154.5 | 154.2 | 95.02 | -102.1 | 5,291.0 | 759.9 | 452.3 | 307.63 | 2.470 | |
| 12,100.0 | 6,529.8 | 12,130.2 | 6,596.2 | 157.3 | 157.0 | 95.01 | -102.1 | 5,391.0 | 759.9 | 446.7 | 313.20 | 2.426 | |
| 12,200.0 | 6,529.1 | 12,230.2 | 6,595.4 | 160.1 | 159.8 | 95.01 | -102.1 | 5,491.0 | 759.9 | 441.2 | 318.77 | 2.384 | |
| 12,300.0 | 6,528.3 | 12,330.2 | 6,594.5 | 162.9 | 162.6 | 95.00 | -102.1 | 5,591.0 | 759.9 | 435.6 | 324.35 | 2.343 | |
| 12,400.0 | 6,527.6 | 12,430.2 | 6,593.7 | 165.7 | 165.4 | 94.99 | -102.1 | 5,691.0 | 759.9 | 430.0 | 329.92 | 2.303 | |
| 12,500.0 | 6,526.8 | 12,530.2 | 6,592.9 | 168.5 | 168.1 | 94.99 | -102.1 | 5,791.0 | 759.9 | 424.4 | 335.50 | 2.265 | |
| 12,600.0 | 6,526.1 | 12,630.2 | 6,592.0 | 171.3 | 170.9 | 94.98 | -102.1 | 5,891.0 | 759.9 | 418.8 | 341.08 | 2.228 | |
| 12,700.0 | 6,525.3 | 12,730.2 | 6,591.2 | 174.0 | 173.7 | 94.97 | -102.1 | 5,991.0 | 759.9 | 413.2 | 346.65 | 2.192 | |
| 12,800.0 | 6,524.6 | 12,830.2 | 6,590.4 | 176.8 | 176.5 | 94.97 | -102.1 | 6,091.0 | 759.9 | 407.6 | 352.23 | 2.157 | |
| 12,900.0 | 6,523.8 | 12,930.2 | 6,589.5 | 179.6 | 179.3 | 94.96 | -102.1 | 6,191.0 | 759.9 | 402.1 | 357.81 | 2.124 | |
| 13,000.0 | 6,523.1 | 13,030.2 | 6,588.7 | 182.4 | 182.1 | 94.95 | -102.1 | 6,291.0 | 759.9 | 396.5 | 363.40 | 2.091 | |
| 13,100.0 | 6,522.3 | 13,130.2 | 6,587.8 | 185.2 | 184.9 | 94.95 | -102.1 | 6,391.0 | 759.9 | 390.9 | 368.98 | 2.059 | |
| 13,200.0 | 6,521.6 | 13,230.2 | 6,587.0 | 188.0 | 187.7 | 94.94 | -102.1 | 6,491.0 | 759.9 | 385.3 | 374.56 | 2.029 | |
| 13,300.0 | 6,520.8 | 13,330.2 | 6,586.2 | 190.8 | 190.5 | 94.93 | -102.1 | 6,591.0 | 759.8 | 379.7 | 380.14 | 1.999 | |
| 13,400.0 | 6,520.1 | 13,430.2 | 6,585.3 | 193.6 | 193.3 | 94.93 | -102.1 | 6,690.9 | 759.8 | 374.1 | 385.73 | 1.970 | |

| | | | |
|---|---|---|---|
| **Company:** | PETROLEUM DEVELOPMENT CORP DJ Basin | **Local Co-ordinate Reference:** | Well Bihain 26F-232 |
| **Project:** | SEC.26-T5N-R64W | **TVD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Reference Site:** | Bihain 5N64W26GK Pad Sec.26-T5N-R64W | **MD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | Bihain 26F-232 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | Plan #1 (11-2-15) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Bihain 5N64W26GK Pad Sec.26-T5N-R64W - Bihain 26G-312 - Wellbore #1 - Plan #1 (11-2-15)

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13,500.0 | 6,519.3 | 13,530.2 | 6,584.5 | 196.4 | 196.1 | 94.92 | -102.1 | 6,790.9 | 759.8 | 368.5 | 391.31 | 1.942 | |
| 13,600.0 | 6,518.6 | 13,630.2 | 6,583.7 | 199.2 | 198.9 | 94.91 | -102.1 | 6,890.9 | 759.8 | 362.9 | 396.90 | 1.914 | |
| 13,675.2 | 6,518.0 | 13,705.3 | 6,583.0 | 201.3 | 201.0 | 94.91 | -102.1 | 6,966.1 | 759.8 | 358.7 | 401.10 | 1.894 | SF |

| | | | |
|---|---|---|---|
| **Company:** | PETROLEUM DEVELOPMENT CORP DJ Basin | **Local Co-ordinate Reference:** | Well Bihain 26F-232 |
| **Project:** | SEC.26-T5N-R64W | **TVD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Reference Site:** | Bihain 5N64W26GK Pad Sec.26-T5N-R64W | **MD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | Bihain 26F-232 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | Plan #1 (11-2-15) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Existing Wells Pad Sec.26-T5N-R64W - Bihain 26-2 (Exist.) - Wellbore #1 - Wellbore #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 6867-UNKNOWN

**Offset Well Error:** 0.0 ft

| Reference | | Offset | | Semi Major Axis | | | Offset Wellbore Centre | | Distance | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
| 7,400.0 | 6,565.1 | 6,545.1 | 6,545.1 | 29.6 | 130.9 | 91.23 | 355.6 | 1,545.3 | 905.6 | 745.4 | 160.24 | 5.652 | |
| 7,500.0 | 6,564.3 | 6,544.3 | 6,544.3 | 31.9 | 130.9 | 91.08 | 355.6 | 1,545.3 | 811.9 | 649.3 | 162.59 | 4.994 | |
| 7,600.0 | 6,563.6 | 6,543.6 | 6,543.6 | 34.4 | 130.9 | 90.94 | 355.6 | 1,545.3 | 719.9 | 554.9 | 165.01 | 4.363 | |
| 7,700.0 | 6,562.8 | 6,542.8 | 6,542.8 | 36.9 | 130.9 | 90.80 | 355.6 | 1,545.3 | 630.3 | 462.9 | 167.48 | 3.764 | |
| 7,800.0 | 6,562.1 | 6,542.1 | 6,542.1 | 39.4 | 130.8 | 90.65 | 355.6 | 1,545.3 | 544.4 | 374.4 | 169.99 | 3.203 | |
| 7,900.0 | 6,561.3 | 6,541.3 | 6,541.3 | 42.0 | 130.8 | 90.51 | 355.6 | 1,545.3 | 464.1 | 291.6 | 172.54 | 2.690 | |
| 8,000.0 | 6,560.6 | 6,540.6 | 6,540.6 | 44.5 | 130.8 | 90.37 | 355.6 | 1,545.3 | 393.0 | 217.9 | 175.12 | 2.244 | |
| 8,100.0 | 6,559.8 | 6,539.8 | 6,539.8 | 47.2 | 130.8 | 90.22 | 355.6 | 1,545.3 | 336.9 | 159.2 | 177.72 | 1.896 | |
| 8,200.0 | 6,559.1 | 6,539.1 | 6,539.1 | 49.8 | 130.8 | 90.08 | 355.6 | 1,545.3 | 304.3 | 123.9 | 180.34 | 1.687 | |
| 8,254.8 | 6,558.7 | 6,538.7 | 6,538.7 | 51.2 | 130.8 | 90.00 | 355.6 | 1,545.3 | 299.3 | 117.5 | 181.78 | 1.646 | CC, ES, SF |
| 8,300.0 | 6,558.3 | 6,538.3 | 6,538.3 | 52.4 | 130.8 | 89.94 | 355.6 | 1,545.3 | 302.7 | 119.7 | 182.98 | 1.654 | |
| 8,400.0 | 6,557.6 | 6,537.6 | 6,537.6 | 55.1 | 130.8 | 89.79 | 355.6 | 1,545.3 | 332.7 | 147.0 | 185.63 | 1.792 | |
| 8,500.0 | 6,556.8 | 6,536.8 | 6,536.8 | 57.8 | 130.7 | 89.65 | 355.6 | 1,545.3 | 386.9 | 198.6 | 188.29 | 2.055 | |
| 8,600.0 | 6,556.1 | 6,536.1 | 6,536.1 | 60.5 | 130.7 | 89.50 | 355.6 | 1,545.3 | 456.9 | 265.9 | 190.97 | 2.393 | |
| 8,700.0 | 6,555.3 | 6,535.3 | 6,535.3 | 63.2 | 130.7 | 89.36 | 355.6 | 1,545.3 | 536.5 | 342.8 | 193.65 | 2.770 | |
| 8,800.0 | 6,554.6 | 6,534.6 | 6,534.6 | 65.9 | 130.7 | 89.22 | 355.6 | 1,545.3 | 622.0 | 425.6 | 196.34 | 3.168 | |
| 8,900.0 | 6,553.8 | 6,533.8 | 6,533.8 | 68.6 | 130.7 | 89.07 | 355.6 | 1,545.3 | 711.3 | 512.2 | 199.04 | 3.573 | |
| 9,000.0 | 6,553.1 | 6,533.1 | 6,533.1 | 71.3 | 130.7 | 88.93 | 355.6 | 1,545.3 | 803.1 | 601.3 | 201.74 | 3.981 | |
| 9,100.0 | 6,552.3 | 6,532.3 | 6,532.3 | 74.1 | 130.6 | 88.79 | 355.6 | 1,545.3 | 896.6 | 692.2 | 204.44 | 4.386 | |
| 9,200.0 | 6,551.6 | 6,531.6 | 6,531.6 | 76.8 | 130.6 | 88.64 | 355.6 | 1,545.3 | 991.5 | 784.3 | 207.15 | 4.786 | |

| | | | |
|---|---|---|---|
| **Company:** | PETROLEUM DEVELOPMENT CORP DJ Basin | **Local Co-ordinate Reference:** | Well Bihain 26F-232 |
| **Project:** | SEC.26-T5N-R64W | **TVD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Reference Site:** | Bihain 5N64W26GK Pad Sec.26-T5N-R64W | **MD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | Bihain 26F-232 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | Plan #1 (11-2-15) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Existing Wells Pad Sec.26-T5N-R64W - Bihain 26-3 (Exist.) - Wellbore #1 - Wellbore #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 6865-UNKNOWN

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 32.25 | 376.7 | 237.7 | 445.8 | | | | |
| 100.0 | 100.0 | 82.0 | 82.0 | 0.1 | 1.6 | 32.25 | 376.7 | 237.7 | 445.4 | 443.7 | 1.75 | 254.146 | |
| 200.0 | 200.0 | 182.0 | 182.0 | 0.3 | 3.6 | 32.25 | 376.7 | 237.7 | 445.4 | 441.4 | 3.98 | 111.987 | |
| 300.0 | 300.0 | 282.0 | 282.0 | 0.6 | 5.6 | 32.25 | 376.7 | 237.7 | 445.4 | 439.2 | 6.20 | 71.816 | |
| 400.0 | 400.0 | 382.0 | 382.0 | 0.8 | 7.6 | 32.25 | 376.7 | 237.7 | 445.4 | 437.0 | 8.43 | 52.856 | |
| 500.0 | 500.0 | 482.0 | 482.0 | 1.0 | 9.6 | 32.25 | 376.7 | 237.7 | 445.4 | 434.8 | 10.65 | 41.816 | |
| 600.0 | 600.0 | 582.0 | 582.0 | 1.2 | 11.6 | 32.25 | 376.7 | 237.7 | 445.4 | 432.5 | 12.88 | 34.591 | |
| 700.0 | 700.0 | 682.0 | 682.0 | 1.5 | 13.6 | 32.25 | 376.7 | 237.7 | 445.4 | 430.3 | 15.10 | 29.495 | |
| 800.0 | 800.0 | 782.0 | 782.0 | 1.7 | 15.6 | 32.25 | 376.7 | 237.7 | 445.4 | 428.1 | 17.33 | 25.708 | |
| 900.0 | 900.0 | 882.0 | 882.0 | 1.9 | 17.6 | 32.25 | 376.7 | 237.7 | 445.4 | 425.9 | 19.55 | 22.782 | |
| 1,000.0 | 1,000.0 | 982.0 | 982.0 | 2.1 | 19.6 | 32.25 | 376.7 | 237.7 | 445.4 | 423.6 | 21.78 | 20.455 | |
| 1,100.0 | 1,100.0 | 1,082.0 | 1,082.0 | 2.4 | 21.6 | 63.82 | 376.7 | 237.7 | 444.8 | 420.8 | 24.00 | 18.537 | |
| 1,200.0 | 1,199.9 | 1,181.9 | 1,181.9 | 2.6 | 23.6 | 64.30 | 376.7 | 237.7 | 443.1 | 416.9 | 26.21 | 16.904 | |
| 1,300.0 | 1,299.7 | 1,281.7 | 1,281.7 | 2.8 | 25.6 | 65.11 | 376.7 | 237.7 | 440.3 | 411.9 | 28.43 | 15.489 | |
| 1,400.0 | 1,399.3 | 1,381.3 | 1,381.3 | 3.0 | 27.6 | 66.24 | 376.7 | 237.7 | 436.5 | 405.9 | 30.64 | 14.246 | |
| 1,500.0 | 1,498.6 | 1,480.6 | 1,480.6 | 3.3 | 29.6 | 67.73 | 376.7 | 237.7 | 431.9 | 399.0 | 32.87 | 13.141 | |
| 1,600.0 | 1,597.5 | 1,579.5 | 1,579.5 | 3.6 | 31.6 | 69.57 | 376.7 | 237.7 | 426.6 | 391.5 | 35.10 | 12.154 | |
| 1,700.0 | 1,696.1 | 1,678.1 | 1,678.1 | 3.9 | 33.6 | 71.78 | 376.7 | 237.7 | 421.0 | 383.6 | 37.36 | 11.267 | |
| 1,731.5 | 1,727.1 | 1,709.1 | 1,709.1 | 4.0 | 34.2 | 72.56 | 376.7 | 237.7 | 419.1 | 381.1 | 38.08 | 11.007 | |
| 1,800.0 | 1,794.3 | 1,776.3 | 1,776.3 | 4.2 | 35.5 | 74.24 | 376.7 | 237.7 | 415.3 | 375.7 | 39.66 | 10.474 | |
| 1,900.0 | 1,892.5 | 1,874.5 | 1,874.5 | 4.5 | 37.5 | 76.76 | 376.7 | 237.7 | 410.5 | 368.5 | 41.97 | 9.780 | |
| 2,000.0 | 1,990.6 | 1,972.6 | 1,972.6 | 4.9 | 39.5 | 79.32 | 376.7 | 237.7 | 406.5 | 362.2 | 44.30 | 9.175 | |
| 2,100.0 | 2,088.8 | 2,070.8 | 2,070.8 | 5.2 | 41.4 | 81.93 | 376.7 | 237.7 | 403.3 | 356.7 | 46.64 | 8.647 | |
| 2,200.0 | 2,187.0 | 2,169.0 | 2,169.0 | 5.6 | 43.4 | 84.58 | 376.7 | 237.7 | 401.0 | 352.1 | 48.99 | 8.186 | |
| 2,300.0 | 2,285.1 | 2,267.1 | 2,267.1 | 6.0 | 45.3 | 87.25 | 376.7 | 237.7 | 399.7 | 348.3 | 51.34 | 7.785 | |
| 2,400.0 | 2,383.3 | 2,365.3 | 2,365.3 | 6.4 | 47.3 | 89.93 | 376.7 | 237.7 | 399.2 | 345.5 | 53.69 | 7.435 | |
| 2,402.7 | 2,386.0 | 2,368.0 | 2,368.0 | 6.4 | 47.4 | 90.00 | 376.7 | 237.7 | 399.2 | 345.4 | 53.75 | 7.427 | |
| 2,500.0 | 2,481.5 | 2,463.5 | 2,463.5 | 6.8 | 49.3 | 92.61 | 376.7 | 237.7 | 399.6 | 343.6 | 56.03 | 7.132 | |
| 2,600.0 | 2,579.7 | 2,561.7 | 2,561.7 | 7.2 | 51.2 | 95.28 | 376.7 | 237.7 | 400.9 | 342.6 | 58.37 | 6.869 | |
| 2,700.0 | 2,677.8 | 2,659.8 | 2,659.8 | 7.6 | 53.2 | 97.92 | 376.7 | 237.7 | 403.2 | 342.5 | 60.70 | 6.642 | |
| 2,800.0 | 2,776.0 | 2,758.0 | 2,758.0 | 8.0 | 55.2 | 100.54 | 376.7 | 237.7 | 406.3 | 343.3 | 63.02 | 6.447 | |
| 2,900.0 | 2,874.2 | 2,856.2 | 2,856.2 | 8.4 | 57.1 | 103.10 | 376.7 | 237.7 | 410.3 | 344.9 | 65.32 | 6.281 | |
| 3,000.0 | 2,972.3 | 2,954.3 | 2,954.3 | 8.8 | 59.1 | 105.62 | 376.7 | 237.7 | 415.1 | 347.4 | 67.61 | 6.139 | |
| 3,100.0 | 3,070.5 | 3,052.5 | 3,052.5 | 9.2 | 61.1 | 108.08 | 376.7 | 237.7 | 420.7 | 350.8 | 69.89 | 6.019 | |
| 3,200.0 | 3,168.7 | 3,150.7 | 3,150.7 | 9.6 | 63.0 | 110.47 | 376.7 | 237.7 | 427.1 | 354.9 | 72.16 | 5.918 | |
| 3,300.0 | 3,266.9 | 3,248.9 | 3,248.9 | 10.0 | 65.0 | 112.78 | 376.7 | 237.7 | 434.2 | 359.8 | 74.41 | 5.835 | |
| 3,400.0 | 3,365.0 | 3,347.0 | 3,347.0 | 10.4 | 66.9 | 115.02 | 376.7 | 237.7 | 442.0 | 365.4 | 76.65 | 5.766 | |
| 3,500.0 | 3,463.2 | 3,445.2 | 3,445.2 | 10.8 | 68.9 | 117.19 | 376.7 | 237.7 | 450.5 | 371.6 | 78.88 | 5.711 | |
| 3,600.0 | 3,561.4 | 3,543.4 | 3,543.4 | 11.2 | 70.9 | 119.27 | 376.7 | 237.7 | 459.7 | 378.6 | 81.10 | 5.668 | |
| 3,700.0 | 3,659.5 | 3,641.5 | 3,641.5 | 11.6 | 72.8 | 121.27 | 376.7 | 237.7 | 469.4 | 386.1 | 83.30 | 5.635 | |
| 3,800.0 | 3,757.7 | 3,739.7 | 3,739.7 | 12.0 | 74.8 | 123.19 | 376.7 | 237.7 | 479.7 | 394.2 | 85.50 | 5.610 | |
| 3,900.0 | 3,855.9 | 3,837.9 | 3,837.9 | 12.4 | 76.8 | 125.03 | 376.7 | 237.7 | 490.5 | 402.8 | 87.69 | 5.593 | |
| 4,000.0 | 3,954.1 | 3,936.1 | 3,936.1 | 12.9 | 78.7 | 126.79 | 376.7 | 237.7 | 501.8 | 411.9 | 89.87 | 5.584 | |
| 4,100.0 | 4,052.2 | 4,034.2 | 4,034.2 | 13.3 | 80.7 | 128.47 | 376.7 | 237.7 | 513.5 | 421.5 | 92.04 | 5.579 | |
| 4,200.0 | 4,150.4 | 4,132.4 | 4,132.4 | 13.7 | 82.6 | 130.07 | 376.7 | 237.7 | 525.7 | 431.5 | 94.21 | 5.580 | |
| 4,300.0 | 4,248.6 | 4,230.6 | 4,230.6 | 14.1 | 84.6 | 131.61 | 376.7 | 237.7 | 538.3 | 441.9 | 96.37 | 5.586 | |
| 4,400.0 | 4,346.8 | 4,328.8 | 4,328.8 | 14.5 | 86.6 | 133.07 | 376.7 | 237.7 | 551.3 | 452.7 | 98.53 | 5.595 | |
| 4,500.0 | 4,444.9 | 4,426.9 | 4,426.9 | 14.9 | 88.5 | 134.47 | 376.7 | 237.7 | 564.5 | 463.9 | 100.68 | 5.607 | |
| 4,600.0 | 4,543.1 | 4,525.1 | 4,525.1 | 15.3 | 90.5 | 135.81 | 376.7 | 237.7 | 578.2 | 475.3 | 102.83 | 5.622 | |
| 4,700.0 | 4,641.3 | 4,623.3 | 4,623.3 | 15.8 | 92.5 | 137.08 | 376.7 | 237.7 | 592.1 | 487.1 | 104.98 | 5.640 | |
| 4,800.0 | 4,739.4 | 4,721.4 | 4,721.4 | 16.2 | 94.4 | 138.30 | 376.7 | 237.7 | 606.3 | 499.1 | 107.13 | 5.659 | |

| | | | |
|---|---|---|---|
| **Company:** | PETROLEUM DEVELOPMENT CORP DJ Basin | **Local Co-ordinate Reference:** | Well Bihain 26F-232 |
| **Project:** | SEC.26-T5N-R64W | **TVD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Reference Site:** | Bihain 5N64W26GK Pad Sec.26-T5N-R64W | **MD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | Bihain 26F-232 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | Plan #1 (11-2-15) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Existing Wells Pad Sec.26-T5N-R64W - Bihain 26-3 (Exist.) - Wellbore #1 - Wellbore #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 6865-UNKNOWN

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,837.6 | 4,819.6 | 4,819.6 | 16.6 | 96.4 | 139.46 | 376.7 | 237.7 | 620.7 | 511.4 | 109.28 | 5.680 | |
| 5,000.0 | 4,935.8 | 4,917.8 | 4,917.8 | 17.0 | 98.4 | 140.56 | 376.7 | 237.7 | 635.4 | 524.0 | 111.42 | 5.703 | |
| 5,100.0 | 5,034.0 | 5,016.0 | 5,016.0 | 17.4 | 100.3 | 141.62 | 376.7 | 237.7 | 650.3 | 536.8 | 113.56 | 5.727 | |
| 5,121.1 | 5,054.7 | 5,036.7 | 5,036.7 | 17.5 | 100.7 | 141.84 | 376.7 | 237.7 | 653.5 | 539.5 | 114.02 | 5.732 | |
| 5,200.0 | 5,132.3 | 5,114.3 | 5,114.3 | 17.8 | 102.3 | 142.71 | 376.7 | 237.7 | 664.6 | 548.6 | 115.99 | 5.730 | |
| 5,300.0 | 5,231.2 | 5,213.2 | 5,213.2 | 18.1 | 104.3 | 143.60 | 376.7 | 237.7 | 676.3 | 557.9 | 118.43 | 5.711 | |
| 5,400.0 | 5,330.6 | 5,312.6 | 5,312.6 | 18.3 | 106.3 | 144.26 | 376.7 | 237.7 | 685.4 | 564.6 | 120.81 | 5.673 | |
| 5,500.0 | 5,430.3 | 5,412.3 | 5,412.3 | 18.5 | 108.2 | 144.70 | 376.7 | 237.7 | 691.6 | 568.5 | 123.12 | 5.617 | |
| 5,600.0 | 5,530.2 | 5,512.2 | 5,512.2 | 18.7 | 110.2 | 144.94 | 376.7 | 237.7 | 695.0 | 569.7 | 125.34 | 5.545 | |
| 5,669.8 | 5,600.0 | 5,582.0 | 5,582.0 | 18.8 | 111.6 | 113.57 | 376.7 | 237.7 | 695.7 | 566.8 | 128.90 | 5.397 | |
| 5,700.0 | 5,630.2 | 5,612.2 | 5,612.2 | 18.8 | 112.2 | 113.57 | 376.7 | 237.7 | 695.7 | 566.2 | 129.55 | 5.370 | |
| 5,800.0 | 5,730.2 | 5,712.2 | 5,712.2 | 19.0 | 114.2 | 113.57 | 376.7 | 237.7 | 695.7 | 564.0 | 131.71 | 5.282 | |
| 5,873.4 | 5,803.6 | 5,785.6 | 5,785.6 | 19.1 | 115.7 | 113.57 | 376.7 | 237.7 | 695.7 | 562.4 | 133.29 | 5.219 | |
| 5,900.0 | 5,830.2 | 5,812.2 | 5,812.2 | 19.1 | 116.2 | 23.60 | 376.7 | 237.7 | 695.3 | 563.6 | 131.72 | 5.278 | |
| 5,950.0 | 5,880.1 | 5,862.1 | 5,862.1 | 19.1 | 117.2 | 23.80 | 376.7 | 237.7 | 692.2 | 560.0 | 132.20 | 5.236 | |
| 6,000.0 | 5,929.6 | 5,911.6 | 5,911.6 | 19.2 | 118.2 | 24.21 | 376.7 | 237.7 | 686.1 | 554.0 | 132.18 | 5.191 | |
| 6,050.0 | 5,978.6 | 5,960.6 | 5,960.6 | 19.2 | 119.2 | 24.84 | 376.7 | 237.7 | 677.1 | 545.5 | 131.67 | 5.143 | |
| 6,100.0 | 6,026.9 | 6,008.9 | 6,008.9 | 19.2 | 120.2 | 25.71 | 376.7 | 237.7 | 665.3 | 534.6 | 130.69 | 5.090 | |
| 6,150.0 | 6,074.2 | 6,056.2 | 6,056.2 | 19.2 | 121.1 | 26.83 | 376.7 | 237.7 | 650.6 | 521.3 | 129.31 | 5.031 | |
| 6,200.0 | 6,120.4 | 6,102.4 | 6,102.4 | 19.1 | 122.0 | 28.25 | 376.7 | 237.7 | 633.3 | 505.7 | 127.59 | 4.963 | |
| 6,250.0 | 6,165.1 | 6,147.1 | 6,147.1 | 19.1 | 122.9 | 30.01 | 376.7 | 237.7 | 613.4 | 487.7 | 125.68 | 4.881 | |
| 6,300.0 | 6,208.4 | 6,190.4 | 6,190.4 | 19.1 | 123.8 | 32.17 | 376.7 | 237.7 | 591.2 | 467.4 | 123.73 | 4.778 | |
| 6,350.0 | 6,249.9 | 6,231.9 | 6,231.9 | 19.0 | 124.6 | 34.77 | 376.7 | 237.7 | 566.7 | 444.7 | 122.00 | 4.645 | |
| 6,400.0 | 6,289.5 | 6,271.5 | 6,271.5 | 18.9 | 125.4 | 37.89 | 376.7 | 237.7 | 540.3 | 419.5 | 120.80 | 4.473 | |
| 6,450.0 | 6,327.0 | 6,309.0 | 6,309.0 | 18.9 | 126.2 | 41.60 | 376.7 | 237.7 | 512.3 | 391.8 | 120.50 | 4.252 | |
| 6,500.0 | 6,362.3 | 6,344.3 | 6,344.3 | 18.8 | 126.9 | 45.94 | 376.7 | 237.7 | 482.9 | 361.5 | 121.44 | 3.977 | |
| 6,550.0 | 6,395.2 | 6,377.2 | 6,377.2 | 18.8 | 127.5 | 50.92 | 376.7 | 237.7 | 452.7 | 328.8 | 123.84 | 3.655 | |
| 6,600.0 | 6,425.5 | 6,407.5 | 6,407.5 | 18.7 | 128.2 | 56.48 | 376.7 | 237.7 | 422.1 | 294.4 | 127.65 | 3.306 | |
| 6,650.0 | 6,453.2 | 6,435.2 | 6,435.2 | 18.7 | 128.7 | 62.45 | 376.7 | 237.7 | 391.7 | 259.3 | 132.43 | 2.958 | |
| 6,700.0 | 6,478.1 | 6,460.1 | 6,460.1 | 18.6 | 129.2 | 68.58 | 376.7 | 237.7 | 362.5 | 225.0 | 137.47 | 2.637 | |
| 6,750.0 | 6,500.1 | 6,482.1 | 6,482.1 | 18.6 | 129.6 | 74.52 | 376.7 | 237.7 | 335.5 | 193.5 | 142.03 | 2.362 | |
| 6,800.0 | 6,519.1 | 6,501.1 | 6,501.1 | 18.5 | 130.0 | 79.91 | 376.7 | 237.7 | 312.0 | 166.4 | 145.61 | 2.143 | |
| 6,850.0 | 6,535.1 | 6,517.1 | 6,517.1 | 18.6 | 130.3 | 84.44 | 376.7 | 237.7 | 293.6 | 145.5 | 148.12 | 1.982 | |
| 6,900.0 | 6,547.9 | 6,529.9 | 6,529.9 | 19.4 | 130.6 | 87.89 | 376.7 | 237.7 | 281.9 | 132.1 | 149.77 | 1.882 | |
| 6,946.5 | 6,557.0 | 6,539.0 | 6,539.0 | 20.2 | 130.8 | 90.00 | 376.7 | 237.7 | 278.2 | 127.3 | 150.87 | 1.844 CC | |
| 6,950.0 | 6,557.6 | 6,539.6 | 6,539.6 | 20.2 | 130.8 | 90.11 | 376.7 | 237.7 | 278.2 | 127.3 | 150.94 | 1.843 ES, SF | |
| 7,000.0 | 6,564.0 | 6,546.0 | 6,546.0 | 21.1 | 130.9 | 91.05 | 376.7 | 237.7 | 283.2 | 131.3 | 151.94 | 1.864 | |
| 7,050.0 | 6,567.2 | 6,549.2 | 6,549.2 | 22.0 | 131.0 | 90.65 | 376.7 | 237.7 | 296.6 | 143.7 | 152.91 | 1.940 | |
| 7,079.1 | 6,567.5 | 6,549.5 | 6,549.5 | 22.6 | 131.0 | 89.80 | 376.7 | 237.7 | 307.9 | 154.5 | 153.44 | 2.007 | |
| 7,100.0 | 6,567.3 | 6,549.3 | 6,549.3 | 23.0 | 131.0 | 89.76 | 376.7 | 237.7 | 317.5 | 163.6 | 153.84 | 2.064 | |
| 7,200.0 | 6,566.6 | 6,548.6 | 6,548.6 | 25.1 | 131.0 | 89.61 | 376.7 | 237.7 | 376.0 | 220.1 | 155.84 | 2.413 | |
| 7,300.0 | 6,565.8 | 6,547.8 | 6,547.8 | 27.3 | 131.0 | 89.45 | 376.7 | 237.7 | 449.4 | 291.4 | 157.99 | 2.844 | |
| 7,400.0 | 6,565.1 | 6,547.1 | 6,547.1 | 29.6 | 130.9 | 89.30 | 376.7 | 237.7 | 531.5 | 371.3 | 160.24 | 3.317 | |
| 7,500.0 | 6,564.3 | 6,546.3 | 6,546.3 | 31.9 | 130.9 | 89.15 | 376.7 | 237.7 | 618.9 | 456.4 | 162.57 | 3.807 | |
| 7,600.0 | 6,563.6 | 6,545.6 | 6,545.6 | 34.4 | 130.9 | 88.99 | 376.7 | 237.7 | 709.7 | 544.7 | 164.97 | 4.302 | |
| 7,700.0 | 6,562.8 | 6,544.8 | 6,544.8 | 36.9 | 130.9 | 88.84 | 376.7 | 237.7 | 802.6 | 635.2 | 167.43 | 4.794 | |
| 7,800.0 | 6,562.1 | 6,544.1 | 6,544.1 | 39.4 | 130.9 | 88.68 | 376.7 | 237.7 | 897.1 | 727.2 | 169.93 | 5.279 | |
| 7,900.0 | 6,561.3 | 6,543.3 | 6,543.3 | 42.0 | 130.9 | 88.53 | 376.7 | 237.7 | 992.7 | 820.2 | 172.46 | 5.756 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PETROLEUM DEVELOPMENT CORP DJ Basin | **Local Co-ordinate Reference:** | Well Bihain 26F-232 |
| **Project:** | SEC.26-T5N-R64W | **TVD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Reference Site:** | Bihain 5N64W26GK Pad Sec.26-T5N-R64W | **MD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | Bihain 26F-232 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | Plan #1 (11-2-15) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Existing Wells Pad Sec.26-T5N-R64W - Monfort Kuner B 26-7 (Exist.) - Wellbore #1 - Wellbore #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 7312-UNKNOWN

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8,700.0 | 6,555.3 | 6,531.3 | 6,531.3 | 63.2 | 130.6 | 91.40 | 383.1 | 2,873.0 | 923.4 | 729.8 | 193.59 | 4.770 | |
| 8,800.0 | 6,554.6 | 6,530.6 | 6,530.6 | 65.9 | 130.6 | 91.24 | 383.1 | 2,873.0 | 828.4 | 632.1 | 196.30 | 4.220 | |
| 8,900.0 | 6,553.8 | 6,529.8 | 6,529.8 | 68.6 | 130.6 | 91.08 | 383.1 | 2,873.0 | 734.6 | 535.6 | 199.01 | 3.691 | |
| 9,000.0 | 6,553.1 | 6,529.1 | 6,529.1 | 71.3 | 130.6 | 90.92 | 383.1 | 2,873.0 | 642.8 | 441.1 | 201.73 | 3.186 | |
| 9,100.0 | 6,552.3 | 6,528.3 | 6,528.3 | 74.1 | 130.6 | 90.76 | 383.1 | 2,873.0 | 553.8 | 349.4 | 204.45 | 2.709 | |
| 9,200.0 | 6,551.6 | 6,527.6 | 6,527.6 | 76.8 | 130.6 | 90.60 | 383.1 | 2,873.0 | 469.3 | 262.1 | 207.18 | 2.265 | |
| 9,300.0 | 6,550.8 | 6,526.8 | 6,526.8 | 79.5 | 130.5 | 90.45 | 383.1 | 2,873.0 | 392.1 | 182.1 | 209.91 | 1.868 | |
| 9,400.0 | 6,550.1 | 6,526.1 | 6,526.1 | 82.3 | 130.5 | 90.29 | 383.1 | 2,873.0 | 327.4 | 114.8 | 212.65 | 1.540 | |
| 9,500.0 | 6,549.3 | 6,525.3 | 6,525.3 | 85.0 | 130.5 | 90.13 | 383.1 | 2,873.0 | 284.1 | 68.7 | 215.38 | 1.319 | Level 3 |
| 9,582.5 | 6,548.7 | 6,524.7 | 6,524.7 | 87.3 | 130.5 | 90.00 | 383.1 | 2,873.0 | 271.9 | 54.2 | 217.64 | 1.249 | Level 2, CC, ES |
| 9,600.0 | 6,548.6 | 6,524.6 | 6,524.6 | 87.8 | 130.5 | 89.97 | 383.1 | 2,873.0 | 272.4 | 54.3 | 218.12 | 1.249 | Level 2, SF |
| 9,700.0 | 6,547.8 | 6,523.8 | 6,523.8 | 90.6 | 130.5 | 89.81 | 383.1 | 2,873.0 | 296.2 | 75.3 | 220.86 | 1.341 | Level 3 |
| 9,800.0 | 6,547.1 | 6,523.1 | 6,523.1 | 93.3 | 130.5 | 89.66 | 383.1 | 2,873.0 | 348.1 | 124.5 | 223.60 | 1.557 | |
| 9,900.0 | 6,546.3 | 6,522.3 | 6,522.3 | 96.1 | 130.4 | 89.50 | 383.1 | 2,873.0 | 418.0 | 191.6 | 226.34 | 1.847 | |
| 10,000.0 | 6,545.6 | 6,521.6 | 6,521.6 | 98.8 | 130.4 | 89.34 | 383.1 | 2,873.0 | 498.2 | 269.1 | 229.09 | 2.175 | |
| 10,100.0 | 6,544.8 | 6,520.8 | 6,520.8 | 101.6 | 130.4 | 89.18 | 383.1 | 2,873.0 | 584.5 | 352.7 | 231.83 | 2.521 | |
| 10,200.0 | 6,544.1 | 6,520.1 | 6,520.1 | 104.4 | 130.4 | 89.02 | 383.1 | 2,873.0 | 674.7 | 440.1 | 234.57 | 2.876 | |
| 10,300.0 | 6,543.3 | 6,519.3 | 6,519.3 | 107.2 | 130.4 | 88.87 | 383.1 | 2,873.0 | 767.3 | 529.9 | 237.32 | 3.233 | |
| 10,400.0 | 6,542.6 | 6,518.6 | 6,518.6 | 109.9 | 130.4 | 88.71 | 383.1 | 2,873.0 | 861.5 | 621.4 | 240.06 | 3.589 | |
| 10,500.0 | 6,541.8 | 6,517.8 | 6,517.8 | 112.7 | 130.4 | 88.55 | 383.1 | 2,873.0 | 956.9 | 714.1 | 242.80 | 3.941 | |

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|---|---|---|---|
| **Company:** | PETROLEUM DEVELOPMENT CORP DJ Basin | **Local Co-ordinate Reference:** | Well Bihain 26F-232 |
| **Project:** | SEC.26-T5N-R64W | **TVD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Reference Site:** | Bihain 5N64W26GK Pad Sec.26-T5N-R64W | **MD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | Bihain 26F-232 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | Plan #1 (11-2-15) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Existing Wells Pad Sec.26-T5N-R64W - Monfort Kuner B 26-8 (Exist.) - Wellbore #1 - Wellbore #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 6840-UNKNOWN

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10,000.0 | 6,545.6 | 6,518.6 | 6,518.6 | 98.8 | 130.4 | 91.34 | 375.2 | 4,164.5 | 917.7 | 688.6 | 229.04 | 4.006 | |
| 10,100.0 | 6,544.8 | 6,517.8 | 6,517.8 | 101.6 | 130.4 | 91.19 | 375.2 | 4,164.5 | 823.0 | 591.2 | 231.81 | 3.550 | |
| 10,200.0 | 6,544.1 | 6,517.1 | 6,517.1 | 104.4 | 130.3 | 91.04 | 375.2 | 4,164.5 | 729.7 | 495.2 | 234.57 | 3.111 | |
| 10,300.0 | 6,543.3 | 6,516.3 | 6,516.3 | 107.2 | 130.3 | 90.88 | 375.2 | 4,164.5 | 638.5 | 401.2 | 237.34 | 2.690 | |
| 10,400.0 | 6,542.6 | 6,515.6 | 6,515.6 | 109.9 | 130.3 | 90.73 | 375.2 | 4,164.5 | 550.4 | 310.3 | 240.10 | 2.292 | |
| 10,500.0 | 6,541.8 | 6,514.8 | 6,514.8 | 112.7 | 130.3 | 90.57 | 375.2 | 4,164.5 | 467.0 | 224.2 | 242.87 | 1.923 | |
| 10,600.0 | 6,541.1 | 6,514.1 | 6,514.1 | 115.5 | 130.3 | 90.42 | 375.2 | 4,164.5 | 391.6 | 145.9 | 245.64 | 1.594 | |
| 10,700.0 | 6,540.3 | 6,513.3 | 6,513.3 | 118.3 | 130.3 | 90.27 | 375.2 | 4,164.5 | 329.4 | 81.0 | 248.40 | 1.326 | Level 3 |
| 10,800.0 | 6,539.6 | 6,512.6 | 6,512.6 | 121.0 | 130.3 | 90.11 | 375.2 | 4,164.5 | 289.3 | 38.2 | 251.17 | 1.152 | Level 2 |
| 10,874.0 | 6,539.0 | 6,512.0 | 6,512.0 | 123.1 | 130.2 | 90.00 | 375.2 | 4,164.5 | 279.7 | 26.5 | 253.21 | 1.105 | Level 2, CC, ES, SF |
| 10,900.0 | 6,538.8 | 6,511.8 | 6,511.8 | 123.8 | 130.2 | 89.96 | 375.2 | 4,164.5 | 280.9 | 27.0 | 253.93 | 1.106 | Level 2 |
| 11,000.0 | 6,538.1 | 6,511.1 | 6,511.1 | 126.6 | 130.2 | 89.81 | 375.2 | 4,164.5 | 306.8 | 50.1 | 256.70 | 1.195 | Level 2 |
| 11,100.0 | 6,537.3 | 6,510.3 | 6,510.3 | 129.4 | 130.2 | 89.65 | 375.2 | 4,164.5 | 359.6 | 100.1 | 259.46 | 1.386 | Level 3 |
| 11,200.0 | 6,536.6 | 6,509.6 | 6,509.6 | 132.2 | 130.2 | 89.50 | 375.2 | 4,164.5 | 429.5 | 167.3 | 262.22 | 1.638 | |
| 11,300.0 | 6,535.8 | 6,508.8 | 6,508.8 | 135.0 | 130.2 | 89.35 | 375.2 | 4,164.5 | 509.6 | 244.6 | 264.98 | 1.923 | |
| 11,400.0 | 6,535.1 | 6,508.1 | 6,508.1 | 137.7 | 130.2 | 89.19 | 375.2 | 4,164.5 | 595.7 | 328.0 | 267.74 | 2.225 | |
| 11,500.0 | 6,534.3 | 6,507.3 | 6,507.3 | 140.5 | 130.1 | 89.04 | 375.2 | 4,164.5 | 685.6 | 415.1 | 270.50 | 2.535 | |
| 11,600.0 | 6,533.6 | 6,506.6 | 6,506.6 | 143.3 | 130.1 | 88.88 | 375.2 | 4,164.5 | 778.0 | 504.7 | 273.26 | 2.847 | |
| 11,700.0 | 6,532.8 | 6,505.8 | 6,505.8 | 146.1 | 130.1 | 88.73 | 375.2 | 4,164.5 | 872.0 | 596.0 | 276.02 | 3.159 | |
| 11,800.0 | 6,532.1 | 6,505.1 | 6,505.1 | 148.9 | 130.1 | 88.58 | 375.2 | 4,164.5 | 967.3 | 688.5 | 278.77 | 3.470 | |

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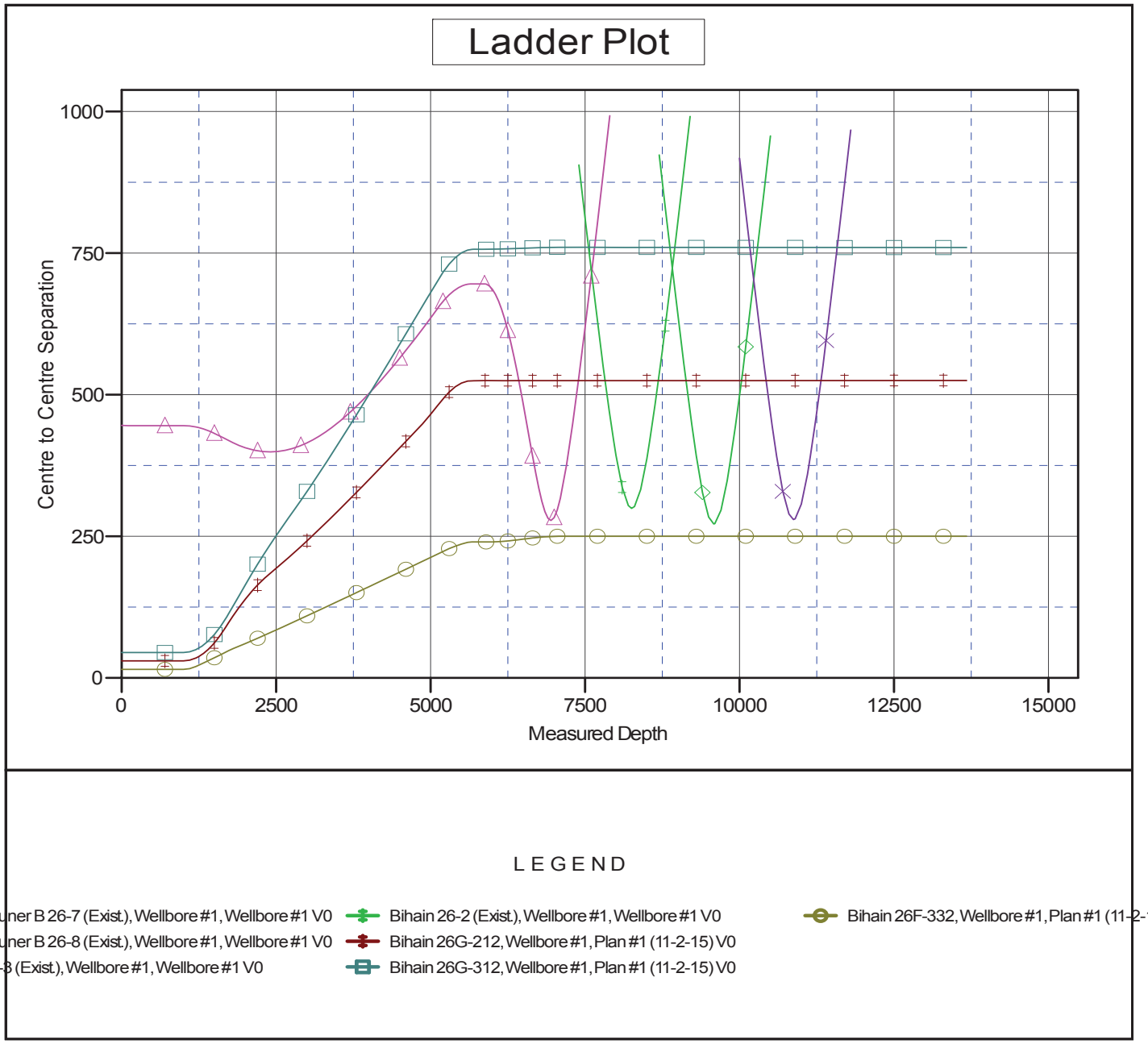
|---|---|---|---|
| **Company:** | PETROLEUM DEVELOPMENT CORP DJ Basin | **Local Co-ordinate Reference:** | Well Bihain 26F-232 |
| **Project:** | SEC.26-T5N-R64W | **TVD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Reference Site:** | Bihain 5N64W26GK Pad Sec.26-T5N-R64W | **MD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | Bihain 26F-232 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | Plan #1 (11-2-15) | **Offset TVD Reference:** | Offset Datum |

Reference Depths are relative to WELL @ 4617.0ft (RKB - 13')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: Bihain 26F-232
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.63°



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|---|---|---|---|
| **Company:** | PETROLEUM DEVELOPMENT CORP DJ Basin | **Local Co-ordinate Reference:** | Well Bihain 26F-232 |
| **Project:** | SEC.26-T5N-R64W | **TVD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Reference Site:** | Bihain 5N64W26GK Pad Sec.26-T5N-R64W | **MD Reference:** | WELL @ 4617.0ft (RKB - 13') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | Bihain 26F-232 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | Plan #1 (11-2-15) | **Offset TVD Reference:** | Offset Datum |

Reference Depths are relative to WELL @ 4617.0ft (RKB - 13')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: Bihain 26F-232
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.63°