# Verdad Oil & Gas Corporation

Well Name: **Pastelak 01N-64W-02-1C**

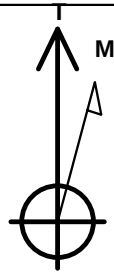
Surface Location: Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 5014.0

| +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Slot |
|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 1276065.59 | 3273268.38 | 40.087060 | -104.523310 | |

Original Well Elev WELL @ 5027.0ft (Original Well Elev)

## WELLBORE TARGET DETAILS

| Name | TVD | +N/-S | +E/-W | Shape |
|---|---|---|---|---|
| 460' Setback BHL | 1.0 | -4582.8 | -800.0 | Polygon |
| 460' Setback SHL | 1.0 | -245.0 | -800.0 | Polygon |
| Sectionline | 1.0 | 215.0 | -800.0 | Polygon |
| SHL 215'FNL & 1256'FWL | 1.0 | 0.0 | 0.0 | Point |
| Schweitzer 11-2 300' Circle | 2.0 | -440.8 | -568.0 | Circle (Radius: 300.0) |
| BHL 460'FSL & 610'FWL | 7127.0 | -4582.8 | -542.6 | Point |



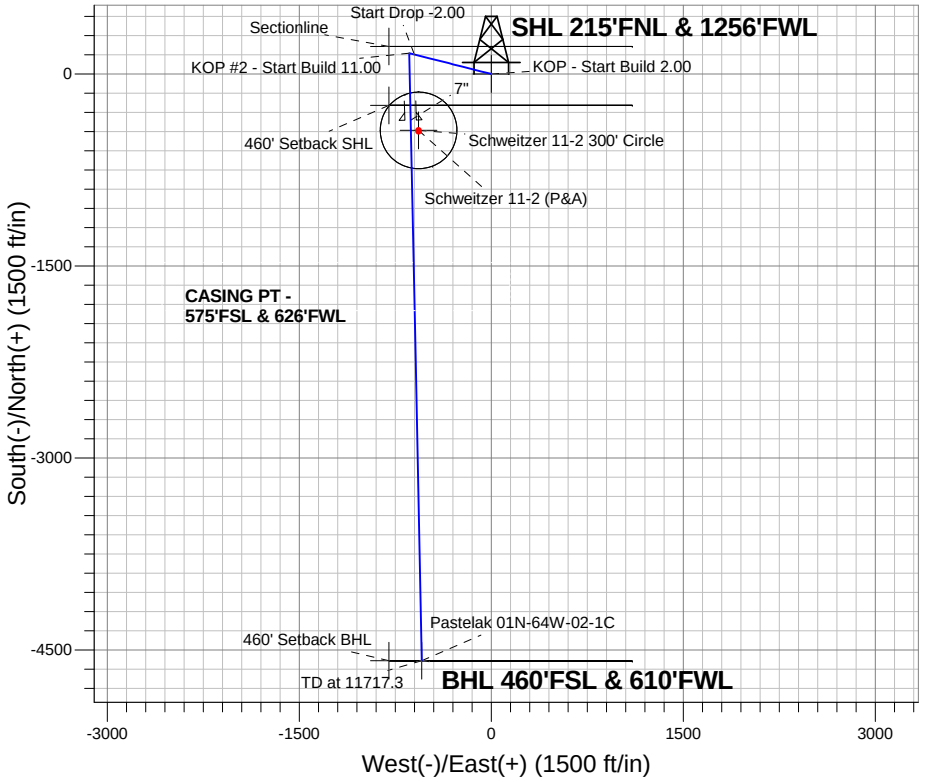

Azimuths to True North
Magnetic North: 8.28°

Magnetic Field
Strength: 52659.6snT
Dip Angle: 66.73°
Date: 8/6/2014
Model: IGRF2010

Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W
Pastelak 01N-64W-02-1C
Plan #1 (8-6-14)

## ANNOTATIONS

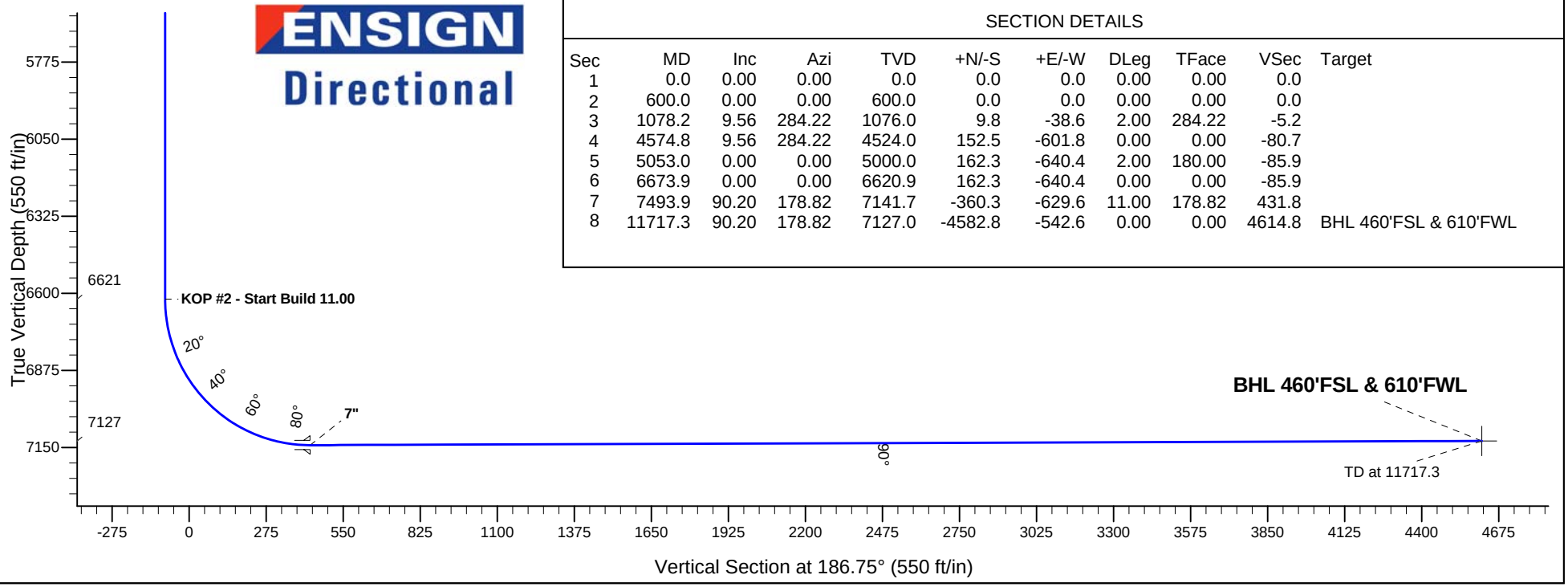
| TVD | MD | Annotation |
|---|---|---|
| 600.0 | 600.0 | KOP - Start Build 2.00 |
| 4524.0 | 4574.8 | Start Drop -2.00 |
| 6620.9 | 6673.9 | KOP #2 - Start Build 11.00 |
| 7127.0 | 11717.3 | TD at 11717.3 |




ENSIGN Directional

## SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | DLeg | TFace | VSec | Target |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | |
| 2 | 600.0 | 0.00 | 0.00 | 600.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | |
| 3 | 1078.2 | 9.56 | 284.22 | 1076.0 | 9.8 | -38.6 | 2.00 | 284.22 | -5.2 | |
| 4 | 4574.8 | 9.56 | 284.22 | 4524.0 | 152.5 | -601.8 | 0.00 | 0.00 | -80.7 | |
| 5 | 5053.0 | 0.00 | 0.00 | 5000.0 | 162.3 | -640.4 | 2.00 | 180.00 | -85.9 | |
| 6 | 6673.9 | 0.00 | 0.00 | 6620.9 | 162.3 | -640.4 | 0.00 | 0.00 | -85.9 | |
| 7 | 7493.9 | 90.20 | 178.82 | 7141.7 | -360.3 | -629.6 | 11.00 | 178.82 | 431.8 | |
| 8 | 11717.3 | 90.20 | 178.82 | 7127.0 | -4582.8 | -542.6 | 0.00 | 0.00 | 4614.8 | BHL 460'FSL & 610'FWL |



# Verdad Oil & Gas Corporation

**SEC.2-T1N-R64W**
**Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W**
**Pastelak 01N-64W-02-1C**

**Wellbore #1**

**Plan: Plan #1 (8-6-14)**

# Standard Planning Report

**08 August, 2014**

| | | | |
|---|---|---|---|
| **Database:** | landmark | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Company:** | Verdad Oil & Gas Corporation | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Project:** | SEC.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **North Reference:** | True |
| **Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Plan #1 (8-6-14) | | |

**Project** SEC.2-T1N-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** Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W

| | | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 1,276,065.60 ft | **Latitude:** | 40.087060 |
| **From:** | Lat/Long | **Easting:** | 3,273,268.38 ft | **Longitude:** | -104.523310 |
| **Position Uncertainty:** | 0.0 ft | **Slot Radius:** | " | **Grid Convergence:** | 0.63 ° |

**Well** Pastelak 01N-64W-02-1C

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 0.0 ft | **Northing:** | 1,276,065.59 ft | **Latitude:** | 40.087060 |
| | **+E/-W** | 0.0 ft | **Easting:** | 3,273,268.38 ft | **Longitude:** | -104.523310 |
| **Position Uncertainty** | | 0.0 ft | **Wellhead Elevation:** | ft | **Ground Level:** | 5,014.0 ft |

**Wellbore** Wellbore #1

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|---|---|---|---|---|---|
| | IGRF2010 | 8/6/2014 | 8.29 | 66.73 | 52,660 |

**Design** Plan #1 (8-6-14)

**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 | 186.75 |

**Plan Sections**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | TFO (°) | Target |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 600.0 | 0.00 | 0.00 | 600.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,078.2 | 9.56 | 284.22 | 1,076.0 | 9.8 | -38.6 | 2.00 | 2.00 | 0.00 | 284.22 | |
| 4,574.8 | 9.56 | 284.22 | 4,524.0 | 152.5 | -601.8 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5,053.0 | 0.00 | 0.00 | 5,000.0 | 162.3 | -640.4 | 2.00 | -2.00 | 0.00 | 180.00 | |
| 6,673.9 | 0.00 | 0.00 | 6,620.9 | 162.3 | -640.4 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 7,493.9 | 90.20 | 178.82 | 7,141.7 | -360.3 | -629.6 | 11.00 | 11.00 | 0.00 | 178.82 | |
| 11,717.3 | 90.20 | 178.82 | 7,127.0 | -4,582.8 | -542.6 | 0.00 | 0.00 | 0.00 | 0.00 | BHL 460'FSL & 61( |

| | | | |
|---|---|---|---|
| **Database:** | landmark | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Company:** | Verdad Oil & Gas Corporation | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Project:** | SEC.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **North Reference:** | True |
| **Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Plan #1 (8-6-14) | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 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 |
| **KOP - Start Build 2.00** | | | | | | | | | |
| 700.0 | 2.00 | 284.22 | 700.0 | 0.4 | -1.7 | -0.2 | 2.00 | 2.00 | 0.00 |
| 800.0 | 4.00 | 284.22 | 799.8 | 1.7 | -6.8 | -0.9 | 2.00 | 2.00 | 0.00 |
| 900.0 | 6.00 | 284.22 | 899.5 | 3.9 | -15.2 | -2.0 | 2.00 | 2.00 | 0.00 |
| 1,000.0 | 8.00 | 284.22 | 998.7 | 6.8 | -27.0 | -3.6 | 2.00 | 2.00 | 0.00 |
| 1,078.2 | 9.56 | 284.22 | 1,076.0 | 9.8 | -38.6 | -5.2 | 2.00 | 2.00 | 0.00 |
| 1,100.0 | 9.56 | 284.22 | 1,097.5 | 10.7 | -42.1 | -5.6 | 0.00 | 0.00 | 0.00 |
| 1,200.0 | 9.56 | 284.22 | 1,196.1 | 14.8 | -58.2 | -7.8 | 0.00 | 0.00 | 0.00 |
| 1,300.0 | 9.56 | 284.22 | 1,294.7 | 18.8 | -74.3 | -10.0 | 0.00 | 0.00 | 0.00 |
| 1,400.0 | 9.56 | 284.22 | 1,393.3 | 22.9 | -90.4 | -12.1 | 0.00 | 0.00 | 0.00 |
| 1,500.0 | 9.56 | 284.22 | 1,491.9 | 27.0 | -106.5 | -14.3 | 0.00 | 0.00 | 0.00 |
| 1,600.0 | 9.56 | 284.22 | 1,590.5 | 31.1 | -122.6 | -16.4 | 0.00 | 0.00 | 0.00 |
| 1,700.0 | 9.56 | 284.22 | 1,689.1 | 35.2 | -138.8 | -18.6 | 0.00 | 0.00 | 0.00 |
| 1,800.0 | 9.56 | 284.22 | 1,787.7 | 39.2 | -154.9 | -20.8 | 0.00 | 0.00 | 0.00 |
| 1,900.0 | 9.56 | 284.22 | 1,886.4 | 43.3 | -171.0 | -22.9 | 0.00 | 0.00 | 0.00 |
| 2,000.0 | 9.56 | 284.22 | 1,985.0 | 47.4 | -187.1 | -25.1 | 0.00 | 0.00 | 0.00 |
| 2,100.0 | 9.56 | 284.22 | 2,083.6 | 51.5 | -203.2 | -27.2 | 0.00 | 0.00 | 0.00 |
| 2,200.0 | 9.56 | 284.22 | 2,182.2 | 55.6 | -219.3 | -29.4 | 0.00 | 0.00 | 0.00 |
| 2,300.0 | 9.56 | 284.22 | 2,280.8 | 59.7 | -235.4 | -31.6 | 0.00 | 0.00 | 0.00 |
| 2,400.0 | 9.56 | 284.22 | 2,379.4 | 63.7 | -251.5 | -33.7 | 0.00 | 0.00 | 0.00 |
| 2,500.0 | 9.56 | 284.22 | 2,478.0 | 67.8 | -267.6 | -35.9 | 0.00 | 0.00 | 0.00 |
| 2,600.0 | 9.56 | 284.22 | 2,576.6 | 71.9 | -283.7 | -38.0 | 0.00 | 0.00 | 0.00 |
| 2,700.0 | 9.56 | 284.22 | 2,675.2 | 76.0 | -299.8 | -40.2 | 0.00 | 0.00 | 0.00 |
| 2,800.0 | 9.56 | 284.22 | 2,773.8 | 80.1 | -315.9 | -42.4 | 0.00 | 0.00 | 0.00 |
| 2,900.0 | 9.56 | 284.22 | 2,872.5 | 84.1 | -332.0 | -44.5 | 0.00 | 0.00 | 0.00 |
| 3,000.0 | 9.56 | 284.22 | 2,971.1 | 88.2 | -348.1 | -46.7 | 0.00 | 0.00 | 0.00 |
| 3,100.0 | 9.56 | 284.22 | 3,069.7 | 92.3 | -364.2 | -48.8 | 0.00 | 0.00 | 0.00 |
| 3,200.0 | 9.56 | 284.22 | 3,168.3 | 96.4 | -380.4 | -51.0 | 0.00 | 0.00 | 0.00 |
| 3,300.0 | 9.56 | 284.22 | 3,266.9 | 100.5 | -396.5 | -53.2 | 0.00 | 0.00 | 0.00 |
| 3,400.0 | 9.56 | 284.22 | 3,365.5 | 104.6 | -412.6 | -55.3 | 0.00 | 0.00 | 0.00 |
| 3,500.0 | 9.56 | 284.22 | 3,464.1 | 108.6 | -428.7 | -57.5 | 0.00 | 0.00 | 0.00 |
| 3,600.0 | 9.56 | 284.22 | 3,562.7 | 112.7 | -444.8 | -59.6 | 0.00 | 0.00 | 0.00 |
| 3,700.0 | 9.56 | 284.22 | 3,661.3 | 116.8 | -460.9 | -61.8 | 0.00 | 0.00 | 0.00 |
| 3,800.0 | 9.56 | 284.22 | 3,759.9 | 120.9 | -477.0 | -64.0 | 0.00 | 0.00 | 0.00 |
| 3,900.0 | 9.56 | 284.22 | 3,858.6 | 125.0 | -493.1 | -66.1 | 0.00 | 0.00 | 0.00 |
| 4,000.0 | 9.56 | 284.22 | 3,957.2 | 129.1 | -509.2 | -68.3 | 0.00 | 0.00 | 0.00 |
| 4,100.0 | 9.56 | 284.22 | 4,055.8 | 133.1 | -525.3 | -70.4 | 0.00 | 0.00 | 0.00 |
| 4,200.0 | 9.56 | 284.22 | 4,154.4 | 137.2 | -541.4 | -72.6 | 0.00 | 0.00 | 0.00 |
| 4,300.0 | 9.56 | 284.22 | 4,253.0 | 141.3 | -557.5 | -74.8 | 0.00 | 0.00 | 0.00 |
| 4,400.0 | 9.56 | 284.22 | 4,351.6 | 145.4 | -573.6 | -76.9 | 0.00 | 0.00 | 0.00 |
| 4,500.0 | 9.56 | 284.22 | 4,450.2 | 149.5 | -589.7 | -79.1 | 0.00 | 0.00 | 0.00 |
| 4,574.8 | 9.56 | 284.22 | 4,524.0 | 152.5 | -601.8 | -80.7 | 0.00 | 0.00 | 0.00 |
| **Start Drop -2.00** | | | | | | | | | |
| 4,600.0 | 9.06 | 284.22 | 4,548.8 | 153.5 | -605.7 | -81.2 | 2.00 | -2.00 | 0.00 |
| 4,700.0 | 7.06 | 284.22 | 4,647.8 | 157.0 | -619.3 | -83.1 | 2.00 | -2.00 | 0.00 |
| 4,800.0 | 5.06 | 284.22 | 4,747.3 | 159.6 | -629.6 | -84.4 | 2.00 | -2.00 | 0.00 |
| 4,900.0 | 3.06 | 284.22 | 4,847.0 | 161.3 | -636.4 | -85.3 | 2.00 | -2.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | landmark | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Company:** | Verdad Oil & Gas Corporation | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Project:** | SEC.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **North Reference:** | True |
| **Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Plan #1 (8-6-14) | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 5,000.0 | 1.06 | 284.22 | 4,947.0 | 162.2 | -639.9 | -85.8 | 2.00 | -2.00 | 0.00 |
| 5,053.0 | 0.00 | 0.00 | 5,000.0 | 162.3 | -640.4 | -85.9 | 2.00 | -2.00 | 0.00 |
| 5,100.0 | 0.00 | 0.00 | 5,047.0 | 162.3 | -640.4 | -85.9 | 0.00 | 0.00 | 0.00 |
| 5,200.0 | 0.00 | 0.00 | 5,147.0 | 162.3 | -640.4 | -85.9 | 0.00 | 0.00 | 0.00 |
| 5,300.0 | 0.00 | 0.00 | 5,247.0 | 162.3 | -640.4 | -85.9 | 0.00 | 0.00 | 0.00 |
| 5,400.0 | 0.00 | 0.00 | 5,347.0 | 162.3 | -640.4 | -85.9 | 0.00 | 0.00 | 0.00 |
| 5,500.0 | 0.00 | 0.00 | 5,447.0 | 162.3 | -640.4 | -85.9 | 0.00 | 0.00 | 0.00 |
| 5,600.0 | 0.00 | 0.00 | 5,547.0 | 162.3 | -640.4 | -85.9 | 0.00 | 0.00 | 0.00 |
| 5,700.0 | 0.00 | 0.00 | 5,647.0 | 162.3 | -640.4 | -85.9 | 0.00 | 0.00 | 0.00 |
| 5,800.0 | 0.00 | 0.00 | 5,747.0 | 162.3 | -640.4 | -85.9 | 0.00 | 0.00 | 0.00 |
| 5,900.0 | 0.00 | 0.00 | 5,847.0 | 162.3 | -640.4 | -85.9 | 0.00 | 0.00 | 0.00 |
| 6,000.0 | 0.00 | 0.00 | 5,947.0 | 162.3 | -640.4 | -85.9 | 0.00 | 0.00 | 0.00 |
| 6,100.0 | 0.00 | 0.00 | 6,047.0 | 162.3 | -640.4 | -85.9 | 0.00 | 0.00 | 0.00 |
| 6,200.0 | 0.00 | 0.00 | 6,147.0 | 162.3 | -640.4 | -85.9 | 0.00 | 0.00 | 0.00 |
| 6,300.0 | 0.00 | 0.00 | 6,247.0 | 162.3 | -640.4 | -85.9 | 0.00 | 0.00 | 0.00 |
| 6,400.0 | 0.00 | 0.00 | 6,347.0 | 162.3 | -640.4 | -85.9 | 0.00 | 0.00 | 0.00 |
| 6,500.0 | 0.00 | 0.00 | 6,447.0 | 162.3 | -640.4 | -85.9 | 0.00 | 0.00 | 0.00 |
| 6,600.0 | 0.00 | 0.00 | 6,547.0 | 162.3 | -640.4 | -85.9 | 0.00 | 0.00 | 0.00 |
| 6,673.9 | 0.00 | 0.00 | 6,620.9 | 162.3 | -640.4 | -85.9 | 0.00 | 0.00 | 0.00 |
| **KOP #2 - Start Build 11.00** | | | | | | | | | |
| 6,700.0 | 2.87 | 178.82 | 6,646.9 | 161.6 | -640.4 | -85.2 | 10.99 | 10.99 | 0.00 |
| 6,800.0 | 13.87 | 178.82 | 6,745.7 | 147.1 | -640.1 | -70.8 | 11.00 | 11.00 | 0.00 |
| 6,900.0 | 24.87 | 178.82 | 6,839.9 | 114.0 | -639.4 | -38.0 | 11.00 | 11.00 | 0.00 |
| 7,000.0 | 35.87 | 178.82 | 6,926.1 | 63.5 | -638.4 | 12.0 | 11.00 | 11.00 | 0.00 |
| 7,100.0 | 46.87 | 178.82 | 7,001.0 | -2.4 | -637.0 | 77.3 | 11.00 | 11.00 | 0.00 |
| 7,200.0 | 57.87 | 178.82 | 7,062.0 | -81.5 | -635.4 | 155.6 | 11.00 | 11.00 | 0.00 |
| 7,300.0 | 68.87 | 178.82 | 7,106.7 | -170.7 | -633.5 | 244.0 | 11.00 | 11.00 | 0.00 |
| 7,400.0 | 79.87 | 178.82 | 7,133.6 | -266.9 | -631.6 | 339.3 | 11.00 | 11.00 | 0.00 |
| 7,493.9 | 90.20 | 178.82 | 7,141.7 | -360.3 | -629.6 | 431.8 | 11.00 | 11.00 | 0.00 |
| **7"** | | | | | | | | | |
| 7,500.0 | 90.20 | 178.82 | 7,141.7 | -366.4 | -629.5 | 437.8 | 0.03 | 0.03 | 0.00 |
| 7,600.0 | 90.20 | 178.82 | 7,141.4 | -466.3 | -627.4 | 536.9 | 0.00 | 0.00 | 0.00 |
| 7,700.0 | 90.20 | 178.82 | 7,141.0 | -566.3 | -625.4 | 635.9 | 0.00 | 0.00 | 0.00 |
| 7,800.0 | 90.20 | 178.82 | 7,140.7 | -666.3 | -623.3 | 735.0 | 0.00 | 0.00 | 0.00 |
| 7,900.0 | 90.20 | 178.82 | 7,140.3 | -766.3 | -621.3 | 834.0 | 0.00 | 0.00 | 0.00 |
| 8,000.0 | 90.20 | 178.82 | 7,140.0 | -866.2 | -619.2 | 933.0 | 0.00 | 0.00 | 0.00 |
| 8,100.0 | 90.20 | 178.82 | 7,139.6 | -966.2 | -617.1 | 1,032.1 | 0.00 | 0.00 | 0.00 |
| 8,200.0 | 90.20 | 178.82 | 7,139.3 | -1,066.2 | -615.1 | 1,131.1 | 0.00 | 0.00 | 0.00 |
| 8,300.0 | 90.20 | 178.82 | 7,138.9 | -1,166.2 | -613.0 | 1,230.2 | 0.00 | 0.00 | 0.00 |
| 8,400.0 | 90.20 | 178.82 | 7,138.6 | -1,266.2 | -611.0 | 1,329.2 | 0.00 | 0.00 | 0.00 |
| 8,500.0 | 90.20 | 178.82 | 7,138.2 | -1,366.1 | -608.9 | 1,428.3 | 0.00 | 0.00 | 0.00 |
| 8,600.0 | 90.20 | 178.82 | 7,137.9 | -1,466.1 | -606.8 | 1,527.3 | 0.00 | 0.00 | 0.00 |
| 8,700.0 | 90.20 | 178.82 | 7,137.5 | -1,566.1 | -604.8 | 1,626.3 | 0.00 | 0.00 | 0.00 |
| 8,800.0 | 90.20 | 178.82 | 7,137.2 | -1,666.1 | -602.7 | 1,725.4 | 0.00 | 0.00 | 0.00 |
| 8,900.0 | 90.20 | 178.82 | 7,136.8 | -1,766.1 | -600.7 | 1,824.4 | 0.00 | 0.00 | 0.00 |
| 9,000.0 | 90.20 | 178.82 | 7,136.5 | -1,866.0 | -598.6 | 1,923.5 | 0.00 | 0.00 | 0.00 |
| 9,100.0 | 90.20 | 178.82 | 7,136.1 | -1,966.0 | -596.5 | 2,022.5 | 0.00 | 0.00 | 0.00 |
| 9,200.0 | 90.20 | 178.82 | 7,135.8 | -2,066.0 | -594.5 | 2,121.6 | 0.00 | 0.00 | 0.00 |
| 9,300.0 | 90.20 | 178.82 | 7,135.4 | -2,166.0 | -592.4 | 2,220.6 | 0.00 | 0.00 | 0.00 |
| 9,400.0 | 90.20 | 178.82 | 7,135.1 | -2,265.9 | -590.4 | 2,319.6 | 0.00 | 0.00 | 0.00 |
| 9,500.0 | 90.20 | 178.82 | 7,134.7 | -2,365.9 | -588.3 | 2,418.7 | 0.00 | 0.00 | 0.00 |
| 9,600.0 | 90.20 | 178.82 | 7,134.4 | -2,465.9 | -586.2 | 2,517.7 | 0.00 | 0.00 | 0.00 |
| 9,700.0 | 90.20 | 178.82 | 7,134.0 | -2,565.9 | -584.2 | 2,616.8 | 0.00 | 0.00 | 0.00 |
| 9,800.0 | 90.20 | 178.82 | 7,133.7 | -2,665.9 | -582.1 | 2,715.8 | 0.00 | 0.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | landmark | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Company:** | Verdad Oil & Gas Corporation | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Project:** | SEC.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **North Reference:** | True |
| **Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Plan #1 (8-6-14) | | |

## Planned Survey

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 9,900.0 | 90.20 | 178.82 | 7,133.3 | -2,765.8 | -580.0 | 2,814.9 | 0.00 | 0.00 | 0.00 |
| 10,000.0 | 90.20 | 178.82 | 7,133.0 | -2,865.8 | -578.0 | 2,913.9 | 0.00 | 0.00 | 0.00 |
| 10,100.0 | 90.20 | 178.82 | 7,132.6 | -2,965.8 | -575.9 | 3,012.9 | 0.00 | 0.00 | 0.00 |
| 10,200.0 | 90.20 | 178.82 | 7,132.3 | -3,065.8 | -573.9 | 3,112.0 | 0.00 | 0.00 | 0.00 |
| 10,300.0 | 90.20 | 178.82 | 7,131.9 | -3,165.7 | -571.8 | 3,211.0 | 0.00 | 0.00 | 0.00 |
| 10,400.0 | 90.20 | 178.82 | 7,131.6 | -3,265.7 | -569.7 | 3,310.1 | 0.00 | 0.00 | 0.00 |
| 10,500.0 | 90.20 | 178.82 | 7,131.2 | -3,365.7 | -567.7 | 3,409.1 | 0.00 | 0.00 | 0.00 |
| 10,600.0 | 90.20 | 178.82 | 7,130.9 | -3,465.7 | -565.6 | 3,508.1 | 0.00 | 0.00 | 0.00 |
| 10,700.0 | 90.20 | 178.82 | 7,130.6 | -3,565.7 | -563.6 | 3,607.2 | 0.00 | 0.00 | 0.00 |
| 10,800.0 | 90.20 | 178.82 | 7,130.2 | -3,665.6 | -561.5 | 3,706.2 | 0.00 | 0.00 | 0.00 |
| 10,900.0 | 90.20 | 178.82 | 7,129.9 | -3,765.6 | -559.4 | 3,805.3 | 0.00 | 0.00 | 0.00 |
| 11,000.0 | 90.20 | 178.82 | 7,129.5 | -3,865.6 | -557.4 | 3,904.3 | 0.00 | 0.00 | 0.00 |
| 11,100.0 | 90.20 | 178.82 | 7,129.2 | -3,965.6 | -555.3 | 4,003.4 | 0.00 | 0.00 | 0.00 |
| 11,200.0 | 90.20 | 178.82 | 7,128.8 | -4,065.6 | -553.3 | 4,102.4 | 0.00 | 0.00 | 0.00 |
| 11,300.0 | 90.20 | 178.82 | 7,128.5 | -4,165.5 | -551.2 | 4,201.4 | 0.00 | 0.00 | 0.00 |
| 11,400.0 | 90.20 | 178.82 | 7,128.1 | -4,265.5 | -549.1 | 4,300.5 | 0.00 | 0.00 | 0.00 |
| 11,500.0 | 90.20 | 178.82 | 7,127.8 | -4,365.5 | -547.1 | 4,399.5 | 0.00 | 0.00 | 0.00 |
| 11,600.0 | 90.20 | 178.82 | 7,127.4 | -4,465.5 | -545.0 | 4,498.6 | 0.00 | 0.00 | 0.00 |
| 11,700.0 | 90.20 | 178.82 | 7,127.1 | -4,565.4 | -543.0 | 4,597.6 | 0.00 | 0.00 | 0.00 |
| 11,717.3 | 90.20 | 178.82 | 7,127.0 | -4,582.7 | -542.6 | 4,614.7 | 0.00 | 0.00 | 0.00 |
| **TD at 11717.3** | | | | | | | | | |

## Casing Points

| Measured Depth (ft) | Vertical Depth (ft) | Name | Casing Diameter (") | Hole Diameter (") |
|---|---|---|---|---|
| 7,493.9 | 7,141.7 | 7" | 7 | 7-1/2 |

## Plan Annotations

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates +N/-S (ft) | Local Coordinates +E/-W (ft) | Comment |
|---|---|---|---|---|
| 600.0 | 600.0 | 0.0 | 0.0 | KOP - Start Build 2.00 |
| 4,574.8 | 4,524.0 | 152.5 | -601.8 | Start Drop -2.00 |
| 6,673.9 | 6,620.9 | 162.3 | -640.4 | KOP #2 - Start Build 11.00 |
| 11,717.3 | 7,127.0 | -4,582.7 | -542.6 | TD at 11717.3 |

ENSIGN
Directional

# Verdad Oil & Gas Corporation

**SEC.2-T1N-R64W**
**Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W**
**Pastelak 01N-64W-02-1C**

**Wellbore #1**
**Plan #1 (8-6-14)**

# Anticollision Report

**08 August, 2014**

| | | | |
|---|---|---|---|
| **Company:** | Verdad Oil & Gas Corporation | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Project:** | SEC.2-T1N-R64W | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Reference Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | landmark |
| **Reference Design:** | Plan #1 (8-6-14) | **Offset TVD Reference:** | Offset Datum |

**Reference** Plan #1 (8-6-14)

| | | | |
|---|---|---|---|
| **Filter type:** | NO GLOBAL FILTER: Using user defined selection & filtering criteria | | |
| **Interpolation Method:** | MD Interval 100.0ft | **Error Model:** | ISCWSA |
| **Depth Range:** | Unlimited | **Scan Method:** | Closest Approach 3D |
| **Results Limited by:** | Maximum center-center distance of 1,000.0ft | **Error Surface:** | Elliptical Conic |

**Warning Levels Evaluated at:** 2.00 **Sigma**

**Survey Tool Program** **Date** 8/8/2014

| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description |
|---|---|---|---|---|
| 0.0 | 11,717.3 | Plan #1 (8-6-14) (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 |
|---|---|---|---|---|---|---|
| Existing Wells Sec.2-T1N-64W | | | | | | |
| Schweitzer 11-2 (P&A) - Wellbore #1 - Wellbore #1 | 7,575.7 | 7,140.5 | 59.9 | -101.0 | 0.373 | Level 1, CC, ES, SF |
| Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | | | | | | |
| Pastelak 01N-64W-02-2N - Wellbore #1 - Plan #1 (8-6-14 | 600.0 | 599.0 | 14.0 | 11.5 | 5.664 | CC, ES |
| Pastelak 01N-64W-02-2N - Wellbore #1 - Plan #1 (8-6-14 | 11,717.3 | 11,496.9 | 293.0 | 155.0 | 2.123 | SF |
| Pastelak 01N-64W-02-3N - Wellbore #1 - Plan #1 (8-6-14 | 600.0 | 599.0 | 30.8 | 28.3 | 12.460 | CC, ES |
| Pastelak 01N-64W-02-3N - Wellbore #1 - Plan #1 (8-6-14 | 11,717.3 | 11,480.5 | 429.6 | 268.8 | 2.672 | SF |
| Pastelak 01N-64W-02-4N - Wellbore #1 - Plan #1 (8-6-14 | 600.0 | 599.0 | 44.8 | 42.3 | 18.124 | CC, ES |
| Pastelak 01N-64W-02-4N - Wellbore #1 - Plan #1 (8-6-14 | 11,717.3 | 11,468.3 | 580.8 | 411.5 | 3.432 | SF |
| Pastelak 01N-64W-02-5C - Wellbore #1 - Plan #1 (8-6-14 | 600.0 | 598.0 | 58.8 | 56.3 | 23.809 | CC, ES |
| Pastelak 01N-64W-02-5C - Wellbore #1 - Plan #1 (8-6-14 | 11,717.3 | 11,660.4 | 710.4 | 531.0 | 3.961 | SF |
| Pastelak 01N-64W-02-6N - Wellbore #1 - Plan #1 (8-6-14 | 600.0 | 598.0 | 75.5 | 73.1 | 30.612 | CC, ES |
| Pastelak 01N-64W-02-6N - Wellbore #1 - Plan #1 (8-6-14 | 11,717.3 | 11,464.1 | 897.9 | 722.8 | 5.128 | SF |
| Pastelak 01N-64W-02-7N - Wellbore #1 - Plan #1 (8-6-14 | 600.0 | 598.0 | 89.5 | 87.1 | 36.281 | CC, ES |
| Pastelak 01N-64W-02-7N - Wellbore #1 - Plan #1 (8-6-14 | 1,000.0 | 996.7 | 116.8 | 112.5 | 27.690 | SF |
| Pastelak 01N-64W-02-8N - Wellbore #1 - Plan #1 (8-6-14 | 600.0 | 597.0 | 103.5 | 101.1 | 41.988 | CC, ES |
| Pastelak 01N-64W-02-8N - Wellbore #1 - Plan #1 (8-6-14 | 1,000.0 | 995.7 | 130.7 | 126.5 | 31.018 | SF |
| Pastelak 01N-64W-02-9C - Wellbore #1 - Plan #1 (8-6-14 | 600.0 | 597.0 | 120.3 | 117.9 | 48.797 | CC, ES |
| Pastelak 01N-64W-02-9C - Wellbore #1 - Plan #1 (8-6-14 | 900.0 | 892.2 | 137.1 | 133.3 | 36.425 | SF |

**Offset Design** Existing Wells Sec.2-T1N-64W - Schweitzer 11-2 (P&A) - Wellbore #1 - Wellbore #1

**Survey Program:** 7690-UNKNOWN

**Offset Site Error:** 0.0 ft

**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 | -127.81 | -440.8 | -568.0 | 719.0 | | | | |
| 100.0 | 100.0 | 99.0 | 99.0 | 0.1 | 2.0 | -127.81 | -440.8 | -568.0 | 719.0 | 716.9 | 2.09 | 343.585 | |
| 200.0 | 200.0 | 199.0 | 199.0 | 0.3 | 4.0 | -127.81 | -440.8 | -568.0 | 719.0 | 714.7 | 4.32 | 166.533 | |
| 300.0 | 300.0 | 299.0 | 299.0 | 0.6 | 6.0 | -127.81 | -440.8 | -568.0 | 719.0 | 712.4 | 6.54 | 109.900 | |
| 400.0 | 400.0 | 399.0 | 399.0 | 0.8 | 8.0 | -127.81 | -440.8 | -568.0 | 719.0 | 710.2 | 8.77 | 82.011 | |
| 500.0 | 500.0 | 499.0 | 499.0 | 1.0 | 10.0 | -127.81 | -440.8 | -568.0 | 719.0 | 708.0 | 10.99 | 65.412 | |
| 600.0 | 600.0 | 599.0 | 599.0 | 1.2 | 12.0 | -127.81 | -440.8 | -568.0 | 719.0 | 705.8 | 13.22 | 54.401 | |
| 700.0 | 700.0 | 699.0 | 699.0 | 1.5 | 14.0 | -52.16 | -440.8 | -568.0 | 717.9 | 702.5 | 15.43 | 46.533 | |
| 800.0 | 799.8 | 798.8 | 798.8 | 1.7 | 16.0 | -52.54 | -440.8 | -568.0 | 714.7 | 697.1 | 17.63 | 40.550 | |

| | | | |
|---|---|---|---|
| **Company:** | Verdad Oil & Gas Corporation | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Project:** | SEC.2-T1N-R64W | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Reference Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | landmark |
| **Reference Design:** | Plan #1 (8-6-14) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Existing Wells Sec.2-T1N-64W - Schweitzer 11-2 (P&A) - Wellbore #1 - Wellbore #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 7690-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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 900.0 | 899.5 | 898.5 | 898.5 | 1.9 | 18.0 | -53.18 | -440.8 | -568.0 | 709.4 | 689.6 | 19.82 | 35.793 | |
| 1,000.0 | 998.7 | 997.7 | 997.7 | 2.2 | 20.0 | -54.09 | -440.8 | -568.0 | 702.2 | 680.2 | 22.02 | 31.894 | |
| 1,100.0 | 1,097.5 | 1,096.5 | 1,096.5 | 2.5 | 21.9 | -55.24 | -440.8 | -568.0 | 693.1 | 668.9 | 24.23 | 28.606 | |
| 1,200.0 | 1,196.1 | 1,195.1 | 1,195.1 | 2.8 | 23.9 | -56.37 | -440.8 | -568.0 | 683.7 | 657.2 | 26.49 | 25.804 | |
| 1,300.0 | 1,294.7 | 1,293.7 | 1,293.7 | 3.1 | 25.9 | -57.54 | -440.8 | -568.0 | 674.5 | 645.7 | 28.78 | 23.440 | |
| 1,400.0 | 1,393.3 | 1,392.3 | 1,392.3 | 3.5 | 27.8 | -58.73 | -440.8 | -568.0 | 665.7 | 634.6 | 31.07 | 21.423 | |
| 1,500.0 | 1,491.9 | 1,490.9 | 1,490.9 | 3.8 | 29.8 | -59.96 | -440.8 | -568.0 | 657.1 | 623.7 | 33.38 | 19.685 | |
| 1,600.0 | 1,590.5 | 1,589.5 | 1,589.5 | 4.2 | 31.8 | -61.22 | -440.8 | -568.0 | 648.9 | 613.2 | 35.70 | 18.176 | |
| 1,700.0 | 1,689.1 | 1,688.1 | 1,688.1 | 4.6 | 33.8 | -62.50 | -440.8 | -568.0 | 640.9 | 602.9 | 38.03 | 16.855 | |
| 1,800.0 | 1,787.7 | 1,786.7 | 1,786.7 | 4.9 | 35.7 | -63.82 | -440.8 | -568.0 | 633.3 | 593.0 | 40.36 | 15.691 | |
| 1,900.0 | 1,886.4 | 1,885.4 | 1,885.4 | 5.3 | 37.7 | -65.17 | -440.8 | -568.0 | 626.1 | 583.4 | 42.71 | 14.660 | |
| 2,000.0 | 1,985.0 | 1,984.0 | 1,984.0 | 5.7 | 39.7 | -66.55 | -440.8 | -568.0 | 619.2 | 574.2 | 45.06 | 13.743 | |
| 2,100.0 | 2,083.6 | 2,082.6 | 2,082.6 | 6.0 | 41.7 | -67.96 | -440.8 | -568.0 | 612.7 | 565.3 | 47.42 | 12.922 | |
| 2,200.0 | 2,182.2 | 2,181.2 | 2,181.2 | 6.4 | 43.6 | -69.40 | -440.8 | -568.0 | 606.6 | 556.8 | 49.78 | 12.186 | |
| 2,300.0 | 2,280.8 | 2,279.8 | 2,279.8 | 6.8 | 45.6 | -70.86 | -440.8 | -568.0 | 600.9 | 548.7 | 52.15 | 11.523 | |
| 2,400.0 | 2,379.4 | 2,378.4 | 2,378.4 | 7.2 | 47.6 | -72.35 | -440.8 | -568.0 | 595.6 | 541.1 | 54.52 | 10.924 | |
| 2,500.0 | 2,478.0 | 2,477.0 | 2,477.0 | 7.6 | 49.5 | -73.87 | -440.8 | -568.0 | 590.7 | 533.8 | 56.90 | 10.382 | |
| 2,600.0 | 2,576.6 | 2,575.6 | 2,575.6 | 8.0 | 51.5 | -75.41 | -440.8 | -568.0 | 586.2 | 527.0 | 59.27 | 9.890 | |
| 2,700.0 | 2,675.2 | 2,674.2 | 2,674.2 | 8.3 | 53.5 | -76.97 | -440.8 | -568.0 | 582.2 | 520.6 | 61.66 | 9.443 | |
| 2,800.0 | 2,773.8 | 2,772.8 | 2,772.8 | 8.7 | 55.5 | -78.55 | -440.8 | -568.0 | 578.6 | 514.6 | 64.04 | 9.036 | |
| 2,900.0 | 2,872.5 | 2,871.5 | 2,871.5 | 9.1 | 57.4 | -80.15 | -440.8 | -568.0 | 575.5 | 509.1 | 66.42 | 8.665 | |
| 3,000.0 | 2,971.1 | 2,970.1 | 2,970.1 | 9.5 | 59.4 | -81.77 | -440.8 | -568.0 | 572.9 | 504.1 | 68.80 | 8.327 | |
| 3,100.0 | 3,069.7 | 3,068.7 | 3,068.7 | 9.9 | 61.4 | -83.39 | -440.8 | -568.0 | 570.7 | 499.5 | 71.18 | 8.018 | |
| 3,200.0 | 3,168.3 | 3,167.3 | 3,167.3 | 10.3 | 63.3 | -85.03 | -440.8 | -568.0 | 569.0 | 495.5 | 73.56 | 7.735 | |
| 3,300.0 | 3,266.9 | 3,265.9 | 3,265.9 | 10.6 | 65.3 | -86.68 | -440.8 | -568.0 | 567.8 | 491.9 | 75.94 | 7.477 | |
| 3,400.0 | 3,365.5 | 3,364.5 | 3,364.5 | 11.0 | 67.3 | -88.33 | -440.8 | -568.0 | 567.1 | 488.8 | 78.31 | 7.242 | |
| 3,500.0 | 3,464.1 | 3,463.1 | 3,463.1 | 11.4 | 69.3 | -89.99 | -440.8 | -568.0 | 566.8 | 486.1 | 80.67 | 7.026 | |
| 3,500.6 | 3,464.7 | 3,463.7 | 3,463.7 | 11.4 | 69.3 | -90.00 | -440.8 | -568.0 | 566.8 | 486.1 | 80.69 | 7.025 | |
| 3,600.0 | 3,562.7 | 3,561.7 | 3,561.7 | 11.8 | 71.2 | -91.65 | -440.8 | -568.0 | 567.1 | 484.0 | 83.03 | 6.829 | |
| 3,700.0 | 3,661.3 | 3,660.3 | 3,660.3 | 12.2 | 73.2 | -93.30 | -440.8 | -568.0 | 567.8 | 482.4 | 85.39 | 6.649 | |
| 3,800.0 | 3,759.9 | 3,758.9 | 3,758.9 | 12.6 | 75.2 | -94.95 | -440.8 | -568.0 | 569.0 | 481.3 | 87.74 | 6.485 | |
| 3,900.0 | 3,858.6 | 3,857.6 | 3,857.6 | 13.0 | 77.2 | -96.59 | -440.8 | -568.0 | 570.7 | 480.6 | 90.08 | 6.336 | |
| 4,000.0 | 3,957.2 | 3,956.2 | 3,956.2 | 13.3 | 79.1 | -98.21 | -440.8 | -568.0 | 572.9 | 480.4 | 92.41 | 6.199 | |
| 4,100.0 | 4,055.8 | 4,054.8 | 4,054.8 | 13.7 | 81.1 | -99.83 | -440.8 | -568.0 | 575.5 | 480.8 | 94.73 | 6.075 | |
| 4,200.0 | 4,154.4 | 4,153.4 | 4,153.4 | 14.1 | 83.1 | -101.43 | -440.8 | -568.0 | 578.6 | 481.6 | 97.05 | 5.962 | |
| 4,300.0 | 4,253.0 | 4,252.0 | 4,252.0 | 14.5 | 85.0 | -103.01 | -440.8 | -568.0 | 582.2 | 482.8 | 99.36 | 5.859 | |
| 4,400.0 | 4,351.6 | 4,350.6 | 4,350.6 | 14.9 | 87.0 | -104.57 | -440.8 | -568.0 | 586.2 | 484.5 | 101.65 | 5.767 | |
| 4,500.0 | 4,450.2 | 4,449.2 | 4,449.2 | 15.3 | 89.0 | -106.11 | -440.8 | -568.0 | 590.6 | 486.7 | 103.94 | 5.682 | |
| 4,600.0 | 4,548.8 | 4,547.8 | 4,547.8 | 15.7 | 91.0 | -107.64 | -440.8 | -568.0 | 595.5 | 489.3 | 106.22 | 5.606 | |
| 4,700.0 | 4,647.8 | 4,646.8 | 4,646.8 | 15.9 | 92.9 | -108.99 | -440.8 | -568.0 | 599.9 | 491.5 | 108.43 | 5.533 | |
| 4,800.0 | 4,747.3 | 4,746.3 | 4,746.3 | 16.1 | 94.9 | -110.00 | -440.8 | -568.0 | 603.5 | 492.9 | 110.62 | 5.455 | |
| 4,900.0 | 4,847.0 | 4,846.0 | 4,846.0 | 16.3 | 96.9 | -110.68 | -440.8 | -568.0 | 605.9 | 493.2 | 112.80 | 5.372 | |
| 5,000.0 | 4,947.0 | 4,946.0 | 4,946.0 | 16.5 | 98.9 | -111.02 | -440.8 | -568.0 | 607.2 | 492.3 | 114.94 | 5.283 | |
| 5,100.0 | 5,047.0 | 5,046.0 | 5,046.0 | 16.6 | 100.9 | 173.16 | -440.8 | -568.0 | 607.4 | 490.3 | 117.13 | 5.186 | |
| 5,200.0 | 5,147.0 | 5,146.0 | 5,146.0 | 16.8 | 102.9 | 173.16 | -440.8 | -568.0 | 607.4 | 488.1 | 119.27 | 5.093 | |
| 5,300.0 | 5,247.0 | 5,246.0 | 5,246.0 | 16.9 | 104.9 | 173.16 | -440.8 | -568.0 | 607.4 | 486.0 | 121.42 | 5.002 | |
| 5,400.0 | 5,347.0 | 5,346.0 | 5,346.0 | 17.1 | 106.9 | 173.16 | -440.8 | -568.0 | 607.4 | 483.8 | 123.57 | 4.915 | |
| 5,500.0 | 5,447.0 | 5,446.0 | 5,446.0 | 17.2 | 108.9 | 173.16 | -440.8 | -568.0 | 607.4 | 481.7 | 125.72 | 4.831 | |
| 5,600.0 | 5,547.0 | 5,546.0 | 5,546.0 | 17.4 | 110.9 | 173.16 | -440.8 | -568.0 | 607.4 | 479.5 | 127.88 | 4.750 | |
| 5,700.0 | 5,647.0 | 5,646.0 | 5,646.0 | 17.5 | 112.9 | 173.16 | -440.8 | -568.0 | 607.4 | 477.4 | 130.03 | 4.671 | |
| 5,800.0 | 5,747.0 | 5,746.0 | 5,746.0 | 17.7 | 114.9 | 173.16 | -440.8 | -568.0 | 607.4 | 475.2 | 132.19 | 4.595 | |
| 5,900.0 | 5,847.0 | 5,846.0 | 5,846.0 | 17.8 | 116.9 | 173.16 | -440.8 | -568.0 | 607.4 | 473.1 | 134.35 | 4.521 | |

| | | | |
|---|---|---|---|
| **Company:** | Verdad Oil & Gas Corporation | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Project:** | SEC.2-T1N-R64W | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Reference Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | landmark |
| **Reference Design:** | Plan #1 (8-6-14) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Existing Wells Sec.2-T1N-64W - Schweitzer 11-2 (P&A) - Wellbore #1 - Wellbore #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 7690-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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6,000.0 | 5,947.0 | 5,946.0 | 5,946.0 | 18.0 | 118.9 | 173.16 | -440.8 | -568.0 | 607.4 | 470.9 | 136.51 | 4.450 | |
| 6,100.0 | 6,047.0 | 6,046.0 | 6,046.0 | 18.1 | 120.9 | 173.16 | -440.8 | -568.0 | 607.4 | 468.7 | 138.67 | 4.380 | |
| 6,200.0 | 6,147.0 | 6,146.0 | 6,146.0 | 18.3 | 122.9 | 173.16 | -440.8 | -568.0 | 607.4 | 466.6 | 140.83 | 4.313 | |
| 6,300.0 | 6,247.0 | 6,246.0 | 6,246.0 | 18.5 | 124.9 | 173.16 | -440.8 | -568.0 | 607.4 | 464.4 | 143.00 | 4.248 | |
| 6,400.0 | 6,347.0 | 6,346.0 | 6,346.0 | 18.6 | 126.9 | 173.16 | -440.8 | -568.0 | 607.4 | 462.2 | 145.16 | 4.184 | |
| 6,500.0 | 6,447.0 | 6,446.0 | 6,446.0 | 18.8 | 128.9 | 173.16 | -440.8 | -568.0 | 607.4 | 460.1 | 147.33 | 4.123 | |
| 6,600.0 | 6,547.0 | 6,546.0 | 6,546.0 | 18.9 | 130.9 | 173.16 | -440.8 | -568.0 | 607.4 | 457.9 | 149.49 | 4.063 | |
| 6,700.0 | 6,646.9 | 6,645.9 | 6,645.9 | 19.1 | 132.9 | -5.68 | -440.8 | -568.0 | 606.8 | 455.4 | 151.40 | 4.008 | |
| 6,800.0 | 6,745.7 | 6,744.7 | 6,744.7 | 19.2 | 134.9 | -5.98 | -440.8 | -568.0 | 592.3 | 443.0 | 149.25 | 3.968 | |
| 6,900.0 | 6,839.9 | 6,838.9 | 6,838.9 | 19.3 | 136.8 | -6.77 | -440.8 | -568.0 | 559.4 | 417.8 | 141.55 | 3.952 | |
| 7,000.0 | 6,926.1 | 6,925.1 | 6,925.1 | 19.3 | 138.5 | -8.32 | -440.8 | -568.0 | 509.2 | 380.6 | 128.64 | 3.958 | |
| 7,100.0 | 7,001.0 | 7,000.0 | 7,000.0 | 19.4 | 140.0 | -11.28 | -440.8 | -568.0 | 443.7 | 332.0 | 111.73 | 3.972 | |
| 7,200.0 | 7,062.0 | 7,061.0 | 7,061.0 | 19.5 | 141.2 | -17.36 | -440.8 | -568.0 | 365.5 | 270.3 | 95.24 | 3.838 | |
| 7,300.0 | 7,106.7 | 7,105.7 | 7,105.7 | 19.6 | 142.1 | -31.50 | -440.8 | -568.0 | 277.9 | 180.3 | 97.59 | 2.847 | |
| 7,400.0 | 7,133.6 | 7,132.6 | 7,132.6 | 19.9 | 142.7 | -62.79 | -440.8 | -568.0 | 185.2 | 43.0 | 142.16 | 1.303 | Level 3 |
| 7,500.0 | 7,141.7 | 7,140.7 | 7,140.7 | 20.3 | 142.8 | -90.25 | -440.8 | -568.0 | 96.5 | -63.7 | 160.25 | 0.602 | Level 1 |
| 7,575.7 | 7,141.5 | 7,140.5 | 7,140.5 | 20.8 | 142.8 | -90.00 | -440.8 | -568.0 | 59.9 | -101.0 | 160.91 | 0.373 | Level 1, CC, ES, SF |
| 7,600.0 | 7,141.4 | 7,140.4 | 7,140.4 | 21.0 | 142.8 | -89.92 | -440.8 | -568.0 | 64.7 | -96.4 | 161.12 | 0.401 | Level 1 |
| 7,700.0 | 7,141.0 | 7,140.0 | 7,140.0 | 21.8 | 142.8 | -89.59 | -440.8 | -568.0 | 138.0 | -24.1 | 162.12 | 0.851 | Level 1 |
| 7,800.0 | 7,140.7 | 7,139.7 | 7,139.7 | 22.8 | 142.8 | -89.25 | -440.8 | -568.0 | 232.2 | 68.9 | 163.25 | 1.422 | Level 3 |
| 7,900.0 | 7,140.3 | 7,139.3 | 7,139.3 | 23.9 | 142.8 | -88.92 | -440.8 | -568.0 | 329.8 | 165.3 | 164.49 | 2.005 | |
| 8,000.0 | 7,140.0 | 7,139.0 | 7,139.0 | 25.1 | 142.8 | -88.58 | -440.8 | -568.0 | 428.5 | 262.7 | 165.81 | 2.585 | |
| 8,100.0 | 7,139.6 | 7,138.6 | 7,138.6 | 26.4 | 142.8 | -88.25 | -440.8 | -568.0 | 527.7 | 360.5 | 167.19 | 3.156 | |
| 8,200.0 | 7,139.3 | 7,138.3 | 7,138.3 | 27.8 | 142.8 | -87.92 | -440.8 | -568.0 | 627.2 | 458.6 | 168.64 | 3.719 | |
| 8,300.0 | 7,138.9 | 7,137.9 | 7,137.9 | 29.3 | 142.8 | -87.58 | -440.8 | -568.0 | 726.8 | 556.7 | 170.13 | 4.272 | |
| 8,400.0 | 7,138.6 | 7,137.6 | 7,137.6 | 30.8 | 142.8 | -87.25 | -440.8 | -568.0 | 826.5 | 654.8 | 171.66 | 4.815 | |
| 8,500.0 | 7,138.2 | 7,137.2 | 7,137.2 | 32.3 | 142.7 | -86.92 | -440.8 | -568.0 | 926.3 | 753.0 | 173.23 | 5.347 | |

| | | | |
|---|---|---|---|
| **Company:** | Verdad Oil & Gas Corporation | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Project:** | SEC.2-T1N-R64W | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Reference Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | landmark |
| **Reference Design:** | Plan #1 (8-6-14) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W - Pastelak 01N-64W-02-2N - Wellbore #1 - Plan #1 (8-6-1 — **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 | 90.07 | 0.0 | 14.0 | 14.0 | 14.0 | 0.00 | N/A | |
| 100.0 | 100.0 | 99.0 | 99.0 | 0.1 | 0.1 | 90.07 | 0.0 | 14.0 | 14.0 | 13.8 | 0.22 | 62.556 | |
| 200.0 | 200.0 | 199.0 | 199.0 | 0.3 | 0.3 | 90.07 | 0.0 | 14.0 | 14.0 | 13.3 | 0.67 | 20.817 | |
| 300.0 | 300.0 | 299.0 | 299.0 | 0.6 | 0.6 | 90.07 | 0.0 | 14.0 | 14.0 | 12.9 | 1.12 | 12.474 | |
| 400.0 | 400.0 | 399.0 | 399.0 | 0.8 | 0.8 | 90.07 | 0.0 | 14.0 | 14.0 | 12.4 | 1.57 | 8.905 | |
| 500.0 | 500.0 | 499.0 | 499.0 | 1.0 | 1.0 | 90.07 | 0.0 | 14.0 | 14.0 | 12.0 | 2.02 | 6.924 | |
| 600.0 | 600.0 | 599.0 | 599.0 | 1.2 | 1.2 | 90.07 | 0.0 | 14.0 | 14.0 | 11.5 | 2.47 | 5.664 | CC, ES |
| 700.0 | 700.0 | 699.0 | 699.0 | 1.5 | 1.5 | 167.40 | 0.0 | 14.0 | 15.7 | 12.8 | 2.91 | 5.390 | |
| 800.0 | 799.8 | 798.8 | 798.8 | 1.7 | 1.7 | 170.52 | 0.0 | 14.0 | 20.8 | 17.5 | 3.35 | 6.225 | |
| 900.0 | 899.5 | 898.5 | 898.5 | 1.9 | 1.9 | 173.30 | 0.0 | 14.0 | 29.5 | 25.7 | 3.78 | 7.790 | |
| 1,000.0 | 998.7 | 997.7 | 997.7 | 2.2 | 2.1 | 175.24 | 0.0 | 14.0 | 41.6 | 37.4 | 4.22 | 9.859 | |
| 1,100.0 | 1,097.5 | 1,096.5 | 1,096.5 | 2.5 | 2.4 | 176.52 | 0.0 | 14.0 | 57.1 | 52.5 | 4.66 | 12.266 | |
| 1,200.0 | 1,196.1 | 1,195.1 | 1,195.1 | 2.8 | 2.6 | 177.30 | 0.0 | 14.0 | 73.7 | 68.6 | 5.10 | 14.442 | |
| 1,300.0 | 1,294.7 | 1,293.7 | 1,293.7 | 3.1 | 2.8 | 177.80 | 0.0 | 14.0 | 90.3 | 84.7 | 5.56 | 16.256 | |
| 1,400.0 | 1,393.3 | 1,392.3 | 1,392.3 | 3.5 | 3.0 | 178.14 | 0.0 | 14.0 | 106.9 | 100.9 | 6.01 | 17.788 | |
| 1,500.0 | 1,491.9 | 1,494.9 | 1,494.9 | 3.8 | 3.2 | 178.30 | 0.5 | 12.5 | 122.0 | 115.6 | 6.46 | 18.875 | |
| 1,600.0 | 1,590.5 | 1,598.9 | 1,598.7 | 4.2 | 3.5 | 178.21 | 2.4 | 7.5 | 133.6 | 126.7 | 6.91 | 19.323 | |
| 1,700.0 | 1,689.1 | 1,703.5 | 1,703.0 | 4.6 | 3.7 | 177.93 | 5.6 | -1.1 | 141.6 | 134.2 | 7.37 | 19.206 | |
| 1,800.0 | 1,787.7 | 1,808.7 | 1,807.3 | 4.9 | 3.9 | 177.45 | 10.1 | -13.3 | 146.0 | 138.1 | 7.84 | 18.621 | |
| 1,900.0 | 1,886.4 | 1,909.1 | 1,906.7 | 5.3 | 4.2 | 176.89 | 15.1 | -27.0 | 148.2 | 139.9 | 8.30 | 17.850 | |
| 2,000.0 | 1,985.0 | 2,009.1 | 2,005.6 | 5.7 | 4.5 | 176.35 | 20.2 | -40.7 | 150.5 | 141.7 | 8.77 | 17.152 | |
| 2,100.0 | 2,083.6 | 2,109.1 | 2,104.5 | 6.0 | 4.8 | 175.83 | 25.2 | -54.3 | 152.7 | 143.5 | 9.25 | 16.517 | |
| 2,200.0 | 2,182.2 | 2,209.0 | 2,203.4 | 6.4 | 5.1 | 175.32 | 30.3 | -68.0 | 155.0 | 145.3 | 9.72 | 15.942 | |
| 2,300.0 | 2,280.8 | 2,309.0 | 2,302.3 | 6.8 | 5.4 | 174.83 | 35.3 | -81.7 | 157.3 | 147.1 | 10.20 | 15.414 | |
| 2,400.0 | 2,379.4 | 2,409.0 | 2,401.2 | 7.2 | 5.7 | 174.35 | 40.4 | -95.3 | 159.6 | 148.9 | 10.69 | 14.930 | |
| 2,500.0 | 2,478.0 | 2,508.9 | 2,500.1 | 7.6 | 6.0 | 173.88 | 45.4 | -109.0 | 161.9 | 150.7 | 11.17 | 14.485 | |
| 2,600.0 | 2,576.6 | 2,608.9 | 2,599.0 | 8.0 | 6.3 | 173.43 | 50.5 | -122.6 | 164.2 | 152.5 | 11.66 | 14.075 | |
| 2,700.0 | 2,675.2 | 2,708.9 | 2,697.9 | 8.3 | 6.6 | 172.99 | 55.5 | -136.3 | 166.5 | 154.3 | 12.16 | 13.695 | |
| 2,800.0 | 2,773.8 | 2,808.8 | 2,796.8 | 8.7 | 6.9 | 172.56 | 60.6 | -150.0 | 168.8 | 156.2 | 12.65 | 13.343 | |
| 2,900.0 | 2,872.5 | 2,908.8 | 2,895.7 | 9.1 | 7.3 | 172.14 | 65.6 | -163.6 | 171.2 | 158.0 | 13.15 | 13.016 | |
| 3,000.0 | 2,971.1 | 3,008.7 | 2,994.6 | 9.5 | 7.6 | 171.74 | 70.6 | -177.3 | 173.5 | 159.8 | 13.65 | 12.711 | |
| 3,100.0 | 3,069.7 | 3,108.7 | 3,093.5 | 9.9 | 7.9 | 171.34 | 75.7 | -190.9 | 175.9 | 161.7 | 14.15 | 12.425 | |
| 3,200.0 | 3,168.3 | 3,208.7 | 3,192.4 | 10.3 | 8.3 | 170.96 | 80.7 | -204.6 | 178.2 | 163.6 | 14.66 | 12.159 | |
| 3,300.0 | 3,266.9 | 3,308.6 | 3,291.3 | 10.6 | 8.6 | 170.58 | 85.8 | -218.3 | 180.6 | 165.4 | 15.17 | 11.908 | |
| 3,400.0 | 3,365.5 | 3,408.6 | 3,390.2 | 11.0 | 8.9 | 170.22 | 90.8 | -231.9 | 183.0 | 167.3 | 15.67 | 11.673 | |
| 3,500.0 | 3,464.1 | 3,508.6 | 3,489.1 | 11.4 | 9.3 | 169.86 | 95.9 | -245.6 | 185.4 | 169.2 | 16.19 | 11.452 | |
| 3,600.0 | 3,562.7 | 3,608.5 | 3,588.0 | 11.8 | 9.6 | 169.52 | 100.9 | -259.2 | 187.8 | 171.1 | 16.70 | 11.243 | |
| 3,700.0 | 3,661.3 | 3,708.5 | 3,686.9 | 12.2 | 10.0 | 169.18 | 106.0 | -272.9 | 190.2 | 172.9 | 17.21 | 11.046 | |
| 3,800.0 | 3,759.9 | 3,808.5 | 3,785.8 | 12.6 | 10.3 | 168.85 | 111.0 | -286.6 | 192.6 | 174.8 | 17.73 | 10.860 | |
| 3,900.0 | 3,858.6 | 3,908.4 | 3,884.7 | 13.0 | 10.6 | 168.53 | 116.1 | -300.2 | 195.0 | 176.7 | 18.25 | 10.683 | |
| 4,000.0 | 3,957.2 | 4,008.4 | 3,983.5 | 13.3 | 11.0 | 168.22 | 121.1 | -313.9 | 197.4 | 178.6 | 18.77 | 10.516 | |
| 4,100.0 | 4,055.8 | 4,108.4 | 4,082.4 | 13.7 | 11.3 | 167.91 | 126.2 | -327.5 | 199.8 | 180.5 | 19.29 | 10.356 | |
| 4,200.0 | 4,154.4 | 4,208.3 | 4,181.3 | 14.1 | 11.7 | 167.61 | 131.2 | -341.2 | 202.2 | 182.4 | 19.82 | 10.205 | |
| 4,300.0 | 4,253.0 | 4,308.3 | 4,280.2 | 14.5 | 12.0 | 167.32 | 136.3 | -354.9 | 204.7 | 184.3 | 20.34 | 10.061 | |
| 4,400.0 | 4,351.6 | 4,408.3 | 4,379.1 | 14.9 | 12.4 | 167.04 | 141.3 | -368.5 | 207.1 | 186.3 | 20.87 | 9.924 | |
| 4,500.0 | 4,450.2 | 4,508.2 | 4,478.0 | 15.3 | 12.7 | 166.76 | 146.4 | -382.2 | 209.6 | 188.2 | 21.40 | 9.793 | |
| 4,600.0 | 4,548.8 | 4,608.2 | 4,576.9 | 15.7 | 13.1 | 166.49 | 151.4 | -395.9 | 211.9 | 190.0 | 21.93 | 9.663 | |
| 4,700.0 | 4,647.8 | 4,700.0 | 4,667.9 | 15.9 | 13.3 | 166.22 | 155.6 | -407.2 | 213.2 | 190.8 | 22.38 | 9.525 | |
| 4,800.0 | 4,747.3 | 4,795.5 | 4,762.9 | 16.1 | 13.6 | 166.00 | 158.9 | -416.1 | 214.1 | 191.4 | 22.78 | 9.402 | |
| 4,900.0 | 4,847.0 | 4,888.9 | 4,856.2 | 16.3 | 13.7 | 165.87 | 161.0 | -421.9 | 214.8 | 191.6 | 23.12 | 9.289 | |
| 5,000.0 | 4,947.0 | 4,982.3 | 4,949.5 | 16.5 | 13.9 | 165.79 | 162.1 | -424.9 | 215.1 | 191.6 | 23.41 | 9.185 | |
| 5,100.0 | 5,047.0 | 5,078.8 | 5,046.0 | 16.6 | 14.0 | 90.00 | 162.3 | -425.3 | 215.1 | 191.4 | 23.64 | 9.097 | |

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

| | | | |
|---|---|---|---|
| **Company:** | Verdad Oil & Gas Corporation | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Project:** | SEC.2-T1N-R64W | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Reference Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | landmark |
| **Reference Design:** | Plan #1 (8-6-14) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W - Pastelak 01N-64W-02-2N - Wellbore #1 - Plan #1 (8-6-1

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,200.0 | 5,147.0 | 5,178.8 | 5,146.0 | 16.8 | 14.2 | 90.00 | 162.3 | -425.3 | 215.1 | 191.1 | 24.03 | 8.951 | |
| 5,300.0 | 5,247.0 | 5,278.8 | 5,246.0 | 16.9 | 14.4 | 90.00 | 162.3 | -425.3 | 215.1 | 190.7 | 24.42 | 8.807 | |
| 5,400.0 | 5,347.0 | 5,378.8 | 5,346.0 | 17.1 | 14.6 | 90.00 | 162.3 | -425.3 | 215.1 | 190.3 | 24.82 | 8.667 | |
| 5,500.0 | 5,447.0 | 5,478.8 | 5,446.0 | 17.2 | 14.7 | 90.00 | 162.3 | -425.3 | 215.1 | 189.9 | 25.21 | 8.531 | |
| 5,600.0 | 5,547.0 | 5,578.8 | 5,546.0 | 17.4 | 14.9 | 90.00 | 162.3 | -425.3 | 215.1 | 189.5 | 25.61 | 8.399 | |
| 5,700.0 | 5,647.0 | 5,678.8 | 5,646.0 | 17.5 | 15.1 | 90.00 | 162.3 | -425.3 | 215.1 | 189.1 | 26.01 | 8.270 | |
| 5,800.0 | 5,747.0 | 5,778.8 | 5,746.0 | 17.7 | 15.3 | 90.00 | 162.3 | -425.3 | 215.1 | 188.7 | 26.41 | 8.145 | |
| 5,900.0 | 5,847.0 | 5,878.8 | 5,846.0 | 17.8 | 15.5 | 90.00 | 162.3 | -425.3 | 215.1 | 188.3 | 26.81 | 8.022 | |
| 6,000.0 | 5,947.0 | 5,978.8 | 5,946.0 | 18.0 | 15.6 | 90.00 | 162.3 | -425.3 | 215.1 | 187.9 | 27.22 | 7.903 | |
| 6,100.0 | 6,047.0 | 6,078.8 | 6,046.0 | 18.1 | 15.8 | 90.00 | 162.3 | -425.3 | 215.1 | 187.5 | 27.62 | 7.787 | |
| 6,200.0 | 6,147.0 | 6,178.8 | 6,146.0 | 18.3 | 16.0 | 90.00 | 162.3 | -425.3 | 215.1 | 187.1 | 28.03 | 7.675 | |
| 6,300.0 | 6,247.0 | 6,278.8 | 6,246.0 | 18.5 | 16.2 | 90.00 | 162.3 | -425.3 | 215.1 | 186.7 | 28.43 | 7.564 | |
| 6,400.0 | 6,347.0 | 6,378.8 | 6,346.0 | 18.6 | 16.4 | 90.00 | 162.3 | -425.3 | 215.1 | 186.2 | 28.84 | 7.457 | |
| 6,458.8 | 6,405.7 | 6,437.5 | 6,404.7 | 18.7 | 16.5 | 90.00 | 162.3 | -425.3 | 215.1 | 186.0 | 29.08 | 7.395 | |
| 6,500.0 | 6,447.0 | 6,478.6 | 6,445.8 | 18.8 | 16.6 | 90.10 | 161.9 | -425.3 | 215.1 | 185.9 | 29.24 | 7.356 | |
| 6,600.0 | 6,547.0 | 6,575.7 | 6,542.0 | 18.9 | 16.7 | 93.48 | 149.2 | -425.0 | 215.8 | 186.4 | 29.42 | 7.336 | |
| 6,700.0 | 6,646.9 | 6,665.6 | 6,627.4 | 19.1 | 16.7 | -78.14 | 121.8 | -424.5 | 220.3 | 190.8 | 29.54 | 7.459 | |
| 6,800.0 | 6,745.7 | 6,750.0 | 6,702.3 | 19.2 | 16.8 | -70.36 | 83.0 | -423.7 | 229.7 | 200.0 | 29.66 | 7.743 | |
| 6,900.0 | 6,839.9 | 6,830.5 | 6,766.9 | 19.3 | 16.8 | -63.81 | 35.3 | -422.7 | 241.6 | 211.9 | 29.67 | 8.140 | |
| 7,000.0 | 6,926.1 | 6,908.6 | 6,822.0 | 19.3 | 16.9 | -58.49 | -20.1 | -421.5 | 254.2 | 224.9 | 29.32 | 8.671 | |
| 7,100.0 | 7,001.0 | 6,984.9 | 6,867.1 | 19.4 | 17.0 | -54.38 | -81.5 | -420.3 | 266.2 | 237.7 | 28.51 | 9.337 | |
| 7,200.0 | 7,062.0 | 7,059.7 | 6,902.2 | 19.5 | 17.1 | -51.37 | -147.4 | -418.9 | 276.4 | 249.0 | 27.43 | 10.079 | |
| 7,300.0 | 7,106.7 | 7,133.5 | 6,927.2 | 19.6 | 17.3 | -49.35 | -216.8 | -417.5 | 284.0 | 257.6 | 26.34 | 10.781 | |
| 7,400.0 | 7,133.6 | 7,200.0 | 6,941.2 | 19.9 | 17.6 | -48.27 | -281.8 | -416.2 | 288.5 | 262.9 | 25.60 | 11.272 | |
| 7,500.0 | 7,141.7 | 7,279.6 | 6,946.9 | 20.3 | 18.0 | -47.97 | -361.0 | -414.5 | 289.5 | 263.9 | 25.64 | 11.291 | |
| 7,600.0 | 7,141.4 | 7,379.6 | 6,946.4 | 21.0 | 18.8 | -47.95 | -461.0 | -412.5 | 289.6 | 262.6 | 26.94 | 10.748 | |
| 7,700.0 | 7,141.0 | 7,479.6 | 6,946.0 | 21.8 | 19.8 | -47.94 | -561.0 | -410.4 | 289.7 | 261.2 | 28.50 | 10.165 | |
| 7,800.0 | 7,140.7 | 7,579.6 | 6,945.5 | 22.8 | 20.9 | -47.92 | -660.9 | -408.3 | 289.8 | 259.5 | 30.27 | 9.572 | |
| 7,900.0 | 7,140.3 | 7,679.6 | 6,945.0 | 23.9 | 22.2 | -47.90 | -760.9 | -406.3 | 289.8 | 257.6 | 32.23 | 8.993 | |
| 8,000.0 | 7,140.0 | 7,779.6 | 6,944.5 | 25.1 | 23.5 | -47.88 | -860.9 | -404.2 | 289.9 | 255.6 | 34.34 | 8.443 | |
| 8,100.0 | 7,139.6 | 7,879.5 | 6,944.1 | 26.4 | 24.9 | -47.87 | -960.9 | -402.1 | 290.0 | 253.4 | 36.58 | 7.929 | |
| 8,200.0 | 7,139.3 | 7,979.5 | 6,943.6 | 27.8 | 26.4 | -47.85 | -1,060.9 | -400.1 | 290.1 | 251.2 | 38.92 | 7.454 | |
| 8,300.0 | 7,138.9 | 8,079.5 | 6,943.1 | 29.3 | 27.9 | -47.83 | -1,160.8 | -398.0 | 290.2 | 248.8 | 41.35 | 7.018 | |
| 8,400.0 | 7,138.6 | 8,179.5 | 6,942.7 | 30.8 | 29.5 | -47.81 | -1,260.8 | -396.0 | 290.3 | 246.4 | 43.85 | 6.620 | |
| 8,500.0 | 7,138.2 | 8,279.5 | 6,942.2 | 32.3 | 31.1 | -47.79 | -1,360.8 | -393.9 | 290.3 | 243.9 | 46.40 | 6.257 | |
| 8,600.0 | 7,137.9 | 8,379.5 | 6,941.7 | 33.9 | 32.8 | -47.78 | -1,460.8 | -391.8 | 290.4 | 241.4 | 49.01 | 5.926 | |
| 8,700.0 | 7,137.5 | 8,479.5 | 6,941.2 | 35.6 | 34.4 | -47.76 | -1,560.7 | -389.8 | 290.5 | 238.8 | 51.66 | 5.623 | |
| 8,800.0 | 7,137.2 | 8,579.5 | 6,940.8 | 37.2 | 36.1 | -47.74 | -1,660.7 | -387.7 | 290.6 | 236.2 | 54.35 | 5.347 | |
| 8,900.0 | 7,136.8 | 8,679.5 | 6,940.3 | 38.9 | 37.9 | -47.72 | -1,760.7 | -385.6 | 290.7 | 233.6 | 57.07 | 5.093 | |
| 9,000.0 | 7,136.5 | 8,779.5 | 6,939.8 | 40.6 | 39.6 | -47.71 | -1,860.7 | -383.6 | 290.8 | 230.9 | 59.81 | 4.861 | |
| 9,100.0 | 7,136.1 | 8,879.5 | 6,939.4 | 42.3 | 41.4 | -47.69 | -1,960.7 | -381.5 | 290.8 | 228.3 | 62.58 | 4.648 | |
| 9,200.0 | 7,135.8 | 8,979.5 | 6,938.9 | 44.0 | 43.1 | -47.67 | -2,060.6 | -379.5 | 290.9 | 225.6 | 65.36 | 4.451 | |
| 9,300.0 | 7,135.4 | 9,079.5 | 6,938.4 | 45.8 | 44.9 | -47.65 | -2,160.6 | -377.4 | 291.0 | 222.8 | 68.17 | 4.269 | |
| 9,400.0 | 7,135.1 | 9,179.5 | 6,937.9 | 47.6 | 46.7 | -47.64 | -2,260.6 | -375.3 | 291.1 | 220.1 | 70.98 | 4.101 | |
| 9,500.0 | 7,134.7 | 9,279.5 | 6,937.5 | 49.3 | 48.5 | -47.62 | -2,360.6 | -373.3 | 291.2 | 217.4 | 73.81 | 3.945 | |
| 9,600.0 | 7,134.4 | 9,379.5 | 6,937.0 | 51.1 | 50.3 | -47.60 | -2,460.5 | -371.2 | 291.3 | 214.6 | 76.66 | 3.800 | |
| 9,700.0 | 7,134.0 | 9,479.5 | 6,936.5 | 52.9 | 52.2 | -47.58 | -2,560.5 | -369.1 | 291.3 | 211.8 | 79.51 | 3.664 | |
| 9,800.0 | 7,133.7 | 9,579.5 | 6,936.1 | 54.7 | 54.0 | -47.57 | -2,660.5 | -367.1 | 291.4 | 209.1 | 82.37 | 3.538 | |
| 9,900.0 | 7,133.3 | 9,679.5 | 6,935.6 | 56.5 | 55.8 | -47.55 | -2,760.5 | -365.0 | 291.5 | 206.3 | 85.24 | 3.420 | |
| 10,000.0 | 7,133.0 | 9,779.5 | 6,935.1 | 58.4 | 57.7 | -47.53 | -2,860.4 | -363.0 | 291.6 | 203.5 | 88.11 | 3.309 | |
| 10,100.0 | 7,132.6 | 9,879.5 | 6,934.6 | 60.2 | 59.5 | -47.51 | -2,960.4 | -360.9 | 291.7 | 200.7 | 90.99 | 3.205 | |
| 10,200.0 | 7,132.3 | 9,979.5 | 6,934.2 | 62.0 | 61.4 | -47.50 | -3,060.4 | -358.8 | 291.8 | 197.9 | 93.88 | 3.108 | |

| | | | |
|---|---|---|---|
| **Company:** | Verdad Oil & Gas Corporation | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Project:** | SEC.2-T1N-R64W | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Reference Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | landmark |
| **Reference Design:** | Plan #1 (8-6-14) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W - Pastelak 01N-64W-02-2N - Wellbore #1 - Plan #1 (8-6-1

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10,300.0 | 7,131.9 | 10,079.5 | 6,933.7 | 63.9 | 63.2 | -47.48 | -3,160.4 | -356.8 | 291.8 | 195.1 | 96.77 | 3.016 | |
| 10,400.0 | 7,131.6 | 10,179.5 | 6,933.2 | 65.7 | 65.1 | -47.46 | -3,260.4 | -354.7 | 291.9 | 192.3 | 99.67 | 2.929 | |
| 10,500.0 | 7,131.2 | 10,279.5 | 6,932.8 | 67.5 | 66.9 | -47.44 | -3,360.3 | -352.7 | 292.0 | 189.4 | 102.57 | 2.847 | |
| 10,600.0 | 7,130.9 | 10,379.5 | 6,932.3 | 69.4 | 68.8 | -47.43 | -3,460.3 | -350.6 | 292.1 | 186.6 | 105.47 | 2.769 | |
| 10,700.0 | 7,130.6 | 10,479.5 | 6,931.8 | 71.3 | 70.7 | -47.41 | -3,560.3 | -348.5 | 292.2 | 183.8 | 108.38 | 2.696 | |
| 10,800.0 | 7,130.2 | 10,579.5 | 6,931.3 | 73.1 | 72.5 | -47.39 | -3,660.3 | -346.5 | 292.3 | 181.0 | 111.29 | 2.626 | |
| 10,900.0 | 7,129.9 | 10,679.5 | 6,930.9 | 75.0 | 74.4 | -47.37 | -3,760.2 | -344.4 | 292.3 | 178.1 | 114.20 | 2.560 | |
| 11,000.0 | 7,129.5 | 10,779.5 | 6,930.4 | 76.8 | 76.3 | -47.36 | -3,860.2 | -342.3 | 292.4 | 175.3 | 117.11 | 2.497 | |
| 11,100.0 | 7,129.2 | 10,879.5 | 6,929.9 | 78.7 | 78.2 | -47.34 | -3,960.2 | -340.3 | 292.5 | 172.5 | 120.03 | 2.437 | |
| 11,200.0 | 7,128.8 | 10,979.5 | 6,929.5 | 80.6 | 80.0 | -47.32 | -4,060.2 | -338.2 | 292.6 | 169.6 | 122.95 | 2.380 | |
| 11,300.0 | 7,128.5 | 11,079.5 | 6,929.0 | 82.4 | 81.9 | -47.30 | -4,160.2 | -336.2 | 292.7 | 166.8 | 125.87 | 2.325 | |
| 11,400.0 | 7,128.1 | 11,179.5 | 6,928.5 | 84.3 | 83.8 | -47.29 | -4,260.1 | -334.1 | 292.8 | 164.0 | 128.79 | 2.273 | |
| 11,500.0 | 7,127.8 | 11,279.5 | 6,928.0 | 86.2 | 85.7 | -47.27 | -4,360.1 | -332.0 | 292.8 | 161.1 | 131.71 | 2.223 | |
| 11,600.0 | 7,127.4 | 11,379.5 | 6,927.6 | 88.1 | 87.6 | -47.25 | -4,460.1 | -330.0 | 292.9 | 158.3 | 134.63 | 2.176 | |
| 11,700.0 | 7,127.1 | 11,479.5 | 6,927.1 | 90.0 | 89.5 | -47.24 | -4,560.1 | -327.9 | 293.0 | 155.5 | 137.55 | 2.130 | |
| 11,717.3 | 7,127.0 | 11,496.9 | 6,927.0 | 90.3 | 89.8 | -47.23 | -4,577.4 | -327.5 | 293.0 | 155.0 | 138.06 | 2.123 | SF |

| | | | |
|---|---|---|---|
| **Company:** | Verdad Oil & Gas Corporation | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Project:** | SEC.2-T1N-R64W | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Reference Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | landmark |
| **Reference Design:** | Plan #1 (8-6-14) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W - Pastelak 01N-64W-02-3N - Wellbore #1 - Plan #1 (8-6-1 — **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 | 90.04 | 0.0 | 30.8 | 30.8 | | | | |
| 100.0 | 100.0 | 99.0 | 99.0 | 0.1 | 0.1 | 90.04 | 0.0 | 30.8 | 30.8 | 30.6 | 0.22 | 137.624 | |
| 200.0 | 200.0 | 199.0 | 199.0 | 0.3 | 0.3 | 90.04 | 0.0 | 30.8 | 30.8 | 30.1 | 0.67 | 45.798 | |
| 300.0 | 300.0 | 299.0 | 299.0 | 0.6 | 0.6 | 90.04 | 0.0 | 30.8 | 30.8 | 29.7 | 1.12 | 27.442 | |
| 400.0 | 400.0 | 399.0 | 399.0 | 0.8 | 0.8 | 90.04 | 0.0 | 30.8 | 30.8 | 29.2 | 1.57 | 19.590 | |
| 500.0 | 500.0 | 499.0 | 499.0 | 1.0 | 1.0 | 90.04 | 0.0 | 30.8 | 30.8 | 28.8 | 2.02 | 15.232 | |
| 600.0 | 600.0 | 599.0 | 599.0 | 1.2 | 1.2 | 90.04 | 0.0 | 30.8 | 30.8 | 28.3 | 2.47 | 12.460 | CC, ES |
| 700.0 | 700.0 | 699.0 | 699.0 | 1.5 | 1.5 | 166.56 | 0.0 | 30.8 | 32.5 | 29.6 | 2.91 | 11.156 | |
| 800.0 | 799.8 | 798.8 | 798.8 | 1.7 | 1.7 | 168.40 | 0.0 | 30.8 | 37.6 | 34.2 | 3.35 | 11.234 | |
| 900.0 | 899.5 | 898.5 | 898.5 | 1.9 | 1.9 | 170.55 | 0.0 | 30.8 | 46.2 | 42.4 | 3.78 | 12.204 | |
| 1,000.0 | 998.7 | 997.7 | 997.7 | 2.2 | 2.1 | 172.48 | 0.0 | 30.8 | 58.2 | 54.0 | 4.22 | 13.799 | |
| 1,100.0 | 1,097.5 | 1,096.5 | 1,096.5 | 2.5 | 2.4 | 174.04 | 0.0 | 30.8 | 73.7 | 69.0 | 4.66 | 15.821 | |
| 1,200.0 | 1,196.1 | 1,195.1 | 1,195.1 | 2.8 | 2.6 | 175.14 | 0.0 | 30.8 | 90.2 | 85.1 | 5.10 | 17.677 | |
| 1,300.0 | 1,294.7 | 1,293.7 | 1,293.7 | 3.1 | 2.8 | 175.89 | 0.0 | 30.8 | 106.8 | 101.2 | 5.56 | 19.222 | |
| 1,400.0 | 1,393.3 | 1,392.3 | 1,392.3 | 3.5 | 3.0 | 176.45 | 0.0 | 30.8 | 123.4 | 117.4 | 6.01 | 20.525 | |
| 1,500.0 | 1,491.9 | 1,490.9 | 1,490.9 | 3.8 | 3.2 | 176.87 | 0.0 | 30.8 | 139.9 | 133.5 | 6.47 | 21.638 | |
| 1,600.0 | 1,590.5 | 1,589.5 | 1,589.5 | 4.2 | 3.5 | 177.20 | 0.0 | 30.8 | 156.5 | 149.6 | 6.93 | 22.597 | |
| 1,700.0 | 1,689.1 | 1,693.5 | 1,693.5 | 4.6 | 3.7 | 177.33 | 0.7 | 29.4 | 171.8 | 164.4 | 7.39 | 23.240 | |
| 1,800.0 | 1,787.7 | 1,799.0 | 1,798.9 | 4.9 | 3.9 | 177.07 | 3.3 | 24.7 | 183.6 | 175.7 | 7.85 | 23.379 | |
| 1,900.0 | 1,886.4 | 1,905.3 | 1,904.7 | 5.3 | 4.2 | 176.49 | 7.9 | 16.6 | 191.8 | 183.5 | 8.32 | 23.061 | |
| 2,000.0 | 1,985.0 | 2,009.7 | 2,008.3 | 5.7 | 4.4 | 175.62 | 14.1 | 5.4 | 196.8 | 188.1 | 8.79 | 22.394 | |
| 2,100.0 | 2,083.6 | 2,109.5 | 2,107.3 | 6.0 | 4.7 | 174.75 | 20.5 | -6.0 | 201.1 | 191.9 | 9.26 | 21.719 | |
| 2,200.0 | 2,182.2 | 2,209.4 | 2,206.3 | 6.4 | 4.9 | 173.91 | 26.9 | -17.4 | 205.4 | 195.7 | 9.74 | 21.102 | |
| 2,300.0 | 2,280.8 | 2,309.3 | 2,305.3 | 6.8 | 5.2 | 173.11 | 33.2 | -28.8 | 209.8 | 199.6 | 10.22 | 20.536 | |
| 2,400.0 | 2,379.4 | 2,409.1 | 2,404.3 | 7.2 | 5.5 | 172.35 | 39.6 | -40.3 | 214.2 | 203.5 | 10.70 | 20.015 | |
| 2,500.0 | 2,478.0 | 2,509.0 | 2,503.3 | 7.6 | 5.7 | 171.61 | 46.0 | -51.7 | 218.6 | 207.4 | 11.19 | 19.534 | |
| 2,600.0 | 2,576.6 | 2,608.9 | 2,602.3 | 8.0 | 6.0 | 170.90 | 52.3 | -63.1 | 223.1 | 211.4 | 11.69 | 19.088 | |
| 2,700.0 | 2,675.2 | 2,708.7 | 2,701.3 | 8.3 | 6.3 | 170.23 | 58.7 | -74.5 | 227.6 | 215.4 | 12.19 | 18.675 | |
| 2,800.0 | 2,773.8 | 2,808.6 | 2,800.3 | 8.7 | 6.6 | 169.57 | 65.1 | -85.9 | 232.1 | 219.4 | 12.69 | 18.290 | |
| 2,900.0 | 2,872.5 | 2,908.4 | 2,899.3 | 9.1 | 6.9 | 168.95 | 71.4 | -97.3 | 236.7 | 223.5 | 13.20 | 17.931 | |
| 3,000.0 | 2,971.1 | 3,008.3 | 2,998.3 | 9.5 | 7.2 | 168.34 | 77.8 | -108.8 | 241.3 | 227.6 | 13.71 | 17.596 | |
| 3,100.0 | 3,069.7 | 3,108.2 | 3,097.3 | 9.9 | 7.5 | 167.76 | 84.2 | -120.2 | 245.9 | 231.7 | 14.23 | 17.282 | |
| 3,200.0 | 3,168.3 | 3,208.0 | 3,196.4 | 10.3 | 7.8 | 167.20 | 90.5 | -131.6 | 250.5 | 235.8 | 14.75 | 16.988 | |
| 3,300.0 | 3,266.9 | 3,307.9 | 3,295.4 | 10.6 | 8.1 | 166.66 | 96.9 | -143.0 | 255.2 | 239.9 | 15.27 | 16.711 | |
| 3,400.0 | 3,365.5 | 3,407.8 | 3,394.4 | 11.0 | 8.4 | 166.14 | 103.3 | -154.4 | 259.9 | 244.1 | 15.80 | 16.450 | |
| 3,500.0 | 3,464.1 | 3,507.6 | 3,493.4 | 11.4 | 8.8 | 165.64 | 109.6 | -165.9 | 264.6 | 248.2 | 16.33 | 16.204 | |
| 3,600.0 | 3,562.7 | 3,607.5 | 3,592.4 | 11.8 | 9.1 | 165.16 | 116.0 | -177.3 | 269.3 | 252.4 | 16.86 | 15.972 | |
| 3,700.0 | 3,661.3 | 3,707.3 | 3,691.4 | 12.2 | 9.4 | 164.69 | 122.4 | -188.7 | 274.0 | 256.6 | 17.40 | 15.753 | |
| 3,800.0 | 3,759.9 | 3,807.2 | 3,790.4 | 12.6 | 9.7 | 164.24 | 128.7 | -200.1 | 278.8 | 260.8 | 17.93 | 15.545 | |
| 3,900.0 | 3,858.6 | 3,907.1 | 3,889.4 | 13.0 | 10.0 | 163.80 | 135.1 | -211.5 | 283.6 | 265.1 | 18.48 | 15.348 | |
| 4,000.0 | 3,957.2 | 4,006.9 | 3,988.4 | 13.3 | 10.3 | 163.38 | 141.5 | -222.9 | 288.3 | 269.3 | 19.02 | 15.161 | |
| 4,100.0 | 4,055.8 | 4,106.8 | 4,087.4 | 13.7 | 10.7 | 162.97 | 147.9 | -234.4 | 293.2 | 273.6 | 19.57 | 14.983 | |
| 4,200.0 | 4,154.4 | 4,200.0 | 4,179.8 | 14.1 | 10.9 | 162.66 | 153.5 | -244.5 | 298.5 | 278.4 | 20.08 | 14.867 | |
| 4,300.0 | 4,253.0 | 4,293.2 | 4,272.6 | 14.5 | 11.1 | 162.63 | 157.9 | -252.3 | 306.3 | 285.8 | 20.53 | 14.919 | |
| 4,400.0 | 4,351.6 | 4,384.2 | 4,363.4 | 14.9 | 11.3 | 162.90 | 160.7 | -257.4 | 316.9 | 295.9 | 20.96 | 15.122 | |
| 4,500.0 | 4,450.2 | 4,474.6 | 4,453.8 | 15.3 | 11.5 | 163.40 | 162.1 | -259.9 | 330.1 | 308.8 | 21.35 | 15.463 | |
| 4,600.0 | 4,548.8 | 4,568.7 | 4,547.8 | 15.7 | 11.6 | 164.14 | 162.3 | -260.2 | 345.6 | 323.9 | 21.74 | 15.902 | |
| 4,700.0 | 4,647.8 | 4,667.7 | 4,646.8 | 15.9 | 11.8 | 164.82 | 162.3 | -260.2 | 359.2 | 337.0 | 22.12 | 16.240 | |
| 4,800.0 | 4,747.3 | 4,767.1 | 4,746.3 | 16.1 | 12.0 | 165.30 | 162.3 | -260.2 | 369.4 | 346.9 | 22.49 | 16.427 | |
| 4,900.0 | 4,847.0 | 4,866.9 | 4,846.0 | 16.3 | 12.2 | 165.61 | 162.3 | -260.2 | 376.2 | 353.4 | 22.84 | 16.475 | |
| 5,000.0 | 4,947.0 | 4,966.8 | 4,946.0 | 16.5 | 12.4 | 165.76 | 162.3 | -260.2 | 379.7 | 356.5 | 23.17 | 16.391 | |
| 5,100.0 | 5,047.0 | 5,066.8 | 5,046.0 | 16.6 | 12.6 | 90.00 | 162.3 | -260.2 | 380.2 | 356.7 | 23.44 | 16.217 | |

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

| | | | |
|---|---|---|---|
| **Company:** | Verdad Oil & Gas Corporation | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Project:** | SEC.2-T1N-R64W | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Reference Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | landmark |
| **Reference Design:** | Plan #1 (8-6-14) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W - Pastelak 01N-64W-02-3N - Wellbore #1 - Plan #1 (8-6-1

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,200.0 | 5,147.0 | 5,166.8 | 5,146.0 | 16.8 | 12.8 | 90.00 | 162.3 | -260.2 | 380.2 | 356.3 | 23.84 | 15.946 | |
| 5,300.0 | 5,247.0 | 5,266.8 | 5,246.0 | 16.9 | 13.0 | 90.00 | 162.3 | -260.2 | 380.2 | 355.9 | 24.24 | 15.683 | |
| 5,400.0 | 5,347.0 | 5,366.8 | 5,346.0 | 17.1 | 13.2 | 90.00 | 162.3 | -260.2 | 380.2 | 355.5 | 24.64 | 15.428 | |
| 5,500.0 | 5,447.0 | 5,466.8 | 5,446.0 | 17.2 | 13.4 | 90.00 | 162.3 | -260.2 | 380.2 | 355.1 | 25.05 | 15.180 | |
| 5,600.0 | 5,547.0 | 5,566.8 | 5,546.0 | 17.4 | 13.6 | 90.00 | 162.3 | -260.2 | 380.2 | 354.7 | 25.45 | 14.938 | |
| 5,700.0 | 5,647.0 | 5,666.8 | 5,646.0 | 17.5 | 13.8 | 90.00 | 162.3 | -260.2 | 380.2 | 354.3 | 25.86 | 14.704 | |
| 5,800.0 | 5,747.0 | 5,766.8 | 5,746.0 | 17.7 | 14.0 | 90.00 | 162.3 | -260.2 | 380.2 | 353.9 | 26.26 | 14.476 | |
| 5,900.0 | 5,847.0 | 5,866.8 | 5,846.0 | 17.8 | 14.2 | 90.00 | 162.3 | -260.2 | 380.2 | 353.5 | 26.67 | 14.254 | |
| 6,000.0 | 5,947.0 | 5,966.8 | 5,946.0 | 18.0 | 14.4 | 90.00 | 162.3 | -260.2 | 380.2 | 353.1 | 27.08 | 14.038 | |
| 6,100.0 | 6,047.0 | 6,066.8 | 6,046.0 | 18.1 | 14.6 | 90.00 | 162.3 | -260.2 | 380.2 | 352.7 | 27.49 | 13.828 | |
| 6,200.0 | 6,147.0 | 6,166.8 | 6,146.0 | 18.3 | 14.8 | 90.00 | 162.3 | -260.2 | 380.2 | 352.3 | 27.90 | 13.624 | |
| 6,300.0 | 6,247.0 | 6,266.8 | 6,246.0 | 18.5 | 15.0 | 90.00 | 162.3 | -260.2 | 380.2 | 351.9 | 28.32 | 13.425 | |
| 6,400.0 | 6,347.0 | 6,366.8 | 6,346.0 | 18.6 | 15.2 | 90.00 | 162.3 | -260.2 | 380.2 | 351.4 | 28.73 | 13.232 | |
| 6,458.1 | 6,405.1 | 6,424.9 | 6,404.1 | 18.7 | 15.3 | 90.00 | 162.3 | -260.2 | 380.2 | 351.2 | 28.97 | 13.121 | |
| 6,500.0 | 6,447.0 | 6,466.5 | 6,445.6 | 18.8 | 15.4 | 90.06 | 161.9 | -260.2 | 380.2 | 351.1 | 29.13 | 13.050 | |
| 6,600.0 | 6,547.0 | 6,563.0 | 6,541.2 | 18.9 | 15.5 | 91.98 | 149.2 | -260.0 | 380.7 | 351.3 | 29.38 | 12.960 | |
| 6,700.0 | 6,646.9 | 6,650.0 | 6,624.0 | 19.1 | 15.6 | -82.84 | 122.8 | -259.4 | 383.6 | 354.0 | 29.54 | 12.984 | |
| 6,800.0 | 6,745.7 | 6,735.9 | 6,700.3 | 19.2 | 15.6 | -78.13 | 83.6 | -258.6 | 389.3 | 359.7 | 29.58 | 13.159 | |
| 6,900.0 | 6,839.9 | 6,816.3 | 6,765.0 | 19.3 | 15.7 | -74.01 | 36.1 | -257.6 | 396.6 | 367.0 | 29.59 | 13.402 | |
| 7,000.0 | 6,926.1 | 6,894.1 | 6,820.0 | 19.3 | 15.7 | -70.47 | -19.0 | -256.5 | 404.6 | 375.1 | 29.52 | 13.704 | |
| 7,100.0 | 7,001.0 | 6,970.1 | 6,865.1 | 19.4 | 15.8 | -67.59 | -79.9 | -255.2 | 412.3 | 382.9 | 29.36 | 14.039 | |
| 7,200.0 | 7,062.0 | 7,050.0 | 6,902.5 | 19.5 | 15.9 | -65.28 | -150.5 | -253.8 | 418.9 | 389.7 | 29.19 | 14.349 | |
| 7,300.0 | 7,106.7 | 7,118.3 | 6,925.6 | 19.6 | 16.2 | -63.85 | -214.6 | -252.4 | 423.8 | 394.7 | 29.12 | 14.555 | |
| 7,400.0 | 7,133.6 | 7,191.3 | 6,940.8 | 19.9 | 16.6 | -63.02 | -286.0 | -251.0 | 426.6 | 397.3 | 29.32 | 14.550 | |
| 7,500.0 | 7,141.7 | 7,264.1 | 6,945.9 | 20.3 | 17.1 | -62.86 | -358.5 | -249.5 | 427.1 | 397.2 | 29.95 | 14.262 | |
| 7,516.9 | 7,141.7 | 7,280.1 | 6,945.8 | 20.4 | 17.2 | -62.86 | -374.5 | -249.1 | 427.1 | 396.9 | 30.20 | 14.145 | |
| 7,600.0 | 7,141.4 | 7,363.2 | 6,945.4 | 21.0 | 18.0 | -62.85 | -457.6 | -247.4 | 427.2 | 395.7 | 31.51 | 13.555 | |
| 7,700.0 | 7,141.0 | 7,463.2 | 6,945.0 | 21.8 | 19.0 | -62.84 | -557.6 | -245.4 | 427.2 | 393.9 | 33.36 | 12.808 | |
| 7,800.0 | 7,140.7 | 7,563.2 | 6,944.5 | 22.8 | 20.2 | -62.82 | -657.5 | -243.3 | 427.3 | 391.8 | 35.45 | 12.054 | |
| 7,900.0 | 7,140.3 | 7,663.2 | 6,944.0 | 23.9 | 21.5 | -62.81 | -757.5 | -241.2 | 427.4 | 389.6 | 37.75 | 11.321 | |
| 8,000.0 | 7,140.0 | 7,763.2 | 6,943.6 | 25.1 | 22.9 | -62.79 | -857.5 | -239.2 | 427.4 | 387.2 | 40.22 | 10.628 | |
| 8,100.0 | 7,139.6 | 7,863.2 | 6,943.1 | 26.4 | 24.3 | -62.78 | -957.5 | -237.1 | 427.5 | 384.6 | 42.83 | 9.982 | |
| 8,200.0 | 7,139.3 | 7,963.2 | 6,942.6 | 27.8 | 25.8 | -62.76 | -1,057.4 | -235.1 | 427.5 | 382.0 | 45.55 | 9.385 | |
| 8,300.0 | 7,138.9 | 8,063.2 | 6,942.1 | 29.3 | 27.4 | -62.75 | -1,157.4 | -233.0 | 427.6 | 379.2 | 48.38 | 8.839 | |
| 8,400.0 | 7,138.6 | 8,163.2 | 6,941.7 | 30.8 | 29.0 | -62.73 | -1,257.4 | -230.9 | 427.6 | 376.4 | 51.28 | 8.340 | |
| 8,500.0 | 7,138.2 | 8,263.2 | 6,941.2 | 32.3 | 30.6 | -62.72 | -1,357.4 | -228.9 | 427.7 | 373.4 | 54.25 | 7.884 | |
| 8,600.0 | 7,137.9 | 8,363.2 | 6,940.7 | 33.9 | 32.3 | -62.71 | -1,457.4 | -226.8 | 427.8 | 370.5 | 57.28 | 7.468 | |
| 8,700.0 | 7,137.5 | 8,463.2 | 6,940.3 | 35.6 | 34.0 | -62.69 | -1,557.3 | -224.7 | 427.8 | 367.5 | 60.35 | 7.088 | |
| 8,800.0 | 7,137.2 | 8,563.2 | 6,939.8 | 37.2 | 35.7 | -62.68 | -1,657.3 | -222.7 | 427.9 | 364.4 | 63.47 | 6.741 | |
| 8,900.0 | 7,136.8 | 8,663.2 | 6,939.3 | 38.9 | 37.4 | -62.66 | -1,757.3 | -220.6 | 427.9 | 361.3 | 66.62 | 6.423 | |
| 9,000.0 | 7,136.5 | 8,763.2 | 6,938.8 | 40.6 | 39.2 | -62.65 | -1,857.3 | -218.6 | 428.0 | 358.2 | 69.81 | 6.131 | |
| 9,100.0 | 7,136.1 | 8,863.2 | 6,938.4 | 42.3 | 41.0 | -62.63 | -1,957.2 | -216.5 | 428.0 | 355.0 | 73.02 | 5.862 | |
| 9,200.0 | 7,135.8 | 8,963.2 | 6,937.9 | 44.0 | 42.8 | -62.62 | -2,057.2 | -214.4 | 428.1 | 351.9 | 76.25 | 5.615 | |
| 9,300.0 | 7,135.4 | 9,063.2 | 6,937.4 | 45.8 | 44.6 | -62.60 | -2,157.2 | -212.4 | 428.2 | 348.7 | 79.50 | 5.386 | |
| 9,400.0 | 7,135.1 | 9,163.2 | 6,937.0 | 47.6 | 46.4 | -62.59 | -2,257.2 | -210.3 | 428.2 | 345.5 | 82.77 | 5.174 | |
| 9,500.0 | 7,134.7 | 9,263.2 | 6,936.5 | 49.3 | 48.2 | -62.58 | -2,357.2 | -208.2 | 428.3 | 342.2 | 86.05 | 4.977 | |
| 9,600.0 | 7,134.4 | 9,363.2 | 6,936.0 | 51.1 | 50.0 | -62.56 | -2,457.1 | -206.2 | 428.3 | 339.0 | 89.35 | 4.794 | |
| 9,700.0 | 7,134.0 | 9,463.2 | 6,935.5 | 52.9 | 51.8 | -62.55 | -2,557.1 | -204.1 | 428.4 | 335.7 | 92.66 | 4.623 | |
| 9,800.0 | 7,133.7 | 9,563.2 | 6,935.1 | 54.7 | 53.7 | -62.53 | -2,657.1 | -202.1 | 428.5 | 332.5 | 95.98 | 4.464 | |
| 9,900.0 | 7,133.3 | 9,663.2 | 6,934.6 | 56.5 | 55.5 | -62.52 | -2,757.1 | -200.0 | 428.5 | 329.2 | 99.31 | 4.315 | |
| 10,000.0 | 7,133.0 | 9,763.2 | 6,934.1 | 58.4 | 57.4 | -62.50 | -2,857.0 | -197.9 | 428.6 | 325.9 | 102.65 | 4.175 | |
| 10,100.0 | 7,132.6 | 9,863.2 | 6,933.7 | 60.2 | 59.2 | -62.49 | -2,957.0 | -195.9 | 428.6 | 322.6 | 106.00 | 4.044 | |

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

| | | | |
|---|---|---|---|
| **Company:** | Verdad Oil & Gas Corporation | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Project:** | SEC.2-T1N-R64W | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Reference Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | landmark |
| **Reference Design:** | Plan #1 (8-6-14) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W - Pastelak 01N-64W-02-3N - Wellbore #1 - Plan #1 (8-6-1

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10,200.0 | 7,132.3 | 9,963.2 | 6,933.2 | 62.0 | 61.1 | -62.48 | -3,057.0 | -193.8 | 428.7 | 319.3 | 109.35 | 3.920 | |
| 10,300.0 | 7,131.9 | 10,063.2 | 6,932.7 | 63.9 | 62.9 | -62.46 | -3,157.0 | -191.7 | 428.7 | 316.0 | 112.71 | 3.804 | |
| 10,400.0 | 7,131.6 | 10,163.2 | 6,932.2 | 65.7 | 64.8 | -62.45 | -3,256.9 | -189.7 | 428.8 | 312.7 | 116.08 | 3.694 | |
| 10,500.0 | 7,131.2 | 10,263.2 | 6,931.8 | 67.5 | 66.7 | -62.43 | -3,356.9 | -187.6 | 428.9 | 309.4 | 119.45 | 3.590 | |
| 10,600.0 | 7,130.9 | 10,363.2 | 6,931.3 | 69.4 | 68.5 | -62.42 | -3,456.9 | -185.6 | 428.9 | 306.1 | 122.82 | 3.492 | |
| 10,700.0 | 7,130.6 | 10,463.2 | 6,930.8 | 71.3 | 70.4 | -62.40 | -3,556.9 | -183.5 | 429.0 | 302.8 | 126.20 | 3.399 | |
| 10,800.0 | 7,130.2 | 10,563.2 | 6,930.4 | 73.1 | 72.3 | -62.39 | -3,656.9 | -181.4 | 429.0 | 299.4 | 129.59 | 3.311 | |
| 10,900.0 | 7,129.9 | 10,663.2 | 6,929.9 | 75.0 | 74.2 | -62.38 | -3,756.8 | -179.4 | 429.1 | 296.1 | 132.97 | 3.227 | |
| 11,000.0 | 7,129.5 | 10,763.2 | 6,929.4 | 76.8 | 76.1 | -62.36 | -3,856.8 | -177.3 | 429.2 | 292.8 | 136.36 | 3.147 | |
| 11,100.0 | 7,129.2 | 10,863.2 | 6,929.0 | 78.7 | 77.9 | -62.35 | -3,956.8 | -175.2 | 429.2 | 289.5 | 139.76 | 3.071 | |
| 11,200.0 | 7,128.8 | 10,963.2 | 6,928.5 | 80.6 | 79.8 | -62.33 | -4,056.8 | -173.2 | 429.3 | 286.1 | 143.15 | 2.999 | |
| 11,300.0 | 7,128.5 | 11,063.2 | 6,928.0 | 82.4 | 81.7 | -62.32 | -4,156.7 | -171.1 | 429.3 | 282.8 | 146.55 | 2.930 | |
| 11,400.0 | 7,128.1 | 11,163.2 | 6,927.5 | 84.3 | 83.6 | -62.30 | -4,256.7 | -169.1 | 429.4 | 279.4 | 149.95 | 2.864 | |
| 11,500.0 | 7,127.8 | 11,263.2 | 6,927.1 | 86.2 | 85.5 | -62.29 | -4,356.7 | -167.0 | 429.4 | 276.1 | 153.35 | 2.800 | |
| 11,600.0 | 7,127.4 | 11,363.2 | 6,926.6 | 88.1 | 87.4 | -62.27 | -4,456.7 | -164.9 | 429.5 | 272.8 | 156.75 | 2.740 | |
| 11,700.0 | 7,127.1 | 11,463.2 | 6,926.1 | 90.0 | 89.3 | -62.26 | -4,556.7 | -162.9 | 429.6 | 269.4 | 160.16 | 2.682 | |
| 11,717.3 | 7,127.0 | 11,480.5 | 6,926.0 | 90.3 | 89.6 | -62.26 | -4,574.0 | -162.5 | 429.6 | 268.8 | 160.75 | 2.672 SF | |

| | | | |
|---|---|---|---|
| **Company:** | Verdad Oil & Gas Corporation | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Project:** | SEC.2-T1N-R64W | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Reference Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | landmark |
| **Reference Design:** | Plan #1 (8-6-14) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W - Pastelak 01N-64W-02-4N - Wellbore #1 - Plan #1 (8-6-1 — **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 | 89.99 | 0.0 | 44.8 | 44.8 | | | | |
| 100.0 | 100.0 | 99.0 | 99.0 | 0.1 | 0.1 | 89.99 | 0.0 | 44.8 | 44.8 | 44.5 | 0.22 | 200.180 | |
| 200.0 | 200.0 | 199.0 | 199.0 | 0.3 | 0.3 | 89.99 | 0.0 | 44.8 | 44.8 | 44.1 | 0.67 | 66.616 | |
| 300.0 | 300.0 | 299.0 | 299.0 | 0.6 | 0.6 | 89.99 | 0.0 | 44.8 | 44.8 | 43.6 | 1.12 | 39.916 | |
| 400.0 | 400.0 | 399.0 | 399.0 | 0.8 | 0.8 | 89.99 | 0.0 | 44.8 | 44.8 | 43.2 | 1.57 | 28.495 | |
| 500.0 | 500.0 | 499.0 | 499.0 | 1.0 | 1.0 | 89.99 | 0.0 | 44.8 | 44.8 | 42.7 | 2.02 | 22.156 | |
| 600.0 | 600.0 | 599.0 | 599.0 | 1.2 | 1.2 | 89.99 | 0.0 | 44.8 | 44.8 | 42.3 | 2.47 | 18.124 | CC, ES |
| 700.0 | 700.0 | 699.0 | 699.0 | 1.5 | 1.5 | 166.29 | 0.0 | 44.8 | 46.5 | 43.6 | 2.91 | 15.962 | |
| 800.0 | 799.8 | 798.8 | 798.8 | 1.7 | 1.7 | 167.65 | 0.0 | 44.8 | 51.6 | 48.2 | 3.35 | 15.413 | |
| 900.0 | 899.5 | 898.5 | 898.5 | 1.9 | 1.9 | 169.40 | 0.0 | 44.8 | 60.1 | 56.3 | 3.78 | 15.893 | |
| 1,000.0 | 998.7 | 997.7 | 997.7 | 2.2 | 2.1 | 171.14 | 0.0 | 44.8 | 72.1 | 67.9 | 4.22 | 17.096 | |
| 1,100.0 | 1,097.5 | 1,096.5 | 1,096.5 | 2.5 | 2.4 | 172.68 | 0.0 | 44.8 | 87.5 | 82.9 | 4.66 | 18.797 | |
| 1,200.0 | 1,196.1 | 1,195.1 | 1,195.1 | 2.8 | 2.6 | 173.84 | 0.0 | 44.8 | 104.0 | 98.9 | 5.10 | 20.383 | |
| 1,300.0 | 1,294.7 | 1,293.7 | 1,293.7 | 3.1 | 2.8 | 174.69 | 0.0 | 44.8 | 120.6 | 115.0 | 5.56 | 21.702 | |
| 1,400.0 | 1,393.3 | 1,392.3 | 1,392.3 | 3.5 | 3.0 | 175.33 | 0.0 | 44.8 | 137.1 | 131.1 | 6.01 | 22.814 | |
| 1,500.0 | 1,491.9 | 1,490.9 | 1,490.9 | 3.8 | 3.2 | 175.84 | 0.0 | 44.8 | 153.7 | 147.2 | 6.47 | 23.761 | |
| 1,600.0 | 1,590.5 | 1,589.5 | 1,589.5 | 4.2 | 3.5 | 176.24 | 0.0 | 44.8 | 170.3 | 163.3 | 6.93 | 24.578 | |
| 1,700.0 | 1,689.1 | 1,688.1 | 1,688.1 | 4.6 | 3.7 | 176.58 | 0.0 | 44.8 | 186.9 | 179.5 | 7.39 | 25.287 | |
| 1,800.0 | 1,787.7 | 1,786.7 | 1,786.7 | 4.9 | 3.9 | 176.86 | 0.0 | 44.8 | 203.4 | 195.6 | 7.85 | 25.910 | |
| 1,900.0 | 1,886.4 | 1,889.4 | 1,889.4 | 5.3 | 4.1 | 176.93 | 0.8 | 44.1 | 219.3 | 210.9 | 8.32 | 26.351 | |
| 2,000.0 | 1,985.0 | 1,993.3 | 1,993.2 | 5.7 | 4.4 | 176.57 | 3.7 | 41.6 | 233.0 | 224.2 | 8.79 | 26.511 | |
| 2,100.0 | 2,083.6 | 2,097.7 | 2,097.4 | 6.0 | 4.6 | 175.84 | 8.8 | 37.2 | 244.6 | 235.3 | 9.26 | 26.416 | |
| 2,200.0 | 2,182.2 | 2,202.4 | 2,201.6 | 6.4 | 4.8 | 174.75 | 16.0 | 30.9 | 254.2 | 244.4 | 9.74 | 26.099 | |
| 2,300.0 | 2,280.8 | 2,305.4 | 2,304.0 | 6.8 | 5.1 | 173.39 | 25.2 | 23.1 | 261.9 | 251.6 | 10.22 | 25.614 | |
| 2,400.0 | 2,379.4 | 2,404.9 | 2,402.7 | 7.2 | 5.3 | 172.06 | 34.5 | 15.1 | 269.3 | 258.6 | 10.71 | 25.137 | |
| 2,500.0 | 2,478.0 | 2,504.5 | 2,501.5 | 7.6 | 5.6 | 170.80 | 43.7 | 7.1 | 276.8 | 265.6 | 11.21 | 24.694 | |
| 2,600.0 | 2,576.6 | 2,604.0 | 2,600.3 | 8.0 | 5.8 | 169.61 | 53.0 | -0.9 | 284.5 | 272.8 | 11.72 | 24.282 | |
| 2,700.0 | 2,675.2 | 2,703.6 | 2,699.1 | 8.3 | 6.1 | 168.48 | 62.3 | -8.9 | 292.3 | 280.1 | 12.23 | 23.898 | |
| 2,800.0 | 2,773.8 | 2,803.1 | 2,797.9 | 8.7 | 6.4 | 167.41 | 71.6 | -16.9 | 300.2 | 287.4 | 12.75 | 23.539 | |
| 2,900.0 | 2,872.5 | 2,902.6 | 2,896.6 | 9.1 | 6.7 | 166.40 | 80.8 | -24.9 | 308.2 | 294.9 | 13.28 | 23.202 | |
| 3,000.0 | 2,971.1 | 3,002.2 | 2,995.4 | 9.5 | 6.9 | 165.44 | 90.1 | -32.9 | 316.3 | 302.4 | 13.82 | 22.886 | |
| 3,100.0 | 3,069.7 | 3,101.7 | 3,094.2 | 9.9 | 7.2 | 164.52 | 99.4 | -40.9 | 324.4 | 310.1 | 14.36 | 22.590 | |
| 3,200.0 | 3,168.3 | 3,201.2 | 3,193.0 | 10.3 | 7.5 | 163.65 | 108.7 | -48.9 | 332.7 | 317.8 | 14.91 | 22.311 | |
| 3,300.0 | 3,266.9 | 3,300.8 | 3,291.7 | 10.6 | 7.8 | 162.82 | 117.9 | -56.9 | 341.0 | 325.5 | 15.47 | 22.048 | |
| 3,400.0 | 3,365.5 | 3,400.3 | 3,390.5 | 11.0 | 8.1 | 162.04 | 127.2 | -64.9 | 349.4 | 333.4 | 16.03 | 21.801 | |
| 3,500.0 | 3,464.1 | 3,499.8 | 3,489.3 | 11.4 | 8.4 | 161.28 | 136.5 | -72.9 | 357.8 | 341.2 | 16.59 | 21.567 | |
| 3,600.0 | 3,562.7 | 3,596.3 | 3,585.0 | 11.8 | 8.6 | 160.64 | 145.2 | -80.4 | 366.6 | 349.5 | 17.13 | 21.396 | |
| 3,700.0 | 3,661.3 | 3,690.4 | 3,678.7 | 12.2 | 8.8 | 160.31 | 152.1 | -86.3 | 376.7 | 359.1 | 17.62 | 21.382 | |
| 3,800.0 | 3,759.9 | 3,784.3 | 3,772.4 | 12.6 | 9.0 | 160.27 | 157.2 | -90.7 | 388.2 | 370.2 | 18.08 | 21.477 | |
| 3,900.0 | 3,858.6 | 3,877.8 | 3,865.8 | 13.0 | 9.2 | 160.51 | 160.5 | -93.6 | 401.2 | 382.7 | 18.51 | 21.673 | |
| 4,000.0 | 3,957.2 | 3,970.8 | 3,958.8 | 13.3 | 9.4 | 160.99 | 162.1 | -95.0 | 415.6 | 396.6 | 18.92 | 21.964 | |
| 4,100.0 | 4,055.8 | 4,066.8 | 4,054.8 | 13.7 | 9.6 | 161.66 | 162.3 | -95.1 | 431.2 | 411.9 | 19.32 | 22.313 | |
| 4,200.0 | 4,154.4 | 4,165.4 | 4,153.4 | 14.1 | 9.7 | 162.33 | 162.3 | -95.1 | 447.0 | 427.3 | 19.75 | 22.634 | |
| 4,300.0 | 4,253.0 | 4,264.0 | 4,252.0 | 14.5 | 10.0 | 162.95 | 162.3 | -95.1 | 462.9 | 442.7 | 20.18 | 22.934 | |
| 4,400.0 | 4,351.6 | 4,362.6 | 4,350.6 | 14.9 | 10.2 | 163.54 | 162.3 | -95.1 | 478.8 | 458.2 | 20.62 | 23.222 | |
| 4,500.0 | 4,450.2 | 4,461.3 | 4,449.2 | 15.3 | 10.4 | 164.08 | 162.3 | -95.1 | 494.8 | 473.7 | 21.06 | 23.497 | |
| 4,600.0 | 4,548.8 | 4,559.9 | 4,547.8 | 15.7 | 10.6 | 164.61 | 162.3 | -95.1 | 510.7 | 489.2 | 21.50 | 23.751 | |
| 4,700.0 | 4,647.8 | 4,658.9 | 4,646.8 | 15.9 | 10.8 | 165.09 | 162.3 | -95.1 | 524.2 | 502.3 | 21.92 | 23.913 | |
| 4,800.0 | 4,747.3 | 4,758.3 | 4,746.3 | 16.1 | 11.0 | 165.43 | 162.3 | -95.1 | 534.5 | 512.1 | 22.32 | 23.943 | |
| 4,900.0 | 4,847.0 | 4,858.1 | 4,846.0 | 16.3 | 11.2 | 165.65 | 162.3 | -95.1 | 541.3 | 518.6 | 22.70 | 23.849 | |
| 5,000.0 | 4,947.0 | 4,958.0 | 4,946.0 | 16.5 | 11.4 | 165.76 | 162.3 | -95.1 | 544.8 | 521.7 | 23.05 | 23.639 | |
| 5,100.0 | 5,047.0 | 5,058.0 | 5,046.0 | 16.6 | 11.6 | 90.00 | 162.3 | -95.1 | 545.3 | 521.9 | 23.35 | 23.354 | |

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

| | | | |
|---|---|---|---|
| **Company:** | Verdad Oil & Gas Corporation | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Project:** | SEC.2-T1N-R64W | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Reference Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | landmark |
| **Reference Design:** | Plan #1 (8-6-14) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W - Pastelak 01N-64W-02-4N - Wellbore #1 - Plan #1 (8-6-1

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,200.0 | 5,147.0 | 5,158.0 | 5,146.0 | 16.8 | 11.8 | 90.00 | 162.3 | -95.1 | 545.3 | 521.5 | 23.75 | 22.957 | |
| 5,300.0 | 5,247.0 | 5,258.0 | 5,246.0 | 16.9 | 12.0 | 90.00 | 162.3 | -95.1 | 545.3 | 521.1 | 24.16 | 22.573 | |
| 5,400.0 | 5,347.0 | 5,358.0 | 5,346.0 | 17.1 | 12.2 | 90.00 | 162.3 | -95.1 | 545.3 | 520.7 | 24.56 | 22.199 | |
| 5,500.0 | 5,447.0 | 5,458.0 | 5,446.0 | 17.2 | 12.4 | 90.00 | 162.3 | -95.1 | 545.3 | 520.3 | 24.97 | 21.837 | |
| 5,600.0 | 5,547.0 | 5,558.0 | 5,546.0 | 17.4 | 12.7 | 90.00 | 162.3 | -95.1 | 545.3 | 519.9 | 25.38 | 21.485 | |
| 5,700.0 | 5,647.0 | 5,658.0 | 5,646.0 | 17.5 | 12.9 | 90.00 | 162.3 | -95.1 | 545.3 | 519.5 | 25.79 | 21.143 | |
| 5,800.0 | 5,747.0 | 5,758.0 | 5,746.0 | 17.7 | 13.1 | 90.00 | 162.3 | -95.1 | 545.3 | 519.1 | 26.20 | 20.811 | |
| 5,900.0 | 5,847.0 | 5,858.0 | 5,846.0 | 17.8 | 13.3 | 90.00 | 162.3 | -95.1 | 545.3 | 518.7 | 26.61 | 20.488 | |
| 6,000.0 | 5,947.0 | 5,958.0 | 5,946.0 | 18.0 | 13.5 | 90.00 | 162.3 | -95.1 | 545.3 | 518.2 | 27.03 | 20.175 | |
| 6,100.0 | 6,047.0 | 6,058.0 | 6,046.0 | 18.1 | 13.7 | 90.00 | 162.3 | -95.1 | 545.3 | 517.8 | 27.44 | 19.870 | |
| 6,200.0 | 6,147.0 | 6,158.0 | 6,146.0 | 18.3 | 13.9 | 90.00 | 162.3 | -95.1 | 545.3 | 517.4 | 27.86 | 19.573 | |
| 6,300.0 | 6,247.0 | 6,258.0 | 6,246.0 | 18.5 | 14.2 | 90.00 | 162.3 | -95.1 | 545.3 | 517.0 | 28.28 | 19.284 | |
| 6,400.0 | 6,347.0 | 6,358.0 | 6,346.0 | 18.6 | 14.4 | 90.00 | 162.3 | -95.1 | 545.3 | 516.6 | 28.69 | 19.003 | |
| 6,458.0 | 6,405.0 | 6,416.0 | 6,404.0 | 18.7 | 14.5 | 90.00 | 162.3 | -95.1 | 545.3 | 516.3 | 28.94 | 18.844 | |
| 6,500.0 | 6,447.0 | 6,457.5 | 6,445.5 | 18.8 | 14.6 | 90.04 | 161.9 | -95.1 | 545.3 | 516.2 | 29.10 | 18.738 | |
| 6,600.0 | 6,547.0 | 6,553.5 | 6,540.5 | 18.9 | 14.7 | 91.36 | 149.4 | -94.9 | 545.7 | 516.3 | 29.37 | 18.578 | |
| 6,700.0 | 6,646.9 | 6,642.3 | 6,625.0 | 19.1 | 14.8 | -84.61 | 122.4 | -94.3 | 547.9 | 518.3 | 29.58 | 18.522 | |
| 6,800.0 | 6,745.7 | 6,725.6 | 6,699.0 | 19.2 | 14.9 | -81.37 | 84.4 | -93.5 | 552.0 | 522.4 | 29.65 | 18.620 | |
| 6,900.0 | 6,839.9 | 6,805.7 | 6,763.6 | 19.3 | 14.9 | -78.44 | 37.3 | -92.6 | 557.3 | 527.6 | 29.69 | 18.773 | |
| 7,000.0 | 6,926.1 | 6,883.3 | 6,818.7 | 19.3 | 15.0 | -75.89 | -17.4 | -91.4 | 563.0 | 533.3 | 29.72 | 18.944 | |
| 7,100.0 | 7,001.0 | 6,959.1 | 6,864.0 | 19.4 | 15.0 | -73.77 | -78.1 | -90.2 | 568.6 | 538.8 | 29.77 | 19.096 | |
| 7,200.0 | 7,062.0 | 7,033.6 | 6,899.4 | 19.5 | 15.3 | -72.13 | -143.4 | -88.8 | 573.3 | 543.4 | 29.91 | 19.165 | |
| 7,300.0 | 7,106.7 | 7,107.1 | 6,925.0 | 19.6 | 15.6 | -71.01 | -212.3 | -87.4 | 576.8 | 546.5 | 30.22 | 19.085 | |
| 7,400.0 | 7,133.6 | 7,180.1 | 6,940.5 | 19.9 | 16.1 | -70.41 | -283.5 | -85.9 | 578.7 | 547.9 | 30.80 | 18.792 | |
| 7,500.0 | 7,141.7 | 7,252.8 | 6,945.9 | 20.3 | 16.7 | -70.34 | -356.0 | -84.4 | 578.9 | 547.2 | 31.70 | 18.262 | |
| 7,523.3 | 7,141.6 | 7,274.3 | 6,945.8 | 20.5 | 16.8 | -70.34 | -377.5 | -84.0 | 578.9 | 546.9 | 32.06 | 18.056 | |
| 7,600.0 | 7,141.4 | 7,351.0 | 6,945.5 | 21.0 | 17.6 | -70.33 | -454.2 | -82.4 | 579.0 | 545.6 | 33.37 | 17.352 | |
| 7,700.0 | 7,141.0 | 7,451.0 | 6,945.0 | 21.8 | 18.6 | -70.32 | -554.1 | -80.3 | 579.0 | 543.7 | 35.32 | 16.392 | |
| 7,800.0 | 7,140.7 | 7,551.0 | 6,944.5 | 22.8 | 19.8 | -70.30 | -654.1 | -78.3 | 579.1 | 541.5 | 37.54 | 15.427 | |
| 7,900.0 | 7,140.3 | 7,651.0 | 6,944.0 | 23.9 | 21.1 | -70.29 | -754.1 | -76.2 | 579.1 | 539.1 | 39.96 | 14.492 | |
| 8,000.0 | 7,140.0 | 7,751.0 | 6,943.6 | 25.1 | 22.5 | -70.28 | -854.1 | -74.2 | 579.1 | 536.6 | 42.56 | 13.608 | |
| 8,100.0 | 7,139.6 | 7,851.0 | 6,943.1 | 26.4 | 24.0 | -70.27 | -954.1 | -72.1 | 579.2 | 533.9 | 45.31 | 12.784 | |
| 8,200.0 | 7,139.3 | 7,951.0 | 6,942.6 | 27.8 | 25.5 | -70.26 | -1,054.0 | -70.0 | 579.2 | 531.1 | 48.17 | 12.024 | |
| 8,300.0 | 7,138.9 | 8,051.0 | 6,942.2 | 29.3 | 27.1 | -70.25 | -1,154.0 | -68.0 | 579.3 | 528.1 | 51.14 | 11.327 | |
| 8,400.0 | 7,138.6 | 8,151.0 | 6,941.7 | 30.8 | 28.7 | -70.24 | -1,254.0 | -65.9 | 579.3 | 525.1 | 54.19 | 10.690 | |
| 8,500.0 | 7,138.2 | 8,251.0 | 6,941.2 | 32.3 | 30.3 | -70.22 | -1,354.0 | -63.8 | 579.4 | 522.0 | 57.31 | 10.109 | |
| 8,600.0 | 7,137.9 | 8,351.0 | 6,940.7 | 33.9 | 32.0 | -70.21 | -1,453.9 | -61.8 | 579.4 | 518.9 | 60.49 | 9.578 | |
| 8,700.0 | 7,137.5 | 8,451.0 | 6,940.3 | 35.6 | 33.7 | -70.20 | -1,553.9 | -59.7 | 579.4 | 515.7 | 63.72 | 9.094 | |
| 8,800.0 | 7,137.2 | 8,551.0 | 6,939.8 | 37.2 | 35.5 | -70.19 | -1,653.9 | -57.7 | 579.5 | 512.5 | 66.99 | 8.650 | |
| 8,900.0 | 7,136.8 | 8,651.0 | 6,939.3 | 38.9 | 37.2 | -70.18 | -1,753.9 | -55.6 | 579.5 | 509.2 | 70.30 | 8.243 | |
| 9,000.0 | 7,136.5 | 8,751.0 | 6,938.9 | 40.6 | 39.0 | -70.17 | -1,853.9 | -53.5 | 579.6 | 505.9 | 73.64 | 7.870 | |
| 9,100.0 | 7,136.1 | 8,851.0 | 6,938.4 | 42.3 | 40.8 | -70.16 | -1,953.8 | -51.5 | 579.6 | 502.6 | 77.01 | 7.526 | |
| 9,200.0 | 7,135.8 | 8,951.0 | 6,937.9 | 44.0 | 42.6 | -70.15 | -2,053.8 | -49.4 | 579.7 | 499.3 | 80.41 | 7.209 | |
| 9,300.0 | 7,135.4 | 9,051.0 | 6,937.4 | 45.8 | 44.4 | -70.13 | -2,153.8 | -47.3 | 579.7 | 495.9 | 83.82 | 6.916 | |
| 9,400.0 | 7,135.1 | 9,151.0 | 6,937.0 | 47.6 | 46.2 | -70.12 | -2,253.8 | -45.3 | 579.8 | 492.5 | 87.26 | 6.644 | |
| 9,500.0 | 7,134.7 | 9,251.0 | 6,936.5 | 49.3 | 48.0 | -70.11 | -2,353.7 | -43.2 | 579.8 | 489.1 | 90.70 | 6.392 | |
| 9,600.0 | 7,134.4 | 9,351.0 | 6,936.0 | 51.1 | 49.8 | -70.10 | -2,453.7 | -41.1 | 579.8 | 485.7 | 94.17 | 6.157 | |
| 9,700.0 | 7,134.0 | 9,451.0 | 6,935.6 | 52.9 | 51.7 | -70.09 | -2,553.7 | -39.1 | 579.9 | 482.2 | 97.65 | 5.939 | |
| 9,800.0 | 7,133.7 | 9,551.0 | 6,935.1 | 54.7 | 53.5 | -70.08 | -2,653.7 | -37.0 | 579.9 | 478.8 | 101.13 | 5.734 | |
| 9,900.0 | 7,133.3 | 9,651.0 | 6,934.6 | 56.5 | 55.4 | -70.07 | -2,753.7 | -35.0 | 580.0 | 475.3 | 104.63 | 5.543 | |
| 10,000.0 | 7,133.0 | 9,751.0 | 6,934.2 | 58.4 | 57.2 | -70.06 | -2,853.6 | -32.9 | 580.0 | 471.9 | 108.14 | 5.363 | |
| 10,100.0 | 7,132.6 | 9,851.0 | 6,933.7 | 60.2 | 59.1 | -70.04 | -2,953.6 | -30.8 | 580.1 | 468.4 | 111.66 | 5.195 | |

| | | | |
|---|---|---|---|
| **Company:** | Verdad Oil & Gas Corporation | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Project:** | SEC.2-T1N-R64W | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Reference Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | landmark |
| **Reference Design:** | Plan #1 (8-6-14) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W - Pastelak 01N-64W-02-4N - Wellbore #1 - Plan #1 (8-6-1

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10,200.0 | 7,132.3 | 9,951.0 | 6,933.2 | 62.0 | 60.9 | -70.03 | -3,053.6 | -28.8 | 580.1 | 464.9 | 115.18 | 5.036 | |
| 10,300.0 | 7,131.9 | 10,051.0 | 6,932.7 | 63.9 | 62.8 | -70.02 | -3,153.6 | -26.7 | 580.1 | 461.4 | 118.71 | 4.887 | |
| 10,400.0 | 7,131.6 | 10,151.0 | 6,932.3 | 65.7 | 64.7 | -70.01 | -3,253.5 | -24.6 | 580.2 | 457.9 | 122.25 | 4.746 | |
| 10,500.0 | 7,131.2 | 10,251.0 | 6,931.8 | 67.5 | 66.5 | -70.00 | -3,353.5 | -22.6 | 580.2 | 454.4 | 125.79 | 4.613 | |
| 10,600.0 | 7,130.9 | 10,351.0 | 6,931.3 | 69.4 | 68.4 | -69.99 | -3,453.5 | -20.5 | 580.3 | 450.9 | 129.34 | 4.486 | |
| 10,700.0 | 7,130.6 | 10,451.0 | 6,930.9 | 71.3 | 70.3 | -69.98 | -3,553.5 | -18.5 | 580.3 | 447.4 | 132.89 | 4.367 | |
| 10,800.0 | 7,130.2 | 10,551.0 | 6,930.4 | 73.1 | 72.2 | -69.97 | -3,653.5 | -16.4 | 580.4 | 443.9 | 136.45 | 4.253 | |
| 10,900.0 | 7,129.9 | 10,651.0 | 6,929.9 | 75.0 | 74.1 | -69.95 | -3,753.4 | -14.3 | 580.4 | 440.4 | 140.01 | 4.145 | |
| 11,000.0 | 7,129.5 | 10,751.0 | 6,929.4 | 76.8 | 75.9 | -69.94 | -3,853.4 | -12.3 | 580.5 | 436.9 | 143.58 | 4.043 | |
| 11,100.0 | 7,129.2 | 10,851.0 | 6,929.0 | 78.7 | 77.8 | -69.93 | -3,953.4 | -10.2 | 580.5 | 433.4 | 147.15 | 3.945 | |
| 11,200.0 | 7,128.8 | 10,951.0 | 6,928.5 | 80.6 | 79.7 | -69.92 | -4,053.4 | -8.1 | 580.5 | 429.8 | 150.72 | 3.852 | |
| 11,300.0 | 7,128.5 | 11,051.0 | 6,928.0 | 82.4 | 81.6 | -69.91 | -4,153.3 | -6.1 | 580.6 | 426.3 | 154.29 | 3.763 | |
| 11,400.0 | 7,128.1 | 11,151.0 | 6,927.6 | 84.3 | 83.5 | -69.90 | -4,253.3 | -4.0 | 580.6 | 422.8 | 157.87 | 3.678 | |
| 11,500.0 | 7,127.8 | 11,251.0 | 6,927.1 | 86.2 | 85.4 | -69.89 | -4,353.3 | -1.9 | 580.7 | 419.2 | 161.45 | 3.597 | |
| 11,600.0 | 7,127.4 | 11,351.0 | 6,926.6 | 88.1 | 87.3 | -69.88 | -4,453.3 | 0.1 | 580.7 | 415.7 | 165.03 | 3.519 | |
| 11,700.0 | 7,127.1 | 11,451.0 | 6,926.1 | 90.0 | 89.2 | -69.86 | -4,553.2 | 2.2 | 580.8 | 412.2 | 168.61 | 3.444 | |
| 11,717.3 | 7,127.0 | 11,468.3 | 6,926.1 | 90.3 | 89.5 | -69.86 | -4,570.6 | 2.5 | 580.8 | 411.5 | 169.23 | 3.432 | SF |

| | | | |
|---|---|---|---|
| **Company:** | Verdad Oil & Gas Corporation | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Project:** | SEC.2-T1N-R64W | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Reference Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | landmark |
| **Reference Design:** | Plan #1 (8-6-14) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W - Pastelak 01N-64W-02-5C - Wellbore #1 - Plan #1 (8-6-1 — **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 | 90.00 | 0.0 | 58.8 | 58.8 | | | | |
| 100.0 | 100.0 | 98.0 | 98.0 | 0.1 | 0.1 | 90.00 | 0.0 | 58.8 | 58.8 | 58.5 | 0.22 | 264.061 | |
| 200.0 | 200.0 | 198.0 | 198.0 | 0.3 | 0.3 | 90.00 | 0.0 | 58.8 | 58.8 | 58.1 | 0.67 | 87.727 | |
| 300.0 | 300.0 | 298.0 | 298.0 | 0.6 | 0.6 | 90.00 | 0.0 | 58.8 | 58.8 | 57.6 | 1.12 | 52.495 | |
| 400.0 | 400.0 | 398.0 | 398.0 | 0.8 | 0.8 | 90.00 | 0.0 | 58.8 | 58.8 | 57.2 | 1.57 | 37.454 | |
| 500.0 | 500.0 | 498.0 | 498.0 | 1.0 | 1.0 | 90.00 | 0.0 | 58.8 | 58.8 | 56.7 | 2.02 | 29.112 | |
| 600.0 | 600.0 | 598.0 | 598.0 | 1.2 | 1.2 | 90.00 | 0.0 | 58.8 | 58.8 | 56.3 | 2.47 | 23.809 | CC, ES |
| 700.0 | 700.0 | 698.0 | 698.0 | 1.5 | 1.5 | 166.18 | 0.0 | 58.8 | 60.5 | 57.5 | 2.91 | 20.784 | |
| 800.0 | 799.8 | 797.8 | 797.8 | 1.7 | 1.7 | 167.25 | 0.0 | 58.8 | 65.5 | 62.2 | 3.34 | 19.606 | |
| 900.0 | 899.5 | 897.5 | 897.5 | 1.9 | 1.9 | 168.71 | 0.0 | 58.8 | 74.1 | 70.3 | 3.78 | 19.598 | |
| 1,000.0 | 998.7 | 996.7 | 996.7 | 2.2 | 2.1 | 170.25 | 0.0 | 58.8 | 86.1 | 81.8 | 4.22 | 20.409 | |
| 1,100.0 | 1,097.5 | 1,095.5 | 1,095.5 | 2.5 | 2.3 | 171.71 | 0.0 | 58.8 | 101.4 | 96.8 | 4.65 | 21.791 | |
| 1,200.0 | 1,196.1 | 1,194.1 | 1,194.1 | 2.8 | 2.6 | 172.87 | 0.0 | 58.8 | 117.9 | 112.8 | 5.10 | 23.108 | |
| 1,300.0 | 1,294.7 | 1,292.7 | 1,292.7 | 3.1 | 2.8 | 173.75 | 0.0 | 58.8 | 134.4 | 128.9 | 5.55 | 24.200 | |
| 1,400.0 | 1,393.3 | 1,391.3 | 1,391.3 | 3.5 | 3.0 | 174.44 | 0.0 | 58.8 | 150.9 | 144.9 | 6.01 | 25.118 | |
| 1,500.0 | 1,491.9 | 1,489.9 | 1,489.9 | 3.8 | 3.2 | 174.99 | 0.0 | 58.8 | 167.5 | 161.0 | 6.47 | 25.900 | |
| 1,600.0 | 1,590.5 | 1,588.5 | 1,588.5 | 4.2 | 3.5 | 175.44 | 0.0 | 58.8 | 184.0 | 177.1 | 6.93 | 26.572 | |
| 1,700.0 | 1,689.1 | 1,687.1 | 1,687.1 | 4.6 | 3.7 | 175.82 | 0.0 | 58.8 | 200.6 | 193.2 | 7.39 | 27.155 | |
| 1,800.0 | 1,787.7 | 1,785.7 | 1,785.7 | 4.9 | 3.9 | 176.14 | 0.0 | 58.8 | 217.2 | 209.3 | 7.85 | 27.666 | |
| 1,900.0 | 1,886.4 | 1,884.4 | 1,884.4 | 5.3 | 4.1 | 176.41 | 0.0 | 58.8 | 233.8 | 225.5 | 8.31 | 28.117 | |
| 2,000.0 | 1,985.0 | 1,983.0 | 1,983.0 | 5.7 | 4.3 | 176.65 | 0.0 | 58.8 | 250.4 | 241.6 | 8.78 | 28.517 | |
| 2,100.0 | 2,083.6 | 2,081.6 | 2,081.6 | 6.0 | 4.6 | 176.86 | 0.0 | 58.8 | 267.0 | 257.7 | 9.25 | 28.875 | |
| 2,200.0 | 2,182.2 | 2,180.2 | 2,180.2 | 6.4 | 4.8 | 177.04 | 0.0 | 58.8 | 283.5 | 273.8 | 9.71 | 29.197 | |
| 2,300.0 | 2,280.8 | 2,279.6 | 2,279.6 | 6.8 | 5.0 | 177.05 | 0.8 | 58.8 | 300.0 | 289.9 | 10.18 | 29.474 | |
| 2,400.0 | 2,379.4 | 2,379.3 | 2,379.2 | 7.2 | 5.2 | 176.59 | 4.2 | 59.0 | 316.2 | 305.6 | 10.65 | 29.696 | |
| 2,500.0 | 2,478.0 | 2,478.9 | 2,478.6 | 7.6 | 5.5 | 175.73 | 10.1 | 59.4 | 332.1 | 321.0 | 11.12 | 29.869 | |
| 2,600.0 | 2,576.6 | 2,578.2 | 2,577.6 | 8.0 | 5.7 | 174.52 | 18.7 | 60.0 | 347.8 | 336.3 | 11.60 | 29.999 | |
| 2,700.0 | 2,675.2 | 2,677.2 | 2,676.0 | 8.3 | 5.9 | 173.01 | 29.7 | 60.8 | 363.6 | 351.5 | 12.08 | 30.092 | |
| 2,800.0 | 2,773.8 | 2,775.4 | 2,773.4 | 8.7 | 6.1 | 171.43 | 41.9 | 61.6 | 379.4 | 366.9 | 12.58 | 30.160 | |
| 2,900.0 | 2,872.5 | 2,873.7 | 2,870.9 | 9.1 | 6.4 | 169.99 | 54.2 | 62.4 | 395.6 | 382.5 | 13.09 | 30.219 | |
| 3,000.0 | 2,971.1 | 2,971.9 | 2,968.3 | 9.5 | 6.6 | 168.66 | 66.4 | 63.2 | 412.0 | 398.4 | 13.61 | 30.268 | |
| 3,100.0 | 3,069.7 | 3,070.1 | 3,065.8 | 9.9 | 6.9 | 167.43 | 78.6 | 64.1 | 428.5 | 414.4 | 14.14 | 30.309 | |
| 3,200.0 | 3,168.3 | 3,168.3 | 3,163.2 | 10.3 | 7.1 | 166.29 | 90.9 | 64.9 | 445.3 | 430.6 | 14.67 | 30.344 | |
| 3,300.0 | 3,266.9 | 3,266.5 | 3,260.6 | 10.6 | 7.4 | 165.23 | 103.1 | 65.7 | 462.2 | 447.0 | 15.22 | 30.373 | |
| 3,400.0 | 3,365.5 | 3,364.7 | 3,358.1 | 11.0 | 7.7 | 164.25 | 115.4 | 66.5 | 479.3 | 463.5 | 15.77 | 30.397 | |
| 3,500.0 | 3,464.1 | 3,462.9 | 3,455.5 | 11.4 | 7.9 | 163.34 | 127.6 | 67.4 | 496.5 | 480.1 | 16.32 | 30.418 | |
| 3,600.0 | 3,562.7 | 3,561.6 | 3,553.5 | 11.8 | 8.2 | 162.49 | 139.8 | 68.2 | 513.7 | 496.9 | 16.87 | 30.450 | |
| 3,700.0 | 3,661.3 | 3,661.7 | 3,653.0 | 12.2 | 8.4 | 161.91 | 150.1 | 68.9 | 530.9 | 513.5 | 17.38 | 30.547 | |
| 3,800.0 | 3,759.9 | 3,762.2 | 3,753.2 | 12.6 | 8.6 | 161.64 | 157.9 | 69.4 | 547.7 | 529.8 | 17.86 | 30.671 | |
| 3,900.0 | 3,858.6 | 3,862.8 | 3,853.6 | 13.0 | 8.8 | 161.65 | 163.1 | 69.8 | 564.2 | 545.9 | 18.31 | 30.805 | |
| 4,000.0 | 3,957.2 | 3,963.4 | 3,954.3 | 13.3 | 9.0 | 161.93 | 165.6 | 69.9 | 580.3 | 561.6 | 18.75 | 30.951 | |
| 4,100.0 | 4,055.8 | 4,062.9 | 4,053.8 | 13.7 | 9.2 | 162.40 | 165.9 | 70.0 | 596.2 | 577.0 | 19.18 | 31.089 | |
| 4,200.0 | 4,154.4 | 4,161.6 | 4,152.4 | 14.1 | 9.4 | 162.87 | 165.9 | 70.0 | 612.1 | 592.4 | 19.62 | 31.195 | |
| 4,300.0 | 4,253.0 | 4,260.2 | 4,251.0 | 14.5 | 9.6 | 163.31 | 165.9 | 70.0 | 628.0 | 607.9 | 20.07 | 31.285 | |
| 4,400.0 | 4,351.6 | 4,358.8 | 4,349.6 | 14.9 | 9.8 | 163.74 | 165.9 | 70.0 | 643.9 | 623.4 | 20.53 | 31.371 | |
| 4,500.0 | 4,450.2 | 4,457.4 | 4,448.2 | 15.3 | 10.0 | 164.14 | 165.9 | 70.0 | 659.9 | 638.9 | 20.98 | 31.455 | |
| 4,600.0 | 4,548.8 | 4,556.0 | 4,546.8 | 15.7 | 10.2 | 164.55 | 165.9 | 70.0 | 675.8 | 654.4 | 21.44 | 31.521 | |
| 4,700.0 | 4,647.8 | 4,655.0 | 4,645.8 | 15.9 | 10.5 | 164.93 | 165.9 | 70.0 | 689.4 | 667.5 | 21.88 | 31.502 | |
| 4,800.0 | 4,747.3 | 4,754.5 | 4,745.3 | 16.1 | 10.7 | 165.20 | 165.9 | 70.0 | 699.6 | 677.3 | 22.30 | 31.370 | |
| 4,900.0 | 4,847.0 | 4,854.2 | 4,845.0 | 16.3 | 10.9 | 165.39 | 165.9 | 70.0 | 706.4 | 683.7 | 22.69 | 31.132 | |
| 5,000.0 | 4,947.0 | 4,954.1 | 4,945.0 | 16.5 | 11.1 | 165.48 | 165.9 | 70.0 | 709.9 | 686.8 | 23.05 | 30.794 | |
| 5,100.0 | 5,047.0 | 5,054.1 | 5,045.0 | 16.6 | 11.3 | 89.71 | 165.9 | 70.0 | 710.4 | 687.0 | 23.37 | 30.392 | |

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

| | | | |
|---|---|---|---|
| **Company:** | Verdad Oil & Gas Corporation | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Project:** | SEC.2-T1N-R64W | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Reference Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | landmark |
| **Reference Design:** | Plan #1 (8-6-14) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W - Pastelak 01N-64W-02-5C - Wellbore #1 - Plan #1 (8-6-1

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,200.0 | 5,147.0 | 5,154.1 | 5,145.0 | 16.8 | 11.5 | 89.71 | 165.9 | 70.0 | 710.4 | 686.6 | 23.78 | 29.876 | |
| 5,300.0 | 5,247.0 | 5,254.1 | 5,245.0 | 16.9 | 11.7 | 89.71 | 165.9 | 70.0 | 710.4 | 686.2 | 24.18 | 29.375 | |
| 5,400.0 | 5,347.0 | 5,354.1 | 5,345.0 | 17.1 | 12.0 | 89.71 | 165.9 | 70.0 | 710.4 | 685.8 | 24.59 | 28.888 | |
| 5,500.0 | 5,447.0 | 5,454.1 | 5,445.0 | 17.2 | 12.2 | 89.71 | 165.9 | 70.0 | 710.4 | 685.4 | 25.00 | 28.416 | |
| 5,600.0 | 5,547.0 | 5,554.1 | 5,545.0 | 17.4 | 12.4 | 89.71 | 165.9 | 70.0 | 710.4 | 685.0 | 25.41 | 27.958 | |
| 5,700.0 | 5,647.0 | 5,654.1 | 5,645.0 | 17.5 | 12.6 | 89.71 | 165.9 | 70.0 | 710.4 | 684.5 | 25.82 | 27.513 | |
| 5,800.0 | 5,747.0 | 5,754.1 | 5,745.0 | 17.7 | 12.8 | 89.71 | 165.9 | 70.0 | 710.4 | 684.1 | 26.23 | 27.080 | |
| 5,900.0 | 5,847.0 | 5,854.1 | 5,845.0 | 17.8 | 13.0 | 89.71 | 165.9 | 70.0 | 710.4 | 683.7 | 26.65 | 26.660 | |
| 6,000.0 | 5,947.0 | 5,954.1 | 5,945.0 | 18.0 | 13.3 | 89.71 | 165.9 | 70.0 | 710.4 | 683.3 | 27.06 | 26.251 | |
| 6,100.0 | 6,047.0 | 6,054.1 | 6,045.0 | 18.1 | 13.5 | 89.71 | 165.9 | 70.0 | 710.4 | 682.9 | 27.48 | 25.854 | |
| 6,200.0 | 6,147.0 | 6,154.1 | 6,145.0 | 18.3 | 13.7 | 89.71 | 165.9 | 70.0 | 710.4 | 682.5 | 27.89 | 25.468 | |
| 6,300.0 | 6,247.0 | 6,254.1 | 6,245.0 | 18.5 | 13.9 | 89.71 | 165.9 | 70.0 | 710.4 | 682.1 | 28.31 | 25.092 | |
| 6,400.0 | 6,347.0 | 6,354.1 | 6,345.0 | 18.6 | 14.1 | 89.71 | 165.9 | 70.0 | 710.4 | 681.6 | 28.73 | 24.726 | |
| 6,500.0 | 6,447.0 | 6,454.1 | 6,445.0 | 18.8 | 14.4 | 89.71 | 165.9 | 70.0 | 710.4 | 681.2 | 29.15 | 24.371 | |
| 6,600.0 | 6,547.0 | 6,554.1 | 6,545.0 | 18.9 | 14.6 | 89.71 | 165.9 | 70.0 | 710.4 | 680.8 | 29.57 | 24.024 | |
| 6,700.0 | 6,646.9 | 6,653.6 | 6,644.4 | 19.1 | 14.8 | -89.11 | 165.3 | 70.0 | 710.4 | 680.4 | 30.01 | 23.670 | |
| 6,800.0 | 6,745.7 | 6,751.5 | 6,741.2 | 19.2 | 14.9 | -89.13 | 151.3 | 70.3 | 710.4 | 680.1 | 30.25 | 23.480 | |
| 6,900.0 | 6,839.9 | 6,850.0 | 6,834.2 | 19.3 | 15.0 | -89.19 | 119.3 | 70.9 | 710.4 | 680.0 | 30.40 | 23.367 | |
| 6,947.5 | 6,882.1 | 6,896.2 | 6,875.4 | 19.3 | 15.0 | -89.23 | 98.4 | 71.4 | 710.3 | 679.9 | 30.46 | 23.323 | |
| 7,000.0 | 6,926.1 | 6,947.8 | 6,918.9 | 19.3 | 15.0 | -89.28 | 70.8 | 71.9 | 710.3 | 679.8 | 30.52 | 23.271 | |
| 7,100.0 | 7,001.0 | 7,046.2 | 6,993.5 | 19.4 | 15.2 | -89.39 | 6.9 | 73.2 | 710.3 | 679.6 | 30.74 | 23.110 | |
| 7,200.0 | 7,062.0 | 7,144.9 | 7,055.0 | 19.5 | 15.3 | -89.52 | -70.1 | 74.8 | 710.3 | 679.2 | 31.15 | 22.802 | |
| 7,300.0 | 7,106.7 | 7,243.9 | 7,101.0 | 19.6 | 15.7 | -89.67 | -157.6 | 76.6 | 710.3 | 678.4 | 31.87 | 22.286 | |
| 7,400.0 | 7,133.6 | 7,343.3 | 7,129.6 | 19.9 | 16.2 | -89.84 | -252.6 | 78.6 | 710.3 | 677.3 | 32.96 | 21.553 | |
| 7,474.0 | 7,141.8 | 7,417.1 | 7,138.9 | 20.2 | 16.8 | -89.93 | -325.8 | 80.1 | 710.3 | 676.3 | 34.01 | 20.886 | |
| 7,500.0 | 7,141.7 | 7,443.1 | 7,139.7 | 20.3 | 17.0 | -90.00 | -351.7 | 80.6 | 710.3 | 675.9 | 34.40 | 20.650 | |
| 7,600.0 | 7,141.4 | 7,543.1 | 7,139.4 | 21.0 | 17.9 | -90.00 | -451.7 | 82.7 | 710.3 | 674.1 | 36.18 | 19.630 | |
| 7,700.0 | 7,141.0 | 7,643.1 | 7,139.1 | 21.8 | 18.9 | -90.00 | -551.7 | 84.8 | 710.3 | 672.0 | 38.26 | 18.566 | |
| 7,800.0 | 7,140.7 | 7,743.1 | 7,138.7 | 22.8 | 20.1 | -90.00 | -651.6 | 86.8 | 710.3 | 669.7 | 40.59 | 17.498 | |
| 7,900.0 | 7,140.3 | 7,843.1 | 7,138.4 | 23.9 | 21.4 | -90.00 | -751.6 | 88.9 | 710.3 | 667.2 | 43.14 | 16.464 | |
| 8,000.0 | 7,140.0 | 7,943.1 | 7,138.0 | 25.1 | 22.7 | -90.00 | -851.6 | 90.9 | 710.3 | 664.4 | 45.88 | 15.483 | |
| 8,100.0 | 7,139.6 | 8,043.1 | 7,137.7 | 26.4 | 24.2 | -90.00 | -951.6 | 93.0 | 710.3 | 661.5 | 48.76 | 14.568 | |
| 8,200.0 | 7,139.3 | 8,143.1 | 7,137.3 | 27.8 | 25.7 | -90.00 | -1,051.6 | 95.1 | 710.3 | 658.5 | 51.77 | 13.721 | |
| 8,300.0 | 7,138.9 | 8,243.1 | 7,137.0 | 29.3 | 27.3 | -90.00 | -1,151.5 | 97.1 | 710.3 | 655.4 | 54.88 | 12.942 | |
| 8,400.0 | 7,138.6 | 8,343.1 | 7,136.6 | 30.8 | 28.9 | -90.00 | -1,251.5 | 99.2 | 710.3 | 652.2 | 58.08 | 12.229 | |
| 8,500.0 | 7,138.2 | 8,443.1 | 7,136.3 | 32.3 | 30.5 | -90.00 | -1,351.5 | 101.3 | 710.3 | 648.9 | 61.36 | 11.576 | |
| 8,600.0 | 7,137.9 | 8,543.1 | 7,135.9 | 33.9 | 32.2 | -90.00 | -1,451.5 | 103.3 | 710.3 | 645.6 | 64.70 | 10.979 | |
| 8,700.0 | 7,137.5 | 8,643.1 | 7,135.6 | 35.6 | 33.9 | -90.00 | -1,551.4 | 105.4 | 710.3 | 642.2 | 68.09 | 10.431 | |
| 8,800.0 | 7,137.2 | 8,743.1 | 7,135.2 | 37.2 | 35.6 | -90.00 | -1,651.4 | 107.4 | 710.3 | 638.8 | 71.53 | 9.930 | |
| 8,900.0 | 7,136.8 | 8,843.1 | 7,134.9 | 38.9 | 37.4 | -90.00 | -1,751.4 | 109.5 | 710.3 | 635.3 | 75.01 | 9.469 | |
| 9,000.0 | 7,136.5 | 8,943.1 | 7,134.5 | 40.6 | 39.1 | -90.00 | -1,851.4 | 111.6 | 710.3 | 631.8 | 78.52 | 9.046 | |
| 9,100.0 | 7,136.1 | 9,043.1 | 7,134.2 | 42.3 | 40.9 | -90.00 | -1,951.4 | 113.6 | 710.3 | 628.2 | 82.07 | 8.655 | |
| 9,200.0 | 7,135.8 | 9,143.1 | 7,133.8 | 44.0 | 42.7 | -90.00 | -2,051.3 | 115.7 | 710.3 | 624.7 | 85.64 | 8.295 | |
| 9,300.0 | 7,135.4 | 9,243.1 | 7,133.5 | 45.8 | 44.5 | -90.00 | -2,151.3 | 117.8 | 710.3 | 621.1 | 89.23 | 7.961 | |
| 9,400.0 | 7,135.1 | 9,343.1 | 7,133.1 | 47.6 | 46.3 | -90.00 | -2,251.3 | 119.8 | 710.3 | 617.5 | 92.84 | 7.651 | |
| 9,500.0 | 7,134.7 | 9,443.1 | 7,132.8 | 49.3 | 48.1 | -90.00 | -2,351.3 | 121.9 | 710.3 | 613.8 | 96.47 | 7.363 | |
| 9,600.0 | 7,134.4 | 9,543.1 | 7,132.4 | 51.1 | 49.9 | -90.00 | -2,451.3 | 123.9 | 710.3 | 610.2 | 100.12 | 7.095 | |
| 9,700.0 | 7,134.0 | 9,643.1 | 7,132.1 | 52.9 | 51.8 | -90.00 | -2,551.2 | 126.0 | 710.3 | 606.5 | 103.78 | 6.844 | |
| 9,800.0 | 7,133.7 | 9,743.1 | 7,131.7 | 54.7 | 53.6 | -90.00 | -2,651.2 | 128.1 | 710.3 | 602.9 | 107.46 | 6.610 | |
| 9,900.0 | 7,133.3 | 9,843.1 | 7,131.4 | 56.5 | 55.5 | -90.00 | -2,751.2 | 130.1 | 710.3 | 599.2 | 111.14 | 6.391 | |
| 10,000.0 | 7,133.0 | 9,943.1 | 7,131.0 | 58.4 | 57.3 | -90.00 | -2,851.2 | 132.2 | 710.3 | 595.5 | 114.84 | 6.185 | |
| 10,100.0 | 7,132.6 | 10,043.1 | 7,130.7 | 60.2 | 59.2 | -90.00 | -2,951.1 | 134.3 | 710.3 | 591.8 | 118.55 | 5.992 | |

| | | | |
|---|---|---|---|
| **Company:** | Verdad Oil & Gas Corporation | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Project:** | SEC.2-T1N-R64W | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Reference Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | landmark |
| **Reference Design:** | Plan #1 (8-6-14) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W - Pastelak 01N-64W-02-5C - Wellbore #1 - Plan #1 (8-6-1

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10,200.0 | 7,132.3 | 10,143.1 | 7,130.3 | 62.0 | 61.0 | -90.00 | -3,051.1 | 136.3 | 710.3 | 588.1 | 122.26 | 5.810 | |
| 10,300.0 | 7,131.9 | 10,243.1 | 7,130.0 | 63.9 | 62.9 | -90.00 | -3,151.1 | 138.4 | 710.3 | 584.3 | 125.99 | 5.638 | |
| 10,400.0 | 7,131.6 | 10,343.1 | 7,129.6 | 65.7 | 64.8 | -90.00 | -3,251.1 | 140.4 | 710.3 | 580.6 | 129.72 | 5.476 | |
| 10,500.0 | 7,131.2 | 10,443.1 | 7,129.3 | 67.5 | 66.6 | -90.00 | -3,351.1 | 142.5 | 710.3 | 576.9 | 133.45 | 5.323 | |
| 10,600.0 | 7,130.9 | 10,543.1 | 7,129.0 | 69.4 | 68.5 | -90.00 | -3,451.0 | 144.6 | 710.3 | 573.1 | 137.20 | 5.177 | |
| 10,700.0 | 7,130.6 | 10,643.1 | 7,128.6 | 71.3 | 70.4 | -90.00 | -3,551.0 | 146.6 | 710.3 | 569.4 | 140.95 | 5.040 | |
| 10,800.0 | 7,130.2 | 10,743.1 | 7,128.3 | 73.1 | 72.2 | -90.00 | -3,651.0 | 148.7 | 710.3 | 565.6 | 144.70 | 4.909 | |
| 10,900.0 | 7,129.9 | 10,843.1 | 7,127.9 | 75.0 | 74.1 | -90.00 | -3,751.0 | 150.7 | 710.3 | 561.9 | 148.46 | 4.785 | |
| 11,000.0 | 7,129.5 | 10,943.1 | 7,127.6 | 76.8 | 76.0 | -90.00 | -3,850.9 | 152.8 | 710.3 | 558.1 | 152.22 | 4.666 | |
| 11,100.0 | 7,129.2 | 11,043.1 | 7,127.2 | 78.7 | 77.9 | -90.00 | -3,950.9 | 154.9 | 710.3 | 554.4 | 155.99 | 4.554 | |
| 11,200.0 | 7,128.8 | 11,143.1 | 7,126.9 | 80.6 | 79.8 | -90.00 | -4,050.9 | 156.9 | 710.3 | 550.6 | 159.76 | 4.446 | |
| 11,300.0 | 7,128.5 | 11,243.1 | 7,126.5 | 82.4 | 81.7 | -90.00 | -4,150.9 | 159.0 | 710.3 | 546.8 | 163.54 | 4.344 | |
| 11,400.0 | 7,128.1 | 11,343.1 | 7,126.2 | 84.3 | 83.6 | -90.00 | -4,250.9 | 161.1 | 710.3 | 543.0 | 167.31 | 4.246 | |
| 11,500.0 | 7,127.8 | 11,443.1 | 7,125.8 | 86.2 | 85.5 | -90.00 | -4,350.8 | 163.1 | 710.4 | 539.3 | 171.10 | 4.152 | |
| 11,600.0 | 7,127.4 | 11,543.1 | 7,125.5 | 88.1 | 87.3 | -90.00 | -4,450.8 | 165.2 | 710.4 | 535.5 | 174.88 | 4.062 | |
| 11,700.0 | 7,127.1 | 11,643.1 | 7,125.1 | 90.0 | 89.2 | -90.00 | -4,550.8 | 167.2 | 710.4 | 531.7 | 178.67 | 3.976 | |
| 11,717.3 | 7,127.0 | 11,660.4 | 7,125.1 | 90.3 | 89.6 | -90.00 | -4,568.1 | 167.6 | 710.4 | 531.0 | 179.32 | 3.961 | SF |

| | | | |
|---|---|---|---|
| **Company:** | Verdad Oil & Gas Corporation | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Project:** | SEC.2-T1N-R64W | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Reference Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | landmark |
| **Reference Design:** | Plan #1 (8-6-14) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W - Pastelak 01N-64W-02-6N - Wellbore #1 - Plan #1 (8-6-1 — **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 | 90.01 | 0.0 | 75.5 | 75.6 | | | | |
| 100.0 | 100.0 | 98.0 | 98.0 | 0.1 | 0.1 | 90.01 | 0.0 | 75.5 | 75.5 | 75.3 | 0.22 | 339.508 | |
| 200.0 | 200.0 | 198.0 | 198.0 | 0.3 | 0.3 | 90.01 | 0.0 | 75.5 | 75.5 | 74.9 | 0.67 | 112.791 | |
| 300.0 | 300.0 | 298.0 | 298.0 | 0.6 | 0.6 | 90.01 | 0.0 | 75.5 | 75.5 | 74.4 | 1.12 | 67.494 | |
| 400.0 | 400.0 | 398.0 | 398.0 | 0.8 | 0.8 | 90.01 | 0.0 | 75.5 | 75.5 | 74.0 | 1.57 | 48.155 | |
| 500.0 | 500.0 | 498.0 | 498.0 | 1.0 | 1.0 | 90.01 | 0.0 | 75.5 | 75.5 | 73.5 | 2.02 | 37.430 | |
| 600.0 | 600.0 | 598.0 | 598.0 | 1.2 | 1.2 | 90.01 | 0.0 | 75.5 | 75.5 | 73.1 | 2.47 | 30.612 | CC, ES |
| 700.0 | 700.0 | 698.0 | 698.0 | 1.5 | 1.5 | 166.10 | 0.0 | 75.5 | 77.2 | 74.3 | 2.91 | 26.556 | |
| 800.0 | 799.8 | 797.8 | 797.8 | 1.7 | 1.7 | 166.95 | 0.0 | 75.5 | 82.3 | 79.0 | 3.34 | 24.626 | |
| 900.0 | 899.5 | 897.5 | 897.5 | 1.9 | 1.9 | 168.16 | 0.0 | 75.5 | 90.8 | 87.1 | 3.78 | 24.034 | |
| 1,000.0 | 998.7 | 996.7 | 996.7 | 2.2 | 2.1 | 169.51 | 0.0 | 75.5 | 102.8 | 98.6 | 4.22 | 24.379 | |
| 1,100.0 | 1,097.5 | 1,095.5 | 1,095.5 | 2.5 | 2.3 | 170.84 | 0.0 | 75.5 | 118.1 | 113.5 | 4.66 | 25.378 | |
| 1,200.0 | 1,196.1 | 1,194.1 | 1,194.1 | 2.8 | 2.6 | 171.97 | 0.0 | 75.5 | 134.6 | 129.5 | 5.10 | 26.372 | |
| 1,300.0 | 1,294.7 | 1,292.7 | 1,292.7 | 3.1 | 2.8 | 172.85 | 0.0 | 75.5 | 151.1 | 145.5 | 5.55 | 27.193 | |
| 1,400.0 | 1,393.3 | 1,391.3 | 1,391.3 | 3.5 | 3.0 | 173.56 | 0.0 | 75.5 | 167.6 | 161.5 | 6.01 | 27.879 | |
| 1,500.0 | 1,491.9 | 1,489.9 | 1,489.9 | 3.8 | 3.2 | 174.14 | 0.0 | 75.5 | 184.1 | 177.6 | 6.47 | 28.461 | |
| 1,600.0 | 1,590.5 | 1,588.5 | 1,588.5 | 4.2 | 3.5 | 174.62 | 0.0 | 75.5 | 200.6 | 193.7 | 6.93 | 28.960 | |
| 1,700.0 | 1,689.1 | 1,684.4 | 1,684.4 | 4.6 | 3.7 | 174.82 | 0.7 | 76.2 | 217.7 | 210.3 | 7.38 | 29.499 | |
| 1,800.0 | 1,787.7 | 1,779.4 | 1,779.4 | 4.9 | 3.9 | 174.50 | 3.0 | 78.5 | 236.2 | 228.4 | 7.83 | 30.159 | |
| 1,900.0 | 1,886.4 | 1,873.9 | 1,873.6 | 5.3 | 4.1 | 173.80 | 7.1 | 82.3 | 256.1 | 247.8 | 8.29 | 30.912 | |
| 2,000.0 | 1,985.0 | 1,967.6 | 1,967.0 | 5.7 | 4.3 | 172.80 | 12.7 | 87.8 | 277.5 | 268.8 | 8.74 | 31.742 | |
| 2,100.0 | 2,083.6 | 2,062.3 | 2,061.2 | 6.0 | 4.5 | 171.61 | 20.0 | 94.8 | 300.3 | 291.1 | 9.21 | 32.606 | |
| 2,200.0 | 2,182.2 | 2,159.4 | 2,157.7 | 6.4 | 4.8 | 170.50 | 27.7 | 102.2 | 323.4 | 313.8 | 9.69 | 33.395 | |
| 2,300.0 | 2,280.8 | 2,256.5 | 2,254.3 | 6.8 | 5.0 | 169.54 | 35.4 | 109.6 | 346.7 | 336.5 | 10.17 | 34.102 | |
| 2,400.0 | 2,379.4 | 2,353.6 | 2,350.8 | 7.2 | 5.2 | 168.70 | 43.1 | 117.0 | 370.0 | 359.4 | 10.65 | 34.736 | |
| 2,500.0 | 2,478.0 | 2,450.8 | 2,447.3 | 7.6 | 5.5 | 167.95 | 50.8 | 124.4 | 393.4 | 382.3 | 11.14 | 35.310 | |
| 2,600.0 | 2,576.6 | 2,547.9 | 2,543.8 | 8.0 | 5.7 | 167.30 | 58.5 | 131.8 | 416.9 | 405.2 | 11.63 | 35.830 | |
| 2,700.0 | 2,675.2 | 2,645.0 | 2,640.3 | 8.3 | 6.0 | 166.71 | 66.2 | 139.2 | 440.4 | 428.2 | 12.13 | 36.302 | |
| 2,800.0 | 2,773.8 | 2,742.1 | 2,736.8 | 8.7 | 6.3 | 166.18 | 73.9 | 146.6 | 463.9 | 451.3 | 12.63 | 36.734 | |
| 2,900.0 | 2,872.5 | 2,839.2 | 2,833.4 | 9.1 | 6.5 | 165.70 | 81.7 | 154.0 | 487.5 | 474.3 | 13.13 | 37.128 | |
| 3,000.0 | 2,971.1 | 2,936.3 | 2,929.9 | 9.5 | 6.8 | 165.27 | 89.4 | 161.4 | 511.1 | 497.4 | 13.63 | 37.491 | |
| 3,100.0 | 3,069.7 | 3,033.4 | 3,026.4 | 9.9 | 7.1 | 164.87 | 97.1 | 168.8 | 534.7 | 520.6 | 14.14 | 37.824 | |
| 3,200.0 | 3,168.3 | 3,130.5 | 3,122.9 | 10.3 | 7.3 | 164.51 | 104.8 | 176.2 | 558.4 | 543.7 | 14.64 | 38.133 | |
| 3,300.0 | 3,266.9 | 3,227.6 | 3,219.4 | 10.6 | 7.6 | 164.18 | 112.5 | 183.7 | 582.0 | 566.9 | 15.15 | 38.418 | |
| 3,400.0 | 3,365.5 | 3,324.7 | 3,315.9 | 11.0 | 7.9 | 163.87 | 120.2 | 191.1 | 605.7 | 590.0 | 15.66 | 38.683 | |
| 3,500.0 | 3,464.1 | 3,421.8 | 3,412.4 | 11.4 | 8.2 | 163.59 | 127.9 | 198.5 | 629.4 | 613.2 | 16.17 | 38.930 | |
| 3,600.0 | 3,562.7 | 3,518.9 | 3,509.0 | 11.8 | 8.4 | 163.33 | 135.6 | 205.9 | 653.1 | 636.4 | 16.68 | 39.160 | |
| 3,700.0 | 3,661.3 | 3,616.0 | 3,605.5 | 12.2 | 8.7 | 163.08 | 143.3 | 213.3 | 676.8 | 659.7 | 17.19 | 39.375 | |
| 3,800.0 | 3,759.9 | 3,716.6 | 3,705.5 | 12.6 | 9.0 | 162.85 | 151.3 | 220.9 | 700.5 | 682.8 | 17.70 | 39.579 | |
| 3,900.0 | 3,858.6 | 3,829.4 | 3,817.8 | 13.0 | 9.2 | 162.74 | 158.5 | 227.8 | 722.7 | 704.5 | 18.19 | 39.737 | |
| 4,000.0 | 3,957.2 | 3,943.2 | 3,931.4 | 13.3 | 9.5 | 162.82 | 163.3 | 232.5 | 742.9 | 724.2 | 18.66 | 39.803 | |
| 4,100.0 | 4,055.8 | 4,057.9 | 4,046.0 | 13.7 | 9.7 | 163.07 | 165.7 | 234.8 | 760.8 | 741.7 | 19.13 | 39.782 | |
| 4,200.0 | 4,154.4 | 4,164.2 | 4,152.4 | 14.1 | 9.9 | 163.44 | 166.0 | 235.0 | 777.0 | 757.4 | 19.57 | 39.703 | |
| 4,300.0 | 4,253.0 | 4,262.9 | 4,251.0 | 14.5 | 10.0 | 163.78 | 166.0 | 235.0 | 793.0 | 772.9 | 20.02 | 39.605 | |
| 4,400.0 | 4,351.6 | 4,361.5 | 4,349.6 | 14.9 | 10.2 | 164.11 | 166.0 | 235.0 | 808.9 | 788.5 | 20.48 | 39.501 | |
| 4,500.0 | 4,450.2 | 4,460.1 | 4,448.2 | 15.3 | 10.4 | 164.42 | 166.0 | 235.0 | 825.0 | 804.0 | 20.94 | 39.401 | |
| 4,600.0 | 4,548.8 | 4,558.7 | 4,546.8 | 15.7 | 10.7 | 164.75 | 166.0 | 235.0 | 840.9 | 819.5 | 21.41 | 39.285 | |
| 4,700.0 | 4,647.8 | 4,657.7 | 4,645.8 | 15.9 | 10.9 | 165.07 | 166.0 | 235.0 | 854.4 | 832.6 | 21.86 | 39.085 | |
| 4,800.0 | 4,747.3 | 4,757.1 | 4,745.3 | 16.1 | 11.1 | 165.30 | 166.0 | 235.0 | 864.6 | 842.4 | 22.29 | 38.791 | |
| 4,900.0 | 4,847.0 | 4,856.9 | 4,845.0 | 16.3 | 11.3 | 165.45 | 166.0 | 235.0 | 871.5 | 848.8 | 22.69 | 38.410 | |
| 5,000.0 | 4,947.0 | 4,956.8 | 4,945.0 | 16.5 | 11.5 | 165.53 | 166.0 | 235.0 | 875.0 | 851.9 | 23.06 | 37.945 | |
| 5,100.0 | 5,047.0 | 5,056.8 | 5,045.0 | 16.6 | 11.7 | 89.76 | 166.0 | 235.0 | 875.5 | 852.1 | 23.40 | 37.421 | |

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

| | | | |
|---|---|---|---|
| **Company:** | Verdad Oil & Gas Corporation | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Project:** | SEC.2-T1N-R64W | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Reference Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | landmark |
| **Reference Design:** | Plan #1 (8-6-14) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W - Pastelak 01N-64W-02-6N - Wellbore #1 - Plan #1 (8-6-1

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,200.0 | 5,147.0 | 5,156.8 | 5,145.0 | 16.8 | 11.9 | 89.76 | 166.0 | 235.0 | 875.5 | 851.7 | 23.80 | 36.790 | |
| 5,300.0 | 5,247.0 | 5,256.8 | 5,245.0 | 16.9 | 12.1 | 89.76 | 166.0 | 235.0 | 875.5 | 851.3 | 24.20 | 36.177 | |
| 5,400.0 | 5,347.0 | 5,356.8 | 5,345.0 | 17.1 | 12.3 | 89.76 | 166.0 | 235.0 | 875.5 | 850.9 | 24.60 | 35.582 | |
| 5,500.0 | 5,447.0 | 5,456.8 | 5,445.0 | 17.2 | 12.5 | 89.76 | 166.0 | 235.0 | 875.5 | 850.4 | 25.01 | 35.005 | |
| 5,600.0 | 5,547.0 | 5,556.8 | 5,545.0 | 17.4 | 12.7 | 89.76 | 166.0 | 235.0 | 875.5 | 850.0 | 25.42 | 34.443 | |
| 5,700.0 | 5,647.0 | 5,656.8 | 5,645.0 | 17.5 | 12.9 | 89.76 | 166.0 | 235.0 | 875.5 | 849.6 | 25.83 | 33.898 | |
| 5,800.0 | 5,747.0 | 5,756.8 | 5,745.0 | 17.7 | 13.1 | 89.76 | 166.0 | 235.0 | 875.5 | 849.2 | 26.24 | 33.368 | |
| 5,900.0 | 5,847.0 | 5,856.8 | 5,845.0 | 17.8 | 13.4 | 89.76 | 166.0 | 235.0 | 875.5 | 848.8 | 26.65 | 32.853 | |
| 6,000.0 | 5,947.0 | 5,956.8 | 5,945.0 | 18.0 | 13.6 | 89.76 | 166.0 | 235.0 | 875.5 | 848.4 | 27.06 | 32.352 | |
| 6,100.0 | 6,047.0 | 6,056.8 | 6,045.0 | 18.1 | 13.8 | 89.76 | 166.0 | 235.0 | 875.5 | 848.0 | 27.47 | 31.865 | |
| 6,200.0 | 6,147.0 | 6,156.8 | 6,145.0 | 18.3 | 14.0 | 89.76 | 166.0 | 235.0 | 875.5 | 847.6 | 27.89 | 31.391 | |
| 6,300.0 | 6,247.0 | 6,256.8 | 6,245.0 | 18.5 | 14.2 | 89.76 | 166.0 | 235.0 | 875.5 | 847.2 | 28.30 | 30.930 | |
| 6,400.0 | 6,347.0 | 6,356.8 | 6,345.0 | 18.6 | 14.4 | 89.76 | 166.0 | 235.0 | 875.5 | 846.7 | 28.72 | 30.481 | |
| 6,458.0 | 6,405.0 | 6,414.8 | 6,403.0 | 18.7 | 14.5 | 89.76 | 166.0 | 235.0 | 875.5 | 846.5 | 28.96 | 30.226 | |
| 6,500.0 | 6,447.0 | 6,456.2 | 6,444.4 | 18.8 | 14.6 | 89.78 | 165.6 | 235.1 | 875.5 | 846.3 | 29.13 | 30.055 | |
| 6,600.0 | 6,547.0 | 6,551.6 | 6,538.8 | 18.9 | 14.8 | 90.60 | 153.2 | 235.3 | 875.8 | 846.3 | 29.43 | 29.756 | |
| 6,700.0 | 6,646.9 | 6,640.0 | 6,623.0 | 19.1 | 14.8 | -86.46 | 126.5 | 235.9 | 877.2 | 847.5 | 29.68 | 29.558 | |
| 6,800.0 | 6,745.7 | 6,723.0 | 6,696.8 | 19.2 | 14.9 | -84.43 | 88.9 | 236.6 | 879.9 | 850.1 | 29.80 | 29.530 | |
| 6,900.0 | 6,839.9 | 6,800.0 | 6,759.2 | 19.3 | 15.0 | -82.64 | 43.9 | 237.6 | 883.3 | 853.4 | 29.88 | 29.561 | |
| 7,000.0 | 6,926.1 | 6,880.3 | 6,816.5 | 19.3 | 15.0 | -80.97 | -12.3 | 238.7 | 886.9 | 856.9 | 29.99 | 29.577 | |
| 7,100.0 | 7,001.0 | 6,950.0 | 6,858.7 | 19.4 | 15.1 | -79.68 | -67.7 | 239.9 | 890.4 | 860.3 | 30.16 | 29.523 | |
| 7,200.0 | 7,062.0 | 7,030.3 | 6,897.6 | 19.5 | 15.4 | -78.56 | -137.8 | 241.3 | 893.4 | 862.9 | 30.52 | 29.271 | |
| 7,300.0 | 7,106.7 | 7,100.0 | 6,922.3 | 19.6 | 15.7 | -77.86 | -202.9 | 242.7 | 895.6 | 864.5 | 31.06 | 28.831 | |
| 7,400.0 | 7,133.6 | 7,176.7 | 6,939.2 | 19.9 | 16.2 | -77.47 | -277.6 | 244.2 | 896.7 | 864.8 | 31.92 | 28.089 | |
| 7,500.0 | 7,141.7 | 7,250.0 | 6,944.9 | 20.3 | 16.7 | -77.45 | -350.7 | 245.7 | 896.8 | 863.7 | 33.06 | 27.129 | |
| 7,526.8 | 7,141.6 | 7,273.5 | 6,944.9 | 20.5 | 16.9 | -77.46 | -374.2 | 246.2 | 896.7 | 863.3 | 33.48 | 26.783 | |
| 7,600.0 | 7,141.4 | 7,346.7 | 6,944.5 | 21.0 | 17.6 | -77.45 | -447.4 | 247.7 | 896.8 | 862.0 | 34.78 | 25.782 | |
| 7,700.0 | 7,141.0 | 7,446.7 | 6,944.0 | 21.8 | 18.7 | -77.44 | -547.4 | 249.8 | 896.8 | 860.0 | 36.82 | 24.356 | |
| 7,800.0 | 7,140.7 | 7,546.7 | 6,943.6 | 22.8 | 19.9 | -77.43 | -647.3 | 251.8 | 896.8 | 857.7 | 39.12 | 22.927 | |
| 7,900.0 | 7,140.3 | 7,646.7 | 6,943.1 | 23.9 | 21.2 | -77.43 | -747.3 | 253.9 | 896.8 | 855.2 | 41.63 | 21.545 | |
| 8,000.0 | 7,140.0 | 7,746.7 | 6,942.6 | 25.1 | 22.5 | -77.42 | -847.3 | 255.9 | 896.9 | 852.6 | 44.32 | 20.238 | |
| 8,100.0 | 7,139.6 | 7,846.7 | 6,942.2 | 26.4 | 24.0 | -77.41 | -947.3 | 258.0 | 896.9 | 849.8 | 47.15 | 19.021 | |
| 8,200.0 | 7,139.3 | 7,946.7 | 6,941.7 | 27.8 | 25.5 | -77.40 | -1,047.2 | 260.1 | 896.9 | 846.8 | 50.11 | 17.898 | |
| 8,300.0 | 7,138.9 | 8,046.7 | 6,941.2 | 29.3 | 27.1 | -77.40 | -1,147.2 | 262.1 | 897.0 | 843.8 | 53.18 | 16.868 | |
| 8,400.0 | 7,138.6 | 8,146.7 | 6,940.7 | 30.8 | 28.7 | -77.39 | -1,247.2 | 264.2 | 897.0 | 840.7 | 56.32 | 15.926 | |
| 8,500.0 | 7,138.2 | 8,246.7 | 6,940.3 | 32.3 | 30.4 | -77.38 | -1,347.2 | 266.2 | 897.0 | 837.5 | 59.54 | 15.065 | |
| 8,600.0 | 7,137.9 | 8,346.7 | 6,939.8 | 33.9 | 32.0 | -77.37 | -1,447.2 | 268.3 | 897.0 | 834.2 | 62.82 | 14.279 | |
| 8,700.0 | 7,137.5 | 8,446.7 | 6,939.3 | 35.6 | 33.7 | -77.37 | -1,547.1 | 270.4 | 897.1 | 830.9 | 66.16 | 13.560 | |
| 8,800.0 | 7,137.2 | 8,546.7 | 6,938.9 | 37.2 | 35.5 | -77.36 | -1,647.1 | 272.4 | 897.1 | 827.6 | 69.53 | 12.902 | |
| 8,900.0 | 7,136.8 | 8,646.7 | 6,938.4 | 38.9 | 37.2 | -77.35 | -1,747.1 | 274.5 | 897.1 | 824.2 | 72.95 | 12.298 | |
| 9,000.0 | 7,136.5 | 8,746.7 | 6,937.9 | 40.6 | 39.0 | -77.34 | -1,847.1 | 276.5 | 897.1 | 820.8 | 76.39 | 11.744 | |
| 9,100.0 | 7,136.1 | 8,846.7 | 6,937.4 | 42.3 | 40.8 | -77.34 | -1,947.0 | 278.6 | 897.2 | 817.3 | 79.87 | 11.233 | |
| 9,200.0 | 7,135.8 | 8,946.7 | 6,937.0 | 44.0 | 42.6 | -77.33 | -2,047.0 | 280.7 | 897.2 | 813.8 | 83.37 | 10.761 | |
| 9,300.0 | 7,135.4 | 9,046.7 | 6,936.5 | 45.8 | 44.4 | -77.32 | -2,147.0 | 282.7 | 897.2 | 810.3 | 86.90 | 10.325 | |
| 9,400.0 | 7,135.1 | 9,146.7 | 6,936.0 | 47.6 | 46.2 | -77.31 | -2,247.0 | 284.8 | 897.3 | 806.8 | 90.44 | 9.921 | |
| 9,500.0 | 7,134.7 | 9,246.7 | 6,935.6 | 49.3 | 48.0 | -77.31 | -2,347.0 | 286.9 | 897.3 | 803.3 | 94.00 | 9.546 | |
| 9,600.0 | 7,134.4 | 9,346.7 | 6,935.1 | 51.1 | 49.8 | -77.30 | -2,446.9 | 288.9 | 897.3 | 799.7 | 97.57 | 9.196 | |
| 9,700.0 | 7,134.0 | 9,446.7 | 6,934.6 | 52.9 | 51.7 | -77.29 | -2,546.9 | 291.0 | 897.3 | 796.2 | 101.16 | 8.870 | |
| 9,800.0 | 7,133.7 | 9,546.7 | 6,934.1 | 54.7 | 53.5 | -77.28 | -2,646.9 | 293.0 | 897.4 | 792.6 | 104.76 | 8.566 | |
| 9,900.0 | 7,133.3 | 9,646.7 | 6,933.7 | 56.5 | 55.4 | -77.27 | -2,746.9 | 295.1 | 897.4 | 789.0 | 108.37 | 8.280 | |
| 10,000.0 | 7,133.0 | 9,746.7 | 6,933.2 | 58.4 | 57.2 | -77.27 | -2,846.8 | 297.2 | 897.4 | 785.4 | 112.00 | 8.013 | |
| 10,100.0 | 7,132.6 | 9,846.7 | 6,932.7 | 60.2 | 59.1 | -77.26 | -2,946.8 | 299.2 | 897.4 | 781.8 | 115.63 | 7.762 | |

| | | | |
|---|---|---|---|
| **Company:** | Verdad Oil & Gas Corporation | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Project:** | SEC.2-T1N-R64W | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Reference Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | landmark |
| **Reference Design:** | Plan #1 (8-6-14) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W - Pastelak 01N-64W-02-6N - Wellbore #1 - Plan #1 (8-6-1

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10,200.0 | 7,132.3 | 9,946.7 | 6,932.3 | 62.0 | 60.9 | -77.25 | -3,046.8 | 301.3 | 897.5 | 778.2 | 119.27 | 7.525 | |
| 10,300.0 | 7,131.9 | 10,046.7 | 6,931.8 | 63.9 | 62.8 | -77.24 | -3,146.8 | 303.3 | 897.5 | 774.6 | 122.91 | 7.302 | |
| 10,400.0 | 7,131.6 | 10,146.7 | 6,931.3 | 65.7 | 64.7 | -77.24 | -3,246.7 | 305.4 | 897.5 | 771.0 | 126.57 | 7.091 | |
| 10,500.0 | 7,131.2 | 10,246.7 | 6,930.8 | 67.5 | 66.5 | -77.23 | -3,346.7 | 307.5 | 897.6 | 767.3 | 130.22 | 6.892 | |
| 10,600.0 | 7,130.9 | 10,346.7 | 6,930.4 | 69.4 | 68.4 | -77.22 | -3,446.7 | 309.5 | 897.6 | 763.7 | 133.89 | 6.704 | |
| 10,700.0 | 7,130.6 | 10,446.7 | 6,929.9 | 71.3 | 70.3 | -77.21 | -3,546.7 | 311.6 | 897.6 | 760.1 | 137.56 | 6.525 | |
| 10,800.0 | 7,130.2 | 10,546.7 | 6,929.4 | 73.1 | 72.2 | -77.21 | -3,646.7 | 313.6 | 897.6 | 756.4 | 141.23 | 6.356 | |
| 10,900.0 | 7,129.9 | 10,646.7 | 6,929.0 | 75.0 | 74.0 | -77.20 | -3,746.6 | 315.7 | 897.7 | 752.8 | 144.91 | 6.195 | |
| 11,000.0 | 7,129.5 | 10,746.7 | 6,928.5 | 76.8 | 75.9 | -77.19 | -3,846.6 | 317.8 | 897.7 | 749.1 | 148.60 | 6.041 | |
| 11,100.0 | 7,129.2 | 10,846.7 | 6,928.0 | 78.7 | 77.8 | -77.18 | -3,946.6 | 319.8 | 897.7 | 745.4 | 152.28 | 5.895 | |
| 11,200.0 | 7,128.8 | 10,946.7 | 6,927.5 | 80.6 | 79.7 | -77.18 | -4,046.6 | 321.9 | 897.7 | 741.8 | 155.97 | 5.756 | |
| 11,300.0 | 7,128.5 | 11,046.7 | 6,927.1 | 82.4 | 81.6 | -77.17 | -4,146.5 | 324.0 | 897.8 | 738.1 | 159.67 | 5.623 | |
| 11,400.0 | 7,128.1 | 11,146.7 | 6,926.6 | 84.3 | 83.5 | -77.16 | -4,246.5 | 326.0 | 897.8 | 734.4 | 163.36 | 5.496 | |
| 11,500.0 | 7,127.8 | 11,246.7 | 6,926.1 | 86.2 | 85.4 | -77.15 | -4,346.5 | 328.1 | 897.8 | 730.8 | 167.06 | 5.374 | |
| 11,600.0 | 7,127.4 | 11,346.7 | 6,925.7 | 88.1 | 87.3 | -77.15 | -4,446.5 | 330.1 | 897.9 | 727.1 | 170.76 | 5.258 | |
| 11,700.0 | 7,127.1 | 11,446.7 | 6,925.2 | 90.0 | 89.2 | -77.14 | -4,546.5 | 332.2 | 897.9 | 723.4 | 174.47 | 5.146 | |
| 11,717.3 | 7,127.0 | 11,464.1 | 6,925.1 | 90.3 | 89.5 | -77.14 | -4,563.8 | 332.6 | 897.9 | 722.8 | 175.11 | 5.128 SF | |

| | | | |
|---|---|---|---|
| **Company:** | Verdad Oil & Gas Corporation | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Project:** | SEC.2-T1N-R64W | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Reference Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | landmark |
| **Reference Design:** | Plan #1 (8-6-14) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W - Pastelak 01N-64W-02-7N - Wellbore #1 - Plan #1 (8-6-1

**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 | 90.02 | 0.0 | 89.5 | 89.6 | | | | |
| 100.0 | 100.0 | 98.0 | 98.0 | 0.1 | 0.1 | 90.02 | 0.0 | 89.5 | 89.5 | 89.3 | 0.22 | 402.379 | |
| 200.0 | 200.0 | 198.0 | 198.0 | 0.3 | 0.3 | 90.02 | 0.0 | 89.5 | 89.5 | 88.9 | 0.67 | 133.679 | |
| 300.0 | 300.0 | 298.0 | 298.0 | 0.6 | 0.6 | 90.02 | 0.0 | 89.5 | 89.5 | 88.4 | 1.12 | 79.993 | |
| 400.0 | 400.0 | 398.0 | 398.0 | 0.8 | 0.8 | 90.02 | 0.0 | 89.5 | 89.5 | 88.0 | 1.57 | 57.072 | |
| 500.0 | 500.0 | 498.0 | 498.0 | 1.0 | 1.0 | 90.02 | 0.0 | 89.5 | 89.5 | 87.5 | 2.02 | 44.361 | |
| 600.0 | 600.0 | 598.0 | 598.0 | 1.2 | 1.2 | 90.02 | 0.0 | 89.5 | 89.5 | 87.1 | 2.47 | 36.281 | CC, ES |
| 700.0 | 700.0 | 698.0 | 698.0 | 1.5 | 1.5 | 166.06 | 0.0 | 89.5 | 91.2 | 88.3 | 2.91 | 31.366 | |
| 800.0 | 799.8 | 797.8 | 797.8 | 1.7 | 1.7 | 166.79 | 0.0 | 89.5 | 96.3 | 93.0 | 3.34 | 28.810 | |
| 900.0 | 899.5 | 897.5 | 897.5 | 1.9 | 1.9 | 167.84 | 0.0 | 89.5 | 104.8 | 101.0 | 3.78 | 27.733 | |
| 1,000.0 | 998.7 | 996.7 | 996.7 | 2.2 | 2.1 | 169.05 | 0.0 | 89.5 | 116.8 | 112.5 | 4.22 | 27.690 | SF |
| 1,100.0 | 1,097.5 | 1,095.5 | 1,095.5 | 2.5 | 2.3 | 170.30 | 0.0 | 89.5 | 132.1 | 127.4 | 4.66 | 28.371 | |
| 1,200.0 | 1,196.1 | 1,194.1 | 1,194.1 | 2.8 | 2.6 | 171.38 | 0.0 | 89.5 | 148.5 | 143.4 | 5.10 | 29.096 | |
| 1,300.0 | 1,294.7 | 1,292.7 | 1,292.7 | 3.1 | 2.8 | 172.24 | 0.0 | 89.5 | 164.9 | 159.4 | 5.56 | 29.690 | |
| 1,400.0 | 1,393.3 | 1,391.3 | 1,391.3 | 3.5 | 3.0 | 172.95 | 0.0 | 89.5 | 181.4 | 175.4 | 6.01 | 30.183 | |
| 1,500.0 | 1,491.9 | 1,486.3 | 1,486.3 | 3.8 | 3.2 | 173.35 | 0.4 | 90.4 | 198.8 | 192.3 | 6.46 | 30.785 | |
| 1,600.0 | 1,590.5 | 1,580.2 | 1,580.2 | 4.2 | 3.4 | 173.32 | 2.0 | 93.3 | 218.1 | 211.2 | 6.90 | 31.606 | |
| 1,700.0 | 1,689.1 | 1,673.4 | 1,673.2 | 4.6 | 3.6 | 172.98 | 4.6 | 98.2 | 239.3 | 232.0 | 7.34 | 32.588 | |
| 1,800.0 | 1,787.7 | 1,765.7 | 1,765.1 | 4.9 | 3.8 | 172.39 | 8.2 | 105.0 | 262.5 | 254.7 | 7.79 | 33.699 | |
| 1,900.0 | 1,886.4 | 1,857.0 | 1,855.9 | 5.3 | 4.0 | 171.65 | 12.8 | 113.6 | 287.7 | 279.4 | 8.24 | 34.909 | |
| 2,000.0 | 1,985.0 | 1,952.3 | 1,950.5 | 5.7 | 4.3 | 170.85 | 18.3 | 124.0 | 314.1 | 305.4 | 8.70 | 36.097 | |
| 2,100.0 | 2,083.6 | 2,048.6 | 2,046.1 | 6.0 | 4.5 | 170.15 | 23.9 | 134.5 | 340.7 | 331.5 | 9.17 | 37.162 | |
| 2,200.0 | 2,182.2 | 2,145.0 | 2,141.7 | 6.4 | 4.8 | 169.56 | 29.4 | 145.0 | 367.3 | 357.6 | 9.64 | 38.117 | |
| 2,300.0 | 2,280.8 | 2,241.3 | 2,237.3 | 6.8 | 5.0 | 169.04 | 35.0 | 155.5 | 393.9 | 383.8 | 10.11 | 38.959 | |
| 2,400.0 | 2,379.4 | 2,337.6 | 2,332.9 | 7.2 | 5.3 | 168.59 | 40.6 | 166.0 | 420.5 | 410.0 | 10.59 | 39.726 | |
| 2,500.0 | 2,478.0 | 2,434.0 | 2,428.5 | 7.6 | 5.6 | 168.20 | 46.2 | 176.5 | 447.2 | 436.1 | 11.06 | 40.418 | |
| 2,600.0 | 2,576.6 | 2,530.3 | 2,524.1 | 8.0 | 5.9 | 167.85 | 51.8 | 187.0 | 473.9 | 462.3 | 11.55 | 41.046 | |
| 2,700.0 | 2,675.2 | 2,626.6 | 2,619.7 | 8.3 | 6.1 | 167.54 | 57.3 | 197.6 | 500.6 | 488.6 | 12.03 | 41.618 | |
| 2,800.0 | 2,773.8 | 2,723.0 | 2,715.3 | 8.7 | 6.4 | 167.25 | 62.9 | 208.1 | 527.3 | 514.8 | 12.51 | 42.141 | |
| 2,900.0 | 2,872.5 | 2,819.3 | 2,810.9 | 9.1 | 6.7 | 167.00 | 68.5 | 218.6 | 554.0 | 541.0 | 13.00 | 42.621 | |
| 3,000.0 | 2,971.1 | 2,915.7 | 2,906.5 | 9.5 | 7.0 | 166.77 | 74.1 | 229.1 | 580.8 | 567.3 | 13.49 | 43.062 | |
| 3,100.0 | 3,069.7 | 3,012.0 | 3,002.1 | 9.9 | 7.3 | 166.56 | 79.7 | 239.6 | 607.5 | 593.5 | 13.98 | 43.469 | |
| 3,200.0 | 3,168.3 | 3,108.3 | 3,097.7 | 10.3 | 7.6 | 166.36 | 85.2 | 250.1 | 634.3 | 619.8 | 14.47 | 43.846 | |
| 3,300.0 | 3,266.9 | 3,204.7 | 3,193.3 | 10.6 | 7.9 | 166.19 | 90.8 | 260.6 | 661.0 | 646.1 | 14.96 | 44.195 | |
| 3,400.0 | 3,365.5 | 3,301.0 | 3,288.9 | 11.0 | 8.1 | 166.02 | 96.4 | 271.1 | 687.8 | 672.3 | 15.45 | 44.520 | |
| 3,500.0 | 3,464.1 | 3,397.3 | 3,384.5 | 11.4 | 8.4 | 165.87 | 102.0 | 281.6 | 714.5 | 698.6 | 15.94 | 44.823 | |
| 3,600.0 | 3,562.7 | 3,493.7 | 3,480.1 | 11.8 | 8.7 | 165.73 | 107.6 | 292.1 | 741.3 | 724.9 | 16.43 | 45.105 | |
| 3,700.0 | 3,661.3 | 3,590.0 | 3,575.7 | 12.2 | 9.0 | 165.60 | 113.2 | 302.6 | 768.1 | 751.1 | 16.93 | 45.370 | |
| 3,800.0 | 3,759.9 | 3,686.3 | 3,671.2 | 12.6 | 9.3 | 165.48 | 118.7 | 313.1 | 794.8 | 777.4 | 17.42 | 45.618 | |
| 3,900.0 | 3,858.6 | 3,782.7 | 3,766.8 | 13.0 | 9.6 | 165.37 | 124.3 | 323.6 | 821.6 | 803.7 | 17.92 | 45.851 | |
| 4,000.0 | 3,957.2 | 3,879.0 | 3,862.4 | 13.3 | 9.9 | 165.26 | 129.9 | 334.1 | 848.4 | 830.0 | 18.42 | 46.070 | |
| 4,100.0 | 4,055.8 | 3,975.3 | 3,958.0 | 13.7 | 10.2 | 165.16 | 135.5 | 344.6 | 875.2 | 856.3 | 18.91 | 46.277 | |
| 4,200.0 | 4,154.4 | 4,071.7 | 4,053.6 | 14.1 | 10.5 | 165.06 | 141.1 | 355.1 | 902.0 | 882.6 | 19.41 | 46.472 | |
| 4,300.0 | 4,253.0 | 4,168.0 | 4,149.2 | 14.5 | 10.8 | 164.98 | 146.6 | 365.6 | 928.8 | 908.9 | 19.91 | 46.656 | |
| 4,400.0 | 4,351.6 | 4,269.1 | 4,249.6 | 14.9 | 11.1 | 164.89 | 152.5 | 376.6 | 955.5 | 935.1 | 20.41 | 46.814 | |
| 4,500.0 | 4,450.2 | 4,394.1 | 4,373.9 | 15.3 | 11.4 | 164.86 | 158.4 | 387.8 | 980.4 | 959.5 | 20.92 | 46.859 | |

| | | | |
|---|---|---|---|
| **Company:** | Verdad Oil & Gas Corporation | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Project:** | SEC.2-T1N-R64W | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Reference Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | landmark |
| **Reference Design:** | Plan #1 (8-6-14) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W - Pastelak 01N-64W-02-8N - Wellbore #1 - Plan #1 (8-6-1

**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 | 90.03 | -0.1 | 103.5 | 103.6 | | | | |
| 100.0 | 100.0 | 97.0 | 97.0 | 0.1 | 0.1 | 90.03 | -0.1 | 103.5 | 103.5 | 103.3 | 0.22 | 467.608 | |
| 200.0 | 200.0 | 197.0 | 197.0 | 0.3 | 0.3 | 90.03 | -0.1 | 103.5 | 103.5 | 102.9 | 0.67 | 155.086 | |
| 300.0 | 300.0 | 297.0 | 297.0 | 0.6 | 0.6 | 90.03 | -0.1 | 103.5 | 103.5 | 102.4 | 1.12 | 92.677 | |
| 400.0 | 400.0 | 397.0 | 397.0 | 0.8 | 0.8 | 90.03 | -0.1 | 103.5 | 103.5 | 102.0 | 1.57 | 66.084 | |
| 500.0 | 500.0 | 497.0 | 497.0 | 1.0 | 1.0 | 90.03 | -0.1 | 103.5 | 103.5 | 101.5 | 2.02 | 51.350 | |
| 600.0 | 600.0 | 597.0 | 597.0 | 1.2 | 1.2 | 90.03 | -0.1 | 103.5 | 103.5 | 101.1 | 2.47 | 41.988 | CC, ES |
| 700.0 | 700.0 | 697.0 | 697.0 | 1.5 | 1.5 | 166.03 | -0.1 | 103.5 | 105.2 | 102.3 | 2.91 | 36.204 | |
| 800.0 | 799.8 | 796.8 | 796.8 | 1.7 | 1.7 | 166.66 | -0.1 | 103.5 | 110.3 | 107.0 | 3.34 | 33.017 | |
| 900.0 | 899.5 | 896.5 | 896.5 | 1.9 | 1.9 | 167.60 | -0.1 | 103.5 | 118.8 | 115.0 | 3.78 | 31.450 | |
| 1,000.0 | 998.7 | 995.7 | 995.7 | 2.2 | 2.1 | 168.70 | -0.1 | 103.5 | 130.7 | 126.5 | 4.21 | 31.018 | SF |
| 1,100.0 | 1,097.5 | 1,090.2 | 1,090.2 | 2.5 | 2.3 | 169.57 | 0.4 | 104.9 | 147.4 | 142.8 | 4.64 | 31.759 | |
| 1,200.0 | 1,196.1 | 1,183.4 | 1,183.3 | 2.8 | 2.5 | 169.93 | 1.9 | 109.1 | 168.0 | 163.0 | 5.07 | 33.120 | |
| 1,300.0 | 1,294.7 | 1,275.3 | 1,274.9 | 3.1 | 2.7 | 169.82 | 4.4 | 116.0 | 191.6 | 186.1 | 5.51 | 34.765 | |
| 1,400.0 | 1,393.3 | 1,366.0 | 1,365.0 | 3.5 | 3.0 | 169.42 | 7.8 | 125.5 | 217.9 | 212.0 | 5.95 | 36.603 | |
| 1,500.0 | 1,491.9 | 1,462.0 | 1,460.3 | 3.8 | 3.2 | 168.95 | 12.0 | 137.0 | 245.6 | 239.2 | 6.40 | 38.356 | |
| 1,600.0 | 1,590.5 | 1,558.1 | 1,555.5 | 4.2 | 3.5 | 168.57 | 16.1 | 148.4 | 273.4 | 266.5 | 6.86 | 39.872 | |
| 1,700.0 | 1,689.1 | 1,654.2 | 1,650.8 | 4.6 | 3.7 | 168.26 | 20.2 | 159.9 | 301.1 | 293.8 | 7.31 | 41.171 | |
| 1,800.0 | 1,787.7 | 1,750.2 | 1,746.1 | 4.9 | 4.0 | 168.00 | 24.3 | 171.4 | 328.9 | 321.1 | 7.78 | 42.295 | |
| 1,900.0 | 1,886.4 | 1,846.3 | 1,841.4 | 5.3 | 4.3 | 167.78 | 28.5 | 182.9 | 356.6 | 348.4 | 8.24 | 43.263 | |
| 2,000.0 | 1,985.0 | 1,942.3 | 1,936.7 | 5.7 | 4.5 | 167.59 | 32.6 | 194.3 | 384.4 | 375.7 | 8.71 | 44.124 | |
| 2,100.0 | 2,083.6 | 2,038.4 | 2,032.0 | 6.0 | 4.8 | 167.43 | 36.7 | 205.8 | 412.1 | 402.9 | 9.18 | 44.881 | |
| 2,200.0 | 2,182.2 | 2,134.5 | 2,127.3 | 6.4 | 5.1 | 167.29 | 40.8 | 217.3 | 439.9 | 430.2 | 9.66 | 45.553 | |
| 2,300.0 | 2,280.8 | 2,230.5 | 2,222.6 | 6.8 | 5.4 | 167.17 | 45.0 | 228.7 | 467.6 | 457.5 | 10.13 | 46.153 | |
| 2,400.0 | 2,379.4 | 2,326.6 | 2,317.8 | 7.2 | 5.7 | 167.06 | 49.1 | 240.2 | 495.4 | 484.8 | 10.61 | 46.692 | |
| 2,500.0 | 2,478.0 | 2,422.7 | 2,413.1 | 7.6 | 6.0 | 166.96 | 53.2 | 251.7 | 523.2 | 512.1 | 11.09 | 47.178 | |
| 2,600.0 | 2,576.6 | 2,518.7 | 2,508.4 | 8.0 | 6.3 | 166.87 | 57.3 | 263.2 | 550.9 | 539.4 | 11.57 | 47.618 | |
| 2,700.0 | 2,675.2 | 2,614.8 | 2,603.7 | 8.3 | 6.6 | 166.79 | 61.5 | 274.6 | 578.7 | 566.7 | 12.05 | 48.019 | |
| 2,800.0 | 2,773.8 | 2,710.9 | 2,699.0 | 8.7 | 6.9 | 166.72 | 65.6 | 286.1 | 606.5 | 593.9 | 12.53 | 48.384 | |
| 2,900.0 | 2,872.5 | 2,806.9 | 2,794.3 | 9.1 | 7.2 | 166.65 | 69.7 | 297.6 | 634.2 | 621.2 | 13.02 | 48.720 | |
| 3,000.0 | 2,971.1 | 2,903.0 | 2,889.6 | 9.5 | 7.5 | 166.59 | 73.8 | 309.0 | 662.0 | 648.5 | 13.50 | 49.028 | |
| 3,100.0 | 3,069.7 | 2,999.1 | 2,984.9 | 9.9 | 7.8 | 166.53 | 78.0 | 320.5 | 689.8 | 675.8 | 13.99 | 49.312 | |
| 3,200.0 | 3,168.3 | 3,095.1 | 3,080.1 | 10.3 | 8.1 | 166.48 | 82.1 | 332.0 | 717.6 | 703.1 | 14.47 | 49.575 | |
| 3,300.0 | 3,266.9 | 3,191.2 | 3,175.4 | 10.6 | 8.4 | 166.43 | 86.2 | 343.5 | 745.3 | 730.4 | 14.96 | 49.818 | |
| 3,400.0 | 3,365.5 | 3,287.2 | 3,270.7 | 11.0 | 8.7 | 166.39 | 90.3 | 354.9 | 773.1 | 757.7 | 15.45 | 50.045 | |
| 3,500.0 | 3,464.1 | 3,383.3 | 3,366.0 | 11.4 | 9.0 | 166.35 | 94.5 | 366.4 | 800.9 | 784.9 | 15.94 | 50.256 | |
| 3,600.0 | 3,562.7 | 3,479.4 | 3,461.3 | 11.8 | 9.3 | 166.31 | 98.6 | 377.9 | 828.6 | 812.2 | 16.42 | 50.453 | |
| 3,700.0 | 3,661.3 | 3,575.4 | 3,556.6 | 12.2 | 9.7 | 166.27 | 102.7 | 389.3 | 856.4 | 839.5 | 16.91 | 50.637 | |
| 3,800.0 | 3,759.9 | 3,671.5 | 3,651.9 | 12.6 | 10.0 | 166.24 | 106.8 | 400.8 | 884.2 | 866.8 | 17.40 | 50.809 | |
| 3,900.0 | 3,858.6 | 3,767.6 | 3,747.2 | 13.0 | 10.3 | 166.21 | 111.0 | 412.3 | 912.0 | 894.1 | 17.89 | 50.971 | |
| 4,000.0 | 3,957.2 | 3,863.6 | 3,842.4 | 13.3 | 10.6 | 166.18 | 115.1 | 423.8 | 939.7 | 921.4 | 18.38 | 51.124 | |
| 4,100.0 | 4,055.8 | 3,959.7 | 3,937.7 | 13.7 | 10.9 | 166.15 | 119.2 | 435.2 | 967.5 | 948.6 | 18.87 | 51.268 | |
| 4,200.0 | 4,154.4 | 4,055.8 | 4,033.0 | 14.1 | 11.2 | 166.12 | 123.3 | 446.7 | 995.3 | 975.9 | 19.36 | 51.403 | |

| | | | |
|---|---|---|---|
| **Company:** | Verdad Oil & Gas Corporation | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Project:** | SEC.2-T1N-R64W | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Reference Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | landmark |
| **Reference Design:** | Plan #1 (8-6-14) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W - Pastelak 01N-64W-02-9C - Wellbore #1 - Plan #1 (8-6-1

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

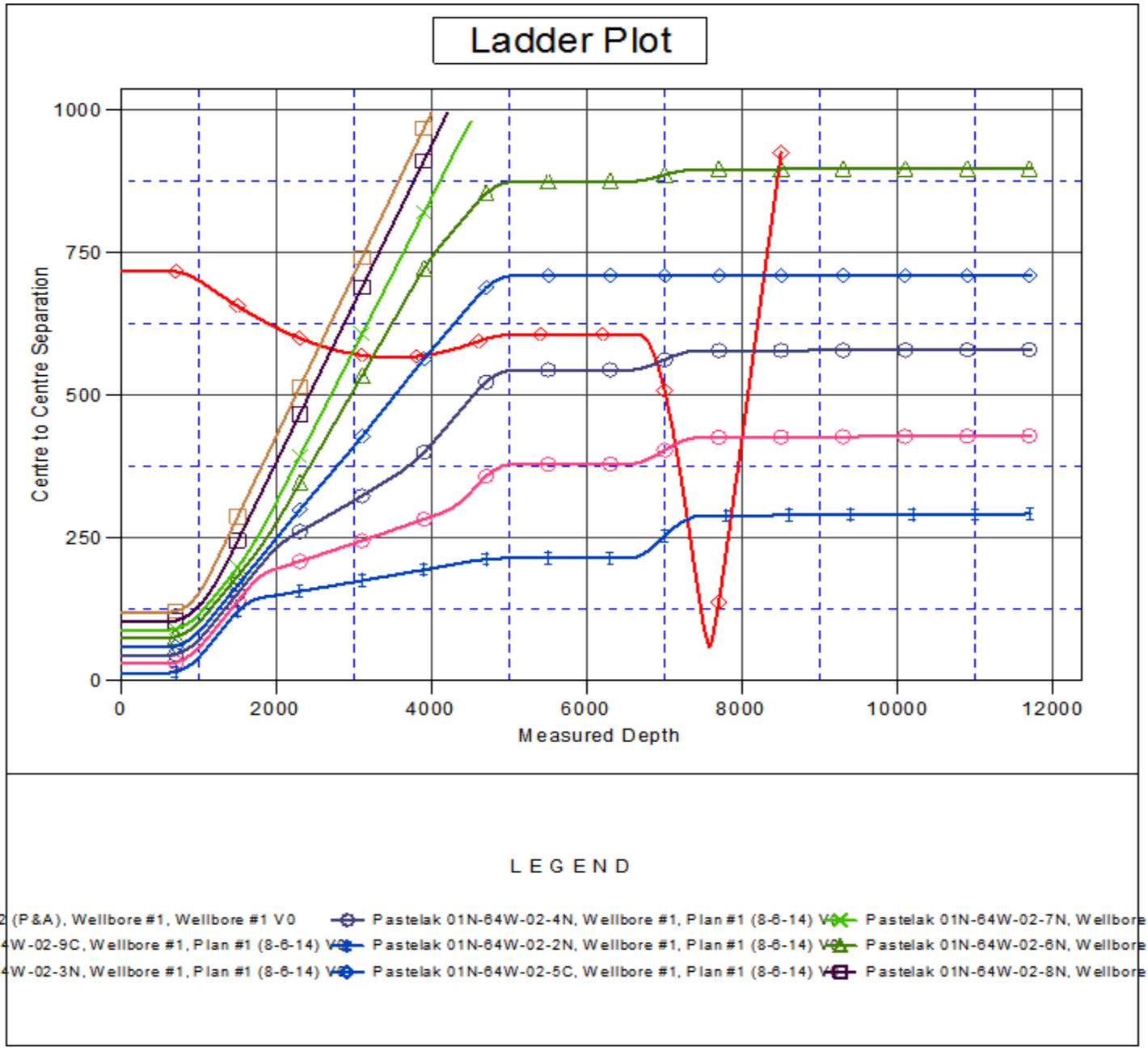
**Offset Well Error:** 0.0 ft

| 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 | 90.02 | -0.1 | 120.3 | 120.4 | | | | |
| 100.0 | 100.0 | 97.0 | 97.0 | 0.1 | 0.1 | 90.02 | -0.1 | 120.3 | 120.3 | 120.1 | 0.22 | 543.437 | |
| 200.0 | 200.0 | 197.0 | 197.0 | 0.3 | 0.3 | 90.02 | -0.1 | 120.3 | 120.3 | 119.6 | 0.67 | 180.236 | |
| 300.0 | 300.0 | 297.0 | 297.0 | 0.6 | 0.6 | 90.02 | -0.1 | 120.3 | 120.3 | 119.2 | 1.12 | 107.706 | |
| 400.0 | 400.0 | 397.0 | 397.0 | 0.8 | 0.8 | 90.02 | -0.1 | 120.3 | 120.3 | 118.8 | 1.57 | 76.801 | |
| 500.0 | 500.0 | 497.0 | 497.0 | 1.0 | 1.0 | 90.02 | -0.1 | 120.3 | 120.3 | 118.3 | 2.02 | 59.677 | |
| 600.0 | 600.0 | 597.0 | 597.0 | 1.2 | 1.2 | 90.02 | -0.1 | 120.3 | 120.3 | 117.9 | 2.47 | 48.797 | CC, ES |
| 700.0 | 700.0 | 697.0 | 697.0 | 1.5 | 1.5 | 166.00 | -0.1 | 120.3 | 122.0 | 119.1 | 2.91 | 41.980 | |
| 800.0 | 799.8 | 796.8 | 796.8 | 1.7 | 1.7 | 166.54 | -0.1 | 120.3 | 127.1 | 123.8 | 3.34 | 38.041 | |
| 900.0 | 899.5 | 892.2 | 892.2 | 1.9 | 1.9 | 167.14 | 0.3 | 121.7 | 137.1 | 133.3 | 3.76 | 36.425 | SF |
| 1,000.0 | 998.7 | 986.3 | 986.2 | 2.2 | 2.1 | 167.54 | 1.5 | 126.2 | 153.6 | 149.4 | 4.19 | 36.679 | |
| 1,100.0 | 1,097.5 | 1,078.6 | 1,078.1 | 2.5 | 2.3 | 167.76 | 3.5 | 133.4 | 176.4 | 171.8 | 4.62 | 38.219 | |
| 1,200.0 | 1,196.1 | 1,169.2 | 1,168.2 | 2.8 | 2.5 | 167.80 | 6.2 | 143.2 | 203.2 | 198.1 | 5.05 | 40.216 | |
| 1,300.0 | 1,294.7 | 1,264.8 | 1,263.0 | 3.1 | 2.8 | 167.70 | 9.4 | 155.2 | 231.5 | 226.0 | 5.50 | 42.125 | |
| 1,400.0 | 1,393.3 | 1,360.7 | 1,358.1 | 3.5 | 3.0 | 167.62 | 12.7 | 167.2 | 259.9 | 253.9 | 5.94 | 43.744 | |
| 1,500.0 | 1,491.9 | 1,456.6 | 1,453.2 | 3.8 | 3.3 | 167.56 | 16.0 | 179.3 | 288.2 | 281.8 | 6.39 | 45.092 | |
| 1,600.0 | 1,590.5 | 1,552.5 | 1,548.3 | 4.2 | 3.6 | 167.51 | 19.3 | 191.3 | 316.6 | 309.7 | 6.85 | 46.227 | |
| 1,700.0 | 1,689.1 | 1,648.4 | 1,643.3 | 4.6 | 3.9 | 167.47 | 22.5 | 203.3 | 344.9 | 337.6 | 7.31 | 47.198 | |
| 1,800.0 | 1,787.7 | 1,744.3 | 1,738.4 | 4.9 | 4.2 | 167.43 | 25.8 | 215.3 | 373.3 | 365.5 | 7.77 | 48.014 | |
| 1,900.0 | 1,886.4 | 1,840.2 | 1,833.5 | 5.3 | 4.5 | 167.40 | 29.1 | 227.3 | 401.7 | 393.4 | 8.24 | 48.733 | |
| 2,000.0 | 1,985.0 | 1,936.1 | 1,928.6 | 5.7 | 4.8 | 167.37 | 32.3 | 239.3 | 430.0 | 421.3 | 8.71 | 49.359 | |
| 2,100.0 | 2,083.6 | 2,032.0 | 2,023.7 | 6.0 | 5.1 | 167.35 | 35.6 | 251.4 | 458.4 | 449.2 | 9.18 | 49.909 | |
| 2,200.0 | 2,182.2 | 2,127.9 | 2,118.8 | 6.4 | 5.4 | 167.33 | 38.9 | 263.4 | 486.7 | 477.1 | 9.66 | 50.396 | |
| 2,300.0 | 2,280.8 | 2,223.8 | 2,213.8 | 6.8 | 5.7 | 167.31 | 42.2 | 275.4 | 515.1 | 504.9 | 10.13 | 50.829 | |
| 2,400.0 | 2,379.4 | 2,319.7 | 2,308.9 | 7.2 | 6.0 | 167.29 | 45.4 | 287.4 | 543.4 | 532.8 | 10.61 | 51.217 | |
| 2,500.0 | 2,478.0 | 2,415.6 | 2,404.0 | 7.6 | 6.3 | 167.28 | 48.7 | 299.4 | 571.8 | 560.7 | 11.09 | 51.566 | |
| 2,600.0 | 2,576.6 | 2,511.5 | 2,499.1 | 8.0 | 6.6 | 167.26 | 52.0 | 311.5 | 600.1 | 588.6 | 11.57 | 51.881 | |
| 2,700.0 | 2,675.2 | 2,607.4 | 2,594.2 | 8.3 | 6.9 | 167.25 | 55.2 | 323.5 | 628.5 | 616.5 | 12.05 | 52.167 | |
| 2,800.0 | 2,773.8 | 2,703.3 | 2,689.3 | 8.7 | 7.2 | 167.24 | 58.5 | 335.5 | 656.9 | 644.3 | 12.53 | 52.427 | |
| 2,900.0 | 2,872.5 | 2,799.2 | 2,784.3 | 9.1 | 7.5 | 167.23 | 61.8 | 347.5 | 685.2 | 672.2 | 13.01 | 52.666 | |
| 3,000.0 | 2,971.1 | 2,895.1 | 2,879.4 | 9.5 | 7.8 | 167.22 | 65.0 | 359.5 | 713.6 | 700.1 | 13.49 | 52.884 | |
| 3,100.0 | 3,069.7 | 2,991.0 | 2,974.5 | 9.9 | 8.1 | 167.21 | 68.3 | 371.5 | 741.9 | 728.0 | 13.98 | 53.085 | |
| 3,200.0 | 3,168.3 | 3,086.9 | 3,069.6 | 10.3 | 8.4 | 167.20 | 71.6 | 383.6 | 770.3 | 755.8 | 14.46 | 53.271 | |
| 3,300.0 | 3,266.9 | 3,182.7 | 3,164.7 | 10.6 | 8.8 | 167.19 | 74.9 | 395.6 | 798.6 | 783.7 | 14.94 | 53.442 | |
| 3,400.0 | 3,365.5 | 3,278.6 | 3,259.8 | 11.0 | 9.1 | 167.19 | 78.1 | 407.6 | 827.0 | 811.6 | 15.43 | 53.602 | |
| 3,500.0 | 3,464.1 | 3,374.5 | 3,354.8 | 11.4 | 9.4 | 167.18 | 81.4 | 419.6 | 855.4 | 839.4 | 15.91 | 53.750 | |
| 3,600.0 | 3,562.7 | 3,470.4 | 3,449.9 | 11.8 | 9.7 | 167.17 | 84.7 | 431.6 | 883.7 | 867.3 | 16.40 | 53.888 | |
| 3,700.0 | 3,661.3 | 3,566.3 | 3,545.0 | 12.2 | 10.0 | 167.17 | 87.9 | 443.6 | 912.1 | 895.2 | 16.88 | 54.016 | |
| 3,800.0 | 3,759.9 | 3,662.2 | 3,640.1 | 12.6 | 10.3 | 167.16 | 91.2 | 455.7 | 940.4 | 923.0 | 17.37 | 54.137 | |
| 3,900.0 | 3,858.6 | 3,758.1 | 3,735.2 | 13.0 | 10.6 | 167.16 | 94.5 | 467.7 | 968.8 | 950.9 | 17.86 | 54.250 | |
| 4,000.0 | 3,957.2 | 3,854.0 | 3,830.3 | 13.3 | 11.0 | 167.15 | 97.7 | 479.7 | 997.1 | 978.8 | 18.34 | 54.356 | |

| | | | |
|---|---|---|---|
| **Company:** | Verdad Oil & Gas Corporation | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Project:** | SEC.2-T1N-R64W | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Reference Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | landmark |
| **Reference Design:** | Plan #1 (8-6-14) | **Offset TVD Reference:** | Offset Datum |

Reference Depths are relative to WELL @ 5027.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Pastelak 01N-64W-02-1C
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.63°



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|---|---|---|---|
| **Company:** | Verdad Oil & Gas Corporation | **Local Co-ordinate Reference:** | Well Pastelak 01N-64W-02-1C |
| **Project:** | SEC.2-T1N-R64W | **TVD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Reference Site:** | Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W | **MD Reference:** | WELL @ 5027.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Pastelak 01N-64W-02-1C | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | landmark |
| **Reference Design:** | Plan #1 (8-6-14) | **Offset TVD Reference:** | Offset Datum |

Reference Depths are relative to WELL @ 5027.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Pastelak 01N-64W-02-1C
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.63°