ENSIGN Directional

# PetroShare Corp

**SEC.3-T1S-R67W**
**SHOOK PAD 3-1S-67W**
**SHOOK 3-10-4CDH**

**Wellbore #1**
**PLAN 1 (FEB 5, 2016)**

# Anticollision Report

**22 February, 2016**

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

**Reference** PLAN 1 (FEB 5, 2016)

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

**Survey Tool Program** **Date** 2/22/2016

| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description |
|---|---|---|---|---|
| 0.0 | 13,946.7 | PLAN 1 (FEB 5, 2016) (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 |
|---|---|---|---|---|---|---|
| SHOOK PAD 3-1S-67W | | | | | | |
| SHOOK 3-10-1CDH - Wellbore #1 - PLAN 1 (FEB 4, 201 | 200.0 | 200.0 | 103.7 | 103.0 | 153.748 | CC, ES |
| SHOOK 3-10-1CDH - Wellbore #1 - PLAN 1 (FEB 4, 201 | 1,000.0 | 972.5 | 175.0 | 170.7 | 40.603 | SF |
| SHOOK 3-10-1NAH - Wellbore #1 - PLAN 1 ( FEB 4, 201 | 1,000.0 | 1,000.0 | 44.8 | 40.6 | 10.498 | CC, ES |
| SHOOK 3-10-1NAH - Wellbore #1 - PLAN 1 ( FEB 4, 201 | 1,200.0 | 1,198.5 | 48.1 | 43.0 | 9.430 | SF |
| SHOOK 3-10-1NBH - Wellbore #1 - PLAN 1 (FEB 4, 201 | 600.0 | 600.0 | 75.7 | 73.2 | 30.599 | CC, ES |
| SHOOK 3-10-1NBH - Wellbore #1 - PLAN 1 (FEB 4, 201 | 1,100.0 | 1,090.4 | 101.0 | 96.4 | 21.925 | SF |
| SHOOK 3-10-1NCH - Wellbore #1 - PLAN 1 (FEB 4 2016 | 400.0 | 400.0 | 89.7 | 88.1 | 56.988 | CC, ES |
| SHOOK 3-10-1NCH - Wellbore #1 - PLAN 1 (FEB 4 2016 | 1,000.0 | 985.0 | 128.0 | 123.8 | 30.466 | SF |
| SHOOK 3-10-2CDH - Wellbore #1 - PLAN 1 (FEB 4, 201 | 800.0 | 800.0 | 58.8 | 55.5 | 17.453 | CC, ES |
| SHOOK 3-10-2CDH - Wellbore #1 - PLAN 1 (FEB 4, 201 | 1,100.0 | 1,096.4 | 67.0 | 62.4 | 14.518 | SF |
| SHOOK 3-10-2NAH - Wellbore #1 - PLAN 1 ( FEB 5 201 | 800.0 | 800.0 | 58.8 | 55.5 | 17.453 | CC, ES |
| SHOOK 3-10-2NAH - Wellbore #1 - PLAN 1 ( FEB 5 201 | 1,100.0 | 1,095.3 | 69.4 | 64.8 | 14.979 | SF |
| SHOOK 3-10-2NBH - Wellbore #1 - PLAN 1 (FEB 4 2016 | 1,200.0 | 1,200.0 | 30.8 | 25.7 | 5.962 | CC, ES |
| SHOOK 3-10-2NBH - Wellbore #1 - PLAN 1 (FEB 4 2016 | 1,300.0 | 1,299.6 | 31.5 | 25.9 | 5.634 | SF |
| SHOOK 3-10-2NCH - Wellbore #1 - PLAN 1 (FEB 5, 201 | 1,200.0 | 1,200.0 | 14.0 | 8.8 | 2.710 | CC, ES |
| SHOOK 3-10-2NCH - Wellbore #1 - PLAN 1 (FEB 5, 201 | 13,946.7 | 13,785.9 | 329.1 | 93.5 | 1.397 | Level 3, SF |
| SHOOK 3-10-3CDH - Wellbore #1 - PLAN 1 ( FEB 4 201 | 1,400.0 | 1,400.0 | 14.0 | 7.9 | 2.309 | CC, ES |
| SHOOK 3-10-3CDH - Wellbore #1 - PLAN 1 ( FEB 4 201 | 1,500.0 | 1,499.8 | 14.6 | 8.1 | 2.252 | SF |
| SHOOK 3-10-3NBH - Wellbore #1 - PLAN 1 ( FEB 5 201 | 1,000.0 | 1,000.0 | 30.8 | 26.6 | 7.217 | CC, ES |
| SHOOK 3-10-3NBH - Wellbore #1 - PLAN 1 ( FEB 5 201 | 13,946.7 | 13,689.7 | 637.4 | 394.1 | 2.620 | SF |
| SHOOK 3-10-4NBH - Wellbore #1 - PLAN 1 ( FEB 5 201 | 600.0 | 600.0 | 75.7 | 73.2 | 30.599 | CC, ES |
| SHOOK 3-10-4NBH - Wellbore #1 - PLAN 1 ( FEB 5 201 | 1,000.0 | 991.4 | 95.0 | 90.9 | 22.739 | SF |
| SHOOK 3-10-5CDH - Wellbore #1 - PLAN 1 ( FEB 5 201 | 800.0 | 800.0 | 44.8 | 41.5 | 13.297 | CC, ES |
| SHOOK 3-10-5CDH - Wellbore #1 - PLAN 1 ( FEB 5 201 | 13,946.7 | 13,989.8 | 863.2 | 597.8 | 3.252 | SF |
| SHOOK 3-10-6CDH - Wellbore #1 - PLAN 1 ( FEB 5 201 | 400.0 | 400.0 | 89.7 | 88.1 | 56.988 | CC, ES |
| SHOOK 3-10-6CDH - Wellbore #1 - PLAN 1 ( FEB 5 201 | 900.0 | 882.2 | 128.1 | 124.3 | 34.108 | SF |

**Offset Design** SHOOK PAD 3-1S-67W - SHOOK 3-10-1CDH - Wellbore #1 - PLAN 1 (FEB 4, 2016)

**Survey Program:** 0-MWD

**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 | -89.97 | 0.1 | -103.7 | 103.7 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -89.97 | 0.1 | -103.7 | 103.7 | 103.4 | 0.22 | 461.245 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SHOOK PAD 3-1S-67W - SHOOK 3-10-1CDH - Wellbore #1 - PLAN 1 (FEB 4, 2016)

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -89.97 | 0.1 | -103.7 | 103.7 | 103.0 | 0.67 | 153.748 | CC, ES |
| 300.0 | 300.0 | 297.9 | 297.9 | 0.6 | 0.5 | -90.39 | -0.7 | -104.7 | 104.7 | 103.6 | 1.10 | 95.078 | |
| 400.0 | 400.0 | 395.6 | 395.5 | 0.8 | 0.7 | -91.61 | -3.0 | -107.6 | 107.8 | 106.2 | 1.53 | 70.421 | |
| 500.0 | 500.0 | 493.1 | 492.8 | 1.0 | 1.0 | -93.48 | -6.8 | -112.6 | 113.0 | 111.0 | 1.97 | 57.223 | |
| 600.0 | 600.0 | 590.2 | 589.6 | 1.2 | 1.2 | -95.82 | -12.2 | -119.4 | 120.5 | 118.0 | 2.43 | 49.587 | |
| 700.0 | 700.0 | 686.9 | 685.5 | 1.5 | 1.5 | -98.41 | -18.9 | -128.1 | 130.3 | 127.5 | 2.89 | 45.058 | |
| 800.0 | 800.0 | 782.8 | 780.6 | 1.7 | 1.8 | -101.08 | -27.2 | -138.7 | 142.7 | 139.3 | 3.36 | 42.443 | |
| 900.0 | 900.0 | 878.1 | 874.5 | 1.9 | 2.1 | -103.67 | -36.8 | -151.1 | 157.6 | 153.7 | 3.83 | 41.089 | |
| 1,000.0 | 1,000.0 | 972.5 | 967.3 | 2.1 | 2.5 | -106.10 | -47.7 | -165.2 | 175.0 | 170.7 | 4.31 | 40.603 | SF |
| 1,100.0 | 1,100.0 | 1,066.0 | 1,058.6 | 2.4 | 2.9 | -108.32 | -59.9 | -180.9 | 195.0 | 190.2 | 4.79 | 40.734 | |
| 1,200.0 | 1,200.0 | 1,158.4 | 1,148.4 | 2.6 | 3.4 | -110.30 | -73.3 | -198.1 | 217.5 | 212.2 | 5.26 | 41.313 | |
| 1,300.0 | 1,300.0 | 1,249.7 | 1,236.5 | 2.8 | 3.8 | -112.05 | -87.8 | -216.9 | 242.5 | 236.7 | 5.74 | 42.220 | |
| 1,400.0 | 1,400.0 | 1,339.7 | 1,322.9 | 3.0 | 4.3 | -113.58 | -103.4 | -237.0 | 269.8 | 263.6 | 6.22 | 43.372 | |
| 1,500.0 | 1,500.0 | 1,428.8 | 1,407.7 | 3.2 | 4.9 | 64.94 | -120.1 | -258.4 | 299.0 | 292.4 | 6.67 | 44.839 | |
| 1,600.0 | 1,599.9 | 1,516.9 | 1,491.0 | 3.4 | 5.5 | 63.91 | -137.8 | -281.2 | 329.4 | 322.3 | 7.10 | 46.381 | |
| 1,700.0 | 1,699.7 | 1,600.0 | 1,568.9 | 3.6 | 6.0 | 63.26 | -155.5 | -304.1 | 360.9 | 353.4 | 7.54 | 47.864 | |
| 1,728.8 | 1,728.4 | 1,629.1 | 1,595.9 | 3.6 | 6.2 | 63.13 | -162.0 | -312.4 | 370.1 | 362.4 | 7.69 | 48.137 | |
| 1,800.0 | 1,799.3 | 1,690.3 | 1,652.7 | 3.8 | 6.7 | 63.14 | -176.0 | -330.4 | 393.6 | 385.6 | 8.03 | 49.024 | |
| 1,900.0 | 1,899.0 | 1,775.1 | 1,730.8 | 4.0 | 7.4 | 63.11 | -196.3 | -356.6 | 428.3 | 419.8 | 8.52 | 50.287 | |
| 2,000.0 | 1,998.6 | 1,858.5 | 1,806.9 | 4.2 | 8.0 | 63.04 | -217.3 | -383.7 | 465.1 | 456.1 | 9.02 | 51.586 | |
| 2,100.0 | 2,098.2 | 1,946.7 | 1,886.6 | 4.4 | 8.8 | 62.93 | -240.4 | -413.4 | 503.5 | 493.9 | 9.54 | 52.768 | |
| 2,200.0 | 2,197.8 | 2,039.0 | 1,970.0 | 4.6 | 9.6 | 62.83 | -264.7 | -444.7 | 542.0 | 532.0 | 10.08 | 53.759 | |
| 2,300.0 | 2,297.5 | 2,131.2 | 2,053.3 | 4.9 | 10.4 | 62.74 | -288.9 | -475.9 | 580.6 | 570.0 | 10.63 | 54.607 | |
| 2,400.0 | 2,397.1 | 2,223.5 | 2,136.7 | 5.1 | 11.2 | 62.66 | -313.2 | -507.2 | 619.2 | 608.0 | 11.19 | 55.337 | |
| 2,500.0 | 2,496.7 | 2,315.8 | 2,220.0 | 5.3 | 12.0 | 62.60 | -337.4 | -538.4 | 657.7 | 646.0 | 11.75 | 55.969 | |
| 2,600.0 | 2,596.4 | 2,408.0 | 2,303.4 | 5.6 | 12.8 | 62.54 | -361.7 | -569.7 | 696.3 | 684.0 | 12.32 | 56.519 | |
| 2,700.0 | 2,696.0 | 2,500.3 | 2,386.7 | 5.8 | 13.7 | 62.48 | -386.0 | -600.9 | 734.9 | 722.0 | 12.89 | 57.001 | |
| 2,800.0 | 2,795.6 | 2,592.5 | 2,470.1 | 6.1 | 14.5 | 62.43 | -410.2 | -632.2 | 773.4 | 759.9 | 13.47 | 57.424 | |
| 2,900.0 | 2,895.3 | 2,684.8 | 2,553.4 | 6.3 | 15.3 | 62.39 | -434.5 | -663.4 | 812.0 | 797.9 | 14.05 | 57.797 | |
| 3,000.0 | 2,994.9 | 2,777.1 | 2,636.8 | 6.6 | 16.1 | 62.35 | -458.7 | -694.7 | 850.5 | 835.9 | 14.63 | 58.130 | |
| 3,100.0 | 3,094.5 | 2,869.3 | 2,720.1 | 6.9 | 16.9 | 62.31 | -483.0 | -725.9 | 889.1 | 873.9 | 15.22 | 58.426 | |
| 3,200.0 | 3,194.1 | 2,961.6 | 2,803.5 | 7.1 | 17.8 | 62.28 | -507.3 | -757.2 | 927.7 | 911.9 | 15.81 | 58.692 | |
| 3,300.0 | 3,293.8 | 3,053.9 | 2,886.8 | 7.4 | 18.6 | 62.25 | -531.5 | -788.4 | 966.2 | 949.9 | 16.40 | 58.930 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SHOOK PAD 3-1S-67W - SHOOK 3-10-1NAH - Wellbore #1 - PLAN 1 ( FEB 4, 2016)

**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 | -89.98 | 0.0 | -44.8 | 44.8 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -89.98 | 0.0 | -44.8 | 44.8 | 44.6 | 0.22 | 199.457 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -89.98 | 0.0 | -44.8 | 44.8 | 44.2 | 0.67 | 66.486 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.6 | 0.6 | -89.98 | 0.0 | -44.8 | 44.8 | 43.7 | 1.12 | 39.891 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | -89.98 | 0.0 | -44.8 | 44.8 | 43.3 | 1.57 | 28.494 | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.0 | 1.0 | -89.98 | 0.0 | -44.8 | 44.8 | 42.8 | 2.02 | 22.162 | |
| 600.0 | 600.0 | 600.0 | 600.0 | 1.2 | 1.2 | -89.98 | 0.0 | -44.8 | 44.8 | 42.4 | 2.47 | 18.132 | |
| 700.0 | 700.0 | 700.0 | 700.0 | 1.5 | 1.5 | -89.98 | 0.0 | -44.8 | 44.8 | 41.9 | 2.92 | 15.343 | |
| 800.0 | 800.0 | 800.0 | 800.0 | 1.7 | 1.7 | -89.98 | 0.0 | -44.8 | 44.8 | 41.5 | 3.37 | 13.297 | |
| 900.0 | 900.0 | 900.0 | 900.0 | 1.9 | 1.9 | -89.98 | 0.0 | -44.8 | 44.8 | 41.0 | 3.82 | 11.733 | |
| 1,000.0 | 1,000.0 | 1,000.0 | 1,000.0 | 2.1 | 2.1 | -89.98 | 0.0 | -44.8 | 44.8 | 40.6 | 4.27 | 10.498 | CC, ES |
| 1,100.0 | 1,100.0 | 1,099.3 | 1,099.3 | 2.4 | 2.3 | -91.29 | -1.0 | -45.6 | 45.6 | 40.9 | 4.69 | 9.718 | |
| 1,200.0 | 1,200.0 | 1,198.5 | 1,198.4 | 2.6 | 2.5 | -94.97 | -4.2 | -47.9 | 48.1 | 43.0 | 5.10 | 9.430 | SF |
| 1,300.0 | 1,300.0 | 1,297.4 | 1,297.1 | 2.8 | 2.7 | -100.28 | -9.4 | -51.6 | 52.5 | 47.0 | 5.51 | 9.536 | |
| 1,400.0 | 1,400.0 | 1,395.8 | 1,395.1 | 3.0 | 2.9 | -106.27 | -16.6 | -56.8 | 59.4 | 53.5 | 5.93 | 10.018 | |
| 1,500.0 | 1,500.0 | 1,493.9 | 1,492.6 | 3.2 | 3.1 | 68.80 | -25.8 | -63.5 | 68.5 | 62.2 | 6.33 | 10.821 | |
| 1,600.0 | 1,599.9 | 1,591.7 | 1,589.3 | 3.4 | 3.4 | 65.77 | -37.1 | -71.6 | 79.1 | 72.4 | 6.71 | 11.782 | |
| 1,700.0 | 1,699.7 | 1,689.1 | 1,685.3 | 3.6 | 3.7 | 64.13 | -50.2 | -81.1 | 90.9 | 83.8 | 7.11 | 12.783 | |
| 1,728.8 | 1,728.4 | 1,717.1 | 1,712.9 | 3.6 | 3.7 | 63.85 | -54.4 | -84.1 | 94.6 | 87.3 | 7.23 | 13.072 | |
| 1,800.0 | 1,799.3 | 1,786.0 | 1,780.5 | 3.8 | 4.0 | 63.26 | -65.3 | -92.0 | 104.2 | 96.7 | 7.54 | 13.823 | |
| 1,900.0 | 1,899.0 | 1,882.3 | 1,874.4 | 4.0 | 4.3 | 62.14 | -82.2 | -104.3 | 119.7 | 111.7 | 7.98 | 14.994 | |
| 2,000.0 | 1,998.6 | 1,977.7 | 1,967.1 | 4.2 | 4.7 | 60.84 | -100.8 | -117.7 | 137.4 | 129.0 | 8.44 | 16.284 | |
| 2,100.0 | 2,098.2 | 2,072.3 | 2,058.3 | 4.4 | 5.1 | 59.48 | -121.2 | -132.4 | 157.4 | 148.5 | 8.91 | 17.676 | |
| 2,200.0 | 2,197.8 | 2,165.9 | 2,147.9 | 4.6 | 5.6 | 58.14 | -143.1 | -148.3 | 179.8 | 170.4 | 9.38 | 19.154 | |
| 2,300.0 | 2,297.5 | 2,258.4 | 2,235.8 | 4.9 | 6.1 | 56.85 | -166.5 | -165.2 | 204.4 | 194.5 | 9.87 | 20.705 | |
| 2,400.0 | 2,397.1 | 2,349.8 | 2,321.8 | 5.1 | 6.6 | 55.65 | -191.3 | -183.1 | 231.2 | 220.9 | 10.36 | 22.317 | |
| 2,500.0 | 2,496.7 | 2,439.8 | 2,406.0 | 5.3 | 7.2 | 54.54 | -217.3 | -201.9 | 260.3 | 249.5 | 10.86 | 23.978 | |
| 2,600.0 | 2,596.4 | 2,528.6 | 2,488.1 | 5.6 | 7.8 | 53.52 | -244.6 | -221.6 | 291.7 | 280.3 | 11.36 | 25.679 | |
| 2,700.0 | 2,696.0 | 2,617.4 | 2,569.5 | 5.8 | 8.5 | 52.58 | -273.4 | -242.4 | 325.1 | 313.2 | 11.87 | 27.394 | |
| 2,800.0 | 2,795.6 | 2,711.3 | 2,655.3 | 6.1 | 9.2 | 51.73 | -304.3 | -264.8 | 359.2 | 346.8 | 12.39 | 28.993 | |
| 2,900.0 | 2,895.3 | 2,805.2 | 2,741.1 | 6.3 | 9.9 | 51.03 | -335.2 | -287.1 | 393.4 | 380.5 | 12.92 | 30.452 | |
| 3,000.0 | 2,994.9 | 2,899.0 | 2,826.9 | 6.6 | 10.6 | 50.45 | -366.1 | -309.4 | 427.7 | 414.2 | 13.45 | 31.787 | |
| 3,100.0 | 3,094.5 | 2,992.9 | 2,912.7 | 6.9 | 11.3 | 49.95 | -397.0 | -331.8 | 462.0 | 448.0 | 14.00 | 33.009 | |
| 3,200.0 | 3,194.1 | 3,086.8 | 2,998.4 | 7.1 | 12.1 | 49.51 | -427.9 | -354.1 | 496.3 | 481.7 | 14.54 | 34.133 | |
| 3,300.0 | 3,293.8 | 3,180.6 | 3,084.2 | 7.4 | 12.8 | 49.14 | -458.8 | -376.4 | 530.6 | 515.5 | 15.09 | 35.168 | |
| 3,400.0 | 3,393.4 | 3,274.5 | 3,170.0 | 7.6 | 13.5 | 48.81 | -489.7 | -398.8 | 565.0 | 549.3 | 15.64 | 36.124 | |
| 3,500.0 | 3,493.0 | 3,368.4 | 3,255.8 | 7.9 | 14.3 | 48.52 | -520.6 | -421.1 | 599.3 | 583.1 | 16.19 | 37.009 | |
| 3,600.0 | 3,592.7 | 3,462.3 | 3,341.5 | 8.2 | 15.0 | 48.25 | -551.5 | -443.4 | 633.7 | 616.9 | 16.75 | 37.830 | |
| 3,700.0 | 3,692.3 | 3,556.1 | 3,427.3 | 8.4 | 15.8 | 48.02 | -582.4 | -465.8 | 668.1 | 650.8 | 17.31 | 38.593 | |
| 3,800.0 | 3,791.9 | 3,650.0 | 3,513.1 | 8.7 | 16.5 | 47.81 | -613.3 | -488.1 | 702.5 | 684.6 | 17.87 | 39.304 | |
| 3,900.0 | 3,891.6 | 3,743.9 | 3,598.9 | 9.0 | 17.3 | 47.62 | -644.2 | -510.4 | 736.9 | 718.4 | 18.44 | 39.967 | |
| 4,000.0 | 3,991.2 | 3,837.7 | 3,684.6 | 9.2 | 18.1 | 47.44 | -675.1 | -532.8 | 771.3 | 752.3 | 19.00 | 40.588 | |
| 4,100.0 | 4,090.8 | 3,931.6 | 3,770.4 | 9.5 | 18.8 | 47.29 | -706.0 | -555.1 | 805.7 | 786.1 | 19.57 | 41.169 | |
| 4,200.0 | 4,190.4 | 4,025.5 | 3,856.2 | 9.8 | 19.6 | 47.14 | -736.9 | -577.5 | 840.1 | 820.0 | 20.14 | 41.714 | |
| 4,300.0 | 4,290.1 | 4,119.3 | 3,942.0 | 10.1 | 20.3 | 47.00 | -767.8 | -599.8 | 874.5 | 853.8 | 20.71 | 42.227 | |
| 4,400.0 | 4,389.7 | 4,213.2 | 4,027.8 | 10.3 | 21.1 | 46.88 | -798.7 | -622.1 | 909.0 | 887.7 | 21.28 | 42.710 | |
| 4,500.0 | 4,489.3 | 4,307.1 | 4,113.5 | 10.6 | 21.9 | 46.76 | -829.6 | -644.5 | 943.4 | 921.5 | 21.86 | 43.165 | |
| 4,600.0 | 4,589.0 | 4,400.9 | 4,199.3 | 10.9 | 22.6 | 46.66 | -860.5 | -666.8 | 977.8 | 955.4 | 22.43 | 43.595 | |

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SHOOK PAD 3-1S-67W - SHOOK 3-10-1NBH - Wellbore #1 - PLAN 1 (FEB 4, 2016)

**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 | -89.97 | 0.0 | -75.7 | 75.7 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -89.97 | 0.0 | -75.7 | 75.7 | 75.4 | 0.22 | 336.584 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -89.97 | 0.0 | -75.7 | 75.7 | 75.0 | 0.67 | 112.195 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.6 | 0.6 | -89.97 | 0.0 | -75.7 | 75.7 | 74.5 | 1.12 | 67.317 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | -89.97 | 0.0 | -75.7 | 75.7 | 74.1 | 1.57 | 48.083 | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.0 | 1.0 | -89.97 | 0.0 | -75.7 | 75.7 | 73.6 | 2.02 | 37.398 | |
| 600.0 | 600.0 | 600.0 | 600.0 | 1.2 | 1.2 | -89.97 | 0.0 | -75.7 | 75.7 | 73.2 | 2.47 | 30.599 | CC, ES |
| 700.0 | 700.0 | 698.6 | 698.6 | 1.5 | 1.4 | -90.65 | -0.9 | -76.6 | 76.6 | 73.7 | 2.90 | 26.444 | |
| 800.0 | 800.0 | 797.1 | 797.0 | 1.7 | 1.6 | -92.57 | -3.6 | -79.3 | 79.4 | 76.1 | 3.31 | 24.010 | |
| 900.0 | 900.0 | 895.3 | 895.0 | 1.9 | 1.8 | -95.47 | -8.0 | -83.7 | 84.3 | 80.5 | 3.73 | 22.595 | |
| 1,000.0 | 1,000.0 | 993.1 | 992.4 | 2.1 | 2.0 | -98.99 | -14.2 | -90.0 | 91.4 | 87.2 | 4.16 | 21.955 | |
| 1,100.0 | 1,100.0 | 1,090.4 | 1,089.0 | 2.4 | 2.3 | -102.75 | -22.2 | -97.9 | 101.0 | 96.4 | 4.61 | 21.925 | SF |
| 1,200.0 | 1,200.0 | 1,187.0 | 1,184.7 | 2.6 | 2.6 | -106.45 | -31.8 | -107.5 | 113.2 | 108.1 | 5.06 | 22.381 | |
| 1,300.0 | 1,300.0 | 1,282.9 | 1,279.3 | 2.8 | 2.9 | -109.88 | -43.0 | -118.8 | 128.0 | 122.5 | 5.51 | 23.225 | |
| 1,400.0 | 1,400.0 | 1,378.0 | 1,372.6 | 3.0 | 3.2 | -112.95 | -55.7 | -131.6 | 145.5 | 139.5 | 5.97 | 24.373 | |
| 1,500.0 | 1,500.0 | 1,472.3 | 1,464.7 | 3.2 | 3.6 | 64.56 | -70.0 | -145.9 | 165.1 | 158.7 | 6.40 | 25.791 | |
| 1,600.0 | 1,599.9 | 1,565.9 | 1,555.6 | 3.4 | 4.0 | 62.97 | -85.7 | -161.7 | 186.0 | 179.1 | 6.81 | 27.288 | |
| 1,700.0 | 1,699.7 | 1,658.8 | 1,645.3 | 3.6 | 4.4 | 62.06 | -102.9 | -178.9 | 208.0 | 200.8 | 7.25 | 28.705 | |
| 1,728.8 | 1,728.4 | 1,685.5 | 1,670.9 | 3.6 | 4.6 | 61.90 | -108.1 | -184.2 | 214.6 | 207.2 | 7.37 | 29.099 | |
| 1,800.0 | 1,799.3 | 1,751.0 | 1,733.6 | 3.8 | 4.9 | 61.73 | -121.5 | -197.5 | 231.5 | 223.8 | 7.70 | 30.050 | |
| 1,900.0 | 1,899.0 | 1,842.1 | 1,820.3 | 4.0 | 5.5 | 61.41 | -141.3 | -217.4 | 257.1 | 248.9 | 8.18 | 31.451 | |
| 2,000.0 | 1,998.6 | 1,932.0 | 1,905.1 | 4.2 | 6.0 | 61.02 | -162.3 | -238.5 | 284.9 | 276.3 | 8.66 | 32.909 | |
| 2,100.0 | 2,098.2 | 2,020.7 | 1,988.1 | 4.4 | 6.6 | 60.59 | -184.3 | -260.6 | 314.9 | 305.8 | 9.15 | 34.413 | |
| 2,200.0 | 2,197.8 | 2,108.0 | 2,069.2 | 4.6 | 7.2 | 60.15 | -207.4 | -283.8 | 347.1 | 337.4 | 9.65 | 35.955 | |
| 2,300.0 | 2,297.5 | 2,194.0 | 2,148.2 | 4.9 | 7.9 | 59.69 | -231.4 | -307.8 | 381.3 | 371.1 | 10.16 | 37.525 | |
| 2,400.0 | 2,397.1 | 2,281.9 | 2,228.1 | 5.1 | 8.6 | 59.23 | -257.1 | -333.6 | 417.4 | 406.7 | 10.68 | 39.064 | |
| 2,500.0 | 2,496.7 | 2,374.9 | 2,312.6 | 5.3 | 9.3 | 58.81 | -284.6 | -361.1 | 453.9 | 442.7 | 11.23 | 40.431 | |
| 2,600.0 | 2,596.4 | 2,468.0 | 2,397.2 | 5.6 | 10.1 | 58.44 | -312.0 | -388.7 | 490.5 | 478.7 | 11.77 | 41.656 | |
| 2,700.0 | 2,696.0 | 2,561.0 | 2,481.7 | 5.8 | 10.9 | 58.13 | -339.5 | -416.2 | 527.0 | 514.7 | 12.33 | 42.753 | |
| 2,800.0 | 2,795.6 | 2,654.0 | 2,566.2 | 6.1 | 11.6 | 57.86 | -367.0 | -443.8 | 563.6 | 550.7 | 12.89 | 43.741 | |
| 2,900.0 | 2,895.3 | 2,747.1 | 2,650.7 | 6.3 | 12.4 | 57.62 | -394.4 | -471.4 | 600.2 | 586.8 | 13.45 | 44.633 | |
| 3,000.0 | 2,994.9 | 2,840.1 | 2,735.2 | 6.6 | 13.2 | 57.41 | -421.9 | -498.9 | 636.8 | 622.8 | 14.01 | 45.441 | |
| 3,100.0 | 3,094.5 | 2,933.1 | 2,819.7 | 6.9 | 14.0 | 57.22 | -449.4 | -526.5 | 673.4 | 658.8 | 14.58 | 46.176 | |
| 3,200.0 | 3,194.1 | 3,026.2 | 2,904.2 | 7.1 | 14.8 | 57.06 | -476.8 | -554.0 | 710.0 | 694.9 | 15.16 | 46.848 | |
| 3,300.0 | 3,293.8 | 3,119.2 | 2,988.7 | 7.4 | 15.6 | 56.90 | -504.3 | -581.6 | 746.7 | 730.9 | 15.73 | 47.462 | |
| 3,400.0 | 3,393.4 | 3,212.3 | 3,073.2 | 7.6 | 16.3 | 56.77 | -531.7 | -609.1 | 783.3 | 767.0 | 16.31 | 48.026 | |
| 3,500.0 | 3,493.0 | 3,305.3 | 3,157.8 | 7.9 | 17.1 | 56.64 | -559.2 | -636.7 | 819.9 | 803.0 | 16.89 | 48.546 | |
| 3,600.0 | 3,592.7 | 3,398.3 | 3,242.3 | 8.2 | 17.9 | 56.53 | -586.7 | -664.2 | 856.5 | 839.1 | 17.47 | 49.026 | |
| 3,700.0 | 3,692.3 | 3,491.4 | 3,326.8 | 8.4 | 18.7 | 56.42 | -614.1 | -691.8 | 893.2 | 875.1 | 18.05 | 49.469 | |
| 3,800.0 | 3,791.9 | 3,584.4 | 3,411.3 | 8.7 | 19.5 | 56.32 | -641.6 | -719.3 | 929.8 | 911.2 | 18.64 | 49.881 | |
| 3,900.0 | 3,891.6 | 3,677.4 | 3,495.8 | 9.0 | 20.3 | 56.23 | -669.1 | -746.9 | 966.4 | 947.2 | 19.23 | 50.265 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SHOOK PAD 3-1S-67W - SHOOK 3-10-1NCH - Wellbore #1 - PLAN 1 (FEB 4 2016)

**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 | -89.98 | 0.0 | -89.7 | 89.7 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -89.98 | 0.0 | -89.7 | 89.7 | 89.4 | 0.22 | 398.915 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -89.98 | 0.0 | -89.7 | 89.7 | 89.0 | 0.67 | 132.972 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.6 | 0.6 | -89.98 | 0.0 | -89.7 | 89.7 | 88.5 | 1.12 | 79.783 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | -89.98 | 0.0 | -89.7 | 89.7 | 88.1 | 1.57 | 56.988 | CC, ES |
| 500.0 | 500.0 | 498.2 | 498.2 | 1.0 | 1.0 | -90.50 | -0.8 | -90.6 | 90.6 | 88.6 | 2.00 | 45.373 | |
| 600.0 | 600.0 | 596.4 | 596.3 | 1.2 | 1.2 | -92.01 | -3.3 | -93.5 | 93.6 | 91.2 | 2.41 | 38.759 | |
| 700.0 | 700.0 | 694.2 | 693.9 | 1.5 | 1.4 | -94.32 | -7.4 | -98.2 | 98.7 | 95.8 | 2.85 | 34.668 | |
| 800.0 | 800.0 | 791.7 | 791.0 | 1.7 | 1.6 | -97.16 | -13.2 | -104.8 | 106.0 | 102.7 | 3.29 | 32.226 | |
| 900.0 | 900.0 | 888.6 | 887.3 | 1.9 | 1.9 | -100.27 | -20.5 | -113.2 | 115.7 | 112.0 | 3.74 | 30.931 | |
| 1,000.0 | 1,000.0 | 985.0 | 982.7 | 2.1 | 2.2 | -103.40 | -29.4 | -123.3 | 128.0 | 123.8 | 4.20 | 30.466 | SF |
| 1,100.0 | 1,100.0 | 1,080.6 | 1,077.0 | 2.4 | 2.5 | -106.38 | -39.7 | -135.2 | 142.8 | 138.1 | 4.66 | 30.618 | |
| 1,200.0 | 1,200.0 | 1,175.3 | 1,170.0 | 2.6 | 2.8 | -109.12 | -51.5 | -148.7 | 160.2 | 155.1 | 5.13 | 31.232 | |
| 1,300.0 | 1,300.0 | 1,269.1 | 1,261.6 | 2.8 | 3.2 | -111.56 | -64.7 | -163.8 | 180.3 | 174.7 | 5.60 | 32.196 | |
| 1,400.0 | 1,400.0 | 1,361.8 | 1,351.6 | 3.0 | 3.7 | -113.71 | -79.2 | -180.4 | 202.8 | 196.8 | 6.07 | 33.422 | |
| 1,500.0 | 1,500.0 | 1,453.6 | 1,440.3 | 3.2 | 4.1 | 64.43 | -94.9 | -198.4 | 227.4 | 220.9 | 6.51 | 34.925 | |
| 1,600.0 | 1,599.9 | 1,544.6 | 1,527.5 | 3.4 | 4.6 | 63.19 | -111.9 | -217.8 | 253.2 | 246.2 | 6.94 | 36.498 | |
| 1,700.0 | 1,699.7 | 1,634.8 | 1,613.4 | 3.6 | 5.2 | 62.46 | -130.1 | -238.7 | 280.0 | 272.7 | 7.38 | 37.944 | |
| 1,728.8 | 1,728.4 | 1,660.6 | 1,637.9 | 3.6 | 5.3 | 62.32 | -135.6 | -244.9 | 288.0 | 280.5 | 7.51 | 38.336 | |
| 1,800.0 | 1,799.3 | 1,724.0 | 1,697.7 | 3.8 | 5.7 | 62.27 | -149.4 | -260.8 | 308.3 | 300.4 | 7.85 | 39.284 | |
| 1,900.0 | 1,899.0 | 1,812.1 | 1,780.2 | 4.0 | 6.3 | 62.13 | -169.7 | -284.0 | 338.6 | 330.3 | 8.33 | 40.656 | |
| 2,000.0 | 1,998.6 | 1,900.0 | 1,861.7 | 4.2 | 7.0 | 61.93 | -191.2 | -308.6 | 371.0 | 362.2 | 8.82 | 42.050 | |
| 2,100.0 | 2,098.2 | 1,984.3 | 1,939.2 | 4.4 | 7.6 | 61.70 | -213.0 | -333.6 | 405.5 | 396.2 | 9.32 | 43.502 | |
| 2,200.0 | 2,197.8 | 2,068.3 | 2,015.7 | 4.6 | 8.3 | 61.45 | -235.8 | -359.7 | 442.1 | 432.2 | 9.83 | 44.969 | |
| 2,300.0 | 2,297.5 | 2,160.1 | 2,098.8 | 4.9 | 9.1 | 61.18 | -261.5 | -389.0 | 479.8 | 469.4 | 10.37 | 46.256 | |
| 2,400.0 | 2,397.1 | 2,252.6 | 2,182.7 | 5.1 | 9.8 | 60.95 | -287.4 | -418.7 | 517.5 | 506.5 | 10.92 | 47.393 | |
| 2,500.0 | 2,496.7 | 2,345.2 | 2,266.5 | 5.3 | 10.6 | 60.74 | -313.2 | -448.3 | 555.2 | 543.7 | 11.47 | 48.395 | |
| 2,600.0 | 2,596.4 | 2,437.8 | 2,350.3 | 5.6 | 11.4 | 60.57 | -339.1 | -477.9 | 592.9 | 580.9 | 12.03 | 49.280 | |
| 2,700.0 | 2,696.0 | 2,530.4 | 2,434.2 | 5.8 | 12.2 | 60.41 | -365.0 | -507.5 | 630.6 | 618.0 | 12.60 | 50.067 | |
| 2,800.0 | 2,795.6 | 2,623.0 | 2,518.0 | 6.1 | 13.0 | 60.28 | -390.8 | -537.1 | 668.4 | 655.2 | 13.16 | 50.770 | |
| 2,900.0 | 2,895.3 | 2,715.6 | 2,601.8 | 6.3 | 13.8 | 60.15 | -416.7 | -566.8 | 706.1 | 692.4 | 13.74 | 51.401 | |
| 3,000.0 | 2,994.9 | 2,808.2 | 2,685.7 | 6.6 | 14.6 | 60.04 | -442.6 | -596.4 | 743.8 | 729.5 | 14.31 | 51.968 | |
| 3,100.0 | 3,094.5 | 2,900.8 | 2,769.5 | 6.9 | 15.4 | 59.94 | -468.5 | -626.0 | 781.6 | 766.7 | 14.89 | 52.482 | |
| 3,200.0 | 3,194.1 | 2,993.4 | 2,853.3 | 7.1 | 16.2 | 59.85 | -494.3 | -655.6 | 819.3 | 803.8 | 15.47 | 52.947 | |
| 3,300.0 | 3,293.8 | 3,086.0 | 2,937.2 | 7.4 | 17.1 | 59.77 | -520.2 | -685.2 | 857.0 | 841.0 | 16.06 | 53.371 | |
| 3,400.0 | 3,393.4 | 3,178.6 | 3,021.0 | 7.6 | 17.9 | 59.69 | -546.1 | -714.8 | 894.8 | 878.1 | 16.64 | 53.758 | |
| 3,500.0 | 3,493.0 | 3,271.2 | 3,104.8 | 7.9 | 18.7 | 59.62 | -572.0 | -744.5 | 932.5 | 915.3 | 17.23 | 54.113 | |
| 3,600.0 | 3,592.7 | 3,363.8 | 3,188.7 | 8.2 | 19.5 | 59.56 | -597.8 | -774.1 | 970.3 | 952.5 | 17.82 | 54.440 | |

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SHOOK PAD 3-1S-67W - SHOOK 3-10-2CDH - Wellbore #1 - PLAN 1 (FEB 4, 2016)

**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 | -89.97 | 0.0 | -58.8 | 58.8 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -89.97 | 0.0 | -58.8 | 58.8 | 58.6 | 0.22 | 261.788 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -89.97 | 0.0 | -58.8 | 58.8 | 58.2 | 0.67 | 87.263 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.6 | 0.6 | -89.97 | 0.0 | -58.8 | 58.8 | 57.7 | 1.12 | 52.358 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | -89.97 | 0.0 | -58.8 | 58.8 | 57.3 | 1.57 | 37.398 | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.0 | 1.0 | -89.97 | 0.0 | -58.8 | 58.8 | 56.8 | 2.02 | 29.088 | |
| 600.0 | 600.0 | 600.0 | 600.0 | 1.2 | 1.2 | -89.97 | 0.0 | -58.8 | 58.8 | 56.4 | 2.47 | 23.799 | |
| 700.0 | 700.0 | 700.0 | 700.0 | 1.5 | 1.5 | -89.97 | 0.0 | -58.8 | 58.8 | 55.9 | 2.92 | 20.138 | |
| 800.0 | 800.0 | 800.0 | 800.0 | 1.7 | 1.7 | -89.97 | 0.0 | -58.8 | 58.8 | 55.5 | 3.37 | 17.453 | CC, ES |
| 900.0 | 900.0 | 899.0 | 899.0 | 1.9 | 1.9 | -90.90 | -0.9 | -59.7 | 59.7 | 55.9 | 3.79 | 15.734 | |
| 1,000.0 | 1,000.0 | 997.8 | 997.7 | 2.1 | 2.1 | -93.53 | -3.8 | -62.2 | 62.4 | 58.2 | 4.20 | 14.843 | |
| 1,100.0 | 1,100.0 | 1,096.4 | 1,096.1 | 2.4 | 2.3 | -97.43 | -8.7 | -66.4 | 67.0 | 62.4 | 4.62 | 14.518 | SF |
| 1,200.0 | 1,200.0 | 1,194.6 | 1,193.9 | 2.6 | 2.5 | -102.01 | -15.4 | -72.2 | 74.0 | 69.0 | 5.05 | 14.678 | |
| 1,300.0 | 1,300.0 | 1,292.3 | 1,290.9 | 2.8 | 2.7 | -106.72 | -23.9 | -79.6 | 83.6 | 78.1 | 5.48 | 15.254 | |
| 1,400.0 | 1,400.0 | 1,389.3 | 1,387.0 | 3.0 | 3.0 | -111.14 | -34.2 | -88.6 | 95.8 | 89.9 | 5.92 | 16.184 | |
| 1,500.0 | 1,500.0 | 1,485.7 | 1,482.0 | 3.2 | 3.3 | 65.39 | -46.4 | -99.1 | 110.3 | 103.9 | 6.34 | 17.399 | |
| 1,600.0 | 1,599.9 | 1,581.6 | 1,576.2 | 3.4 | 3.6 | 63.25 | -60.2 | -111.0 | 126.2 | 119.4 | 6.74 | 18.721 | |
| 1,700.0 | 1,699.7 | 1,677.0 | 1,669.3 | 3.6 | 3.9 | 62.09 | -75.7 | -124.5 | 143.2 | 136.1 | 7.16 | 20.012 | |
| 1,728.8 | 1,728.4 | 1,704.4 | 1,696.0 | 3.6 | 4.1 | 61.89 | -80.5 | -128.7 | 148.4 | 141.1 | 7.28 | 20.379 | |
| 1,800.0 | 1,799.3 | 1,771.8 | 1,761.3 | 3.8 | 4.3 | 61.58 | -92.9 | -139.4 | 161.7 | 154.1 | 7.60 | 21.282 | |
| 1,900.0 | 1,899.0 | 1,865.6 | 1,851.9 | 4.0 | 4.8 | 61.01 | -111.6 | -155.6 | 182.4 | 174.3 | 8.06 | 22.643 | |
| 2,000.0 | 1,998.6 | 1,958.5 | 1,940.8 | 4.2 | 5.3 | 60.32 | -131.7 | -173.0 | 205.4 | 196.8 | 8.53 | 24.083 | |
| 2,100.0 | 2,098.2 | 2,050.3 | 2,028.1 | 4.4 | 5.8 | 59.59 | -153.2 | -191.7 | 230.6 | 221.6 | 9.01 | 25.592 | |
| 2,200.0 | 2,197.8 | 2,140.9 | 2,113.5 | 4.6 | 6.3 | 58.85 | -176.0 | -211.4 | 258.0 | 248.5 | 9.50 | 27.155 | |
| 2,300.0 | 2,297.5 | 2,230.3 | 2,197.1 | 4.9 | 6.9 | 58.11 | -199.9 | -232.2 | 287.6 | 277.6 | 10.00 | 28.765 | |
| 2,400.0 | 2,397.1 | 2,318.3 | 2,278.7 | 5.1 | 7.5 | 57.41 | -225.0 | -253.9 | 319.4 | 308.9 | 10.50 | 30.408 | |
| 2,500.0 | 2,496.7 | 2,412.5 | 2,365.5 | 5.3 | 8.2 | 56.73 | -252.6 | -277.8 | 352.3 | 341.2 | 11.03 | 31.939 | |
| 2,600.0 | 2,596.4 | 2,506.9 | 2,452.5 | 5.6 | 8.9 | 56.16 | -280.2 | -301.8 | 385.2 | 373.7 | 11.56 | 33.319 | |
| 2,700.0 | 2,696.0 | 2,601.2 | 2,539.4 | 5.8 | 9.6 | 55.68 | -307.8 | -325.8 | 418.2 | 406.1 | 12.10 | 34.563 | |
| 2,800.0 | 2,795.6 | 2,695.6 | 2,626.4 | 6.1 | 10.3 | 55.28 | -335.5 | -349.7 | 451.2 | 438.5 | 12.64 | 35.686 | |
| 2,900.0 | 2,895.3 | 2,789.9 | 2,713.4 | 6.3 | 11.0 | 54.93 | -363.1 | -373.7 | 484.2 | 471.0 | 13.19 | 36.704 | |
| 3,000.0 | 2,994.9 | 2,884.3 | 2,800.4 | 6.6 | 11.7 | 54.62 | -390.8 | -397.6 | 517.2 | 503.5 | 13.74 | 37.631 | |
| 3,100.0 | 3,094.5 | 2,978.7 | 2,887.4 | 6.9 | 12.5 | 54.35 | -418.4 | -421.6 | 550.3 | 536.0 | 14.30 | 38.478 | |
| 3,200.0 | 3,194.1 | 3,073.0 | 2,974.3 | 7.1 | 13.2 | 54.11 | -446.0 | -445.6 | 583.3 | 568.4 | 14.86 | 39.253 | |
| 3,300.0 | 3,293.8 | 3,167.4 | 3,061.3 | 7.4 | 13.9 | 53.90 | -473.7 | -469.5 | 616.4 | 600.9 | 15.42 | 39.965 | |
| 3,400.0 | 3,393.4 | 3,261.7 | 3,148.3 | 7.6 | 14.7 | 53.71 | -501.3 | -493.5 | 649.4 | 633.4 | 15.99 | 40.621 | |
| 3,500.0 | 3,493.0 | 3,356.1 | 3,235.3 | 7.9 | 15.4 | 53.53 | -528.9 | -517.5 | 682.5 | 665.9 | 16.55 | 41.226 | |
| 3,600.0 | 3,592.7 | 3,450.4 | 3,322.2 | 8.2 | 16.1 | 53.38 | -556.6 | -541.4 | 715.6 | 698.4 | 17.12 | 41.787 | |
| 3,700.0 | 3,692.3 | 3,544.8 | 3,409.2 | 8.4 | 16.9 | 53.23 | -584.2 | -565.4 | 748.6 | 730.9 | 17.70 | 42.307 | |
| 3,800.0 | 3,791.9 | 3,639.1 | 3,496.2 | 8.7 | 17.6 | 53.10 | -611.8 | -589.3 | 781.7 | 763.4 | 18.27 | 42.791 | |
| 3,900.0 | 3,891.6 | 3,733.5 | 3,583.2 | 9.0 | 18.3 | 52.98 | -639.5 | -613.3 | 814.8 | 795.9 | 18.84 | 43.242 | |
| 4,000.0 | 3,991.2 | 3,827.9 | 3,670.2 | 9.2 | 19.1 | 52.87 | -667.1 | -637.3 | 847.9 | 828.5 | 19.42 | 43.663 | |
| 4,100.0 | 4,090.8 | 3,922.2 | 3,757.1 | 9.5 | 19.8 | 52.77 | -694.8 | -661.2 | 881.0 | 861.0 | 20.00 | 44.057 | |
| 4,200.0 | 4,190.4 | 4,016.6 | 3,844.1 | 9.8 | 20.6 | 52.67 | -722.4 | -685.2 | 914.1 | 893.5 | 20.57 | 44.426 | |
| 4,300.0 | 4,290.1 | 4,110.9 | 3,931.1 | 10.1 | 21.3 | 52.58 | -750.0 | -709.1 | 947.2 | 926.0 | 21.15 | 44.773 | |
| 4,400.0 | 4,389.7 | 4,205.3 | 4,018.1 | 10.3 | 22.0 | 52.50 | -777.7 | -733.1 | 980.2 | 958.5 | 21.74 | 45.099 | |

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SHOOK PAD 3-1S-67W - SHOOK 3-10-2NAH - Wellbore #1 - PLAN 1 ( FEB 5 2016)

**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 | 0.0 | 58.8 | 58.8 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 90.03 | 0.0 | 58.8 | 58.8 | 58.6 | 0.22 | 261.788 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 90.03 | 0.0 | 58.8 | 58.8 | 58.2 | 0.67 | 87.263 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.6 | 0.6 | 90.03 | 0.0 | 58.8 | 58.8 | 57.7 | 1.12 | 52.358 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | 90.03 | 0.0 | 58.8 | 58.8 | 57.3 | 1.57 | 37.398 | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.0 | 1.0 | 90.03 | 0.0 | 58.8 | 58.8 | 56.8 | 2.02 | 29.088 | |
| 600.0 | 600.0 | 600.0 | 600.0 | 1.2 | 1.2 | 90.03 | 0.0 | 58.8 | 58.8 | 56.4 | 2.47 | 23.799 | |
| 700.0 | 700.0 | 700.0 | 700.0 | 1.5 | 1.5 | 90.03 | 0.0 | 58.8 | 58.8 | 55.9 | 2.92 | 20.138 | |
| 800.0 | 800.0 | 800.0 | 800.0 | 1.7 | 1.7 | 90.03 | 0.0 | 58.8 | 58.8 | 55.5 | 3.37 | 17.453 | CC, ES |
| 900.0 | 900.0 | 898.6 | 898.6 | 1.9 | 1.9 | 90.57 | -0.6 | 60.0 | 60.0 | 56.2 | 3.80 | 15.797 | |
| 1,000.0 | 1,000.0 | 997.1 | 997.0 | 2.1 | 2.1 | 92.07 | -2.3 | 63.4 | 63.5 | 59.3 | 4.21 | 15.075 | |
| 1,100.0 | 1,100.0 | 1,095.3 | 1,095.0 | 2.4 | 2.3 | 94.22 | -5.1 | 69.1 | 69.4 | 64.8 | 4.64 | 14.979 | SF |
| 1,200.0 | 1,200.0 | 1,193.2 | 1,192.5 | 2.6 | 2.5 | 96.67 | -9.0 | 77.0 | 77.8 | 72.8 | 5.06 | 15.372 | |
| 1,300.0 | 1,300.0 | 1,290.5 | 1,289.1 | 2.8 | 2.7 | 99.13 | -14.0 | 87.0 | 88.8 | 83.3 | 5.50 | 16.151 | |
| 1,400.0 | 1,400.0 | 1,387.2 | 1,384.8 | 3.0 | 3.0 | 101.41 | -20.0 | 99.2 | 102.3 | 96.4 | 5.94 | 17.234 | |
| 1,500.0 | 1,500.0 | 1,483.2 | 1,479.5 | 3.2 | 3.3 | -76.90 | -27.1 | 113.4 | 118.1 | 111.8 | 6.35 | 18.598 | |
| 1,600.0 | 1,599.9 | 1,579.9 | 1,574.5 | 3.4 | 3.6 | -76.42 | -35.1 | 129.8 | 135.6 | 128.8 | 6.75 | 20.083 | |
| 1,700.0 | 1,699.7 | 1,678.4 | 1,671.2 | 3.6 | 4.0 | -76.93 | -43.6 | 146.7 | 152.8 | 145.6 | 7.16 | 21.330 | |
| 1,728.8 | 1,728.4 | 1,706.8 | 1,699.0 | 3.6 | 4.1 | -77.22 | -46.0 | 151.6 | 157.7 | 150.4 | 7.29 | 21.639 | |
| 1,800.0 | 1,799.3 | 1,776.9 | 1,767.8 | 3.8 | 4.3 | -78.11 | -52.0 | 163.7 | 169.7 | 162.1 | 7.60 | 22.328 | |
| 1,900.0 | 1,899.0 | 1,875.4 | 1,864.5 | 4.0 | 4.7 | -79.18 | -60.4 | 180.7 | 186.6 | 178.6 | 8.05 | 23.172 | |
| 2,000.0 | 1,998.6 | 1,973.9 | 1,961.1 | 4.2 | 5.1 | -80.07 | -68.8 | 197.7 | 203.6 | 195.1 | 8.52 | 23.890 | |
| 2,100.0 | 2,098.2 | 2,072.4 | 2,057.8 | 4.4 | 5.5 | -80.82 | -77.2 | 214.7 | 220.6 | 211.6 | 9.00 | 24.504 | |
| 2,200.0 | 2,197.8 | 2,170.9 | 2,154.5 | 4.6 | 5.9 | -81.46 | -85.6 | 231.6 | 237.6 | 228.1 | 9.49 | 25.031 | |
| 2,300.0 | 2,297.5 | 2,269.4 | 2,251.1 | 4.9 | 6.3 | -82.02 | -94.0 | 248.6 | 254.7 | 244.7 | 10.00 | 25.484 | |
| 2,400.0 | 2,397.1 | 2,367.9 | 2,347.8 | 5.1 | 6.7 | -82.50 | -102.4 | 265.6 | 271.8 | 261.3 | 10.50 | 25.875 | |
| 2,500.0 | 2,496.7 | 2,466.4 | 2,444.5 | 5.3 | 7.1 | -82.93 | -110.8 | 282.6 | 288.9 | 277.9 | 11.02 | 26.216 | |
| 2,600.0 | 2,596.4 | 2,564.9 | 2,541.1 | 5.6 | 7.5 | -83.31 | -119.2 | 299.6 | 306.0 | 294.5 | 11.54 | 26.513 | |
| 2,700.0 | 2,696.0 | 2,663.4 | 2,637.8 | 5.8 | 7.9 | -83.65 | -127.6 | 316.6 | 323.2 | 311.1 | 12.07 | 26.773 | |
| 2,800.0 | 2,795.6 | 2,761.9 | 2,734.5 | 6.1 | 8.4 | -83.96 | -136.0 | 333.5 | 340.3 | 327.7 | 12.60 | 27.002 | |
| 2,900.0 | 2,895.3 | 2,860.4 | 2,831.1 | 6.3 | 8.8 | -84.24 | -144.5 | 350.5 | 357.5 | 344.3 | 13.14 | 27.205 | |
| 3,000.0 | 2,994.9 | 2,958.9 | 2,927.8 | 6.6 | 9.2 | -84.49 | -152.9 | 367.5 | 374.6 | 360.9 | 13.68 | 27.385 | |
| 3,100.0 | 3,094.5 | 3,057.4 | 3,024.4 | 6.9 | 9.6 | -84.72 | -161.3 | 384.5 | 391.8 | 377.6 | 14.22 | 27.546 | |
| 3,200.0 | 3,194.1 | 3,155.9 | 3,121.1 | 7.1 | 10.0 | -84.93 | -169.7 | 401.5 | 409.0 | 394.2 | 14.77 | 27.689 | |
| 3,300.0 | 3,293.8 | 3,254.4 | 3,217.8 | 7.4 | 10.5 | -85.12 | -178.1 | 418.5 | 426.1 | 410.8 | 15.32 | 27.818 | |
| 3,400.0 | 3,393.4 | 3,352.9 | 3,314.4 | 7.6 | 10.9 | -85.30 | -186.5 | 435.4 | 443.3 | 427.4 | 15.87 | 27.934 | |
| 3,500.0 | 3,493.0 | 3,451.4 | 3,411.1 | 7.9 | 11.3 | -85.47 | -194.9 | 452.4 | 460.5 | 444.1 | 16.42 | 28.039 | |
| 3,600.0 | 3,592.7 | 3,549.9 | 3,507.8 | 8.2 | 11.7 | -85.62 | -203.3 | 469.4 | 477.7 | 460.7 | 16.98 | 28.135 | |
| 3,700.0 | 3,692.3 | 3,648.4 | 3,604.4 | 8.4 | 12.1 | -85.76 | -211.7 | 486.4 | 494.9 | 477.3 | 17.54 | 28.221 | |
| 3,800.0 | 3,791.9 | 3,746.9 | 3,701.1 | 8.7 | 12.6 | -85.90 | -220.1 | 503.4 | 512.1 | 494.0 | 18.09 | 28.300 | |
| 3,900.0 | 3,891.6 | 3,845.4 | 3,797.8 | 9.0 | 13.0 | -86.02 | -228.5 | 520.3 | 529.3 | 510.6 | 18.65 | 28.373 | |
| 4,000.0 | 3,991.2 | 3,943.9 | 3,894.4 | 9.2 | 13.4 | -86.14 | -236.9 | 537.3 | 546.5 | 527.2 | 19.22 | 28.439 | |
| 4,100.0 | 4,090.8 | 4,042.5 | 3,991.1 | 9.5 | 13.8 | -86.25 | -245.4 | 554.3 | 563.7 | 543.9 | 19.78 | 28.500 | |
| 4,200.0 | 4,190.4 | 4,141.0 | 4,087.8 | 9.8 | 14.3 | -86.35 | -253.8 | 571.3 | 580.9 | 560.5 | 20.34 | 28.556 | |
| 4,300.0 | 4,290.1 | 4,239.5 | 4,184.4 | 10.1 | 14.7 | -86.45 | -262.2 | 588.3 | 598.1 | 577.2 | 20.91 | 28.607 | |
| 4,400.0 | 4,389.7 | 4,338.0 | 4,281.1 | 10.3 | 15.1 | -86.54 | -270.6 | 605.3 | 615.3 | 593.8 | 21.47 | 28.655 | |
| 4,500.0 | 4,489.3 | 4,436.5 | 4,377.7 | 10.6 | 15.5 | -86.62 | -279.0 | 622.2 | 632.5 | 610.4 | 22.04 | 28.699 | |
| 4,600.0 | 4,589.0 | 4,535.0 | 4,474.4 | 10.9 | 16.0 | -86.71 | -287.4 | 639.2 | 649.7 | 627.1 | 22.61 | 28.741 | |
| 4,700.0 | 4,688.6 | 4,633.5 | 4,571.1 | 11.1 | 16.4 | -86.78 | -295.8 | 656.2 | 666.9 | 643.7 | 23.17 | 28.779 | |
| 4,800.0 | 4,788.2 | 4,732.0 | 4,667.7 | 11.4 | 16.8 | -86.86 | -304.2 | 673.2 | 684.1 | 660.4 | 23.74 | 28.814 | |
| 4,900.0 | 4,887.9 | 4,830.5 | 4,764.4 | 11.7 | 17.3 | -86.93 | -312.6 | 690.2 | 701.3 | 677.0 | 24.31 | 28.848 | |
| 5,000.0 | 4,987.5 | 4,929.0 | 4,861.1 | 12.0 | 17.7 | -87.00 | -321.0 | 707.2 | 718.5 | 693.7 | 24.88 | 28.879 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SHOOK PAD 3-1S-67W - SHOOK 3-10-2NAH - Wellbore #1 - PLAN 1 ( FEB 5 2016)

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,100.0 | 5,087.1 | 5,027.5 | 4,957.7 | 12.2 | 18.1 | -87.06 | -329.4 | 724.1 | 735.8 | 710.3 | 25.45 | 28.908 | |
| 5,200.0 | 5,186.7 | 5,126.0 | 5,054.4 | 12.5 | 18.5 | -87.12 | -337.8 | 741.1 | 753.0 | 726.9 | 26.02 | 28.935 | |
| 5,300.0 | 5,286.4 | 5,224.5 | 5,151.1 | 12.8 | 19.0 | -87.18 | -346.3 | 758.1 | 770.2 | 743.6 | 26.59 | 28.961 | |
| 5,400.0 | 5,386.0 | 5,323.0 | 5,247.7 | 13.1 | 19.4 | -87.23 | -354.7 | 775.1 | 787.4 | 760.2 | 27.17 | 28.985 | |
| 5,500.0 | 5,485.6 | 5,421.5 | 5,344.4 | 13.3 | 19.8 | -87.29 | -363.1 | 792.1 | 804.6 | 776.9 | 27.74 | 29.007 | |
| 5,600.0 | 5,585.3 | 5,520.0 | 5,441.0 | 13.6 | 20.2 | -87.34 | -371.5 | 809.1 | 821.8 | 793.5 | 28.31 | 29.028 | |
| 5,700.0 | 5,684.9 | 5,618.5 | 5,537.7 | 13.9 | 20.7 | -87.39 | -379.9 | 826.0 | 839.0 | 810.2 | 28.88 | 29.049 | |
| 5,800.0 | 5,784.5 | 5,717.0 | 5,634.4 | 14.2 | 21.1 | -87.43 | -388.3 | 843.0 | 856.3 | 826.8 | 29.46 | 29.067 | |
| 5,900.0 | 5,884.1 | 5,815.5 | 5,731.0 | 14.4 | 21.5 | -87.48 | -396.7 | 860.0 | 873.5 | 843.5 | 30.03 | 29.085 | |
| 6,000.0 | 5,983.8 | 5,914.0 | 5,827.7 | 14.7 | 22.0 | -87.52 | -405.1 | 877.0 | 890.7 | 860.1 | 30.61 | 29.102 | |
| 6,100.0 | 6,083.4 | 6,012.5 | 5,924.4 | 15.0 | 22.4 | -87.56 | -413.5 | 894.0 | 907.9 | 876.7 | 31.18 | 29.118 | |
| 6,200.0 | 6,183.0 | 6,111.0 | 6,021.0 | 15.3 | 22.8 | -87.60 | -421.9 | 910.9 | 925.1 | 893.4 | 31.76 | 29.134 | |
| 6,300.0 | 6,282.7 | 6,209.5 | 6,117.7 | 15.5 | 23.2 | -87.64 | -430.3 | 927.9 | 942.4 | 910.0 | 32.33 | 29.148 | |
| 6,400.0 | 6,382.3 | 6,308.0 | 6,214.4 | 15.8 | 23.7 | -87.68 | -438.8 | 944.9 | 959.6 | 926.7 | 32.91 | 29.162 | |
| 6,500.0 | 6,481.9 | 6,406.5 | 6,311.0 | 16.1 | 24.1 | -87.72 | -447.2 | 961.9 | 976.8 | 943.3 | 33.48 | 29.175 | |
| 6,600.0 | 6,581.6 | 6,505.1 | 6,407.7 | 16.4 | 24.5 | -87.75 | -455.6 | 978.9 | 994.0 | 960.0 | 34.06 | 29.187 | |

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SHOOK PAD 3-1S-67W - SHOOK 3-10-2NBH - Wellbore #1 - PLAN 1 (FEB 4 2016)

**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 | -89.98 | 0.0 | -30.8 | 30.8 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -89.98 | 0.0 | -30.8 | 30.8 | 30.6 | 0.22 | 137.127 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -89.98 | 0.0 | -30.8 | 30.8 | 30.1 | 0.67 | 45.709 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.6 | 0.6 | -89.98 | 0.0 | -30.8 | 30.8 | 29.7 | 1.12 | 27.425 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | -89.98 | 0.0 | -30.8 | 30.8 | 29.2 | 1.57 | 19.590 | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.0 | 1.0 | -89.98 | 0.0 | -30.8 | 30.8 | 28.8 | 2.02 | 15.236 | |
| 600.0 | 600.0 | 600.0 | 600.0 | 1.2 | 1.2 | -89.98 | 0.0 | -30.8 | 30.8 | 28.3 | 2.47 | 12.466 | |
| 700.0 | 700.0 | 700.0 | 700.0 | 1.5 | 1.5 | -89.98 | 0.0 | -30.8 | 30.8 | 27.9 | 2.92 | 10.548 | |
| 800.0 | 800.0 | 800.0 | 800.0 | 1.7 | 1.7 | -89.98 | 0.0 | -30.8 | 30.8 | 27.5 | 3.37 | 9.142 | |
| 900.0 | 900.0 | 900.0 | 900.0 | 1.9 | 1.9 | -89.98 | 0.0 | -30.8 | 30.8 | 27.0 | 3.82 | 8.066 | |
| 1,000.0 | 1,000.0 | 1,000.0 | 1,000.0 | 2.1 | 2.1 | -89.98 | 0.0 | -30.8 | 30.8 | 26.6 | 4.27 | 7.217 | |
| 1,100.0 | 1,100.0 | 1,100.0 | 1,100.0 | 2.4 | 2.4 | -89.98 | 0.0 | -30.8 | 30.8 | 26.1 | 4.72 | 6.530 | |
| 1,200.0 | 1,200.0 | 1,200.0 | 1,200.0 | 2.6 | 2.6 | -89.98 | 0.0 | -30.8 | 30.8 | 25.7 | 5.17 | 5.962 | CC, ES |
| 1,300.0 | 1,300.0 | 1,299.6 | 1,299.6 | 2.8 | 2.8 | -92.02 | -1.1 | -31.5 | 31.5 | 25.9 | 5.59 | 5.634 | SF |
| 1,400.0 | 1,400.0 | 1,399.0 | 1,398.9 | 3.0 | 3.0 | -97.60 | -4.5 | -33.4 | 33.8 | 27.8 | 5.99 | 5.634 | |
| 1,500.0 | 1,500.0 | 1,498.2 | 1,497.9 | 3.2 | 3.1 | 76.63 | -10.0 | -36.7 | 37.8 | 31.4 | 6.37 | 5.932 | |
| 1,600.0 | 1,599.9 | 1,597.3 | 1,596.6 | 3.4 | 3.3 | 72.94 | -17.8 | -41.3 | 43.3 | 36.5 | 6.74 | 6.425 | |
| 1,700.0 | 1,699.7 | 1,696.2 | 1,694.8 | 3.6 | 3.6 | 70.98 | -27.7 | -47.1 | 50.0 | 42.9 | 7.12 | 7.025 | |
| 1,728.8 | 1,728.4 | 1,724.6 | 1,723.0 | 3.6 | 3.6 | 70.66 | -31.0 | -49.0 | 52.2 | 44.9 | 7.23 | 7.210 | |
| 1,800.0 | 1,799.3 | 1,794.8 | 1,792.4 | 3.8 | 3.8 | 69.72 | -39.8 | -54.2 | 58.1 | 50.6 | 7.52 | 7.721 | |
| 1,900.0 | 1,899.0 | 1,893.0 | 1,889.2 | 4.0 | 4.1 | 67.56 | -54.0 | -62.6 | 68.2 | 60.2 | 7.95 | 8.576 | |
| 2,000.0 | 1,998.6 | 1,990.6 | 1,985.0 | 4.2 | 4.4 | 64.90 | -70.3 | -72.1 | 80.4 | 72.0 | 8.39 | 9.584 | |
| 2,100.0 | 2,098.2 | 2,087.6 | 2,079.6 | 4.4 | 4.7 | 62.14 | -88.5 | -82.8 | 94.9 | 86.1 | 8.85 | 10.733 | |
| 2,200.0 | 2,197.8 | 2,183.8 | 2,173.0 | 4.6 | 5.1 | 59.49 | -108.6 | -94.6 | 111.8 | 102.5 | 9.31 | 12.011 | |
| 2,300.0 | 2,297.5 | 2,279.1 | 2,264.8 | 4.9 | 5.5 | 57.05 | -130.6 | -107.5 | 131.0 | 121.2 | 9.78 | 13.400 | |
| 2,400.0 | 2,397.1 | 2,373.4 | 2,355.1 | 5.1 | 5.9 | 54.87 | -154.2 | -121.4 | 152.6 | 142.4 | 10.25 | 14.887 | |
| 2,500.0 | 2,496.7 | 2,466.7 | 2,443.6 | 5.3 | 6.4 | 52.93 | -179.4 | -136.2 | 176.6 | 165.9 | 10.73 | 16.457 | |
| 2,600.0 | 2,596.4 | 2,558.7 | 2,530.2 | 5.6 | 7.0 | 51.22 | -206.2 | -151.9 | 203.0 | 191.8 | 11.22 | 18.094 | |
| 2,700.0 | 2,696.0 | 2,649.5 | 2,615.0 | 5.8 | 7.5 | 49.72 | -234.3 | -168.4 | 231.6 | 219.9 | 11.71 | 19.787 | |
| 2,800.0 | 2,795.6 | 2,740.9 | 2,699.5 | 6.1 | 8.1 | 48.38 | -264.3 | -186.0 | 262.4 | 250.2 | 12.20 | 21.512 | |
| 2,900.0 | 2,895.3 | 2,835.7 | 2,787.0 | 6.3 | 8.8 | 47.25 | -295.7 | -204.5 | 293.8 | 281.1 | 12.71 | 23.119 | |
| 3,000.0 | 2,994.9 | 2,930.5 | 2,874.5 | 6.6 | 9.4 | 46.34 | -327.2 | -223.0 | 325.3 | 312.1 | 13.22 | 24.602 | |
| 3,100.0 | 3,094.5 | 3,025.3 | 2,962.0 | 6.9 | 10.1 | 45.59 | -358.7 | -241.5 | 356.8 | 343.1 | 13.74 | 25.968 | |
| 3,200.0 | 3,194.1 | 3,120.1 | 3,049.5 | 7.1 | 10.8 | 44.96 | -390.1 | -260.0 | 388.4 | 374.1 | 14.26 | 27.228 | |
| 3,300.0 | 3,293.8 | 3,214.9 | 3,137.0 | 7.4 | 11.5 | 44.42 | -421.6 | -278.5 | 420.0 | 405.2 | 14.79 | 28.393 | |
| 3,400.0 | 3,393.4 | 3,309.7 | 3,224.5 | 7.6 | 12.2 | 43.96 | -453.1 | -296.9 | 451.6 | 436.3 | 15.32 | 29.471 | |
| 3,500.0 | 3,493.0 | 3,404.5 | 3,312.0 | 7.9 | 12.9 | 43.56 | -484.5 | -315.4 | 483.3 | 467.4 | 15.86 | 30.472 | |
| 3,600.0 | 3,592.7 | 3,499.3 | 3,399.5 | 8.2 | 13.6 | 43.21 | -516.0 | -333.9 | 515.0 | 498.6 | 16.40 | 31.401 | |
| 3,700.0 | 3,692.3 | 3,594.1 | 3,487.0 | 8.4 | 14.3 | 42.90 | -547.5 | -352.4 | 546.7 | 529.7 | 16.94 | 32.267 | |
| 3,800.0 | 3,791.9 | 3,688.9 | 3,574.5 | 8.7 | 15.0 | 42.62 | -578.9 | -370.9 | 578.4 | 560.9 | 17.49 | 33.074 | |
| 3,900.0 | 3,891.6 | 3,783.7 | 3,662.0 | 9.0 | 15.7 | 42.37 | -610.4 | -389.3 | 610.1 | 592.1 | 18.03 | 33.829 | |
| 4,000.0 | 3,991.2 | 3,878.5 | 3,749.5 | 9.2 | 16.4 | 42.15 | -641.9 | -407.8 | 641.8 | 623.2 | 18.58 | 34.535 | |
| 4,100.0 | 4,090.8 | 3,973.3 | 3,837.0 | 9.5 | 17.1 | 41.95 | -673.3 | -426.3 | 673.6 | 654.4 | 19.14 | 35.198 | |
| 4,200.0 | 4,190.4 | 4,068.1 | 3,924.5 | 9.8 | 17.9 | 41.77 | -704.8 | -444.8 | 705.3 | 685.6 | 19.69 | 35.821 | |
| 4,300.0 | 4,290.1 | 4,163.0 | 4,012.0 | 10.1 | 18.6 | 41.60 | -736.3 | -463.3 | 737.1 | 716.8 | 20.24 | 36.407 | |
| 4,400.0 | 4,389.7 | 4,257.8 | 4,099.5 | 10.3 | 19.3 | 41.44 | -767.7 | -481.8 | 768.8 | 748.0 | 20.80 | 36.959 | |
| 4,500.0 | 4,489.3 | 4,352.6 | 4,187.0 | 10.6 | 20.0 | 41.30 | -799.2 | -500.2 | 800.6 | 779.2 | 21.36 | 37.480 | |
| 4,600.0 | 4,589.0 | 4,447.4 | 4,274.5 | 10.9 | 20.7 | 41.17 | -830.7 | -518.7 | 832.3 | 810.4 | 21.92 | 37.972 | |
| 4,700.0 | 4,688.6 | 4,542.2 | 4,362.0 | 11.1 | 21.5 | 41.05 | -862.1 | -537.2 | 864.1 | 841.6 | 22.48 | 38.438 | |
| 4,800.0 | 4,788.2 | 4,637.0 | 4,449.5 | 11.4 | 22.2 | 40.94 | -893.6 | -555.7 | 895.9 | 872.8 | 23.04 | 38.880 | |
| 4,900.0 | 4,887.9 | 4,731.8 | 4,537.0 | 11.7 | 22.9 | 40.83 | -925.1 | -574.2 | 927.6 | 904.0 | 23.60 | 39.299 | |
| 5,000.0 | 4,987.5 | 4,826.6 | 4,624.5 | 12.0 | 23.6 | 40.73 | -956.5 | -592.7 | 959.4 | 935.3 | 24.17 | 39.697 | |

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SHOOK PAD 3-1S-67W - SHOOK 3-10-2NBH - Wellbore #1 - PLAN 1 (FEB 4 2016)

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,100.0 | 5,087.1 | 4,921.4 | 4,712.0 | 12.2 | 24.4 | 40.64 | -988.0 | -611.1 | 991.2 | 966.5 | 24.73 | 40.075 | |

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SHOOK PAD 3-1S-67W - SHOOK 3-10-2NCH - Wellbore #1 - PLAN 1 (FEB 5, 2016)

**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 | 14.0 | 14.0 | 14.0 | 0.00 | N/A | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 90.02 | 0.0 | 14.0 | 14.0 | 13.8 | 0.22 | 62.330 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 90.02 | 0.0 | 14.0 | 14.0 | 13.3 | 0.67 | 20.777 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.6 | 0.6 | 90.02 | 0.0 | 14.0 | 14.0 | 12.9 | 1.12 | 12.466 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | 90.02 | 0.0 | 14.0 | 14.0 | 12.4 | 1.57 | 8.904 | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.0 | 1.0 | 90.02 | 0.0 | 14.0 | 14.0 | 12.0 | 2.02 | 6.926 | |
| 600.0 | 600.0 | 600.0 | 600.0 | 1.2 | 1.2 | 90.02 | 0.0 | 14.0 | 14.0 | 11.5 | 2.47 | 5.666 | |
| 700.0 | 700.0 | 700.0 | 700.0 | 1.5 | 1.5 | 90.02 | 0.0 | 14.0 | 14.0 | 11.1 | 2.92 | 4.795 | |
| 800.0 | 800.0 | 800.0 | 800.0 | 1.7 | 1.7 | 90.02 | 0.0 | 14.0 | 14.0 | 10.6 | 3.37 | 4.155 | |
| 900.0 | 900.0 | 900.0 | 900.0 | 1.9 | 1.9 | 90.02 | 0.0 | 14.0 | 14.0 | 10.2 | 3.82 | 3.666 | |
| 1,000.0 | 1,000.0 | 1,000.0 | 1,000.0 | 2.1 | 2.1 | 90.02 | 0.0 | 14.0 | 14.0 | 9.7 | 4.27 | 3.281 | |
| 1,100.0 | 1,100.0 | 1,100.0 | 1,100.0 | 2.4 | 2.4 | 90.02 | 0.0 | 14.0 | 14.0 | 9.3 | 4.72 | 2.968 | |
| 1,200.0 | 1,200.0 | 1,200.0 | 1,200.0 | 2.6 | 2.6 | 90.02 | 0.0 | 14.0 | 14.0 | 8.8 | 5.17 | 2.710 | CC, ES |
| 1,300.0 | 1,300.0 | 1,299.8 | 1,299.8 | 2.8 | 2.8 | 94.57 | -1.2 | 14.6 | 14.6 | 9.1 | 5.59 | 2.620 | |
| 1,400.0 | 1,400.0 | 1,399.5 | 1,399.4 | 3.0 | 3.0 | 105.84 | -4.6 | 16.4 | 17.0 | 11.0 | 5.99 | 2.842 | |
| 1,500.0 | 1,500.0 | 1,499.0 | 1,498.7 | 3.2 | 3.1 | -64.60 | -10.4 | 19.3 | 21.4 | 15.0 | 6.37 | 3.359 | |
| 1,600.0 | 1,599.9 | 1,598.5 | 1,597.8 | 3.4 | 3.3 | -60.37 | -18.4 | 23.4 | 26.9 | 20.2 | 6.73 | 3.996 | |
| 1,700.0 | 1,699.7 | 1,698.3 | 1,697.2 | 3.6 | 3.6 | -61.00 | -27.0 | 27.7 | 31.7 | 24.6 | 7.11 | 4.458 | |
| 1,728.8 | 1,728.4 | 1,727.1 | 1,725.8 | 3.6 | 3.6 | -61.88 | -29.4 | 29.0 | 32.8 | 25.6 | 7.22 | 4.547 | |
| 1,800.0 | 1,799.3 | 1,798.2 | 1,796.6 | 3.8 | 3.8 | -64.26 | -35.5 | 32.1 | 35.6 | 28.1 | 7.51 | 4.741 | |
| 1,900.0 | 1,899.0 | 1,898.2 | 1,896.1 | 4.0 | 4.0 | -67.02 | -44.1 | 36.4 | 39.6 | 31.6 | 7.93 | 4.989 | |
| 2,000.0 | 1,998.6 | 1,998.1 | 1,995.5 | 4.2 | 4.3 | -69.28 | -52.6 | 40.8 | 43.6 | 35.2 | 8.37 | 5.210 | |
| 2,100.0 | 2,098.2 | 2,098.0 | 2,094.9 | 4.4 | 4.5 | -71.15 | -61.2 | 45.1 | 47.7 | 38.9 | 8.82 | 5.408 | |
| 2,200.0 | 2,197.8 | 2,197.9 | 2,194.4 | 4.6 | 4.8 | -72.73 | -69.7 | 49.5 | 51.8 | 42.5 | 9.28 | 5.583 | |
| 2,300.0 | 2,297.5 | 2,297.8 | 2,293.8 | 4.9 | 5.0 | -74.08 | -78.3 | 53.8 | 56.0 | 46.2 | 9.75 | 5.738 | |
| 2,400.0 | 2,397.1 | 2,397.7 | 2,393.3 | 5.1 | 5.3 | -75.23 | -86.8 | 58.2 | 60.2 | 49.9 | 10.24 | 5.877 | |
| 2,500.0 | 2,496.7 | 2,497.6 | 2,492.7 | 5.3 | 5.5 | -76.24 | -95.4 | 62.6 | 64.4 | 53.6 | 10.73 | 6.000 | |
| 2,600.0 | 2,596.4 | 2,597.5 | 2,592.2 | 5.6 | 5.8 | -77.12 | -104.0 | 66.9 | 68.6 | 57.4 | 11.23 | 6.111 | |
| 2,700.0 | 2,696.0 | 2,697.4 | 2,691.6 | 5.8 | 6.1 | -77.90 | -112.5 | 71.3 | 72.8 | 61.1 | 11.73 | 6.209 | |
| 2,800.0 | 2,795.6 | 2,797.3 | 2,791.0 | 6.1 | 6.3 | -78.59 | -121.1 | 75.6 | 77.1 | 64.9 | 12.24 | 6.298 | |
| 2,900.0 | 2,895.3 | 2,897.2 | 2,890.5 | 6.3 | 6.6 | -79.21 | -129.6 | 80.0 | 81.4 | 68.6 | 12.75 | 6.379 | |
| 3,000.0 | 2,994.9 | 2,997.1 | 2,989.9 | 6.6 | 6.9 | -79.77 | -138.2 | 84.3 | 85.6 | 72.4 | 13.27 | 6.451 | |
| 3,100.0 | 3,094.5 | 3,097.0 | 3,089.4 | 6.9 | 7.2 | -80.28 | -146.7 | 88.7 | 89.9 | 76.1 | 13.80 | 6.518 | |
| 3,200.0 | 3,194.1 | 3,196.9 | 3,188.8 | 7.1 | 7.5 | -80.74 | -155.3 | 93.0 | 94.2 | 79.9 | 14.32 | 6.578 | |
| 3,300.0 | 3,293.8 | 3,296.8 | 3,288.3 | 7.4 | 7.7 | -81.16 | -163.8 | 97.4 | 98.5 | 83.6 | 14.85 | 6.633 | |
| 3,400.0 | 3,393.4 | 3,396.7 | 3,387.7 | 7.6 | 8.0 | -81.54 | -172.4 | 101.7 | 102.8 | 87.4 | 15.38 | 6.683 | |
| 3,500.0 | 3,493.0 | 3,496.6 | 3,487.1 | 7.9 | 8.3 | -81.90 | -181.0 | 106.1 | 107.1 | 91.2 | 15.91 | 6.729 | |
| 3,600.0 | 3,592.7 | 3,596.5 | 3,586.6 | 8.2 | 8.6 | -82.22 | -189.5 | 110.5 | 111.4 | 94.9 | 16.45 | 6.772 | |
| 3,700.0 | 3,692.3 | 3,696.5 | 3,686.0 | 8.4 | 8.9 | -82.53 | -198.1 | 114.8 | 115.7 | 98.7 | 16.99 | 6.811 | |
| 3,800.0 | 3,791.9 | 3,796.4 | 3,785.5 | 8.7 | 9.1 | -82.81 | -206.6 | 119.2 | 120.0 | 102.5 | 17.53 | 6.848 | |
| 3,900.0 | 3,891.6 | 3,896.3 | 3,884.9 | 9.0 | 9.4 | -83.07 | -215.2 | 123.5 | 124.3 | 106.3 | 18.07 | 6.882 | |
| 4,000.0 | 3,991.2 | 3,996.2 | 3,984.4 | 9.2 | 9.7 | -83.31 | -223.7 | 127.9 | 128.6 | 110.0 | 18.61 | 6.913 | |
| 4,100.0 | 4,090.8 | 4,096.1 | 4,083.8 | 9.5 | 10.0 | -83.54 | -232.3 | 132.2 | 133.0 | 113.8 | 19.15 | 6.942 | |
| 4,200.0 | 4,190.4 | 4,196.0 | 4,183.2 | 9.8 | 10.3 | -83.75 | -240.8 | 136.6 | 137.3 | 117.6 | 19.70 | 6.970 | |
| 4,300.0 | 4,290.1 | 4,295.9 | 4,282.7 | 10.1 | 10.6 | -83.95 | -249.4 | 140.9 | 141.6 | 121.4 | 20.24 | 6.995 | |
| 4,400.0 | 4,389.7 | 4,395.8 | 4,382.1 | 10.3 | 10.8 | -84.14 | -258.0 | 145.3 | 145.9 | 125.1 | 20.79 | 7.019 | |
| 4,500.0 | 4,489.3 | 4,495.7 | 4,481.6 | 10.6 | 11.1 | -84.32 | -266.5 | 149.6 | 150.3 | 128.9 | 21.34 | 7.042 | |
| 4,600.0 | 4,589.0 | 4,595.6 | 4,581.0 | 10.9 | 11.4 | -84.49 | -275.1 | 154.0 | 154.6 | 132.7 | 21.89 | 7.063 | |
| 4,700.0 | 4,688.6 | 4,695.5 | 4,680.5 | 11.1 | 11.7 | -84.65 | -283.6 | 158.3 | 158.9 | 136.5 | 22.44 | 7.083 | |
| 4,800.0 | 4,788.2 | 4,795.4 | 4,779.9 | 11.4 | 12.0 | -84.80 | -292.2 | 162.7 | 163.2 | 140.3 | 22.99 | 7.102 | |
| 4,900.0 | 4,887.9 | 4,895.3 | 4,879.3 | 11.7 | 12.3 | -84.94 | -300.7 | 167.1 | 167.6 | 144.0 | 23.54 | 7.120 | |
| 5,000.0 | 4,987.5 | 4,995.2 | 4,978.8 | 12.0 | 12.6 | -85.07 | -309.3 | 171.4 | 171.9 | 147.8 | 24.09 | 7.136 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SHOOK PAD 3-1S-67W - SHOOK 3-10-2NCH - Wellbore #1 - PLAN 1 (FEB 5, 2016)

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,100.0 | 5,087.1 | 5,095.1 | 5,078.2 | 12.2 | 12.9 | -85.20 | -317.8 | 175.8 | 176.2 | 151.6 | 24.64 | 7.152 | |
| 5,200.0 | 5,186.7 | 5,195.0 | 5,177.7 | 12.5 | 13.1 | -85.32 | -326.4 | 180.1 | 180.6 | 155.4 | 25.19 | 7.167 | |
| 5,300.0 | 5,286.4 | 5,294.9 | 5,277.1 | 12.8 | 13.4 | -85.44 | -335.0 | 184.5 | 184.9 | 159.2 | 25.75 | 7.182 | |
| 5,400.0 | 5,386.0 | 5,394.8 | 5,376.6 | 13.1 | 13.7 | -85.55 | -343.5 | 188.8 | 189.2 | 162.9 | 26.30 | 7.195 | |
| 5,500.0 | 5,485.6 | 5,494.7 | 5,476.0 | 13.3 | 14.0 | -85.66 | -352.1 | 193.2 | 193.6 | 166.7 | 26.85 | 7.208 | |
| 5,600.0 | 5,585.3 | 5,594.7 | 5,575.5 | 13.6 | 14.3 | -85.76 | -360.6 | 197.5 | 197.9 | 170.5 | 27.41 | 7.221 | |
| 5,700.0 | 5,684.9 | 5,694.6 | 5,674.9 | 13.9 | 14.6 | -85.86 | -369.2 | 201.9 | 202.2 | 174.3 | 27.96 | 7.232 | |
| 5,800.0 | 5,784.5 | 5,794.5 | 5,774.3 | 14.2 | 14.9 | -85.95 | -377.7 | 206.2 | 206.6 | 178.1 | 28.52 | 7.244 | |
| 5,900.0 | 5,884.1 | 5,894.4 | 5,873.8 | 14.4 | 15.2 | -86.04 | -386.3 | 210.6 | 210.9 | 181.8 | 29.07 | 7.254 | |
| 6,000.0 | 5,983.8 | 5,994.3 | 5,973.2 | 14.7 | 15.5 | -86.13 | -394.8 | 215.0 | 215.3 | 185.6 | 29.63 | 7.265 | |
| 6,100.0 | 6,083.4 | 6,094.2 | 6,072.7 | 15.0 | 15.7 | -86.21 | -403.4 | 219.3 | 219.6 | 189.4 | 30.19 | 7.274 | |
| 6,200.0 | 6,183.0 | 6,194.1 | 6,172.1 | 15.3 | 16.0 | -86.29 | -412.0 | 223.7 | 223.9 | 193.2 | 30.74 | 7.284 | |
| 6,300.0 | 6,282.7 | 6,294.0 | 6,271.6 | 15.5 | 16.3 | -86.36 | -420.5 | 228.0 | 228.3 | 197.0 | 31.30 | 7.293 | |
| 6,400.0 | 6,382.3 | 6,393.9 | 6,371.0 | 15.8 | 16.6 | -86.44 | -429.1 | 232.4 | 232.6 | 200.8 | 31.86 | 7.301 | |
| 6,500.0 | 6,481.9 | 6,493.8 | 6,470.4 | 16.1 | 16.9 | -86.51 | -437.6 | 236.7 | 237.0 | 204.5 | 32.42 | 7.310 | |
| 6,600.0 | 6,581.6 | 6,593.7 | 6,569.9 | 16.4 | 17.2 | -86.58 | -446.2 | 241.1 | 241.3 | 208.3 | 32.97 | 7.318 | |
| 6,700.0 | 6,681.2 | 6,693.6 | 6,669.3 | 16.7 | 17.5 | -86.64 | -454.7 | 245.4 | 245.6 | 212.1 | 33.53 | 7.325 | |
| 6,800.0 | 6,780.8 | 6,793.5 | 6,768.8 | 16.9 | 17.8 | -86.71 | -463.3 | 249.8 | 250.0 | 215.9 | 34.09 | 7.333 | |
| 6,900.0 | 6,880.4 | 6,893.4 | 6,868.2 | 17.2 | 18.1 | -86.77 | -471.8 | 254.1 | 254.3 | 219.7 | 34.65 | 7.340 | |
| 7,000.0 | 6,980.1 | 6,993.3 | 6,967.7 | 17.5 | 18.4 | -86.83 | -480.4 | 258.5 | 258.7 | 223.5 | 35.21 | 7.347 | |
| 7,100.0 | 7,079.7 | 7,092.3 | 7,066.0 | 17.8 | 18.7 | -86.57 | -490.3 | 262.8 | 263.1 | 227.3 | 35.76 | 7.356 | |
| 7,204.1 | 7,183.4 | 7,192.3 | 7,163.5 | 18.1 | 19.1 | -83.79 | -512.0 | 267.1 | 268.7 | 232.4 | 36.31 | 7.401 | |
| 7,250.0 | 7,229.0 | 7,235.3 | 7,204.2 | 18.2 | 19.3 | -81.72 | -525.5 | 268.9 | 271.9 | 235.3 | 36.56 | 7.437 | |
| 7,300.0 | 7,278.1 | 7,281.5 | 7,247.0 | 18.4 | 19.5 | -79.60 | -542.7 | 270.8 | 275.5 | 238.7 | 36.86 | 7.474 | |
| 7,350.0 | 7,326.5 | 7,327.2 | 7,288.2 | 18.6 | 19.8 | -77.60 | -562.4 | 272.7 | 279.4 | 242.2 | 37.21 | 7.508 | |
| 7,400.0 | 7,373.9 | 7,372.4 | 7,327.7 | 18.9 | 20.1 | -75.71 | -584.4 | 274.5 | 283.4 | 245.8 | 37.60 | 7.538 | |
| 7,450.0 | 7,420.0 | 7,417.1 | 7,365.2 | 19.1 | 20.5 | -73.94 | -608.6 | 276.2 | 287.5 | 249.5 | 38.01 | 7.565 | |
| 7,500.0 | 7,464.7 | 7,461.4 | 7,400.9 | 19.5 | 20.8 | -72.28 | -634.8 | 277.8 | 291.7 | 253.3 | 38.44 | 7.588 | |
| 7,550.0 | 7,507.7 | 7,505.4 | 7,434.6 | 19.8 | 21.2 | -70.74 | -663.0 | 279.4 | 295.9 | 257.0 | 38.90 | 7.606 | |
| 7,600.0 | 7,548.9 | 7,550.0 | 7,467.0 | 20.2 | 21.6 | -69.28 | -693.6 | 280.9 | 300.0 | 260.6 | 39.39 | 7.617 | |
| 7,650.0 | 7,588.0 | 7,592.2 | 7,495.8 | 20.7 | 22.1 | -68.00 | -724.4 | 282.2 | 304.0 | 264.1 | 39.89 | 7.621 | |
| 7,700.0 | 7,624.7 | 7,635.1 | 7,523.2 | 21.1 | 22.5 | -66.80 | -757.4 | 283.5 | 307.9 | 267.5 | 40.43 | 7.616 | |
| 7,750.0 | 7,659.1 | 7,677.8 | 7,548.5 | 21.6 | 23.0 | -65.71 | -791.8 | 284.7 | 311.6 | 270.6 | 40.99 | 7.601 | |
| 7,800.0 | 7,690.8 | 7,720.2 | 7,571.5 | 22.2 | 23.5 | -64.73 | -827.4 | 285.8 | 315.0 | 273.4 | 41.59 | 7.574 | |
| 7,850.0 | 7,719.8 | 7,762.4 | 7,592.3 | 22.7 | 24.0 | -63.86 | -864.1 | 286.8 | 318.2 | 276.0 | 42.24 | 7.533 | |
| 7,900.0 | 7,745.8 | 7,804.4 | 7,610.7 | 23.3 | 24.5 | -63.10 | -901.8 | 287.7 | 321.1 | 278.2 | 42.94 | 7.478 | |
| 7,950.0 | 7,768.8 | 7,850.0 | 7,628.3 | 24.0 | 25.1 | -62.40 | -943.9 | 288.6 | 323.7 | 280.0 | 43.74 | 7.402 | |
| 8,000.0 | 7,788.7 | 7,888.0 | 7,640.8 | 24.6 | 25.7 | -61.88 | -979.7 | 289.3 | 326.0 | 281.4 | 44.54 | 7.319 | |
| 8,050.0 | 7,805.3 | 7,929.6 | 7,652.3 | 25.3 | 26.2 | -61.42 | -1,019.7 | 289.9 | 327.8 | 282.4 | 45.44 | 7.214 | |
| 8,100.0 | 7,818.5 | 7,971.1 | 7,661.5 | 26.1 | 26.8 | -61.05 | -1,060.1 | 290.4 | 329.3 | 282.9 | 46.43 | 7.093 | |
| 8,150.0 | 7,828.4 | 8,012.5 | 7,668.3 | 26.8 | 27.4 | -60.79 | -1,101.0 | 290.8 | 330.4 | 282.9 | 47.50 | 6.957 | |
| 8,200.0 | 7,834.8 | 8,050.0 | 7,672.5 | 27.5 | 28.0 | -60.63 | -1,138.3 | 291.1 | 331.2 | 282.6 | 48.60 | 6.815 | |
| 8,250.0 | 7,837.8 | 8,095.2 | 7,674.8 | 28.3 | 28.7 | -60.55 | -1,183.4 | 291.4 | 331.5 | 281.6 | 49.88 | 6.645 | |
| 8,267.4 | 7,838.0 | 8,110.3 | 7,675.0 | 28.6 | 28.9 | -60.54 | -1,198.4 | 291.4 | 331.5 | 281.1 | 50.34 | 6.584 | |
| 8,281.8 | 7,838.0 | 8,123.8 | 7,675.0 | 28.8 | 29.1 | -60.54 | -1,212.0 | 291.5 | 331.5 | 280.7 | 50.73 | 6.534 | |
| 8,300.0 | 7,838.0 | 8,142.0 | 7,675.0 | 29.1 | 29.4 | -60.54 | -1,230.2 | 291.5 | 331.4 | 280.2 | 51.23 | 6.470 | |
| 8,400.0 | 7,838.0 | 8,242.0 | 7,675.0 | 30.7 | 30.9 | -60.54 | -1,330.2 | 291.8 | 331.4 | 277.4 | 54.02 | 6.134 | |
| 8,500.0 | 7,838.0 | 8,342.0 | 7,675.0 | 32.3 | 32.5 | -60.53 | -1,430.2 | 292.1 | 331.4 | 274.5 | 56.89 | 5.825 | |
| 8,600.0 | 7,838.0 | 8,442.0 | 7,675.0 | 33.9 | 34.2 | -60.53 | -1,530.2 | 292.4 | 331.3 | 271.5 | 59.81 | 5.540 | |
| 8,700.0 | 7,838.0 | 8,542.0 | 7,675.0 | 35.6 | 35.8 | -60.53 | -1,630.2 | 292.7 | 331.3 | 268.5 | 62.78 | 5.277 | |
| 8,800.0 | 7,838.0 | 8,642.0 | 7,675.0 | 37.3 | 37.5 | -60.52 | -1,730.2 | 293.0 | 331.2 | 265.4 | 65.79 | 5.035 | |
| 8,900.0 | 7,838.0 | 8,742.0 | 7,675.0 | 39.0 | 39.2 | -60.52 | -1,830.2 | 293.3 | 331.2 | 262.4 | 68.84 | 4.811 | |

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SHOOK PAD 3-1S-67W - SHOOK 3-10-2NCH - Wellbore #1 - PLAN 1 (FEB 5, 2016)

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9,000.0 | 7,838.0 | 8,842.0 | 7,675.0 | 40.7 | 40.9 | -60.51 | -1,930.2 | 293.6 | 331.2 | 259.2 | 71.92 | 4.604 | |
| 9,100.0 | 7,838.0 | 8,942.0 | 7,675.0 | 42.5 | 42.7 | -60.51 | -2,030.2 | 293.9 | 331.1 | 256.1 | 75.03 | 4.413 | |
| 9,200.0 | 7,838.0 | 9,042.0 | 7,675.0 | 44.2 | 44.4 | -60.51 | -2,130.2 | 294.2 | 331.1 | 252.9 | 78.17 | 4.235 | |
| 9,300.0 | 7,838.0 | 9,142.0 | 7,675.0 | 46.0 | 46.2 | -60.50 | -2,230.2 | 294.5 | 331.0 | 249.7 | 81.33 | 4.070 | |
| 9,400.0 | 7,838.0 | 9,242.0 | 7,675.0 | 47.8 | 48.0 | -60.50 | -2,330.2 | 294.8 | 331.0 | 246.5 | 84.50 | 3.917 | |
| 9,500.0 | 7,838.0 | 9,342.0 | 7,675.0 | 49.6 | 49.7 | -60.49 | -2,430.2 | 295.1 | 330.9 | 243.2 | 87.70 | 3.774 | |
| 9,600.0 | 7,838.0 | 9,442.0 | 7,675.0 | 51.4 | 51.5 | -60.49 | -2,530.2 | 295.4 | 330.9 | 240.0 | 90.91 | 3.640 | |
| 9,700.0 | 7,838.0 | 9,542.0 | 7,675.0 | 53.2 | 53.3 | -60.49 | -2,630.2 | 295.7 | 330.9 | 236.7 | 94.13 | 3.515 | |
| 9,800.0 | 7,838.0 | 9,642.0 | 7,675.0 | 55.0 | 55.1 | -60.48 | -2,730.2 | 296.0 | 330.8 | 233.5 | 97.37 | 3.398 | |
| 9,900.0 | 7,838.0 | 9,742.0 | 7,675.0 | 56.9 | 57.0 | -60.48 | -2,830.2 | 296.3 | 330.8 | 230.2 | 100.61 | 3.288 | |
| 10,000.0 | 7,838.0 | 9,842.0 | 7,675.0 | 58.7 | 58.8 | -60.47 | -2,930.2 | 296.6 | 330.7 | 226.9 | 103.87 | 3.184 | |
| 10,100.0 | 7,838.0 | 9,942.0 | 7,675.0 | 60.5 | 60.6 | -60.47 | -3,030.2 | 296.9 | 330.7 | 223.6 | 107.14 | 3.087 | |
| 10,200.0 | 7,838.0 | 10,042.0 | 7,675.0 | 62.4 | 62.5 | -60.46 | -3,130.2 | 297.2 | 330.7 | 220.2 | 110.41 | 2.995 | |
| 10,300.0 | 7,838.0 | 10,142.0 | 7,675.0 | 64.2 | 64.3 | -60.46 | -3,230.2 | 297.5 | 330.6 | 216.9 | 113.69 | 2.908 | |
| 10,400.0 | 7,838.0 | 10,242.0 | 7,675.0 | 66.1 | 66.1 | -60.46 | -3,330.2 | 297.8 | 330.6 | 213.6 | 116.98 | 2.826 | |
| 10,500.0 | 7,838.0 | 10,342.0 | 7,675.0 | 67.9 | 68.0 | -60.45 | -3,430.2 | 298.1 | 330.5 | 210.2 | 120.28 | 2.748 | |
| 10,600.0 | 7,838.0 | 10,442.0 | 7,675.0 | 69.8 | 69.8 | -60.45 | -3,530.2 | 298.4 | 330.5 | 206.9 | 123.58 | 2.674 | |
| 10,700.0 | 7,838.0 | 10,542.0 | 7,675.0 | 71.6 | 71.7 | -60.44 | -3,630.2 | 298.7 | 330.4 | 203.6 | 126.89 | 2.604 | |
| 10,800.0 | 7,838.0 | 10,642.0 | 7,675.0 | 73.5 | 73.6 | -60.44 | -3,730.2 | 298.9 | 330.4 | 200.2 | 130.20 | 2.538 | |
| 10,900.0 | 7,838.0 | 10,742.0 | 7,675.0 | 75.4 | 75.4 | -60.44 | -3,830.2 | 299.2 | 330.4 | 196.8 | 133.52 | 2.474 | |
| 11,000.0 | 7,838.0 | 10,842.0 | 7,675.0 | 77.2 | 77.3 | -60.43 | -3,930.2 | 299.5 | 330.3 | 193.5 | 136.84 | 2.414 | |
| 11,100.0 | 7,838.0 | 10,942.0 | 7,675.0 | 79.1 | 79.1 | -60.43 | -4,030.2 | 299.8 | 330.3 | 190.1 | 140.16 | 2.356 | |
| 11,200.0 | 7,838.0 | 11,042.0 | 7,675.0 | 81.0 | 81.0 | -60.42 | -4,130.2 | 300.1 | 330.2 | 186.7 | 143.49 | 2.301 | |
| 11,300.0 | 7,838.0 | 11,142.0 | 7,675.0 | 82.8 | 82.9 | -60.42 | -4,230.2 | 300.4 | 330.2 | 183.4 | 146.82 | 2.249 | |
| 11,400.0 | 7,838.0 | 11,242.0 | 7,675.0 | 84.7 | 84.8 | -60.42 | -4,330.2 | 300.7 | 330.2 | 180.0 | 150.16 | 2.199 | |
| 11,500.0 | 7,838.0 | 11,342.0 | 7,675.0 | 86.6 | 86.6 | -60.41 | -4,430.2 | 301.0 | 330.1 | 176.6 | 153.49 | 2.151 | |
| 11,600.0 | 7,838.0 | 11,442.0 | 7,675.0 | 88.5 | 88.5 | -60.41 | -4,530.2 | 301.3 | 330.1 | 173.2 | 156.83 | 2.105 | |
| 11,700.0 | 7,838.0 | 11,542.0 | 7,675.0 | 90.3 | 90.4 | -60.40 | -4,630.2 | 301.6 | 330.0 | 169.9 | 160.18 | 2.060 | |
| 11,800.0 | 7,838.0 | 11,642.0 | 7,675.0 | 92.2 | 92.3 | -60.40 | -4,730.2 | 301.9 | 330.0 | 166.5 | 163.52 | 2.018 | |
| 11,900.0 | 7,838.0 | 11,742.0 | 7,675.0 | 94.1 | 94.1 | -60.39 | -4,830.2 | 302.2 | 329.9 | 163.1 | 166.87 | 1.977 | |
| 12,000.0 | 7,838.0 | 11,842.0 | 7,675.0 | 96.0 | 96.0 | -60.39 | -4,930.2 | 302.5 | 329.9 | 159.7 | 170.22 | 1.938 | |
| 12,100.0 | 7,838.0 | 11,942.0 | 7,675.0 | 97.9 | 97.9 | -60.39 | -5,030.2 | 302.8 | 329.9 | 156.3 | 173.57 | 1.900 | |
| 12,200.0 | 7,838.0 | 12,042.0 | 7,675.0 | 99.8 | 99.8 | -60.38 | -5,130.2 | 303.1 | 329.8 | 152.9 | 176.92 | 1.864 | |
| 12,300.0 | 7,838.0 | 12,142.0 | 7,675.0 | 101.7 | 101.7 | -60.38 | -5,230.2 | 303.4 | 329.8 | 149.5 | 180.28 | 1.829 | |
| 12,400.0 | 7,838.0 | 12,242.0 | 7,675.0 | 103.5 | 103.6 | -60.37 | -5,330.2 | 303.7 | 329.7 | 146.1 | 183.63 | 1.796 | |
| 12,500.0 | 7,838.0 | 12,342.0 | 7,675.0 | 105.4 | 105.4 | -60.37 | -5,430.2 | 304.0 | 329.7 | 142.7 | 186.99 | 1.763 | |
| 12,600.0 | 7,838.0 | 12,442.0 | 7,675.0 | 107.3 | 107.3 | -60.37 | -5,530.2 | 304.3 | 329.7 | 139.3 | 190.35 | 1.732 | |
| 12,700.0 | 7,838.0 | 12,542.0 | 7,675.0 | 109.2 | 109.2 | -60.36 | -5,630.2 | 304.6 | 329.6 | 135.9 | 193.71 | 1.702 | |
| 12,800.0 | 7,838.0 | 12,642.0 | 7,675.0 | 111.1 | 111.1 | -60.36 | -5,730.2 | 304.9 | 329.6 | 132.5 | 197.07 | 1.672 | |
| 12,900.0 | 7,838.0 | 12,742.0 | 7,675.0 | 113.0 | 113.0 | -60.35 | -5,830.2 | 305.2 | 329.5 | 129.1 | 200.43 | 1.644 | |
| 13,000.0 | 7,838.0 | 12,842.0 | 7,675.0 | 114.9 | 114.9 | -60.35 | -5,930.2 | 305.5 | 329.5 | 125.7 | 203.80 | 1.617 | |
| 13,100.0 | 7,838.0 | 12,942.0 | 7,675.0 | 116.8 | 116.8 | -60.35 | -6,030.2 | 305.8 | 329.4 | 122.3 | 207.16 | 1.590 | |
| 13,200.0 | 7,838.0 | 13,042.0 | 7,675.0 | 118.7 | 118.7 | -60.34 | -6,130.2 | 306.1 | 329.4 | 118.9 | 210.53 | 1.565 | |
| 13,300.0 | 7,838.0 | 13,142.0 | 7,675.0 | 120.6 | 120.6 | -60.34 | -6,230.2 | 306.4 | 329.4 | 115.5 | 213.89 | 1.540 | |
| 13,400.0 | 7,838.0 | 13,242.0 | 7,675.0 | 122.5 | 122.5 | -60.33 | -6,330.2 | 306.7 | 329.3 | 112.1 | 217.26 | 1.516 | |
| 13,500.0 | 7,838.0 | 13,342.0 | 7,675.0 | 124.4 | 124.4 | -60.33 | -6,430.2 | 307.0 | 329.3 | 108.6 | 220.63 | 1.492 | Level 3 |
| 13,600.0 | 7,838.0 | 13,442.0 | 7,675.0 | 126.3 | 126.3 | -60.32 | -6,530.2 | 307.3 | 329.2 | 105.2 | 224.00 | 1.470 | Level 3 |
| 13,700.0 | 7,838.0 | 13,542.0 | 7,675.0 | 128.2 | 128.2 | -60.32 | -6,630.2 | 307.6 | 329.2 | 101.8 | 227.37 | 1.448 | Level 3 |
| 13,800.0 | 7,838.0 | 13,642.0 | 7,675.0 | 130.1 | 130.1 | -60.32 | -6,730.2 | 307.9 | 329.2 | 98.4 | 230.74 | 1.427 | Level 3 |
| 13,900.0 | 7,838.0 | 13,742.0 | 7,675.0 | 132.0 | 132.0 | -60.31 | -6,830.2 | 308.2 | 329.1 | 95.0 | 234.11 | 1.406 | Level 3 |
| 13,936.4 | 7,838.0 | 13,778.4 | 7,675.0 | 132.7 | 132.7 | -60.31 | -6,866.5 | 308.3 | 329.1 | 93.8 | 235.34 | 1.398 | Level 3 |
| 13,946.7 | 7,838.0 | 13,785.9 | 7,675.0 | 132.9 | 132.8 | -60.31 | -6,874.0 | 308.3 | 329.1 | 93.5 | 235.64 | 1.397 | Level 3, SF |

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SHOOK PAD 3-1S-67W - SHOOK 3-10-3CDH - Wellbore #1 - PLAN 1 ( FEB 4 2016)

**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 | -89.98 | 0.0 | -14.0 | 14.0 | 14.0 | 0.00 | N/A | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -89.98 | 0.0 | -14.0 | 14.0 | 13.8 | 0.22 | 62.330 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -89.98 | 0.0 | -14.0 | 14.0 | 13.3 | 0.67 | 20.777 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.6 | 0.6 | -89.98 | 0.0 | -14.0 | 14.0 | 12.9 | 1.12 | 12.466 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | -89.98 | 0.0 | -14.0 | 14.0 | 12.4 | 1.57 | 8.904 | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.0 | 1.0 | -89.98 | 0.0 | -14.0 | 14.0 | 12.0 | 2.02 | 6.926 | |
| 600.0 | 600.0 | 600.0 | 600.0 | 1.2 | 1.2 | -89.98 | 0.0 | -14.0 | 14.0 | 11.5 | 2.47 | 5.666 | |
| 700.0 | 700.0 | 700.0 | 700.0 | 1.5 | 1.5 | -89.98 | 0.0 | -14.0 | 14.0 | 11.1 | 2.92 | 4.795 | |
| 800.0 | 800.0 | 800.0 | 800.0 | 1.7 | 1.7 | -89.98 | 0.0 | -14.0 | 14.0 | 10.6 | 3.37 | 4.155 | |
| 900.0 | 900.0 | 900.0 | 900.0 | 1.9 | 1.9 | -89.98 | 0.0 | -14.0 | 14.0 | 10.2 | 3.82 | 3.666 | |
| 1,000.0 | 1,000.0 | 1,000.0 | 1,000.0 | 2.1 | 2.1 | -89.98 | 0.0 | -14.0 | 14.0 | 9.7 | 4.27 | 3.281 | |
| 1,100.0 | 1,100.0 | 1,100.0 | 1,100.0 | 2.4 | 2.4 | -89.98 | 0.0 | -14.0 | 14.0 | 9.3 | 4.72 | 2.968 | |
| 1,200.0 | 1,200.0 | 1,200.0 | 1,200.0 | 2.6 | 2.6 | -89.98 | 0.0 | -14.0 | 14.0 | 8.8 | 5.17 | 2.710 | |
| 1,300.0 | 1,300.0 | 1,300.0 | 1,300.0 | 2.8 | 2.8 | -89.98 | 0.0 | -14.0 | 14.0 | 8.4 | 5.62 | 2.493 | |
| 1,400.0 | 1,400.0 | 1,400.0 | 1,400.0 | 3.0 | 3.0 | -89.98 | 0.0 | -14.0 | 14.0 | 7.9 | 6.07 | 2.309 | CC, ES |
| 1,500.0 | 1,500.0 | 1,499.8 | 1,499.8 | 3.2 | 3.2 | 90.53 | -1.2 | -14.5 | 14.6 | 8.1 | 6.46 | 2.252 | SF |
| 1,600.0 | 1,599.9 | 1,599.7 | 1,599.6 | 3.4 | 3.4 | 91.71 | -4.7 | -16.2 | 16.2 | 9.4 | 6.81 | 2.377 | |
| 1,700.0 | 1,699.7 | 1,699.5 | 1,699.2 | 3.6 | 3.6 | 93.23 | -10.7 | -18.8 | 18.9 | 11.7 | 7.17 | 2.636 | |
| 1,728.8 | 1,728.4 | 1,728.2 | 1,727.8 | 3.6 | 3.6 | 93.67 | -12.8 | -19.8 | 19.9 | 12.6 | 7.28 | 2.732 | |
| 1,800.0 | 1,799.3 | 1,799.2 | 1,798.5 | 3.8 | 3.8 | 93.10 | -19.0 | -22.6 | 22.7 | 15.1 | 7.55 | 3.002 | |
| 1,900.0 | 1,899.0 | 1,898.8 | 1,897.4 | 4.0 | 4.0 | 88.19 | -29.6 | -27.4 | 27.5 | 19.5 | 7.96 | 3.454 | |
| 2,000.0 | 1,998.6 | 1,998.1 | 1,995.7 | 4.2 | 4.2 | 80.95 | -42.6 | -33.3 | 33.8 | 25.4 | 8.39 | 4.031 | |
| 2,100.0 | 2,098.2 | 2,097.1 | 2,093.2 | 4.4 | 4.5 | 73.30 | -57.8 | -40.2 | 42.2 | 33.3 | 8.83 | 4.775 | |
| 2,200.0 | 2,197.8 | 2,195.4 | 2,189.7 | 4.6 | 4.8 | 66.32 | -75.2 | -48.0 | 52.9 | 43.6 | 9.28 | 5.702 | |
| 2,300.0 | 2,297.5 | 2,293.2 | 2,285.1 | 4.9 | 5.1 | 60.42 | -94.7 | -56.9 | 66.2 | 56.5 | 9.73 | 6.806 | |
| 2,400.0 | 2,397.1 | 2,390.1 | 2,379.1 | 5.1 | 5.5 | 55.59 | -116.3 | -66.6 | 82.1 | 71.9 | 10.18 | 8.067 | |
| 2,500.0 | 2,496.7 | 2,486.2 | 2,471.6 | 5.3 | 5.9 | 51.68 | -139.8 | -77.3 | 100.6 | 90.0 | 10.64 | 9.462 | |
| 2,600.0 | 2,596.4 | 2,581.3 | 2,562.5 | 5.6 | 6.3 | 48.53 | -165.1 | -88.7 | 121.7 | 110.6 | 11.10 | 10.969 | |
| 2,700.0 | 2,696.0 | 2,675.2 | 2,651.7 | 5.8 | 6.8 | 45.95 | -192.1 | -101.0 | 145.3 | 133.7 | 11.56 | 12.568 | |
| 2,800.0 | 2,795.6 | 2,768.0 | 2,739.0 | 6.1 | 7.3 | 43.84 | -220.8 | -113.9 | 171.3 | 159.3 | 12.03 | 14.241 | |
| 2,900.0 | 2,895.3 | 2,862.1 | 2,826.8 | 6.3 | 7.9 | 42.07 | -251.5 | -127.8 | 199.3 | 186.8 | 12.50 | 15.941 | |
| 3,000.0 | 2,994.9 | 2,957.9 | 2,916.2 | 6.6 | 8.5 | 40.69 | -282.9 | -142.1 | 227.7 | 214.7 | 12.99 | 17.528 | |
| 3,100.0 | 3,094.5 | 3,053.7 | 3,005.5 | 6.9 | 9.1 | 39.62 | -314.3 | -156.3 | 256.2 | 242.7 | 13.48 | 18.998 | |
| 3,200.0 | 3,194.1 | 3,149.4 | 3,094.8 | 7.1 | 9.7 | 38.77 | -345.8 | -170.5 | 284.7 | 270.7 | 13.98 | 20.360 | |
| 3,300.0 | 3,293.8 | 3,245.2 | 3,184.2 | 7.4 | 10.3 | 38.07 | -377.2 | -184.7 | 313.3 | 298.8 | 14.49 | 21.624 | |
| 3,400.0 | 3,393.4 | 3,341.0 | 3,273.5 | 7.6 | 10.9 | 37.48 | -408.6 | -198.9 | 341.9 | 326.9 | 15.00 | 22.797 | |
| 3,500.0 | 3,493.0 | 3,436.7 | 3,362.9 | 7.9 | 11.6 | 36.99 | -440.0 | -213.2 | 370.5 | 355.0 | 15.51 | 23.888 | |
| 3,600.0 | 3,592.7 | 3,532.5 | 3,452.2 | 8.2 | 12.2 | 36.57 | -471.4 | -227.4 | 399.2 | 383.2 | 16.03 | 24.904 | |
| 3,700.0 | 3,692.3 | 3,628.2 | 3,541.5 | 8.4 | 12.9 | 36.20 | -502.9 | -241.6 | 427.9 | 411.3 | 16.55 | 25.853 | |
| 3,800.0 | 3,791.9 | 3,724.0 | 3,630.9 | 8.7 | 13.5 | 35.88 | -534.3 | -255.8 | 456.6 | 439.5 | 17.08 | 26.739 | |
| 3,900.0 | 3,891.6 | 3,819.8 | 3,720.2 | 9.0 | 14.2 | 35.60 | -565.7 | -270.0 | 485.3 | 467.7 | 17.60 | 27.568 | |
| 4,000.0 | 3,991.2 | 3,915.5 | 3,809.6 | 9.2 | 14.9 | 35.35 | -597.1 | -284.3 | 514.0 | 495.9 | 18.13 | 28.346 | |
| 4,100.0 | 4,090.8 | 4,011.3 | 3,898.9 | 9.5 | 15.5 | 35.12 | -628.5 | -298.5 | 542.7 | 524.1 | 18.67 | 29.076 | |
| 4,200.0 | 4,190.4 | 4,107.1 | 3,988.2 | 9.8 | 16.2 | 34.92 | -659.9 | -312.7 | 571.5 | 552.3 | 19.20 | 29.763 | |
| 4,300.0 | 4,290.1 | 4,202.8 | 4,077.6 | 10.1 | 16.9 | 34.74 | -691.4 | -326.9 | 600.2 | 580.5 | 19.74 | 30.410 | |
| 4,400.0 | 4,389.7 | 4,298.6 | 4,166.9 | 10.3 | 17.6 | 34.58 | -722.8 | -341.2 | 629.0 | 608.7 | 20.28 | 31.020 | |
| 4,500.0 | 4,489.3 | 4,394.4 | 4,256.3 | 10.6 | 18.2 | 34.42 | -754.2 | -355.4 | 657.7 | 636.9 | 20.82 | 31.596 | |
| 4,600.0 | 4,589.0 | 4,490.1 | 4,345.6 | 10.9 | 18.9 | 34.29 | -785.6 | -369.6 | 686.5 | 665.1 | 21.36 | 32.140 | |
| 4,700.0 | 4,688.6 | 4,585.9 | 4,434.9 | 11.1 | 19.6 | 34.16 | -817.0 | -383.8 | 715.2 | 693.3 | 21.90 | 32.656 | |
| 4,800.0 | 4,788.2 | 4,681.7 | 4,524.3 | 11.4 | 20.3 | 34.04 | -848.5 | -398.0 | 744.0 | 721.5 | 22.45 | 33.145 | |
| 4,900.0 | 4,887.9 | 4,777.4 | 4,613.6 | 11.7 | 20.9 | 33.93 | -879.9 | -412.3 | 772.7 | 749.7 | 22.99 | 33.610 | |
| 5,000.0 | 4,987.5 | 4,873.2 | 4,703.0 | 12.0 | 21.6 | 33.83 | -911.3 | -426.5 | 801.5 | 778.0 | 23.54 | 34.051 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SHOOK PAD 3-1S-67W - SHOOK 3-10-3CDH - Wellbore #1 - PLAN 1 ( FEB 4 2016)

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,100.0 | 5,087.1 | 4,969.0 | 4,792.3 | 12.2 | 22.3 | 33.74 | -942.7 | -440.7 | 830.3 | 806.2 | 24.09 | 34.471 | |
| 5,200.0 | 5,186.7 | 5,064.7 | 4,881.6 | 12.5 | 23.0 | 33.65 | -974.1 | -454.9 | 859.0 | 834.4 | 24.64 | 34.870 | |
| 5,300.0 | 5,286.4 | 5,160.5 | 4,971.0 | 12.8 | 23.7 | 33.57 | -1,005.5 | -469.1 | 887.8 | 862.6 | 25.18 | 35.252 | |
| 5,400.0 | 5,386.0 | 5,256.2 | 5,060.3 | 13.1 | 24.3 | 33.49 | -1,037.0 | -483.4 | 916.6 | 890.8 | 25.74 | 35.615 | |
| 5,500.0 | 5,485.6 | 5,352.0 | 5,149.7 | 13.3 | 25.0 | 33.42 | -1,068.4 | -497.6 | 945.3 | 919.1 | 26.29 | 35.963 | |
| 5,600.0 | 5,585.3 | 5,447.8 | 5,239.0 | 13.6 | 25.7 | 33.35 | -1,099.8 | -511.8 | 974.1 | 947.3 | 26.84 | 36.295 | |
| 8,700.0 | 7,838.0 | 7,889.7 | 7,508.6 | 35.6 | 43.5 | 69.44 | -1,920.3 | -873.0 | 980.7 | 908.5 | 72.14 | 13.594 | |
| 8,800.0 | 7,838.0 | 7,929.8 | 7,541.2 | 37.3 | 44.0 | 71.43 | -1,943.2 | -878.1 | 955.1 | 880.2 | 74.95 | 12.744 | |
| 8,900.0 | 7,838.0 | 7,977.2 | 7,578.0 | 39.0 | 44.5 | 73.70 | -1,972.5 | -883.9 | 936.8 | 858.9 | 77.94 | 12.020 | |
| 9,000.0 | 7,838.0 | 8,033.3 | 7,619.0 | 40.7 | 45.2 | 76.26 | -2,010.3 | -890.3 | 925.4 | 844.3 | 81.11 | 11.409 | |
| 9,100.0 | 7,838.0 | 8,100.0 | 7,663.7 | 42.5 | 46.0 | 79.07 | -2,059.2 | -897.3 | 920.0 | 835.6 | 84.43 | 10.897 | |
| 9,163.3 | 7,838.0 | 8,148.7 | 7,693.4 | 43.6 | 46.7 | 80.95 | -2,097.5 | -901.9 | 919.2 | 832.6 | 86.61 | 10.613 | |
| 9,200.0 | 7,838.0 | 8,179.2 | 7,710.7 | 44.2 | 47.1 | 82.04 | -2,122.5 | -904.5 | 919.5 | 831.6 | 87.89 | 10.461 | |
| 9,300.0 | 7,838.0 | 8,272.0 | 7,756.5 | 46.0 | 48.4 | 84.93 | -2,202.8 | -911.5 | 922.0 | 830.5 | 91.45 | 10.082 | |
| 9,400.0 | 7,838.0 | 8,378.4 | 7,796.0 | 47.8 | 50.1 | 87.40 | -2,301.3 | -917.4 | 925.6 | 830.5 | 95.11 | 9.732 | |
| 9,500.0 | 7,838.0 | 8,495.9 | 7,822.3 | 49.6 | 52.0 | 89.03 | -2,415.6 | -921.2 | 928.5 | 829.6 | 98.90 | 9.388 | |
| 9,600.0 | 7,838.0 | 8,615.8 | 7,830.0 | 51.4 | 53.9 | 89.51 | -2,535.2 | -921.9 | 929.3 | 826.6 | 102.77 | 9.043 | |
| 9,700.0 | 7,838.0 | 8,715.8 | 7,830.0 | 53.2 | 55.6 | 89.51 | -2,635.2 | -921.4 | 929.2 | 822.9 | 106.32 | 8.740 | |
| 9,800.0 | 7,838.0 | 8,815.8 | 7,830.0 | 55.0 | 57.3 | 89.51 | -2,735.2 | -921.0 | 929.1 | 819.2 | 109.89 | 8.455 | |
| 9,900.0 | 7,838.0 | 8,915.8 | 7,830.0 | 56.9 | 59.0 | 89.51 | -2,835.2 | -920.5 | 929.0 | 815.5 | 113.49 | 8.186 | |
| 10,000.0 | 7,838.0 | 9,015.8 | 7,830.0 | 58.7 | 60.7 | 89.51 | -2,935.2 | -920.1 | 928.9 | 811.8 | 117.10 | 7.933 | |
| 10,100.0 | 7,838.0 | 9,115.8 | 7,830.0 | 60.5 | 62.4 | 89.51 | -3,035.2 | -919.6 | 928.8 | 808.1 | 120.72 | 7.694 | |
| 10,200.0 | 7,838.0 | 9,215.8 | 7,830.0 | 62.4 | 64.1 | 89.51 | -3,135.2 | -919.2 | 928.7 | 804.4 | 124.35 | 7.468 | |
| 10,300.0 | 7,838.0 | 9,315.8 | 7,830.0 | 64.2 | 65.9 | 89.51 | -3,235.2 | -918.7 | 928.6 | 800.6 | 128.00 | 7.255 | |
| 10,400.0 | 7,838.0 | 9,415.8 | 7,830.0 | 66.1 | 67.6 | 89.51 | -3,335.2 | -918.3 | 928.5 | 796.9 | 131.66 | 7.053 | |
| 10,500.0 | 7,838.0 | 9,515.8 | 7,830.0 | 67.9 | 69.4 | 89.51 | -3,435.2 | -917.9 | 928.4 | 793.1 | 135.32 | 6.861 | |
| 10,600.0 | 7,838.0 | 9,615.8 | 7,830.0 | 69.8 | 71.2 | 89.51 | -3,535.2 | -917.4 | 928.3 | 789.3 | 139.00 | 6.679 | |
| 10,700.0 | 7,838.0 | 9,715.8 | 7,830.0 | 71.6 | 72.9 | 89.51 | -3,635.2 | -917.0 | 928.2 | 785.5 | 142.68 | 6.506 | |
| 10,800.0 | 7,838.0 | 9,815.8 | 7,830.0 | 73.5 | 74.7 | 89.51 | -3,735.2 | -916.5 | 928.1 | 781.7 | 146.37 | 6.341 | |
| 10,900.0 | 7,838.0 | 9,915.8 | 7,830.0 | 75.4 | 76.5 | 89.51 | -3,835.2 | -916.1 | 928.0 | 777.9 | 150.07 | 6.184 | |
| 11,000.0 | 7,838.0 | 10,015.8 | 7,830.0 | 77.2 | 78.3 | 89.51 | -3,935.2 | -915.6 | 927.9 | 774.1 | 153.77 | 6.034 | |
| 11,100.0 | 7,838.0 | 10,115.8 | 7,830.0 | 79.1 | 80.1 | 89.51 | -4,035.2 | -915.2 | 927.8 | 770.3 | 157.48 | 5.891 | |
| 11,200.0 | 7,838.0 | 10,215.8 | 7,830.0 | 81.0 | 81.9 | 89.51 | -4,135.2 | -914.7 | 927.7 | 766.5 | 161.20 | 5.755 | |
| 11,300.0 | 7,838.0 | 10,315.8 | 7,830.0 | 82.8 | 83.7 | 89.51 | -4,235.2 | -914.3 | 927.6 | 762.7 | 164.92 | 5.625 | |
| 11,400.0 | 7,838.0 | 10,415.8 | 7,830.0 | 84.7 | 85.5 | 89.51 | -4,335.2 | -913.8 | 927.5 | 758.9 | 168.65 | 5.500 | |
| 11,500.0 | 7,838.0 | 10,515.8 | 7,830.0 | 86.6 | 87.4 | 89.51 | -4,435.2 | -913.4 | 927.4 | 755.0 | 172.38 | 5.380 | |
| 11,600.0 | 7,838.0 | 10,615.8 | 7,830.0 | 88.5 | 89.2 | 89.51 | -4,535.2 | -912.9 | 927.3 | 751.2 | 176.12 | 5.265 | |
| 11,700.0 | 7,838.0 | 10,715.8 | 7,830.0 | 90.3 | 91.0 | 89.51 | -4,635.2 | -912.5 | 927.2 | 747.4 | 179.85 | 5.155 | |
| 11,800.0 | 7,838.0 | 10,815.8 | 7,830.0 | 92.2 | 92.8 | 89.51 | -4,735.2 | -912.1 | 927.1 | 743.5 | 183.60 | 5.050 | |
| 11,900.0 | 7,838.0 | 10,915.8 | 7,830.0 | 94.1 | 94.7 | 89.51 | -4,835.2 | -911.6 | 927.0 | 739.7 | 187.34 | 4.948 | |
| 12,000.0 | 7,838.0 | 11,015.8 | 7,830.0 | 96.0 | 96.5 | 89.51 | -4,935.2 | -911.2 | 926.9 | 735.8 | 191.09 | 4.851 | |
| 12,100.0 | 7,838.0 | 11,115.8 | 7,830.0 | 97.9 | 98.4 | 89.51 | -5,035.2 | -910.7 | 926.8 | 732.0 | 194.85 | 4.757 | |
| 12,200.0 | 7,838.0 | 11,215.8 | 7,830.0 | 99.8 | 100.2 | 89.51 | -5,135.2 | -910.3 | 926.7 | 728.1 | 198.60 | 4.666 | |
| 12,300.0 | 7,838.0 | 11,315.8 | 7,830.0 | 101.7 | 102.0 | 89.51 | -5,235.2 | -909.8 | 926.6 | 724.2 | 202.36 | 4.579 | |
| 12,400.0 | 7,838.0 | 11,415.8 | 7,830.0 | 103.5 | 103.9 | 89.51 | -5,335.2 | -909.4 | 926.5 | 720.4 | 206.12 | 4.495 | |
| 12,500.0 | 7,838.0 | 11,515.8 | 7,830.0 | 105.4 | 105.7 | 89.51 | -5,435.2 | -908.9 | 926.4 | 716.5 | 209.89 | 4.414 | |
| 12,600.0 | 7,838.0 | 11,615.8 | 7,830.0 | 107.3 | 107.6 | 89.51 | -5,535.1 | -908.5 | 926.3 | 712.6 | 213.66 | 4.335 | |
| 12,700.0 | 7,838.0 | 11,715.8 | 7,830.0 | 109.2 | 109.5 | 89.51 | -5,635.1 | -908.0 | 926.2 | 708.8 | 217.42 | 4.260 | |
| 12,800.0 | 7,838.0 | 11,815.8 | 7,830.0 | 111.1 | 111.3 | 89.51 | -5,735.1 | -907.6 | 926.1 | 704.9 | 221.20 | 4.187 | |
| 12,900.0 | 7,838.0 | 11,915.8 | 7,830.0 | 113.0 | 113.2 | 89.50 | -5,835.1 | -907.1 | 926.0 | 701.0 | 224.97 | 4.116 | |
| 13,000.0 | 7,838.0 | 12,015.8 | 7,830.0 | 114.9 | 115.0 | 89.50 | -5,935.1 | -906.7 | 925.9 | 697.2 | 228.74 | 4.048 | |
| 13,100.0 | 7,838.0 | 12,115.8 | 7,830.0 | 116.8 | 116.9 | 89.50 | -6,035.1 | -906.3 | 925.8 | 693.3 | 232.52 | 3.982 | |

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SHOOK PAD 3-1S-67W - SHOOK 3-10-3CDH - Wellbore #1 - PLAN 1 ( FEB 4 2016)

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13,200.0 | 7,838.0 | 12,215.8 | 7,830.0 | 118.7 | 118.8 | 89.50 | -6,135.1 | -905.8 | 925.7 | 689.4 | 236.30 | 3.917 | |
| 13,300.0 | 7,838.0 | 12,315.8 | 7,830.0 | 120.6 | 120.6 | 89.50 | -6,235.1 | -905.4 | 925.6 | 685.5 | 240.08 | 3.855 | |
| 13,400.0 | 7,838.0 | 12,415.8 | 7,830.0 | 122.5 | 122.5 | 89.50 | -6,335.1 | -904.9 | 925.5 | 681.6 | 243.86 | 3.795 | |
| 13,500.0 | 7,838.0 | 12,515.8 | 7,830.0 | 124.4 | 124.4 | 89.50 | -6,435.1 | -904.5 | 925.4 | 677.7 | 247.64 | 3.737 | |
| 13,600.0 | 7,838.0 | 12,615.8 | 7,830.0 | 126.3 | 126.2 | 89.50 | -6,535.1 | -904.0 | 925.3 | 673.9 | 251.43 | 3.680 | |
| 13,700.0 | 7,838.0 | 12,715.8 | 7,830.0 | 128.2 | 128.1 | 89.50 | -6,635.1 | -903.6 | 925.2 | 670.0 | 255.22 | 3.625 | |
| 13,800.0 | 7,838.0 | 12,815.8 | 7,830.0 | 130.1 | 130.0 | 89.50 | -6,735.1 | -903.1 | 925.1 | 666.1 | 259.00 | 3.572 | |
| 13,900.0 | 7,838.0 | 12,915.8 | 7,830.0 | 132.0 | 131.9 | 89.50 | -6,835.1 | -902.7 | 925.0 | 662.2 | 262.79 | 3.520 | |
| 13,946.7 | 7,838.0 | 12,962.0 | 7,830.0 | 132.9 | 132.7 | 89.50 | -6,881.3 | -902.5 | 924.9 | 660.4 | 264.55 | 3.496 | |

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SHOOK PAD 3-1S-67W - SHOOK 3-10-3NBH - Wellbore #1 - PLAN 1 ( FEB 5 2016)

**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 | 0.0 | 30.8 | 30.8 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 90.03 | 0.0 | 30.8 | 30.8 | 30.6 | 0.22 | 137.127 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 90.03 | 0.0 | 30.8 | 30.8 | 30.1 | 0.67 | 45.709 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.6 | 0.6 | 90.03 | 0.0 | 30.8 | 30.8 | 29.7 | 1.12 | 27.425 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | 90.03 | 0.0 | 30.8 | 30.8 | 29.2 | 1.57 | 19.590 | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.0 | 1.0 | 90.03 | 0.0 | 30.8 | 30.8 | 28.8 | 2.02 | 15.236 | |
| 600.0 | 600.0 | 600.0 | 600.0 | 1.2 | 1.2 | 90.03 | 0.0 | 30.8 | 30.8 | 28.3 | 2.47 | 12.466 | |
| 700.0 | 700.0 | 700.0 | 700.0 | 1.5 | 1.5 | 90.03 | 0.0 | 30.8 | 30.8 | 27.9 | 2.92 | 10.548 | |
| 800.0 | 800.0 | 800.0 | 800.0 | 1.7 | 1.7 | 90.03 | 0.0 | 30.8 | 30.8 | 27.5 | 3.37 | 9.142 | |
| 900.0 | 900.0 | 900.0 | 900.0 | 1.9 | 1.9 | 90.03 | 0.0 | 30.8 | 30.8 | 27.0 | 3.82 | 8.066 | |
| 1,000.0 | 1,000.0 | 1,000.0 | 1,000.0 | 2.1 | 2.1 | 90.03 | 0.0 | 30.8 | 30.8 | 26.6 | 4.27 | 7.217 | CC, ES |
| 1,100.0 | 1,100.0 | 1,099.4 | 1,099.4 | 2.4 | 2.3 | 91.68 | -0.9 | 31.7 | 31.8 | 27.1 | 4.69 | 6.765 | |
| 1,200.0 | 1,200.0 | 1,198.7 | 1,198.6 | 2.6 | 2.5 | 96.06 | -3.7 | 34.5 | 34.7 | 29.6 | 5.10 | 6.803 | |
| 1,300.0 | 1,300.0 | 1,297.7 | 1,297.4 | 2.8 | 2.7 | 101.85 | -8.2 | 39.0 | 40.0 | 34.5 | 5.52 | 7.247 | |
| 1,400.0 | 1,400.0 | 1,396.3 | 1,395.6 | 3.0 | 2.9 | 107.71 | -14.5 | 45.4 | 47.9 | 41.9 | 5.94 | 8.057 | |
| 1,500.0 | 1,500.0 | 1,495.0 | 1,493.6 | 3.2 | 3.2 | -68.18 | -22.5 | 53.4 | 57.8 | 51.5 | 6.34 | 9.123 | |
| 1,600.0 | 1,599.9 | 1,594.5 | 1,592.4 | 3.4 | 3.4 | -67.13 | -30.9 | 61.9 | 67.4 | 60.7 | 6.72 | 10.040 | |
| 1,700.0 | 1,699.7 | 1,694.1 | 1,691.3 | 3.6 | 3.7 | -68.14 | -39.4 | 70.4 | 76.1 | 69.0 | 7.11 | 10.694 | |
| 1,728.8 | 1,728.4 | 1,722.8 | 1,719.8 | 3.6 | 3.7 | -68.72 | -41.8 | 72.9 | 78.4 | 71.2 | 7.23 | 10.839 | |
| 1,800.0 | 1,799.3 | 1,793.7 | 1,790.2 | 3.8 | 3.9 | -70.25 | -47.8 | 78.9 | 84.1 | 76.5 | 7.53 | 11.160 | |
| 1,900.0 | 1,899.0 | 1,893.4 | 1,889.1 | 4.0 | 4.2 | -72.09 | -56.3 | 87.4 | 92.1 | 84.1 | 7.97 | 11.559 | |
| 2,000.0 | 1,998.6 | 1,993.0 | 1,988.0 | 4.2 | 4.5 | -73.63 | -64.7 | 95.9 | 100.2 | 91.8 | 8.42 | 11.904 | |
| 2,100.0 | 2,098.2 | 2,092.6 | 2,086.9 | 4.4 | 4.8 | -74.94 | -73.2 | 104.4 | 108.4 | 99.5 | 8.88 | 12.204 | |
| 2,200.0 | 2,197.8 | 2,192.3 | 2,185.8 | 4.6 | 5.1 | -76.07 | -81.6 | 112.9 | 116.7 | 107.3 | 9.36 | 12.464 | |
| 2,300.0 | 2,297.5 | 2,291.9 | 2,284.8 | 4.9 | 5.4 | -77.04 | -90.1 | 121.4 | 124.9 | 115.1 | 9.84 | 12.690 | |
| 2,400.0 | 2,397.1 | 2,391.5 | 2,383.7 | 5.1 | 5.7 | -77.90 | -98.5 | 129.9 | 133.2 | 122.9 | 10.34 | 12.888 | |
| 2,500.0 | 2,496.7 | 2,491.2 | 2,482.6 | 5.3 | 6.0 | -78.65 | -107.0 | 138.4 | 141.6 | 130.7 | 10.84 | 13.061 | |
| 2,600.0 | 2,596.4 | 2,590.8 | 2,581.5 | 5.6 | 6.3 | -79.32 | -115.4 | 146.9 | 149.9 | 138.6 | 11.35 | 13.214 | |
| 2,700.0 | 2,696.0 | 2,690.5 | 2,680.4 | 5.8 | 6.6 | -79.92 | -123.9 | 155.4 | 158.3 | 146.4 | 11.86 | 13.349 | |
| 2,800.0 | 2,795.6 | 2,790.1 | 2,779.3 | 6.1 | 6.9 | -80.46 | -132.3 | 163.9 | 166.7 | 154.3 | 12.38 | 13.468 | |
| 2,900.0 | 2,895.3 | 2,889.7 | 2,878.2 | 6.3 | 7.2 | -80.95 | -140.7 | 172.4 | 175.1 | 162.2 | 12.90 | 13.574 | |
| 3,000.0 | 2,994.9 | 2,989.4 | 2,977.1 | 6.6 | 7.5 | -81.39 | -149.2 | 180.9 | 183.5 | 170.1 | 13.42 | 13.670 | |
| 3,100.0 | 3,094.5 | 3,089.0 | 3,076.1 | 6.9 | 7.8 | -81.80 | -157.6 | 189.4 | 191.9 | 178.0 | 13.95 | 13.755 | |
| 3,200.0 | 3,194.1 | 3,188.6 | 3,175.0 | 7.1 | 8.1 | -82.17 | -166.1 | 197.9 | 200.3 | 185.9 | 14.48 | 13.832 | |
| 3,300.0 | 3,293.8 | 3,288.3 | 3,273.9 | 7.4 | 8.4 | -82.51 | -174.5 | 206.4 | 208.8 | 193.8 | 15.02 | 13.901 | |
| 3,400.0 | 3,393.4 | 3,387.9 | 3,372.8 | 7.6 | 8.7 | -82.82 | -183.0 | 214.9 | 217.2 | 201.7 | 15.56 | 13.964 | |
| 3,500.0 | 3,493.0 | 3,487.5 | 3,471.7 | 7.9 | 9.1 | -83.11 | -191.4 | 223.4 | 225.7 | 209.6 | 16.09 | 14.021 | |
| 3,600.0 | 3,592.7 | 3,587.2 | 3,570.6 | 8.2 | 9.4 | -83.38 | -199.9 | 231.9 | 234.1 | 217.5 | 16.64 | 14.073 | |
| 3,700.0 | 3,692.3 | 3,686.8 | 3,669.5 | 8.4 | 9.7 | -83.63 | -208.3 | 240.4 | 242.6 | 225.4 | 17.18 | 14.121 | |
| 3,800.0 | 3,791.9 | 3,786.5 | 3,768.4 | 8.7 | 10.0 | -83.87 | -216.8 | 248.9 | 251.0 | 233.3 | 17.72 | 14.165 | |
| 3,900.0 | 3,891.6 | 3,886.1 | 3,867.4 | 9.0 | 10.3 | -84.08 | -225.2 | 257.4 | 259.5 | 241.2 | 18.27 | 14.205 | |
| 4,000.0 | 3,991.2 | 3,985.7 | 3,966.3 | 9.2 | 10.6 | -84.29 | -233.7 | 265.9 | 268.0 | 249.2 | 18.82 | 14.242 | |
| 4,100.0 | 4,090.8 | 4,085.4 | 4,065.2 | 9.5 | 11.0 | -84.48 | -242.1 | 274.4 | 276.5 | 257.1 | 19.37 | 14.276 | |
| 4,200.0 | 4,190.4 | 4,185.0 | 4,164.1 | 9.8 | 11.3 | -84.66 | -250.6 | 282.9 | 284.9 | 265.0 | 19.91 | 14.308 | |
| 4,300.0 | 4,290.1 | 4,284.6 | 4,263.0 | 10.1 | 11.6 | -84.83 | -259.0 | 291.4 | 293.4 | 273.0 | 20.47 | 14.337 | |
| 4,400.0 | 4,389.7 | 4,384.3 | 4,361.9 | 10.3 | 11.9 | -84.99 | -267.5 | 299.9 | 301.9 | 280.9 | 21.02 | 14.365 | |
| 4,500.0 | 4,489.3 | 4,483.9 | 4,460.8 | 10.6 | 12.2 | -85.14 | -275.9 | 308.4 | 310.4 | 288.8 | 21.57 | 14.390 | |
| 4,600.0 | 4,589.0 | 4,583.5 | 4,559.8 | 10.9 | 12.5 | -85.29 | -284.4 | 316.9 | 318.9 | 296.8 | 22.12 | 14.414 | |
| 4,700.0 | 4,688.6 | 4,683.2 | 4,658.7 | 11.1 | 12.9 | -85.42 | -292.8 | 325.4 | 327.4 | 304.7 | 22.68 | 14.436 | |
| 4,800.0 | 4,788.2 | 4,782.8 | 4,757.6 | 11.4 | 13.2 | -85.55 | -301.3 | 333.9 | 335.9 | 312.6 | 23.23 | 14.457 | |
| 4,900.0 | 4,887.9 | 4,882.4 | 4,856.5 | 11.7 | 13.5 | -85.68 | -309.7 | 342.4 | 344.3 | 320.6 | 23.79 | 14.476 | |
| 5,000.0 | 4,987.5 | 4,982.1 | 4,955.4 | 12.0 | 13.8 | -85.79 | -318.2 | 350.9 | 352.8 | 328.5 | 24.34 | 14.494 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SHOOK PAD 3-1S-67W - SHOOK 3-10-3NBH - Wellbore #1 - PLAN 1 ( FEB 5 2016)

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,100.0 | 5,087.1 | 5,081.7 | 5,054.3 | 12.2 | 14.1 | -85.91 | -326.6 | 359.4 | 361.3 | 336.4 | 24.90 | 14.511 | |
| 5,200.0 | 5,186.7 | 5,181.4 | 5,153.2 | 12.5 | 14.5 | -86.01 | -335.1 | 367.9 | 369.8 | 344.4 | 25.46 | 14.528 | |
| 5,300.0 | 5,286.4 | 5,281.0 | 5,252.1 | 12.8 | 14.8 | -86.11 | -343.5 | 376.4 | 378.3 | 352.3 | 26.01 | 14.543 | |
| 5,400.0 | 5,386.0 | 5,380.6 | 5,351.1 | 13.1 | 15.1 | -86.21 | -352.0 | 384.9 | 386.8 | 360.3 | 26.57 | 14.557 | |
| 5,500.0 | 5,485.6 | 5,480.3 | 5,450.0 | 13.3 | 15.4 | -86.30 | -360.4 | 393.4 | 395.3 | 368.2 | 27.13 | 14.571 | |
| 5,600.0 | 5,585.3 | 5,579.9 | 5,548.9 | 13.6 | 15.7 | -86.39 | -368.9 | 401.9 | 403.8 | 376.1 | 27.69 | 14.584 | |
| 5,700.0 | 5,684.9 | 5,679.5 | 5,647.8 | 13.9 | 16.1 | -86.48 | -377.3 | 410.4 | 412.3 | 384.1 | 28.25 | 14.596 | |
| 5,800.0 | 5,784.5 | 5,779.2 | 5,746.7 | 14.2 | 16.4 | -86.56 | -385.8 | 418.9 | 420.8 | 392.0 | 28.81 | 14.608 | |
| 5,900.0 | 5,884.1 | 5,878.8 | 5,845.6 | 14.4 | 16.7 | -86.64 | -394.2 | 427.4 | 429.3 | 400.0 | 29.37 | 14.619 | |
| 6,000.0 | 5,983.8 | 5,978.4 | 5,944.5 | 14.7 | 17.0 | -86.72 | -402.7 | 435.9 | 437.8 | 407.9 | 29.93 | 14.629 | |
| 6,100.0 | 6,083.4 | 6,078.1 | 6,043.4 | 15.0 | 17.3 | -86.79 | -411.1 | 444.4 | 446.3 | 415.9 | 30.49 | 14.639 | |
| 6,200.0 | 6,183.0 | 6,177.7 | 6,142.4 | 15.3 | 17.7 | -86.86 | -419.5 | 452.9 | 454.9 | 423.8 | 31.05 | 14.648 | |
| 6,300.0 | 6,282.7 | 6,277.4 | 6,241.3 | 15.5 | 18.0 | -86.93 | -428.0 | 461.4 | 463.4 | 431.7 | 31.61 | 14.657 | |
| 6,400.0 | 6,382.3 | 6,377.0 | 6,340.2 | 15.8 | 18.3 | -86.99 | -436.4 | 469.9 | 471.9 | 439.7 | 32.17 | 14.666 | |
| 6,500.0 | 6,481.9 | 6,476.6 | 6,439.1 | 16.1 | 18.6 | -87.05 | -444.9 | 478.4 | 480.4 | 447.6 | 32.74 | 14.674 | |
| 6,600.0 | 6,581.6 | 6,576.3 | 6,538.0 | 16.4 | 19.0 | -87.11 | -453.3 | 486.9 | 488.9 | 455.6 | 33.30 | 14.682 | |
| 6,700.0 | 6,681.2 | 6,675.9 | 6,636.9 | 16.7 | 19.3 | -87.17 | -461.8 | 495.4 | 497.4 | 463.5 | 33.86 | 14.690 | |
| 6,800.0 | 6,780.8 | 6,775.5 | 6,735.8 | 16.9 | 19.6 | -87.23 | -470.2 | 503.9 | 505.9 | 471.5 | 34.42 | 14.697 | |
| 6,900.0 | 6,880.4 | 6,875.2 | 6,834.7 | 17.2 | 19.9 | -87.28 | -478.7 | 512.4 | 514.4 | 479.4 | 34.99 | 14.704 | |
| 7,000.0 | 6,980.1 | 6,974.1 | 6,932.9 | 17.5 | 20.2 | -87.29 | -487.5 | 520.9 | 522.9 | 487.4 | 35.55 | 14.711 | |
| 7,100.0 | 7,079.7 | 7,069.7 | 7,026.5 | 17.8 | 20.6 | -86.31 | -505.1 | 529.0 | 532.0 | 495.9 | 36.09 | 14.740 | |
| 7,204.1 | 7,183.4 | 7,164.8 | 7,116.4 | 18.1 | 21.1 | -84.04 | -534.8 | 536.8 | 542.7 | 506.1 | 36.63 | 14.816 | |
| 7,250.0 | 7,229.0 | 7,205.1 | 7,153.2 | 18.2 | 21.3 | -82.35 | -551.0 | 540.0 | 548.1 | 511.3 | 36.85 | 14.873 | |
| 7,300.0 | 7,278.1 | 7,250.0 | 7,193.0 | 18.4 | 21.6 | -80.58 | -571.4 | 543.4 | 554.3 | 517.1 | 37.15 | 14.919 | |
| 7,350.0 | 7,326.5 | 7,290.9 | 7,228.1 | 18.6 | 21.9 | -78.98 | -592.1 | 546.5 | 560.5 | 523.0 | 37.49 | 14.952 | |
| 7,400.0 | 7,373.9 | 7,333.0 | 7,262.9 | 18.9 | 22.2 | -77.43 | -615.5 | 549.6 | 566.9 | 529.0 | 37.87 | 14.968 | |
| 7,450.0 | 7,420.0 | 7,374.5 | 7,295.9 | 19.1 | 22.6 | -75.95 | -640.6 | 552.5 | 573.3 | 535.0 | 38.30 | 14.969 | |
| 7,500.0 | 7,464.7 | 7,415.5 | 7,327.0 | 19.5 | 22.9 | -74.56 | -667.3 | 555.3 | 579.7 | 540.9 | 38.76 | 14.955 | |
| 7,550.0 | 7,507.7 | 7,456.2 | 7,356.2 | 19.8 | 23.3 | -73.25 | -695.3 | 557.9 | 585.9 | 546.7 | 39.26 | 14.925 | |
| 7,600.0 | 7,548.9 | 7,500.0 | 7,385.9 | 20.2 | 23.7 | -71.97 | -727.4 | 560.5 | 592.1 | 552.3 | 39.81 | 14.872 | |
| 7,650.0 | 7,588.0 | 7,536.4 | 7,409.1 | 20.7 | 24.0 | -70.91 | -755.4 | 562.6 | 598.0 | 557.6 | 40.37 | 14.813 | |
| 7,700.0 | 7,624.7 | 7,576.0 | 7,432.6 | 21.1 | 24.5 | -69.87 | -787.2 | 564.7 | 603.6 | 562.6 | 40.98 | 14.728 | |
| 7,750.0 | 7,659.1 | 7,615.3 | 7,454.2 | 21.6 | 24.9 | -68.92 | -820.0 | 566.7 | 608.9 | 567.3 | 41.64 | 14.622 | |
| 7,800.0 | 7,690.8 | 7,650.0 | 7,471.8 | 22.2 | 25.3 | -68.12 | -849.9 | 568.3 | 613.9 | 571.6 | 42.32 | 14.508 | |
| 7,850.0 | 7,719.8 | 7,693.2 | 7,491.6 | 22.7 | 25.8 | -67.30 | -888.2 | 570.1 | 618.5 | 575.3 | 43.12 | 14.343 | |
| 7,900.0 | 7,745.8 | 7,731.9 | 7,507.3 | 23.3 | 26.3 | -66.62 | -923.5 | 571.6 | 622.6 | 578.6 | 43.95 | 14.167 | |
| 7,950.0 | 7,768.8 | 7,770.4 | 7,521.1 | 24.0 | 26.8 | -66.03 | -959.5 | 572.9 | 626.3 | 581.4 | 44.84 | 13.966 | |
| 8,000.0 | 7,788.7 | 7,808.8 | 7,532.9 | 24.6 | 27.3 | -65.53 | -996.0 | 574.0 | 629.4 | 583.6 | 45.81 | 13.741 | |
| 8,050.0 | 7,805.3 | 7,850.0 | 7,543.4 | 25.3 | 27.8 | -65.10 | -1,035.8 | 575.1 | 632.1 | 585.2 | 46.88 | 13.484 | |
| 8,100.0 | 7,818.5 | 7,885.2 | 7,550.5 | 26.1 | 28.3 | -64.79 | -1,070.3 | 575.8 | 634.2 | 586.3 | 47.97 | 13.222 | |
| 8,150.0 | 7,828.4 | 7,923.3 | 7,556.3 | 26.8 | 28.8 | -64.55 | -1,107.9 | 576.4 | 635.8 | 586.6 | 49.16 | 12.933 | |
| 8,200.0 | 7,834.8 | 7,961.3 | 7,560.1 | 27.5 | 29.4 | -64.40 | -1,145.7 | 576.9 | 636.8 | 586.4 | 50.43 | 12.627 | |
| 8,250.0 | 7,837.8 | 8,000.0 | 7,561.9 | 28.3 | 29.9 | -64.34 | -1,184.4 | 577.2 | 637.3 | 585.5 | 51.79 | 12.306 | |
| 8,267.4 | 7,838.0 | 8,014.1 | 7,562.0 | 28.6 | 30.1 | -64.34 | -1,198.4 | 577.2 | 637.3 | 585.0 | 52.28 | 12.189 | |
| 8,273.3 | 7,838.0 | 8,018.0 | 7,562.0 | 28.7 | 30.2 | -64.34 | -1,202.3 | 577.2 | 637.3 | 584.9 | 52.42 | 12.157 | |
| 8,300.0 | 7,838.0 | 8,044.7 | 7,562.0 | 29.1 | 30.6 | -64.34 | -1,229.0 | 577.3 | 637.3 | 584.1 | 53.18 | 11.984 | |
| 8,400.0 | 7,838.0 | 8,144.7 | 7,562.0 | 30.7 | 32.1 | -64.34 | -1,329.0 | 577.7 | 637.3 | 581.2 | 56.05 | 11.370 | |
| 8,500.0 | 7,838.0 | 8,244.7 | 7,562.0 | 32.3 | 33.6 | -64.34 | -1,429.0 | 578.0 | 637.3 | 578.3 | 59.00 | 10.802 | |
| 8,600.0 | 7,838.0 | 8,344.7 | 7,562.0 | 33.9 | 35.2 | -64.34 | -1,529.0 | 578.4 | 637.3 | 575.3 | 62.00 | 10.279 | |
| 8,700.0 | 7,838.0 | 8,444.7 | 7,562.0 | 35.6 | 36.8 | -64.34 | -1,629.0 | 578.7 | 637.3 | 572.2 | 65.05 | 9.797 | |
| 8,800.0 | 7,838.0 | 8,544.7 | 7,562.0 | 37.3 | 38.4 | -64.34 | -1,729.0 | 579.1 | 637.3 | 569.2 | 68.15 | 9.351 | |
| 8,900.0 | 7,838.0 | 8,644.7 | 7,562.0 | 39.0 | 40.0 | -64.34 | -1,829.0 | 579.4 | 637.3 | 566.0 | 71.29 | 8.940 | |

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SHOOK PAD 3-1S-67W - SHOOK 3-10-3NBH - Wellbore #1 - PLAN 1 ( FEB 5 2016)

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9,000.0 | 7,838.0 | 8,744.7 | 7,562.0 | 40.7 | 41.7 | -64.34 | -1,929.0 | 579.8 | 637.3 | 562.8 | 74.46 | 8.559 | |
| 9,100.0 | 7,838.0 | 8,844.7 | 7,562.0 | 42.5 | 43.4 | -64.34 | -2,029.0 | 580.1 | 637.3 | 559.6 | 77.66 | 8.206 | |
| 9,200.0 | 7,838.0 | 8,944.7 | 7,562.0 | 44.2 | 45.1 | -64.34 | -2,129.0 | 580.5 | 637.3 | 556.4 | 80.89 | 7.879 | |
| 9,300.0 | 7,838.0 | 9,044.7 | 7,562.0 | 46.0 | 46.9 | -64.34 | -2,229.0 | 580.8 | 637.3 | 553.2 | 84.14 | 7.575 | |
| 9,400.0 | 7,838.0 | 9,144.7 | 7,562.0 | 47.8 | 48.6 | -64.34 | -2,329.0 | 581.2 | 637.3 | 549.9 | 87.40 | 7.292 | |
| 9,500.0 | 7,838.0 | 9,244.7 | 7,562.0 | 49.6 | 50.4 | -64.34 | -2,429.0 | 581.5 | 637.3 | 546.6 | 90.69 | 7.027 | |
| 9,600.0 | 7,838.0 | 9,344.7 | 7,562.0 | 51.4 | 52.1 | -64.34 | -2,529.0 | 581.9 | 637.3 | 543.3 | 94.00 | 6.780 | |
| 9,700.0 | 7,838.0 | 9,444.7 | 7,562.0 | 53.2 | 53.9 | -64.34 | -2,629.0 | 582.2 | 637.3 | 540.0 | 97.31 | 6.549 | |
| 9,800.0 | 7,838.0 | 9,544.7 | 7,562.0 | 55.0 | 55.7 | -64.34 | -2,729.0 | 582.6 | 637.3 | 536.7 | 100.65 | 6.332 | |
| 9,900.0 | 7,838.0 | 9,644.7 | 7,562.0 | 56.9 | 57.5 | -64.34 | -2,829.0 | 582.9 | 637.3 | 533.3 | 103.99 | 6.129 | |
| 10,000.0 | 7,838.0 | 9,744.7 | 7,562.0 | 58.7 | 59.3 | -64.34 | -2,929.0 | 583.3 | 637.3 | 530.0 | 107.34 | 5.937 | |
| 10,100.0 | 7,838.0 | 9,844.7 | 7,562.0 | 60.5 | 61.1 | -64.34 | -3,029.0 | 583.6 | 637.3 | 526.6 | 110.71 | 5.757 | |
| 10,200.0 | 7,838.0 | 9,944.7 | 7,562.0 | 62.4 | 62.9 | -64.34 | -3,129.0 | 583.9 | 637.3 | 523.3 | 114.08 | 5.587 | |
| 10,300.0 | 7,838.0 | 10,044.7 | 7,562.0 | 64.2 | 64.7 | -64.34 | -3,229.0 | 584.3 | 637.3 | 519.9 | 117.46 | 5.426 | |
| 10,400.0 | 7,838.0 | 10,144.7 | 7,562.0 | 66.1 | 66.6 | -64.34 | -3,329.0 | 584.6 | 637.3 | 516.5 | 120.85 | 5.274 | |
| 10,500.0 | 7,838.0 | 10,244.7 | 7,562.0 | 67.9 | 68.4 | -64.34 | -3,429.0 | 585.0 | 637.3 | 513.1 | 124.25 | 5.130 | |
| 10,600.0 | 7,838.0 | 10,344.7 | 7,562.0 | 69.8 | 70.2 | -64.34 | -3,529.0 | 585.3 | 637.3 | 509.7 | 127.65 | 4.993 | |
| 10,700.0 | 7,838.0 | 10,444.7 | 7,562.0 | 71.6 | 72.1 | -64.34 | -3,629.0 | 585.7 | 637.3 | 506.3 | 131.06 | 4.863 | |
| 10,800.0 | 7,838.0 | 10,544.7 | 7,562.0 | 73.5 | 73.9 | -64.34 | -3,729.0 | 586.0 | 637.3 | 502.9 | 134.47 | 4.740 | |
| 10,900.0 | 7,838.0 | 10,644.7 | 7,562.0 | 75.4 | 75.8 | -64.34 | -3,829.0 | 586.4 | 637.4 | 499.5 | 137.89 | 4.622 | |
| 11,000.0 | 7,838.0 | 10,744.7 | 7,562.0 | 77.2 | 77.6 | -64.34 | -3,929.0 | 586.7 | 637.4 | 496.0 | 141.31 | 4.510 | |
| 11,100.0 | 7,838.0 | 10,844.7 | 7,562.0 | 79.1 | 79.5 | -64.34 | -4,029.0 | 587.1 | 637.4 | 492.6 | 144.74 | 4.404 | |
| 11,200.0 | 7,838.0 | 10,944.7 | 7,562.0 | 81.0 | 81.3 | -64.34 | -4,129.0 | 587.4 | 637.4 | 489.2 | 148.17 | 4.302 | |
| 11,300.0 | 7,838.0 | 11,044.7 | 7,562.0 | 82.8 | 83.2 | -64.34 | -4,229.0 | 587.8 | 637.4 | 485.8 | 151.60 | 4.204 | |
| 11,400.0 | 7,838.0 | 11,144.7 | 7,562.0 | 84.7 | 85.0 | -64.34 | -4,329.0 | 588.1 | 637.4 | 482.3 | 155.04 | 4.111 | |
| 11,500.0 | 7,838.0 | 11,244.7 | 7,562.0 | 86.6 | 86.9 | -64.34 | -4,429.0 | 588.5 | 637.4 | 478.9 | 158.48 | 4.022 | |
| 11,600.0 | 7,838.0 | 11,344.7 | 7,562.0 | 88.5 | 88.8 | -64.34 | -4,529.0 | 588.8 | 637.4 | 475.4 | 161.93 | 3.936 | |
| 11,700.0 | 7,838.0 | 11,444.7 | 7,562.0 | 90.3 | 90.6 | -64.34 | -4,629.0 | 589.2 | 637.4 | 472.0 | 165.37 | 3.854 | |
| 11,800.0 | 7,838.0 | 11,544.7 | 7,562.0 | 92.2 | 92.5 | -64.34 | -4,729.0 | 589.5 | 637.4 | 468.5 | 168.82 | 3.775 | |
| 11,900.0 | 7,838.0 | 11,644.7 | 7,562.0 | 94.1 | 94.4 | -64.34 | -4,829.0 | 589.9 | 637.4 | 465.1 | 172.28 | 3.700 | |
| 12,000.0 | 7,838.0 | 11,744.7 | 7,562.0 | 96.0 | 96.2 | -64.34 | -4,929.0 | 590.2 | 637.4 | 461.6 | 175.73 | 3.627 | |
| 12,100.0 | 7,838.0 | 11,844.7 | 7,562.0 | 97.9 | 98.1 | -64.34 | -5,029.0 | 590.6 | 637.4 | 458.2 | 179.19 | 3.557 | |
| 12,200.0 | 7,838.0 | 11,944.7 | 7,562.0 | 99.8 | 100.0 | -64.34 | -5,129.0 | 590.9 | 637.4 | 454.7 | 182.65 | 3.490 | |
| 12,300.0 | 7,838.0 | 12,044.7 | 7,562.0 | 101.7 | 101.9 | -64.34 | -5,229.0 | 591.3 | 637.4 | 451.3 | 186.11 | 3.425 | |
| 12,400.0 | 7,838.0 | 12,144.7 | 7,562.0 | 103.5 | 103.8 | -64.34 | -5,329.0 | 591.6 | 637.4 | 447.8 | 189.57 | 3.362 | |
| 12,500.0 | 7,838.0 | 12,244.7 | 7,562.0 | 105.4 | 105.6 | -64.34 | -5,429.0 | 592.0 | 637.4 | 444.4 | 193.04 | 3.302 | |
| 12,600.0 | 7,838.0 | 12,344.7 | 7,562.0 | 107.3 | 107.5 | -64.34 | -5,529.0 | 592.3 | 637.4 | 440.9 | 196.50 | 3.244 | |
| 12,700.0 | 7,838.0 | 12,444.7 | 7,562.0 | 109.2 | 109.4 | -64.34 | -5,629.0 | 592.6 | 637.4 | 437.4 | 199.97 | 3.187 | |
| 12,800.0 | 7,838.0 | 12,544.7 | 7,562.0 | 111.1 | 111.3 | -64.34 | -5,729.0 | 593.0 | 637.4 | 434.0 | 203.44 | 3.133 | |
| 12,900.0 | 7,838.0 | 12,644.7 | 7,562.0 | 113.0 | 113.2 | -64.34 | -5,829.0 | 593.3 | 637.4 | 430.5 | 206.91 | 3.081 | |
| 13,000.0 | 7,838.0 | 12,744.7 | 7,562.0 | 114.9 | 115.1 | -64.34 | -5,929.0 | 593.7 | 637.4 | 427.0 | 210.39 | 3.030 | |
| 13,100.0 | 7,838.0 | 12,844.7 | 7,562.0 | 116.8 | 116.9 | -64.34 | -6,029.0 | 594.0 | 637.4 | 423.5 | 213.86 | 2.980 | |
| 13,200.0 | 7,838.0 | 12,944.7 | 7,562.0 | 118.7 | 118.8 | -64.34 | -6,129.0 | 594.4 | 637.4 | 420.1 | 217.33 | 2.933 | |
| 13,300.0 | 7,838.0 | 13,044.7 | 7,562.0 | 120.6 | 120.7 | -64.34 | -6,229.0 | 594.7 | 637.4 | 416.6 | 220.81 | 2.887 | |
| 13,400.0 | 7,838.0 | 13,144.7 | 7,562.0 | 122.5 | 122.6 | -64.34 | -6,329.0 | 595.1 | 637.4 | 413.1 | 224.29 | 2.842 | |
| 13,500.0 | 7,838.0 | 13,244.7 | 7,562.0 | 124.4 | 124.5 | -64.34 | -6,429.0 | 595.4 | 637.4 | 409.6 | 227.77 | 2.799 | |
| 13,600.0 | 7,838.0 | 13,344.7 | 7,562.0 | 126.3 | 126.4 | -64.34 | -6,529.0 | 595.8 | 637.4 | 406.2 | 231.25 | 2.756 | |
| 13,700.0 | 7,838.0 | 13,444.7 | 7,562.0 | 128.2 | 128.3 | -64.34 | -6,629.0 | 596.1 | 637.4 | 402.7 | 234.73 | 2.716 | |
| 13,800.0 | 7,838.0 | 13,544.7 | 7,562.0 | 130.1 | 130.2 | -64.34 | -6,729.0 | 596.5 | 637.4 | 399.2 | 238.21 | 2.676 | |
| 13,900.0 | 7,838.0 | 13,644.7 | 7,562.0 | 132.0 | 132.1 | -64.34 | -6,829.0 | 596.8 | 637.4 | 395.7 | 241.69 | 2.637 | |
| 13,924.8 | 7,838.0 | 13,669.5 | 7,562.0 | 132.4 | 132.5 | -64.34 | -6,853.8 | 596.9 | 637.4 | 394.9 | 242.55 | 2.628 | |
| 13,946.7 | 7,838.0 | 13,689.7 | 7,562.0 | 132.9 | 132.9 | -64.34 | -6,874.0 | 597.0 | 637.4 | 394.1 | 243.29 | 2.620 SF | |

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

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SHOOK PAD 3-1S-67W - SHOOK 3-10-4NBH - Wellbore #1 - PLAN 1 ( FEB 5 2016)

**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 | 75.7 | 75.7 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 90.04 | 0.0 | 75.7 | 75.7 | 75.4 | 0.22 | 336.585 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 90.04 | 0.0 | 75.7 | 75.7 | 75.0 | 0.67 | 112.195 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.6 | 0.6 | 90.04 | 0.0 | 75.7 | 75.7 | 74.5 | 1.12 | 67.317 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | 90.04 | 0.0 | 75.7 | 75.7 | 74.1 | 1.57 | 48.084 | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.0 | 1.0 | 90.04 | 0.0 | 75.7 | 75.7 | 73.6 | 2.02 | 37.398 | |
| 600.0 | 600.0 | 600.0 | 600.0 | 1.2 | 1.2 | 90.04 | 0.0 | 75.7 | 75.7 | 73.2 | 2.47 | 30.599 | CC, ES |
| 700.0 | 700.0 | 698.2 | 698.2 | 1.5 | 1.4 | 90.38 | -0.5 | 76.8 | 76.9 | 74.0 | 2.90 | 26.501 | |
| 800.0 | 800.0 | 796.2 | 796.1 | 1.7 | 1.6 | 91.35 | -1.9 | 80.3 | 80.5 | 77.1 | 3.32 | 24.245 | |
| 900.0 | 900.0 | 894.0 | 893.7 | 1.9 | 1.8 | 92.78 | -4.2 | 86.2 | 86.5 | 82.8 | 3.75 | 23.096 | |
| 1,000.0 | 1,000.0 | 991.4 | 990.7 | 2.1 | 2.1 | 94.48 | -7.4 | 94.3 | 95.0 | 90.9 | 4.18 | 22.739 | SF |
| 1,100.0 | 1,100.0 | 1,088.3 | 1,086.9 | 2.4 | 2.3 | 96.25 | -11.5 | 104.6 | 106.1 | 101.5 | 4.62 | 22.965 | |
| 1,200.0 | 1,200.0 | 1,184.5 | 1,182.3 | 2.6 | 2.6 | 97.97 | -16.4 | 117.2 | 119.7 | 114.6 | 5.06 | 23.630 | |
| 1,300.0 | 1,300.0 | 1,280.1 | 1,276.5 | 2.8 | 2.9 | 99.55 | -22.2 | 131.8 | 135.7 | 130.2 | 5.51 | 24.626 | |
| 1,400.0 | 1,400.0 | 1,374.7 | 1,369.4 | 3.0 | 3.2 | 100.96 | -28.7 | 148.5 | 154.3 | 148.4 | 5.96 | 25.877 | |
| 1,500.0 | 1,500.0 | 1,469.7 | 1,462.2 | 3.2 | 3.6 | -77.86 | -36.1 | 167.3 | 175.0 | 168.6 | 6.39 | 27.379 | |
| 1,600.0 | 1,599.9 | 1,567.5 | 1,557.6 | 3.4 | 4.0 | -77.61 | -44.0 | 187.2 | 195.8 | 189.0 | 6.80 | 28.780 | |
| 1,700.0 | 1,699.7 | 1,665.4 | 1,653.1 | 3.6 | 4.4 | -78.06 | -51.9 | 207.2 | 216.1 | 208.8 | 7.23 | 29.884 | |
| 1,728.8 | 1,728.4 | 1,693.6 | 1,680.7 | 3.6 | 4.6 | -78.28 | -54.1 | 212.9 | 221.8 | 214.5 | 7.36 | 30.152 | |
| 1,800.0 | 1,799.3 | 1,763.3 | 1,748.7 | 3.8 | 4.9 | -79.06 | -59.7 | 227.1 | 236.0 | 228.3 | 7.68 | 30.734 | |
| 1,900.0 | 1,899.0 | 1,861.2 | 1,844.2 | 4.0 | 5.3 | -80.01 | -67.6 | 247.1 | 256.0 | 247.8 | 8.14 | 31.431 | |
| 2,000.0 | 1,998.6 | 1,959.1 | 1,939.7 | 4.2 | 5.8 | -80.82 | -75.4 | 267.0 | 276.0 | 267.4 | 8.62 | 32.009 | |
| 2,100.0 | 2,098.2 | 2,057.0 | 2,035.2 | 4.4 | 6.2 | -81.52 | -83.3 | 287.0 | 296.1 | 287.0 | 9.11 | 32.488 | |
| 2,200.0 | 2,197.8 | 2,154.9 | 2,130.8 | 4.6 | 6.7 | -82.13 | -91.2 | 306.9 | 316.2 | 306.6 | 9.62 | 32.887 | |
| 2,300.0 | 2,297.5 | 2,252.8 | 2,226.3 | 4.9 | 7.1 | -82.66 | -99.0 | 326.8 | 336.4 | 326.2 | 10.13 | 33.220 | |
| 2,400.0 | 2,397.1 | 2,350.7 | 2,321.8 | 5.1 | 7.6 | -83.14 | -106.9 | 346.8 | 356.5 | 345.9 | 10.64 | 33.500 | |
| 2,500.0 | 2,496.7 | 2,448.6 | 2,417.3 | 5.3 | 8.0 | -83.57 | -114.7 | 366.7 | 376.7 | 365.6 | 11.17 | 33.735 | |
| 2,600.0 | 2,596.4 | 2,546.5 | 2,512.9 | 5.6 | 8.5 | -83.95 | -122.6 | 386.7 | 396.9 | 385.2 | 11.70 | 33.934 | |
| 2,700.0 | 2,696.0 | 2,644.4 | 2,608.4 | 5.8 | 8.9 | -84.30 | -130.4 | 406.6 | 417.2 | 404.9 | 12.23 | 34.103 | |
| 2,800.0 | 2,795.6 | 2,742.3 | 2,703.9 | 6.1 | 9.4 | -84.61 | -138.3 | 426.6 | 437.4 | 424.6 | 12.77 | 34.247 | |
| 2,900.0 | 2,895.3 | 2,840.2 | 2,799.5 | 6.3 | 9.9 | -84.89 | -146.2 | 446.5 | 457.7 | 444.3 | 13.32 | 34.369 | |
| 3,000.0 | 2,994.9 | 2,938.1 | 2,895.0 | 6.6 | 10.3 | -85.16 | -154.0 | 466.5 | 477.9 | 464.1 | 13.86 | 34.475 | |
| 3,100.0 | 3,094.5 | 3,036.0 | 2,990.5 | 6.9 | 10.8 | -85.40 | -161.9 | 486.4 | 498.2 | 483.8 | 14.41 | 34.565 | |
| 3,200.0 | 3,194.1 | 3,133.9 | 3,086.0 | 7.1 | 11.3 | -85.62 | -169.7 | 506.4 | 518.5 | 503.5 | 14.97 | 34.642 | |
| 3,300.0 | 3,293.8 | 3,231.8 | 3,181.6 | 7.4 | 11.7 | -85.82 | -177.6 | 526.3 | 538.8 | 523.2 | 15.52 | 34.710 | |
| 3,400.0 | 3,393.4 | 3,329.7 | 3,277.1 | 7.6 | 12.2 | -86.01 | -185.5 | 546.3 | 559.1 | 543.0 | 16.08 | 34.768 | |
| 3,500.0 | 3,493.0 | 3,427.6 | 3,372.6 | 7.9 | 12.7 | -86.19 | -193.3 | 566.2 | 579.4 | 562.7 | 16.64 | 34.818 | |
| 3,600.0 | 3,592.7 | 3,525.5 | 3,468.1 | 8.2 | 13.1 | -86.35 | -201.2 | 586.2 | 599.7 | 582.5 | 17.20 | 34.861 | |
| 3,700.0 | 3,692.3 | 3,623.4 | 3,563.7 | 8.4 | 13.6 | -86.51 | -209.0 | 606.1 | 620.0 | 602.2 | 17.76 | 34.899 | |
| 3,800.0 | 3,791.9 | 3,721.3 | 3,659.2 | 8.7 | 14.1 | -86.65 | -216.9 | 626.1 | 640.3 | 622.0 | 18.33 | 34.932 | |
| 3,900.0 | 3,891.6 | 3,819.2 | 3,754.7 | 9.0 | 14.6 | -86.79 | -224.8 | 646.0 | 660.6 | 641.7 | 18.90 | 34.960 | |
| 4,000.0 | 3,991.2 | 3,917.1 | 3,850.2 | 9.2 | 15.0 | -86.92 | -232.6 | 666.0 | 680.9 | 661.5 | 19.46 | 34.985 | |
| 4,100.0 | 4,090.8 | 4,015.0 | 3,945.8 | 9.5 | 15.5 | -87.04 | -240.5 | 685.9 | 701.2 | 681.2 | 20.03 | 35.006 | |
| 4,200.0 | 4,190.4 | 4,112.9 | 4,041.3 | 9.8 | 16.0 | -87.15 | -248.3 | 705.9 | 721.6 | 701.0 | 20.60 | 35.025 | |
| 4,300.0 | 4,290.1 | 4,210.8 | 4,136.8 | 10.1 | 16.4 | -87.26 | -256.2 | 725.8 | 741.9 | 720.7 | 21.17 | 35.041 | |
| 4,400.0 | 4,389.7 | 4,308.7 | 4,232.4 | 10.3 | 16.9 | -87.36 | -264.0 | 745.8 | 762.2 | 740.5 | 21.74 | 35.055 | |
| 4,500.0 | 4,489.3 | 4,406.6 | 4,327.9 | 10.6 | 17.4 | -87.45 | -271.9 | 765.7 | 782.5 | 760.2 | 22.32 | 35.067 | |
| 4,600.0 | 4,589.0 | 4,504.6 | 4,423.4 | 10.9 | 17.8 | -87.54 | -279.8 | 785.7 | 802.9 | 780.0 | 22.89 | 35.077 | |
| 4,700.0 | 4,688.6 | 4,602.5 | 4,518.9 | 11.1 | 18.3 | -87.63 | -287.6 | 805.6 | 823.2 | 799.8 | 23.46 | 35.086 | |
| 4,800.0 | 4,788.2 | 4,700.4 | 4,614.5 | 11.4 | 18.8 | -87.71 | -295.5 | 825.6 | 843.6 | 819.5 | 24.04 | 35.093 | |
| 4,900.0 | 4,887.9 | 4,798.3 | 4,710.0 | 11.7 | 19.3 | -87.79 | -303.3 | 845.5 | 863.9 | 839.3 | 24.61 | 35.100 | |
| 5,000.0 | 4,987.5 | 4,896.2 | 4,805.5 | 12.0 | 19.7 | -87.87 | -311.2 | 865.5 | 884.2 | 859.0 | 25.19 | 35.105 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SHOOK PAD 3-1S-67W - SHOOK 3-10-4NBH - Wellbore #1 - PLAN 1 ( FEB 5 2016)

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,100.0 | 5,087.1 | 4,994.1 | 4,901.0 | 12.2 | 20.2 | -87.94 | -319.1 | 885.4 | 904.6 | 878.8 | 25.76 | 35.109 | |
| 5,200.0 | 5,186.7 | 5,092.0 | 4,996.6 | 12.5 | 20.7 | -88.01 | -326.9 | 905.4 | 924.9 | 898.6 | 26.34 | 35.113 | |
| 5,300.0 | 5,286.4 | 5,189.9 | 5,092.1 | 12.8 | 21.1 | -88.07 | -334.8 | 925.3 | 945.3 | 918.3 | 26.92 | 35.116 | |
| 5,400.0 | 5,386.0 | 5,287.8 | 5,187.6 | 13.1 | 21.6 | -88.13 | -342.6 | 945.2 | 965.6 | 938.1 | 27.50 | 35.118 | |
| 5,500.0 | 5,485.6 | 5,385.7 | 5,283.1 | 13.3 | 22.1 | -88.19 | -350.5 | 965.2 | 986.0 | 957.9 | 28.07 | 35.119 | |

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SHOOK PAD 3-1S-67W - SHOOK 3-10-5CDH - Wellbore #1 - PLAN 1 ( FEB 5 2016)

**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 | 0.0 | 44.8 | 44.8 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 90.03 | 0.0 | 44.8 | 44.8 | 44.6 | 0.22 | 199.457 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 90.03 | 0.0 | 44.8 | 44.8 | 44.2 | 0.67 | 66.486 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.6 | 0.6 | 90.03 | 0.0 | 44.8 | 44.8 | 43.7 | 1.12 | 39.891 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | 90.03 | 0.0 | 44.8 | 44.8 | 43.3 | 1.57 | 28.494 | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.0 | 1.0 | 90.03 | 0.0 | 44.8 | 44.8 | 42.8 | 2.02 | 22.162 | |
| 600.0 | 600.0 | 600.0 | 600.0 | 1.2 | 1.2 | 90.03 | 0.0 | 44.8 | 44.8 | 42.4 | 2.47 | 18.132 | |
| 700.0 | 700.0 | 700.0 | 700.0 | 1.5 | 1.5 | 90.03 | 0.0 | 44.8 | 44.8 | 41.9 | 2.92 | 15.343 | |
| 800.0 | 800.0 | 800.0 | 800.0 | 1.7 | 1.7 | 90.03 | 0.0 | 44.8 | 44.8 | 41.5 | 3.37 | 13.297 | CC, ES |
| 900.0 | 900.0 | 899.0 | 899.0 | 1.9 | 1.9 | 90.90 | -0.7 | 45.9 | 45.9 | 42.1 | 3.80 | 12.092 | |
| 1,000.0 | 1,000.0 | 997.9 | 997.8 | 2.1 | 2.1 | 93.30 | -2.8 | 49.1 | 49.2 | 45.0 | 4.21 | 11.697 | |
| 1,100.0 | 1,100.0 | 1,096.5 | 1,096.2 | 2.4 | 2.3 | 96.63 | -6.3 | 54.4 | 54.9 | 50.3 | 4.63 | 11.865 | |
| 1,200.0 | 1,200.0 | 1,194.7 | 1,194.0 | 2.6 | 2.5 | 100.25 | -11.2 | 61.9 | 63.2 | 58.1 | 5.06 | 12.483 | |
| 1,300.0 | 1,300.0 | 1,292.4 | 1,291.0 | 2.8 | 2.7 | 103.71 | -17.4 | 71.3 | 74.0 | 68.5 | 5.49 | 13.464 | |
| 1,400.0 | 1,400.0 | 1,390.3 | 1,388.0 | 3.0 | 3.0 | 106.73 | -24.9 | 82.7 | 87.2 | 81.3 | 5.93 | 14.694 | |
| 1,500.0 | 1,500.0 | 1,489.4 | 1,486.1 | 3.2 | 3.3 | -71.42 | -32.6 | 94.6 | 100.6 | 94.3 | 6.35 | 15.853 | |
| 1,600.0 | 1,599.9 | 1,588.6 | 1,584.2 | 3.4 | 3.6 | -71.28 | -40.4 | 106.5 | 113.2 | 106.5 | 6.74 | 16.796 | |
| 1,700.0 | 1,699.7 | 1,687.9 | 1,682.5 | 3.6 | 3.9 | -72.28 | -48.2 | 118.4 | 125.0 | 117.9 | 7.15 | 17.481 | |
| 1,728.8 | 1,728.4 | 1,716.5 | 1,710.8 | 3.6 | 4.0 | -72.74 | -50.5 | 121.8 | 128.3 | 121.0 | 7.27 | 17.637 | |
| 1,800.0 | 1,799.3 | 1,787.1 | 1,780.7 | 3.8 | 4.2 | -73.99 | -56.0 | 130.3 | 136.3 | 128.8 | 7.58 | 17.976 | |
| 1,900.0 | 1,899.0 | 1,886.4 | 1,879.0 | 4.0 | 4.5 | -75.52 | -63.8 | 142.2 | 147.7 | 139.7 | 8.03 | 18.390 | |
| 2,000.0 | 1,998.6 | 1,985.7 | 1,977.2 | 4.2 | 4.9 | -76.83 | -71.6 | 154.1 | 159.2 | 150.7 | 8.50 | 18.740 | |
| 2,100.0 | 2,098.2 | 2,085.0 | 2,075.5 | 4.4 | 5.2 | -77.97 | -79.4 | 165.9 | 170.7 | 161.8 | 8.97 | 19.036 | |
| 2,200.0 | 2,197.8 | 2,184.2 | 2,173.7 | 4.6 | 5.5 | -78.96 | -87.2 | 177.8 | 182.3 | 172.9 | 9.45 | 19.287 | |
| 2,300.0 | 2,297.5 | 2,283.5 | 2,272.0 | 4.9 | 5.9 | -79.83 | -95.0 | 189.7 | 194.0 | 184.0 | 9.95 | 19.501 | |
| 2,400.0 | 2,397.1 | 2,382.8 | 2,370.3 | 5.1 | 6.2 | -80.60 | -102.8 | 201.6 | 205.7 | 195.2 | 10.45 | 19.684 | |
| 2,500.0 | 2,496.7 | 2,482.1 | 2,468.5 | 5.3 | 6.5 | -81.29 | -110.6 | 213.5 | 217.4 | 206.4 | 10.96 | 19.840 | |
| 2,600.0 | 2,596.4 | 2,581.4 | 2,566.8 | 5.6 | 6.9 | -81.91 | -118.4 | 225.4 | 229.2 | 217.7 | 11.47 | 19.975 | |
| 2,700.0 | 2,696.0 | 2,680.6 | 2,665.0 | 5.8 | 7.2 | -82.47 | -126.2 | 237.3 | 240.9 | 228.9 | 11.99 | 20.092 | |
| 2,800.0 | 2,795.6 | 2,779.9 | 2,763.3 | 6.1 | 7.6 | -82.98 | -134.0 | 249.2 | 252.7 | 240.2 | 12.51 | 20.194 | |
| 2,900.0 | 2,895.3 | 2,879.2 | 2,861.5 | 6.3 | 7.9 | -83.44 | -141.8 | 261.1 | 264.5 | 251.5 | 13.04 | 20.282 | |
| 3,000.0 | 2,994.9 | 2,978.5 | 2,959.8 | 6.6 | 8.2 | -83.86 | -149.6 | 273.0 | 276.4 | 262.8 | 13.57 | 20.359 | |
| 3,100.0 | 3,094.5 | 3,077.8 | 3,058.0 | 6.9 | 8.6 | -84.25 | -157.4 | 284.9 | 288.2 | 274.1 | 14.11 | 20.427 | |
| 3,200.0 | 3,194.1 | 3,177.0 | 3,156.3 | 7.1 | 8.9 | -84.61 | -165.2 | 296.8 | 300.1 | 285.4 | 14.65 | 20.487 | |
| 3,300.0 | 3,293.8 | 3,276.3 | 3,254.5 | 7.4 | 9.3 | -84.94 | -173.0 | 308.7 | 311.9 | 296.7 | 15.19 | 20.540 | |
| 3,400.0 | 3,393.4 | 3,375.6 | 3,352.8 | 7.6 | 9.6 | -85.24 | -180.8 | 320.6 | 323.8 | 308.1 | 15.73 | 20.587 | |
| 3,500.0 | 3,493.0 | 3,474.9 | 3,451.0 | 7.9 | 10.0 | -85.53 | -188.6 | 332.5 | 335.7 | 319.4 | 16.27 | 20.629 | |
| 3,600.0 | 3,592.7 | 3,574.1 | 3,549.3 | 8.2 | 10.3 | -85.79 | -196.4 | 344.4 | 347.6 | 330.7 | 16.82 | 20.666 | |
| 3,700.0 | 3,692.3 | 3,673.4 | 3,647.6 | 8.4 | 10.7 | -86.04 | -204.2 | 356.3 | 359.5 | 342.1 | 17.37 | 20.699 | |
| 3,800.0 | 3,791.9 | 3,772.7 | 3,745.8 | 8.7 | 11.0 | -86.27 | -212.0 | 368.1 | 371.4 | 353.4 | 17.92 | 20.729 | |
| 3,900.0 | 3,891.6 | 3,872.0 | 3,844.1 | 9.0 | 11.4 | -86.48 | -219.8 | 380.0 | 383.3 | 364.8 | 18.47 | 20.756 | |
| 4,000.0 | 3,991.2 | 3,971.3 | 3,942.3 | 9.2 | 11.7 | -86.69 | -227.6 | 391.9 | 395.2 | 376.2 | 19.02 | 20.780 | |
| 4,100.0 | 4,090.8 | 4,070.5 | 4,040.6 | 9.5 | 12.1 | -86.88 | -235.4 | 403.8 | 407.1 | 387.5 | 19.57 | 20.802 | |
| 4,200.0 | 4,190.4 | 4,169.8 | 4,138.8 | 9.8 | 12.4 | -87.06 | -243.2 | 415.7 | 419.0 | 398.9 | 20.12 | 20.822 | |
| 4,300.0 | 4,290.1 | 4,269.1 | 4,237.1 | 10.1 | 12.8 | -87.23 | -251.0 | 427.6 | 430.9 | 410.3 | 20.68 | 20.840 | |
| 4,400.0 | 4,389.7 | 4,368.4 | 4,335.3 | 10.3 | 13.1 | -87.39 | -258.8 | 439.5 | 442.9 | 421.6 | 21.24 | 20.856 | |
| 4,500.0 | 4,489.3 | 4,467.6 | 4,433.6 | 10.6 | 13.5 | -87.55 | -266.6 | 451.4 | 454.8 | 433.0 | 21.79 | 20.871 | |
| 4,600.0 | 4,589.0 | 4,566.9 | 4,531.8 | 10.9 | 13.8 | -87.69 | -274.4 | 463.3 | 466.7 | 444.4 | 22.35 | 20.884 | |
| 4,700.0 | 4,688.6 | 4,666.2 | 4,630.1 | 11.1 | 14.2 | -87.83 | -282.1 | 475.2 | 478.7 | 455.8 | 22.91 | 20.897 | |
| 4,800.0 | 4,788.2 | 4,765.5 | 4,728.4 | 11.4 | 14.5 | -87.96 | -289.9 | 487.1 | 490.6 | 467.2 | 23.47 | 20.908 | |
| 4,900.0 | 4,887.9 | 4,864.8 | 4,826.6 | 11.7 | 14.9 | -88.09 | -297.7 | 499.0 | 502.6 | 478.5 | 24.03 | 20.918 | |
| 5,000.0 | 4,987.5 | 4,964.0 | 4,924.9 | 12.0 | 15.2 | -88.21 | -305.5 | 510.9 | 514.5 | 489.9 | 24.59 | 20.928 | |

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SHOOK PAD 3-1S-67W - SHOOK 3-10-5CDH - Wellbore #1 - PLAN 1 ( FEB 5 2016)

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,100.0 | 5,087.1 | 5,063.3 | 5,023.1 | 12.2 | 15.6 | -88.32 | -313.3 | 522.8 | 526.5 | 501.3 | 25.15 | 20.936 | |
| 5,200.0 | 5,186.7 | 5,162.6 | 5,121.4 | 12.5 | 15.9 | -88.43 | -321.1 | 534.7 | 538.4 | 512.7 | 25.71 | 20.944 | |
| 5,300.0 | 5,286.4 | 5,261.9 | 5,219.6 | 12.8 | 16.3 | -88.53 | -328.9 | 546.6 | 550.4 | 524.1 | 26.27 | 20.951 | |
| 5,400.0 | 5,386.0 | 5,361.2 | 5,317.9 | 13.1 | 16.6 | -88.63 | -336.7 | 558.5 | 562.3 | 535.5 | 26.83 | 20.958 | |
| 5,500.0 | 5,485.6 | 5,460.4 | 5,416.1 | 13.3 | 17.0 | -88.73 | -344.5 | 570.4 | 574.3 | 546.9 | 27.39 | 20.964 | |
| 5,600.0 | 5,585.3 | 5,559.7 | 5,514.4 | 13.6 | 17.3 | -88.82 | -352.3 | 582.2 | 586.2 | 558.3 | 27.96 | 20.970 | |
| 5,700.0 | 5,684.9 | 5,659.0 | 5,612.6 | 13.9 | 17.7 | -88.91 | -360.1 | 594.1 | 598.2 | 569.7 | 28.52 | 20.975 | |
| 5,800.0 | 5,784.5 | 5,758.3 | 5,710.9 | 14.2 | 18.1 | -88.99 | -367.9 | 606.0 | 610.1 | 581.1 | 29.08 | 20.980 | |
| 5,900.0 | 5,884.1 | 5,857.5 | 5,809.2 | 14.4 | 18.4 | -89.07 | -375.7 | 617.9 | 622.1 | 592.5 | 29.65 | 20.985 | |
| 6,000.0 | 5,983.8 | 5,956.8 | 5,907.4 | 14.7 | 18.8 | -89.15 | -383.5 | 629.8 | 634.1 | 603.9 | 30.21 | 20.989 | |
| 6,100.0 | 6,083.4 | 6,056.1 | 6,005.7 | 15.0 | 19.1 | -89.23 | -391.3 | 641.7 | 646.0 | 615.3 | 30.77 | 20.993 | |
| 6,200.0 | 6,183.0 | 6,155.4 | 6,103.9 | 15.3 | 19.5 | -89.30 | -399.1 | 653.6 | 658.0 | 626.7 | 31.34 | 20.996 | |
| 6,300.0 | 6,282.7 | 6,254.7 | 6,202.2 | 15.5 | 19.8 | -89.37 | -406.9 | 665.5 | 670.0 | 638.1 | 31.90 | 20.999 | |
| 6,400.0 | 6,382.3 | 6,353.9 | 6,300.4 | 15.8 | 20.2 | -89.44 | -414.7 | 677.4 | 681.9 | 649.5 | 32.47 | 21.002 | |
| 6,500.0 | 6,481.9 | 6,453.2 | 6,398.7 | 16.1 | 20.5 | -89.50 | -422.5 | 689.3 | 693.9 | 660.9 | 33.03 | 21.005 | |
| 6,600.0 | 6,581.6 | 6,552.5 | 6,496.9 | 16.4 | 20.9 | -89.57 | -430.3 | 701.2 | 705.9 | 672.3 | 33.60 | 21.008 | |
| 6,700.0 | 6,681.2 | 6,651.8 | 6,595.2 | 16.7 | 21.2 | -89.63 | -438.1 | 713.1 | 717.8 | 683.7 | 34.17 | 21.010 | |
| 6,800.0 | 6,780.8 | 6,751.1 | 6,693.4 | 16.9 | 21.6 | -89.69 | -445.9 | 725.0 | 729.8 | 695.1 | 34.73 | 21.012 | |
| 6,900.0 | 6,880.4 | 6,850.3 | 6,791.7 | 17.2 | 21.9 | -89.74 | -453.7 | 736.9 | 741.8 | 706.5 | 35.30 | 21.014 | |
| 7,000.0 | 6,980.1 | 6,949.6 | 6,890.0 | 17.5 | 22.3 | -89.80 | -461.5 | 748.8 | 753.7 | 717.9 | 35.86 | 21.016 | |
| 7,100.0 | 7,079.7 | 7,048.9 | 6,988.2 | 17.8 | 22.6 | -89.85 | -469.3 | 760.7 | 765.7 | 729.3 | 36.43 | 21.018 | |
| 7,204.1 | 7,183.4 | 7,152.2 | 7,090.5 | 18.1 | 23.0 | -89.91 | -477.4 | 773.0 | 778.2 | 741.1 | 37.02 | 21.020 | |
| 7,250.0 | 7,229.0 | 7,197.8 | 7,135.5 | 18.2 | 23.2 | -89.53 | -481.0 | 778.5 | 783.7 | 746.4 | 37.26 | 21.032 | |
| 7,300.0 | 7,278.1 | 7,247.1 | 7,184.4 | 18.4 | 23.3 | -89.41 | -484.9 | 784.4 | 789.6 | 752.0 | 37.58 | 21.012 | |
| 7,350.0 | 7,326.5 | 7,297.4 | 7,234.0 | 18.6 | 23.5 | -89.42 | -490.7 | 790.4 | 795.6 | 757.6 | 37.96 | 20.960 | |
| 7,400.0 | 7,373.9 | 7,348.2 | 7,283.5 | 18.9 | 23.7 | -89.44 | -500.0 | 796.4 | 801.5 | 763.1 | 38.40 | 20.873 | |
| 7,450.0 | 7,420.0 | 7,399.5 | 7,332.7 | 19.1 | 24.0 | -89.47 | -513.1 | 802.4 | 807.2 | 768.3 | 38.91 | 20.749 | |
| 7,500.0 | 7,464.7 | 7,451.3 | 7,381.4 | 19.5 | 24.2 | -89.50 | -529.9 | 808.4 | 812.9 | 773.4 | 39.49 | 20.588 | |
| 7,550.0 | 7,507.7 | 7,503.8 | 7,429.3 | 19.8 | 24.5 | -89.53 | -550.4 | 814.2 | 818.4 | 778.3 | 40.14 | 20.390 | |
| 7,600.0 | 7,548.9 | 7,556.8 | 7,476.1 | 20.2 | 24.9 | -89.56 | -574.7 | 820.0 | 823.8 | 782.9 | 40.87 | 20.158 | |
| 7,650.0 | 7,588.0 | 7,610.3 | 7,521.4 | 20.7 | 25.2 | -89.60 | -602.7 | 825.5 | 828.9 | 787.2 | 41.67 | 19.891 | |
| 7,700.0 | 7,624.7 | 7,664.5 | 7,564.9 | 21.1 | 25.6 | -89.63 | -634.3 | 830.9 | 833.7 | 791.2 | 42.55 | 19.592 | |
| 7,750.0 | 7,659.1 | 7,719.2 | 7,606.4 | 21.6 | 26.1 | -89.67 | -669.6 | 836.0 | 838.3 | 794.8 | 43.52 | 19.263 | |
| 7,800.0 | 7,690.8 | 7,774.4 | 7,645.4 | 22.2 | 26.5 | -89.71 | -708.4 | 840.9 | 842.6 | 798.0 | 44.56 | 18.907 | |
| 7,850.0 | 7,719.8 | 7,830.2 | 7,681.7 | 22.7 | 27.0 | -89.75 | -750.5 | 845.4 | 846.5 | 800.8 | 45.69 | 18.527 | |
| 7,900.0 | 7,745.8 | 7,886.4 | 7,714.9 | 23.3 | 27.6 | -89.79 | -795.7 | 849.6 | 850.1 | 803.2 | 46.89 | 18.127 | |
| 7,950.0 | 7,768.8 | 7,943.2 | 7,744.7 | 24.0 | 28.1 | -89.82 | -843.8 | 853.3 | 853.2 | 805.1 | 48.18 | 17.711 | |
| 8,000.0 | 7,788.7 | 8,000.3 | 7,770.8 | 24.6 | 28.8 | -89.86 | -894.5 | 856.7 | 856.0 | 806.5 | 49.53 | 17.283 | |
| 8,050.0 | 7,805.3 | 8,057.8 | 7,792.9 | 25.3 | 29.4 | -89.89 | -947.5 | 859.5 | 858.3 | 807.4 | 50.95 | 16.846 | |
| 8,100.0 | 7,818.5 | 8,115.6 | 7,810.8 | 26.1 | 30.1 | -89.92 | -1,002.4 | 861.9 | 860.2 | 807.8 | 52.43 | 16.406 | |
| 8,150.0 | 7,828.4 | 8,173.7 | 7,824.4 | 26.8 | 30.8 | -89.95 | -1,058.8 | 863.7 | 861.6 | 807.7 | 53.97 | 15.966 | |
| 8,200.0 | 7,834.8 | 8,232.0 | 7,833.3 | 27.5 | 31.6 | -89.97 | -1,116.4 | 865.0 | 862.6 | 807.0 | 55.54 | 15.530 | |
| 8,250.0 | 7,837.8 | 8,290.4 | 7,837.6 | 28.3 | 32.3 | -89.99 | -1,174.6 | 865.7 | 863.0 | 805.8 | 57.15 | 15.101 | |
| 8,267.4 | 7,838.0 | 8,310.7 | 7,838.0 | 28.6 | 32.6 | -90.00 | -1,194.9 | 865.8 | 863.0 | 805.3 | 57.71 | 14.954 | |
| 8,300.0 | 7,838.0 | 8,343.8 | 7,838.0 | 29.1 | 33.0 | -90.00 | -1,228.0 | 865.9 | 863.0 | 804.3 | 58.71 | 14.700 | |
| 8,400.0 | 7,838.0 | 8,443.8 | 7,838.0 | 30.7 | 34.4 | -90.00 | -1,328.0 | 866.3 | 863.0 | 801.2 | 61.80 | 13.965 | |
| 8,500.0 | 7,838.0 | 8,543.8 | 7,838.0 | 32.3 | 35.8 | -90.00 | -1,428.0 | 866.6 | 863.0 | 798.1 | 64.97 | 13.283 | |
| 8,600.0 | 7,838.0 | 8,643.8 | 7,838.0 | 33.9 | 37.3 | -90.00 | -1,528.0 | 867.0 | 863.1 | 794.8 | 68.21 | 12.652 | |
| 8,700.0 | 7,838.0 | 8,743.8 | 7,838.0 | 35.6 | 38.8 | -90.00 | -1,628.0 | 867.3 | 863.1 | 791.5 | 71.51 | 12.069 | |
| 8,800.0 | 7,838.0 | 8,843.8 | 7,838.0 | 37.3 | 40.3 | -90.00 | -1,728.0 | 867.7 | 863.1 | 788.2 | 74.86 | 11.529 | |
| 8,900.0 | 7,838.0 | 8,943.8 | 7,838.0 | 39.0 | 41.9 | -90.00 | -1,828.0 | 868.0 | 863.1 | 784.8 | 78.25 | 11.029 | |
| 9,000.0 | 7,838.0 | 9,043.8 | 7,838.0 | 40.7 | 43.5 | -90.00 | -1,928.0 | 868.4 | 863.1 | 781.4 | 81.69 | 10.566 | |

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SHOOK PAD 3-1S-67W - SHOOK 3-10-5CDH - Wellbore #1 - PLAN 1 ( FEB 5 2016)

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9,100.0 | 7,838.0 | 9,143.8 | 7,838.0 | 42.5 | 45.1 | -90.00 | -2,028.0 | 868.7 | 863.1 | 777.9 | 85.15 | 10.136 | |
| 9,200.0 | 7,838.0 | 9,243.8 | 7,838.0 | 44.2 | 46.8 | -90.00 | -2,128.0 | 869.1 | 863.1 | 774.4 | 88.65 | 9.736 | |
| 9,300.0 | 7,838.0 | 9,343.8 | 7,838.0 | 46.0 | 48.4 | -90.00 | -2,228.0 | 869.4 | 863.1 | 770.9 | 92.17 | 9.364 | |
| 9,400.0 | 7,838.0 | 9,443.8 | 7,838.0 | 47.8 | 50.1 | -90.00 | -2,328.0 | 869.8 | 863.1 | 767.4 | 95.72 | 9.017 | |
| 9,500.0 | 7,838.0 | 9,543.8 | 7,838.0 | 49.6 | 51.8 | -90.00 | -2,428.0 | 870.1 | 863.1 | 763.8 | 99.29 | 8.693 | |
| 9,600.0 | 7,838.0 | 9,643.8 | 7,838.0 | 51.4 | 53.5 | -90.00 | -2,528.0 | 870.5 | 863.1 | 760.2 | 102.87 | 8.390 | |
| 9,700.0 | 7,838.0 | 9,743.8 | 7,838.0 | 53.2 | 55.3 | -90.00 | -2,628.0 | 870.8 | 863.1 | 756.6 | 106.48 | 8.106 | |
| 9,800.0 | 7,838.0 | 9,843.8 | 7,838.0 | 55.0 | 57.0 | -90.00 | -2,728.0 | 871.2 | 863.1 | 753.0 | 110.10 | 7.839 | |
| 9,900.0 | 7,838.0 | 9,943.8 | 7,838.0 | 56.9 | 58.7 | -90.00 | -2,828.0 | 871.5 | 863.1 | 749.4 | 113.73 | 7.589 | |
| 10,000.0 | 7,838.0 | 10,043.8 | 7,838.0 | 58.7 | 60.5 | -90.00 | -2,928.0 | 871.9 | 863.1 | 745.7 | 117.37 | 7.353 | |
| 10,100.0 | 7,838.0 | 10,143.8 | 7,838.0 | 60.5 | 62.3 | -90.00 | -3,028.0 | 872.2 | 863.1 | 742.1 | 121.03 | 7.131 | |
| 10,200.0 | 7,838.0 | 10,243.8 | 7,838.0 | 62.4 | 64.1 | -90.00 | -3,128.0 | 872.6 | 863.1 | 738.4 | 124.70 | 6.922 | |
| 10,300.0 | 7,838.0 | 10,343.8 | 7,838.0 | 64.2 | 65.8 | -90.00 | -3,228.0 | 872.9 | 863.1 | 734.7 | 128.38 | 6.723 | |
| 10,400.0 | 7,838.0 | 10,443.8 | 7,838.0 | 66.1 | 67.6 | -90.00 | -3,328.0 | 873.3 | 863.1 | 731.1 | 132.06 | 6.536 | |
| 10,500.0 | 7,838.0 | 10,543.8 | 7,838.0 | 67.9 | 69.4 | -90.00 | -3,428.0 | 873.6 | 863.1 | 727.4 | 135.76 | 6.358 | |
| 10,600.0 | 7,838.0 | 10,643.8 | 7,838.0 | 69.8 | 71.2 | -90.00 | -3,528.0 | 874.0 | 863.1 | 723.7 | 139.46 | 6.189 | |
| 10,700.0 | 7,838.0 | 10,743.8 | 7,838.0 | 71.6 | 73.0 | -90.00 | -3,628.0 | 874.3 | 863.1 | 720.0 | 143.16 | 6.029 | |
| 10,800.0 | 7,838.0 | 10,843.8 | 7,838.0 | 73.5 | 74.9 | -90.00 | -3,728.0 | 874.7 | 863.1 | 716.3 | 146.88 | 5.876 | |
| 10,900.0 | 7,838.0 | 10,943.8 | 7,838.0 | 75.4 | 76.7 | -90.00 | -3,828.0 | 875.0 | 863.1 | 712.5 | 150.60 | 5.731 | |
| 11,000.0 | 7,838.0 | 11,043.8 | 7,838.0 | 77.2 | 78.5 | -90.00 | -3,928.0 | 875.4 | 863.1 | 708.8 | 154.33 | 5.593 | |
| 11,100.0 | 7,838.0 | 11,143.8 | 7,838.0 | 79.1 | 80.3 | -90.00 | -4,028.0 | 875.7 | 863.1 | 705.1 | 158.06 | 5.461 | |
| 11,200.0 | 7,838.0 | 11,243.8 | 7,838.0 | 81.0 | 82.2 | -90.00 | -4,128.0 | 876.1 | 863.1 | 701.4 | 161.79 | 5.335 | |
| 11,300.0 | 7,838.0 | 11,343.8 | 7,838.0 | 82.8 | 84.0 | -90.00 | -4,228.0 | 876.4 | 863.2 | 697.6 | 165.53 | 5.214 | |
| 11,400.0 | 7,838.0 | 11,443.8 | 7,838.0 | 84.7 | 85.8 | -90.00 | -4,328.0 | 876.8 | 863.2 | 693.9 | 169.27 | 5.099 | |
| 11,500.0 | 7,838.0 | 11,543.8 | 7,838.0 | 86.6 | 87.7 | -90.00 | -4,428.0 | 877.1 | 863.2 | 690.1 | 173.02 | 4.989 | |
| 11,600.0 | 7,838.0 | 11,643.8 | 7,838.0 | 88.5 | 89.5 | -90.00 | -4,528.0 | 877.5 | 863.2 | 686.4 | 176.77 | 4.883 | |
| 11,700.0 | 7,838.0 | 11,743.8 | 7,838.0 | 90.3 | 91.4 | -90.00 | -4,628.0 | 877.8 | 863.2 | 682.6 | 180.53 | 4.781 | |
| 11,800.0 | 7,838.0 | 11,843.8 | 7,838.0 | 92.2 | 93.2 | -90.00 | -4,728.0 | 878.2 | 863.2 | 678.9 | 184.29 | 4.684 | |
| 11,900.0 | 7,838.0 | 11,943.8 | 7,838.0 | 94.1 | 95.1 | -90.00 | -4,828.0 | 878.5 | 863.2 | 675.1 | 188.05 | 4.590 | |
| 12,000.0 | 7,838.0 | 12,043.8 | 7,838.0 | 96.0 | 96.9 | -90.00 | -4,928.0 | 878.9 | 863.2 | 671.4 | 191.81 | 4.500 | |
| 12,100.0 | 7,838.0 | 12,143.8 | 7,838.0 | 97.9 | 98.8 | -90.00 | -5,028.0 | 879.2 | 863.2 | 667.6 | 195.58 | 4.414 | |
| 12,200.0 | 7,838.0 | 12,243.8 | 7,838.0 | 99.8 | 100.7 | -90.00 | -5,128.0 | 879.6 | 863.2 | 663.8 | 199.35 | 4.330 | |
| 12,300.0 | 7,838.0 | 12,343.8 | 7,838.0 | 101.7 | 102.5 | -90.00 | -5,228.0 | 879.9 | 863.2 | 660.1 | 203.12 | 4.250 | |
| 12,400.0 | 7,838.0 | 12,443.8 | 7,838.0 | 103.5 | 104.4 | -90.00 | -5,328.0 | 880.3 | 863.2 | 656.3 | 206.89 | 4.172 | |
| 12,500.0 | 7,838.0 | 12,543.8 | 7,838.0 | 105.4 | 106.3 | -90.00 | -5,428.0 | 880.6 | 863.2 | 652.5 | 210.66 | 4.097 | |
| 12,600.0 | 7,838.0 | 12,643.8 | 7,838.0 | 107.3 | 108.1 | -90.00 | -5,528.0 | 881.0 | 863.2 | 648.8 | 214.44 | 4.025 | |
| 12,700.0 | 7,838.0 | 12,743.8 | 7,838.0 | 109.2 | 110.0 | -90.00 | -5,628.0 | 881.3 | 863.2 | 645.0 | 218.22 | 3.956 | |
| 12,800.0 | 7,838.0 | 12,843.8 | 7,838.0 | 111.1 | 111.9 | -90.00 | -5,728.0 | 881.7 | 863.2 | 641.2 | 222.00 | 3.888 | |
| 12,900.0 | 7,838.0 | 12,943.8 | 7,838.0 | 113.0 | 113.7 | -90.00 | -5,828.0 | 882.0 | 863.2 | 637.4 | 225.78 | 3.823 | |
| 13,000.0 | 7,838.0 | 13,043.8 | 7,838.0 | 114.9 | 115.6 | -90.00 | -5,928.0 | 882.4 | 863.2 | 633.6 | 229.57 | 3.760 | |
| 13,100.0 | 7,838.0 | 13,143.8 | 7,838.0 | 116.8 | 117.5 | -90.00 | -6,028.0 | 882.7 | 863.2 | 629.9 | 233.35 | 3.699 | |
| 13,200.0 | 7,838.0 | 13,243.8 | 7,838.0 | 118.7 | 119.4 | -90.00 | -6,128.0 | 883.1 | 863.2 | 626.1 | 237.14 | 3.640 | |
| 13,300.0 | 7,838.0 | 13,343.8 | 7,838.0 | 120.6 | 121.3 | -90.00 | -6,228.0 | 883.4 | 863.2 | 622.3 | 240.93 | 3.583 | |
| 13,400.0 | 7,838.0 | 13,443.8 | 7,838.0 | 122.5 | 123.1 | -90.00 | -6,328.0 | 883.8 | 863.2 | 618.5 | 244.72 | 3.527 | |
| 13,500.0 | 7,838.0 | 13,543.8 | 7,838.0 | 124.4 | 125.0 | -90.00 | -6,428.0 | 884.1 | 863.2 | 614.7 | 248.51 | 3.474 | |
| 13,600.0 | 7,838.0 | 13,643.8 | 7,838.0 | 126.3 | 126.9 | -90.00 | -6,528.0 | 884.5 | 863.2 | 610.9 | 252.30 | 3.421 | |
| 13,700.0 | 7,838.0 | 13,743.8 | 7,838.0 | 128.2 | 128.8 | -90.00 | -6,628.0 | 884.8 | 863.2 | 607.1 | 256.10 | 3.371 | |
| 13,800.0 | 7,838.0 | 13,843.8 | 7,838.0 | 130.1 | 130.7 | -90.00 | -6,728.0 | 885.2 | 863.2 | 603.4 | 259.89 | 3.322 | |
| 13,900.0 | 7,838.0 | 13,943.8 | 7,838.0 | 132.0 | 132.5 | -90.00 | -6,828.0 | 885.5 | 863.2 | 599.6 | 263.69 | 3.274 | |
| 13,924.1 | 7,838.0 | 13,967.9 | 7,838.0 | 132.4 | 133.0 | -90.00 | -6,852.1 | 885.6 | 863.2 | 598.6 | 264.60 | 3.262 | |
| 13,946.7 | 7,838.0 | 13,989.8 | 7,838.0 | 132.9 | 133.4 | -90.00 | -6,874.0 | 885.7 | 863.2 | 597.8 | 265.45 | 3.252 | SF |

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SHOOK PAD 3-1S-67W - SHOOK 3-10-6CDH - Wellbore #1 - PLAN 1 ( FEB 5 2016)

**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 | 0.0 | 89.7 | 89.7 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 90.03 | 0.0 | 89.7 | 89.7 | 89.4 | 0.22 | 398.915 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 90.03 | 0.0 | 89.7 | 89.7 | 89.0 | 0.67 | 132.972 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.6 | 0.6 | 90.03 | 0.0 | 89.7 | 89.7 | 88.5 | 1.12 | 79.783 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | 90.03 | 0.0 | 89.7 | 89.7 | 88.1 | 1.57 | 56.988 | CC, ES |
| 500.0 | 500.0 | 497.2 | 497.2 | 1.0 | 1.0 | 90.33 | -0.5 | 91.1 | 91.2 | 89.2 | 2.00 | 45.569 | |
| 600.0 | 600.0 | 594.3 | 594.1 | 1.2 | 1.2 | 91.17 | -2.0 | 95.6 | 95.8 | 93.3 | 2.43 | 39.472 | |
| 700.0 | 700.0 | 690.9 | 690.5 | 1.5 | 1.4 | 92.40 | -4.3 | 102.9 | 103.4 | 100.6 | 2.86 | 36.143 | |
| 800.0 | 800.0 | 787.0 | 785.9 | 1.7 | 1.7 | 93.85 | -7.6 | 113.1 | 114.2 | 110.9 | 3.31 | 34.551 | |
| 900.0 | 900.0 | 882.2 | 880.2 | 1.9 | 1.9 | 95.34 | -11.8 | 126.0 | 128.1 | 124.3 | 3.76 | 34.108 | SF |
| 1,000.0 | 1,000.0 | 976.6 | 973.1 | 2.1 | 2.3 | 96.77 | -16.8 | 141.6 | 145.1 | 140.9 | 4.21 | 34.456 | |
| 1,100.0 | 1,100.0 | 1,069.8 | 1,064.4 | 2.4 | 2.6 | 98.07 | -22.6 | 159.6 | 165.1 | 160.5 | 4.67 | 35.361 | |
| 1,200.0 | 1,200.0 | 1,164.0 | 1,156.0 | 2.6 | 3.0 | 99.23 | -29.3 | 180.4 | 188.0 | 182.8 | 5.14 | 36.586 | |
| 1,300.0 | 1,300.0 | 1,261.1 | 1,250.4 | 2.8 | 3.5 | 100.20 | -36.4 | 202.3 | 211.4 | 205.8 | 5.60 | 37.726 | |
| 1,400.0 | 1,400.0 | 1,358.3 | 1,344.8 | 3.0 | 4.0 | 100.97 | -43.4 | 224.1 | 234.9 | 228.8 | 6.07 | 38.684 | |
| 1,500.0 | 1,500.0 | 1,455.5 | 1,439.3 | 3.2 | 4.4 | -78.28 | -50.5 | 246.0 | 258.2 | 251.6 | 6.51 | 39.627 | |
| 1,600.0 | 1,599.9 | 1,552.9 | 1,533.9 | 3.4 | 4.9 | -78.19 | -57.6 | 268.0 | 280.9 | 274.0 | 6.94 | 40.475 | |
| 1,700.0 | 1,699.7 | 1,650.3 | 1,628.5 | 3.6 | 5.4 | -78.57 | -64.7 | 289.9 | 303.2 | 295.8 | 7.38 | 41.067 | |
| 1,728.8 | 1,728.4 | 1,678.4 | 1,655.8 | 3.6 | 5.5 | -78.75 | -66.7 | 296.3 | 309.5 | 302.0 | 7.51 | 41.195 | |
| 1,800.0 | 1,799.3 | 1,747.7 | 1,723.2 | 3.8 | 5.9 | -79.43 | -71.8 | 311.9 | 325.1 | 317.3 | 7.84 | 41.448 | |
| 1,900.0 | 1,899.0 | 1,845.2 | 1,817.8 | 4.0 | 6.4 | -80.29 | -78.8 | 333.8 | 347.1 | 338.8 | 8.32 | 41.716 | |
| 2,000.0 | 1,998.6 | 1,942.6 | 1,912.5 | 4.2 | 6.9 | -81.05 | -85.9 | 355.8 | 369.2 | 360.4 | 8.81 | 41.903 | |
| 2,100.0 | 2,098.2 | 2,040.0 | 2,007.1 | 4.4 | 7.3 | -81.72 | -93.0 | 377.7 | 391.3 | 382.0 | 9.31 | 42.027 | |
| 2,200.0 | 2,197.8 | 2,137.4 | 2,101.8 | 4.6 | 7.8 | -82.32 | -100.1 | 399.7 | 413.5 | 403.7 | 9.82 | 42.103 | |
| 2,300.0 | 2,297.5 | 2,234.9 | 2,196.5 | 4.9 | 8.3 | -82.85 | -107.2 | 421.6 | 435.7 | 425.4 | 10.34 | 42.142 | |
| 2,400.0 | 2,397.1 | 2,332.3 | 2,291.1 | 5.1 | 8.8 | -83.34 | -114.3 | 443.6 | 457.9 | 447.1 | 10.86 | 42.153 | |
| 2,500.0 | 2,496.7 | 2,429.7 | 2,385.8 | 5.3 | 9.3 | -83.78 | -121.3 | 465.5 | 480.2 | 468.8 | 11.40 | 42.143 | |
| 2,600.0 | 2,596.4 | 2,527.1 | 2,480.4 | 5.6 | 9.8 | -84.18 | -128.4 | 487.5 | 502.5 | 490.6 | 11.93 | 42.116 | |
| 2,700.0 | 2,696.0 | 2,624.6 | 2,575.1 | 5.8 | 10.3 | -84.55 | -135.5 | 509.4 | 524.8 | 512.4 | 12.47 | 42.078 | |
| 2,800.0 | 2,795.6 | 2,722.0 | 2,669.7 | 6.1 | 10.8 | -84.88 | -142.6 | 531.3 | 547.2 | 534.1 | 13.02 | 42.031 | |
| 2,900.0 | 2,895.3 | 2,819.4 | 2,764.4 | 6.3 | 11.3 | -85.20 | -149.7 | 553.3 | 569.5 | 555.9 | 13.57 | 41.977 | |
| 3,000.0 | 2,994.9 | 2,916.8 | 2,859.0 | 6.6 | 11.8 | -85.48 | -156.8 | 575.2 | 591.9 | 577.8 | 14.12 | 41.919 | |
| 3,100.0 | 3,094.5 | 3,014.3 | 2,953.7 | 6.9 | 12.3 | -85.75 | -163.8 | 597.2 | 614.3 | 599.6 | 14.68 | 41.858 | |
| 3,200.0 | 3,194.1 | 3,111.7 | 3,048.4 | 7.1 | 12.8 | -86.00 | -170.9 | 619.1 | 636.7 | 621.4 | 15.23 | 41.794 | |
| 3,300.0 | 3,293.8 | 3,209.1 | 3,143.0 | 7.4 | 13.3 | -86.23 | -178.0 | 641.1 | 659.1 | 643.3 | 15.79 | 41.730 | |
| 3,400.0 | 3,393.4 | 3,306.5 | 3,237.7 | 7.6 | 13.8 | -86.44 | -185.1 | 663.0 | 681.5 | 665.1 | 16.36 | 41.666 | |
| 3,500.0 | 3,493.0 | 3,404.0 | 3,332.3 | 7.9 | 14.3 | -86.65 | -192.2 | 685.0 | 703.9 | 687.0 | 16.92 | 41.601 | |
| 3,600.0 | 3,592.7 | 3,501.4 | 3,427.0 | 8.2 | 14.8 | -86.84 | -199.3 | 706.9 | 726.3 | 708.8 | 17.49 | 41.537 | |
| 3,700.0 | 3,692.3 | 3,598.8 | 3,521.6 | 8.4 | 15.3 | -87.01 | -206.3 | 728.9 | 748.8 | 730.7 | 18.05 | 41.474 | |
| 3,800.0 | 3,791.9 | 3,696.2 | 3,616.3 | 8.7 | 15.8 | -87.18 | -213.4 | 750.8 | 771.2 | 752.6 | 18.62 | 41.412 | |
| 3,900.0 | 3,891.6 | 3,793.7 | 3,711.0 | 9.0 | 16.3 | -87.34 | -220.5 | 772.8 | 793.6 | 774.4 | 19.19 | 41.351 | |
| 4,000.0 | 3,991.2 | 3,891.1 | 3,805.6 | 9.2 | 16.8 | -87.49 | -227.6 | 794.7 | 816.1 | 796.3 | 19.76 | 41.291 | |
| 4,100.0 | 4,090.8 | 3,988.5 | 3,900.3 | 9.5 | 17.3 | -87.63 | -234.7 | 816.7 | 838.6 | 818.2 | 20.34 | 41.233 | |
| 4,200.0 | 4,190.4 | 4,085.9 | 3,994.9 | 9.8 | 17.8 | -87.77 | -241.7 | 838.6 | 861.0 | 840.1 | 20.91 | 41.176 | |
| 4,300.0 | 4,290.1 | 4,183.4 | 4,089.6 | 10.1 | 18.3 | -87.89 | -248.8 | 860.6 | 883.5 | 862.0 | 21.49 | 41.121 | |
| 4,400.0 | 4,389.7 | 4,280.8 | 4,184.2 | 10.3 | 18.8 | -88.01 | -255.9 | 882.5 | 906.0 | 883.9 | 22.06 | 41.067 | |
| 4,500.0 | 4,489.3 | 4,378.2 | 4,278.9 | 10.6 | 19.3 | -88.13 | -263.0 | 904.4 | 928.4 | 905.8 | 22.64 | 41.014 | |
| 4,600.0 | 4,589.0 | 4,475.6 | 4,373.5 | 10.9 | 19.8 | -88.24 | -270.1 | 926.4 | 950.9 | 927.7 | 23.21 | 40.963 | |
| 4,700.0 | 4,688.6 | 4,573.1 | 4,468.2 | 11.1 | 20.3 | -88.34 | -277.2 | 948.3 | 973.4 | 949.6 | 23.79 | 40.913 | |
| 4,800.0 | 4,788.2 | 4,670.5 | 4,562.9 | 11.4 | 20.8 | -88.44 | -284.2 | 970.3 | 995.9 | 971.5 | 24.37 | 40.865 | |

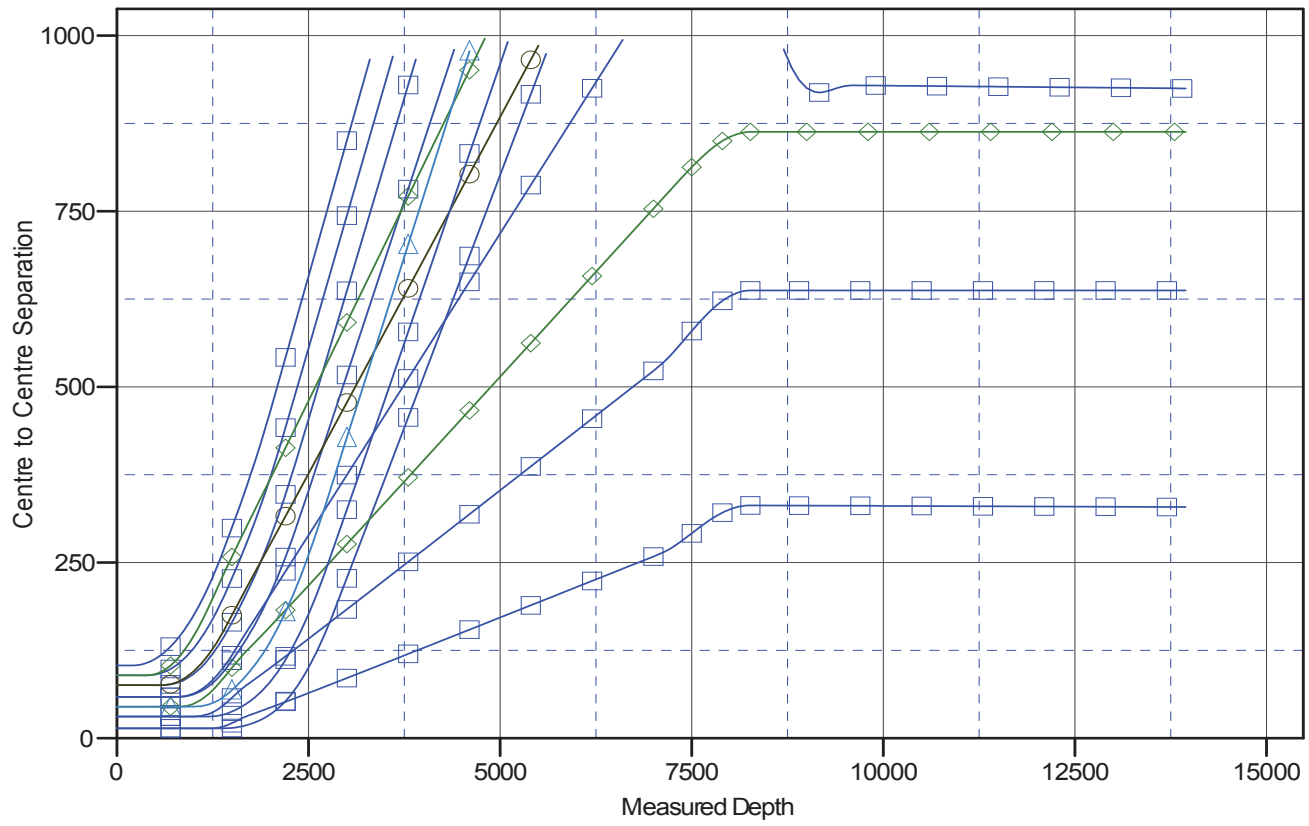
CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

Reference Depths are relative to RKB @ 5109.0ft (EST KB 16')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: SHOOK 3-10-4CDH
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.40°

## Ladder Plot




L E G E N D

| | | |
|---|---|---|
| 0-3NBH, Wellbore #1, PLAN 1 ( FEB 5 2016) V0 | SHOOK 3-10-3CDH, Wellbore #1, PLAN 1 ( FEB 4 2016) V0 | SHOOK 3-10-6CDH, Wellbore #1, PLAN 1 |
| 0-1CDH, Wellbore #1, PLAN 1 (FEB 4, 2016) V0 | SHOOK 3-10-2NAH, Wellbore #1, PLAN 1 ( FEB 5 2016) V0 | SHOOK 3-10-1NAH, Wellbore #1, PLAN 1 |
| 0-1NBH, Wellbore #1, PLAN 1 (FEB 4, 2016) V0 | SHOOK 3-10-4NBH, Wellbore #1, PLAN 1 ( FEB 5 2016) V0 | SHOOK 3-10-2NBH, Wellbore #1, PLAN 1 |
| 0-2CDH, Wellbore #1, PLAN 1 (FEB 4, 2016) V0 | SHOOK 3-10-5CDH, Wellbore #1, PLAN 1 ( FEB 5 2016) V0 | |
| 0-1NCH, Wellbore #1, PLAN 1 (FEB 4 2016) V0 | SHOOK 3-10-2NCH, Wellbore #1, PLAN 1 (FEB 5, 2016) V0 | |

| | | | |
|---|---|---|---|
| **Company:** | PetroShare Corp | **Local Co-ordinate Reference:** | Well SHOOK 3-10-4CDH |
| **Project:** | SEC.3-T1S-R67W | **TVD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Reference Site:** | SHOOK PAD 3-1S-67W | **MD Reference:** | RKB @ 5109.0ft (EST KB 16') |
| **Site Error:** | 0.0 ft | **North Reference:** | True |
| **Reference Well:** | SHOOK 3-10-4CDH | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | US_EDM |
| **Reference Design:** | PLAN 1 (FEB 5, 2016) | **Offset TVD Reference:** | Offset Datum |

Reference Depths are relative to RKB @ 5109.0ft (EST KB 16')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: SHOOK 3-10-4CDH
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.40°