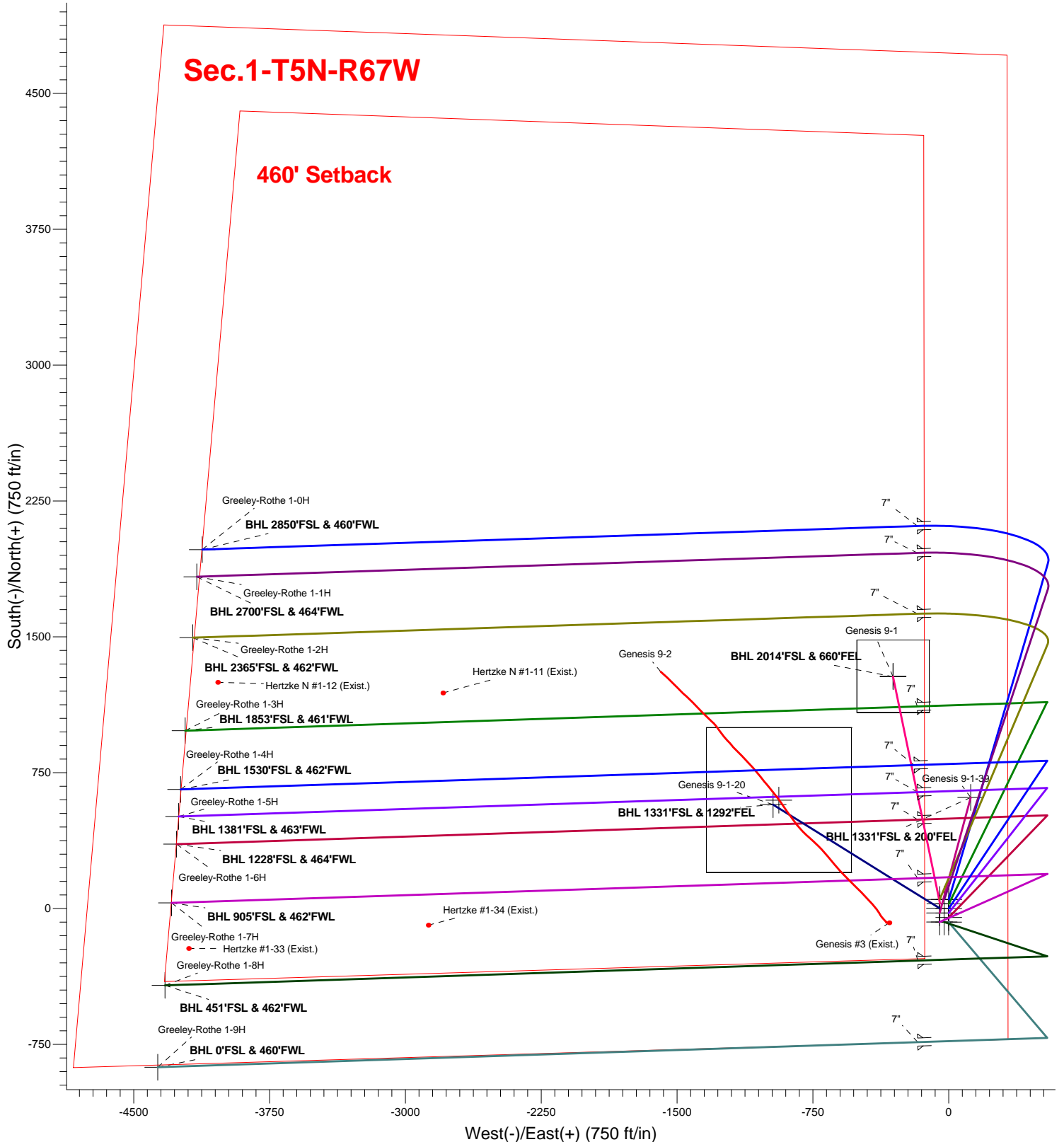


Sec.1-T5N-R67W

460' Setback





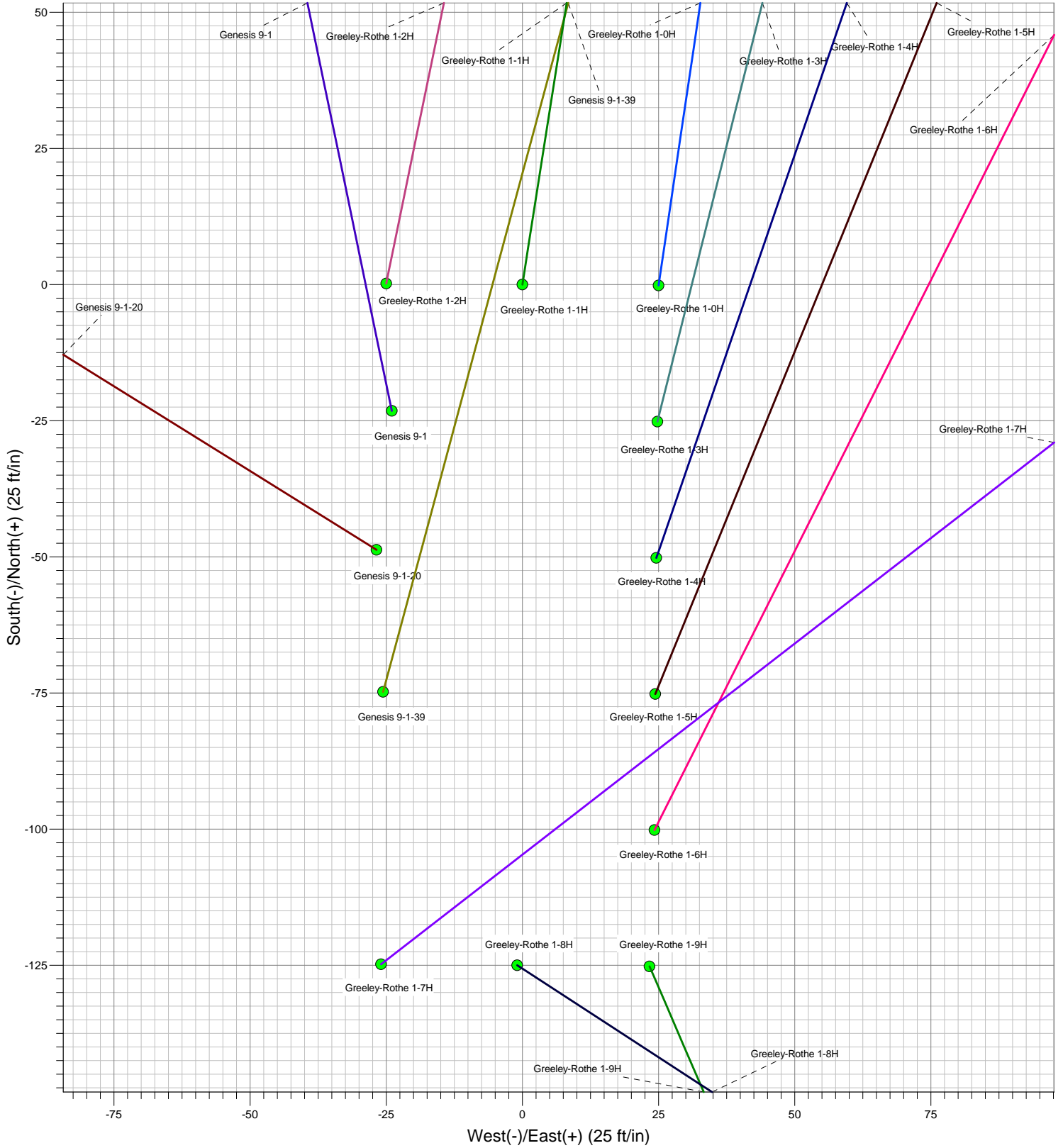
Surface Location: Greeley-Rothe Pad Sec.1-T5N-R67W

North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4875.0

| +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Slot |
|-------|-------|------------|------------|-----------|-------------|------|
| 0.0 | 0.0 | 1397881.60 | 3185503.82 | 40.423674 | -104.833704 | |

Design Version: Plan #2 (6-05-14)



KP KAUFFMAN

Well Name: **Greeley-Rothe 1-0H**

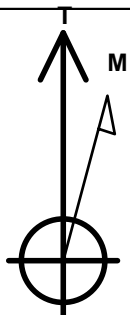
Surface Location: Greeley-Rothe Pad Sec.1-T5N-R67W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4875.0

| +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Slot |
|---------------------------------------|-------|------------|------------|-----------|-------------|------|
| 0.0 | 0.0 | 1397881.60 | 3185528.82 | 40.423673 | -104.833614 | |
| RKB - 15' WELL @ 4890.0ft (RKB - 15') | | | | | | |

WELLBORE TARGET DETAILS

| Name | TVD | +N/-S | +E/-W | Shape |
|------------------------|--------|--------|---------|-------|
| SHL 773'FSL & 327'FEL | 1.0 | 0.0 | 0.0 | Point |
| BHL 2850'FSL & 460'FWL | 7394.0 | 1931.5 | -4122.7 | Point |



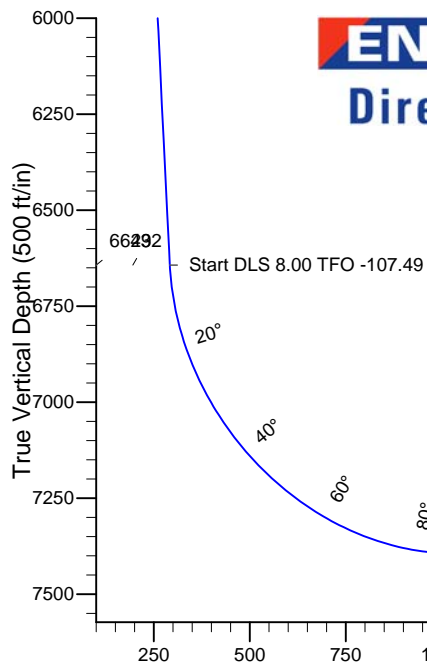
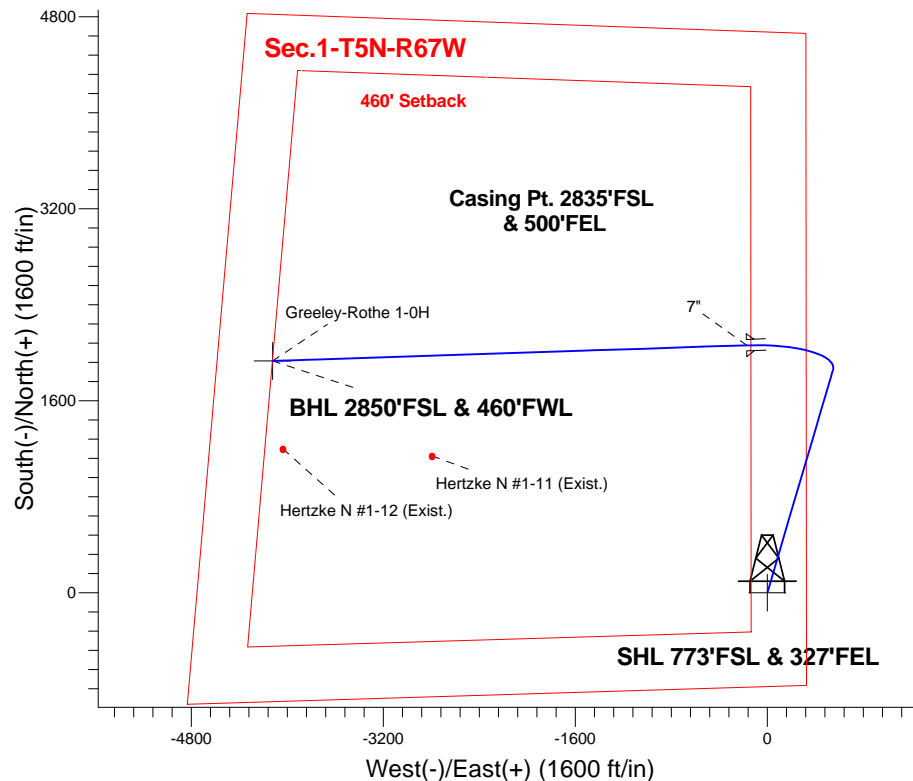
Azimuths to True North
Magnetic North: 8.50°

Magnetic Field
Strength: 52822.8nT
Dip Angle: 66.96°
Date: 6/5/2014
Model: IGRF2010

Greeley-Rothe Pad Sec.1-T5N-R67W
Greeley-Rothe 1-0H
Plan #1 (6-5-14)
14:33, June 06 2014

ANNOTATIONS

| TVD | MD | Annotation |
|--------|---------|----------------------------|
| 200.0 | 200.0 | KOP - Start Build 2.00 |
| 6643.1 | 6940.3 | Start DLS 8.00 TFO -107.49 |
| 7394.0 | 12086.3 | TD at 12086.3 |



ENSIGN
Directional

SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | DLeg | TFace | VSec | Target |
|-----|---------|-------|--------|--------|--------|---------|------|---------|--------|------------------------|
| 1 | 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | |
| 2 | 200.0 | 0.00 | 0.00 | 200.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | |
| 3 | 1094.6 | 17.89 | 16.43 | 1080.1 | 132.9 | 39.2 | 2.00 | 16.43 | 20.9 | |
| 4 | 6940.3 | 17.89 | 16.43 | 6643.1 | 1855.5 | 547.1 | 0.00 | 0.00 | 291.9 | |
| 5 | 8134.6 | 90.00 | 268.11 | 7394.0 | 2062.0 | -173.0 | 8.00 | -107.49 | 1031.5 | |
| 6 | 12086.3 | 90.00 | 268.11 | 7394.0 | 1931.7 | -4122.6 | 0.00 | 0.00 | 4552.7 | BHL 2850'FSL & 460'FWL |

BHL 2850'FSL & 460'FWL



KP KAUFFMAN

SEC.1-T5N-R67W

Greeley-Rothe Pad Sec.1-T5N-R67W

Greeley-Rothe 1-0H

Wellbore #1

Plan: Plan #1 (6-5-14)

Standard Planning Report

06 June, 2014

| Plan Sections | | | | | | | | | | |
|---------------------------|--------------------|----------------|---------------------------|---------------|---------------|-----------------------------|----------------------------|---------------------------|------------|--------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | TFO (°) | Target |
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 200.0 | 0.00 | 0.00 | 200.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,094.6 | 17.89 | 16.43 | 1,080.1 | 132.9 | 39.2 | 2.00 | 2.00 | 0.00 | 16.43 | |
| 6,940.3 | 17.89 | 16.43 | 6,643.1 | 1,855.5 | 547.1 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 8,134.6 | 90.00 | 268.11 | 7,394.0 | 2,062.0 | -173.0 | 8.00 | 6.04 | -9.07 | -107.49 | |
| 12,086.3 | 90.00 | 268.11 | 7,394.0 | 1,931.7 | -4,122.6 | 0.00 | 0.00 | 0.00 | 0.00 | BHL 2850'FSL & 40° |

| | | | |
|------------------|----------------------------------|-------------------------------------|-----------------------------|
| Database: | Landmark | Local Co-ordinate Reference: | Well Greeley-Rothe 1-0H |
| Company: | KP KAUFFMAN | TVD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Project: | SEC.1-T5N-R67W | MD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Site: | Greeley-Rothe Pad Sec.1-T5N-R67W | North Reference: | True |
| Well: | Greeley-Rothe 1-0H | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | Plan #1 (6-5-14) | | |

| Planned Survey | | | | | | | | | |
|----------------------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1.0 | 0.00 | 0.00 | 1.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| SHL 773'FSL & 327'FEL | | | | | | | | | |
| 100.0 | 0.00 | 0.00 | 100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 200.0 | 0.00 | 0.00 | 200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| KOP - Start Build 2.00 | | | | | | | | | |
| 300.0 | 2.00 | 16.43 | 300.0 | 1.7 | 0.5 | 0.3 | 2.00 | 2.00 | 0.00 |
| 400.0 | 4.00 | 16.43 | 399.8 | 6.7 | 2.0 | 1.1 | 2.00 | 2.00 | 0.00 |
| 500.0 | 6.00 | 16.43 | 499.5 | 15.1 | 4.4 | 2.4 | 2.00 | 2.00 | 0.00 |
| 600.0 | 8.00 | 16.43 | 598.7 | 26.7 | 7.9 | 4.2 | 2.00 | 2.00 | 0.00 |
| 700.0 | 10.00 | 16.43 | 697.5 | 41.7 | 12.3 | 6.6 | 2.00 | 2.00 | 0.00 |
| 800.0 | 12.00 | 16.43 | 795.6 | 60.0 | 17.7 | 9.4 | 2.00 | 2.00 | 0.00 |
| 900.0 | 14.00 | 16.43 | 893.1 | 81.6 | 24.1 | 12.8 | 2.00 | 2.00 | 0.00 |
| 1,000.0 | 16.00 | 16.43 | 989.6 | 106.4 | 31.4 | 16.7 | 2.00 | 2.00 | 0.00 |
| 1,094.6 | 17.89 | 16.43 | 1,080.1 | 132.9 | 39.2 | 20.9 | 2.00 | 2.00 | 0.00 |
| 1,100.0 | 17.89 | 16.43 | 1,085.3 | 134.5 | 39.6 | 21.2 | 0.00 | 0.00 | 0.00 |
| 1,200.0 | 17.89 | 16.43 | 1,180.4 | 164.0 | 48.3 | 25.8 | 0.00 | 0.00 | 0.00 |
| 1,300.0 | 17.89 | 16.43 | 1,275.6 | 193.4 | 57.0 | 30.4 | 0.00 | 0.00 | 0.00 |
| 1,400.0 | 17.89 | 16.43 | 1,370.8 | 222.9 | 65.7 | 35.1 | 0.00 | 0.00 | 0.00 |
| 1,500.0 | 17.89 | 16.43 | 1,465.9 | 252.4 | 74.4 | 39.7 | 0.00 | 0.00 | 0.00 |
| 1,600.0 | 17.89 | 16.43 | 1,561.1 | 281.8 | 83.1 | 44.3 | 0.00 | 0.00 | 0.00 |
| 1,700.0 | 17.89 | 16.43 | 1,656.3 | 311.3 | 91.8 | 49.0 | 0.00 | 0.00 | 0.00 |
| 1,800.0 | 17.89 | 16.43 | 1,751.4 | 340.8 | 100.5 | 53.6 | 0.00 | 0.00 | 0.00 |
| 1,900.0 | 17.89 | 16.43 | 1,846.6 | 370.2 | 109.2 | 58.2 | 0.00 | 0.00 | 0.00 |
| 2,000.0 | 17.89 | 16.43 | 1,941.7 | 399.7 | 117.8 | 62.9 | 0.00 | 0.00 | 0.00 |
| 2,100.0 | 17.89 | 16.43 | 2,036.9 | 429.2 | 126.5 | 67.5 | 0.00 | 0.00 | 0.00 |
| 2,200.0 | 17.89 | 16.43 | 2,132.1 | 458.6 | 135.2 | 72.1 | 0.00 | 0.00 | 0.00 |
| 2,300.0 | 17.89 | 16.43 | 2,227.2 | 488.1 | 143.9 | 76.8 | 0.00 | 0.00 | 0.00 |
| 2,400.0 | 17.89 | 16.43 | 2,322.4 | 517.6 | 152.6 | 81.4 | 0.00 | 0.00 | 0.00 |
| 2,500.0 | 17.89 | 16.43 | 2,417.6 | 547.0 | 161.3 | 86.1 | 0.00 | 0.00 | 0.00 |
| 2,600.0 | 17.89 | 16.43 | 2,512.7 | 576.5 | 170.0 | 90.7 | 0.00 | 0.00 | 0.00 |
| 2,700.0 | 17.89 | 16.43 | 2,607.9 | 606.0 | 178.7 | 95.3 | 0.00 | 0.00 | 0.00 |
| 2,800.0 | 17.89 | 16.43 | 2,703.1 | 635.4 | 187.3 | 100.0 | 0.00 | 0.00 | 0.00 |
| 2,900.0 | 17.89 | 16.43 | 2,798.2 | 664.9 | 196.0 | 104.6 | 0.00 | 0.00 | 0.00 |
| 3,000.0 | 17.89 | 16.43 | 2,893.4 | 694.4 | 204.7 | 109.2 | 0.00 | 0.00 | 0.00 |
| 3,100.0 | 17.89 | 16.43 | 2,988.5 | 723.8 | 213.4 | 113.9 | 0.00 | 0.00 | 0.00 |
| 3,200.0 | 17.89 | 16.43 | 3,083.7 | 753.3 | 222.1 | 118.5 | 0.00 | 0.00 | 0.00 |
| 3,300.0 | 17.89 | 16.43 | 3,178.9 | 782.8 | 230.8 | 123.1 | 0.00 | 0.00 | 0.00 |
| 3,400.0 | 17.89 | 16.43 | 3,274.0 | 812.3 | 239.5 | 127.8 | 0.00 | 0.00 | 0.00 |
| 3,500.0 | 17.89 | 16.43 | 3,369.2 | 841.7 | 248.2 | 132.4 | 0.00 | 0.00 | 0.00 |
| 3,600.0 | 17.89 | 16.43 | 3,464.4 | 871.2 | 256.8 | 137.0 | 0.00 | 0.00 | 0.00 |
| 3,700.0 | 17.89 | 16.43 | 3,559.5 | 900.7 | 265.5 | 141.7 | 0.00 | 0.00 | 0.00 |
| 3,800.0 | 17.89 | 16.43 | 3,654.7 | 930.1 | 274.2 | 146.3 | 0.00 | 0.00 | 0.00 |
| 3,900.0 | 17.89 | 16.43 | 3,749.9 | 959.6 | 282.9 | 151.0 | 0.00 | 0.00 | 0.00 |
| 4,000.0 | 17.89 | 16.43 | 3,845.0 | 989.1 | 291.6 | 155.6 | 0.00 | 0.00 | 0.00 |
| 4,100.0 | 17.89 | 16.43 | 3,940.2 | 1,018.5 | 300.3 | 160.2 | 0.00 | 0.00 | 0.00 |
| 4,200.0 | 17.89 | 16.43 | 4,035.3 | 1,048.0 | 309.0 | 164.9 | 0.00 | 0.00 | 0.00 |
| 4,300.0 | 17.89 | 16.43 | 4,130.5 | 1,077.5 | 317.7 | 169.5 | 0.00 | 0.00 | 0.00 |
| 4,400.0 | 17.89 | 16.43 | 4,225.7 | 1,106.9 | 326.4 | 174.1 | 0.00 | 0.00 | 0.00 |
| 4,500.0 | 17.89 | 16.43 | 4,320.8 | 1,136.4 | 335.0 | 178.8 | 0.00 | 0.00 | 0.00 |
| 4,600.0 | 17.89 | 16.43 | 4,416.0 | 1,165.9 | 343.7 | 183.4 | 0.00 | 0.00 | 0.00 |
| 4,700.0 | 17.89 | 16.43 | 4,511.2 | 1,195.3 | 352.4 | 188.0 | 0.00 | 0.00 | 0.00 |
| 4,800.0 | 17.89 | 16.43 | 4,606.3 | 1,224.8 | 361.1 | 192.7 | 0.00 | 0.00 | 0.00 |
| 4,900.0 | 17.89 | 16.43 | 4,701.5 | 1,254.3 | 369.8 | 197.3 | 0.00 | 0.00 | 0.00 |

| | | | |
|------------------|----------------------------------|-------------------------------------|-----------------------------|
| Database: | Landmark | Local Co-ordinate Reference: | Well Greeley-Rothe 1-0H |
| Company: | KP KAUFFMAN | TVD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Project: | SEC.1-T5N-R67W | MD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Site: | Greeley-Rothe Pad Sec.1-T5N-R67W | North Reference: | True |
| Well: | Greeley-Rothe 1-0H | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | Plan #1 (6-5-14) | | |

| Planned Survey | | | | | | | | | |
|----------------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 5,000.0 | 17.89 | 16.43 | 4,796.7 | 1,283.7 | 378.5 | 201.9 | 0.00 | 0.00 | 0.00 |
| 5,100.0 | 17.89 | 16.43 | 4,891.8 | 1,313.2 | 387.2 | 206.6 | 0.00 | 0.00 | 0.00 |
| 5,200.0 | 17.89 | 16.43 | 4,987.0 | 1,342.7 | 395.9 | 211.2 | 0.00 | 0.00 | 0.00 |
| 5,300.0 | 17.89 | 16.43 | 5,082.2 | 1,372.1 | 404.5 | 215.9 | 0.00 | 0.00 | 0.00 |
| 5,400.0 | 17.89 | 16.43 | 5,177.3 | 1,401.6 | 413.2 | 220.5 | 0.00 | 0.00 | 0.00 |
| 5,500.0 | 17.89 | 16.43 | 5,272.5 | 1,431.1 | 421.9 | 225.1 | 0.00 | 0.00 | 0.00 |
| 5,600.0 | 17.89 | 16.43 | 5,367.6 | 1,460.5 | 430.6 | 229.8 | 0.00 | 0.00 | 0.00 |
| 5,700.0 | 17.89 | 16.43 | 5,462.8 | 1,490.0 | 439.3 | 234.4 | 0.00 | 0.00 | 0.00 |
| 5,800.0 | 17.89 | 16.43 | 5,558.0 | 1,519.5 | 448.0 | 239.0 | 0.00 | 0.00 | 0.00 |
| 5,900.0 | 17.89 | 16.43 | 5,653.1 | 1,549.0 | 456.7 | 243.7 | 0.00 | 0.00 | 0.00 |
| 6,000.0 | 17.89 | 16.43 | 5,748.3 | 1,578.4 | 465.4 | 248.3 | 0.00 | 0.00 | 0.00 |
| 6,100.0 | 17.89 | 16.43 | 5,843.5 | 1,607.9 | 474.0 | 252.9 | 0.00 | 0.00 | 0.00 |
| 6,200.0 | 17.89 | 16.43 | 5,938.6 | 1,637.4 | 482.7 | 257.6 | 0.00 | 0.00 | 0.00 |
| 6,300.0 | 17.89 | 16.43 | 6,033.8 | 1,666.8 | 491.4 | 262.2 | 0.00 | 0.00 | 0.00 |
| 6,400.0 | 17.89 | 16.43 | 6,129.0 | 1,696.3 | 500.1 | 266.9 | 0.00 | 0.00 | 0.00 |
| 6,500.0 | 17.89 | 16.43 | 6,224.1 | 1,725.8 | 508.8 | 271.5 | 0.00 | 0.00 | 0.00 |
| 6,600.0 | 17.89 | 16.43 | 6,319.3 | 1,755.2 | 517.5 | 276.1 | 0.00 | 0.00 | 0.00 |
| 6,700.0 | 17.89 | 16.43 | 6,414.4 | 1,784.7 | 526.2 | 280.8 | 0.00 | 0.00 | 0.00 |
| 6,800.0 | 17.89 | 16.43 | 6,509.6 | 1,814.2 | 534.9 | 285.4 | 0.00 | 0.00 | 0.00 |
| 6,900.0 | 17.89 | 16.43 | 6,604.8 | 1,843.6 | 543.6 | 290.0 | 0.00 | 0.00 | 0.00 |
| 6,940.3 | 17.89 | 16.43 | 6,643.1 | 1,855.5 | 547.1 | 291.9 | 0.00 | 0.00 | 0.00 |
| Start DLS 8.00 TFO -107.49 | | | | | | | | | |
| 7,000.0 | 17.06 | 0.72 | 6,700.1 | 1,873.1 | 549.8 | 296.9 | 8.00 | -1.40 | -26.31 |
| 7,100.0 | 18.47 | 334.69 | 6,795.5 | 1,902.1 | 543.2 | 315.2 | 8.00 | 1.41 | -26.03 |
| 7,200.0 | 22.71 | 315.20 | 6,889.2 | 1,930.2 | 522.8 | 345.6 | 8.00 | 4.24 | -19.48 |
| 7,300.0 | 28.53 | 302.42 | 6,979.4 | 1,956.7 | 488.9 | 387.5 | 8.00 | 5.83 | -12.78 |
| 7,400.0 | 35.16 | 293.90 | 7,064.3 | 1,981.2 | 442.4 | 440.0 | 8.00 | 6.63 | -8.53 |
| 7,500.0 | 42.22 | 287.85 | 7,142.4 | 2,003.2 | 384.0 | 502.2 | 8.00 | 7.06 | -6.05 |
| 7,600.0 | 49.52 | 283.27 | 7,212.0 | 2,022.3 | 314.9 | 572.9 | 8.00 | 7.30 | -4.58 |
| 7,700.0 | 56.96 | 279.61 | 7,271.8 | 2,038.0 | 236.4 | 650.6 | 8.00 | 7.44 | -3.67 |
| 7,800.0 | 64.50 | 276.52 | 7,320.6 | 2,050.2 | 150.1 | 733.9 | 8.00 | 7.53 | -3.09 |
| 7,900.0 | 72.09 | 273.80 | 7,357.6 | 2,058.4 | 57.6 | 821.2 | 8.00 | 7.59 | -2.72 |
| 8,000.0 | 79.71 | 271.30 | 7,381.9 | 2,062.7 | -39.2 | 910.7 | 8.00 | 7.63 | -2.50 |
| 8,100.0 | 87.36 | 268.92 | 7,393.2 | 2,062.9 | -138.5 | 1,000.6 | 8.00 | 7.64 | -2.38 |
| 8,134.6 | 90.00 | 268.11 | 7,394.0 | 2,062.0 | -173.0 | 1,031.6 | 7.99 | 7.64 | -2.34 |
| 7" | | | | | | | | | |
| 8,200.0 | 90.00 | 268.11 | 7,394.0 | 2,059.8 | -238.4 | 1,089.8 | 0.00 | 0.00 | 0.00 |
| 8,300.0 | 90.00 | 268.11 | 7,394.0 | 2,056.5 | -338.3 | 1,178.9 | 0.00 | 0.00 | 0.00 |
| 8,400.0 | 90.00 | 268.11 | 7,394.0 | 2,053.2 | -438.3 | 1,268.1 | 0.00 | 0.00 | 0.00 |
| 8,500.0 | 90.00 | 268.11 | 7,394.0 | 2,049.9 | -538.2 | 1,357.2 | 0.00 | 0.00 | 0.00 |
| 8,600.0 | 90.00 | 268.11 | 7,394.0 | 2,046.6 | -638.2 | 1,446.3 | 0.00 | 0.00 | 0.00 |
| 8,700.0 | 90.00 | 268.11 | 7,394.0 | 2,043.4 | -738.1 | 1,535.4 | 0.00 | 0.00 | 0.00 |
| 8,800.0 | 90.00 | 268.11 | 7,394.0 | 2,040.1 | -838.1 | 1,624.5 | 0.00 | 0.00 | 0.00 |
| 8,900.0 | 90.00 | 268.11 | 7,394.0 | 2,036.8 | -938.0 | 1,713.6 | 0.00 | 0.00 | 0.00 |
| 9,000.0 | 90.00 | 268.11 | 7,394.0 | 2,033.5 | -1,038.0 | 1,802.7 | 0.00 | 0.00 | 0.00 |
| 9,100.0 | 90.00 | 268.11 | 7,394.0 | 2,030.2 | -1,137.9 | 1,891.8 | 0.00 | 0.00 | 0.00 |
| 9,200.0 | 90.00 | 268.11 | 7,394.0 | 2,026.9 | -1,237.9 | 1,980.9 | 0.00 | 0.00 | 0.00 |
| 9,300.0 | 90.00 | 268.11 | 7,394.0 | 2,023.6 | -1,337.8 | 2,070.0 | 0.00 | 0.00 | 0.00 |
| 9,400.0 | 90.00 | 268.11 | 7,394.0 | 2,020.3 | -1,437.7 | 2,159.1 | 0.00 | 0.00 | 0.00 |
| 9,500.0 | 90.00 | 268.11 | 7,394.0 | 2,017.0 | -1,537.7 | 2,248.2 | 0.00 | 0.00 | 0.00 |
| 9,600.0 | 90.00 | 268.11 | 7,394.0 | 2,013.7 | -1,637.6 | 2,337.3 | 0.00 | 0.00 | 0.00 |
| 9,700.0 | 90.00 | 268.11 | 7,394.0 | 2,010.4 | -1,737.6 | 2,426.4 | 0.00 | 0.00 | 0.00 |
| 9,800.0 | 90.00 | 268.11 | 7,394.0 | 2,007.1 | -1,837.5 | 2,515.5 | 0.00 | 0.00 | 0.00 |
| 9,900.0 | 90.00 | 268.11 | 7,394.0 | 2,003.8 | -1,937.5 | 2,604.6 | 0.00 | 0.00 | 0.00 |

| Plan Annotations | | | | | |
|------------------|---------------------------|---------------------------|-------------------|---------------|----------------------------|
| | Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates | | Comment |
| | | | +N/-S (ft) | +E/-W (ft) | |
| | | | | | |
| | 200.0 | 200.0 | 0.0 | 0.0 | KOP - Start Build 2.00 |
| | 6,940.3 | 6,643.1 | 132.9 | 39.2 | Start DLS 8.00 TFO -107.49 |
| | 12,086.3 | 7,394.0 | 1,855.5 | 547.1 | TD at 12086.3 |



KP KAUFFMAN

SEC.1-T5N-R67W

Greeley-Rothe Pad Sec.1-T5N-R67W

Greeley-Rothe 1-0H

Wellbore #1

Plan #1 (6-5-14)

Anticollision Report

06 June, 2014

| | | | |
|---------------------------|----------------------------------|-------------------------------------|-----------------------------|
| Company: | KP KAUFFMAN | Local Co-ordinate Reference: | Well Greeley-Rothe 1-0H |
| Project: | SEC.1-T5N-R67W | TVD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Reference Site: | Greeley-Rothe Pad Sec.1-T5N-R67W | MD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Greeley-Rothe 1-0H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (6-5-14) | Offset TVD Reference: | Offset Datum |

| | | | |
|-------------------------------------|---|-----------------------|---------------------|
| Reference | Plan #1 (6-5-14) | | |
| Filter type: | NO GLOBAL FILTER: Using user defined selection & filtering criteria | | |
| Interpolation Method: | MD Interval 100.0ft | Error Model: | ISCWSA |
| Depth Range: | Unlimited | Scan Method: | Closest Approach 3D |
| Results Limited by: | Maximum center-center distance of 500.0ft | Error Surface: | Elliptical Conic |
| Warning Levels Evaluated at: | 2.00 Sigma | | |

| | | | | |
|----------------------------|----------------------|--------------------------------|------------------|--------------------|
| Survey Tool Program | Date 6/6/2014 | | | |
| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description |
| 0.0 | 12,085.9 | Plan #1 (6-5-14) (Wellbore #1) | MWD | MWD - Standard |

| Summary | | | | | | |
|--|-------------------------------|----------------------------|-------------------------------|--------------------------------|-------------------|-----------------|
| Site Name | Reference Measured Depth (ft) | Offset Measured Depth (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Separation Factor | Warning |
| Offset Well - Wellbore - Design | | | | | | |
| Genesis 9-1 Pad Sec.1-T5N-R67W | | | | | | |
| Genesis #3 (Exist.) - Wellbore #1 - Wellbore #1 | 200.0 | 205.0 | 353.3 | 348.9 | 79.624 | CC |
| Genesis #3 (Exist.) - Wellbore #1 - Wellbore #1 | 300.0 | 305.0 | 354.4 | 347.7 | 53.208 | ES |
| Genesis #3 (Exist.) - Wellbore #1 - Wellbore #1 | 1,200.0 | 1,185.4 | 477.5 | 451.3 | 18.165 | SF |
| Genesis 9-2 - Wellbore #1 - Wellbore #1 | 184.1 | 187.1 | 366.9 | 366.2 | 596.321 | CC |
| Genesis 9-2 - Wellbore #1 - Wellbore #1 | 200.0 | 202.5 | 366.9 | 366.2 | 536.790 | ES |
| Genesis 9-2 - Wellbore #1 - Wellbore #1 | 1,100.0 | 1,047.8 | 488.2 | 482.0 | 78.650 | SF |
| Greeley-Rothe Pad Sec.1-T5N-R67W | | | | | | |
| Genesis 9-1 - Wellbore #1 - Plan #2 (5-2-14) | 200.0 | 201.0 | 54.1 | 53.4 | 79.990 | CC, ES |
| Genesis 9-1 - Wellbore #1 - Plan #2 (5-2-14) | 3,500.0 | 3,498.6 | 489.3 | 461.1 | 17.364 | SF |
| Genesis 9-1-20 - Wellbore #1 - Plan #1 (5-02-14) | 200.0 | 201.0 | 71.0 | 70.3 | 104.879 | CC, ES |
| Genesis 9-1-20 - Wellbore #1 - Plan #1 (5-02-14) | 700.0 | 698.5 | 110.7 | 107.7 | 37.002 | SF |
| Genesis 9-1-39 - Wellbore #1 - Plan #2 (6-05-14) | 200.0 | 201.0 | 90.1 | 89.5 | 133.221 | CC, ES |
| Genesis 9-1-39 - Wellbore #1 - Plan #2 (6-05-14) | 800.0 | 796.6 | 151.0 | 147.5 | 43.748 | SF |
| Greeley-Rothe 1-1H - Wellbore #1 - Plan #2 (6-05-14) | 200.0 | 200.0 | 25.0 | 24.3 | 37.080 | CC |
| Greeley-Rothe 1-1H - Wellbore #1 - Plan #2 (6-05-14) | 12,086.3 | 11,943.2 | 186.2 | -11.1 | 0.944 | Level 1, ES, SF |
| Greeley-Rothe 1-2H - Wellbore #1 - Plan #2 (6-05-14) | 200.0 | 200.0 | 50.0 | 49.3 | 74.161 | CC, ES |
| Greeley-Rothe 1-2H - Wellbore #1 - Plan #2 (6-05-14) | 12,086.3 | 11,853.3 | 497.2 | 257.5 | 2.075 | SF |
| Greeley-Rothe 1-3H - Wellbore #1 - Plan #2 (6-05-14) | 200.0 | 200.0 | 25.0 | 24.3 | 37.065 | CC, ES |
| Greeley-Rothe 1-3H - Wellbore #1 - Plan #2 (6-05-14) | 5,400.0 | 5,410.1 | 499.2 | 464.1 | 14.244 | SF |
| Greeley-Rothe 1-4H - Wellbore #1 - Plan #2 (6-05-14) | 200.0 | 201.0 | 50.0 | 49.3 | 73.937 | CC, ES |
| Greeley-Rothe 1-4H - Wellbore #1 - Plan #2 (6-05-14) | 4,400.0 | 4,420.5 | 452.3 | 417.7 | 13.052 | SF |
| Greeley-Rothe 1-5H - Wellbore #1 - Plan #2 (6-05-14) | 200.0 | 201.0 | 75.0 | 74.3 | 110.879 | CC, ES |
| Greeley-Rothe 1-5H - Wellbore #1 - Plan #2 (6-05-14) | 2,800.0 | 2,819.2 | 496.1 | 480.9 | 32.603 | SF |
| Greeley-Rothe 1-6H - Wellbore #1 - Plan #2 (6-05-14) | 200.0 | 201.0 | 100.0 | 99.3 | 147.820 | CC, ES |
| Greeley-Rothe 1-6H - Wellbore #1 - Plan #2 (6-05-14) | 800.0 | 796.6 | 161.1 | 157.7 | 46.656 | SF |
| Greeley-Rothe 1-7H - Wellbore #1 - Plan #2 (6-05-14) | 200.0 | 201.0 | 134.6 | 134.0 | 199.018 | CC, ES |
| Greeley-Rothe 1-7H - Wellbore #1 - Plan #2 (6-05-14) | 1,000.0 | 990.6 | 245.3 | 240.9 | 56.038 | SF |
| Greeley-Rothe 1-8H - Wellbore #1 - Plan #2 (6-05-14) | 200.0 | 202.0 | 127.5 | 126.8 | 187.808 | CC, ES |
| Greeley-Rothe 1-8H - Wellbore #1 - Plan #2 (6-05-14) | 900.0 | 895.1 | 212.4 | 208.5 | 54.290 | SF |
| Greeley-Rothe 1-9H - Wellbore #1 - Plan #2 (6-6-14) | 200.0 | 202.0 | 125.0 | 124.4 | 184.220 | CC, ES |
| Greeley-Rothe 1-9H - Wellbore #1 - Plan #2 (6-6-14) | 900.0 | 895.1 | 208.3 | 204.3 | 53.043 | SF |
| Hertzke #1-33 (Exist.) - Wellbore #1 - Wellbore #1 | | | | | | Out of range |
| Hertzke #1-34 (Exist.) - Wellbore #1 - Wellbore #1 | | | | | | Out of range |
| Hertzke N #1-11 (Exist.) - Wellbore #1 - Wellbore #1 | | | | | | Out of range |
| Hertzke N #1-12 (Exist.) - Wellbore #1 - Wellbore #1 | | | | | | Out of range |

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

| | | | |
|---------------------------|----------------------------------|-------------------------------------|-----------------------------|
| Company: | KP KAUFFMAN | Local Co-ordinate Reference: | Well Greeley-Rothe 1-0H |
| Project: | SEC.1-T5N-R67W | TVD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Reference Site: | Greeley-Rothe Pad Sec.1-T5N-R67W | MD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Greeley-Rothe 1-0H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (6-5-14) | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | Genesis 9-1 Pad Sec.1-T5N-R67W - Genesis #3 (Exist.) - Wellbore #1 - Wellbore #1 | Offset Site Error: | 0.0 ft |
|------------------------------|---------------------|---------------------|---------------------|----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|--|---------------------------|--------|
| Survey Program: 7800-UNKNOWN | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | Offset | Semi Major Axis | | | Distance | | | | | | | | | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning | |
| 0.0 | 0.0 | 5.0 | 5.0 | 0.0 | 0.1 | -111.36 | -128.7 | -329.1 | 353.3 | 353.2 | 0.10 | 3,526.141 | | |
| 100.0 | 100.0 | 105.0 | 105.0 | 0.1 | 2.1 | -111.36 | -128.7 | -329.1 | 353.3 | 351.1 | 2.21 | 159.686 | | |
| 200.0 | 200.0 | 205.0 | 205.0 | 0.3 | 4.1 | -111.36 | -128.7 | -329.1 | 353.3 | 348.9 | 4.44 | 79.624 CC | | |
| 300.0 | 300.0 | 305.0 | 305.0 | 0.6 | 6.1 | -127.99 | -128.7 | -329.1 | 354.4 | 347.7 | 6.66 | 53.208 ES | | |
| 400.0 | 399.8 | 404.8 | 404.8 | 0.8 | 8.1 | -128.60 | -128.7 | -329.1 | 357.6 | 348.8 | 8.88 | 40.273 | | |
| 500.0 | 499.5 | 504.5 | 504.5 | 1.0 | 10.1 | -129.59 | -128.7 | -329.1 | 363.1 | 352.0 | 11.10 | 32.720 | | |
| 600.0 | 598.7 | 603.7 | 603.7 | 1.3 | 12.1 | -130.91 | -128.7 | -329.1 | 371.1 | 357.7 | 13.31 | 27.868 | | |
| 700.0 | 697.5 | 702.5 | 702.5 | 1.6 | 14.0 | -132.52 | -128.7 | -329.1 | 381.5 | 366.0 | 15.53 | 24.575 | | |
| 800.0 | 795.6 | 800.6 | 800.6 | 2.0 | 16.0 | -134.35 | -128.7 | -329.1 | 394.8 | 377.1 | 17.72 | 22.277 | | |
| 900.0 | 893.1 | 898.1 | 898.1 | 2.4 | 18.0 | -136.34 | -128.7 | -329.1 | 411.0 | 391.1 | 19.89 | 20.660 | | |
| 1,000.0 | 989.6 | 994.6 | 994.6 | 2.9 | 19.9 | -138.42 | -128.7 | -329.1 | 430.3 | 408.3 | 22.03 | 19.538 | | |
| 1,100.0 | 1,085.3 | 1,090.3 | 1,090.3 | 3.5 | 21.8 | -140.56 | -128.7 | -329.1 | 453.0 | 428.9 | 24.11 | 18.786 | | |
| 1,200.0 | 1,180.4 | 1,185.4 | 1,185.4 | 4.0 | 23.7 | -142.86 | -128.7 | -329.1 | 477.5 | 451.3 | 26.29 | 18.165 SF | | |

| | | | |
|---------------------------|----------------------------------|-------------------------------------|-----------------------------|
| Company: | KP KAUFFMAN | Local Co-ordinate Reference: | Well Greeley-Rothe 1-0H |
| Project: | SEC.1-T5N-R67W | TVD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Reference Site: | Greeley-Rothe Pad Sec.1-T5N-R67W | MD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Greeley-Rothe 1-0H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (6-5-14) | Offset TVD Reference: | Offset Datum |

| Offset Design Genesis 9-1 Pad Sec.1-T5N-R67W - Genesis 9-2 - Wellbore #1 - Wellbore #1 | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---|------------------------|------------------------|------------------------|-------------------|----------------|-----------------------------|---|---------------|----------------------------|-----------------------------|-------------------------------|---------------------------|---------|
| Survey Program: 78-MWD | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | Offset | Semi Major Axis | | Distance | | | | | | | | | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
| 0.0 | 0.0 | 3.1 | 3.1 | 0.0 | 0.0 | -110.50 | -128.7 | -344.1 | 367.4 | 367.4 | 0.00 | N/A | |
| 100.0 | 100.0 | 104.5 | 104.5 | 0.1 | 0.1 | -110.61 | -129.2 | -343.6 | 367.1 | 366.8 | 0.26 | 1,437.818 | |
| 184.1 | 184.1 | 187.1 | 187.1 | 0.3 | 0.3 | -110.55 | -128.8 | -343.5 | 366.9 | 366.2 | 0.62 | 596.321 CC | |
| 200.0 | 200.0 | 202.5 | 202.5 | 0.3 | 0.3 | -110.51 | -128.5 | -343.6 | 366.9 | 366.2 | 0.68 | 536.790 ES | |
| 300.0 | 300.0 | 298.1 | 298.0 | 0.6 | 0.6 | -126.59 | -125.6 | -345.3 | 368.5 | 367.4 | 1.12 | 329.086 | |
| 400.0 | 399.8 | 392.0 | 391.7 | 0.8 | 0.8 | -126.24 | -120.9 | -349.2 | 373.8 | 372.3 | 1.58 | 236.997 | |
| 500.0 | 499.5 | 486.8 | 486.1 | 1.0 | 1.0 | -125.80 | -114.0 | -355.4 | 382.6 | 380.5 | 2.07 | 184.715 | |
| 600.0 | 598.7 | 583.6 | 582.2 | 1.3 | 1.3 | -125.41 | -105.3 | -363.4 | 394.5 | 391.9 | 2.61 | 150.997 | |
| 700.0 | 697.5 | 685.7 | 683.4 | 1.6 | 1.6 | -125.28 | -95.2 | -372.0 | 408.4 | 405.2 | 3.21 | 127.215 | |
| 800.0 | 795.6 | 788.3 | 784.6 | 2.0 | 2.0 | -125.03 | -81.3 | -380.7 | 423.0 | 419.1 | 3.87 | 109.273 | |
| 900.0 | 893.1 | 879.0 | 873.6 | 2.4 | 2.3 | -124.66 | -66.1 | -390.1 | 440.3 | 435.7 | 4.59 | 96.030 | |
| 1,000.0 | 989.6 | 963.4 | 955.7 | 2.9 | 2.7 | -124.23 | -50.5 | -401.3 | 461.8 | 456.4 | 5.36 | 86.117 | |
| 1,100.0 | 1,085.3 | 1,047.8 | 1,037.3 | 3.5 | 3.1 | -123.85 | -34.3 | -415.6 | 488.2 | 482.0 | 6.21 | 78.650 SF | |

| Greeley-Rothe Pad Sec.1-T5N-R67W - Genesis 9-1 - Wellbore #1 - Plan #2 (5-2-14) | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|-------------------|---|---|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | | Warning |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | | |
| 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | -115.18 | -23.0 | -49.0 | 54.1 | 54.1 | 0.00 | N/A | 238.387 79.990 CC, ES 48.976 37.159 31.936 | |
| 100.0 | 100.0 | 101.0 | 101.0 | 0.1 | 0.1 | -115.18 | -23.0 | -49.0 | 54.1 | 53.9 | 0.23 | | | |
| 200.0 | 200.0 | 201.0 | 201.0 | 0.3 | 0.3 | -115.18 | -23.0 | -49.0 | 54.1 | 53.4 | 0.68 | | | |
| 300.0 | 300.0 | 301.0 | 301.0 | 0.6 | 0.6 | -132.94 | -23.0 | -49.0 | 55.3 | 54.2 | 1.13 | | | |
| 400.0 | 399.8 | 400.8 | 400.8 | 0.8 | 0.8 | -136.61 | -23.0 | -49.0 | 59.0 | 57.4 | 1.59 | | | |
| 500.0 | 499.5 | 500.5 | 500.5 | 1.0 | 1.0 | -141.76 | -23.0 | -49.0 | 65.6 | 63.5 | 2.05 | | | |
| 600.0 | 598.7 | 599.7 | 599.7 | 1.3 | 1.2 | -147.37 | -23.0 | -49.0 | 75.6 | 73.0 | 2.53 | 29.893 | 34.358 34.785 34.468 33.551 32.155 | |
| 700.0 | 697.5 | 698.5 | 698.5 | 1.6 | 1.5 | -152.66 | -23.0 | -49.0 | 89.2 | 86.2 | 3.00 | 29.678 | | |
| 800.0 | 795.6 | 796.6 | 796.6 | 2.0 | 1.7 | -157.23 | -23.0 | -49.0 | 106.5 | 103.0 | 3.48 | 30.603 | | |
| 900.0 | 893.1 | 897.0 | 897.0 | 2.4 | 1.9 | -160.54 | -21.4 | -49.3 | 126.5 | 122.6 | 3.96 | 31.968 | | |
| 1,000.0 | 989.6 | 998.0 | 997.8 | 2.9 | 2.1 | -162.36 | -16.3 | -50.4 | 147.7 | 143.2 | 4.44 | 33.267 | | |
| 1,100.0 | 1,085.3 | 1,099.5 | 1,098.9 | 3.5 | 2.4 | -163.20 | -7.7 | -52.1 | 169.7 | 164.8 | 4.94 | | | 27.236 25.933 24.794 |
| 1,200.0 | 1,180.4 | 1,201.9 | 1,200.5 | 4.0 | 2.6 | -163.30 | 4.5 | -54.7 | 190.8 | 185.3 | 5.48 | 34.785 | | |
| 1,300.0 | 1,275.6 | 1,305.2 | 1,302.6 | 4.6 | 2.9 | -162.67 | 20.5 | -58.0 | 209.3 | 203.2 | 6.07 | 34.468 | | |
| 1,400.0 | 1,370.8 | 1,409.4 | 1,404.8 | 5.2 | 3.2 | -161.45 | 40.2 | -62.0 | 225.4 | 218.6 | 6.72 | 33.551 | | |
| 1,500.0 | 1,465.9 | 1,514.1 | 1,506.7 | 5.8 | 3.6 | -159.73 | 63.7 | -66.9 | 239.0 | 231.6 | 7.43 | 32.155 | | |
| 1,600.0 | 1,561.1 | 1,618.7 | 1,607.6 | 6.4 | 4.1 | -157.54 | 90.7 | -72.5 | 250.6 | 242.3 | 8.24 | 30.412 | 22.921 22.152 21.472 20.870 | |
| 1,700.0 | 1,656.3 | 1,717.6 | 1,702.5 | 7.0 | 4.5 | -155.37 | 117.9 | -78.1 | 261.3 | 252.2 | 9.10 | 28.719 | | |
| 1,800.0 | 1,751.4 | 1,816.6 | 1,797.5 | 7.6 | 5.0 | -153.38 | 145.1 | -83.7 | 272.5 | 262.5 | 10.00 | 27.236 | | |
| 1,900.0 | 1,846.6 | 1,915.5 | 1,892.5 | 8.2 | 5.5 | -151.54 | 172.3 | -89.3 | 283.9 | 272.9 | 10.95 | 25.933 | | |
| 2,000.0 | 1,941.7 | 2,014.4 | 1,987.5 | 8.8 | 6.0 | -149.84 | 199.4 | -94.9 | 295.6 | 283.7 | 11.92 | 24.794 | | |
| 2,100.0 | 2,036.9 | 2,113.4 | 2,082.4 | 9.4 | 6.6 | -148.28 | 226.6 | -100.6 | 307.5 | 294.6 | 12.92 | 23.796 | | 18.692 20.335 19.856 19.427 19.041 18.375 18.087 17.825 17.584 17.364 SF |
| 2,200.0 | 2,132.1 | 2,212.3 | 2,177.4 | 10.1 | 7.1 | -146.83 | 253.8 | -106.2 | 319.7 | 305.7 | 13.95 | 22.921 | | |
| 2,300.0 | 2,227.2 | 2,311.3 | 2,272.4 | 10.7 | 7.6 | -145.48 | 281.0 | -111.8 | 332.0 | 317.0 | 14.99 | 22.152 | | |
| 2,400.0 | 2,322.4 | 2,410.2 | 2,367.4 | 11.3 | 8.2 | -144.24 | 308.1 | -117.4 | 344.5 | 328.5 | 16.04 | 21.472 | | |
| 2,500.0 | 2,417.6 | 2,509.2 | 2,462.3 | 11.9 | 8.7 | -143.08 | 335.3 | -123.0 | 357.2 | 340.0 | 17.11 | 20.870 | | |
| 2,600.0 | 2,512.7 | 2,608.1 | 2,557.3 | 12.5 | 9.2 | -142.00 | 362.5 | -128.6 | 369.9 | 351.8 | 18.19 | 20.335 | 18.692 20.335 19.856 19.427 19.041 18.375 18.087 17.825 17.584 17.364 SF | |
| 2,700.0 | 2,607.9 | 2,707.1 | 2,652.3 | 13.1 | 9.8 | -140.99 | 389.7 | -134.2 | 382.9 | 363.6 | 19.28 | 19.856 | | |
| 2,800.0 | 2,703.1 | 2,806.0 | 2,747.3 | 13.7 | 10.3 | -140.05 | 416.8 | -139.9 | 395.9 | 375.5 | 20.38 | 19.427 | | |
| 2,900.0 | 2,798.2 | 2,904.9 | 2,842.2 | 14.3 | 10.9 | -139.17 | 444.0 | -145.5 | 409.0 | 387.5 | 21.48 | 19.041 | | |
| 3,000.0 | 2,893.4 | 3,003.9 | 2,937.2 | 14.9 | 11.4 | -138.34 | 471.2 | -151.1 | 422.2 | 399.6 | 22.59 | 18.692 | | |
| 3,100.0 | 2,988.5 | 3,102.8 | 3,032.2 | 15.6 | 12.0 | -137.56 | 498.4 | -156.7 | 435.5 | 411.8 | 23.70 | 18.375 | | 18.692 20.335 19.856 19.427 19.041 18.375 18.087 17.825 17.584 17.364 SF |
| 3,200.0 | 3,083.7 | 3,201.8 | 3,127.2 | 16.2 | 12.5 | -136.83 | 525.5 | -162.3 | 448.8 | 424.0 | 24.81 | 18.087 | | |
| 3,300.0 | 3,178.9 | 3,300.7 | 3,222.1 | 16.8 | 13.1 | -136.14 | 552.7 | -167.9 | 462.3 | 436.3 | 25.93 | 17.825 | | |
| 3,400.0 | 3,274.0 | 3,399.7 | 3,317.1 | 17.4 | 13.6 | -135.49 | 579.9 | -173.5 | 475.8 | 448.7 | 27.06 | 17.584 | | |
| 3,500.0 | 3,369.2 | 3,498.6 | 3,412.1 | 18.0 | 14.2 | -134.88 | 607.1 | -179.2 | 489.3 | 461.1 | 28.18 | 17.364 SF | | |

| Greeley-Rothe Pad Sec.1-T5N-R67W - Genesis 9-1-20 - Wellbore #1 - Plan #1 (5-02-14) | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|-------------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning | |
| 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | -133.16 | -48.5 | -51.8 | 71.0 | 71.0 | 0.00 | N/A | | |
| 100.0 | 100.0 | 101.0 | 101.0 | 0.1 | 0.1 | -133.16 | -48.5 | -51.8 | 71.0 | 70.7 | 0.23 | 312.559 | | |
| 200.0 | 200.0 | 201.0 | 201.0 | 0.3 | 0.3 | -133.16 | -48.5 | -51.8 | 71.0 | 70.3 | 0.68 | 104.879 CC, ES | | |
| 300.0 | 300.0 | 301.0 | 301.0 | 0.6 | 0.6 | -150.27 | -48.5 | -51.8 | 72.5 | 71.3 | 1.13 | 64.051 | | |
| 400.0 | 399.8 | 400.8 | 400.8 | 0.8 | 0.8 | -152.16 | -48.5 | -51.8 | 77.1 | 75.5 | 1.59 | 48.429 | | |
| 500.0 | 499.5 | 500.5 | 500.5 | 1.0 | 1.0 | -154.84 | -48.5 | -51.8 | 84.9 | 82.8 | 2.05 | 41.303 | | |
| 600.0 | 598.7 | 599.7 | 599.7 | 1.3 | 1.2 | -157.84 | -48.5 | -51.8 | 96.0 | 93.5 | 2.52 | 38.083 | | |
| 700.0 | 697.5 | 698.5 | 698.5 | 1.6 | 1.5 | -160.79 | -48.5 | -51.8 | 110.7 | 107.7 | 2.99 | 37.002 SF | | |
| 800.0 | 795.6 | 796.6 | 796.6 | 2.0 | 1.7 | -163.48 | -48.5 | -51.8 | 128.9 | 125.4 | 3.46 | 37.223 | | |
| 900.0 | 893.1 | 894.1 | 894.1 | 2.4 | 1.9 | -165.80 | -48.5 | -51.8 | 150.6 | 146.7 | 3.93 | 38.283 | | |
| 1,000.0 | 989.6 | 990.6 | 990.6 | 2.9 | 2.1 | -167.75 | -48.5 | -51.8 | 175.9 | 171.5 | 4.41 | 39.907 | | |
| 1,100.0 | 1,085.3 | 1,086.8 | 1,086.8 | 3.5 | 2.3 | -169.01 | -47.8 | -52.9 | 204.5 | 199.6 | 4.88 | 41.901 | | |
| 1,200.0 | 1,180.4 | 1,182.9 | 1,182.8 | 4.0 | 2.5 | -169.30 | -45.4 | -56.7 | 234.3 | 228.9 | 5.37 | 43.614 | | |
| 1,300.0 | 1,275.6 | 1,279.2 | 1,278.7 | 4.6 | 2.8 | -168.79 | -41.4 | -63.3 | 263.8 | 257.9 | 5.89 | 44.817 | | |
| 1,400.0 | 1,370.8 | 1,375.4 | 1,374.3 | 5.2 | 3.0 | -167.73 | -35.6 | -72.6 | 293.1 | 286.7 | 6.43 | 45.562 | | |
| 1,500.0 | 1,465.9 | 1,471.2 | 1,469.1 | 5.8 | 3.2 | -166.27 | -28.1 | -84.6 | 322.4 | 315.4 | 7.02 | 45.904 | | |
| 1,600.0 | 1,561.1 | 1,566.6 | 1,562.9 | 6.4 | 3.5 | -164.51 | -19.0 | -99.2 | 351.7 | 344.1 | 7.66 | 45.891 | | |
| 1,700.0 | 1,656.3 | 1,661.3 | 1,655.5 | 7.0 | 3.9 | -162.55 | -8.4 | -116.3 | 381.4 | 373.0 | 8.37 | 45.574 | | |
| 1,800.0 | 1,751.4 | 1,755.5 | 1,746.8 | 7.6 | 4.2 | -160.48 | 3.6 | -135.5 | 411.6 | 402.4 | 9.13 | 45.067 | | |
| 1,900.0 | 1,846.6 | 1,849.7 | 1,838.2 | 8.2 | 4.6 | -158.64 | 15.8 | -155.1 | 442.2 | 432.3 | 9.93 | 44.511 | | |
| 2,000.0 | 1,941.7 | 1,944.0 | 1,929.7 | 8.8 | 5.0 | -157.03 | 28.0 | -174.7 | 473.2 | 462.4 | 10.77 | 43.953 | | |

| | | | |
|---------------------------|----------------------------------|-------------------------------------|-----------------------------|
| Company: | KP KAUFFMAN | Local Co-ordinate Reference: | Well Greeley-Rothe 1-0H |
| Project: | SEC.1-T5N-R67W | TVD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Reference Site: | Greeley-Rothe Pad Sec.1-T5N-R67W | MD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Greeley-Rothe 1-0H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (6-5-14) | Offset TVD Reference: | Offset Datum |

| Offset Design Greeley-Rothe Pad Sec.1-T5N-R67W - Genesis 9-1-39 - Wellbore #1 - Plan #2 (6-05-14) | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|--|------------------------|------------------------|------------------------|-------------------|----------------|--------------------------|---|---------------|-------------------------|--------------------------|----------------------------|---------------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
| 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | -145.88 | -74.6 | -50.6 | 90.1 | 90.1 | 0.00 | N/A | |
| 100.0 | 100.0 | 101.0 | 101.0 | 0.1 | 0.1 | -145.88 | -74.6 | -50.6 | 90.1 | 89.9 | 0.23 | 397.024 | |
| 200.0 | 200.0 | 201.0 | 201.0 | 0.3 | 0.3 | -145.88 | -74.6 | -50.6 | 90.1 | 89.5 | 0.68 | 133.221 CC, ES | |
| 300.0 | 300.0 | 301.0 | 301.0 | 0.6 | 0.6 | -162.62 | -74.6 | -50.6 | 91.8 | 90.7 | 1.13 | 81.039 | |
| 400.0 | 399.8 | 400.8 | 400.8 | 0.8 | 0.8 | -163.52 | -74.6 | -50.6 | 96.8 | 95.2 | 1.59 | 60.757 | |
| 500.0 | 499.5 | 500.5 | 500.5 | 1.0 | 1.0 | -164.82 | -74.6 | -50.6 | 105.2 | 103.1 | 2.06 | 51.184 | |
| 600.0 | 598.7 | 599.7 | 599.7 | 1.3 | 1.2 | -166.33 | -74.6 | -50.6 | 117.0 | 114.5 | 2.52 | 46.451 | |
| 700.0 | 697.5 | 698.5 | 698.5 | 1.6 | 1.5 | -167.86 | -74.6 | -50.6 | 132.3 | 129.3 | 2.98 | 44.320 | |
| 800.0 | 795.6 | 796.6 | 796.6 | 2.0 | 1.7 | -169.32 | -74.6 | -50.6 | 151.0 | 147.5 | 3.45 | 43.748 SF | |
| 900.0 | 893.1 | 894.1 | 894.1 | 2.4 | 1.9 | -170.62 | -74.6 | -50.6 | 173.1 | 169.2 | 3.92 | 44.175 | |
| 1,000.0 | 989.6 | 990.6 | 990.6 | 2.9 | 2.1 | -171.76 | -74.6 | -50.6 | 198.7 | 194.3 | 4.39 | 45.276 | |
| 1,100.0 | 1,085.3 | 1,086.3 | 1,086.3 | 3.5 | 2.3 | -172.74 | -74.6 | -50.6 | 227.7 | 222.9 | 4.86 | 46.840 | |
| 1,200.0 | 1,180.4 | 1,181.4 | 1,181.4 | 4.0 | 2.5 | -173.60 | -74.6 | -50.6 | 258.3 | 252.9 | 5.35 | 48.281 | |
| 1,300.0 | 1,275.6 | 1,276.6 | 1,276.6 | 4.6 | 2.8 | -174.28 | -74.6 | -50.6 | 288.8 | 283.0 | 5.84 | 49.446 | |
| 1,400.0 | 1,370.8 | 1,371.8 | 1,371.8 | 5.2 | 3.0 | -174.83 | -74.6 | -50.6 | 319.4 | 313.1 | 6.34 | 50.403 | |
| 1,500.0 | 1,465.9 | 1,466.9 | 1,466.9 | 5.8 | 3.2 | -175.28 | -74.6 | -50.6 | 350.0 | 343.2 | 6.84 | 51.200 | |
| 1,600.0 | 1,561.1 | 1,562.1 | 1,562.1 | 6.4 | 3.4 | -175.66 | -74.6 | -50.6 | 380.7 | 373.3 | 7.34 | 51.874 | |
| 1,700.0 | 1,656.3 | 1,657.3 | 1,657.3 | 7.0 | 3.6 | -175.99 | -74.6 | -50.6 | 411.3 | 403.5 | 7.84 | 52.449 | |
| 1,800.0 | 1,751.4 | 1,752.4 | 1,752.4 | 7.6 | 3.8 | -176.27 | -74.6 | -50.6 | 442.0 | 433.6 | 8.35 | 52.946 | |
| 1,900.0 | 1,846.6 | 1,847.6 | 1,847.6 | 8.2 | 4.0 | -176.51 | -74.6 | -50.6 | 472.6 | 463.8 | 8.85 | 53.378 | |

| Greeley-Rothe Pad Sec.1-T5N-R67W - Greeley-Rothe 1-1H - Wellbore #1 - Plan #2 (6-05-14) | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---|----------------|----------------|----------------|-----------------|--------|-------------------|------------------------|------------|-----------------|------------------|--------------------|-------------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | | |
| Measured Depth | Vertical Depth | Measured Depth | Vertical Depth | Reference | Offset | Highside Toolface | Offset Wellbore Centre | | Between Centres | Between Ellipses | Minimum Separation | Separation Factor | Warning | |
| (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (°) | +N/-S (ft) | +E/-W (ft) | (ft) | (ft) | (ft) | | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -89.58 | 0.2 | -25.0 | 25.0 | | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -89.58 | 0.2 | -25.0 | 25.0 | 24.8 | 0.22 | 111.241 | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -89.58 | 0.2 | -25.0 | 25.0 | 24.3 | 0.67 | 37.080 | CC | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.6 | 0.6 | -109.76 | 0.2 | -25.0 | 25.5 | 24.4 | 1.12 | 22.724 | | |
| 400.0 | 399.8 | 399.8 | 399.8 | 0.8 | 0.8 | -119.94 | 0.2 | -25.0 | 27.8 | 26.2 | 1.58 | 17.552 | | |
| 500.0 | 499.5 | 500.2 | 500.2 | 1.0 | 1.0 | -130.95 | 1.8 | -24.4 | 31.8 | 29.7 | 2.05 | 15.509 | | |
| 600.0 | 598.7 | 600.9 | 600.7 | 1.3 | 1.2 | -139.40 | 6.9 | -22.8 | 36.6 | 34.1 | 2.52 | 14.506 | | |
| 700.0 | 697.5 | 701.8 | 701.2 | 1.6 | 1.5 | -145.91 | 15.2 | -20.0 | 41.9 | 38.9 | 3.01 | 13.946 | | |
| 800.0 | 795.6 | 802.9 | 801.6 | 2.0 | 1.8 | -151.01 | 27.0 | -16.0 | 47.6 | 44.1 | 3.50 | 13.594 | | |
| 900.0 | 893.1 | 904.3 | 901.7 | 2.4 | 2.1 | -155.12 | 42.2 | -11.0 | 53.5 | 49.5 | 4.01 | 13.345 | | |
| 1,000.0 | 989.6 | 1,005.9 | 1,001.4 | 2.9 | 2.4 | -158.49 | 60.7 | -4.8 | 59.5 | 54.9 | 4.52 | 13.146 | | |
| 1,100.0 | 1,085.3 | 1,107.8 | 1,100.6 | 3.5 | 2.8 | -161.33 | 82.7 | 2.6 | 65.5 | 60.5 | 5.05 | 12.967 | | |
| 1,200.0 | 1,180.4 | 1,210.0 | 1,199.3 | 4.0 | 3.3 | -163.35 | 108.1 | 11.0 | 69.8 | 64.2 | 5.62 | 12.407 | | |
| 1,300.0 | 1,275.6 | 1,311.7 | 1,296.4 | 4.6 | 3.8 | -164.50 | 136.5 | 20.5 | 70.8 | 64.6 | 6.22 | 11.380 | | |
| 1,400.0 | 1,370.8 | 1,411.7 | 1,391.7 | 5.2 | 4.4 | -165.44 | 165.2 | 30.1 | 71.0 | 64.2 | 6.82 | 10.409 | | |
| 1,500.0 | 1,465.9 | 1,511.7 | 1,487.0 | 5.8 | 5.0 | -166.38 | 193.9 | 39.7 | 71.2 | 63.8 | 7.42 | 9.602 | | |
| 1,600.0 | 1,561.1 | 1,611.7 | 1,582.3 | 6.4 | 5.5 | -167.31 | 222.6 | 49.3 | 71.4 | 63.4 | 8.01 | 8.915 | | |
| 1,700.0 | 1,656.3 | 1,711.7 | 1,677.6 | 7.0 | 6.1 | -168.24 | 251.3 | 58.9 | 71.7 | 63.1 | 8.61 | 8.329 | | |
| 1,800.0 | 1,751.4 | 1,811.6 | 1,772.9 | 7.6 | 6.7 | -169.16 | 280.0 | 68.4 | 72.0 | 62.8 | 9.20 | 7.823 | | |
| 1,900.0 | 1,846.6 | 1,911.6 | 1,868.2 | 8.2 | 7.3 | -170.07 | 308.7 | 78.0 | 72.3 | 62.5 | 9.79 | 7.381 | | |
| 2,000.0 | 1,941.7 | 2,011.6 | 1,963.5 | 8.8 | 7.9 | -170.98 | 337.4 | 87.6 | 72.6 | 62.2 | 10.38 | 6.992 | | |
| 2,100.0 | 2,036.9 | 2,111.6 | 2,058.8 | 9.4 | 8.5 | -171.87 | 366.1 | 97.2 | 72.9 | 61.9 | 10.97 | 6.647 | | |
| 2,200.0 | 2,132.1 | 2,211.6 | 2,154.1 | 10.1 | 9.1 | -172.76 | 394.8 | 106.8 | 73.3 | 61.7 | 11.56 | 6.339 | | |
| 2,300.0 | 2,227.2 | 2,311.6 | 2,249.5 | 10.7 | 9.7 | -173.64 | 423.5 | 116.4 | 73.6 | 61.5 | 12.15 | 6.061 | | |
| 2,400.0 | 2,322.4 | 2,411.6 | 2,344.8 | 11.3 | 10.3 | -174.52 | 452.2 | 126.0 | 74.0 | 61.3 | 12.74 | 5.810 | | |
| 2,500.0 | 2,417.6 | 2,511.6 | 2,440.1 | 11.9 | 10.9 | -175.38 | 481.0 | 135.5 | 74.4 | 61.1 | 13.33 | 5.581 | | |
| 2,600.0 | 2,512.7 | 2,611.6 | 2,535.4 | 12.5 | 11.5 | -176.23 | 509.7 | 145.1 | 74.8 | 60.9 | 13.93 | 5.372 | | |
| 2,700.0 | 2,607.9 | 2,711.6 | 2,630.7 | 13.1 | 12.1 | -177.07 | 538.4 | 154.7 | 75.2 | 60.7 | 14.53 | 5.179 | | |
| 2,800.0 | 2,703.1 | 2,811.6 | 2,726.0 | 13.7 | 12.7 | -177.91 | 567.1 | 164.3 | 75.7 | 60.6 | 15.14 | 5.001 | | |
| 2,900.0 | 2,798.2 | 2,911.6 | 2,821.3 | 14.3 | 13.3 | -178.73 | 595.8 | 173.9 | 76.2 | 60.4 | 15.75 | 4.835 | | |
| 3,000.0 | 2,893.4 | 3,011.6 | 2,916.6 | 14.9 | 13.9 | -179.54 | 624.5 | 183.5 | 76.6 | 60.3 | 16.37 | 4.681 | | |
| 3,100.0 | 2,988.5 | 3,111.6 | 3,011.9 | 15.6 | 14.5 | 179.65 | 653.2 | 193.1 | 77.1 | 60.1 | 17.00 | 4.537 | | |
| 3,200.0 | 3,083.7 | 3,211.6 | 3,107.2 | 16.2 | 15.1 | 178.86 | 681.9 | 202.7 | 77.6 | 60.0 | 17.64 | 4.402 | | |
| 3,300.0 | 3,178.9 | 3,311.5 | 3,202.5 | 16.8 | 15.7 | 178.08 | 710.6 | 212.2 | 78.2 | 59.9 | 18.28 | 4.275 | | |
| 3,400.0 | 3,274.0 | 3,411.5 | 3,297.8 | 17.4 | 16.3 | 177.31 | 739.3 | 221.8 | 78.7 | 59.8 | 18.94 | 4.155 | | |
| 3,500.0 | 3,369.2 | 3,511.5 | 3,393.1 | 18.0 | 16.9 | 176.55 | 768.0 | 231.4 | 79.3 | 59.7 | 19.61 | 4.042 | | |
| 3,600.0 | 3,464.4 | 3,611.5 | 3,488.4 | 18.6 | 17.5 | 175.80 | 796.7 | 241.0 | 79.8 | 59.5 | 20.28 | 3.936 | | |
| 3,700.0 | 3,559.5 | 3,711.5 | 3,583.7 | 19.2 | 18.1 | 175.06 | 825.4 | 250.6 | 80.4 | 59.4 | 20.97 | 3.834 | | |
| 3,800.0 | 3,654.7 | 3,811.5 | 3,679.0 | 19.8 | 18.7 | 174.33 | 854.1 | 260.2 | 81.0 | 59.3 | 21.67 | 3.738 | | |
| 3,900.0 | 3,749.9 | 3,911.5 | 3,774.3 | 20.5 | 19.3 | 173.61 | 882.9 | 269.8 | 81.6 | 59.2 | 22.38 | 3.646 | | |
| 4,000.0 | 3,845.0 | 4,011.5 | 3,869.6 | 21.1 | 19.9 | 172.90 | 911.6 | 279.3 | 82.2 | 59.1 | 23.10 | 3.559 | | |
| 4,100.0 | 3,940.2 | 4,111.5 | 3,964.9 | 21.7 | 20.5 | 172.21 | 940.3 | 288.9 | 82.9 | 59.0 | 23.83 | 3.476 | | |
| 4,200.0 | 4,035.3 | 4,211.5 | 4,060.2 | 22.3 | 21.1 | 171.52 | 969.0 | 298.5 | 83.5 | 58.9 | 24.58 | 3.397 | | |
| 4,300.0 | 4,130.5 | 4,311.5 | 4,155.5 | 22.9 | 21.7 | 170.84 | 997.7 | 308.1 | 84.2 | 58.8 | 25.34 | 3.322 | | |
| 4,400.0 | 4,225.7 | 4,411.5 | 4,250.8 | 23.5 | 22.3 | 170.18 | 1,026.4 | 317.7 | 84.8 | 58.7 | 26.10 | 3.249 | | |
| 4,500.0 | 4,320.8 | 4,511.5 | 4,346.1 | 24.1 | 22.9 | 169.52 | 1,055.1 | 327.3 | 85.5 | 58.6 | 26.88 | 3.180 | | |
| 4,600.0 | 4,416.0 | 4,611.5 | 4,441.4 | 24.7 | 23.5 | 168.88 | 1,083.8 | 336.9 | 86.2 | 58.5 | 27.68 | 3.114 | | |
| 4,700.0 | 4,511.2 | 4,711.4 | 4,536.7 | 25.4 | 24.1 | 168.25 | 1,112.5 | 346.4 | 86.9 | 58.4 | 28.48 | 3.051 | | |
| 4,800.0 | 4,606.3 | 4,811.4 | 4,632.0 | 26.0 | 24.7 | 167.62 | 1,141.2 | 356.0 | 87.6 | 58.3 | 29.29 | 2.990 | | |
| 4,900.0 | 4,701.5 | 4,911.4 | 4,727.3 | 26.6 | 25.3 | 167.01 | 1,169.9 | 365.6 | 88.3 | 58.2 | 30.12 | 2.932 | | |
| 5,000.0 | 4,796.7 | 5,011.4 | 4,822.6 | 27.2 | 25.9 | 166.41 | 1,198.6 | 375.2 | 89.0 | 58.1 | 30.96 | 2.876 | | |
| 5,100.0 | 4,891.8 | 5,111.4 | 4,917.9 | 27.8 | 26.5 | 165.81 | 1,227.3 | 384.8 | 89.8 | 58.0 | 31.81 | 2.823 | | |

| | | | |
|---------------------------|----------------------------------|-------------------------------------|-----------------------------|
| Company: | KP KAUFFMAN | Local Co-ordinate Reference: | Well Greeley-Rothe 1-0H |
| Project: | SEC.1-T5N-R67W | TVD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Reference Site: | Greeley-Rothe Pad Sec.1-T5N-R67W | MD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Greeley-Rothe 1-0H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (6-5-14) | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | Offset Site Error: | 0.0ft |
|------------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|--------------------|---------|
| Survey Program: 0-MWDD | | | | | | | | | | | | Offset Well Error: | 0.0ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | Warning |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | |
| 5,200.0 | 4,987.0 | 5,211.4 | 5,013.2 | 28.4 | 27.1 | 165.23 | 1,256.0 | 394.4 | 90.5 | 57.9 | 32.67 | 2.772 | |
| 5,300.0 | 5,082.2 | 5,311.4 | 5,108.5 | 29.0 | 27.7 | 164.65 | 1,284.7 | 404.0 | 91.3 | 57.8 | 33.54 | 2.722 | |
| 5,400.0 | 5,177.3 | 5,411.4 | 5,203.8 | 29.6 | 28.4 | 164.09 | 1,313.5 | 413.6 | 92.1 | 57.6 | 34.41 | 2.675 | |
| 5,500.0 | 5,272.5 | 5,511.4 | 5,299.1 | 30.3 | 29.0 | 163.53 | 1,342.2 | 423.1 | 92.8 | 57.5 | 35.30 | 2.630 | |
| 5,600.0 | 5,367.6 | 5,611.4 | 5,394.4 | 30.9 | 29.6 | 162.99 | 1,370.9 | 432.7 | 93.6 | 57.4 | 36.20 | 2.586 | |
| 5,700.0 | 5,462.8 | 5,711.4 | 5,489.7 | 31.5 | 30.2 | 162.45 | 1,399.6 | 442.3 | 94.4 | 57.3 | 37.11 | 2.544 | |
| 5,800.0 | 5,558.0 | 5,811.4 | 5,585.0 | 32.1 | 30.8 | 161.92 | 1,428.3 | 451.9 | 95.2 | 57.2 | 38.03 | 2.504 | |
| 5,900.0 | 5,653.1 | 5,911.4 | 5,680.3 | 32.7 | 31.4 | 161.40 | 1,457.0 | 461.5 | 96.0 | 57.1 | 38.96 | 2.465 | |
| 6,000.0 | 5,748.3 | 6,011.4 | 5,775.7 | 33.3 | 32.0 | 160.89 | 1,485.7 | 471.1 | 96.8 | 57.0 | 39.89 | 2.428 | |
| 6,100.0 | 5,843.5 | 6,111.3 | 5,871.0 | 33.9 | 32.6 | 160.39 | 1,514.4 | 480.7 | 97.7 | 56.8 | 40.84 | 2.392 | |
| 6,200.0 | 5,938.6 | 6,211.3 | 5,966.3 | 34.6 | 33.2 | 159.90 | 1,543.1 | 490.2 | 98.5 | 56.7 | 41.79 | 2.357 | |
| 6,300.0 | 6,033.8 | 6,311.3 | 6,061.6 | 35.2 | 33.8 | 159.41 | 1,571.8 | 499.8 | 99.3 | 56.6 | 42.75 | 2.324 | |
| 6,400.0 | 6,129.0 | 6,411.3 | 6,156.9 | 35.8 | 34.4 | 158.94 | 1,600.5 | 509.4 | 100.2 | 56.5 | 43.71 | 2.292 | |
| 6,500.0 | 6,224.1 | 6,511.3 | 6,252.2 | 36.4 | 35.0 | 158.47 | 1,629.2 | 519.0 | 101.0 | 56.3 | 44.69 | 2.261 | |
| 6,600.0 | 6,319.3 | 6,611.3 | 6,347.5 | 37.0 | 35.6 | 158.01 | 1,657.9 | 528.6 | 101.9 | 56.2 | 45.67 | 2.231 | |
| 6,700.0 | 6,414.4 | 6,711.3 | 6,442.8 | 37.6 | 36.2 | 157.55 | 1,686.6 | 538.2 | 102.8 | 56.1 | 46.66 | 2.202 | |
| 6,800.0 | 6,509.6 | 6,811.5 | 6,538.3 | 38.2 | 36.8 | 157.20 | 1,715.4 | 547.6 | 103.6 | 56.0 | 47.59 | 2.177 | |
| 6,900.0 | 6,604.8 | 6,912.0 | 6,634.5 | 38.8 | 37.3 | 161.83 | 1,744.1 | 548.0 | 104.0 | 58.2 | 45.80 | 2.271 | |
| 7,000.0 | 6,700.1 | 7,008.9 | 6,726.6 | 39.4 | 37.7 | -172.76 | 1,771.1 | 535.1 | 106.4 | 64.1 | 42.28 | 2.516 | |
| 7,100.0 | 6,795.5 | 7,103.2 | 6,813.9 | 39.9 | 38.0 | -137.97 | 1,796.3 | 510.2 | 112.3 | 70.7 | 41.65 | 2.697 | |
| 7,200.0 | 6,889.2 | 7,195.2 | 6,895.5 | 40.2 | 38.2 | -111.28 | 1,819.4 | 474.7 | 120.9 | 77.7 | 43.18 | 2.800 | |
| 7,300.0 | 6,979.4 | 7,285.2 | 6,970.5 | 40.5 | 38.4 | -92.92 | 1,840.3 | 429.7 | 131.0 | 86.0 | 44.92 | 2.915 | |
| 7,400.0 | 7,064.3 | 7,373.5 | 7,038.4 | 40.8 | 38.5 | -80.29 | 1,858.7 | 376.3 | 141.5 | 95.8 | 45.70 | 3.097 | |
| 7,500.0 | 7,142.4 | 7,460.4 | 7,098.6 | 41.0 | 38.6 | -71.38 | 1,874.7 | 315.8 | 151.9 | 106.7 | 45.18 | 3.363 | |
| 7,600.0 | 7,212.0 | 7,546.1 | 7,150.8 | 41.1 | 38.6 | -64.99 | 1,888.0 | 249.2 | 161.5 | 118.0 | 43.51 | 3.712 | |
| 7,700.0 | 7,271.8 | 7,630.8 | 7,194.5 | 41.2 | 38.6 | -60.37 | 1,898.7 | 177.6 | 169.8 | 128.8 | 41.08 | 4.134 | |
| 7,800.0 | 7,320.6 | 7,714.7 | 7,229.6 | 41.2 | 38.6 | -57.10 | 1,906.6 | 101.8 | 176.7 | 138.3 | 38.42 | 4.599 | |
| 7,900.0 | 7,357.6 | 7,800.0 | 7,256.4 | 41.3 | 38.6 | -54.86 | 1,911.9 | 21.0 | 181.8 | 145.6 | 36.16 | 5.028 | |
| 8,000.0 | 7,381.9 | 7,881.0 | 7,273.1 | 41.3 | 38.6 | -53.56 | 1,914.3 | -58.1 | 185.0 | 150.0 | 34.98 | 5.288 | |
| 8,100.0 | 7,393.2 | 7,963.7 | 7,281.3 | 41.3 | 38.6 | -53.03 | 1,914.0 | -140.4 | 186.2 | 151.0 | 35.26 | 5.281 | |
| 8,200.0 | 7,394.0 | 8,056.9 | 7,282.0 | 41.4 | 38.7 | -53.02 | 1,911.2 | -233.5 | 186.2 | 149.0 | 37.19 | 5.006 | |
| 8,300.0 | 7,394.0 | 8,156.9 | 7,282.0 | 41.6 | 38.9 | -53.02 | 1,907.9 | -333.4 | 186.2 | 146.5 | 39.68 | 4.692 | |
| 8,324.0 | 7,394.0 | 8,180.9 | 7,282.0 | 41.7 | 39.0 | -53.02 | 1,907.1 | -357.4 | 186.2 | 145.8 | 40.34 | 4.615 | |
| 8,400.0 | 7,394.0 | 8,256.9 | 7,282.0 | 42.0 | 39.3 | -53.02 | 1,904.6 | -433.4 | 186.2 | 143.7 | 42.52 | 4.379 | |
| 8,500.0 | 7,394.0 | 8,356.9 | 7,282.0 | 42.5 | 39.9 | -53.02 | 1,901.3 | -533.3 | 186.2 | 140.6 | 45.63 | 4.080 | |
| 8,600.0 | 7,394.0 | 8,456.9 | 7,282.0 | 43.3 | 40.8 | -53.02 | 1,898.0 | -633.3 | 186.2 | 137.2 | 48.97 | 3.802 | |
| 8,700.0 | 7,394.0 | 8,556.9 | 7,282.0 | 44.3 | 41.9 | -53.02 | 1,894.7 | -733.2 | 186.2 | 133.7 | 52.50 | 3.547 | |
| 8,800.0 | 7,394.0 | 8,656.9 | 7,282.0 | 45.6 | 43.4 | -53.02 | 1,891.4 | -833.2 | 186.2 | 130.0 | 56.17 | 3.315 | |
| 8,857.8 | 7,394.0 | 8,714.6 | 7,282.0 | 46.4 | 44.3 | -53.02 | 1,889.5 | -890.9 | 186.2 | 127.8 | 58.35 | 3.191 | |
| 8,900.0 | 7,394.0 | 8,756.9 | 7,282.0 | 47.1 | 45.0 | -53.02 | 1,888.1 | -933.1 | 186.2 | 126.2 | 59.96 | 3.105 | |
| 9,000.0 | 7,394.0 | 8,856.9 | 7,282.0 | 48.8 | 46.9 | -53.02 | 1,884.8 | -1,033.1 | 186.2 | 122.3 | 63.86 | 2.916 | |
| 9,100.0 | 7,394.0 | 8,956.9 | 7,282.0 | 50.7 | 48.9 | -53.02 | 1,881.5 | -1,133.0 | 186.2 | 118.4 | 67.83 | 2.745 | |
| 9,200.0 | 7,394.0 | 9,056.9 | 7,282.0 | 52.7 | 51.1 | -53.02 | 1,878.2 | -1,233.0 | 186.2 | 114.3 | 71.88 | 2.590 | |
| 9,300.0 | 7,394.0 | 9,156.9 | 7,282.0 | 54.8 | 53.3 | -53.02 | 1,874.9 | -1,332.9 | 186.2 | 110.2 | 75.98 | 2.451 | |
| 9,317.4 | 7,394.0 | 9,174.3 | 7,282.0 | 55.2 | 53.7 | -53.02 | 1,874.3 | -1,350.3 | 186.2 | 109.5 | 76.70 | 2.428 | |
| 9,400.0 | 7,394.0 | 9,256.9 | 7,282.0 | 57.0 | 55.6 | -53.02 | 1,871.6 | -1,432.8 | 186.2 | 106.1 | 80.13 | 2.324 | |
| 9,500.0 | 7,394.0 | 9,356.9 | 7,282.0 | 59.3 | 58.0 | -53.02 | 1,868.3 | -1,532.8 | 186.2 | 101.9 | 84.32 | 2.208 | |
| 9,600.0 | 7,394.0 | 9,456.9 | 7,282.0 | 61.6 | 60.4 | -53.02 | 1,865.0 | -1,632.7 | 186.2 | 97.6 | 88.55 | 2.103 | |
| 9,700.0 | 7,394.0 | 9,556.9 | 7,282.0 | 64.0 | 62.8 | -53.02 | 1,861.7 | -1,732.7 | 186.2 | 93.4 | 92.81 | 2.006 | |
| 9,800.0 | 7,394.0 | 9,656.9 | 7,282.0 | 66.4 | 65.3 | -53.02 | 1,858.4 | -1,832.6 | 186.2 | 89.1 | 97.09 | 1.918 | |
| 9,900.0 | 7,394.0 | 9,756.9 | 7,282.0 | 68.9 | 67.8 | -53.02 | 1,855.1 | -1,932.6 | 186.2 | 84.8 | 101.40 | 1.836 | |
| 10,000.0 | 7,394.0 | 9,856.9 | 7,282.0 | 71.4 | 70.3 | -53.02 | 1,851.8 | -2,032.5 | 186.2 | 80.5 | 105.73 | 1.761 | |

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

| | | | |
|---------------------------|----------------------------------|-------------------------------------|-----------------------------|
| Company: | KP KAUFFMAN | Local Co-ordinate Reference: | Well Greeley-Rothe 1-0H |
| Project: | SEC.1-T5N-R67W | TVD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Reference Site: | Greeley-Rothe Pad Sec.1-T5N-R67W | MD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Greeley-Rothe 1-0H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (6-5-14) | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|-----------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|-----------------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | | |
| 10,100.0 | 7,394.0 | 9,956.9 | 7,282.0 | 73.9 | 72.9 | -53.02 | 1,848.5 | -2,132.5 | 186.2 | 76.1 | 110.08 | 1.691 | | |
| 10,121.1 | 7,394.0 | 9,978.0 | 7,282.0 | 74.4 | 73.4 | -53.02 | 1,847.8 | -2,153.6 | 186.2 | 75.2 | 111.00 | 1.677 | | |
| 10,200.0 | 7,394.0 | 10,056.9 | 7,282.0 | 76.4 | 75.4 | -53.02 | 1,845.2 | -2,232.4 | 186.2 | 71.7 | 114.44 | 1.627 | | |
| 10,300.0 | 7,394.0 | 10,156.9 | 7,282.0 | 79.0 | 78.0 | -53.02 | 1,841.9 | -2,332.4 | 186.2 | 67.4 | 118.82 | 1.567 | | |
| 10,384.6 | 7,394.0 | 10,241.5 | 7,282.0 | 81.1 | 80.2 | -53.02 | 1,839.1 | -2,416.9 | 186.2 | 63.7 | 122.54 | 1.519 | | |
| 10,400.0 | 7,394.0 | 10,256.9 | 7,282.0 | 81.5 | 80.6 | -53.02 | 1,838.6 | -2,432.3 | 186.2 | 63.0 | 123.21 | 1.511 | | |
| 10,500.0 | 7,394.0 | 10,356.9 | 7,282.0 | 84.1 | 83.2 | -53.02 | 1,835.3 | -2,532.2 | 186.2 | 58.6 | 127.61 | 1.459 Level 3 | | |
| 10,531.5 | 7,394.0 | 10,388.4 | 7,282.0 | 84.9 | 84.0 | -53.02 | 1,834.3 | -2,563.7 | 186.2 | 57.2 | 129.00 | 1.443 Level 3 | | |
| 10,600.0 | 7,394.0 | 10,456.9 | 7,282.0 | 86.7 | 85.8 | -53.02 | 1,832.0 | -2,632.2 | 186.2 | 54.2 | 132.03 | 1.410 Level 3 | | |
| 10,700.0 | 7,394.0 | 10,556.9 | 7,282.0 | 89.3 | 88.5 | -53.02 | 1,828.7 | -2,732.1 | 186.2 | 49.7 | 136.45 | 1.365 Level 3 | | |
| 10,800.0 | 7,394.0 | 10,656.9 | 7,282.0 | 92.0 | 91.1 | -53.02 | 1,825.4 | -2,832.1 | 186.2 | 45.3 | 140.88 | 1.322 Level 3 | | |
| 10,900.0 | 7,394.0 | 10,756.9 | 7,282.0 | 94.6 | 93.8 | -53.02 | 1,822.1 | -2,932.0 | 186.2 | 40.9 | 145.32 | 1.281 Level 3 | | |
| 10,921.1 | 7,394.0 | 10,778.0 | 7,282.0 | 95.2 | 94.3 | -53.02 | 1,821.4 | -2,953.1 | 186.2 | 39.9 | 146.26 | 1.273 Level 3 | | |
| 11,000.0 | 7,394.0 | 10,856.9 | 7,282.0 | 97.3 | 96.4 | -53.02 | 1,818.8 | -3,032.0 | 186.2 | 36.4 | 149.76 | 1.243 Level 2 | | |
| 11,100.0 | 7,394.0 | 10,956.9 | 7,282.0 | 99.9 | 99.1 | -53.02 | 1,815.5 | -3,131.9 | 186.2 | 32.0 | 154.21 | 1.207 Level 2 | | |
| 11,200.0 | 7,394.0 | 11,056.9 | 7,282.0 | 102.6 | 101.8 | -53.02 | 1,812.2 | -3,231.9 | 186.2 | 27.5 | 158.67 | 1.173 Level 2 | | |
| 11,221.1 | 7,394.0 | 11,078.0 | 7,282.0 | 103.1 | 102.4 | -53.02 | 1,811.5 | -3,253.0 | 186.2 | 26.6 | 159.61 | 1.167 Level 2 | | |
| 11,300.0 | 7,394.0 | 11,156.9 | 7,282.0 | 105.2 | 104.5 | -53.02 | 1,808.9 | -3,331.8 | 186.2 | 23.1 | 163.13 | 1.141 Level 2 | | |
| 11,400.0 | 7,394.0 | 11,256.9 | 7,282.0 | 107.9 | 107.2 | -53.02 | 1,805.6 | -3,431.8 | 186.2 | 18.6 | 167.60 | 1.111 Level 2 | | |
| 11,500.0 | 7,394.0 | 11,356.9 | 7,282.0 | 110.6 | 109.9 | -53.02 | 1,802.3 | -3,531.7 | 186.2 | 14.1 | 172.07 | 1.082 Level 2 | | |
| 11,600.0 | 7,394.0 | 11,456.9 | 7,282.0 | 113.3 | 112.6 | -53.02 | 1,799.1 | -3,631.6 | 186.2 | 9.6 | 176.55 | 1.055 Level 2 | | |
| 11,700.0 | 7,394.0 | 11,556.9 | 7,282.0 | 116.0 | 115.3 | -53.02 | 1,795.8 | -3,731.6 | 186.2 | 5.2 | 181.03 | 1.029 Level 2 | | |
| 11,721.1 | 7,394.0 | 11,578.0 | 7,282.0 | 116.6 | 115.8 | -53.02 | 1,795.1 | -3,752.7 | 186.2 | 4.2 | 181.98 | 1.023 Level 2 | | |
| 11,800.0 | 7,394.0 | 11,656.9 | 7,282.0 | 118.7 | 118.0 | -53.02 | 1,792.5 | -3,831.5 | 186.2 | 0.7 | 185.51 | 1.004 Level 2 | | |
| 11,900.0 | 7,394.0 | 11,756.9 | 7,282.0 | 121.4 | 120.7 | -53.02 | 1,789.2 | -3,931.5 | 186.2 | -3.8 | 190.00 | 0.980 Level 1 | | |
| 12,000.0 | 7,394.0 | 11,856.9 | 7,282.0 | 124.1 | 123.4 | -53.02 | 1,785.9 | -4,031.4 | 186.2 | -8.3 | 194.49 | 0.957 Level 1 | | |
| 12,025.9 | 7,394.0 | 11,882.8 | 7,282.0 | 124.6 | 124.1 | -53.02 | 1,785.0 | -4,057.3 | 186.2 | -9.2 | 195.44 | 0.953 Level 1 | | |
| 12,086.3 | 7,394.0 | 11,943.2 | 7,282.0 | 125.7 | 125.4 | -53.02 | 1,783.0 | -4,117.7 | 186.2 | -11.1 | 197.30 | 0.944 Level 1, ES, SF | | |

| Greeley-Rothe Pad Sec.1-T5N-R67W - Greeley-Rothe 1-2H - Wellbore #1 - Plan #2 (6-05-14) | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---|----------------|----------------|----------------|-----------------|--------|-------------------|------------------------|------------|-----------------|------------------|--------------------|-------------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | | |
| Measured Depth | Vertical Depth | Measured Depth | Vertical Depth | Reference | Offset | Highside Toolface | Offset Wellbore Centre | | Between Centres | Between Ellipses | Minimum Separation | Separation Factor | Warning | |
| (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (°) | +N/-S (ft) | +E/-W (ft) | (ft) | (ft) | (ft) | | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -89.58 | 0.4 | -50.0 | 50.0 | | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -89.58 | 0.4 | -50.0 | 50.0 | 49.8 | 0.22 | 222.482 | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -89.58 | 0.4 | -50.0 | 50.0 | 49.3 | 0.67 | 74.161 CC, ES | | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.6 | 0.6 | -107.90 | 0.4 | -50.0 | 50.5 | 49.4 | 1.12 | 44.953 | | |
| 400.0 | 399.8 | 399.8 | 399.8 | 0.8 | 0.8 | -113.32 | 0.4 | -50.0 | 52.4 | 50.8 | 1.58 | 33.144 | | |
| 500.0 | 499.5 | 499.5 | 499.5 | 1.0 | 1.0 | -121.39 | 0.4 | -50.0 | 56.4 | 54.3 | 2.05 | 27.490 | | |
| 600.0 | 598.7 | 598.7 | 598.7 | 1.3 | 1.2 | -130.65 | 0.4 | -50.0 | 63.6 | 61.1 | 2.54 | 25.073 | | |
| 700.0 | 697.5 | 699.6 | 699.6 | 1.6 | 1.5 | -139.02 | 2.0 | -49.3 | 73.4 | 70.4 | 3.03 | 24.247 | | |
| 800.0 | 795.6 | 801.0 | 800.8 | 2.0 | 1.7 | -145.57 | 6.9 | -47.3 | 84.1 | 80.6 | 3.51 | 23.943 | | |
| 900.0 | 893.1 | 902.9 | 902.4 | 2.4 | 1.9 | -150.80 | 15.1 | -43.8 | 95.5 | 91.5 | 4.00 | 23.844 | | |
| 1,000.0 | 989.6 | 1,005.3 | 1,004.0 | 2.9 | 2.2 | -155.09 | 26.7 | -38.9 | 107.2 | 102.7 | 4.50 | 23.829 | | |
| 1,100.0 | 1,085.3 | 1,108.3 | 1,105.6 | 3.5 | 2.5 | -158.71 | 41.8 | -32.5 | 119.2 | 114.2 | 5.00 | 23.835 | | |
| 1,200.0 | 1,180.4 | 1,211.9 | 1,207.3 | 4.0 | 2.8 | -161.62 | 60.3 | -24.7 | 129.6 | 124.0 | 5.53 | 23.420 | | |
| 1,300.0 | 1,275.6 | 1,316.3 | 1,308.9 | 4.6 | 3.2 | -163.83 | 82.4 | -15.3 | 136.6 | 130.5 | 6.08 | 22.475 | | |
| 1,400.0 | 1,370.8 | 1,418.9 | 1,407.9 | 5.2 | 3.7 | -165.59 | 107.1 | -4.9 | 140.6 | 134.0 | 6.63 | 21.191 | | |
| 1,500.0 | 1,465.9 | 1,518.7 | 1,504.1 | 5.8 | 4.2 | -167.18 | 131.6 | 5.5 | 144.2 | 137.0 | 7.19 | 20.041 | | |
| 1,600.0 | 1,561.1 | 1,618.6 | 1,600.4 | 6.4 | 4.7 | -168.70 | 156.1 | 15.9 | 147.8 | 140.1 | 7.74 | 19.095 | | |
| 1,700.0 | 1,656.3 | 1,718.4 | 1,696.6 | 7.0 | 5.2 | -170.14 | 180.7 | 26.2 | 151.6 | 143.3 | 8.30 | 18.264 | | |
| 1,800.0 | 1,751.4 | 1,818.3 | 1,792.8 | 7.6 | 5.7 | -171.51 | 205.2 | 36.6 | 155.5 | 146.6 | 8.86 | 17.543 | | |
| 1,900.0 | 1,846.6 | 1,918.2 | 1,889.1 | 8.2 | 6.2 | -172.82 | 229.7 | 47.0 | 159.4 | 150.0 | 9.43 | 16.910 | | |
| 2,000.0 | 1,941.7 | 2,018.0 | 1,985.3 | 8.8 | 6.7 | -174.06 | 254.2 | 57.3 | 163.5 | 153.5 | 10.00 | 16.348 | | |
| 2,100.0 | 2,036.9 | 2,117.9 | 2,081.6 | 9.4 | 7.2 | -175.24 | 278.8 | 67.7 | 167.6 | 157.0 | 10.58 | 15.844 | | |
| 2,200.0 | 2,132.1 | 2,217.7 | 2,177.8 | 10.1 | 7.7 | -176.36 | 303.3 | 78.1 | 171.7 | 160.6 | 11.16 | 15.389 | | |
| 2,300.0 | 2,227.2 | 2,317.6 | 2,274.1 | 10.7 | 8.3 | -177.43 | 327.8 | 88.4 | 176.0 | 164.2 | 11.75 | 14.975 | | |
| 2,400.0 | 2,322.4 | 2,417.4 | 2,370.3 | 11.3 | 8.8 | -178.45 | 352.3 | 98.8 | 180.3 | 167.9 | 12.35 | 14.595 | | |
| 2,500.0 | 2,417.6 | 2,517.3 | 2,466.5 | 11.9 | 9.3 | -179.42 | 376.8 | 109.2 | 184.6 | 171.6 | 12.96 | 14.246 | | |
| 2,600.0 | 2,512.7 | 2,617.2 | 2,562.8 | 12.5 | 9.9 | -179.65 | 401.4 | 119.5 | 189.0 | 175.4 | 13.57 | 13.923 | | |
| 2,700.0 | 2,607.9 | 2,717.0 | 2,659.0 | 13.1 | 10.4 | -178.77 | 425.9 | 129.9 | 193.4 | 179.2 | 14.20 | 13.624 | | |
| 2,800.0 | 2,703.1 | 2,816.9 | 2,755.3 | 13.7 | 10.9 | -177.92 | 450.4 | 140.3 | 197.9 | 183.1 | 14.83 | 13.345 | | |
| 2,900.0 | 2,798.2 | 2,916.7 | 2,851.5 | 14.3 | 11.5 | -177.11 | 474.9 | 150.6 | 202.5 | 187.0 | 15.47 | 13.084 | | |
| 3,000.0 | 2,893.4 | 3,016.6 | 2,947.8 | 14.9 | 12.0 | -176.34 | 499.5 | 161.0 | 207.0 | 190.9 | 16.12 | 12.840 | | |
| 3,100.0 | 2,988.5 | 3,116.5 | 3,044.0 | 15.6 | 12.5 | -175.60 | 524.0 | 171.4 | 211.6 | 194.9 | 16.78 | 12.610 | | |
| 3,200.0 | 3,083.7 | 3,216.3 | 3,140.2 | 16.2 | 13.1 | -174.90 | 548.5 | 181.7 | 216.3 | 198.8 | 17.45 | 12.394 | | |
| 3,300.0 | 3,178.9 | 3,316.2 | 3,236.5 | 16.8 | 13.6 | -174.22 | 573.0 | 192.1 | 220.9 | 202.8 | 18.12 | 12.191 | | |
| 3,400.0 | 3,274.0 | 3,416.0 | 3,332.7 | 17.4 | 14.1 | -173.57 | 597.5 | 202.5 | 225.6 | 206.8 | 18.80 | 11.999 | | |
| 3,500.0 | 3,369.2 | 3,515.9 | 3,429.0 | 18.0 | 14.7 | -172.95 | 622.1 | 212.8 | 230.4 | 210.9 | 19.49 | 11.818 | | |
| 3,600.0 | 3,464.4 | 3,615.7 | 3,525.2 | 18.6 | 15.2 | -172.35 | 646.6 | 223.2 | 235.1 | 214.9 | 20.19 | 11.646 | | |
| 3,700.0 | 3,559.5 | 3,715.6 | 3,621.5 | 19.2 | 15.8 | -171.78 | 671.1 | 233.6 | 239.9 | 219.0 | 20.89 | 11.483 | | |
| 3,800.0 | 3,654.7 | 3,815.5 | 3,717.7 | 19.8 | 16.3 | -171.23 | 695.6 | 243.9 | 244.7 | 223.1 | 21.60 | 11.329 | | |
| 3,900.0 | 3,749.9 | 3,915.3 | 3,813.9 | 20.5 | 16.8 | -170.70 | 720.2 | 254.3 | 249.5 | 227.2 | 22.31 | 11.182 | | |
| 4,000.0 | 3,845.0 | 4,015.2 | 3,910.2 | 21.1 | 17.4 | -170.19 | 744.7 | 264.7 | 254.3 | 231.3 | 23.03 | 11.043 | | |
| 4,100.0 | 3,940.2 | 4,115.0 | 4,006.4 | 21.7 | 17.9 | -169.70 | 769.2 | 275.1 | 259.2 | 235.5 | 23.76 | 10.910 | | |
| 4,200.0 | 4,035.3 | 4,214.9 | 4,102.7 | 22.3 | 18.5 | -169.23 | 793.7 | 285.4 | 264.1 | 239.6 | 24.49 | 10.784 | | |
| 4,300.0 | 4,130.5 | 4,314.7 | 4,198.9 | 22.9 | 19.0 | -168.77 | 818.2 | 295.8 | 269.0 | 243.8 | 25.22 | 10.664 | | |
| 4,400.0 | 4,225.7 | 4,414.6 | 4,295.2 | 23.5 | 19.5 | -168.33 | 842.8 | 306.2 | 273.9 | 247.9 | 25.96 | 10.549 | | |
| 4,500.0 | 4,320.8 | 4,514.5 | 4,391.4 | 24.1 | 20.1 | -167.91 | 867.3 | 316.5 | 278.8 | 252.1 | 26.71 | 10.439 | | |
| 4,600.0 | 4,416.0 | 4,614.3 | 4,487.6 | 24.7 | 20.6 | -167.50 | 891.8 | 326.9 | 283.8 | 256.3 | 27.46 | 10.334 | | |
| 4,700.0 | 4,511.2 | 4,714.2 | 4,583.9 | 25.4 | 21.2 | -167.10 | 916.3 | 337.3 | 288.7 | 260.5 | 28.21 | 10.234 | | |
| 4,800.0 | 4,606.3 | 4,814.0 | 4,680.1 | 26.0 | 21.7 | -166.72 | 940.9 | 347.6 | 293.7 | 264.7 | 28.97 | 10.138 | | |
| 4,900.0 | 4,701.5 | 4,913.9 | 4,776.4 | 26.6 | 22.3 | -166.35 | 965.4 | 358.0 | 298.7 | 268.9 | 29.73 | 10.047 | | |
| 5,000.0 | 4,796.7 | 5,013.7 | 4,872.6 | 27.2 | 22.8 | -166.00 | 989.9 | 368.4 | 303.7 | 273.2 | 30.49 | 9.959 | | |
| 5,100.0 | 4,891.8 | 5,113.6 | 4,968.9 | 27.8 | 23.3 | -165.65 | 1,014.4 | 378.7 | 308.7 | 277.4 | 31.26 | 9.874 | | |

| | | | |
|---------------------------|----------------------------------|-------------------------------------|-----------------------------|
| Company: | KP KAUFFMAN | Local Co-ordinate Reference: | Well Greeley-Rothe 1-0H |
| Project: | SEC.1-T5N-R67W | TVD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Reference Site: | Greeley-Rothe Pad Sec.1-T5N-R67W | MD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Greeley-Rothe 1-0H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (6-5-14) | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|-----------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|--------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | Warning |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | |
| 5,200.0 | 4,987.0 | 5,213.5 | 5,065.1 | 28.4 | 23.9 | 165.32 | 1,038.9 | 389.1 | 313.7 | 281.7 | 32.03 | 9.793 | |
| 5,300.0 | 5,082.2 | 5,313.3 | 5,161.3 | 29.0 | 24.4 | 164.99 | 1,063.5 | 399.5 | 318.7 | 285.9 | 32.81 | 9.715 | |
| 5,400.0 | 5,177.3 | 5,413.2 | 5,257.6 | 29.6 | 25.0 | 164.68 | 1,088.0 | 409.8 | 323.8 | 290.2 | 33.58 | 9.641 | |
| 5,500.0 | 5,272.5 | 5,513.0 | 5,353.8 | 30.3 | 25.5 | 164.38 | 1,112.5 | 420.2 | 328.8 | 294.4 | 34.36 | 9.569 | |
| 5,600.0 | 5,367.6 | 5,612.9 | 5,450.1 | 30.9 | 26.0 | 164.08 | 1,137.0 | 430.6 | 333.9 | 298.7 | 35.14 | 9.500 | |
| 5,700.0 | 5,462.8 | 5,712.8 | 5,546.3 | 31.5 | 26.6 | 163.80 | 1,161.6 | 440.9 | 338.9 | 303.0 | 35.93 | 9.433 | |
| 5,800.0 | 5,558.0 | 5,812.6 | 5,642.6 | 32.1 | 27.1 | 163.52 | 1,186.1 | 451.3 | 344.0 | 307.3 | 36.71 | 9.369 | |
| 5,900.0 | 5,653.1 | 5,912.5 | 5,738.8 | 32.7 | 27.7 | 163.25 | 1,210.6 | 461.7 | 349.1 | 311.6 | 37.50 | 9.308 | |
| 6,000.0 | 5,748.3 | 6,012.3 | 5,835.0 | 33.3 | 28.2 | 162.99 | 1,235.1 | 472.0 | 354.2 | 315.9 | 38.30 | 9.248 | |
| 6,100.0 | 5,843.5 | 6,112.2 | 5,931.3 | 33.9 | 28.8 | 162.73 | 1,259.6 | 482.4 | 359.2 | 320.2 | 39.09 | 9.191 | |
| 6,200.0 | 5,938.6 | 6,212.0 | 6,027.5 | 34.6 | 29.3 | 162.49 | 1,284.2 | 492.8 | 364.3 | 324.5 | 39.88 | 9.135 | |
| 6,300.0 | 6,033.8 | 6,311.9 | 6,123.8 | 35.2 | 29.8 | 162.25 | 1,308.7 | 503.1 | 369.5 | 328.8 | 40.68 | 9.082 | |
| 6,400.0 | 6,129.0 | 6,411.8 | 6,220.0 | 35.8 | 30.4 | 162.01 | 1,333.2 | 513.5 | 374.6 | 333.1 | 41.48 | 9.030 | |
| 6,500.0 | 6,224.1 | 6,511.6 | 6,316.3 | 36.4 | 30.9 | 161.78 | 1,357.7 | 523.9 | 379.7 | 337.4 | 42.28 | 8.980 | |
| 6,600.0 | 6,319.3 | 6,611.5 | 6,412.5 | 37.0 | 31.5 | 161.56 | 1,382.3 | 534.2 | 384.8 | 341.7 | 43.08 | 8.932 | |
| 6,700.0 | 6,414.4 | 6,711.3 | 6,508.8 | 37.6 | 32.0 | 161.35 | 1,406.8 | 544.6 | 389.9 | 346.1 | 43.89 | 8.885 | |
| 6,800.0 | 6,509.6 | 6,811.6 | 6,605.8 | 38.2 | 32.5 | 162.14 | 1,431.3 | 548.2 | 395.0 | 350.9 | 44.14 | 8.949 | |
| 6,900.0 | 6,604.8 | 6,908.5 | 6,699.3 | 38.8 | 32.8 | 164.77 | 1,454.5 | 538.3 | 400.5 | 357.1 | 43.48 | 9.212 | |
| 7,000.0 | 6,700.1 | 7,000.0 | 6,785.8 | 39.4 | 33.0 | -176.10 | 1,475.5 | 517.1 | 408.0 | 365.7 | 42.32 | 9.642 | |
| 7,100.0 | 6,795.5 | 7,087.7 | 6,865.6 | 39.9 | 33.2 | -147.09 | 1,494.5 | 486.3 | 417.5 | 376.0 | 41.50 | 10.059 | |
| 7,200.0 | 6,889.2 | 7,173.1 | 6,939.3 | 40.2 | 33.3 | -124.99 | 1,511.7 | 447.0 | 428.2 | 387.0 | 41.19 | 10.394 | |
| 7,300.0 | 6,979.4 | 7,256.2 | 7,006.3 | 40.5 | 33.3 | -110.02 | 1,527.0 | 400.2 | 439.6 | 398.3 | 41.25 | 10.657 | |
| 7,400.0 | 7,064.3 | 7,337.6 | 7,066.4 | 40.8 | 33.3 | -99.77 | 1,540.4 | 347.1 | 451.0 | 409.6 | 41.47 | 10.877 | |
| 7,500.0 | 7,142.4 | 7,417.4 | 7,119.4 | 41.0 | 33.3 | -92.47 | 1,551.7 | 288.5 | 462.0 | 420.3 | 41.71 | 11.077 | |
| 7,600.0 | 7,212.0 | 7,500.0 | 7,167.2 | 41.1 | 33.3 | -87.08 | 1,561.6 | 222.0 | 472.1 | 430.1 | 41.94 | 11.255 | |
| 7,700.0 | 7,271.8 | 7,573.8 | 7,203.5 | 41.2 | 33.2 | -83.22 | 1,568.6 | 158.2 | 480.8 | 438.6 | 42.20 | 11.394 | |
| 7,800.0 | 7,320.6 | 7,650.0 | 7,234.1 | 41.2 | 33.1 | -80.41 | 1,574.0 | 88.6 | 487.9 | 445.3 | 42.62 | 11.448 | |
| 7,900.0 | 7,357.6 | 7,727.1 | 7,257.6 | 41.3 | 33.1 | -78.48 | 1,577.4 | 15.3 | 493.1 | 449.7 | 43.40 | 11.362 | |
| 8,000.0 | 7,381.9 | 7,800.0 | 7,272.7 | 41.3 | 33.0 | -77.36 | 1,578.9 | -56.0 | 496.3 | 451.8 | 44.56 | 11.139 | |
| 8,100.0 | 7,393.2 | 7,879.2 | 7,281.0 | 41.3 | 33.0 | -76.95 | 1,578.4 | -134.6 | 497.4 | 451.1 | 46.30 | 10.743 | |
| 8,200.0 | 7,394.0 | 7,967.0 | 7,282.0 | 41.4 | 33.1 | -76.98 | 1,575.7 | -222.4 | 497.2 | 448.5 | 48.64 | 10.220 | |
| 8,300.0 | 7,394.0 | 8,067.0 | 7,282.0 | 41.6 | 33.3 | -76.98 | 1,572.4 | -322.4 | 497.2 | 445.5 | 51.60 | 9.634 | |
| 8,400.0 | 7,394.0 | 8,167.0 | 7,282.0 | 42.0 | 33.8 | -76.98 | 1,569.1 | -422.3 | 497.2 | 442.2 | 54.95 | 9.048 | |
| 8,500.0 | 7,394.0 | 8,267.0 | 7,282.0 | 42.5 | 34.8 | -76.98 | 1,565.8 | -522.3 | 497.2 | 438.5 | 58.61 | 8.483 | |
| 8,600.0 | 7,394.0 | 8,367.0 | 7,282.0 | 43.3 | 36.1 | -76.98 | 1,562.5 | -622.2 | 497.2 | 434.6 | 62.53 | 7.950 | |
| 8,700.0 | 7,394.0 | 8,467.0 | 7,282.0 | 44.3 | 37.8 | -76.98 | 1,559.2 | -722.2 | 497.2 | 430.5 | 66.67 | 7.456 | |
| 8,800.0 | 7,394.0 | 8,567.0 | 7,282.0 | 45.6 | 39.7 | -76.98 | 1,555.9 | -822.1 | 497.2 | 426.2 | 71.00 | 7.002 | |
| 8,900.0 | 7,394.0 | 8,667.0 | 7,282.0 | 47.1 | 41.8 | -76.98 | 1,552.6 | -922.0 | 497.2 | 421.7 | 75.47 | 6.588 | |
| 9,000.0 | 7,394.0 | 8,767.0 | 7,282.0 | 48.8 | 44.0 | -76.98 | 1,549.3 | -1,022.0 | 497.2 | 417.1 | 80.06 | 6.210 | |
| 9,100.0 | 7,394.0 | 8,867.0 | 7,282.0 | 50.7 | 46.2 | -76.98 | 1,546.1 | -1,121.9 | 497.2 | 412.4 | 84.76 | 5.866 | |
| 9,200.0 | 7,394.0 | 8,967.0 | 7,282.0 | 52.7 | 48.6 | -76.98 | 1,542.8 | -1,221.9 | 497.2 | 407.6 | 89.54 | 5.552 | |
| 9,258.0 | 7,394.0 | 9,025.0 | 7,282.0 | 53.9 | 50.0 | -76.98 | 1,540.8 | -1,279.9 | 497.2 | 404.8 | 92.36 | 5.383 | |
| 9,300.0 | 7,394.0 | 9,067.0 | 7,282.0 | 54.8 | 51.0 | -76.98 | 1,539.5 | -1,321.8 | 497.2 | 402.8 | 94.40 | 5.266 | |
| 9,400.0 | 7,394.0 | 9,167.0 | 7,282.0 | 57.0 | 53.4 | -76.98 | 1,536.2 | -1,421.8 | 497.2 | 397.8 | 99.32 | 5.005 | |
| 9,500.0 | 7,394.0 | 9,267.0 | 7,282.0 | 59.3 | 55.9 | -76.98 | 1,532.9 | -1,521.7 | 497.2 | 392.9 | 104.30 | 4.767 | |
| 9,558.0 | 7,394.0 | 9,325.0 | 7,282.0 | 60.6 | 57.3 | -76.98 | 1,530.9 | -1,579.7 | 497.2 | 389.9 | 107.21 | 4.637 | |
| 9,600.0 | 7,394.0 | 9,367.0 | 7,282.0 | 61.6 | 58.4 | -76.98 | 1,529.6 | -1,621.7 | 497.2 | 387.8 | 109.32 | 4.548 | |
| 9,700.0 | 7,394.0 | 9,467.0 | 7,282.0 | 64.0 | 60.9 | -76.98 | 1,526.3 | -1,721.6 | 497.2 | 382.8 | 114.38 | 4.346 | |
| 9,800.0 | 7,394.0 | 9,567.0 | 7,282.0 | 66.4 | 63.5 | -76.98 | 1,523.0 | -1,821.6 | 497.2 | 377.7 | 119.48 | 4.161 | |
| 9,900.0 | 7,394.0 | 9,667.0 | 7,282.0 | 68.9 | 66.0 | -76.98 | 1,519.7 | -1,921.5 | 497.2 | 372.5 | 124.61 | 3.990 | |
| 10,000.0 | 7,394.0 | 9,767.0 | 7,282.0 | 71.4 | 68.6 | -76.98 | 1,516.4 | -2,021.4 | 497.2 | 367.4 | 129.77 | 3.831 | |
| 10,100.0 | 7,394.0 | 9,867.0 | 7,282.0 | 73.9 | 71.2 | -76.98 | 1,513.1 | -2,121.4 | 497.2 | 362.2 | 134.95 | 3.684 | |

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

| | | | |
|---------------------------|----------------------------------|-------------------------------------|-----------------------------|
| Company: | KP KAUFFMAN | Local Co-ordinate Reference: | Well Greeley-Rothe 1-0H |
| Project: | SEC.1-T5N-R67W | TVD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Reference Site: | Greeley-Rothe Pad Sec.1-T5N-R67W | MD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Greeley-Rothe 1-0H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (6-5-14) | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|-----------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|-------------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | | |
| 10,200.0 | 7,394.0 | 9,967.0 | 7,282.0 | 76.4 | 73.8 | -76.98 | 1,509.8 | -2,221.3 | 497.2 | 357.0 | 140.15 | 3.547 | | |
| 10,300.0 | 7,394.0 | 10,067.0 | 7,282.0 | 79.0 | 76.5 | -76.98 | 1,506.5 | -2,321.3 | 497.2 | 351.8 | 145.37 | 3.420 | | |
| 10,347.7 | 7,394.0 | 10,114.7 | 7,282.0 | 80.2 | 77.7 | -76.98 | 1,504.9 | -2,368.9 | 497.2 | 349.3 | 147.87 | 3.362 | | |
| 10,400.0 | 7,394.0 | 10,167.0 | 7,282.0 | 81.5 | 79.1 | -76.98 | 1,503.2 | -2,421.2 | 497.2 | 346.5 | 150.61 | 3.301 | | |
| 10,500.0 | 7,394.0 | 10,267.0 | 7,282.0 | 84.1 | 81.8 | -76.98 | 1,499.9 | -2,521.2 | 497.2 | 341.3 | 155.86 | 3.190 | | |
| 10,600.0 | 7,394.0 | 10,367.0 | 7,282.0 | 86.7 | 84.4 | -76.98 | 1,496.6 | -2,621.1 | 497.2 | 336.0 | 161.13 | 3.085 | | |
| 10,700.0 | 7,394.0 | 10,467.0 | 7,282.0 | 89.3 | 87.1 | -76.98 | 1,493.3 | -2,721.1 | 497.2 | 330.7 | 166.41 | 2.987 | | |
| 10,800.0 | 7,394.0 | 10,567.0 | 7,282.0 | 92.0 | 89.8 | -76.98 | 1,490.0 | -2,821.0 | 497.2 | 325.4 | 171.71 | 2.895 | | |
| 10,900.0 | 7,394.0 | 10,667.0 | 7,282.0 | 94.6 | 92.4 | -76.98 | 1,486.7 | -2,921.0 | 497.2 | 320.1 | 177.01 | 2.809 | | |
| 11,000.0 | 7,394.0 | 10,767.0 | 7,282.0 | 97.3 | 95.1 | -76.98 | 1,483.4 | -3,020.9 | 497.2 | 314.8 | 182.32 | 2.727 | | |
| 11,100.0 | 7,394.0 | 10,867.0 | 7,282.0 | 99.9 | 97.8 | -76.98 | 1,480.1 | -3,120.8 | 497.2 | 309.5 | 187.64 | 2.649 | | |
| 11,200.0 | 7,394.0 | 10,967.0 | 7,282.0 | 102.6 | 100.5 | -76.98 | 1,476.8 | -3,220.8 | 497.2 | 304.2 | 192.97 | 2.576 | | |
| 11,300.0 | 7,394.0 | 11,067.0 | 7,282.0 | 105.2 | 103.2 | -76.98 | 1,473.5 | -3,320.7 | 497.2 | 298.8 | 198.31 | 2.507 | | |
| 11,400.0 | 7,394.0 | 11,167.0 | 7,282.0 | 107.9 | 106.0 | -76.98 | 1,470.2 | -3,420.7 | 497.2 | 293.5 | 203.65 | 2.441 | | |
| 11,500.0 | 7,394.0 | 11,267.0 | 7,282.0 | 110.6 | 108.7 | -76.98 | 1,466.9 | -3,520.6 | 497.2 | 288.2 | 209.00 | 2.379 | | |
| 11,600.0 | 7,394.0 | 11,367.0 | 7,282.0 | 113.3 | 111.4 | -76.98 | 1,463.6 | -3,620.6 | 497.2 | 282.8 | 214.36 | 2.319 | | |
| 11,700.0 | 7,394.0 | 11,467.0 | 7,282.0 | 116.0 | 114.1 | -76.98 | 1,460.3 | -3,720.5 | 497.2 | 277.4 | 219.72 | 2.263 | | |
| 11,800.0 | 7,394.0 | 11,567.0 | 7,282.0 | 118.7 | 116.8 | -76.98 | 1,457.0 | -3,820.5 | 497.2 | 272.1 | 225.08 | 2.209 | | |
| 11,900.0 | 7,394.0 | 11,667.0 | 7,282.0 | 121.4 | 119.6 | -76.98 | 1,453.7 | -3,920.4 | 497.2 | 266.7 | 230.45 | 2.157 | | |
| 12,000.0 | 7,394.0 | 11,767.0 | 7,282.0 | 124.1 | 122.3 | -76.98 | 1,450.4 | -4,020.4 | 497.2 | 261.3 | 235.83 | 2.108 | | |
| 12,086.3 | 7,394.0 | 11,853.3 | 7,282.0 | 125.7 | 124.7 | -76.98 | 1,447.6 | -4,106.6 | 497.2 | 257.5 | 239.63 | 2.075 SF | | |

| | | | |
|---------------------------|----------------------------------|-------------------------------------|-----------------------------|
| Company: | KP KAUFFMAN | Local Co-ordinate Reference: | Well Greeley-Rothe 1-0H |
| Project: | SEC.1-T5N-R67W | TVD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Reference Site: | Greeley-Rothe Pad Sec.1-T5N-R67W | MD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Greeley-Rothe 1-0H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (6-5-14) | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|-----------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|-------------------|--------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | | Warning |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -179.55 | -25.0 | -0.2 | 25.0 | | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -179.55 | -25.0 | -0.2 | 25.0 | 24.8 | 0.22 | 111.194 | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -179.55 | -25.0 | -0.2 | 25.0 | 24.3 | 0.67 | 37.065 CC, ES | | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.6 | 0.6 | 165.04 | -25.0 | -0.2 | 26.7 | 25.5 | 1.13 | 23.587 | | |
| 400.0 | 399.8 | 399.8 | 399.8 | 0.8 | 0.8 | 167.46 | -25.0 | -0.2 | 31.8 | 30.2 | 1.59 | 19.947 | | |
| 500.0 | 499.5 | 499.5 | 499.5 | 1.0 | 1.0 | 170.12 | -25.0 | -0.2 | 40.3 | 38.3 | 2.05 | 19.624 | | |
| 600.0 | 598.7 | 598.7 | 598.7 | 1.3 | 1.2 | 172.38 | -25.0 | -0.2 | 52.4 | 49.8 | 2.52 | 20.806 | | |
| 700.0 | 697.5 | 697.5 | 697.5 | 1.6 | 1.5 | 174.09 | -25.0 | -0.2 | 67.9 | 64.9 | 2.98 | 22.788 | | |
| 800.0 | 795.6 | 795.6 | 795.6 | 2.0 | 1.7 | 175.36 | -25.0 | -0.2 | 86.9 | 83.5 | 3.44 | 25.235 | | |
| 900.0 | 893.1 | 896.6 | 896.6 | 2.4 | 1.9 | 176.11 | -23.5 | 0.5 | 107.8 | 103.9 | 3.91 | 27.595 | | |
| 1,000.0 | 989.6 | 998.5 | 998.3 | 2.9 | 2.1 | 176.35 | -18.8 | 2.8 | 128.8 | 124.4 | 4.37 | 29.477 | | |
| 1,100.0 | 1,085.3 | 1,101.1 | 1,100.6 | 3.5 | 2.4 | 176.28 | -10.8 | 6.7 | 149.7 | 144.9 | 4.84 | 30.919 | | |
| 1,200.0 | 1,180.4 | 1,204.9 | 1,203.6 | 4.0 | 2.6 | 175.99 | 0.7 | 12.3 | 168.8 | 163.4 | 5.35 | 31.538 | | |
| 1,300.0 | 1,275.6 | 1,310.0 | 1,307.3 | 4.6 | 2.9 | 175.48 | 15.7 | 19.6 | 184.4 | 178.5 | 5.88 | 31.334 | | |
| 1,400.0 | 1,370.8 | 1,416.1 | 1,411.3 | 5.2 | 3.3 | 174.76 | 34.3 | 28.7 | 196.4 | 190.0 | 6.44 | 30.498 | | |
| 1,500.0 | 1,465.9 | 1,522.1 | 1,514.5 | 5.8 | 3.7 | 173.85 | 56.4 | 39.5 | 204.9 | 197.9 | 7.02 | 29.194 | | |
| 1,600.0 | 1,561.1 | 1,621.8 | 1,611.1 | 6.4 | 4.1 | 172.94 | 78.4 | 50.2 | 212.0 | 204.4 | 7.61 | 27.863 | | |
| 1,700.0 | 1,656.3 | 1,721.5 | 1,707.8 | 7.0 | 4.5 | 172.10 | 100.4 | 60.9 | 219.2 | 211.0 | 8.21 | 26.702 | | |
| 1,800.0 | 1,751.4 | 1,821.2 | 1,804.4 | 7.6 | 4.9 | 171.31 | 122.5 | 71.7 | 226.4 | 217.6 | 8.83 | 25.650 | | |
| 1,900.0 | 1,846.6 | 1,920.9 | 1,901.0 | 8.2 | 5.4 | 170.57 | 144.5 | 82.4 | 233.7 | 224.3 | 9.46 | 24.710 | | |
| 2,000.0 | 1,941.7 | 2,020.6 | 1,997.7 | 8.8 | 5.9 | 169.87 | 166.6 | 93.2 | 241.0 | 230.9 | 10.10 | 23.866 | | |
| 2,100.0 | 2,036.9 | 2,120.3 | 2,094.3 | 9.4 | 6.3 | 169.22 | 188.6 | 103.9 | 248.3 | 237.6 | 10.75 | 23.103 | | |
| 2,200.0 | 2,132.1 | 2,220.0 | 2,190.9 | 10.1 | 6.8 | 168.60 | 210.6 | 114.7 | 255.7 | 244.3 | 11.41 | 22.411 | | |
| 2,300.0 | 2,227.2 | 2,319.7 | 2,287.5 | 10.7 | 7.3 | 168.02 | 232.7 | 125.4 | 263.1 | 251.0 | 12.08 | 21.782 | | |
| 2,400.0 | 2,322.4 | 2,419.4 | 2,384.2 | 11.3 | 7.8 | 167.46 | 254.7 | 136.1 | 270.5 | 257.8 | 12.76 | 21.207 | | |
| 2,500.0 | 2,417.6 | 2,519.0 | 2,480.8 | 11.9 | 8.3 | 166.94 | 276.8 | 146.9 | 278.0 | 264.5 | 13.44 | 20.681 | | |
| 2,600.0 | 2,512.7 | 2,618.7 | 2,577.4 | 12.5 | 8.8 | 166.45 | 298.8 | 157.6 | 285.4 | 271.3 | 14.13 | 20.197 | | |
| 2,700.0 | 2,607.9 | 2,718.4 | 2,674.1 | 13.1 | 9.2 | 165.98 | 320.8 | 168.4 | 292.9 | 278.1 | 14.83 | 19.751 | | |
| 2,800.0 | 2,703.1 | 2,818.1 | 2,770.7 | 13.7 | 9.7 | 165.53 | 342.9 | 179.1 | 300.4 | 284.9 | 15.53 | 19.339 | | |
| 2,900.0 | 2,798.2 | 2,917.8 | 2,867.3 | 14.3 | 10.2 | 165.11 | 364.9 | 189.9 | 307.9 | 291.7 | 16.24 | 18.958 | | |
| 3,000.0 | 2,893.4 | 3,017.5 | 2,964.0 | 14.9 | 10.7 | 164.70 | 386.9 | 200.6 | 315.5 | 298.5 | 16.96 | 18.603 | | |
| 3,100.0 | 2,988.5 | 3,117.2 | 3,060.6 | 15.6 | 11.2 | 164.32 | 409.0 | 211.3 | 323.0 | 305.3 | 17.68 | 18.273 | | |
| 3,200.0 | 3,083.7 | 3,216.9 | 3,157.2 | 16.2 | 11.7 | 163.95 | 431.0 | 222.1 | 330.6 | 312.2 | 18.40 | 17.965 | | |
| 3,300.0 | 3,178.9 | 3,316.6 | 3,253.8 | 16.8 | 12.2 | 163.60 | 453.1 | 232.8 | 338.1 | 319.0 | 19.13 | 17.678 | | |
| 3,400.0 | 3,274.0 | 3,416.3 | 3,350.5 | 17.4 | 12.7 | 163.26 | 475.1 | 243.6 | 345.7 | 325.9 | 19.86 | 17.408 | | |
| 3,500.0 | 3,369.2 | 3,516.0 | 3,447.1 | 18.0 | 13.2 | 162.94 | 497.1 | 254.3 | 353.3 | 332.7 | 20.60 | 17.155 | | |
| 3,600.0 | 3,464.4 | 3,615.7 | 3,543.7 | 18.6 | 13.7 | 162.64 | 519.2 | 265.1 | 360.9 | 339.6 | 21.33 | 16.918 | | |
| 3,700.0 | 3,559.5 | 3,715.3 | 3,640.4 | 19.2 | 14.2 | 162.34 | 541.2 | 275.8 | 368.6 | 346.5 | 22.08 | 16.694 | | |
| 3,800.0 | 3,654.7 | 3,815.0 | 3,737.0 | 19.8 | 14.7 | 162.06 | 563.3 | 286.5 | 376.2 | 353.4 | 22.82 | 16.483 | | |
| 3,900.0 | 3,749.9 | 3,914.7 | 3,833.6 | 20.5 | 15.2 | 161.79 | 585.3 | 297.3 | 383.8 | 360.3 | 23.57 | 16.284 | | |
| 4,000.0 | 3,845.0 | 4,014.4 | 3,930.3 | 21.1 | 15.7 | 161.52 | 607.3 | 308.0 | 391.5 | 367.2 | 24.32 | 16.096 | | |
| 4,100.0 | 3,940.2 | 4,114.1 | 4,026.9 | 21.7 | 16.2 | 161.27 | 629.4 | 318.8 | 399.1 | 374.1 | 25.07 | 15.917 | | |
| 4,200.0 | 4,035.3 | 4,213.8 | 4,123.5 | 22.3 | 16.7 | 161.03 | 651.4 | 329.5 | 406.8 | 381.0 | 25.83 | 15.748 | | |
| 4,300.0 | 4,130.5 | 4,313.5 | 4,220.1 | 22.9 | 17.2 | 160.80 | 673.4 | 340.2 | 414.5 | 387.9 | 26.59 | 15.588 | | |
| 4,400.0 | 4,225.7 | 4,413.2 | 4,316.8 | 23.5 | 17.7 | 160.57 | 695.5 | 351.0 | 422.1 | 394.8 | 27.35 | 15.435 | | |
| 4,500.0 | 4,320.8 | 4,512.9 | 4,413.4 | 24.1 | 18.2 | 160.36 | 717.5 | 361.7 | 429.8 | 401.7 | 28.11 | 15.290 | | |
| 4,600.0 | 4,416.0 | 4,612.6 | 4,510.0 | 24.7 | 18.8 | 160.15 | 739.6 | 372.5 | 437.5 | 408.6 | 28.87 | 15.152 | | |
| 4,700.0 | 4,511.2 | 4,712.3 | 4,606.7 | 25.4 | 19.3 | 159.95 | 761.6 | 383.2 | 445.2 | 415.6 | 29.64 | 15.020 | | |
| 4,800.0 | 4,606.3 | 4,812.0 | 4,703.3 | 26.0 | 19.8 | 159.75 | 783.6 | 394.0 | 452.9 | 422.5 | 30.41 | 14.894 | | |
| 4,900.0 | 4,701.5 | 4,911.6 | 4,799.9 | 26.6 | 20.3 | 159.56 | 805.7 | 404.7 | 460.6 | 429.4 | 31.18 | 14.773 | | |
| 5,000.0 | 4,796.7 | 5,011.3 | 4,896.6 | 27.2 | 20.8 | 159.38 | 827.7 | 415.4 | 468.3 | 436.4 | 31.95 | 14.658 | | |
| 5,100.0 | 4,891.8 | 5,111.0 | 4,993.2 | 27.8 | 21.3 | 159.21 | 849.8 | 426.2 | 476.0 | 443.3 | 32.72 | 14.548 | | |

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

| | | | |
|---------------------------|----------------------------------|-------------------------------------|-----------------------------|
| Company: | KP KAUFFMAN | Local Co-ordinate Reference: | Well Greeley-Rothe 1-0H |
| Project: | SEC.1-T5N-R67W | TVD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Reference Site: | Greeley-Rothe Pad Sec.1-T5N-R67W | MD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Greeley-Rothe 1-0H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (6-5-14) | Offset TVD Reference: | Offset Datum |

| Offset Design Greeley-Rothe Pad Sec.1-T5N-R67W - Greeley-Rothe 1-3H - Wellbore #1 - Plan #2 (6-05-14) | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|--|------------------------|------------------------|------------------------|-------------------|----------------|-----------------------------|---|---------------|----------------------------|-----------------------------|-------------------------------|---------------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | Offset | Semi Major Axis | | Distance | | | | | | | | | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
| 5,200.0 | 4,987.0 | 5,210.7 | 5,089.8 | 28.4 | 21.8 | 159.04 | 871.8 | 436.9 | 483.7 | 450.2 | 33.49 | 14.442 | |
| 5,300.0 | 5,082.2 | 5,310.4 | 5,186.4 | 29.0 | 22.3 | 158.87 | 893.8 | 447.7 | 491.5 | 457.2 | 34.27 | 14.341 | |
| 5,400.0 | 5,177.3 | 5,410.1 | 5,283.1 | 29.6 | 22.8 | 158.71 | 915.9 | 458.4 | 499.2 | 464.1 | 35.04 | 14.244 SF | |

| | | | |
|---------------------------|----------------------------------|-------------------------------------|-----------------------------|
| Company: | KP KAUFFMAN | Local Co-ordinate Reference: | Well Greeley-Rothe 1-0H |
| Project: | SEC.1-T5N-R67W | TVD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Reference Site: | Greeley-Rothe Pad Sec.1-T5N-R67W | MD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Greeley-Rothe 1-0H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (6-5-14) | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|-----------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|-------------------|--------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | | Warning |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | | |
| 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | -179.55 | -50.0 | -0.4 | 50.0 | 50.0 | 0.00 | N/A | | |
| 100.0 | 100.0 | 101.0 | 101.0 | 0.1 | 0.1 | -179.55 | -50.0 | -0.4 | 50.0 | 49.8 | 0.23 | 220.347 | | |
| 200.0 | 200.0 | 201.0 | 201.0 | 0.3 | 0.3 | -179.55 | -50.0 | -0.4 | 50.0 | 49.3 | 0.68 | 73.937 CC, ES | | |
| 300.0 | 300.0 | 301.0 | 301.0 | 0.6 | 0.6 | 164.54 | -50.0 | -0.4 | 51.7 | 50.6 | 1.13 | 45.628 | | |
| 400.0 | 399.8 | 400.8 | 400.8 | 0.8 | 0.8 | 165.93 | -50.0 | -0.4 | 56.8 | 55.2 | 1.59 | 35.604 | | |
| 500.0 | 499.5 | 500.5 | 500.5 | 1.0 | 1.0 | 167.75 | -50.0 | -0.4 | 65.3 | 63.2 | 2.06 | 31.730 | | |
| 600.0 | 598.7 | 599.7 | 599.7 | 1.3 | 1.2 | 169.63 | -50.0 | -0.4 | 77.2 | 74.7 | 2.52 | 30.642 | | |
| 700.0 | 697.5 | 698.5 | 698.5 | 1.6 | 1.5 | 171.32 | -50.0 | -0.4 | 92.6 | 89.7 | 2.98 | 31.049 | | |
| 800.0 | 795.6 | 796.6 | 796.6 | 2.0 | 1.7 | 172.75 | -50.0 | -0.4 | 111.5 | 108.1 | 3.45 | 32.343 | | |
| 900.0 | 893.1 | 894.1 | 894.1 | 2.4 | 1.9 | 173.92 | -50.0 | -0.4 | 133.9 | 130.0 | 3.92 | 34.199 | | |
| 1,000.0 | 989.6 | 990.6 | 990.6 | 2.9 | 2.1 | 174.85 | -50.0 | -0.4 | 159.7 | 155.3 | 4.38 | 36.424 | | |
| 1,100.0 | 1,085.3 | 1,091.9 | 1,091.9 | 3.5 | 2.3 | 175.48 | -48.8 | 0.4 | 187.5 | 182.7 | 4.86 | 38.611 | | |
| 1,200.0 | 1,180.4 | 1,195.1 | 1,195.0 | 4.0 | 2.6 | 175.64 | -44.5 | 3.3 | 213.7 | 208.3 | 5.34 | 39.979 | | |
| 1,300.0 | 1,275.6 | 1,300.1 | 1,299.6 | 4.6 | 2.8 | 175.43 | -36.9 | 8.3 | 236.6 | 230.7 | 5.85 | 40.418 | | |
| 1,400.0 | 1,370.8 | 1,406.7 | 1,405.3 | 5.2 | 3.1 | 174.92 | -26.0 | 15.6 | 256.1 | 249.8 | 6.38 | 40.121 | | |
| 1,500.0 | 1,465.9 | 1,514.5 | 1,511.8 | 5.8 | 3.4 | 174.15 | -11.7 | 25.2 | 272.3 | 265.4 | 6.94 | 39.240 | | |
| 1,600.0 | 1,561.1 | 1,623.3 | 1,618.4 | 6.4 | 3.7 | 173.14 | 6.2 | 37.1 | 285.1 | 277.6 | 7.52 | 37.884 | | |
| 1,700.0 | 1,656.3 | 1,732.8 | 1,724.9 | 7.0 | 4.1 | 171.89 | 27.5 | 51.3 | 294.5 | 286.3 | 8.15 | 36.138 | | |
| 1,800.0 | 1,751.4 | 1,842.7 | 1,830.6 | 7.6 | 4.6 | 170.36 | 52.4 | 67.9 | 300.6 | 291.8 | 8.82 | 34.077 | | |
| 1,900.0 | 1,846.6 | 1,945.1 | 1,928.3 | 8.2 | 5.1 | 168.75 | 77.8 | 84.8 | 304.4 | 294.8 | 9.52 | 31.984 | | |
| 2,000.0 | 1,941.7 | 2,044.6 | 2,023.3 | 8.8 | 5.6 | 167.21 | 102.6 | 101.4 | 308.3 | 298.0 | 10.25 | 30.073 | | |
| 2,100.0 | 2,036.9 | 2,144.2 | 2,118.3 | 9.4 | 6.1 | 165.70 | 127.5 | 117.9 | 312.4 | 301.3 | 11.02 | 28.354 | | |
| 2,200.0 | 2,132.1 | 2,243.8 | 2,213.3 | 10.1 | 6.6 | 164.24 | 152.3 | 134.5 | 316.7 | 304.9 | 11.82 | 26.798 | | |
| 2,300.0 | 2,227.2 | 2,343.4 | 2,308.3 | 10.7 | 7.2 | 162.82 | 177.1 | 151.0 | 321.2 | 308.5 | 12.65 | 25.388 | | |
| 2,400.0 | 2,322.4 | 2,443.0 | 2,403.3 | 11.3 | 7.7 | 161.43 | 202.0 | 167.6 | 325.9 | 312.4 | 13.52 | 24.110 | | |
| 2,500.0 | 2,417.6 | 2,542.5 | 2,498.3 | 11.9 | 8.3 | 160.09 | 226.8 | 184.2 | 330.8 | 316.4 | 14.41 | 22.951 | | |
| 2,600.0 | 2,512.7 | 2,642.1 | 2,593.3 | 12.5 | 8.9 | 158.79 | 251.6 | 200.7 | 335.9 | 320.5 | 15.34 | 21.897 | | |
| 2,700.0 | 2,607.9 | 2,741.7 | 2,688.3 | 13.1 | 9.4 | 157.52 | 276.5 | 217.3 | 341.1 | 324.8 | 16.29 | 20.940 | | |
| 2,800.0 | 2,703.1 | 2,841.3 | 2,783.3 | 13.7 | 10.0 | 156.30 | 301.3 | 233.8 | 346.5 | 329.3 | 17.27 | 20.068 | | |
| 2,900.0 | 2,798.2 | 2,940.9 | 2,878.3 | 14.3 | 10.6 | 155.11 | 326.2 | 250.4 | 352.1 | 333.8 | 18.27 | 19.274 | | |
| 3,000.0 | 2,893.4 | 3,040.5 | 2,973.3 | 14.9 | 11.2 | 153.96 | 351.0 | 267.0 | 357.8 | 338.5 | 19.29 | 18.549 | | |
| 3,100.0 | 2,988.5 | 3,140.0 | 3,068.3 | 15.6 | 11.8 | 152.85 | 375.8 | 283.5 | 363.6 | 343.3 | 20.33 | 17.886 | | |
| 3,200.0 | 3,083.7 | 3,239.6 | 3,163.3 | 16.2 | 12.3 | 151.77 | 400.7 | 300.1 | 369.6 | 348.2 | 21.39 | 17.279 | | |
| 3,300.0 | 3,178.9 | 3,339.2 | 3,258.3 | 16.8 | 12.9 | 150.72 | 425.5 | 316.6 | 375.7 | 353.2 | 22.47 | 16.722 | | |
| 3,400.0 | 3,274.0 | 3,438.8 | 3,353.3 | 17.4 | 13.5 | 149.71 | 450.4 | 333.2 | 381.9 | 358.4 | 23.56 | 16.211 | | |
| 3,500.0 | 3,369.2 | 3,538.4 | 3,448.3 | 18.0 | 14.1 | 148.74 | 475.2 | 349.8 | 388.3 | 363.6 | 24.67 | 15.741 | | |
| 3,600.0 | 3,464.4 | 3,637.9 | 3,543.3 | 18.6 | 14.7 | 147.79 | 500.0 | 366.3 | 394.7 | 368.9 | 25.79 | 15.307 | | |
| 3,700.0 | 3,559.5 | 3,737.5 | 3,638.3 | 19.2 | 15.3 | 146.87 | 524.9 | 382.9 | 401.3 | 374.4 | 26.92 | 14.907 | | |
| 3,800.0 | 3,654.7 | 3,837.1 | 3,733.3 | 19.8 | 15.9 | 145.99 | 549.7 | 399.4 | 407.9 | 379.9 | 28.06 | 14.537 | | |
| 3,900.0 | 3,749.9 | 3,936.7 | 3,828.3 | 20.5 | 16.5 | 145.13 | 574.6 | 416.0 | 414.7 | 385.5 | 29.21 | 14.194 | | |
| 4,000.0 | 3,845.0 | 4,036.3 | 3,923.3 | 21.1 | 17.1 | 144.30 | 599.4 | 432.6 | 421.5 | 391.2 | 30.38 | 13.877 | | |
| 4,100.0 | 3,940.2 | 4,135.9 | 4,018.3 | 21.7 | 17.7 | 143.50 | 624.2 | 449.1 | 428.5 | 396.9 | 31.55 | 13.582 | | |
| 4,200.0 | 4,035.3 | 4,235.4 | 4,113.3 | 22.3 | 18.3 | 142.72 | 649.1 | 465.7 | 435.5 | 402.7 | 32.72 | 13.307 | | |
| 4,300.0 | 4,130.5 | 4,329.2 | 4,203.0 | 22.9 | 18.8 | 142.09 | 671.9 | 480.9 | 443.0 | 409.2 | 33.78 | 13.115 | | |
| 4,400.0 | 4,225.7 | 4,420.5 | 4,291.1 | 23.5 | 19.2 | 141.78 | 691.8 | 494.2 | 452.3 | 417.7 | 34.66 | 13.052 SF | | |
| 4,500.0 | 4,320.8 | 4,511.5 | 4,379.6 | 24.1 | 19.5 | 141.79 | 709.4 | 505.9 | 463.5 | 428.1 | 35.42 | 13.086 | | |
| 4,600.0 | 4,416.0 | 4,600.0 | 4,466.3 | 24.7 | 19.8 | 142.06 | 724.2 | 515.8 | 476.5 | 440.4 | 36.06 | 13.213 | | |
| 4,700.0 | 4,511.2 | 4,692.0 | 4,556.9 | 25.4 | 20.1 | 142.62 | 737.3 | 524.5 | 491.3 | 454.7 | 36.59 | 13.427 | | |

| Greeley-Rothe Pad Sec.1-T5N-R67W - Greeley-Rothe 1-5H - Wellbore #1 - Plan #2 (6-05-14) | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|-------------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning | |
| 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | -179.55 | -75.0 | -0.6 | 75.0 | 75.0 | 0.00 | N/A | | |
| 100.0 | 100.0 | 101.0 | 101.0 | 0.1 | 0.1 | -179.55 | -75.0 | -0.6 | 75.0 | 74.8 | 0.23 | 330.440 | | |
| 200.0 | 200.0 | 201.0 | 201.0 | 0.3 | 0.3 | -179.55 | -75.0 | -0.6 | 75.0 | 74.3 | 0.68 | 110.879 CC, ES | | |
| 300.0 | 300.0 | 301.0 | 301.0 | 0.6 | 0.6 | 164.37 | -75.0 | -0.6 | 76.7 | 75.6 | 1.13 | 67.685 | | |
| 400.0 | 399.8 | 400.8 | 400.8 | 0.8 | 0.8 | 165.33 | -75.0 | -0.6 | 81.7 | 80.2 | 1.59 | 51.276 | | |
| 500.0 | 499.5 | 500.5 | 500.5 | 1.0 | 1.0 | 166.69 | -75.0 | -0.6 | 90.2 | 88.1 | 2.06 | 43.863 | | |
| 600.0 | 598.7 | 599.7 | 599.7 | 1.3 | 1.2 | 168.22 | -75.0 | -0.6 | 102.1 | 99.6 | 2.52 | 40.516 | | |
| 700.0 | 697.5 | 698.5 | 698.5 | 1.6 | 1.5 | 169.72 | -75.0 | -0.6 | 117.5 | 114.5 | 2.99 | 39.352 | | |
| 800.0 | 795.6 | 796.6 | 796.6 | 2.0 | 1.7 | 171.09 | -75.0 | -0.6 | 136.3 | 132.8 | 3.45 | 39.491 | | |
| 900.0 | 893.1 | 894.1 | 894.1 | 2.4 | 1.9 | 172.29 | -75.0 | -0.6 | 158.6 | 154.6 | 3.92 | 40.462 | | |
| 1,000.0 | 989.6 | 990.6 | 990.6 | 2.9 | 2.1 | 173.31 | -75.0 | -0.6 | 184.3 | 179.9 | 4.39 | 41.990 | | |
| 1,100.0 | 1,085.3 | 1,086.3 | 1,086.3 | 3.5 | 2.3 | 174.16 | -75.0 | -0.6 | 213.3 | 208.5 | 4.86 | 43.898 | | |
| 1,200.0 | 1,180.4 | 1,181.4 | 1,181.4 | 4.0 | 2.5 | 174.90 | -75.0 | -0.6 | 243.9 | 238.6 | 5.35 | 45.625 | | |
| 1,300.0 | 1,275.6 | 1,283.8 | 1,283.8 | 4.6 | 2.8 | 175.39 | -74.0 | 0.2 | 273.5 | 267.7 | 5.85 | 46.788 | | |
| 1,400.0 | 1,370.8 | 1,389.7 | 1,389.6 | 5.2 | 3.0 | 175.46 | -70.1 | 3.3 | 300.1 | 293.7 | 6.35 | 47.237 | | |
| 1,500.0 | 1,465.9 | 1,497.5 | 1,497.0 | 5.8 | 3.3 | 175.21 | -62.9 | 9.0 | 323.4 | 316.5 | 6.88 | 47.029 | | |
| 1,600.0 | 1,561.1 | 1,606.8 | 1,605.5 | 6.4 | 3.5 | 174.67 | -52.4 | 17.3 | 343.4 | 335.9 | 7.42 | 46.268 | | |
| 1,700.0 | 1,656.3 | 1,717.4 | 1,714.6 | 7.0 | 3.8 | 173.88 | -38.4 | 28.2 | 360.0 | 352.0 | 7.99 | 45.046 | | |
| 1,800.0 | 1,751.4 | 1,828.4 | 1,823.4 | 7.6 | 4.2 | 172.85 | -21.1 | 41.9 | 373.4 | 364.8 | 8.59 | 43.461 | | |
| 1,900.0 | 1,846.6 | 1,927.5 | 1,920.1 | 8.2 | 4.5 | 171.87 | -4.3 | 55.1 | 385.3 | 376.1 | 9.19 | 41.909 | | |
| 2,000.0 | 1,941.7 | 2,026.5 | 2,016.8 | 8.8 | 4.8 | 170.95 | 12.6 | 68.4 | 397.3 | 387.4 | 9.81 | 40.514 | | |
| 2,100.0 | 2,036.9 | 2,125.6 | 2,113.6 | 9.4 | 5.2 | 170.08 | 29.4 | 81.6 | 409.3 | 398.9 | 10.44 | 39.212 | | |
| 2,200.0 | 2,132.1 | 2,224.7 | 2,210.3 | 10.1 | 5.6 | 169.27 | 46.2 | 94.9 | 421.5 | 410.4 | 11.09 | 38.022 | | |
| 2,300.0 | 2,227.2 | 2,323.8 | 2,307.1 | 10.7 | 6.0 | 168.50 | 63.0 | 108.1 | 433.8 | 422.0 | 11.75 | 36.928 | | |
| 2,400.0 | 2,322.4 | 2,422.9 | 2,403.8 | 11.3 | 6.4 | 167.77 | 79.9 | 121.3 | 446.1 | 433.7 | 12.42 | 35.921 | | |
| 2,500.0 | 2,417.6 | 2,521.9 | 2,500.5 | 11.9 | 6.8 | 167.08 | 96.7 | 134.6 | 458.5 | 445.4 | 13.10 | 34.992 | | |
| 2,600.0 | 2,512.7 | 2,621.0 | 2,597.3 | 12.5 | 7.2 | 166.42 | 113.5 | 147.8 | 471.0 | 457.2 | 13.80 | 34.134 | | |
| 2,700.0 | 2,607.9 | 2,720.1 | 2,694.0 | 13.1 | 7.6 | 165.80 | 130.3 | 161.1 | 483.5 | 469.0 | 14.50 | 33.340 | | |
| 2,800.0 | 2,703.1 | 2,819.2 | 2,790.8 | 13.7 | 8.1 | 165.22 | 147.1 | 174.3 | 496.1 | 480.9 | 15.22 | 32.603 SF | | |

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|---------------------------|----------------------------------|-------------------------------------|-----------------------------|
| Company: | KP KAUFFMAN | Local Co-ordinate Reference: | Well Greeley-Rothe 1-0H |
| Project: | SEC.1-T5N-R67W | TVD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Reference Site: | Greeley-Rothe Pad Sec.1-T5N-R67W | MD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Greeley-Rothe 1-0H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (6-5-14) | Offset TVD Reference: | Offset Datum |

| Offset Design | | Greeley-Rothe Pad Sec.1-T5N-R67W - Greeley-Rothe 1-6H - Wellbore #1 - Plan #2 (6-05-14) | | | | | | | | | | | Offset Site Error: | 0.0 ft | |
|-----------------------|---------------------|---|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|-------------------|--------------------|---------|--|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft | |
| Reference | | Offset | | Semi Major Axis | | Distance | | | | | | | | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | | | |
| 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | -179.57 | -100.0 | -0.8 | 100.0 | 100.0 | 0.00 | N/A | | | |
| 100.0 | 100.0 | 101.0 | 101.0 | 0.1 | 0.1 | -179.57 | -100.0 | -0.8 | 100.0 | 99.8 | 0.23 | 440.533 | | | |
| 200.0 | 200.0 | 201.0 | 201.0 | 0.3 | 0.3 | -179.57 | -100.0 | -0.8 | 100.0 | 99.3 | 0.68 | 147.820 CC, ES | | | |
| 300.0 | 300.0 | 301.0 | 301.0 | 0.6 | 0.6 | 164.27 | -100.0 | -0.8 | 101.7 | 100.6 | 1.13 | 89.742 | | | |
| 400.0 | 399.8 | 400.8 | 400.8 | 0.8 | 0.8 | 165.00 | -100.0 | -0.8 | 106.7 | 105.1 | 1.59 | 66.951 | | | |
| 500.0 | 499.5 | 500.5 | 500.5 | 1.0 | 1.0 | 166.08 | -100.0 | -0.8 | 115.2 | 113.1 | 2.06 | 56.004 | | | |
| 600.0 | 598.7 | 599.7 | 599.7 | 1.3 | 1.2 | 167.35 | -100.0 | -0.8 | 127.0 | 124.5 | 2.52 | 50.404 | | | |
| 700.0 | 697.5 | 698.5 | 698.5 | 1.6 | 1.5 | 168.67 | -100.0 | -0.8 | 142.4 | 139.4 | 2.99 | 47.672 | | | |
| 800.0 | 795.6 | 796.6 | 796.6 | 2.0 | 1.7 | 169.94 | -100.0 | -0.8 | 161.1 | 157.7 | 3.45 | 46.656 SF | | | |
| 900.0 | 893.1 | 894.1 | 894.1 | 2.4 | 1.9 | 171.09 | -100.0 | -0.8 | 183.3 | 179.4 | 3.92 | 46.741 | | | |
| 1,000.0 | 989.6 | 990.6 | 990.6 | 2.9 | 2.1 | 172.12 | -100.0 | -0.8 | 208.9 | 204.5 | 4.39 | 47.569 | | | |
| 1,100.0 | 1,085.3 | 1,086.3 | 1,086.3 | 3.5 | 2.3 | 173.01 | -100.0 | -0.8 | 237.9 | 233.1 | 4.86 | 48.910 | | | |
| 1,200.0 | 1,180.4 | 1,181.4 | 1,181.4 | 4.0 | 2.5 | 173.81 | -100.0 | -0.8 | 268.5 | 263.1 | 5.35 | 50.162 | | | |
| 1,300.0 | 1,275.6 | 1,276.6 | 1,276.6 | 4.6 | 2.8 | 174.45 | -100.0 | -0.8 | 299.1 | 293.2 | 5.84 | 51.167 | | | |
| 1,400.0 | 1,370.8 | 1,371.8 | 1,371.8 | 5.2 | 3.0 | 174.96 | -100.0 | -0.8 | 329.7 | 323.3 | 6.34 | 51.987 | | | |
| 1,500.0 | 1,465.9 | 1,466.9 | 1,466.9 | 5.8 | 3.2 | 175.39 | -100.0 | -0.8 | 360.3 | 353.4 | 6.84 | 52.668 | | | |
| 1,600.0 | 1,561.1 | 1,562.1 | 1,562.1 | 6.4 | 3.4 | 175.75 | -100.0 | -0.8 | 390.9 | 383.6 | 7.34 | 53.241 | | | |
| 1,700.0 | 1,656.3 | 1,665.5 | 1,665.5 | 7.0 | 3.6 | 176.03 | -99.5 | -0.2 | 421.0 | 413.2 | 7.86 | 53.566 | | | |
| 1,800.0 | 1,751.4 | 1,776.0 | 1,775.9 | 7.6 | 3.9 | 176.02 | -96.1 | 3.0 | 448.2 | 439.8 | 8.39 | 53.442 | | | |
| 1,900.0 | 1,846.6 | 1,888.5 | 1,888.0 | 8.2 | 4.1 | 175.73 | -89.6 | 9.3 | 472.2 | 463.3 | 8.93 | 52.889 | | | |
| 2,000.0 | 1,941.7 | 2,002.6 | 2,001.2 | 8.8 | 4.4 | 175.18 | -79.7 | 18.9 | 493.0 | 483.5 | 9.49 | 51.943 | | | |

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|---------------------------|----------------------------------|-------------------------------------|-----------------------------|
| Company: | KP KAUFFMAN | Local Co-ordinate Reference: | Well Greeley-Rothe 1-0H |
| Project: | SEC.1-T5N-R67W | TVD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Reference Site: | Greeley-Rothe Pad Sec.1-T5N-R67W | MD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Greeley-Rothe 1-0H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (6-5-14) | Offset TVD Reference: | Offset Datum |

| Offset Design Greeley-Rothe Pad Sec.1-T5N-R67W - Greeley-Rothe 1-7H - Wellbore #1 - Plan #2 (6-05-14) | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|--|------------------------|------------------------|------------------------|-------------------|----------------|-----------------------------|---|---------------|----------------------------|-----------------------------|-------------------------------|---------------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
| 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | -157.76 | -124.6 | -51.0 | 134.6 | | | | |
| 100.0 | 100.0 | 101.0 | 101.0 | 0.1 | 0.1 | -157.76 | -124.6 | -51.0 | 134.6 | 134.4 | 0.23 | 593.112 | |
| 200.0 | 200.0 | 201.0 | 201.0 | 0.3 | 0.3 | -157.76 | -124.6 | -51.0 | 134.6 | 134.0 | 0.68 | 199.018 CC, ES | |
| 300.0 | 300.0 | 301.0 | 301.0 | 0.6 | 0.6 | -174.26 | -124.6 | -51.0 | 136.4 | 135.2 | 1.13 | 120.324 | |
| 400.0 | 399.8 | 400.8 | 400.8 | 0.8 | 0.8 | -174.46 | -124.6 | -51.0 | 141.6 | 140.0 | 1.59 | 88.797 | |
| 500.0 | 499.5 | 500.5 | 500.5 | 1.0 | 1.0 | -174.77 | -124.6 | -51.0 | 150.3 | 148.2 | 2.06 | 73.098 | |
| 600.0 | 598.7 | 599.7 | 599.7 | 1.3 | 1.2 | -175.14 | -124.6 | -51.0 | 162.4 | 159.9 | 2.52 | 64.516 | |
| 700.0 | 697.5 | 698.5 | 698.5 | 1.6 | 1.5 | -175.54 | -124.6 | -51.0 | 178.0 | 175.0 | 2.98 | 59.733 | |
| 800.0 | 795.6 | 796.6 | 796.6 | 2.0 | 1.7 | -175.95 | -124.6 | -51.0 | 197.0 | 193.6 | 3.44 | 57.210 | |
| 900.0 | 893.1 | 894.1 | 894.1 | 2.4 | 1.9 | -176.33 | -124.6 | -51.0 | 219.5 | 215.6 | 3.91 | 56.135 | |
| 1,000.0 | 989.6 | 990.6 | 990.6 | 2.9 | 2.1 | -176.69 | -124.6 | -51.0 | 245.3 | 240.9 | 4.38 | 56.038 SF | |
| 1,100.0 | 1,085.3 | 1,086.3 | 1,086.3 | 3.5 | 2.3 | -177.01 | -124.6 | -51.0 | 274.5 | 269.7 | 4.85 | 56.619 | |
| 1,200.0 | 1,180.4 | 1,181.4 | 1,181.4 | 4.0 | 2.5 | -177.31 | -124.6 | -51.0 | 305.2 | 299.9 | 5.33 | 57.208 | |
| 1,300.0 | 1,275.6 | 1,276.6 | 1,276.6 | 4.6 | 2.8 | -177.56 | -124.6 | -51.0 | 335.9 | 330.1 | 5.83 | 57.645 | |
| 1,400.0 | 1,370.8 | 1,371.8 | 1,371.8 | 5.2 | 3.0 | -177.76 | -124.6 | -51.0 | 366.6 | 360.3 | 6.32 | 57.975 | |
| 1,500.0 | 1,465.9 | 1,466.9 | 1,466.9 | 5.8 | 3.2 | -177.93 | -124.6 | -51.0 | 397.3 | 390.5 | 6.82 | 58.229 | |
| 1,600.0 | 1,561.1 | 1,562.1 | 1,562.1 | 6.4 | 3.4 | -178.08 | -124.6 | -51.0 | 428.0 | 420.7 | 7.32 | 58.429 | |
| 1,700.0 | 1,656.3 | 1,657.3 | 1,657.3 | 7.0 | 3.6 | -178.21 | -124.6 | -51.0 | 458.7 | 450.9 | 7.83 | 58.588 | |
| 1,800.0 | 1,751.4 | 1,752.4 | 1,752.4 | 7.6 | 3.8 | -178.32 | -124.6 | -51.0 | 489.4 | 481.1 | 8.34 | 58.715 | |

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|---------------------------|----------------------------------|-------------------------------------|-----------------------------|
| Company: | KP KAUFFMAN | Local Co-ordinate Reference: | Well Greeley-Rothe 1-0H |
| Project: | SEC.1-T5N-R67W | TVD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Reference Site: | Greeley-Rothe Pad Sec.1-T5N-R67W | MD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Greeley-Rothe 1-0H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (6-5-14) | Offset TVD Reference: | Offset Datum |

| Offset Design Greeley-Rothe Pad Sec.1-T5N-R67W - Greeley-Rothe 1-8H - Wellbore #1 - Plan #2 (6-05-14) | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|--|------------------------|------------------------|------------------------|-------------------|----------------|--------------------------|---|---------------|-------------------------|--------------------------|----------------------------|---------------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | Warning |
| 0.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | -168.26 | -124.8 | -25.9 | 127.5 | 127.5 | 0.00 | N/A | |
| 100.0 | 100.0 | 102.0 | 102.0 | 0.1 | 0.1 | -168.26 | -124.8 | -25.9 | 127.5 | 127.3 | 0.23 | 556.059 | |
| 200.0 | 200.0 | 202.0 | 202.0 | 0.3 | 0.3 | -168.26 | -124.8 | -25.9 | 127.5 | 126.8 | 0.68 | 187.808 CC, ES | |
| 300.0 | 300.0 | 302.0 | 302.0 | 0.6 | 0.6 | 175.38 | -124.8 | -25.9 | 129.2 | 128.1 | 1.14 | 113.774 | |
| 400.0 | 399.8 | 401.8 | 401.8 | 0.8 | 0.8 | 175.55 | -124.8 | -25.9 | 134.4 | 132.8 | 1.60 | 84.181 | |
| 500.0 | 499.5 | 501.5 | 501.5 | 1.0 | 1.0 | 175.81 | -124.8 | -25.9 | 143.1 | 141.1 | 2.06 | 69.537 | |
| 600.0 | 598.7 | 600.7 | 600.7 | 1.3 | 1.2 | 176.12 | -124.8 | -25.9 | 155.3 | 152.8 | 2.52 | 61.621 | |
| 700.0 | 697.5 | 699.5 | 699.5 | 1.6 | 1.5 | 176.46 | -124.8 | -25.9 | 170.9 | 167.9 | 2.98 | 57.296 | |
| 800.0 | 795.6 | 797.6 | 797.6 | 2.0 | 1.7 | 176.79 | -124.8 | -25.9 | 189.9 | 186.5 | 3.45 | 55.109 | |
| 900.0 | 893.1 | 895.1 | 895.1 | 2.4 | 1.9 | 177.11 | -124.8 | -25.9 | 212.4 | 208.5 | 3.91 | 54.290 SF | |
| 1,000.0 | 989.6 | 991.6 | 991.6 | 2.9 | 2.1 | 177.40 | -124.8 | -25.9 | 238.3 | 233.9 | 4.38 | 54.395 | |
| 1,100.0 | 1,085.3 | 1,087.3 | 1,087.3 | 3.5 | 2.3 | 177.66 | -124.8 | -25.9 | 267.5 | 262.6 | 4.85 | 55.140 | |
| 1,200.0 | 1,180.4 | 1,182.4 | 1,182.4 | 4.0 | 2.5 | 177.90 | -124.8 | -25.9 | 298.2 | 292.8 | 5.34 | 55.866 | |
| 1,300.0 | 1,275.6 | 1,277.0 | 1,277.0 | 4.6 | 2.7 | 177.90 | -125.1 | -25.0 | 328.9 | 323.1 | 5.82 | 56.552 | |
| 1,400.0 | 1,370.8 | 1,371.2 | 1,371.1 | 5.2 | 2.9 | 177.40 | -126.4 | -21.1 | 359.9 | 353.6 | 6.29 | 57.200 | |
| 1,500.0 | 1,465.9 | 1,465.0 | 1,464.6 | 5.8 | 3.1 | 176.50 | -128.7 | -14.3 | 391.2 | 384.5 | 6.78 | 57.697 | |
| 1,600.0 | 1,561.1 | 1,558.1 | 1,557.2 | 6.4 | 3.3 | 175.31 | -131.9 | -4.7 | 422.9 | 415.6 | 7.29 | 58.008 | |
| 1,700.0 | 1,656.3 | 1,650.5 | 1,648.6 | 7.0 | 3.6 | 173.90 | -135.9 | 7.6 | 455.2 | 447.4 | 7.83 | 58.147 | |
| 1,800.0 | 1,751.4 | 1,743.8 | 1,740.7 | 7.6 | 3.8 | 172.41 | -140.7 | 22.0 | 488.0 | 479.6 | 8.40 | 58.077 | |

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|---------------------------|----------------------------------|-------------------------------------|-----------------------------|
| Company: | KP KAUFFMAN | Local Co-ordinate Reference: | Well Greeley-Rothe 1-0H |
| Project: | SEC.1-T5N-R67W | TVD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Reference Site: | Greeley-Rothe Pad Sec.1-T5N-R67W | MD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Greeley-Rothe 1-0H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (6-5-14) | Offset TVD Reference: | Offset Datum |

| Greeley-Rothe Pad Sec.1-T5N-R67W - Greeley-Rothe 1-9H - Wellbore #1 - Plan #2 (6-6-14) | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|--|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|-------------------|--------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | | Warning |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | | |
| 0.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | -179.25 | -125.0 | -1.6 | 125.0 | 125.0 | 0.00 | N/A | | |
| 100.0 | 100.0 | 102.0 | 102.0 | 0.1 | 0.1 | -179.25 | -125.0 | -1.6 | 125.0 | 124.8 | 0.23 | 545.436 | | |
| 200.0 | 200.0 | 202.0 | 202.0 | 0.3 | 0.3 | -179.25 | -125.0 | -1.6 | 125.0 | 124.4 | 0.68 | 184.220 CC, ES | | |
| 300.0 | 300.0 | 302.0 | 302.0 | 0.6 | 0.6 | 164.53 | -125.0 | -1.6 | 126.7 | 125.6 | 1.14 | 111.623 | | |
| 400.0 | 399.8 | 401.8 | 401.8 | 0.8 | 0.8 | 165.11 | -125.0 | -1.6 | 131.8 | 130.2 | 1.60 | 82.548 | | |
| 500.0 | 499.5 | 501.5 | 501.5 | 1.0 | 1.0 | 165.98 | -125.0 | -1.6 | 140.2 | 138.2 | 2.06 | 68.111 | | |
| 600.0 | 598.7 | 600.7 | 600.7 | 1.3 | 1.2 | 167.04 | -125.0 | -1.6 | 152.1 | 149.6 | 2.52 | 60.283 | | |
| 700.0 | 697.5 | 699.5 | 699.5 | 1.6 | 1.5 | 168.18 | -125.0 | -1.6 | 167.4 | 164.4 | 2.99 | 56.000 | | |
| 800.0 | 795.6 | 797.6 | 797.6 | 2.0 | 1.7 | 169.31 | -125.0 | -1.6 | 186.1 | 182.6 | 3.46 | 53.839 | | |
| 900.0 | 893.1 | 895.1 | 895.1 | 2.4 | 1.9 | 170.38 | -125.0 | -1.6 | 208.3 | 204.3 | 3.93 | 53.043 SF | | |
| 1,000.0 | 989.6 | 991.6 | 991.6 | 2.9 | 2.1 | 171.36 | -125.0 | -1.6 | 233.8 | 229.4 | 4.40 | 53.174 | | |
| 1,100.0 | 1,085.3 | 1,082.3 | 1,082.3 | 3.5 | 2.3 | 171.99 | -125.9 | -0.9 | 263.6 | 258.8 | 4.85 | 54.359 | | |
| 1,200.0 | 1,180.4 | 1,171.0 | 1,170.9 | 4.0 | 2.5 | 172.16 | -128.9 | 1.7 | 296.8 | 291.5 | 5.31 | 55.897 | | |
| 1,300.0 | 1,275.6 | 1,258.4 | 1,258.1 | 4.6 | 2.6 | 171.92 | -133.9 | 5.9 | 331.9 | 326.1 | 5.78 | 57.416 | | |
| 1,400.0 | 1,370.8 | 1,344.4 | 1,343.6 | 5.2 | 2.8 | 171.39 | -140.8 | 11.8 | 368.8 | 362.5 | 6.26 | 58.870 | | |
| 1,500.0 | 1,465.9 | 1,428.8 | 1,427.2 | 5.8 | 3.0 | 170.67 | -149.4 | 19.1 | 407.6 | 400.8 | 6.76 | 60.251 | | |
| 1,600.0 | 1,561.1 | 1,511.6 | 1,508.9 | 6.4 | 3.2 | 169.83 | -159.7 | 27.9 | 448.2 | 441.0 | 7.28 | 61.549 | | |
| 1,700.0 | 1,656.3 | 1,599.8 | 1,595.6 | 7.0 | 3.5 | 168.91 | -172.0 | 38.5 | 490.3 | 482.5 | 7.83 | 62.610 | | |

| | | | |
|---------------------------|----------------------------------|-------------------------------------|-----------------------------|
| Company: | KP KAUFFMAN | Local Co-ordinate Reference: | Well Greeley-Rothe 1-0H |
| Project: | SEC.1-T5N-R67W | TVD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Reference Site: | Greeley-Rothe Pad Sec.1-T5N-R67W | MD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Greeley-Rothe 1-0H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (6-5-14) | Offset TVD Reference: | Offset Datum |

Reference Depths are relative to WELL @ 4890.0ft (RKB - 15')

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Greeley-Rothe 1-0H

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.43°



| | | | |
|---------------------------|----------------------------------|-------------------------------------|-----------------------------|
| Company: | KP KAUFFMAN | Local Co-ordinate Reference: | Well Greeley-Rothe 1-0H |
| Project: | SEC.1-T5N-R67W | TVD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Reference Site: | Greeley-Rothe Pad Sec.1-T5N-R67W | MD Reference: | WELL @ 4890.0ft (RKB - 15') |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Greeley-Rothe 1-0H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (6-5-14) | Offset TVD Reference: | Offset Datum |

Reference Depths are relative to WELL @ 4890.0ft (RKB - 15')

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Greeley-Rothe 1-0H

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.43°

