

# Directional Survey Report

Chesapeake Operating, Inc.

Well ID: 819031

Well Name: Keller 11 State 1

Well Bore: Original Well Bore

Plane of Vertical Section: 0.0 degrees

| Survey Type | Meas. Depth | Inc. | Azimuth | TVD    | Coordinates |        | Closure | Vertical Section | Dog Leg Severity |
|-------------|-------------|------|---------|--------|-------------|--------|---------|------------------|------------------|
|             |             |      |         |        | N-S         | E-W    |         |                  |                  |
| ** Tieln    | 0.0         | 0.00 | 0.0     | 0.0    |             |        |         | 0.0              |                  |
| INC         | 238.0       | 0.50 |         |        |             |        |         |                  |                  |
| INC         | 589.0       | 0.50 |         |        |             |        |         |                  |                  |
| INC         | 630.0       | 1.30 | 196.1   | 629.9  | S 6.9       | W 2.0  | 7.1     | -6.9             | 0.206            |
| INC         | 732.0       | 0.70 | 196.3   | 731.9  | S 8.6       | W 2.5  | 8.9     | -8.6             | 0.588            |
| INC         | 921.0       | 0.08 | 86.3    | 920.9  | S 9.7       | W 2.7  | 10.0    | -9.7             | 0.387            |
| INC         | 1110.0      | 2.20 | 86.3    | 1109.9 | S 9.4       | E 1.1  | 9.5     | -9.4             | 1.122            |
| INC         | 1300.0      | 1.20 | 88.1    | 1299.8 | S 9.1       | E 6.7  | 11.3    | -9.1             | 0.527            |
| INC         | 1489.0      | 0.80 | 85.2    | 1488.8 | S 9.0       | E 10.0 | 13.4    | -9.0             | 0.213            |
| INC         | 1753.0      | 1.40 | 128.2   | 1752.7 | S 10.8      | E 14.4 | 18.0    | -10.8            | 0.371            |
| INC         | 1967.0      | 2.30 | 152.4   | 1966.6 | S 16.2      | E 18.4 | 24.5    | -16.2            | 0.548            |
| INC         | 2062.0      | 2.30 | 144.4   | 2061.5 | S 19.5      | E 20.4 | 28.2    | -19.5            | 0.338            |
| INC         | 2157.0      | 2.50 | 131.4   | 2156.4 | S 22.4      | E 23.1 | 32.1    | -22.4            | 0.609            |
| INC         | 2251.0      | 2.60 | 136.5   | 2250.4 | S 25.3      | E 26.1 | 36.3    | -25.3            | 0.264            |
| INC         | 2346.0      | 2.50 | 138.0   | 2345.3 | S 28.4      | E 28.9 | 40.5    | -28.4            | 0.127            |
| INC         | 2473.0      | 3.20 | 151.8   | 2472.1 | S 33.6      | E 32.5 | 46.7    | -33.6            | 0.768            |
| INC         | 2536.0      | 3.50 | 159.3   | 2535.0 | S 36.9      | E 34.0 | 50.2    | -36.9            | 0.842            |
| INC         | 2600.0      | 3.40 | 164.0   | 2598.9 | S 40.6      | E 35.2 | 53.7    | -40.6            | 0.469            |
| INC         | 2663.0      | 2.50 | 178.5   | 2661.8 | S 43.7      | E 35.8 | 56.5    | -43.7            | 1.845            |
| INC         | 2726.0      | 2.20 | 190.6   | 2724.7 | S 46.3      | E 35.6 | 58.4    | -46.3            | 0.918            |
| INC         | 2821.0      | 1.10 | 185.8   | 2819.7 | S 49.0      | E 35.1 | 60.3    | -49.0            | 1.166            |
| INC         | 2916.0      | 0.70 | 153.9   | 2914.7 | S 50.4      | E 35.3 | 61.6    | -50.4            | 0.660            |
| INC         | 3011.0      | 1.10 | 134.2   | 3009.7 | S 51.6      | E 36.2 | 63.0    | -51.6            | 0.526            |
| INC         | 3201.0      | 1.80 | 176.2   | 3199.6 | S 55.8      | E 37.7 | 67.4    | -55.8            | 0.646            |
| INC         | 3290.0      | 3.10 | 178.9   | 3288.5 | S 59.6      | E 37.9 | 70.6    | -59.6            | 1.466            |
| INC         | 3295.0      | 3.60 | 186.3   | 3293.5 | S 59.9      | E 37.8 | 70.9    | -59.9            | 13.201           |
| INC         | 3390.0      | 3.10 | 178.9   | 3388.4 | S 65.5      | E 37.6 | 75.5    | -65.5            | 0.695            |
| INC         | 3485.0      | 2.20 | 159.0   | 3483.3 | S 69.7      | E 38.3 | 79.5    | -69.7            | 1.341            |
| MWD         | 3582.0      | 1.40 | 138.8   | 3580.2 | S 72.4      | E 39.7 | 82.5    | -72.4            | 1.041            |

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Well Name: Keller 11 State 1

Well Bore: Original Well Bore

Plane of Vertical Section: 0.0 degrees

| Survey<br>Type | Meas.<br>Depth | Inc. | Azimuth | TVD    | Coordinates |        | Closure | Vertical<br>Section | Dog Leg<br>Severity |
|----------------|----------------|------|---------|--------|-------------|--------|---------|---------------------|---------------------|
|                |                |      |         |        | N-S         | E-W    |         |                     |                     |
| MWD            | 3677.0         | 1.80 | 14.4    | 3675.2 | S 71.8      | E 40.8 | 82.6    | -71.8               | 2.986               |
| MWD            | 3772.0         | 1.10 | 122.2   | 3770.2 | S 70.8      | E 42.0 | 82.3    | -70.8               | 2.504               |
| MWD            | 3835.0         | 0.90 | 112.9   | 3833.2 | S 71.3      | E 43.0 | 83.3    | -71.3               | 0.408               |
| MWD            | 3867.0         | 0.80 | 102.7   | 3865.2 | S 71.5      | E 43.4 | 83.6    | -71.5               | 0.566               |

Calculations using Minimum Curvature Method

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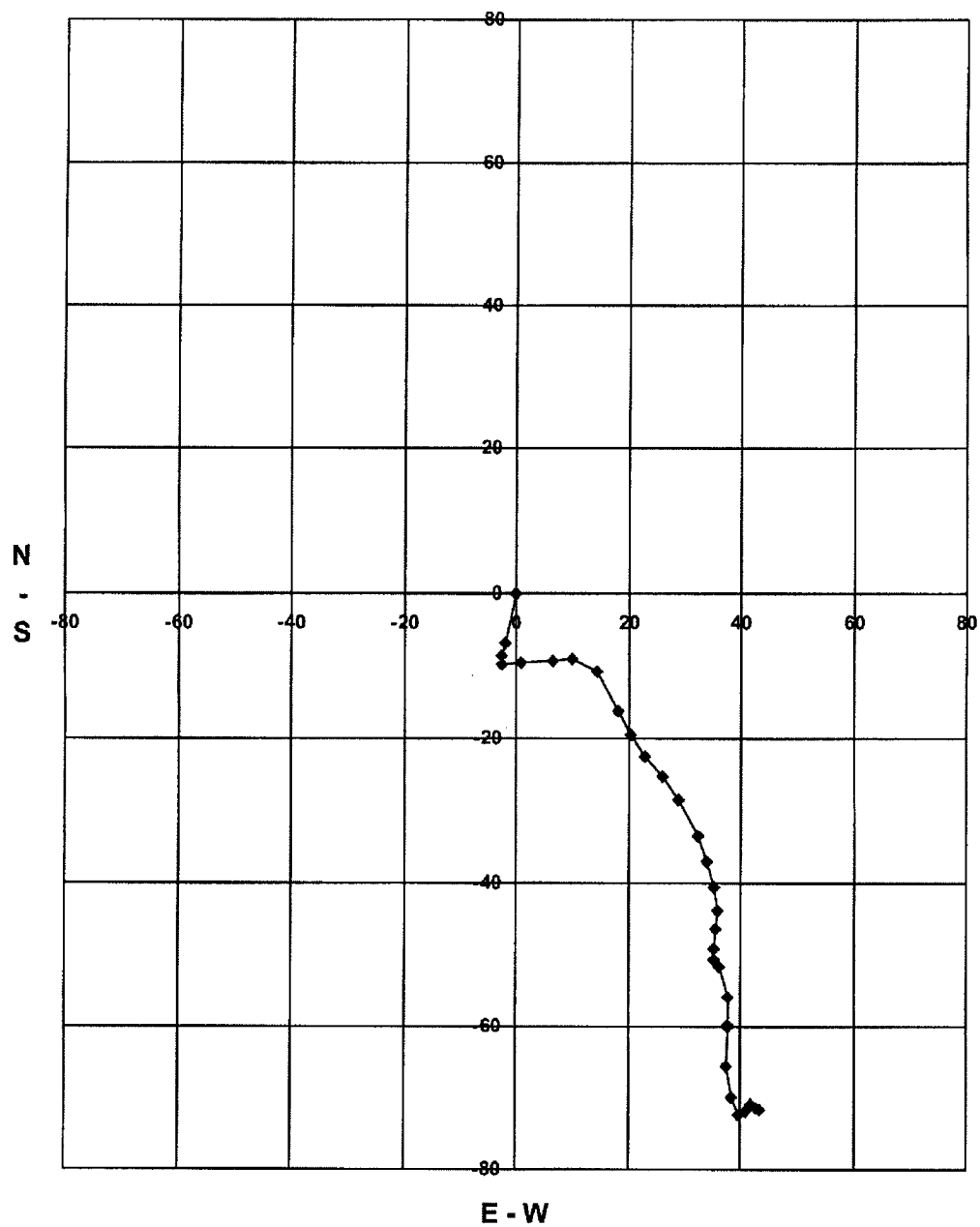
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# Well Plan View

Well ID: 819031

Chesapeake Operating, Inc.

Well Name: Keller 11 State 1



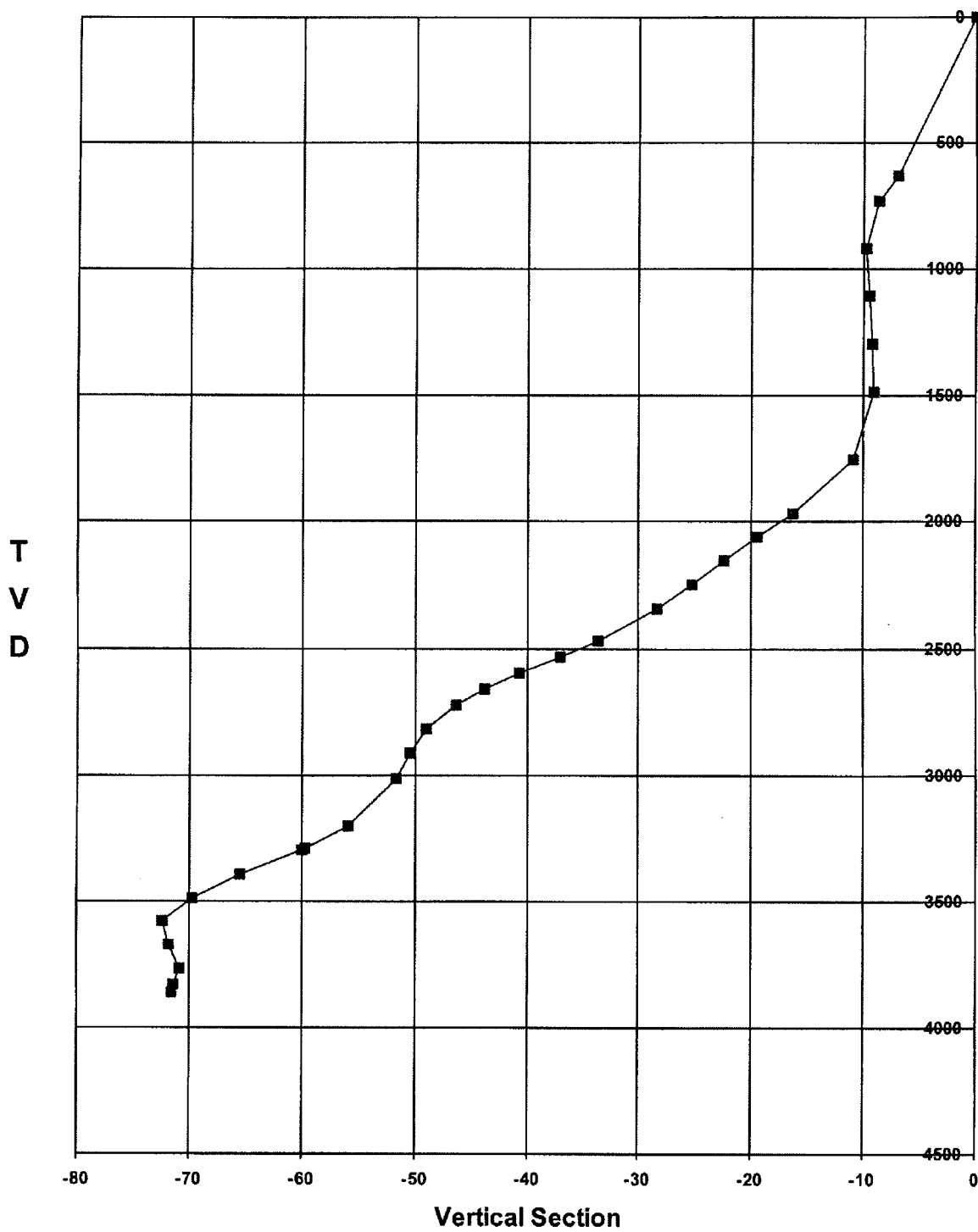
# Well Elevation View

Well ID: 819031

Chesapeake Operating, Inc.

Well Name: Keller 11 State 1

Plane of Vertical Section: 0.0 degrees



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