



Project: Mary Prospect
 Site: Howell Pad
 Well: Howell 2H
 Wellbore: OH
 Design: As Drilled



WELL DETAILS: Howell 2H

+N/-S +E/W 0.0 0.0
 Northing Easting 401682.98 1635238.08
 Longitude Latitude 80° 47' 40.014 W 35° 44' 298 N

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well 1302.0 & KB 18' @ 1320 usft (Saxon 141)
 Vertical (TVD) Reference: GL 1302.0 & KB 18' @ 1320 usft (Saxon 141)
 Section (VS) Reference: Slot - (0.0N, 0.0E)
 Measured Depth Reference: GL 1302.0 & KB 18' @ 1320 usft (Saxon 141)
 Calculation Method: Minimum Curvature

PROJECT DETAILS: Mary Prospect

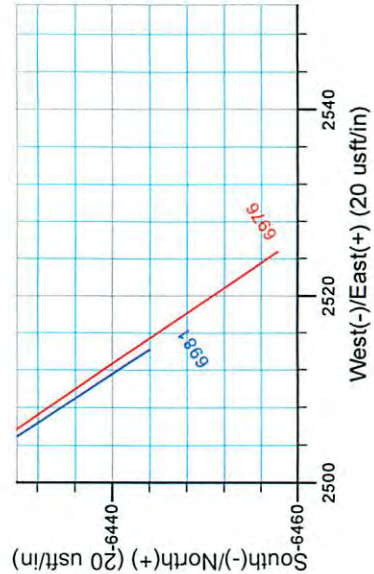
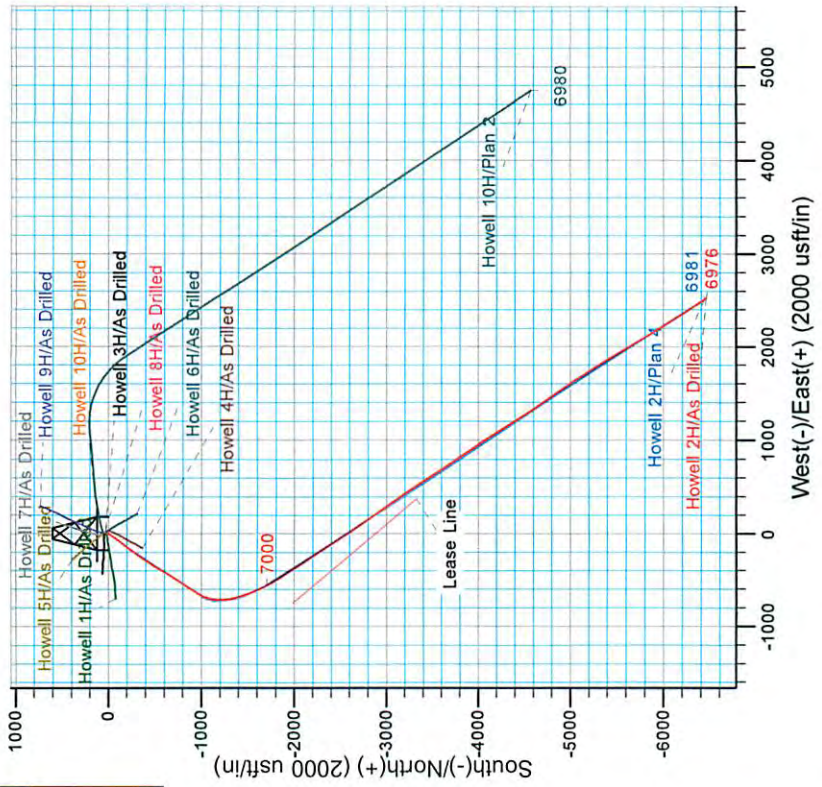
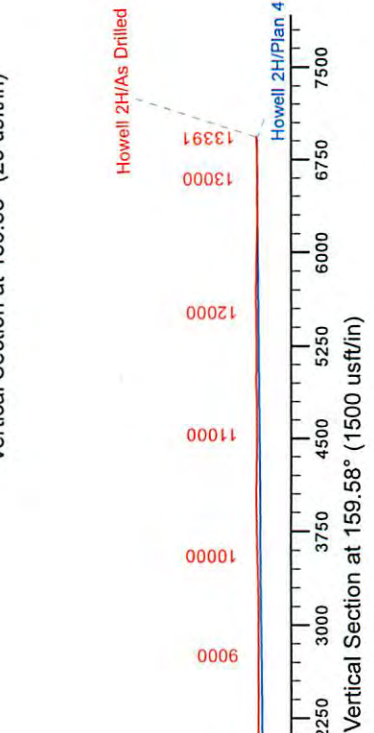
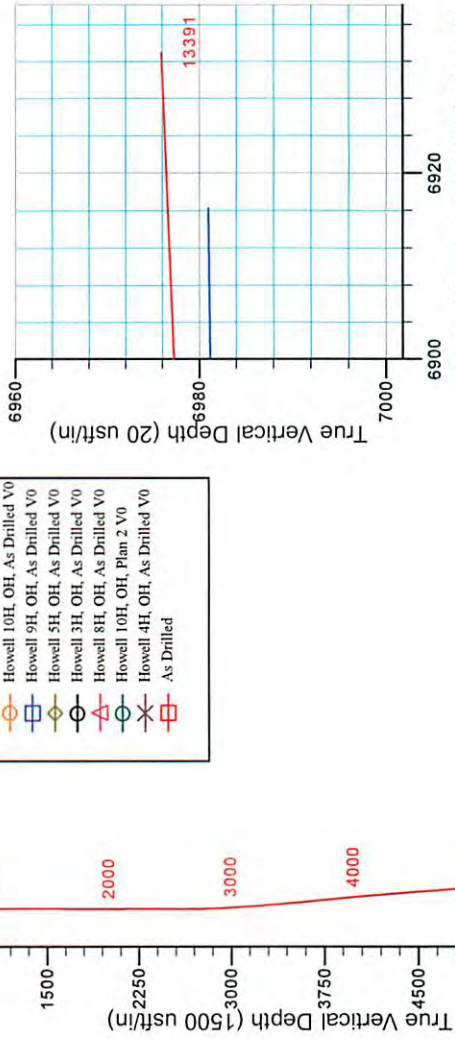
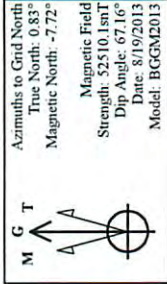
Geodetic System: US State Plane 1927 (Exact solution)
 Datum: NAD 1927 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone: West Virginia North 4701
 System Datum: Mean Sea Level

SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/W | Dleg | T/Face | V/Set | Target |
|-----|--------|-------|--------|--------|---------|--------|------|--------|--------|------------------|
| 1 | 4867.0 | 10.12 | 212.69 | 4842.2 | -258.0 | -192.1 | 0.00 | 0.00 | 170.5 | |
| 2 | 4967.0 | 10.12 | 212.69 | 4940.7 | -272.8 | -201.6 | 0.00 | 0.00 | 180.8 | |
| 3 | 5731.7 | 35.06 | 213.34 | 5647.0 | -506.7 | -354.6 | 3.00 | 0.90 | 343.2 | |
| 4 | 6810.2 | 35.06 | 213.34 | 6550.9 | -598.3 | -677.9 | 0.00 | 0.00 | 683.6 | |
| 5 | 7782.5 | 90.50 | 147.00 | 7030.0 | -1746.1 | -536.5 | 8.00 | -69.57 | 1431.7 | Howell 2H_LP3 |
| 6 | 3384.2 | 90.50 | 147.00 | 6981.0 | -6444.0 | 2514.2 | 0.00 | 0.00 | 6917.1 | Howell 2H_PBH1.3 |

LEGEND

- Howell 1H, OH, As Drilled V0
- Howell 6H, OH, As Drilled V0
- Howell 2H, OH, Plan 4 V0
- Howell 7H, OH, As Drilled V0
- Howell 10H, OH, As Drilled V0
- Howell 9H, OH, As Drilled V0
- Howell 5H, OH, As Drilled V0
- Howell 3H, OH, As Drilled V0
- Howell 8H, OH, As Drilled V0
- Howell 10H, OH, Plan 2 V0
- Howell 4H, OH, As Drilled V0
- As Drilled

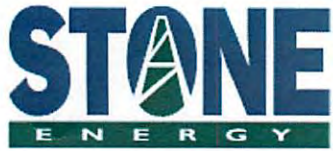


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Stone Energy

Mary Prospect
Howell Pad
Howell 2H

OH

Design: As Drilled

Standard Survey Report

29 August, 2013



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Survey Report



| | | | |
|------------------|---------------|-------------------------------------|--------------------------------------------|
| Company: | Stone Energy | Local Co-ordinate Reference: | Well Howell 2H |
| Project: | Mary Prospect | TVD Reference: | GL 1302' & KB 18' @ 1320.0usft (Saxon 141) |
| Site: | Howell Pad | MD Reference: | GL 1302' & KB 18' @ 1320.0usft (Saxon 141) |
| Well: | Howell 2H | North Reference: | Grid |
| Wellbore: | OH | Survey Calculation Method: | Minimum Curvature |
| Design: | As Drilled | Database: | Northeast District |

| | | | |
|--------------------|--------------------------------------|----------------------|----------------|
| Project | Mary Prospect, West Virginia | | |
| Map System: | US State Plane 1927 (Exact solution) | System Datum: | Mean Sea Level |
| Geo Datum: | NAD 1927 (NADCON CONUS) | | |
| Map Zone: | West Virginia North 4701 | | |

| | | | | | |
|------------------------------|------------|---------------------|-------------------|--------------------------|------------------|
| Site | Howell Pad | | | | |
| Site Position: | | Northing: | 401,702.68 usft | Latitude: | 39° 35' 44.492 N |
| From: | Map | Easting: | 1,635,235.83 usft | Longitude: | 80° 47' 40.046 W |
| Position Uncertainty: | 0.0 usft | Slot Radius: | 13-3/16 " | Grid Convergence: | -0.83 ° |

| | | | | | | |
|-----------------------------|--------------|----------|----------------------------|-------------------|----------------------|------------------|
| Well | Howell 2H | | | | | |
| Well Position | +N/-S | 0.0 usft | Northing: | 401,682.98 usft | Latitude: | 39° 35' 44.298 N |
| | +E/-W | 0.0 usft | Easting: | 1,635,238.08 usft | Longitude: | 80° 47' 40.014 W |
| Position Uncertainty | | 0.0 usft | Wellhead Elevation: | usft | Ground Level: | 1,302.0 usft |

| | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | OH | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2010 | 3/19/2013 | -8.49 | 67.17 | 52,602 |
| | IGRF2010 | 7/29/2013 | -8.50 | 67.14 | 52,558 |
| | BGGM2013 | 8/19/2013 | -8.55 | 67.16 | 52,510 |

| | | | | | |
|--------------------------|--------------------------------|---------------------|---------------------|----------------------|--------|
| Design | As Drilled | | | | |
| Audit Notes: | | | | | |
| Version: | 1.0 | Phase: | ACTUAL | Tie On Depth: | 0.0 |
| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft) | Direction (°) | |
| | 0.0 | 0.0 | 0.0 | | 159.58 |

| | | | | | |
|-----------------------|------------------|--------------------------|-------------------------|----------------------------------------|--|
| Survey Program | Date | 8/29/2013 | | | |
| From (usft) | To (usft) | Survey (Wellbore) | Tool Name | Description | |
| 18.0 | 2,303.0 | Survey 1 - Gyro (OH) | SDI Standard Keeper 103 | SDI Standard Wireline Keeper ver 1.0.3 | |
| 2,370.9 | 13,391.0 | Survey 2 - MWD (OH) | MWD SDI | MWD - Standard ver 1.0.1 | |

| | | | | | | | | | | |
|------------------------------|------------------------|--------------------|------------------------------|---------------------|---------------------|--------------------------------|--------------------------------|-------------------------------|------------------------------|--|
| Survey | | | | | | | | | | |
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | |
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | |
| 18.0 | 0.00 | 360.00 | 18.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | |
| Ground Level | | | | | | | | | | |
| 103.0 | 0.47 | 309.15 | 103.0 | 0.2 | -0.3 | -0.3 | 0.55 | 0.55 | 0.00 | |
| First SDI Gyro Survey | | | | | | | | | | |
| 203.0 | 0.23 | 272.04 | 203.0 | 0.5 | -0.8 | -0.7 | 0.32 | -0.24 | -37.11 | |
| 303.0 | 0.19 | 268.43 | 303.0 | 0.5 | -1.2 | -0.9 | 0.04 | -0.04 | -3.61 | |

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| Well: | Howell 2H | North Reference: | Grid |
| Wellbore: | OH | Survey Calculation Method: | Minimum Curvature |
| Design: | As Drilled | Database: | Northeast District |

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|-----------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 403.0 | 0.15 | 248.05 | 403.0 | 0.4 | -1.4 | -0.9 | 0.07 | -0.04 | -20.38 |
| 503.0 | 0.16 | 202.61 | 503.0 | 0.3 | -1.6 | -0.8 | 0.12 | 0.01 | -45.44 |
| 603.0 | 0.11 | 203.91 | 603.0 | 0.0 | -1.7 | -0.6 | 0.05 | -0.05 | 1.30 |
| 703.0 | 0.21 | 123.38 | 703.0 | -0.1 | -1.6 | -0.4 | 0.22 | 0.10 | -80.53 |
| 803.0 | 0.10 | 204.86 | 803.0 | -0.3 | -1.5 | -0.2 | 0.22 | -0.11 | 81.48 |
| 903.0 | 0.07 | 214.95 | 903.0 | -0.5 | -1.6 | -0.1 | 0.03 | -0.03 | 10.09 |
| 1,003.0 | 0.04 | 276.35 | 1,003.0 | -0.5 | -1.6 | -0.1 | 0.06 | -0.03 | 61.40 |
| 1,103.0 | 0.11 | 160.75 | 1,103.0 | -0.6 | -1.6 | 0.0 | 0.13 | 0.07 | -115.60 |
| 1,203.0 | 0.05 | 82.39 | 1,203.0 | -0.7 | -1.5 | 0.1 | 0.11 | -0.06 | -78.36 |
| 1,303.0 | 0.13 | 111.32 | 1,303.0 | -0.7 | -1.4 | 0.2 | 0.09 | 0.08 | 28.93 |
| 1,403.0 | 0.26 | 107.36 | 1,403.0 | -0.8 | -1.1 | 0.4 | 0.13 | 0.13 | -3.96 |
| 1,503.0 | 0.22 | 93.97 | 1,503.0 | -0.9 | -0.7 | 0.6 | 0.07 | -0.04 | -13.39 |
| 1,603.0 | 0.29 | 23.57 | 1,603.0 | -0.7 | -0.4 | 0.5 | 0.30 | 0.07 | -70.40 |
| 1,703.0 | 0.37 | 36.05 | 1,703.0 | -0.2 | -0.1 | 0.1 | 0.11 | 0.08 | 12.48 |
| 1,803.0 | 0.53 | 14.20 | 1,803.0 | 0.5 | 0.2 | -0.4 | 0.23 | 0.16 | -21.85 |
| 1,903.0 | 0.12 | 357.46 | 1,903.0 | 1.1 | 0.3 | -0.9 | 0.42 | -0.41 | -16.74 |
| 2,003.0 | 0.43 | 253.40 | 2,003.0 | 1.1 | 0.0 | -1.0 | 0.47 | 0.31 | -104.06 |
| 2,103.0 | 0.64 | 238.27 | 2,103.0 | 0.7 | -0.9 | -0.9 | 0.25 | 0.21 | -15.13 |
| 2,203.0 | 0.57 | 233.18 | 2,203.0 | 0.1 | -1.7 | -0.7 | 0.09 | -0.07 | -5.09 |
| 2,303.0 | 0.46 | 252.56 | 2,303.0 | -0.3 | -2.5 | -0.6 | 0.20 | -0.11 | 19.38 |
| Last SDI Gyro Survey | | | | | | | | | |
| 2,370.9 | 0.62 | 277.47 | 2,370.9 | -0.4 | -3.2 | -0.7 | 0.41 | 0.24 | 36.68 |
| First SDI MWD Survey | | | | | | | | | |
| 2,484.0 | 0.57 | 228.62 | 2,484.0 | -0.7 | -4.2 | -0.8 | 0.44 | -0.04 | -43.19 |
| 2,578.0 | 0.53 | 209.34 | 2,577.9 | -1.4 | -4.7 | -0.4 | 0.20 | -0.04 | -20.51 |
| 2,669.0 | 1.45 | 214.59 | 2,668.9 | -2.7 | -5.6 | 0.5 | 1.01 | 1.01 | 5.77 |
| 2,762.0 | 2.94 | 206.68 | 2,761.9 | -5.8 | -7.3 | 2.8 | 1.63 | 1.60 | -8.51 |
| 2,855.0 | 4.22 | 207.72 | 2,854.7 | -10.9 | -10.0 | 6.8 | 1.38 | 1.38 | 1.12 |
| 2,946.0 | 5.38 | 207.10 | 2,945.4 | -17.7 | -13.5 | 11.9 | 1.28 | 1.27 | -0.68 |
| 3,037.0 | 6.06 | 209.57 | 3,035.9 | -25.7 | -17.8 | 17.8 | 0.79 | 0.75 | 2.71 |
| 3,129.0 | 6.71 | 215.40 | 3,127.3 | -34.3 | -23.3 | 24.0 | 1.00 | 0.71 | 6.34 |
| 3,220.0 | 6.65 | 211.51 | 3,217.7 | -43.1 | -29.2 | 30.2 | 0.50 | -0.07 | -4.27 |
| 3,313.0 | 7.21 | 214.96 | 3,310.0 | -52.5 | -35.3 | 36.8 | 0.75 | 0.60 | 3.71 |
| 3,407.0 | 8.26 | 217.65 | 3,403.2 | -62.7 | -42.8 | 43.8 | 1.18 | 1.12 | 2.86 |
| 3,500.0 | 9.59 | 218.30 | 3,495.0 | -74.0 | -51.7 | 51.3 | 1.43 | 1.43 | 0.70 |
| 3,592.0 | 9.97 | 214.91 | 3,585.7 | -86.6 | -61.0 | 59.8 | 0.75 | 0.41 | -3.68 |
| 3,682.0 | 10.25 | 217.27 | 3,674.3 | -99.3 | -70.3 | 68.5 | 0.56 | 0.31 | 2.62 |
| 3,778.0 | 10.52 | 214.56 | 3,768.7 | -113.3 | -80.5 | 78.1 | 0.58 | 0.28 | -2.82 |
| 3,871.0 | 9.92 | 219.35 | 3,860.3 | -126.5 | -90.4 | 87.0 | 1.12 | -0.65 | 5.15 |
| 3,965.0 | 10.44 | 219.19 | 3,952.8 | -139.4 | -100.9 | 95.4 | 0.55 | 0.55 | -0.17 |
| 4,059.0 | 10.29 | 215.76 | 4,045.3 | -152.8 | -111.2 | 104.4 | 0.68 | -0.16 | -3.65 |
| 4,150.0 | 10.51 | 212.82 | 4,134.8 | -166.4 | -120.4 | 113.9 | 0.63 | 0.24 | -3.23 |
| 4,244.0 | 10.17 | 217.41 | 4,227.2 | -180.2 | -130.1 | 123.5 | 0.95 | -0.36 | 4.88 |
| 4,336.0 | 9.25 | 223.21 | 4,317.9 | -192.0 | -140.1 | 131.1 | 1.48 | 1.00 | 6.30 |

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|------------------|---------------|-------------------------------------|--------------------------------------------|
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| Site: | Howell Pad | MD Reference: | GL 1302' & KB 18' @ 1320.0usft (Saxon 141) |
| Well: | Howell 2H | North Reference: | Grid |
| Wellbore: | OH | Survey Calculation Method: | Minimum Curvature |
| Design: | As Drilled | Database: | Northeast District |

| Survey | | | | | | | | | | |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|--|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | |
| 4,430.0 | 9.11 | 221.22 | 4,410.7 | -203.1 | -150.2 | 138.0 | 0.37 | -0.15 | -2.12 | |
| 4,523.0 | 8.79 | 216.56 | 4,502.6 | -214.4 | -159.3 | 145.3 | 0.85 | -0.34 | -5.01 | |
| 4,617.0 | 9.09 | 219.51 | 4,595.4 | -225.9 | -168.3 | 153.0 | 0.58 | 0.32 | 3.14 | |
| 4,710.0 | 9.02 | 218.12 | 4,687.3 | -237.3 | -177.4 | 160.4 | 0.25 | -0.08 | -1.49 | |
| 4,807.0 | 9.21 | 214.75 | 4,783.1 | -249.6 | -186.6 | 168.8 | 0.58 | 0.20 | -3.47 | |
| 4,869.0 | 10.15 | 212.63 | 4,844.2 | -258.3 | -192.3 | 175.0 | 1.62 | 1.52 | -3.42 | |
| 4,932.0 | 11.25 | 213.05 | 4,906.1 | -268.1 | -198.7 | 182.0 | 1.75 | 1.75 | 0.67 | |
| 4,996.0 | 9.87 | 211.86 | 4,969.0 | -278.0 | -205.0 | 189.0 | 2.18 | -2.16 | -1.86 | |
| 5,060.0 | 9.93 | 214.04 | 5,032.0 | -287.3 | -211.0 | 195.6 | 0.59 | 0.09 | 3.41 | |
| 5,123.0 | 12.53 | 219.56 | 5,093.8 | -297.0 | -218.4 | 202.2 | 4.46 | 4.13 | 8.76 | |
| 5,186.0 | 14.93 | 221.33 | 5,155.0 | -308.4 | -228.1 | 209.4 | 3.87 | 3.81 | 2.81 | |
| 5,249.0 | 18.78 | 215.60 | 5,215.3 | -322.7 | -239.3 | 218.9 | 6.65 | 6.11 | -9.10 | |
| 5,313.0 | 21.88 | 215.22 | 5,275.3 | -340.9 | -252.2 | 231.4 | 4.85 | 4.84 | -0.59 | |
| 5,376.0 | 23.27 | 215.64 | 5,333.5 | -360.6 | -266.2 | 245.0 | 2.22 | 2.21 | 0.67 | |
| 5,440.0 | 26.66 | 214.46 | 5,391.5 | -382.7 | -281.7 | 260.3 | 5.35 | 5.30 | -1.84 | |
| 5,504.0 | 27.23 | 214.23 | 5,448.6 | -406.6 | -298.1 | 277.1 | 0.91 | 0.89 | -0.36 | |
| 5,567.0 | 30.01 | 213.96 | 5,503.9 | -431.6 | -315.0 | 294.6 | 4.42 | 4.41 | -0.43 | |
| 5,631.0 | 30.98 | 213.28 | 5,559.0 | -458.7 | -333.0 | 313.7 | 1.61 | 1.52 | -1.06 | |
| 5,694.0 | 32.76 | 211.53 | 5,612.5 | -486.7 | -350.8 | 333.8 | 3.18 | 2.83 | -2.78 | |
| 5,758.0 | 32.96 | 209.59 | 5,666.3 | -516.6 | -368.5 | 355.6 | 1.67 | 0.31 | -3.03 | |
| 5,821.0 | 31.81 | 209.73 | 5,719.5 | -546.0 | -385.1 | 377.3 | 1.83 | -1.83 | 0.22 | |
| 5,885.0 | 31.79 | 210.08 | 5,773.9 | -575.2 | -402.0 | 398.8 | 0.29 | -0.03 | 0.55 | |
| 5,948.0 | 31.33 | 210.39 | 5,827.5 | -603.7 | -418.6 | 419.7 | 0.77 | -0.73 | 0.49 | |
| 6,011.0 | 31.35 | 212.46 | 5,881.4 | -631.6 | -435.6 | 440.0 | 1.71 | 0.03 | 3.29 | |
| 6,075.0 | 31.62 | 213.28 | 5,935.9 | -659.7 | -453.8 | 459.9 | 0.79 | 0.42 | 1.28 | |
| 6,138.0 | 32.24 | 213.84 | 5,989.4 | -687.5 | -472.2 | 479.5 | 1.09 | 0.98 | 0.89 | |
| 6,201.0 | 32.75 | 214.52 | 6,042.5 | -715.5 | -491.2 | 499.1 | 1.00 | 0.81 | 1.08 | |
| 6,265.0 | 33.92 | 213.09 | 6,096.0 | -744.7 | -510.8 | 519.7 | 2.20 | 1.83 | -2.23 | |
| 6,328.0 | 34.20 | 212.86 | 6,148.2 | -774.3 | -530.0 | 540.7 | 0.49 | 0.44 | -0.37 | |
| 6,391.0 | 33.45 | 213.00 | 6,200.5 | -803.7 | -549.1 | 561.7 | 1.20 | -1.19 | 0.22 | |
| 6,454.0 | 33.69 | 212.78 | 6,253.0 | -833.0 | -568.0 | 582.5 | 0.43 | 0.38 | -0.35 | |
| 6,518.0 | 33.87 | 213.53 | 6,306.2 | -862.8 | -587.4 | 603.6 | 0.71 | 0.28 | 1.17 | |
| 6,582.0 | 33.55 | 212.06 | 6,359.5 | -892.6 | -606.7 | 624.9 | 1.37 | -0.50 | -2.30 | |
| 6,645.0 | 32.81 | 211.74 | 6,412.2 | -921.9 | -624.9 | 645.9 | 1.21 | -1.17 | -0.51 | |
| 6,709.0 | 32.82 | 212.13 | 6,466.0 | -951.3 | -643.2 | 667.1 | 0.33 | 0.02 | 0.61 | |
| 6,741.0 | 33.33 | 212.79 | 6,492.8 | -966.1 | -652.6 | 677.7 | 1.95 | 1.59 | 2.06 | |
| 6,773.0 | 32.70 | 212.67 | 6,519.6 | -980.7 | -662.0 | 688.1 | 1.98 | -1.97 | -0.38 | |
| 6,804.0 | 32.94 | 211.47 | 6,545.7 | -995.0 | -671.0 | 698.4 | 2.24 | 0.77 | -3.87 | |
| 6,836.0 | 34.74 | 206.64 | 6,572.3 | -1,010.6 | -679.6 | 709.9 | 10.11 | 5.63 | -15.09 | |
| 6,868.0 | 36.82 | 203.39 | 6,598.2 | -1,027.5 | -687.5 | 723.1 | 8.80 | 6.50 | -10.16 | |
| 6,900.0 | 38.62 | 199.76 | 6,623.5 | -1,045.7 | -694.7 | 737.6 | 8.93 | 5.63 | -11.34 | |
| 6,931.0 | 39.43 | 196.94 | 6,647.6 | -1,064.2 | -700.8 | 752.8 | 6.30 | 2.61 | -9.10 | |
| 6,963.0 | 39.91 | 194.08 | 6,672.2 | -1,083.9 | -706.3 | 769.7 | 5.90 | 1.50 | -8.94 | |

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Scientific Drilling International
Survey Report



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|------------------|---------------|-------------------------------------|--------------------------------------------|
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| Wellbore: | OH | Survey Calculation Method: | Minimum Curvature |
| Design: | As Drilled | Database: | Northeast District |

Survey

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 6,994.0 | 39.94 | 189.57 | 6,696.0 | -1,103.4 | -710.3 | 786.2 | 9.34 | 0.10 | -14.55 |
| 7,026.0 | 41.46 | 185.50 | 6,720.3 | -1,124.1 | -713.1 | 804.6 | 9.56 | 4.75 | -12.72 |
| 7,057.0 | 43.86 | 184.70 | 6,743.1 | -1,145.0 | -714.9 | 823.6 | 7.94 | 7.74 | -2.58 |
| 7,089.0 | 45.17 | 184.71 | 6,765.9 | -1,167.3 | -716.8 | 843.9 | 4.09 | 4.09 | 0.03 |
| 7,121.0 | 47.35 | 182.96 | 6,788.0 | -1,190.4 | -718.3 | 865.0 | 7.87 | 6.81 | -5.47 |
| 7,153.0 | 50.73 | 179.95 | 6,809.0 | -1,214.6 | -718.9 | 887.4 | 12.73 | 10.56 | -9.41 |
| 7,185.0 | 52.96 | 177.41 | 6,828.8 | -1,239.7 | -718.3 | 911.2 | 9.35 | 6.97 | -7.94 |
| 7,216.0 | 54.62 | 175.75 | 6,847.1 | -1,264.7 | -716.8 | 935.1 | 6.88 | 5.35 | -5.35 |
| 7,248.0 | 55.77 | 173.18 | 6,865.4 | -1,290.8 | -714.3 | 960.5 | 7.51 | 3.59 | -8.03 |
| 7,279.0 | 56.98 | 169.47 | 6,882.5 | -1,316.3 | -710.4 | 985.7 | 10.70 | 3.90 | -11.97 |
| 7,311.0 | 59.16 | 166.44 | 6,899.5 | -1,342.9 | -704.7 | 1,012.6 | 10.53 | 6.81 | -9.47 |
| 7,343.0 | 61.24 | 165.22 | 6,915.4 | -1,369.8 | -697.9 | 1,040.2 | 7.29 | 6.50 | -3.81 |
| 7,374.0 | 63.48 | 164.15 | 6,929.7 | -1,396.3 | -690.7 | 1,067.6 | 7.85 | 7.23 | -3.45 |
| 7,406.0 | 65.87 | 163.29 | 6,943.4 | -1,424.0 | -682.5 | 1,096.4 | 7.85 | 7.47 | -2.69 |
| 7,437.0 | 69.44 | 162.85 | 6,955.2 | -1,451.5 | -674.2 | 1,125.0 | 11.59 | 11.52 | -1.42 |
| 7,469.0 | 72.67 | 161.94 | 6,965.6 | -1,480.3 | -665.0 | 1,155.3 | 10.45 | 10.09 | -2.84 |
| 7,501.0 | 75.02 | 162.19 | 6,974.5 | -1,509.6 | -655.6 | 1,186.0 | 7.38 | 7.34 | 0.78 |
| 7,533.0 | 78.27 | 161.07 | 6,981.9 | -1,539.1 | -645.8 | 1,217.1 | 10.71 | 10.16 | -3.50 |
| 7,565.0 | 81.02 | 159.38 | 6,987.6 | -1,568.7 | -635.1 | 1,248.5 | 10.04 | 8.59 | -5.28 |
| 7,597.0 | 83.88 | 156.99 | 6,991.8 | -1,598.2 | -623.3 | 1,280.2 | 11.61 | 8.94 | -7.47 |
| 7,629.0 | 85.53 | 154.67 | 6,994.8 | -1,627.2 | -610.3 | 1,312.0 | 8.87 | 5.16 | -7.25 |
| 7,660.0 | 86.37 | 153.60 | 6,997.0 | -1,655.1 | -596.8 | 1,342.8 | 4.38 | 2.71 | -3.45 |
| 7,690.0 | 86.74 | 153.55 | 6,998.8 | -1,681.9 | -583.5 | 1,372.6 | 1.24 | 1.23 | -0.17 |
| 7,720.0 | 88.53 | 152.44 | 7,000.0 | -1,708.6 | -569.9 | 1,402.4 | 7.02 | 5.97 | -3.70 |
| 7,780.0 | 90.74 | 150.53 | 7,000.4 | -1,761.3 | -541.2 | 1,461.8 | 4.87 | 3.68 | -3.18 |
| 7,840.0 | 91.24 | 148.48 | 6,999.4 | -1,813.0 | -510.8 | 1,520.8 | 3.52 | 0.83 | -3.42 |
| 7,901.0 | 90.87 | 147.55 | 6,998.3 | -1,864.7 | -478.5 | 1,580.6 | 1.64 | -0.61 | -1.52 |
| 7,962.0 | 90.40 | 146.49 | 6,997.6 | -1,915.9 | -445.3 | 1,640.1 | 1.90 | -0.77 | -1.74 |
| 8,022.0 | 91.11 | 146.52 | 6,996.8 | -1,965.9 | -412.2 | 1,698.6 | 1.18 | 1.18 | 0.05 |
| 8,083.0 | 91.38 | 146.67 | 6,995.5 | -2,016.8 | -378.6 | 1,758.0 | 0.51 | 0.44 | 0.25 |
| 8,143.0 | 90.10 | 146.07 | 6,994.7 | -2,066.8 | -345.4 | 1,816.4 | 2.36 | -2.13 | -1.00 |
| 8,204.0 | 89.97 | 146.45 | 6,994.6 | -2,117.5 | -311.5 | 1,875.8 | 0.66 | -0.21 | 0.62 |
| 8,264.0 | 90.37 | 146.75 | 6,994.5 | -2,167.6 | -278.4 | 1,934.2 | 0.83 | 0.67 | 0.50 |
| 8,326.0 | 90.60 | 146.84 | 6,993.9 | -2,219.5 | -244.5 | 1,994.7 | 0.40 | 0.37 | 0.15 |
| 8,386.0 | 90.67 | 146.90 | 6,993.3 | -2,269.7 | -211.7 | 2,053.2 | 0.15 | 0.12 | 0.10 |
| 8,447.0 | 90.20 | 146.25 | 6,992.8 | -2,320.6 | -178.1 | 2,112.6 | 1.31 | -0.77 | -1.07 |
| 8,507.0 | 90.30 | 146.59 | 6,992.6 | -2,370.6 | -144.9 | 2,171.1 | 0.59 | 0.17 | 0.57 |
| 8,568.0 | 89.66 | 146.56 | 6,992.6 | -2,421.5 | -111.3 | 2,230.5 | 1.05 | -1.05 | -0.05 |
| 8,629.0 | 90.64 | 147.26 | 6,992.4 | -2,472.6 | -78.0 | 2,290.0 | 1.97 | 1.61 | 1.15 |
| 8,690.0 | 90.57 | 146.84 | 6,991.8 | -2,523.8 | -44.8 | 2,349.6 | 0.70 | -0.11 | -0.69 |
| 8,753.0 | 89.43 | 145.62 | 6,991.8 | -2,576.2 | -9.8 | 2,410.8 | 2.65 | -1.81 | -1.94 |
| 8,817.0 | 90.44 | 145.76 | 6,991.8 | -2,629.0 | 26.3 | 2,473.0 | 1.59 | 1.58 | 0.22 |
| 8,881.0 | 90.59 | 146.10 | 6,991.3 | -2,682.0 | 62.1 | 2,535.2 | 0.54 | 0.09 | 0.53 |
| 8,944.0 | 88.39 | 145.35 | 6,991.9 | -2,734.1 | 97.6 | 2,596.3 | 3.55 | -3.35 | -1.19 |

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Scientific Drilling International
Survey Report



| | | | |
|------------------|---------------|-------------------------------------|--------------------------------------------|
| Company: | Stone Energy | Local Co-ordinate Reference: | Well Howell 2H |
| Project: | Mary Prospect | TVD Reference: | GL 1302' & KB 18' @ 1320.0usft (Saxon 141) |
| Site: | Howell Pad | MD Reference: | GL 1302' & KB 18' @ 1320.0usft (Saxon 141) |
| Well: | Howell 2H | North Reference: | Grid |
| Wellbore: | OH | Survey Calculation Method: | Minimum Curvature |
| Design: | As Drilled | Database: | Northeast District |

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 9,008.0 | 89.09 | 145.39 | 6,993.3 | -2,786.7 | 133.9 | 2,658.4 | 1.10 | 1.09 | 0.06 |
| 9,070.0 | 89.90 | 145.08 | 6,993.9 | -2,837.7 | 169.3 | 2,718.4 | 1.40 | 1.31 | -0.50 |
| 9,134.0 | 90.50 | 145.13 | 6,993.7 | -2,890.2 | 205.9 | 2,780.4 | 0.94 | 0.94 | 0.08 |
| 9,197.0 | 90.27 | 144.79 | 6,993.2 | -2,941.7 | 242.1 | 2,841.3 | 0.65 | -0.37 | -0.54 |
| 9,261.0 | 90.70 | 144.41 | 6,992.7 | -2,993.9 | 279.2 | 2,903.2 | 0.90 | 0.67 | -0.59 |
| 9,324.0 | 89.76 | 144.54 | 6,992.4 | -3,045.2 | 315.8 | 2,964.0 | 1.51 | -1.49 | 0.21 |
| 9,387.0 | 89.33 | 144.84 | 6,992.9 | -3,096.6 | 352.2 | 3,024.9 | 0.83 | -0.68 | 0.48 |
| 9,451.0 | 89.73 | 145.88 | 6,993.5 | -3,149.2 | 388.5 | 3,086.9 | 1.74 | 0.63 | 1.63 |
| 9,514.0 | 90.37 | 146.63 | 6,993.4 | -3,201.6 | 423.5 | 3,148.2 | 1.57 | 1.02 | 1.19 |
| 9,577.0 | 90.80 | 146.58 | 6,992.8 | -3,254.2 | 458.2 | 3,209.6 | 0.69 | 0.68 | -0.08 |
| 9,641.0 | 91.31 | 147.49 | 6,991.6 | -3,307.9 | 493.0 | 3,272.1 | 1.63 | 0.80 | 1.42 |
| 9,704.0 | 90.57 | 146.25 | 6,990.6 | -3,360.7 | 527.5 | 3,333.5 | 2.29 | -1.17 | -1.97 |
| 9,767.0 | 90.60 | 146.48 | 6,989.9 | -3,413.1 | 562.4 | 3,394.8 | 0.37 | 0.05 | 0.37 |
| 9,831.0 | 91.58 | 148.28 | 6,988.7 | -3,467.0 | 596.8 | 3,457.4 | 3.20 | 1.53 | 2.81 |
| 9,894.0 | 91.21 | 147.92 | 6,987.2 | -3,520.5 | 630.1 | 3,519.1 | 0.82 | -0.59 | -0.57 |
| 9,957.0 | 90.60 | 146.57 | 6,986.2 | -3,573.5 | 664.2 | 3,580.6 | 2.35 | -0.97 | -2.14 |
| 10,019.0 | 91.44 | 146.57 | 6,985.1 | -3,625.2 | 698.4 | 3,641.0 | 1.35 | 1.35 | 0.00 |
| 10,083.0 | 92.18 | 146.56 | 6,983.0 | -3,678.6 | 733.6 | 3,703.4 | 1.16 | 1.16 | -0.02 |
| 10,146.0 | 92.12 | 146.60 | 6,980.7 | -3,731.1 | 768.3 | 3,764.7 | 0.11 | -0.10 | 0.06 |
| 10,210.0 | 92.02 | 147.10 | 6,978.4 | -3,784.7 | 803.3 | 3,827.1 | 0.80 | -0.16 | 0.78 |
| 10,273.0 | 91.68 | 147.11 | 6,976.3 | -3,837.5 | 837.4 | 3,888.6 | 0.54 | -0.54 | 0.02 |
| 10,336.0 | 90.87 | 146.55 | 6,974.9 | -3,890.3 | 871.9 | 3,950.0 | 1.56 | -1.29 | -0.89 |
| 10,400.0 | 90.23 | 146.35 | 6,974.3 | -3,943.6 | 907.3 | 4,012.3 | 1.05 | -1.00 | -0.31 |
| 10,463.0 | 89.20 | 146.00 | 6,974.6 | -3,995.9 | 942.3 | 4,073.6 | 1.73 | -1.63 | -0.56 |
| 10,526.0 | 89.09 | 146.98 | 6,975.6 | -4,048.4 | 977.1 | 4,135.0 | 1.57 | -0.17 | 1.56 |
| 10,589.0 | 88.32 | 147.36 | 6,977.0 | -4,101.4 | 1,011.3 | 4,196.5 | 1.36 | -1.22 | 0.60 |
| 10,653.0 | 89.16 | 147.88 | 6,978.4 | -4,155.4 | 1,045.5 | 4,259.1 | 1.54 | 1.31 | 0.81 |
| 10,715.0 | 90.50 | 148.58 | 6,978.6 | -4,208.1 | 1,078.2 | 4,319.8 | 2.44 | 2.16 | 1.13 |
| 10,779.0 | 90.27 | 148.73 | 6,978.2 | -4,262.8 | 1,111.5 | 4,382.7 | 0.43 | -0.36 | 0.23 |
| 10,842.0 | 88.96 | 148.17 | 6,978.6 | -4,316.5 | 1,144.4 | 4,444.5 | 2.26 | -2.08 | -0.89 |
| 10,906.0 | 89.16 | 148.28 | 6,979.6 | -4,370.9 | 1,178.1 | 4,507.2 | 0.36 | 0.31 | 0.17 |
| 10,969.0 | 90.30 | 148.63 | 6,979.9 | -4,424.5 | 1,211.1 | 4,569.0 | 1.89 | 1.81 | 0.56 |
| 11,033.0 | 90.87 | 148.47 | 6,979.3 | -4,479.1 | 1,244.5 | 4,631.9 | 0.93 | 0.89 | -0.25 |
| 11,096.0 | 89.56 | 146.91 | 6,979.0 | -4,532.4 | 1,278.1 | 4,693.5 | 3.23 | -2.08 | -2.48 |
| 11,160.0 | 90.50 | 147.10 | 6,979.0 | -4,586.1 | 1,313.0 | 4,756.0 | 1.50 | 1.47 | 0.30 |
| 11,223.0 | 90.87 | 146.10 | 6,978.2 | -4,638.6 | 1,347.7 | 4,817.4 | 1.69 | 0.59 | -1.59 |
| 11,286.0 | 91.24 | 145.64 | 6,977.1 | -4,690.8 | 1,383.0 | 4,878.6 | 0.94 | 0.59 | -0.73 |
| 11,350.0 | 91.01 | 145.61 | 6,975.8 | -4,743.6 | 1,419.1 | 4,940.7 | 0.36 | -0.36 | -0.05 |
| 11,413.0 | 89.40 | 144.66 | 6,975.6 | -4,795.3 | 1,455.2 | 5,001.7 | 2.97 | -2.56 | -1.51 |
| 11,476.0 | 88.15 | 144.64 | 6,977.0 | -4,846.7 | 1,491.6 | 5,062.5 | 1.98 | -1.98 | -0.03 |
| 11,539.0 | 88.86 | 144.49 | 6,978.6 | -4,898.1 | 1,527.9 | 5,123.4 | 1.19 | 1.13 | 0.40 |
| 11,603.0 | 89.77 | 145.25 | 6,976.4 | -4,950.6 | 1,564.6 | 5,185.4 | 1.53 | 1.42 | 0.56 |
| 11,666.0 | 90.64 | 146.01 | 6,979.1 | -5,002.6 | 1,600.1 | 5,246.5 | 1.83 | 1.38 | 1.21 |

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|------------------|---------------|-------------------------------------|--------------------------------------------|
| Company: | Stone Energy | Local Co-ordinate Reference: | Well Howell 2H |
| Project: | Mary Prospect | TVD Reference: | GL 1302' & KB 18' @ 1320.0usft (Saxon 141) |
| Site: | Howell Pad | MD Reference: | GL 1302' & KB 18' @ 1320.0usft (Saxon 141) |
| Well: | Howell 2H | North Reference: | Grid |
| Wellbore: | OH | Survey Calculation Method: | Minimum Curvature |
| Design: | As Drilled | Database: | Northeast District |

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|----------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 11,729.0 | 91.08 | 146.51 | 6,978.2 | -5,055.0 | 1,635.1 | 5,307.8 | 1.06 | 0.70 | 0.79 |
| 11,793.0 | 90.94 | 146.92 | 6,977.1 | -5,108.4 | 1,670.2 | 5,370.2 | 0.68 | -0.22 | 0.64 |
| 11,856.0 | 91.81 | 147.75 | 6,975.6 | -5,161.5 | 1,704.2 | 5,431.7 | 1.91 | 1.38 | 1.32 |
| 11,920.0 | 90.67 | 147.54 | 6,974.2 | -5,215.5 | 1,738.5 | 5,494.3 | 1.81 | -1.78 | -0.33 |
| 11,983.0 | 90.54 | 147.67 | 6,973.5 | -5,268.7 | 1,772.2 | 5,555.9 | 0.29 | -0.21 | 0.21 |
| 12,046.0 | 91.21 | 147.94 | 6,972.5 | -5,322.0 | 1,805.8 | 5,617.6 | 1.15 | 1.06 | 0.43 |
| 12,110.0 | 89.26 | 148.59 | 6,972.3 | -5,376.4 | 1,839.5 | 5,680.4 | 3.21 | -3.05 | 1.02 |
| 12,174.0 | 88.42 | 148.13 | 6,973.6 | -5,430.9 | 1,873.0 | 5,743.1 | 1.50 | -1.31 | -0.72 |
| 12,237.0 | 89.53 | 148.57 | 6,974.7 | -5,484.5 | 1,906.1 | 5,804.9 | 1.90 | 1.76 | 0.70 |
| 12,300.0 | 89.60 | 148.40 | 6,975.2 | -5,538.2 | 1,939.0 | 5,866.7 | 0.29 | 0.11 | -0.27 |
| 12,361.0 | 89.26 | 147.56 | 6,975.8 | -5,590.0 | 1,971.3 | 5,926.5 | 1.49 | -0.56 | -1.38 |
| 12,425.0 | 88.19 | 148.59 | 6,977.2 | -5,644.3 | 2,005.2 | 5,989.2 | 2.32 | -1.67 | 1.61 |
| 12,488.0 | 87.07 | 148.39 | 6,979.8 | -5,697.9 | 2,038.1 | 6,051.0 | 1.81 | -1.78 | -0.32 |
| 12,551.0 | 87.92 | 149.37 | 6,982.6 | -5,751.8 | 2,070.6 | 6,112.8 | 2.06 | 1.35 | 1.56 |
| 12,614.0 | 88.32 | 148.75 | 6,984.6 | -5,805.8 | 2,103.0 | 6,174.7 | 1.17 | 0.63 | -0.98 |
| 12,678.0 | 90.00 | 149.31 | 6,985.6 | -5,860.7 | 2,135.9 | 6,237.6 | 2.77 | 2.63 | 0.88 |
| 12,741.0 | 91.38 | 149.87 | 6,984.8 | -5,915.0 | 2,167.8 | 6,299.6 | 2.36 | 2.19 | 0.89 |
| 12,804.0 | 90.44 | 148.74 | 6,983.8 | -5,969.2 | 2,199.9 | 6,361.6 | 2.33 | -1.49 | -1.79 |
| 12,866.0 | 90.84 | 148.17 | 6,983.1 | -6,022.0 | 2,232.4 | 6,422.5 | 1.12 | 0.65 | -0.92 |
| 12,929.0 | 90.40 | 147.22 | 6,982.4 | -6,075.3 | 2,266.0 | 6,484.1 | 1.66 | -0.70 | -1.51 |
| 12,993.0 | 88.72 | 146.03 | 6,982.9 | -6,128.7 | 2,301.3 | 6,546.5 | 3.22 | -2.63 | -1.86 |
| 13,056.0 | 89.40 | 145.94 | 6,984.0 | -6,180.9 | 2,336.5 | 6,607.7 | 1.09 | 1.08 | -0.14 |
| 13,120.0 | 90.23 | 145.69 | 6,984.2 | -6,233.8 | 2,372.4 | 6,669.9 | 1.35 | 1.30 | -0.39 |
| 13,184.0 | 91.34 | 145.92 | 6,983.3 | -6,286.8 | 2,408.4 | 6,732.0 | 1.77 | 1.73 | 0.36 |
| 13,247.0 | 92.01 | 145.64 | 6,981.5 | -6,338.8 | 2,443.8 | 6,793.2 | 1.15 | 1.06 | -0.44 |
| 13,311.0 | 92.29 | 145.83 | 6,979.0 | -6,391.7 | 2,479.8 | 6,855.3 | 0.53 | 0.44 | 0.30 |
| Last SDI MWD Survey | | | | | | | | | |
| 13,391.0 | 92.29 | 145.83 | 6,975.9 | -6,457.8 | 2,524.7 | 6,932.9 | 0.00 | 0.00 | 0.00 |
| Projection to Bit | | | | | | | | | |

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates | | Comment |
|-----------------------|-----------------------|-------------------|--------------|-----------------------|
| | | +N/-S (usft) | +E/-W (usft) | |
| 18.0 | 18.0 | 0.0 | 0.0 | Ground Level |
| 103.0 | 103.0 | 0.2 | -0.3 | First SDI Gyro Survey |
| 2,303.0 | 2,303.0 | -0.3 | -2.5 | Last SDI Gyro Survey |
| 2,370.9 | 2,370.9 | -0.4 | -3.2 | First SDI MWD Survey |
| 13,311.0 | 6,979.0 | -6,391.7 | 2,479.8 | Last SDI MWD Survey |
| 13,391.0 | 6,975.9 | -6,457.8 | 2,524.7 | Projection to Bit |

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Checked By: _____ Approved By: _____ Date: _____