



Bayswater

Windsor

Heidenrich 10-2

Heidenrich 10-2

Heidenrich 10-2

Design: Heidenrich 10-2

Standard Survey Report

03 August, 2015

| | | | |
|------------------|-----------------|-------------------------------------|---------------------------------------|
| Company: | Bayswater | Local Co-ordinate Reference: | Well Heidenrich 10-2 |
| Project: | Windsor | TVD Reference: | WELL @ 4789.00ft (Original Well Elev) |
| Site: | Heidenrich 10-2 | MD Reference: | WELL @ 4789.00ft (Original Well Elev) |
| Well: | Heidenrich 10-2 | North Reference: | True |
| Wellbore: | Heidenrich 10-2 | Survey Calculation Method: | Minimum Curvature |
| Design: | Heidenrich 10-2 | Database: | Compass DB Connection |

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|--------------------|---------------------------|----------------------|-----------------------------|
| Project | Windsor, Colorado | | |
| Map System: | US State Plane 1983 | System Datum: | Mean Sea Level |
| Geo Datum: | North American Datum 1983 | | |
| Map Zone: | Colorado Central Zone | | Using geodetic scale factor |

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|-----------------------|-----------------|--------------|--------------------|-------------------|-------------|
| Site | Heidenrich 10-2 | | | | |
| Site Position: | | Northing: | 1,972,239.201 usft | Latitude: | 40.498650 |
| From: | Lat/Long | Easting: | 3,267,428.570 usft | Longitude: | -104.538630 |
| Position Uncertainty: | 0.00 ft | Slot Radius: | 13-3/16 " | Grid Convergence: | 0.61 ° |

| Well | Heidenrich 10-2 | | | | | |
|----------------------|-----------------|---------|---------------------|--------------------|---------------|-------------|
| Well Position | +N/-S | 0.00 ft | Northing: | 1,972,239.201 usft | Latitude: | 40.498650 |
| | +E/-W | 0.00 ft | Easting: | 3,267,428.570 usft | Longitude: | -104.538630 |
| Position Uncertainty | | 0.00 ft | Wellhead Elevation: | 4,789.00 ft | Ground Level: | 4,789.00 ft |

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|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | Heidenrich 10-2 | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2015 | 8/3/2015 | 8.30 | 67.02 | 52,681 |

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|-------------------|--------------------------|---------------|---------------|------------------|------|
| Design | Heidenrich 10-2 | | | | |
| Audit Notes: | | | | | |
| Version: | 1.0 | Phase: | ACTUAL | Tie On Depth: | 0.00 |
| Vertical Section: | Depth From (TVD) (ft) | +N/-S (ft) | +E/-W (ft) | Direction (°) | |
| | 0.00 | 0.00 | 0.00 | 30.78 | |

| | | | | |
|-----------------------|----------------|-----------------------------------|------------------|----------------------------------|
| Survey Program | Date | 8/3/2015 | | |
| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description |
| 100.00 | 6,950.00 | Heidenrich 10-2 (Heidenrich 10-2) | NS-GYRO-MS | North sensing gyrocompassing m/s |

| | | | | | | | | | |
|----------------------------|------------------------|--------------------|----------------------------|-------------------|-------------------|------------------------------|--------------------------------|-------------------------------|------------------------------|
| Survey | | | | | | | | | |
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 100.00 | 0.21 | 314.97 | 100.00 | 0.13 | -0.13 | 0.04 | 0.21 | 0.21 | 0.00 |
| 200.00 | 0.13 | 323.65 | 200.00 | 0.35 | -0.33 | 0.13 | 0.08 | -0.08 | 8.68 |
| 300.00 | 0.21 | 57.10 | 300.00 | 0.54 | -0.24 | 0.34 | 0.25 | 0.08 | 93.45 |
| 400.00 | 0.28 | 54.44 | 400.00 | 0.78 | 0.11 | 0.73 | 0.07 | 0.07 | -2.66 |
| 500.00 | 0.54 | 70.09 | 500.00 | 1.09 | 0.75 | 1.32 | 0.28 | 0.26 | 15.65 |
| 600.00 | 0.60 | 62.36 | 599.99 | 1.49 | 1.66 | 2.13 | 0.10 | 0.06 | -7.73 |
| 700.00 | 0.55 | 77.91 | 699.99 | 1.83 | 2.59 | 2.90 | 0.16 | -0.05 | 15.55 |
| 800.00 | 0.42 | 118.07 | 799.98 | 1.76 | 3.39 | 3.25 | 0.35 | -0.13 | 40.16 |
| 900.00 | 0.49 | 123.72 | 899.98 | 1.35 | 4.07 | 3.24 | 0.08 | 0.07 | 5.65 |

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| Site: | Heidenrich 10-2 | MD Reference: | WELL @ 4789.00ft (Original Well Elev) |
| Well: | Heidenrich 10-2 | North Reference: | True |
| Wellbore: | Heidenrich 10-2 | Survey Calculation Method: | Minimum Curvature |
| Design: | Heidenrich 10-2 | Database: | Compass DB Connection |

| Survey | | | | | | | | | |
|---------------------|-----------------|-------------|---------------------|-----------|-----------|-----------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N-S (ft) | +E-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 1,000.00 | 0.49 | 126.90 | 999.98 | 0.86 | 4.76 | 3.17 | 0.03 | 0.00 | 3.18 |
| 1,100.00 | 0.50 | 125.99 | 1,099.97 | 0.34 | 5.46 | 3.09 | 0.01 | 0.01 | -0.91 |
| 1,200.00 | 0.54 | 117.19 | 1,199.97 | -0.13 | 6.23 | 3.08 | 0.09 | 0.04 | -8.80 |
| 1,300.00 | 0.52 | 124.57 | 1,299.96 | -0.60 | 7.02 | 3.08 | 0.07 | -0.02 | 7.38 |
| 1,400.00 | 0.43 | 130.49 | 1,399.96 | -1.10 | 7.68 | 2.99 | 0.10 | -0.09 | 5.92 |
| 1,500.00 | 0.61 | 129.88 | 1,499.96 | -1.69 | 8.38 | 2.84 | 0.18 | 0.18 | -0.61 |
| 1,600.00 | 0.60 | 141.80 | 1,599.95 | -2.44 | 9.11 | 2.57 | 0.13 | -0.01 | 11.92 |
| 1,700.00 | 0.66 | 134.75 | 1,699.94 | -3.26 | 9.84 | 2.24 | 0.10 | 0.06 | -7.05 |
| 1,800.00 | 0.60 | 134.76 | 1,799.94 | -4.03 | 10.62 | 1.97 | 0.06 | -0.06 | 0.01 |
| 1,900.00 | 0.47 | 126.58 | 1,899.93 | -4.64 | 11.32 | 1.81 | 0.15 | -0.13 | -8.18 |
| 2,000.00 | 0.23 | 120.79 | 1,999.93 | -4.99 | 11.83 | 1.76 | 0.24 | -0.24 | -5.79 |
| 2,100.00 | 0.18 | 239.91 | 2,099.93 | -5.17 | 11.86 | 1.63 | 0.35 | -0.05 | 119.12 |
| 2,200.00 | 0.82 | 311.14 | 2,199.93 | -4.78 | 11.19 | 1.62 | 0.78 | 0.64 | 71.23 |
| 2,300.00 | 1.30 | 306.41 | 2,299.91 | -3.64 | 9.74 | 1.86 | 0.49 | 0.48 | -4.73 |
| 2,400.00 | 1.86 | 299.64 | 2,399.87 | -2.16 | 7.41 | 1.94 | 0.59 | 0.56 | -6.77 |
| 2,500.00 | 1.99 | 294.70 | 2,499.82 | -0.63 | 4.42 | 1.72 | 0.21 | 0.13 | -4.94 |
| 2,600.00 | 2.02 | 300.54 | 2,599.75 | 0.99 | 1.33 | 1.53 | 0.21 | 0.03 | 5.84 |
| 2,700.00 | 1.55 | 316.80 | 2,699.71 | 2.87 | -1.11 | 1.89 | 0.69 | -0.47 | 16.26 |
| 2,800.00 | 1.28 | 324.52 | 2,799.68 | 4.77 | -2.69 | 2.72 | 0.33 | -0.27 | 7.72 |
| 2,900.00 | 1.05 | 333.26 | 2,899.66 | 6.49 | -3.75 | 3.66 | 0.29 | -0.23 | 8.74 |
| 3,000.00 | 0.76 | 340.37 | 2,999.64 | 7.94 | -4.38 | 4.57 | 0.31 | -0.29 | 7.11 |
| 3,100.00 | 0.76 | 346.70 | 3,099.63 | 9.21 | -4.76 | 5.47 | 0.08 | 0.00 | 6.33 |
| 3,200.00 | 0.90 | 353.30 | 3,199.62 | 10.63 | -5.00 | 6.57 | 0.17 | 0.14 | 6.60 |
| 3,300.00 | 1.32 | 356.13 | 3,299.60 | 12.56 | -5.17 | 8.14 | 0.42 | 0.42 | 2.83 |
| 3,400.00 | 1.85 | 353.53 | 3,399.57 | 15.31 | -5.43 | 10.38 | 0.53 | 0.53 | -2.60 |
| 3,500.00 | 1.40 | 339.28 | 3,499.53 | 18.06 | -6.05 | 12.42 | 0.60 | -0.45 | -14.25 |
| 3,600.00 | 1.06 | 309.80 | 3,599.50 | 19.79 | -7.19 | 13.33 | 0.71 | -0.34 | -29.48 |
| 3,700.00 | 1.25 | 295.93 | 3,699.48 | 20.86 | -8.88 | 13.38 | 0.34 | 0.19 | -13.87 |
| 3,800.00 | 1.68 | 295.51 | 3,799.45 | 21.97 | -11.19 | 13.15 | 0.43 | 0.43 | -0.42 |
| 3,900.00 | 1.80 | 305.09 | 3,899.40 | 23.51 | -13.79 | 13.14 | 0.31 | 0.12 | 9.58 |
| 4,000.00 | 1.76 | 295.65 | 3,999.36 | 25.07 | -16.46 | 13.12 | 0.30 | -0.04 | -9.44 |
| 4,100.00 | 1.54 | 284.79 | 4,099.32 | 26.08 | -19.15 | 12.61 | 0.38 | -0.22 | -10.86 |
| 4,200.00 | 1.02 | 266.28 | 4,199.29 | 26.37 | -21.33 | 11.73 | 0.66 | -0.52 | -18.51 |
| 4,300.00 | 0.51 | 244.09 | 4,299.28 | 26.11 | -22.62 | 10.86 | 0.58 | -0.51 | -22.19 |
| 4,400.00 | 0.30 | 181.29 | 4,399.28 | 25.66 | -23.03 | 10.26 | 0.46 | -0.21 | -62.80 |
| 4,500.00 | 0.18 | 131.48 | 4,499.28 | 25.29 | -22.92 | 10.00 | 0.23 | -0.12 | -49.81 |
| 4,600.00 | 0.10 | 125.86 | 4,599.28 | 25.14 | -22.73 | 9.96 | 0.08 | -0.08 | -5.62 |
| 4,700.00 | 0.94 | 86.63 | 4,699.27 | 25.13 | -21.84 | 10.42 | 0.86 | 0.84 | -39.23 |
| 4,800.00 | 2.21 | 102.37 | 4,799.23 | 24.77 | -19.14 | 11.49 | 1.33 | 1.27 | 15.74 |
| 4,900.00 | 2.49 | 106.70 | 4,899.15 | 23.73 | -15.17 | 12.62 | 0.33 | 0.28 | 4.33 |
| 5,000.00 | 2.56 | 104.52 | 4,999.05 | 22.55 | -10.93 | 13.78 | 0.12 | 0.07 | -2.18 |
| 5,100.00 | 2.08 | 117.75 | 5,098.97 | 21.14 | -7.16 | 14.50 | 0.72 | -0.48 | 13.23 |
| 5,200.00 | 1.71 | 115.71 | 5,198.92 | 19.65 | -4.21 | 14.73 | 0.38 | -0.37 | -2.04 |
| 5,300.00 | 1.50 | 99.35 | 5,298.88 | 18.79 | -1.58 | 15.34 | 0.50 | -0.21 | -16.36 |

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| Wellbore: | Heidenrich 10-2 | Survey Calculation Method: | Minimum Curvature |
| Design: | Heidenrich 10-2 | Database: | Compass DB Connection |

| Survey | | | | | | | | | | |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-------------------------|------------------------|-----------------------|--|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | |
| 5,400.00 | 1.57 | 87.68 | 5,398.84 | 18.63 | 1.08 | 16.56 | 0.32 | 0.07 | -11.67 | |
| 5,500.00 | 1.82 | 96.59 | 5,498.80 | 18.51 | 4.03 | 17.96 | 0.36 | 0.25 | 8.91 | |
| 5,600.00 | 2.05 | 77.43 | 5,598.74 | 18.71 | 7.35 | 19.84 | 0.68 | 0.23 | -19.16 | |
| 5,700.00 | 1.63 | 71.23 | 5,698.69 | 19.56 | 10.45 | 22.15 | 0.46 | -0.42 | -6.20 | |
| 5,800.00 | 0.99 | 60.34 | 5,798.66 | 20.45 | 12.54 | 23.99 | 0.68 | -0.64 | -10.89 | |
| 5,900.00 | 0.86 | 48.62 | 5,898.65 | 21.37 | 13.86 | 25.45 | 0.23 | -0.13 | -11.72 | |
| 6,000.00 | 0.81 | 44.87 | 5,998.64 | 22.37 | 14.92 | 26.85 | 0.07 | -0.05 | -3.75 | |
| 6,100.00 | 0.97 | 26.41 | 6,098.63 | 23.63 | 15.79 | 28.38 | 0.33 | 0.16 | -18.46 | |
| 6,200.00 | 1.36 | 32.04 | 6,198.61 | 25.39 | 16.80 | 30.41 | 0.41 | 0.39 | 5.63 | |
| 6,300.00 | 1.40 | 29.42 | 6,298.58 | 27.46 | 18.03 | 32.82 | 0.07 | 0.04 | -2.62 | |
| 6,400.00 | 1.37 | 33.38 | 6,398.55 | 29.52 | 19.29 | 35.23 | 0.10 | -0.03 | 3.96 | |
| 6,500.00 | 1.34 | 29.55 | 6,498.52 | 31.54 | 20.52 | 37.60 | 0.10 | -0.03 | -3.83 | |
| 6,600.00 | 1.48 | 25.87 | 6,598.49 | 33.72 | 21.66 | 40.05 | 0.17 | 0.14 | -3.68 | |
| 6,700.00 | 1.60 | 22.92 | 6,698.46 | 36.16 | 22.77 | 42.72 | 0.14 | 0.12 | -2.95 | |
| 6,800.00 | 1.71 | 16.57 | 6,798.41 | 38.88 | 23.74 | 45.55 | 0.21 | 0.11 | -6.35 | |
| 6,900.00 | 2.12 | 28.77 | 6,898.36 | 41.93 | 25.05 | 48.85 | 0.58 | 0.41 | 12.20 | |
| 6,950.00 | 2.37 | 29.02 | 6,948.32 | 43.65 | 26.00 | 50.80 | 0.50 | 0.50 | 0.50 | |

Checked By: _____ Approved By: _____ Date: _____