



Ursa Operating Company, LLC

Rio Blanco County, Colorado

Boies Ranch B-19N Pad

Boies Ranch B-19N FED 42B-19-2-97

Wellbore #1

Plan: APD

Standard Planning Report

24 September, 2018

| | | | |
|------------------|-----------------------------------|-------------------------------------|---|
| Database: | EDM 5000.1 Single User Db | Local Co-ordinate Reference: | Well Boies Ranch B-19N FED 42B-19-2-97 |
| Company: | Ursa Operating Company, LLC | TVD Reference: | Boies Ranch B-19N FED 42B-19-2-97 @ 6325.8usft (Est KB) |
| Project: | Rio Blanco County, Colorado | MD Reference: | Boies Ranch B-19N FED 42B-19-2-97 @ 6325.8usft (Est KB) |
| Site: | Boies Ranch B-19N Pad | North Reference: | True |
| Well: | Boies Ranch B-19N FED 42B-19-2-97 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | APD | | |

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

| | | | |
|------------------------------|-----------------------|--------------------------|-------------------|
| Site | Boies Ranch B-19N Pad | | |
| Site Position: | | Northing: | 1,203,643.43 usft |
| From: | Lat/Long | Easting: | 2,206,000.33 usft |
| Position Uncertainty: | 0.0 usft | Slot Radius: | 13-3/16 " |
| | | Latitude: | 39.857609622 |
| | | Longitude: | -108.328733084 |
| | | Grid Convergence: | -1.83 ° |

| | | | |
|-----------------------------|--|----------------------------|------------------------------------|
| Well | Boies Ranch B-19N FED 42B-19-2-97, SHL: Lat 39.857614946 Long -108.328693863 | | |
| Well Position | +N/-S | 1.9 usft | Northing: 1,203,645.02 usft |
| | +E/-W | 11.0 usft | Easting: 2,206,011.40 usft |
| Position Uncertainty | 0.0 usft | Wellhead Elevation: | 6,325.8 usft |
| | | Ground Level: | 6,304.8 usft |

| | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | Wellbore #1 | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2015 | 8/16/2018 | 9.77 | 65.80 | 51,548 |

| | | | | | |
|--------------------------|--------------------------------|---------------------|----------------------|----------------------|--|
| Design | APD | | | | |
| Audit Notes: | | | | | |
| Version: | Phase: | PROTOTYPE | Tie On Depth: | 0.0 | |
| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft) | Direction (°) | |
| | 0.0 | 0.0 | 0.0 | 48.77 | |

| Plan Sections | | | | | | | | | | |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|------------------------|-----------------------|---------|---------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | TFO (°) | Target |
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 800.0 | 0.00 | 0.00 | 800.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,965.3 | 40.78 | 48.77 | 1,869.3 | 262.0 | 298.9 | 3.50 | 3.50 | 0.00 | 48.77 | |
| 6,573.6 | 40.78 | 48.77 | 5,358.7 | 2,246.2 | 2,562.7 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 7,738.9 | 0.00 | 0.00 | 6,428.0 | 2,508.2 | 2,861.6 | 3.50 | -3.50 | 0.00 | 180.00 | B 19N FED 42B-19-2- |
| 12,672.9 | 0.00 | 0.00 | 11,362.0 | 2,508.2 | 2,861.6 | 0.00 | 0.00 | 0.00 | 0.00 | |

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| Company: | Ursa Operating Company, LLC | TVD Reference: | Boies Ranch B-19N FED 42B-19-2-97 @ 6325.8usft (Est KB) |
| Project: | Rio Blanco County, Colorado | MD Reference: | Boies Ranch B-19N FED 42B-19-2-97 @ 6325.8usft (Est KB) |
| Site: | Boies Ranch B-19N Pad | North Reference: | True |
| Well: | Boies Ranch B-19N FED 42B-19-2-97 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | APD | | |

| Planned 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 | |
| 0.1 | 0.00 | 0.00 | 0.1 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | |
| SHL 39.857614946, -108.328693863 | | | | | | | | | | |
| 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 | |
| 300.0 | 0.00 | 0.00 | 300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | |
| 400.0 | 0.00 | 0.00 | 400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | |
| 500.0 | 0.00 | 0.00 | 500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | |
| 600.0 | 0.00 | 0.00 | 600.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | |
| 700.0 | 0.00 | 0.00 | 700.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | |
| 800.0 | 0.00 | 0.00 | 800.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | |
| Start Build 3.50 | | | | | | | | | | |
| 900.0 | 3.50 | 48.77 | 899.9 | 2.0 | 2.3 | 3.1 | 3.50 | 3.50 | 0.00 | |
| 1,000.0 | 7.00 | 48.77 | 999.5 | 8.0 | 9.2 | 12.2 | 3.50 | 3.50 | 0.00 | |
| 1,097.6 | 10.42 | 48.77 | 1,096.0 | 17.8 | 20.3 | 27.0 | 3.50 | 3.50 | 0.00 | |
| Mahogany Bench | | | | | | | | | | |
| 1,100.0 | 10.50 | 48.77 | 1,098.3 | 18.1 | 20.6 | 27.4 | 3.50 | 3.50 | 0.00 | |
| 1,155.8 | 12.45 | 48.77 | 1,153.0 | 25.4 | 29.0 | 38.5 | 3.50 | 3.50 | 0.00 | |
| Dissolution Surface | | | | | | | | | | |
| 1,200.0 | 14.00 | 48.77 | 1,196.0 | 32.1 | 36.6 | 48.6 | 3.50 | 3.50 | 0.00 | |
| 1,300.0 | 17.50 | 48.77 | 1,292.3 | 49.9 | 57.0 | 75.8 | 3.50 | 3.50 | 0.00 | |
| 1,400.0 | 21.00 | 48.77 | 1,386.7 | 71.7 | 81.8 | 108.7 | 3.50 | 3.50 | 0.00 | |
| 1,500.0 | 24.50 | 48.77 | 1,478.9 | 97.2 | 110.8 | 147.4 | 3.50 | 3.50 | 0.00 | |
| 1,600.0 | 28.00 | 48.77 | 1,568.5 | 126.3 | 144.1 | 191.6 | 3.50 | 3.50 | 0.00 | |
| 1,700.0 | 31.50 | 48.77 | 1,655.3 | 159.0 | 181.4 | 241.2 | 3.50 | 3.50 | 0.00 | |
| 1,800.0 | 35.00 | 48.77 | 1,739.0 | 195.1 | 222.6 | 296.1 | 3.50 | 3.50 | 0.00 | |
| 1,900.0 | 38.50 | 48.77 | 1,819.1 | 234.6 | 267.6 | 355.9 | 3.50 | 3.50 | 0.00 | |
| 1,965.3 | 40.78 | 48.77 | 1,869.3 | 262.0 | 298.9 | 397.5 | 3.50 | 3.50 | 0.00 | |
| Start 4608.4 hold at 1965.3 MD | | | | | | | | | | |
| 2,000.0 | 40.78 | 48.77 | 1,895.6 | 277.0 | 316.0 | 420.2 | 0.00 | 0.00 | 0.00 | |
| 2,100.0 | 40.78 | 48.77 | 1,971.3 | 320.0 | 365.1 | 485.5 | 0.00 | 0.00 | 0.00 | |
| 2,200.0 | 40.78 | 48.77 | 2,047.1 | 363.1 | 414.2 | 550.8 | 0.00 | 0.00 | 0.00 | |
| 2,300.0 | 40.78 | 48.77 | 2,122.8 | 406.1 | 463.4 | 616.2 | 0.00 | 0.00 | 0.00 | |
| 2,400.0 | 40.78 | 48.77 | 2,198.5 | 449.2 | 512.5 | 681.5 | 0.00 | 0.00 | 0.00 | |
| 2,478.6 | 40.78 | 48.77 | 2,258.0 | 483.0 | 551.1 | 732.8 | 0.00 | 0.00 | 0.00 | |
| Garden Gulch Mbr | | | | | | | | | | |
| 2,500.0 | 40.78 | 48.77 | 2,274.2 | 492.3 | 561.6 | 746.8 | 0.00 | 0.00 | 0.00 | |
| 2,600.0 | 40.78 | 48.77 | 2,349.9 | 535.3 | 610.7 | 812.1 | 0.00 | 0.00 | 0.00 | |
| 2,700.0 | 40.78 | 48.77 | 2,425.6 | 578.4 | 659.9 | 877.4 | 0.00 | 0.00 | 0.00 | |
| 2,700.5 | 40.78 | 48.77 | 2,426.0 | 578.6 | 660.1 | 877.7 | 0.00 | 0.00 | 0.00 | |
| Wasatch | | | | | | | | | | |
| 2,800.0 | 40.78 | 48.77 | 2,501.4 | 621.4 | 709.0 | 942.8 | 0.00 | 0.00 | 0.00 | |
| 2,900.0 | 40.78 | 48.77 | 2,577.1 | 664.5 | 758.1 | 1,008.1 | 0.00 | 0.00 | 0.00 | |
| 3,000.0 | 40.78 | 48.77 | 2,652.8 | 707.5 | 807.2 | 1,073.4 | 0.00 | 0.00 | 0.00 | |
| 3,100.0 | 40.78 | 48.77 | 2,728.5 | 750.6 | 856.3 | 1,138.7 | 0.00 | 0.00 | 0.00 | |
| 3,200.0 | 40.78 | 48.77 | 2,804.2 | 793.6 | 905.5 | 1,204.0 | 0.00 | 0.00 | 0.00 | |
| 3,300.0 | 40.78 | 48.77 | 2,880.0 | 836.7 | 954.6 | 1,269.4 | 0.00 | 0.00 | 0.00 | |
| 3,400.0 | 40.78 | 48.77 | 2,955.7 | 879.8 | 1,003.7 | 1,334.7 | 0.00 | 0.00 | 0.00 | |
| 3,500.0 | 40.78 | 48.77 | 3,031.4 | 922.8 | 1,052.8 | 1,400.0 | 0.00 | 0.00 | 0.00 | |
| 3,600.0 | 40.78 | 48.77 | 3,107.1 | 965.9 | 1,102.0 | 1,465.3 | 0.00 | 0.00 | 0.00 | |
| 3,700.0 | 40.78 | 48.77 | 3,182.8 | 1,008.9 | 1,151.1 | 1,530.7 | 0.00 | 0.00 | 0.00 | |
| 3,800.0 | 40.78 | 48.77 | 3,258.5 | 1,052.0 | 1,200.2 | 1,596.0 | 0.00 | 0.00 | 0.00 | |

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| Well: | Boies Ranch B-19N FED 42B-19-2-97 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | APD | | |

| Planned 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) |
| 3,900.0 | 40.78 | 48.77 | 3,334.3 | 1,095.0 | 1,249.3 | 1,661.3 | 0.00 | 0.00 | 0.00 |
| 4,000.0 | 40.78 | 48.77 | 3,410.0 | 1,138.1 | 1,298.4 | 1,726.6 | 0.00 | 0.00 | 0.00 |
| 4,100.0 | 40.78 | 48.77 | 3,485.7 | 1,181.1 | 1,347.6 | 1,791.9 | 0.00 | 0.00 | 0.00 |
| 4,118.9 | 40.78 | 48.77 | 3,500.0 | 1,189.3 | 1,356.8 | 1,804.3 | 0.00 | 0.00 | 0.00 |
| Surface Casing | | | | | | | | | |
| 4,200.0 | 40.78 | 48.77 | 3,561.4 | 1,224.2 | 1,396.7 | 1,857.3 | 0.00 | 0.00 | 0.00 |
| 4,300.0 | 40.78 | 48.77 | 3,637.1 | 1,267.3 | 1,445.8 | 1,922.6 | 0.00 | 0.00 | 0.00 |
| 4,400.0 | 40.78 | 48.77 | 3,712.9 | 1,310.3 | 1,494.9 | 1,987.9 | 0.00 | 0.00 | 0.00 |
| 4,500.0 | 40.78 | 48.77 | 3,788.6 | 1,353.4 | 1,544.1 | 2,053.2 | 0.00 | 0.00 | 0.00 |
| 4,600.0 | 40.78 | 48.77 | 3,864.3 | 1,396.4 | 1,593.2 | 2,118.5 | 0.00 | 0.00 | 0.00 |
| 4,700.0 | 40.78 | 48.77 | 3,940.0 | 1,439.5 | 1,642.3 | 2,183.9 | 0.00 | 0.00 | 0.00 |
| 4,800.0 | 40.78 | 48.77 | 4,015.7 | 1,482.5 | 1,691.4 | 2,249.2 | 0.00 | 0.00 | 0.00 |
| 4,900.0 | 40.78 | 48.77 | 4,091.4 | 1,525.6 | 1,740.5 | 2,314.5 | 0.00 | 0.00 | 0.00 |
| 5,000.0 | 40.78 | 48.77 | 4,167.2 | 1,568.6 | 1,789.7 | 2,379.8 | 0.00 | 0.00 | 0.00 |
| 5,100.0 | 40.78 | 48.77 | 4,242.9 | 1,611.7 | 1,838.8 | 2,445.1 | 0.00 | 0.00 | 0.00 |
| 5,200.0 | 40.78 | 48.77 | 4,318.6 | 1,654.8 | 1,887.9 | 2,510.5 | 0.00 | 0.00 | 0.00 |
| 5,300.0 | 40.78 | 48.77 | 4,394.3 | 1,697.8 | 1,937.0 | 2,575.8 | 0.00 | 0.00 | 0.00 |
| 5,400.0 | 40.78 | 48.77 | 4,470.0 | 1,740.9 | 1,986.2 | 2,641.1 | 0.00 | 0.00 | 0.00 |
| 5,500.0 | 40.78 | 48.77 | 4,545.8 | 1,783.9 | 2,035.3 | 2,706.4 | 0.00 | 0.00 | 0.00 |
| 5,600.0 | 40.78 | 48.77 | 4,621.5 | 1,827.0 | 2,084.4 | 2,771.7 | 0.00 | 0.00 | 0.00 |
| 5,700.0 | 40.78 | 48.77 | 4,697.2 | 1,870.0 | 2,133.5 | 2,837.1 | 0.00 | 0.00 | 0.00 |
| 5,800.0 | 40.78 | 48.77 | 4,772.9 | 1,913.1 | 2,182.6 | 2,902.4 | 0.00 | 0.00 | 0.00 |
| 5,900.0 | 40.78 | 48.77 | 4,848.6 | 1,956.1 | 2,231.8 | 2,967.7 | 0.00 | 0.00 | 0.00 |
| 5,924.3 | 40.78 | 48.77 | 4,867.0 | 1,966.6 | 2,243.7 | 2,983.6 | 0.00 | 0.00 | 0.00 |
| Ft Union | | | | | | | | | |
| 6,000.0 | 40.78 | 48.77 | 4,924.3 | 1,999.2 | 2,280.9 | 3,033.0 | 0.00 | 0.00 | 0.00 |
| 6,100.0 | 40.78 | 48.77 | 5,000.1 | 2,042.3 | 2,330.0 | 3,098.4 | 0.00 | 0.00 | 0.00 |
| 6,200.0 | 40.78 | 48.77 | 5,075.8 | 2,085.3 | 2,379.1 | 3,163.7 | 0.00 | 0.00 | 0.00 |
| 6,300.0 | 40.78 | 48.77 | 5,151.5 | 2,128.4 | 2,428.3 | 3,229.0 | 0.00 | 0.00 | 0.00 |
| 6,400.0 | 40.78 | 48.77 | 5,227.2 | 2,171.4 | 2,477.4 | 3,294.3 | 0.00 | 0.00 | 0.00 |
| 6,500.0 | 40.78 | 48.77 | 5,302.9 | 2,214.5 | 2,526.5 | 3,359.6 | 0.00 | 0.00 | 0.00 |
| 6,573.6 | 40.78 | 48.77 | 5,358.7 | 2,246.2 | 2,562.7 | 3,407.7 | 0.00 | 0.00 | 0.00 |
| Start Drop -3.50 | | | | | | | | | |
| 6,600.0 | 39.86 | 48.77 | 5,378.8 | 2,257.4 | 2,575.5 | 3,424.8 | 3.50 | -3.50 | 0.00 |
| 6,700.0 | 36.36 | 48.77 | 5,457.5 | 2,298.1 | 2,621.9 | 3,486.5 | 3.50 | -3.50 | 0.00 |
| 6,800.0 | 32.86 | 48.77 | 5,539.7 | 2,335.5 | 2,664.6 | 3,543.3 | 3.50 | -3.50 | 0.00 |
| 6,900.0 | 29.36 | 48.77 | 5,625.3 | 2,369.6 | 2,703.5 | 3,595.0 | 3.50 | -3.50 | 0.00 |
| 7,000.0 | 25.86 | 48.77 | 5,713.9 | 2,400.1 | 2,738.3 | 3,641.3 | 3.50 | -3.50 | 0.00 |
| 7,100.0 | 22.36 | 48.77 | 5,805.2 | 2,427.1 | 2,769.0 | 3,682.1 | 3.50 | -3.50 | 0.00 |
| 7,200.0 | 18.86 | 48.77 | 5,898.8 | 2,450.3 | 2,795.5 | 3,717.3 | 3.50 | -3.50 | 0.00 |
| 7,300.0 | 15.36 | 48.77 | 5,994.3 | 2,469.6 | 2,817.6 | 3,746.8 | 3.50 | -3.50 | 0.00 |
| 7,400.0 | 11.86 | 48.77 | 6,091.5 | 2,485.2 | 2,835.3 | 3,770.3 | 3.50 | -3.50 | 0.00 |
| 7,500.0 | 8.36 | 48.77 | 6,190.0 | 2,496.7 | 2,848.5 | 3,787.8 | 3.50 | -3.50 | 0.00 |
| 7,548.5 | 6.67 | 48.77 | 6,238.0 | 2,500.9 | 2,853.3 | 3,794.2 | 3.50 | -3.50 | 0.00 |
| Ohio Creek | | | | | | | | | |
| 7,600.0 | 4.86 | 48.77 | 6,289.3 | 2,504.3 | 2,857.2 | 3,799.3 | 3.50 | -3.50 | 0.00 |
| 7,700.0 | 1.36 | 48.77 | 6,389.1 | 2,507.9 | 2,861.3 | 3,804.8 | 3.50 | -3.50 | 0.00 |
| 7,738.9 | 0.00 | 0.00 | 6,428.0 | 2,508.2 | 2,861.6 | 3,805.2 | 3.50 | -3.50 | 0.00 |
| Start 4934.0 hold at 7738.9 MD - Back to Vertical - Williams Fork - Top of Gas - B 19N FED 42B-19-2-97 TGT | | | | | | | | | |
| 7,800.0 | 0.00 | 0.00 | 6,489.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 |
| 7,900.0 | 0.00 | 0.00 | 6,589.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 |

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| Site: | Boies Ranch B-19N Pad | North Reference: | True |
| Well: | Boies Ranch B-19N FED 42B-19-2-97 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | APD | | |

| Planned 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) | |
| 8,000.0 | 0.00 | 0.00 | 6,689.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 8,100.0 | 0.00 | 0.00 | 6,789.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 8,200.0 | 0.00 | 0.00 | 6,889.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 8,300.0 | 0.00 | 0.00 | 6,989.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 8,400.0 | 0.00 | 0.00 | 7,089.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 8,500.0 | 0.00 | 0.00 | 7,189.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 8,600.0 | 0.00 | 0.00 | 7,289.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 8,700.0 | 0.00 | 0.00 | 7,389.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 8,800.0 | 0.00 | 0.00 | 7,489.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 8,900.0 | 0.00 | 0.00 | 7,589.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 9,000.0 | 0.00 | 0.00 | 7,689.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 9,100.0 | 0.00 | 0.00 | 7,789.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 9,200.0 | 0.00 | 0.00 | 7,889.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 9,300.0 | 0.00 | 0.00 | 7,989.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 9,400.0 | 0.00 | 0.00 | 8,089.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 9,500.0 | 0.00 | 0.00 | 8,189.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 9,600.0 | 0.00 | 0.00 | 8,289.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 9,700.0 | 0.00 | 0.00 | 8,389.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 9,800.0 | 0.00 | 0.00 | 8,489.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 9,900.0 | 0.00 | 0.00 | 8,589.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 10,000.0 | 0.00 | 0.00 | 8,689.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 10,100.0 | 0.00 | 0.00 | 8,789.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 10,200.0 | 0.00 | 0.00 | 8,889.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 10,300.0 | 0.00 | 0.00 | 8,989.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 10,400.0 | 0.00 | 0.00 | 9,089.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 10,500.0 | 0.00 | 0.00 | 9,189.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 10,600.0 | 0.00 | 0.00 | 9,289.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 10,700.0 | 0.00 | 0.00 | 9,389.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 10,800.0 | 0.00 | 0.00 | 9,489.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 10,847.9 | 0.00 | 0.00 | 9,537.0 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| Cameo | | | | | | | | | | |
| 10,900.0 | 0.00 | 0.00 | 9,589.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 11,000.0 | 0.00 | 0.00 | 9,689.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 11,100.0 | 0.00 | 0.00 | 9,789.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 11,200.0 | 0.00 | 0.00 | 9,889.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 11,300.0 | 0.00 | 0.00 | 9,989.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 11,392.9 | 0.00 | 0.00 | 10,082.0 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| Rollins | | | | | | | | | | |
| 11,400.0 | 0.00 | 0.00 | 10,089.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 11,500.0 | 0.00 | 0.00 | 10,189.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 11,536.9 | 0.00 | 0.00 | 10,226.0 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| Cozzette | | | | | | | | | | |
| 11,600.0 | 0.00 | 0.00 | 10,289.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 11,700.0 | 0.00 | 0.00 | 10,389.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 11,800.0 | 0.00 | 0.00 | 10,489.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 11,870.9 | 0.00 | 0.00 | 10,560.0 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| Corcoran | | | | | | | | | | |
| 11,900.0 | 0.00 | 0.00 | 10,589.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 12,000.0 | 0.00 | 0.00 | 10,689.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 12,054.9 | 0.00 | 0.00 | 10,744.0 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| Upper Sego | | | | | | | | | | |

| | | | |
|------------------|-----------------------------------|-------------------------------------|---|
| Database: | EDM 5000.1 Single User Db | Local Co-ordinate Reference: | Well Boies Ranch B-19N FED 42B-19-2-97 |
| Company: | Ursa Operating Company, LLC | TVD Reference: | Boies Ranch B-19N FED 42B-19-2-97 @ 6325.8usft (Est KB) |
| Project: | Rio Blanco County, Colorado | MD Reference: | Boies Ranch B-19N FED 42B-19-2-97 @ 6325.8usft (Est KB) |
| Site: | Boies Ranch B-19N Pad | North Reference: | True |
| Well: | Boies Ranch B-19N FED 42B-19-2-97 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | APD | | |

| Planned 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) | |
| 12,100.0 | 0.00 | 0.00 | 10,789.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 12,200.0 | 0.00 | 0.00 | 10,889.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 12,300.0 | 0.00 | 0.00 | 10,989.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 12,400.0 | 0.00 | 0.00 | 11,089.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 12,500.0 | 0.00 | 0.00 | 11,189.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 12,600.0 | 0.00 | 0.00 | 11,289.1 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| 12,672.9 | 0.00 | 0.00 | 11,362.0 | 2,508.2 | 2,861.6 | 3,805.2 | 0.00 | 0.00 | 0.00 | |
| BHL 39.8644999, -108.3184999 - TD at 12672.9 | | | | | | | | | | |

| Design Targets | | | | | | | | | | |
|---|---------------|--------------|------------|--------------|--------------|-----------------|----------------|--------------|----------------|--|
| Target Name | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude | Longitude | |
| - hit/miss target | | | | | | | | | | |
| - Shape | | | | | | | | | | |
| B 19N FED 42B-19-2-97 | 0.00 | 0.00 | 6,428.0 | 2,508.2 | 2,861.6 | 1,206,060.63 | 2,208,951.49 | 39.864499900 | -108.318499900 | |
| - plan hits target center | | | | | | | | | | |
| - Rectangle (sides W100.0 H40.0 D4,934.0) | | | | | | | | | | |

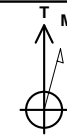
| Formations | | | | | | |
|-----------------------|-----------------------|---------------------|-----------|---------|-------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | Name | Lithology | Dip (°) | Dip Direction (°) | |
| 1,097.6 | 1,096.0 | Mahogany Bench | | 0.00 | | |
| 1,155.8 | 1,153.0 | Dissolution Surface | | 0.00 | | |
| 2,478.6 | 2,258.0 | Garden Gulch Mbr | | 0.00 | | |
| 2,700.5 | 2,426.0 | Wasatch | | 0.00 | | |
| 5,924.3 | 4,867.0 | Ft Union | | 0.00 | | |
| 7,548.5 | 6,238.0 | Ohio Creek | | 0.00 | | |
| 7,738.9 | 6,428.0 | Williams Fork | | 0.00 | | |
| 7,738.9 | 6,428.0 | Top of Gas | | 0.00 | | |
| 10,847.9 | 9,537.0 | Cameo | | 0.00 | | |
| 11,392.9 | 10,082.0 | Rollins | | 0.00 | | |
| 11,536.9 | 10,226.0 | Cozzette | | 0.00 | | |
| 11,870.9 | 10,560.0 | Corcoran | | 0.00 | | |
| 12,054.9 | 10,744.0 | Upper Sego | | 0.00 | | |

| | | | |
|------------------|-----------------------------------|-------------------------------------|---|
| Database: | EDM 5000.1 Single User Db | Local Co-ordinate Reference: | Well Boies Ranch B-19N FED 42B-19-2-97 |
| Company: | Ursa Operating Company, LLC | TVD Reference: | Boies Ranch B-19N FED 42B-19-2-97 @ 6325.8usft (Est KB) |
| Project: | Rio Blanco County, Colorado | MD Reference: | Boies Ranch B-19N FED 42B-19-2-97 @ 6325.8usft (Est KB) |
| Site: | Boies Ranch B-19N Pad | North Reference: | True |
| Well: | Boies Ranch B-19N FED 42B-19-2-97 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | APD | | |

| Plan Annotations | | | | |
|-----------------------|-----------------------|-------------------|--------------|----------------------------------|
| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates | | Comment |
| | | +N/-S (usft) | +E/-W (usft) | |
| 0.1 | 0.1 | 0.0 | 0.0 | SHL 39.857614946, -108.328693863 |
| 800.0 | 800.0 | 0.0 | 0.0 | Start Build 3.50 |
| 1,965.3 | 1,869.3 | 262.0 | 298.9 | Start 4608.4 hold at 1965.3 MD |
| 4,118.9 | 3,500.0 | 1,189.3 | 1,356.8 | Surface Casing |
| 6,573.6 | 5,358.7 | 2,246.2 | 2,562.7 | Start Drop -3.50 |
| 7,738.9 | 6,428.0 | 2,508.2 | 2,861.6 | Start 4934.0 hold at 7738.9 MD |
| 7,738.9 | 6,428.0 | 2,508.2 | 2,861.6 | Back to Vertical |
| 12,672.9 | 11,362.0 | 2,508.2 | 2,861.6 | BHL 39.8644999, -108.3184999 |
| 12,672.9 | 11,362.0 | 2,508.2 | 2,861.6 | TD at 12672.9 |



Well Name:Boies Ranch B-19N FED 42B-19-2-97
Surface Location: Boies Ranch B-19N Pad
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 6304.8
+N/-S +E/-W Northing Easting Latitude Longitude
0.0 0.0 1203645.03 2206011.40 39.857614946 -108.328693863
Est KB Boies Ranch B-19N FED 42B-19-2-97 @ 6325.8usft (Est KB)



Azimuths to True North
Magnetic North: 9.77°
Magnetic Field
Strength: 51547.7nT
Dip Angle: 65.80°
Date: 8/16/2018
Model: IGRF2015

Boies Ranch B-19N Pad
Boies Ranch B-19N FED 42B-19-2-97
APD
12:09, September 24 2018

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

| Name | TVD | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Shape |
|---------------------------|--------|--------|--------|------------|------------|--------------|----------------|---------------------------------|
| B 19N FED 42B-19-2-97 TGT | 6428.0 | 2508.2 | 2861.6 | 1206060.63 | 2208951.49 | 39.864499900 | -108.318499900 | Rectangle (Sides: L40.0 W100.0) |

SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | Vsect | Target |
|-----|---------|-------|-------|---------|--------|--------|------|--------|--------|---------------------------|
| 1 | 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | |
| 2 | 800.0 | 0.00 | 0.00 | 800.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | |
| 3 | 1965.3 | 40.78 | 48.77 | 1869.3 | 262.0 | 298.9 | 3.50 | 48.77 | 397.5 | |
| 4 | 6573.6 | 40.78 | 48.77 | 5358.7 | 2246.2 | 2562.7 | 0.00 | 0.00 | 3407.7 | |
| 5 | 7738.9 | 0.00 | 0.00 | 6428.0 | 2508.2 | 2861.6 | 3.50 | 180.00 | 3805.2 | B 19N FED 42B-19-2-97 TGT |
| 6 | 12672.9 | 0.00 | 0.00 | 11362.0 | 2508.2 | 2861.6 | 0.00 | 0.00 | 3805.2 | |

ANNOTATIONS

| TVD | MD | Annotation |
|---------|---------|----------------------------------|
| 0.1 | 0.1 | SHL 39.857614946, -108.328693863 |
| 800.0 | 800.0 | Start Build 3.50 |
| 1869.3 | 1965.3 | Start 4608.4 hold at 1965.3 MD |
| 3500.0 | 4118.9 | Surface Casing |
| 5358.7 | 6573.6 | Start Drop -3.50 |
| 6428.0 | 7738.9 | Start 4934.0 hold at 7738.9 MD |
| 6428.0 | 7738.9 | Back to Vertical |
| 11362.0 | 12672.9 | TD at 12672.9 |
| 11362.0 | 12672.9 | BHL 39.8644999, -108.3184999 |

FORMATION TOP DETAILS

| TVDPath | MDPath | Formation | DipAngle | DipDir |
|---------|---------|---------------------|----------|--------|
| 1096.0 | 1097.6 | Mahogany Bench | 0.00 | |
| 1153.0 | 1155.8 | Dissolution Surface | 0.00 | |
| 2258.0 | 2478.6 | Garden Gulch Mbr | 0.00 | |
| 2426.0 | 2700.5 | Wasatch | 0.00 | |
| 4867.0 | 5924.3 | Ft Union | 0.00 | |
| 6238.0 | 7548.5 | Ohio Creek | 0.00 | |
| 6428.0 | 7738.9 | Top of Gas | 0.00 | |
| 6428.0 | 7738.9 | Williams Fork | 0.00 | |
| 9537.0 | 10847.9 | Cameo | 0.00 | |
| 10082.0 | 11392.9 | Rollins | 0.00 | |
| 10226.0 | 11536.9 | Cozzette | 0.00 | |
| 10560.0 | 11870.9 | Corcoran | 0.00 | |
| 10744.0 | 12054.9 | Upper Sego | 0.00 | |

