

AXIS EXPLORATION

ARAPAHOE COUNTY

Sec 4-T4S-R65W

JAMASO 4-65 5-6-2

ORIGINAL WELLBORE

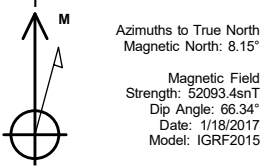
Plan: PROPOSAL 1

Standard Planning Report

18 October, 2018



Project: ARAPAHOE COUNTY
Site: Sec 4-T4S-R65W
Well: JAMASO 4-65 5-6-2
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL 1



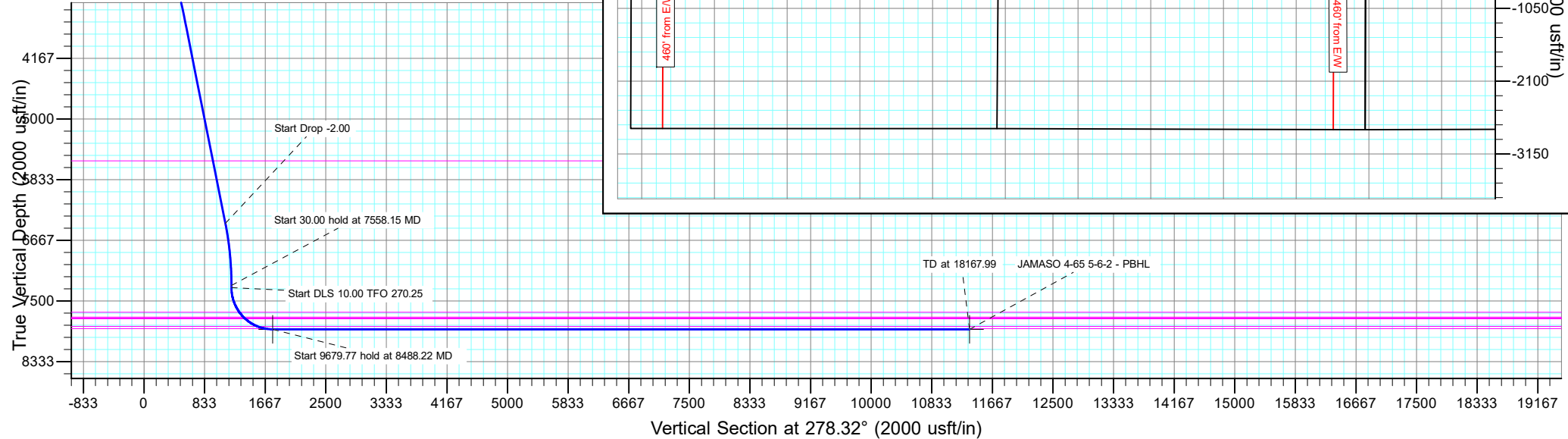
| WELL DETAILS: JAMASO 4-65 5-6-2 | | | | | | | | | | ANNOTATIONS | | | | | | | | | |
|---------------------------------|----------|-------|------------|------------|---------|-------------|--------------|--------|----------|-----------------------|---------------------------|---------|---------|-----------|------------|------------|-------------|----------------------------------|-------|
| | +N/-S | +E/-W | Northing | Easting | 5585.00 | Latitude | Longitude | Slot | | MD | Inc | Azi | TVD | +N/-S | +E/-W | VSect | Departure | Annotation | |
| | 0.00 | 0.00 | 1146769.89 | 3232195.47 | | 39.733281°N | 104.674402°W | | | 400.00 | 0.00 | 0.00 | 400.00 | 0.00 | 0.00 | 0.00 | 0.00 | Start Build 2.00 | |
| | | | | | | | | | | 1265.74 | 17.31 | 328.41 | 1252.62 | 110.59 | -68.00 | 83.28 | 129.82 | Start 5426.67 hold at 1265.74 MD | |
| | | | | | | | | | | 6692.41 | 17.31 | 328.41 | 6433.38 | 1486.43 | -913.93 | 1119.30 | 1744.92 | Start Drop -2.00 | |
| | | | | | | | | | | 7558.15 | 0.00 | 0.00 | 7286.00 | 1597.02 | -981.93 | 1202.58 | 1874.74 | Start 30.00 hold at 7558.15 MD | |
| | | | | | | | | | | 7588.15 | 0.00 | 0.00 | 7316.00 | 1597.02 | -981.93 | 1202.58 | 1874.74 | Start DLS 10.00 TFO 270.25 | |
| | | | | | | | | | | 8488.22 | 90.00 | 270.25 | 7889.00 | 1599.56 | -1554.93 | 1769.92 | 2447.75 | Start 9679.77 hold at 8488.22 MD | |
| | | | | | | | | | | 18167.99 | 90.00 | 270.25 | 7888.95 | 1642.46 | -11234.60 | 11354.03 | 12127.52 | TD at 18167.99 | |
| SECTION DETAILS | | | | | | | | | | DESIGN TARGET DETAILS | | | | | | | | | |
| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSect | Target | Name | TVD | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Shape |
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | JAMASO 4-65 5-6-2 - LP | 7889.00 | 1599.56 | -1554.93 | 1148354.91 | 3230625.72 | 39.737672°N | 104.679931°W | Point |
| 2 | 400.00 | 0.00 | 0.00 | 400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | - plan hits target center | | | | | | | | |
| 3 | 1265.74 | 17.31 | 328.41 | 1252.62 | 110.59 | -68.00 | 2.00 | 328.41 | 83.28 | | JAMASO 4-65 5-6-2 - PBHL | 7889.00 | 1642.11 | -11234.61 | 1148307.34 | 3220946.06 | 39.737782°N | 104.714350°W | Point |
| 4 | 6692.41 | 17.31 | 328.41 | 6433.38 | 1486.43 | -913.93 | 0.00 | 0.00 | 1119.30 | | - plan hits target center | | | | | | | | |
| 5 | 7558.15 | 0.00 | 0.00 | 7286.00 | 1597.02 | -981.93 | 2.00 | 180.00 | 1202.58 | | | | | | | | | | |
| 6 | 7588.15 | 0.00 | 0.00 | 7316.00 | 1597.02 | -981.93 | 0.00 | 0.00 | 1202.58 | | | | | | | | | | |
| 7 | 8488.22 | 90.00 | 270.25 | 7889.00 | 1599.56 | -1554.93 | 10.00 | 270.25 | 1769.92 | | | | | | | | | | |
| 8 | 18167.99 | 90.00 | 270.25 | 7889.00 | 1642.11 | -11234.61 | 0.00 | 0.00 | 11353.98 | | | | | | | | | | |

| FORMATION TOP DETAILS | | | PROJECT DETAILS: ARAPAHOE COUNTY | | |
|-----------------------|---------|-----------------------------------|----------------------------------|---------------------------|--|
| TVDPath | MDPath | Formation | Geodetic System: | US State Plane 1983 | |
| 293.00 | 293.00 | Denver | Datum: | North American Datum 1983 | |
| 877.00 | 879.23 | Upper Arapahoe | Ellipsoid: | GRS 1980 | |
| 1165.00 | 1174.40 | Lower Arapahoe | Zone: | Colorado Northern Zone | |
| 1718.00 | 1753.21 | Laramie - Fox Hills | System Datum: | Mean Sea Level | |
| 1970.00 | 2017.21 | Windsor Shale (Base of Fox Hills) | | | |
| 5575.00 | 5793.21 | Shannon Sandstone Member | | | |
| 7655.00 | 7950.90 | Sharon Springs Shale | | | |
| 7720.00 | 8036.53 | Niobrara Formation | | | |
| 7735.00 | 8058.09 | Niobrara A Chalk | | | |
| 7745.00 | 8072.96 | Niobrara A Landing Point | | | |
| 7848.00 | 8272.85 | Niobrara B Chalk | | | |
| 7879.00 | 8381.01 | Niobrara B Landing Point | | | |

SHL:
2450' FNL, 1098' FWL
Sec 4-T4S-R65W

LP:
856' FNL, 460' FEL
Sec 5-T4S-R65W

BHL:
856' FNL, 460' FWL
Sec 6-T4S-R65W



Planning Report

| | | | |
|------------------|-------------------|-------------------------------------|------------------------|
| Database: | EDT_32Bit_ODBC | Local Co-ordinate Reference: | Well JAMASO 4-65 5-6-2 |
| Company: | AXIS EXPLORATION | TVD Reference: | KB 25' @ 5610.00usft |
| Project: | ARAPAHOE COUNTY | MD Reference: | KB 25' @ 5610.00usft |
| Site: | Sec 4-T4S-R65W | North Reference: | True |
| Well: | JAMASO 4-65 5-6-2 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | ORIGINAL WELLBORE | | |
| Design: | PROPOSAL 1 | | |

| | | | |
|--------------------|---------------------------|----------------------|----------------|
| Project | ARAPAHOE COUNTY | | |
| Map System: | US State Plane 1983 | System Datum: | Mean Sea Level |
| Geo Datum: | North American Datum 1983 | | |
| Map Zone: | Colorado Northern Zone | | |

| | | | | | |
|-----------------------|-----------|----------------|-------------------|-------------------|--------------|
| Site | | Sec 4-T4S-R65W | | | |
| Site Position: | | Northing: | 1,149,213.35 usft | Latitude: | 39.740017°N |
| From: | Lat/Long | Easting: | 3,231,079.56 usft | Longitude: | 104.678289°W |
| Position Uncertainty: | 0.00 usft | Slot Radius: | 13.200 in | Grid Convergence: | 0.53 ° |

| | | | | | | |
|----------------------|-------------------|----------------|---------------------|-------------------|---------------|---------------|
| Well | JAMASO 4-65 5-6-2 | | | | | |
| Well Position | +N/-S | -2,453.70 usft | Northing: | 1,146,769.89 usft | Latitude: | 39.733281°N |
| | +E/-W | 1,093.22 usft | Easting: | 3,232,195.47 usft | Longitude: | 104.674402°W |
| Position Uncertainty | 0.00 usft | | Wellhead Elevation: | | Ground Level: | 5,585.00 usft |

| | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | ORIGINAL WELLBORE | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2015 | 1/18/2017 | 8.15 | 66.34 | 52,093.37358536 |

| | | | | |
|--------------------------|--------------------------------|---------------------|----------------------|----------------------|
| Design | PROPOSAL 1 | | | |
| Audit Notes: | | | | |
| Version: | Phase: | PROTOTYPE | Tie On Depth: | 0.00 |
| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft) | Direction (°) |
| | 0.00 | 0.00 | 0.00 | 278.32 |

| | | | | |
|---------------------------------|------------------------|--------------------------|---------------------------|----------------|
| Plan Survey Tool Program | Date | 10/18/2018 | | |
| Depth From (usft) | Depth To (usft) | Survey (Wellbore) | Tool Name | Remarks |
| 1 | 0.00 | 18,167.99 | PROPOSAL 1 (ORIGINAL WELL | MWD OWSG |
| | | | OWSG MWD - Standard | |

| | | | | | | | | | | |
|------------------------------|------------------------|--------------------|------------------------------|---------------------|---------------------|------------------------------|-----------------------------|----------------------------|----------------|---------------------|
| Plan Sections | | | | | | | | | | |
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | TFO (°) | Target |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 400.00 | 0.00 | 0.00 | 400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,265.74 | 17.31 | 328.41 | 1,252.62 | 110.59 | -68.00 | 2.00 | 2.00 | 0.00 | 328.41 | |
| 6,692.41 | 17.31 | 328.41 | 6,433.38 | 1,486.43 | -913.93 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 7,558.15 | 0.00 | 0.00 | 7,286.00 | 1,597.02 | -981.93 | 2.00 | -2.00 | 0.00 | 180.00 | |
| 7,588.15 | 0.00 | 0.00 | 7,316.00 | 1,597.02 | -981.93 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 8,488.22 | 90.00 | 270.25 | 7,889.00 | 1,599.56 | -1,554.93 | 10.00 | 10.00 | -9.97 | 270.25 | JAMASO 4-65 5-6-2 - |
| 18,167.99 | 90.00 | 270.25 | 7,889.00 | 1,642.11 | -11,234.61 | 0.00 | 0.00 | 0.00 | 0.00 | JAMASO 4-65 5-6-2 - |

Planning Report

| | | | |
|------------------|-------------------|-------------------------------------|------------------------|
| Database: | EDT_32Bit_ODBC | Local Co-ordinate Reference: | Well JAMASO 4-65 5-6-2 |
| Company: | AXIS EXPLORATION | TVD Reference: | KB 25' @ 5610.00usft |
| Project: | ARAPAHOE COUNTY | MD Reference: | KB 25' @ 5610.00usft |
| Site: | Sec 4-T4S-R65W | North Reference: | True |
| Well: | JAMASO 4-65 5-6-2 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | ORIGINAL WELLBORE | | |
| Design: | PROPOSAL 1 | | |

| Planned Survey | | | | | | | | | |
|---|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-----------------------|----------------------|---------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 100.00 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 200.00 | 0.00 | 0.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 293.00 | 0.00 | 0.00 | 293.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Denver | | | | | | | | | |
| 300.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 400.00 | 0.00 | 0.00 | 400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Start Build 2.00 | | | | | | | | | |
| 500.00 | 2.00 | 328.41 | 499.98 | 1.49 | -0.91 | 1.12 | 2.00 | 2.00 | 0.00 |
| 600.00 | 4.00 | 328.41 | 599.84 | 5.94 | -3.66 | 4.48 | 2.00 | 2.00 | 0.00 |
| 700.00 | 6.00 | 328.41 | 699.45 | 13.37 | -8.22 | 10.07 | 2.00 | 2.00 | 0.00 |
| 800.00 | 8.00 | 328.41 | 798.70 | 23.75 | -14.60 | 17.88 | 2.00 | 2.00 | 0.00 |
| 879.23 | 9.58 | 328.41 | 877.00 | 34.07 | -20.95 | 25.65 | 2.00 | 2.00 | 0.00 |
| Upper Arapahoe | | | | | | | | | |
| 900.00 | 10.00 | 328.41 | 897.47 | 37.08 | -22.80 | 27.92 | 2.00 | 2.00 | 0.00 |
| 1,000.00 | 12.00 | 328.41 | 995.62 | 53.33 | -32.79 | 40.16 | 2.00 | 2.00 | 0.00 |
| 1,100.00 | 14.00 | 328.41 | 1,093.06 | 72.49 | -44.57 | 54.59 | 2.00 | 2.00 | 0.00 |
| 1,174.40 | 15.49 | 328.41 | 1,165.00 | 88.62 | -54.49 | 66.73 | 2.00 | 2.00 | 0.00 |
| Lower Arapahoe | | | | | | | | | |
| 1,200.00 | 16.00 | 328.41 | 1,189.64 | 94.54 | -58.13 | 71.19 | 2.00 | 2.00 | 0.00 |
| 1,265.74 | 17.31 | 328.41 | 1,252.62 | 110.59 | -68.00 | 83.28 | 2.00 | 2.00 | 0.00 |
| Start 5426.67 hold at 1265.74 MD | | | | | | | | | |
| 1,300.00 | 17.31 | 328.41 | 1,285.33 | 119.28 | -73.34 | 89.82 | 0.00 | 0.00 | 0.00 |
| 1,400.00 | 17.31 | 328.41 | 1,380.80 | 144.63 | -88.93 | 108.91 | 0.00 | 0.00 | 0.00 |
| 1,500.00 | 17.31 | 328.41 | 1,476.27 | 169.98 | -104.51 | 128.00 | 0.00 | 0.00 | 0.00 |
| 1,600.00 | 17.31 | 328.41 | 1,571.74 | 195.34 | -120.10 | 147.09 | 0.00 | 0.00 | 0.00 |
| 1,700.00 | 17.31 | 328.41 | 1,667.20 | 220.69 | -135.69 | 166.18 | 0.00 | 0.00 | 0.00 |
| 1,753.21 | 17.31 | 328.41 | 1,718.00 | 234.18 | -143.99 | 176.34 | 0.00 | 0.00 | 0.00 |
| Laramie - Fox Hills | | | | | | | | | |
| 1,800.00 | 17.31 | 328.41 | 1,762.67 | 246.04 | -151.28 | 185.27 | 0.00 | 0.00 | 0.00 |
| 1,900.00 | 17.31 | 328.41 | 1,858.14 | 271.40 | -166.87 | 204.37 | 0.00 | 0.00 | 0.00 |
| 2,000.00 | 17.31 | 328.41 | 1,953.61 | 296.75 | -182.46 | 223.46 | 0.00 | 0.00 | 0.00 |
| 2,017.17 | 17.31 | 328.41 | 1,970.00 | 301.10 | -185.13 | 226.73 | 0.00 | 0.00 | 0.00 |
| Pierre Shale (Base of Fox Hills) | | | | | | | | | |
| 2,100.00 | 17.31 | 328.41 | 2,049.08 | 322.10 | -198.04 | 242.55 | 0.00 | 0.00 | 0.00 |
| 2,200.00 | 17.31 | 328.41 | 2,144.55 | 347.46 | -213.63 | 261.64 | 0.00 | 0.00 | 0.00 |
| 2,300.00 | 17.31 | 328.41 | 2,240.01 | 372.81 | -229.22 | 280.73 | 0.00 | 0.00 | 0.00 |
| 2,400.00 | 17.31 | 328.41 | 2,335.48 | 398.16 | -244.81 | 299.82 | 0.00 | 0.00 | 0.00 |
| 2,500.00 | 17.31 | 328.41 | 2,430.95 | 423.52 | -260.40 | 318.91 | 0.00 | 0.00 | 0.00 |
| 2,600.00 | 17.31 | 328.41 | 2,526.42 | 448.87 | -275.99 | 338.01 | 0.00 | 0.00 | 0.00 |
| 2,700.00 | 17.31 | 328.41 | 2,621.89 | 474.22 | -291.58 | 357.10 | 0.00 | 0.00 | 0.00 |
| 2,800.00 | 17.31 | 328.41 | 2,717.36 | 499.58 | -307.16 | 376.19 | 0.00 | 0.00 | 0.00 |
| 2,900.00 | 17.31 | 328.41 | 2,812.82 | 524.93 | -322.75 | 395.28 | 0.00 | 0.00 | 0.00 |
| 3,000.00 | 17.31 | 328.41 | 2,908.29 | 550.28 | -338.34 | 414.37 | 0.00 | 0.00 | 0.00 |
| 3,100.00 | 17.31 | 328.41 | 3,003.76 | 575.64 | -353.93 | 433.46 | 0.00 | 0.00 | 0.00 |
| 3,200.00 | 17.31 | 328.41 | 3,099.23 | 600.99 | -369.52 | 452.55 | 0.00 | 0.00 | 0.00 |
| 3,300.00 | 17.31 | 328.41 | 3,194.70 | 626.34 | -385.11 | 471.65 | 0.00 | 0.00 | 0.00 |
| 3,400.00 | 17.31 | 328.41 | 3,290.17 | 651.70 | -400.70 | 490.74 | 0.00 | 0.00 | 0.00 |
| 3,500.00 | 17.31 | 328.41 | 3,385.63 | 677.05 | -416.28 | 509.83 | 0.00 | 0.00 | 0.00 |
| 3,600.00 | 17.31 | 328.41 | 3,481.10 | 702.40 | -431.87 | 528.92 | 0.00 | 0.00 | 0.00 |
| 3,700.00 | 17.31 | 328.41 | 3,576.57 | 727.76 | -447.46 | 548.01 | 0.00 | 0.00 | 0.00 |
| 3,800.00 | 17.31 | 328.41 | 3,672.04 | 753.11 | -463.05 | 567.10 | 0.00 | 0.00 | 0.00 |
| 3,900.00 | 17.31 | 328.41 | 3,767.51 | 778.46 | -478.64 | 586.19 | 0.00 | 0.00 | 0.00 |

Planning Report

| | | | |
|------------------|-------------------|-------------------------------------|------------------------|
| Database: | EDT_32Bit_ODBC | Local Co-ordinate Reference: | Well JAMASO 4-65 5-6-2 |
| Company: | AXIS EXPLORATION | TVD Reference: | KB 25' @ 5610.00usft |
| Project: | ARAPAHOE COUNTY | MD Reference: | KB 25' @ 5610.00usft |
| Site: | Sec 4-T4S-R65W | North Reference: | True |
| Well: | JAMASO 4-65 5-6-2 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | ORIGINAL WELLBORE | | |
| Design: | PROPOSAL 1 | | |

| Planned Survey | | | | | | | | | |
|--------------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-----------------------|----------------------|---------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 4,000.00 | 17.31 | 328.41 | 3,862.98 | 803.81 | -494.23 | 605.29 | 0.00 | 0.00 | 0.00 |
| 4,100.00 | 17.31 | 328.41 | 3,958.44 | 829.17 | -509.82 | 624.38 | 0.00 | 0.00 | 0.00 |
| 4,200.00 | 17.31 | 328.41 | 4,053.91 | 854.52 | -525.40 | 643.47 | 0.00 | 0.00 | 0.00 |
| 4,300.00 | 17.31 | 328.41 | 4,149.38 | 879.87 | -540.99 | 662.56 | 0.00 | 0.00 | 0.00 |
| 4,400.00 | 17.31 | 328.41 | 4,244.85 | 905.23 | -556.58 | 681.65 | 0.00 | 0.00 | 0.00 |
| 4,500.00 | 17.31 | 328.41 | 4,340.32 | 930.58 | -572.17 | 700.74 | 0.00 | 0.00 | 0.00 |
| 4,600.00 | 17.31 | 328.41 | 4,435.79 | 955.93 | -587.76 | 719.83 | 0.00 | 0.00 | 0.00 |
| 4,700.00 | 17.31 | 328.41 | 4,531.25 | 981.29 | -603.35 | 738.93 | 0.00 | 0.00 | 0.00 |
| 4,800.00 | 17.31 | 328.41 | 4,626.72 | 1,006.64 | -618.93 | 758.02 | 0.00 | 0.00 | 0.00 |
| 4,900.00 | 17.31 | 328.41 | 4,722.19 | 1,031.99 | -634.52 | 777.11 | 0.00 | 0.00 | 0.00 |
| 5,000.00 | 17.31 | 328.41 | 4,817.66 | 1,057.35 | -650.11 | 796.20 | 0.00 | 0.00 | 0.00 |
| 5,100.00 | 17.31 | 328.41 | 4,913.13 | 1,082.70 | -665.70 | 815.29 | 0.00 | 0.00 | 0.00 |
| 5,200.00 | 17.31 | 328.41 | 5,008.60 | 1,108.05 | -681.29 | 834.38 | 0.00 | 0.00 | 0.00 |
| 5,300.00 | 17.31 | 328.41 | 5,104.06 | 1,133.41 | -696.88 | 853.47 | 0.00 | 0.00 | 0.00 |
| 5,400.00 | 17.31 | 328.41 | 5,199.53 | 1,158.76 | -712.47 | 872.57 | 0.00 | 0.00 | 0.00 |
| 5,500.00 | 17.31 | 328.41 | 5,295.00 | 1,184.11 | -728.05 | 891.66 | 0.00 | 0.00 | 0.00 |
| 5,600.00 | 17.31 | 328.41 | 5,390.47 | 1,209.47 | -743.64 | 910.75 | 0.00 | 0.00 | 0.00 |
| 5,700.00 | 17.31 | 328.41 | 5,485.94 | 1,234.82 | -759.23 | 929.84 | 0.00 | 0.00 | 0.00 |
| 5,793.29 | 17.31 | 328.41 | 5,575.00 | 1,258.47 | -773.77 | 947.65 | 0.00 | 0.00 | 0.00 |
| Shannon Sandstone Member | | | | | | | | | |
| 5,800.00 | 17.31 | 328.41 | 5,581.41 | 1,260.17 | -774.82 | 948.93 | 0.00 | 0.00 | 0.00 |
| 5,900.00 | 17.31 | 328.41 | 5,676.87 | 1,285.53 | -790.41 | 968.02 | 0.00 | 0.00 | 0.00 |
| 6,000.00 | 17.31 | 328.41 | 5,772.34 | 1,310.88 | -806.00 | 987.11 | 0.00 | 0.00 | 0.00 |
| 6,100.00 | 17.31 | 328.41 | 5,867.81 | 1,336.23 | -821.59 | 1,006.21 | 0.00 | 0.00 | 0.00 |
| 6,200.00 | 17.31 | 328.41 | 5,963.28 | 1,361.59 | -837.17 | 1,025.30 | 0.00 | 0.00 | 0.00 |
| 6,300.00 | 17.31 | 328.41 | 6,058.75 | 1,386.94 | -852.76 | 1,044.39 | 0.00 | 0.00 | 0.00 |
| 6,400.00 | 17.31 | 328.41 | 6,154.22 | 1,412.29 | -868.35 | 1,063.48 | 0.00 | 0.00 | 0.00 |
| 6,500.00 | 17.31 | 328.41 | 6,249.69 | 1,437.65 | -883.94 | 1,082.57 | 0.00 | 0.00 | 0.00 |
| 6,600.00 | 17.31 | 328.41 | 6,345.15 | 1,463.00 | -899.53 | 1,101.66 | 0.00 | 0.00 | 0.00 |
| 6,692.41 | 17.31 | 328.41 | 6,433.38 | 1,486.43 | -913.93 | 1,119.30 | 0.00 | 0.00 | 0.00 |
| Start Drop -2.00 | | | | | | | | | |
| 6,700.00 | 17.16 | 328.41 | 6,440.62 | 1,488.35 | -915.11 | 1,120.75 | 2.00 | -2.00 | 0.00 |
| 6,800.00 | 15.16 | 328.41 | 6,536.67 | 1,512.06 | -929.69 | 1,138.60 | 2.00 | -2.00 | 0.00 |
| 6,900.00 | 13.16 | 328.41 | 6,633.62 | 1,532.90 | -942.51 | 1,154.30 | 2.00 | -2.00 | 0.00 |
| 7,000.00 | 11.16 | 328.41 | 6,731.37 | 1,550.85 | -953.54 | 1,167.81 | 2.00 | -2.00 | 0.00 |
| 7,100.00 | 9.16 | 328.41 | 6,829.80 | 1,565.88 | -962.78 | 1,179.13 | 2.00 | -2.00 | 0.00 |
| 7,200.00 | 7.16 | 328.41 | 6,928.78 | 1,577.97 | -970.22 | 1,188.24 | 2.00 | -2.00 | 0.00 |
| 7,300.00 | 5.16 | 328.41 | 7,028.20 | 1,587.12 | -975.84 | 1,195.12 | 2.00 | -2.00 | 0.00 |
| 7,400.00 | 3.16 | 328.41 | 7,127.93 | 1,593.30 | -979.64 | 1,199.78 | 2.00 | -2.00 | 0.00 |
| 7,500.00 | 1.16 | 328.41 | 7,227.85 | 1,596.52 | -981.62 | 1,202.20 | 2.00 | -2.00 | 0.00 |
| 7,558.15 | 0.00 | 0.00 | 7,286.00 | 1,597.02 | -981.93 | 1,202.58 | 2.00 | -2.00 | 0.00 |
| Start 30.00 hold at 7558.15 MD | | | | | | | | | |
| 7,588.15 | 0.00 | 0.00 | 7,316.00 | 1,597.02 | -981.93 | 1,202.58 | 0.00 | 0.00 | 0.00 |
| Start DLS 10.00 TFO 270.25 | | | | | | | | | |
| 7,600.00 | 1.18 | 270.25 | 7,327.85 | 1,597.02 | -982.05 | 1,202.70 | 10.00 | 10.00 | 0.00 |
| 7,650.00 | 6.18 | 270.25 | 7,377.73 | 1,597.03 | -985.26 | 1,205.88 | 10.00 | 10.00 | 0.00 |
| 7,700.00 | 11.18 | 270.25 | 7,427.14 | 1,597.07 | -992.81 | 1,213.35 | 10.00 | 10.00 | 0.00 |
| 7,750.00 | 16.18 | 270.25 | 7,475.70 | 1,597.12 | -1,004.64 | 1,225.06 | 10.00 | 10.00 | 0.00 |
| 7,800.00 | 21.18 | 270.25 | 7,523.05 | 1,597.19 | -1,020.65 | 1,240.92 | 10.00 | 10.00 | 0.00 |
| 7,850.00 | 26.18 | 270.25 | 7,568.83 | 1,597.28 | -1,040.72 | 1,260.80 | 10.00 | 10.00 | 0.00 |
| 7,900.00 | 31.18 | 270.25 | 7,612.68 | 1,597.39 | -1,064.71 | 1,284.55 | 10.00 | 10.00 | 0.00 |
| 7,950.00 | 36.18 | 270.25 | 7,654.27 | 1,597.51 | -1,092.44 | 1,312.00 | 10.00 | 10.00 | 0.00 |
| 7,950.90 | 36.27 | 270.25 | 7,655.00 | 1,597.51 | -1,092.97 | 1,312.52 | 10.00 | 10.00 | 0.00 |
| Sharon Springs Shale | | | | | | | | | |

Planning Report

| | | | |
|------------------|-------------------|-------------------------------------|------------------------|
| Database: | EDT_32Bit_ODBC | Local Co-ordinate Reference: | Well JAMASO 4-65 5-6-2 |
| Company: | AXIS EXPLORATION | TVD Reference: | KB 25' @ 5610.00usft |
| Project: | ARAPAHOE COUNTY | MD Reference: | KB 25' @ 5610.00usft |
| Site: | Sec 4-T4S-R65W | North Reference: | True |
| Well: | JAMASO 4-65 5-6-2 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | ORIGINAL WELLBORE | | |
| Design: | PROPOSAL 1 | | |

| Planned Survey | | | | | | | | | |
|---|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-----------------------|----------------------|---------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 8,000.00 | 41.18 | 270.25 | 7,693.29 | 1,597.65 | -1,123.67 | 1,342.93 | 10.00 | 10.00 | 0.00 |
| 8,036.53 | 44.83 | 270.25 | 7,720.00 | 1,597.76 | -1,148.59 | 1,367.59 | 10.00 | 10.00 | 0.00 |
| Niobrara Formation | | | | | | | | | |
| 8,050.00 | 46.18 | 270.25 | 7,729.44 | 1,597.80 | -1,158.20 | 1,377.11 | 10.00 | 10.00 | 0.00 |
| 8,058.09 | 46.99 | 270.25 | 7,735.00 | 1,597.83 | -1,164.07 | 1,382.93 | 10.00 | 10.00 | 0.00 |
| Niobrara A Chalk | | | | | | | | | |
| 8,072.96 | 48.48 | 270.25 | 7,745.00 | 1,597.88 | -1,175.08 | 1,393.82 | 10.00 | 10.00 | 0.00 |
| Niobrara A Landing Point | | | | | | | | | |
| 8,100.00 | 51.18 | 270.25 | 7,762.44 | 1,597.97 | -1,195.74 | 1,414.28 | 10.00 | 10.00 | 0.00 |
| 8,150.00 | 56.18 | 270.25 | 7,792.05 | 1,598.15 | -1,236.01 | 1,454.15 | 10.00 | 10.00 | 0.00 |
| 8,200.00 | 61.18 | 270.25 | 7,818.03 | 1,598.34 | -1,278.71 | 1,496.43 | 10.00 | 10.00 | 0.00 |
| 8,250.00 | 66.18 | 270.25 | 7,840.19 | 1,598.53 | -1,323.51 | 1,540.79 | 10.00 | 10.00 | 0.00 |
| 8,272.85 | 68.46 | 270.25 | 7,849.00 | 1,598.63 | -1,344.59 | 1,561.66 | 10.00 | 10.00 | 0.00 |
| Niobrara B Chalk | | | | | | | | | |
| 8,300.00 | 71.18 | 270.25 | 7,858.36 | 1,598.74 | -1,370.07 | 1,586.89 | 10.00 | 10.00 | 0.00 |
| 8,350.00 | 76.18 | 270.25 | 7,872.41 | 1,598.95 | -1,418.04 | 1,634.39 | 10.00 | 10.00 | 0.00 |
| 8,381.01 | 79.28 | 270.25 | 7,879.00 | 1,599.09 | -1,448.34 | 1,664.39 | 10.00 | 10.00 | 0.00 |
| Niobrara B Landing Point | | | | | | | | | |
| 8,400.00 | 81.18 | 270.25 | 7,882.22 | 1,599.17 | -1,467.06 | 1,682.92 | 10.00 | 10.00 | 0.00 |
| 8,450.00 | 86.18 | 270.25 | 7,887.73 | 1,599.39 | -1,516.74 | 1,732.11 | 10.00 | 10.00 | 0.00 |
| 8,488.22 | 90.00 | 270.25 | 7,889.00 | 1,599.56 | -1,554.93 | 1,769.92 | 10.00 | 10.00 | 0.00 |
| Start 9679.77 hold at 8488.22 MD | | | | | | | | | |
| 8,500.00 | 90.00 | 270.25 | 7,889.00 | 1,599.61 | -1,566.71 | 1,781.58 | 0.00 | 0.00 | 0.00 |
| 8,600.00 | 90.00 | 270.25 | 7,889.00 | 1,600.05 | -1,666.71 | 1,880.60 | 0.00 | 0.00 | 0.00 |
| 8,700.00 | 90.00 | 270.25 | 7,889.00 | 1,600.50 | -1,766.70 | 1,979.61 | 0.00 | 0.00 | 0.00 |
| 8,800.00 | 90.00 | 270.25 | 7,889.00 | 1,600.94 | -1,866.70 | 2,078.62 | 0.00 | 0.00 | 0.00 |
| 8,900.00 | 90.00 | 270.25 | 7,889.00 | 1,601.38 | -1,966.70 | 2,177.63 | 0.00 | 0.00 | 0.00 |
| 9,000.00 | 90.00 | 270.25 | 7,889.00 | 1,601.83 | -2,066.70 | 2,276.64 | 0.00 | 0.00 | 0.00 |
| 9,100.00 | 90.00 | 270.25 | 7,889.00 | 1,602.27 | -2,166.70 | 2,375.65 | 0.00 | 0.00 | 0.00 |
| 9,200.00 | 90.00 | 270.25 | 7,889.00 | 1,602.71 | -2,266.70 | 2,474.67 | 0.00 | 0.00 | 0.00 |
| 9,300.00 | 90.00 | 270.25 | 7,889.00 | 1,603.16 | -2,366.70 | 2,573.68 | 0.00 | 0.00 | 0.00 |
| 9,400.00 | 90.00 | 270.25 | 7,889.00 | 1,603.60 | -2,466.70 | 2,672.69 | 0.00 | 0.00 | 0.00 |
| 9,500.00 | 90.00 | 270.25 | 7,888.99 | 1,604.04 | -2,566.70 | 2,771.70 | 0.00 | 0.00 | 0.00 |
| 9,600.00 | 90.00 | 270.25 | 7,888.99 | 1,604.49 | -2,666.70 | 2,870.71 | 0.00 | 0.00 | 0.00 |
| 9,700.00 | 90.00 | 270.25 | 7,888.99 | 1,604.93 | -2,766.69 | 2,969.72 | 0.00 | 0.00 | 0.00 |
| 9,800.00 | 90.00 | 270.25 | 7,888.99 | 1,605.37 | -2,866.69 | 3,068.74 | 0.00 | 0.00 | 0.00 |
| 9,900.00 | 90.00 | 270.25 | 7,888.99 | 1,605.82 | -2,966.69 | 3,167.75 | 0.00 | 0.00 | 0.00 |
| 10,000.00 | 90.00 | 270.25 | 7,888.99 | 1,606.26 | -3,066.69 | 3,266.76 | 0.00 | 0.00 | 0.00 |
| 10,100.00 | 90.00 | 270.25 | 7,888.99 | 1,606.70 | -3,166.69 | 3,365.77 | 0.00 | 0.00 | 0.00 |
| 10,200.00 | 90.00 | 270.25 | 7,888.99 | 1,607.15 | -3,266.69 | 3,464.78 | 0.00 | 0.00 | 0.00 |
| 10,300.00 | 90.00 | 270.25 | 7,888.99 | 1,607.59 | -3,366.69 | 3,563.79 | 0.00 | 0.00 | 0.00 |
| 10,400.00 | 90.00 | 270.25 | 7,888.99 | 1,608.03 | -3,466.69 | 3,662.81 | 0.00 | 0.00 | 0.00 |
| 10,500.00 | 90.00 | 270.25 | 7,888.99 | 1,608.48 | -3,566.69 | 3,761.82 | 0.00 | 0.00 | 0.00 |
| 10,600.00 | 90.00 | 270.25 | 7,888.99 | 1,608.92 | -3,666.69 | 3,860.83 | 0.00 | 0.00 | 0.00 |
| 10,700.00 | 90.00 | 270.25 | 7,888.99 | 1,609.36 | -3,766.68 | 3,959.84 | 0.00 | 0.00 | 0.00 |
| 10,800.00 | 90.00 | 270.25 | 7,888.99 | 1,609.81 | -3,866.68 | 4,058.85 | 0.00 | 0.00 | 0.00 |
| 10,900.00 | 90.00 | 270.25 | 7,888.99 | 1,610.25 | -3,966.68 | 4,157.87 | 0.00 | 0.00 | 0.00 |
| 11,000.00 | 90.00 | 270.25 | 7,888.99 | 1,610.69 | -4,066.68 | 4,256.88 | 0.00 | 0.00 | 0.00 |
| 11,100.00 | 90.00 | 270.25 | 7,888.99 | 1,611.13 | -4,166.68 | 4,355.89 | 0.00 | 0.00 | 0.00 |
| 11,200.00 | 90.00 | 270.25 | 7,888.99 | 1,611.58 | -4,266.68 | 4,454.90 | 0.00 | 0.00 | 0.00 |
| 11,300.00 | 90.00 | 270.25 | 7,888.99 | 1,612.02 | -4,366.68 | 4,553.91 | 0.00 | 0.00 | 0.00 |
| 11,400.00 | 90.00 | 270.25 | 7,888.98 | 1,612.46 | -4,466.68 | 4,652.92 | 0.00 | 0.00 | 0.00 |
| 11,500.00 | 90.00 | 270.25 | 7,888.98 | 1,612.91 | -4,566.68 | 4,751.94 | 0.00 | 0.00 | 0.00 |

Planning Report

| | | | |
|------------------|-------------------|-------------------------------------|------------------------|
| Database: | EDT_32Bit_ODBC | Local Co-ordinate Reference: | Well JAMASO 4-65 5-6-2 |
| Company: | AXIS EXPLORATION | TVD Reference: | KB 25' @ 5610.00usft |
| Project: | ARAPAHOE COUNTY | MD Reference: | KB 25' @ 5610.00usft |
| Site: | Sec 4-T4S-R65W | North Reference: | True |
| Well: | JAMASO 4-65 5-6-2 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | ORIGINAL WELLBORE | | |
| Design: | PROPOSAL 1 | | |

| Planned Survey | | | | | | | | | |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-----------------------|----------------------|---------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 11,600.00 | 90.00 | 270.25 | 7,888.98 | 1,613.35 | -4,666.68 | 4,850.95 | 0.00 | 0.00 | 0.00 |
| 11,700.00 | 90.00 | 270.25 | 7,888.98 | 1,613.79 | -4,766.67 | 4,949.96 | 0.00 | 0.00 | 0.00 |
| 11,800.00 | 90.00 | 270.25 | 7,888.98 | 1,614.24 | -4,866.67 | 5,048.97 | 0.00 | 0.00 | 0.00 |
| 11,900.00 | 90.00 | 270.25 | 7,888.98 | 1,614.68 | -4,966.67 | 5,147.98 | 0.00 | 0.00 | 0.00 |
| 12,000.00 | 90.00 | 270.25 | 7,888.98 | 1,615.12 | -5,066.67 | 5,246.99 | 0.00 | 0.00 | 0.00 |
| 12,100.00 | 90.00 | 270.25 | 7,888.98 | 1,615.57 | -5,166.67 | 5,346.01 | 0.00 | 0.00 | 0.00 |
| 12,200.00 | 90.00 | 270.25 | 7,888.98 | 1,616.01 | -5,266.67 | 5,445.02 | 0.00 | 0.00 | 0.00 |
| 12,300.00 | 90.00 | 270.25 | 7,888.98 | 1,616.45 | -5,366.67 | 5,544.03 | 0.00 | 0.00 | 0.00 |
| 12,400.00 | 90.00 | 270.25 | 7,888.98 | 1,616.90 | -5,466.67 | 5,643.04 | 0.00 | 0.00 | 0.00 |
| 12,500.00 | 90.00 | 270.25 | 7,888.98 | 1,617.34 | -5,566.67 | 5,742.05 | 0.00 | 0.00 | 0.00 |
| 12,600.00 | 90.00 | 270.25 | 7,888.98 | 1,617.78 | -5,666.67 | 5,841.06 | 0.00 | 0.00 | 0.00 |
| 12,700.00 | 90.00 | 270.25 | 7,888.98 | 1,618.23 | -5,766.67 | 5,940.08 | 0.00 | 0.00 | 0.00 |
| 12,800.00 | 90.00 | 270.25 | 7,888.98 | 1,618.67 | -5,866.66 | 6,039.09 | 0.00 | 0.00 | 0.00 |
| 12,900.00 | 90.00 | 270.25 | 7,888.98 | 1,619.11 | -5,966.66 | 6,138.10 | 0.00 | 0.00 | 0.00 |
| 13,000.00 | 90.00 | 270.25 | 7,888.98 | 1,619.56 | -6,066.66 | 6,237.11 | 0.00 | 0.00 | 0.00 |
| 13,100.00 | 90.00 | 270.25 | 7,888.98 | 1,620.00 | -6,166.66 | 6,336.12 | 0.00 | 0.00 | 0.00 |
| 13,200.00 | 90.00 | 270.25 | 7,888.98 | 1,620.44 | -6,266.66 | 6,435.13 | 0.00 | 0.00 | 0.00 |
| 13,300.00 | 90.00 | 270.25 | 7,888.97 | 1,620.89 | -6,366.66 | 6,534.15 | 0.00 | 0.00 | 0.00 |
| 13,400.00 | 90.00 | 270.25 | 7,888.97 | 1,621.33 | -6,466.66 | 6,633.16 | 0.00 | 0.00 | 0.00 |
| 13,500.00 | 90.00 | 270.25 | 7,888.97 | 1,621.77 | -6,566.66 | 6,732.17 | 0.00 | 0.00 | 0.00 |
| 13,600.00 | 90.00 | 270.25 | 7,888.97 | 1,622.21 | -6,666.66 | 6,831.18 | 0.00 | 0.00 | 0.00 |
| 13,700.00 | 90.00 | 270.25 | 7,888.97 | 1,622.66 | -6,766.66 | 6,930.19 | 0.00 | 0.00 | 0.00 |
| 13,800.00 | 90.00 | 270.25 | 7,888.97 | 1,623.10 | -6,866.65 | 7,029.21 | 0.00 | 0.00 | 0.00 |
| 13,900.00 | 90.00 | 270.25 | 7,888.97 | 1,623.54 | -6,966.65 | 7,128.22 | 0.00 | 0.00 | 0.00 |
| 14,000.00 | 90.00 | 270.25 | 7,888.97 | 1,623.99 | -7,066.65 | 7,227.23 | 0.00 | 0.00 | 0.00 |
| 14,100.00 | 90.00 | 270.25 | 7,888.97 | 1,624.43 | -7,166.65 | 7,326.24 | 0.00 | 0.00 | 0.00 |
| 14,200.00 | 90.00 | 270.25 | 7,888.97 | 1,624.87 | -7,266.65 | 7,425.25 | 0.00 | 0.00 | 0.00 |
| 14,300.00 | 90.00 | 270.25 | 7,888.97 | 1,625.32 | -7,366.65 | 7,524.26 | 0.00 | 0.00 | 0.00 |
| 14,400.00 | 90.00 | 270.25 | 7,888.97 | 1,625.76 | -7,466.65 | 7,623.28 | 0.00 | 0.00 | 0.00 |
| 14,500.00 | 90.00 | 270.25 | 7,888.97 | 1,626.20 | -7,566.65 | 7,722.29 | 0.00 | 0.00 | 0.00 |
| 14,600.00 | 90.00 | 270.25 | 7,888.97 | 1,626.65 | -7,666.65 | 7,821.30 | 0.00 | 0.00 | 0.00 |
| 14,700.00 | 90.00 | 270.25 | 7,888.97 | 1,627.09 | -7,766.65 | 7,920.31 | 0.00 | 0.00 | 0.00 |
| 14,800.00 | 90.00 | 270.25 | 7,888.97 | 1,627.53 | -7,866.64 | 8,019.32 | 0.00 | 0.00 | 0.00 |
| 14,900.00 | 90.00 | 270.25 | 7,888.97 | 1,627.98 | -7,966.64 | 8,118.33 | 0.00 | 0.00 | 0.00 |
| 15,000.00 | 90.00 | 270.25 | 7,888.97 | 1,628.42 | -8,066.64 | 8,217.35 | 0.00 | 0.00 | 0.00 |
| 15,100.00 | 90.00 | 270.25 | 7,888.97 | 1,628.86 | -8,166.64 | 8,316.36 | 0.00 | 0.00 | 0.00 |
| 15,200.00 | 90.00 | 270.25 | 7,888.96 | 1,629.31 | -8,266.64 | 8,415.37 | 0.00 | 0.00 | 0.00 |
| 15,300.00 | 90.00 | 270.25 | 7,888.96 | 1,629.75 | -8,366.64 | 8,514.38 | 0.00 | 0.00 | 0.00 |
| 15,400.00 | 90.00 | 270.25 | 7,888.96 | 1,630.19 | -8,466.64 | 8,613.39 | 0.00 | 0.00 | 0.00 |
| 15,500.00 | 90.00 | 270.25 | 7,888.96 | 1,630.64 | -8,566.64 | 8,712.40 | 0.00 | 0.00 | 0.00 |
| 15,600.00 | 90.00 | 270.25 | 7,888.96 | 1,631.08 | -8,666.64 | 8,811.42 | 0.00 | 0.00 | 0.00 |
| 15,700.00 | 90.00 | 270.25 | 7,888.96 | 1,631.52 | -8,766.64 | 8,910.43 | 0.00 | 0.00 | 0.00 |
| 15,800.00 | 90.00 | 270.25 | 7,888.96 | 1,631.97 | -8,866.63 | 9,009.44 | 0.00 | 0.00 | 0.00 |
| 15,900.00 | 90.00 | 270.25 | 7,888.96 | 1,632.41 | -8,966.63 | 9,108.45 | 0.00 | 0.00 | 0.00 |
| 16,000.00 | 90.00 | 270.25 | 7,888.96 | 1,632.85 | -9,066.63 | 9,207.46 | 0.00 | 0.00 | 0.00 |
| 16,100.00 | 90.00 | 270.25 | 7,888.96 | 1,633.29 | -9,166.63 | 9,306.48 | 0.00 | 0.00 | 0.00 |
| 16,200.00 | 90.00 | 270.25 | 7,888.96 | 1,633.74 | -9,266.63 | 9,405.49 | 0.00 | 0.00 | 0.00 |
| 16,300.00 | 90.00 | 270.25 | 7,888.96 | 1,634.18 | -9,366.63 | 9,504.50 | 0.00 | 0.00 | 0.00 |
| 16,400.00 | 90.00 | 270.25 | 7,888.96 | 1,634.62 | -9,466.63 | 9,603.51 | 0.00 | 0.00 | 0.00 |
| 16,500.00 | 90.00 | 270.25 | 7,888.96 | 1,635.07 | -9,566.63 | 9,702.52 | 0.00 | 0.00 | 0.00 |
| 16,600.00 | 90.00 | 270.25 | 7,888.96 | 1,635.51 | -9,666.63 | 9,801.53 | 0.00 | 0.00 | 0.00 |
| 16,700.00 | 90.00 | 270.25 | 7,888.96 | 1,635.95 | -9,766.63 | 9,900.55 | 0.00 | 0.00 | 0.00 |
| 16,800.00 | 90.00 | 270.25 | 7,888.96 | 1,636.40 | -9,866.62 | 9,999.56 | 0.00 | 0.00 | 0.00 |
| 16,900.00 | 90.00 | 270.25 | 7,888.96 | 1,636.84 | -9,966.62 | 10,098.57 | 0.00 | 0.00 | 0.00 |

Planning Report

| | | | |
|------------------|-------------------|-------------------------------------|------------------------|
| Database: | EDT_32Bit_ODBC | Local Co-ordinate Reference: | Well JAMASO 4-65 5-6-2 |
| Company: | AXIS EXPLORATION | TVD Reference: | KB 25' @ 5610.00usft |
| Project: | ARAPAHOE COUNTY | MD Reference: | KB 25' @ 5610.00usft |
| Site: | Sec 4-T4S-R65W | North Reference: | True |
| Well: | JAMASO 4-65 5-6-2 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | ORIGINAL WELLBORE | | |
| Design: | PROPOSAL 1 | | |

| Planned Survey | | | | | | | | | | |
|-----------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|-------------------------------|-----------------------------|----------------------------|---------------------------|--|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | |
| 17,000.00 | 90.00 | 270.25 | 7,888.96 | 1,637.28 | -10,066.62 | 10,197.58 | 0.00 | 0.00 | 0.00 | |
| 17,100.00 | 90.00 | 270.25 | 7,888.95 | 1,637.73 | -10,166.62 | 10,296.59 | 0.00 | 0.00 | 0.00 | |
| 17,200.00 | 90.00 | 270.25 | 7,888.95 | 1,638.17 | -10,266.62 | 10,395.60 | 0.00 | 0.00 | 0.00 | |
| 17,300.00 | 90.00 | 270.25 | 7,888.95 | 1,638.61 | -10,366.62 | 10,494.62 | 0.00 | 0.00 | 0.00 | |
| 17,400.00 | 90.00 | 270.25 | 7,888.95 | 1,639.06 | -10,466.62 | 10,593.63 | 0.00 | 0.00 | 0.00 | |
| 17,500.00 | 90.00 | 270.25 | 7,888.95 | 1,639.50 | -10,566.62 | 10,692.64 | 0.00 | 0.00 | 0.00 | |
| 17,600.00 | 90.00 | 270.25 | 7,888.95 | 1,639.94 | -10,666.62 | 10,791.65 | 0.00 | 0.00 | 0.00 | |
| 17,700.00 | 90.00 | 270.25 | 7,888.95 | 1,640.39 | -10,766.62 | 10,890.66 | 0.00 | 0.00 | 0.00 | |
| 17,800.00 | 90.00 | 270.25 | 7,888.95 | 1,640.83 | -10,866.62 | 10,989.67 | 0.00 | 0.00 | 0.00 | |
| 17,900.00 | 90.00 | 270.25 | 7,888.95 | 1,641.27 | -10,966.61 | 11,088.69 | 0.00 | 0.00 | 0.00 | |
| 18,000.00 | 90.00 | 270.25 | 7,888.95 | 1,641.72 | -11,066.61 | 11,187.70 | 0.00 | 0.00 | 0.00 | |
| 18,100.00 | 90.00 | 270.25 | 7,888.95 | 1,642.16 | -11,166.61 | 11,286.71 | 0.00 | 0.00 | 0.00 | |
| 18,167.99 | 90.00 | 270.25 | 7,888.95 | 1,642.46 | -11,234.60 | 11,354.03 | 0.00 | 0.00 | 0.00 | |
| TD at 18167.99 | | | | | | | | | | |

| Design Targets | | | | | | | | | | |
|--|-----------|----------|----------|----------|------------|--------------|--------------|-------------|--|--------------|
| Target Name | | | | | | | | | | |
| - hit/miss target | Dip Angle | Dip Dir. | TVD | +N/-S | +E/-W | Northing | Easting | | | |
| - Shape | (°) | (°) | (usft) | (usft) | (usft) | (usft) | (usft) | Latitude | | Longitude |
| JAMASO 4-65 5-6-2 - PI | 0.00 | 0.00 | 7,889.00 | 1,642.11 | -11,234.61 | 1,148,307.33 | 3,220,946.06 | 39.737782°N | | 104.714350°W |
| - plan misses target center by 0.35usft at 18167.99usft MD (7888.95 TVD, 1642.46 N, -11234.60 E) | | | | | | | | | | |
| - Point | | | | | | | | | | |
| JAMASO 4-65 5-6-2 - LF | 0.00 | 0.00 | 7,889.00 | 1,599.56 | -1,554.93 | 1,148,354.90 | 3,230,625.72 | 39.737672°N | | 104.679931°W |
| - plan hits target center | | | | | | | | | | |
| - Point | | | | | | | | | | |

| Formations | | | | | | | |
|-----------------------|-----------------------|----------------------------------|-----------|---------|-------------------|--|--|
| Measured Depth (usft) | Vertical Depth (usft) | Name | Lithology | Dip (°) | Dip Direction (°) | | |
| 293.00 | 293.00 | Denver | | | | | |
| 879.23 | 877.00 | Upper Arapahoe | | | | | |
| 1,174.40 | 1,165.00 | Lower Arapahoe | | | | | |
| 1,753.21 | 1,718.00 | Laramie - Fox Hills | | | | | |
| 2,017.17 | 1,970.00 | Pierre Shale (Base of Fox Hills) | | | | | |
| 5,793.29 | 5,575.00 | Shannon Sandstone Member | | | | | |
| 7,950.90 | 7,655.00 | Sharon Springs Shale | | | | | |
| 8,036.53 | 7,720.00 | Niobrara Formation | | | | | |
| 8,058.09 | 7,735.00 | Niobrara A Chalk | | | | | |
| 8,072.96 | 7,745.00 | Niobrara A Landing Point | | | | | |
| 8,272.85 | 7,849.00 | Niobrara B Chalk | | | | | |
| 8,381.01 | 7,879.00 | Niobrara B Landing Point | | | | | |

Planning Report

| | | | |
|------------------|-------------------|-------------------------------------|------------------------|
| Database: | EDT_32Bit_ODBC | Local Co-ordinate Reference: | Well JAMASO 4-65 5-6-2 |
| Company: | AXIS EXPLORATION | TVD Reference: | KB 25' @ 5610.00usft |
| Project: | ARAPAHOE COUNTY | MD Reference: | KB 25' @ 5610.00usft |
| Site: | Sec 4-T4S-R65W | North Reference: | True |
| Well: | JAMASO 4-65 5-6-2 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | ORIGINAL WELLBORE | | |
| Design: | PROPOSAL 1 | | |

| Plan Annotations | | | | |
|-----------------------------|-----------------------------|-------------------|-----------------|----------------------------------|
| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates | | Comment |
| | | +N/-S (usft) | +E/-W (usft) | |
| 400.00 | 400.00 | 0.00 | 0.00 | Start Build 2.00 |
| 1,265.74 | 1,252.62 | 110.59 | -68.00 | Start 5426.67 hold at 1265.74 MD |
| 6,692.41 | 6,433.38 | 1,486.43 | -913.93 | Start Drop -2.00 |
| 7,558.15 | 7,286.00 | 1,597.02 | -981.93 | Start 30.00 hold at 7558.15 MD |
| 7,588.15 | 7,316.00 | 1,597.02 | -981.93 | Start DLS 10.00 TFO 270.25 |
| 8,488.22 | 7,889.00 | 1,599.56 | -1,554.93 | Start 9679.77 hold at 8488.22 MD |
| 18,167.99 | 7,888.95 | 1,642.46 | -11,234.60 | TD at 18167.99 |