

NOBLE ENERGY, INC

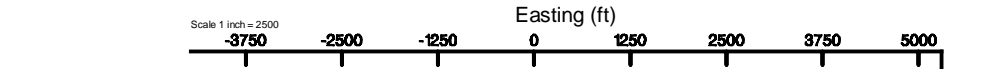
Location: COLORADO Slot: SLOT#11 EMMY STATE H25-777(285'FSL&1185'FWL,SEC.25)
 Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: EMMY STATE H25-777
 Facility: SEC.25-T03N-R65W Wellbore: EMMY STATE H25-777 PWB

| | |
|---|--|
| Plot reference wellpath is EMMY STATE H25-777 (REV-A.0) PWB | Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet |
| True vertical depths are referenced to Rig (30KB) (RKB) | * = Wellpath was transformed from a different geodetic datum |
| Measured depths are referenced to Rig (30KB) (RKB) | North Reference: Grid north |
| Rig (30KB) (RKB) to Mean Sea Level: 4847 feet | Scale: True distance |
| Mean Sea Level to Ground level (At Slot: SLOT#11 EMMY STATE H25-777(285'FSL&1185'FWL,SEC.25)): 0 feet | Depths are in feet |
| Coordinates are in feet referenced to Slot | Created by: guenier on 2018-08-27 |
| | Database: WA_DEN_Denver_Dein |

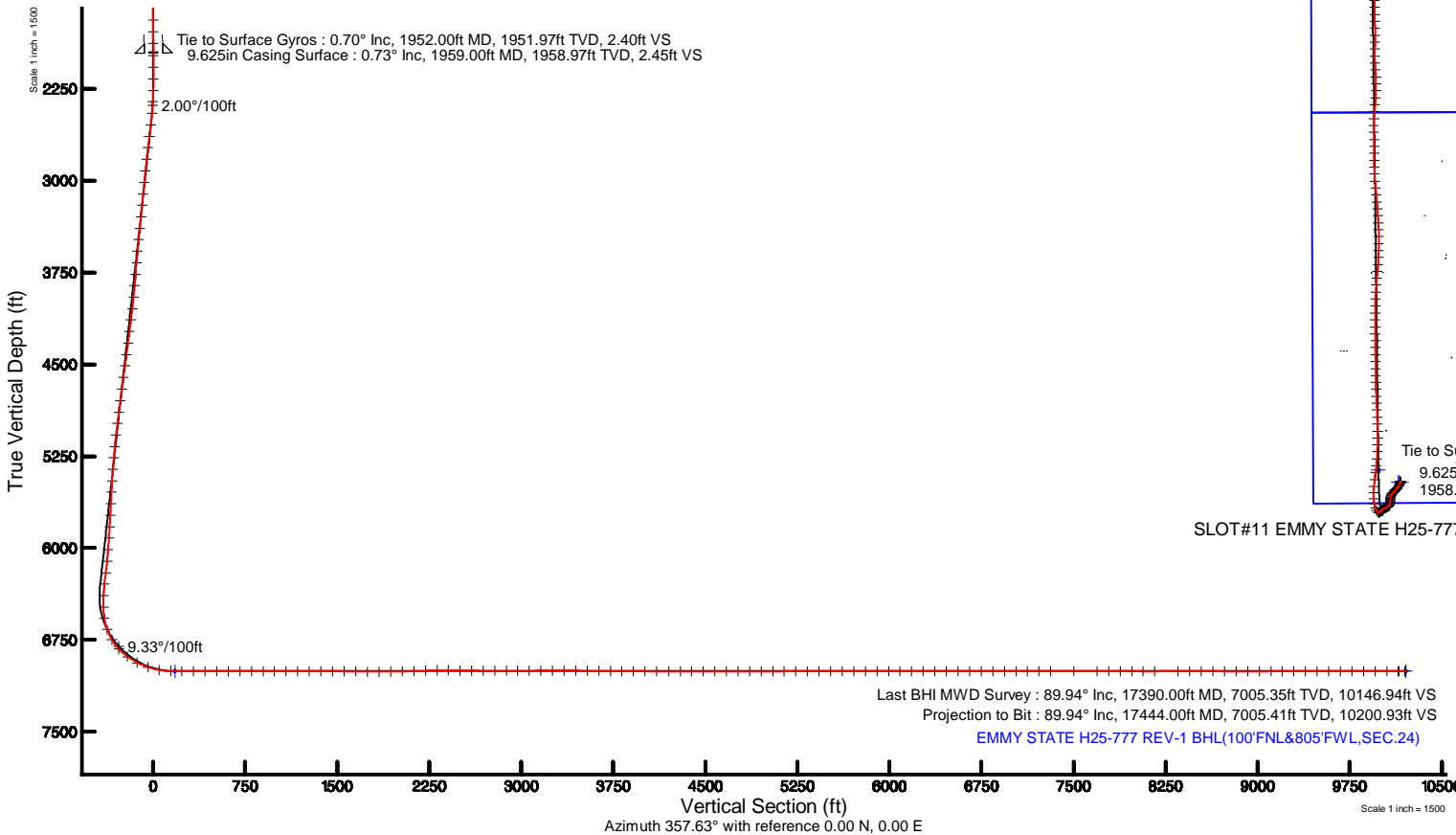
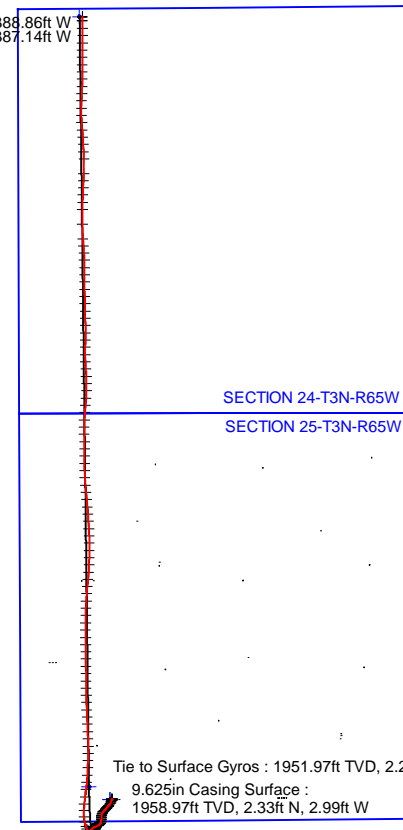


Location Information

| Facility Name | | | | Grid East (US ft) | Grid North (US ft) | Latitude | Longitude |
|---|--------------|--------------|-------------------|--------------------|--------------------|-----------------|-----------------|
| SEC.25-T03N-R65W | | | | 3248954.739 | 1313190.352 | 40°11'22.612"N | 104°36'31.932"W |
| Slot | Local N (ft) | Local E (ft) | Grid East (US ft) | Grid North (US ft) | Latitude | Longitude | |
| SLOT#11 EMMY STATE H25-777(285'FSL&1185'FWL,SEC.25) | -19.05 | -2268.54 | 3246686.296 | 1313171.302 | 40°11'22.848"N | 104°37'01.164"W | |
| Rig (30KB) (RKB) to Ground level (At Slot: SLOT#11 EMMY STATE H25-777(285'FSL&1185'FWL,SEC.25)) | | | | | | 4847ft | |
| Mean Sea Level to Ground level (At Slot: SLOT#11 EMMY STATE H25-777(285'FSL&1185'FWL,SEC.25)) | | | | | | 0ft | |
| Rig (30KB) (RKB) to Mean Sea Level | | | | | | 4847ft | |



Projection to Bit : 7005.41ft TVD, 10193.57ft N, 388.86ft W
 Last BHI MWD Survey : 7005.35ft TVD, 10139.60ft N, 387.14ft W



| REFERENCE WELLPATH IDENTIFICATION | | | |
|-----------------------------------|---------------------------------|----------|---|
| Operator | NOBLE ENERGY, INC | Slot | SLOT#11 EMMY STATE H25-777(285'FSL&1185'FWL,SEC.25) |
| Area | COLORADO | Well | EMMY STATE H25-777 |
| Field | WELD COUNTY (NOBLE NAD 83 GRID) | Wellbore | EMMY STATE H25-777 AWB |
| Facility | SEC.25-T03N-R65W | | |

| REPORT SETUP INFORMATION | | | |
|--------------------------|---|----------------------|---|
| Projection System | NAD83 / Lambert Colorado SP, Northern Zone (501), US feet | Software System | WellArchitect® 5.0 |
| North Reference | Grid | User | Guenaler |
| Scale | 0.999957 | Report Generated | 8/27/2018 at 4:08:32 PM |
| Convergence at slot | 0.58° East | Database/Source file | WA_DEN_Denver_Defn/EMMY_STATE_H25-777_AWP.xml |

| WELLPATH LOCATION | | | | | | |
|-----------------------|-------------------|----------|------------------|-----------------|------------------------|-----------------|
| | Local coordinates | | Grid coordinates | | Geographic coordinates | |
| | North[ft] | East[ft] | Easting[US ft] | Northing[US ft] | Latitude | Longitude |
| Slot Location | -19.05 | -2268.54 | 3246686.30 | 1313171.30 | 40°11'22.848"N | 104°37'01.164"W |
| Facility Reference Pt | | | 3248954.74 | 1313190.35 | 40°11'22.812"N | 104°36'31.932"W |
| Field Reference Pt | | | 3000000.00 | 4454105.15 | 48°46'34.315"N | 105°30'00.000"W |

| WELLPATH DATUM | | | |
|--------------------------|-------------------|--|-------------------|
| Calculation method | Minimum curvature | Rig (30'KB) (RKB) to Facility Vertical Datum | 4847.00ft |
| Horizontal Reference Pt | Slot | Rig (30'KB) (RKB) to Mean Sea Level | 4847.00ft |
| Vertical Reference Pt | Rig (30'KB) (RKB) | Rig (30'KB) (RKB) to Ground Level at Slot (SLOT#11 EMMY STATE H25-777 (285'FSL&1185'FWL,SEC.25)) | 4847.00ft |
| MD Reference Pt | Rig (30'KB) (RKB) | Section Origin | N 0.00, E 0.00 ft |
| Field Vertical Reference | Mean Sea Level | Section Azimuth | 357.63° |

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| Area | COLORADO | Well | EMMY STATE H25-777 |
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| Facility | SEC.25-T03N-R65W | | |

| WELLPATH DATA (184 stations) | | | | | | | | | | |
|------------------------------|-----------------|-------------|----------|----------------|------------|-----------|----------------|-----------------|---------------|----------------------|
| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Latitude | Longitude | DLS [°/100ft] | Comments |
| 0.00 | 0.000 | 74.880 | 0.00 | 0.00 | 0.00 | 0.00 | 40°11'22.848"N | 104°37'01.164"W | 0.00 | |
| 83.00 | 0.170 | 74.880 | 83.00 | 0.03 | 0.03 | 0.12 | 40°11'22.848"N | 104°37'01.162"W | 0.20 | |
| 178.00 | 0.060 | 111.750 | 178.00 | 0.04 | 0.05 | 0.30 | 40°11'22.848"N | 104°37'01.160"W | 0.13 | |
| 273.00 | 0.350 | 115.600 | 273.00 | -0.12 | -0.09 | 0.61 | 40°11'22.847"N | 104°37'01.156"W | 0.31 | |
| 367.00 | 0.530 | 102.360 | 367.00 | -0.36 | -0.31 | 1.29 | 40°11'22.845"N | 104°37'01.147"W | 0.22 | |
| 461.00 | 0.260 | 191.800 | 460.99 | -0.68 | -0.61 | 1.67 | 40°11'22.842"N | 104°37'01.143"W | 0.63 | |
| 556.00 | 0.110 | 33.090 | 555.99 | -0.82 | -0.75 | 1.68 | 40°11'22.840"N | 104°37'01.142"W | 0.38 | |
| 650.00 | 0.300 | 23.690 | 649.99 | -0.52 | -0.45 | 1.83 | 40°11'22.843"N | 104°37'01.141"W | 0.20 | |
| 745.00 | 0.210 | 241.850 | 744.99 | -0.37 | -0.30 | 1.77 | 40°11'22.845"N | 104°37'01.141"W | 0.51 | |
| 840.00 | 0.290 | 273.030 | 839.99 | -0.43 | -0.37 | 1.38 | 40°11'22.844"N | 104°37'01.146"W | 0.16 | |
| 934.00 | 0.560 | 270.610 | 933.99 | -0.38 | -0.35 | 0.68 | 40°11'22.844"N | 104°37'01.155"W | 0.29 | |
| 1029.00 | 0.240 | 302.960 | 1028.99 | -0.24 | -0.24 | 0.05 | 40°11'22.846"N | 104°37'01.163"W | 0.40 | |
| 1123.00 | 0.460 | 305.830 | 1122.99 | 0.11 | 0.09 | -0.42 | 40°11'22.849"N | 104°37'01.169"W | 0.23 | |
| 1218.00 | 0.340 | 298.260 | 1217.98 | 0.49 | 0.45 | -0.98 | 40°11'22.852"N | 104°37'01.177"W | 0.14 | |
| 1313.00 | 0.140 | 305.300 | 1312.98 | 0.70 | 0.65 | -1.32 | 40°11'22.855"N | 104°37'01.181"W | 0.21 | |
| 1407.00 | 0.320 | 283.690 | 1406.98 | 0.84 | 0.77 | -1.67 | 40°11'22.856"N | 104°37'01.185"W | 0.21 | |
| 1502.00 | 0.220 | 239.040 | 1501.98 | 0.83 | 0.74 | -2.08 | 40°11'22.856"N | 104°37'01.191"W | 0.24 | |
| 1596.00 | 0.150 | 219.780 | 1595.98 | 0.65 | 0.56 | -2.32 | 40°11'22.854"N | 104°37'01.194"W | 0.10 | |
| 1691.00 | 0.220 | 261.050 | 1690.98 | 0.54 | 0.43 | -2.58 | 40°11'22.853"N | 104°37'01.197"W | 0.15 | |
| 1785.00 | 0.480 | 320.800 | 1784.98 | 0.83 | 0.71 | -3.00 | 40°11'22.855"N | 104°37'01.203"W | 0.44 | |
| 1880.00 | 0.650 | 353.240 | 1879.97 | 1.69 | 1.55 | -3.32 | 40°11'22.864"N | 104°37'01.207"W | 0.37 | |
| 1952.00 | 0.700 | 44.460 | 1951.97 | 2.40 | 2.27 | -3.06 | 40°11'22.871"N | 104°37'01.203"W | 0.81 | Tie to Surface Gyros |
| 1980.00 | 1.030 | 90.960 | 1979.97 | 2.50 | 2.39 | -2.69 | 40°11'22.872"N | 104°37'01.198"W | 2.67 | |
| 2075.00 | 0.040 | 252.850 | 2074.96 | 2.44 | 2.37 | -1.86 | 40°11'22.872"N | 104°37'01.188"W | 1.12 | |
| 2169.00 | 0.070 | 153.550 | 2168.96 | 2.38 | 2.30 | -1.87 | 40°11'22.871"N | 104°37'01.188"W | 0.09 | |
| 2264.00 | 1.370 | 195.200 | 2263.95 | 1.24 | 1.16 | -2.14 | 40°11'22.860"N | 104°37'01.191"W | 1.39 | |
| 2358.00 | 3.440 | 194.910 | 2357.86 | -2.52 | -2.65 | -3.16 | 40°11'22.822"N | 104°37'01.205"W | 2.20 | |
| 2453.00 | 5.300 | 198.250 | 2452.58 | -9.35 | -9.57 | -5.27 | 40°11'22.754"N | 104°37'01.233"W | 1.98 | |
| 2547.00 | 7.520 | 197.120 | 2545.99 | -19.21 | -19.58 | -8.44 | 40°11'22.655"N | 104°37'01.275"W | 2.37 | |
| 2642.00 | 7.640 | 197.590 | 2640.16 | -31.01 | -31.54 | -12.18 | 40°11'22.538"N | 104°37'01.325"W | 0.14 | |

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| Field | WELD COUNTY (NOBLE NAD 83 GRID) | Wellbore | EMMY STATE H25-777 AWB |
| Facility | SEC.25-T03N-R65W | | |

| WELLPATH DATA (184 stations) | | | | | | | | | | |
|------------------------------|-----------------|-------------|----------|----------------|------------|-----------|----------------|-----------------|---------------|----------|
| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Latitude | Longitude | DLS [°/100ft] | Comments |
| 2736.00 | 7.540 | 204.310 | 2733.34 | -42.39 | -43.12 | -16.61 | 40°11'22.424"N | 104°37'01.383"W | 0.95 | |
| 2831.00 | 7.440 | 211.070 | 2827.53 | -53.09 | -54.06 | -22.35 | 40°11'22.316"N | 104°37'01.459"W | 0.93 | |
| 2925.00 | 7.540 | 217.790 | 2920.73 | -62.88 | -64.15 | -29.27 | 40°11'22.217"N | 104°37'01.549"W | 0.94 | |
| 3020.00 | 7.440 | 218.870 | 3014.92 | -72.27 | -73.87 | -36.95 | 40°11'22.122"N | 104°37'01.650"W | 0.18 | |
| 3115.00 | 7.290 | 218.860 | 3109.14 | -81.43 | -83.35 | -44.59 | 40°11'22.029"N | 104°37'01.749"W | 0.16 | |
| 3209.00 | 7.490 | 225.260 | 3202.36 | -90.04 | -92.30 | -52.68 | 40°11'21.941"N | 104°37'01.855"W | 0.90 | |
| 3304.00 | 7.420 | 221.900 | 3296.55 | -98.61 | -101.23 | -61.18 | 40°11'21.854"N | 104°37'01.965"W | 0.46 | |
| 3398.00 | 7.580 | 219.290 | 3389.75 | -107.58 | -110.54 | -69.16 | 40°11'21.762"N | 104°37'02.069"W | 0.40 | |
| 3493.00 | 7.470 | 216.420 | 3483.93 | -117.08 | -120.36 | -76.79 | 40°11'21.666"N | 104°37'02.169"W | 0.41 | |
| 3587.00 | 7.240 | 218.690 | 3577.16 | -126.31 | -129.90 | -84.12 | 40°11'21.573"N | 104°37'02.265"W | 0.39 | |
| 3682.00 | 7.490 | 224.550 | 3671.38 | -135.05 | -138.99 | -92.21 | 40°11'21.484"N | 104°37'02.370"W | 0.83 | |
| 3777.00 | 7.420 | 230.370 | 3765.57 | -142.99 | -147.31 | -101.27 | 40°11'21.402"N | 104°37'02.488"W | 0.80 | |
| 3871.00 | 7.390 | 227.850 | 3858.79 | -150.53 | -155.24 | -110.43 | 40°11'21.325"N | 104°37'02.607"W | 0.35 | |
| 3965.00 | 8.050 | 217.770 | 3951.94 | -159.43 | -164.50 | -118.94 | 40°11'21.234"N | 104°37'02.718"W | 1.60 | |
| 4060.00 | 7.500 | 204.640 | 4046.08 | -170.04 | -175.40 | -125.60 | 40°11'21.127"N | 104°37'02.805"W | 1.95 | |
| 4154.00 | 7.430 | 199.960 | 4139.28 | -181.13 | -186.69 | -130.24 | 40°11'21.016"N | 104°37'02.866"W | 0.65 | |
| 4249.00 | 7.700 | 198.290 | 4233.45 | -192.77 | -198.50 | -134.33 | 40°11'20.900"N | 104°37'02.920"W | 0.37 | |
| 4343.00 | 7.580 | 192.300 | 4326.62 | -204.66 | -210.54 | -137.63 | 40°11'20.781"N | 104°37'02.964"W | 0.86 | |
| 4438.00 | 7.580 | 181.110 | 4420.80 | -216.97 | -222.93 | -139.08 | 40°11'20.659"N | 104°37'02.985"W | 1.55 | |
| 4532.00 | 7.650 | 177.590 | 4513.97 | -229.42 | -235.38 | -138.94 | 40°11'20.536"N | 104°37'02.984"W | 0.50 | |
| 4627.00 | 7.450 | 179.540 | 4608.14 | -241.90 | -247.85 | -138.63 | 40°11'20.412"N | 104°37'02.982"W | 0.34 | |
| 4722.00 | 7.360 | 183.260 | 4702.35 | -254.11 | -260.09 | -138.92 | 40°11'20.292"N | 104°37'02.987"W | 0.51 | |
| 4816.00 | 7.520 | 185.150 | 4795.56 | -266.20 | -272.22 | -139.82 | 40°11'20.172"N | 104°37'03.000"W | 0.31 | |
| 4911.00 | 7.780 | 188.600 | 4889.72 | -278.67 | -284.77 | -141.34 | 40°11'20.048"N | 104°37'03.022"W | 0.56 | |
| 5005.00 | 7.470 | 188.060 | 4982.88 | -290.93 | -297.11 | -143.14 | 40°11'19.926"N | 104°37'03.046"W | 0.34 | |
| 5100.00 | 7.540 | 206.840 | 5077.08 | -302.44 | -308.79 | -146.82 | 40°11'19.811"N | 104°37'03.095"W | 2.57 | |
| 5194.00 | 7.740 | 223.330 | 5170.26 | -312.25 | -318.90 | -153.95 | 40°11'19.712"N | 104°37'03.189"W | 2.33 | |
| 5289.00 | 7.930 | 229.030 | 5264.38 | -320.80 | -327.85 | -163.29 | 40°11'19.624"N | 104°37'03.310"W | 0.84 | |
| 5383.00 | 7.760 | 236.680 | 5357.50 | -328.11 | -335.59 | -173.49 | 40°11'19.549"N | 104°37'03.442"W | 1.12 | |
| 5478.00 | 7.820 | 243.090 | 5451.62 | -334.09 | -342.04 | -184.61 | 40°11'19.486"N | 104°37'03.587"W | 0.92 | |

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|-----------------------------------|---------------------------------|----------|---|
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| Area | COLORADO | Well | EMMY STATE H25-777 |
| Field | WELD COUNTY (NOBLE NAD 83 GRID) | Wellbore | EMMY STATE H25-777 AWB |
| Facility | SEC.25-T03N-R65W | | |

| WELLPATH DATA (184 stations) | | | | | | | | | | |
|------------------------------|-----------------|-------------|----------|----------------|------------|-----------|----------------|-----------------|---------------|----------|
| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Latitude | Longitude | DLS [°/100ft] | Comments |
| 5572.00 | 7.750 | 243.840 | 5544.76 | -339.31 | -347.72 | -196.00 | 40°11'19.431"N | 104°37'03.734"W | 0.13 | |
| 5667.00 | 7.740 | 246.070 | 5638.89 | -344.24 | -353.14 | -207.60 | 40°11'19.379"N | 104°37'03.884"W | 0.32 | |
| 5761.00 | 7.860 | 245.560 | 5732.02 | -348.98 | -358.37 | -219.24 | 40°11'19.328"N | 104°37'04.035"W | 0.15 | |
| 5856.00 | 7.820 | 241.590 | 5826.13 | -354.26 | -364.13 | -230.84 | 40°11'19.273"N | 104°37'04.185"W | 0.57 | |
| 5950.00 | 7.850 | 239.480 | 5919.26 | -360.09 | -370.43 | -241.99 | 40°11'19.211"N | 104°37'04.329"W | 0.31 | |
| 6045.00 | 7.920 | 233.610 | 6013.36 | -366.81 | -377.61 | -252.85 | 40°11'19.141"N | 104°37'04.470"W | 0.85 | |
| 6139.00 | 7.920 | 221.710 | 6106.47 | -375.09 | -386.29 | -262.37 | 40°11'19.057"N | 104°37'04.594"W | 1.74 | |
| 6234.00 | 8.000 | 206.560 | 6200.56 | -385.58 | -397.09 | -269.68 | 40°11'18.951"N | 104°37'04.690"W | 2.20 | |
| 6328.00 | 7.830 | 210.780 | 6293.67 | -396.66 | -408.44 | -275.89 | 40°11'18.839"N | 104°37'04.771"W | 0.64 | |
| 6422.00 | 3.140 | 237.360 | 6387.23 | -403.33 | -415.34 | -281.33 | 40°11'18.772"N | 104°37'04.842"W | 5.55 | |
| 6517.00 | 9.540 | 265.890 | 6481.61 | -404.88 | -417.31 | -291.39 | 40°11'18.753"N | 104°37'04.972"W | 7.31 | |
| 6611.00 | 15.050 | 303.670 | 6573.56 | -397.92 | -411.08 | -309.36 | 40°11'18.816"N | 104°37'05.203"W | 10.08 | |
| 6706.00 | 21.190 | 334.650 | 6664.01 | -374.78 | -388.66 | -327.03 | 40°11'19.040"N | 104°37'05.427"W | 11.81 | |
| 6800.00 | 31.140 | 341.860 | 6748.29 | -335.64 | -350.10 | -341.91 | 40°11'19.422"N | 104°37'05.614"W | 11.09 | |
| 6895.00 | 42.990 | 347.680 | 6823.99 | -279.88 | -294.90 | -356.53 | 40°11'19.969"N | 104°37'05.796"W | 13.00 | |
| 6990.00 | 53.920 | 356.220 | 6886.96 | -209.32 | -224.67 | -366.01 | 40°11'20.664"N | 104°37'05.909"W | 13.31 | |
| 7084.00 | 63.850 | 3.260 | 6935.52 | -129.08 | -144.37 | -366.11 | 40°11'21.457"N | 104°37'05.900"W | 12.35 | |
| 7179.00 | 71.520 | 5.150 | 6971.57 | -41.85 | -56.79 | -359.63 | 40°11'22.322"N | 104°37'05.805"W | 8.28 | |
| 7273.00 | 80.280 | 6.900 | 6994.45 | 48.25 | 33.77 | -350.05 | 40°11'23.216"N | 104°37'05.670"W | 9.49 | |
| 7368.00 | 89.080 | 7.350 | 7003.24 | 141.45 | 127.54 | -338.32 | 40°11'24.142"N | 104°37'05.507"W | 9.28 | |
| 7463.00 | 89.910 | 5.430 | 7004.08 | 235.33 | 221.94 | -327.75 | 40°11'25.073"N | 104°37'05.359"W | 2.20 | |
| 7557.00 | 90.060 | 3.730 | 7004.11 | 328.63 | 315.64 | -320.25 | 40°11'25.998"N | 104°37'05.250"W | 1.82 | |
| 7652.00 | 90.090 | 1.580 | 7003.98 | 423.26 | 410.53 | -315.84 | 40°11'26.936"N | 104°37'05.181"W | 2.26 | |
| 7746.00 | 90.060 | 2.310 | 7003.86 | 516.99 | 504.48 | -312.65 | 40°11'27.864"N | 104°37'05.128"W | 0.78 | |
| 7841.00 | 90.250 | 0.910 | 7003.60 | 611.76 | 599.44 | -309.99 | 40°11'28.802"N | 104°37'05.081"W | 1.49 | |
| 7935.00 | 89.970 | 359.210 | 7003.42 | 705.67 | 693.43 | -309.89 | 40°11'29.731"N | 104°37'05.068"W | 1.83 | |
| 8030.00 | 89.690 | 357.610 | 7003.70 | 800.66 | 788.39 | -312.52 | 40°11'30.669"N | 104°37'05.090"W | 1.71 | |
| 8125.00 | 89.750 | 357.370 | 7004.17 | 895.66 | 883.30 | -316.68 | 40°11'31.607"N | 104°37'05.131"W | 0.26 | |
| 8219.00 | 89.880 | 357.840 | 7004.47 | 989.66 | 977.22 | -320.61 | 40°11'32.536"N | 104°37'05.170"W | 0.52 | |
| 8314.00 | 89.750 | 357.510 | 7004.78 | 1084.66 | 1072.14 | -324.47 | 40°11'33.474"N | 104°37'05.207"W | 0.37 | |

| REFERENCE WELLPATH IDENTIFICATION | | | |
|-----------------------------------|---------------------------------|----------|---|
| Operator | NOBLE ENERGY, INC | Slot | SLOT#11 EMMY STATE H25-777(285'FSL&1185'FWL,SEC.25) |
| Area | COLORADO | Well | EMMY STATE H25-777 |
| Field | WELD COUNTY (NOBLE NAD 83 GRID) | Wellbore | EMMY STATE H25-777 AWB |
| Facility | SEC.25-T03N-R65W | | |

| WELLPATH DATA (184 stations) | | | | | | | | | | |
|------------------------------|-----------------|-------------|----------|----------------|------------|-----------|----------------|-----------------|---------------|----------|
| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Latitude | Longitude | DLS [°/100ft] | Comments |
| 8408.00 | 89.970 | 357.430 | 7005.01 | 1178.66 | 1166.05 | -328.61 | 40°11'34.403"N | 104°37'05.249"W | 0.25 | |
| 8503.00 | 90.000 | 357.670 | 7005.03 | 1273.66 | 1260.96 | -332.68 | 40°11'35.341"N | 104°37'05.289"W | 0.25 | |
| 8597.00 | 90.090 | 359.310 | 7004.96 | 1367.64 | 1354.92 | -335.15 | 40°11'36.270"N | 104°37'05.309"W | 1.75 | |
| 8692.00 | 89.780 | 359.530 | 7005.07 | 1462.60 | 1449.92 | -336.11 | 40°11'37.208"N | 104°37'05.309"W | 0.40 | |
| 8786.00 | 89.660 | 358.790 | 7005.53 | 1556.56 | 1543.91 | -337.49 | 40°11'38.137"N | 104°37'05.315"W | 0.80 | |
| 8881.00 | 89.010 | 359.760 | 7006.63 | 1651.51 | 1638.89 | -338.69 | 40°11'39.076"N | 104°37'05.318"W | 1.23 | |
| 8975.00 | 88.650 | 358.850 | 7008.55 | 1745.45 | 1732.86 | -339.83 | 40°11'40.005"N | 104°37'05.321"W | 1.04 | |
| 9070.00 | 90.740 | 359.250 | 7009.05 | 1840.42 | 1827.84 | -341.41 | 40°11'40.943"N | 104°37'05.329"W | 2.24 | |
| 9164.00 | 90.550 | 359.710 | 7008.00 | 1934.36 | 1921.83 | -342.26 | 40°11'41.872"N | 104°37'05.328"W | 0.53 | |
| 9259.00 | 91.230 | 359.440 | 7006.52 | 2029.29 | 2016.82 | -342.97 | 40°11'42.811"N | 104°37'05.325"W | 0.77 | |
| 9353.00 | 91.720 | 359.640 | 7004.10 | 2123.21 | 2110.78 | -343.72 | 40°11'43.740"N | 104°37'05.322"W | 0.56 | |
| 9448.00 | 92.310 | 359.890 | 7000.76 | 2218.09 | 2205.72 | -344.11 | 40°11'44.678"N | 104°37'05.315"W | 0.67 | |
| 9543.00 | 91.450 | 0.580 | 6997.64 | 2312.93 | 2300.67 | -343.72 | 40°11'45.616"N | 104°37'05.298"W | 1.16 | |
| 9637.00 | 89.050 | 1.140 | 6997.23 | 2406.78 | 2394.65 | -342.31 | 40°11'46.544"N | 104°37'05.268"W | 2.62 | |
| 9732.00 | 89.350 | 1.990 | 6998.56 | 2501.54 | 2489.61 | -339.72 | 40°11'47.482"N | 104°37'05.222"W | 0.95 | |
| 9826.00 | 89.290 | 3.220 | 6999.68 | 2595.18 | 2583.50 | -335.44 | 40°11'48.410"N | 104°37'05.155"W | 1.31 | |
| 9921.00 | 89.350 | 4.420 | 7000.80 | 2689.62 | 2678.28 | -329.12 | 40°11'49.346"N | 104°37'05.061"W | 1.26 | |
| 10015.00 | 89.570 | 4.980 | 7001.69 | 2782.90 | 2771.96 | -321.41 | 40°11'50.271"N | 104°37'04.950"W | 0.64 | |
| 10110.00 | 89.660 | 5.220 | 7002.33 | 2877.09 | 2866.58 | -312.97 | 40°11'51.205"N | 104°37'04.829"W | 0.27 | |
| 10204.00 | 90.490 | 3.960 | 7002.20 | 2970.39 | 2960.28 | -305.45 | 40°11'52.130"N | 104°37'04.720"W | 1.61 | |
| 10299.00 | 90.650 | 2.390 | 7001.26 | 3064.94 | 3055.13 | -300.19 | 40°11'53.067"N | 104°37'04.640"W | 1.66 | |
| 10394.00 | 90.920 | 1.990 | 6999.96 | 3159.63 | 3150.05 | -296.56 | 40°11'54.004"N | 104°37'04.581"W | 0.51 | |
| 10488.00 | 90.220 | 0.460 | 6999.02 | 3253.43 | 3244.02 | -294.55 | 40°11'54.933"N | 104°37'04.543"W | 1.79 | |
| 10582.00 | 89.600 | 359.630 | 6999.17 | 3347.35 | 3338.02 | -294.47 | 40°11'55.862"N | 104°37'04.530"W | 1.10 | |
| 10677.00 | 89.350 | 357.430 | 7000.04 | 3442.33 | 3432.97 | -296.91 | 40°11'56.800"N | 104°37'04.550"W | 2.33 | |
| 10771.00 | 89.480 | 356.750 | 7001.00 | 3536.32 | 3526.85 | -301.68 | 40°11'57.728"N | 104°37'04.599"W | 0.74 | |
| 10866.00 | 89.380 | 356.570 | 7001.95 | 3631.30 | 3621.68 | -307.22 | 40°11'58.666"N | 104°37'04.658"W | 0.22 | |
| 10961.00 | 89.540 | 355.440 | 7002.84 | 3726.25 | 3716.45 | -313.83 | 40°11'59.603"N | 104°37'04.731"W | 1.20 | |
| 11055.00 | 89.540 | 355.270 | 7003.60 | 3820.18 | 3810.13 | -321.45 | 40°12'00.529"N | 104°37'04.817"W | 0.18 | |
| 11150.00 | 89.510 | 354.850 | 7004.38 | 3915.08 | 3904.78 | -329.63 | 40°12'01.465"N | 104°37'04.911"W | 0.44 | |

| REFERENCE WELLPATH IDENTIFICATION | | | |
|-----------------------------------|---------------------------------|----------|---|
| Operator | NOBLE ENERGY, INC | Slot | SLOT#11 EMMY STATE H25-777(285'FSL&1185'FWL,SEC.25) |
| Area | COLORADO | Well | EMMY STATE H25-777 |
| Field | WELD COUNTY (NOBLE NAD 83 GRID) | Wellbore | EMMY STATE H25-777 AWB |
| Facility | SEC.25-T03N-R65W | | |

| WELLPATH DATA (184 stations) | | | | | | | | | | |
|------------------------------|-----------------|-------------|----------|----------------|------------|-----------|----------------|-----------------|---------------|----------|
| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Latitude | Longitude | DLS [°/100ft] | Comments |
| 11245.00 | 89.410 | 354.770 | 7005.28 | 4009.96 | 3999.38 | -338.22 | 40°12'02.401"N | 104°37'05.009"W | 0.13 | |
| 11340.00 | 89.600 | 355.320 | 7006.10 | 4104.86 | 4094.02 | -346.42 | 40°12'03.337"N | 104°37'05.103"W | 0.61 | |
| 11435.00 | 89.910 | 357.460 | 7006.51 | 4199.83 | 4188.83 | -352.41 | 40°12'04.275"N | 104°37'05.168"W | 2.28 | |
| 11530.00 | 89.850 | 358.280 | 7006.70 | 4294.83 | 4283.76 | -355.94 | 40°12'05.213"N | 104°37'05.201"W | 0.87 | |
| 11624.00 | 90.030 | 359.450 | 7006.80 | 4388.81 | 4377.74 | -357.80 | 40°12'06.142"N | 104°37'05.213"W | 1.26 | |
| 11719.00 | 89.940 | 0.160 | 7006.83 | 4483.74 | 4472.74 | -358.12 | 40°12'07.081"N | 104°37'05.205"W | 0.75 | |
| 11814.00 | 89.880 | 359.970 | 7006.98 | 4578.65 | 4567.74 | -358.01 | 40°12'08.019"N | 104°37'05.192"W | 0.21 | |
| 11908.00 | 90.000 | 358.810 | 7007.08 | 4672.60 | 4661.73 | -359.01 | 40°12'08.948"N | 104°37'05.192"W | 1.24 | |
| 12003.00 | 90.340 | 358.910 | 7006.79 | 4767.58 | 4756.71 | -360.90 | 40°12'09.887"N | 104°37'05.205"W | 0.37 | |
| 12097.00 | 90.180 | 359.560 | 7006.37 | 4861.54 | 4850.70 | -362.16 | 40°12'10.816"N | 104°37'05.209"W | 0.71 | |
| 12191.00 | 90.120 | 3.040 | 7006.12 | 4955.33 | 4944.67 | -360.03 | 40°12'11.744"N | 104°37'05.169"W | 3.70 | |
| 12286.00 | 90.280 | 5.390 | 7005.79 | 5049.70 | 5039.40 | -353.05 | 40°12'12.680"N | 104°37'05.067"W | 2.48 | |
| 12380.00 | 90.150 | 5.170 | 7005.44 | 5142.86 | 5133.00 | -344.40 | 40°12'13.604"N | 104°37'04.944"W | 0.27 | |
| 12475.00 | 90.310 | 3.460 | 7005.05 | 5237.21 | 5227.73 | -337.25 | 40°12'14.539"N | 104°37'04.839"W | 1.81 | |
| 12570.00 | 90.340 | 1.520 | 7004.52 | 5331.86 | 5322.63 | -333.12 | 40°12'15.476"N | 104°37'04.774"W | 2.04 | |
| 12664.00 | 90.180 | 358.530 | 7004.09 | 5425.77 | 5416.62 | -333.08 | 40°12'16.405"N | 104°37'04.761"W | 3.19 | |
| 12758.00 | 89.970 | 358.270 | 7003.97 | 5519.76 | 5510.58 | -335.70 | 40°12'17.334"N | 104°37'04.783"W | 0.36 | |
| 12853.00 | 90.060 | 356.420 | 7003.94 | 5614.75 | 5605.48 | -340.11 | 40°12'18.272"N | 104°37'04.828"W | 1.95 | |
| 12947.00 | 90.150 | 356.520 | 7003.77 | 5708.74 | 5699.30 | -345.89 | 40°12'19.200"N | 104°37'04.890"W | 0.14 | |
| 13042.00 | 90.060 | 359.350 | 7003.60 | 5803.72 | 5794.23 | -349.32 | 40°12'20.138"N | 104°37'04.922"W | 2.98 | |
| 13136.00 | 89.910 | 1.830 | 7003.62 | 5897.59 | 5888.22 | -348.35 | 40°12'21.067"N | 104°37'04.898"W | 2.64 | |
| 13231.00 | 89.940 | 0.640 | 7003.74 | 5992.40 | 5983.19 | -346.30 | 40°12'22.005"N | 104°37'04.859"W | 1.25 | |
| 13325.00 | 90.060 | 0.730 | 7003.74 | 6086.27 | 6077.18 | -345.18 | 40°12'22.934"N | 104°37'04.833"W | 0.16 | |
| 13420.00 | 90.090 | 357.980 | 7003.62 | 6181.21 | 6172.17 | -346.25 | 40°12'23.872"N | 104°37'04.834"W | 2.89 | |
| 13515.00 | 89.880 | 359.030 | 7003.64 | 6276.20 | 6267.14 | -348.72 | 40°12'24.811"N | 104°37'04.854"W | 1.13 | |
| 13609.00 | 89.780 | 359.360 | 7003.92 | 6370.17 | 6361.13 | -350.04 | 40°12'25.740"N | 104°37'04.859"W | 0.37 | |
| 13703.00 | 89.780 | 357.880 | 7004.28 | 6464.15 | 6455.10 | -352.31 | 40°12'26.669"N | 104°37'04.876"W | 1.57 | |
| 13798.00 | 89.940 | 358.000 | 7004.52 | 6559.15 | 6550.03 | -355.72 | 40°12'27.607"N | 104°37'04.908"W | 0.21 | |
| 13892.00 | 89.690 | 359.170 | 7004.82 | 6653.13 | 6644.00 | -358.04 | 40°12'28.536"N | 104°37'04.926"W | 1.27 | |
| 13987.00 | 89.880 | 0.730 | 7005.18 | 6748.05 | 6739.00 | -358.13 | 40°12'29.475"N | 104°37'04.915"W | 1.65 | |

| REFERENCE WELLPATH IDENTIFICATION | | | |
|-----------------------------------|---------------------------------|----------|---|
| Operator | NOBLE ENERGY, INC | Slot | SLOT#11 EMMY STATE H25-777(285'FSL&1185'FWL,SEC.25) |
| Area | COLORADO | Well | EMMY STATE H25-777 |
| Field | WELD COUNTY (NOBLE NAD 83 GRID) | Wellbore | EMMY STATE H25-777 AWB |
| Facility | SEC.25-T03N-R65W | | |

| WELLPATH DATA (184 stations) | | | | | | | | | | |
|------------------------------|-----------------|-------------|----------|----------------|------------|-----------|----------------|-----------------|---------------|----------|
| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Latitude | Longitude | DLS [°/100ft] | Comments |
| 14081.00 | 90.250 | 0.530 | 7005.07 | 6841.92 | 6832.99 | -357.09 | 40°12'30.403"N | 104°37'04.889"W | 0.45 | |
| 14176.00 | 90.090 | 359.230 | 7004.79 | 6936.84 | 6927.99 | -357.29 | 40°12'31.342"N | 104°37'04.880"W | 1.38 | |
| 14270.00 | 90.180 | 357.350 | 7004.57 | 7030.83 | 7021.94 | -360.10 | 40°12'32.271"N | 104°37'04.904"W | 2.00 | |
| 14364.00 | 90.090 | 356.780 | 7004.35 | 7124.83 | 7115.82 | -364.91 | 40°12'33.199"N | 104°37'04.954"W | 0.61 | |
| 14459.00 | 89.850 | 355.590 | 7004.39 | 7219.80 | 7210.61 | -371.23 | 40°12'34.136"N | 104°37'05.023"W | 1.28 | |
| 14553.00 | 89.880 | 356.100 | 7004.62 | 7313.75 | 7304.36 | -378.04 | 40°12'35.063"N | 104°37'05.099"W | 0.54 | |
| 14742.00 | 89.970 | 359.410 | 7004.86 | 7502.72 | 7493.19 | -385.44 | 40°12'36.930"N | 104°37'05.170"W | 1.75 | |
| 14932.00 | 89.940 | 1.030 | 7005.01 | 7692.52 | 7683.18 | -384.72 | 40°12'38.807"N | 104°37'05.136"W | 0.85 | |
| 15026.00 | 89.820 | 1.990 | 7005.21 | 7786.31 | 7777.15 | -382.24 | 40°12'39.735"N | 104°37'05.092"W | 1.03 | |
| 15121.00 | 90.060 | 2.040 | 7005.31 | 7881.03 | 7872.09 | -378.90 | 40°12'40.673"N | 104°37'05.037"W | 0.26 | |
| 15215.00 | 89.880 | 2.050 | 7005.36 | 7974.75 | 7966.03 | -375.54 | 40°12'41.601"N | 104°37'04.982"W | 0.19 | |
| 15309.00 | 89.940 | 2.080 | 7005.51 | 8068.47 | 8059.97 | -372.16 | 40°12'42.529"N | 104°37'04.926"W | 0.07 | |
| 15404.00 | 90.060 | 2.020 | 7005.51 | 8163.18 | 8154.91 | -368.76 | 40°12'43.467"N | 104°37'04.870"W | 0.14 | |
| 15593.00 | 90.030 | 358.910 | 7005.36 | 8351.93 | 8343.88 | -367.22 | 40°12'45.334"N | 104°37'04.826"W | 1.65 | |
| 15687.00 | 90.090 | 357.380 | 7005.26 | 8445.92 | 8437.82 | -370.27 | 40°12'46.263"N | 104°37'04.853"W | 1.63 | |
| 15782.00 | 89.970 | 356.840 | 7005.21 | 8540.92 | 8532.70 | -375.06 | 40°12'47.201"N | 104°37'04.903"W | 0.58 | |
| 15876.00 | 89.880 | 356.170 | 7005.33 | 8634.90 | 8626.53 | -380.79 | 40°12'48.128"N | 104°37'04.965"W | 0.72 | |
| 15971.00 | 89.880 | 356.000 | 7005.53 | 8729.86 | 8721.31 | -387.27 | 40°12'49.066"N | 104°37'05.036"W | 0.18 | |
| 16065.00 | 89.750 | 355.950 | 7005.84 | 8823.82 | 8815.07 | -393.87 | 40°12'49.993"N | 104°37'05.109"W | 0.15 | |
| 16160.00 | 89.850 | 357.890 | 7006.17 | 8918.81 | 8909.93 | -398.98 | 40°12'50.931"N | 104°37'05.163"W | 2.04 | |
| 16254.00 | 90.340 | 1.180 | 7006.01 | 9012.75 | 9003.92 | -399.74 | 40°12'51.859"N | 104°37'05.161"W | 3.54 | |
| 16349.00 | 90.370 | 1.640 | 7005.42 | 9107.54 | 9098.88 | -397.40 | 40°12'52.798"N | 104°37'05.118"W | 0.49 | |
| 16443.00 | 90.030 | 2.890 | 7005.09 | 9201.23 | 9192.81 | -393.69 | 40°12'53.725"N | 104°37'05.058"W | 1.38 | |
| 16538.00 | 90.220 | 2.500 | 7004.89 | 9295.85 | 9287.70 | -389.22 | 40°12'54.663"N | 104°37'04.989"W | 0.46 | |
| 16633.00 | 90.150 | 0.390 | 7004.58 | 9390.64 | 9382.67 | -386.82 | 40°12'55.601"N | 104°37'04.946"W | 2.22 | |
| 16727.00 | 89.940 | 359.210 | 7004.51 | 9484.57 | 9476.66 | -387.15 | 40°12'56.530"N | 104°37'04.938"W | 1.28 | |
| 16822.00 | 90.000 | 359.750 | 7004.56 | 9579.52 | 9571.66 | -388.01 | 40°12'57.468"N | 104°37'04.937"W | 0.57 | |
| 16916.00 | 89.880 | 1.120 | 7004.65 | 9673.40 | 9665.66 | -387.30 | 40°12'58.397"N | 104°37'04.916"W | 1.46 | |
| 17011.00 | 90.060 | 0.560 | 7004.70 | 9768.25 | 9760.64 | -385.91 | 40°12'59.336"N | 104°37'04.885"W | 0.62 | |
| 17106.00 | 89.880 | 0.340 | 7004.75 | 9863.14 | 9855.64 | -385.16 | 40°13'00.274"N | 104°37'04.864"W | 0.30 | |

| REFERENCE WELLPATH IDENTIFICATION | | | |
|-----------------------------------|---------------------------------|----------|---|
| Operator | NOBLE ENERGY, INC | Slot | SLOT#11 EMMY STATE H25-777(285'FSL&1185'FWL,SEC.25) |
| Area | COLORADO | Well | EMMY STATE H25-777 |
| Field | WELD COUNTY (NOBLE NAD 83 GRID) | Wellbore | EMMY STATE H25-777 AWB |
| Facility | SEC.25-T03N-R65W | | |

| WELLPATH DATA (184 stations) | | | | | | | | | | |
|------------------------------|-----------------|-------------|----------|----------------|------------|-----------|----------------|-----------------|---------------|---------------------|
| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Latitude | Longitude | DLS [°/100ft] | Comments |
| 17200.00 | 89.880 | 0.650 | 7004.95 | 9957.02 | 9949.64 | -384.35 | 40°13'01.203"N | 104°37'04.841"W | 0.33 | |
| 17295.00 | 89.850 | 358.900 | 7005.17 | 10051.95 | 10044.63 | -384.72 | 40°13'02.142"N | 104°37'04.834"W | 1.84 | |
| 17390.00 | 89.940 | 358.180 | 7005.35 | 10146.94 | 10139.60 | -387.14 | 40°13'03.080"N | 104°37'04.853"W | 0.76 | Last BHI MWD Survey |
| 17444.00 | 89.940 | 358.180 | 7005.41 | 10200.93 | 10193.57 | -388.86 | 40°13'03.614"N | 104°37'04.868"W | 0.00 | Projection to Bit |

| HOLE & CASING SECTIONS - Ref Wellbore: EMMY STATE H25-777 AWB Ref Wellpath: EMMY STATE H25-777 AWP | | | | | | | | | |
|--|---------------|-------------|---------------|----------------|--------------|----------------|----------------|--------------|--------------|
| String/Diameter | Start MD [ft] | End MD [ft] | Interval [ft] | Start TVD [ft] | End TVD [ft] | Start N/S [ft] | Start E/W [ft] | End N/S [ft] | End E/W [ft] |
| 13.5in Open Hole | 30.00 | 1959.00 | 1929.00 | 30.00 | 1958.97 | 0.00 | 0.02 | 2.33 | -2.99 |
| 9.625in Casing Surface | 30.00 | 1959.00 | 1929.00 | 30.00 | 1958.97 | 0.00 | 0.02 | 2.33 | -2.99 |
| 8.5in Open Hole | 1959.00 | 9921.00 | 7962.00 | 1958.97 | 7000.80 | 2.33 | -2.99 | 2678.28 | -329.12 |

| TARGETS | | | | | | | | |
|--|----------|------------|-----------|-------------------|--------------------|----------------|-----------------|---------|
| Name | TVD [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude | Longitude | Shape |
| EMMY STATE H25-785 SECTION 24-T3N-R65W | 0.00 | -3.89 | -25.11 | 3246661.19 | 1313167.41 | 40°11'22.812"N | 104°37'01.488"W | polygon |
| EMMY STATE H25-785 SECTION 25-T3N-R65W | 0.00 | -3.89 | -25.11 | 3246661.19 | 1313167.41 | 40°11'22.812"N | 104°37'01.488"W | polygon |
| EMMY STATE H25-777 LANDING POINT | 7005.00 | 165.00 | -300.00 | 3246386.31 | 1313336.29 | 40°11'24.508"N | 104°37'05.008"W | point |
| EMMY STATE H25-777 REV-1 BHL(100'FNL&805'FWL,SEC.24) | 7005.00 | 10196.69 | -422.72 | 3246263.60 | 1323367.53 | 40°13'03.648"N | 104°37'05.304"W | point |

| REFERENCE WELLPATH IDENTIFICATION | | | |
|-----------------------------------|---------------------------------|----------|---|
| Operator | NOBLE ENERGY, INC | Slot | SLOT#11 EMMY STATE H25-777(285'FSL&1185'FWL,SEC.25) |
| Area | COLORADO | Well | EMMY STATE H25-777 |
| Field | WELD COUNTY (NOBLE NAD 83 GRID) | Wellbore | EMMY STATE H25-777 AWB |
| Facility | SEC.25-T03N-R65W | | |

| WELLPATH COMPOSITION - Ref Wellbore: EMMY STATE H25-777 AWB Ref Wellpath: EMMY STATE H25-777 AWP | | | | |
|--|-------------|--|---|------------------------|
| Start MD [ft] | End MD [ft] | Positional Uncertainty Model | Log Name/Comment | Wellbore |
| 0.00 | 1952.00 | Gyrodatta standard - Drop gyro or Multi-shot | 3rd Party Surface Gyros <83'-1952'> | EMMY STATE H25-777 AWB |
| 1952.00 | 17390.00 | OWSG MWD rev2 + IFR1 + Axial Corr [Floating Rig] | BHGE 8 1/2" ATC OWSG MWD rev2+IFR1+MSA <1980'-17390'> | EMMY STATE H25-777 AWB |
| 17390.00 | 17444.00 | Blind Drilling (std) | Projection to bit | EMMY STATE H25-777 AWB |

| REFERENCE WELLPATH IDENTIFICATION | | | |
|-----------------------------------|---------------------------------|----------|---|
| Operator | NOBLE ENERGY, INC | Slot | SLOT#11 EMMY STATE H25-777(285'FSL&1185'FWL,SEC.25) |
| Area | COLORADO | Well | EMMY STATE H25-777 |
| Field | WELD COUNTY (NOBLE NAD 83 GRID) | Wellbore | EMMY STATE H25-777 AWB |
| Facility | SEC.25-T03N-R65W | | |

| WELLPATH COMMENTS | | | | |
|-------------------|-----------------|-------------|----------|----------------------|
| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Comment |
| 1952.00 | 0.700 | 44.460 | 1951.97 | Tie to Surface Gyros |
| 17390.00 | 89.940 | 358.180 | 7005.35 | Last BHI MWD Survey |
| 17444.00 | 89.940 | 358.180 | 7005.41 | Projection to Bit |

| COMMENTS |
|---|
| <p>Wellpath general comments SURFACE LOCATION: SWSW 40.18968N 104.61699W API #: 05-123-46978</p> |