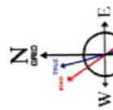


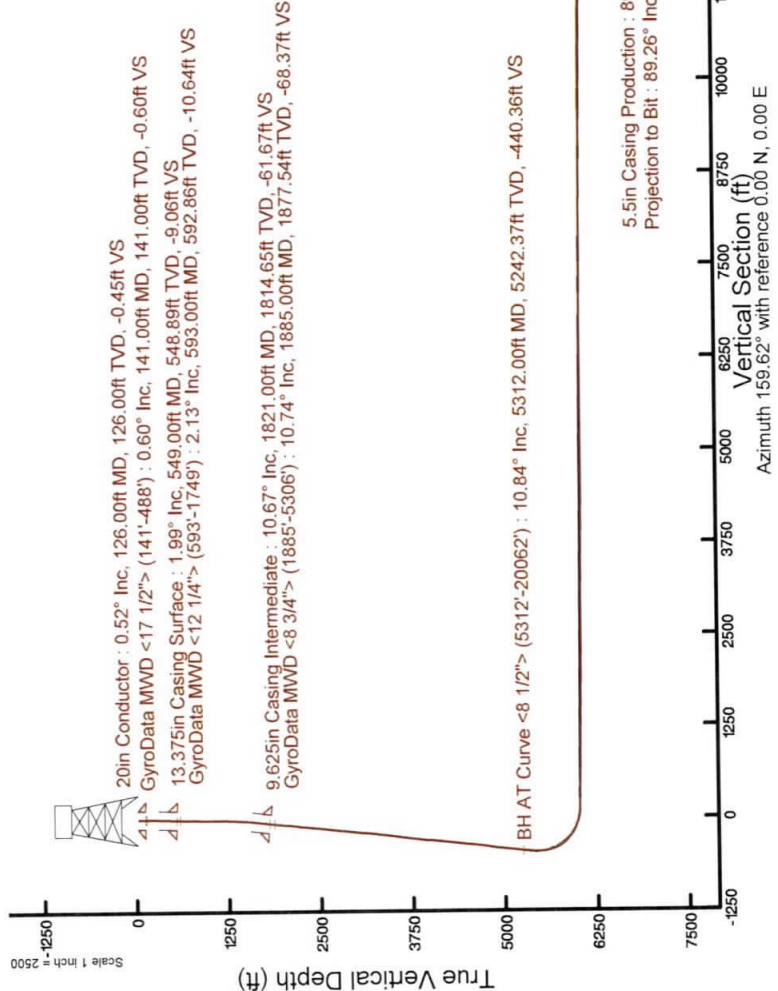
# SOUTHWESTERN ENERGY

Location: Brooke County, WV  
 Slot: Slot 6H  
 Well: Kathy Mayhew BRK 6H  
 Facility: Kathy Mayhew BRK Pad Wellbore: Kathy Mayhew BRK 6H PWB

|  |
|--|
| Plot reference wellpath is Kathy Mayhew BRK 6H PWP Rev-A.0 Grid System: NAD83 / UTM Zone 17 North, US feet |
| True vertical depths are referenced to SDC 41 (RKB)  |
| Measured depths are referenced to SDC 41 (RKB)   |
| Scale: True distance   |
| Depths are in feet   |
| SDC 41 (RKB) to Mean Sea Level: 1308 feet  |
| Mean Sea Level to Ground level (At Slot: Slot 6H): -1282 feet  |
| Coordinates are in feet referenced to Slot   |



User specified Dip: 67.47° Field: 52479 nT  
 Magnetic North is 8.13 degrees West of True North (at 03/Aug/2019)  
 Grid North is 0.24 degrees West of True North  
 To correct azimuth from Magnetic to Grid subtract 8.37 degrees

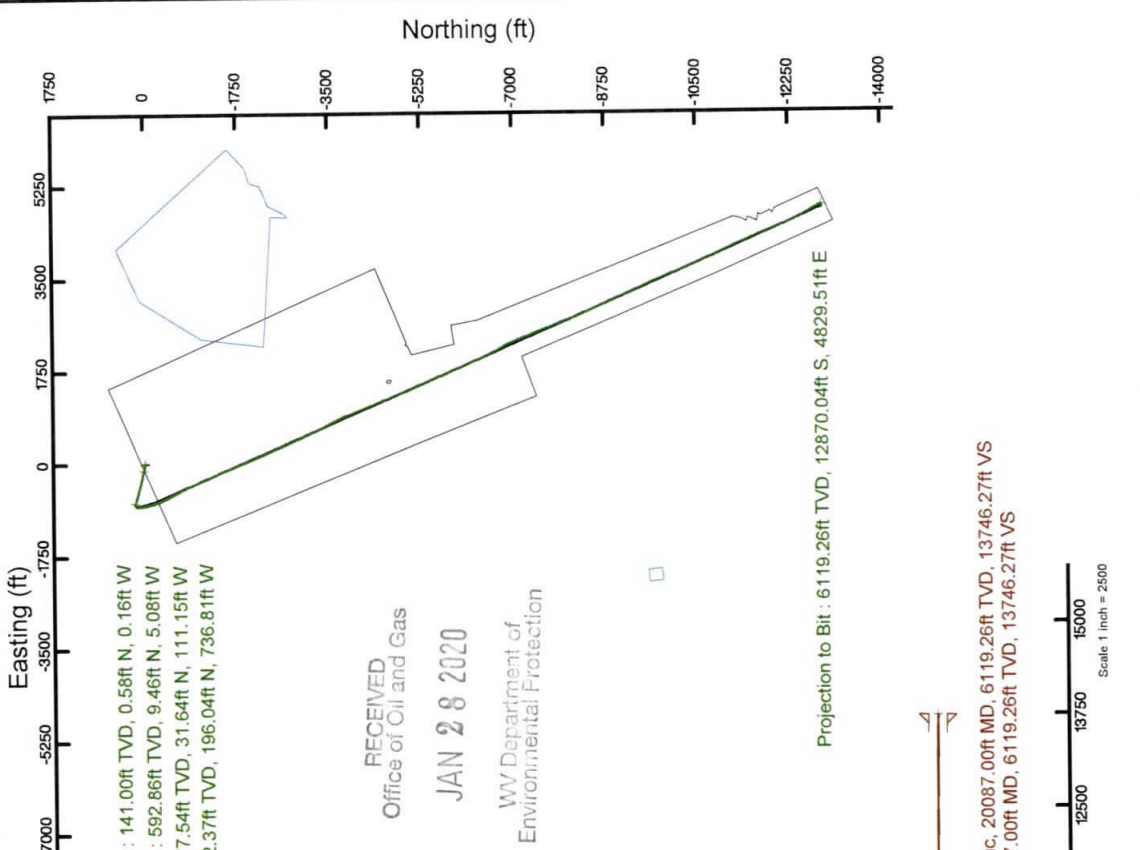


### Location Information

|   |                   |                    |                |                |
|---|-------------------|--------------------|----------------|----------------|
| Facility Name                                     | Grid East (US ft) | Grid North (US ft) | Latitude       | Longitude      |
| Kathy Mayhew BRK Pad                              | 1745806.460       | 14597023.540       | 40°11'32.682"N | 80°37'21.416"W |
| Slot  | Local E (ft)      | Grid East (US ft)  | Latitude       | Longitude      |
| Slot 6H   | -69.78            | 1745786.416        | 40°11'31.994"N | 80°37'21.678"W |
| Slot 6H   | -20.05            | 14596953.787       | 26ft           |                |
| SDC 41 (RKB) to Ground level (At Slot: Slot 6H)   |                   |                    |                |                |
| Mean Sea Level to Ground level (At Slot: Slot 6H) |                   |                    |                | -1282ft        |
| SDC 41 (RKB) to Mean Sea Level                    |                   |                    |                | 1308ft         |

### Comments

API: 47-009-00275-0000  
 BH Job #: 109910148  
 Rig: SDC 41  
 Duration: 08/04/2019 - 08/07/2019



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5.5in Casing Production : 89.26° Inc, 20087.00ft MD, 6119.26ft TVD, 13746.27ft VS  
 Projection to Bit : 89.26° Inc, 20087.00ft MD, 6119.26ft TVD, 13746.27ft VS

Vertical Section (ft)  
 Azimuth 159.62° with reference 0.00 N, 0.00 E

Scale 1 inch = 2500



# Actual Wellpath Report

Kathy Mayhew BRK 6H AWP Proj: 20087'  
Page 1 of 11



| REFERENCE WELLPATH IDENTIFICATION |                      |          |                         |
|-----------------------------------|----------------------|----------|-------------------------|
| Operator                          | SOUTHWESTERN ENERGY  | Slot     | Slot 6H                 |
| Area                              | Brooke County, WV    | Well     | Kathy Mayhew BRK 6H     |
| Field                             | Brooke               | Wellbore | Kathy Mayhew BRK 6H AWP |
| Facility                          | Kathy Mayhew BRK Pad |          |                         |

| REPORT SETUP INFORMATION |                                       |                      |   |
|--------------------------|---------------------------------------|----------------------|---|
| Projection System        | NAD83 / UTM Zone 17 North, US<br>feet | Software System      | WellArchitect® 5.1  |
| North Reference          | Grid                                  | User                 | Atenjen   |
| Scale                    | 0.999613                              | Report Generated     | 8/12/2019 at 3:03:07 PM                                       |
| Convergence at slot      | 0.24° East                            | Database/Source file | WA_MPL_EASTERNUS_Defn/Kathy_Mayhew_BRK_6H_AWP_Proj_20087_.xml |

| WELLPATH LOCATION     |                   |          |                  |                 |                        |                |
|-----------------------|-------------------|----------|------------------|-----------------|------------------------|----------------|
|                       | Local coordinates |          | Grid coordinates |                 | Geographic coordinates |                |
|                       | North[ft]         | East[ft] | Easting[US ft]   | Northing[US ft] | Latitude               | Longitude      |
| Slot Location         | -69.78            | -20.05   | 1745786.42       | 14596953.79     | 40°1'31.994"N          | 80°37'21.678"W |
| Facility Reference Pt |                   |          | 1745806.46       | 14597023.54     | 40°1'32.682"N          | 80°37'21.416"W |
| Field Reference Pt    |                   |          | 0.00             | 0.00            | 0°00'00.000"           | 85°29'19.478"W |

| WELLPATH DATUM           |                   |  |                   |
|--------------------------|-------------------|--|-------------------|
| Calculation method       | Minimum curvature | SDC 41 (RKB) to Facility Vertical Datum        | 1308.00ft         |
| Horizontal Reference Pt  | Slot              | SDC 41 (RKB) to Mean Sea Level                 | 1308.00ft         |
| Vertical Reference Pt    | SDC 41 (RKB)      | SDC 41 (RKB) to Ground Level at Slot (Slot 6H) | 26.00ft           |
| MD Reference Pt          | SDC 41 (RKB)      | Section Origin                                 | N 0.00, E 0.00 ft |
| Field Vertical Reference | Mean Sea Level    | Section Azimuth                                | 159.62°           |

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Southwestern Energy

# Actual Wellpath Report

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Kathy Mayhew BRK 6H AWP Proj: 20087

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BAKER HUGHES  
a GE company

## REFERENCE WELLPATH IDENTIFICATION

|          |                      |          |                         |
|----------|----------------------|----------|-------------------------|
| Operator | SOUTHWESTERN ENERGY  | Slot     | Slot 6H                 |
| Area     | Brooke County, WV    | Well     | Kathy Mayhew BRK 6H     |
| Field    | Brooke               | Wellbore | Kathy Mayhew BRK 6H AWB |
| Facility | Kathy Mayhew BRK Pad |          |                         |

## WELLPATH DATA (221 stations) † = interpolated/extrapolated station

| MD<br>ft | Inclination<br>° | Azimuth<br>° | TVD<br>ft | Vert Sect<br>ft | North<br>ft | East<br>ft | Grid East<br>US ft | Grid North<br>US ft | Latitude       | Longitude      | Closure Dist<br>ft | Closure Dir<br>° | DLS<br>%/100ft | Build Rate<br>%/100ft | Turn Rate<br>°/100ft |
|----------|------------------|--------------|-----------|-----------------|-------------|------------|--------------------|---------------------|----------------|----------------|--------------------|------------------|----------------|-----------------------|----------------------|
| 0.00†    | 0.000            | 344.360      | 0.00      | 0.00            | 0.00        | 0.00       | 1745786.42         | 1459653.79          | 40°11'31.994"N | 80°37'21.678"W | 0.00               | 0.000            | 0.00           | 0.00                  | 0.00                 |
| 26.00    | 0.000            | 344.360      | 26.00     | 0.00            | 0.00        | 0.00       | 1745786.42         | 1459653.79          | 40°11'31.994"N | 80°37'21.678"W | 0.00               | 0.000            | 0.00           | 0.00                  | 0.00                 |
| 141.00   | 0.600            | 344.360      | 141.00    | -0.60           | 0.58        | -0.16      | 1745786.25         | 1459654.37          | 40°11'31.999"N | 80°37'21.680"W | 0.60               | 344.360          | 0.52           | 0.52                  | -13.60               |
| 232.00   | 0.750            | 337.490      | 231.99    | -1.67           | 1.59        | -0.52      | 1745785.90         | 1459655.37          | 40°11'32.009"N | 80°37'21.684"W | 1.67               | 341.917          | 0.19           | 0.16                  | -7.55                |
| 323.00   | 0.870            | 320.930      | 322.98    | -2.92           | 2.68        | -1.18      | 1745785.23         | 1459656.46          | 40°11'32.020"N | 80°37'21.693"W | 2.93               | 336.160          | 0.29           | 0.13                  | -18.20               |
| 414.00   | 1.660            | 328.280      | 413.96    | -4.87           | 4.33        | -2.31      | 1745784.11         | 1459658.12          | 40°11'32.037"N | 80°37'21.707"W | 4.91               | 331.930          | 0.88           | 0.87                  | 8.08                 |
| 488.00   | 1.800            | 330.340      | 487.93    | -7.06           | 6.25        | -3.45      | 1745782.97         | 1459660.04          | 40°11'32.056"N | 80°37'21.722"W | 7.14               | 331.124          | 0.21           | 0.19                  | 2.78                 |
| 593.00   | 2.130            | 335.280      | 592.86    | -10.64          | 9.46        | -5.08      | 1745781.34         | 1459663.24          | 40°11'32.087"N | 80°37'21.743"W | 10.74              | 331.758          | 0.35           | 0.31                  | 4.70                 |
| 683.00   | 1.050            | 331.380      | 682.83    | -13.12          | 11.70       | -6.18      | 1745780.24         | 1459665.49          | 40°11'32.110"N | 80°37'21.757"W | 13.23              | 332.179          | 1.21           | 1.21                  | -4.33                |
| 774.00   | 0.600            | 301.390      | 773.82    | -14.32          | 12.68       | -6.98      | 1745779.44         | 1459666.47          | 40°11'32.119"N | 80°37'21.767"W | 14.48              | 331.168          | 0.67           | 0.49                  | -32.96               |
| 867.00   | 1.250            | 275.590      | 866.81    | -15.15          | 13.04       | -8.41      | 1745778.01         | 1459666.82          | 40°11'32.123"N | 80°37'21.785"W | 15.51              | 327.181          | 0.81           | 0.81                  | -27.74               |
| 959.00   | 1.590            | 267.050      | 958.78    | -15.97          | 13.07       | -10.68     | 1745775.74         | 1459666.85          | 40°11'32.123"N | 80°37'21.815"W | 16.88              | 320.740          | 0.43           | 0.37                  | -9.28                |
| 1052.00  | 1.820            | 267.280      | 1051.74   | -16.80          | 12.93       | -13.44     | 1745772.98         | 1459666.71          | 40°11'32.122"N | 80°37'21.850"W | 18.65              | 313.886          | 0.25           | 0.25                  | 0.25                 |
| 1144.00  | 2.780            | 260.130      | 1143.66   | -17.65          | 12.48       | -17.10     | 1745769.32         | 1459666.26          | 40°11'32.118"N | 80°37'21.897"W | 21.17              | 306.119          | 1.09           | 1.04                  | -7.77                |
| 1237.00  | 3.980            | 268.730      | 1236.50   | -19.12          | 12.02       | -22.55     | 1745763.87         | 1459666.80          | 40°11'32.113"N | 80°37'21.968"W | 25.55              | 298.062          | 1.40           | 1.29                  | 9.25                 |
| 1329.00  | 5.060            | 271.440      | 1328.21   | -21.68          | 12.05       | -29.80     | 1745756.63         | 1459665.83          | 40°11'32.114"N | 80°37'22.061"W | 32.14              | 292.022          | 1.20           | 1.17                  | 2.95                 |
| 1422.00  | 6.210            | 279.080      | 1420.76   | -25.67          | 12.95       | -38.87     | 1745747.57         | 1459666.73          | 40°11'32.123"N | 80°37'22.178"W | 40.97              | 288.427          | 1.47           | 1.24                  | 8.22                 |
| 1515.00  | 7.550            | 279.290      | 1513.09   | -31.17          | 14.73       | -49.86     | 1745736.57         | 1459666.51          | 40°11'32.141"N | 80°37'22.320"W | 51.99              | 286.457          | 1.44           | 1.44                  | 0.23                 |
| 1607.00  | 9.600            | 287.160      | 1604.06   | -38.84          | 17.97       | -63.16     | 1745723.28         | 1459697.75          | 40°11'32.174"N | 80°37'22.491"W | 65.67              | 285.881          | 2.56           | 2.23                  | 8.55                 |
| 1699.00  | 10.130           | 287.970      | 1694.70   | -48.53          | 22.73       | -78.19     | 1745708.26         | 1459697.651         | 40°11'32.222"N | 80°37'22.684"W | 81.42              | 286.209          | 0.60           | 0.58                  | 0.88                 |
| 1749.00  | 10.590           | 285.680      | 1743.88   | -53.97          | 25.33       | -86.79     | 1745699.66         | 1459697.910         | 40°11'32.248"N | 80°37'22.795"W | 90.41              | 286.268          | 1.23           | 0.92                  | -4.58                |
| 1885.00  | 10.740           | 283.400      | 1877.54   | -68.37          | 31.64       | -111.15    | 1745675.31         | 1459695.42          | 40°11'32.317"N | 80°37'23.108"W | 115.57             | 285.800          | 0.33           | 0.33                  | -1.68                |
| 1978.00  | 10.410           | 280.710      | 1968.96   | -77.53          | 35.21       | -127.84    | 1745658.63         | 1459698.98          | 40°11'32.347"N | 80°37'23.323"W | 132.60             | 285.400          | 0.64           | 0.64                  | -2.89                |
| 2071.00  | 10.920           | 287.780      | 2060.35   | -87.31          | 39.46       | -144.48    | 1745641.99         | 1459699.93          | 40°11'32.390"N | 80°37'23.537"W | 149.77             | 285.277          | 1.51           | 0.55                  | 7.60                 |
| 2164.00  | 10.480           | 287.410      | 2151.74   | -97.93          | 44.68       | -160.94    | 1745625.54         | 1459699.845         | 40°11'32.442"N | 80°37'23.749"W | 167.03             | 285.517          | 0.48           | -0.47                 | -0.40                |
| 2256.00  | 11.280           | 282.240      | 2242.08   | -107.91         | 49.09       | -177.72    | 1745608.77         | 1459700.86          | 40°11'32.486"N | 80°37'23.965"W | 184.37             | 285.443          | 1.37           | 0.87                  | -5.62                |
| 2349.00  | 10.600           | 280.000      | 2333.39   | -117.14         | 52.51       | -195.03    | 1745591.46         | 1459700.627         | 40°11'32.521"N | 80°37'24.188"W | 201.97             | 285.069          | 0.86           | -0.73                 | -2.41                |
| 2442.00  | 11.180           | 276.370      | 2424.72   | -125.52         | 54.99       | -212.41    | 1745574.08         | 1459700.876         | 40°11'32.546"N | 80°37'24.412"W | 219.42             | 284.515          | 0.97           | 0.62                  | -3.90                |
| 2534.00  | 11.140           | 282.180      | 2514.98   | -134.32         | 57.86       | -229.97    | 1745556.54         | 1459701.162         | 40°11'32.575"N | 80°37'24.638"W | 237.13             | 284.122          | 1.22           | -0.04                 | 6.32                 |
| 2626.00  | 10.480           | 278.950      | 2605.35   | -143.20         | 61.04       | -246.92    | 1745539.59         | 1459701.480         | 40°11'32.607"N | 80°37'24.856"W | 254.35             | 283.885          | 0.97           | -0.72                 | -3.51                |



# Actual Wellpath Report

Kathy Mayhew BRK 6H AWP Proji: 20087'

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## REFERENCE WELLPATH IDENTIFICATION

|          |                      |          |                         |
|----------|----------------------|----------|-------------------------|
| Operator | SOUTHWESTERN ENERGY  | Slot     | Slot 6H                 |
| Area     | Brooke County, WV    | Well     | Kathy Mayhew BRK 6H     |
| Field    | Brooke               | Wellbore | Kathy Mayhew BRK 6H AWP |
| Facility | Kathy Mayhew BRK Pad |          |                         |

## WELLPATH DATA (221 stations)

| MD (ft) | Inclination (°) | Azimuth (°) | TVD (ft) | Vert Sect (ft) | North (ft) | East (ft) | Grid East (US ft) | Grid North (US ft) | Latitude       | Longitude      | Closure Dist (ft) | Closure Dir (°) | DLS (ft/100ft) | Build Rate (ft/100ft) | Turn Rate (ft/100ft) |
|---------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|----------------|-----------------------|----------------------|
| 2717.00 | 10.360          | 286.470     | 2694.85  | -152.16        | 64.64      | -262.94   | 1745523.58        | 14597018.40        | 40°11'32.644"N | 80°37'25.062"W | 270.77            | 283.812         | 1.50           | -0.13                 | 8.26                 |
| 2810.00 | 9.500           | 284.140     | 2786.46  | -161.53        | 68.89      | -278.40   | 1745508.12        | 14597022.65        | 40°11'32.686"N | 80°37'25.261"W | 286.80            | 283.898         | 1.02           | -0.92                 | -2.51                |
| 2903.00 | 10.640          | 282.980     | 2878.03  | -170.60        | 72.69      | -294.21   | 1745492.32        | 14597026.45        | 40°11'32.724"N | 80°37'25.465"W | 303.06            | 283.878         | 1.24           | 1.23                  | -1.25                |
| 2996.00 | 12.010          | 280.530     | 2969.21  | -180.29        | 76.39      | -312.09   | 1745474.44        | 14597030.15        | 40°11'32.762"N | 80°37'25.695"W | 321.31            | 283.754         | 1.56           | 1.47                  | -2.63                |
| 3088.00 | 10.980          | 279.300     | 3059.37  | -189.55        | 79.55      | -330.15   | 1745456.39        | 14597033.31        | 40°11'32.794"N | 80°37'25.928"W | 339.60            | 283.548         | 1.15           | -1.12                 | -1.34                |
| 3180.00 | 10.970          | 281.380     | 3149.69  | -198.49        | 82.70      | -347.38   | 1745439.17        | 14597036.45        | 40°11'32.825"N | 80°37'26.150"W | 357.09            | 283.391         | 0.43           | -0.01                 | 2.26                 |
| 3273.00 | 11.030          | 287.600     | 3240.98  | -208.63        | 87.13      | -364.53   | 1745422.02        | 14597040.89        | 40°11'32.870"N | 80°37'26.370"W | 374.80            | 283.443         | 1.28           | 0.06                  | 6.69                 |
| 3366.00 | 10.760          | 290.260     | 3332.30  | -219.76        | 92.83      | -381.16   | 1745405.41        | 14597046.58        | 40°11'32.927"N | 80°37'26.584"W | 392.30            | 283.688         | 0.61           | -0.29                 | 2.86                 |
| 3458.00 | 10.780          | 286.650     | 3422.68  | -230.53        | 98.27      | -397.46   | 1745389.11        | 14597052.02        | 40°11'32.981"N | 80°37'26.794"W | 409.43            | 283.888         | 0.73           | 0.02                  | -3.92                |
| 3551.00 | 11.630          | 289.250     | 3513.91  | -241.75        | 103.85     | -414.64   | 1745371.94        | 14597057.60        | 40°11'33.037"N | 80°37'27.015"W | 427.45            | 284.061         | 1.06           | 0.91                  | 2.80                 |
| 3643.00 | 12.210          | 287.220     | 3603.93  | -263.60        | 109.79     | -432.69   | 1745353.90        | 14597063.53        | 40°11'33.097"N | 80°37'27.247"W | 446.40            | 284.238         | 0.78           | 0.63                  | -2.21                |
| 3736.00 | 11.820          | 288.700     | 3694.89  | -265.60        | 115.75     | -451.10   | 1745335.49        | 14597069.50        | 40°11'33.156"N | 80°37'27.484"W | 465.72            | 284.392         | 0.53           | -0.42                 | 1.59                 |
| 3829.00 | 11.120          | 285.200     | 3786.03  | -276.83        | 121.16     | -468.78   | 1745317.82        | 14597074.90        | 40°11'33.211"N | 80°37'27.712"W | 484.19            | 284.491         | 1.06           | -0.75                 | -3.76                |
| 3921.00 | 11.060          | 284.840     | 3876.32  | -287.08        | 125.75     | -485.87   | 1745300.73        | 14597079.48        | 40°11'33.257"N | 80°37'27.932"W | 501.88            | 284.510         | 0.10           | -0.07                 | -0.39                |
| 4014.00 | 10.440          | 283.360     | 3967.68  | -296.90        | 129.98     | -502.69   | 1745283.92        | 14597083.71        | 40°11'33.299"N | 80°37'28.148"W | 519.23            | 284.497         | 0.73           | -0.67                 | -1.59                |
| 4107.00 | 10.010          | 281.680     | 4059.21  | -305.87        | 133.56     | -518.81   | 1745267.81        | 14597087.30        | 40°11'33.335"N | 80°37'28.356"W | 535.72            | 284.437         | 0.56           | -0.46                 | -1.81                |
| 4198.00 | 10.360          | 285.330     | 4148.77  | -314.85        | 137.33     | -534.44   | 1745252.18        | 14597091.06        | 40°11'33.373"N | 80°37'28.557"W | 551.81            | 284.410         | 0.81           | 0.38                  | 4.01                 |
| 4291.00 | 11.170          | 286.070     | 4240.14  | -325.08        | 142.03     | -551.17   | 1745235.47        | 14597095.76        | 40°11'33.420"N | 80°37'28.772"W | 569.17            | 284.450         | 0.88           | 0.87                  | 0.80                 |
| 4383.00 | 10.930          | 283.840     | 4330.43  | -335.28        | 146.58     | -568.20   | 1745218.44        | 14597100.31        | 40°11'33.466"N | 80°37'28.991"W | 586.80            | 284.466         | 0.53           | -0.26                 | -2.42                |
| 4476.00 | 10.340          | 279.240     | 4421.83  | -344.36        | 150.03     | -585.00   | 1745201.65        | 14597103.76        | 40°11'33.501"N | 80°37'29.208"W | 603.93            | 284.384         | 1.11           | -0.63                 | -4.95                |
| 4569.00 | 9.580           | 282.040     | 4513.43  | -352.64        | 152.99     | -600.80   | 1745185.85        | 14597106.71        | 40°11'33.531"N | 80°37'29.411"W | 619.98            | 284.286         | 0.97           | -0.82                 | 3.01                 |
| 4659.00 | 9.700           | 283.060     | 4602.16  | -360.83        | 156.26     | -615.51   | 1745171.14        | 14597109.99        | 40°11'33.564"N | 80°37'29.601"W | 635.04            | 284.245         | 0.23           | 0.13                  | 1.13                 |
| 4752.00 | 11.110          | 289.020     | 4693.63  | -370.84        | 160.95     | -631.62   | 1745155.04        | 14597114.68        | 40°11'33.611"N | 80°37'29.808"W | 651.80            | 284.265         | 1.91           | 1.52                  | 6.41                 |
| 4844.00 | 12.610          | 292.720     | 4783.67  | -383.32        | 167.72     | -649.26   | 1745137.41        | 14597121.44        | 40°11'33.678"N | 80°37'30.035"W | 670.58            | 284.484         | 1.83           | 1.63                  | 4.02                 |
| 4937.00 | 13.440          | 293.020     | 4874.27  | -397.69        | 175.87     | -668.57   | 1745118.10        | 14597129.59        | 40°11'33.760"N | 80°37'30.283"W | 691.32            | 284.738         | 0.90           | 0.89                  | 0.32                 |
| 5028.00 | 12.050          | 287.980     | 4963.03  | -410.85        | 182.94     | -687.34   | 1745099.34        | 14597136.65        | 40°11'33.830"N | 80°37'30.525"W | 711.27            | 284.904         | 1.95           | -1.53                 | -5.54                |
| 5121.00 | 9.950           | 283.700     | 5054.32  | -421.38        | 187.84     | -704.39   | 1745082.31        | 14597141.55        | 40°11'33.879"N | 80°37'30.744"W | 729.00            | 284.931         | 2.42           | -2.26                 | -4.60                |
| 5213.00 | 9.860           | 285.500     | 5144.95  | -430.22        | 191.56     | -719.77   | 1745066.93        | 14597145.27        | 40°11'33.917"N | 80°37'30.942"W | 744.82            | 284.903         | 0.10           | -0.10                 | -0.22                |
| 5306.00 | 10.590          | 286.740     | 5236.47  | -439.70        | 195.74     | -735.73   | 1745050.97        | 14597149.45        | 40°11'33.959"N | 80°37'31.148"W | 761.33            | 284.898         | 0.89           | 0.78                  | 2.41                 |
| 5312.00 | 10.840          | 286.190     | 5242.37  | -440.36        | 196.04     | -736.81   | 1745049.90        | 14597149.75        | 40°11'33.962"N | 80°37'31.161"W | 762.44            | 284.899         | 4.39           | 4.17                  | 7.50                 |



Southwestern Energy

# Actual Wellpath Report

Kathy Mayhew BRK 6H AWP Proj: 20087'  
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Environmental Protection



BAKER HUGHES  
a GE company

## REFERENCE WELLPATH IDENTIFICATION

|          |                      |          |                         |
|----------|----------------------|----------|-------------------------|
| Operator | SOUTHWESTERN ENERGY  | Slot     | Slot 6H                 |
| Area     | Brooke County, WV    | Well     | Kathy Mayhew BRK 6H     |
| Field    | Brooke               | Wellbore | Kathy Mayhew BRK 6H AWB |
| Facility | Kathy Mayhew BRK Pad |          |                         |

## WELLPATH DATA (221 stations)

| MD (ft) | Inclination (°) | Azimuth (°) | TVD (ft) | Vert Sect (ft) | North (ft) | East (ft) | Grid East (US ft) | Grid North (US ft) | Latitude       | Longitude      | Closure Dist (ft) | Closure Dir (°) | DLS (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 5404.00 | 9.250           | 281.080     | 5332.96  | -449.37        | 199.88     | -752.37   | 1745034.34        | 14597153.58        | 40°11'34.00"N  | 80°37'31.362"W | 778.47            | 284.878         | 1.98          | -1.73                | -5.55               |
| 5497.00 | 9.710           | 254.760     | 5424.73  | -453.98        | 199.25     | -767.28   | 1745019.43        | 14597152.96        | 40°11'33.995"N | 80°37'31.554"W | 792.73            | 284.557         | 4.65          | 0.49                 | -28.30              |
| 5590.00 | 11.910          | 222.060     | 5516.16  | -450.24        | 190.05     | -781.29   | 1745005.43        | 14597122.93        | 40°11'33.904"N | 80°37'31.735"W | 804.08            | 283.672         | 6.89          | 2.37                 | -35.16              |
| 5682.00 | 18.610          | 200.370     | 5604.93  | -434.70        | 169.20     | -792.78   | 1744993.94        | 14597123.77        | 40°11'33.699"N | 80°37'31.884"W | 810.64            | 282.048         | 9.45          | 7.28                 | -23.58              |
| 5774.00 | 25.560          | 184.800     | 5699.20  | -405.55        | 135.60     | -799.57   | 1744987.16        | 14597089.33        | 40°11'33.367"N | 80°37'31.973"W | 810.98            | 279.625         | 9.82          | 7.55                 | -16.92              |
| 5866.00 | 35.590          | 173.360     | 5769.38  | -361.44        | 89.07      | -798.13   | 1744988.60        | 14597042.82        | 40°11'32.907"N | 80°37'31.957"W | 803.08            | 276.368         | 12.56         | 10.90                | -12.43              |
| 5959.00 | 46.680          | 171.070     | 5839.31  | -301.80        | 28.58      | -789.72   | 1744997.00        | 14596982.35        | 40°11'32.309"N | 80°37'31.852"W | 790.24            | 272.072         | 12.03         | 11.92                | -2.46               |
| 6049.00 | 53.670          | 168.710     | 5896.92  | -233.83        | -39.41     | -777.53   | 1745009.19        | 14596914.39        | 40°11'31.637"N | 80°37'31.699"W | 778.52            | 267.099         | 8.02          | 7.77                 | -2.62               |
| 6142.00 | 63.080          | 163.990     | 5945.65  | -155.29        | -116.20    | -758.71   | 1745028.00        | 14596837.63        | 40°11'30.877"N | 80°37'31.461"W | 767.55            | 261.292         | 11.00         | 10.12                | -5.08               |
| 6234.00 | 70.620          | 160.180     | 5981.81  | -70.85         | -196.59    | -732.64   | 1745054.07        | 14596757.27        | 40°11'30.082"N | 80°37'31.129"W | 758.55            | 254.980         | 9.04          | 8.20                 | -4.14               |
| 6326.00 | 80.110          | 157.550     | 6005.03  | 18.04          | -279.50    | -700.54   | 1745086.15        | 14596674.40        | 40°11'29.261"N | 80°37'30.720"W | 754.24            | 248.249         | 10.68         | 10.32                | -2.86               |
| 6418.00 | 88.580          | 156.050     | 6014.09  | 109.40         | -363.56    | -664.50   | 1745122.18        | 14596590.36        | 40°11'28.429"N | 80°37'30.260"W | 757.45            | 241.316         | 9.35          | 9.21                 | -1.63               |
| 6511.00 | 88.890          | 152.420     | 6016.14  | 201.95         | -447.28    | -624.09   | 1745162.57        | 14596506.68        | 40°11'27.600"N | 80°37'29.744"W | 767.82            | 234.371         | 3.92          | 0.33                 | -3.90               |
| 6604.00 | 88.770          | 151.730     | 6018.04  | 294.13         | -529.44    | -580.54   | 1745206.10        | 14596424.55        | 40°11'26.786"N | 80°37'29.187"W | 785.71            | 227.636         | 0.75          | -0.13                | -0.74               |
| 6697.00 | 88.950          | 151.570     | 6019.89  | 386.21         | -611.27    | -536.39   | 1745250.23        | 14596342.76        | 40°11'25.976"N | 80°37'28.623"W | 813.24            | 221.267         | 0.26          | 0.19                 | -0.17               |
| 6789.00 | 88.800          | 152.810     | 6021.70  | 477.42         | -692.62    | -493.48   | 1745293.13        | 14596261.43        | 40°11'25.170"N | 80°37'28.074"W | 850.44            | 215.469         | 1.36          | -0.16                | 1.35                |
| 6882.00 | 88.830          | 154.110     | 6023.62  | 569.86         | -775.80    | -451.93   | 1745334.66        | 14596178.28        | 40°11'24.346"N | 80°37'27.544"W | 897.84            | 210.222         | 1.40          | 0.03                 | 1.40                |
| 6975.00 | 88.650          | 154.080     | 6025.67  | 662.40         | -859.44    | -411.31   | 1745375.26        | 14596094.68        | 40°11'23.518"N | 80°37'27.025"W | 952.79            | 205.575         | 0.20          | -0.19                | -0.03               |
| 7068.00 | 89.080          | 158.020     | 6027.51  | 755.19         | -944.40    | -373.58   | 1745412.98        | 14596009.76        | 40°11'22.677"N | 80°37'26.543"W | 1015.60           | 201.582         | 4.26          | 0.46                 | 4.24                |
| 7161.00 | 89.290          | 159.690     | 6028.83  | 848.17         | -1031.13   | -340.03   | 1745446.51        | 14595923.06        | 40°11'21.818"N | 80°37'26.116"W | 1085.75           | 198.251         | 1.81          | 0.23                 | 1.80                |
| 7253.00 | 89.690          | 157.780     | 6029.65  | 940.15         | -1116.85   | -306.67   | 1745479.87        | 14595837.37        | 40°11'20.970"N | 80°37'25.690"W | 1158.19           | 195.354         | 2.12          | 0.43                 | -2.08               |
| 7346.00 | 89.320          | 154.430     | 6030.45  | 1032.95        | -1201.87   | -269.01   | 1745517.51        | 14595752.39        | 40°11'20.128"N | 80°37'25.210"W | 1231.60           | 192.616         | 3.62          | -0.40                | -3.60               |
| 7439.00 | 88.980          | 156.930     | 6031.83  | 1125.72        | -1286.60   | -230.71   | 1745555.79        | 14595667.69        | 40°11'19.289"N | 80°37'24.721"W | 1307.12           | 190.166         | 2.71          | -0.37                | 2.69                |
| 7531.00 | 88.800          | 155.510     | 6033.62  | 1217.54        | -1370.77   | -193.62   | 1745592.87        | 14595583.55        | 40°11'18.456"N | 80°37'24.248"W | 1384.38           | 188.040         | 1.56          | -0.20                | -1.54               |
| 7624.00 | 89.020          | 157.700     | 6035.39  | 1310.38        | -1456.10   | -156.71   | 1745629.77        | 14595498.25        | 40°11'17.611"N | 80°37'23.777"W | 1464.51           | 186.143         | 2.37          | 0.24                 | 2.35                |
| 7717.00 | 89.140          | 156.880     | 6036.88  | 1403.29        | -1541.88   | -120.81   | 1745665.66        | 14595412.51        | 40°11'16.762"N | 80°37'23.319"W | 1546.61           | 184.480         | 0.89          | 0.13                 | -0.88               |
| 7810.00 | 89.050          | 157.850     | 6038.35  | 1486.21        | -1627.71   | -85.02    | 1745701.43        | 14595326.71        | 40°11'15.912"N | 80°37'22.862"W | 1629.93           | 182.990         | 1.05          | -0.10                | 1.04                |
| 7902.00 | 89.200          | 157.200     | 6039.75  | 1568.14        | -1712.71   | -49.85    | 1745736.58        | 14595241.75        | 40°11'15.071"N | 80°37'22.414"W | 1713.43           | 181.667         | 0.73          | 0.16                 | -0.71               |
| 7995.00 | 89.540          | 156.640     | 6040.78  | 1681.03        | -1798.26   | -13.40    | 1745773.02        | 14595156.23        | 40°11'14.224"N | 80°37'21.949"W | 1798.31           | 180.427         | 0.70          | 0.37                 | -0.60               |
| 8086.00 | 89.110          | 157.560     | 6041.85  | 1771.93        | -1882.08   | 22.01     | 1745808.42        | 14595072.44        | 40°11'13.394"N | 80°37'21.497"W | 1882.21           | 179.330         | 1.12          | -0.47                | 1.01                |



Southwestern Energy

# Actual Wellpath Report

Kathy Mayhew BRK 6H AWP Proj: 20087

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JAN 28 2020  
WV Dept of Environmental Protection



## REFERENCE WELLPATH IDENTIFICATION

|          |                      |  |          |                         |
|----------|----------------------|--|----------|-------------------------|
| Operator | SOUTHWESTERN ENERGY  |  | Slot     | Slot 6H                 |
| Area     | Brooke County, WV    |  | Well     | Kathy Mayhew BRK 6H     |
| Field    | Brooke               |  | Wellbore | Kathy Mayhew BRK 6H AWB |
| Facility | Kathy Mayhew BRK Pad |  |          |                         |

## WELLPATH DATA (221 stations)

| MD (ft)  | Inclination (°) | Azimuth (°) | TVD (ft) | Vert Sect (ft) | North (ft) | East (ft) | Grid East (US ft) | Grid North (US ft) | Latitude       | Longitude      | Closure Dist (ft) | Closure Dir (°) | DLS (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 8179.00  | 89.420          | 158.230     | 6043.04  | 1864.88        | -1968.24   | 57.00     | 1745843.40        | 14594986.32        | 40°11'12.541"N | 80°37'21.051"W | 1969.06           | 178.341         | 0.79          | 0.33                 | 0.72                |
| 8271.00  | 89.420          | 157.560     | 6043.97  | 1956.83        | -2053.47   | 91.62     | 1745878.00        | 14594901.12        | 40°11'11.698"N | 80°37'20.610"W | 2055.51           | 177.445         | 0.73          | 0.00                 | -0.73               |
| 8363.00  | 89.170          | 156.210     | 6045.10  | 2048.72        | -2138.07   | 127.73    | 1745914.10        | 14594816.54        | 40°11'10.860"N | 80°37'20.149"W | 2141.89           | 176.581         | 1.49          | -0.27                | -1.47               |
| 8456.00  | 89.690          | 157.860     | 6046.03  | 2141.62        | -2223.70   | 164.02    | 1745950.37        | 14594730.96        | 40°11'10.012"N | 80°37'19.686"W | 2229.74           | 175.782         | 1.86          | 0.56                 | 1.77                |
| 8548.00  | 89.510          | 155.860     | 6046.67  | 2233.50        | -2302.79   | 200.17    | 1745986.51        | 14594646.40        | 40°11'09.175"N | 80°37'19.225"W | 2316.95           | 175.044         | 2.18          | -0.20                | -2.17               |
| 8641.00  | 89.380          | 154.780     | 6047.57  | 2326.24        | -2392.79   | 239.00    | 1746025.32        | 14594561.93        | 40°11'08.338"N | 80°37'18.729"W | 2404.69           | 174.296         | 1.17          | -0.14                | -1.16               |
| 8724.00  | 90.060          | 157.850     | 6048.03  | 2419.07        | -2477.94   | 276.35    | 1746062.66        | 14594476.81        | 40°11'07.495"N | 80°37'18.253"W | 2493.30           | 173.636         | 3.38          | 0.73                 | 3.30                |
| 8826.00  | 89.540          | 156.410     | 6048.35  | 2510.98        | -2562.71   | 312.10    | 1746098.40        | 14594392.08        | 40°11'06.656"N | 80°37'17.797"W | 2581.64           | 173.056         | 1.66          | -0.57                | -1.57               |
| 8918.00  | 89.380          | 155.840     | 6049.22  | 2602.80        | -2646.83   | 349.34    | 1746135.62        | 14594307.99        | 40°11'05.823"N | 80°37'17.322"W | 2669.78           | 172.481         | 0.64          | -0.17                | -0.62               |
| 9010.00  | 89.420          | 155.830     | 6050.18  | 2694.60        | -2730.76   | 387.00    | 1746173.26        | 14594224.09        | 40°11'04.992"N | 80°37'16.841"W | 2758.05           | 171.934         | 0.04          | 0.04                 | -0.01               |
| 9103.00  | 89.480          | 156.170     | 6051.07  | 2787.41        | -2815.72   | 424.82    | 1746211.07        | 14594139.16        | 40°11'04.151"N | 80°37'16.358"W | 2847.59           | 171.420         | 0.37          | 0.06                 | 0.37                |
| 9195.00  | 89.480          | 156.040     | 6051.91  | 2879.23        | -2899.83   | 462.09    | 1746248.32        | 14594055.08        | 40°11'03.318"N | 80°37'15.883"W | 2936.42           | 170.946         | 0.14          | 0.00                 | -0.14               |
| 9287.00  | 89.540          | 155.420     | 6052.69  | 2971.02        | -2983.70   | 499.90    | 1746286.12        | 14593971.25        | 40°11'02.488"N | 80°37'15.400"W | 3025.28           | 170.489         | 0.68          | 0.07                 | -0.67               |
| 9379.00  | 89.510          | 156.170     | 6053.46  | 3062.81        | -3067.60   | 537.62    | 1746323.83        | 14593887.38        | 40°11'01.657"N | 80°37'14.919"W | 3114.36           | 170.059         | 0.82          | -0.03                | 0.82                |
| 9472.00  | 89.350          | 155.780     | 6054.38  | 3155.61        | -3152.54   | 575.48    | 1746361.67        | 14593802.47        | 40°11'00.816"N | 80°37'14.436"W | 3204.64           | 169.655         | 0.45          | -0.17                | -0.42               |
| 9565.00  | 89.380          | 155.570     | 6055.41  | 3248.39        | -3237.28   | 613.79    | 1746399.96        | 14593717.76        | 40°10'59.977"N | 80°37'13.947"W | 3294.95           | 169.264         | 0.23          | 0.03                 | -0.23               |
| 9656.00  | 89.350          | 154.020     | 6056.42  | 3339.06        | -3319.61   | 652.54    | 1746438.70        | 14593635.47        | 40°10'59.162"N | 80°37'13.452"W | 3383.14           | 168.879         | 1.70          | -0.03                | -1.70               |
| 9747.00  | 89.380          | 152.600     | 6057.43  | 3429.50        | -3400.91   | 693.41    | 1746479.55        | 14593554.20        | 40°10'58.357"N | 80°37'12.930"W | 3470.88           | 168.476         | 1.56          | 0.03                 | -1.56               |
| 9840.00  | 89.350          | 151.810     | 6058.46  | 3521.71        | -3483.17   | 736.77    | 1746522.90        | 14593474.97        | 40°10'57.542"N | 80°37'12.376"W | 3560.24           | 168.057         | 0.85          | -0.03                | -0.85               |
| 9931.00  | 89.380          | 152.120     | 6059.47  | 3611.90        | -3563.49   | 779.54    | 1746566.65        | 14593391.69        | 40°10'56.747"N | 80°37'11.829"W | 3647.76           | 167.661         | 0.34          | 0.03                 | 0.34                |
| 10024.00 | 89.350          | 154.350     | 6060.50  | 3704.31        | -3646.51   | 821.41    | 1746607.51        | 14593308.69        | 40°10'55.925"N | 80°37'11.294"W | 3737.89           | 167.305         | 2.40          | -0.03                | 2.40                |
| 10116.00 | 89.320          | 155.550     | 6061.57  | 3796.00        | -3729.85   | 860.36    | 1746646.45        | 14593225.39        | 40°10'55.099"N | 80°37'10.797"W | 3827.80           | 167.011         | 1.30          | -0.03                | 1.30                |
| 10209.00 | 88.770          | 158.740     | 6063.12  | 3888.88        | -3815.53   | 896.48    | 1746682.54        | 14593139.74        | 40°10'54.250"N | 80°37'10.337"W | 3919.43           | 166.778         | 3.48          | -0.59                | 3.43                |
| 10302.00 | 89.450          | 160.110     | 6064.56  | 3981.87        | -3902.58   | 929.15    | 1746718.21        | 14593056.72        | 40°10'53.381"N | 80°37'09.921"W | 4011.67           | 166.608         | 1.64          | 0.73                 | 1.47                |
| 10395.00 | 89.260          | 157.590     | 6065.61  | 4074.85        | -3989.58   | 967.22    | 1746753.25        | 14592980.79        | 40°10'52.531"N | 80°37'09.483"W | 4103.82           | 166.433         | 2.72          | -0.20                | -2.71               |
| 10487.00 | 89.350          | 158.340     | 6066.72  | 4166.80        | -4074.31   | 997.22    | 1746788.25        | 14592906.03        | 40°10'51.687"N | 80°37'09.053"W | 4194.83           | 166.248         | 0.82          | 0.10                 | 0.82                |
| 10579.00 | 89.540          | 157.650     | 6067.62  | 4258.76        | -4159.87   | 1031.69   | 1746817.70        | 14592829.53        | 40°10'50.843"N | 80°37'08.614"W | 4285.90           | 166.071         | 0.78          | 0.21                 | -0.75               |
| 10672.00 | 89.380          | 157.890     | 6068.49  | 4351.71        | -4245.96   | 1066.87   | 1746852.87        | 14592750.48        | 40°10'49.991"N | 80°37'08.165"W | 4377.94           | 165.895         | 0.31          | -0.17                | 0.26                |
| 10765.00 | 89.450          | 157.350     | 6069.44  | 4444.64        | -4331.95   | 1102.28   | 1746888.26        | 14592673.53        | 40°10'49.139"N | 80°37'07.714"W | 4469.99           | 165.724         | 0.59          | 0.08                 | -0.58               |
| 10857.00 | 90.150          | 158.610     | 6069.76  | 4536.60        | -4417.23   | 1136.77   | 1746922.74        | 14592598.27        | 40°10'48.295"N | 80°37'07.274"W | 4561.16           | 165.568         | 1.57          | 0.76                 | 1.37                |



Southwestern Energy

# Actual Wellpath Report

Kathy Mayhew BRK 6H AWP Proj: 20087

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Environmental



## REFERENCE WELLPATH IDENTIFICATION

|          |                      |          |                         |
|----------|----------------------|----------|-------------------------|
| Operator | SOUTHWESTERN ENERGY  | Slot     | Slot 6H                 |
| Area     | Brooke County, WV    | Well     | Kathy Mayhew BRK 6H     |
| Field    | Brooke               | Wellbore | Kathy Mayhew BRK 6H AWB |
| Facility | Kathy Mayhew BRK Pad |          |                         |

## WELLPATH DATA (221 stations)

| MD (ft)  | Inclination (°) | Azimuth (°) | TVD (ft) | Vert Sect (ft) | North (ft) | East (ft) | Grid East (US ft) | Grid North (US ft) | Latitude       | Longitude      | Closure Dist (ft) | Closure Dir (°) | DLS (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 10950.00 | 89.450          | 156.430     | 6070.09  | 4629.53        | -4503.16   | 1172.33   | 1746958.29        | 14592452.38        | 40°10'47.444"N | 80°37'06.821"W | 4653.26           | 165.408         | 2.46          | -0.75                | -2.34               |
| 11041.00 | 89.910          | 157.930     | 6070.60  | 4720.45        | -4587.03   | 1207.62   | 1746993.56        | 14592368.54        | 40°10'46.614"N | 80°37'06.371"W | 4743.33           | 165.251         | 1.72          | 0.51                 | 1.65                |
| 11133.00 | 89.660          | 157.560     | 6070.94  | 4812.40        | -4672.18   | 1242.46   | 1747028.39        | 14592283.43        | 40°10'44.771"N | 80°37'05.927"W | 4834.56           | 165.108         | 0.49          | -0.27                | -0.40               |
| 11225.00 | 89.820          | 158.100     | 6071.36  | 4904.35        | -4757.38   | 1277.18   | 1747063.10        | 14592198.26        | 40°10'44.928"N | 80°37'05.484"W | 4925.83           | 164.973         | 0.61          | 0.17                 | 0.59                |
| 11318.00 | 90.400          | 159.750     | 6071.18  | 4997.34        | -4844.15   | 1310.62   | 1747096.52        | 14592111.52        | 40°10'44.069"N | 80°37'05.058"W | 5018.32           | 164.861         | 1.88          | 0.62                 | 1.77                |
| 11411.00 | 91.020          | 157.460     | 6070.03  | 5090.31        | -4930.73   | 1344.54   | 1747130.43        | 14592024.98        | 40°10'43.212"N | 80°37'04.626"W | 5110.76           | 164.747         | 2.55          | 0.67                 | -2.46               |
| 11503.00 | 90.030          | 155.990     | 6069.18  | 5182.19        | -5015.24   | 1380.89   | 1747166.77        | 14591940.50        | 40°10'42.375"N | 80°37'04.162"W | 5201.87           | 164.606         | 1.93          | -1.08                | -1.60               |
| 11596.00 | 90.060          | 156.330     | 6069.11  | 5275.02        | -5100.30   | 1418.48   | 1747204.34        | 14591855.47        | 40°10'41.533"N | 80°37'03.683"W | 5293.88           | 164.458         | 0.37          | 0.03                 | 0.37                |
| 11689.00 | 89.880          | 155.860     | 6069.16  | 5367.84        | -5185.32   | 1456.16   | 1747242.01        | 14591770.48        | 40°10'40.691"N | 80°37'03.202"W | 5385.91           | 164.314         | 0.54          | -0.19                | -0.51               |
| 11780.00 | 90.120          | 156.730     | 6069.16  | 5458.69        | -5268.64   | 1492.75   | 1747278.58        | 14591687.19        | 40°10'39.866"N | 80°37'02.735"W | 5476.03           | 164.181         | 0.99          | 0.26                 | 0.96                |
| 11873.00 | 89.940          | 156.190     | 6069.11  | 5551.55        | -5353.90   | 1529.89   | 1747315.71        | 14591601.97        | 40°10'39.022"N | 80°37'02.261"W | 5568.20           | 164.053         | 0.61          | -0.19                | -0.58               |
| 11966.00 | 90.000          | 155.940     | 6069.16  | 5644.37        | -5438.91   | 1567.62   | 1747353.43        | 14591517.00        | 40°10'38.181"N | 80°37'01.780"W | 5660.31           | 163.922         | 0.28          | 0.06                 | -0.27               |
| 12059.00 | 89.970          | 156.050     | 6069.18  | 5737.18        | -5523.86   | 1605.45   | 1747391.25        | 14591432.07        | 40°10'37.339"N | 80°37'01.297"W | 5752.44           | 163.794         | 0.12          | -0.03                | 0.12                |
| 12152.00 | 89.910          | 156.030     | 6069.28  | 5830.00        | -5608.85   | 1643.22   | 1747429.00        | 14591347.12        | 40°10'36.498"N | 80°37'00.816"W | 5844.60           | 163.671         | 0.07          | -0.06                | -0.02               |
| 12244.00 | 89.940          | 156.800     | 6069.48  | 5921.85        | -5693.16   | 1680.03   | 1747465.79        | 14591262.84        | 40°10'35.663"N | 80°37'00.346"W | 5935.88           | 163.559         | 0.84          | 0.03                 | 0.84                |
| 12337.00 | 89.970          | 157.030     | 6069.48  | 6014.75        | -5778.72   | 1716.50   | 1747502.24        | 14591177.32        | 40°10'34.816"N | 80°36'59.881"W | 6028.26           | 163.457         | 0.25          | 0.03                 | 0.25                |
| 12430.00 | 90.120          | 156.240     | 6069.40  | 6107.62        | -5864.09   | 1753.38   | 1747539.11        | 14591091.98        | 40°10'33.971"N | 80°36'59.411"W | 6120.61           | 163.353         | 0.86          | 0.16                 | -0.85               |
| 12522.00 | 89.940          | 157.000     | 6069.35  | 6199.50        | -5948.53   | 1789.89   | 1747575.61        | 14591007.57        | 40°10'33.135"N | 80°36'58.945"W | 6211.99           | 163.254         | 0.85          | -0.20                | 0.83                |
| 12615.00 | 90.090          | 156.510     | 6069.33  | 6292.38        | -6033.99   | 1826.59   | 1747612.30        | 14590922.15        | 40°10'32.289"N | 80°36'58.477"W | 6304.40           | 163.158         | 0.55          | 0.16                 | -0.53               |
| 12708.00 | 90.000          | 156.370     | 6069.26  | 6385.24        | -6119.23   | 1863.76   | 1747649.45        | 14590836.94        | 40°10'31.445"N | 80°36'58.003"W | 6396.77           | 163.061         | 0.18          | -0.10                | -0.15               |
| 12800.00 | 90.090          | 156.760     | 6069.18  | 6477.11        | -6203.64   | 1900.35   | 1747686.03        | 14590752.56        | 40°10'30.609"N | 80°36'57.536"W | 6488.18           | 162.969         | 0.44          | 0.10                 | 0.42                |
| 12893.00 | 90.280          | 156.570     | 6068.88  | 6569.98        | -6289.04   | 1937.19   | 1747722.85        | 14590667.20        | 40°10'29.764"N | 80°36'57.066"W | 6580.63           | 162.880         | 0.29          | 0.20                 | -0.20               |
| 12986.00 | 89.720          | 156.700     | 6068.88  | 6662.86        | -6374.41   | 1974.07   | 1747759.72        | 14590581.86        | 40°10'28.919"N | 80°36'56.586"W | 6673.09           | 162.793         | 0.62          | -0.60                | 0.14                |
| 13079.00 | 89.690          | 155.300     | 6069.36  | 6755.67        | -6459.37   | 2051.90   | 1747797.53        | 14590496.93        | 40°10'28.078"N | 80°36'56.113"W | 6765.44           | 162.700         | 1.51          | -0.03                | -1.51               |
| 13171.00 | 89.630          | 153.700     | 6069.91  | 6847.29        | -6542.40   | 2051.90   | 1747837.12        | 14590413.93        | 40°10'27.255"N | 80°36'55.608"W | 6856.51           | 162.590         | 1.74          | -0.07                | -1.74               |
| 13264.00 | 89.540          | 153.400     | 6070.58  | 6939.77        | -6625.66   | 2092.93   | 1747878.53        | 14590330.70        | 40°10'26.431"N | 80°36'55.079"W | 6948.36           | 162.470         | 0.34          | -0.10                | -0.32               |
| 13357.00 | 89.910          | 152.620     | 6071.03  | 7032.15        | -6708.53   | 2135.13   | 1747920.72        | 14590247.87        | 40°10'25.610"N | 80°36'54.540"W | 7040.11           | 162.345         | 0.93          | 0.40                 | -0.84               |
| 13449.00 | 89.230          | 149.850     | 6071.72  | 7123.16        | -6789.17   | 2179.40   | 1747964.97        | 14590167.26        | 40°10'24.811"N | 80°36'53.974"W | 7130.40           | 162.203         | 3.10          | -0.74                | -3.01               |
| 13541.00 | 89.660          | 151.180     | 6072.61  | 7213.99        | -6869.25   | 2224.68   | 1748010.23        | 14590087.21        | 40°10'24.018"N | 80°36'53.395"W | 7220.51           | 162.055         | 1.52          | 0.47                 | 1.45                |
| 13634.00 | 89.450          | 155.170     | 6073.33  | 7306.38        | -6952.22   | 2266.63   | 1748052.17        | 14590004.27        | 40°10'23.196"N | 80°36'52.869"W | 7312.39           | 161.942         | 4.30          | -0.23                | 4.29                |



# Actual Wellpath Report

Kathy Mayhew BRK 6H AWP Proj: 20087

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## REFERENCE WELLPATH IDENTIFICATION

|          |                      |          |                         |
|----------|----------------------|----------|-------------------------|
| Operator | SOUTHWESTERN ENERGY  | Slot     | Slot 6H                 |
| Area     | Brooke County, WV    | Well     | Kathy Mayhew BRK 6H     |
| Field    | Brooke               | Wellbore | Kathy Mayhew BRK 6H AWB |
| Facility | Kathy Mayhew BRK Pad |          |                         |

## WELLPATH DATA (221 stations)

| MD (ft)  | Inclination (°) | Azimuth (°) | TVD (ft) | Vert Sect (ft) | North (ft) | East (ft) | Grid East (US ft) | Grid North (US ft) | Latitude       | Longitude      | Closure Dist (ft) | Closure Dir (°) | DLS (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 13727.00 | 89.320          | 156.830     | 6074.33  | 7399.19        | -7037.17   | 2304.46   | 1748089.98        | 14589919.35        | 40°10'22.355"N | 80°36'52.377"W | 7404.88           | 161.868         | 1.79          | -0.14                | 1.78                |
| 13819.00 | 89.380          | 158.110     | 6075.38  | 7491.11        | -7122.14   | 2339.71   | 1748125.21        | 14589634.42        | 40°10'21.514"N | 80°36'51.928"W | 7496.61           | 161.814         | 1.39          | 0.07                 | 1.39                |
| 13912.00 | 89.520          | 159.910     | 6076.02  | 7584.10        | -7208.97   | 2373.02   | 1748158.51        | 14589747.63        | 40°10'20.655"N | 80°36'51.503"W | 7589.49           | 161.780         | 1.99          | 0.47                 | 1.94                |
| 14005.00 | 89.540          | 157.080     | 6076.54  | 7677.07        | -7295.48   | 2407.10   | 1748192.58        | 14589661.14        | 40°10'19.798"N | 80°36'51.069"W | 7682.33           | 161.740         | 3.06          | -0.30                | -3.04               |
| 14097.00 | 89.510          | 157.230     | 6077.31  | 7768.98        | -7380.26   | 2442.82   | 1748228.29        | 14589526.40        | 40°10'18.959"N | 80°36'50.614"W | 7774.04           | 161.686         | 0.17          | -0.03                | 0.16                |
| 14190.00 | 89.970          | 159.020     | 6077.73  | 7861.95        | -7466.56   | 2477.47   | 1748262.92        | 14589490.13        | 40°10'18.105"N | 80°36'50.172"W | 7866.85           | 161.644         | 1.99          | 0.49                 | 1.92                |
| 14282.00 | 89.910          | 158.510     | 6077.83  | 7953.94        | -7552.31   | 2510.79   | 1748296.23        | 14589404.41        | 40°10'17.256"N | 80°36'49.748"W | 7958.74           | 161.610         | 0.56          | -0.07                | -0.55               |
| 14374.00 | 89.630          | 159.870     | 6078.19  | 8045.93        | -7638.31   | 2543.47   | 1748328.90        | 14589318.45        | 40°10'16.404"N | 80°36'49.331"W | 8050.66           | 161.583         | 1.51          | -0.30                | 1.48                |
| 14466.00 | 89.570          | 157.700     | 6078.84  | 8137.91        | -7724.07   | 2576.76   | 1748362.18        | 14589232.73        | 40°10'15.556"N | 80°36'48.907"W | 8142.54           | 161.551         | 2.36          | -0.07                | -2.36               |
| 14559.00 | 90.090          | 158.760     | 6079.11  | 8230.88        | -7810.43   | 2611.26   | 1748396.65        | 14589146.39        | 40°10'14.704"N | 80°36'48.468"W | 8235.38           | 161.514         | 1.27          | 0.56                 | 1.14                |
| 14651.00 | 89.630          | 157.830     | 6079.34  | 8322.86        | -7895.91   | 2645.28   | 1748430.67        | 14589060.95        | 40°10'13.855"N | 80°36'48.035"W | 8327.24           | 161.478         | 1.13          | -0.50                | -1.01               |
| 14743.00 | 89.630          | 158.950     | 6079.93  | 8414.83        | -7981.44   | 2679.16   | 1748464.53        | 14588975.45        | 40°10'13.008"N | 80°36'47.603"W | 8419.10           | 161.444         | 1.22          | 0.00                 | 1.22                |
| 14836.00 | 89.970          | 161.330     | 6080.26  | 8507.82        | -8068.90   | 2710.75   | 1748496.11        | 14588888.03        | 40°10'12.142"N | 80°36'47.201"W | 8512.07           | 161.430         | 2.59          | 0.37                 | 2.56                |
| 14929.00 | 89.540          | 161.050     | 6080.65  | 8600.79        | -8156.93   | 2740.74   | 1748526.09        | 14588800.03        | 40°10'11.271"N | 80°36'46.820"W | 8605.07           | 161.428         | 0.55          | -0.46                | -0.30               |
| 15021.00 | 89.660          | 157.210     | 6081.30  | 8692.76        | -8242.88   | 2773.51   | 1748558.84        | 14588714.12        | 40°10'10.420"N | 80°36'46.402"W | 8696.98           | 161.403         | 4.18          | 0.13                 | -4.17               |
| 15114.00 | 89.570          | 154.910     | 6081.92  | 8785.58        | -8327.87   | 2811.24   | 1748596.56        | 14588629.16        | 40°10'09.579"N | 80°36'45.921"W | 8789.57           | 161.347         | 2.47          | -0.10                | -2.47               |
| 15206.00 | 89.600          | 154.880     | 6082.59  | 8877.26        | -8411.18   | 2850.27   | 1748635.58        | 14588545.88        | 40°10'08.754"N | 80°36'45.423"W | 8880.99           | 161.280         | 0.05          | 0.03                 | -0.03               |
| 15298.00 | 89.600          | 155.840     | 6083.23  | 8969.00        | -8494.80   | 2888.63   | 1748673.92        | 14588462.30        | 40°10'07.926"N | 80°36'44.933"W | 8972.50           | 161.220         | 1.04          | 0.00                 | 1.04                |
| 15391.00 | 89.660          | 155.180     | 6083.83  | 9061.76        | -8579.43   | 2927.18   | 1748712.45        | 14588377.70        | 40°10'07.088"N | 80°36'44.442"W | 9065.04           | 161.161         | 0.71          | 0.06                 | -0.71               |
| 15484.00 | 89.970          | 155.060     | 6084.13  | 9154.47        | -8663.80   | 2966.30   | 1748751.57        | 14588293.36        | 40°10'06.252"N | 80°36'43.942"W | 9157.53           | 161.100         | 0.36          | 0.33                 | -0.13               |
| 15577.00 | 89.880          | 156.440     | 6084.25  | 9247.26        | -8748.59   | 3004.50   | 1748789.75        | 14588208.60        | 40°10'05.413"N | 80°36'43.455"W | 9250.13           | 161.046         | 1.49          | -0.10                | 1.48                |
| 15668.00 | 89.970          | 156.920     | 6084.37  | 9338.14        | -8832.15   | 3040.52   | 1748825.76        | 14588125.07        | 40°10'04.586"N | 80°36'42.996"W | 9340.86           | 161.004         | 0.54          | 0.10                 | 0.53                |
| 15761.00 | 90.120          | 156.560     | 6084.30  | 9431.02        | -8917.60   | 3077.25   | 1748862.47        | 14588039.66        | 40°10'03.740"N | 80°36'42.528"W | 9433.61           | 160.962         | 0.42          | 0.16                 | -0.39               |
| 15854.00 | 90.180          | 156.160     | 6084.06  | 9523.87        | -9002.79   | 3114.54   | 1748899.75        | 14587954.50        | 40°10'02.896"N | 80°36'42.052"W | 9526.31           | 160.917         | 0.43          | 0.06                 | -0.43               |
| 15946.00 | 90.000          | 155.610     | 6083.91  | 9615.68        | -9086.76   | 3152.13   | 1748937.32        | 14587870.56        | 40°10'02.065"N | 80°36'41.573"W | 9617.96           | 160.869         | 0.63          | -0.20                | -0.60               |
| 16038.00 | 90.220          | 156.940     | 6083.73  | 9707.52        | -9170.98   | 3189.14   | 1748974.32        | 14587786.37        | 40°10'01.231"N | 80°36'41.101"W | 9709.66           | 160.825         | 1.47          | 0.24                 | 1.45                |
| 16131.00 | 89.780          | 155.640     | 6083.73  | 9800.36        | -9256.13   | 3226.54   | 1749011.70        | 14587701.26        | 40°10'00.388"N | 80°36'40.624"W | 9802.37           | 160.782         | 1.48          | -0.47                | -1.40               |
| 16222.00 | 89.850          | 156.280     | 6084.03  | 9891.17        | -9339.24   | 3263.61   | 1749048.76        | 14587618.18        | 40°09'59.565"N | 80°36'40.151"W | 9893.05           | 160.738         | 0.71          | 0.08                 | 0.70                |
| 16314.00 | 89.780          | 155.820     | 6084.33  | 9982.99        | -9423.32   | 3300.96   | 1749086.09        | 14587534.14        | 40°09'58.733"N | 80°36'39.674"W | 9984.75           | 160.695         | 0.51          | -0.08                | -0.50               |
| 16407.00 | 89.940          | 156.590     | 6084.55  | 10075.83       | -9508.41   | 3338.48   | 1749123.60        | 14587449.08        | 40°09'57.890"N | 80°36'39.196"W | 10077.46          | 160.653         | 0.85          | 0.17                 | 0.83                |





Southwestern Energy

# Actual Wellpath Report

Kathy Mayhew BRK 6H AWP Proj: 20087

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## REFERENCE WELLPATH IDENTIFICATION

|          |                      |          |                         |
|----------|----------------------|----------|-------------------------|
| Operator | SOUTHWESTERN ENERGY  | Slot     | Slot 6H                 |
| Area     | Brooke County, WV    | Well     | Kathy Mayhew BRK 6H     |
| Field    | Brooke               | Wellbore | Kathy Mayhew BRK 6H AWB |
| Facility | Kathy Mayhew BRK Pad |          |                         |

## WELLPATH DATA (221 stations)

| MD<br>(ft) | Inclination<br>[°] | Azimuth<br>[°] | TVD<br>(ft) | Vert Sect<br>(ft) | North<br>(ft) | East<br>(ft) | Grid East<br>(US ft) | Grid North<br>(US ft) | Latitude       | Longitude      | Closure Dist<br>(ft) | Closure Dir<br>[°] | DLS<br>[°/100ft] | Build Rate<br>[°/100ft] | Turn Rate<br>[°/100ft] |
|------------|--------------------|----------------|-------------|-------------------|---------------|--------------|----------------------|-----------------------|----------------|----------------|----------------------|--------------------|------------------|-------------------------|------------------------|
| 16499.00   | 89.600             | 155.930        | 6084.92     | 10167.67          | -9592.62      | 3375.52      | 1749160.62           | 14587364.90           | 40°09'57.056"N | 80°36'38.724"W | 10169.20             | 160.614            | 0.81             | -0.37                   | -0.72                  |
| 16592.00   | 89.510             | 156.070        | 6085.64     | 10260.48          | -9677.58      | 3413.34      | 1749198.43           | 14587279.97           | 40°09'56.215"N | 80°36'38.241"W | 10261.89             | 160.572            | 0.18             | -0.10                   | 0.15                   |
| 16685.00   | 89.350             | 157.250        | 6086.57     | 10353.35          | -9762.96      | 3450.18      | 1749235.26           | 14587194.62           | 40°09'55.370"N | 80°36'37.772"W | 10354.67             | 160.537            | 1.28             | -0.17                   | 1.27                   |
| 16777.00   | 89.110             | 156.630        | 6087.81     | 10445.24          | -9847.61      | 3486.22      | 1749271.28           | 14587102.02           | 40°09'54.532"N | 80°36'37.312"W | 10446.48             | 160.505            | 0.72             | -0.26                   | -0.67                  |
| 16869.00   | 89.450             | 157.650        | 6088.96     | 10537.14          | -9932.37      | 3521.95      | 1749307.00           | 14587025.28           | 40°09'53.692"N | 80°36'36.857"W | 10538.32             | 160.476            | 1.17             | 0.37                    | -1.11                  |
| 16961.00   | 89.720             | 157.930        | 6089.63     | 10629.09          | -10017.48     | 3556.88      | 1749341.91           | 14586940.20           | 40°09'52.850"N | 80°36'36.412"W | 10630.21             | 160.452            | 0.31             | 0.29                    | 0.09                   |
| 17054.00   | 89.570             | 157.920        | 6090.20     | 10722.04          | -10103.60     | 3591.98      | 1749377.00           | 14586854.12           | 40°09'51.997"N | 80°36'35.964"W | 10723.11             | 160.429            | 0.26             | -0.16                   | 0.20                   |
| 17147.00   | 89.570             | 157.970        | 6090.90     | 10815.00          | -10189.79     | 3626.90      | 1749411.90           | 14586767.96           | 40°09'51.144"N | 80°36'35.519"W | 10816.02             | 160.408            | 0.05             | 0.00                    | 0.05                   |
| 17240.00   | 89.290             | 157.440        | 6091.83     | 10907.94          | -10275.84     | 3662.18      | 1749447.17           | 14586681.95           | 40°09'50.292"N | 80°36'35.070"W | 10908.91             | 160.385            | 0.64             | -0.30                   | -0.57                  |
| 17333.00   | 88.980             | 155.910        | 6093.23     | 11000.81          | -10361.22     | 3699.00      | 1749483.97           | 14586596.60           | 40°09'49.447"N | 80°36'34.601"W | 11001.71             | 160.353            | 1.68             | -0.33                   | -1.65                  |
| 17425.00   | 89.200             | 156.960        | 6094.69     | 11092.65          | -10445.54     | 3735.77      | 1749520.73           | 14586512.31           | 40°09'48.612"N | 80°36'34.132"W | 11093.48             | 160.321            | 1.17             | 0.24                    | -1.14                  |
| 17517.00   | 88.960             | 156.010        | 6096.18     | 11184.50          | -10529.89     | 3772.47      | 1749557.42           | 14586428.00           | 40°09'47.777"N | 80°36'33.664"W | 11185.26             | 160.289            | 1.07             | -0.27                   | -1.03                  |
| 17610.00   | 89.110             | 156.680        | 6097.75     | 11277.33          | -10615.06     | 3809.78      | 1749594.72           | 14586342.86           | 40°09'46.934"N | 80°36'33.188"W | 11278.03             | 160.257            | 0.74             | 0.17                    | 0.72                   |
| 17700.00   | 88.950             | 156.190        | 6099.28     | 11367.18          | -10697.54     | 3845.76      | 1749630.68           | 14586260.41           | 40°09'46.117"N | 80°36'32.729"W | 11367.82             | 160.227            | 0.57             | -0.18                   | -0.54                  |
| 17793.00   | 88.980             | 156.730        | 6100.93     | 11450.02          | -10782.79     | 3882.89      | 1749667.80           | 14586175.19           | 40°09'45.273"N | 80°36'32.256"W | 11460.60             | 160.196            | 0.58             | 0.03                    | 0.58                   |
| 17886.00   | 89.200             | 156.410        | 6102.43     | 11532.88          | -10868.11     | 3919.87      | 1749704.76           | 14586089.91           | 40°09'44.428"N | 80°36'31.784"W | 11553.41             | 160.167            | 0.42             | 0.24                    | -0.34                  |
| 17974.00   | 89.200             | 157.360        | 6103.66     | 11640.77          | -10949.04     | 3954.41      | 1749739.29           | 14586009.01           | 40°09'43.627"N | 80°36'31.344"W | 11641.25             | 160.142            | 1.08             | 0.00                    | 1.08                   |
| 18064.00   | 89.350             | 154.730        | 6104.80     | 11730.58          | -11031.27     | 3990.95      | 1749775.81           | 14585926.81           | 40°09'42.813"N | 80°36'30.878"W | 11731.01             | 160.111            | 2.93             | 0.17                    | -2.92                  |
| 18157.00   | 89.420             | 153.060        | 6105.80     | 11823.11          | -11114.78     | 4031.87      | 1749816.71           | 14585843.34           | 40°09'41.986"N | 80°36'30.356"W | 11823.46             | 160.062            | 1.80             | 0.08                    | -1.80                  |
| 18249.00   | 89.820             | 154.090        | 6106.41     | 11914.59          | -11197.16     | 4072.81      | 1749857.64           | 14585760.98           | 40°09'41.170"N | 80°36'29.833"W | 11914.87             | 160.012            | 1.20             | 0.43                    | -1.12                  |
| 18341.00   | 89.750             | 158.130        | 6106.75     | 12006.40          | -11281.26     | 4110.06      | 1749894.87           | 14585676.92           | 40°09'40.337"N | 80°36'29.358"W | 12006.64             | 159.982            | 4.39             | -0.08                   | 4.39                   |
| 18431.00   | 89.820             | 157.270        | 6107.09     | 12096.35          | -11364.53     | 4144.21      | 1749929.01           | 14585593.68           | 40°09'39.513"N | 80°36'28.923"W | 12096.57             | 159.965            | 0.96             | 0.08                    | -0.96                  |
| 18521.00   | 89.630             | 156.790        | 6107.52     | 12186.26          | -11447.39     | 4179.33      | 1749964.12           | 14585510.85           | 40°09'38.693"N | 80°36'28.475"W | 12186.45             | 159.943            | 0.57             | -0.21                   | -0.53                  |
| 18610.00   | 89.780             | 156.440        | 6107.98     | 12275.13          | -11529.08     | 4214.65      | 1749999.43           | 14585429.20           | 40°09'37.884"N | 80°36'28.020"W | 12275.30             | 159.919            | 0.43             | 0.17                    | -0.39                  |
| 18703.00   | 89.660             | 156.330        | 6108.44     | 12367.98          | -11614.91     | 4251.91      | 1750036.67           | 14585344.02           | 40°09'37.040"N | 80°36'27.550"W | 12368.12             | 159.893            | 0.18             | -0.13                   | -0.12                  |
| 18796.00   | 89.660             | 157.470        | 6108.99     | 12460.87          | -11699.83     | 4288.39      | 1750073.14           | 14585258.51           | 40°09'36.193"N | 80°36'27.085"W | 12460.99             | 159.870            | 1.23             | 0.00                    | 1.23                   |
| 18888.00   | 89.690             | 157.800        | 6109.51     | 12552.82          | -11784.91     | 4326.40      | 1750108.13           | 14585173.47           | 40°09'35.351"N | 80°36'26.639"W | 12552.92             | 159.854            | 0.36             | 0.03                    | 0.36                   |
| 18881.00   | 89.660             | 158.500        | 6110.04     | 12645.79          | -11871.23     | 4365.01      | 1750142.73           | 14585087.18           | 40°09'34.496"N | 80°36'26.198"W | 12645.88             | 159.841            | 0.75             | -0.03                   | 0.75                   |
| 19074.00   | 89.660             | 156.790        | 6110.59     | 12738.72          | -11957.23     | 4393.38      | 1750178.09           | 14585001.21           | 40°09'33.645"N | 80°36'25.748"W | 12738.81             | 159.825            | 1.84             | 0.00                    | -1.84                  |
| 19167.00   | 89.880             | 159.420        | 6110.96     | 12831.68          | -12043.52     | 4428.06      | 1750212.75           | 14584914.96           | 40°09'32.791"N | 80°36'25.306"W | 12831.76             | 159.813            | 2.84             | 0.24                    | 2.83                   |



# Actual Wellpath Report

Kathy Mayhew BRK 6H AWP Proj: 20087'  
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## REFERENCE WELLPATH IDENTIFICATION

|          |                      |          |                         |
|----------|----------------------|----------|-------------------------|
| Operator | SOUTHWESTERN ENERGY  | Slot     | Slot 6H                 |
| Area     | Brooke County, WV    | Well     | Kathy Mayhew BRK 6H     |
| Field    | Brooke               | Wellbore | Kathy Mayhew BRK 6H AWP |
| Facility | Kathy Mayhew BRK Pad |          |                         |

## WELLPATH DATA (221 stations)

| MD<br>(ft) | Inclination<br>I° | Azimuth<br>A° | TVD<br>(ft) | Vert Sect<br>(ft) | North<br>(ft) | East<br>(ft) | Grid East<br>(US ft) | Grid North<br>(US ft) | Latitude       | Longitude      | Closure Dist<br>(ft) | Closure Dir<br>I° | DLS<br>ft/100ft | Build Rate<br>ft/100ft | Turn Rate<br>°/100ft |
|------------|-------------------|---------------|-------------|-------------------|---------------|--------------|----------------------|-----------------------|----------------|----------------|----------------------|-------------------|-----------------|------------------------|----------------------|
| 19259.00   | 89.780            | 157.350       | 6111.24     | 12923.66          | -12129.04     | 4461.95      | 1750246.63           | 14584829.47           | 40°09'31.944"N | 80°36'24.874"W | 12923.72             | 159.803           | 2.25            | -0.11                  | -2.25                |
| 19382.00   | 89.690            | 155.810       | 6111.67     | 13016.52          | -12214.38     | 4498.91      | 1750283.57           | 14584744.17           | 40°09'31.099"N | 80°36'24.403"W | 13016.57             | 159.780           | 1.66            | -0.10                  | -1.66                |
| 19445.00   | 89.750            | 156.210       | 6112.12     | 13109.34          | -12299.34     | 4536.72      | 1750321.37           | 14584659.23           | 40°09'30.258"N | 80°36'23.921"W | 13109.37             | 159.753           | 0.43            | 0.06                   | 0.43                 |
| 19538.00   | 89.660            | 156.060       | 6112.60     | 13202.16          | -12384.39     | 4573.47      | 1750358.98           | 14584574.22           | 40°09'29.416"N | 80°36'23.441"W | 13202.19             | 159.728           | 0.19            | -0.10                  | -0.16                |
| 19630.00   | 89.540            | 153.600       | 6113.24     | 13293.83          | -12467.64     | 4613.47      | 1750398.09           | 14584491.00           | 40°09'28.592"N | 80°36'22.942"W | 13293.84             | 159.694           | 2.68            | -0.13                  | -2.67                |
| 19723.00   | 89.080            | 150.210       | 6114.36     | 13385.97          | -12549.67     | 4657.26      | 1750441.86           | 14584409.00           | 40°09'27.779"N | 80°36'22.383"W | 13385.97             | 159.640           | 3.68            | -0.49                  | -3.65                |
| 19814.00   | 89.170            | 149.700       | 6115.71     | 13472.71          | -12625.83     | 4701.31      | 1750485.90           | 14584332.87           | 40°09'27.024"N | 80°36'21.820"W | 13472.71             | 159.577           | 0.59            | 0.10                   | -0.58                |
| 19904.00   | 89.290            | 150.600       | 6116.96     | 13564.43          | -12706.49     | 4747.60      | 1750532.16           | 14584252.25           | 40°09'26.225"N | 80°36'21.228"W | 13564.46             | 159.513           | 0.98            | 0.13                   | 0.97                 |
| 19994.00   | 89.290            | 153.300       | 6118.07     | 13653.61          | -12785.90     | 4789.91      | 1750574.46           | 14584172.86           | 40°09'25.439"N | 80°36'20.688"W | 13653.67             | 159.463           | 3.00            | 0.00                   | 3.00                 |
| 20062.00   | 89.260            | 155.660       | 6118.93     | 13721.33          | -12847.26     | 4819.20      | 1750603.74           | 14584111.53           | 40°09'24.831"N | 80°36'20.314"W | 13721.40             | 159.438           | 3.47            | -0.04                  | 3.47                 |
| 20087.00   | 89.260            | 155.660       | 6119.26     | 13746.27          | -12870.04     | 4829.51      | 1750614.04           | 14584088.76           | 40°09'24.606"N | 80°36'20.183"W | 13746.34             | 159.431           | 0.00            | 0.00                   | 0.00                 |

## HOLE & CASING SECTIONS - Ref Wellbore: Kathy Mayhew BRK 6H AWP Ref Wellpath: Kathy Mayhew BRK 6H AWP Proj: 20087'

| String/Diameter             | Start MD<br>(ft) | End MD<br>(ft) | Interval<br>(ft) | Start TVD<br>(ft) | End TVD<br>(ft) | Start N/S<br>(ft) | Start E/W<br>(ft) | End N/S<br>(ft) | End E/W<br>(ft) |
|-----------------------------|------------------|----------------|------------------|-------------------|-----------------|-------------------|-------------------|-----------------|-----------------|
| 20in Conductor              | 26.00            | 126.00         | 100.00           | 26.00             | 126.00          | 0.00              | 0.00              | 0.44            | -0.12           |
| 17.5in Open Hole            | 126.00           | 549.00         | 423.00           | 126.00            | 548.89          | 0.44              | -0.12             | 8.03            | -4.40           |
| 13.375in Casing Surface     | 26.00            | 549.00         | 523.00           | 26.00             | 548.89          | 0.00              | 0.00              | 8.03            | -4.40           |
| 12.25in Open Hole           | 549.00           | 1821.00        | 1272.00          | 548.89            | 1814.65         | 8.03              | -4.40             | 28.78           | -99.61          |
| 9.625in Casing Intermediate | 26.00            | 1821.00        | 1795.00          | 26.00             | 1814.65         | 0.00              | 0.00              | 28.78           | -99.61          |
| 8.75in Open Hole            | 1821.00          | 5381.00        | 3560.00          | 1814.65           | 5310.27         | 28.78             | -99.61            | 199.10          | -748.68         |
| 8.5in Open Hole             | 5381.00          | 20087.00       | 14706.00         | 5310.27           | 6119.26         | 199.10            | -748.68           | -12870.04       | 4829.51         |
| 5.5in Casing Production     | 26.00            | 20087.00       | 20061.00         | 26.00             | 6119.26         | 0.00              | 0.00              | -12870.04       | 4829.51         |

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**REFERENCE WELLPATH IDENTIFICATION**

|          |                      |          |                         |
|----------|----------------------|----------|-------------------------|
| Operator | SOUTHWESTERN ENERGY  | Slot     | Slot 6H                 |
| Area     | Brooke County, WV    | Well     | Kathy Mayhew BRK 6H     |
| Field    | Brooke               | Wellbore | Kathy Mayhew BRK 6H AWB |
| Facility | Kathy Mayhew BRK Pad |          |                         |

**TARGETS**

| Name                          | TVD [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude       | Longitude      | Shape |
|-------------------------------|----------|------------|-----------|-------------------|--------------------|----------------|----------------|-------|
| Kathy Mayhew BRK 6H LP Rev-3  | 6015.00  | -358.03    | -628.13   | 1745158.53        | 14596595.90        | 40°11'28.482"N | 80°37'29.791"W | point |
| Kathy Mayhew BRK 6H BHL Rev-3 | 6121.89  | -12882.58  | 4786.53   | 1750571.09        | 14584076.22        | 40°09'24.484"N | 80°36'20.737"W | point |

**WELLPATH COMPOSITION - Ref Wellbore: Kathy Mayhew BRK 6H AWB Ref Wellpath: Kathy Mayhew BRK 6H AWP Proj: 20087'**

| Start MD [ft] | End MD [ft] | Positional Uncertainty Model            | Log Name/Comment                               | Wellbore                |
|---------------|-------------|---|--|-------------------------|
| 26.00         | 488.00      | OWSG MWD rev2 + HRGM + Axial Correction | 01_GyroData MWD <17' 1/2"> (141'-488')         | Kathy Mayhew BRK 6H AWB |
| 488.00        | 1749.00     | OWSG MWD rev2 + HRGM + Axial Correction | 02_GyroData MWD <12' 1/4"> (488')(593'-1749')  | Kathy Mayhew BRK 6H AWB |
| 1749.00       | 5306.00     | OWSG MWD rev2 + HRGM + Axial Correction | 03_GyroData MWD <8'-3/4"> (1749')(1885'-5306') | Kathy Mayhew BRK 6H AWB |
| 5306.00       | 20062.00    | BH AutoTrak Curve (Short)               | 04_BH AT Curve <8'-1/2"> (5306')(5312'-20062') | Kathy Mayhew BRK 6H AWB |
| 20062.00      | 20087.00    | Blind Drilling (std)                    | Projection to bit                              | Kathy Mayhew BRK 6H AWB |

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| REFERENCE WELLPATH IDENTIFICATION |                      |          |                         |
|-----------------------------------|----------------------|----------|-------------------------|
| Operator                          | SOUTHWESTERN ENERGY  | Slot     | Slot 6H                 |
| Area                              | Brooke County, WV    | Well     | Kathy Mayhew BRK 6H     |
| Field                             | Brooke               | Wellbore | Kathy Mayhew BRK 6H AWB |
| Facility                          | Kathy Mayhew BRK Pad |          |                         |

**COMMENTS**

Wellpath general comments  
 API: 47-009-00275-0000  
 BH Job #: 109910148  
 Rig: SDC 41  
 Duration: 08/04/2019 - 08/07/2019

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