

# SOUTHWESTERN ENERGY

Location: Brooke County, WV Slot: Slot #10  
 Well: John Good Jr BRK 10H  
 Field: Brooke  
 Facility: John Good Jr BRK Pad Wellbore: John Good Jr BRK 10H.PWB

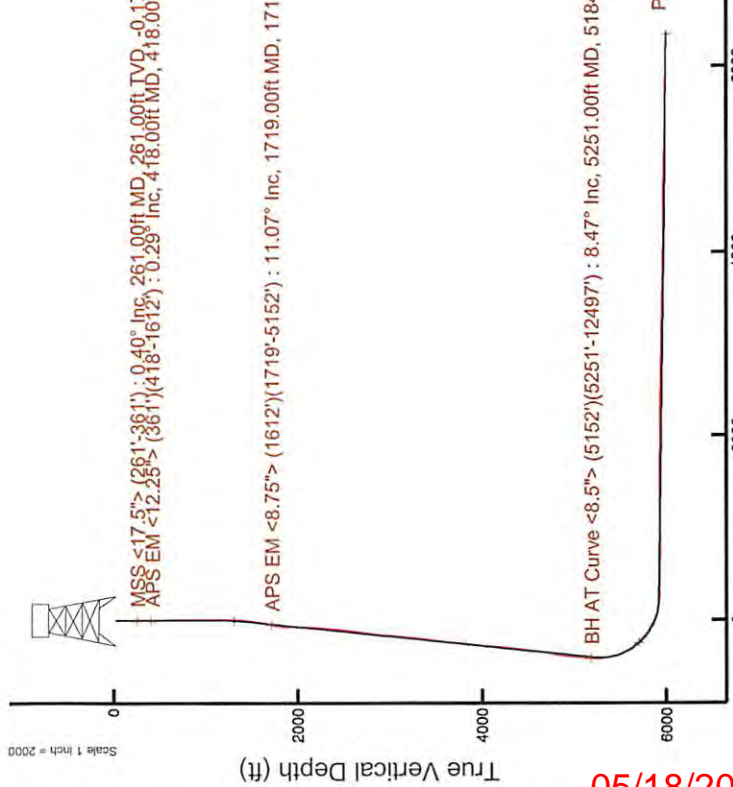
Plot reference wellpath is John Good Jr BRK 10H.PWB Rev-B.0 Grid System: NAD83 / UTM Zone 17 North, US feet  
 True vertical depths are referenced to SDC-46 (KB) North Reference: Grid north  
 Measured depths are referenced to SDC-46 (KB) Scale: True distance  
 SDC-46 (KB) to Mean Sea Level: 1178.6 feet Depths are in feet  
 Mean Sea Level to Ground level (At Slot: Slot #10): -1152.6 feet Created by: amarc on 2017-08-30  
 Coordinates are in feet, referenced to Slot Database: WA\_MPL\_EASTERNUS\_Defn

## Location Information

| Facility Name                                      | Grid East (US ft) | Grid North (US ft) | Latitude       | Longitude      |
|----------------------------------------------------|-------------------|--------------------|----------------|----------------|
| John Good Jr BRK Pad                               | 1757463.232       | 14608504.851       | 40°13'25.666"N | 80°34'50.452"W |
| Slot #10                                           | 5.35              | 1757482.750        | 40°13'25.718"N | 80°34'50.200"W |
| SDC-46 (KB) to Ground level (At Slot: Slot #10)    | 26ft              |                    |                |                |
| Mean Sea Level to Ground level (At Slot: Slot #10) | -1152.6ft         |                    |                |                |
| SDC-46 (KB) to Mean Sea Level                      | 1178.6ft          |                    |                |                |

## Well Profile Data

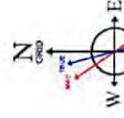
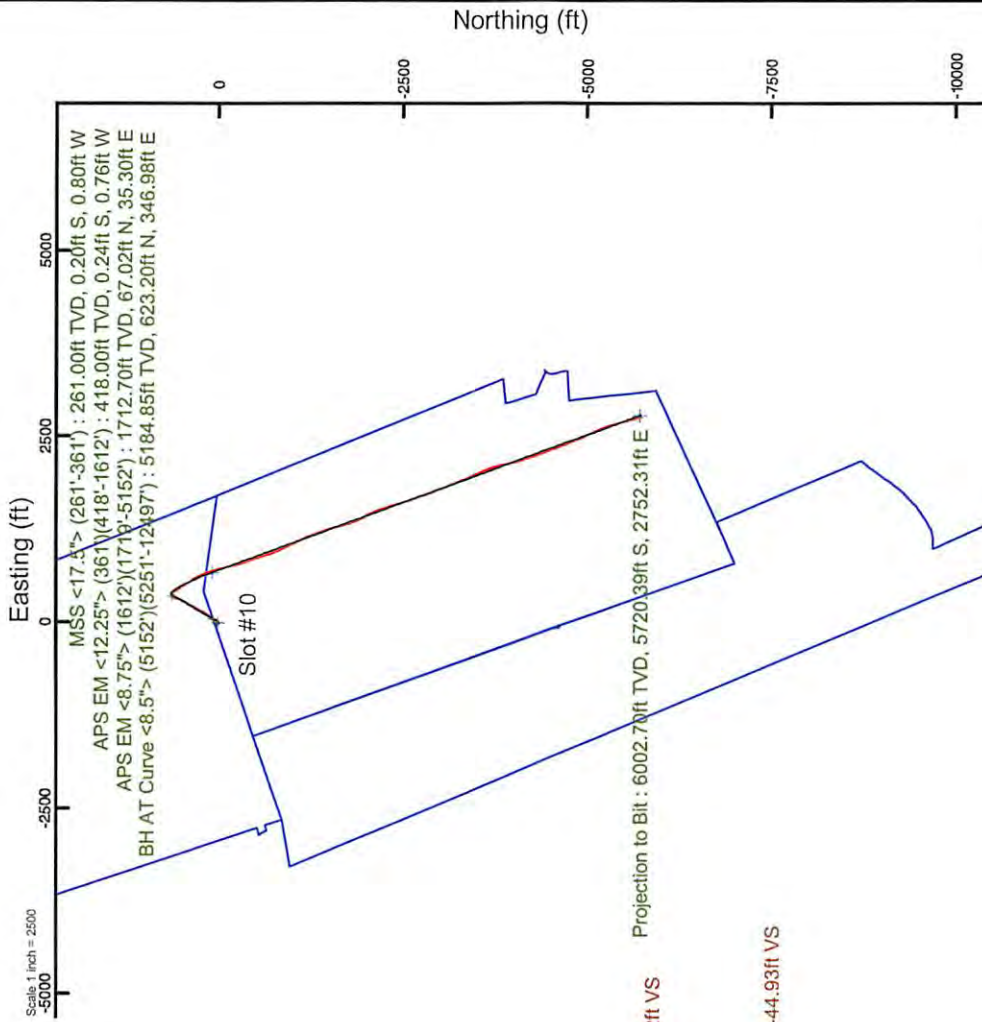
| Design Comment | MD (ft)  | Inc (°) | Az (°)  | TVD (ft) | Local N (ft) | Local E (ft) | DLS (°/100ft) | VS (ft) |
|----------------|----------|---------|---------|----------|--------------|--------------|---------------|---------|
| Tie On         | 26.00    | 0.000   | 29.936  | 26.00    | 0.00         | 0.00         | 0.00          | 0.00    |
| Start Build    | 1045.02  | 0.000   | 29.936  | 1045.02  | 0.00         | 0.00         | 0.00          | 0.00    |
| End Build      | 1570.02  | 10.500  | 29.936  | 1567.09  | 41.57        | 23.94        | 2.00          | -26.98  |
| Curve KOP      | 5279.61  | 10.500  | 29.936  | 5214.56  | 627.40       | 361.30       | 0.00          | -407.19 |
| Landing Point  | 6345.94  | 89.221  | 160.040 | 5919.00  | 74.84        | 666.77       | 9.00          | 223.26  |
| Total Depth    | 12521.34 | 89.221  | 160.040 | 6003.00  | -5729.05     | 2774.68      | 0.00          | 6365.60 |



8/02/18/50



API: 47-009-00189-0000  
 Job#: 8653242  
 Rig: SDC-46  
 Duration: 08/19/17 - 08/27/17



User specified Dip: 67.74° Field: 52706.0T  
 Magnetic North is 8.32 degrees West of True North (at 15/Aug/2017)  
 Grid North is 0.27 degrees East of True North  
 To correct azimuth from True to Grid subtract 0.27 degrees  
 To correct azimuth from Magnetic to Grid subtract 8.59 Degrees



### REFERENCE WELLPATH IDENTIFICATION

|          |                      |          |                          |
|----------|----------------------|----------|--------------------------|
| Operator | SOUTHWESTERN ENERGY  | Slot     | Slot #10                 |
| Area     | Brooke County, WV    | Well     | John Good Jr BRK 10H     |
| Field    | Brooke               | Wellbore | John Good Jr BRK 10H AWB |
| Facility | John Good Jr BRK Pad |          |                          |

### REPORT SETUP INFORMATION

|                     |                                    |                      |                                                                |
|---------------------|------------------------------------|----------------------|----------------------------------------------------------------|
| Projection System   | NAD83 / UTM Zone 17 North, US feet | Software System      | WellArchitect® 5.1                                             |
| North Reference     | Grid                               | User                 | Amarcar                                                        |
| Scale               | 0.999616                           | Report Generated     | 30/Aug/2017 at 09:03                                           |
| Convergence at slot | 0.27° East                         | Database/Source file | WA_MPL_EASTERNUS_Defn/John_Good_Jr_BRK_10H_AWP_Proj_12521_.xml |

### WELLPATH LOCATION

|                       | Local coordinates |          | Grid coordinates |                 | Geographic coordinates |                |
|-----------------------|-------------------|----------|------------------|-----------------|------------------------|----------------|
|                       | North[ft]         | East[ft] | Easting[US ft]   | Northing[US ft] | Latitude               | Longitude      |
| Slot Location         | 5.35              | 19.53    | 1757482.75       | 14608510.20     | 40°13'25.718"N         | 80°34'50.200"W |
| Facility Reference Pt |                   |          | 1757463.23       | 14608504.85     | 40°13'25.666"N         | 80°34'50.452"W |
| Field Reference Pt    |                   |          | 0.00             | 0.00            | 0°00'00.000"           | 85°29'19.478"W |

### WELLPATH DATUM

|                          |                   |                                                |                   |
|--------------------------|-------------------|------------------------------------------------|-------------------|
| Calculation method       | Minimum curvature | SDC-46 (KB) to Facility Vertical Datum         | 26.00ft           |
| Horizontal Reference Pt  | Slot              | SDC-46 (KB) to Mean Sea Level                  | 1178.60ft         |
| Vertical Reference Pt    | SDC-46 (KB)       | SDC-46 (KB) to Ground Level at Slot (Slot #10) | 26.00ft           |
| MD Reference Pt          | SDC-46 (KB)       | Section Origin                                 | N 0.00, E 0.00 ft |
| Field Vertical Reference | Mean Sea Level    | Section Azimuth                                | 154.16°           |



# Actual Wellpath Report

John Good Jr BRK 10H AWP Proj: 12521'  
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## REFERENCE WELLPATH IDENTIFICATION

| Operator            | Slot     | Slot #10                 |
|---------------------|----------|--------------------------|
| SOUTHWESTERN ENERGY | Well     | John Good Jr BRK 10H     |
| Area                | Wellbore | John Good Jr BRK 10H AWP |
| Field               |          |                          |
| Facility            |          |                          |

## WELLPATH DATA (137 stations) † = interpolated/extrapolated station

| 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] |
|---------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 0.00†   | 0.000           | 256.080     | 0.00     | 0.00           | 0.00       | 0.00      | 1757482.75        | 14608510.20        | 40°13'25.718"N | 80°34'50.200"W | 0.00              | 0.000           | 0.00          | 0.00                 | 0.00                |
| 26.00   | 0.000           | 256.080     | 26.00    | 0.00           | 0.00       | 0.00      | 1757482.75        | 14608510.20        | 40°13'25.718"N | 80°34'50.200"W | 0.00              | 0.000           | 0.00          | 0.00                 | 0.00                |
| 261.00  | 0.400           | 256.080     | 261.00   | -0.17          | -0.20      | -0.80     | 1757481.95        | 14608510.99        | 40°13'25.716"N | 80°34'50.210"W | 0.82              | 256.080         | 0.17          | -0.20                | -44.22              |
| 361.00  | 0.200           | 64.580      | 361.00   | -0.24          | -0.21      | -0.98     | 1757481.77        | 14608509.99        | 40°13'25.716"N | 80°34'50.213"W | 1.00              | 256.076         | 0.60          | -0.20                | 168.50              |
| 418.00  | 0.290           | 121.820     | 418.00   | -0.12          | -0.24      | -0.76     | 1757481.99        | 14608509.96        | 40°13'25.716"N | 80°34'50.210"W | 0.80              | 252.599         | 0.43          | 0.16                 | 100.42              |
| 510.00  | 0.620           | 130.610     | 509.99   | 0.54           | -0.69      | -0.19     | 1757482.56        | 14608509.52        | 40°13'25.711"N | 80°34'50.202"W | 0.71              | 195.412         | 0.37          | 0.36                 | 9.55                |
| 603.00  | 1.090           | 145.670     | 602.98   | 1.87           | -1.74      | 0.69      | 1757483.44        | 14608508.46        | 40°13'25.701"N | 80°34'50.191"W | 1.88              | 188.374         | 0.56          | 0.51                 | 16.19               |
| 696.00  | 0.690           | 128.830     | 695.97   | 3.25           | -2.83      | 1.63      | 1757484.38        | 14608507.38        | 40°13'25.690"N | 80°34'50.179"W | 3.26              | 150.075         | 0.51          | -0.43                | -18.11              |
| 788.00  | 0.560           | 141.190     | 787.97   | 4.19           | -3.52      | 2.34      | 1757485.09        | 14608506.68        | 40°13'25.683"N | 80°34'50.170"W | 4.23              | 146.413         | 0.20          | -0.14                | 13.43               |
| 881.00  | 0.500           | 143.780     | 880.96   | 5.03           | -4.21      | 2.86      | 1757485.61        | 14608506.00        | 40°13'25.676"N | 80°34'50.163"W | 5.09              | 145.738         | 0.07          | -0.06                | 2.78                |
| 974.00  | 0.730           | 165.470     | 973.96   | 6.01           | -5.11      | 3.25      | 1757486.00        | 14608505.10        | 40°13'25.667"N | 80°34'50.158"W | 6.05              | 147.500         | 0.35          | 0.25                 | 23.32               |
| 1077.00 | 0.650           | 104.760     | 1066.95  | 6.94           | -5.81      | 3.91      | 1757486.66        | 14608504.39        | 40°13'25.660"N | 80°34'50.150"W | 7.01              | 146.067         | 0.75          | -0.09                | -65.28              |
| 1159.00 | 2.240           | 48.390      | 1158.92  | 6.79           | -4.75      | 5.76      | 1757488.51        | 14608505.45        | 40°13'25.671"N | 80°34'50.126"W | 7.47              | 129.524         | 2.13          | 1.73                 | -61.27              |
| 1252.00 | 4.330           | 35.790      | 1251.77  | 4.63           | -0.70      | 9.17      | 1757491.92        | 14608509.50        | 40°13'25.711"N | 80°34'50.082"W | 9.20              | 94.349          | 2.36          | 2.25                 | -13.55              |
| 1345.00 | 7.020           | 30.500      | 1344.30  | -0.19          | 7.05       | 14.11     | 1757496.86        | 14608517.25        | 40°13'25.787"N | 80°34'50.018"W | 15.77             | 63.460          | 2.94          | 2.89                 | -5.69               |
| 1438.00 | 8.940           | 25.820      | 1436.40  | -7.83          | 18.45      | 20.14     | 1757502.89        | 14608528.64        | 40°13'25.899"N | 80°34'49.939"W | 27.32             | 47.512          | 2.18          | 2.06                 | -5.03               |
| 1530.00 | 10.380          | 21.430      | 1527.09  | -17.88         | 32.60      | 26.29     | 1757509.03        | 14608542.79        | 40°13'26.039"N | 80°34'49.859"W | 41.88             | 38.879          | 1.76          | 1.57                 | -4.77               |
| 1612.00 | 11.010          | 15.940      | 1607.67  | -28.74         | 47.01      | 31.14     | 1757513.87        | 14608557.19        | 40°13'26.181"N | 80°34'49.796"W | 56.38             | 33.519          | 1.46          | 0.77                 | -6.70               |
| 1719.00 | 11.070          | 7.590       | 1712.70  | -44.93         | 67.02      | 35.30     | 1757518.04        | 14608577.19        | 40°13'26.379"N | 80°34'49.741"W | 75.74             | 27.777          | 1.49          | 0.06                 | -7.80               |
| 1812.00 | 9.590           | 17.090      | 1804.19  | -58.06         | 83.27      | 38.76     | 1757521.49        | 14608593.44        | 40°13'26.539"N | 80°34'49.695"W | 91.85             | 24.957          | 2.42          | -1.59                | 10.22               |
| 1905.00 | 10.120          | 41.360      | 1895.86  | -66.90         | 96.82      | 46.43     | 1757529.17        | 14608606.98        | 40°13'26.673"N | 80°34'49.595"W | 107.38            | 25.623          | 4.47          | 0.57                 | 26.10               |
| 1997.00 | 12.660          | 52.030      | 1986.05  | -72.15         | 109.09     | 59.73     | 1757542.45        | 14608619.25        | 40°13'26.793"N | 80°34'49.423"W | 124.37            | 28.701          | 3.58          | 2.76                 | 11.60               |
| 2090.00 | 11.920          | 48.930      | 2076.92  | -76.81         | 121.57     | 75.00     | 1757557.72        | 14608631.82        | 40°13'26.917"N | 80°34'49.226"W | 142.93            | 31.651          | 1.07          | -0.80                | -3.33               |
| 2182.00 | 11.360          | 42.070      | 2167.03  | -82.72         | 134.64     | 88.24     | 1757570.95        | 14608644.79        | 40°13'27.044"N | 80°34'49.054"W | 160.98            | 33.239          | 1.62          | -0.61                | -7.46               |
| 2275.00 | 10.600          | 36.730      | 2258.33  | -90.10         | 148.29     | 99.49     | 1757582.20        | 14608658.44        | 40°13'27.179"N | 80°34'48.908"W | 178.57            | 33.857          | 1.36          | -0.82                | -5.74               |
| 2367.00 | 10.030          | 34.860      | 2348.84  | -97.92         | 161.65     | 109.13    | 1757591.84        | 14608671.79        | 40°13'27.310"N | 80°34'48.783"W | 195.04            | 34.023          | 0.72          | -0.62                | -2.03               |
| 2460.00 | 9.380           | 34.160      | 2440.51  | -105.67        | 174.57     | 118.01    | 1757600.72        | 14608684.70        | 40°13'27.437"N | 80°34'48.668"W | 210.71            | 34.060          | 0.71          | -0.70                | -0.75               |
| 2553.00 | 11.320          | 27.540      | 2532.00  | -114.91        | 188.93     | 126.49    | 1757609.19        | 14608699.06        | 40°13'27.579"N | 80°34'48.558"W | 227.37            | 33.802          | 2.44          | 2.09                 | -7.12               |
| 2646.00 | 11.930          | 24.890      | 2623.09  | -126.44        | 205.74     | 134.76    | 1757617.45        | 14608715.87        | 40°13'27.745"N | 80°34'48.450"W | 245.95            | 33.224          | 0.87          | 0.66                 | -2.85               |
| 2738.00 | 11.410          | 23.670      | 2713.19  | -138.37        | 222.71     | 142.41    | 1757625.11        | 14608732.82        | 40°13'27.912"N | 80°34'48.350"W | 264.35            | 32.597          | 0.63          | -0.57                | -1.33               |



# Actual Wellpath Report

John Good Jr BRK 10H AWP Proj: 12521'  
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## REFERENCE WELLPATH IDENTIFICATION

| Operator | SOUTHWESTERN ENERGY  | Slot     | Slot #10                 |
|----------|----------------------|----------|--------------------------|
| Area     | Brooke County, WV    | Well     | John Good Jr BRK 10H     |
| Field    | Brooke               | Wellbore | John Good Jr BRK 10H AWB |
| Facility | John Good Jr BRK Pad |          |                          |

## WELLPATH DATA (137 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] |
|---------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 2831.00 | 10.670          | 19.480      | 2804.47  | -150.39        | 239.25     | 148.98    | 1757631.67        | 14608749.36        | 40°13'28.075"N | 80°34'48.265"W | 281.84            | 31.910          | 1.17          | -0.80                | -4.51               |
| 2924.00 | 10.520          | 29.990      | 2895.89  | -161.22        | 254.72     | 156.09    | 1757638.78        | 14608764.82        | 40°13'28.228"N | 80°34'48.172"W | 298.74            | 31.500          | 2.08          | -0.16                | 11.30               |
| 3016.00 | 10.750          | 33.310      | 2986.31  | -170.33        | 269.16     | 165.00    | 1757647.69        | 14608779.26        | 40°13'28.370"N | 80°34'48.066"W | 315.71            | 31.509          | 0.71          | 0.25                 | 3.61                |
| 3112.00 | 9.880           | 31.980      | 3080.76  | -179.31        | 283.63     | 174.28    | 1757656.96        | 14608793.72        | 40°13'28.513"N | 80°34'47.936"W | 332.90            | 31.589          | 0.94          | -0.91                | -1.39               |
| 3205.00 | 9.330           | 30.690      | 3172.45  | -187.74        | 296.92     | 182.38    | 1757665.06        | 14608807.01        | 40°13'28.644"N | 80°34'47.831"W | 348.46            | 31.559          | 0.58          | -0.53                | -1.39               |
| 3298.00 | 11.340          | 32.090      | 3263.93  | -196.79        | 311.20     | 191.11    | 1757673.78        | 14608821.28        | 40°13'28.784"N | 80°34'47.717"W | 365.19            | 31.554          | 2.11          | 2.10                 | 1.49                |
| 3390.00 | 11.740          | 28.650      | 3354.07  | -207.03        | 327.07     | 200.40    | 1757683.07        | 14608837.15        | 40°13'28.941"N | 80°34'47.597"W | 383.59            | 31.496          | 0.86          | 0.43                 | -3.73               |
| 3483.00 | 10.940          | 25.790      | 3445.25  | -218.00        | 343.32     | 208.78    | 1757691.44        | 14608853.39        | 40°13'29.101"N | 80°34'47.488"W | 401.82            | 31.304          | 1.05          | -0.86                | -3.08               |
| 3576.00 | 10.610          | 22.680      | 3536.61  | -229.15        | 359.17     | 215.92    | 1757698.58        | 14608869.23        | 40°13'29.257"N | 80°34'47.395"W | 419.07            | 31.012          | 0.72          | -0.35                | -3.34               |
| 3668.00 | 9.890           | 17.640      | 3627.15  | -240.49        | 374.51     | 221.58    | 1757704.24        | 14608884.57        | 40°13'29.409"N | 80°34'47.321"W | 435.15            | 30.610          | 1.25          | -0.78                | -5.48               |
| 3761.00 | 9.310           | 15.230      | 3718.84  | -251.96        | 389.38     | 225.97    | 1757708.64        | 14608899.43        | 40°13'29.555"N | 80°34'47.263"W | 450.20            | 30.128          | 0.76          | -0.62                | -2.59               |
| 3854.00 | 9.310           | 26.830      | 3810.63  | -262.19        | 403.36     | 231.34    | 1757714.01        | 14608913.40        | 40°13'29.693"N | 80°34'47.193"W | 464.99            | 29.836          | 2.01          | 0.00                 | 12.47               |
| 3946.00 | 10.940          | 38.230      | 3901.20  | -270.52        | 416.86     | 240.11    | 1757722.76        | 14608926.90        | 40°13'29.826"N | 80°34'47.079"W | 481.06            | 29.942          | 2.80          | 1.77                 | 12.39               |
| 4042.00 | 10.560          | 37.380      | 3995.52  | -278.47        | 431.00     | 251.08    | 1757733.74        | 14608941.04        | 40°13'29.965"N | 80°34'46.937"W | 498.81            | 30.223          | 0.43          | -0.40                | -0.89               |
| 4135.00 | 10.330          | 36.690      | 4086.97  | -286.16        | 444.46     | 261.24    | 1757743.89        | 14608954.49        | 40°13'30.098"N | 80°34'46.805"W | 515.55            | 30.446          | 0.28          | -0.25                | -0.74               |
| 4228.00 | 9.910           | 31.420      | 4178.53  | -294.33        | 457.98     | 270.39    | 1757753.04        | 14608968.00        | 40°13'30.231"N | 80°34'46.686"W | 531.84            | 30.558          | 1.09          | -0.45                | -5.67               |
| 4321.00 | 9.360           | 26.660      | 4270.22  | -303.26        | 471.57     | 277.96    | 1757760.60        | 14608981.58        | 40°13'30.365"N | 80°34'46.588"W | 547.39            | 30.517          | 1.04          | -0.59                | -5.12               |
| 4413.00 | 8.440           | 22.640      | 4361.11  | -312.29        | 484.48     | 283.92    | 1757766.56        | 14608994.50        | 40°13'30.492"N | 80°34'46.510"W | 561.54            | 30.371          | 1.21          | -1.00                | -4.37               |
| 4506.00 | 10.370          | 25.150      | 4452.86  | -322.09        | 498.36     | 290.10    | 1757772.74        | 14609008.37        | 40°13'30.629"N | 80°34'46.430"W | 576.65            | 30.204          | 2.12          | 2.08                 | 2.70                |
| 4599.00 | 10.800          | 22.450      | 4544.27  | -333.15        | 513.99     | 296.99    | 1757779.62        | 14609023.99        | 40°13'30.783"N | 80°34'46.340"W | 593.62            | 30.020          | 0.71          | 0.46                 | -2.90               |
| 4691.00 | 10.440          | 15.160      | 4634.70  | -345.18        | 530.00     | 302.46    | 1757785.09        | 14609040.00        | 40°13'30.941"N | 80°34'46.268"W | 610.23            | 29.712          | 1.51          | -0.39                | -7.92               |
| 4784.00 | 11.630          | 20.810      | 4725.98  | -357.98        | 546.90     | 307.99    | 1757790.62        | 14609056.89        | 40°13'31.108"N | 80°34'46.196"W | 627.66            | 29.386          | 1.73          | 1.28                 | 6.08                |
| 4877.00 | 12.140          | 16.950      | 4816.99  | -371.59        | 565.02     | 314.17    | 1757796.80        | 14609075.00        | 40°13'31.287"N | 80°34'46.115"W | 646.49            | 29.076          | 1.02          | 0.55                 | -4.15               |
| 4973.00 | 11.050          | 24.040      | 4911.04  | -384.92        | 583.07     | 320.86    | 1757803.49        | 14609093.05        | 40°13'31.465"N | 80°34'46.028"W | 665.53            | 28.824          | 1.87          | -1.14                | 7.39                |
| 5065.00 | 10.110          | 35.550      | 5001.48  | -394.47        | 597.70     | 329.15    | 1757811.77        | 14609107.67        | 40°13'31.609"N | 80°34'45.920"W | 682.34            | 28.842          | 2.51          | -1.02                | 12.51               |
| 5152.00 | 10.030          | 35.890      | 5087.14  | -401.72        | 610.05     | 338.03    | 1757820.65        | 14609120.01        | 40°13'31.731"N | 80°34'45.805"W | 697.44            | 28.991          | 0.11          | -0.09                | 0.39                |
| 5251.00 | 8.470           | 32.240      | 5184.85  | -409.66        | 623.20     | 346.98    | 1757829.59        | 14609133.16        | 40°13'31.860"N | 80°34'45.689"W | 713.28            | 29.108          | 1.68          | -1.58                | -3.69               |
| 5338.00 | 8.960           | 65.090      | 5270.90  | -412.94        | 631.48     | 356.55    | 1757839.16        | 14609141.44        | 40°13'31.941"N | 80°34'45.565"W | 725.18            | 29.450          | 5.67          | 0.56                 | 37.76               |
| 5430.00 | 12.300          | 103.180     | 5361.41  | -406.64        | 632.26     | 372.61    | 1757855.21        | 14609142.22        | 40°13'31.948"N | 80°34'45.358"W | 733.89            | 30.512          | 8.25          | 3.63                 | 41.40               |
| 5523.00 | 17.690          | 139.390     | 5451.40  | -386.69        | 619.24     | 391.50    | 1757874.10        | 14609129.20        | 40°13'31.819"N | 80°34'45.115"W | 732.62            | 32.302          | 11.35         | 5.80                 | 38.94               |

# Actual Wellpath Report

John Good Jr BRK 10H AWP Proj: 12521'  
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## REFERENCE WELLPATH IDENTIFICATION

| Operator | SOUTHWESTERN ENERGY  | Slot     | Slot #10                 |
|----------|----------------------|----------|--------------------------|
| Area     | Brooke County, WV    | Well     | John Good Jr BRK 10H     |
| Field    | Brooke               | Wellbore | John Good Jr BRK 10H AWB |
| Facility | John Good Jr BRK Pad |          |                          |

## WELLPATH DATA (137 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] |
|---------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 5616.00 | 25.330          | 145.520     | 5537.87  | -353.30        | 592.07     | 412.00    | 1757894.59        | 14609102.04        | 40°13'31.549"N | 80°34'44.852"W | 721.31            | 34.832          | 8.55          | 8.22                 | 6.59                |
| 5709.00 | 33.380          | 146.750     | 5618.86  | -308.19        | 584.21     | 437.33    | 1757919.91        | 14609064.20        | 40°13'31.174"N | 80°34'44.528"W | 705.98            | 38.277          | 8.68          | 8.66                 | 1.32                |
| 5801.00 | 41.070          | 147.260     | 5692.07  | -253.00        | 507.56     | 467.59    | 1757950.16        | 14609017.56        | 40°13'30.712"N | 80°34'44.141"W | 690.12            | 42.653          | 8.37          | 8.36                 | 0.55                |
| 5894.00 | 49.560          | 147.830     | 5757.41  | -187.38        | 451.80     | 503.02    | 1757985.58        | 14608961.83        | 40°13'30.159"N | 80°34'43.687"W | 676.14            | 48.071          | 9.14          | 9.13                 | 0.61                |
| 5987.00 | 56.910          | 148.960     | 5813.03  | -113.31        | 388.38     | 542.01    | 1758024.55        | 14608898.43        | 40°13'29.530"N | 80°34'43.189"W | 666.79            | 54.376          | 7.96          | 7.90                 | 1.22                |
| 6080.00 | 64.300          | 150.690     | 5858.65  | -32.57         | 318.36     | 582.67    | 1758065.19        | 14608828.44        | 40°13'28.837"N | 80°34'42.669"W | 663.97            | 61.349          | 8.11          | 7.95                 | 1.86                |
| 6173.00 | 72.820          | 153.800     | 5892.62  | 53.86          | 241.81     | 622.88    | 1758105.39        | 14608751.91        | 40°13'28.078"N | 80°34'42.155"W | 668.17            | 68.783          | 9.67          | 9.16                 | 3.34                |
| 6265.00 | 81.290          | 158.360     | 5913.22  | 143.36         | 159.92     | 659.13    | 1758141.63        | 14608670.06        | 40°13'27.267"N | 80°34'41.693"W | 678.25            | 76.362          | 10.39         | 9.21                 | 4.96                |
| 6358.00 | 89.230          | 163.420     | 5920.90  | 235.30         | 72.44      | 689.42    | 1758171.90        | 14608582.61        | 40°13'26.401"N | 80°34'41.308"W | 693.21            | 84.002          | 10.11         | 8.54                 | 5.44                |
| 6451.00 | 88.950          | 167.790     | 5922.38  | 326.41         | -17.61     | 712.63    | 1758195.00        | 14608492.60        | 40°13'25.511"N | 80°34'41.015"W | 712.75            | 91.416          | 4.71          | -0.30                | 4.70                |
| 6543.00 | 88.890          | 164.540     | 5924.12  | 416.37         | -106.91    | 734.52    | 1758216.99        | 14608403.33        | 40°13'24.627"N | 80°34'40.737"W | 742.26            | 98.282          | 3.53          | -0.07                | -3.53               |
| 6636.00 | 89.800          | 165.350     | 5925.62  | 507.72         | -196.71    | 758.68    | 1758241.13        | 14608313.57        | 40°13'23.739"N | 80°34'40.431"W | 783.76            | 104.536         | 0.96          | 0.40                 | 0.87                |
| 6729.00 | 89.380          | 164.370     | 5926.72  | 599.09         | -286.47    | 782.96    | 1758265.41        | 14608223.84        | 40°13'22.850"N | 80°34'40.124"W | 833.73            | 110.097         | 1.06          | 0.13                 | -1.05               |
| 6821.00 | 89.200          | 159.850     | 5927.86  | 690.18         | -374.00    | 811.22    | 1758293.65        | 14608136.35        | 40°13'21.984"N | 80°34'39.765"W | 893.28            | 114.751         | 4.92          | -0.20                | -4.91               |
| 6914.00 | 89.320          | 160.400     | 5929.06  | 782.67         | -461.45    | 842.83    | 1758325.25        | 14608048.93        | 40°13'21.119"N | 80°34'39.363"W | 960.88            | 118.701         | 0.61          | 0.13                 | 0.59                |
| 7007.00 | 89.380          | 163.710     | 5930.12  | 874.77         | -549.91    | 871.48    | 1758353.89        | 14607960.51        | 40°13'20.243"N | 80°34'38.999"W | 1030.47           | 122.252         | 3.56          | 0.06                 | 3.56                |
| 7099.00 | 89.630          | 165.350     | 5930.91  | 965.26         | -638.57    | 896.02    | 1758378.42        | 14607871.88        | 40°13'19.366"N | 80°34'38.688"W | 1100.28           | 125.477         | 1.80          | 0.27                 | 1.78                |
| 7192.00 | 89.480          | 161.390     | 5931.64  | 1057.04        | -727.66    | 922.62    | 1758405.02        | 14607782.83        | 40°13'18.484"N | 80°34'38.350"W | 1175.04           | 128.262         | 4.26          | -0.16                | -4.26               |
| 7285.00 | 89.880          | 153.920     | 5932.16  | 1149.80        | -813.61    | 957.96    | 1758440.34        | 14607696.90        | 40°13'17.633"N | 80°34'37.900"W | 1256.84           | 130.342         | 8.04          | 0.43                 | -8.03               |
| 7378.00 | 89.970          | 155.080     | 5932.28  | 1242.79        | -897.55    | 997.99    | 1758480.36        | 14607613.00        | 40°13'16.802"N | 80°34'37.389"W | 1342.23           | 131.967         | 1.25          | 0.10                 | 1.25                |
| 7470.00 | 90.000          | 155.280     | 5932.30  | 1334.78        | -981.05    | 1036.61   | 1758518.96        | 14607529.53        | 40°13'15.975"N | 80°34'36.897"W | 1427.24           | 133.423         | 0.22          | 0.03                 | 0.22                |
| 7563.00 | 90.120          | 154.950     | 5932.21  | 1427.77        | -1065.42   | 1075.75   | 1758558.08        | 14607445.20        | 40°13'15.139"N | 80°34'36.397"W | 1514.05           | 134.724         | 0.38          | 0.13                 | -0.35               |
| 7656.00 | 89.880          | 154.740     | 5932.21  | 1520.76        | -1149.60   | 1115.28   | 1758597.60        | 14607361.05        | 40°13'14.306"N | 80°34'35.893"W | 1601.69           | 135.868         | 0.34          | -0.26                | -0.23               |
| 7749.00 | 89.910          | 158.390     | 5932.38  | 1613.66        | -1234.91   | 1152.26   | 1758634.56        | 14607275.77        | 40°13'13.461"N | 80°34'35.421"W | 1689.00           | 136.983         | 3.92          | 0.03                 | 3.92                |
| 7842.00 | 89.510          | 159.540     | 5932.85  | 1706.33        | -1321.71   | 1185.64   | 1758667.93        | 14607189.00        | 40°13'12.601"N | 80°34'34.996"W | 1775.57           | 138.106         | 1.31          | -0.43                | 1.24                |
| 7934.00 | 89.540          | 160.550     | 5933.61  | 1797.84        | -1408.18   | 1217.03   | 1758699.31        | 14607102.56        | 40°13'11.745"N | 80°34'34.597"W | 1861.22           | 139.165         | 1.10          | 0.03                 | 1.10                |
| 8027.00 | 89.510          | 163.320     | 5934.38  | 1889.98        | -1496.59   | 1245.87   | 1758728.14        | 14607014.19        | 40°13'10.870"N | 80°34'34.231"W | 1947.30           | 140.224         | 2.98          | -0.03                | 2.98                |
| 8120.00 | 89.570          | 164.580     | 5935.13  | 1981.62        | -1585.96   | 1271.58   | 1758753.84        | 14606924.86        | 40°13'09.986"N | 80°34'33.905"W | 2032.78           | 141.278         | 1.36          | 0.06                 | 1.35                |
| 8213.00 | 89.690          | 165.030     | 5935.73  | 2073.01        | -1675.70   | 1295.96   | 1758778.21        | 14606835.14        | 40°13'09.098"N | 80°34'33.596"W | 2118.37           | 142.282         | 0.50          | 0.13                 | 0.48                |
| 8306.00 | 89.510          | 162.230     | 5936.38  | 2164.73        | -1764.92   | 1322.16   | 1758804.40        | 14606745.96        | 40°13'08.215"N | 80°34'33.264"W | 2205.24           | 143.162         | 3.02          | -0.19                | -3.01               |



# Actual Wellpath Report

John Good Jr BRK 10H AWP Proj: 12521'

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## REFERENCE WELLPATH IDENTIFICATION

| Operator | SOUTHWESTERN ENERGY  | Slot     | Slot #10                 |
|----------|----------------------|----------|--------------------------|
| Area     | Brooke County, WV    | Well     | John Good Jr BRK 10H     |
| Field    | Brooke               | Wellbore | John Good Jr BRK 10H AWB |
| Facility | John Good Jr BRK Pad |          |                          |

## WELLPATH DATA (137 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] |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 8398.00  | 89.420          | 158.600     | 5937.24  | 2256.17        | -1851.58   | 1353.00   | 1758835.22        | 14606659.33        | 40°13'07.357"N | 80°34'32.872"W | 2293.24           | 143.843         | 3.95          | -0.10                | -3.95               |
| 8491.00  | 89.320          | 153.820     | 5938.26  | 2349.08        | -1936.65   | 1390.50   | 1758872.71        | 14606574.30        | 40°13'06.515"N | 80°34'32.394"W | 2384.13           | 144.322         | 5.14          | -0.11                | -5.14               |
| 8583.00  | 88.950          | 152.720     | 5939.65  | 2441.05        | -2018.81   | 1431.87   | 1758914.07        | 14606492.17        | 40°13'05.877"N | 80°34'31.865"W | 2475.04           | 144.653         | 1.26          | -0.40                | -1.20               |
| 8676.00  | 88.890          | 154.320     | 5941.40  | 2534.03        | -2102.03   | 1473.33   | 1758955.51        | 14606408.98        | 40°13'04.701"N | 80°34'31.336"W | 2566.95           | 144.973         | 1.72          | -0.06                | -1.72               |
| 8769.00  | 88.860          | 161.200     | 5943.23  | 2626.77        | -2188.05   | 1508.50   | 1758990.67        | 14606323.00        | 40°13'04.025"N | 80°34'30.888"W | 2657.65           | 145.417         | 7.40          | -0.03                | 7.40                |
| 8862.00  | 88.980          | 163.530     | 5944.98  | 2718.80        | -2276.65   | 1536.67   | 1759018.83        | 14606234.43        | 40°13'03.148"N | 80°34'30.530"W | 2746.73           | 145.982         | 2.51          | 0.13                 | 2.51                |
| 8955.00  | 88.890          | 162.050     | 5946.71  | 2810.72        | -2365.47   | 1564.18   | 1759046.33        | 14606145.64        | 40°13'02.269"N | 80°34'30.181"W | 2835.86           | 146.525         | 1.59          | -0.10                | -1.59               |
| 9047.00  | 88.980          | 163.380     | 5948.42  | 2901.68        | -2453.30   | 1591.51   | 1759073.65        | 14606057.85        | 40°13'01.400"N | 80°34'29.834"W | 2924.31           | 147.028         | 1.45          | 0.10                 | 1.45                |
| 9140.00  | 89.050          | 164.160     | 5950.02  | 2993.36        | -2542.58   | 1617.50   | 1759099.63        | 14605968.60        | 40°13'00.517"N | 80°34'29.505"W | 3013.47           | 147.537         | 0.84          | 0.08                 | 0.84                |
| 9229.00  | 89.140          | 160.690     | 5951.43  | 3081.41        | -2627.40   | 1644.37   | 1759126.48        | 14605883.81        | 40°12'59.677"N | 80°34'29.164"W | 3099.55           | 147.960         | 3.90          | 0.10                 | -3.90               |
| 9322.00  | 89.080          | 158.200     | 5952.87  | 3174.00        | -2714.46   | 1677.01   | 1759159.11        | 14605796.79        | 40°12'58.815"N | 80°34'28.748"W | 3190.72           | 148.292         | 2.68          | -0.06                | -2.68               |
| 9415.00  | 88.890          | 161.930     | 5954.54  | 3266.48        | -2801.86   | 1708.71   | 1759190.80        | 14605709.42        | 40°12'57.950"N | 80°34'28.345"W | 3281.79           | 148.623         | 4.02          | -0.20                | 4.01                |
| 9507.00  | 88.800          | 161.540     | 5956.37  | 3357.65        | -2889.21   | 1737.54   | 1759219.62        | 14605622.11        | 40°12'57.086"N | 80°34'27.979"W | 3371.44           | 148.978         | 0.43          | -0.10                | -0.42               |
| 9600.00  | 88.860          | 155.730     | 5958.27  | 3450.31        | -2975.76   | 1771.40   | 1759253.46        | 14605535.59        | 40°12'56.229"N | 80°34'27.548"W | 3463.09           | 149.236         | 6.25          | 0.06                 | -6.23               |
| 9693.00  | 88.920          | 158.420     | 5960.08  | 3543.17        | -3061.39   | 1807.61   | 1759289.67        | 14605449.99        | 40°12'55.381"N | 80°34'27.086"W | 3555.22           | 149.440         | 2.89          | 0.06                 | 2.89                |
| 9785.00  | 89.020          | 158.510     | 5961.73  | 3634.89        | -3146.96   | 1841.38   | 1759323.42        | 14605364.46        | 40°12'54.534"N | 80°34'26.656"W | 3646.10           | 149.667         | 0.15          | 0.11                 | 0.10                |
| 9878.00  | 89.140          | 158.300     | 5963.22  | 3727.62        | -3233.42   | 1875.60   | 1759357.63        | 14605278.03        | 40°12'53.678"N | 80°34'26.220"W | 3738.03           | 149.883         | 0.26          | 0.13                 | -0.23               |
| 9971.00  | 89.230          | 158.730     | 5964.55  | 3820.35        | -3319.95   | 1909.66   | 1759391.67        | 14605191.54        | 40°12'52.821"N | 80°34'25.787"W | 3829.99           | 150.092         | 0.47          | 0.10                 | 0.46                |
| 10063.00 | 89.320          | 155.500     | 5965.71  | 3912.20        | -3404.69   | 1945.43   | 1759427.43        | 14605106.83        | 40°12'51.982"N | 80°34'25.331"W | 3921.30           | 150.256         | 3.51          | 0.10                 | -3.51               |
| 10156.00 | 89.080          | 154.330     | 5967.01  | 4005.19        | -3488.91   | 1984.85   | 1759466.84        | 14605022.64        | 40°12'51.148"N | 80°34'24.928"W | 4013.99           | 150.364         | 1.28          | -0.26                | -1.26               |
| 10249.00 | 89.230          | 157.390     | 5968.38  | 4098.12        | -3573.75   | 2022.88   | 1759504.85        | 14604937.83        | 40°12'50.307"N | 80°34'24.343"W | 4106.55           | 150.489         | 3.29          | 0.16                 | 3.29                |
| 10342.00 | 89.290          | 158.980     | 5969.58  | 4190.88        | -3660.08   | 2057.44   | 1759539.39        | 14604851.53        | 40°12'49.453"N | 80°34'23.903"W | 4198.72           | 150.658         | 1.71          | 0.06                 | 1.71                |
| 10434.00 | 89.570          | 165.650     | 5970.50  | 4281.90        | -3747.68   | 2085.37   | 1759567.31        | 14604763.97        | 40°12'48.586"N | 80°34'23.548"W | 4288.81           | 150.907         | 7.26          | 0.30                 | 7.25                |
| 10527.00 | 89.380          | 167.380     | 5971.35  | 4372.74        | -3838.11   | 2107.05   | 1759588.99        | 14604673.57        | 40°12'47.691"N | 80°34'23.275"W | 4378.44           | 151.234         | 1.87          | -0.20                | 1.86                |
| 10620.00 | 89.820          | 168.630     | 5972.00  | 4463.03        | -3929.08   | 2126.38   | 1759608.31        | 14604582.64        | 40°12'46.791"N | 80°34'23.031"W | 4467.56           | 151.578         | 1.42          | 0.47                 | 1.34                |
| 10713.00 | 90.060          | 165.840     | 5972.10  | 4553.61        | -4019.77   | 2146.92   | 1759628.85        | 14604491.98        | 40°12'45.894"N | 80°34'22.772"W | 4557.17           | 151.894         | 3.01          | 0.26                 | -3.00               |
| 10805.00 | 90.150          | 163.070     | 5971.93  | 4644.12        | -4108.40   | 2171.58   | 1759653.49        | 14604403.39        | 40°12'45.017"N | 80°34'22.460"W | 4647.01           | 152.140         | 3.01          | 0.10                 | -3.01               |
| 10898.00 | 88.550          | 161.820     | 5972.98  | 4736.14        | -4197.05   | 2199.63   | 1759681.53        | 14604314.77        | 40°12'44.140"N | 80°34'22.104"W | 4738.52           | 152.342         | 2.18          | -1.72                | -1.34               |
| 10991.00 | 89.050          | 161.270     | 5974.93  | 4828.35        | -4285.25   | 2229.06   | 1759710.95        | 14604226.61        | 40°12'43.267"N | 80°34'21.730"W | 4830.33           | 152.518         | 0.80          | 0.54                 | -0.56               |
| 11084.00 | 88.520          | 160.150     | 5976.90  | 4920.72        | -4373.01   | 2259.77   | 1759741.65        | 14604138.88        | 40°12'42.398"N | 80°34'21.339"W | 4922.38           | 152.672         | 1.33          | -0.57                | -1.20               |



# Actual Wellpath Report

John Good Jr BRK 10H AWP Proj: 12521'  
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## REFERENCE WELLPATH IDENTIFICATION

| Operator            | Slot     | Slot #10                 |
|---------------------|----------|--------------------------|
| SOUTHWESTERN ENERGY | Well     | John Good Jr BRK 10H     |
| Area                | Wellbore | John Good Jr BRK 10H AWB |
| Facility            |          |                          |

## WELLPATH DATA (137 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] |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 11176.00 | 88.830          | 159.410     | 5979.03  | 5012.25        | -4459.31   | 2291.56   | 1759773.43        | 14604052.61        | 40°12'41.544"N | 80°34'20.935"W | 5013.66           | 152.802         | 0.87          | 0.34                 | -0.80               |
| 11269.00 | 88.060          | 159.950     | 5981.55  | 5104.78        | -4546.49   | 2323.85   | 1759805.70        | 14603965.46        | 40°12'40.681"N | 80°34'20.524"W | 5105.96           | 152.927         | 1.01          | -0.83                | 0.58                |
| 11362.00 | 88.650          | 158.280     | 5984.22  | 5197.39        | -4633.34   | 2356.98   | 1759838.82        | 14603878.65        | 40°12'39.821"N | 80°34'20.102"W | 5198.39           | 153.038         | 1.90          | 0.63                 | -1.80               |
| 11455.00 | 88.520          | 158.310     | 5986.52  | 5290.12        | -4719.72   | 2391.37   | 1759873.19        | 14603792.30        | 40°12'38.966"W | 80°34'19.665"W | 5290.98           | 153.130         | 0.14          | -0.14                | 0.03                |
| 11548.00 | 88.310          | 158.020     | 5989.09  | 5382.86        | -4806.02   | 2425.94   | 1759907.76        | 14603706.04        | 40°12'38.111"N | 80°34'19.224"W | 5383.59           | 153.217         | 0.38          | -0.23                | -0.31               |
| 11640.00 | 89.450          | 156.410     | 5990.89  | 5474.71        | -4890.82   | 2461.57   | 1759943.36        | 14603621.27        | 40°12'37.272"N | 80°34'18.770"W | 5475.35           | 153.284         | 2.14          | 1.24                 | -1.75               |
| 11733.00 | 89.510          | 154.900     | 5991.74  | 5567.67        | -4975.54   | 2499.90   | 1759981.68        | 14603536.58        | 40°12'36.432"N | 80°34'18.282"W | 5568.26           | 153.323         | 1.62          | 0.06                 | -1.62               |
| 11826.00 | 89.630          | 155.610     | 5992.43  | 5660.65        | -5060.00   | 2538.83   | 1760020.60        | 14603452.15        | 40°12'35.596"N | 80°34'17.785"W | 5661.21           | 153.355         | 0.77          | 0.13                 | 0.76                |
| 11919.00 | 89.540          | 158.430     | 5993.11  | 5753.52        | -5145.61   | 2575.13   | 1760056.89        | 14603366.58        | 40°12'34.748"N | 80°34'17.323"W | 5754.01           | 153.414         | 3.03          | -0.10                | 3.03                |
| 12012.00 | 89.450          | 160.380     | 5993.93  | 5846.12        | -5232.66   | 2607.84   | 1760089.58        | 14603279.56        | 40°12'33.887"N | 80°34'16.906"W | 5846.50           | 153.509         | 2.10          | -0.10                | 2.10                |
| 12104.00 | 89.080          | 161.350     | 5995.11  | 5937.48        | -5319.57   | 2638.00   | 1760119.73        | 14603192.69        | 40°12'33.026"N | 80°34'16.523"W | 5937.75           | 153.623         | 1.13          | -0.40                | 1.05                |
| 12197.00 | 89.010          | 163.300     | 5996.66  | 6029.52        | -5408.16   | 2666.23   | 1760147.95        | 14603104.13        | 40°12'32.149"N | 80°34'16.165"W | 6029.67           | 153.757         | 2.10          | -0.08                | 2.10                |
| 12290.00 | 88.920          | 165.760     | 5998.34  | 6120.98        | -5497.77   | 2691.03   | 1760172.74        | 14603014.55        | 40°12'31.263"N | 80°34'15.851"W | 6121.04           | 153.919         | 2.65          | -0.10                | 2.65                |
| 12383.00 | 88.830          | 165.840     | 6000.16  | 6212.05        | -5587.91   | 2713.84   | 1760195.54        | 14602924.45        | 40°12'30.371"N | 80°34'15.562"W | 6212.06           | 154.096         | 0.13          | -0.10                | 0.09                |
| 12476.00 | 88.980          | 162.970     | 6001.94  | 6303.54        | -5677.46   | 2738.83   | 1760220.52        | 14602834.93        | 40°12'29.485"N | 80°34'15.246"W | 6303.55           | 154.247         | 3.09          | 0.16                 | -3.09               |
| 12497.00 | 89.050          | 162.450     | 6002.30  | 6324.31        | -5697.51   | 2745.07   | 1760226.76        | 14602814.89        | 40°12'29.286"N | 80°34'15.167"W | 6324.32           | 154.275         | 2.50          | 0.33                 | -2.48               |
| 12521.00 | 89.050          | 162.450     | 6002.70  | 6348.05        | -5720.39   | 2752.31   | 1760233.99        | 14602792.02        | 40°12'29.060"N | 80°34'15.075"W | 6348.07           | 154.306         | 0.00          | 0.00                 | 0.00                |

## HOLE & CASING SECTIONS - Ref Wellbore: John Good Jr BRK 10H AWB Ref Wellpath: John Good Jr BRK 10H AWP Proj: 12521'

| String/Diameter             | Start MD [ft] | End MD [ft] | Interval [ft] | Start TVD [ft] | End TVD [ft] | Start N/S [ft] | End N/S [ft] | Start E/W [ft] | End E/W [ft] | End E/W [ft] |
|-----------------------------|---------------|-------------|---------------|----------------|--------------|----------------|--------------|----------------|--------------|--------------|
| 17.5in Open Hole            | 26.00         | 400.00      | 374.00        | 26.00          | 400.00       | 0.00           | 0.00         | 0.00           | -0.20        | -0.84        |
| 13.375in Casing Surface     | 26.00         | 380.00      | 354.00        | 26.00          | 380.00       | 0.00           | 0.00         | 0.00           | -0.19        | -0.91        |
| 12.25in Open Hole           | 400.00        | 1688.00     | 1288.00       | 400.00         | 1682.27      | -0.20          | 61.15        | -0.84          | 61.15        | 34.39        |
| 9.625in Casing Intermediate | 26.00         | 1685.00     | 1659.00       | 26.00          | 1679.33      | 0.00           | 60.58        | 0.00           | 60.58        | 34.29        |
| 8.75in Open Hole            | 1688.00       | 5226.00     | 3538.00       | 1682.27        | 5160.14      | 61.15          | 620.03       | 34.39          | 620.03       | 344.94       |
| 8.5in Open Hole             | 5226.00       | 12621.00    | 7295.00       | 5160.14        | 6002.70      | 620.03         | -5720.39     | 344.94         | -5720.39     | 2752.31      |

## REFERENCE WELLPATH IDENTIFICATION

| Operator            | Slot     | Slot #10                 |
|---------------------|----------|--------------------------|
| SOUTHWESTERN ENERGY | Well     | John Good Jr BRK 10H     |
| Area                | Wellbore | John Good Jr BRK 10H AWB |
| Field               |          |                          |
| Facility            |          |                          |

## TARGETS

| Name                           | TVD [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude       | Longitude      | Shape   |
|--------------------------------|----------|------------|-----------|-------------------|--------------------|----------------|----------------|---------|
| John Good Jr N LL              | 5897.00  | -5.39      | -19.50    | 1757463.26        | 14608504.81        | 40°13'25.666"N | 80°34'50.452"W | polygon |
| John Good Jr S LL              | 5897.00  | -5.39      | -19.50    | 1757463.26        | 14608504.81        | 40°13'25.666"N | 80°34'50.452"W | polygon |
| John Good Jr SW LL             | 5897.00  | -5.39      | -19.50    | 1757463.26        | 14608504.81        | 40°13'25.666"N | 80°34'50.452"W | polygon |
| John Good Jr BRK 10H LP Rev-2  | 5919.00  | 74.84      | 666.77    | 1758149.27        | 14608585.01        | 40°13'26.426"N | 80°34'41.600"W | point   |
| John Good Jr BRK 10H BHL Rev-1 | 6003.00  | -5729.05   | 2774.68   | 1760256.36        | 14602783.36        | 40°12'28.973"N | 80°34'14.787"W | point   |

## WELLPATH COMPOSITION - Ref Wellbore: John Good Jr BRK 10H AWB Ref Wellpath: John Good Jr BRK 10H AWP Proj: 12521'

| Start MD [ft] | End MD [ft] | Positional Uncertainty Model      | Log Name/Comment                            |
|---------------|-------------|-----------------------------------|---------------------------------------------|
| 26.00         | 361.00      | OWSG EMS rev2 - Standard          | 01_MSS <17.5'> (261'-361')                  |
| 361.00        | 1612.00     | BHI NaviTrak (Axial)              | 02_APS EM <12.25'> (361')(418'-1612')       |
| 1612.00       | 5152.00     | BHI NaviTrak (Axial)              | 03_APS EM <8.75'> (1612')(1719'-5152')      |
| 5152.00       | 12497.00    | BHI AutoTrak Curve (Long spacing) | 04_BH AT Curve <8.5'> (5152')(5251'-12497') |
| 12497.00      | 12521.00    | Blind Drilling (std)              | Projection to bit                           |



### REFERENCE WELLPATH IDENTIFICATION

|          |                      |  |          |                          |
|----------|----------------------|--|----------|--------------------------|
| Operator | SOUTHWESTERN ENERGY  |  | Slot     | Slot #10                 |
| Area     | Brooke County, WV    |  | Well     | John Good Jr BRK 10H     |
| Field    | Brooke               |  | Wellbore | John Good Jr BRK 10H AWB |
| Facility | John Good Jr BRK Pad |  |          |                          |

### WELLPATH COMMENTS

| MD [ft]  | Inclination [°] | Azimuth [°] | TVD [ft] | Comment                                  |
|----------|-----------------|-------------|----------|------------------------------------------|
| 261.00   | 0.400           | 256.080     | 261.00   | MSS <17.5"> (261'-361')                  |
| 418.00   | 0.290           | 121.820     | 418.00   | APS EM <12.25"> (361')(418'-1612')       |
| 1719.00  | 11.070          | 7.590       | 1712.70  | APS EM <8.75"> (1612')(1719'-5152')      |
| 5251.00  | 8.470           | 32.240      | 5184.85  | BH AT Curve <8.5"> (5152')(5251'-12497') |
| 12521.00 | 89.050          | 162.450     | 6002.70  | Projection to Bit                        |

### COMMENTS

Wellpath general comments  
 API: 47-009-00189-0000  
 Job#: 8653242  
 Rig: SDC-46  
 Duration: 08/21/17 - 08/28/17