

# PathFinder Energy Services, Inc.

## Survey Report

MARBOB ENERGY CORPORATION  
SHOWSTOPPER 19 FEDERAL #5  
EDDY COUNTY, NEW MEXICO  
Rig: PATRIOT 2  
PathFinder Office Supervisor: FRANCISCO SINISTERRA  
PathFinder Field Engineers: J. FULTON  
S. STONER

Survey Horiz. Reference: WELLHEAD  
Ref Coordinates: LAT: 32.632.5822 N LON: 104.127.1526 W  
GRID Reference: NAD27 new mexico east Transverse Mercator  
Ref GRID Coord: X: 595713.5000 Y: 403532.8000  
North Aligned To: GRID NORTH  
Total Magnetic Correction: 7.76° EAST TO GRID  
Vertical Section Plane: 358.04  
Survey Vert. Reference: 18.00' Rotary Table To Ground  
Altitude: 2910.00' Ground To MSL

Survey Calculations by RX4 using Minimum Curvature

| Measured<br>Depth<br>(ft)                          | Incl<br>(deg) | Drift<br>Dir.<br>(deg) | TVD<br>(ft) | Course<br>Length<br>(ft) | Vertical<br>Section<br>(ft) | TOTAL<br>Rectangular<br>(ft) | Offsets<br>(ft) | Closure<br>Dist Dir<br>(ft) (deg) | DLS<br>(dg/100ft) |
|----------------------------------------------------|---------------|------------------------|-------------|--------------------------|-----------------------------|------------------------------|-----------------|-----------------------------------|-------------------|
| TIE-IN PROVIDED BY SCIENTIFIC DRILLING @ 6500' MD. |               |                        |             |                          |                             |                              |                 |                                   |                   |
| 6500.00                                            | 0.88          | 225.53                 | 6498.64     | 0.00                     | -58.76                      | 58.63 S                      | 4.92 E          | 58.84@ 175.20                     | 0.00              |
| THE FOLLOWING ARE PATHFINDER MWD SURVEYS.          |               |                        |             |                          |                             |                              |                 |                                   |                   |
| 6535.00                                            | 7.65          | 331.70                 | 6533.54     | 35.00                    | -56.85                      | 56.76 S                      | 3.62 E          | 56.88@ 176.35                     | 22.69             |
| 6586.00                                            | 19.52         | 343.25                 | 6583.03     | 51.00                    | -45.53                      | 45.57 S                      | 0.46 W          | 45.58@ 180.58                     | 23.76             |
| 6618.00                                            | 24.62         | 344.63                 | 6612.68     | 32.00                    | -33.87                      | 34.02 S                      | 3.77 W          | 34.23@ 186.32                     | 16.02             |
| 6648.00                                            | 28.49         | 345.25                 | 6639.51     | 30.00                    | -20.81                      | 21.07 S                      | 7.25 W          | 22.28@ 198.98                     | 12.93             |
| 6681.00                                            | 32.18         | 346.91                 | 6667.98     | 33.00                    | -4.51                       | 4.89 S                       | 11.24 W         | 12.26@ 246.48                     | 11.47             |
| 6713.00                                            | 35.44         | 348.76                 | 6694.57     | 32.00                    | 13.02                       | 12.51 N                      | 14.98 W         | 19.52@ 309.86                     | 10.68             |
| 6745.00                                            | 38.60         | 349.40                 | 6720.12     | 32.00                    | 32.05                       | 31.43 N                      | 18.63 W         | 36.53@ 329.34                     | 9.95              |
| 6776.00                                            | 42.21         | 348.86                 | 6743.72     | 31.00                    | 51.89                       | 51.16 N                      | 22.42 W         | 55.85@ 336.33                     | 11.70             |
| 6808.00                                            | 45.55         | 348.08                 | 6766.78     | 32.00                    | 73.76                       | 72.88 N                      | 26.86 W         | 77.68@ 339.77                     | 10.57             |
| 6840.00                                            | 48.54         | 349.47                 | 6788.58     | 32.00                    | 96.87                       | 95.85 N                      | 31.41 W         | 100.87@ 341.86                    | 9.87              |
| 6872.00                                            | 51.79         | 350.27                 | 6809.08     | 32.00                    | 121.19                      | 120.04 N                     | 35.73 W         | 125.25@ 343.43                    | 10.34             |
| 6904.00                                            | 55.31         | 350.40                 | 6828.09     | 32.00                    | 146.70                      | 145.41 N                     | 40.05 W         | 150.83@ 344.60                    | 11.01             |
| 6935.00                                            | 58.56         | 351.19                 | 6845.00     | 31.00                    | 172.47                      | 171.05 N                     | 44.20 W         | 176.67@ 345.51                    | 10.70             |
| 6967.00                                            | 60.41         | 351.46                 | 6861.25     | 32.00                    | 199.84                      | 198.31 N                     | 48.36 W         | 204.12@ 346.30                    | 5.83              |
| 6999.00                                            | 62.70         | 351.94                 | 6876.49     | 32.00                    | 227.81                      | 226.15 N                     | 52.42 W         | 232.14@ 346.95                    | 7.28              |
| 7031.00                                            | 66.21         | 352.00                 | 6890.29     | 32.00                    | 256.51                      | 254.73 N                     | 56.45 W         | 260.91@ 347.51                    | 10.97             |
| 7063.00                                            | 70.26         | 351.61                 | 6902.15     | 32.00                    | 286.05                      | 284.14 N                     | 60.68 W         | 290.55@ 347.94                    | 12.71             |
| 7094.00                                            | 75.01         | 351.22                 | 6911.40     | 31.00                    | 315.43                      | 313.39 N                     | 65.10 W         | 320.08@ 348.26                    | 15.37             |
| 7127.00                                            | 78.61         | 349.39                 | 6918.93     | 33.00                    | 347.26                      | 345.05 N                     | 70.51 W         | 352.18@ 348.45                    | 12.17             |
| 7159.00                                            | 80.11         | 351.27                 | 6924.84     | 32.00                    | 378.42                      | 376.05 N                     | 75.80 W         | 383.61@ 348.60                    | 7.44              |
| 7192.00                                            | 81.78         | 353.56                 | 6930.03     | 33.00                    | 410.85                      | 408.35 N                     | 80.10 W         | 416.13@ 348.90                    | 8.52              |
| 7224.00                                            | 84.42         | 355.36                 | 6933.87     | 32.00                    | 442.55                      | 439.97 N                     | 83.16 W         | 447.76@ 349.30                    | 9.96              |
| 7256.00                                            | 88.02         | 356.31                 | 6935.98     | 32.00                    | 474.45                      | 471.81 N                     | 85.48 W         | 479.49@ 349.73                    | 11.63             |
| 7288.00                                            | 90.92         | 357.07                 | 6936.28     | 32.00                    | 506.44                      | 503.75 N                     | 87.33 W         | 511.26@ 350.17                    | 9.37              |

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# PathFinder Energy Services, Inc.

## Survey Report

MARBOB ENERGY CORPORATION  
SHOWSTOPPER 19 FEDERAL #5  
EDDY COUNTY, NEW MEXICO  
RIG: PATRIOT 2

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| Measured<br>Depth<br>(ft) | Incl<br>(deg) | Drift<br>Dir.<br>(deg) | TVD<br>(ft) | Course<br>Length<br>(ft) | Vertical<br>Section<br>(ft) | TOTAL<br>Rectangular Offsets<br>(ft) (ft) |          | Closure<br>Dist Dir<br>(ft) (deg) |        | DLS<br>(dg/100ft) |
|---------------------------|---------------|------------------------|-------------|--------------------------|-----------------------------|-------------------------------------------|----------|-----------------------------------|--------|-------------------|
| 7351.00                   | 90.84         | 357.73                 | 6935.31     | 63.00                    | 569.43                      | 566.68 N                                  | 90.18 W  | 573.81@                           | 350.96 | 1.05              |
| 7383.00                   | 89.52         | 358.16                 | 6935.21     | 32.00                    | 601.43                      | 598.65 N                                  | 91.33 W  | 605.58@                           | 351.33 | 4.34              |
| 7447.00                   | 89.78         | 357.90                 | 6935.60     | 64.00                    | 665.43                      | 662.62 N                                  | 93.53 W  | 669.18@                           | 351.97 | 0.57              |
| 7542.00                   | 88.55         | 357.16                 | 6936.99     | 95.00                    | 760.41                      | 757.51 N                                  | 97.62 W  | 763.78@                           | 352.66 | 1.51              |
| 7638.00                   | 87.85         | 357.11                 | 6940.00     | 96.00                    | 856.35                      | 853.35 N                                  | 102.42 W | 859.47@                           | 353.16 | 0.73              |
| 7733.00                   | 88.46         | 358.60                 | 6943.06     | 95.00                    | 951.30                      | 948.23 N                                  | 105.97 W | 954.13@                           | 353.62 | 1.69              |
| 7797.00                   | 89.34         | 359.61                 | 6944.29     | 64.00                    | 1015.27                     | 1012.21 N                                 | 106.97 W | 1017.84@                          | 353.97 | 2.09              |
| 7829.00                   | 88.81         | 359.60                 | 6944.81     | 32.00                    | 1047.26                     | 1044.20 N                                 | 107.19 W | 1049.69@                          | 354.14 | 1.66              |
| 7892.00                   | 89.69         | 359.81                 | 6945.63     | 63.00                    | 1110.22                     | 1107.19 N                                 | 107.52 W | 1112.40@                          | 354.45 | 1.44              |
| 7955.00                   | 90.57         | 359.82                 | 6945.49     | 63.00                    | 1173.19                     | 1170.19 N                                 | 107.72 W | 1175.14@                          | 354.74 | 1.40              |
| 8018.00                   | 89.34         | 359.08                 | 6945.54     | 63.00                    | 1236.17                     | 1233.19 N                                 | 108.33 W | 1237.94@                          | 354.98 | 2.28              |
| 8082.00                   | 90.66         | 359.60                 | 6945.54     | 64.00                    | 1300.15                     | 1297.18 N                                 | 109.06 W | 1301.76@                          | 355.19 | 2.22              |
| 8133.00                   | 90.75         | 358.60                 | 6944.91     | 51.00                    | 1351.14                     | 1348.17 N                                 | 109.86 W | 1352.64@                          | 355.34 | 1.97              |
| 8200.00                   | 90.48         | 357.88                 | 6944.19     | 67.00                    | 1418.14                     | 1415.14 N                                 | 111.92 W | 1419.55@                          | 355.48 | 1.15              |
| 8263.00                   | 90.84         | 357.58                 | 6943.47     | 63.00                    | 1481.13                     | 1478.08 N                                 | 114.42 W | 1482.50@                          | 355.57 | 0.74              |
| 8327.00                   | 92.42         | 359.58                 | 6941.65     | 64.00                    | 1545.10                     | 1542.03 N                                 | 116.00 W | 1546.39@                          | 355.70 | 3.98              |
| 8391.00                   | 92.51         | 1.61                   | 6938.89     | 64.00                    | 1608.97                     | 1605.96 N                                 | 115.34 W | 1610.10@                          | 355.89 | 3.17              |
| 8454.00                   | 91.28         | 2.84                   | 6936.81     | 63.00                    | 1671.77                     | 1668.88 N                                 | 112.89 W | 1672.70@                          | 356.13 | 2.76              |
| 8518.00                   | 88.11         | 1.17                   | 6937.15     | 64.00                    | 1735.60                     | 1732.83 N                                 | 110.66 W | 1736.36@                          | 356.35 | 5.60              |
| 8581.00                   | 87.85         | 0.54                   | 6939.37     | 63.00                    | 1798.49                     | 1795.78 N                                 | 109.72 W | 1799.13@                          | 356.50 | 1.08              |
| 8645.00                   | 88.46         | 0.20                   | 6941.43     | 64.00                    | 1862.40                     | 1859.75 N                                 | 109.30 W | 1862.96@                          | 356.64 | 1.09              |
| 8708.00                   | 89.60         | 359.79                 | 6942.50     | 63.00                    | 1925.35                     | 1922.74 N                                 | 109.31 W | 1925.84@                          | 356.75 | 1.92              |
| 8772.00                   | 89.60         | 358.37                 | 6942.94     | 64.00                    | 1989.34                     | 1986.73 N                                 | 110.34 W | 1989.79@                          | 356.82 | 2.22              |
| 8835.00                   | 89.96         | 358.49                 | 6943.19     | 63.00                    | 2052.34                     | 2049.70 N                                 | 112.06 W | 2052.76@                          | 356.87 | 0.60              |
| 8899.00                   | 90.66         | 359.25                 | 6942.84     | 64.00                    | 2116.33                     | 2113.69 N                                 | 113.32 W | 2116.72@                          | 356.93 | 1.61              |
| 8962.00                   | 90.31         | 359.70                 | 6942.31     | 63.00                    | 2179.31                     | 2176.68 N                                 | 113.90 W | 2179.66@                          | 357.00 | 0.90              |
| 9026.00                   | 89.96         | 359.18                 | 6942.16     | 64.00                    | 2243.29                     | 2240.68 N                                 | 114.53 W | 2243.61@                          | 357.07 | 0.98              |
| 9121.00                   | 90.66         | 0.38                   | 6941.64     | 95.00                    | 2338.24                     | 2335.68 N                                 | 114.89 W | 2338.50@                          | 357.18 | 1.46              |
| 9184.00                   | 88.81         | 358.36                 | 6941.93     | 63.00                    | 2401.22                     | 2398.67 N                                 | 115.58 W | 2401.45@                          | 357.24 | 4.35              |

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SHOWSTOPPER 19 FEDERAL #5  
EDDY COUNTY, NEW MEXICO  
RIG: PATRIOT 2

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| Measured<br>Depth<br>(ft) | Incl<br>(deg) | Drift<br>Dir.<br>(deg) | TVD<br>(ft) | Course<br>Length<br>(ft) | Vertical<br>Section<br>(ft) | TOTAL<br>Rectangular Offsets<br>(ft) |          | Closure<br>Dist Dir<br>(ft) (deg) |        | DLS<br>(dg/100ft) |
|---------------------------|---------------|------------------------|-------------|--------------------------|-----------------------------|--------------------------------------|----------|-----------------------------------|--------|-------------------|
| 9247.00                   | 86.61         | 355.75                 | 6944.45     | 63.00                    | 2464.15                     | 2461.52 N                            | 118.82 W | 2464.39@                          | 357.24 | 5.42              |
| 9311.00                   | 88.11         | 356.72                 | 6947.40     | 64.00                    | 2528.04                     | 2525.31 N                            | 123.01 W | 2528.31@                          | 357.21 | 2.79              |
| 9374.00                   | 88.02         | 356.25                 | 6949.53     | 63.00                    | 2590.98                     | 2588.16 N                            | 126.87 W | 2591.27@                          | 357.19 | 0.76              |
| 9438.00                   | 89.08         | 356.24                 | 6951.14     | 64.00                    | 2654.93                     | 2652.00 N                            | 131.06 W | 2655.24@                          | 357.17 | 1.66              |
| 9501.00                   | 89.87         | 356.09                 | 6951.72     | 63.00                    | 2717.89                     | 2714.86 N                            | 135.28 W | 2718.22@                          | 357.15 | 1.28              |
| 9565.00                   | 90.13         | 357.53                 | 6951.72     | 64.00                    | 2781.88                     | 2778.76 N                            | 138.84 W | 2782.22@                          | 357.14 | 2.29              |
| 9629.00                   | 90.13         | 358.20                 | 6951.58     | 64.00                    | 2845.88                     | 2842.71 N                            | 141.22 W | 2846.22@                          | 357.16 | 1.05              |
| 9691.00                   | 90.66         | 357.19                 | 6951.15     | 62.00                    | 2907.87                     | 2904.66 N                            | 143.72 W | 2908.21@                          | 357.17 | 1.84              |
| 9754.00                   | 90.75         | 358.79                 | 6950.37     | 63.00                    | 2970.87                     | 2967.61 N                            | 145.93 W | 2971.20@                          | 357.18 | 2.54              |
| 9818.00                   | 91.10         | 358.99                 | 6949.34     | 64.00                    | 3034.85                     | 3031.59 N                            | 147.17 W | 3035.16@                          | 357.22 | 0.63              |
| 9882.00                   | 90.31         | 359.54                 | 6948.55     | 64.00                    | 3098.83                     | 3095.58 N                            | 147.99 W | 3099.12@                          | 357.26 | 1.50              |
| 9945.00                   | 89.69         | 359.55                 | 6948.55     | 63.00                    | 3161.81                     | 3158.58 N                            | 148.49 W | 3162.07@                          | 357.31 | 0.98              |
| 10009.00                  | 89.43         | 358.85                 | 6949.05     | 64.00                    | 3225.79                     | 3222.57 N                            | 149.38 W | 3226.03@                          | 357.35 | 1.17              |
| 10072.00                  | 89.34         | 358.20                 | 6949.72     | 63.00                    | 3288.79                     | 3285.55 N                            | 151.00 W | 3289.01@                          | 357.37 | 1.04              |
| 10136.00                  | 89.69         | 359.64                 | 6950.26     | 64.00                    | 3352.78                     | 3349.53 N                            | 152.21 W | 3352.99@                          | 357.40 | 2.32              |
| 10198.00                  | 90.40         | 1.11                   | 6950.22     | 62.00                    | 3414.72                     | 3411.53 N                            | 151.80 W | 3414.90@                          | 357.45 | 2.63              |
| 10262.00                  | 91.19         | 2.23                   | 6949.33     | 64.00                    | 3478.59                     | 3475.49 N                            | 149.94 W | 3478.72@                          | 357.53 | 2.14              |
| 10326.00                  | 91.01         | 1.54                   | 6948.10     | 64.00                    | 3542.43                     | 3539.44 N                            | 147.83 W | 3542.53@                          | 357.61 | 1.11              |
| 10389.00                  | 90.22         | 0.36                   | 6947.42     | 63.00                    | 3605.34                     | 3602.43 N                            | 146.79 W | 3605.42@                          | 357.67 | 2.25              |
| 10453.00                  | 91.63         | 1.58                   | 6946.39     | 64.00                    | 3669.25                     | 3666.41 N                            | 145.71 W | 3669.30@                          | 357.72 | 2.91              |
| 10516.00                  | 90.57         | 0.20                   | 6945.18     | 63.00                    | 3732.16                     | 3729.39 N                            | 144.73 W | 3732.20@                          | 357.78 | 2.76              |
| 10579.00                  | 90.13         | 359.54                 | 6944.79     | 63.00                    | 3795.12                     | 3792.39 N                            | 144.87 W | 3795.15@                          | 357.81 | 1.26              |
| 10643.00                  | 90.75         | 358.90                 | 6944.30     | 64.00                    | 3859.11                     | 3856.38 N                            | 145.74 W | 3859.13@                          | 357.84 | 1.39              |
| 10707.00                  | 89.87         | 359.21                 | 6943.96     | 64.00                    | 3923.10                     | 3920.37 N                            | 146.80 W | 3923.12@                          | 357.86 | 1.46              |
| 10770.00                  | 89.34         | 359.30                 | 6944.39     | 63.00                    | 3986.08                     | 3983.36 N                            | 147.62 W | 3986.10@                          | 357.88 | 0.85              |
| 10833.00                  | 89.78         | 358.59                 | 6944.87     | 63.00                    | 4049.07                     | 4046.35 N                            | 148.78 W | 4049.08@                          | 357.89 | 1.33              |
| 10897.00                  | 89.87         | 356.80                 | 6945.07     | 64.00                    | 4113.07                     | 4110.29 N                            | 151.35 W | 4113.08@                          | 357.89 | 2.80              |
| 10960.00                  | 90.13         | 356.85                 | 6945.07     | 63.00                    | 4176.05                     | 4173.20 N                            | 154.84 W | 4176.07@                          | 357.88 | 0.42              |
| 11023.00                  | 89.87         | 358.42                 | 6945.07     | 63.00                    | 4239.05                     | 4236.14 N                            | 157.44 W | 4239.07@                          | 357.87 | 2.53              |

# PathFinder Energy Services, Inc.

## Survey Report

MARBOB ENERGY CORPORATION  
SHOWSTOPPER 19 FEDERAL #5  
EDDY COUNTY, NEW MEXICO  
RIG:PATRIOT 2

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| Measured<br>Depth<br>(ft)                    | Incl<br>(deg) | Drift<br>Dir.<br>(deg) | TVD<br>(ft) | Course<br>Length<br>(ft) | Vertical<br>Section<br>(ft) | TOTAL<br>Rectangular Offsets |          | Closure<br>Dist Dir |        | DLS<br>(dg/100ft) |
|----------------------------------------------|---------------|------------------------|-------------|--------------------------|-----------------------------|------------------------------|----------|---------------------|--------|-------------------|
|                                              |               |                        |             |                          |                             | (ft)                         | (ft)     | (ft)                | (deg)  |                   |
| 11086.00                                     | 90.57         | 358.19                 | 6944.83     | 63.00                    | 4302.05                     | 4299.11 N                    | 159.30 W | 4302.06@            | 357.88 | 1.17              |
| 11150.00                                     | 91.01         | 358.17                 | 6943.95     | 64.00                    | 4366.04                     | 4363.07 N                    | 161.34 W | 4366.06@            | 357.88 | 0.69              |
| 11212.00                                     | 91.10         | 0.51                   | 6942.80     | 62.00                    | 4428.01                     | 4425.05 N                    | 162.05 W | 4428.02@            | 357.90 | 3.78              |
| 11275.00                                     | 92.07         | 2.05                   | 6941.06     | 63.00                    | 4490.88                     | 4488.01 N                    | 160.64 W | 4490.89@            | 357.95 | 2.89              |
| 11337.00                                     | 93.30         | 1.60                   | 6938.16     | 62.00                    | 4552.68                     | 4549.91 N                    | 158.67 W | 4552.68@            | 358.00 | 2.11              |
| STRAIGHT LINE PROJECTION TO BIT @ 11407' MD. |               |                        |             |                          |                             |                              |          |                     |        |                   |
| 11407.00                                     | 93.30         | 1.60                   | 6934.13     | 70.00                    | 4622.43                     | 4619.77 N                    | 156.72 W | 4622.43@            | 358.06 | 0.00              |