



## **Tap Rock Resources, LLC**

Lea County, NM (NAD 83 NME)  
(Hyperion) Sec-20\_T-24-S\_R-33-E  
Hyperion State #221H

OWB

Design: AWB

## **Standard Survey Report**

16 August, 2019





# Intrepid Survey Report



**Company:** Tap Rock Resources, LLC  
**Project:** Lea County, NM (NAD 83 NME)  
**Site:** (Hyperion) Sec-20\_T-24-S\_R-33-E  
**Well:** Hyperion State #221H  
**Wellbore:** OWB  
**Design:** AWB

**Local Co-ordinate Reference:** Well Hyperion State #221H  
**TVD Reference:** KB @ 3563.5usft (H&P 388)  
**MD Reference:** KB @ 3563.5usft (H&P 388)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 5000.15 Single User Db

|                    |                             |                      |                |
|--------------------|-----------------------------|----------------------|----------------|
| <b>Project</b>     | Lea County, NM (NAD 83 NME) |                      |                |
| <b>Map System:</b> | US State Plane 1983         | <b>System Datum:</b> | Mean Sea Level |
| <b>Geo Datum:</b>  | North American Datum 1983   |                      |                |
| <b>Map Zone:</b>   | New Mexico Eastern Zone     |                      |                |

|                                      |          |              |                 |                   |                  |
|--------------------------------------|----------|--------------|-----------------|-------------------|------------------|
| Site (Hyperion) Sec-20_T-24-S_R-33-E |          |              |                 |                   |                  |
| Site Position:                       |          | Northing:    | 440,505.00 usft | Latitude:         | 32° 12' 32.058 N |
| From:                                | Map      | Easting:     | 767,798.00 usft | Longitude:        | 103° 36' 4.072 W |
| Position Uncertainty:                | 0.0 usft | Slot Radius: | 13-3/16 "       | Grid Convergence: | 0.39 °           |

|                      |                      |          |                     |                 |               |                  |
|----------------------|----------------------|----------|---------------------|-----------------|---------------|------------------|
| Well                 | Hyperion State #221H |          |                     |                 |               |                  |
| Well Position        | +N/-S                | 0.0 usft | Northing:           | 440,534.00 usft | Latitude:     | 32° 12' 32.350 N |
|                      | +E/-W                | 0.0 usft | Easting:            | 767,718.00 usft | Longitude:    | 103° 36' 5.001 W |
| Position Uncertainty |                      | 0.0 usft | Wellhead Elevation: | usft            | Ground Level: | 3,537.0 usft     |

|                  |                   |                    |                        |                      |                            |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| <b>Wellbore</b>  | OWB               |                    |                        |                      |                            |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination (°)</b> | <b>Dip Angle (°)</b> | <b>Field Strength (nT)</b> |
|                  | IGRF2015          | 07/15/19           | 6.74                   | 60.02                | 47,711.77092706            |

|                          |                                |                     |                     |                      |     |
|--------------------------|--------------------------------|---------------------|---------------------|----------------------|-----|
| <b>Design</b>            | AWB                            |                     |                     |                      |     |
| <b>Audit Notes:</b>      |                                |                     |                     |                      |     |
| <b>Version:</b>          | 1.0                            | <b>Phase:</b>       | ACTUAL              | <b>Tie On Depth:</b> | 0.0 |
| <b>Vertical Section:</b> | <b>Depth From (TVD) (usft)</b> | <b>+N/-S (usft)</b> | <b>+E/-W (usft)</b> | <b>Direction (°)</b> |     |
|                          | 0.0                            | 0.0                 | 0.0                 | 179.54               |     |

|                       |                  |                          |                  |                     |  |
|-----------------------|------------------|--------------------------|------------------|---------------------|--|
| <b>Survey Program</b> | Date 08/16/19    |                          |                  |                     |  |
| <b>From (usft)</b>    | <b>To (usft)</b> | <b>Survey (Wellbore)</b> | <b>Tool Name</b> | <b>Description</b>  |  |
| 148.0                 | 17,939.0         | Intrepid MWD (OWB)       | MWD              | OWSG MWD - Standard |  |

| Survey                |                 |             |                       |              |              |                         |                         |                        |                       |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 0.0                   | 0.00            | 0.00        | 0.0                   | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 148.0                 | 0.57            | 79.04       | 148.0                 | 0.1          | 0.7          | -0.1                    | 0.39                    | 0.39                   | 0.00                  |
| 272.0                 | 0.84            | 106.28      | 272.0                 | 0.0          | 2.2          | 0.0                     | 0.34                    | 0.22                   | 21.97                 |
| 392.0                 | 0.22            | 93.98       | 392.0                 | -0.3         | 3.3          | 0.3                     | 0.52                    | -0.52                  | -10.25                |
| 517.0                 | 0.48            | 125.79      | 517.0                 | -0.6         | 3.9          | 0.6                     | 0.25                    | 0.21                   | 25.45                 |
| 608.0                 | 0.22            | 58.21       | 608.0                 | -0.7         | 4.4          | 0.7                     | 0.49                    | -0.29                  | -74.26                |
| 701.0                 | 0.26            | 198.92      | 701.0                 | -0.8         | 4.5          | 0.9                     | 0.49                    | 0.04                   | 151.30                |
| 793.0                 | 0.44            | 154.97      | 793.0                 | -1.3         | 4.6          | 1.4                     | 0.34                    | 0.20                   | -47.77                |
| 885.0                 | 0.13            | 283.21      | 885.0                 | -1.6         | 4.6          | 1.7                     | 0.58                    | -0.34                  | 139.39                |
| 977.0                 | 0.31            | 269.49      | 977.0                 | -1.6         | 4.3          | 1.6                     | 0.20                    | 0.20                   | -14.91                |



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**Wellbore:** OWB  
**Design:** AWB

**Local Co-ordinate Reference:** Well Hyperion State #221H  
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**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 5000.15 Single User Db

## Survey

| Measured<br>Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Vertical<br>Section<br>(usft) | Dogleg<br>Rate<br>(°/100usft) | Build<br>Rate<br>(°/100usft) | Turn<br>Rate<br>(°/100usft) |
|-----------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|-------------------------------|-------------------------------|------------------------------|-----------------------------|
| 1,069.0                     | 0.62               | 236.71         | 1,069.0                     | -1.9            | 3.6             | 1.9                           | 0.43                          | 0.34                         | -35.63                      |
| 1,160.0                     | 0.53               | 278.55         | 1,160.0                     | -2.1            | 2.8             | 2.1                           | 0.46                          | -0.10                        | 45.98                       |
| 1,198.0                     | 0.79               | 258.75         | 1,198.0                     | -2.1            | 2.3             | 2.1                           | 0.89                          | 0.68                         | -52.05                      |
| <b>Rustler Anhydrite</b>    |                    |                |                             |                 |                 |                               |                               |                              |                             |
| 1,215.0                     | 0.92               | 253.76         | 1,215.0                     | -2.2            | 2.1             | 2.2                           | 0.89                          | 0.78                         | -29.43                      |
| 1,347.0                     | 1.05               | 259.12         | 1,346.9                     | -2.7            | -0.1            | 2.7                           | 0.12                          | 0.10                         | 4.06                        |
| 1,442.0                     | 1.01               | 263.78         | 1,441.9                     | -3.0            | -1.8            | 2.9                           | 0.10                          | -0.04                        | 4.91                        |
| 1,537.0                     | 1.10               | 274.94         | 1,536.9                     | -3.0            | -3.5            | 2.9                           | 0.24                          | 0.09                         | 11.75                       |
| 1,553.1                     | 1.12               | 277.76         | 1,553.0                     | -2.9            | -3.9            | 2.9                           | 0.35                          | 0.10                         | 17.55                       |
| <b>Top Salt</b>             |                    |                |                             |                 |                 |                               |                               |                              |                             |
| 1,632.0                     | 1.23               | 290.24         | 1,631.9                     | -2.5            | -5.4            | 2.5                           | 0.35                          | 0.14                         | 15.81                       |
| 1,727.0                     | 1.19               | 300.78         | 1,726.9                     | -1.7            | -7.2            | 1.6                           | 0.24                          | -0.04                        | 11.09                       |
| 1,822.0                     | 1.32               | 308.34         | 1,821.8                     | -0.5            | -8.9            | 0.4                           | 0.22                          | 0.14                         | 7.96                        |
| 1,916.0                     | 1.49               | 310.01         | 1,915.8                     | 1.0             | -10.7           | -1.0                          | 0.19                          | 0.18                         | 1.78                        |
| 2,011.0                     | 2.59               | 324.07         | 2,010.8                     | 3.5             | -12.9           | -3.6                          | 1.26                          | 1.16                         | 14.80                       |
| 2,106.0                     | 4.31               | 333.22         | 2,105.6                     | 8.4             | -15.8           | -8.5                          | 1.90                          | 1.81                         | 9.63                        |
| 2,201.0                     | 6.42               | 341.74         | 2,200.2                     | 16.6            | -19.0           | -16.8                         | 2.37                          | 2.22                         | 8.97                        |
| 2,296.0                     | 8.22               | 347.01         | 2,294.4                     | 28.3            | -22.2           | -28.5                         | 2.02                          | 1.89                         | 5.55                        |
| 2,391.0                     | 8.04               | 348.86         | 2,388.4                     | 41.4            | -25.1           | -41.6                         | 0.33                          | -0.19                        | 1.95                        |
| 2,486.0                     | 7.78               | 347.19         | 2,482.5                     | 54.2            | -27.8           | -54.5                         | 0.37                          | -0.27                        | -1.76                       |
| 2,581.0                     | 7.34               | 347.19         | 2,576.7                     | 66.4            | -30.5           | -66.7                         | 0.46                          | -0.46                        | 0.00                        |
| 2,675.0                     | 7.12               | 347.19         | 2,670.0                     | 78.0            | -33.2           | -78.2                         | 0.23                          | -0.23                        | 0.00                        |
| 2,770.0                     | 6.64               | 347.10         | 2,764.3                     | 89.1            | -35.7           | -89.3                         | 0.51                          | -0.51                        | -0.09                       |
| 2,865.0                     | 6.15               | 347.54         | 2,858.7                     | 99.4            | -38.0           | -99.7                         | 0.52                          | -0.52                        | 0.46                        |
| 2,960.0                     | 5.67               | 347.01         | 2,953.2                     | 108.9           | -40.2           | -109.2                        | 0.51                          | -0.51                        | -0.56                       |
| 3,055.0                     | 5.32               | 348.42         | 3,047.7                     | 117.8           | -42.1           | -118.1                        | 0.39                          | -0.37                        | 1.48                        |
| 3,150.0                     | 4.97               | 347.98         | 3,142.4                     | 126.1           | -43.8           | -126.5                        | 0.37                          | -0.37                        | -0.46                       |
| 3,244.0                     | 4.53               | 348.16         | 3,236.0                     | 133.8           | -45.5           | -134.1                        | 0.47                          | -0.47                        | 0.19                        |
| 3,339.0                     | 4.22               | 346.93         | 3,330.8                     | 140.8           | -47.0           | -141.2                        | 0.34                          | -0.33                        | -1.29                       |
| 3,434.0                     | 3.82               | 345.17         | 3,425.5                     | 147.3           | -48.6           | -147.7                        | 0.44                          | -0.42                        | -1.85                       |
| 3,529.0                     | 5.14               | 335.06         | 3,520.2                     | 154.2           | -51.2           | -154.6                        | 1.61                          | 1.39                         | -10.64                      |
| 3,624.0                     | 4.75               | 336.29         | 3,614.9                     | 161.7           | -54.6           | -162.1                        | 0.43                          | -0.41                        | 1.29                        |
| 3,719.0                     | 4.48               | 336.20         | 3,709.6                     | 168.7           | -57.7           | -169.1                        | 0.28                          | -0.28                        | -0.09                       |
| 3,814.0                     | 3.91               | 332.42         | 3,804.3                     | 174.9           | -60.7           | -175.4                        | 0.67                          | -0.60                        | -3.98                       |
| 3,908.0                     | 6.81               | 338.58         | 3,897.9                     | 183.0           | -64.2           | -183.5                        | 3.14                          | 3.09                         | 6.55                        |
| 4,003.0                     | 6.07               | 337.17         | 3,992.3                     | 192.8           | -68.2           | -193.4                        | 0.80                          | -0.78                        | -1.48                       |
| 4,098.0                     | 4.92               | 336.64         | 4,086.9                     | 201.2           | -71.8           | -201.8                        | 1.21                          | -1.21                        | -0.56                       |
| 4,193.0                     | 4.40               | 335.50         | 4,181.5                     | 208.3           | -74.9           | -208.9                        | 0.56                          | -0.55                        | -1.20                       |
| 4,288.0                     | 3.16               | 334.89         | 4,276.3                     | 214.0           | -77.5           | -214.6                        | 1.31                          | -1.31                        | -0.64                       |
| 4,383.0                     | 3.25               | 341.83         | 4,371.2                     | 218.9           | -79.5           | -219.5                        | 0.42                          | 0.09                         | 7.31                        |
| 4,478.0                     | 4.44               | 341.21         | 4,466.0                     | 224.9           | -81.5           | -225.6                        | 1.25                          | 1.25                         | -0.65                       |
| 4,573.0                     | 6.51               | 348.42         | 4,560.5                     | 233.7           | -83.7           | -234.3                        | 2.29                          | 2.18                         | 7.59                        |
| 4,668.0                     | 8.00               | 352.90         | 4,654.8                     | 245.5           | -85.6           | -246.2                        | 1.68                          | 1.57                         | 4.72                        |
| 4,751.9                     | 6.71               | 358.35         | 4,738.0                     | 256.2           | -86.5           | -256.9                        | 1.74                          | -1.53                        | 6.50                        |



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**Wellbore:** OWB  
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**Local Co-ordinate Reference:** Well Hyperion State #221H  
**TVD Reference:** KB @ 3563.5usft (H&P 388)  
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**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 5000.15 Single User Db

## Survey

| Measured Depth (usft)       | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|-----------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| <b>Base Salt</b>            |                 |             |                       |              |              |                         |                         |                        |                       |
| 4,763.0                     | 6.55            | 359.23      | 4,749.0               | 257.5        | -86.5        | -258.2                  | 1.74                    | -1.48                  | 7.92                  |
| 4,858.0                     | 7.12            | 355.72      | 4,843.3               | 268.8        | -87.0        | -269.5                  | 0.74                    | 0.60                   | -3.69                 |
| 4,952.0                     | 8.13            | 351.50      | 4,936.5               | 281.2        | -88.5        | -281.9                  | 1.23                    | 1.07                   | -4.49                 |
| 5,047.0                     | 6.99            | 350.53      | 5,030.7               | 293.5        | -90.4        | -294.2                  | 1.21                    | -1.20                  | -1.02                 |
| 5,054.4                     | 6.90            | 350.47      | 5,038.0               | 294.4        | -90.6        | -295.1                  | 1.22                    | -1.21                  | -0.87                 |
| <b>Delaware Mountain Gp</b> |                 |             |                       |              |              |                         |                         |                        |                       |
| 5,059.4                     | 6.84            | 350.42      | 5,043.0               | 295.0        | -90.7        | -295.7                  | 1.22                    | -1.21                  | -0.89                 |
| <b>Bell Canyon</b>          |                 |             |                       |              |              |                         |                         |                        |                       |
| 5,084.6                     | 6.53            | 350.18      | 5,068.0               | 297.9        | -91.2        | -298.6                  | 1.22                    | -1.21                  | -0.94                 |
| <b>Lamar</b>                |                 |             |                       |              |              |                         |                         |                        |                       |
| 5,094.0                     | 6.42            | 350.09      | 5,077.3               | 298.9        | -91.3        | -299.7                  | 1.22                    | -1.21                  | -1.00                 |
| 5,104.7                     | 6.40            | 349.97      | 5,088.0               | 300.1        | -91.5        | -300.8                  | 0.19                    | -0.14                  | -1.14                 |
| <b>Ramsey Sand</b>          |                 |             |                       |              |              |                         |                         |                        |                       |
| 5,221.0                     | 6.24            | 348.60      | 5,203.6               | 312.7        | -93.9        | -313.4                  | 0.19                    | -0.14                  | -1.18                 |
| 5,316.0                     | 7.78            | 344.03      | 5,297.9               | 323.9        | -96.7        | -324.7                  | 1.72                    | 1.62                   | -4.81                 |
| 5,410.0                     | 8.57            | 343.76      | 5,390.9               | 336.8        | -100.4       | -337.6                  | 0.84                    | 0.84                   | -0.29                 |
| 5,505.0                     | 8.66            | 344.11      | 5,484.8               | 350.4        | -104.4       | -351.3                  | 0.11                    | 0.09                   | 0.37                  |
| 5,600.0                     | 8.75            | 343.94      | 5,578.7               | 364.3        | -108.3       | -365.1                  | 0.10                    | 0.09                   | -0.18                 |
| 5,695.0                     | 8.70            | 342.00      | 5,672.6               | 378.0        | -112.5       | -378.9                  | 0.31                    | -0.05                  | -2.04                 |
| 5,790.0                     | 7.82            | 337.26      | 5,766.7               | 390.8        | -117.3       | -391.8                  | 1.17                    | -0.93                  | -4.99                 |
| 5,885.0                     | 6.55            | 337.08      | 5,860.9               | 401.8        | -121.9       | -402.8                  | 1.34                    | -1.34                  | -0.19                 |
| 5,980.0                     | 4.88            | 337.35      | 5,955.4               | 410.5        | -125.5       | -411.5                  | 1.76                    | -1.76                  | 0.28                  |
| 6,032.8                     | 4.83            | 336.43      | 6,008.0               | 414.6        | -127.3       | -415.6                  | 0.18                    | -0.10                  | -1.74                 |
| <b>Cherry Canyon</b>        |                 |             |                       |              |              |                         |                         |                        |                       |
| 6,075.0                     | 4.79            | 335.68      | 6,050.1               | 417.9        | -128.7       | -418.9                  | 0.18                    | -0.09                  | -1.78                 |
| 6,170.0                     | 4.79            | 336.20      | 6,144.8               | 425.1        | -132.0       | -426.1                  | 0.05                    | 0.00                   | 0.55                  |
| 6,264.0                     | 4.75            | 335.15      | 6,238.4               | 432.2        | -135.2       | -433.3                  | 0.10                    | -0.04                  | -1.12                 |
| 6,359.0                     | 4.79            | 334.36      | 6,333.1               | 439.4        | -138.5       | -440.5                  | 0.08                    | 0.04                   | -0.83                 |
| 6,454.0                     | 4.84            | 334.53      | 6,427.8               | 446.6        | -142.0       | -447.7                  | 0.05                    | 0.05                   | 0.18                  |
| 6,549.0                     | 4.92            | 332.51      | 6,522.4               | 453.8        | -145.6       | -454.9                  | 0.20                    | 0.08                   | -2.13                 |
| 6,643.0                     | 3.96            | 338.84      | 6,616.1               | 460.4        | -148.6       | -461.6                  | 1.15                    | -1.02                  | 6.73                  |
| 6,738.0                     | 1.89            | 355.89      | 6,711.0               | 465.0        | -149.9       | -466.2                  | 2.34                    | -2.18                  | 17.95                 |
| 6,833.0                     | 0.97            | 8.37        | 6,806.0               | 467.4        | -149.9       | -468.6                  | 1.02                    | -0.97                  | 13.14                 |
| 6,928.0                     | 0.62            | 315.64      | 6,901.0               | 468.5        | -150.1       | -469.7                  | 0.81                    | -0.37                  | -55.51                |
| 7,023.0                     | 0.35            | 257.81      | 6,996.0               | 468.8        | -150.8       | -470.0                  | 0.55                    | -0.28                  | -60.87                |
| 7,118.0                     | 0.53            | 238.91      | 7,091.0               | 468.6        | -151.5       | -469.8                  | 0.24                    | 0.19                   | -19.89                |
| 7,213.0                     | 0.66            | 238.82      | 7,186.0               | 468.0        | -152.3       | -469.3                  | 0.14                    | 0.14                   | -0.09                 |
| 7,308.0                     | 0.88            | 235.13      | 7,281.0               | 467.3        | -153.4       | -468.6                  | 0.24                    | 0.23                   | -3.88                 |
| 7,402.0                     | 0.84            | 215.44      | 7,374.9               | 466.4        | -154.4       | -467.6                  | 0.32                    | -0.04                  | -20.95                |
| 7,497.0                     | 1.05            | 214.83      | 7,469.9               | 465.1        | -155.3       | -466.3                  | 0.22                    | 0.22                   | -0.64                 |
| 7,540.1                     | 1.07            | 209.23      | 7,513.0               | 464.4        | -155.7       | -465.7                  | 0.24                    | 0.04                   | -12.99                |
| <b>Brushy Canyon</b>        |                 |             |                       |              |              |                         |                         |                        |                       |
| 7,592.0                     | 1.10            | 202.79      | 7,564.9               | 463.5        | -156.1       | -464.8                  | 0.24                    | 0.06                   | -12.41                |
| 7,687.0                     | 1.14            | 206.21      | 7,659.9               | 461.8        | -156.9       | -463.1                  | 0.08                    | 0.04                   | 3.60                  |



# Intrepid Survey Report



|                  |                                 |                                     |                            |
|------------------|---------------------------------|-------------------------------------|----------------------------|
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| <b>Project:</b>  | Lea County, NM (NAD 83 NME)     | <b>TVD Reference:</b>               | KB @ 3563.5usft (H&P 388)  |
| <b>Site:</b>     | (Hyperion) Sec-20_T-24-S_R-33-E | <b>MD Reference:</b>                | KB @ 3563.5usft (H&P 388)  |
| <b>Well:</b>     | Hyperion State #221H            | <b>North Reference:</b>             | Grid                       |
| <b>Wellbore:</b> | OWB                             | <b>Survey Calculation Method:</b>   | Minimum Curvature          |
| <b>Design:</b>   | AWB                             | <b>Database:</b>                    | EDM 5000.15 Single User Db |

## Survey

| Measured Depth (usft)       | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|-----------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 7,782.0                     | 1.19            | 219.57      | 7,754.9               | 460.2        | -157.9       | -461.5                  | 0.29                    | 0.05                   | 14.06                 |
| 7,877.0                     | 0.92            | 207.27      | 7,849.9               | 458.8        | -158.9       | -460.1                  | 0.37                    | -0.28                  | -12.95                |
| 7,972.0                     | 1.23            | 215.79      | 7,944.8               | 457.3        | -159.8       | -458.6                  | 0.37                    | 0.33                   | 8.97                  |
| 8,066.0                     | 0.48            | 295.77      | 8,038.8               | 456.6        | -160.8       | -457.9                  | 1.32                    | -0.80                  | 85.09                 |
| 8,161.0                     | 0.66            | 293.05      | 8,133.8               | 457.0        | -161.7       | -458.3                  | 0.19                    | 0.19                   | -2.86                 |
| 8,256.0                     | 0.75            | 267.74      | 8,228.8               | 457.2        | -162.8       | -458.5                  | 0.34                    | 0.09                   | -26.64                |
| 8,351.0                     | 0.79            | 250.33      | 8,323.8               | 457.0        | -164.0       | -458.3                  | 0.25                    | 0.04                   | -18.33                |
| 8,446.0                     | 0.66            | 235.74      | 8,418.8               | 456.5        | -165.1       | -457.8                  | 0.24                    | -0.14                  | -15.36                |
| 8,541.0                     | 0.84            | 232.40      | 8,513.8               | 455.7        | -166.1       | -457.0                  | 0.19                    | 0.19                   | -3.52                 |
| 8,636.0                     | 0.84            | 215.44      | 8,608.8               | 454.7        | -167.0       | -456.1                  | 0.26                    | 0.00                   | -17.85                |
| 8,730.0                     | 0.22            | 297.88      | 8,702.8               | 454.3        | -167.6       | -455.6                  | 0.89                    | -0.66                  | 87.70                 |
| 8,825.0                     | 0.66            | 349.21      | 8,797.8               | 454.9        | -167.9       | -456.2                  | 0.58                    | 0.46                   | 54.03                 |
| 8,920.0                     | 1.49            | 25.07       | 8,892.8               | 456.5        | -167.4       | -457.9                  | 1.08                    | 0.87                   | 37.75                 |
| 9,015.0                     | 1.54            | 18.57       | 8,987.7               | 458.9        | -166.5       | -460.2                  | 0.19                    | 0.05                   | -6.84                 |
| 9,075.3                     | 1.57            | 33.98       | 9,048.0               | 460.3        | -165.8       | -461.6                  | 0.69                    | 0.04                   | 25.57                 |
| <b>Bone Spring Lime</b>     |                 |             |                       |              |              |                         |                         |                        |                       |
| 9,110.0                     | 1.63            | 42.30       | 9,082.7               | 461.1        | -165.2       | -462.4                  | 0.69                    | 0.18                   | 23.95                 |
| 9,205.0                     | 1.05            | 42.39       | 9,177.7               | 462.7        | -163.7       | -464.0                  | 0.61                    | -0.61                  | 0.09                  |
| 9,265.3                     | 0.93            | 30.06       | 9,238.0               | 463.5        | -163.1       | -464.8                  | 0.41                    | -0.20                  | -20.44                |
| <b>Upper Avalon</b>         |                 |             |                       |              |              |                         |                         |                        |                       |
| 9,300.0                     | 0.88            | 21.64       | 9,272.7               | 464.0        | -162.8       | -465.3                  | 0.41                    | -0.14                  | -24.29                |
| 9,395.0                     | 0.70            | 313.79      | 9,367.7               | 465.1        | -163.0       | -466.4                  | 0.94                    | -0.19                  | -71.42                |
| 9,489.0                     | 0.75            | 322.32      | 9,461.6               | 466.0        | -163.8       | -467.3                  | 0.13                    | 0.05                   | 9.07                  |
| 9,550.4                     | 0.98            | 283.66      | 9,523.0               | 466.4        | -164.5       | -467.7                  | 1.00                    | 0.38                   | -63.01                |
| <b>Middle Avalon</b>        |                 |             |                       |              |              |                         |                         |                        |                       |
| 9,584.0                     | 1.23            | 271.60      | 9,556.6               | 466.5        | -165.2       | -467.8                  | 1.00                    | 0.73                   | -35.84                |
| 9,679.0                     | 1.98            | 256.93      | 9,651.6               | 466.2        | -167.8       | -467.5                  | 0.89                    | 0.79                   | -15.44                |
| 9,774.0                     | 2.33            | 268.88      | 9,746.5               | 465.8        | -171.3       | -467.1                  | 0.60                    | 0.37                   | 12.58                 |
| 9,869.0                     | 3.03            | 274.94      | 9,841.4               | 465.9        | -175.8       | -467.3                  | 0.79                    | 0.74                   | 6.38                  |
| 9,880.6                     | 3.01            | 276.33      | 9,853.0               | 466.0        | -176.4       | -467.4                  | 0.65                    | -0.14                  | 12.01                 |
| <b>Lower Avalon</b>         |                 |             |                       |              |              |                         |                         |                        |                       |
| 9,963.0                     | 2.95            | 286.55      | 9,935.3               | 466.8        | -180.6       | -468.3                  | 0.65                    | -0.08                  | 12.40                 |
| 10,058.0                    | 2.51            | 307.02      | 10,030.2              | 468.8        | -184.6       | -470.3                  | 1.12                    | -0.46                  | 21.55                 |
| 10,105.8                    | 1.29            | 352.10      | 10,078.0              | 470.0        | -185.5       | -471.4                  | 3.85                    | -2.56                  | 94.25                 |
| <b>1st Bone Spring Sand</b> |                 |             |                       |              |              |                         |                         |                        |                       |
| 10,153.0                    | 1.93            | 57.33       | 10,125.2              | 470.9        | -184.9       | -472.4                  | 3.85                    | 1.36                   | 138.29                |
| 10,247.0                    | 3.38            | 88.09       | 10,219.1              | 471.9        | -180.8       | -473.3                  | 2.11                    | 1.54                   | 32.72                 |
| 10,342.0                    | 3.74            | 91.96       | 10,313.9              | 471.8        | -174.9       | -473.2                  | 0.46                    | 0.38                   | 4.07                  |
| 10,436.3                    | 1.99            | 83.81       | 10,408.0              | 471.9        | -170.2       | -473.3                  | 1.90                    | -1.85                  | -8.65                 |
| <b>2nd Bone Spring Carb</b> |                 |             |                       |              |              |                         |                         |                        |                       |
| 10,437.0                    | 1.98            | 83.69       | 10,408.7              | 471.9        | -170.2       | -473.3                  | 1.90                    | -1.81                  | -16.27                |
| 10,532.0                    | 1.89            | 85.01       | 10,503.7              | 472.2        | -167.0       | -473.6                  | 0.11                    | -0.09                  | 1.39                  |
| 10,627.0                    | 1.89            | 81.85       | 10,598.6              | 472.6        | -163.9       | -473.9                  | 0.11                    | 0.00                   | -3.33                 |
| 10,721.0                    | 1.67            | 70.69       | 10,692.6              | 473.3        | -161.0       | -474.5                  | 0.44                    | -0.23                  | -11.87                |



Intrepid  
Survey Report



Company: Tap Rock Resources, LLC  
Project: Lea County, NM (NAD 83 NME)  
Site: (Hyperion) Sec-20\_T-24-S\_R-33-E  
Well: Hyperion State #221H  
Wellbore: OWB  
Design: AWB

Local Co-ordinate Reference: Well Hyperion State #221H  
TVD Reference: KB @ 3563.5usft (H&P 388)  
MD Reference: KB @ 3563.5usft (H&P 388)  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature  
Database: EDM 5000.15 Single User Db

Survey

| Measured<br>Depth<br>(usft)                      | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Vertical<br>Section<br>(usft) | Dogleg<br>Rate<br>(°/100usft) | Build<br>Rate<br>(°/100usft) | Turn<br>Rate<br>(°/100usft) |
|--------------------------------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|-------------------------------|-------------------------------|------------------------------|-----------------------------|
| 10,756.4                                         | 1.55               | 67.37          | 10,728.0                    | 473.6           | -160.1          | -474.9                        | 0.43                          | -0.34                        | -9.38                       |
| <b>2nd Bone Spring Sand</b>                      |                    |                |                             |                 |                 |                               |                               |                              |                             |
| 10,816.0                                         | 1.36               | 60.49          | 10,787.6                    | 474.3           | -158.7          | -475.5                        | 0.43                          | -0.32                        | -11.54                      |
| 10,911.0                                         | 1.23               | 56.71          | 10,882.5                    | 475.4           | -156.9          | -476.6                        | 0.16                          | -0.14                        | -3.98                       |
| 11,006.0                                         | 0.35               | 81.50          | 10,977.5                    | 476.0           | -155.8          | -477.2                        | 0.97                          | -0.93                        | 26.09                       |
| 11,101.0                                         | 0.44               | 268.70         | 11,072.5                    | 476.0           | -155.8          | -477.3                        | 0.83                          | 0.09                         | -181.89                     |
| 11,196.0                                         | 0.79               | 296.13         | 11,167.5                    | 476.3           | -156.8          | -477.6                        | 0.47                          | 0.37                         | 28.87                       |
| 11,290.0                                         | 1.05               | 280.48         | 11,261.5                    | 476.8           | -158.2          | -478.0                        | 0.38                          | 0.28                         | -16.65                      |
| 11,366.5                                         | 1.19               | 275.75         | 11,338.0                    | 477.0           | -159.7          | -478.2                        | 0.22                          | 0.19                         | -6.19                       |
| <b>3rd Bone Spring Carb</b>                      |                    |                |                             |                 |                 |                               |                               |                              |                             |
| 11,385.0                                         | 1.23               | 274.77         | 11,356.5                    | 477.0           | -160.1          | -478.3                        | 0.22                          | 0.19                         | -5.28                       |
| 11,480.0                                         | 1.01               | 258.51         | 11,451.5                    | 476.9           | -161.9          | -478.2                        | 0.40                          | -0.23                        | -17.12                      |
| 11,575.0                                         | 0.79               | 231.88         | 11,546.5                    | 476.3           | -163.3          | -477.6                        | 0.49                          | -0.23                        | -28.03                      |
| 11,670.0                                         | 1.01               | 207.44         | 11,641.5                    | 475.2           | -164.2          | -476.5                        | 0.46                          | 0.23                         | -25.73                      |
| 11,765.0                                         | 1.36               | 182.66         | 11,736.4                    | 473.3           | -164.6          | -474.6                        | 0.64                          | 0.37                         | -26.08                      |
| 11,859.0                                         | 1.23               | 183.10         | 11,830.4                    | 471.2           | -164.7          | -472.5                        | 0.14                          | -0.14                        | 0.47                        |
| 11,954.0                                         | 1.19               | 183.89         | 11,925.4                    | 469.2           | -164.8          | -470.5                        | 0.05                          | -0.04                        | 0.83                        |
| 11,996.6                                         | 1.26               | 186.60         | 11,968.0                    | 468.3           | -164.9          | -469.6                        | 0.22                          | 0.18                         | 6.35                        |
| <b>3rd Bone Spring Sand</b>                      |                    |                |                             |                 |                 |                               |                               |                              |                             |
| 12,049.0                                         | 1.36               | 189.51         | 12,020.4                    | 467.1           | -165.1          | -468.4                        | 0.22                          | 0.18                         | 5.56                        |
| 12,144.0                                         | 1.54               | 186.17         | 12,115.3                    | 464.7           | -165.4          | -466.0                        | 0.21                          | 0.19                         | -3.52                       |
| 12,239.0                                         | 1.49               | 182.22         | 12,210.3                    | 462.2           | -165.6          | -463.5                        | 0.12                          | -0.05                        | -4.16                       |
| 12,286.7                                         | 1.61               | 179.51         | 12,258.0                    | 460.9           | -165.6          | -462.3                        | 0.29                          | 0.24                         | -5.68                       |
| <b>3rd BS W Sand</b>                             |                    |                |                             |                 |                 |                               |                               |                              |                             |
| 12,313.0                                         | 1.67               | 178.18         | 12,284.3                    | 460.2           | -165.6          | -461.5                        | 0.29                          | 0.25                         | -5.06                       |
| 12,360.0                                         | 1.76               | 172.81         | 12,331.3                    | 458.8           | -165.5          | -460.1                        | 0.39                          | 0.19                         | -11.43                      |
| 12,372.8                                         | 2.04               | 169.96         | 12,344.0                    | 458.4           | -165.4          | -459.7                        | 2.29                          | 2.16                         | -22.37                      |
| <b>Wolfcamp A X Sand</b>                         |                    |                |                             |                 |                 |                               |                               |                              |                             |
| 12,455.0                                         | 3.87               | 161.56         | 12,426.1                    | 454.3           | -164.3          | -455.6                        | 2.29                          | 2.23                         | -10.21                      |
| 12,487.0                                         | 6.93               | 171.51         | 12,458.0                    | 451.4           | -163.7          | -452.7                        | 9.97                          | 9.57                         | 31.09                       |
| <b>Wolfcamp A Y Sand</b>                         |                    |                |                             |                 |                 |                               |                               |                              |                             |
| 12,550.0                                         | 13.14              | 177.30         | 12,520.0                    | 440.4           | -162.8          | -441.7                        | 9.97                          | 9.85                         | 9.19                        |
| 12,591.4                                         | 16.47              | 177.68         | 12,560.0                    | 429.9           | -162.3          | -431.2                        | 8.06                          | 8.05                         | 0.92                        |
| <b>Wolfcamp A Lower</b>                          |                    |                |                             |                 |                 |                               |                               |                              |                             |
| 12,620.1                                         | 18.78              | 177.87         | 12,587.4                    | 421.2           | -162.0          | -422.5                        | 8.06                          | 8.05                         | 0.65                        |
| <b>FTP @ 12620.1'MD, 100'FNL &amp; 301.6'FWL</b> |                    |                |                             |                 |                 |                               |                               |                              |                             |
| 12,645.0                                         | 20.79              | 178.00         | 12,610.8                    | 412.8           | -161.7          | -414.0                        | 8.06                          | 8.05                         | 0.52                        |
| 12,740.0                                         | 31.96              | 177.39         | 12,695.8                    | 370.7           | -159.9          | -371.9                        | 11.76                         | 11.76                        | -0.64                       |
| 12,834.0                                         | 38.15              | 174.84         | 12,772.7                    | 316.8           | -156.2          | -318.1                        | 6.77                          | 6.59                         | -2.71                       |
| 12,904.9                                         | 46.61              | 172.84         | 12,825.0                    | 269.4           | -151.0          | -270.6                        | 12.08                         | 11.93                        | -2.82                       |
| <b>Wolfcamp B</b>                                |                    |                |                             |                 |                 |                               |                               |                              |                             |
| 12,929.0                                         | 49.49              | 172.29         | 12,841.1                    | 251.6           | -148.7          | -252.8                        | 12.08                         | 11.96                        | -2.30                       |
| 13,024.0                                         | 59.74              | 172.55         | 12,896.1                    | 174.9           | -138.5          | -176.0                        | 10.79                         | 10.79                        | 0.27                        |
| 13,119.0                                         | 71.47              | 172.55         | 12,935.2                    | 89.3            | -127.3          | -90.3                         | 12.35                         | 12.35                        | 0.00                        |
| 13,214.0                                         | 84.92              | 171.85         | 12,954.6                    | -2.6            | -114.7          | 1.7                           | 14.18                         | 14.16                        | -0.74                       |



**Intrepid**  
Survey Report



**Company:** Tap Rock Resources, LLC  
**Project:** Lea County, NM (NAD 83 NME)  
**Site:** (Hyperion) Sec-20\_T-24-S\_R-33-E  
**Well:** Hyperion State #221H  
**Wellbore:** OWB  
**Design:** AWB

**Local Co-ordinate Reference:** Well Hyperion State #221H  
**TVD Reference:** KB @ 3563.5usft (H&P 388)  
**MD Reference:** KB @ 3563.5usft (H&P 388)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 5000.15 Single User Db

**Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 13,253.0              | 89.01           | 173.78      | 12,956.7              | -41.3        | -109.8       | 40.4                    | 11.59                   | 10.49                  | 4.95                  |
| 13,308.0              | 91.16           | 178.70      | 12,956.6              | -96.1        | -106.2       | 95.3                    | 9.76                    | 3.91                   | 8.95                  |
| 13,403.0              | 91.21           | 181.16      | 12,954.6              | -191.1       | -106.1       | 190.2                   | 2.59                    | 0.05                   | 2.59                  |
| 13,498.0              | 93.85           | 181.96      | 12,950.4              | -285.9       | -108.7       | 285.1                   | 2.90                    | 2.78                   | 0.84                  |
| 13,593.0              | 88.48           | 180.90      | 12,948.5              | -380.9       | -111.0       | 380.0                   | 5.76                    | -5.65                  | -1.12                 |
| 13,620.0              | 88.97           | 180.81      | 12,949.1              | -407.9       | -111.4       | 406.9                   | 1.85                    | 1.81                   | -0.33                 |
| 13,715.0              | 90.33           | 181.43      | 12,949.7              | -502.8       | -113.3       | 501.9                   | 1.57                    | 1.43                   | 0.65                  |
| 13,810.0              | 90.11           | 180.64      | 12,949.3              | -597.8       | -115.0       | 596.9                   | 0.86                    | -0.23                  | -0.83                 |
| 13,904.0              | 90.37           | 180.02      | 12,948.9              | -691.8       | -115.6       | 690.9                   | 0.72                    | 0.28                   | -0.66                 |
| 13,999.0              | 90.42           | 179.93      | 12,948.3              | -786.8       | -115.5       | 785.9                   | 0.11                    | 0.05                   | -0.09                 |
| 14,093.0              | 91.30           | 179.58      | 12,946.9              | -880.8       | -115.1       | 879.8                   | 1.01                    | 0.94                   | -0.37                 |
| 14,188.0              | 91.91           | 179.49      | 12,944.2              | -975.8       | -114.3       | 974.8                   | 0.65                    | 0.64                   | -0.09                 |
| 14,283.0              | 91.60           | 179.14      | 12,941.3              | -1,070.7     | -113.2       | 1,069.8                 | 0.49                    | -0.33                  | -0.37                 |
| 14,377.0              | 91.78           | 179.06      | 12,938.5              | -1,164.7     | -111.7       | 1,163.7                 | 0.21                    | 0.19                   | -0.09                 |
| 14,472.0              | 91.47           | 178.97      | 12,935.8              | -1,259.6     | -110.1       | 1,258.7                 | 0.34                    | -0.33                  | -0.09                 |
| 14,567.0              | 92.00           | 179.23      | 12,933.0              | -1,354.5     | -108.6       | 1,353.6                 | 0.62                    | 0.56                   | 0.27                  |
| 14,662.0              | 91.87           | 180.46      | 12,929.8              | -1,449.5     | -108.3       | 1,448.6                 | 1.30                    | -0.14                  | 1.29                  |
| 14,757.0              | 92.13           | 180.90      | 12,926.4              | -1,544.4     | -109.5       | 1,543.5                 | 0.54                    | 0.27                   | 0.46                  |
| 14,852.0              | 89.85           | 180.55      | 12,924.8              | -1,639.4     | -110.7       | 1,638.5                 | 2.43                    | -2.40                  | -0.37                 |
| 14,946.0              | 87.34           | 179.93      | 12,927.1              | -1,733.4     | -111.1       | 1,732.4                 | 2.75                    | -2.67                  | -0.66                 |
| 15,041.0              | 88.35           | 179.67      | 12,930.7              | -1,828.3     | -110.7       | 1,827.3                 | 1.10                    | 1.06                   | -0.27                 |
| 15,136.0              | 87.52           | 179.58      | 12,934.1              | -1,923.2     | -110.1       | 1,922.3                 | 0.88                    | -0.87                  | -0.09                 |
| 15,230.0              | 88.40           | 179.49      | 12,937.4              | -2,017.2     | -109.4       | 2,016.2                 | 0.94                    | 0.94                   | -0.10                 |
| 15,325.0              | 88.84           | 178.70      | 12,939.7              | -2,112.1     | -107.9       | 2,111.2                 | 0.95                    | 0.46                   | -0.83                 |
| 15,420.0              | 89.54           | 177.30      | 12,941.1              | -2,207.0     | -104.5       | 2,206.1                 | 1.65                    | 0.74                   | -1.47                 |
| 15,514.0              | 91.25           | 178.79      | 12,940.4              | -2,301.0     | -101.3       | 2,300.1                 | 2.41                    | 1.82                   | 1.59                  |
| 15,609.0              | 91.25           | 178.97      | 12,938.4              | -2,395.9     | -99.5        | 2,395.1                 | 0.19                    | 0.00                   | 0.19                  |
| 15,704.0              | 93.14           | 180.81      | 12,934.7              | -2,490.9     | -99.3        | 2,490.0                 | 2.78                    | 1.99                   | 1.94                  |
| 15,798.0              | 92.40           | 181.43      | 12,930.2              | -2,584.7     | -101.1       | 2,583.8                 | 1.03                    | -0.79                  | 0.66                  |
| 15,893.0              | 91.60           | 180.99      | 12,926.9              | -2,679.7     | -103.1       | 2,678.7                 | 0.96                    | -0.84                  | -0.46                 |
| 15,987.0              | 91.16           | 180.64      | 12,924.6              | -2,773.6     | -104.5       | 2,772.7                 | 0.60                    | -0.47                  | -0.37                 |
| 16,082.0              | 92.48           | 180.81      | 12,921.6              | -2,868.6     | -105.7       | 2,867.6                 | 1.40                    | 1.39                   | 0.18                  |
| 16,177.0              | 91.12           | 180.73      | 12,918.6              | -2,963.5     | -106.9       | 2,962.6                 | 1.43                    | -1.43                  | -0.08                 |
| 16,272.0              | 90.77           | 180.73      | 12,917.0              | -3,058.5     | -108.2       | 3,057.5                 | 0.37                    | -0.37                  | 0.00                  |
| 16,367.0              | 90.24           | 180.64      | 12,916.2              | -3,153.5     | -109.3       | 3,152.5                 | 0.57                    | -0.56                  | -0.09                 |
| 16,461.0              | 91.16           | 180.99      | 12,915.0              | -3,247.5     | -110.6       | 3,246.5                 | 1.05                    | 0.98                   | 0.37                  |
| 16,556.0              | 90.29           | 180.81      | 12,913.8              | -3,342.4     | -112.1       | 3,341.4                 | 0.94                    | -0.92                  | -0.19                 |
| 16,651.0              | 88.18           | 179.76      | 12,915.1              | -3,437.4     | -112.6       | 3,436.4                 | 2.48                    | -2.22                  | -1.11                 |
| 16,745.0              | 89.01           | 180.20      | 12,917.4              | -3,531.4     | -112.6       | 3,530.4                 | 1.00                    | 0.88                   | 0.47                  |
| 16,840.0              | 88.97           | 180.11      | 12,919.1              | -3,626.4     | -112.8       | 3,625.4                 | 0.10                    | -0.04                  | -0.09                 |
| 16,935.0              | 90.11           | 180.29      | 12,919.8              | -3,721.4     | -113.1       | 3,720.3                 | 1.21                    | 1.20                   | 0.19                  |
| 17,029.0              | 89.23           | 179.76      | 12,920.4              | -3,815.4     | -113.2       | 3,814.3                 | 1.09                    | -0.94                  | -0.56                 |
| 17,124.0              | 89.58           | 179.58      | 12,921.4              | -3,910.4     | -112.6       | 3,909.3                 | 0.41                    | 0.37                   | -0.19                 |



# Intrepid Survey Report



**Company:** Tap Rock Resources, LLC  
**Project:** Lea County, NM (NAD 83 NME)  
**Site:** (Hyperion) Sec-20\_T-24-S\_R-33-E  
**Well:** Hyperion State #221H  
**Wellbore:** OWB  
**Design:** AWB

**Local Co-ordinate Reference:** Well Hyperion State #221H  
**TVD Reference:** KB @ 3563.5usft (H&P 388)  
**MD Reference:** KB @ 3563.5usft (H&P 388)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 5000.15 Single User Db

## Survey

| Measured<br>Depth<br>(usft)                                  | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Vertical<br>Section<br>(usft) | Dogleg<br>Rate<br>(°/100usft) | Build<br>Rate<br>(°/100usft) | Turn<br>Rate<br>(°/100usft) |
|--------------------------------------------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|-------------------------------|-------------------------------|------------------------------|-----------------------------|
| 17,218.0                                                     | 89.45              | 179.23         | 12,922.2                    | -4,004.4        | -111.7          | 4,003.3                       | 0.40                          | -0.14                        | -0.37                       |
| 17,313.0                                                     | 89.27              | 178.88         | 12,923.2                    | -4,099.3        | -110.1          | 4,098.3                       | 0.41                          | -0.19                        | -0.37                       |
| 17,408.0                                                     | 88.13              | 178.62         | 12,925.4                    | -4,194.3        | -108.0          | 4,193.3                       | 1.23                          | -1.20                        | -0.27                       |
| 17,503.0                                                     | 87.82              | 178.00         | 12,928.7                    | -4,289.2        | -105.2          | 4,288.2                       | 0.73                          | -0.33                        | -0.65                       |
| 17,597.0                                                     | 89.76              | 177.74         | 12,930.7                    | -4,383.1        | -101.7          | 4,382.1                       | 2.08                          | 2.06                         | -0.28                       |
| 17,692.0                                                     | 92.75              | 177.56         | 12,928.6                    | -4,478.0        | -97.8           | 4,477.0                       | 3.15                          | 3.15                         | -0.19                       |
| 17,786.0                                                     | 93.01              | 177.39         | 12,923.9                    | -4,571.8        | -93.7           | 4,570.9                       | 0.33                          | 0.28                         | -0.18                       |
| 17,864.0                                                     | 93.63              | 177.30         | 12,919.4                    | -4,649.6        | -90.1           | 4,648.7                       | 0.80                          | 0.79                         | -0.12                       |
| <b>LAST SVY</b>                                              |                    |                |                             |                 |                 |                               |                               |                              |                             |
| 17,879.7                                                     | 93.63              | 177.30         | 12,918.4                    | -4,665.2        | -89.4           | 4,664.3                       | 0.00                          | 0.00                         | 0.00                        |
| <b>LTP @ 17879.7'MD, 100'FSL &amp; 333.8'FWL</b>             |                    |                |                             |                 |                 |                               |                               |                              |                             |
| 17,939.0                                                     | 93.63              | 177.30         | 12,914.7                    | -4,724.3        | -86.6           | 4,723.5                       | 0.00                          | 0.00                         | 0.00                        |
| <b>Projection to TD @ 17939'MD, 30.8'FSL &amp; 336.5'FWL</b> |                    |                |                             |                 |                 |                               |                               |                              |                             |

## Design Targets

| Target Name                                                                                            | Dip Angle<br>(°) | Dip Dir.<br>(°) | TVD<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Northing<br>(usft) | Easting<br>(usft) | Latitude         | Longitude        |
|--------------------------------------------------------------------------------------------------------|------------------|-----------------|---------------|-----------------|-----------------|--------------------|-------------------|------------------|------------------|
| - hit/miss target                                                                                      |                  |                 |               |                 |                 |                    |                   |                  |                  |
| - Shape                                                                                                |                  |                 |               |                 |                 |                    |                   |                  |                  |
| LTP (Hyperion State #                                                                                  | 0.00             | 0.00            | 12,925.0      | -4,655.0        | -93.0           | 435,879.00         | 767,625.00        | 32° 11' 46.294 N | 103° 36' 6.452 W |
| - actual wellpath misses target center by 6.7usft at 17868.9usft MD (12919.1 TVD, -4654.5 N, -89.9 E)  |                  |                 |               |                 |                 |                    |                   |                  |                  |
| - Point                                                                                                |                  |                 |               |                 |                 |                    |                   |                  |                  |
| PBHL (Hyperion State                                                                                   | -0.30            | 179.54          | 12,925.0      | -4,725.0        | -92.0           | 435,809.00         | 767,626.00        | 32° 11' 45.601 N | 103° 36' 6.446 W |
| - actual wellpath misses target center by 11.7usft at 17938.8usft MD (12914.7 TVD, -4724.1 N, -86.6 E) |                  |                 |               |                 |                 |                    |                   |                  |                  |
| - Rectangle (sides W100.0 H5,147.0 D30.0)                                                              |                  |                 |               |                 |                 |                    |                   |                  |                  |
| FTP (Hyperion State #                                                                                  | 0.00             | 0.00            | 12,949.4      | 421.0           | -133.0          | 440,955.00         | 767,585.00        | 32° 12' 36.525 N | 103° 36' 6.515 W |
| - actual wellpath misses target center by 196.2usft at 12896.5usft MD (12819.2 TVD, 275.4 N, -151.7 E) |                  |                 |               |                 |                 |                    |                   |                  |                  |
| - Point                                                                                                |                  |                 |               |                 |                 |                    |                   |                  |                  |



**Intrepid**  
Survey Report



**Company:** Tap Rock Resources, LLC  
**Project:** Lea County, NM (NAD 83 NME)  
**Site:** (Hyperion) Sec-20\_T-24-S\_R-33-E  
**Well:** Hyperion State #221H  
**Wellbore:** OWB  
**Design:** AWB

**Local Co-ordinate Reference:** Well Hyperion State #221H  
**TVD Reference:** KB @ 3563.5usft (H&P 388)  
**MD Reference:** KB @ 3563.5usft (H&P 388)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 5000.15 Single User Db

**Formations**

| Measured Depth (usft) | Vertical Depth (usft) | Name                 | Lithology | Dip (°) | Dip Direction (°) |
|-----------------------|-----------------------|----------------------|-----------|---------|-------------------|
| 1,198.0               | 1,198.0               | Rustler Anhydrite    |           |         |                   |
| 1,553.1               | 1,553.0               | Top Salt             |           |         |                   |
| 4,751.9               | 4,738.0               | Base Salt            |           |         |                   |
| 5,054.4               | 5,038.0               | Delaware Mountain Gp |           |         |                   |
| 5,059.4               | 5,043.0               | Bell Canyon          |           |         |                   |
| 5,084.6               | 5,068.0               | Lamar                |           |         |                   |
| 5,104.7               | 5,088.0               | Ramsey Sand          |           |         |                   |
| 6,032.8               | 6,008.0               | Cherry Canyon        |           |         |                   |
| 7,540.1               | 7,513.0               | Brushy Canyon        |           |         |                   |
| 9,075.3               | 9,048.0               | Bone Spring Lime     |           |         |                   |
| 9,265.3               | 9,238.0               | Upper Avalon         |           |         |                   |
| 9,550.4               | 9,523.0               | Middle Avalon        |           |         |                   |
| 9,880.6               | 9,853.0               | Lower Avalon         |           |         |                   |
| 10,105.8              | 10,078.0              | 1st Bone Spring Sand |           |         |                   |
| 10,436.3              | 10,408.0              | 2nd Bone Spring Carb |           |         |                   |
| 10,756.4              | 10,728.0              | 2nd Bone Spring Sand |           |         |                   |
| 11,366.5              | 11,338.0              | 3rd Bone Spring Carb |           |         |                   |
| 11,996.6              | 11,968.0              | 3rd Bone Spring Sand |           |         |                   |
| 12,286.7              | 12,258.0              | 3rd BS W Sand        |           |         |                   |
| 12,372.8              | 12,344.0              | Wolfcamp A X Sand    |           |         |                   |
| 12,487.0              | 12,458.0              | Wolfcamp A Y Sand    |           |         |                   |
| 12,591.4              | 12,560.0              | Wolfcamp A Lower     |           |         |                   |
| 12,904.9              | 12,825.0              | Wolfcamp B           |           |         |                   |

**Design Annotations**

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates |              | Comment                                           |
|-----------------------|-----------------------|-------------------|--------------|---------------------------------------------------|
|                       |                       | +N/-S (usft)      | +E/-W (usft) |                                                   |
| 12,620.1              | 12,587.4              | 421.2             | -162.0       | FTP @ 12620.1'MD, 100'FNL & 301.6'FWL             |
| 17,864.0              | 12,919.4              | -4,649.6          | -90.1        | LAST SVY                                          |
| 17,879.7              | 12,918.4              | -4,665.2          | -89.4        | LTP @ 17879.7'MD, 100'FSL & 333.8'FWL             |
| 17,939.0              | 12,914.7              | -4,724.3          | -86.6        | Projection to TD @ 17939'MD, 30.8'FSL & 336.5'FWL |

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_