



A Schlumberger Company

***DIRECTIONAL SURVEY REPORT***

RECEIVED

JUL 16 2012

NMOCD ARTESIA

30-015-39735

**YATES PETROLEUM**

***CANYON "BJK" STATE COM #2H***

***EDDY COUNTY, NEW MEXICO***

**PREPARED BY: JUAN ALCOCER**

Pathfinder

6213 WCR 112  
Midland, Texas 79706  
Tel (432)687-1647  
Fax (432)687-1544



DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:  
A) GEORGE SAKAS
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 3-17-12 TO 4-08-12
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: EDDY COUNTY, NM
7. TYPE OF SURVEY(S) PERFORMED: GAMMA-RAY
8. COMPLETE IDENTIFICATION OF WELL:

YATES PETROLEUM  
CANYON "BJK" STATE COM #2H  
EDDY COUNTY, NM  
RIG: PATRIOT 5

9. SURVEY CERTIFIED FROM: 196 TO 14,254 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 5330.87 FEET ON A BEARING OF 269.11 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 14,334 FEET, ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

  
JUAN ALCOCER  
MWD COORDINATOR

# PathFinder Energy Services, Inc.

## BHL Report

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Tie-in Date: 03/17/2012  
Date Completed: 04/08/2012

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YATES PETROLEUM CORP.  
CANYON BJK STATE COM #2H  
EDDY COUNTY, NM  
Rig: PATRIOT 5  
PathFinder Office Supervisor: JUAN ALCOCER  
PathFinder Field Engineers: G.SAKAS  
K.THURMAN

Survey Horiz. Reference: WELLHEAD  
Ref Coordinates: LAT: 32.9.11.8694 N LON: 103.55.10.4176 W  
GRID Reference: NAD83 new mexico east Transverse Mercator  
Ref GRID Coord: X: 669388.7800 Y: 419750.8500  
North Aligned To: GRID NORTH  
Total Magnetic Correction: 7.43° EAST TO GRID  
Vertical Section Plane: 269.32  
Survey Vert. Reference: 26.50' Rotary Table To Ground  
Altitude: 3189.00' Ground To MSL

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|                       |                |             |
|-----------------------|----------------|-------------|
| Measured Depth        | 14334.00       | (feet)      |
| Inclination           | 94.18          | (deg)       |
| Azimuth               | 268.84         | (deg)       |
| True Vertical Depth   | 9201.55        | (feet)      |
| Vertical Section      | 5330.83        | (feet)      |
| Survey X cord         | 664058.55      | (feet)      |
| Survey Y cord         | 419668.35      | (feet)      |
| Survey Lat            | 32.15312541 N  | (deg)       |
| Survey Lon            | 103.93678466 W | (deg)       |
| Rectangular Corr. N/S | 82.50 S        | (feet)      |
| Rectangular Corr. E/W | 5330.23 W      | (feet)      |
| Closure Distance      | 5330.87        | (feet)      |
| Direction of Closure  | 269.11         | (deg)       |
| Dogleg Severity       | 0.00           | (deg/100ft) |

# PathFinder Energy Services, Inc.

## Survey Report

YATES PETROLEUM CORP.  
CANYON BJK STATE COM #2H  
EDDY COUNTY, NM  
Rig: PATRIOT 5  
PathFinder Office Supervisor: JUAN ALCOCER  
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Total Magnetic Correction: 7.43° EAST TO GRID  
Vertical Section Plane: 269.32  
Survey Vert. Reference: 26.50' Rotary Table To Ground  
Altitude: 3189.00' Ground To MSL

Survey Calculations by RX5 V6.04 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 Offsets<br>(ft) (ft) |         | Closure<br>Dist<br>(ft) | Dir<br>(deg) | DLS<br>(dg/100ft) |
|-------------------------------------------|---------------|------------------------|-------------|--------------------------|-----------------------------|-------------------------------------------|---------|-------------------------|--------------|-------------------|
| ORIGIN OF WELL AT SURFACE.                |               |                        |             |                          |                             |                                           |         |                         |              |                   |
| 0.00                                      | 0.00          | 0.00                   | 0.00        | 0.00                     | -0.00                       | 0.00                                      | 0.00    | 0.00@                   | 0.00         | 0.00              |
| THE FOLLOWING ARE PATHFINDER MWD SURVEYS. |               |                        |             |                          |                             |                                           |         |                         |              |                   |
| 196.00                                    | 0.97          | 54.05                  | 195.99      | 196.00                   | -1.35                       | 0.97 N                                    | 1.34 E  | 1.66@                   | 54.05        | 0.49              |
| 266.00                                    | 0.70          | 28.26                  | 265.98      | 70.00                    | -2.05                       | 1.70 N                                    | 2.03 E  | 2.64@                   | 50.01        | 0.65              |
| 325.00                                    | 0.70          | 357.07                 | 324.98      | 59.00                    | -2.21                       | 2.38 N                                    | 2.18 E  | 3.22@                   | 42.50        | 0.64              |
| 413.00                                    | 0.97          | 293.54                 | 412.97      | 88.00                    | -1.51                       | 3.21 N                                    | 1.47 E  | 3.53@                   | 24.56        | 1.03              |
| 503.00                                    | 2.02          | 277.57                 | 502.94      | 90.00                    | 0.76                        | 3.72 N                                    | 0.80 W  | 3.81@                   | 347.82       | 1.24              |
| 604.00                                    | 2.99          | 273.54                 | 603.84      | 101.00                   | 5.15                        | 4.12 N                                    | 5.20 W  | 6.63@                   | 308.41       | 0.98              |
| 712.00                                    | 3.43          | 272.80                 | 711.67      | 108.00                   | 11.18                       | 4.45 N                                    | 11.24 W | 12.09@                  | 291.62       | 0.41              |
| 775.00                                    | 3.17          | 267.88                 | 774.57      | 63.00                    | 14.80                       | 4.48 N                                    | 14.86 W | 15.52@                  | 286.78       | 0.61              |
| 837.00                                    | 3.08          | 262.51                 | 836.48      | 62.00                    | 18.17                       | 4.20 N                                    | 18.22 W | 18.70@                  | 282.98       | 0.49              |
| 900.00                                    | 3.17          | 260.77                 | 899.38      | 63.00                    | 21.58                       | 3.70 N                                    | 21.62 W | 21.94@                  | 279.71       | 0.21              |
| 994.00                                    | 2.73          | 251.64                 | 993.26      | 94.00                    | 26.28                       | 2.58 N                                    | 26.31 W | 26.44@                  | 275.59       | 0.68              |
| 1088.00                                   | 2.55          | 249.94                 | 1087.16     | 94.00                    | 30.38                       | 1.16 N                                    | 30.40 W | 30.42@                  | 272.18       | 0.21              |
| 1213.00                                   | 2.73          | 247.24                 | 1212.03     | 125.00                   | 35.77                       | 0.95 S                                    | 35.76 W | 35.77@                  | 268.48       | 0.17              |
| 1308.00                                   | 2.90          | 246.88                 | 1306.91     | 95.00                    | 40.08                       | 2.77 S                                    | 40.05 W | 40.15@                  | 266.04       | 0.18              |
| 1402.00                                   | 2.29          | 237.41                 | 1400.81     | 94.00                    | 43.88                       | 4.71 S                                    | 43.82 W | 44.08@                  | 263.86       | 0.79              |
| 1496.00                                   | 2.29          | 231.73                 | 1494.74     | 94.00                    | 46.96                       | 6.89 S                                    | 46.88 W | 47.38@                  | 261.64       | 0.24              |
| 1590.00                                   | 1.76          | 207.62                 | 1588.68     | 94.00                    | 49.13                       | 9.33 S                                    | 49.02 W | 49.90@                  | 259.22       | 1.05              |
| 1684.00                                   | 0.70          | 174.65                 | 1682.66     | 94.00                    | 49.77                       | 11.18 S                                   | 49.64 W | 50.88@                  | 257.30       | 1.31              |
| 1778.00                                   | 0.53          | 172.18                 | 1776.65     | 94.00                    | 49.67                       | 12.18 S                                   | 49.53 W | 51.00@                  | 256.18       | 0.18              |
| 1873.00                                   | 0.70          | 162.72                 | 1871.65     | 95.00                    | 49.45                       | 13.17 S                                   | 49.29 W | 51.02@                  | 255.04       | 0.21              |
| 1968.00                                   | 0.44          | 250.22                 | 1966.65     | 95.00                    | 49.63                       | 13.85 S                                   | 49.46 W | 51.37@                  | 254.36       | 0.85              |
| 2062.00                                   | 1.23          | 286.88                 | 2060.64     | 94.00                    | 50.93                       | 13.68 S                                   | 50.77 W | 52.58@                  | 254.92       | 0.97              |
| 2157.00                                   | 1.06          | 315.20                 | 2155.62     | 95.00                    | 52.51                       | 12.76 S                                   | 52.36 W | 53.90@                  | 256.30       | 0.61              |

# PathFinder Energy Services, Inc.

## Survey Report

YATES PETROLEUM CORP.  
CANYON BJK STATE COM #2H  
EDDY COUNTY, NM  
RIG: PATRIOT 5

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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<br>(ft) | Dir<br>(deg) | DLS<br>(dg/100ft) |
|---------------------------|---------------|------------------------|-------------|--------------------------|-----------------------------|-------------------------------------------|---------|-------------------------|--------------|-------------------|
| 2251.00                   | 0.35          | 35.50                  | 2249.61     | 94.00                    | 52.95                       | 11.91 S                                   | 52.81 W | 54.14@                  | 257.29       | 1.13              |
| 2345.00                   | 0.18          | 68.41                  | 2343.61     | 94.00                    | 52.64                       | 11.62 S                                   | 52.51 W | 53.78@                  | 257.52       | 0.24              |
| 2440.00                   | 0.18          | 208.61                 | 2438.61     | 95.00                    | 52.57                       | 11.70 S                                   | 52.44 W | 53.73@                  | 257.42       | 0.36              |
| 2534.00                   | 0.44          | 322.38                 | 2532.61     | 94.00                    | 52.86                       | 11.54 S                                   | 52.73 W | 53.98@                  | 257.65       | 0.57              |
| 2628.00                   | 0.62          | 322.53                 | 2626.61     | 94.00                    | 53.39                       | 10.85 S                                   | 53.26 W | 54.35@                  | 258.48       | 0.19              |
| 2722.00                   | 0.70          | 299.04                 | 2720.60     | 94.00                    | 54.19                       | 10.17 S                                   | 54.07 W | 55.02@                  | 259.35       | 0.30              |
| 2817.00                   | 0.88          | 312.40                 | 2815.59     | 95.00                    | 55.23                       | 9.40 S                                    | 55.12 W | 55.91@                  | 260.32       | 0.27              |
| 2911.00                   | 0.44          | 343.44                 | 2909.58     | 94.00                    | 55.85                       | 8.56 S                                    | 55.75 W | 56.41@                  | 261.27       | 0.59              |
| 3005.00                   | 0.62          | 83.63                  | 3003.58     | 94.00                    | 55.44                       | 8.16 S                                    | 55.35 W | 55.95@                  | 261.61       | 0.87              |
| 3099.00                   | 0.70          | 54.07                  | 3097.58     | 94.00                    | 54.47                       | 7.77 S                                    | 54.38 W | 54.93@                  | 261.87       | 0.37              |
| 3196.00                   | 0.44          | 93.33                  | 3194.57     | 97.00                    | 53.61                       | 7.44 S                                    | 53.53 W | 54.04@                  | 262.08       | 0.47              |
| 3288.00                   | 0.88          | 122.38                 | 3286.56     | 92.00                    | 52.67                       | 7.84 S                                    | 52.58 W | 53.16@                  | 261.52       | 0.59              |
| 3383.00                   | 0.97          | 121.53                 | 3381.55     | 95.00                    | 51.38                       | 8.65 S                                    | 51.28 W | 52.00@                  | 260.42       | 0.10              |
| 3478.00                   | 1.14          | 112.70                 | 3476.54     | 95.00                    | 49.83                       | 9.44 S                                    | 49.72 W | 50.61@                  | 259.25       | 0.25              |
| 3572.00                   | 0.88          | 77.14                  | 3570.52     | 94.00                    | 48.27                       | 9.64 S                                    | 48.15 W | 49.11@                  | 258.68       | 0.71              |
| 3667.00                   | 1.49          | 22.14                  | 3665.50     | 95.00                    | 47.07                       | 8.33 S                                    | 46.98 W | 47.71@                  | 259.94       | 1.29              |
| 3762.00                   | 1.67          | 0.01                   | 3760.47     | 95.00                    | 46.58                       | 5.80 S                                    | 46.51 W | 46.87@                  | 262.89       | 0.67              |
| 3856.00                   | 1.67          | 1.75                   | 3854.43     | 94.00                    | 46.50                       | 3.06 S                                    | 46.47 W | 46.57@                  | 266.23       | 0.05              |
| 3950.00                   | 1.49          | 343.29                 | 3948.39     | 94.00                    | 46.78                       | 0.52 S                                    | 46.78 W | 46.78@                  | 269.36       | 0.57              |
| 4044.00                   | 1.76          | 333.52                 | 4042.36     | 94.00                    | 47.75                       | 1.94 N                                    | 47.77 W | 47.81@                  | 272.32       | 0.41              |
| 4138.00                   | 1.06          | 337.98                 | 4136.33     | 94.00                    | 48.69                       | 4.04 N                                    | 48.74 W | 48.91@                  | 274.73       | 0.75              |
| 4232.00                   | 0.70          | 346.77                 | 4230.32     | 94.00                    | 49.13                       | 5.40 N                                    | 49.20 W | 49.50@                  | 276.26       | 0.41              |
| 4326.00                   | 0.62          | 350.21                 | 4324.31     | 94.00                    | 49.34                       | 6.46 N                                    | 49.42 W | 49.84@                  | 277.45       | 0.09              |
| 4420.00                   | 0.62          | 358.45                 | 4418.30     | 94.00                    | 49.43                       | 7.47 N                                    | 49.52 W | 50.08@                  | 278.58       | 0.09              |
| 4514.00                   | 0.62          | 4.24                   | 4512.30     | 94.00                    | 49.39                       | 8.49 N                                    | 49.50 W | 50.22@                  | 279.73       | 0.07              |
| 4609.00                   | 0.62          | 346.22                 | 4607.29     | 95.00                    | 49.46                       | 9.50 N                                    | 49.58 W | 50.48@                  | 280.84       | 0.20              |
| 4703.00                   | 0.62          | 349.35                 | 4701.29     | 94.00                    | 49.67                       | 10.49 N                                   | 49.80 W | 50.89@                  | 281.90       | 0.04              |
| 4815.00                   | 0.62          | 354.88                 | 4813.28     | 112.00                   | 49.82                       | 11.69 N                                   | 49.96 W | 51.31@                  | 283.17       | 0.05              |

# PathFinder Energy Services, Inc.

## Survey Report

YATES PETROLEUM CORP.  
CANYON BJK STATE COM #2H  
EDDY COUNTY, NM  
RIG:PATRIOT 5

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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) |
|---------------------------|---------------|------------------------|-------------|--------------------------|-----------------------------|-------------------------------------------|---------|-----------------------------------|--------|-------------------|
| 4979.00                   | 0.62          | 339.07                 | 4977.27     | 164.00                   | 50.19                       | 13.40 N                                   | 50.36 W | 52.11@                            | 284.90 | 0.10              |
| 5074.00                   | 0.70          | 326.76                 | 5072.27     | 95.00                    | 50.69                       | 14.37 N                                   | 50.86 W | 52.85@                            | 285.78 | 0.17              |
| 5169.00                   | 0.62          | 310.29                 | 5167.26     | 95.00                    | 51.39                       | 15.19 N                                   | 51.57 W | 53.76@                            | 286.41 | 0.22              |
| 5263.00                   | 0.62          | 321.39                 | 5261.25     | 94.00                    | 52.08                       | 15.91 N                                   | 52.27 W | 54.64@                            | 286.93 | 0.13              |
| 5358.00                   | 0.44          | 319.86                 | 5356.25     | 95.00                    | 52.63                       | 16.59 N                                   | 52.83 W | 55.38@                            | 287.44 | 0.19              |
| 5452.00                   | 0.44          | 301.49                 | 5450.25     | 94.00                    | 53.16                       | 17.06 N                                   | 53.37 W | 56.03@                            | 287.72 | 0.15              |
| 5547.00                   | 0.44          | 281.88                 | 5545.24     | 95.00                    | 53.83                       | 17.32 N                                   | 54.04 W | 56.75@                            | 287.77 | 0.16              |
| 5736.00                   | 0.44          | 225.97                 | 5734.24     | 189.00                   | 55.07                       | 16.97 N                                   | 55.27 W | 57.82@                            | 287.07 | 0.22              |
| 5925.00                   | 0.35          | 193.38                 | 5923.24     | 189.00                   | 55.73                       | 15.90 N                                   | 55.93 W | 58.14@                            | 285.87 | 0.13              |
| 6113.00                   | 0.53          | 198.51                 | 6111.23     | 188.00                   | 56.16                       | 14.52 N                                   | 56.34 W | 58.18@                            | 284.45 | 0.10              |
| 6301.00                   | 0.53          | 189.66                 | 6299.22     | 188.00                   | 56.60                       | 12.84 N                                   | 56.76 W | 58.19@                            | 282.75 | 0.04              |
| 6489.00                   | 0.53          | 162.40                 | 6487.21     | 188.00                   | 56.50                       | 11.15 N                                   | 56.64 W | 57.73@                            | 281.14 | 0.13              |
| 6677.00                   | 0.70          | 157.58                 | 6675.20     | 188.00                   | 55.83                       | 9.26 N                                    | 55.94 W | 56.70@                            | 279.40 | 0.09              |
| 6865.00                   | 0.97          | 150.57                 | 6863.18     | 188.00                   | 54.63                       | 6.81 N                                    | 54.72 W | 55.14@                            | 277.10 | 0.15              |
| 7054.00                   | 1.14          | 161.22                 | 7052.15     | 189.00                   | 53.28                       | 3.64 N                                    | 53.33 W | 53.45@                            | 273.91 | 0.14              |
| 7241.00                   | 0.97          | 153.96                 | 7239.12     | 187.00                   | 52.03                       | 0.46 N                                    | 52.03 W | 52.04@                            | 270.50 | 0.12              |
| 7335.00                   | 1.06          | 153.94                 | 7333.11     | 94.00                    | 51.31                       | 1.04 S                                    | 51.30 W | 51.31@                            | 268.84 | 0.10              |
| 7430.00                   | 0.53          | 209.67                 | 7428.10     | 95.00                    | 51.16                       | 2.21 S                                    | 51.13 W | 51.18@                            | 267.53 | 0.93              |
| 7524.00                   | 0.79          | 222.63                 | 7522.09     | 94.00                    | 51.82                       | 3.06 S                                    | 51.79 W | 51.88@                            | 266.61 | 0.32              |
| 7618.00                   | 1.06          | 234.95                 | 7616.08     | 94.00                    | 52.98                       | 4.04 S                                    | 52.94 W | 53.09@                            | 265.64 | 0.35              |
| 7710.00                   | 1.23          | 214.10                 | 7708.06     | 92.00                    | 54.25                       | 5.35 S                                    | 54.19 W | 54.45@                            | 264.36 | 0.49              |
| 7804.00                   | 0.79          | 290.97                 | 7802.05     | 94.00                    | 55.43                       | 5.95 S                                    | 55.36 W | 55.68@                            | 263.86 | 1.38              |
| 7899.00                   | 0.70          | 244.44                 | 7897.04     | 95.00                    | 56.56                       | 5.97 S                                    | 56.50 W | 56.81@                            | 263.97 | 0.63              |
| 7993.00                   | 0.97          | 224.84                 | 7991.03     | 94.00                    | 57.65                       | 6.78 S                                    | 57.57 W | 57.97@                            | 263.29 | 0.41              |
| 8088.00                   | 0.97          | 147.37                 | 8086.02     | 95.00                    | 57.80                       | 8.03 S                                    | 57.71 W | 58.26@                            | 262.08 | 1.28              |
| 8183.00                   | 1.41          | 162.07                 | 8181.00     | 95.00                    | 57.03                       | 9.82 S                                    | 56.91 W | 57.75@                            | 260.22 | 0.56              |
| 8277.00                   | 0.97          | 200.06                 | 8274.98     | 94.00                    | 56.97                       | 11.66 S                                   | 56.83 W | 58.02@                            | 258.40 | 0.94              |
| 8372.00                   | 0.26          | 213.72                 | 8369.98     | 95.00                    | 57.37                       | 12.60 S                                   | 57.23 W | 58.60@                            | 257.59 | 0.76              |

# PathFinder Energy Services, Inc.

## Survey Report

YATES PETROLEUM CORP.  
CANYON BJK STATE COM #2H  
EDDY COUNTY, NM  
RIG:PATRIOT 5

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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) |
|---------------------------|---------------|------------------------|-------------|--------------------------|-----------------------------|-------------------------------------------|----------|-----------------------------------|--------|-------------------|
| 8467.00                   | 0.26          | 166.72                 | 8464.98     | 95.00                    | 57.45                       | 12.99 S                                   | 57.30 W  | 58.75@                            | 257.23 | 0.22              |
| 8561.00                   | 0.62          | 145.84                 | 8558.97     | 94.00                    | 57.12                       | 13.62 S                                   | 56.96 W  | 58.57@                            | 256.56 | 0.41              |
| 8656.00                   | 1.76          | 35.60                  | 8653.96     | 95.00                    | 55.97                       | 12.85 S                                   | 55.82 W  | 57.29@                            | 257.03 | 2.17              |
| 8750.00                   | 1.67          | 52.43                  | 8747.92     | 94.00                    | 54.02                       | 10.85 S                                   | 53.90 W  | 54.98@                            | 258.62 | 0.54              |
| 8776.00                   | 1.23          | 357.83                 | 8773.91     | 26.00                    | 53.73                       | 10.34 S                                   | 53.61 W  | 54.60@                            | 259.09 | 5.33              |
| 8807.00                   | 4.66          | 292.77                 | 8804.87     | 31.00                    | 54.89                       | 9.52 S                                    | 54.78 W  | 55.60@                            | 260.15 | 13.83             |
| 8839.00                   | 9.58          | 286.03                 | 8836.61     | 32.00                    | 58.64                       | 8.28 S                                    | 58.54 W  | 59.13@                            | 261.95 | 15.57             |
| 8870.00                   | 13.72         | 283.40                 | 8866.97     | 31.00                    | 64.68                       | 6.71 S                                    | 64.60 W  | 64.95@                            | 264.07 | 13.46             |
| 8902.00                   | 17.41         | 282.25                 | 8897.79     | 32.00                    | 73.03                       | 4.82 S                                    | 72.97 W  | 73.13@                            | 266.22 | 11.57             |
| 8933.00                   | 20.40         | 279.80                 | 8927.11     | 31.00                    | 82.86                       | 2.91 S                                    | 82.83 W  | 82.88@                            | 267.99 | 9.98              |
| 8965.00                   | 23.13         | 274.93                 | 8956.83     | 32.00                    | 94.60                       | 1.42 S                                    | 94.59 W  | 94.60@                            | 269.14 | 10.22             |
| 8996.00                   | 26.12         | 273.39                 | 8985.01     | 31.00                    | 107.47                      | 0.49 S                                    | 107.47 W | 107.48@                           | 269.74 | 9.86              |
| 9027.00                   | 29.37         | 272.41                 | 9012.44     | 31.00                    | 121.87                      | 0.23 N                                    | 121.89 W | 121.89@                           | 270.11 | 10.59             |
| 9059.00                   | 32.54         | 272.28                 | 9039.88     | 32.00                    | 138.31                      | 0.90 N                                    | 138.33 W | 138.33@                           | 270.37 | 9.91              |
| 9090.00                   | 35.44         | 272.15                 | 9065.58     | 31.00                    | 155.62                      | 1.57 N                                    | 155.65 W | 155.65@                           | 270.58 | 9.36              |
| 9122.00                   | 39.04         | 270.61                 | 9091.05     | 32.00                    | 174.96                      | 2.03 N                                    | 175.00 W | 175.01@                           | 270.66 | 11.62             |
| 9154.00                   | 43.00         | 268.00                 | 9115.19     | 32.00                    | 195.96                      | 1.75 N                                    | 195.99 W | 196.00@                           | 270.51 | 13.48             |
| 9185.00                   | 47.75         | 266.08                 | 9136.96     | 31.00                    | 217.99                      | 0.60 N                                    | 218.02 W | 218.02@                           | 270.16 | 15.94             |
| 9216.00                   | 51.97         | 266.08                 | 9156.94     | 31.00                    | 241.65                      | 1.02 S                                    | 241.66 W | 241.66@                           | 269.76 | 13.61             |
| 9248.00                   | 55.22         | 266.40                 | 9175.93     | 32.00                    | 267.36                      | 2.71 S                                    | 267.35 W | 267.37@                           | 269.42 | 10.19             |
| 9279.00                   | 57.77         | 268.52                 | 9193.05     | 31.00                    | 293.20                      | 3.85 S                                    | 293.17 W | 293.20@                           | 269.25 | 10.01             |
| 9310.00                   | 61.29         | 270.18                 | 9208.76     | 31.00                    | 319.91                      | 4.14 S                                    | 319.88 W | 319.91@                           | 269.26 | 12.26             |
| 9341.00                   | 64.10         | 272.51                 | 9222.98     | 31.00                    | 347.43                      | 3.49 S                                    | 347.41 W | 347.43@                           | 269.42 | 11.26             |
| 9373.00                   | 67.27         | 273.01                 | 9236.16     | 32.00                    | 376.54                      | 2.08 S                                    | 376.54 W | 376.54@                           | 269.68 | 10.01             |
| 9404.00                   | 71.75         | 272.46                 | 9247.01     | 31.00                    | 405.52                      | 0.70 S                                    | 405.54 W | 405.54@                           | 269.90 | 14.55             |
| 9435.00                   | 76.50         | 271.73                 | 9255.49     | 31.00                    | 435.29                      | 0.39 N                                    | 435.33 W | 435.33@                           | 270.05 | 15.49             |
| 9466.00                   | 80.72         | 271.45                 | 9261.61     | 31.00                    | 465.65                      | 1.23 N                                    | 465.70 W | 465.70@                           | 270.15 | 13.64             |
| 9497.00                   | 82.83         | 271.19                 | 9266.04     | 31.00                    | 496.31                      | 1.94 N                                    | 496.37 W | 496.37@                           | 270.22 | 6.86              |

# PathFinder Energy Services, Inc.

## Survey Report

YATES PETROLEUM CORP.  
CANYON BJK STATE COM #2H  
EDDY COUNTY, NM  
RIG:PATRIOT 5

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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) |
|---------------------------|---------------|------------------------|-------------|--------------------------|-----------------------------|-------------------------------------------|-----------|-----------------------------------|--------|-------------------|
| 9529.00                   | 84.15         | 270.87                 | 9269.67     | 32.00                    | 528.09                      | 2.51 N                                    | 528.16 W  | 528.16@                           | 270.27 | 4.24              |
| 9560.00                   | 84.24         | 270.79                 | 9272.80     | 31.00                    | 558.92                      | 2.95 N                                    | 558.99 W  | 559.00@                           | 270.30 | 0.39              |
| 9623.00                   | 88.81         | 270.16                 | 9276.62     | 63.00                    | 621.77                      | 3.47 N                                    | 621.86 W  | 621.87@                           | 270.32 | 7.32              |
| 9654.00                   | 89.78         | 270.10                 | 9277.00     | 31.00                    | 652.77                      | 3.54 N                                    | 652.86 W  | 652.87@                           | 270.31 | 3.13              |
| 9748.00                   | 90.92         | 270.72                 | 9276.43     | 94.00                    | 746.75                      | 4.22 N                                    | 746.85 W  | 746.86@                           | 270.32 | 1.38              |
| 9841.00                   | 91.36         | 269.56                 | 9274.58     | 93.00                    | 839.72                      | 4.44 N                                    | 839.83 W  | 839.84@                           | 270.30 | 1.33              |
| 9936.00                   | 92.07         | 270.33                 | 9271.73     | 95.00                    | 934.67                      | 4.35 N                                    | 934.79 W  | 934.80@                           | 270.27 | 1.10              |
| 9968.00                   | 91.80         | 269.84                 | 9270.65     | 32.00                    | 966.65                      | 4.40 N                                    | 966.77 W  | 966.78@                           | 270.26 | 1.75              |
| 10030.00                  | 91.98         | 269.42                 | 9268.61     | 62.00                    | 1028.61                     | 4.00 N                                    | 1028.73 W | 1028.74@                          | 270.22 | 0.74              |
| 10124.00                  | 91.80         | 268.31                 | 9265.51     | 94.00                    | 1122.56                     | 2.14 N                                    | 1122.66 W | 1122.66@                          | 270.11 | 1.20              |
| 10155.00                  | 91.54         | 268.18                 | 9264.61     | 31.00                    | 1153.54                     | 1.19 N                                    | 1153.63 W | 1153.63@                          | 270.06 | 0.94              |
| 10187.00                  | 91.36         | 268.57                 | 9263.80     | 32.00                    | 1185.52                     | 0.28 N                                    | 1185.61 W | 1185.61@                          | 270.01 | 1.34              |
| 10218.00                  | 90.57         | 268.97                 | 9263.27     | 31.00                    | 1216.52                     | 0.38 S                                    | 1216.60 W | 1216.60@                          | 269.98 | 2.86              |
| 10250.00                  | 90.66         | 268.83                 | 9262.93     | 32.00                    | 1248.51                     | 1.00 S                                    | 1248.59 W | 1248.59@                          | 269.95 | 0.52              |
| 10281.00                  | 90.40         | 267.68                 | 9262.64     | 31.00                    | 1279.51                     | 1.94 S                                    | 1279.57 W | 1279.58@                          | 269.91 | 3.80              |
| 10312.00                  | 90.66         | 267.82                 | 9262.36     | 31.00                    | 1310.49                     | 3.16 S                                    | 1310.55 W | 1310.55@                          | 269.86 | 0.95              |
| 10344.00                  | 90.92         | 267.93                 | 9261.92     | 32.00                    | 1342.48                     | 4.34 S                                    | 1342.52 W | 1342.53@                          | 269.81 | 0.88              |
| 10407.00                  | 90.04         | 267.62                 | 9261.39     | 63.00                    | 1405.45                     | 6.79 S                                    | 1405.47 W | 1405.49@                          | 269.72 | 1.48              |
| 10469.00                  | 90.40         | 267.86                 | 9261.15     | 62.00                    | 1467.43                     | 9.23 S                                    | 1467.42 W | 1467.45@                          | 269.64 | 0.70              |
| 10501.00                  | 90.66         | 267.60                 | 9260.85     | 32.00                    | 1499.42                     | 10.50 S                                   | 1499.40 W | 1499.43@                          | 269.60 | 1.15              |
| 10594.00                  | 90.40         | 268.52                 | 9259.99     | 93.00                    | 1592.39                     | 13.65 S                                   | 1592.34 W | 1592.40@                          | 269.51 | 1.03              |
| 10658.00                  | 90.66         | 269.18                 | 9259.40     | 64.00                    | 1656.38                     | 14.93 S                                   | 1656.32 W | 1656.39@                          | 269.48 | 1.11              |
| 10690.00                  | 90.75         | 269.35                 | 9259.01     | 32.00                    | 1688.38                     | 15.34 S                                   | 1688.32 W | 1688.39@                          | 269.48 | 0.60              |
| 10784.00                  | 90.13         | 268.76                 | 9258.29     | 94.00                    | 1782.38                     | 16.89 S                                   | 1782.30 W | 1782.38@                          | 269.46 | 0.91              |
| 10879.00                  | 90.84         | 268.75                 | 9257.48     | 95.00                    | 1877.37                     | 18.96 S                                   | 1877.28 W | 1877.37@                          | 269.42 | 0.75              |
| 10973.00                  | 90.75         | 268.23                 | 9256.18     | 94.00                    | 1971.35                     | 21.44 S                                   | 1971.23 W | 1971.35@                          | 269.38 | 0.56              |
| 11067.00                  | 90.04         | 268.90                 | 9255.53     | 94.00                    | 2065.34                     | 23.79 S                                   | 2065.20 W | 2065.34@                          | 269.34 | 1.04              |
| 11162.00                  | 90.57         | 268.67                 | 9255.02     | 95.00                    | 2160.33                     | 25.80 S                                   | 2160.18 W | 2160.33@                          | 269.32 | 0.61              |

# PathFinder Energy Services, Inc.

## Survey Report

YATES PETROLEUM CORP.  
CANYON BJK STATE COM #2H  
EDDY COUNTY, NM  
RIG:PATRIOT 5

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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) |
|---------------------------|---------------|------------------------|-------------|--------------------------|-----------------------------|-------------------------------------------|-----------|-----------------------------------|--------|-------------------|
| 11256.00                  | 91.28         | 269.65                 | 9253.51     | 94.00                    | 2254.32                     | 27.18 S                                   | 2254.15 W | 2254.32@                          | 269.31 | 1.29              |
| 11350.00                  | 91.01         | 269.37                 | 9251.63     | 94.00                    | 2348.30                     | 27.99 S                                   | 2348.13 W | 2348.30@                          | 269.32 | 0.41              |
| 11444.00                  | 90.75         | 269.64                 | 9250.18     | 94.00                    | 2442.29                     | 28.80 S                                   | 2442.12 W | 2442.29@                          | 269.32 | 0.40              |
| 11539.00                  | 90.75         | 270.41                 | 9248.94     | 95.00                    | 2537.27                     | 28.76 S                                   | 2537.11 W | 2537.27@                          | 269.35 | 0.81              |
| 11634.00                  | 90.31         | 270.88                 | 9248.06     | 95.00                    | 2632.24                     | 27.69 S                                   | 2632.10 W | 2632.24@                          | 269.40 | 0.68              |
| 11728.00                  | 90.40         | 271.22                 | 9247.48     | 94.00                    | 2726.20                     | 25.96 S                                   | 2726.08 W | 2726.20@                          | 269.45 | 0.37              |
| 11822.00                  | 90.48         | 270.73                 | 9246.76     | 94.00                    | 2820.15                     | 24.36 S                                   | 2820.06 W | 2820.17@                          | 269.50 | 0.53              |
| 11917.00                  | 90.66         | 270.31                 | 9245.81     | 95.00                    | 2915.13                     | 23.50 S                                   | 2915.05 W | 2915.15@                          | 269.54 | 0.48              |
| 12012.00                  | 90.66         | 269.14                 | 9244.72     | 95.00                    | 3010.12                     | 23.96 S                                   | 3010.04 W | 3010.14@                          | 269.54 | 1.23              |
| 12107.00                  | 91.28         | 269.32                 | 9243.11     | 95.00                    | 3105.10                     | 25.24 S                                   | 3105.02 W | 3105.12@                          | 269.53 | 0.68              |
| 12202.00                  | 91.01         | 269.42                 | 9241.21     | 95.00                    | 3200.08                     | 26.28 S                                   | 3200.00 W | 3200.11@                          | 269.53 | 0.30              |
| 12234.00                  | 90.75         | 268.89                 | 9240.72     | 32.00                    | 3232.08                     | 26.75 S                                   | 3231.99 W | 3232.10@                          | 269.53 | 1.84              |
| 12296.00                  | 91.10         | 269.37                 | 9239.72     | 62.00                    | 3294.07                     | 27.69 S                                   | 3293.97 W | 3294.09@                          | 269.52 | 0.96              |
| 12391.00                  | 90.84         | 268.64                 | 9238.11     | 95.00                    | 3389.06                     | 29.34 S                                   | 3388.95 W | 3389.07@                          | 269.50 | 0.82              |
| 12485.00                  | 89.87         | 267.57                 | 9237.53     | 94.00                    | 3483.03                     | 32.45 S                                   | 3482.89 W | 3483.04@                          | 269.47 | 1.54              |
| 12580.00                  | 90.22         | 267.82                 | 9237.45     | 95.00                    | 3577.99                     | 36.27 S                                   | 3577.81 W | 3578.00@                          | 269.42 | 0.45              |
| 12675.00                  | 90.75         | 267.60                 | 9236.65     | 95.00                    | 3672.95                     | 40.07 S                                   | 3672.73 W | 3672.95@                          | 269.37 | 0.60              |
| 12770.00                  | 91.19         | 267.85                 | 9235.04     | 95.00                    | 3767.90                     | 43.84 S                                   | 3767.64 W | 3767.90@                          | 269.33 | 0.53              |
| 12865.00                  | 90.66         | 267.96                 | 9233.51     | 95.00                    | 3862.86                     | 47.31 S                                   | 3862.57 W | 3862.86@                          | 269.30 | 0.57              |
| 12960.00                  | 89.96         | 268.69                 | 9232.99     | 95.00                    | 3957.84                     | 50.09 S                                   | 3957.52 W | 3957.84@                          | 269.27 | 1.07              |
| 13055.00                  | 89.87         | 267.99                 | 9233.14     | 95.00                    | 4052.83                     | 52.84 S                                   | 4052.48 W | 4052.83@                          | 269.25 | 0.74              |
| 13150.00                  | 89.87         | 267.83                 | 9233.35     | 95.00                    | 4147.80                     | 56.30 S                                   | 4147.42 W | 4147.80@                          | 269.22 | 0.17              |
| 13244.00                  | 89.96         | 267.93                 | 9233.49     | 94.00                    | 4241.77                     | 59.78 S                                   | 4241.36 W | 4241.78@                          | 269.19 | 0.14              |
| 13339.00                  | 90.57         | 268.84                 | 9233.05     | 95.00                    | 4336.75                     | 62.46 S                                   | 4336.32 W | 4336.77@                          | 269.17 | 1.15              |
| 13433.00                  | 90.84         | 268.99                 | 9231.89     | 94.00                    | 4430.74                     | 64.24 S                                   | 4430.29 W | 4430.76@                          | 269.17 | 0.33              |
| 13528.00                  | 90.75         | 269.52                 | 9230.58     | 95.00                    | 4525.73                     | 65.47 S                                   | 4525.27 W | 4525.75@                          | 269.17 | 0.57              |
| 13623.00                  | 91.01         | 269.63                 | 9229.12     | 95.00                    | 4620.72                     | 66.18 S                                   | 4620.26 W | 4620.74@                          | 269.18 | 0.30              |
| 13717.00                  | 89.60         | 268.94                 | 9228.62     | 94.00                    | 4714.72                     | 67.35 S                                   | 4714.25 W | 4714.73@                          | 269.18 | 1.67              |

# PathFinder Energy Services, Inc.

## Survey Report

YATES PETROLEUM CORP.  
CANYON BJK STATE COM #2H  
EDDY COUNTY, NM  
RIG:PATRIOT 5

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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) |
|-----------------------------------------------------------|---------------|------------------------|-------------|--------------------------|-----------------------------|-------------------------------------------|-----------|-----------------------------------|--------|-------------------|
| 13812.00                                                  | 90.75         | 268.99                 | 9228.33     | 95.00                    | 4809.71                     | 69.07 S                                   | 4809.23 W | 4809.73@                          | 269.18 | 1.21              |
| 13907.00                                                  | 92.24         | 268.45                 | 9225.85     | 95.00                    | 4904.67                     | 71.19 S                                   | 4904.17 W | 4904.69@                          | 269.17 | 1.67              |
| 13927.00                                                  | 91.36         | 268.60                 | 9225.22     | 20.00                    | 4924.66                     | 71.70 S                                   | 4924.16 W | 4924.68@                          | 269.17 | 4.46              |
| 13970.00                                                  | 90.92         | 267.78                 | 9224.36     | 43.00                    | 4967.64                     | 73.06 S                                   | 4967.13 W | 4967.66@                          | 269.16 | 2.16              |
| 14002.00                                                  | 91.54         | 268.31                 | 9223.68     | 32.00                    | 4999.63                     | 74.15 S                                   | 4999.10 W | 4999.65@                          | 269.15 | 2.55              |
| 14065.00                                                  | 93.74         | 268.75                 | 9220.78     | 63.00                    | 5062.55                     | 75.77 S                                   | 5062.01 W | 5062.58@                          | 269.14 | 3.56              |
| 14097.00                                                  | 93.74         | 268.08                 | 9218.69     | 32.00                    | 5094.48                     | 76.65 S                                   | 5093.93 W | 5094.50@                          | 269.14 | 2.09              |
| 14192.00                                                  | 94.35         | 268.52                 | 9211.99     | 95.00                    | 5189.23                     | 79.46 S                                   | 5188.65 W | 5189.26@                          | 269.12 | 0.79              |
| 14254.00                                                  | 94.18         | 268.84                 | 9207.38     | 62.00                    | 5251.05                     | 80.89 S                                   | 5250.46 W | 5251.08@                          | 269.12 | 0.58              |
| STRAIGHT LINE PROJECTION TO BIT @ 14334'MD (9201.54 TVD). |               |                        |             |                          |                             |                                           |           |                                   |        |                   |
| 14334.00                                                  | 94.18         | 268.84                 | 9201.55     | 80.00                    | 5330.83                     | 82.50 S                                   | 5330.23 W | 5330.87@                          | 269.11 | 0.00              |



A Schlumberger Company

## TIE-IN SURVEY INFORMATION SHEET

### CLIENT INFORMATION

|                           |                             |      |     |
|---------------------------|-----------------------------|------|-----|
| CLIENT:                   | YATES PETROLEUM CORPORATION |      |     |
| LEASE / WELL No.:         | CANYON BJK STATE COM        | #2 H |     |
| WELL LOCATION:            | CORRAL DRAW; BONE SPRING    |      |     |
| COUNTY / STATE / COUNTRY: | EDDY COUNTY                 | NM   | USA |
| RIG:                      | PATRIOT 5                   |      |     |
| API WELL No:              | 30-015-39735                |      |     |
| JOB No:                   | 12MLD0084                   |      |     |
| P.O. / AFE No.            | 11-256-0                    |      |     |
| DIRECTIONAL COMPANY:      | PATHFINDER ENERGY SERVICES  |      |     |

### WELL SITE INFORMATION

|                                  |                                                                                                        |                 |                   |
|----------------------------------|--------------------------------------------------------------------------------------------------------|-----------------|-------------------|
| TOTAL MAGNETIC CORRECTION (TMC): |                                                                                                        |                 |                   |
| On Wall Plat:                    | 7.44                                                                                                   | LWD Calculated: | 7.43              |
| Agreed Upon:                     |                                                                                                        | 7.43            |                   |
| X =                              | 669388.780000                                                                                          | Feet            | Y = 419750.850000 |
|                                  |                                                                                                        | Feet            |                   |
| SITE LATITUDE:                   | 32.153297                                                                                              | SITE LONGITUDE: | 103.91956         |
| GRID SYSTEM:                     | TRUE <input type="checkbox"/> UTM <input checked="" type="checkbox"/> LAMBERT <input type="checkbox"/> | ZONE:           |                   |
| PROPOSED DRIFT DIRECTION:        | 269.32                                                                                                 |                 |                   |
| KELLY BUSHING ELEVATION:         | 26.5                                                                                                   |                 |                   |
| ALTITUDE:                        | Feet                                                                                                   | WATER DEPTH:    | Feet              |

### TIE-IN SURVEY

|                                    |                                                          |                                        |                                                         |
|------------------------------------|----------------------------------------------------------|----------------------------------------|---------------------------------------------------------|
| MEASURED DEPTH:                    | 0                                                        |                                        |                                                         |
| DRIFT ANGLE:                       | 0                                                        |                                        |                                                         |
| DRIFT DIRECTION:                   | 269.32                                                   |                                        |                                                         |
| TRUE VERTICAL DEPTH:               | 0                                                        |                                        |                                                         |
| VERTICAL SECTION:                  | 0                                                        |                                        |                                                         |
| RECTANGULAR COORDINATE ( N / S ) : | 0                                                        |                                        |                                                         |
| RECTANGULAR COORDINATE ( E / W ) : | 0                                                        |                                        |                                                         |
| CLOSURE DISTANCE / DIRECTION:      |                                                          |                                        |                                                         |
| SURVEY CALCULATION METHOD:         | AA <input type="checkbox"/>                              | MC <input checked="" type="checkbox"/> | RC <input type="checkbox"/> BT <input type="checkbox"/> |
| SOURCE OF TIE-IN DATA ( COMPANY ): |                                                          |                                        |                                                         |
| COPY OF TIE-IN SURVEY REPORT       | <input type="checkbox"/> YES <input type="checkbox"/> NO |                                        |                                                         |

### WELL PLAN

|                |              |
|----------------|--------------|
| KICKOFF DEPTH: | TOTAL DEPTH: |
| KICKOFF ANGLE: | MAX ANGLE:   |

PES Engineers:

G.SAKAS

\*\*Signature of both field engineers required if applicable

K.THURMAN

Directional Driller: IRBY LEJUENE

DATE: 15-Mar-2012

## PathFinder Energy Services, Inc.

### Magnetic & Grid Calculations

Yates Petroleum Corporation  
Canyon BJK State Com #2H  
Eddy County, NM  
Rig: Patriot 5

Mon Mar 12 08:42:40 2012

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### Coordinates

Latitude: 32.153297 N ( 32 deg. 9 min. 11.8694 sec.)  
Longitude: 103.919560 W (-103 deg. 55 min. 10.4176 sec.)  
Elevation: 3215.50 feet.  
Calculation Date: Mar/12/2012

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### Magnetic Calculations

Model: IGRF2010  
Dip Angle: 60.0428 degrees  
Total Magnetic Field: 0.48463 gauss  
Magnetic Declination: 7.649315 degrees  
Horizontal Intensity: 0.241999 gauss  
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.649315 Degr

---

### Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east  
Ellipsoid: GRS80  
X: 669388.7800 feet  
Y: 419750.8500 feet  
True to Grid: (convergence) -0.220207 degrees  
Magnetic to Grid: 7.429108 degrees  
To Convert a Magnetic Dir. to a GRID dir. Add 7.429108 Degr.

TMC

# PathFinder Energy Services, Inc.

## Magnetic & Grid Calculations

YATES PETROLEUM CORP  
CANYON BJK STATE COM #2H  
CORRAL DRAW; BONE SPRINGS

Thu Mar 15 23:19:47 2012

---

### Coordinates

Latitude: 32.153297 N ( 32 deg. 9 min. 11.8694 sec.)  
Longitude: 103.919560 W (-103 deg. 55 min. 10.4176 sec.)  
Elevation: 3215.50 feet.  
Calculation Date: Mar/15/2012

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### Magnetic Calculations

Model: IGRF2010  
Dip Angle: 60.0426 degrees  
Total Magnetic Field: 0.48462 gauss  
Magnetic Declination: 7.648311 degrees  
Horizontal Intensity: 0.241997 gauss

To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.648311 Degr

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### Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east  
Ellipsoid: GRS80  
X: 669388.7800 feet  
Y: 419750.8500 feet  
True to Grid: (convergence) -0.220207 degrees  
Magnetic to Grid: 7.428104 degrees

To Convert a Magnetic Dir. to a GRID dir. Add 7.428104 Degr.

7.42810.