



HOBBS OCD

NOV 14 2016

RECEIVED

## State of New Mexico

County of Lea

I, Paul Miller, certify that I am employed by DriTech MWD Rentals, LLC. I did on the day(s) of 9/13/16 through 10/01/16 conduct or supervise the taking of the 165 survey(s) from a measured depth of 965 feet to a measured depth of 15,552 feet. The data is true, correct, complete, and within the limitations of the tool as set forth by DriTech MWD Rentals, LLC. I am authorized and qualified to make this report, and this/these survey(s) was/were conducted at the request of Endurance Resources, LLC for the Duo Sonic 29 Federal #4H, API No. 30-025-43090 in Lea County, New Mexico. I have reviewed this report, and find that it conforms to the principles and procedures as set forth by DriTech MWD Rentals, LLC. ←

SIGNATURE

DATE

11/10/16



# DrilTech, LLC

## MWD Survey Report

Job No: DM-2016-046-ENDT-N

Operator: **Endurance Resources, LLC**  
Well Name: **Duo Sonic 29 Federal #4H**  
Location: **Lea County, New Mexico**  
Rig: **NorAm 23**  
Directional Drilling Co: **DrilTech, LLC**  
Well API #: **30-025-43090**  
Tie Into: **VES**  
Tie-In Date: **9/13/2016**  
Date Completed: **10/1/2016**

Reference Coordinates: LAT: 

|     |   |    |   |         |   |   |
|-----|---|----|---|---------|---|---|
| 32  | ° | 5  | ' | 40.2410 | " | N |
| 103 | ° | 22 | ' | 59.2820 | " | W |

  
LON: 

|     |   |    |   |         |   |   |
|-----|---|----|---|---------|---|---|
| 103 | ° | 22 | ' | 59.2820 | " | W |
|-----|---|----|---|---------|---|---|

  
Reference Grid Coordinates: X: 835591.37 (ft)  
Y: 399416.48 (ft)

Reference Grid: **NAD 83**  
Zone: **New Mexico Eastern**  
(UTM or Lambert): **Lambert**

Survey Vertical Reference: **28.00 (ft)** Rotary Table to Ground Level  
Elevation: **3219.30 (ft)** Ground Level to Mean Sea Level  
Vertical Section Plane: **359.45 (deg)**

North Alignment: **Grid North**

| <u>Magnetic Data</u>       | <u>Section 1</u> | <u>Section 2</u> | <u>Section 3</u> | <u>Section 4</u> |
|----------------------------|------------------|------------------|------------------|------------------|
| Magnetic Declination (deg) | 6.94             |                  |                  |                  |
| Grid (deg)                 | 0.50             |                  |                  |                  |
| TOTAL CORRECTION (deg)     | 6.44             |                  |                  |                  |
| Depth Start (MD Ft)        | 965.00           |                  |                  |                  |
| Depth End (MD Ft)          | 15552.00         |                  |                  |                  |

REMARKS:

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# DRILTECH MWD SURVEY REPORT



Company: Endurance Resources, LLC  
 Well: Duo Sonic 29 Federal #4H  
 Location: Lea County, New Mexico  
 Rig: NorAm 23

Job Number: DM-2016-046-ENDT-NM  
 Vertical Section Plane: 359.45  
 Well API Number: 30-025-43090  
 Tie Into: VES

Calculation Method: Minimum Curvature

| Survey # | Survey Tool Type | Survey Depth (ft) | Inclination (deg) | Azimuth (deg) | Course Length (ft) | True Vertical Depth (ft) | Vertical Section (ft) | Coordinates |          | Closure       |             | Dogleg Severity (d/100') | Build Rate (d/100') | Walk Rate (d/100') |
|----------|------------------|-------------------|-------------------|---------------|--------------------|--------------------------|-----------------------|-------------|----------|---------------|-------------|--------------------------|---------------------|--------------------|
|          |                  |                   |                   |               |                    |                          |                       | N/S (ft)    | E/W (ft) | Distance (ft) | Angle (deg) |                          |                     |                    |
| Tie In   | Gyro             | 965.00            | 1.32              | 6.78          | 965.00             | 964.91                   | 11.18                 | 11.18 N     | 2.29 E   | 11.41         | 11.58       | 0.43                     | 0.00                | 0.00               |
| 1        | MWD              | 1149.00           | 1.40              | 9.80          | 184                | 1148.86                  | 15.47                 | 15.50 N     | 2.92 E   | 15.77         | 10.68       | 0.06                     | 0.04                | 1.64               |
| 2        | MWD              | 1244.00           | 1.40              | 9.10          | 95                 | 1243.83                  | 17.76                 | 17.79 N     | 3.30 E   | 18.09         | 10.52       | 0.02                     | 0.00                | -0.74              |
| 3        | MWD              | 1338.00           | 1.40              | 10.80         | 94                 | 1337.80                  | 20.01                 | 20.05 N     | 3.70 E   | 20.39         | 10.46       | 0.04                     | 0.00                | 1.81               |
| 4        | MWD              | 1432.00           | 1.40              | 11.20         | 94                 | 1431.77                  | 22.26                 | 22.31 N     | 4.14 E   | 22.69         | 10.51       | 0.01                     | 0.00                | 0.43               |
| 5        | MWD              | 1527.00           | 1.40              | 5.70          | 95                 | 1526.75                  | 24.55                 | 24.60 N     | 4.48 E   | 25.00         | 10.32       | 0.14                     | 0.00                | -5.79              |
| 6        | MWD              | 1621.00           | 1.40              | 8.00          | 94                 | 1620.72                  | 26.83                 | 26.88 N     | 4.75 E   | 27.30         | 10.03       | 0.06                     | 0.00                | 2.45               |
| 7        | MWD              | 1716.00           | 1.60              | 10.10         | 95                 | 1715.68                  | 29.28                 | 29.33 N     | 5.15 E   | 29.78         | 9.95        | 0.22                     | 0.21                | 2.21               |
| 8        | MWD              | 1810.00           | 1.60              | 5.70          | 94                 | 1809.65                  | 31.88                 | 31.93 N     | 5.51 E   | 32.40         | 9.79        | 0.13                     | 0.00                | -4.68              |
| 9        | MWD              | 1904.00           | 1.80              | 13.30         | 94                 | 1903.61                  | 34.61                 | 34.67 N     | 5.98 E   | 35.19         | 9.78        | 0.32                     | 0.21                | 8.09               |
| 10       | MWD              | 1999.00           | 1.80              | 14.90         | 95                 | 1998.56                  | 37.50                 | 37.57 N     | 6.70 E   | 38.16         | 10.12       | 0.05                     | 0.00                | 1.68               |
| 11       | MWD              | 2093.00           | 2.10              | 19.30         | 94                 | 2092.51                  | 40.54                 | 40.62 N     | 7.65 E   | 41.33         | 10.67       | 0.36                     | 0.32                | 4.68               |
| 12       | MWD              | 2187.00           | 1.40              | 14.50         | 94                 | 2186.46                  | 43.27                 | 43.36 N     | 8.51 E   | 44.18         | 11.11       | 0.76                     | -0.74               | -5.11              |
| 13       | MWD              | 2281.00           | 0.70              | 315.30        | 94                 | 2280.45                  | 44.79                 | 44.88 N     | 8.39 E   | 45.65         | 10.59       | 1.28                     | -0.74               | 320.00             |
| 14       | MWD              | 2376.00           | 0.90              | 300.90        | 95                 | 2375.44                  | 45.60                 | 45.67 N     | 7.35 E   | 46.26         | 9.14        | 0.30                     | 0.21                | -15.16             |
| 15       | MWD              | 2470.00           | 0.90              | 322.70        | 94                 | 2469.43                  | 46.58                 | 46.64 N     | 6.26 E   | 47.06         | 7.65        | 0.36                     | 0.00                | 23.19              |
| 16       | MWD              | 2565.00           | 0.90              | 329.70        | 95                 | 2564.41                  | 47.82                 | 47.88 N     | 5.44 E   | 48.18         | 6.48        | 0.12                     | 0.00                | 7.37               |
| 17       | MWD              | 2659.00           | 0.90              | 339.00        | 94                 | 2658.40                  | 49.15                 | 49.20 N     | 4.80 E   | 49.44         | 5.57        | 0.16                     | 0.00                | 9.89               |
| 18       | MWD              | 2754.00           | 0.90              | 344.30        | 95                 | 2753.39                  | 50.57                 | 50.62 N     | 4.33 E   | 50.80         | 4.89        | 0.09                     | 0.00                | 5.58               |
| 19       | MWD              | 2848.00           | 1.10              | 353.30        | 94                 | 2847.38                  | 52.18                 | 52.22 N     | 4.02 E   | 52.38         | 4.41        | 0.27                     | 0.21                | 9.57               |
| 20       | MWD              | 2943.00           | 1.20              | 0.50          | 95                 | 2942.36                  | 54.08                 | 54.12 N     | 3.93 E   | 54.27         | 4.15        | 0.18                     | 0.11                | -371.37            |
| 21       | MWD              | 3037.00           | 0.50              | 304.70        | 94                 | 3036.35                  | 55.31                 | 55.34 N     | 3.60 E   | 55.46         | 3.72        | 1.07                     | -0.74               | 323.62             |
| 22       | MWD              | 3131.00           | 0.90              | 207.40        | 94                 | 3130.34                  | 54.89                 | 54.92 N     | 2.92 E   | 55.00         | 3.05        | 1.15                     | 0.43                | -103.51            |
| 23       | MWD              | 3226.00           | 0.70              | 197.30        | 95                 | 3225.33                  | 53.68                 | 53.70 N     | 2.41 E   | 53.76         | 2.56        | 0.26                     | -0.21               | -10.63             |
| 24       | MWD              | 3320.00           | 0.20              | 182.00        | 94                 | 3319.33                  | 52.97                 | 52.99 N     | 2.23 E   | 53.04         | 2.41        | 0.54                     | -0.53               | -16.28             |
| 25       | MWD              | 3415.00           | 0.20              | 116.70        | 95                 | 3414.33                  | 52.73                 | 52.75 N     | 2.37 E   | 52.81         | 2.57        | 0.23                     | 0.00                | -68.74             |
| 26       | MWD              | 3509.00           | 0.00              | 153.00        | 94                 | 3508.33                  | 52.65                 | 52.68 N     | 2.52 E   | 52.74         | 2.74        | 0.21                     | -0.21               | 38.62              |
| 27       | MWD              | 3603.00           | 0.40              | 50.40         | 94                 | 3602.33                  | 52.86                 | 52.89 N     | 2.77 E   | 52.96         | 3.00        | 0.43                     | 0.43                | -109.15            |
| 28       | MWD              | 3697.00           | 0.40              | 33.00         | 94                 | 3696.33                  | 53.34                 | 53.37 N     | 3.20 E   | 53.47         | 3.43        | 0.13                     | 0.00                | -18.51             |
| 29       | MWD              | 3792.00           | 0.50              | 46.50         | 95                 | 3791.32                  | 53.90                 | 53.94 N     | 3.68 E   | 54.06         | 3.91        | 0.15                     | 0.11                | 14.21              |
| 30       | MWD              | 3886.00           | 0.50              | 38.30         | 94                 | 3885.32                  | 54.50                 | 54.54 N     | 4.24 E   | 54.70         | 4.44        | 0.08                     | 0.00                | -8.72              |
| 31       | MWD              | 3981.00           | 0.40              | 44.90         | 95                 | 3980.32                  | 55.05                 | 55.10 N     | 4.73 E   | 55.30         | 4.90        | 0.12                     | -0.11               | 6.95               |
| 32       | MWD              | 4075.00           | 0.50              | 50.70         | 94                 | 4074.31                  | 55.54                 | 55.59 N     | 5.28 E   | 55.84         | 5.42        | 0.12                     | 0.11                | 6.17               |
| 33       | MWD              | 4169.00           | 0.70              | 53.90         | 94                 | 4168.31                  | 56.13                 | 56.19 N     | 6.06 E   | 56.52         | 6.15        | 0.22                     | 0.21                | 3.40               |



# DRILTECH MWD SURVEY REPORT

Company: Endurance Resources, LLC  
Well: Duo Sonic 29 Federal #4H  
Location: Lea County, New Mexico  
Rig: NorAm 23

Job Number: DM-2016-046-ENDT-NM  
Vertical Section Plane: 359.45  
Well API Number: 30-025-43090  
Tie Into: VES

Calculation Method: Minimum Curvature

| Survey # | Survey Tool Type | Survey Depth (ft) | Inclination (deg) | Azimuth (deg) | Course Length (ft) | True Vertical Depth (ft) | Vertical Section (ft) | Coordinates |          | Closure       |             | Dogleg Severity (d/100') | Build Rate (d/100') | Walk Rate (d/100') |
|----------|------------------|-------------------|-------------------|---------------|--------------------|--------------------------|-----------------------|-------------|----------|---------------|-------------|--------------------------|---------------------|--------------------|
|          |                  |                   |                   |               |                    |                          |                       | N/S (ft)    | E/W (ft) | Distance (ft) | Angle (deg) |                          |                     |                    |
| 34       | MWD              | 4263.00           | 0.90              | 63.70         | 94                 | 4262.30                  | 56.78                 | 56.86 N     | 7.18 E   | 57.31         | 7.20        | 0.26                     | 0.21                | 10.43              |
| 35       | MWD              | 4357.00           | 0.50              | 96.40         | 94                 | 4356.29                  | 57.05                 | 57.14 N     | 8.25 E   | 57.73         | 8.22        | 0.59                     | -0.43               | 34.79              |
| 36       | MWD              | 4452.00           | 1.10              | 103.50        | 95                 | 4451.28                  | 56.78                 | 56.88 N     | 9.55 E   | 57.67         | 9.53        | 0.64                     | 0.63                | 7.47               |
| 37       | MWD              | 4546.00           | 1.80              | 98.70         | 94                 | 4545.25                  | 56.33                 | 56.44 N     | 11.89 E  | 57.68         | 11.89       | 0.76                     | 0.74                | -5.11              |
| 38       | MWD              | 4640.00           | 0.90              | 138.10        | 94                 | 4639.23                  | 55.54                 | 55.67 N     | 13.84 E  | 57.37         | 13.96       | 1.32                     | -0.96               | 41.91              |
| 39       | MWD              | 4735.00           | 0.70              | 195.40        | 95                 | 4734.22                  | 54.42                 | 54.56 N     | 14.18 E  | 56.37         | 14.57       | 0.83                     | -0.21               | 60.32              |
| 40       | MWD              | 4829.00           | 0.90              | 155.00        | 94                 | 4828.21                  | 53.19                 | 53.33 N     | 14.34 E  | 55.23         | 15.05       | 0.62                     | 0.21                | -42.98             |
| 41       | MWD              | 4924.00           | 1.40              | 136.90        | 95                 | 4923.19                  | 51.66                 | 51.81 N     | 15.45 E  | 54.06         | 16.61       | 0.64                     | 0.53                | -19.05             |
| 42       | MWD              | 5018.00           | 1.10              | 141.60        | 94                 | 5017.17                  | 50.10                 | 50.26 N     | 16.80 E  | 53.00         | 18.48       | 0.34                     | -0.32               | 5.00               |
| 43       | MWD              | 5112.00           | 0.20              | 109.30        | 94                 | 5111.16                  | 49.33                 | 49.50 N     | 17.51 E  | 52.51         | 19.48       | 1.00                     | -0.96               | -34.36             |
| 44       | MWD              | 5186.00           | 0.40              | 99.30         | 74                 | 5185.16                  | 49.24                 | 49.42 N     | 17.89 E  | 52.56         | 19.90       | 0.28                     | 0.27                | -13.51             |
| 45       | MWD              | 5357.00           | 0.40              | 128.80        | 171                | 5356.16                  | 48.76                 | 48.95 N     | 18.94 E  | 52.49         | 21.16       | 0.12                     | 0.00                | 17.25              |
| 46       | MWD              | 5451.00           | 0.40              | 125.60        | 94                 | 5450.15                  | 48.36                 | 48.55 N     | 19.47 E  | 52.31         | 21.85       | 0.02                     | 0.00                | -3.40              |
| 47       | MWD              | 5546.00           | 0.90              | 168.00        | 95                 | 5545.15                  | 47.44                 | 47.63 N     | 19.89 E  | 51.61         | 22.67       | 0.70                     | 0.53                | 44.63              |
| 48       | MWD              | 5640.00           | 0.90              | 175.20        | 94                 | 5639.14                  | 45.98                 | 46.17 N     | 20.11 E  | 50.36         | 23.53       | 0.12                     | 0.00                | 7.66               |
| 49       | MWD              | 5734.00           | 1.10              | 167.80        | 94                 | 5733.12                  | 44.36                 | 44.55 N     | 20.36 E  | 48.98         | 24.56       | 0.25                     | 0.21                | -7.87              |
| 50       | MWD              | 5829.00           | 1.10              | 163.90        | 95                 | 5828.11                  | 42.58                 | 42.79 N     | 20.80 E  | 47.58         | 25.93       | 0.08                     | 0.00                | -4.11              |
| 51       | MWD              | 5923.00           | 0.90              | 167.80        | 94                 | 5922.09                  | 40.99                 | 41.20 N     | 21.21 E  | 46.34         | 27.24       | 0.22                     | -0.21               | 4.15               |
| 52       | MWD              | 6017.00           | 0.90              | 167.30        | 94                 | 6016.08                  | 39.55                 | 39.76 N     | 21.53 E  | 45.21         | 28.44       | 0.01                     | 0.00                | -0.53              |
| 53       | MWD              | 6112.00           | 0.90              | 172.70        | 95                 | 6111.07                  | 38.08                 | 38.29 N     | 21.79 E  | 44.05         | 29.64       | 0.09                     | 0.00                | 5.68               |
| 54       | MWD              | 6206.00           | 0.70              | 175.20        | 94                 | 6205.06                  | 36.77                 | 36.98 N     | 21.93 E  | 43.00         | 30.67       | 0.22                     | -0.21               | 2.66               |
| 55       | MWD              | 6301.00           | 0.90              | 176.60        | 95                 | 6300.05                  | 35.45                 | 35.66 N     | 22.02 E  | 41.91         | 31.70       | 0.21                     | 0.21                | 1.47               |
| 56       | MWD              | 6395.00           | 0.70              | 176.40        | 94                 | 6394.04                  | 34.14                 | 34.35 N     | 22.10 E  | 40.85         | 32.76       | 0.21                     | -0.21               | -0.21              |
| 57       | MWD              | 6490.00           | 0.70              | 186.10        | 95                 | 6489.03                  | 32.98                 | 33.19 N     | 22.08 E  | 39.86         | 33.63       | 0.12                     | 0.00                | 10.21              |
| 58       | MWD              | 6584.00           | 0.70              | 182.00        | 94                 | 6583.03                  | 31.84                 | 32.05 N     | 22.00 E  | 38.87         | 34.46       | 0.05                     | 0.00                | -4.36              |
| 59       | MWD              | 6679.00           | 0.70              | 186.80        | 95                 | 6678.02                  | 30.68                 | 30.89 N     | 21.91 E  | 37.87         | 35.34       | 0.06                     | 0.00                | 5.05               |
| 60       | MWD              | 6773.00           | 0.90              | 191.00        | 94                 | 6772.01                  | 29.39                 | 29.60 N     | 21.70 E  | 36.70         | 36.24       | 0.22                     | 0.21                | 4.47               |
| 61       | MWD              | 6867.00           | 0.90              | 187.10        | 94                 | 6866.00                  | 27.93                 | 28.14 N     | 21.47 E  | 35.39         | 37.34       | 0.07                     | 0.00                | -4.15              |
| 62       | MWD              | 6962.00           | 0.70              | 191.20        | 95                 | 6960.99                  | 26.63                 | 26.83 N     | 21.26 E  | 34.23         | 38.39       | 0.22                     | -0.21               | 4.32               |
| 63       | MWD              | 7056.00           | 0.70              | 194.90        | 94                 | 7054.98                  | 25.51                 | 25.71 N     | 21.00 E  | 33.20         | 39.24       | 0.05                     | 0.00                | 3.94               |
| 64       | MWD              | 7151.00           | 0.90              | 193.80        | 95                 | 7149.97                  | 24.23                 | 24.43 N     | 20.67 E  | 32.00         | 40.24       | 0.21                     | 0.21                | -1.16              |
| 65       | MWD              | 7245.00           | 0.90              | 199.30        | 94                 | 7243.96                  | 22.82                 | 23.01 N     | 20.25 E  | 30.66         | 41.35       | 0.09                     | 0.00                | 5.85               |
| 66       | MWD              | 7340.00           | 1.10              | 193.80        | 95                 | 7338.95                  | 21.23                 | 21.42 N     | 19.79 E  | 29.17         | 42.73       | 0.23                     | 0.21                | -5.79              |
| 67       | MWD              | 7433.00           | 1.10              | 195.40        | 93                 | 7431.93                  | 19.51                 | 19.70 N     | 19.34 E  | 27.60         | 44.48       | 0.03                     | 0.00                | 1.72               |
| 68       | MWD              | 7528.00           | 1.20              | 197.90        | 95                 | 7526.91                  | 17.69                 | 17.87 N     | 18.79 E  | 25.93         | 46.44       | 0.12                     | 0.11                | 2.63               |
| 69       | MWD              | 7622.00           | 1.20              | 194.00        | 94                 | 7620.89                  | 15.80                 | 15.98 N     | 18.25 E  | 24.26         | 48.80       | 0.09                     | 0.00                | -4.15              |
| 70       | MWD              | 7717.00           | 1.40              | 195.20        | 95                 | 7715.86                  | 13.72                 | 13.89 N     | 17.71 E  | 22.51         | 51.88       | 0.21                     | 0.21                | 1.26               |



# DRILTECH MWD SURVEY REPORT

Company: Endurance Resources, LLC  
 Well: Duo Sonic 29 Federal #4H  
 Location: Lea County, New Mexico  
 Rig: NorAm 23

Job Number: DM-2016-046-ENDT-NM  
 Vertical Section Plane: 359.45  
 Well API Number: 30-025-43090  
 Tie Into: VES

Calculation Method: Minimum Curvature

| Survey # | Survey Tool Type | Survey Depth (ft) | Inclination (deg) | Azimuth (deg) | Course Length (ft) | True Vertical Depth (ft) | Vertical Section (ft) | Coordinates |          | Closure       |             | Dogleg Severity (d/100') | Build Rate (d/100') | Walk Rate (d/100') |
|----------|------------------|-------------------|-------------------|---------------|--------------------|--------------------------|-----------------------|-------------|----------|---------------|-------------|--------------------------|---------------------|--------------------|
|          |                  |                   |                   |               |                    |                          |                       | N/S (ft)    | E/W (ft) | Distance (ft) | Angle (deg) |                          |                     |                    |
| 71       | MWD              | 7811.00           | 1.20              | 194.20        | 94                 | 7809.84                  | 11.67                 | 11.83 N     | 17.16 E  | 20.85         | 55.42       | 0.21                     | -0.21               | -1.06              |
| 72       | MWD              | 7906.00           | 0.90              | 179.20        | 95                 | 7904.82                  | 9.96                  | 10.12 N     | 16.93 E  | 19.72         | 59.13       | 0.43                     | -0.32               | -15.79             |
| 73       | MWD              | 8000.00           | 1.20              | 185.90        | 94                 | 7998.81                  | 8.24                  | 8.40 N      | 16.84 E  | 18.82         | 63.48       | 0.34                     | 0.32                | 7.13               |
| 74       | MWD              | 8094.00           | 1.60              | 194.00        | 94                 | 8092.78                  | 5.99                  | 6.15 N      | 16.42 E  | 17.54         | 69.46       | 0.47                     | 0.43                | 8.62               |
| 75       | MWD              | 8188.00           | 1.60              | 193.60        | 94                 | 8186.74                  | 3.45                  | 3.60 N      | 15.79 E  | 16.20         | 77.15       | 0.01                     | 0.00                | -0.43              |
| 76       | MWD              | 8283.00           | 1.60              | 185.90        | 95                 | 8281.71                  | 0.85                  | 0.99 N      | 15.35 E  | 15.38         | 86.29       | 0.23                     | 0.00                | -8.11              |
| 77       | MWD              | 8377.00           | 1.80              | 181.90        | 94                 | 8375.66                  | -1.93                 | 1.79 S      | 15.16 E  | 15.27         | 96.72       | 0.25                     | 0.21                | -4.26              |
| 78       | MWD              | 8471.00           | 1.80              | 182.40        | 94                 | 8469.62                  | -4.88                 | 4.74 S      | 15.05 E  | 15.78         | 107.47      | 0.02                     | 0.00                | 0.53               |
| 79       | MWD              | 8565.00           | 1.80              | 182.20        | 94                 | 8563.57                  | -7.83                 | 7.69 S      | 14.93 E  | 16.80         | 117.24      | 0.01                     | 0.00                | -0.21              |
| 80       | MWD              | 8659.00           | 1.60              | 177.80        | 94                 | 8657.53                  | -10.62                | 10.47 S     | 14.93 E  | 18.23         | 125.06      | 0.25                     | -0.21               | -4.68              |
| 81       | MWD              | 8753.00           | 1.40              | 171.10        | 94                 | 8751.50                  | -13.06                | 12.92 S     | 15.16 E  | 19.91         | 130.45      | 0.28                     | -0.21               | -7.13              |
| 82       | MWD              | 8847.00           | 1.40              | 167.80        | 94                 | 8845.47                  | -15.33                | 15.18 S     | 15.58 E  | 21.75         | 134.26      | 0.09                     | 0.00                | -3.51              |
| 83       | MWD              | 8941.00           | 1.60              | 163.80        | 94                 | 8939.44                  | -17.71                | 17.56 S     | 16.18 E  | 23.88         | 137.33      | 0.24                     | 0.21                | -4.26              |
| 84       | MWD              | 9035.00           | 1.40              | 156.40        | 94                 | 9033.41                  | -20.03                | 19.87 S     | 17.01 E  | 26.16         | 139.44      | 0.30                     | -0.21               | -7.87              |
| 85       | MWD              | 9129.00           | 1.40              | 148.80        | 94                 | 9127.38                  | -22.08                | 21.91 S     | 18.06 E  | 28.39         | 140.49      | 0.20                     | 0.00                | -8.09              |
| 86       | MWD              | 9223.00           | 1.40              | 137.40        | 94                 | 9221.35                  | -23.92                | 23.73 S     | 19.44 E  | 30.68         | 140.68      | 0.30                     | 0.00                | -12.13             |
| 87       | MWD              | 9317.00           | 1.40              | 126.00        | 94                 | 9315.32                  | -25.46                | 25.25 S     | 21.14 E  | 32.94         | 140.06      | 0.30                     | 0.00                | -12.13             |
| 88       | MWD              | 9411.00           | 1.40              | 116.00        | 94                 | 9409.29                  | -26.65                | 26.43 S     | 23.10 E  | 35.11         | 138.84      | 0.26                     | 0.00                | -10.64             |
| 89       | MWD              | 9505.00           | 1.40              | 120.30        | 94                 | 9503.27                  | -27.75                | 27.51 S     | 25.13 E  | 37.26         | 137.60      | 0.11                     | 0.00                | 4.57               |
| 90       | MWD              | 9599.00           | 1.40              | 118.40        | 94                 | 9597.24                  | -28.90                | 28.64 S     | 27.13 E  | 39.45         | 136.55      | 0.05                     | 0.00                | -2.02              |
| 91       | MWD              | 9693.00           | 1.40              | 123.90        | 94                 | 9691.21                  | -30.10                | 29.83 S     | 29.09 E  | 41.67         | 135.71      | 0.14                     | 0.00                | 5.85               |
| 92       | MWD              | 9788.00           | 1.80              | 120.00        | 95                 | 9786.17                  | -31.52                | 31.22 S     | 31.35 E  | 44.24         | 134.88      | 0.44                     | 0.42                | -4.11              |
| 93       | MWD              | 9893.00           | 1.80              | 125.80        | 105                | 9891.12                  | -33.34                | 33.01 S     | 34.11 E  | 47.47         | 134.06      | 0.17                     | 0.00                | 5.52               |
| 94       | MWD              | 9988.00           | 1.60              | 122.60        | 95                 | 9986.08                  | -34.94                | 34.60 S     | 36.44 E  | 50.25         | 133.51      | 0.23                     | -0.21               | -3.37              |
| 95       | MWD              | 10082.00          | 1.40              | 123.90        | 94                 | 10080.05                 | -36.31                | 35.94 S     | 38.50 E  | 52.67         | 133.03      | 0.22                     | -0.21               | 1.38               |
| 96       | MWD              | 10179.00          | 1.40              | 142.10        | 97                 | 10177.02                 | -37.92                | 37.54 S     | 40.21 E  | 55.01         | 133.03      | 0.46                     | 0.00                | 18.76              |
| 97       | MWD              | 10273.00          | 1.10              | 140.90        | 94                 | 10270.99                 | -39.54                | 39.15 S     | 41.49 E  | 57.04         | 133.34      | 0.32                     | -0.32               | -1.28              |
| 98       | MWD              | 10302.00          | 1.10              | 125.80        | 29                 | 10299.99                 | -39.93                | 39.53 S     | 41.89 E  | 57.59         | 133.34      | 1.00                     | 0.00                | -52.07             |
| 99       | MWD              | 10386.00          | 0.70              | 41.60         | 84                 | 10383.98                 | -40.02                | 39.61 S     | 42.88 E  | 58.38         | 132.73      | 1.48                     | -0.48               | -100.24            |
| 100      | MWD              | 10433.00          | 4.90              | 348.00        | 47                 | 10430.92                 | -37.84                | 37.43 S     | 42.65 E  | 56.75         | 131.27      | 9.62                     | 8.94                | 651.91             |
| 101      | MWD              | 10480.00          | 9.30              | 345.00        | 47                 | 10477.55                 | -32.19                | 31.80 S     | 41.25 E  | 52.09         | 127.63      | 9.39                     | 9.36                | -6.38              |
| 102      | MWD              | 10527.00          | 15.30             | 347.30        | 47                 | 10523.45                 | -22.45                | 22.07 S     | 38.91 E  | 44.73         | 119.57      | 12.81                    | 12.77               | 4.89               |
| 103      | MWD              | 10575.00          | 19.70             | 346.80        | 48                 | 10569.21                 | -8.35                 | 8.01 S      | 35.66 E  | 36.55         | 102.66      | 9.17                     | 9.17                | -1.04              |
| 104      | MWD              | 10622.00          | 25.30             | 348.90        | 47                 | 10612.62                 | 9.26                  | 9.57 N      | 31.92 E  | 33.32         | 73.31       | 12.04                    | 11.91               | 4.47               |
| 105      | MWD              | 10669.00          | 30.30             | 354.30        | 47                 | 10654.19                 | 30.96                 | 31.24 N     | 28.81 E  | 42.49         | 42.68       | 11.90                    | 10.64               | 11.49              |
| 106      | MWD              | 10716.00          | 34.80             | 356.10        | 47                 | 10693.80                 | 56.17                 | 56.43 N     | 26.71 E  | 62.44         | 25.33       | 9.79                     | 9.57                | 3.83               |
| 107      | MWD              | 10764.00          | 39.10             | 355.90        | 48                 | 10732.15                 | 84.97                 | 85.21 N     | 24.70 E  | 88.72         | 16.17       | 8.96                     | 8.96                | -0.42              |



# DRILTECH MWD SURVEY REPORT

Company: Endurance Resources, LLC  
 Well: Duo Sonic 29 Federal #4H  
 Location: Lea County, New Mexico  
 Rig: NorAm 23

Job Number: DM-2016-046-ENDT-NM  
 Vertical Section Plane: 359.45  
 Well API Number: 30-025-43090  
 Tie Into: VES

Calculation Method: Minimum Curvature

| Survey # | Survey Tool Type | Survey Depth (ft) | Inclination (deg) | Azimuth (deg) | Course Length (ft) | True Vertical Depth (ft) | Vertical Section (ft) | Coordinates |          | Closure       |             | Dogleg Severity (d/100') | Build Rate (d/100') | Walk Rate (d/100') |
|----------|------------------|-------------------|-------------------|---------------|--------------------|--------------------------|-----------------------|-------------|----------|---------------|-------------|--------------------------|---------------------|--------------------|
|          |                  |                   |                   |               |                    |                          |                       | N/S (ft)    | E/W (ft) | Distance (ft) | Angle (deg) |                          |                     |                    |
| 108      | MWD              | 10811.00          | 43.10             | 357.80        | 47                 | 10767.56                 | 115.82                | 116.05 N    | 23.02 E  | 118.31        | 11.22       | 8.92                     | 8.51                | 4.04               |
| 109      | MWD              | 10859.00          | 48.60             | 359.40        | 48                 | 10800.98                 | 150.25                | 150.47 N    | 22.20 E  | 152.10        | 8.39        | 11.70                    | 11.46               | 3.33               |
| 110      | MWD              | 10906.00          | 52.80             | 1.00          | 47                 | 10830.75                 | 186.60                | 186.83 N    | 22.35 E  | 188.16        | 6.82        | 9.32                     | 8.94                | -762.55            |
| 111      | MWD              | 10953.00          | 56.50             | 0.30          | 47                 | 10857.93                 | 224.92                | 225.15 N    | 22.78 E  | 226.30        | 5.78        | 7.97                     | 7.87                | -1.49              |
| 112      | MWD              | 11000.00          | 60.00             | 358.90        | 47                 | 10882.66                 | 264.88                | 265.11 N    | 22.49 E  | 266.06        | 4.85        | 7.87                     | 7.45                | 762.98             |
| 113      | MWD              | 11048.00          | 64.00             | 357.80        | 48                 | 10905.19                 | 307.25                | 307.46 N    | 21.26 E  | 308.20        | 3.96        | 8.58                     | 8.33                | -2.29              |
| 114      | MWD              | 11095.00          | 67.40             | 357.30        | 47                 | 10924.53                 | 350.05                | 350.25 N    | 19.43 E  | 350.79        | 3.17        | 7.30                     | 7.23                | -1.06              |
| 115      | MWD              | 11142.00          | 72.70             | 358.00        | 47                 | 10940.56                 | 394.19                | 394.38 N    | 17.62 E  | 394.77        | 2.56        | 11.36                    | 11.28               | 1.49               |
| 116      | MWD              | 11189.00          | 76.20             | 357.50        | 47                 | 10953.16                 | 439.45                | 439.62 N    | 15.84 E  | 439.90        | 2.06        | 7.52                     | 7.45                | -1.06              |
| 117      | MWD              | 11236.00          | 79.90             | 355.20        | 47                 | 10962.89                 | 485.35                | 485.49 N    | 12.91 E  | 485.67        | 1.52        | 9.21                     | 7.87                | -4.89              |
| 118      | MWD              | 11283.00          | 84.30             | 354.70        | 47                 | 10969.35                 | 531.75                | 531.86 N    | 8.81 E   | 531.93        | 0.95        | 9.42                     | 9.36                | -1.06              |
| 119      | MWD              | 11337.00          | 89.00             | 356.20        | 54                 | 10972.50                 | 585.51                | 585.58 N    | 4.54 E   | 585.59        | 0.44        | 9.13                     | 8.70                | 2.78               |
| 120      | MWD              | 11431.00          | 90.10             | 356.10        | 94                 | 10973.24                 | 679.35                | 679.36 N    | 1.77 W   | 679.36        | 359.85      | 1.18                     | 1.17                | -0.11              |
| 121      | MWD              | 11525.00          | 90.60             | 356.90        | 94                 | 10972.67                 | 773.22                | 773.18 N    | 7.51 W   | 773.22        | 359.44      | 1.00                     | 0.53                | 0.85               |
| 122      | MWD              | 11614.00          | 90.40             | 357.80        | 89                 | 10971.89                 | 862.15                | 862.08 N    | 11.63 W  | 862.16        | 359.23      | 1.04                     | -0.22               | 1.01               |
| 123      | MWD              | 11708.00          | 89.60             | 1.00          | 94                 | 10971.89                 | 956.14                | 956.06 N    | 12.61 W  | 956.15        | 359.24      | 3.51                     | -0.85               | -379.57            |
| 124      | MWD              | 11801.00          | 89.90             | 359.60        | 93                 | 10972.30                 | 1049.13               | 1049.06 N   | 12.12 W  | 1049.13       | 359.34      | 1.54                     | 0.32                | 385.59             |
| 125      | MWD              | 11896.00          | 90.40             | 359.90        | 95                 | 10972.05                 | 1144.13               | 1144.06 N   | 12.54 W  | 1144.13       | 359.37      | 0.61                     | 0.53                | 0.32               |
| 126      | MWD              | 11989.00          | 88.90             | 0.60          | 93                 | 10972.62                 | 1237.11               | 1237.05 N   | 12.13 W  | 1237.11       | 359.44      | 1.78                     | -1.61               | -386.34            |
| 127      | MWD              | 12083.00          | 89.00             | 359.90        | 94                 | 10974.34                 | 1331.09               | 1331.04 N   | 11.72 W  | 1331.09       | 359.50      | 0.75                     | 0.11                | 382.23             |
| 128      | MWD              | 12178.00          | 89.00             | 359.20        | 95                 | 10976.00                 | 1426.07               | 1426.02 N   | 12.47 W  | 1426.07       | 359.50      | 0.74                     | 0.00                | -0.74              |
| 129      | MWD              | 12272.00          | 89.70             | 359.40        | 94                 | 10977.06                 | 1520.06               | 1520.00 N   | 13.62 W  | 1520.06       | 359.49      | 0.77                     | 0.74                | 0.21               |
| 130      | MWD              | 12366.00          | 91.00             | 358.50        | 94                 | 10976.49                 | 1614.06               | 1613.98 N   | 15.34 W  | 1614.06       | 359.46      | 1.68                     | 1.38                | -0.96              |
| 131      | MWD              | 12460.00          | 91.80             | 358.00        | 94                 | 10974.19                 | 1708.01               | 1707.91 N   | 18.21 W  | 1708.01       | 359.39      | 1.00                     | 0.85                | -0.53              |
| 132      | MWD              | 12555.00          | 91.30             | 359.20        | 95                 | 10971.62                 | 1802.96               | 1802.85 N   | 20.53 W  | 1802.96       | 359.35      | 1.37                     | -0.53               | 1.26               |
| 133      | MWD              | 12649.00          | 90.60             | 359.40        | 94                 | 10970.07                 | 1896.95               | 1896.82 N   | 21.68 W  | 1896.95       | 359.35      | 0.77                     | -0.74               | 0.21               |
| 134      | MWD              | 12743.00          | 91.50             | 358.50        | 94                 | 10968.34                 | 1990.92               | 1990.79 N   | 23.40 W  | 1990.93       | 359.33      | 1.35                     | 0.96                | -0.96              |
| 135      | MWD              | 12837.00          | 89.90             | 359.40        | 94                 | 10967.19                 | 2084.91               | 2084.76 N   | 25.12 W  | 2084.92       | 359.31      | 1.95                     | -1.70               | 0.96               |
| 136      | MWD              | 12930.00          | 90.60             | 359.60        | 93                 | 10966.79                 | 2177.91               | 2177.76 N   | 25.93 W  | 2177.91       | 359.32      | 0.78                     | 0.75                | 0.22               |
| 137      | MWD              | 13025.00          | 89.20             | 359.60        | 95                 | 10966.95                 | 2272.90               | 2272.75 N   | 26.60 W  | 2272.91       | 359.33      | 1.47                     | -1.47               | 0.00               |
| 138      | MWD              | 13119.00          | 89.70             | 357.80        | 94                 | 10967.86                 | 2366.89               | 2366.72 N   | 28.73 W  | 2366.90       | 359.30      | 1.99                     | 0.53                | -1.91              |
| 139      | MWD              | 13213.00          | 88.90             | 359.90        | 94                 | 10969.01                 | 2460.87               | 2460.69 N   | 30.62 W  | 2460.88       | 359.29      | 2.39                     | -0.85               | 2.23               |
| 140      | MWD              | 13307.00          | 89.20             | 359.90        | 94                 | 10970.56                 | 2554.85               | 2554.68 N   | 30.78 W  | 2554.86       | 359.31      | 0.32                     | 0.32                | 0.00               |
| 141      | MWD              | 13402.00          | 89.40             | 358.40        | 95                 | 10971.72                 | 2649.84               | 2649.66 N   | 32.19 W  | 2649.85       | 359.30      | 1.59                     | 0.21                | -1.58              |
| 142      | MWD              | 13494.00          | 89.90             | 358.50        | 92                 | 10972.29                 | 2741.83               | 2741.62 N   | 34.68 W  | 2741.84       | 359.28      | 0.55                     | 0.54                | 0.11               |
| 143      | MWD              | 13588.00          | 91.00             | 359.10        | 94                 | 10971.55                 | 2835.82               | 2835.60 N   | 36.65 W  | 2835.83       | 359.26      | 1.33                     | 1.17                | 0.64               |
| 144      | MWD              | 13682.00          | 89.40             | 359.20        | 94                 | 10971.22                 | 2929.81               | 2929.58 N   | 38.04 W  | 2929.83       | 359.26      | 1.71                     | -1.70               | 0.11               |



# DRILTECH MWD SURVEY REPORT

Company: Endurance Resources, LLC  
 Well: Duo Sonic 29 Federal #4H  
 Location: Lea County, New Mexico  
 Rig: NorAm 23

Job Number: DM-2016-046-ENDT-NM  
 Vertical Section Plane: 359.45  
 Well API Number: 30-025-43090  
 Tie Into: VES

Calculation Method: Minimum Curvature

| Survey # | Survey Tool Type | Survey Depth (ft) | Inclination (deg) | Azimuth (deg) | Course Length (ft) | True Vertical Depth (ft) | Vertical Section (ft) | Coordinates |          | Closure       |             | Dogleg Severity (d/100') | Build Rate (d/100') | Walk Rate (d/100') |
|----------|------------------|-------------------|-------------------|---------------|--------------------|--------------------------|-----------------------|-------------|----------|---------------|-------------|--------------------------|---------------------|--------------------|
|          |                  |                   |                   |               |                    |                          |                       | N/S (ft)    | E/W (ft) | Distance (ft) | Angle (deg) |                          |                     |                    |
| 145      | MWD              | 13776.00          | 88.20             | 0.10          | 94                 | 10973.19                 | 3023.79               | 3023.56 N   | 38.62 W  | 3023.80       | 359.27      | 1.60                     | -1.28               | -382.02            |
| 146      | MWD              | 13871.00          | 88.20             | 359.60        | 95                 | 10976.17                 | 3118.74               | 3118.51 N   | 38.86 W  | 3118.75       | 359.29      | 0.53                     | 0.00                | 378.42             |
| 147      | MWD              | 13965.00          | 88.90             | 359.80        | 94                 | 10978.55                 | 3212.71               | 3212.48 N   | 39.36 W  | 3212.72       | 359.30      | 0.77                     | 0.74                | 0.21               |
| 148      | MWD              | 14061.00          | 88.50             | 358.00        | 96                 | 10980.73                 | 3308.67               | 3308.43 N   | 41.20 W  | 3308.69       | 359.29      | 1.92                     | -0.42               | -1.88              |
| 149      | MWD              | 14155.00          | 90.80             | 359.10        | 94                 | 10981.30                 | 3402.65               | 3402.39 N   | 43.58 W  | 3402.67       | 359.27      | 2.71                     | 2.45                | 1.17               |
| 150      | MWD              | 14250.00          | 91.70             | 358.90        | 95                 | 10979.23                 | 3497.63               | 3497.35 N   | 45.23 W  | 3497.64       | 359.26      | 0.97                     | 0.95                | -0.21              |
| 151      | MWD              | 14344.00          | 90.80             | 0.80          | 94                 | 10977.18                 | 3591.60               | 3591.32 N   | 45.48 W  | 3591.61       | 359.27      | 2.24                     | -0.96               | -380.96            |
| 152      | MWD              | 14438.00          | 90.60             | 359.20        | 94                 | 10976.03                 | 3685.58               | 3685.31 N   | 45.48 W  | 3685.59       | 359.29      | 1.72                     | -0.21               | 381.28             |
| 153      | MWD              | 14532.00          | 89.00             | 1.00          | 94                 | 10976.36                 | 3779.57               | 3779.31 N   | 45.32 W  | 3779.58       | 359.31      | 2.56                     | -1.70               | -381.06            |
| 154      | MWD              | 14627.00          | 89.60             | 1.30          | 95                 | 10977.52                 | 3874.52               | 3874.28 N   | 43.41 W  | 3874.52       | 359.36      | 0.71                     | 0.63                | 0.32               |
| 155      | MWD              | 14721.00          | 90.10             | 0.80          | 94                 | 10977.77                 | 3968.48               | 3968.26 N   | 41.69 W  | 3968.48       | 359.40      | 0.75                     | 0.53                | -0.53              |
| 156      | MWD              | 14815.00          | 90.60             | 1.90          | 94                 | 10977.19                 | 4062.43               | 4062.23 N   | 39.47 W  | 4062.43       | 359.44      | 1.29                     | 0.53                | 1.17               |
| 157      | MWD              | 14910.00          | 90.10             | 0.10          | 95                 | 10976.61                 | 4157.38               | 4157.21 N   | 37.81 W  | 4157.39       | 359.48      | 1.97                     | -0.53               | -1.89              |
| 158      | MWD              | 15004.00          | 90.40             | 1.20          | 94                 | 10976.20                 | 4251.36               | 4251.20 N   | 36.75 W  | 4251.36       | 359.50      | 1.21                     | 0.32                | 1.17               |
| 159      | MWD              | 15098.00          | 91.10             | 0.80          | 94                 | 10974.97                 | 4345.32               | 4345.18 N   | 35.11 W  | 4345.32       | 359.54      | 0.86                     | 0.74                | -0.43              |
| 160      | MWD              | 15193.00          | 92.40             | 1.50          | 95                 | 10972.07                 | 4440.23               | 4440.12 N   | 33.20 W  | 4440.24       | 359.57      | 1.55                     | 1.37                | 0.74               |
| 161      | MWD              | 15288.00          | 91.10             | 359.60        | 95                 | 10969.17                 | 4535.16               | 4535.06 N   | 32.29 W  | 4535.18       | 359.59      | 2.42                     | -1.37               | 376.95             |
| 162      | MWD              | 15382.00          | 92.00             | 359.20        | 94                 | 10966.63                 | 4629.13               | 4629.02 N   | 33.28 W  | 4629.14       | 359.59      | 1.05                     | 0.96                | -0.43              |
| 163      | MWD              | 15477.00          | 92.20             | 358.00        | 95                 | 10963.15                 | 4724.05               | 4723.93 N   | 35.59 W  | 4724.06       | 359.57      | 1.28                     | 0.21                | -1.26              |
| 164      | MWD              | 15495.00          | 92.40             | 358.90        | 18                 | 10962.42                 | 4742.03               | 4741.90 N   | 36.08 W  | 4742.04       | 359.56      | 5.12                     | 1.11                | 5.00               |
| 165      | PROJ             | 15552.00          | 92.40             | 358.90        | 57                 | 10960.04                 | 4798.98               | 4798.84 N   | 37.17 W  | 4798.99       | 359.56      | 0.00                     | 0.00                | 0.00               |