

OCD Hobbs

15-176

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCT 26 2015

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. **SHL - NMNM 112943**
NM-045706 **BNL - 132955**

6. If Indian, Allottee or Tribe Name

7. If Unit or CA Agreement, Name and No.

8. Lease Name and Well No. **(315618)**
MUSTANG 33 FEDERAL 2H

9. API Well No.

10. Field and Pool, or Exploratory

11. Sec., T. R. M. or Blk. and Survey or Area
SEC. 33-T25S-R35E

12. County or Parish
LEA

13. State
NM

1a. Type of work: ☒ DRILL ☐ REENTER

1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone

2. Name of Operator

ENDURANCE RESOURCES, LLC

3a. Address **203 WEST WALL ST. SUITE 1000**
MIDLAND, TX 79701

3b. Phone No. (include area code)
432-242-4680

4. Location of Well (Report location clearly and in accordance with any State requirements.)

At surface **150' FSL & 1980' FWL (N)**

At proposed prod. zone **330' FNL & 1980' FWL (C)**

14. Distance in miles and direction from nearest town or post office*
7 miles southwest of Jal, New Mexico

15. Distance from proposed* location to nearest property or lease line, ft.
(Also to nearest drig. unit line, if any)
330'

16. No. of acres in lease
1,400 ac

17. Spacing Unit dedicated to this well
160 ac

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
1980'

19. Proposed Depth
MD: 17220'
TVD: 12320'

20. BLM/BIA Bond No. on file
NM00640 terminated
NM Bond 1230

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3200.0 GL

22. Approximate date work will start*
03/01/2015

23. Estimated duration
45 DAYS

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature

M.A. Sirgo III

Name (Printed/Typed)
M.A. SIRGO III

Date
11/06/2014

Title

ENGINEER

Approved by (Signature)

Steve Caffey

Name (Printed/Typed)

Office **CARLSBAD FIELD OFFICE**

Date
OCT 21 2015

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

Carlsbad Controlled Water Basin

Approval Subject to General Requirements
& Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

OCT 28 2015



HOBBS OCD

OCT 26 2015

RECEIVED

Endurance Resources LLC

DRILLING & OPERATIONS PROGRAM

Mustang 33 Fed 2H

SHL: 150' FSL & 1980' FWL

Sec 33-25S-35E

BHL: 330' FNL & 1980' FWL

Sec 33-25S-35E

Lea Co, NM

1. Geological Name of Surface Formation

Quaternary

2. Estimated Tops of Important Geological Markers

Fresh Water	400'	
Rustler	1,025'	
Top of Salt	1,125'	
Castile	3,590'	
Lamar Limestone	5,250'	
Bell Canyon	5,295'	Oil
Cherry Canyon	6,295'	
Brushy canyon	7,940'	Oil
Bone Spring	9,120'	
1 st Bone Spring	10,370'	Oil
2 nd Bone Spring	10,850'	Oil
3 rd Bone Spring	11,990'	Oil
TVD: 12,320'; MD: 16,891'		

Pilot Hole TD: 13,115' TVD

3. Estimated Depths of Anticipated Fresh Water, Oil or Gas

The estimated depths at which water, oil and gas will be encountered are as follows:



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Water: Average depth to water: 400'. Minimum depth: 0'. Max: 400'. As reported from the New Mexico Office of the State Engineer website.

Oil & Gas: 5,295' – 12,230' (Delaware through Bone Spring)

No other formations are expected to give up oil, gas, or fresh water in measurable quantities.

4. Pilot Hole Program:

Drill 8 3/4" pilot hole to 13,115'. Run open hole logs, plug back to KOP (11,768').

5. Proposed Casing Program:

Size	Depth	#/ft	Grade	Collapse	Burst	Tension
13-3/8"	1,075'	54.5	J-55 <i>STC</i>	2.25	5.43	8.77
9-5/8"	4,350'	40	J-55 <i>L-80 LTC</i>	1.26	1.94	2.6
9-5/8"	9,150	43.5	HCL-80 <i>LTC</i>	1.13	1.34	2.1
5-1/2"	16,891'	20.0	P-110 <i>BTC</i>	1.92	2.15	1.97

*Per operator
10/15/15
CRW*

NOTE: ALL CASING IS NEW & API APPROVED. WHILE RUNNING CASING, PIPE WILL BE KEPT A MINIMUM OF 1/3 FULL AT ALL TIMES TO AVOID APPROACHING COLLAPSE PRESSURE OF THE CASING. SURFACE CASING WILL BE WATCHED & NECESSARY ADJUSTMENTS MADE TO ENSURE PIPE IS FULL DUE TO LOST CIRCULATION ZONES THAT MAY OCCUR. CENTRALIZERS WILL BE USED ON SURFACE CASING

6. Proposed Cement Program:

a. 13-3/8" Surface

Lead: 475 sks ExtendaCem Class C (13.7 ppg / 1.694 cuft/sk)

Tail: 555 sks HalCem Class C (14.8 ppg / 1.326 cuft/sk)

****Calculated w/ 100% excess on OH volume**

b. 9-5/8" Intermediate (2 stage with DVT @ 5250')

1st stage:

Lead: 730 sks EconoCem Class H + HR-601 Retarder + 0.125 lbm/sk Poly-E-Flake LCM + 3 lbm/sk Kol-Seal LCM + 5% salt (12.7 ppg / 2.002 cuft/sk)



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Tail: 390 sks VersaCem Class H + 0.3% Halad-344 retarder + 0.3% Halad-322 retarder + 3 lbm/sk Kol-Seal LCM + 0.125 lbm/sk Poly-E-Flake LCM + 0.2% HR-800 retarder (14.4 ppg / 1.26 cuft/sk)

2nd stage:

Lead: 1205 sks EconoCem Class C + 5% salt + 0.125 lbm/sk Poly-E-Flake LCM + 0.4% HR-800 retarder (12.9 ppg / 1.874 cuft/sk)

Tail: 100 sks HalCem Class C + .0125 lbm/sk Poly-E-Flake LCM (14.8 ppg / 1.325 cuft/sk) *TOC Surface*

****Calculated w/ 50% excess on OH volumes & 10% in CH**

c. Isolation Plugs:

500 COA
13,115' – 12,615' *- Additional Plug required*
12,270' – 11,770' *(Class H Neck Required)*

Slurry: 2 - 150 sks EconoCem Class H + 5% salt (12.9 ppg / 1.88 cuft/sk)

****Calculated with 40% excess**

d. 5 1/2" Production

Lead: 575 sks VersaCem Class H + 0.1% FE-2 + 8% Bentonite gel (11.9 ppg / 2.268 cuft/sk)

Tail: 500 sks SoluCem Class H + 0.8 % HR-601 retarder + 0.25 lbm/sk D-AIR 5000 Defoamer (15 ppg / 2.625 cuft/sk)

****Calculated w/ 20% excess in vertical OH, 20% excess on OH volumes & 10% in CH** *TOC - 8950'*

NOTE: THE ABOVE CEMENT VOLUMES COULD BE REVISED PENDING FLUID CALIPER & CALIPER LOG DATA. ALL VOLUMES ARE DESIGNED TO CIRCULATE TO SURFACE.

7. Minimum Specifications for Pressure Control:

13-5/8 (5M) working pressure BOP system consisting of one set of blind rams and one set of pipe rams and a 5000# annular type preventer (please see BOP schematic). A 5M choke manifold & 120 gallon accumulator with floor and remote operating stations & auxiliary power system. Rotating head as needed. A Kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

BOP unit will be hydraulically operated. BOP will be NU and operated at least once a day while drilling and the blind rams will be operated when out of the hole



during trips. From the base of the 13-3/8" csg through running of production casing, the well will be equipped with a 5M BOP system. Below the 9-5/8 csg shoe, this 5M system will be equipped with a HCR valve, remote kill line, & annular to match. The remote kill line will be installed prior to testing the system & tested to stack pressure.

Before drilling out of the 13-3/8 surface casing, BOP will be tested by an independent surface company to 250 psi low & 3000 psi high. Hydril will be tested to 250 psi low and 1500 psi high. Before drilling out the 9-5/8 intermediate shoe BOP will be tested by an independent service company to 250psi low and 5000 psi high. Hydril will be tested to 250 psi low and 2500 psi high. These low pressure tests from 250 to 300 psi will be held a minimum of 10 minutes if test is done with a test plug & 30 minutes without a test plug.

8. Estimated BHP:

5771 psi @ 13,115' TVD

9. Mud Program: The applicable depths & properties of this system are as follows:

Depth	Type of System	Mud Weight	Viscosity (sec)	Waterloss (cc)
0 – 1,075'	Fresh	8.4	29-32	NC
1,075' – 9,150'	OBM	90.0	50-60	-
9,150' – 16,891'	Cut Brine	9.4	28-32	<12

NOTE: NECESSARY MUD PRODUCTS FOR WEIGHT ADDITION & FLUID LOSS WILL BE ON LOCATION AT ALL TIMES. VISUAL MUD MONITORING EQUIPMENT (I.E. TRIP TANK) WILL BE IN PLACE TO DETECT VOLUME CHANGES INDICATING LOSS OR GAIN OF CIRCULATION VOLUME WITH ALARMS.

10. Auxiliary Well Control & Monitoring Equipment:

- A Kelly cock will be in the drill string at all times.
- A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times



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- c. H2S detection equipment will be in operation & breathing apparatuses will be on location after the drill out of the 13-3/8" casing shoe until the 5-1/2" casing is cemented.

11. Testing, Logging & Coring Program:

- a. No drill stem tests are planned.
- b. GR/N well log ran from KOP to surface.
- c. Triple combo logs from KOP to intermediate casing shoe.
- d. No coring is planned.

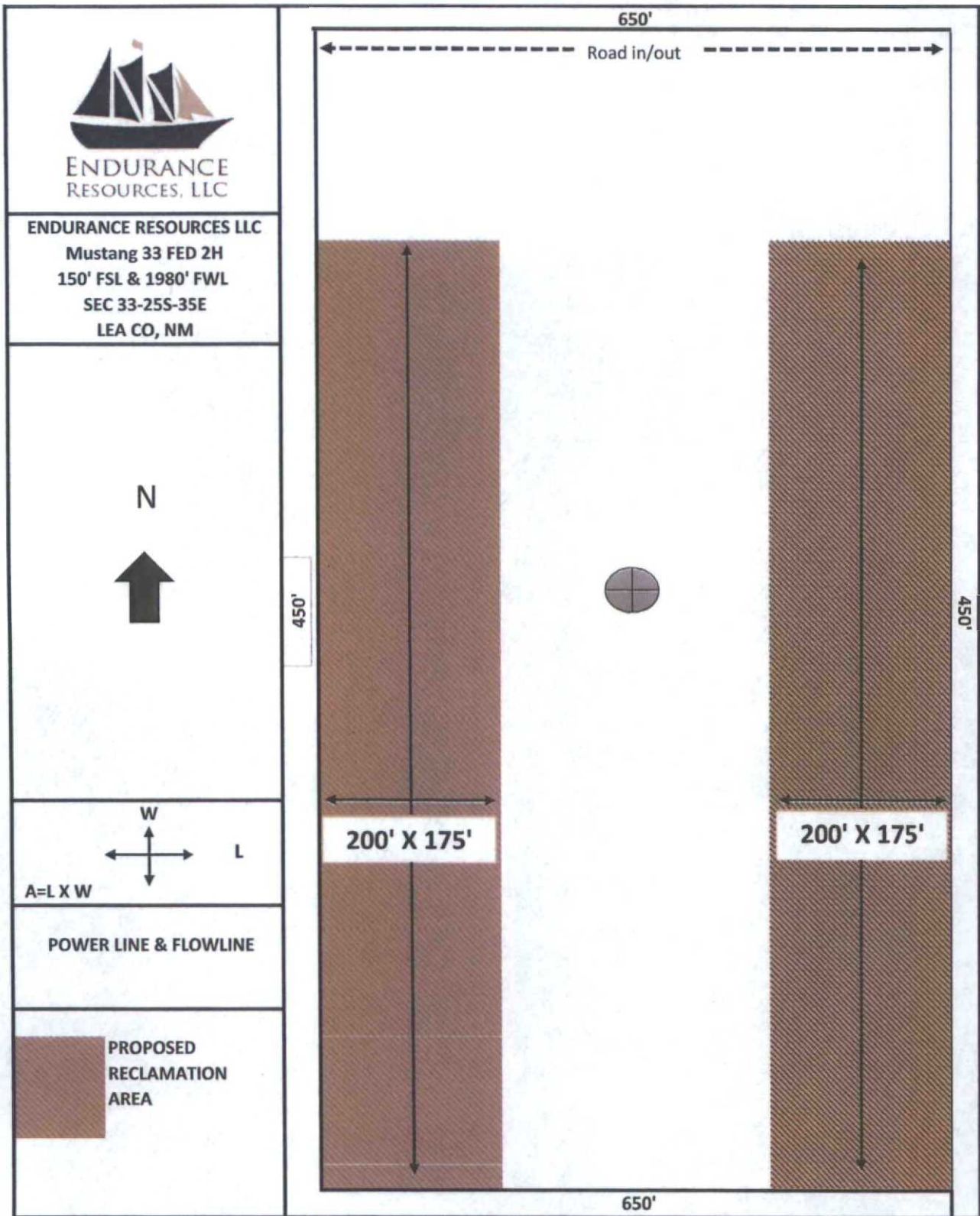
12. Potential Hazards:

No abnormal pressures or temperatures are expected. If H2S is encountered, Endurance Resources LLC will comply with Onshore Order #6. Regardless, all personnel will be trained & qualified with H2S safety. Rig safety equipment will all also be checked daily once drill out of the 13-3/8" casing shoe to TD. It has been noted that H2S has been encountered in the salt section. If H2S is encountered, measurements & formations will be reported to the BLM.

13. Anticipated starting date & Duration of Operations:

Road & location construction will begin after the BLM has approved the APD. Anticipated spud date will begin after BLM approval & after a drilling rig is secured. Move in operations & drilling is expected to take no more than 45 days. An additional 30-50 days will be needed to complete this well & construct surface facilities and/or lay flow lines in order to place well on production.

PROPOSED INTERIM SITE RECLAMATION



Endurance Resources LLC

HALLIBURTON
Sperry Drilling Services

Project: Lea County, NM (NAD 83)
Site: Mustang 33 Federal
Well: Mustang 33 Federal #2H
Wellbore: Wellbore #1
Plan #1
Rig: Patriot 4

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
11768.00	0.00	0.00	11768.00	0.00	0.00	0.00	0.00	0.00	Start Build
12668.07	90.00	359.44	12341.00	572.97	-5.63	10.00	359.44	573.00	End Build
16890.99	90.00	359.44	12341.00	4795.69	-47.10	0.00	0.00	4795.92	TD

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

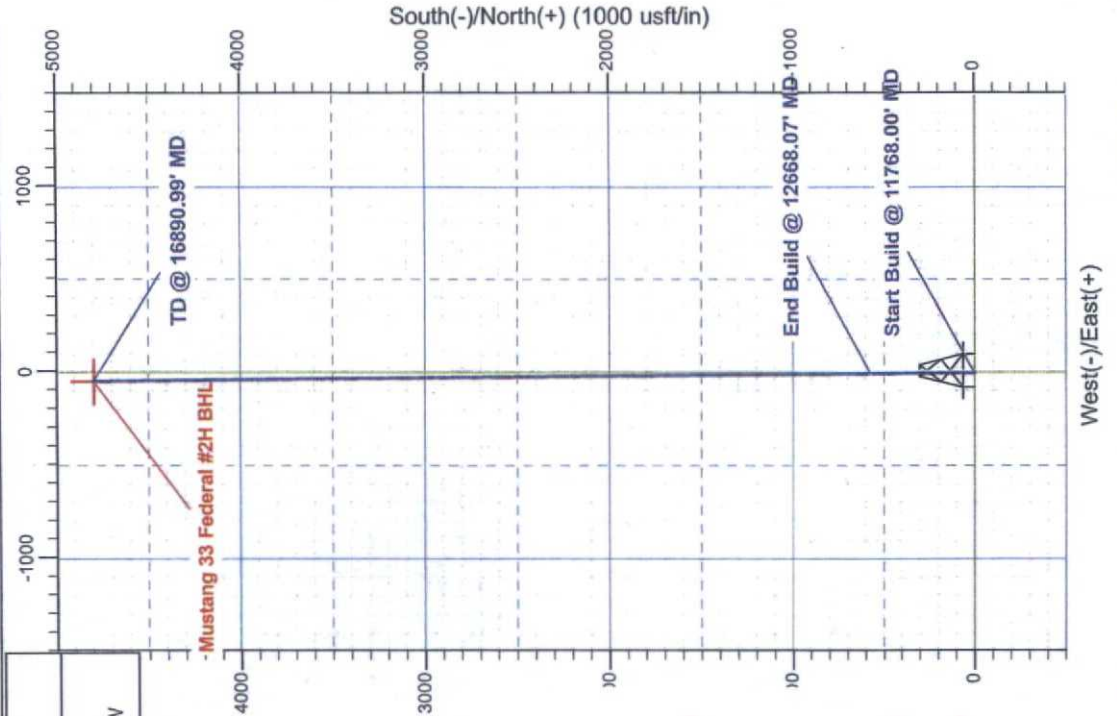
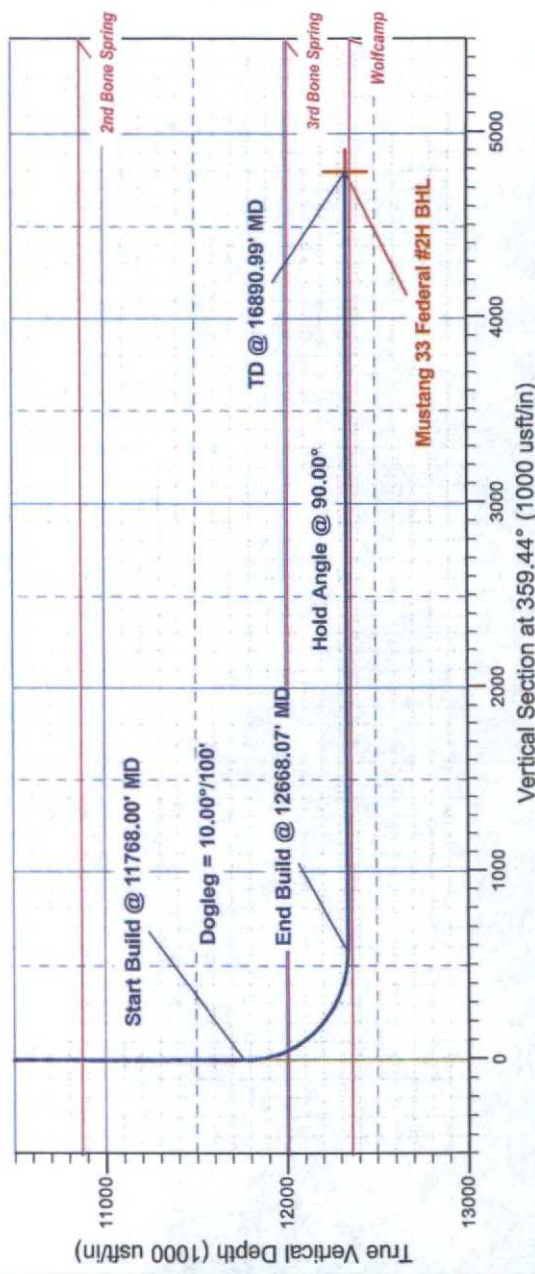
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Mustang 33 Federal #2H BHL	12341.00	4795.69	-47.10	398956.41	838235.76	32° 5' 35.457 N	103° 22' 28.592 W

Surface Location:

US State Plane 1983
 New Mexico Eastern Zone
 Elevation: GL 3200.3' + KB 21' @ 3221.30usft (Patriot 4)
 Northing
 394160.72
 Easting
 838282.86
 Latitude
 32° 4' 48.000 N
 Longitude
 103° 22' 28.540 W

To convert a Magnetic Direction to a Grid Direction, Add 6.73°

Magnetic Model: BGGM2014
 Date: 02-Oct-14
 Azimuths to Grid North



Endurance Resources LLC

Lea County, NM (NAD 83)

Mustang 33 Federal

Mustang 33 Federal #2H

Wellbore #1

Plan: Plan #1

Sperry Drilling Services Proposal Report

03 October, 2014

Well Coordinates: 394,160.72 N, 838,282.86 E (32° 04' 48.00" N, 103° 22' 28.54" W)
Ground Level: 3,200.30 usft

Local Coordinate Origin:	Centered on Well Mustang 33 Federal #2H
Viewing Datum:	GL 3200.3' + KB 21' @ 3221.30usft (Patriot 4)
TVDs to System:	N
North Reference:	Grid
Unit System:	API - US Survey Feet

Version: 5000.1 Build: 72

HALLIBURTON

HALLIBURTON**Plan Report for Mustang 33 Federal #2H - Plan #1**

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	Toolface Azimuth (°)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,046.00	0.00	0.00	1,046.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler										
1,096.00	0.00	0.00	1,096.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13 3/8"										
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,146.00	0.00	0.00	1,146.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Top of Salt										
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,611.00	0.00	0.00	3,611.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Castile										
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

HALLIBURTON**Plan Report for Mustang 33 Federal #2H - Plan #1**

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	Toolface Azimuth (°)
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,271.00	0.00	0.00	5,271.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lamar Limestone										
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,316.00	0.00	0.00	5,316.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bell Canyon										
5,366.00	0.00	0.00	5,366.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5 1/2"										
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,316.00	0.00	0.00	6,316.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cherry Canyon										
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,961.00	0.00	0.00	7,961.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Brushy Canyon										
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8,100.00	0.00	0.00	8,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8,300.00	0.00	0.00	8,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8,400.00	0.00	0.00	8,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8,500.00	0.00	0.00	8,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8,600.00	0.00	0.00	8,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8,700.00	0.00	0.00	8,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8,800.00	0.00	0.00	8,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8,900.00	0.00	0.00	8,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000.00	0.00	0.00	9,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,100.00	0.00	0.00	9,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,141.00	0.00	0.00	9,141.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bone Spring										
9,200.00	0.00	0.00	9,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,300.00	0.00	0.00	9,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,400.00	0.00	0.00	9,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,500.00	0.00	0.00	9,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,600.00	0.00	0.00	9,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

HALLIBURTON**Plan Report for Mustang 33 Federal #2H - Plan #1**

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	Toolface Azimuth (°)
9,700.00	0.00	0.00	9,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,800.00	0.00	0.00	9,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,900.00	0.00	0.00	9,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10,000.00	0.00	0.00	10,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10,100.00	0.00	0.00	10,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10,200.00	0.00	0.00	10,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10,300.00	0.00	0.00	10,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10,391.00	0.00	0.00	10,391.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1st Bone Spring										
10,400.00	0.00	0.00	10,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10,500.00	0.00	0.00	10,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10,600.00	0.00	0.00	10,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10,700.00	0.00	0.00	10,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10,800.00	0.00	0.00	10,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10,871.00	0.00	0.00	10,871.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2nd Bone Spring										
10,900.00	0.00	0.00	10,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11,000.00	0.00	0.00	11,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11,100.00	0.00	0.00	11,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11,200.00	0.00	0.00	11,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11,300.00	0.00	0.00	11,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11,400.00	0.00	0.00	11,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11,500.00	0.00	0.00	11,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11,600.00	0.00	0.00	11,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11,700.00	0.00	0.00	11,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11,768.00	0.00	0.00	11,768.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build @ 11768.00' MD - Dogleg = 10.00°/100'										
11,800.00	3.20	359.44	11,799.98	0.89	-0.01	0.89	10.00	10.00	0.00	359.44
11,900.00	13.20	359.44	11,898.84	15.14	-0.15	15.14	10.00	10.00	0.00	0.00
12,000.00	23.20	359.44	11,993.71	46.33	-0.46	46.33	10.00	10.00	0.00	0.00
12,018.95	25.09	359.44	12,011.00	54.08	-0.53	54.08	10.00	10.00	0.00	0.00
3rd Bone Spring										
12,100.00	33.20	359.44	12,081.73	93.52	-0.92	93.52	10.00	10.00	0.00	0.00
12,200.00	43.20	359.44	12,160.22	155.27	-1.53	155.28	10.00	10.00	0.00	0.00
12,300.00	53.20	359.44	12,226.80	229.72	-2.26	229.73	10.00	10.00	0.00	0.00
12,400.00	63.20	359.44	12,279.43	314.59	-3.09	314.61	10.00	10.00	0.00	0.00
12,500.00	73.19	359.44	12,316.53	407.31	-4.00	407.33	10.00	10.00	0.00	0.00
12,600.00	83.19	359.44	12,336.96	505.07	-4.96	505.09	10.00	10.00	0.00	0.00
12,668.07	90.00	359.44	12,341.00	572.98	-5.63	573.00	10.00	10.00	0.00	0.00
End Build @ 12668.07' MD - Hold Angle @ 90.00°										
12,700.00	90.00	359.44	12,341.00	604.90	-5.94	604.93	0.00	0.00	0.00	0.00
12,800.00	90.00	359.44	12,341.00	704.90	-6.92	704.93	0.00	0.00	0.00	0.00
12,900.00	90.00	359.44	12,341.00	804.89	-7.91	804.93	0.00	0.00	0.00	0.00
13,000.00	90.00	359.44	12,341.00	904.89	-8.89	904.93	0.00	0.00	0.00	0.00
13,100.00	90.00	359.44	12,341.00	1,004.89	-9.87	1,004.93	0.00	0.00	0.00	0.00
13,200.00	90.00	359.44	12,341.00	1,104.88	-10.85	1,104.93	0.00	0.00	0.00	0.00
13,300.00	90.00	359.44	12,341.00	1,204.88	-11.83	1,204.93	0.00	0.00	0.00	0.00
13,400.00	90.00	359.44	12,341.00	1,304.87	-12.82	1,304.93	0.00	0.00	0.00	0.00
13,500.00	90.00	359.44	12,341.00	1,404.87	-13.80	1,404.93	0.00	0.00	0.00	0.00
13,600.00	90.00	359.44	12,341.00	1,504.86	-14.78	1,504.93	0.00	0.00	0.00	0.00
13,700.00	90.00	359.44	12,341.00	1,604.86	-15.76	1,604.93	0.00	0.00	0.00	0.00
13,800.00	90.00	359.44	12,341.00	1,704.85	-16.75	1,704.93	0.00	0.00	0.00	0.00
13,900.00	90.00	359.44	12,341.00	1,804.85	-17.73	1,804.93	0.00	0.00	0.00	0.00
14,000.00	90.00	359.44	12,341.00	1,904.84	-18.71	1,904.93	0.00	0.00	0.00	0.00
14,100.00	90.00	359.44	12,341.00	2,004.84	-19.69	2,004.93	0.00	0.00	0.00	0.00
14,200.00	90.00	359.44	12,341.00	2,104.83	-20.67	2,104.93	0.00	0.00	0.00	0.00
14,300.00	90.00	359.44	12,341.00	2,204.83	-21.66	2,204.93	0.00	0.00	0.00	0.00
14,400.00	90.00	359.44	12,341.00	2,304.82	-22.64	2,304.93	0.00	0.00	0.00	0.00
14,500.00	90.00	359.44	12,341.00	2,404.82	-23.62	2,404.93	0.00	0.00	0.00	0.00

Plan Report for Mustang 33 Federal #2H - Plan #1

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	Toolface Azimuth (°)
14,600.00	90.00	359.44	12,341.00	2,504.81	-24.60	2,504.93	0.00	0.00	0.00	0.00
14,700.00	90.00	359.44	12,341.00	2,604.81	-25.59	2,604.93	0.00	0.00	0.00	0.00
14,800.00	90.00	359.44	12,341.00	2,704.80	-26.57	2,704.93	0.00	0.00	0.00	0.00
14,900.00	90.00	359.44	12,341.00	2,804.80	-27.55	2,804.93	0.00	0.00	0.00	0.00
15,000.00	90.00	359.44	12,341.00	2,904.79	-28.53	2,904.93	0.00	0.00	0.00	0.00
15,100.00	90.00	359.44	12,341.00	3,004.79	-29.51	3,004.93	0.00	0.00	0.00	0.00
15,200.00	90.00	359.44	12,341.00	3,104.78	-30.50	3,104.93	0.00	0.00	0.00	0.00
15,300.00	90.00	359.44	12,341.00	3,204.78	-31.48	3,204.93	0.00	0.00	0.00	0.00
15,400.00	90.00	359.44	12,341.00	3,304.77	-32.46	3,304.93	0.00	0.00	0.00	0.00
15,500.00	90.00	359.44	12,341.00	3,404.77	-33.44	3,404.93	0.00	0.00	0.00	0.00
15,600.00	90.00	359.44	12,341.00	3,504.76	-34.43	3,504.93	0.00	0.00	0.00	0.00
15,700.00	90.00	359.44	12,341.00	3,604.76	-35.41	3,604.93	0.00	0.00	0.00	0.00
15,800.00	90.00	359.44	12,341.00	3,704.75	-36.39	3,704.93	0.00	0.00	0.00	0.00
15,900.00	90.00	359.44	12,341.00	3,804.75	-37.37	3,804.93	0.00	0.00	0.00	0.00
16,000.00	90.00	359.44	12,341.00	3,904.75	-38.35	3,904.93	0.00	0.00	0.00	0.00
16,100.00	90.00	359.44	12,341.00	4,004.74	-39.34	4,004.93	0.00	0.00	0.00	0.00
16,200.00	90.00	359.44	12,341.00	4,104.74	-40.32	4,104.93	0.00	0.00	0.00	0.00
16,300.00	90.00	359.44	12,341.00	4,204.73	-41.30	4,204.93	0.00	0.00	0.00	0.00
16,400.00	90.00	359.44	12,341.00	4,304.73	-42.28	4,304.93	0.00	0.00	0.00	0.00
16,500.00	90.00	359.44	12,341.00	4,404.72	-43.26	4,404.93	0.00	0.00	0.00	0.00
16,600.00	90.00	359.44	12,341.00	4,504.72	-44.25	4,504.93	0.00	0.00	0.00	0.00
16,700.00	90.00	359.44	12,341.00	4,604.71	-45.23	4,604.93	0.00	0.00	0.00	0.00
16,800.00	90.00	359.44	12,341.00	4,704.71	-46.21	4,704.93	0.00	0.00	0.00	0.00
16,890.99	90.00	359.44	12,341.00	4,795.69	-47.10	4,795.92	0.00	0.00	0.00	0.00

TD @ 16890.99' MD - Mustang 33 Federal #2H BHL

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
11,768.00	11,768.00	0.00	0.00	Start Build @ 11768.00' MD
11,768.00	11,768.00	0.00	0.00	Dogleg = 10.00°/100'
12,668.07	12,341.00	572.98	-5.63	End Build @ 12668.07' MD
12,668.07	12,341.00	572.98	-5.63	Hold Angle @ 90.00°
16,890.99	12,341.00	4,795.69	-47.10	TD @ 16890.99' MD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (usft)	+E/-W (usft)	Start TVD (usft)
TD	No Target (Freehand)	359.44	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	16,890.99	Plan #1	MWD+SC

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,096.00	1,096.00	13 3/8"	13-3/8	17-1/2
5,366.00	5,366.00	5 1/2"	9-5/8	9-5/8

Plan Report for Mustang 33 Federal #2H - Plan #1**Formation Details**

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,046.00	1,046.00	Rustler		0.00	
1,146.00	1,146.00	Top of Salt		0.00	
3,611.00	3,611.00	Castile		0.00	
5,271.00	5,271.00	Lamar Limestone		0.00	
5,316.00	5,316.00	Bell Canyon		0.00	
6,316.00	6,316.00	Cherry Canyon		0.00	
7,961.00	7,961.00	Brushy Canyon		0.00	
9,141.00	9,141.00	Bone Spring		0.00	
10,391.00	10,391.00	1st Bone Spring		0.00	
10,871.00	10,871.00	2nd Bone Spring		0.00	
12,018.95	12,011.00	3rd Bone Spring		0.00	

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
Mustang 33 Federal #2H BHL	12,341.00	4,795.69	-47.10	Point

HALLIBURTON**North Reference Sheet for Mustang 33 Federal - Mustang 33 Federal #2H - Wellbore #1**

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to GL 3200.3' + KB 21' @ 3221.30usft (Patriot 4). Northing and Easting are relative to Mustang 33 Federal #2H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Transverse Mercator (Gauss-Kruger)

Central Meridian is -104.33°, Longitude Origin: 0° 0' 0.000 E°, Latitude Origin: 0° 0' 0.000 N°

False Easting: 541,337.50usft, False Northing: 0.00usft, Scale Reduction: 1.00001008

Grid Coordinates of Well: 394,160.72 usft N, 838,282.86 usft E

Geographical Coordinates of Well: 32° 04' 48.00" N, 103° 22' 28.54" W

Grid Convergence at Surface is: 0.51°

Based upon Minimum Curvature type calculations, at a Measured Depth of 16,890.99usft the Bottom Hole Displacement is 4,795.92usft in the Direction of 359.44° (Grid).

Magnetic Convergence at surface is: -6.73° (2 October 2014, , BGGM2014)

