ATS-11-1014

Form 3160-3
(August 2007)

RECEIVED
DEC 22 2011
HOBBS OCD

OCD Hobbs

FORM APPROVED
OMB No 1004-0137
Expires July 31, 2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

# APPLICATION FOR PERMIT TO DRILL OR REENTER

5 Lease Serial No. BH
NM-27507, NM-107393, Fee Tract

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

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

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

8. Lease Name and Well No. (38043)
Red Hills West "21" Fed Com #2H

2. Name of Operator Mewbourne Oil Company (14744)

9. API Well No.
30-025-40391

3a. Address
PO BOX 5270
Hobbs, NM 88240

3b Phone No. (include area code)
(575) 393-5905

10. Field and Pool, or Exploratory (97838)
Wildcat Bone Spring

4. Location of Well (Report location clearly and in accordance with any State requirements.*)
At surface 150' FNL & 2350' FWL (Unit C)
At proposed prod. zone 330' FSL & 2271' FWL (Unit N)

11. Sec., T. R. M. or Blk. and Survey or Area
Sec 21 , T26S, R32E

14 Distance in miles and direction from nearest town or post office*
29 miles West/SW from Jal, NM

12 County or Parish
Lea

13. State
NM

| 15 Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) | 16. No. of acres in lease | 17 Spacing Unit dedicated to this well |
|---|---|---|
| 150' | 160 | 160 |

| 18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft | 19 Proposed Depth | 20. BLM/BIA Bond No. on file |
|---|---|---|
| 2120' | 13529' MD<br>8921' TVD | NM1693, Nationwide |

| 21 Elevations (Show whether DF, KDB, RT, GL, etc.) | 22. Approximate date work will start* | 23. Estimated duration |
|---|---|---|
| 3155' GL | 01/01/2012 | 40 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 | Name (Printed/Typed) | Date |
|---|---|---|
| Brett Bednarz | Brett Bednarz | 09/09/2011 |

Title
Petroleum Engineer

| Approved by (Signature) | Name (Printed/Typed) | Date |
|---|---|---|
| /s/George MacDonell | | DEC 20 2011 |

| Title | Office |
|---|---|
| FIELD MANAGER | CARLSBAD FIELD OFFICE |

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

12/21/11

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

RECEIVED
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HOBBS OCD

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

# OIL CONSERVATION DIVISION
*1220 South St. Francis Dr.*
*Santa Fe, New Mexico 87505*

Form C-102
Revised July 16, 2010

Submit one copy to appropriate District Office

☐ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

| API Number | Pool Code | Pool Name |
|---|---|---|
| 30-025-40391 | ~~97838~~ 96403 | Wildcat Bone Spring |

| Property Code | Property Name | Well Number |
|---|---|---|
| 38643 | RED HILLS WEST "21" FEDERAL COM | 2H |
| **OGRID No.** | **Operator Name** | **Elevation** |
| 14744 | MEWBOURNE OIL COMPANY | 3155' |

### Surface Location

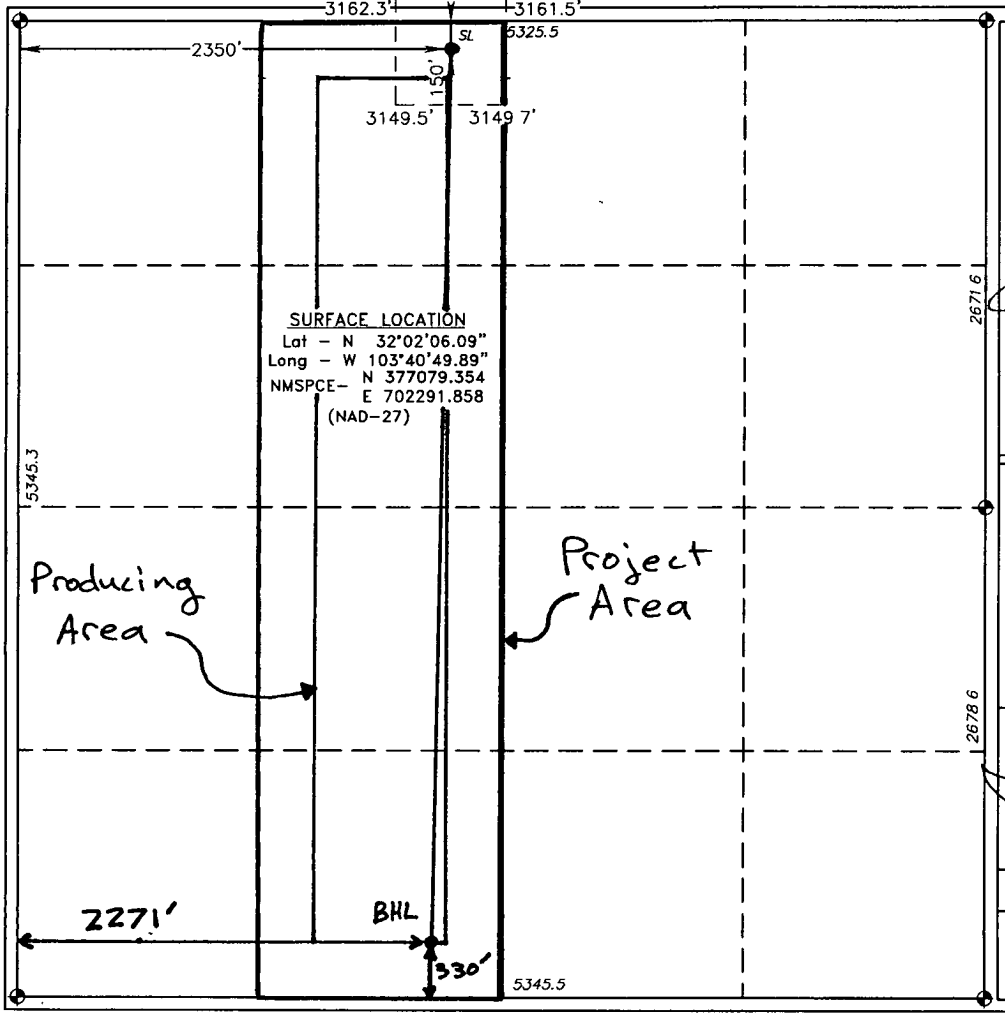
| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| C | 21 | 26 S | 32 E | | 150 | NORTH | 2350 | WEST | LEA |

### Bottom Hole Location If Different From Surface

| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| N | 21 | 26S | 32E | | 330 | South | 2271 | West | Lea |

| Dedicated Acres | Joint or Infill | Consolidation Code | Order No. |
|---|---|---|---|
| 160 | | | |

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION




### OPERATOR CERTIFICATION

*I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.*

Jackie Lathan 9/9/11
Signature Date

Jackie Lathan
Printed Name

Email Address

### SURVEYOR CERTIFICATION

*I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my belief*

AUGUST 15, 2011
Date Surveyed

Signature & Seal of Professional Surveyor

GARY L. JONES
NEW MEXICO
7977
REGISTERED PROFESSIONAL LAND SURVEYOR

Certificate No. Gary L. Jones 7977

BASIN SURVEYS 25051

**Drilling Program**
**Mewbourne Oil Company**
Red Hills West "21" Fed Com #2H
150' FNL & 2350' FWL (SHL)
Sec 21-T26S-R32E
Lea County, New Mexico

**1. The estimated tops of geological markers are as follows:**

| | |
|---|---|
| Rustler | 530' |
| Top Salt | 900' |
| Base Salt | 4180' |
| Lamar | 4400' |
| *Delaware | 4430' |
| *Bone Springs | 8475' |

**2. Estimated depths of anticipated fresh water, oil, or gas:**

| | |
|---|---|
| Water | Fresh water is anticipated at 250' and will be protected by setting surface casing at 555' and cementing to surface. |
| Hydrocarbons | Oil and gas are anticipated in the above (*) formations. These zones will be protected by casing as necessary. |

**3. Pressure control equipment:**

2000# WP Annular will be installed after running 13 ⅜" casing. A 3000# WP Double Ram BOP and 3000# WP Annular will be installed after running 9 ⅝" & 7" casing strings. Pressure tests will be conducted prior to drilling out under all casing strings. BOP controls will be installed prior to drilling under surface casing and will remain in use until completion of drilling operations. BOPE will be inspected and operated as recommended in Onshore Order #2. A kelly cock and a sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position when the kelly is not in use.
Will test the 7" & 9 ⅝" BOPE to 3000# and both Annular BOPs to 1500# with a third party testing company before drilling below each shoe, but will test again, if needed, in 30 days from the 1st test as per BLM Onshore Oil and Gas Order #2.

4. MOC proposes to drill a vertical wellbore to 8333' & kick off to horizontal @ 8906' TVD. The well will be drilled to 13529' MD (8921' TVD). See attached directional plan.

**5. Proposed casing and cementing program:**

**A. Casing Program:**

See COA

| Hole Size | Casing | Wt/Ft. | Grade | Depth | Jt Type |
|---|---|---|---|---|---|
| 17 ½" | 13 ⅜" (new) | 48# | H40 | 0'-~~555'~~ 785 | ST&C |
| 12 ¼" | 9 ⅝" (new) | 36# | J55 | 0'-3340' | ST&C |
| 12 ¼" | 9 ⅝" (new) | 40# | J55 | 3340'-4340' | LT&C |
| 12 ¼" | 9 ⅝" (new) | 40# | N80 | 4340'-4400' | LT&C |
| 8 ¾" | 7" (new) | 26# | P110 | 0'-8333' MD | LT&C |
| 8 ¾" | 7" (new) | 26# | P110 | 8333'-9231' MD | BT&C |
| 6 1/8" | 4 ½" (new) | 11.6# | P110 | 9031'-13529' MD | LT&C |

Minimum casing design factors: Collapse 1.125, Burst 1.0, Tensile strength 1.8.
See COA — *Subject to availability of casing.

### B. Cementing Program:

i. Surface Casing: 250 sacks EconoCem-HCL cement w/ 2% Econolite, salt and LCM additives. Yield at 2.09 cuft/sk. 215 sacks HalCem-C cement w/1% CaCl2. Yield at 1.34 cuft/sk. Cmt circulated to surface w/100% excess.

ii. Intermediate Casing: 700 sacks EconoCem-HCL cement w/ 2% Econolite, LCM & salt additives. Yield at 2.09 cuft/sk. 200 sacks Class "C" neat. Yield at 1.33 cuft/sk. Cmt circulated to surface w/25% excess.

See COA

iii Production Casing: 400 sacks EconoCem-HLH cement w/ salt & fluid loss additives. Yield at 1.99 cuft/sk. 300 sacks HalCem-H cement w/ .2% Halad-344, .3% CFR3 and salt additives. Yield at 1.21 cuft/sk. Cmt calc to tieback 200' inside Intermediate csg w/25% excess.

iv. Production Liner: This will be a Packer/Port completion from TD up inside 7" casing with packer type liner hanger.

*Referring to above blends of light cement: (wt% fly ash : wt% cement : wt% bentonite of the total of first two numbers). Generic names of additives are used since the availability of specific company and products are unknown at this time.

### 6. Mud Program:

| Interval | Type System | Weight | Viscosity | Fluid Loss |
|---|---|---|---|---|
| 0' - ~~555'~~ 785 | FW spud mud | 8.6-9.0 | 32-34 | NA |
| ~~555'~~ - 4400' | Brine water | 10.0-10.2 | 28-30 | NA |
| 4400' - 8333' (KOP) | FW | 8.3-8.6 | 28-30 | NA |
| 8333' - TD | FW w/Polymer | 8.5-8.7 | 32-35 | 15 |

### 7. Evaluation Program: See COA

| | |
|---|---|
| Samples: | 10' samples from surface casing to TD |
| Logging: | GR/N & Gyro from KOP -100' (8233') to surface. GR from 8233' to TD. |

### 8. Downhole Conditions

| | |
|---|---|
| Zones of abnormal pressure: | None anticipated |
| Zones of lost circulation: | Anticipated in surface and intermediate holes |
| Maximum bottom hole temperature: | 120 degree F |
| Maximum bottom hole pressure: | 8.3 lbs/gal gradient or less |

### 9. Anticipated Starting Date:

Mewbourne Oil Company intends to drill this well as soon as possible after receiving approval with approximately 40 days involved in drilling operations and an additional 10 days involved in completion operations on the project.

# Mewbourne Oil Co

**Eddy County, New Mexico**
**Sec 21, T26S, R32E**
**Red Hills West 21 Federal Com #2H**

**Wellbore #1**

**Plan: Design #1**

# DDC Well Planning Report

**07 September, 2011**

The DIRECTIONAL DRILLING COMPANY

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well Red Hills West 21 Federal Com #2H |
| **Company:** | Mewbourne Oil Co | **TVD Reference:** | WELL @ 3173.0usft (Patterson #45) |
| **Project:** | Eddy County, New Mexico | **MD Reference:** | WELL @ 3173.0usft (Patterson #45) |
| **Site:** | Sec 21, T26S, R32E | **North Reference:** | Grid |
| **Well:** | Red Hills West 21 Federal Com #2H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Design #1 | | |

**Project** Eddy County, New Mexico

| | | | |
|---|---|---|---|
| **Map System:** | US State Plane 1927 (Exact solution) | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | NAD 1927 (NADCON CONUS) | | |
| **Map Zone:** | New Mexico East 3001 | | |

**Site** Sec 21, T26S, R32E

| | | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 377,079 35 usft | **Latitude:** | 32° 2' 6.091 N |
| **From:** | Map | **Easting:** | 702,291 85 usft | **Longitude:** | 103° 40' 49.893 W |
| **Position Uncertainty:** | 0 0 usft | **Slot Radius:** | 13-3/16 " | **Grid Convergence:** | 0 35 ° |

**Well** Red Hills West 21 Federal Com #2H

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 0.0 usft | **Northing:** | 377,079.35 usft | **Latitude:** | 32° 2' 6 091 N |
| | **+E/-W** | 0 0 usft | **Easting:** | 702,291.85 usft | **Longitude:** | 103° 40' 49 893 W |
| **Position Uncertainty** | | 0 0 usft | **Wellhead Elevation:** | | **Ground Level:** | 3,155 0 usft |

**Wellbore** Wellbore #1

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|---|---|---|---|---|---|
| | IGRF2010 | 9/7/2011 | 7.59 | 59 99 | 48,469 |

**Design** Design #1

**Audit Notes:**

| | | | | | |
|---|---|---|---|---|---|
| **Version:** | | **Phase:** | PLAN | **Tie On Depth:** | 0 0 |

| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft) | Direction (°) |
|---|---|---|---|---|
| | 0 0 | 0.0 | 0 0 | 180 93 |

**Plan Sections**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | TFO (°) | Target |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 0 | 0 00 | 0 00 | 0 0 | 0 0 | 0.0 | 0 00 | 0 00 | 0 00 | 0 00 | |
| 8,333 0 | 0 00 | 0 00 | 8,333 0 | 0 0 | 0 0 | 0 00 | 0 00 | 0 00 | 0 00 | |
| 9,231 0 | 89 80 | 180 93 | 8,906.0 | -570 9 | -9 3 | 10 00 | 10 00 | -19 94 | 180 93 | |
| 13,528 8 | 89 80 | 180 93 | 8,921 0 | -4,868 1 | -79 1 | 0 00 | 0 00 | 0 00 | 0 00 | PBHL-Red Hills West |

| | | | |
|---|---|---|---|
| Database: | EDM 5000.1 Single User Db | Local Co-ordinate Reference: | Well Red Hills West 21 Federal Com #2H |
| Company: | Mewbourne Oil Co | TVD Reference: | WELL @ 3173 0usft (Patterson #45) |
| Project: | Eddy County, New Mexico | MD Reference: | WELL @ 3173.0usft (Patterson #45) |
| Site: | Sec 21, T26S, R32E | North Reference: | Grid |
| Well: | Red Hills West 21 Federal Com #2H | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | Design #1 | | |

Planned Survey

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0 00 | 0.00 | 0 0 | 0.0 | 0.0 | 0 0 | 0.00 | 0 00 | 0.00 |
| 100.0 | 0.00 | 0 00 | 100.0 | 0 0 | 0.0 | 0.0 | 0.00 | 0.00 | 0 00 |
| 200.0 | 0 00 | 0.00 | 200.0 | 0.0 | 0 0 | 0.0 | 0 00 | 0 00 | 0.00 |
| 300 0 | 0.00 | 0.00 | 300 0 | 0 0 | 0 0 | 0.0 | 0 00 | 0.00 | 0 00 |
| 400.0 | 0 00 | 0.00 | 400 0 | 0.0 | 0 0 | 0.0 | 0 00 | 0.00 | 0.00 |
| 500.0 | 0 00 | 0 00 | 500.0 | 0 0 | 0.0 | 0.0 | 0.00 | 0 00 | 0 00 |
| 600.0 | 0 00 | 0 00 | 600 0 | 0 0 | 0 0 | 0.0 | 0 00 | 0.00 | 0 00 |
| 700 0 | 0 00 | 0 00 | 700.0 | 0 0 | 0.0 | 0 0 | 0 00 | 0.00 | 0 00 |
| 800 0 | 0.00 | 0.00 | 800 0 | 0.0 | 0 0 | 0 0 | 0 00 | 0.00 | 0 00 |
| 900 0 | 0 00 | 0.00 | 900 0 | 0 0 | 0 0 | 0 0 | 0 00 | 0 00 | 0 00 |
| 1,000.0 | 0 00 | 0.00 | 1,000.0 | 0 0 | 0.0 | 0.0 | 0.00 | 0 00 | 0.00 |
| 1,100.0 | 0.00 | 0 00 | 1,100 0 | 0.0 | 0.0 | 0.0 | 0.00 | 0 00 | 0 00 |
| 1,200 0 | 0.00 | 0.00 | 1,200 0 | 0 0 | 0 0 | 0 0 | 0.00 | 0 00 | 0 00 |
| 1,300 0 | 0.00 | 0.00 | 1,300 0 | 0.0 | 0 0 | 0.0 | 0.00 | 0 00 | 0 00 |
| 1,400.0 | 0 00 | 0 00 | 1,400.0 | 0.0 | 0 0 | 0 0 | 0 00 | 0.00 | 0.00 |
| 1,500 0 | 0 00 | 0.00 | 1,500.0 | 0 0 | 0.0 | 0 0 | 0 00 | 0.00 | 0.00 |
| 1,600.0 | 0 00 | 0 00 | 1,600 0 | 0 0 | 0 0 | 0.0 | 0.00 | 0 00 | 0 00 |
| 1,700 0 | 0 00 | 0 00 | 1,700 0 | 0.0 | 0 0 | 0.0 | 0.00 | 0 00 | 0 00 |
| 1,800 0 | 0 00 | 0.00 | 1,800 0 | 0 0 | 0 0 | 0 0 | 0.00 | 0 00 | 0 00 |
| 1,900 0 | 0 00 | 0 00 | 1,900 0 | 0 0 | 0 0 | 0 0 | 0 00 | 0 00 | 0 00 |
| 2,000.0 | 0 00 | 0.00 | 2,000 0 | 0 0 | 0.0 | 0.0 | 0 00 | 0 00 | 0 00 |
| 2,100 0 | 0 00 | 0 00 | 2,100 0 | 0.0 | 0 0 | 0.0 | 0.00 | 0 00 | 0 00 |
| 2,200 0 | 0 00 | 0 00 | 2,200 0 | 0 0 | 0 0 | 0 0 | 0.00 | 0.00 | 0 00 |
| 2,300 0 | 0 00 | 0 00 | 2,300 0 | 0 0 | 0.0 | 0 0 | 0.00 | 0 00 | 0 00 |
| 2,400 0 | 0 00 | 0 00 | 2,400 0 | 0 0 | 0 0 | 0 0 | 0 00 | 0 00 | 0 00 |
| 2,500 0 | 0 00 | 0.00 | 2,500 0 | 0 0 | 0 0 | 0 0 | 0 00 | 0 00 | 0 00 |
| 2,600 0 | 0 00 | 0.00 | 2,600 0 | 0 0 | 0 0 | 0 0 | 0 00 | 0.00 | 0 00 |
| 2,700.0 | 0.00 | 0 00 | 2,700.0 | 0 0 | 0 0 | 0 0 | 0.00 | 0 00 | 0.00 |
| 2,800 0 | 0.00 | 0 00 | 2,800 0 | 0 0 | 0 0 | 0 0 | 0.00 | 0 00 | 0 00 |
| 2,900 0 | 0 00 | 0 00 | 2,900 0 | 0 0 | 0 0 | 0.0 | 0.00 | 0 00 | 0 00 |
| 3,000 0 | 0 00 | 0 00 | 3,000 0 | 0.0 | 0.0 | 0 0 | 0.00 | 0 00 | 0.00 |
| 3,100.0 | 0 00 | 0 00 | 3,100 0 | 0 0 | 0 0 | 0.0 | 0 00 | 0.00 | 0 00 |
| 3,200 0 | 0.00 | 0 00 | 3,200 0 | 0 0 | 0 0 | 0.0 | 0.00 | 0 00 | 0 00 |
| 3,300 0 | 0 00 | 0 00 | 3,300 0 | 0 0 | 0 0 | 0 0 | 0.00 | 0.00 | 0 00 |
| 3,400.0 | 0.00 | 0 00 | 3,400 0 | 0 0 | 0 0 | 0 0 | 0 00 | 0 00 | 0 00 |
| 3,500 0 | 0 00 | 0.00 | 3,500.0 | 0 0 | 0 0 | 0 0 | 0.00 | 0 00 | 0.00 |
| 3,600.0 | 0 00 | 0 00 | 3,600 0 | 0 0 | 0.0 | 0.0 | 0.00 | 0.00 | 0 00 |
| 3,700 0 | 0 00 | 0 00 | 3,700 0 | 0 0 | 0 0 | 0.0 | 0.00 | 0 00 | 0 00 |
| 3,800 0 | 0 00 | 0 00 | 3,800 0 | 0.0 | 0 0 | 0 0 | 0 00 | 0 00 | 0 00 |
| 3,900 0 | 0 00 | 0 00 | 3,900 0 | 0 0 | 0 0 | 0 0 | 0 00 | 0 00 | 0 00 |
| 4,000 0 | 0.00 | 0 00 | 4,000 0 | 0 0 | 0 0 | 0 0 | 0.00 | 0 00 | 0 00 |
| 4,100.0 | 0 00 | 0 00 | 4,100 0 | 0 0 | 0 0 | 0 0 | 0 00 | 0 00 | 0 00 |
| 4,200.0 | 0.00 | 0.00 | 4,200.0 | 0.0 | 0 0 | 0.0 | 0 00 | 0.00 | 0.00 |
| 4,300 0 | 0 00 | 0.00 | 4,300 0 | 0.0 | 0.0 | 0.0 | 0 00 | 0 00 | 0 00 |
| 4,400.0 | 0.00 | 0 00 | 4,400.0 | 0 0 | 0 0 | 0.0 | 0 00 | 0 00 | 0 00 |
| 4,500 0 | 0 00 | 0.00 | 4,500 0 | 0.0 | 0 0 | 0 0 | 0 00 | 0 00 | 0 00 |
| 4,600 0 | 0 00 | 0.00 | 4,600 0 | 0.0 | 0 0 | 0 0 | 0 00 | 0 00 | 0 00 |
| 4,700 0 | 0 00 | 0 00 | 4,700 0 | 0 0 | 0 0 | 0.0 | 0 00 | 0 00 | 0 00 |
| 4,800 0 | 0 00 | 0 00 | 4,800 0 | 0 0 | 0 0 | 0 0 | 0 00 | 0 00 | 0 00 |
| 4,900 0 | 0 00 | 0.00 | 4,900.0 | 0 0 | 0.0 | 0 0 | 0 00 | 0.00 | 0 00 |
| 5,000 0 | 0 00 | 0 00 | 5,000 0 | 0 0 | 0 0 | 0 0 | 0.00 | 0 00 | 0 00 |
| 5,100 0 | 0 00 | 0 00 | 5,100 0 | 0 0 | 0 0 | 0 0 | 0 00 | 0 00 | 0 00 |
| 5,200 0 | 0.00 | 0 00 | 5,200.0 | 0.0 | 0.0 | 0 0 | 0.00 | 0 00 | 0.00 |
| 5,300 0 | 0 00 | 0 00 | 5,300 0 | 0.0 | 0 0 | 0 0 | 0 00 | 0 00 | 0.00 |

| | | | |
|---|---|---|---|
| Database: | EDM 5000.1 Single User Db | Local Co-ordinate Reference: | Well Red Hills West 21 Federal Com #2H |
| Company: | Mewbourne Oil Co | TVD Reference: | WELL @ 3173.0usft (Patterson #45) |
| Project: | Eddy County, New Mexico | MD Reference: | WELL @ 3173.0usft (Patterson #45) |
| Site: | Sec 21, T26S, R32E | North Reference: | Grid |
| Well: | Red Hills West 21 Federal Com #2H | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | Design #1 | | |

Planned Survey

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 5,400 0 | 0.00 | 0.00 | 5,400.0 | 0.0 | 0 0 | 0.0 | 0.00 | 0 00 | 0.00 |
| 5,500.0 | 0 00 | 0.00 | 5,500 0 | 0 0 | 0.0 | 0.0 | 0.00 | 0 00 | 0.00 |
| 5,600 0 | 0.00 | 0 00 | 5,600.0 | 0 0 | 0.0 | 0 0 | 0 00 | 0.00 | 0.00 |
| 5,700 0 | 0.00 | 0.00 | 5,700.0 | 0 0 | 0.0 | 0 0 | 0 00 | 0.00 | 0 00 |
| 5,800.0 | 0.00 | 0 00 | 5,800.0 | 0 0 | 0 0 | 0 0 | 0.00 | 0.00 | 0 00 |
| 5,900 0 | 0.00 | 0 00 | 5,900.0 | 0 0 | 0 0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 6,000 0 | 0 00 | 0 00 | 6,000 0 | 0 0 | 0 0 | 0 0 | 0 00 | 0 00 | 0.00 |
| 6,100.0 | 0 00 | 0.00 | 6,100 0 | 0 0 | 0.0 | 0 0 | 0 00 | 0 00 | 0 00 |
| 6,200.0 | 0.00 | 0 00 | 6,200.0 | 0 0 | 0 0 | 0.0 | 0.00 | 0 00 | 0 00 |
| 6,300 0 | 0 00 | 0 00 | 6,300.0 | 0 0 | 0 0 | 0 0 | 0 00 | 0 00 | 0.00 |
| 6,400 0 | 0 00 | 0 00 | 6,400 0 | 0.0 | 0 0 | 0 0 | 0.00 | 0 00 | 0 00 |
| 6,500 0 | 0 00 | 0.00 | 6,500 0 | 0.0 | 0.0 | 0 0 | 0.00 | 0.00 | 0 00 |
| 6,600 0 | 0 00 | 0.00 | 6,600.0 | 0 0 | 0 0 | 0 0 | 0.00 | 0.00 | 0.00 |
| 6,700.0 | 0.00 | 0 00 | 6,700.0 | 0 0 | 0 0 | 0.0 | 0 00 | 0 00 | 0.00 |
| 6,800 0 | 0.00 | 0 00 | 6,800 0 | 0.0 | 0 0 | 0 0 | 0 00 | 0 00 | 0 00 |
| 6,900 0 | 0 00 | 0 00 | 6,900 0 | 0.0 | 0 0 | 0 0 | 0.00 | 0 00 | 0.00 |
| 7,000 0 | 0.00 | 0 00 | 7,000 0 | 0 0 | 0 0 | 0 0 | 0.00 | 0 00 | 0.00 |
| 7,100 0 | 0 00 | 0.00 | 7,100 0 | 0 0 | 0 0 | 0.0 | 0.00 | 0 00 | 0.00 |
| 7,200.0 | 0 00 | 0 00 | 7,200 0 | 0 0 | 0 0 | 0.0 | 0 00 | 0 00 | 0 00 |
| 7,300 0 | 0 00 | 0.00 | 7,300 0 | 0.0 | 0 0 | 0 0 | 0.00 | 0 00 | 0 00 |
| 7,400.0 | 0.00 | 0 00 | 7,400 0 | 0 0 | 0.0 | 0 0 | 0.00 | 0 00 | 0 00 |
| 7,500 0 | 0.00 | 0.00 | 7,500 0 | 0 0 | 0 0 | 0.0 | 0.00 | 0 00 | 0 00 |
| 7,600 0 | 0 00 | 0.00 | 7,600 0 | 0 0 | 0 0 | 0 0 | 0 00 | 0 00 | 0.00 |
| 7,700 0 | 0 00 | 0.00 | 7,700 0 | 0.0 | 0 0 | 0 0 | 0 00 | 0 00 | 0 00 |
| 7,800 0 | 0 00 | 0 00 | 7,800 0 | 0 0 | 0.0 | 0 0 | 0.00 | 0 00 | 0.00 |
| 7,900 0 | 0 00 | 0 00 | 7,900 0 | 0 0 | 0 0 | 0 0 | 0 00 | 0 00 | 0 00 |
| 8,000 0 | 0.00 | 0 00 | 8,000 0 | 0.0 | 0 0 | 0 0 | 0 00 | 0 00 | 0 00 |
| 8,100 0 | 0 00 | 0.00 | 8,100 0 | 0 0 | 0 0 | 0 0 | 0 00 | 0 00 | 0 00 |
| 8,200.0 | 0 00 | 0 00 | 8,200 0 | 0 0 | 0 0 | 0 0 | 0.00 | 0 00 | 0 00 |
| 8,300 0 | 0.00 | 0 00 | 8,300.0 | 0.0 | 0 0 | 0 0 | 0.00 | 0 00 | 0.00 |
| **KOP: Build 10°/100'** | | | | | | | | | |
| 8,333 0 | 0 00 | 0 00 | 8,333 0 | 0 0 | 0 0 | 0 0 | 0 00 | 0 00 | 0 00 |
| 8,350 0 | 1 70 | 180 93 | 8,350.0 | -0 3 | 0 0 | 0 3 | 10.00 | 10 00 | 0.00 |
| 8,400 0 | 6.70 | 180 93 | 8,399 8 | -3.9 | -0 1 | 3.9 | 10 00 | 10 00 | 0 00 |
| 8,450.0 | 11.70 | 180.93 | 8,449.2 | -11.9 | -0 2 | 11 9 | 10 00 | 10.00 | 0 00 |
| 8,500 0 | 16 70 | 180 93 | 8,497.6 | -24 2 | -0 4 | 24 2 | 10 00 | 10 00 | 0 00 |
| 8,550 0 | 21.70 | 180 93 | 8,544 8 | -40 6 | -0 7 | 40 6 | 10 00 | 10 00 | 0 00 |
| 8,600.0 | 26 70 | 180.93 | 8,590 4 | -61 1 | -1.0 | 61 1 | 10.00 | 10 00 | 0 00 |
| 8,650 0 | 31.70 | 180.93 | 8,634.1 | -85 5 | -1 4 | 85 5 | 10 00 | 10 00 | 0 00 |
| 8,700 0 | 36 70 | 180.93 | 8,675 4 | -113 6 | -1 8 | 113 6 | 10 00 | 10 00 | 0 00 |
| 8,750.0 | 41 70 | 180 93 | 8,714 1 | -145.1 | -2 4 | 145 2 | 10 00 | 10 00 | 0 00 |
| 8,800 0 | 46 70 | 180 93 | 8,750 0 | -180 0 | -2 9 | 180 0 | 10 00 | 10.00 | 0 00 |
| 8,850 0 | 51 70 | 180 93 | 8,782 6 | -217 8 | -3 5 | 217 9 | 10 00 | 10 00 | 0.00 |
| 8,900 0 | 56 70 | 180 93 | 8,811 9 | -258.4 | -4 2 | 258 4 | 10 00 | 10 00 | 0 00 |
| 8,950 0 | 61 70 | 180 93 | 8,837 5 | -301 3 | -4 9 | 301 3 | 10 00 | 10.00 | 0 00 |
| 9,000 0 | 66 70 | 180.93 | 8,859 2 | -346 3 | -5 6 | 346 3 | 10 00 | 10.00 | 0 00 |
| 9,050.0 | 71 70 | 180 93 | 8,877 0 | -393 0 | -6.4 | 393 1 | 10 00 | 10 00 | 0 00 |
| 9,100 0 | 76 70 | 180 93 | 8,890 6 | -441 1 | -7 2 | 441 1 | 10 00 | 10 00 | 0 00 |
| 9,150 0 | 81 70 | 180.93 | 8,900.0 | -490 2 | -8 0 | 490 2 | 10 00 | 10 00 | 0.00 |
| 9,200.0 | 86 70 | 180 93 | 8,905 0 | -539 9 | -8 8 | 540.0 | 10 00 | 10 00 | 0.00 |
| **EOC: 9231' MD, 89.8° Inc., 180.93° Azm., 8906' TVD** | | | | | | | | | |
| 9,231.0 | 89.80 | 180 93 | 8,906.0 | -570 9 | -9 3 | 571 0 | 10 00 | 10 00 | 0 00 |
| 9,300.0 | 89 80 | 180 93 | 8,906 2 | -639.9 | -10.4 | 640.0 | 0 00 | 0 00 | 0 00 |

| | | | |
|---|---|---|---|
| Database: | EDM 5000.1 Single User Db | Local Co-ordinate Reference: | Well Red Hills West 21 Federal Com #2H |
| Company: | Mewbourne Oil Co | TVD Reference: | WELL @ 3173.0usft (Patterson #45) |
| Project: | Eddy County, New Mexico | MD Reference: | WELL @ 3173.0usft (Patterson #45) |
| Site: | Sec 21, T26S, R32E | North Reference: | Grid |
| Well: | Red Hills West 21 Federal Com #2H | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | Design #1 | | |

Planned Survey

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 9,400 0 | 89.80 | 180.93 | 8,906.5 | -739.9 | -12 0 | 740 0 | 0.00 | 0.00 | 0 00 |
| 9,500.0 | 89 80 | 180.93 | 8,906.9 | -839.8 | -13 7 | 840.0 | 0 00 | 0.00 | 0.00 |
| 9,600 0 | 89.80 | 180.93 | 8,907 2 | -939 8 | -15.3 | 940 0 | 0 00 | 0 00 | 0.00 |
| 9,700.0 | 89.80 | 180.93 | 8,907 6 | -1,039.8 | -16 9 | 1,040 0 | 0 00 | 0.00 | 0 00 |
| 9,800 0 | 89 80 | 180.93 | 8,907 9 | -1,139 8 | -18 5 | 1,140 0 | 0 00 | 0.00 | 0 00 |
| 9,900 0 | 89 80 | 180.93 | 8,908 3 | -1,239.8 | -20.2 | 1,240 0 | 0 00 | 0.00 | 0 00 |
| 10,000 0 | 89.80 | 180.93 | 8,908 6 | -1,339.8 | -21 8 | 1,340 0 | 0 00 | 0 00 | 0 00 |
| 10,100 0 | 89 80 | 180.93 | 8,909 0 | -1,439 8 | -23 4 | 1,440 0 | 0 00 | 0 00 | 0.00 |
| 10,200 0 | 89 80 | 180.93 | 8,909.3 | -1,539.7 | -25.0 | 1,540 0 | 0 00 | 0.00 | 0.00 |
| 10,300 0 | 89 80 | 180.93 | 8,909 7 | -1,639.7 | -26 7 | 1,640 0 | 0 00 | 0 00 | 0.00 |
| 10,400 0 | 89 80 | 180.93 | 8,910.0 | -1,739.7 | -28 3 | 1,740 0 | 0 00 | 0 00 | 0.00 |
| 10,500 0 | 89.80 | 180 93 | 8,910 4 | -1,839.7 | -29 9 | 1,839 9 | 0 00 | 0 00 | 0 00 |
| 10,600.0 | 89 80 | 180.93 | 8,910 7 | -1,939 7 | -31 5 | 1,939 9 | 0 00 | 0 00 | 0 00 |
| 10,700.0 | 89.80 | 180 93 | 8,911 1 | -2,039 7 | -33 2 | 2,039 9 | 0 00 | 0 00 | 0 00 |
| 10,800 0 | 89.80 | 180.93 | 8,911.4 | -2,139.7 | -34 8 | 2,139.9 | 0 00 | 0 00 | 0.00 |
| 10,900.0 | 89 80 | 180 93 | 8,911.8 | -2,239 7 | -36 4 | 2,239.9 | 0 00 | 0 00 | 0.00 |
| 11,000 0 | 89 80 | 180 93 | 8,912 1 | -2,339.6 | -38 0 | 2,339 9 | 0 00 | 0 00 | 0 00 |
| 11,100.0 | 89 80 | 180 93 | 8,912 5 | -2,439.6 | -39 7 | 2,439 9 | 0 00 | 0 00 | 0 00 |
| 11,200.0 | 89 80 | 180.93 | 8,912 8 | -2,539 6 | -41 3 | 2,539 9 | 0 00 | 0 00 | 0 00 |
| 11,300 0 | 89 80 | 180.93 | 8,913 2 | -2,639 6 | -42 9 | 2,639 9 | 0 00 | 0 00 | 0.00 |
| 11,400.0 | 89 80 | 180.93 | 8,913 5 | -2,739 6 | -44 5 | 2,739 9 | 0 00 | 0 00 | 0 00 |
| 11,500.0 | 89 80 | 180 93 | 8,913 9 | -2,839.6 | -46 2 | 2,839 9 | 0 00 | 0 00 | 0 00 |
| 11,600 0 | 89 80 | 180 93 | 8,914 2 | -2,939 6 | -47 8 | 2,939 9 | 0 00 | 0.00 | 0 00 |
| 11,700 0 | 89 80 | 180 93 | 8,914 6 | -3,039 5 | -49 4 | 3,039 9 | 0.00 | 0 00 | 0 00 |
| 11,800 0 | 89 80 | 180 93 | 8,914 9 | -3,139 5 | -51 0 | 3,139 9 | 0.00 | 0.00 | 0 00 |
| 11,900 0 | 89 80 | 180 93 | 8,915 3 | -3,239 5 | -52 7 | 3,239 9 | 0 00 | 0 00 | 0 00 |
| 12,000 0 | 89 80 | 180 93 | 8,915 6 | -3,339 5 | -54 3 | 3,339 9 | 0 00 | 0 00 | 0 00 |
| 12,100 0 | 89 80 | 180 93 | 8,916 0 | -3,439 5 | -55 9 | 3,439 9 | 0 00 | 0 00 | 0 00 |
| 12,200 0 | 89 80 | 180 93 | 8,916 3 | -3,539 5 | -57 5 | 3,539 9 | 0 00 | 0 00 | 0 00 |
| 12,300 0 | 89.80 | 180 93 | 8,916 7 | -3,639 5 | -59 2 | 3,639 9 | 0 00 | 0 00 | 0 00 |
| 12,400.0 | 89.80 | 180 93 | 8,917 0 | -3,739 4 | -60 8 | 3,739.9 | 0 00 | 0 00 | 0 00 |
| 12,500 0 | 89.80 | 180 93 | 8,917 4 | -3,839 4 | -62 4 | 3,839 9 | 0 00 | 0 00 | 0 00 |
| 12,600 0 | 89 80 | 180 93 | 8,917 7 | -3,939 4 | -64 0 | 3,939 9 | 0 00 | 0 00 | 0 00 |
| 12,700 0 | 89 80 | 180.93 | 8,918 1 | -4,039 4 | -65 7 | 4,039 9 | 0 00 | 0 00 | 0 00 |
| 12,800 0 | 89 80 | 180 93 | 8,918.4 | -4,139 4 | -67 3 | 4,139 9 | 0 00 | 0 00 | 0 00 |
| 12,900 0 | 89 80 | 180 93 | 8,918.8 | -4,239 4 | -68 9 | 4,239 9 | 0.00 | 0 00 | 0 00 |
| 13,000 0 | 89.80 | 180 93 | 8,919.1 | -4,339 4 | -70 5 | 4,339.9 | 0 00 | 0.00 | 0 00 |
| 13,100 0 | 89.80 | 180 93 | 8,919.5 | -4,439 3 | -72 2 | 4,439 9 | 0 00 | 0 00 | 0 00 |
| 13,200 0 | 89 80 | 180 93 | 8,919 8 | -4,539 3 | -73 8 | 4,539 9 | 0 00 | 0 00 | 0 00 |
| 13,300 0 | 89 80 | 180 93 | 8,920 2 | -4,639 3 | -75 4 | 4,639 9 | 0 00 | 0 00 | 0 00 |
| 13,400 0 | 89.80 | 180 93 | 8,920 5 | -4,739 3 | -77 0 | 4,739.9 | 0 00 | 0 00 | 0 00 |
| 13,500.0 | 89 80 | 180.93 | 8,920 9 | -4,839.3 | -78 7 | 4,839 9 | 0.00 | 0 00 | 0 00 |
| TD @ 13529' MD/8921' TVD - PBHL-Red Hills West 21 Federal Com #2H | | | | | | | | | |
| 13,528 8 | 89 80 | 180 93 | 8,921 0 | -4,868 1 | -79.1 | 4,868 7 | 0 00 | 0 00 | 0 00 |

| | | | |
|---|---|---|---|
| Database: | EDM 5000.1 Single User Db | Local Co-ordinate Reference: | Well Red Hills West 21 Federal Com #2H |
| Company: | Mewbourne Oil Co | TVD Reference: | WELL @ 3173.0usft (Patterson #45) |
| Project: | Eddy County, New Mexico | MD Reference: | WELL @ 3173.0usft (Patterson #45) |
| Site: | Sec 21, T26S, R32E | North Reference: | Grid |
| Well: | Red Hills West 21 Federal Com #2H | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | Design #1 | | |

**Design Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| PBHL-Red Hills West 21<br>- plan hits target center<br>- Point | 0.00 | 0.00 | 8,921 0 | -4,868.1 | -79 1 | 372,211 28 | 702,212 73 | 32° 1' 17 921 N | 103° 40' 51.153 W |

**Plan Annotations**

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates +N/-S (usft) | Local Coordinates +E/-W (usft) | Comment |
|---|---|---|---|---|
| 8,333 0 | 8,333 0 | 0 0 | 0.0 | KOP Build 10°/100' |
| 9,231 0 | 8,906.0 | -570 9 | -9.3 | EOC: 9231' MD, 89.8° Inc., 180.93° Azm., 8906' TVD |
| 13,528 8 | 8,921 0 | -4,868.1 | -79.1 | TD @ 13529' MD/8921' TVD |

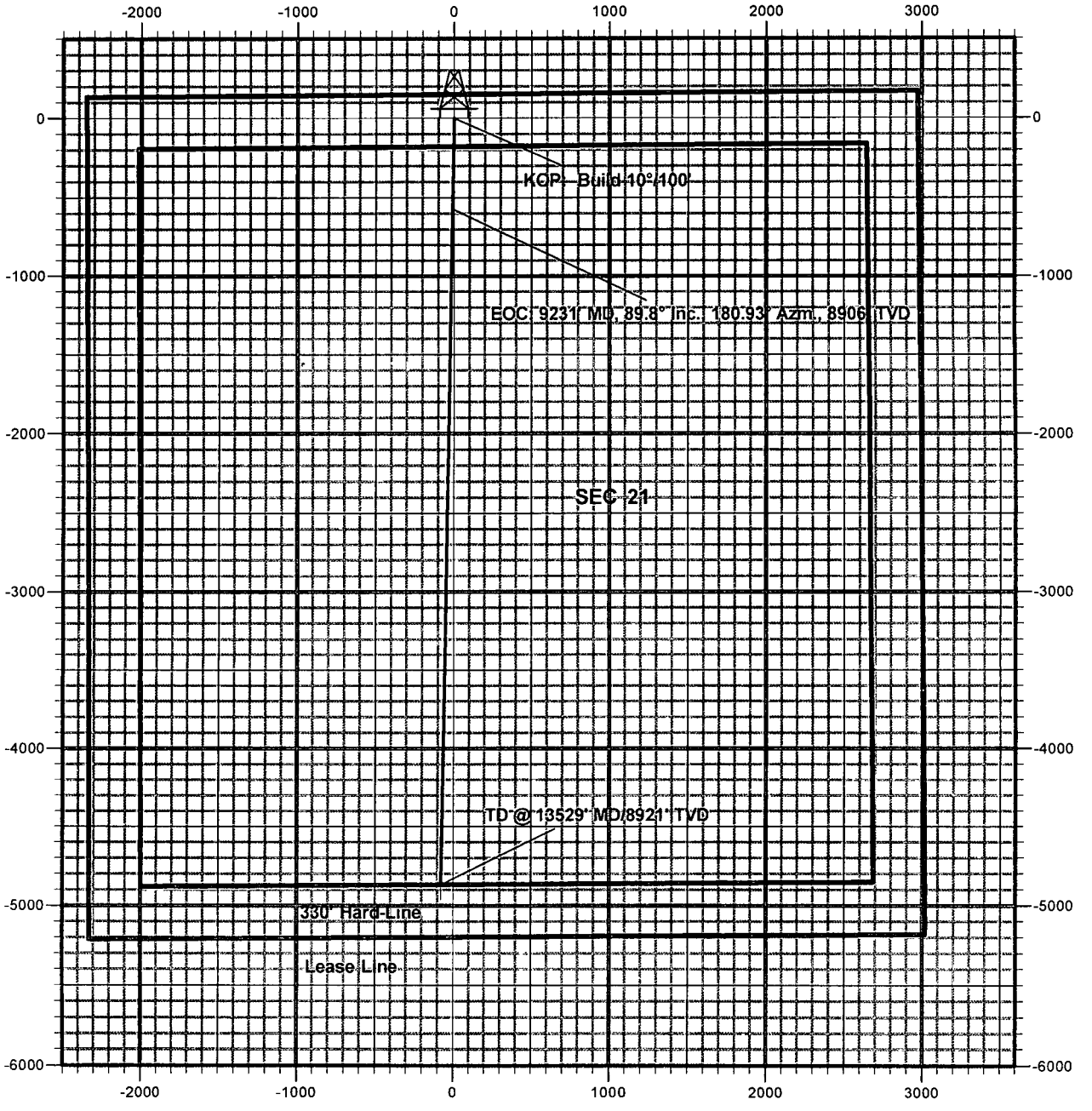
# Mewbourne Oil Company

The DIRECTIONAL DRILLING COMPANY

**Eddy County, New Mexico**

**Red Hills West 21 Federal Com #2H**

**Design #1**



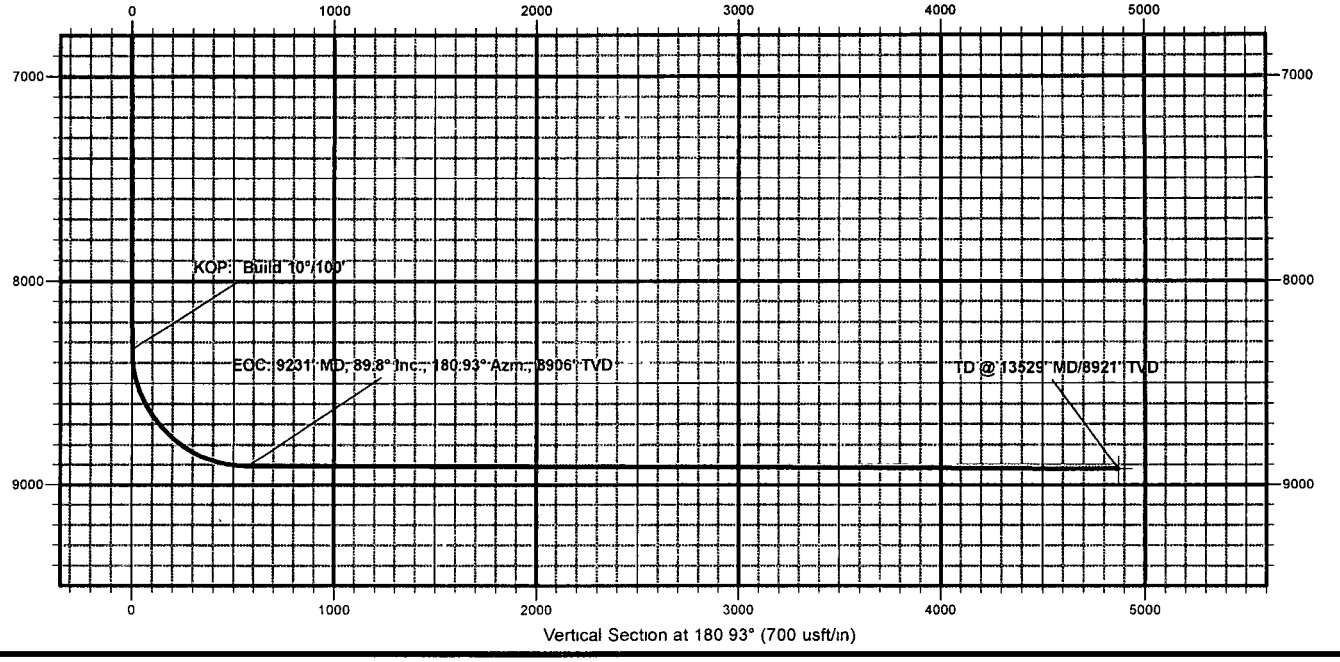
# Mewbourne Oil Company

Eddy County, New Mexico

Red Hills West 21 Federal Com #2H

Design #1

The DIRE[illegible]NAL DRILLING COMPANY



Mewbourne Oil Company
BOP Scematic for
12 ¼" Hole

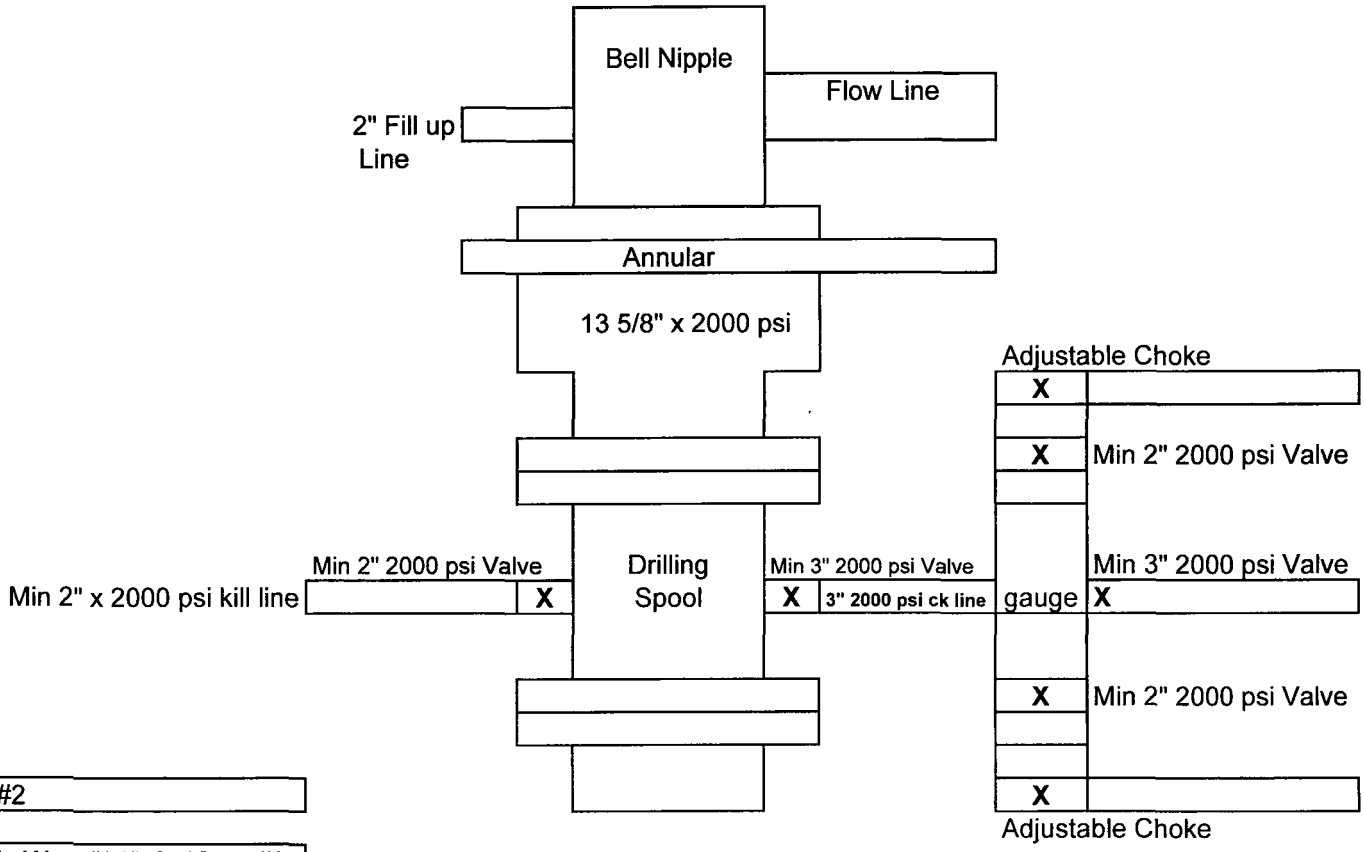



Exhibit #2

Red Hills West "21" FedCom #2H
150' FNL & 2350' FWL
Sec 21-T26S-R32E
Lea, County
New Mexico

Mewbourne Oil Company
BOP Schematic for
6 1/8" & 8 3/4" Holes

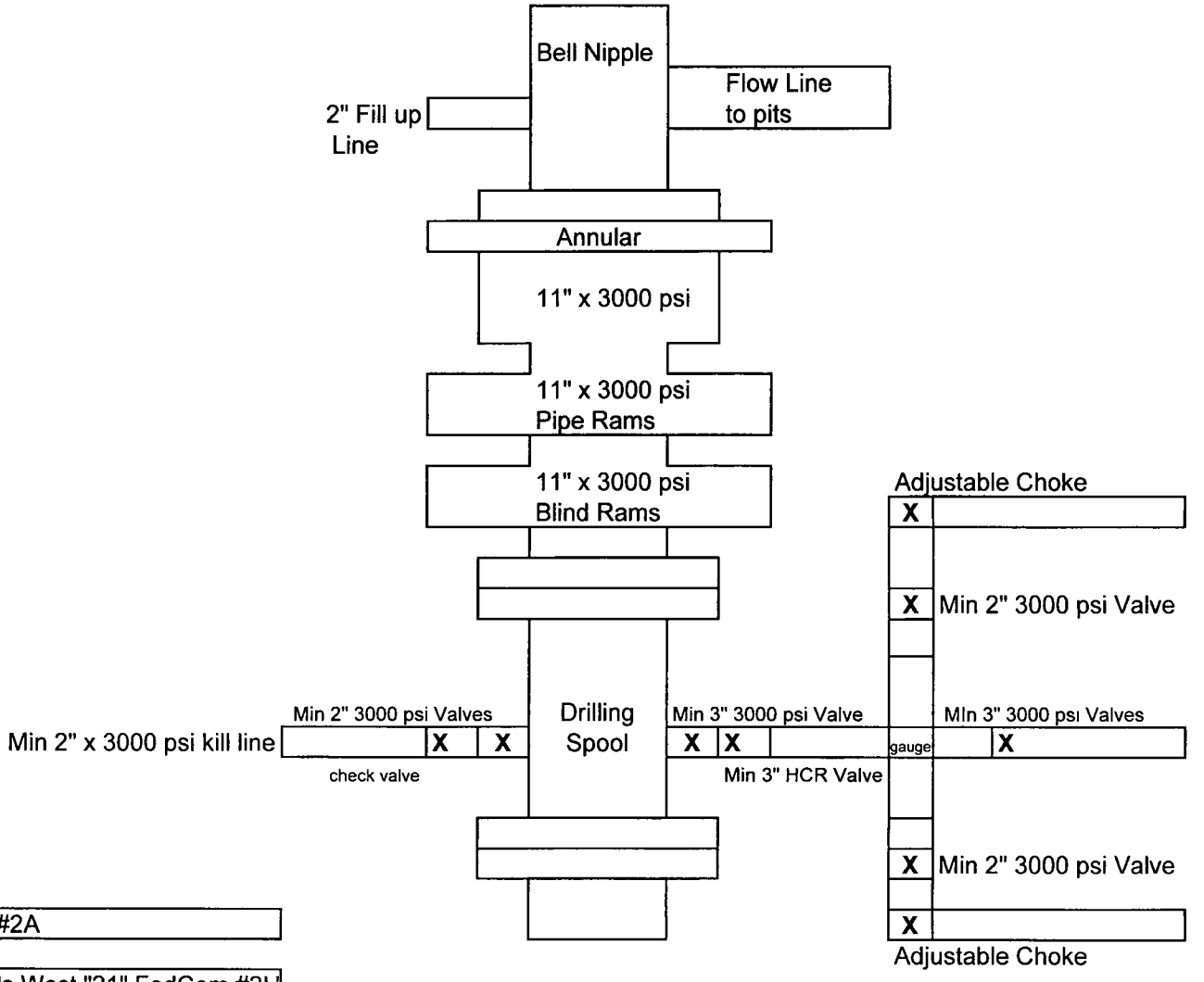



Exhibit #2A

Red Hills West "21" FedCom #2H
150' FNL & 2350' FWL
Sec 21-T26S-R32E
Lea, County
New Mexico

**Notes Regarding Blowout Preventer**

**Mewbourne Oil Company**

Red Hills West "21" Fed Com #2H
150' FNL & 2350' FWL (SHL)
Sec 21-T26S-R32E
Lea County, New Mexico

I. Drilling nipple (bell nipple) to be constructed so that it can be removed without the use of a welder through the opening of the rotary table, with minimum internal diameter equal to blowout preventer bore.

II. Blowout preventer and all fittings must be in good condition with a minimum 2000 psi working pressure on 13 3/8" casing and 3000 psi working pressure on 9 5/8" & 7" casing.

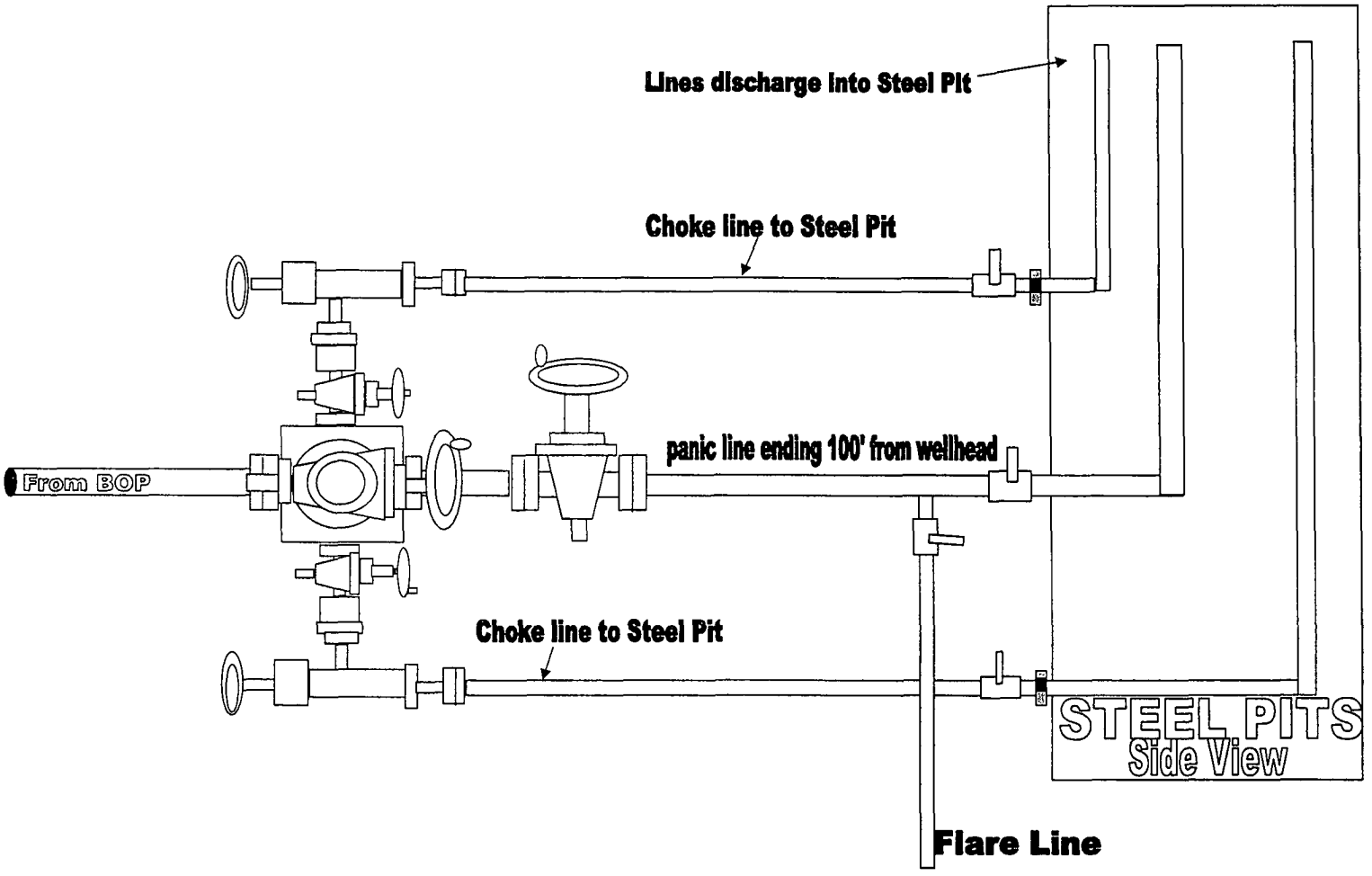
III. Safety valve must be available on the rig floor at all times with proper connections to install in the drill string. Valve must be full bore with minimum 3000 psi working pressure.

IV. Equipment through which bit must pass shall be at least as large as internal diameter of the casing.

V. A kelly cock shall be installed on the kelly at all times.

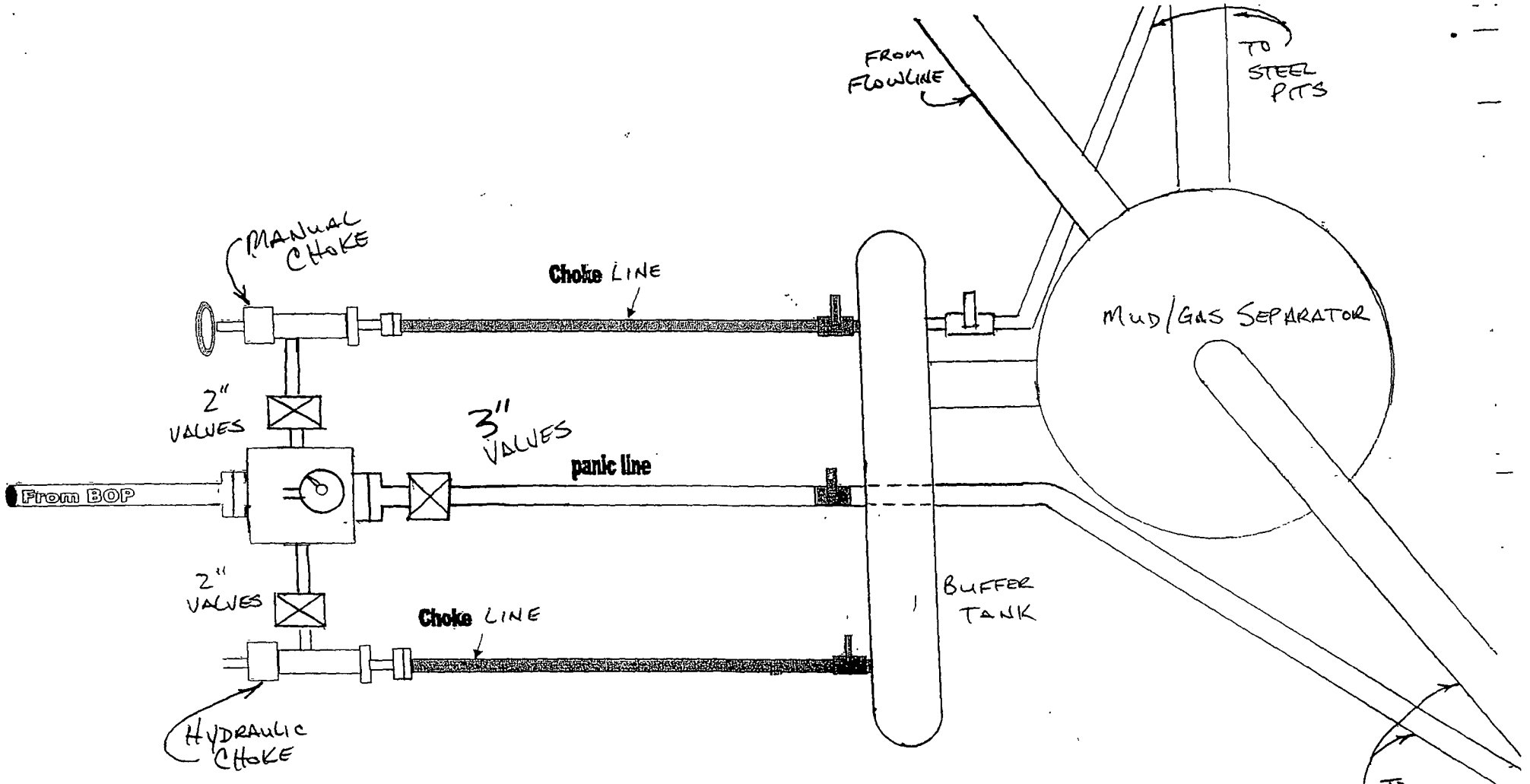
Blowout preventer closing equipment to include and accumulator of at least 40 gallon capacity, two independent sources of pressure on closing unit, and meet all other API specifications.

Red Hills West 21 Fed Com #2H




3000# BOP manifold system for Exhibit 2 & 2A

Red Hills West 21 Fed Com #214




3000 # **BOP manifold system**