

Form 3160-5
(June 2019)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2021**SUNDRY NOTICES AND REPORTS ON WELLS**
Do not use this form for proposals to drill or to re-enter an
abandoned well. Use Form 3160-3 (APD) for such proposals.

5. Lease Serial No. NMNM0106040A

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator CIMAREX ENERGY COMPANY

3a. Address 600 N MARIENFELD STREET ST SUITE 600, M 3b. Phone No. (include area code)
(432) 571-78004. Location of Well (Footage, Sec., T., R., M., or Survey Description)
SEC 32/T25S/R33E/NMP

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

8. Well Name and No. RED HILLS 32-5 FEDERAL COM/16

9. API Well No. 3002550210 160H

10. Field and Pool or Exploratory Area
BONESPRING/UPPER BONE SPRING11. Country or Parish, State
LEA/NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION				
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off	
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity	
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other	
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon		
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal		

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has detennined that the site is ready for final inspection.)

Cimarex Energy Company respectfully requests to change the FTP, BHL, proposed total depth (MD & TVD), casing programs and request for offline cementing and approval to skid rig. These changes are as follows:

FTP change:

From: 100' FNL & 440' FWL, Unit D, Sec 32, 25S, 33E

To: 100' FNL & 2566' FWL, Unit C, Sec 32, 25S, 33E


BHL change:

From 100' FSL & 440' FWL, Unit M, Sec 5, 26S, 33E

To: 100' FSL & 2566' FWL, Unit N, Sec 5, 26S, 33E

Proposed TD change:

Continued on page 3 additional information

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed) KANICIA SCHLICHTING / Ph: (432) 571-7894	Title Regulatory Analyst
Signature 	Date 12/08/2022

THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by CHRISTOPHER WALLS / Ph: (575) 234-2234 / Approved	Title Petroleum Engineer	Date 02/13/2023
Conditions of approval, if any, are attached. Approval of this notice 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.	Office CARLSBAD	

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.

(Instructions on page 2)

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local area or regional procedures and practices, are either shown below, will be issued by or may be obtained from the local Federal office.

SPECIFIC INSTRUCTIONS

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. If the proposal will involve **hydraulic fracturing operations**, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c) and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.

ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.

EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

Response to this request is mandatory.

The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

Additional Information

Additional Remarks

From: 20223'MD/10300' TVD

To: 2959'MD/10715'TVD

Pool will remain the same.

We are also requesting approval for offline cement and to skid the rig to the next well on pad to begin operations instead of waiting 8 hours for the surface casing cement to harden before skidding the rig. Updated drilling plan, directional survey and C-102 attached.

Location of Well

0. SHL: NWNW / 330 FNL / 2265 FWL / TWSP: 25S / RANGE: 33E / SECTION: 32 / LAT: 32.09341 / LONG: -103.595542 (TVD: 0 feet, MD: 0 feet)

PPP: SWSW / 2633 FSL / 2266 FWL / TWSP: 26S / RANGE: 33E / SECTION: 5 / LAT: 32.072531 / LONG: -103.595542 (TVD: 10300 feet, MD: 17690 feet)

PPP: NWNW / 5278 FSL / 2267 FWL / TWSP: 26S / RANGE: 33E / SECTION: 5 / LAT: 32.0798 / LONG: -103.595542 (TVD: 10300 feet, MD: 15045 feet)

PPP: SWNW / 3955 FSL / 2268 FWL / TWSP: 26S / RANGE: 33E / SECTION: 5 / LAT: 32.076167 / LONG: -103.095542 (TVD: 10300 feet, MD: 15045 feet)

BHL: SWSW / 100 FSL / 440 FWL / TWSP: 26S / RANGE: 33E / SECTION: 5 / LAT: 32.065572 / LONG: -103.601431 (TVD: 10300 feet, MD: 20223 feet)

CONFIDENTIAL

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (505) 393-6161 Fax: (505) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (505) 748-1283 Fax: (505) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

AMENDED REPORT

30-025-50210

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-20510	² Pool Code 97903	³ Pool Name WC-025; G-08 S253235G; LOWER BONE SPRINGS
⁴ Property Code 330240	⁵ Property Name RED HILLS 32-5 FED COM	⁶ Well Number 160H
⁷ GRID No. 215099	⁸ Operator Name CIMAREX ENERGY CO.	⁹ Elevation 3408.9'

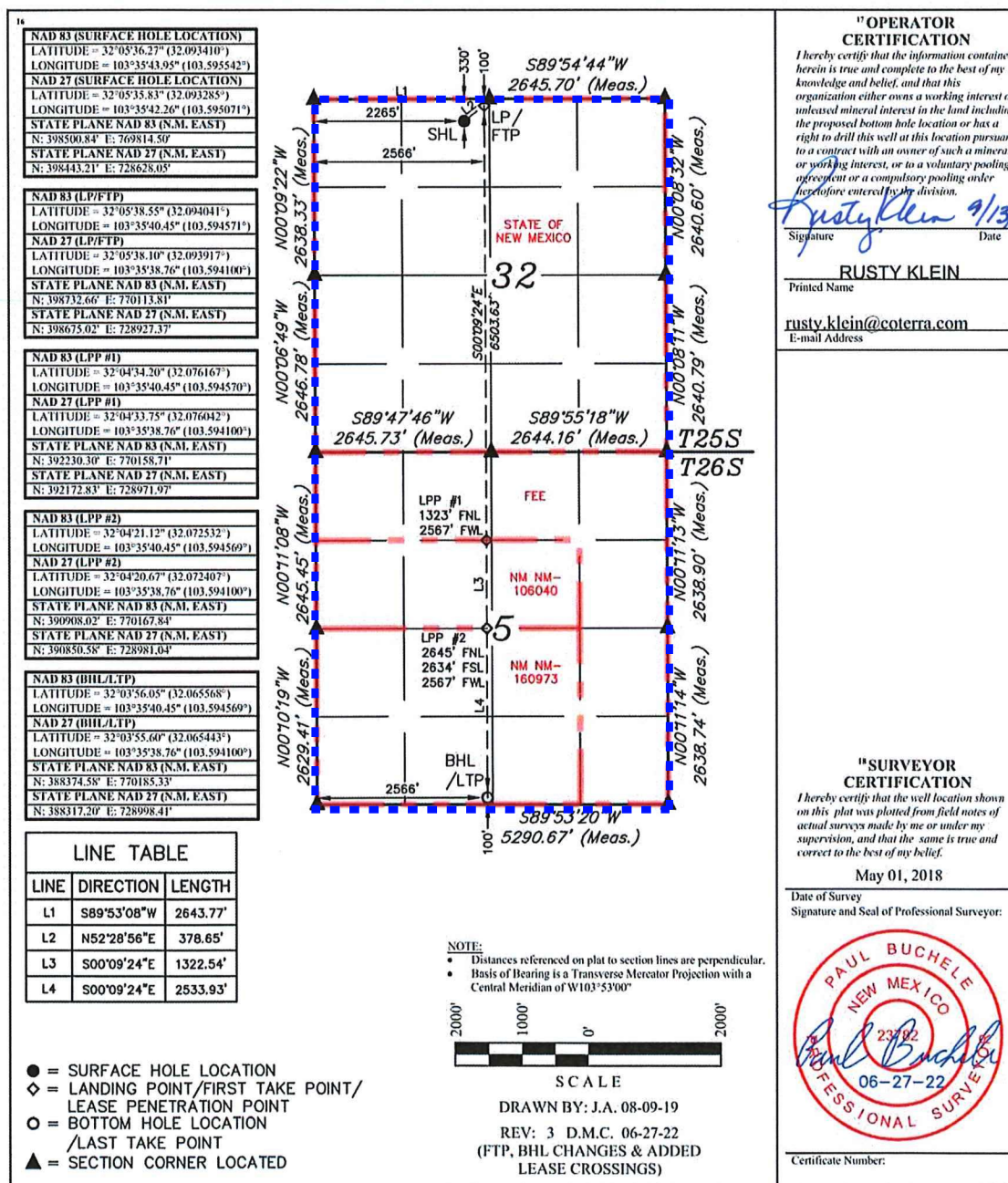
"Surface Location

UL or lot no. C	Section 32	Township 25S	Range 33E	Lot Idn	Feet from the 330	North/South line NORTH	Feet from the 2265	East/West line WEST	County LEA
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"Bottom Hole Location If Different From Surface

UL or lot no. N	Section 5	Township 26S	Range 33E	Lot Idn	Feet from the 100	North/South line SOUTH	Feet from the 2566	East/West line WEST	County LEA
¹² Dedicated Acres 1280	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. NSP-2145						

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.



PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Cimarex
LEASE NO.:	NMNM106040A
LOCATION:	Section 32, T.25 S., R.33 E., NMPM
COUNTY:	Lea County, New Mexico

WELL NAME & NO.:	Red Hills 32-5 Fed Com 160H
SURFACE HOLE FOOTAGE:	330'/N & 2265'/W
BOTTOM HOLE FOOTAGE:	100'/S & 2566'/W

COA

H2S	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input checked="" type="radio"/> Low	<input type="radio"/> Medium	<input type="radio"/> High
Cave/Karst Potential	<input type="radio"/> Critical		
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input checked="" type="checkbox"/> Fluid Filled	<input type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Wolfcamp** formation. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **1170** feet (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8**

hours or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)

- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
- d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Operator is approve to use offline cementing on Intermediate casing.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
 - Cement to surface. If cement does not circulate see B.1.a, c-d above.

Wait on cement (WOC) time for a primary cement job is to include the tail cement slurry due to cave/karst.

Operator shall use a max minimum of 12.5 ppg MW in this location.

3. The minimum required fill of cement behind the **7** inch production casing is:
 - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.
4. The minimum required fill of cement behind the **4-1/2** inch production liner is:
 - Cement should tie-back **100 feet** into the previous casing. Operator shall provide method of verification. **Excess calculate to be 11%. Additional cement maybe required.**

C. PRESSURE CONTROL

1. **Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).**
2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M) psi**. **Operator shall add an extra ram before drilling out the Intermeditate shoe.**
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)**Communitization Agreement**

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

☒ Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
(575) 361-2822

☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)
689-5981

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.

- Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
 3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.

- c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
- a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
 - c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
 - d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
 - e. The results of the test shall be reported to the appropriate BLM office.

- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

ZS021023

1. Geological Formations

TVD of target 10,715

Pilot Hole TD N/A

MD at TD 20,959

Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	875	Useable Water	
Top Salt	1235	N/A	
Base Salt	4900	N/A	
Bell Canyon	4930	Hydrocarbons	
Cherry Canyon	5960	Hydrocarbons	
Brushy Canyon	7480	Hydrocarbons	
Bone Spring	9045	Hydrocarbons	
Avalon Shale	9305	Hydrocarbons	
1st Bone Spring	10040	Hydrocarbons	
2nd Bone Spring	10580	Hydrocarbons	

2. Casing Program

Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17 1/2	0	925	925	13-3/8"	48.00	H-40	ST&C	1.85	4.33	7.25
12 1/4	0	4980	4980	9-5/8"	40.00	HCK-55	LT&C	1.42	1.48	2.82
8 3/4	0	10239	10239	7"	29.00	L-80	LT&C	1.47	1.70	1.88
8 3/4	10239	10989	10745	7"	29.00	P-110	BT&C	1.70	2.23	63.31
6	9239	20958	10715	4-1/2"	11.60	P-110	BT&C	1.51	2.14	21.43
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet

TVD was used on all calculations.

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Cimarex Energy Co., Red Hills 32-5 Federal Com 160H

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	N
Is well within the designated 4 string boundary.	N
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	N
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	N
Is 2nd string set 100' to 600' below the base of salt?	N
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	N
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	N
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	N
Is AC Report included?	Y

3. Cementing Program

Casing	# Sk	Wt. lb/gal	Yld ft ³ /sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	379	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	195	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate	1039	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	291	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Production	335	10.30	3.64	22.18		Lead: Tuned Light + LCM
	125	14.80	1.36	6.57	9.5	Tail: Class C + Retarder
Completion System	740	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS

Casing String	TOC	% Excess
Surface	0	42
Intermediate	0	49
Production	4780	25
Completion System	10789	10

Cimarex request the ability to perform casing integrity tests after plug bump of cement job.

4. Pressure Control Equipment

A variance is requested for the use of a diverter on the surface casing. See attached for schematic.					
BOP installed and tested before drilling which hole?	Size	Min Required WP	Type		Tested To
12 1/4	13 5/8	2M	Annular	X	2M
			Blind Ram		
			Pipe Ram		
			Double Ram	X	
			Other		
8 3/4	13 5/8	3M	Annular	X	3M
			Blind Ram		
			Pipe Ram		
			Double Ram	X	
			Other		
6	13 5/8	5M	Annular	X	5M
			Blind Ram		
			Pipe Ram	X	
			Double Ram	X	
			Other		

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

X	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.				
X	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.				
	N	Are anchors required by manufacturer?			

5. Mud Program

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 925'	Fresh Water	7.80 - 8.30	28	N/C
925' to 4980'	Brine Water	9.83 - 10.33	30-32	N/C
4980' to 11297'	Cut Brine or OBM	8.50 - 9.00	27-70	N/C
11297' to 20958'	OBM	8.50 - 9.00	50-70	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
---	-----------------------------

6. Logging and Testing Procedures

Logging, Coring and Testing	
	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
X	No logs are planned based on well control or offset log information.
	Drill stem test?
	Coring?

Additional Logs Planned	Interval
-------------------------	----------

7. Drilling Conditions

Condition	
BH Pressure at deepest TVD	5014 psi
Abnormal Temperature	No

Hydrogen Sulfide (H₂S) monitors will be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.

X	H ₂ S is present
X	H ₂ S plan is attached

8. Other Facets of Operation**9. Wellhead**

A multi-bowl wellhead system will be utilized.

After running the 13-3/8" surface casing, a 13 5/8" BOP/BOPE system with a minimum working pressure of 5000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 5000 psi test. Annular will be tested to working pressure, or a maximum test pressure of 5000 psi. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2.

The multi-bowl wellhead will be installed by vendor's representative. A copy of the installation instructions has been sent to the BLM field office.

The wellhead will be installed by a third-party welder while being monitored by the wellhead vendor representative.

All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type.

A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 5000 psi.

A solid steel body pack-off will be utilized after running and cementing the production casing. After installation the pack-off and lower flange will be pressure tested to 5000 psi.

All casing strings will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1,500 whichever is greater and not to exceed 70% of casing burst.

If well conditions dictate conventional slips will be set and BOPE will be tested to appropriate pressures based on permitted pressure requirements.

10. Other Variances

Cimarex requests to perform offline cementing. OLC procedure as follows: 1. Land casing on solid body mandrel hanger. Engage packoff and lock ring 2. Install BPV. 3. Skid rig. 4. Check for pressure and remove BPV. 5. Circulate down casing, taking returns through casing valves. 6. Pump lead and tail cement. 7. Displace cement and bump the plug. 8. Ensure floats are holding pressure. 9. RD cement crew. 10. Install BPV and TA cap.

Cimarex requests permission to skid the rig to the next well on the pad to begin operations instead of waiting 8 hours for surface cement to harden on this 160H well. Surface cement will be pumped and we will ensure floats hold, do a green cement test and then skid to the next well on pad. We will not perform any operations on this 160H well until at least 8 hours and when both tail and lead slurry reach 500 psi. The mandrel hanger is made up on the last joint of 13 3/8" casing and then lowered down with and landing joint. It is then lowered down until the mandrel contacts the landing ring which is pre-welded to the conductor pipe. At this point the 13 3/8" casing is entirely supported by the conductor pipe via the landing ring/mandrel and is independent from the rig. This allows us to walk the rig away from the 160H well and begin work on the next well while the cement is hardening. There is no way for the casing to be moved or knocked off center since it is hanging from the landing ring.

CIMAREX ENERGY COMPANY
 RED HILLS 32 5 FEDERAL COM #160H
 30-025-50210
 Section 32-T25S-R33E
 Lea Co., NM

THE CASING PROGRAM WILL BE CHANGED AS FOLLOWS:

FROM:

HOLE SIZE	CASING DEPTH FROM	CASING DEPTH TO	SETTING DEPTH TVD	CASING SIZE	WEIGHT (LB/FT)	GRADE	CONN	SF COLLAPSE	SF BURST	SF TENSION
17-1/2"	0	963'	963'	13-3/8"	48#	H-40/J-55 hybrid	ST&C	1.77	4.15	6.97
12-1/4"	0	4800'	4800'	9-5/8"	40#	J-55	BT&C	1.40	1.54	3.28
8-3/4"	0	9822'	9822'	5-1/2"	20#	L-80	LT&C	1.92	2	2.02
8-3/4"	9822'	20223'	10300'	5-1/2"	20#	L-80	BT&C	1.83	1.87	48.74
BLM Minimum Safety Factor								1.125	1	1.6 dry 1.8 wet

TVD was used on all calculations

All casing strings will be tested in accordance with Onshore Oil & Gas Order #2 III.B.1.H

TO:

HOLE SIZE	CASING DEPTH FROM	CASING DEPTH TO	SETTING DEPTH TVD	CASING SIZE	WEIGHT (LB/FT)	GRADE	CONN	SF COLLAPSE	SF BURST	SF TENSION
17-1/2"	0	925'	925'	13-3/8"	48#	H-40	ST&C	1.85	4.33	7.25
12-1/4"	0	4980'	4980'	9-5/8"	40#	HCK-55	LT&C	1.42	1.48	2.82
8-3/4"	0	10239'	10239'	7"	29#	L-80	LT&C	1.47	1.70	1.88
8-3/4"	10239'	10989'	10745'	7"	29#	P-110	BT&C	1.70	2.23	63.31
6"	9239'	20959'	10715'	4-1/2"	11.6#	P-110	BT&C	1.51	2.14	21.43
BLM Minimum Safety Factor								1.125	1	1.6 dry 1.8 wet

TVD was used on all calculations.

All casing strings will be tested in accordance with Onshore Oil & Gas Order #2 III.B.1.h.

Cimarex is also requesting approval for off line cementing and request approval to skid the rig to the next well on the pad to begin operations instead of waiting 8 hours for the surface casing cement to harden before skidding the rig.

An updated drilling plan is attached.



Cimarex Red Hills 32-5 Fed Com 160H Rev4 kFc 01Sep22 Proposal Geodetic Report (Def Plan)



Report Date: September 02, 2022 - 04:59 PM
Client: Cimarex Energy
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Red Hills 32-5 Fed Com 160H / 160H
Well: Red Hills 32-5 Fed Com 160H
Borehole: Red Hills 32-5 Fed Com 160H
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Red Hills 32-5 Fed Com 160H Rev4 kFc 01Sep22
Survey Date: September 01, 2022
Tort / AHD / DDI / ERD Ratio: 135.414 * / 11039.033 ft / 6.463 / 1.024
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 5' 36.27494", W 103° 35' 43.95248"
Location Grid N/E Y/X: N 398500.840 RUS, E 769814.500 RUS
CRS Grid Convergence Angle: 0.3920 °
Grid Scale Factor: 0.99996888
Version / Patch: 2.10.832.2

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 179.600 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB = 22ft
TVD Reference Elevation: 3430.900 ft above MSL
Seabed / Ground Elevation: 3408.900 ft above MSL
Magnetic Declination: 6.305 °
Total Gravity Field Strength: 998.4290mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47434.595 nT
Magnetic Dip Angle: 59.650 °
Declination Date: September 01, 2022
Magnetic Declination Model: HDGM 2022
North Reference: Grid North
Grid Convergence Used: 0.3920 °
Total Corr Mag North->Grid North: 5.9134 °
Local Coord Referenced To: Well Head

30-025-50210

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S °)	Longitude (E/W °)
SHL [330° FNL, 2265° FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	398500.84	769814.50	N 32.093410	W 103.595542
Rustler	100.00	0.00	68.89	100.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	200.00	0.00	68.89	200.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	300.00	0.00	68.89	300.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	400.00	0.00	68.89	400.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	500.00	0.00	68.89	500.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	600.00	0.00	68.89	600.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	700.00	0.00	68.89	700.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	800.00	0.00	68.89	800.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	875.00	0.00	68.89	875.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	900.00	0.00	68.89	900.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
Top of Salt	1000.00	0.00	68.89	1000.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	1100.00	0.00	68.89	1100.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	1200.00	0.00	68.89	1200.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	1235.00	0.00	68.89	1235.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	1300.00	0.00	68.89	1300.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	1400.00	0.00	68.89	1400.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	1500.00	0.00	68.89	1500.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	1600.00	0.00	68.89	1600.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	1700.00	0.00	68.89	1700.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	1800.00	0.00	68.89	1800.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
Nudge, Build 2"/100ft	1900.00	0.00	68.89	1900.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	2000.00	0.00	68.89	2000.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	2100.00	0.00	68.89	2100.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	2200.00	0.00	68.89	2200.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	2300.00	0.00	68.89	2300.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	2400.00	0.00	68.89	2400.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	2500.00	0.00	68.89	2500.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	2600.00	0.00	68.89	2600.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	2700.00	0.00	68.89	2700.00	0.00	0.00	0.00	0.00	398500.84	769814.50	N 32.093410	W 103.595542
	2800.00	2.00	68.89	2799.98	-0.62	0.63	1.63	2.00	398501.47	769816.13	N 32.093411	W 103.595537
Hold	2900.00	4.00	68.89	2899.84	-2.47	2.51	6.51	2.00	398503.35	769821.01	N 32.093416	W 103.595521
	3000.00	6.00	68.89	2999.45	-5.55	5.65	14.64	2.00	398506.49	769829.14	N 32.093425	W 103.595495
	3100.00	8.00	68.89	3098.70	-9.86	10.04	26.01	2.00	398510.88	769840.51	N 32.093437	W 103.595458
	3125.00	8.50	68.89	3123.45	-11.13	11.33	29.36	2.00	398512.17	769843.86	N 32.093440	W 103.595447
	3200.00	8.50	68.89	3197.62	-15.05	15.32	39.70	0.00	398516.16	769854.20	N 32.093451	W 103.595414
	3300.00	8.50	68.89	3296.52	-20.27	20.65	53.49	0.00	398521.49	769867.99	N 32.093465	W 103.595369
	3400.00	8.50	68.89	3395.42	-25.50	25.97	67.28	0.00	398526.81	769881.77	N 32.093480	W 103.595325
	3500.00	8.50	68.89	3494.32	-30.73	31.29	81.07	0.00	398532.13	769895.56	N 32.093494	W 103.595280
	3600.00	8.50	68.89	3593.23	-35.95	36.62	94.86	0.00	398537.46	769909.35	N 32.093509	W 103.595235
	3700.00	8.50	68.89	3692.13	-41.18	41.94	108.64	0.00	398542.78	769923.14	N 32.093523	W 103.595191
3800.00	8.50	68.89	3791.03	-46.41	47.26	122.43	0.00	398548.10	769936.93	N 32.093537	W 103.595146	
Base of Salt Bell Canyon	3900.00	8.50	68.89	3889.93	-51.63	52.59	136.22	0.00	398553.42	769950.72	N 32.093552	W 103.595101
	4000.00	8.50	68.89	3988.83	-56.86	57.91	150.01	0.00	398558.75	769964.51	N 32.093566	W 103.595057
	4100.00	8.50	68.89	4087.73	-62.09	63.23	163.80	0.00	398564.07	769978.30	N 32.093580	W 103.595012
	4200.00	8.50	68.89	4186.63	-67.31	68.56	177.59	0.00	398569.39	769992.08	N 32.093595	W 103.594967
	4300.00	8.50	68.89	4285.54	-72.54	73.88	191.38	0.00	398574.72	770005.87	N 32.093609	W 103.594923
	4400.00	8.50	68.89	4384.44	-77.77	79.20	205.17	0.00	398580.04	770019.66	N 32.093624	W 103.594878
	4500.00	8.50	68.89	4483.34	-82.99	84.53	218.96	0.00	398585.36	770033.45	N 32.093638	W 103.594834
	4600.00	8.50	68.89	4582.24	-88.22	89.85	232.75	0.00	398590.69	770047.24	N 32.093652	W 103.594789
	4700.00	8.50	68.89	4681.14	-93.45	95.17	246.54	0.00	398596.01	770061.03	N 32.093667	W 103.594744
	4800.00	8.50	68.89	4780.04	-98.67	100.49	260.33	0.00	398601.33	770074.82	N 32.093681	W 103.594700
Cherry Canyon	4900.00	8.50	68.89	4878.95	-103.90	105.82	274.12	0.00	398606.65	770088.61	N 32.093695	W 103.594655
	4921.29	8.50	68.89	4900.00	-105.01	106.95	277.05	0.00	398607.79	770091.54	N 32.093698	W 103.594610
	4951.62	8.50	68.89	4930.00	-106.60	108.57	281.23	0.00	398609.40	770095.72	N 32.093703	W 103.594632
	5000.00	8.50	68.89	4977.85	-109.13	111.14	287.91	0.00	398611.98	770102.40	N 32.093710	W 103.594610
	5100.00	8.50	68.89	5076.75	-114.36	116.46	301.69	0.00	398617.30	770116.18	N 32.093724	W 103.594566
	5200.00	8.50	68.89	5175.65	-119.58	121.79	315.48	0.00	398622.62	770129.97	N 32.093739	W 103.594521
	5300.00	8.50	68.89	5274.55	-124.81	127.11	329.27	0.00	398627.95	770143.76	N 32.093753	W 103.594476
	5400.00	8.50	68.89	5373.45	-130.04	132.43	343.06	0.00	398633.27	770157.55	N 32.093767	W 103.594432
	5500.00	8.50	68.89	5472.35	-135.26	137.76	356.85	0.00	398638.59	770171.34	N 32.093782	W 103.594387
	5600.00	8.50	68.89	5571.26	-140.49	143.08	370.64	0.00	398643.92	770185.13	N 32.093796	W 103.594342
5700.00	8.50	68.89	5670.16	-145.72	148.40	384.43	0.00	398649.24	770198.92	N 32.093810	W 103.594298	
5800.00	8.50	68.89	5769.06	-150.94	153.73	398.22	0.00	398654.56	770212.71	N 32.093825	W 103.594253	
5900.00	8.50	68.89	5867.96	-156.17	159.05	412.01	0.00	398659.88	770226.50	N 32.093839	W 103.594209	
5993.06	8.50	68.89	5960.00	-161.03	164.00	424.84	0.00	398664.84	770239.33	N 32.093852	W 103.594167	
6000.00	8.50	68.89	5966.86	-161.40	164.37	425.80	0.00	398665.21	770240.28	N 32.093853	W 103.594164	
6100.00	8.50	68.89	6065.76	-166.62	169.70	439.59	0.00	398670.53	770254.07	N 32.093868	W 103.594119	
6200.00	8.50	68.89	6164.67	-171.85	175.02	453.38	0.00	398675.85	770267.86	N 32.093882	W 103.594075	
6300.00	8.50	68.89	6263.57	-177.08	180.34	467.17	0.00	398681.18	770281.65	N 32.093897	W 103.594030	
6400.00	8.50	68.89	6362.47	-182.30	185.66	480.96	0.00	398686.50	770295.44	N 32.093911	W 103.593985	
6500.00	8.50	68.89	6461.37	-187.53	190.99	494.74	0.00	398691.82	770309.23	N 32.093925	W 103.593941	
6600.00	8.50	68.89	6560.27	-192.76	196.31	508.53	0.00	398697.14	770323.02	N 32.093940	W 103.593896	
6700.00	8.50	68.89	6659.17	-197.98	201.63	522.32	0.00	398702.47	770336.81	N 32.093954	W 103.593851	
6800.00	8.50	68.89	6758.08	-203.21	206.96	536.11	0.00	398707.79	770350.60	N 32.093968	W 103.593807	
6900.00	8.50	68.89	6856.98	-208.44	212.28	549.90	0.00	398713.11	770364.38	N 32.093983	W 103.593762	

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S °)	Longitude (E/W °)
	7000.00	8.50	68.89	6955.88	-213.66	217.60	563.69	0.00	398718.44	770378.17	N 32.093997	W 103.593717
Drop 2"/100ft	7086.68	8.50	68.89	7041.60	-218.19	222.22	575.64	0.00	398723.05	770390.12	N 32.094010	W 103.593679
	7100.00	8.23	68.89	7054.78	-218.88	222.92	577.45	0.00	398723.75	770391.93	N 32.094012	W 103.593673
	7200.00	6.23	68.89	7153.98	-223.33	227.45	589.20	2.00	398728.28	770403.68	N 32.094024	W 103.593635
	7300.00	4.23	68.89	7253.56	-226.56	230.73	597.71	2.00	398731.57	770412.19	N 32.094033	W 103.593607
	7400.00	2.23	68.89	7353.40	-228.55	232.77	602.97	2.00	398733.60	770417.45	N 32.094038	W 103.593590
	7500.00	0.23	68.89	7453.37	-229.31	233.54	604.98	2.00	398734.37	770419.46	N 32.094040	W 103.593584
Hold	7511.68	0.00	68.89	7465.05	-229.32	233.55	605.00	2.00	398734.38	770419.48	N 32.094040	W 103.593584
Brushy Canyon	7526.63	0.00	68.89	7480.00	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	7600.00	0.00	68.89	7553.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	7700.00	0.00	68.89	7653.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	7800.00	0.00	68.89	7753.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	7900.00	0.00	68.89	7853.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	8000.00	0.00	68.89	7953.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	8100.00	0.00	68.89	8053.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	8200.00	0.00	68.89	8153.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	8300.00	0.00	68.89	8253.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	8400.00	0.00	68.89	8353.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	8500.00	0.00	68.89	8453.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	8600.00	0.00	68.89	8553.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	8700.00	0.00	68.89	8653.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	8800.00	0.00	68.89	8753.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	8900.00	0.00	68.89	8853.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	9000.00	0.00	68.89	8953.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
BS/BS Lime	9091.63	0.00	68.89	9045.00	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	9100.00	0.00	68.89	9053.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
Leonard	9131.63	0.00	68.89	9085.00	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	9200.00	0.00	68.89	9153.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	9300.00	0.00	68.89	9253.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
Avalon	9351.63	0.00	68.89	9305.00	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	9400.00	0.00	68.89	9353.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	9500.00	0.00	68.89	9453.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	9600.00	0.00	68.89	9553.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	9700.00	0.00	68.89	9653.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	9800.00	0.00	68.89	9753.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	9900.00	0.00	68.89	9853.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	10000.00	0.00	68.89	9953.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
1st BS Sand	10086.63	0.00	68.89	10040.00	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	10100.00	0.00	68.89	10053.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	10200.00	0.00	68.89	10153.37	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
KOP, Build 10"/100ft	10239.18	0.00	68.89	10192.55	-229.32	233.55	605.00	0.00	398734.38	770419.48	N 32.094040	W 103.593584
	10300.00	6.08	191.60	10253.25	-226.17	230.39	604.35	10.00	398731.22	770418.83	N 32.094032	W 103.593586
	10400.00	16.08	191.60	10351.27	-207.39	211.59	600.49	10.00	398712.42	770414.97	N 32.093980	W 103.593599
	10500.00	26.08	191.60	10444.45	-172.25	176.40	593.26	10.00	398677.23	770407.74	N 32.093883	W 103.593623
	10600.00	36.08	191.60	10529.99	-121.82	125.89	582.89	10.00	398626.73	770397.37	N 32.093745	W 103.593658
2nd BS Sand	10664.68	42.55	191.60	10580.00	-81.76	85.77	574.65	10.00	398586.61	770389.14	N 32.093635	W 103.593685
	10700.00	46.08	191.60	10605.27	-57.62	61.60	569.69	10.00	398562.44	770384.17	N 32.093568	W 103.593702
	10800.00	56.08	191.60	10668.01	18.38	-14.52	554.06	10.00	398486.32	770368.54	N 32.093359	W 103.593754
	10900.00	66.08	191.60	10716.31	103.89	-100.15	536.48	10.00	398400.69	770350.96	N 32.093124	W 103.593812
Build 5"/100ft	10989.18	75.00	191.60	10745.98	186.06	-182.44	519.58	10.00	398318.41	770334.06	N 32.092898	W 103.593869
	11000.00	75.54	191.60	10748.74	196.29	-192.69	517.48	5.00	398308.16	770331.96	N 32.092870	W 103.593876
	11100.00	80.54	191.60	10769.45	291.95	-288.48	497.80	5.00	398212.36	770312.29	N 32.092607	W 103.593941
	11200.00	85.54	191.60	10781.56	389.02	-385.69	477.84	5.00	398115.16	770292.33	N 32.092341	W 103.594008
2nd BS Sand target	11280.77	89.58	191.60	10785.00	467.93	-464.72	461.61	5.00	398036.13	770276.10	N 32.092124	W 103.594062
Landing Point	11297.48	90.42	191.60	10785.00	484.28	-481.09	458.25	5.00	398019.77	770272.74	N 32.092079	W 103.594073
2nd BS Sand target	11297.59	90.42	191.60	10785.00	484.38	-481.20	458.23	0.00	398019.66	770272.72	N 32.092078	W 103.594073
	11300.00	90.42	191.60	10784.98	486.74	-483.56	457.75	0.00	398017.30	770272.23	N 32.092072	W 103.594075
	11400.00	90.42	191.60	10784.26	584.55	-581.51	437.63	0.00	397919.35	770252.12	N 32.091803	W 103.594142
	11500.00	90.42	191.60	10783.53	682.36	-679.46	417.52	0.00	397821.40	770232.00	N 32.091534	W 103.594209
	11600.00	90.42	191.60	10782.81	780.17	-777.42	397.40	0.00	397723.45	770211.89	N 32.091265	W 103.594276
	11700.00	90.42	191.60	10782.09	877.98	-875.37	377.29	0.00	397625.50	770191.78	N 32.090987	W 103.594344
Turn 2"/100ft	11737.48	90.42	191.60	10781.81	914.64	-912.08	369.75	0.00	397588.79	770184.24	N 32.090896	W 103.594369
	11800.00	90.42	190.35	10781.36	975.93	-973.46	357.85	2.00	397527.42	770172.33	N 32.090727	W 103.594408
	11900.00	90.42	188.35	10780.63	1074.48	-1072.12	341.59	2.00	397428.76	770156.08	N 32.090456	W 103.594463
	12000.00	90.42	186.35	10779.91	1173.56	-1171.29	328.80	2.00	397329.59	770143.29	N 32.090184	W 103.594507
	12100.00	90.42	184.35	10779.18	1273.04	-1270.85	319.47	2.00	397230.04	770133.96	N 32.089911	W 103.594539
	12200.00	90.42	182.35	10778.45	1372.82	-1370.67	313.62	2.00	397130.22	770128.11	N 32.089636	W 103.594560
	12300.00	90.42	180.35	10777.72	1472.77	-1470.63	311.26	2.00	397030.26	770125.75	N 32.089362	W 103.594570
Hold	12337.47	90.42	179.60	10777.45	1510.23	-1508.09	311.27	2.00	396992.80	770125.76	N 32.089259	W 103.594571
	12400.00	90.42	179.60	10777.00	1572.76	-1570.63	311.70	0.00	396930.27	770126.19	N 32.089087	W 103.594571
	12500.00	90.42	179.60	10776.27	1672.76	-1670.62	312.39	0.00	396830.27	770126.88	N 32.088812	W 103.594571
	12600.00	90.42	179.60	10775.55	1772.76	-1770.62	313.08	0.00	396730.28	770127.57	N 32.088537	W 103.594571
	12700.00	90.42	179.60	10774.83	1872.76	-1870.61	313.78	0.00	396630.29	770128.27	N 32.088262	W 103.594571
	12800.00	90.42	179.60	10774.10	1972.75	-1970.61	314.47	0.00	396530.30	770128.96	N 32.087987	W 103.594571
	12900.00	90.42	179.60	10773.38	2072.75	-2070.60	315.16	0.00	396430.31	770129.65	N 32.087712	W 103.594571
	13000.00	90.42	179.60	10772.65	2172.75	-2170.60	315.85	0.00	396330.32	770130.34	N 32.087438	W 103.594571
	13100.00	90.42	179.60	10771.93	2272.75	-2270.59						

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S °)	Longitude (E/W °)
Section 32-5 Line, State exit to Fee enter Lease Cross	15777.94	90.42	179.60	10752.53	4950.62	-4948.40	335.05	0.00	393552.60	770149.54	N 32.079802	W 103.594570
	15800.00	90.42	179.60	10752.37	4972.68	-4970.46	335.20	0.00	393530.55	770149.69	N 32.079741	W 103.594570
	15900.00	90.42	179.60	10751.65	5072.67	-5070.45	335.89	0.00	393430.56	770150.38	N 32.079467	W 103.594570
	16000.00	90.42	179.60	10750.92	5172.67	-5170.45	336.58	0.00	393330.57	770151.07	N 32.079192	W 103.594570
	16100.00	90.42	179.60	10750.20	5272.67	-5270.44	337.27	0.00	393230.57	770151.76	N 32.078917	W 103.594570
	16200.00	90.42	179.60	10749.48	5372.66	-5370.44	337.97	0.00	393130.58	770152.45	N 32.078642	W 103.594570
	16300.00	90.42	179.60	10748.75	5472.66	-5470.43	338.66	0.00	393030.59	770153.15	N 32.078367	W 103.594570
	16400.00	90.42	179.60	10748.03	5572.66	-5570.43	339.35	0.00	392930.60	770153.84	N 32.078092	W 103.594570
	16500.00	90.42	179.60	10747.30	5672.66	-5670.42	340.04	0.00	392830.61	770154.53	N 32.077817	W 103.594570
	16600.00	90.42	179.60	10746.58	5772.65	-5770.42	340.73	0.00	392730.62	770155.22	N 32.077542	W 103.594570
	16700.00	90.42	179.60	10745.85	5872.65	-5870.41	341.42	0.00	392630.62	770155.91	N 32.077268	W 103.594570
	16800.00	90.42	179.60	10745.13	5972.65	-5970.41	342.11	0.00	392530.63	770156.60	N 32.076993	W 103.594570
	16900.00	90.42	179.60	10744.41	6072.65	-6070.40	342.80	0.00	392430.64	770157.29	N 32.076718	W 103.594570
	17000.00	90.42	179.60	10743.68	6172.64	-6170.40	343.49	0.00	392330.65	770157.98	N 32.076443	W 103.594570
	17100.00	90.42	179.60	10742.96	6272.64	-6270.39	344.19	0.00	392230.66	770158.67	N 32.076168	W 103.594570
Fee exit to NMNM0106040 4 enter lease Cross	17100.36	90.42	179.60	10742.95	6273.00	-6270.75	344.19	0.00	392230.30	770158.68	N 32.076167	W 103.594570
	17200.00	90.42	179.60	10742.23	6372.64	-6370.39	344.88	0.00	392130.67	770159.37	N 32.075893	W 103.594570
	17300.00	90.42	179.60	10741.51	6472.64	-6470.38	345.57	0.00	392030.67	770160.06	N 32.075618	W 103.594570
	17400.00	90.42	179.60	10740.78	6572.63	-6570.38	346.26	0.00	391930.68	770160.75	N 32.075344	W 103.594570
	17500.00	90.42	179.60	10740.06	6672.63	-6670.37	346.95	0.00	391830.69	770161.44	N 32.075069	W 103.594570
	17600.00	90.42	179.60	10739.34	6772.63	-6770.37	347.64	0.00	391730.70	770162.13	N 32.074794	W 103.594570
	17700.00	90.42	179.60	10738.61	6872.63	-6870.36	348.33	0.00	391630.71	770162.82	N 32.074519	W 103.594570
	17800.00	90.42	179.60	10737.89	6972.62	-6970.36	349.02	0.00	391530.72	770163.51	N 32.074244	W 103.594570
	17900.00	90.42	179.60	10737.16	7072.62	-7070.35	349.71	0.00	391430.72	770164.20	N 32.073969	W 103.594570
	18000.00	90.42	179.60	10736.44	7172.62	-7170.35	350.41	0.00	391330.73	770164.89	N 32.073694	W 103.594570
	18100.00	90.42	179.60	10735.71	7272.61	-7270.34	351.10	0.00	391230.74	770165.59	N 32.073419	W 103.594570
	18200.00	90.42	179.60	10734.99	7372.61	-7370.34	351.79	0.00	391130.75	770166.28	N 32.073145	W 103.594569
	18300.00	90.42	179.60	10734.27	7472.61	-7470.33	352.48	0.00	391030.76	770166.97	N 32.072870	W 103.594569
Turn 2°/100ft	18337.47	90.42	179.60	10733.99	7510.07	-7507.79	352.74	0.00	390930.29	770167.23	N 32.072767	W 103.594569
	18400.00	90.42	178.35	10733.54	7572.60	-7570.32	353.85	2.00	390930.77	770168.34	N 32.072595	W 103.594567
NMNM0106040 4 exit to NMNM0160973 enter lease Cross	18422.75	90.42	177.90	10733.38	7595.34	-7593.05	354.60	2.00	390908.04	770169.08	N 32.072532	W 103.594565
	18500.00	90.42	176.35	10732.82	7672.52	-7670.20	358.47	2.00	390830.89	770172.96	N 32.072320	W 103.594555
	18537.46	90.42	175.60	10732.54	7709.90	-7707.57	361.10	2.00	390793.53	770175.59	N 32.072218	W 103.594547
Hold	18600.00	90.42	175.60	10732.09	7772.29	-7769.92	365.89	0.00	390731.17	770180.38	N 32.072046	W 103.594533
	18700.00	90.42	175.60	10731.37	7872.04	-7869.63	373.56	0.00	390631.47	770188.04	N 32.071772	W 103.594510
	18800.00	90.42	175.60	10730.64	7971.80	-7969.33	381.22	0.00	390531.77	770195.71	N 32.071498	W 103.594488
Turn 2°/100ft	18877.46	90.42	175.60	10730.08	8049.07	-8046.56	387.16	0.00	390454.55	770201.64	N 32.071285	W 103.594470
	18900.00	90.42	176.05	10729.92	8071.56	-8069.04	388.80	2.00	390432.07	770203.28	N 32.071223	W 103.594465
	19000.00	90.42	178.05	10729.19	8171.45	-8168.90	393.93	2.00	390332.21	770208.42	N 32.070949	W 103.594451
	19100.00	90.42	180.05	10728.47	8271.44	-8268.88	395.58	2.00	390232.24	770210.07	N 32.070674	W 103.594448
	19200.00	90.42	182.05	10727.74	8371.40	-8368.85	393.74	2.00	390132.26	770208.23	N 32.070399	W 103.594456
Hold	19277.45	90.42	183.60	10727.18	8448.72	-8446.20	389.92	2.00	390054.92	770204.41	N 32.070187	W 103.594470
	19300.00	90.42	183.60	10727.02	8471.21	-8468.71	388.50	0.00	390032.41	770202.99	N 32.070125	W 103.594475
	19400.00	90.42	183.60	10726.29	8570.97	-8568.51	382.22	0.00	389932.62	770196.70	N 32.069851	W 103.594498
	19500.00	90.42	183.60	10725.57	8670.72	-8668.31	375.93	0.00	389832.82	770190.42	N 32.069576	W 103.594520
	19600.00	90.42	183.60	10724.84	8770.47	-8768.11	369.64	0.00	389733.02	770184.13	N 32.069302	W 103.594543
Turn 2°/100ft	19617.35	90.42	183.60	10724.72	8787.78	-8785.42	368.55	0.00	389715.71	770183.04	N 32.069255	W 103.594547
	19700.00	90.42	181.95	10724.12	8870.30	-8867.93	364.55	2.00	389633.16	770179.04	N 32.069028	W 103.594561
	19800.00	90.42	179.95	10723.39	8970.26	-8967.95	362.89	2.00	389533.19	770177.38	N 32.068753	W 103.594569
Hold	19817.34	90.42	178.60	10723.27	8987.60	-8985.29	362.96	2.00	389515.85	770177.44	N 32.068705	W 103.594569
	19900.00	90.42	178.60	10722.67	9070.26	-9067.94	363.53	0.00	389433.20	770178.02	N 32.068478	W 103.594569
	20000.00	90.42	178.60	10721.95	9170.26	-9167.94	364.22	0.00	389333.20	770178.71	N 32.068203	W 103.594569
	20100.00	90.42	178.60	10721.22	9270.26	-9267.93	364.91	0.00	389233.21	770179.40	N 32.067929	W 103.594569
	20200.00	90.42	178.60	10720.50	9370.25	-9367.93	365.60	0.00	389133.22	770180.09	N 32.067654	W 103.594569
	20300.00	90.42	178.60	10719.77	9470.25	-9467.92	366.29	0.00	389033.23	770180.78	N 32.067379	W 103.594569
	20400.00	90.42	178.60	10719.05	9570.25	-9567.92	366.98	0.00	388933.24	770181.47	N 32.067104	W 103.594569
	20500.00	90.42	178.60	10718.32	9670.25	-9667.91	367.67	0.00	388833.25	770182.16	N 32.066829	W 103.594569
	20600.00	90.42	178.60	10717.60	9770.24	-9767.91	368.36	0.00	388733.25	770182.85	N 32.066554	W 103.594569
	20700.00	90.42	178.60	10716.87	9870.24	-9867.90	369.05	0.00	388633.26	770183.54	N 32.066279	W 103.594569
	20800.00	90.42	178.60	10716.15	9970.24	-9967.90	369.75	0.00	388533.27	770184.23	N 32.066004	W 103.594569
	20900.00	90.42	178.60	10715.43	10070.24	-10067.89	370.44	0.00	388433.28	770184.92	N 32.065730	W 103.594569
Cimarex Red Hills 32-5 Fed Com 160H - PBHL [100' FSL, 2566' FWL]	20958.70	90.42	178.60	10715.00	10128.94	-10126.60	370.84	0.00	388374.58	770185.33	N 32.065568	W 103.594569

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 3 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	22.000	1/100.000	17.500	13.375		A001Mb_MWD-Depth Only	Red Hills 32-5 Fed Com 160H / Cimarex Red Hills 32-5 Fed Com
	1	22.000	20958.704	1/100.000	17.500	13.375		A001Mb_MWD	Red Hills 32-5 Fed Com 160H / Cimarex Red Hills 32-5 Fed Com

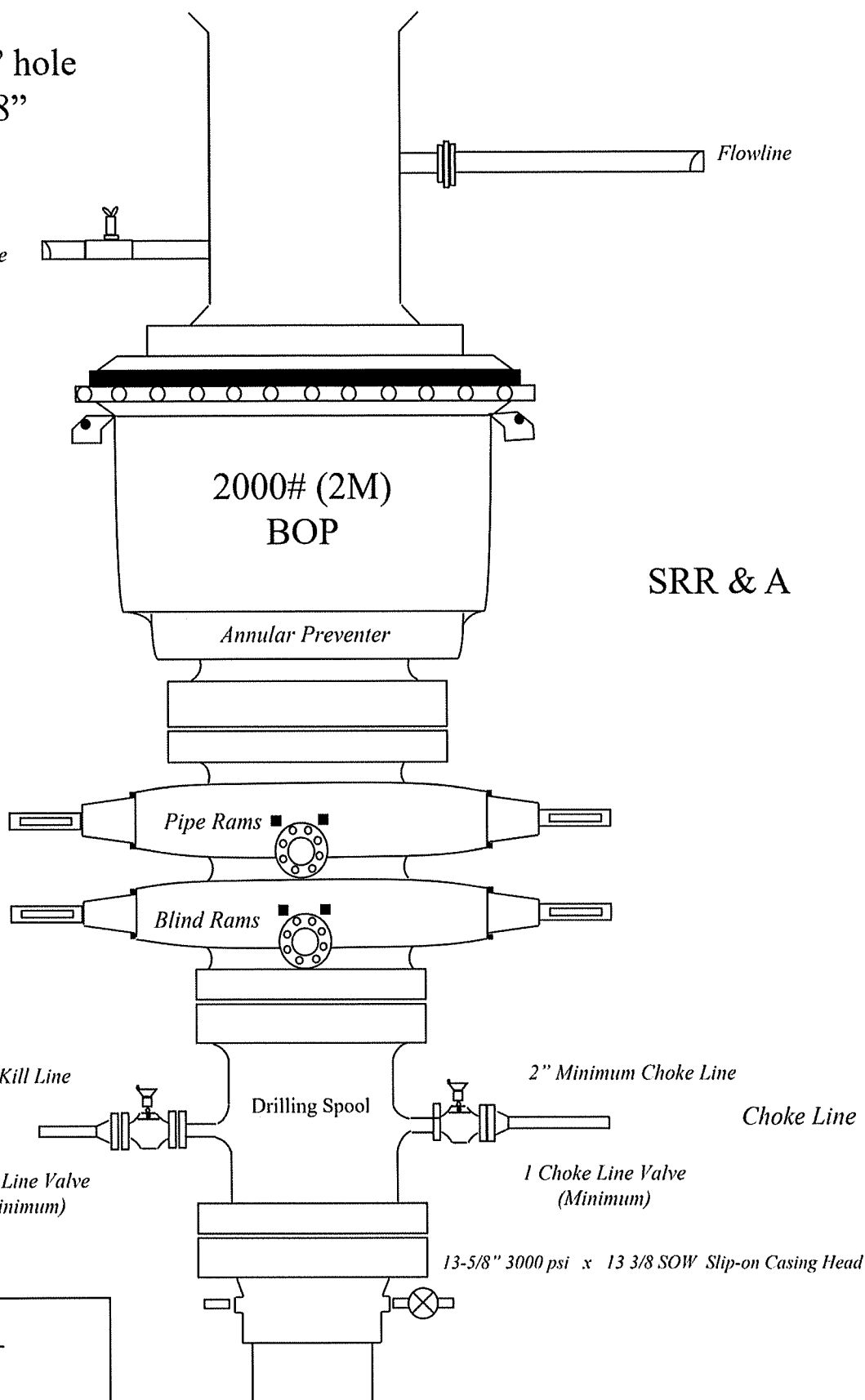
...Red Hills 32-5 Fed Com 160H/Cimarex Red Hills 32-5 Fed Com 160H Rev4 kFc 01Sep22

Drilling 12 1/4" hole
below 13 3/8"
Casing

Casing

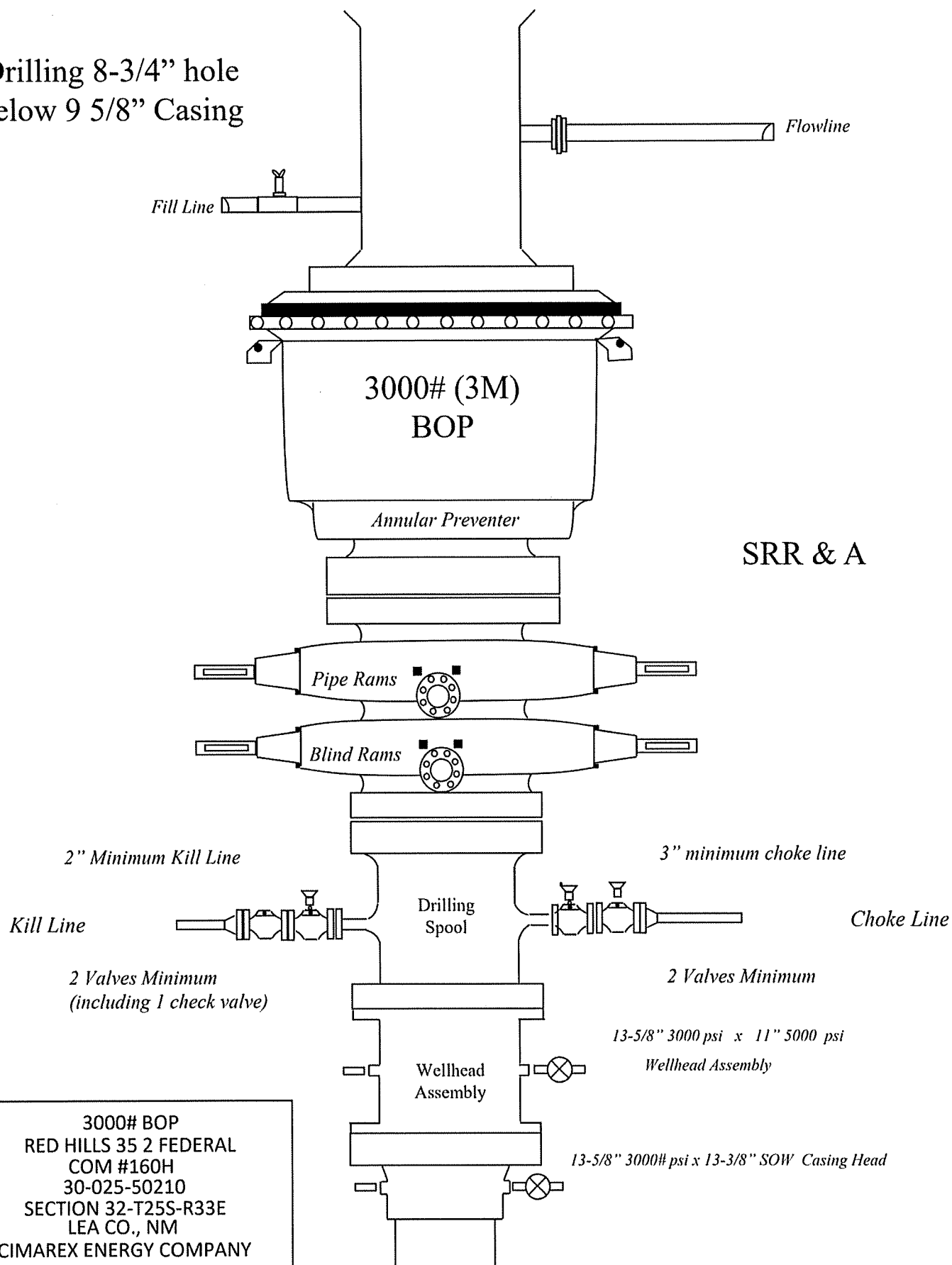
Flowline

Fill Line



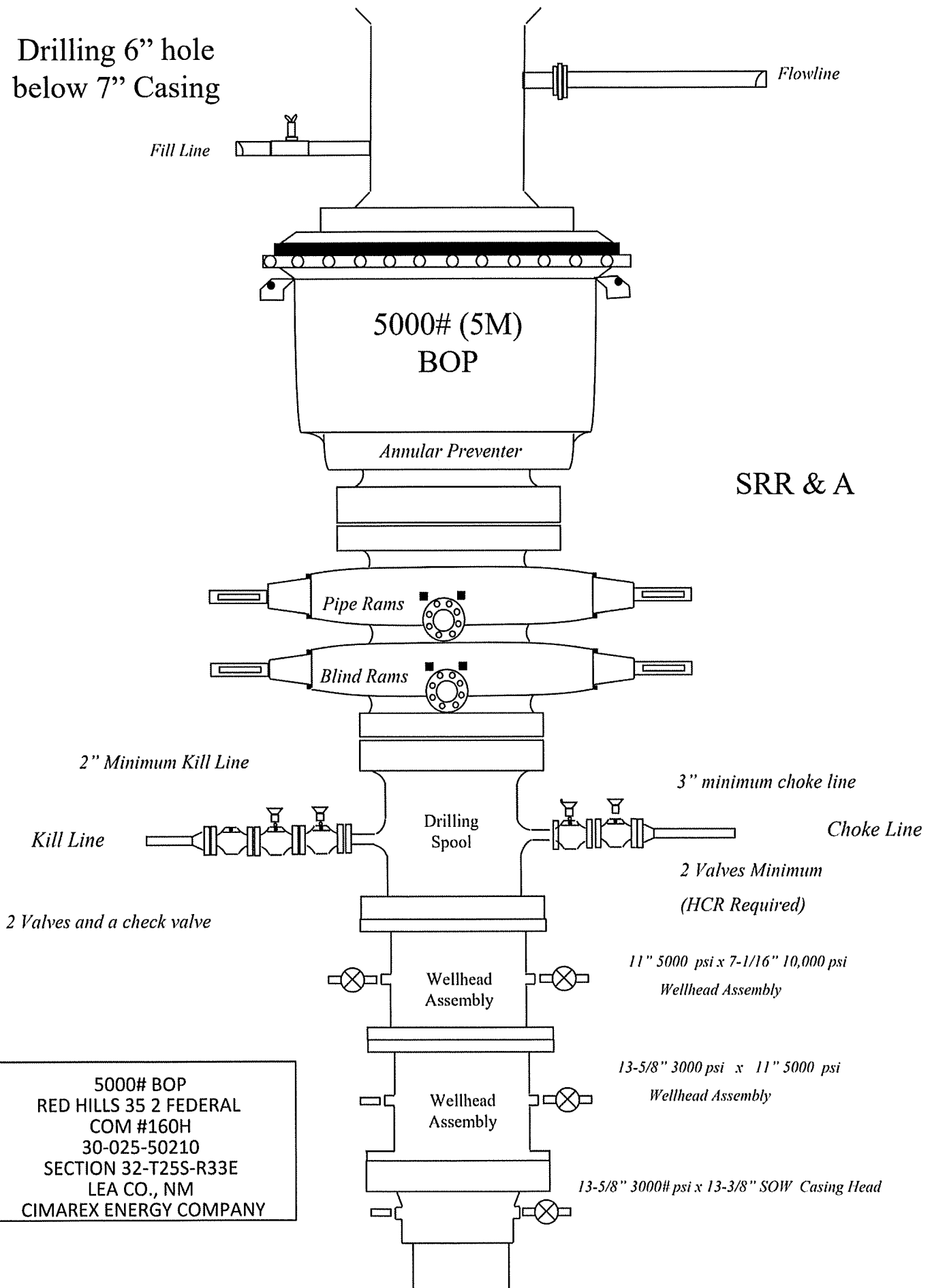
2000# BOP
RED HILLS 32 5 FEDERAL
COM #160H
30-025-50210
SECTION 32-T25S-R33E
LEA CO., NM
Cimarex Energy Co.

Drilling 8-3/4" hole
below 9 5/8" Casing

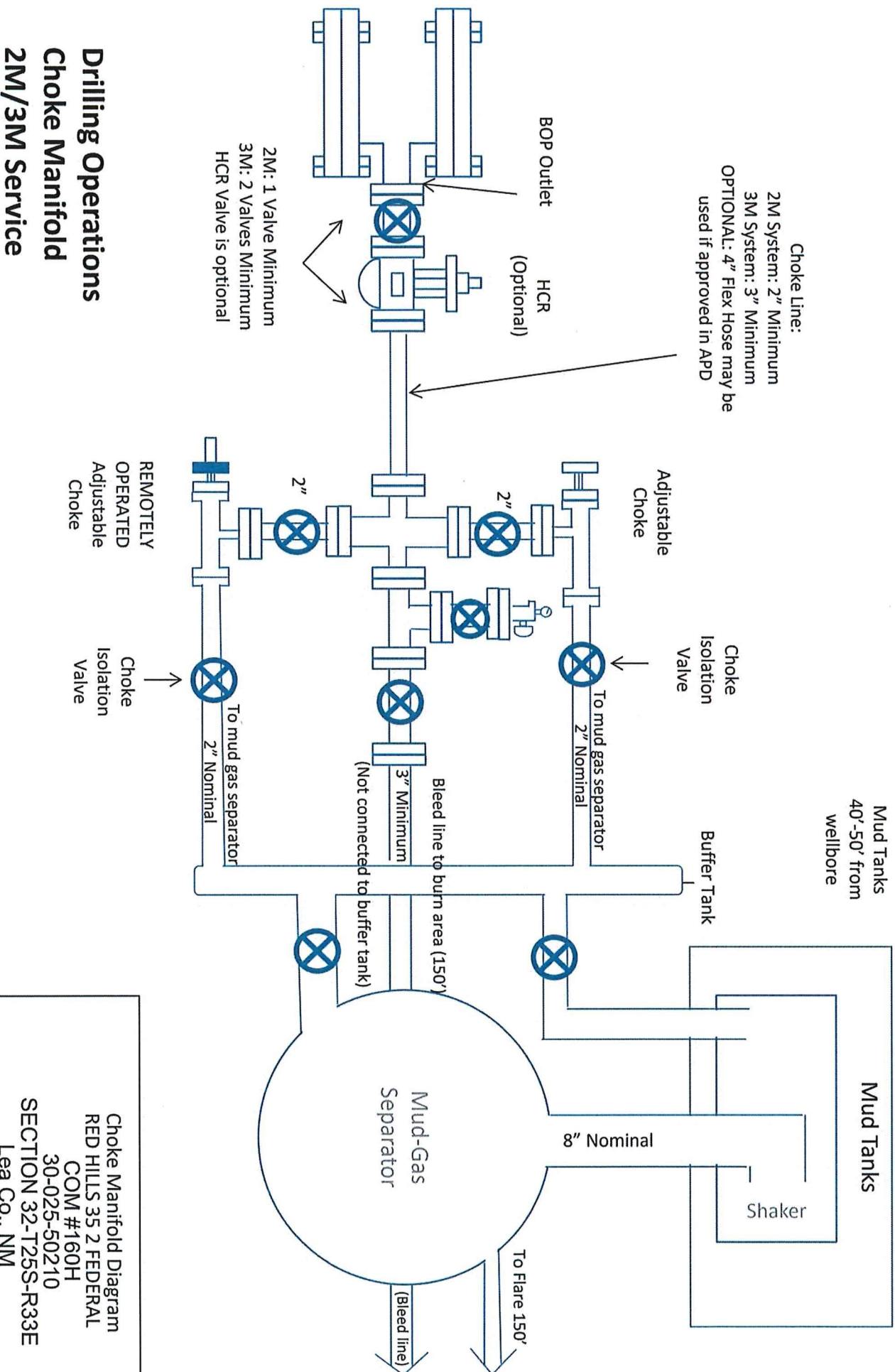


3000# BOP
RED HILLS 35 2 FEDERAL
COM #160H
30-025-50210
SECTION 32-T25S-R33E
LEA CO., NM
CIMAREX ENERGY COMPANY

Drilling 6" hole
below 7" Casing

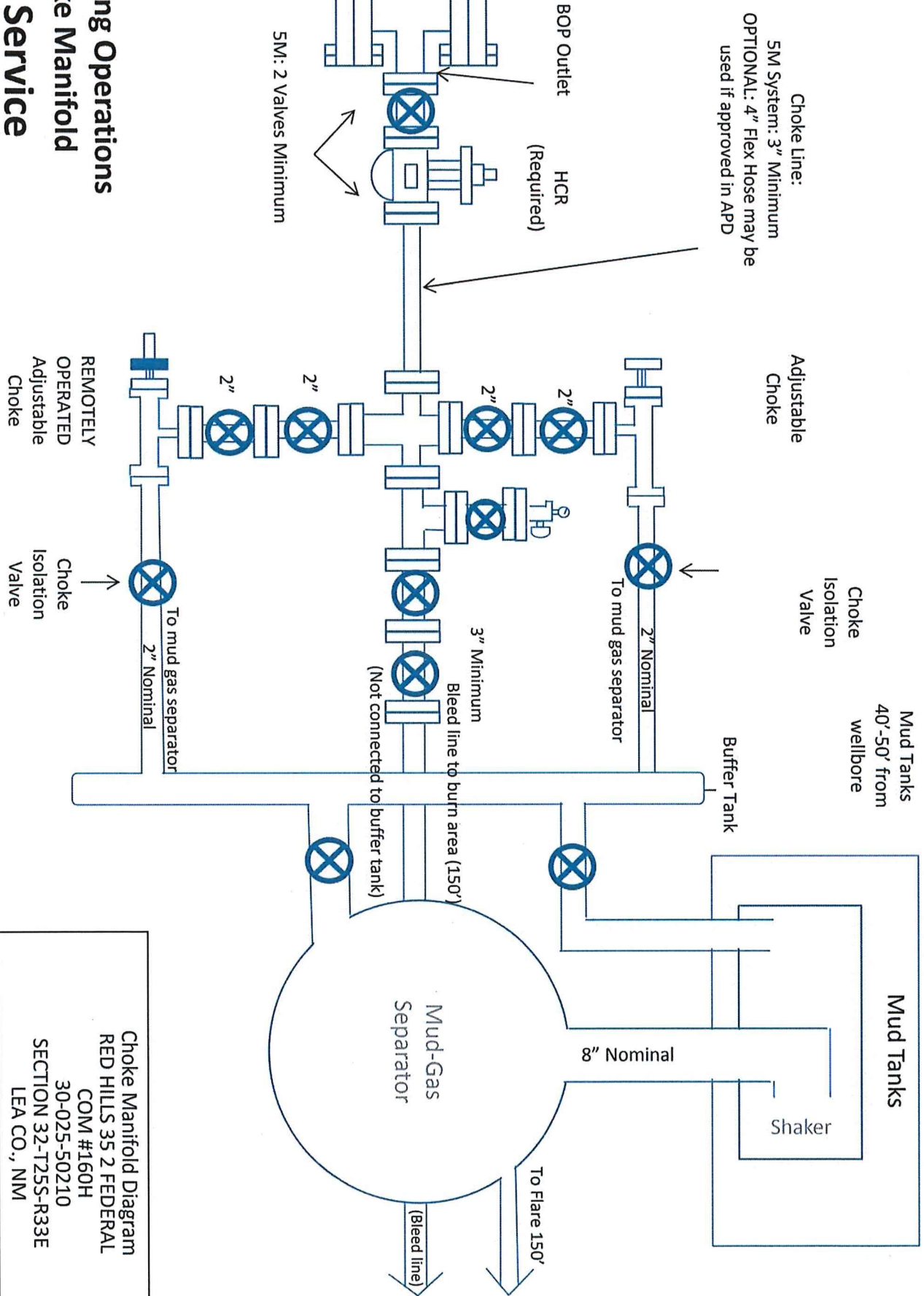


CIMAREX ENERGY COMPANY



CIMAREX ENERGY COMPANY

Drilling Operations
Choke Manifold
5M Service



Choke Manifold Diagram
RED HILLS 35 2 FEDERAL
COM #160H
30-025-50210
SECTION 32-T255-R33E
LEA CO., NM

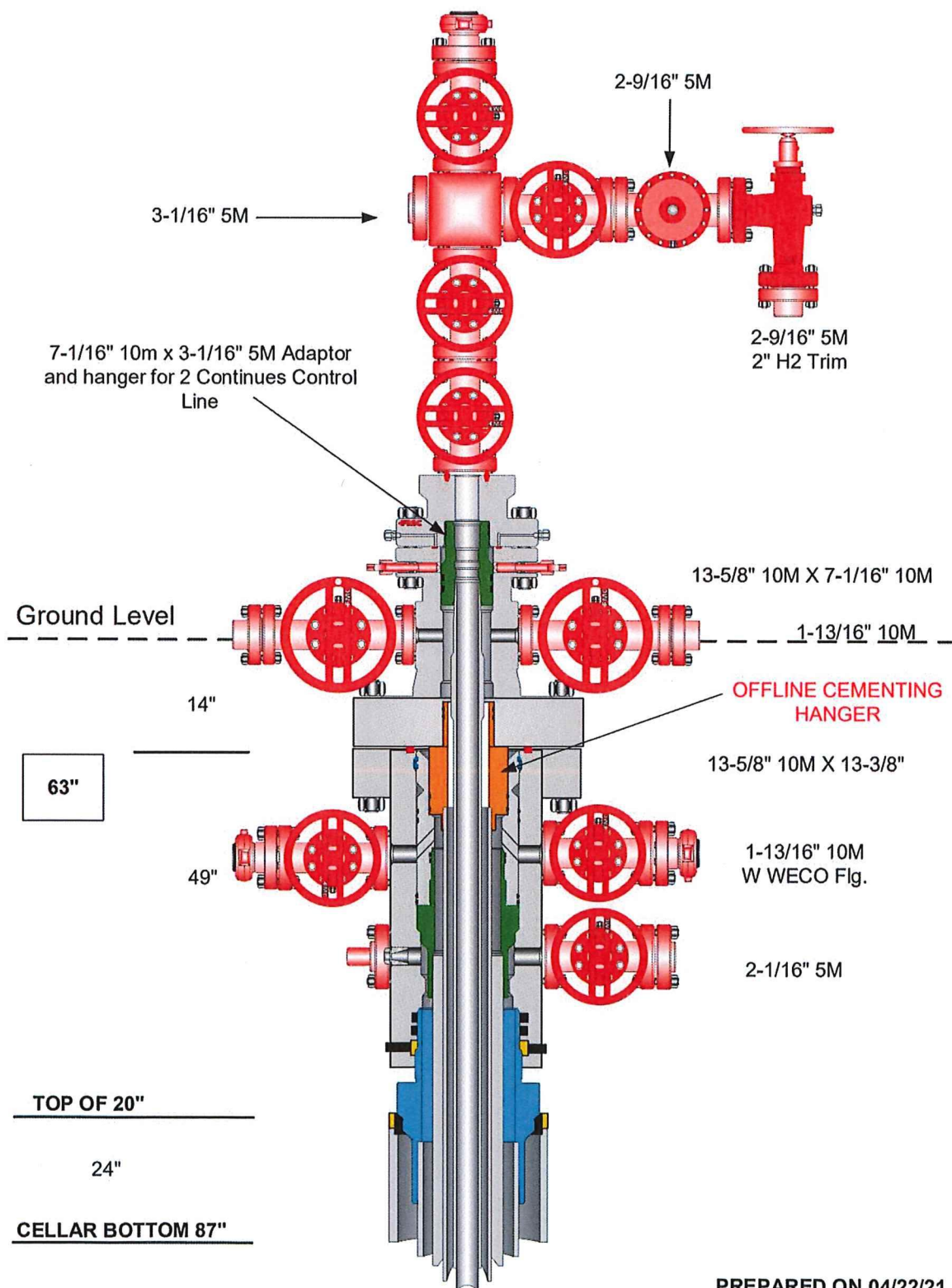


**CACTUS FOR SERVICE
WEARBUSHING
IN CASING HEAD &
CASING SPOOL**

Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17 1/2	0	925	925	13-3/8"	48.00	H-40	ST&C	1.85	4.33	7.25
12 1/4	0	4980	4980	9-5/8"	40.00	HCK-55	LT&C	1.42	1.48	2.82
8 3/4	0	10239	10239	7"	29.00	L-80	LT&C	1.47	1.70	1.88
8 3/4	10239	10989	10745	7"	29.00	P-110	BT&C	1.70	2.23	63.31
5	9239	20958	10715	4-1/2"	11.60	P-110	BT&C	1.51	2.14	21.43
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet

TVD was used on all calculations.
All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.8.1.h

RED HILLS 35 2 FEDERAL COM #160H
SECTION 32-T25S-R33E
LEA CO., NM
30-025-50210



District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 186381

CONDITIONS

Operator: CIMAREX ENERGY CO. 600 N. Marienfeld Street Midland, TX 79701	OGRID: 215099
	Action Number: 186381
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	None	2/15/2023