

Form 3160-3  
(June 2015)FORM APPROVED  
OMB No. 1004-0137  
Expires: January 31, 2018

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
**APPLICATION FOR PERMIT TO DRILL OR REENTER**

1a. Type of work: <input type="checkbox"/> DRILL <input type="checkbox"/> REENTER 1b. Type of Well: <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other 1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		5. Lease Serial No.  6. If Indian, Allottee or Tribe Name  7. If Unit or CA Agreement, Name and No.  8. Lease Name and Well No.  <div style="text-align: center; font-weight: bold; font-size: 1.2em;">[334707]</div>
2. Name of Operator <div style="text-align: center; font-weight: bold; font-size: 1.2em;">[215099]</div>		9. API Well No. <div style="text-align: center; font-weight: bold; font-size: 1.2em;">30-025-52013</div>
3a. Address	3b. Phone No. (include area code)	10. Field and Pool, or Exploratory
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		11. Sec., T. R. M. or Blk. and Survey or Area
14. Distance in miles and direction from nearest town or post office*		12. County or Parish
13. State		
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
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
24. Attachments		

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

- |   |   |
|---|---|
| 1. Well plat certified by a registered surveyor.<br>2. A Drilling Plan.<br>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).<br>5. Operator certification.<br>6. Such other site specific information and/or plans as may be requested by the BLM. |
|---|---|

25. Signature	Name (Printed/Typed)	Date
Title		
Approved by (Signature)	Name (Printed/Typed)	Date
Title		
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.

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.

NGMP Rec 09/20/2023

SL

(Continued on page 2)



Approval Date: 09/13/2023

 KZ  
 09/21/2023

\*(Instructions on page 2)

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 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

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number <b>30-025-52013</b>	<sup>2</sup> Pool Code <b>53805</b>	<sup>3</sup> Pool Name <b>SAND DUNES; BONE SPRING, SOUTH</b>
<sup>4</sup> Property Code <b>334707</b>	<sup>5</sup> Property Name <b>JAMES 29-32 FEDERAL COM</b>	<sup>6</sup> Well Number <b>32H</b>
<sup>7</sup> OGRID No. <b>215099</b>	<sup>8</sup> Operator Name <b>CIMAREX ENERGY CO.</b>	<sup>9</sup> Elevation <b>3688.2'</b>

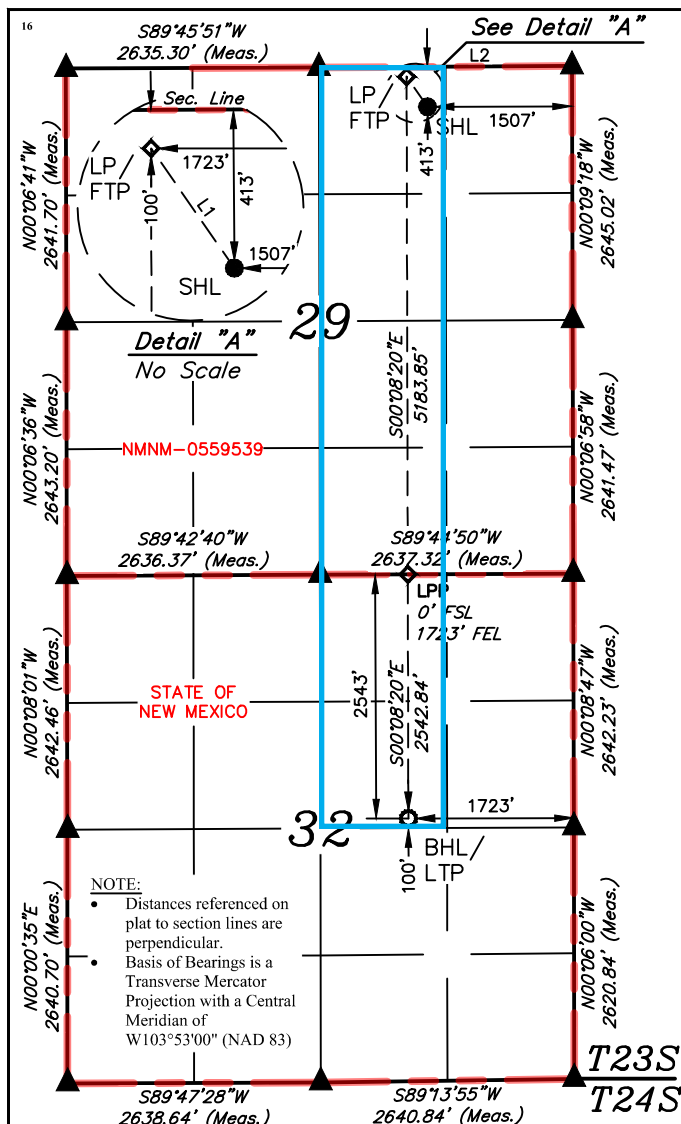
<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	29	23S	32E		413	NORTH	1507	EAST	LEA

<sup>11</sup> 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
G	32	23S	32E		2543	NORTH	1723	EAST	LEA
<sup>12</sup> Dedicated Acres <b>240</b>	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.						

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.



<b>NAD 83 (SURFACE HOLE LOCATION)</b>
LATITUDE = 32°16'53.95" (32.281654°)
LONGITUDE = 103°41'34.90" (103.693029°)
<b>NAD 27 (SURFACE HOLE LOCATION)</b>
LATITUDE = 32°16'53.51" (32.281531°)
LONGITUDE = 103°41'33.16" (103.692545°)
<b>STATE PLANE NAD 83 (N.M. EAST)</b>
N: 466789.13' E: 739216.97'
<b>STATE PLANE NAD 27 (N.M. EAST)</b>
N: 466729.72' E: 698033.50'

<b>NAD 83 (LP/FTP)</b>
LATITUDE = 32°16'57.04" (32.282512°)
LONGITUDE = 103°41'37.42" (103.693729°)
<b>NAD 27 (LP/FTP)</b>
LATITUDE = 32°16'56.60" (32.282389°)
LONGITUDE = 103°41'35.68" (103.693245°)
<b>STATE PLANE NAD 83 (N.M. EAST)</b>
N: 467100.10' E: 738998.68'
<b>STATE PLANE NAD 27 (N.M. EAST)</b>
N: 467040.68' E: 697815.22'

<b>NAD 83 (LPP)</b>
LATITUDE = 32°16'05.76" (32.268266°)
LONGITUDE = 103°41'37.38" (103.693718°)
<b>NAD 27 (LPP)</b>
LATITUDE = 32°16'05.31" (32.268143°)
LONGITUDE = 103°41'35.64" (103.693235°)
<b>STATE PLANE NAD 83 (N.M. EAST)</b>
N: 461917.31' E: 739032.98'
<b>STATE PLANE NAD 27 (N.M. EAST)</b>
N: 461858.03' E: 697849.38'

<b>NAD 83 (BHL/LTP)</b>
LATITUDE = 32°15'40.60" (32.261277°)
LONGITUDE = 103°41'37.36" (103.693712°)
<b>NAD 27 (BHL/LTP)</b>
LATITUDE = 32°15'40.15" (32.261154°)
LONGITUDE = 103°41'35.63" (103.693229°)
<b>STATE PLANE NAD 83 (N.M. EAST)</b>
N: 459374.98' E: 739049.80'
<b>STATE PLANE NAD 27 (N.M. EAST)</b>
N: 459315.77' E: 697866.13'

LINE	DIRECTION	LENGTH
L1	N34°49'38"W	380.01'
L2	S89°39'35"W	2636.08'



SCALE  
DRAWN BY: D.J.S. 07-05-22

<sup>17</sup> 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.

*Brittany Gordon* 3/28/2023

Signature Date

Printed Name

Printed Name

Signature

E-mail Address

<sup>18</sup> 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 supervision, and that the same is true and correct to the best of my belief.

June 16, 2022

Date of Survey

Signature and Seal of Professional Surveyor:



Certificate Number:

Intent ☐ As Drilled ☐

API # <b>30-025-52013</b>	
Operator Name:	Property Name:
Well Number	

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

Is this well the defining well for the Horizontal Spacing Unit? ☐Is this well an infill well? ☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #	
Operator Name:	Property Name:
Well Number	

Estimated Formation Tops

Formation:	Top:	Formation:	Top:

State of New Mexico  
Energy, Minerals and Natural Resources Department

Submit Electronically  
Via E-permitting

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

## NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

### Section 1 – Plan Description Effective May 25, 2021

**I. Operator:** Cimarex Energy Company **OGRID:** 215099 **Date:** 1/11/2023

**II. Type:** ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: \_\_\_\_\_

**III. Well(s):** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
James 29-32 Federal Com 32H		B, Sec 29 T23S, R32E	413 FNL/1507 FEL	1057	2665	3173
<b>30-025-52013</b>						

**IV. Central Delivery Point Name:** James 20 East CTB Sales [See 19.15.27.9(D)(1) NMAC]

**V. Anticipated Schedule:** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
James 29 Federal Com 32H		11/1/2023	12/11/2023	1/10/2024	1/24/2024	1/24/2024

**VI. Separation Equipment:** ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

**VII. Operational Practices:** ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

**VIII. Best Management Practices:** ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.



**Section 2 – Enhanced Plan****EFFECTIVE APRIL 1, 2022**

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☒ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

**IX. Anticipated Natural Gas Production:**

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

**X. Natural Gas Gathering System (NGGS):**

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

**XI. Map.** ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

**XII. Line Capacity.** The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

**XIII. Line Pressure.** Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

**XIV. Confidentiality:** ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

### **Section 3 - Certifications**

**Effective May 25, 2021**

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system.

***If Operator checks this box, Operator will select one of the following:***

**Well Shut-In.** ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

**Venting and Flaring Plan.** ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- (a) power generation on lease;
- (b) power generation for grid;
- (c) compression on lease;
- (d) liquids removal on lease;
- (e) reinjection for underground storage;
- (f) reinjection for temporary storage;
- (g) reinjection for enhanced oil recovery;
- (h) fuel cell production; and
- (i) other alternative beneficial uses approved by the division.

### **Section 4 - Notices**


1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature: 
Printed Name: Sarah Jordan
Title: Regulatory Analyst
E-mail Address: sarah.jordan@coterra.com
Date: 1/11/2023
Phone: 432/620-1909
<b>OIL CONSERVATION DIVISION</b> <b>(Only applicable when submitted as a standalone form)</b>
Approved By:
Title:
Approval Date:
Conditions of Approval:

***From State of New Mexico, Natural Gas Management Plan***

**VI. Separation Equipment:** Attach a complete description of how Operator will size separation equipment to optimize gas capture.

**XEC Standard Response**

Standard facility gas process flow begins at the inlet separator. These vessels are designed based off of forecasted rates and residence times in accordance with, and often greater than, API 12J. The separated gas is then routed to an additional separation vessel (ie sales scrubber) in order to extract liquids that may have carried over or developed due to the decrease in pressure. The sales scrubber is sized based on API 521. From the sales scrubber, the gas leaves the facility and enters the gas midstream gathering network.

## **Cimarex**

### **VII. Operational Practices**

Cimarex values the sustainable development of New Mexico's natural resources. Venting and flaring of natural gas is a source of waste in the industry, and Cimarex will ensure that its values are aligned with those of NMOCD. As such, Cimarex plans to take pointed steps to ensure compliance with Subsection A through F of 19.15.27.8 NMAC.

Specifically, below are the steps Cimarex will plan to follow under routine well commissioning and operations.

1. Capture or combust natural gas during drilling operations where technically feasible, using the best industry practices and control technologies.
  - a. All flares during these operations will be a minimum of 100ft away from the nearest surface-hole location.
2. All gas present during post-completion drill-out and flow back will be routed through separation equipment, and, if technically feasible, flare unsellable vapors rather than vent. Lastly, formal sales separator commissioning to process well-stream fluids and send gas to a gas flow line/collection system or use the gas for on-site fuel or beneficial usage, gas as soon as is safe and technically feasible.
3. Cimarex will ensure the flare or combustion equipment is properly sized to handle expected flow rates, ensure this equipment is equipped with an automatic or continuous ignition source, and ensure this equipment is designed for proper combustion efficiency.
4. If Cimarex must flare because gas is not meeting pipeline specifications, Cimarex will limit flaring to <60 days, analyze gas composition at least twice per week, and route gas into a gathering pipeline as soon as pipeline specifications are met.
5. Under routine production operations, Cimarex will not flare/vent unless:
  - a. Venting or flaring occurs due to an emergency or equipment malfunction.
  - b. Venting or flaring occurs as a result of unloading practices, and an operator is onsite (or within 30 minutes of drive time and posts contact information at the wellsite) until the end of unloading practice.
  - c. The venting or flaring occurs during automated plungerlift operations, in which case the Cimarex operator will work to optimize the plungerlift system to minimize venting/flaring.
  - d. The venting or flaring occurs during downhole well maintenance, in which case Cimarex will work to minimize venting or flaring operations to the extent that it does not pose a risk to safe operations.
  - e. The well is an exploratory well, the division has approved the well as an exploratory well, venting or flaring is limited to 12 months, as approved by the division, and venting/flaring does not cause Cimarex to breach its State-wide 98% gas capture requirement.
  - f. Venting or flaring occurs because the stock tanks or other low-pressure vessels are being gauged, sampled, or liquids are being loaded out.
  - g. The venting or flaring occurs because pressurized vessels are being maintained and are being blown-down or depressurized.
  - h. Venting or flaring occurs as a result of normal dehydration unit operations.

- i. Venting or flaring occurs as a result of bradenhead testing.
  - j. Venting or flaring occurs as a result of normal compressor operations, including general compressor operations, compressor engines and turbines.
  - k. Venting or flaring occurs as a result of a packer leakage test.
  - l. Venting or flaring occurs as a result of a production test lasting less than 24 hours unless otherwise approved by the division.
  - m. Venting or flaring occurs as a result of new equipment commissioning and is necessary to purge impurities from the pipeline or production equipment.
6. Cimarex will maintain its equipment in accordance with its Operations and Maintenance Program, to ensure venting or flaring events are minimized and that equipment is properly functioning.
7. Cimarex will install automatic tank gauging equipment on all production facilities constructed after May 25, 2021, to ensure minimal emissions from tank gauging practices.
8. By November 25, 2022, all Cimarex facilities equipped with flares or combustors will be equipped with continuous pilots or automatic igniters, and technology to ensure proper function, i.e. thermocouple, fire-eye, etc...
9. Cimarex will perform AVO (audio, visual, olfactory) facility inspections in accordance with NMOCD requirements. Specifically, Cimarex will:
  - a. Perform weekly inspections during the first year of production, and so long as production is greater than 60 MCFD.
  - b. If production is less than 60 MCFD, Cimarex will perform weekly AVO inspections when an operator is present on location, and inspections at least once per calendar month with at least 20 calendar days between inspections.
10. Cimarex will measure or estimate the volume of vented, flared or beneficially used natural gas, regardless of the reason or authorization for such venting or flaring.
11. On all facilities constructed after May 25, 2021, Cimarex will install metering where feasible and in accordance with available technology and best engineering practices, in an effort to measure how much gas could have been vented or flared.
  - a. In areas where metering is not technically feasible, such as low-pressure/low volume venting or flaring applications, engineering estimates will be used such that the methodology could be independently verified.
12. Cimarex will fulfill the division's requirements for reporting and filing of venting or flaring that exceeds 50 MCF in volume or last eight hours or more cumulatively within any 24-hour period.

## VIII. Best Management Practices to minimize venting during active and planned maintenance

Cimarex strives to ensure minimal venting occurs during active and planned maintenance activities. Below is a description of common maintenance practices, and the steps Cimarex takes to limit venting exposure.

- **Workovers:**
  - Always strive to kill well when performing downhole maintenance.
  - If vapors or trapped pressure is present and must be relieved then:
    - Initial blowdown to production facility:
      - Route vapors to LP flare if possible/applicable
    - Blowdown to portable gas buster tank:
      - Vent to existing or portable flare if applicable.
- **Stock tank servicing:**
  - Minimize time spent with thief hatches open.
  - When cleaning or servicing via manway, suck tank bottoms to ensure minimal volatiles exposed to atmosphere.
    - Connect vacuum truck to low pressure flare while cleaning bottoms to limit venting.
  - Isolate the vent lines and overflows on the tank being serviced from other tanks.
- **Pressure vessel/compressor servicing and associated blowdowns:**
  - Route to flare where possible.
  - Blow vessel down to minimum available pressure via pipeline, prior to venting vessel.
  - Preemptively changing anodes to reduce failures and extended corrosion related servicing.
  - When cleaning or servicing via manway, suck vessel bottoms to ensure minimal volatiles exposed to atmosphere.
- **Flare/combustor maintenance:**
  - Minimize downtime by coordinating with vendor and Cimarex staff travel logistics.
  - Utilizing preventative and predictive maintenance programs to replace high wear components before failure.
  - Because the flare/combustor is the primary equipment used to limit venting practices, ensure flare/combustor is properly maintained and fully operational at all times via routine maintenance, temperature telemetry, onsite visual inspections.

*The Cimarex expectation is to limit all venting exposure. Equipment that may not be listed on this document is still expected to be maintained and associated venting during such maintenance minimized.*



## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	Cimarex
<b>LEASE NO.:</b>	NMNM0559539
<b>LOCATION:</b>	Section 29, T.23 S, R.32 E., NMPM
<b>COUNTY:</b>	Lea County, New Mexico
<b>WELL NAME &amp; NO.:</b>	James 29-32 Fed Com 32H
<b>SURFACE HOLE FOOTAGE:</b>	413'/N & 1507'/E
<b>BOTTOM HOLE FOOTAGE:</b>	2543'/N & 1723'/E

COA

<b>H<sub>2</sub>S</b>	<input type="radio"/> Yes	<input checked="" type="radio"/> No		
<b>Potash / WIPP</b>	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P	<input type="checkbox"/> WIPP
<b>Cave / Karst</b>	<input checked="" type="radio"/> Low	<input type="radio"/> Medium	<input type="radio"/> High	<input type="radio"/> Critical
<b>Wellhead</b>	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both	<input type="radio"/> Diverter
<b>Cementing</b>	<input type="checkbox"/> Primary Squeeze	<input type="checkbox"/> Cont. Squeeze	<input type="checkbox"/> EchoMeter	<input type="checkbox"/> DV Tool
<b>Special Req</b>	<input type="checkbox"/> Break Testing	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit
<b>Variance</b>	<input checked="" type="checkbox"/> Flex Hose	<input type="checkbox"/> Casing Clearance	<input type="checkbox"/> Pilot Hole	<input type="checkbox"/> Capitan Reef
<b>Variance</b>	<input type="checkbox"/> Four-String	<input type="checkbox"/> Offline Cementing	<input type="checkbox"/> Fluid-Filled	<input type="checkbox"/> Open Annulus
<input type="checkbox"/> Batch APD / Sundry				

### A. HYDROGEN SULFIDE

Hydrogen Sulfide (H<sub>2</sub>S) monitors shall be installed prior to drilling out the surface shoe. If H<sub>2</sub>S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area must meet all requirements from **43 CFR 3176**, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

### B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **1340** feet (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface. **Excess calculates to 23%. Additional cement maybe required.**

- 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.
2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing shall be set at **4660ft**:
- 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.**
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.
- Wait on cement (WOC) time for a primary cement job is to include the tail cement slurry due to cave/karst.**
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.

### 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 casing shoe shall be **5000 (5M)** psi. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - a. 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.
  - b. Manufacturer representative shall install the test plug for the initial BOP test.
  - c. 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.
  - d. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172 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.
- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in 43 CFR 3171 and 3172.
- 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

Email or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, [BLM\\_NM\\_CFO\\_DrillingNotifications@BLM.GOV](mailto:BLM_NM_CFO_DrillingNotifications@BLM.GOV)  
(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 2<sup>nd</sup> 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 **43 CFR part 3170 Subpart 3172** 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 **43 CFR part 3170 Subpart 3172 and API STD 53 Sec. 5.3**.
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 **43 CFR part 3170 Subpart 3172** 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 cement), 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 cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)
  - c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR part 3170 Subpart 3172** 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 **43 CFR part 3170 Subpart 3172**.

#### 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.

**ZS 8/29/2023**





U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

# Operator Certification Data Report

09/19/2023

## Operator

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME:

Signed on: 04/05/2023

Title:

Street Address:

City:

State:

Zip:

Phone:

Email address:

## Field

Representative Name:

Street Address:

City:

State:

Zip:

Phone:

Email address:



U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

## Application Data

09/19/2023

APD ID: 10400088889

Submission Date: 10/30/2022

Operator Name: CIMAREX ENERGY COMPANY

Well Name: JAMES 29-32 FEDERAL COM

Well Number: 32H

Well Type: OIL WELL

Well Work Type: Drill

Highlighted data  
reflects the most  
recent changes  
[Show Final Text](#)

### Section 1 - General

APD ID: 10400088889

Tie to previous NOS? N

Submission Date: 10/30/2022

BLM Office: Carlsbad

User: KANICIA02 SCHLICHTING

Title: Regulatory Specialist

Federal/Indian APD: FED

Is the first lease penetrated for production Federal or Indian? FED

Lease number: NMNM0559539

Lease Acres:

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? NO

Federal or Indian agreement:

Agreement number:

Agreement name:

Keep application confidential? N

Permitting Agent? NO

APD Operator: CIMAREX ENERGY COMPANY

Operator letter of

### Operator Info

Operator Organization Name: CIMAREX ENERGY COMPANY

Operator Address: 6001 DEAUVILLE BLVD STE 300N

Zip: 79706

Operator PO Box:

Operator City: MIDLAND

State: TX

Operator Phone: (303)295-3995

Operator Internet Address: hknaults@cimarex.com

### Section 2 - Well Information

Well in Master Development Plan? NO

Master Development Plan name:

Well in Master SUPO? NO

Master SUPO name:

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Well Name: JAMES 29-32 FEDERAL COM

Well Number: 32H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: SAND DUNES

Pool Name: BONE SPRING,  
SOUTH

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** JAMES 29-32 FEDERAL COM**Well Number:** 32H**Is the proposed well in an area containing other mineral resources?** USEABLE WATER,NATURAL GAS,OIL**Is the proposed well in a Helium production area?** N **Use Existing Well Pad?** Y **New surface disturbance?** Y**Type of Well Pad:** MULTIPLE WELL**Multiple Well Pad Name:** James **Number:** 39H  
29 Fed Com W2E2**Well Class:** HORIZONTAL**Number of Legs:** 1**Well Work Type:** Drill**Well Type:** OIL WELL**Describe Well Type:****Well sub-Type:** INFILL**Describe sub-type:****Distance to town:** 24 Miles**Distance to nearest well:** 20 FT**Distance to lease line:** 413 FT**Reservoir well spacing assigned acres Measurement:** 240 Acres**Well plat:** JAMES\_29\_32\_FEDERAL\_COM\_32H\_C\_102\_20230713144415.pdf**Well work start Date:** 05/14/2023**Duration:** 30 DAYS**Section 3 - Well Location Table****Survey Type:** RECTANGULAR**Describe Survey Type:****Datum:** NAD83**Vertical Datum:** NAVD88**Survey number:** 23782**Reference Datum:** GROUND LEVEL

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this
SHL Leg #1	413	FNL	1507	FEL	23S	32E	29	Aliquot NWNE	32.281654	- 103.693029	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 0559539	3688	0	0	Y
KOP Leg #1	413	FNL	1507	FEL	23S	32E	29	Aliquot NWNE	32.281654	- 103.693029	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 0559539	- 7630	11331	11318	Y
PPP Leg #1-1	100	FNL	1723	FEL	23S	32E	29	Aliquot NWNE	32.282512	- 103.693729	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 0559539	- 8222	12381	11910	Y

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** JAMES 29-32 FEDERAL COM**Well Number:** 32H

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this
PPP Leg #1-2	0	FSL	1723	FEL	23S	32E	32	Aliquot NWNE	32.268266	- 103.693718	LEA	NEW MEXICO	NEW MEXICO	S	STATE	- 8222	16692	11910	Y
EXIT Leg #1	2543	FNL	1723	FEL	23S	32E	32	Aliquot SWNE	32.261277	- 103.693229	LEA	NEW MEXICO	NEW MEXICO	S	STATE	- 8222	19235	11910	Y
BHL Leg #1	2543	FNL	1723	FEL	23S	32E	32	Aliquot SWNE	32.261277	- 103.693229	LEA	NEW MEXICO	NEW MEXICO	S	STATE	- 8222	19235	11910	Y



U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

# Drilling Plan Data Report

09/19/2023

APD ID: 10400088889

Submission Date: 10/30/2022

Highlighted data  
reflects the most  
recent changes

Operator Name: CIMAREX ENERGY COMPANY

Well Name: JAMES 29-32 FEDERAL COM

Well Number: 32H

Well Type: OIL WELL

Well Work Type: Drill

[Show Final Text](#)

## Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
12114670	RUSTLER	3688	1090	1090	ANHYDRITE	USEABLE WATER	N
12114671	TOP SALT	2288	1400	1400	SALT	NONE	N
12114672	BASE OF SALT	-1027	4715	4715	SALT	NONE	N
12114673	LAMAR	-1052	4740	4740	SANDSTONE	NONE	N
12114674	BELL CANYON	-1128	4816	4816	SANDSTONE	NONE	N
12114675	CHERRY CANYON	-1991	5679	5679	SANDSTONE	NONE	N
12114676	BRUSHY CANYON	-3279	6967	6967	SANDSTONE	NATURAL GAS, OIL	N
12114677	BONE SPRING LIME	-4982	8670	8670	LIMESTONE	NATURAL GAS, OIL	N
12114678	BONE SPRING 1ST	-6092	9780	9780	SANDSTONE	NATURAL GAS, OIL	N
12114679	BONE SPRING 2ND	-6697	10385	10385	SANDSTONE	NATURAL GAS, OIL	N
12114669	BONE SPRING 3RD	-8222	11910	11910	SANDSTONE	NATURAL GAS, OIL	Y

## Section 2 - Blowout Prevention

Pressure Rating (PSI): 2M

Rating Depth: 4807

**Equipment:** A BOP consisting of three rams, including one blind ram and two pipe rams and one annular preventer. An accumulator that meets the requirements in Onshore Order #2 for the pressure rating of the BOP stack. A rotating head may be installed as needed. A Kelly clock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

**Requesting Variance?** YES

**Variance request:** Co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. The hose is not required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used. Variance to include Hammer Union connections on lines downstream of the buffer tank only.

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** JAMES 29-32 FEDERAL COM**Well Number:** 32H

**Testing Procedure:** 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 2000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 2000 psi test. Annular will be tested to working pressure. 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 vendors 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, 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 2000 psi. Slips will be utilized after running and cementing the production casing. After installation of the slips and wellhead on the production casing, a 13 5/8 BOP/BOPE system with a minimum working pressure of 2000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 2000 psi test. Annular will be tested to 100% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2. The surface casing string will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater. The casing string utilizing steel body pack-off will be tested to 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.

**Choke Diagram Attachment:**

James\_29\_Fed\_Com\_23H\_32H\_Choke\_2M\_3M\_20221030150723.pdf

**BOP Diagram Attachment:**

James\_29\_Fed\_Com\_23H\_32H\_BOP\_2M\_20221030150747.pdf

**Pressure Rating (PSI):** 3M**Rating Depth:** 12081

**Equipment:** A BOP consisting of three rams, including one blind ram and two pipe rams and one annular preventer. An accumulator that meets the requirements in Onshore Order #2 for the pressure rating of the BOP stack. A rotating head may be installed as needed. A Kelly clock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

**Requesting Variance?** YES

**Variance request:** Co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. The hose is not required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used. Variance to include Hammer Union connections on lines downstream of the buffer tank only.

**Testing Procedure:** A multi-bowl wellhead system will be utilized. After running the 9-5/8" surface casing, a 13 5/8 BOP/BOPE system with a minimum working pressure of 3000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 3000 psi test. Annular will be tested to working pressure. 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 vendors 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, 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 3000 psi. Slips will be utilized after running and cementing the production casing. After installation of the slips and wellhead on the production casing, a 13 5/8 BOP/BOPE system with a minimum working pressure of 3000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 3000 psi test. Annular will be tested to 100% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2. The surface casing string will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater. The casing string utilizing steel body pack-off will be tested to 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.

**Choke Diagram Attachment:**

James\_29\_Fed\_Com\_23H\_32H\_Choke\_2M\_3M\_20221030151255.pdf

**BOP Diagram Attachment:**

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** JAMES 29-32 FEDERAL COM**Well Number:** 32H

James\_29\_Fed\_Com\_23H\_32H\_Choke\_2M\_3M\_20221030151255.pdf

James\_29\_Fed\_Com\_23H\_32H\_BOP\_3M\_20221030151318.pdf

**Pressure Rating (PSI):** 5M**Rating Depth:** 19235

**Equipment:** A BOP consisting of three rams, including one blind ram and two pipe rams and one annular preventer. An accumulator that meets the requirements in Onshore Order #2 for the pressure rating of the BOP stack. A rotating head may be installed as needed. A Kelly clock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

**Requesting Variance?** YES

**Variance request:** Co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. The hose is not required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used. Variance to include Hammer Union connections on lines downstream of the buffer tank only.

**Testing Procedure:** A multi-bowl wellhead system will be utilized. After running the 7" 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. 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 vendors 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, 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. Slips will be utilized after running and cementing the production casing. After installation of the slips and wellhead on the production 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 100% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2. The surface casing string will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater. The casing string utilizing steel body pack-off will be tested to 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.

**Choke Diagram Attachment:**

James\_29\_Fed\_Com\_23H\_32H\_Choke\_5M\_20221030151411.pdf

**BOP Diagram Attachment:**

James\_29\_Fed\_Com\_23H\_32H\_BOP\_5M\_20221030151435.pdf



Operator Name: CIMAREX ENERGY COMPANY

Well Name: JAMES 29-32 FEDERAL COMWell Number: 32H

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	1140	0	1140	3688	2548	1140	H-40	48	ST&C	1.5	3.5	BUOY	5.88	BUOY	5.88
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	4807	0	4796	3688	-1108	4807	HCK-55	40	LT&C	1.48	1.54	BUOY	2.92	BUOY	2.92
3	PRODUCTION	8.75	7.0	NEW	API	N	0	11331	0	11331	3688	-7643	11331	L-80	29	LT&C	1.32	1.54	BUOY	1.71	BUOY	1.71
4	PRODUCTION	8.75	7.0	NEW	API	N	11331	12081	11331	11870	-7643	-8182	750	P-110	29	BUTT	1.54	2.02	BUOY	59.43	BUOY	59.43
5	COMPLETION SYSTEM	6	4.5	NEW	API	N	10331	19235	10331	11910	-6643	-8222	8904	P-110	11.6	BUTT	1.36	1.92	BUOY	20.04	BUOY	20.04

Casing Attachments

Casing ID: 1StringSURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

JAMES\_29\_32\_FEDERAL\_32H\_CASING\_ASSUMPTION\_20230405074409.pdf

Operator Name: CIMAREX ENERGY COMPANY

Well Name: JAMES 29-32 FEDERAL COMWell Number: 32H

Casing Attachments

Casing ID: 2StringINTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

JAMES\_29\_32\_FEDERAL\_32H\_CASING\_ASSUMPTION\_20230405074503.pdf

Casing ID: 3StringPRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

JAMES\_29\_32\_FEDERAL\_32H\_CASING\_ASSUMPTION\_20230405074609.pdf

Casing ID: 4StringPRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

JAMES\_29\_32\_FEDERAL\_32H\_CASING\_ASSUMPTION\_20230405074715.pdf

Operator Name: CIMAREX ENERGY COMPANY

Well Name: JAMES 29-32 FEDERAL COM

Well Number: 32H

Casing Attachments

Casing ID: 5StringCOMPLETION SYSTEM

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

JAMES\_29\_32\_FEDERAL\_32H\_CASING\_ASSUMPTION\_20230405074824.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
PRODUCTION	Lead		0	0	0	0	0	0		0	0

SURFACE	Lead		0	1140	553	1.72	13.5	951	45	Class C	Bentonite
SURFACE	Tail		0	1140	148	1.34	14.8	198	45	Class C	LCM
INTERMEDIATE	Lead		0	4807	905	1.88	12.9	1701	50	35:65 (POZ:C)	Salt + Bentonite
INTERMEDIATE	Tail		0	4807	281	1.34	14.8	377	50	Class C	LCM
PRODUCTION	Lead		4807	1238 1	413	3.64	10.3	1514	25	Tuned Light	LCM
PRODUCTION	Tail		4807	1238 1	125	1.36	14.8	170	25	Class C	Retarder
COMPLETION SYSTEM	Lead		1238 1	1923 5	535	1.3	14.2	696	10	50:50 (POZ:H)	Salt + Bentonite + Fluid Loss + Dispersant + SMS

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** JAMES 29-32 FEDERAL COM**Well Number:** 32H**Section 5 - Circulating Medium****Mud System Type:** Closed**Will an air or gas system be Used?** NO**Description of the equipment for the circulating system in accordance with Onshore Order #2:****Diagram of the equipment for the circulating system in accordance with Onshore Order #2:**

**Describe what will be on location to control well or mitigate other conditions:** Sufficient mud materials will be kept on location at all times in order to combat lost circulation or unexpected kicks. In order to run DSTs, open hole logs, and casing, the viscosity and water loss may have to be adjusted in order to meet these needs.

**Describe the mud monitoring system utilized:** PVT/Pason/Visual Monitoring

**Circulating Medium Table**

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	1140	OTHER : Fresh Water	7.83	8.33							
1140	4807	OTHER : Brine Water	9.8	10.3							
4807	1238 1	OTHER : Cut Brine or OBM	8.5	9							
1238 1	1923 5	OIL-BASED MUD	8.5	9							

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** JAMES 29-32 FEDERAL COM**Well Number:** 32H

## Section 6 - Test, Logging, Coring

**List of production tests including testing procedures, equipment and safety measures:**

No DST Planned

**List of open and cased hole logs run in the well:**

GAMMA RAY LOG,COMPENSATED NEUTRON LOG,DIRECTIONAL SURVEY,

**Coring operation description for the well:**

N/A

## Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 5573**Anticipated Surface Pressure:** 2952**Anticipated Bottom Hole Temperature(F):** 187**Anticipated abnormal pressures, temperatures, or potential geologic hazards?** NO**Describe:****Contingency Plans geohazards description:****Contingency Plans geohazards****Hydrogen Sulfide drilling operations plan required?** YES**Hydrogen sulfide drilling operations**

JAMES\_29\_32\_FEDERAL\_COM\_32H\_H2S\_20230405091800.pdf

## Section 8 - Other Information

**Proposed horizontal/directional/multi-lateral plan submission:**

JAMES\_29\_32\_FEDERAL\_COM\_32H\_DIRECTIONAL\_PLANS\_20230405091118.pdf

JAMES\_29\_32\_FEDERAL\_COM\_32H\_AC\_Report\_20230405091118.pdf

**Other proposed operations facets description:****Other proposed operations facets attachment:**

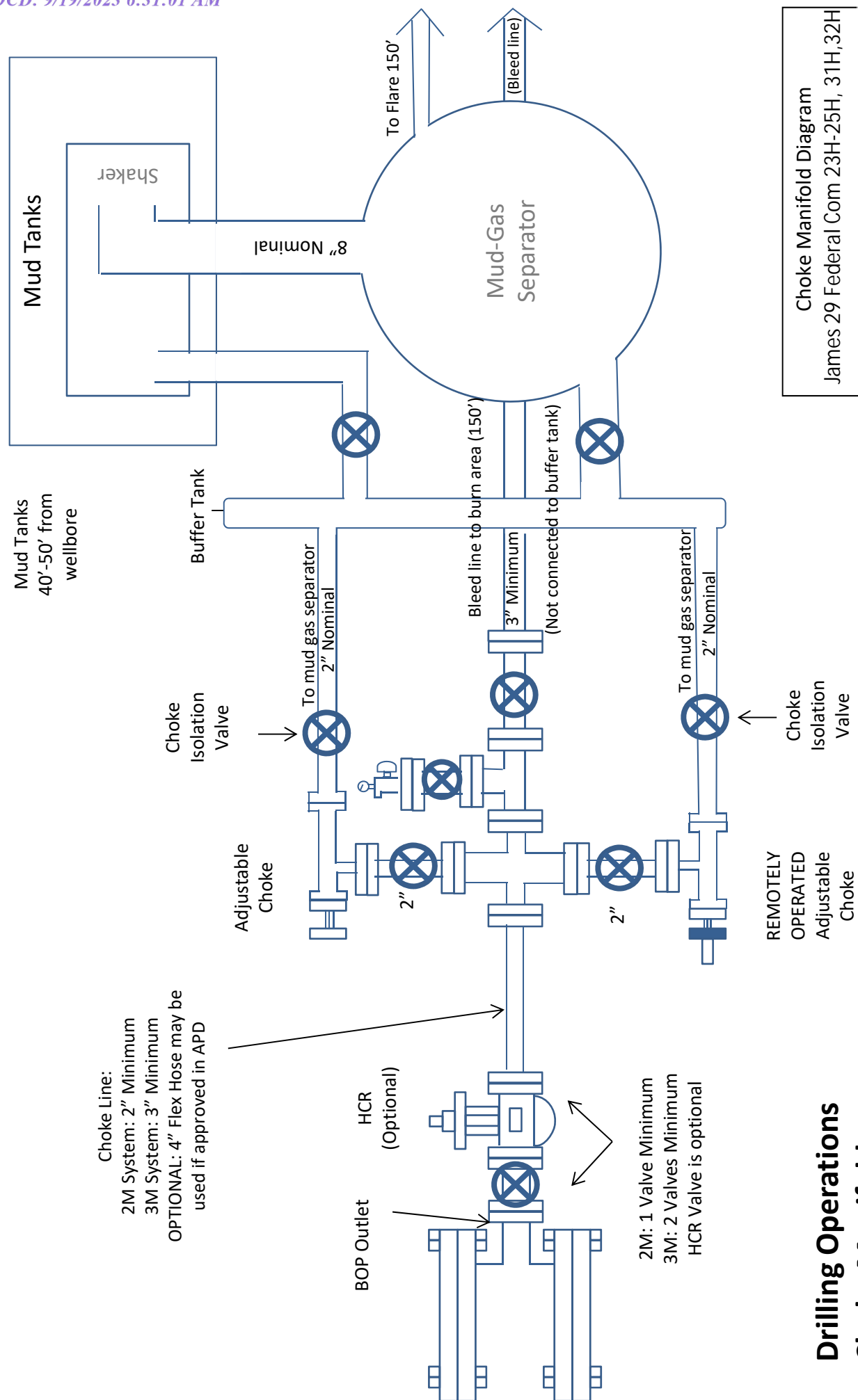
JAMES\_29\_32\_FEDERAL\_COM\_32H\_DRILL\_PLANS\_20230405091202.pdf

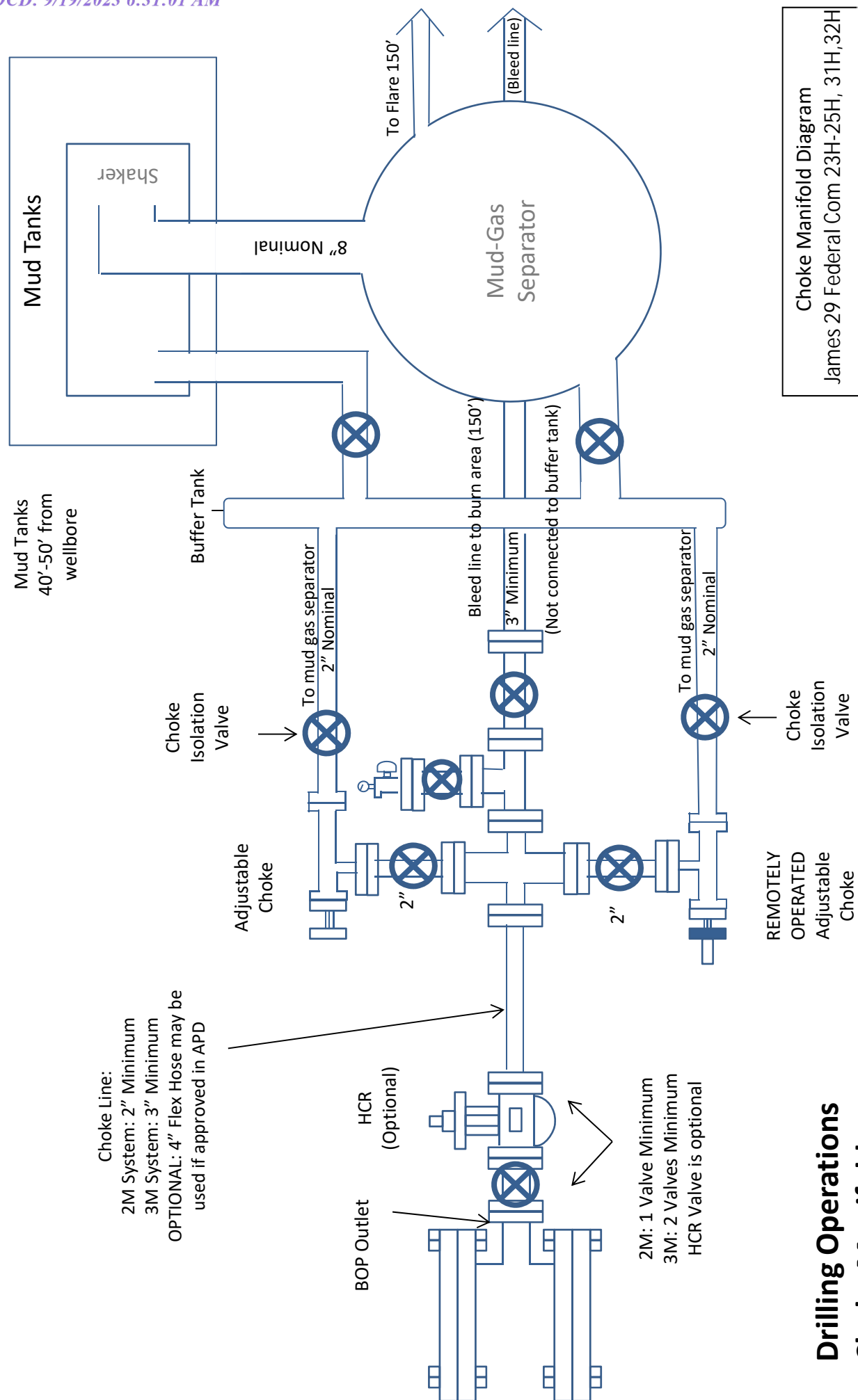
**Other Variance attachment:**

James\_29\_Federal\_Com\_32H\_Multibowl\_13.375\_20221030233835.pdf

James\_29\_Fed\_Com\_23H\_32H\_Flex\_Hose\_20221030152227.pdf

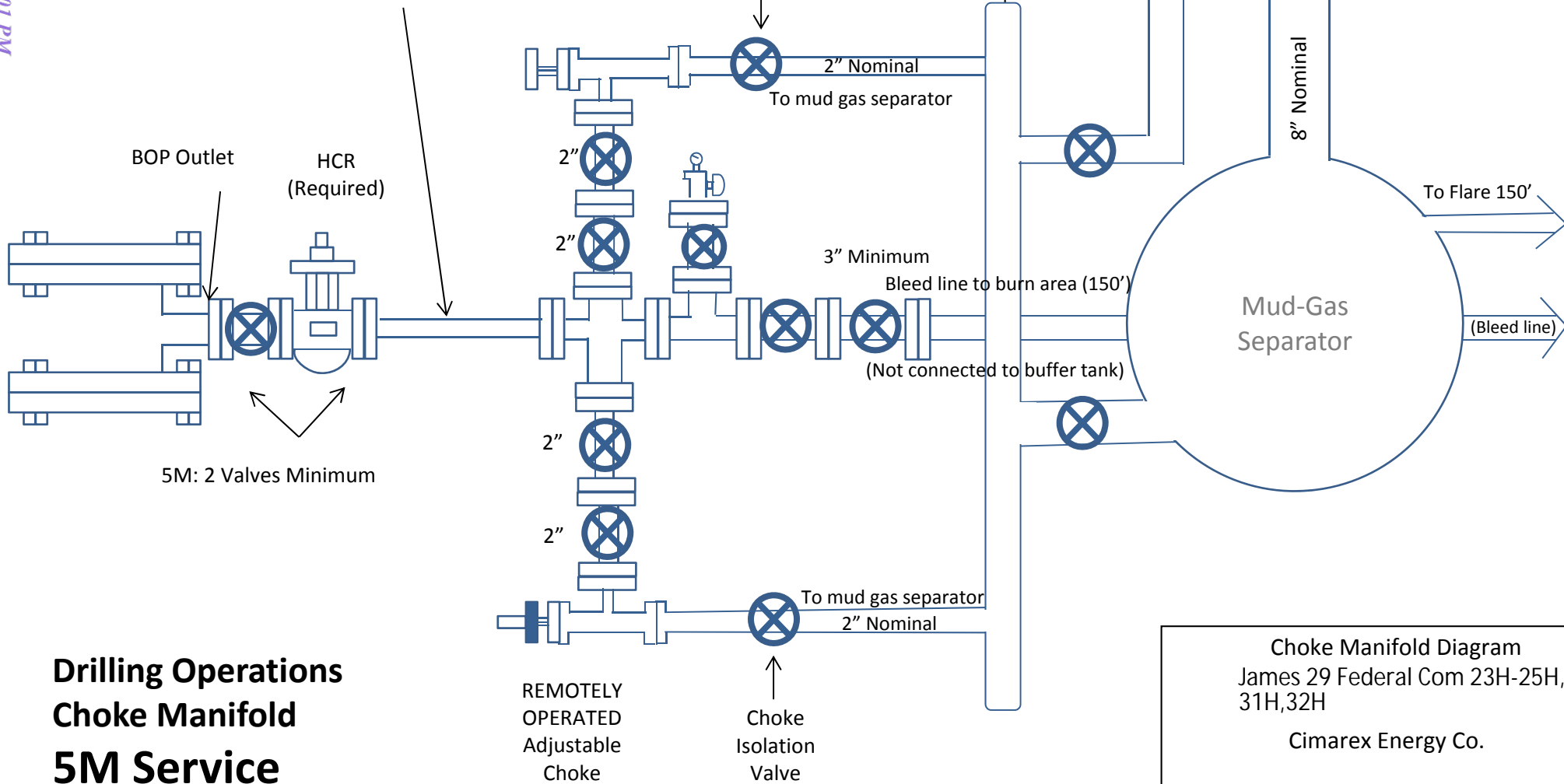
Offline\_Cement\_Procedure\_20221029113736.pdf



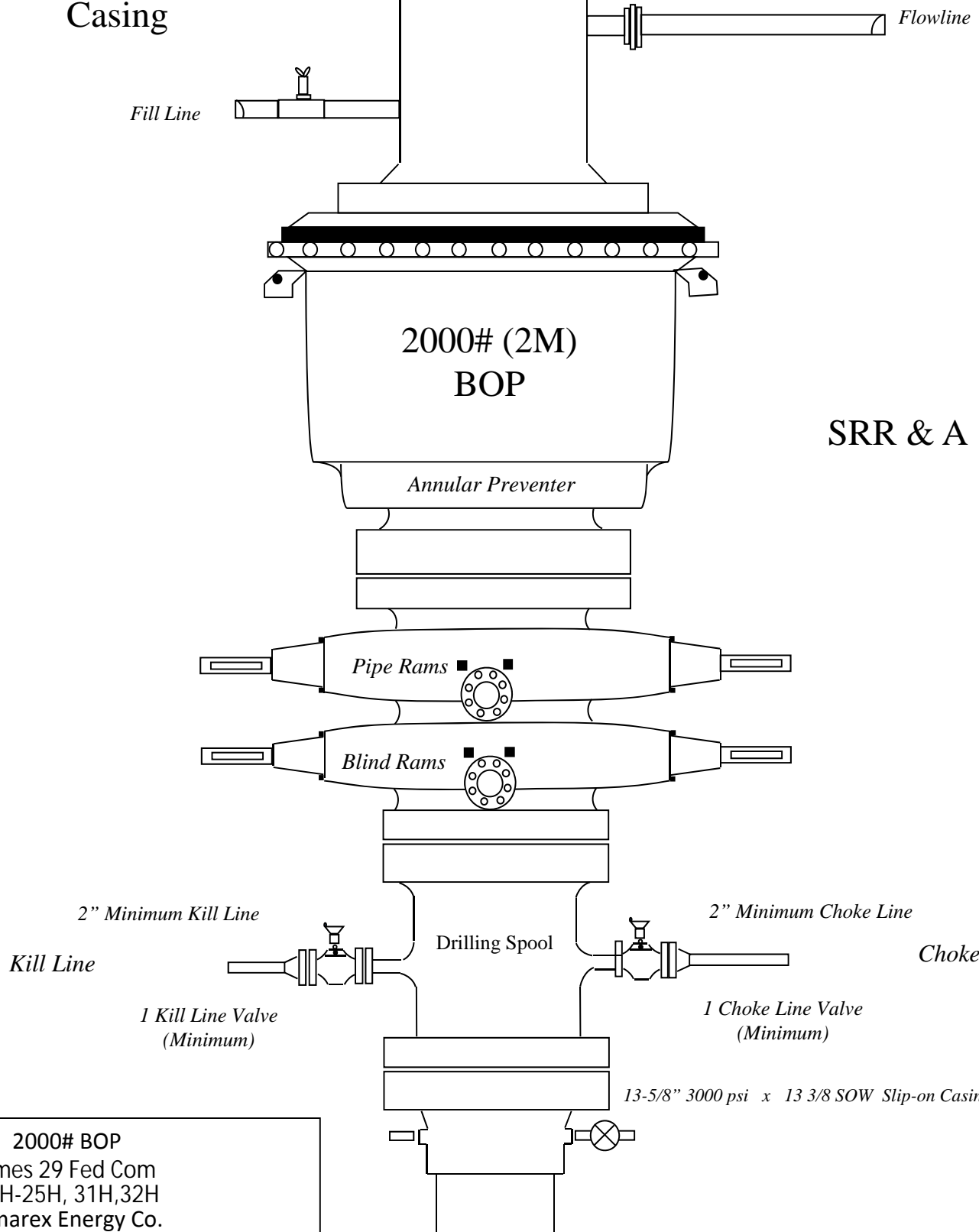




Choke Line:  
5M System: 3" Minimum  
OPTIONAL: 4" Flex Hose may be  
used if approved in APD

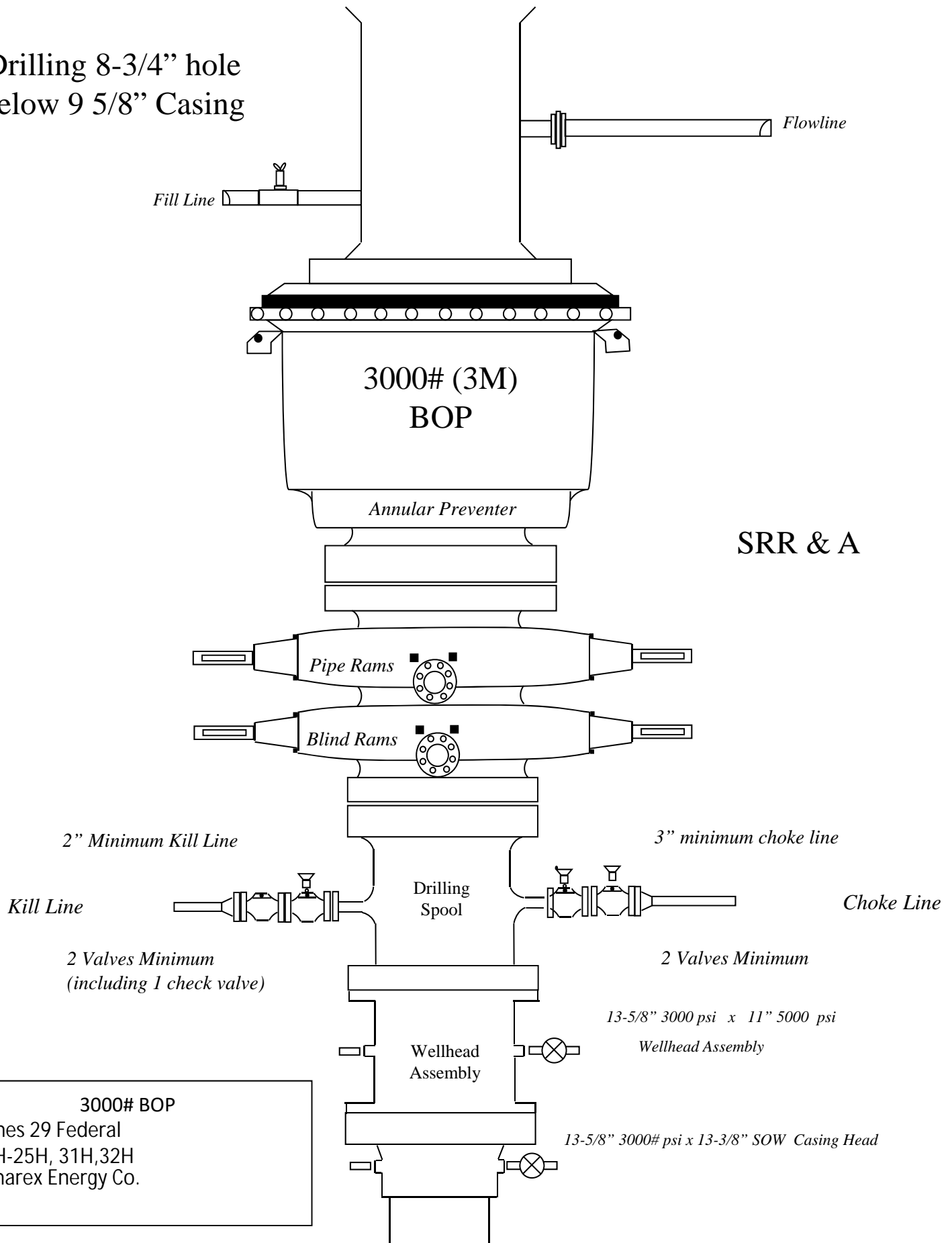


Drilling 12 1/4" hole  
below 13 3/8"  
Casing



2000# BOP  
James 29 Fed Com  
23H-25H, 31H,32H  
Cimarex Energy Co.

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



Drilling 6" hole  
below 7" Casing

Fill Line

Flowline

5000# (5M)  
BOP

Annular Preventer

SRR & A

Pipe Rams

Blind Rams

2" Minimum Kill Line

Kill Line

Drilling  
Spool

3" minimum choke line

Choke Line

2 Valves Minimum

(HCR Required)

2 Valves and a check valve

Wellhead  
Assembly

11" 5000 psi x 7-1/16" 10,000 psi  
Wellhead Assembly

Wellhead  
Assembly

13-5/8" 3000 psi x 11" 5000 psi  
Wellhead Assembly

13-5/8" 3000# psi x 13-3/8" SOW Casing Head

5000# BOP

James 29 Federal Com  
23H-25H, 31H,32H  
Cimarex Energy Co.

## James 29-32 Federal Com 32H Casing Assumptions

### 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	1140	1140	13-3/8"	48.00	H-40	ST&C	1.50	3.50	5.88
12 1/4	0	4807	4796	9-5/8"	40.00	HCK-55	LT&C	1.48	1.54	2.92
8 3/4	0	11331	11331	7"	29.00	L-80	LT&C	1.32	1.54	1.71
8 3/4	11331	12081	11870	7"	29.00	P-110	BT&C	1.54	2.02	59.43
6	10331	19235	11910	4-1/2"	11.60	P-110	BT&C	1.36	1.92	20.04
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet

## James 29-32 Federal Com 32H Casing Assumptions

### 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	1140	1140	13-3/8"	48.00	H-40	ST&C	1.50	3.50	5.88
12 1/4	0	4807	4796	9-5/8"	40.00	HCK-55	LT&C	1.48	1.54	2.92
8 3/4	0	11331	11331	7"	29.00	L-80	LT&C	1.32	1.54	1.71
8 3/4	11331	12081	11870	7"	29.00	P-110	BT&C	1.54	2.02	59.43
6	10331	19235	11910	4-1/2"	11.60	P-110	BT&C	1.36	1.92	20.04
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet

## James 29-32 Federal Com 32H Casing Assumptions

### 2. Casing Program

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BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet

## James 29-32 Federal Com 32H Casing Assumptions

### 2. Casing Program

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6	10331	19235	11910	4-1/2"	11.60	P-110	BT&C	1.36	1.92	20.04
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet



## James 29-32 Federal Com 32H Casing Assumptions

### 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
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6	10331	19235	11910	4-1/2"	11.60	P-110	BT&C	1.36	1.92	20.04
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet

Hydrogen Sulfide Drilling Operations Plan  
James 29 Federal Com 23H-25H, 31H,32H  
Cimarex Energy Co.  
Lea Co., NM

- 1 All Company and Contract personnel admitted on location must be trained by a qualified H2S safety instructor to the following:
  - A. Characteristics of H<sub>2</sub>S
  - B. Physical effects and hazards
  - C. Principal and operation of H<sub>2</sub>S detectors, warning system and briefing areas.
  - D. Evacuation procedure, routes and first aid.
  - E. Proper use of safety equipment & life support systems
  - F. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30 minute pressure demand air packs.

H<sub>2</sub>S Detection and Alarm Systems:

  - A. H<sub>2</sub>S sensors/detectors to be located on the drilling rig floor, in the base of the sub structure/cellar area, on the mud pits in the shale shaker area. Additional H<sub>2</sub>S detectors may play placed as deemed necessary.
  - B. An audio alarm system will be installed on the derrick floor and in the top doghouse.
- 3 Windsock and/or wind streamers:
  - A. Windsock at mudpit area should be high enough to be visible.
  - B. Windsock on the rig floor and / or top doghouse should be high enough to be visible.
- 4 Condition Flags and Signs
  - A. Warning sign on access road to location.
  - B. Flags to be displayed on sign at entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential pressure and danger. Red flag indicates danger (H<sub>2</sub>S present in dangerous concentration). Only H<sub>2</sub>S trained and certified personnel admitted to location.
- 5 Well control equipment:
  - A. See exhibit "E-1"
- 6 Communication:
  - A. While working under masks chalkboards will be used for communication.
  - B. Hand signals will be used where chalk board is inappropriate.
  - C. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.
- 7 Drillstem Testing:

No DSTs r cores are planned at this time.
- 8 Drilling contractor supervisor will be required to be familiar with the effects H<sub>2</sub>S has on tubular goods and other mechanical equipment.
- 9 If H<sub>2</sub>S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H<sub>2</sub>S scavengers if necessary.

H<sub>2</sub>S Contingency Plan  
**James 29 Federal Com 23H-25H, 31H,32H**  
Cimarex Energy Co.  
Lea Co., NM

### **Emergency Procedures**

In the event of a release of gas containing H<sub>2</sub>S, the first responder(s) must:

- « Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- « Evacuate any public places encompassed by the 100 ppm ROE.
- « Be equipped with H<sub>2</sub>S monitors and air packs in order to control the release.
- « Use the "buddy system" to ensure no injuries occur during the 432-620-1975
- « Take precautions to avoid personal injury during this operation.
- « Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- « Have received training in the:
  - Detection of H<sub>2</sub>S, and
  - Measures for protection against the gas,
  - Equipment used for protection and emergency response.

### **Ignition of Gas Source**

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO<sub>2</sub>). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

### **Characteristics of H<sub>2</sub>S and SO<sub>2</sub>**

Please see attached International Chemical Safety Cards.

### **Contacting Authorities**

Cimarex Energy Co. of Colorado's personnel must liaise with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Cimarex Energy Co. of Colorado's response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

H<sub>2</sub>S Contingency Plan Emergency Contacts  
**James 29 Federal Com 23H-25H, 31H,32H**  
 Cimarex Energy Co.  
 Lea Co., NM

<b><u>Company Office</u></b>			
Cimarex Energy Co. of Colorado		800-969-4789	
Co. Office and After-Hours Menu			
<b><u>Key Personnel</u></b>			
<b>Name</b>	<b>Title</b>	<b>Office</b>	<b>Mobile</b>
Larry Seigrist	Drilling Manager	432-620-1934	580-243-8485
Charlie Pritchard	Drilling Superintendent	432-620-1975	432-238-7084
Roy Shirley	Construction Superintendent		432-634-2136
<b><u>Artesia</u></b>			
Ambulance		911	
State Police		575-746-2703	
City Police		575-746-2703	
Sheriff's Office		575-746-9888	
<b>Fire Department</b>		<b>575-746-2701</b>	
Local Emergency Planning Committee		575-746-2122	
New Mexico Oil Conservation Division		575-748-1283	
<b><u>Carlsbad</u></b>			
Ambulance		911	
State Police		575-885-3137	
City Police		575-885-2111	
Sheriff's Office		575-887-7551	
<b>Fire Department</b>		<b>575-887-3798</b>	
Local Emergency Planning Committee		575-887-6544	
US Bureau of Land Management		575-887-6544	
<b><u>Santa Fe</u></b>			
New Mexico Emergency Response Commission (Santa Fe)		505-476-9600	
New Mexico Emergency Response Commission (Santa Fe) 24 Hrs		505-827-9126	
New Mexico State Emergency Operations Center		505-476-9635	
<b><u>National</u></b>			
National Emergency Response Center (Washington, D.C.)		800-424-8802	
<b><u>Medical</u></b>			
Flight for Life - 4000 24th St.; Lubbock, TX		806-743-9911	
Aerocare - R3, Box 49F; Lubbock, TX		806-747-8923	
Med Flight Air Amb - 2301 Yale Blvd S.E., #D3; Albuquerque, NM		505-842-4433	
SB Air Med Service - 2505 Clark Carr Loop S.E.; Albuquerque, NM		505-842-4949	
<b><u>Other</u></b>			
Boots & Coots IWC	800-256-9688	or	281-931-8884
Cudd Pressure Control	432-699-0139	or	432-563-3356
Halliburton	575-746-2757		
B.J. Services	575-746-3569		



**Coterra James 29-32 Federal Com 32H Rev2 kFc 30Mar23 Proposal**  
**Geodetic Report**  
(Def Plan)



**Report Date:** March 30, 2023 - 12:15 PM  
**Client:** COTERRA  
**Field:** NM Lea County (NAD 83)  
**Structure / Slot:** Coterra James 29-32 Federal Com 32H / 32H  
**Well:** James 29-32 Federal Com 32H  
**Borehole:** James 29-32 Federal Com 32H  
**UWI / API#:** Unknown / Unknown  
**Survey Name:** Coterra James 29-32 Federal Com 32H Rev2 kFc 30Mar23  
**Survey Date:** September 27, 2022  
**Tort / AHD / DDI / ERD Ratio:** 102.000 ° / 7844.518 ft / 6.111 / 0.659  
**Coordinate Reference System:** NAD83 New Mexico State Plane, Eastern Zone, US Feet  
**Location Lat / Long:** N 32° 16' 53.95480", W 103° 41' 34.90279"  
**Location Grid N/E Y/X:** N 466789.130 ftUS, E 739216.970 ftUS  
**CRS Grid Convergence Angle:** 0.3420 °  
**Grid Scale Factor:** 0.99995394  
**Version / Patch:** 2.10.834.0

**Survey / DLS Computation:** Minimum Curvature / Lubinski  
**Vertical Section Azimuth:** 179.620 ° (Grid North)  
**Vertical Section Origin:** 0.000 ft, 0.000 ft  
**TVD Reference Datum:** RKB = 23ft  
**TVD Reference Elevation:** 3711.200 ft above MSL  
**Seabed / Ground Elevation:** 3688.200 ft above MSL  
**Magnetic Declination:** 6.349 °  
**Total Gravity Field Strength:** 998.4335mgn (9.80665 Based)  
**Gravity Model:** GARM  
**Total Magnetic Field Strength:** 47544.348 nT  
**Magnetic Dip Angle:** 59.865 °  
**Declination Date:** March 30, 2023  
**Magnetic Declination Model:** HDGM 2023  
**North Reference:** Grid North  
**Grid Convergence Used:** 0.3420 °  
**Total Corr Mag North->Grid North:** 6.0066 °  
**Local Coord Referenced To:** Well Head

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 [413' FNL, 1507' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	466789.13	739216.97	N 32.281654	W 103.693029
	100.00	0.00	306.36	100.00	0.00	0.00	0.00	0.00	466789.13	739216.97	N 32.281654	W 103.693029
	200.00	0.00	306.36	200.00	0.00	0.00	0.00	0.00	466789.13	739216.97	N 32.281654	W 103.693029
	300.00	0.00	306.36	300.00	0.00	0.00	0.00	0.00	466789.13	739216.97	N 32.281654	W 103.693029
	400.00	0.00	306.36	400.00	0.00	0.00	0.00	0.00	466789.13	739216.97	N 32.281654	W 103.693029
	500.00	0.00	306.36	500.00	0.00	0.00	0.00	0.00	466789.13	739216.97	N 32.281654	W 103.693029
	600.00	0.00	306.36	600.00	0.00	0.00	0.00	0.00	466789.13	739216.97	N 32.281654	W 103.693029
	700.00	0.00	306.36	700.00	0.00	0.00	0.00	0.00	466789.13	739216.97	N 32.281654	W 103.693029
	800.00	0.00	306.36	800.00	0.00	0.00	0.00	0.00	466789.13	739216.97	N 32.281654	W 103.693029
	900.00	0.00	306.36	900.00	0.00	0.00	0.00	0.00	466789.13	739216.97	N 32.281654	W 103.693029
	1000.00	0.00	306.36	1000.00	0.00	0.00	0.00	0.00	466789.13	739216.97	N 32.281654	W 103.693029
Rustler	1090.00	0.00	306.36	1090.00	0.00	0.00	0.00	0.00	466789.13	739216.97	N 32.281654	W 103.693029
	1100.00	0.00	306.36	1100.00	0.00	0.00	0.00	0.00	466789.13	739216.97	N 32.281654	W 103.693029
	1200.00	0.00	306.36	1200.00	0.00	0.00	0.00	0.00	466789.13	739216.97	N 32.281654	W 103.693029
	1300.00	0.00	306.36	1300.00	0.00	0.00	0.00	0.00	466789.13	739216.97	N 32.281654	W 103.693029
Top of Salt	1400.00	0.00	306.36	1400.00	0.00	0.00	0.00	0.00	466789.13	739216.97	N 32.281654	W 103.693029
	1500.00	0.00	306.36	1500.00	0.00	0.00	0.00	0.00	466789.13	739216.97	N 32.281654	W 103.693029
	1600.00	0.00	306.36	1600.00	0.00	0.00	0.00	0.00	466789.13	739216.97	N 32.281654	W 103.693029
	1700.00	0.00	306.36	1700.00	0.00	0.00	0.00	0.00	466789.13	739216.97	N 32.281654	W 103.693029
	1800.00	0.00	306.36	1800.00	0.00	0.00	0.00	0.00	466789.13	739216.97	N 32.281654	W 103.693029
	1900.00	0.00	306.36	1900.00	0.00	0.00	0.00	0.00	466789.13	739216.97	N 32.281654	W 103.693029
	2000.00	0.00	306.36	2000.00	0.00	0.00	0.00	0.00	466789.13	739216.97	N 32.281654	W 103.693029
	2100.00	0.00	306.36	2100.00	0.00	0.00	0.00	0.00	466789.13	739216.97	N 32.281654	W 103.693029
	2200.00	0.00	306.36	2200.00	0.00	0.00	0.00	0.00	466789.13	739216.97	N 32.281654	W 103.693029
	2300.00	0.00	306.36	2300.00	0.00	0.00	0.00	0.00	466789.13	739216.97	N 32.281654	W 103.693029
	2400.00	0.00	306.36	2400.00	0.00	0.00	0.00	0.00	466789.13	739216.97	N 32.281654	W 103.693029
Nudge, Build 2"/100ft	2500.00	0.00	306.36	2500.00	0.00	0.00	0.00	0.00	466789.13	739216.97	N 32.281654	W 103.693029
	2600.00	2.00	306.36	2599.98	-1.04	1.03	-1.41	2.00	466790.16	739215.56	N 32.281657	W 103.693033
	2700.00	4.00	306.36	2699.84	-4.17	4.14	-5.62	2.00	466793.27	739211.35	N 32.281666	W 103.693047
Hold	2799.99	6.00	306.36	2799.44	-9.39	9.30	-12.64	2.00	466798.43	739204.33	N 32.281680	W 103.693069
	2900.00	6.00	306.36	2898.90	-15.64	15.50	-21.05	0.00	466804.63	739195.92	N 32.281697	W 103.693096
	3000.00	6.00	306.36	2998.36	-21.89	21.70	-29.47	0.00	466810.83	739187.50	N 32.281714	W 103.693123
	3100.00	6.00	306.36	3097.81	-28.15	27.90	-37.89	0.00	466817.03	739179.08	N 32.281731	W 103.693151
	3200.00	6.00	306.36	3197.26	-34.40	34.09	-46.31	0.00	466823.22	739170.67	N 32.281749	W 103.693178
	3300.00	6.00	306.36	3296.71	-40.65	40.29	-54.72	0.00	466829.42	739162.25	N 32.281766	W 103.693205
	3400.00	6.00	306.36	3396.17	-46.91	46.49	-63.14	0.00	466835.62	739153.83	N 32.281783	W 103.693232
	3500.00	6.00	306.36	3495.62	-53.16	52.69	-71.56	0.00	466841.81	739145.42	N 32.281800	W 103.693259
	3600.00	6.00	306.36	3595.07	-59.41	58.88	-79.97	0.00	466848.01	739137.00	N 32.281817	W 103.693286
	3700.00	6.00	306.36	3694.52	-65.67	65.08	-88.39	0.00	466854.21	739128.58	N 32.281834	W 103.693313
	3800.00	6.00	306.36	3793.97	-71.92	71.28	-96.81	0.00	466860.41	739120.17	N 32.281852	W 103.693340
	3900.00	6.00	306.36	3893.43	-78.17	77.48	-105.22	0.00	466866.60	739111.75	N 32.281869	W 103.693368
	4000.00	6.00	306.36	3992.88	-84.43	83.67	-113.64	0.00	466872.80	739103.33	N 32.281886	W 103.693395
	4100.00	6.00	306.36	4092.33	-90.68	89.87	-122.06	0.00	466879.00	739094.92	N 32.281903	W 103.693422
	4200.00	6.00	306.36	4191.78	-96.93	96.07	-130.47	0.00	466885.20	739086.50	N 32.281920	W 103.693449
	4300.00	6.00	306.36	4291.24	-103.19	102.27	-138.89	0.00	466891.39	739078.09	N 32.281937	W 103.693476
	4400.00	6.00	306.36	4390.69	-109.44	108.46	-147.31	0.00	466897.59	739069.67	N 32.281955	W 103.693503
	4500.00	6.00	306.36	4490.14	-115.69	114.66	-155.73	0.00	466903.79	739061.25	N 32.281972	W 103.693530
	4600.00	6.00	306.36	4589.59	-121.95	120.86	-164.14	0.00	466909.98	739052.84	N 32.281989	W 103.693557
	4700.00	6.00	306.36	4689.04	-128.20	127.06	-172.56	0.00	466916.18	739044.42	N 32.282006	W 103.693584
Base of Salt Lamar	4726.10	6.00	306.36	4715.00	-129.83	128.67	-174.76	0.00	466917.80	739042.22	N 32.282011	W 103.693591
	4751.24	6.00	306.36	4740.00	-131.40	130.23	-176.87	0.00	466919.36	739040.11	N 32.282015	W 103.693598
	4800.00	6.00	306.36	4788.50	-134.45	133.25	-180.98	0.00	466922.38	739036.00	N 32.282023	W 103.693612
Bell Canyon	4827.65	6.00	306.36	4816.00	-136.18	134.97	-183.30	0.00	466924.09	739033.67	N 32.282028	W 103.693619
	4900.00	6.00	306.36	4887.95	-140.70	139.45	-189.39	0.00	466928.58	739027.59	N 32.282041	W 103.693639
	5000.00	6.00	306.36	4987.40	-146.96	145.65	-197.81	0.00	466934.77	739019.17	N 32.282058	W 103.693666
Drop 2"/100ft	5081.42	6.00	306.36	5068.38	-152.05	150.70	-204.66	0.00	466939.82	739012.32	N 32.282072	W 103.693688
	5100.00	5.63	306.36	5086.86	-153.18	151.81	-206.18	2.00	466940.93	739010.80	N 32.282075	W 103.693693
	5200.00	3.63	306.36	5186.53	-158.00	156.60	-212.68	2.00	466945.72	739004.30	N 32.282088	W 103.693714
	5300.00	1.63	306.36	5286.42	-160.75	159.31	-216.37	2.00	466948.44	739000.61	N 32.282096	W 103.693726
Hold	5381.41	0.00	306.36	5367.82	-161.44	160.00	-217.30	2.00	466949.12	738999.68	N 32.282097	W 103.693729
	5400.00	0.00	306.36	5386.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	5500.00	0.00	306.36	5486.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	5600.00	0.00	306.36	5586.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
Cherry Canyon	5692.59	0.00	306.36	5679.00	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	5700.00	0.00	306.36	5686.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	5800.00	0.00	306.36	5786.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	5900.00	0.00	306.36	5886.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	6000.00	0.00	306.36	5986.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	6100.00	0.00	306.36	6086.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	6200.00	0.00	306.36	6186.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	6300.00	0.00	306.36	6286.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	6400.00	0.00	306.36	6386.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	6500.00	0.00	306.36	6486.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	6600.00	0.00	306.36	6586.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	6700.00	0.00	306.36									

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 °)
Brushy Canyon	6980.59	0.00	306.36	6967.00	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	7000.00	0.00	306.36	6986.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	7100.00	0.00	306.36	7086.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	7200.00	0.00	306.36	7186.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	7300.00	0.00	306.36	7286.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	7400.00	0.00	306.36	7386.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	7500.00	0.00	306.36	7486.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	7600.00	0.00	306.36	7586.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	7700.00	0.00	306.36	7686.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	7800.00	0.00	306.36	7786.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	7900.00	0.00	306.36	7886.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	8000.00	0.00	306.36	7986.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	8100.00	0.00	306.36	8086.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	8200.00	0.00	306.36	8186.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	8300.00	0.00	306.36	8286.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	8400.00	0.00	306.36	8386.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	8500.00	0.00	306.36	8486.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	8600.00	0.00	306.36	8586.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
BS/BS Lime	8683.59	0.00	306.36	8670.00	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	8700.00	0.00	306.36	8686.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
Leonard	8768.59	0.00	306.36	8755.00	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	8800.00	0.00	306.36	8786.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	8900.00	0.00	306.36	8886.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	9000.00	0.00	306.36	8986.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	9100.00	0.00	306.36	9086.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
Avalon	9146.59	0.00	306.36	9133.00	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	9200.00	0.00	306.36	9186.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	9300.00	0.00	306.36	9286.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	9400.00	0.00	306.36	9386.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	9500.00	0.00	306.36	9486.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	9600.00	0.00	306.36	9586.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	9700.00	0.00	306.36	9686.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
1st BS Sand	9793.59	0.00	306.36	9780.00	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	9800.00	0.00	306.36	9786.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	9900.00	0.00	306.36	9886.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	10000.00	0.00	306.36	9986.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	10100.00	0.00	306.36	10086.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	10200.00	0.00	306.36	10186.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
2nd BS Carb	10240.59	0.00	306.36	10227.00	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	10300.00	0.00	306.36	10286.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
2nd BS Sand	10398.59	0.00	306.36	10385.00	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	10400.00	0.00	306.36	10386.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	10500.00	0.00	306.36	10486.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	10600.00	0.00	306.36	10586.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	10700.00	0.00	306.36	10686.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	10800.00	0.00	306.36	10786.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	10900.00	0.00	306.36	10886.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	11000.00	0.00	306.36	10986.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
3rd BS Carb	11033.59	0.00	306.36	11020.00	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	11100.00	0.00	306.36	11086.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	11200.00	0.00	306.36	11186.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	11300.00	0.00	306.36	11286.41	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
KOP, Build 10°/100ft	11331.11	0.00	306.36	11317.52	-161.44	160.00	-217.30	0.00	466949.12	738999.68	N 32.282097	W 103.693729
	11400.00	6.89	179.62	11386.24	-157.30	155.86	-217.27	10.00	466944.99	738999.71	N 32.282086	W 103.693729
	11500.00	16.89	179.62	11483.97	-136.73	135.29	-217.14	10.00	466924.41	738999.84	N 32.282030	W 103.693728
3rd BS Sand	11581.49	25.04	179.62	11560.00	-107.60	106.16	-216.94	10.00	466895.29	739000.04	N 32.281949	W 103.693728
	11600.00	26.89	179.62	11576.65	-99.49	98.06	-216.89	10.00	466887.18	739000.09	N 32.281927	W 103.693728
	11700.00	36.89	179.62	11661.45	-46.73	45.30	-216.54	10.00	466834.43	739000.44	N 32.281782	W 103.693728
	11800.00	46.89	179.62	11735.80	19.95	-21.38	-216.10	10.00	466767.75	739000.88	N 32.281599	W 103.693728
	11900.00	56.89	179.62	11797.44	98.53	-99.96	-215.58	10.00	466689.17	739001.40	N 32.281383	W 103.693728
	12000.00	66.89	179.62	11844.49	186.62	-188.05	-215.00	10.00	466601.09	739001.98	N 32.281141	W 103.693728
Build 5°/100ft	12081.11	75.00	179.62	11870.95	263.23	-264.66	-214.49	10.00	466524.49	739002.49	N 32.280930	W 103.693728
	12100.00	75.94	179.62	11875.69	281.51	-282.94	-214.37	5.00	466506.20	739002.61	N 32.280880	W 103.693728
	12200.00	80.94	179.62	11895.72	379.45	-380.88	-213.72	5.00	466408.27	739003.26	N 32.280611	W 103.693727
	12300.00	85.94	179.62	11907.13	478.77	-480.19	-213.07	5.00	466308.96	739003.92	N 32.280338	W 103.693727
Landing Point	12381.11	90.00	179.62	11910.00	559.81	-561.23	-212.53	5.00	466227.92	739004.45	N 32.280115	W 103.693727
	12400.00	90.00	179.62	11910.00	578.70	-580.12	-212.40	0.00	466209.04	739004.58	N 32.280063	W 103.693727
	12500.00	90.00	179.62	11910.00	678.70	-680.12	-211.74	0.00	466109.04	739005.24	N 32.279788	W 103.693727
	12600.00	90.00	179.62	11910.00	778.70	-780.12	-211.08	0.00	466009.05	739005.90	N 32.279513	W 103.693727
	12700.00	90.00	179.62	11910.00	878.70	-880.11	-210.42	0.00	465909.06	739006.56	N 32.279238	W 103.693726
	12800.00	90.00	179.62	11910.00	978.70	-980.11	-209.76	0.00	465809.06	739007.22	N 32.278964	W 103.693726
	12900.00	90.00	179.62	11910.00	1078.70	-1080.11	-209.10	0.00	465709.07	739007.88	N 32.278689	W 103.693726
	13000.00	90.00	179.62	11910.00	1178.70	-1180.11	-208.43	0.00	465609.08	739008.55	N 32.278414	W 103.693726
	13100.00	90.00	179.62	11910.00	1278.70	-1280.11	-207.77	0.00	465509.09	739009.21	N 32.278139	W 103.693725
	13200.00	90.00	179.62	11910.00	1378.70	-1380.10	-207.11	0.00	465409.09	739009.87	N 32.277864	W 103.693725
	13300.00	90.00	179.62	11910.00	1478.70	-1480.10	-206.45	0.00	465309.10	739010.53	N 32.277589	W 103.693725
	13400.00	90.00	179.62	11910.00	1578.70	-1580.10	-205					

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 29-32 Line, NMNM0559539 exit to State enter Lease Cross	16600.00	90.00	179.62	11910.00	4778.70	-4780.03	-184.61	0.00	462009.33	739032.37	N 32.268519	W 103.693718
	16692.02	90.00	179.62	11910.00	4870.72	-4872.05	-184.00	0.00	461917.31	739032.98	N 32.268266	W 103.693718
	16700.00	90.00	179.62	11910.00	4878.70	-4880.03	-183.95	0.00	461909.34	739033.03	N 32.268244	W 103.693718
	16800.00	90.00	179.62	11910.00	4978.70	-4980.02	-183.29	0.00	461809.34	739033.69	N 32.267969	W 103.693718
	16900.00	90.00	179.62	11910.00	5078.70	-5080.02	-182.63	0.00	461709.35	739034.35	N 32.267694	W 103.693717
	17000.00	90.00	179.62	11910.00	5178.70	-5180.02	-181.96	0.00	461609.36	739035.01	N 32.267419	W 103.693717
	17100.00	90.00	179.62	11910.00	5278.70	-5280.02	-181.30	0.00	461509.37	739035.68	N 32.267145	W 103.693717
	17200.00	90.00	179.62	11910.00	5378.70	-5380.02	-180.64	0.00	461409.37	739036.34	N 32.266870	W 103.693717
	17300.00	90.00	179.62	11910.00	5478.70	-5480.01	-179.98	0.00	461309.38	739037.00	N 32.266595	W 103.693717
	17400.00	90.00	179.62	11910.00	5578.70	-5580.01	-179.32	0.00	461209.39	739037.66	N 32.266320	W 103.693716
	17500.00	90.00	179.62	11910.00	5678.70	-5680.01	-178.66	0.00	461109.39	739038.32	N 32.266045	W 103.693716
	17600.00	90.00	179.62	11910.00	5778.70	-5780.01	-177.99	0.00	461009.40	739038.98	N 32.265770	W 103.693716
	17700.00	90.00	179.62	11910.00	5878.70	-5880.01	-177.33	0.00	460909.41	739039.65	N 32.265495	W 103.693716
	17800.00	90.00	179.62	11910.00	5978.70	-5980.00	-176.67	0.00	460809.41	739040.31	N 32.265220	W 103.693716
	17900.00	90.00	179.62	11910.00	6078.70	-6080.00	-176.01	0.00	460709.42	739040.97	N 32.264946	W 103.693715
	18000.00	90.00	179.62	11910.00	6178.70	-6180.00	-175.35	0.00	460609.43	739041.63	N 32.264671	W 103.693715
	18100.00	90.00	179.62	11910.00	6278.70	-6280.00	-174.69	0.00	460509.44	739042.29	N 32.264396	W 103.693715
	18200.00	90.00	179.62	11910.00	6378.70	-6379.99	-174.02	0.00	460409.44	739042.95	N 32.264121	W 103.693715
	18300.00	90.00	179.62	11910.00	6478.70	-6479.99	-173.36	0.00	460309.45	739043.62	N 32.263846	W 103.693714
	18400.00	90.00	179.62	11910.00	6578.70	-6579.99	-172.70	0.00	460209.46	739044.28	N 32.263571	W 103.693714
	18500.00	90.00	179.62	11910.00	6678.70	-6679.99	-172.04	0.00	460109.46	739044.94	N 32.263296	W 103.693714
	18600.00	90.00	179.62	11910.00	6778.70	-6779.99	-171.38	0.00	460009.47	739045.60	N 32.263022	W 103.693714
	18700.00	90.00	179.62	11910.00	6878.70	-6879.98	-170.72	0.00	459909.48	739046.26	N 32.262747	W 103.693714
	18800.00	90.00	179.62	11910.00	6978.70	-6979.98	-170.05	0.00	459809.48	739046.92	N 32.262472	W 103.693713
	18900.00	90.00	179.62	11910.00	7078.70	-7079.98	-169.39	0.00	459709.49	739047.59	N 32.262197	W 103.693713
	19000.00	90.00	179.62	11910.00	7178.70	-7179.98	-168.73	0.00	459609.50	739048.25	N 32.261922	W 103.693713
	19100.00	90.00	179.62	11910.00	7278.70	-7279.97	-168.07	0.00	459509.51	739048.91	N 32.261647	W 103.693713
	19200.00	90.00	179.62	11910.00	7378.70	-7379.97	-167.41	0.00	459409.51	739049.57	N 32.261372	W 103.693713
James 29-32 Federal Com 32H - BHL [100' FSL, 1723' FEL]	19234.53	90.00	179.62	11910.00	7413.23	-7414.50	-167.18	0.00	459374.98	739049.80	N 32.261277	W 103.693712

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	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	23.000	1/100.000	30.000	30.000		A001Mb_MWD-Depth Only	James 29-32 Federal Com 32H / Coterra James 29-32 Federal
	1	23.000	11300.000	1/100.000	30.000	30.000		A001Mb_MWD	James 29-32 Federal Com 32H / Coterra James 29-32 Federal
	1	11300.000	19234.530	1/100.000	30.000	30.000		A008Mb_MWD+IFR1+MS	James 29-32 Federal Com 32H / Coterra James 29-32 Federal



## Coterra James 29-32 Federal Com 32H Rev2 kFc 30Mar23 Anti-Collision Summary Report

**Analysis Date-24hr Time:** March 30, 2023 - 12:40

**Client:** COTERRA

**Field:** NM Lea County (NAD 83)

**Structure:** Coterra James 29-32 Federal Com 32H

**Slot:** 32H

**Well:** James 29-32 Federal Com 32H

**Borehole:** James 29-32 Federal Com 32H

**Scan MD Range:** 0.00ft - 32.00ft

**Analysis Method:** 3D Least Distance

**Reference Trajectory:** Coterra James 29-32 Federal Com 32H Rev2 kFc 30Mar23 (Def Plan)

**Depth Interval:** Every 10.00 Measured Depth (ft)

**Rule Set:** NAL Procedure: D&M AntiCollision Standard S002

**Min Pts:** All local minima indicated.

**Version / Patch:** 2.10.834.0

**Database \ Project:** localhost\drilling-project1

**Trajectory Error Model:** ISCWSA0 3-D 95.000% Confidence 2.7955 sigma

### Offset Trajectories Summary

#### Offset Selection Criteria

Wellhead distance scan:

Selection filters: Definitive Surveys - Definitive Plans - Definitive surveys exclude definitive plans

- All Non-Def Surveys when no Def-Survey is set in a borehole - All Non-Def Plans when no Def-Plan is set in a borehole

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
Coterra James 29-32 Federal Com 31H Rev2 kFc 30Mar23 (Def Plan)													Warning Alert
	20.00	16.50	17.50	3.50	N/A	MAS = 5.03 (m)	0.00	0.00	CtCt<=15m<15.00			Enter Alert	
	20.00	16.50	17.50	3.50	N/A	MAS = 5.03 (m)	23.00	23.00				WRP	
	20.00	16.50	17.46	3.50	392.39	MAS = 5.03 (m)	32.00	32.00				MinPts	
Coterra James 29 Federal Com 25H Rev1 kFc 27Sep22 (Def Plan)													Pass
	99.99	32.81	97.49	67.18	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	99.99	32.81	97.49	67.18	275141.49	MAS = 10.00 (m)	23.00	23.00				WRP	
	99.99	32.81	97.44	67.18	2149.74	MAS = 10.00 (m)	32.00	32.00				MinPts	
Coterra James 29 Federal Com 24H Rev1 kFc 27Sep22 (Def Plan)													Pass
	113.12	32.81	110.62	80.32	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	113.12	32.81	110.62	80.32	312219.06	MAS = 10.00 (m)	23.00	23.00				WRP	
	113.12	32.81	110.58	80.32	2439.43	MAS = 10.00 (m)	32.00	32.00				MinPts	
30-025-42091 - James 29 Federal 039H - MWD to 13997ft - A (Def Survey)													Pass
	116.69	32.81	114.19	83.88	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	114.94	32.81	112.18	82.13	430.78	MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
	113.95	32.81	111.37	81.15	1271.60	MAS = 10.00 (m)	23.00	23.00				MINPT-O-EOU	
	113.93	32.81	111.39	81.12	2788.09	MAS = 10.00 (m)	32.00	32.00				MinPts	
Coterra James 29 Federal Com 23H Rev1 kFc 27Sep22 (Def Plan)													Pass
	128.04	32.81	125.54	95.24	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	128.04	32.81	125.54	95.24	N/A	MAS = 10.00 (m)	23.00	23.00				WRP	
	128.04	32.81	125.50	95.24	2783.86	MAS = 10.00 (m)	32.00	32.00				MinPts	
30-025-36028 - James Federal 7 - INC Only to 8603ft - A (Def Survey)													Pass
	436.07	32.81	433.57	403.26	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	436.05	32.81	433.43	403.24	3676.23	MAS = 10.00 (m)	10.00	10.00				MinPts	
	436.06	32.81	433.18	403.25	1134.05	MAS = 10.00 (m)	23.00	23.00				WRP	
	436.07	32.81	433.01	403.27	765.72	MAS = 10.00 (m)	32.00	32.00				MinPts	
30-025-41362 - James Federal 21H ST01 - MWD to 13935ft - A (Def Survey)													Pass
	523.47	32.81	520.97	490.66	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	523.14	32.81	520.60	490.34	11310.38	MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
	523.01	32.81	520.49	490.20	31344.06	MAS = 10.00 (m)	20.00	20.00				MINPT-O-EOU	
	523.00	32.81	520.50	490.19	183627.91	MAS = 10.00 (m)	23.00	23.00				WRP	
	523.00	32.81	520.45	490.19	11040.61	MAS = 10.00 (m)	32.00	32.00				MinPts	
30-025-41852 - James 29 Federal 38H ST01 - MWD to 13640ft - A (Def Survey)													Pass
	801.45	32.81	798.95	768.64	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	801.24	32.81	798.71	768.43	26575.54	MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
	801.15	32.81	798.64	768.34	73670.16	MAS = 10.00 (m)	20.00	20.00				MINPT-O-EOU	
	801.15	32.81	798.64	768.34	281754.51	MAS = 10.00 (m)	23.00	23.00				WRP	
	801.15	32.81	798.60	768.34	16940.46	MAS = 10.00 (m)	32.00	32.00				MinPts	
30-025-41363 - James Federal 22H ST01 - MWD to 13853ft - A (Def Survey)													Pass
	877.49	32.81	874.99	844.68	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	877.31	32.81	874.78	844.50	34715.36	MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
	877.24	32.81	874.73	844.43	137154.86	MAS = 10.00 (m)	23.00	23.00				WRP	
	877.24	32.81	874.69	844.43	17560.88	MAS = 10.00 (m)	32.00	32.00				MinPts	
30-025-36772 - James Federal 10 - INC Only to 8645ft - A (Def Survey)													Pass
	1041.83	32.81	1039.33	1009.02	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1041.78	32.81	1038.95	1008.97	3141.59	MAS = 10.00 (m)	23.00	23.00				WRP	
	1041.75	32.81	1038.71	1008.95	1898.22	MAS = 10.00 (m)	32.00	32.00				MinPts	
30-025-35888 - James Federal 6 - INC Only to 8700ft - A (Def Survey)													Pass
	1647.72	32.81	1645.22	1614.91	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1647.59	32.81	1645.07	1614.78	84761.71	MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
	1647.51	32.81	1645.01	1614.71	186550.54	MAS = 10.00 (m)	23.00	23.00				WRP	
	1647.51	32.81	1644.93	1614.70	20054.20	MAS = 10.00 (m)	30.00	30.00				MinPts	
	1647.51	32.81	1644.89	1614.70	13316.94	MAS = 10.00 (m)	32.00	32.00				MinPts	

...James 29-32 Federal Com 32H\Coterra James 29-32 Federal Com 32H Rev2 kFc 30Mar23

Drilling Office 2.10.834.0

SLB-Private

Page 1 of 4



Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
30-025-37778 - James Federal 12 - INC Only to 8865ft - A (Def Survey)													
	1805.44	32.81	1802.94	1772.63	N/A	MAS = 10.00 (m)	0.00	0.00				Pass	
	1805.33	32.81	1802.82	1772.52	116116.02	MAS = 10.00 (m)	10.00	10.00				Surface	
	1805.28	32.81	1802.77	1772.47	196283.66	MAS = 10.00 (m)	20.00	20.00				MinPt-O-SF	
	1805.28	32.81	1802.77	1772.47	597382.09	MAS = 10.00 (m)	23.00	23.00				MinPts	
	1805.28	32.81	1802.75	1772.47	56490.41	MAS = 10.00 (m)	32.00	32.00				MinPts	
Cimarex James Federal 20H MWD Off to 12150ft (Def Survey)													
	1892.06	32.81	1889.56	1859.25	N/A	MAS = 10.00 (m)	0.00	0.00				Pass	
	1892.05	32.81	1889.55	1859.25	N/A	MAS = 10.00 (m)	23.00	23.00				Surface	
	1892.05	32.81	1889.51	1859.24	48143.54	MAS = 10.00 (m)	32.00	32.00				WRP	
												MinPts	
Cimarex James Federal 20H ST01 MWD 8951ft to 14067ft (Def Survey)													
	1892.06	32.81	1889.56	1859.25	N/A	MAS = 10.00 (m)	0.00	0.00				Pass	
	1892.05	32.81	1889.55	1859.25	N/A	MAS = 10.00 (m)	23.00	23.00				Surface	
	1892.05	32.81	1889.51	1859.24	48143.54	MAS = 10.00 (m)	32.00	32.00				WRP	
												MinPts	
30-025-36773 - James Federal 11 - INC Only to 8639ft - A (Def Survey)													
	1897.63	32.81	1895.13	1864.82	N/A	MAS = 10.00 (m)	0.00	0.00				Pass	
	1897.58	32.81	1894.79	1864.77	6509.07	MAS = 10.00 (m)	23.00	23.00				Surface	
	1897.57	32.81	1894.51	1864.76	3387.48	MAS = 10.00 (m)	32.00	32.00				WRP	
												MinPts	
30-025-38447 - Lonecat Federal 001 - INC Only to 8870ft - A (Def Survey)													
	2068.71	32.81	2066.21	2035.90	N/A	MAS = 10.00 (m)	0.00	0.00				Pass	
	2068.62	32.81	2066.04	2035.81	23963.66	MAS = 10.00 (m)	23.00	23.00				Surface	
	2068.62	32.81	2066.82	2035.81	7071.69	MAS = 10.00 (m)	32.00	32.00				WRP	
												MinPts	
30-025-36721 - James Federal 5 - INC Only to 8664ft - A (Def Survey)													
	2151.36	32.81	2149.71	2118.55	N/A	MAS = 10.00 (m)	0.00	0.00				Pass	
	2150.98	32.81	2149.28	2118.17	42079.53	MAS = 10.00 (m)	23.00	23.00				Surface	
	2150.90	32.81	2149.20	2118.09	47510.26	MAS = 10.00 (m)	32.00	32.00				MinPt-O-SF	
												MinPts	
Cimarex James 29 Federal 36H MWD to 13872ft (Def Survey)													
	2319.26	32.81	2316.76	2286.45	N/A	MAS = 10.00 (m)	0.00	0.00				Pass	
	2319.24	32.81	2316.74	2286.43	N/A	MAS = 10.00 (m)	10.00	10.00				Surface	
	2319.24	32.81	2316.74	2286.43	N/A	MAS = 10.00 (m)	23.00	23.00				MinPts	
	2319.24	32.81	2316.71	2286.43	70500.46	MAS = 10.00 (m)	32.00	32.00				WRP	
												MinPts	
30-025-37786 - James 20 Federal 1 - INC Only to 8889ft - A (Def Survey)													
	2967.63	32.81	2965.13	2934.82	N/A	MAS = 10.00 (m)	0.00	0.00				Pass	
	2967.60	32.81	2965.10	2934.79	460413.73	MAS = 10.00 (m)	23.00	23.00				Surface	
	2967.60	32.81	2964.90	2934.79	15301.53	MAS = 10.00 (m)	32.00	32.00				WRP	
												MinPts	
30-025-35843 - James Federal 4 - INC Only to 8632ft - A (Def Survey)													
	3003.24	32.81	3001.59	2970.43	N/A	MAS = 10.00 (m)	0.00	0.00				Pass	
	3003.11	32.81	3001.44	2970.30	223845.23	MAS = 10.00 (m)	20.00	20.00				Surface	
	3003.10	32.81	3001.44	2970.29	275749.77	MAS = 10.00 (m)	23.00	23.00				MinPt-O-SF	
	3003.09	32.81	3001.39	2970.28	66404.84	MAS = 10.00 (m)	32.00	32.00				WRP	
												MinPts	
30-025-36031 - James Federal 9 - INC Only to 8657ft - A (Def Survey)													
	3008.26	32.81	3005.76	2975.45	N/A	MAS = 10.00 (m)	0.00	0.00				Pass	
	3008.21	32.81	3005.70	2975.40	408989.04	MAS = 10.00 (m)	10.00	10.00				Surface	
	3008.19	32.81	3005.65	2975.38	88502.16	MAS = 10.00 (m)	23.00	23.00				MinPt-O-SF	
	3008.18	32.81	3005.48	2975.38	14572.99	MAS = 10.00 (m)	32.00	32.00				WRP	
												MinPts	
30-025-35812 - James Federal 3 - INC Only to 8610ft - A (Def Survey)													
	3244.55	32.81	3242.05	3211.74	N/A	MAS = 10.00 (m)	0.00	0.00				Pass	
	3244.51	32.81	3242.00	3211.70	740127.06	MAS = 10.00 (m)	10.00	10.00				Surface	
	3244.50	32.81	3242.00	3211.69	N/A	MAS = 10.00 (m)	23.00	23.00				MinPt-O-SF	
	3244.50	32.81	3241.91	3211.69	37109.26	MAS = 10.00 (m)	32.00	32.00				WRP	
												MinPts	
Cimarex James 29 Federal 35H MWD to 13649ft (Def Survey)													
	3428.65	32.81	3426.15	3395.84	N/A	MAS = 10.00 (m)	0.00	0.00				Pass	
	3428.48	32.81	3425.95	3395.67	154963.61	MAS = 10.00 (m)	20.00	20.00				Surface	
	3428.46	32.81	3425.94	3395.65	159703.41	MAS = 10.00 (m)	23.00	23.00				MinPt-O-SF	
	3428.43	32.81	3425.90	3395.62	102931.07	MAS = 10.00 (m)	32.00	32.00				WRP	
												MinPts	
30-025-38050 - James 20 Federal 2 - INC Only to 8850ft - A (Def Survey)													
	4095.05	32.81	4092.55	4062.25	N/A	MAS = 10.00 (m)	0.00	0.00				Pass	
	4095.00	32.81	4092.50	4062.19	524087.42	MAS = 10.00 (m)	10.00	10.00				Surface	
	4094.97	32.81	4092.47	4062.16	N/A	MAS = 10.00 (m)	23.00	23.00				MinPt-O-SF	
	4094.97	32.81	4092.44	4062.16	128283.10	MAS = 10.00 (m)	32.00	32.00				WRP	
												MinPts	
30-025-31515 - James Federal 1 - INC Only+Blind to 6160ft - SWD (Def Survey)													
	4109.60	32.81	4107.10	4076.79	N/A	MAS = 10.00 (m)	0.00	0.00				Pass	
	4109.56	32.81	4107.05	4076.75	763454.92	MAS = 10.00 (m)	10.00	10.00				Surface	
	4109.54	32.81	4107.01	4076.73	118525.24	MAS = 10.00 (m)	23.00	23.00				MinPt-O-SF	
	4109.54	32.81	4106.83	4076.73	19525.87	MAS = 10.00 (m)	32.00	32.00				MinPts	
												MinPts	
30-025-29495 - James Federal 2 - Blind+INC Only to 8151ft - A (Def Survey)													
												Pass	

...James 29-32 Federal Com 32H\Coterra James 29-32 Federal Com 32H Rev2 kFc 30Mar23

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
	4643.87	32.81	4641.37	4611.06	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	Pass
	4643.63	32.81	4641.09	4610.82	124269.56	MAS = 10.00 (m)	23.00	23.00				WRP	
	4643.56	32.81	4641.02	4610.75	108428.93	MAS = 10.00 (m)	32.00	32.00				MinPts	
30-025-27136 - State 'IG' 1 - Gyro to 8630ft - A (Def Survey)													
	5586.18	32.81	5583.68	5553.37	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	Pass
	5586.10	32.81	5583.59	5553.29	598541.33	MAS = 10.00 (m)	20.00	20.00				MinPt-O-SF	
	5586.09	32.81	5583.58	5553.28	673548.83	MAS = 10.00 (m)	23.00	23.00				WRP	
	5586.08	32.81	5583.55	5553.27	175014.53	MAS = 10.00 (m)	32.00	32.00				MinPts	
30-025-36555 - Falcon 32 State 4 - INC Only to 8600ft - A (Def Survey)													
	5769.39	32.81	5766.89	5736.58	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	Pass
	5769.29	32.81	5766.78	5736.49	520220.72	MAS = 10.00 (m)	20.00	20.00				MinPt-O-SF	
	5769.29	32.81	5766.78	5736.48	555174.79	MAS = 10.00 (m)	23.00	23.00				WRP	
	5769.27	32.81	5766.74	5736.46	179877.35	MAS = 10.00 (m)	32.00	32.00				MinPts	
30-025-45602 - James 20 Federal 037H - Corrected MWD to 20191ft - A (Def Survey)													
	6119.23	32.81	6116.73	6086.42	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	Pass
	6119.22	32.81	6116.72	6086.41	N/A	MAS = 10.00 (m)	23.00	23.00				WRP	
	6119.22	32.81	6116.68	6086.41	181751.69	MAS = 10.00 (m)	32.00	32.00				MinPts	
30-025-45603 - James 20-29 Federal Com 38H - Corrected MWD to 22061 ft - A (Def Survey)													
	6128.97	32.81	6126.47	6096.16	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	Pass
	6128.97	32.81	6126.47	6096.16	N/A	MAS = 10.00 (m)	10.00	10.00				MinPts	
	6128.97	32.81	6126.47	6096.16	N/A	MAS = 10.00 (m)	23.00	23.00				WRP	
	6128.97	32.81	6126.44	6096.16	191325.07	MAS = 10.00 (m)	32.00	32.00				MinPts	
Coterra James 20-29 Federal Com 41H Rev0 kFc 08Sep22 (Def Plan)													
	6133.75	32.81	6131.25	6100.94	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	Pass
	6133.74	32.81	6131.24	6100.94	N/A	MAS = 10.00 (m)	23.00	23.00				WRP	
	6133.74	32.81	6131.21	6100.94	191974.55	MAS = 10.00 (m)	32.00	32.00				MinPts	
30-025-45604 - James 20-29 Federal Com 39H - Corrected MWD to 21906ft - A (Def Survey)													
	6138.81	32.81	6136.31	6106.01	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	Pass
	6138.81	32.81	6136.31	6106.00	N/A	MAS = 10.00 (m)	23.00	23.00				WRP	
	6138.81	32.81	6136.28	6106.00	192344.78	MAS = 10.00 (m)	32.00	32.00				MinPts	
Coterra James 20-29 Federal Com 42H Rev0 kFc 08Sep22 (Def Plan)													
	6143.19	32.81	6140.69	6110.38	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	Pass
	6143.18	32.81	6140.68	6110.37	N/A	MAS = 10.00 (m)	23.00	23.00				WRP	
	6143.18	32.81	6140.65	6110.37	192140.02	MAS = 10.00 (m)	32.00	32.00				MinPts	
30-025-37176 - State IG 2 - INC Only to 8625ft - A (Def Survey)													
	6600.18	32.81	6597.68	6567.38	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	Pass
	6600.16	32.81	6597.66	6567.35	N/A	MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
	6600.15	32.81	6597.62	6567.34	187171.91	MAS = 10.00 (m)	23.00	23.00				MinPts	
	6600.15	32.81	6597.44	6567.34	30846.68	MAS = 10.00 (m)	32.00	32.00				MinPts	
30-025-33001 - Falcon '32' State 1 - INC Only to 10000ft - A (Def Survey)													
	7273.05	32.81	7270.55	7240.25	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	Pass
	7272.97	32.81	7270.46	7240.16	663084.04	MAS = 10.00 (m)	20.00	20.00				MinPt-O-SF	
	7272.96	32.81	7270.45	7240.16	677162.24	MAS = 10.00 (m)	23.00	23.00				WRP	
	7272.95	32.81	7270.42	7240.14	225112.82	MAS = 10.00 (m)	32.00	32.00				MinPts	
30-025-35640 - Falcon '32' State 3 - INC Only to 8690ft - A (Def Survey)													
	8385.62	32.81	8383.12	8352.82	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	Pass
	8385.50	32.81	8382.98	8352.69	466378.14	MAS = 10.00 (m)	23.00	23.00				WRP	
	8385.47	32.81	8382.94	8352.66	243154.77	MAS = 10.00 (m)	32.00	32.00				MinPts	
30-025-46023 - Alley Cat 17-20 Fed Com 524H - MWD to 19813ft - A (Def Survey)													
	9393.64	257.82	9220.93	9135.82	55.17	OSF1.50	0.00	0.00				Surface	Pass
	9370.73	257.91	9197.95	9112.82	55.02	OSF1.50	23.00	23.00				WRP	
	9361.76	257.91	9188.99	9103.85	54.97	OSF1.50	32.00	32.00				MinPts	
30-025-46251 - Alley Cat 17-20 Federal Com 525H - MWD to 19992ft - A (Def Survey)													
	9412.48	257.17	9240.20	9155.31	55.42	OSF1.50	0.00	0.00				Surface	Pass
	9389.52	257.26	9217.19	9132.27	55.27	OSF1.50	23.00	23.00				WRP	
	9380.54	257.26	9208.20	9123.28	55.22	OSF1.50	32.00	32.00				MinPts	
30-025-46252 - Alley Cat 17-20 Federal Com 526H - MWD to 19952ft - A (Def Survey)													
	9497.10	262.10	9321.53	9235.00	54.86	OSF1.50	0.00	0.00				Surface	Pass
	9474.29	262.22	9298.65	9212.08	54.70	OSF1.50	23.00	23.00				WRP	
	9465.37	262.23	9289.72	9203.14	54.65	OSF1.50	32.00	32.00				MinPts	
30-025-39661 - Falcon 32 State 005Y-H - Gyro+MWD to 12715ft - A (Def Survey)													
	10227.43	32.81	10224.93	10194.62	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	Pass
	10227.28	32.81	10224.75	10194.47	409850.45	MAS = 10.00 (m)	23.00	23.00				WRP	
	10227.23	32.81	10224.70	10194.43	267962.15	MAS = 10.00 (m)	32.00	32.00				MinPts	

...James 29-32 Federal Com 32H\Coterra James 29-32 Federal Com 32H Rev2 kFc 30Mar23

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
30-025-45066 - Alley Cat 17-20 Federal Com 215H - MWD to 21436ft - A (Def Survey)													
	10604.90	266.50	10426.40	10338.40	60.24	OSF1.50	0.00	0.00				Pass	
	10581.95	266.59	10403.39	10315.37	60.09	OSF1.50	23.00	23.00				Surface	
	10572.97	266.59	10394.41	10306.39	60.04	OSF1.50	32.00	32.00				WRP	
												MinPts	
30-025-45067 - Alley Cat 17-20 FEDERAL COM 216H - MWD to 21324ft - A (Def Survey)													
	10619.58	266.86	10441.16	10352.73	60.03	OSF1.50	0.00	0.00				Pass	
	10596.66	266.95	10418.18	10329.71	59.88	OSF1.50	23.00	23.00				Surface	
	10587.69	266.95	10409.21	10320.74	59.83	OSF1.50	32.00	32.00				WRP	
												MinPts	

**1. Geological Formations**

TVD of target 11,910

Pilot Hole TD N/A

MD at TD 19,235

Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	1090	Useable Water	
Top Salt	1400	N/A	
Base Salt	4715	N/A	
Lamar	4740	N/A	
Bell Canyon	4816	N/A	
Cherry Canyon	5679	N/A	
Brushy Canyon	6967	Hydrocarbons	
Bone Spring Lime	8670	Hydrocarbons	
1st Bone Spring	9780	Hydrocarbons	
2nd Bone Spring	10385	Hydrocarbons	
3rd Bone Spring	11910	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	1140	1140	13-3/8"	48.00	H-40	ST&C	1.50	3.50	5.88
12 1/4	0	4807	4796	9-5/8"	40.00	HCK-55	LT&C	1.48	1.54	2.92
8 3/4	0	11331	11331	7"	29.00	L-80	LT&C	1.32	1.54	1.71
8 3/4	11331	12081	11870	7"	29.00	P-110	BT&C	1.54	2.02	59.43
6	10331	19235	11910	4-1/2"	11.60	P-110	BT&C	1.36	1.92	20.04
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., James 29-32 Federal Com 32H

	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 <sup>3</sup> /sack	H <sub>2</sub> O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	553	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	148	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate	905	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
	281	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Production	413	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	535	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	45
Intermediate	0	50
Production	4607	25
Completion System	11881	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.				
	Y	Are anchors required by manufacturer?			

**5. Mud Program**

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 1140'	Fresh Water	7.83 - 8.33	28	N/C
1140' to 4807'	Brine Water	9.80 - 10.30	30-32	N/C
4807' to 12381'	Cut Brine or OBM	8.50 - 9.00	27-70	N/C
12381' to 19235'	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	5573 psi
Abnormal Temperature	No

Hydrogen Sulfide (H<sub>2</sub>S) monitors will be installed prior to drilling out the surface shoe. If H<sub>2</sub>S 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 <sub>2</sub> S is present
X	H <sub>2</sub> 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. Annual 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 pack off 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 32H 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 32H 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 32H 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.



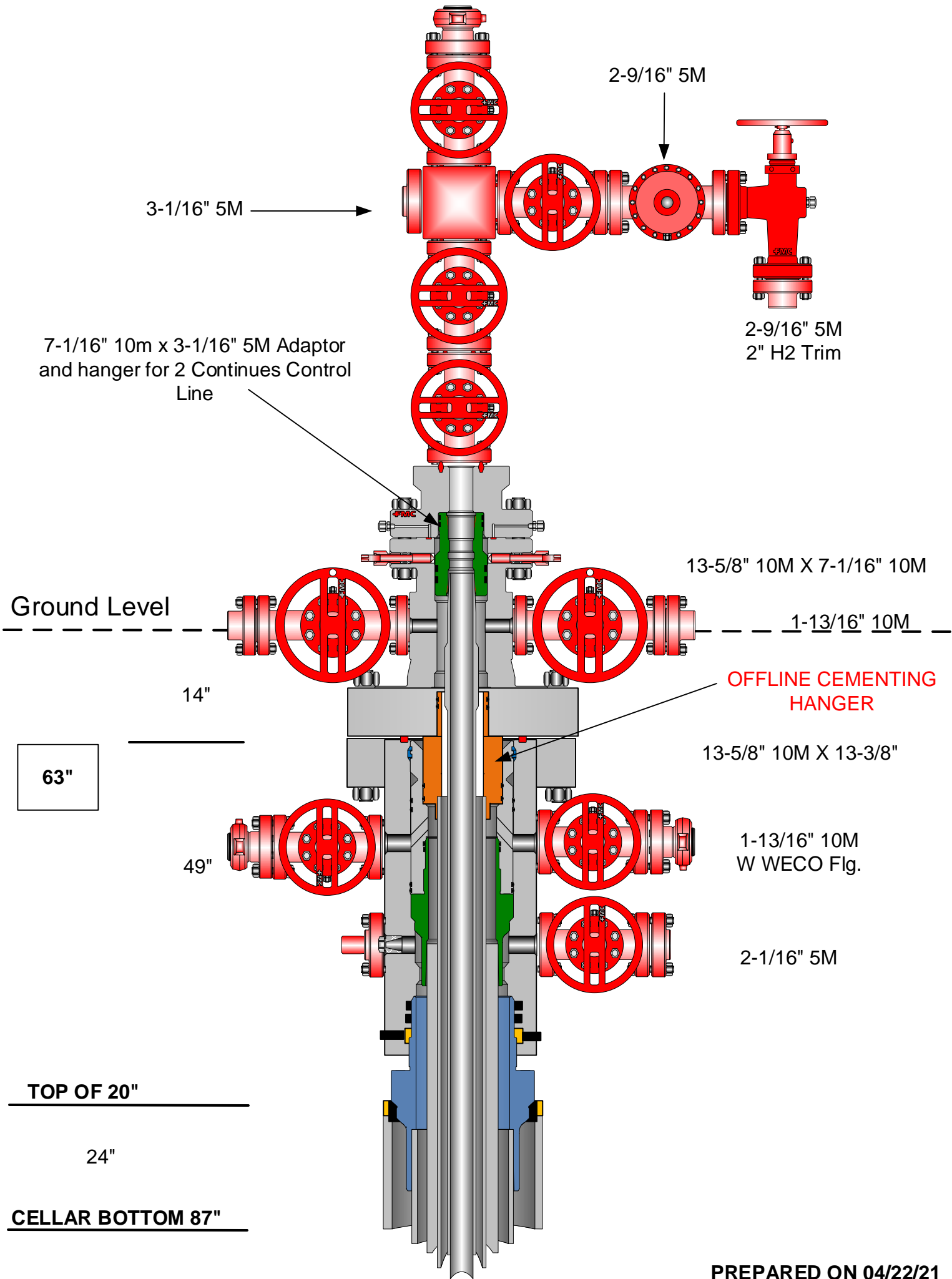
CACTUS FOR SERVICE  
WEARBUSHING  
IN CASING HEAD &  
CASING SPOOL

James 29 Federal Com 32H

2. Casing Program

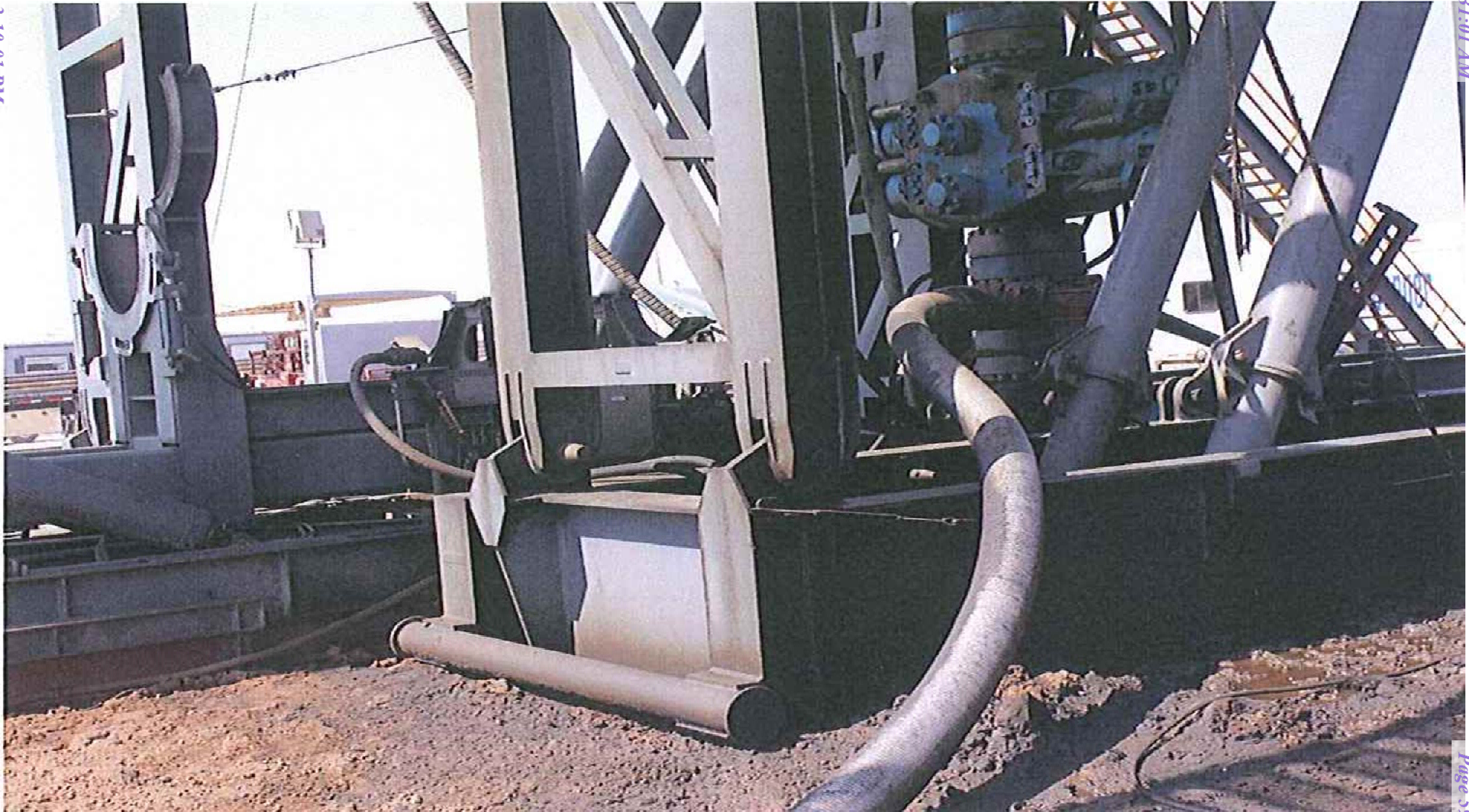
Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17 1/2	0	1205	1205	13-3/8"	48.00	H-40	ST&C	1.42	3.31	5.57
12 1/4	0	4807	4796	9-5/8"	40.00	HCK-55	LT&C	1.48	1.54	2.92
8 3/4	0	11371	11371	7"	29.00	L-80	LT&C	1.32	1.53	1.70
8 3/4	11371	12121	11910	7"	29.00	P-110	BT&C	1.53	2.01	59.43
6	10371	16632	11950	4-1/2"	11.60	P-110	BT&C	1.36	1.92	20.04
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet

LEA CO., NM



PREPARED ON 04/22/21

Co-Flex Hose  
James 29 Federal Com  
23H-25H, 31H,32H  
Cimarex Energy Co.





Co-Flex Hose Hydrostatic Test  
James 29 Federal Com 23H  
Cimarex Energy Co.

## Midwest Hose & Specialty, Inc.

### INTERNAL HYDROSTATIC TEST REPORT

Customer:		P.O. Number:	
Oderco Inc		odyd-271	
HOSE SPECIFICATIONS			
Type: Stainless Steel Armor Choke & Kill Hose		Hose Length: 45'ft.	
I.D. 4 INCHES		O.D. 9 INCHES	
WORKING PRESSURE	TEST PRESSURE	BURST PRESSURE	
10,000 PSI	15,000 PSI	0 PSI	
COUPLINGS			
Stem Part No.		Ferrule No.	
OKC OKC		OKC OKC	
Type of Coupling: Swage-It			
PROCEDURE			
<u>Hose assembly pressure tested with water at ambient temperature.</u>			
TIME HELD AT TEST PRESSURE		ACTUAL BURST PRESSURE:	
15 MIN.		0 PSI	
Hose Assembly Serial Number: 79793		Hose Serial Number: OKC	
Comments:			
Date:	Tested:	Approved:	
3/8/2011	<i>A. Joine Sauer</i>	<i>Kevin Red</i>	





Midwest Hose  
& Specialty, Inc.

## Internal Hydrostatic Test Graph

March 3, 2011

Customer: Houston

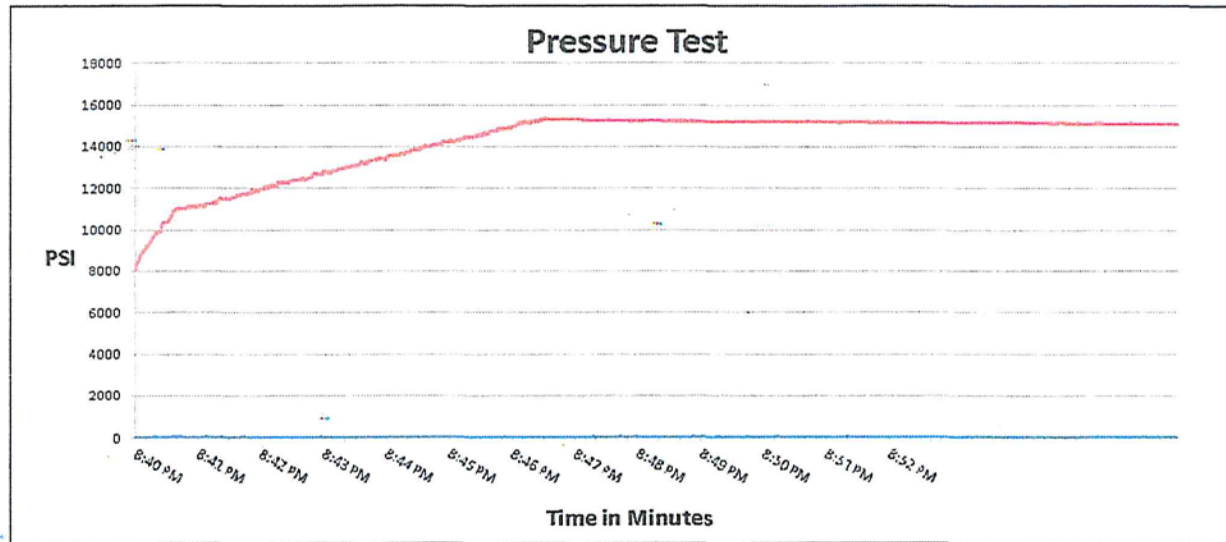
Pick Ticket #: 94260

### Hose Specifications

<u>Hose Type</u>	<u>Length</u>
C & K	45'
<u>I.D.</u>	<u>O.D.</u>
4"	6.09"
<u>Working Pressure</u>	<u>Burst Pressure</u>
10000 PSI	Standard Safety Multiplier Applies

### Verification

<u>Type of Fitting</u>	<u>Coupling Method</u>
41/16 10K	Swage
<u>Die Size</u>	<u>Final O.D.</u>
6.38"	6.25"
<u>Hose Serial #</u>	<u>Hose Assembly Serial #</u>
5544	79793



Test Pressure  
15000 PSI

Time Held at Test Pressure  
11 Minutes

Actual Burst Pressure

Peak Pressure  
15483 PSI

**Comments:** Hose assembly pressure tested with water at ambient temperature.

**Tested By:** Zac Mcconnell

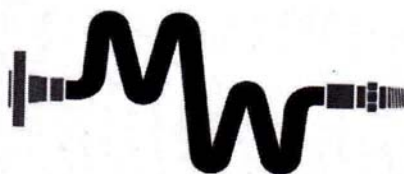
*[Signature]*

**Approved By:** Kim Thomas

*[Signature]*

Co-Flex Hose Hydrostatic Test  
James 29 Federal Com 23H  
Cinarex Energy Co.

Co-Flex Hose  
James 29 Federal Com 23H  
Cimarex Energy Co.



## Midwest Hose & Specialty, Inc.

### Certificate of Conformity

Customer:

DEM

PO

ODYD-271

### SPECIFICATIONS

Sales Order

79793

Dated:

3/8/2011

We hereby certify that the material supplied  
for the referenced purchase order to be true  
according to the requirements of the purchase  
order and current industry standards

Supplier:  
Midwest Hose & Specialty, Inc.  
10640 Tanner Road  
Houston, Texas 77041

Comments:

Approved:

*James Garcia*

Date:

3/8/2011

Midwest Hose  
& Specialty, Inc.Co-Flex Hose  
James 29 Federal Com 23H  
Cimarex Energy Co.

## Specification Sheet Choke & Kill Hose

The Midwest Hose & Specialty Choke & Kill hose is manufactured with only premium componets. The reinforcement cables, inner liner and cover are made of the highest quality material to handle the tough drilling applications of today's industry. The end connections are available with API flanges, API male threads, hubs, hammer unions or other special fittings upon request. Hose assembly is manufactured to API 7K. This assembly is wrapped with fire resistant vermiculite coated fiberglass insulation, rated at 2000 degrees with stainless steel armor cover.

<b>Working Pressure:</b>	5,000 or 10,000 psi working pressure
<b>Test Pressure:</b>	10,000 or 15,000 psi test pressure
<b>Reinforcement:</b>	Multiple steel cables
<b>Cover:</b>	Stainless Steel Armor
<b>Inner Tube:</b>	Petroleum resistant, Abrasion resistant
<b>End Fitting:</b>	API flanges, API male threads, threaded or butt weld hammer unions, unbolt and other special connections
<b>Maximum Length:</b>	110 Feet
<b>ID:</b>	2-1/2", 3", 3-1/2", 4"
<b>Operating Temperature:</b>	-22 deg F to +180 deg F (-30 deg C to +82 deg C)

P.O. Box 96558 - 1421 S.E. 29<sup>th</sup> St. Oklahoma City, OK 73143 \* (405) 670-6718 \* Fax: (405) 670-6816

# Cementing Operational Workflow

---

## Conventional Cementing

1. Land casing on fluted mandrel hanger
2. Circulate down casing, taking returns through BOP stack
3. Pump lead and tail cement
4. Displace cement and bump the plug
5. Ensure floats are holding pressure
6. RD cement crew
7. Install packoff to isolate pressure
8. Install BPV and skid rig

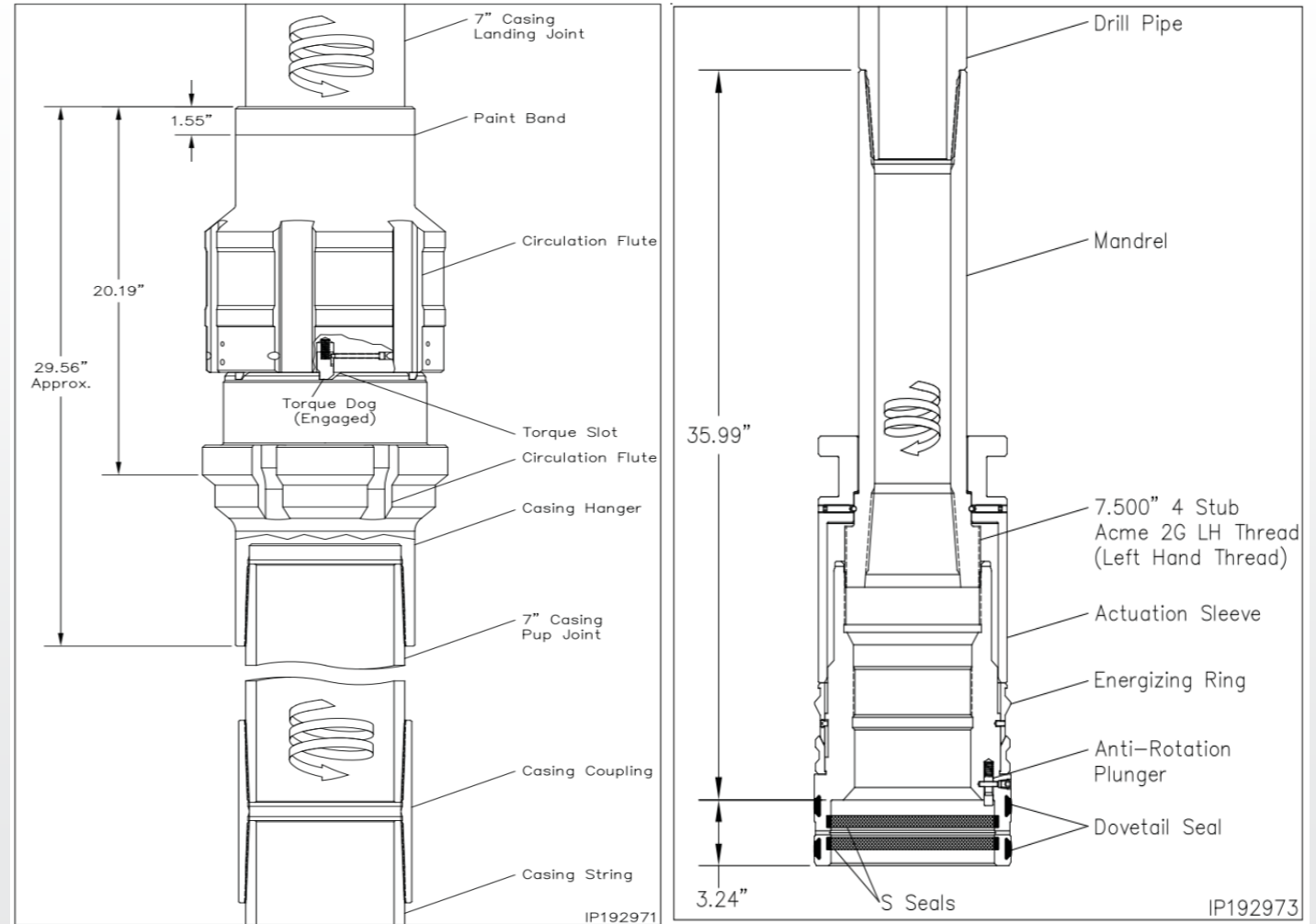
## Offline Cementing

1. Land casing on **solid body** mandrel hanger
  - a) Engage packoff and lockring
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



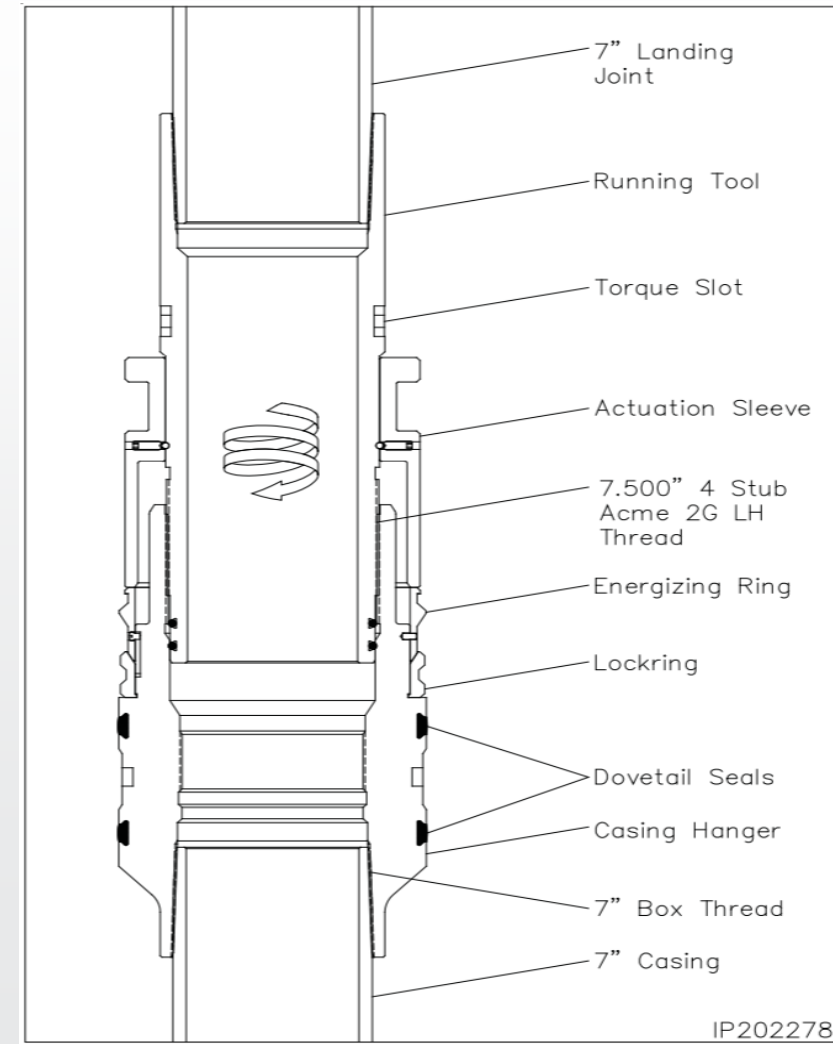
# Conventional Cementing Equipment-Fluted Mandrel

- Fluted Hanger allows returns up past the hanger body
- Returns throughout cement job flow up through BOP stack and into flowline
- Packoff is installed **after** cement job to isolate pressure above and below hanger
- Lockring engaged during packoff installation

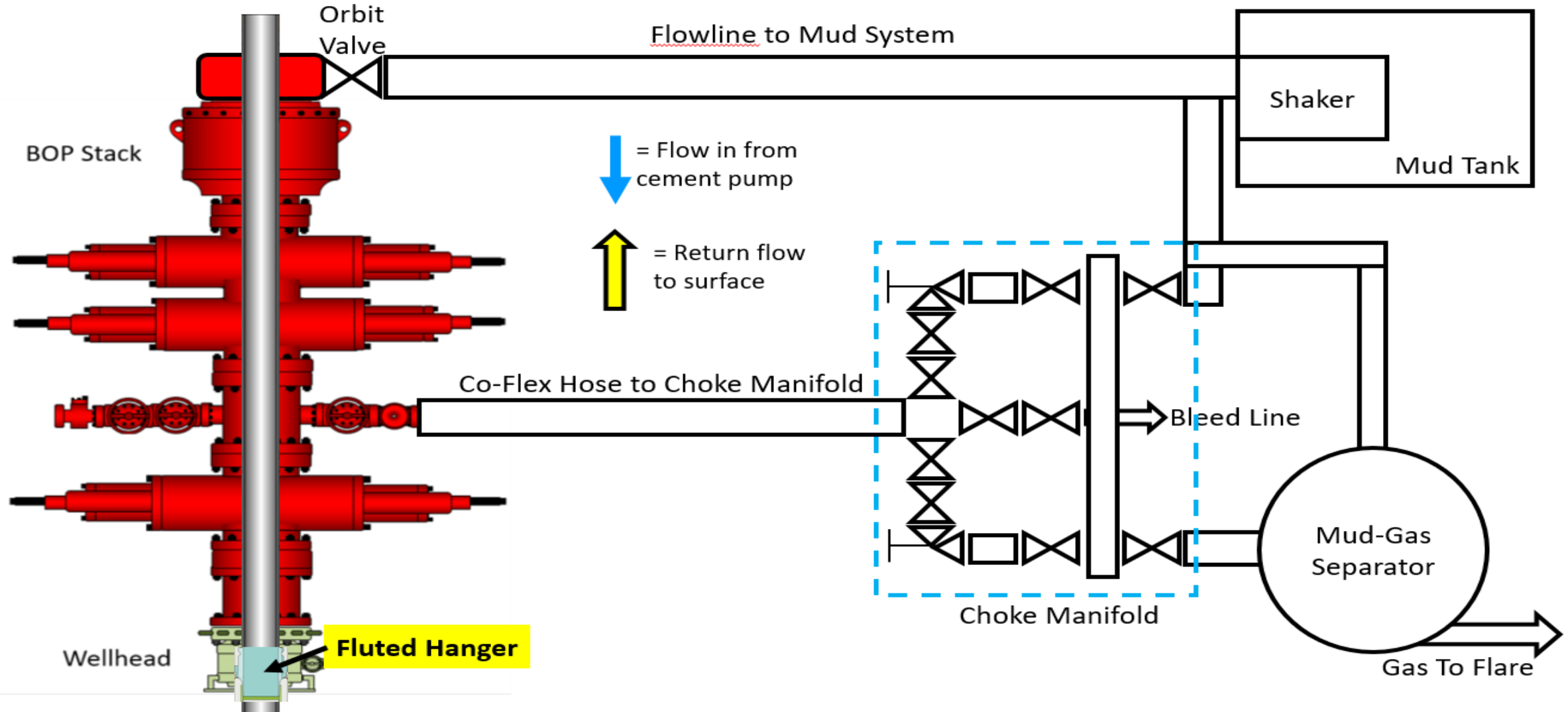


# Offline Cementing Equipment-Solid Body Mandrel Hanger

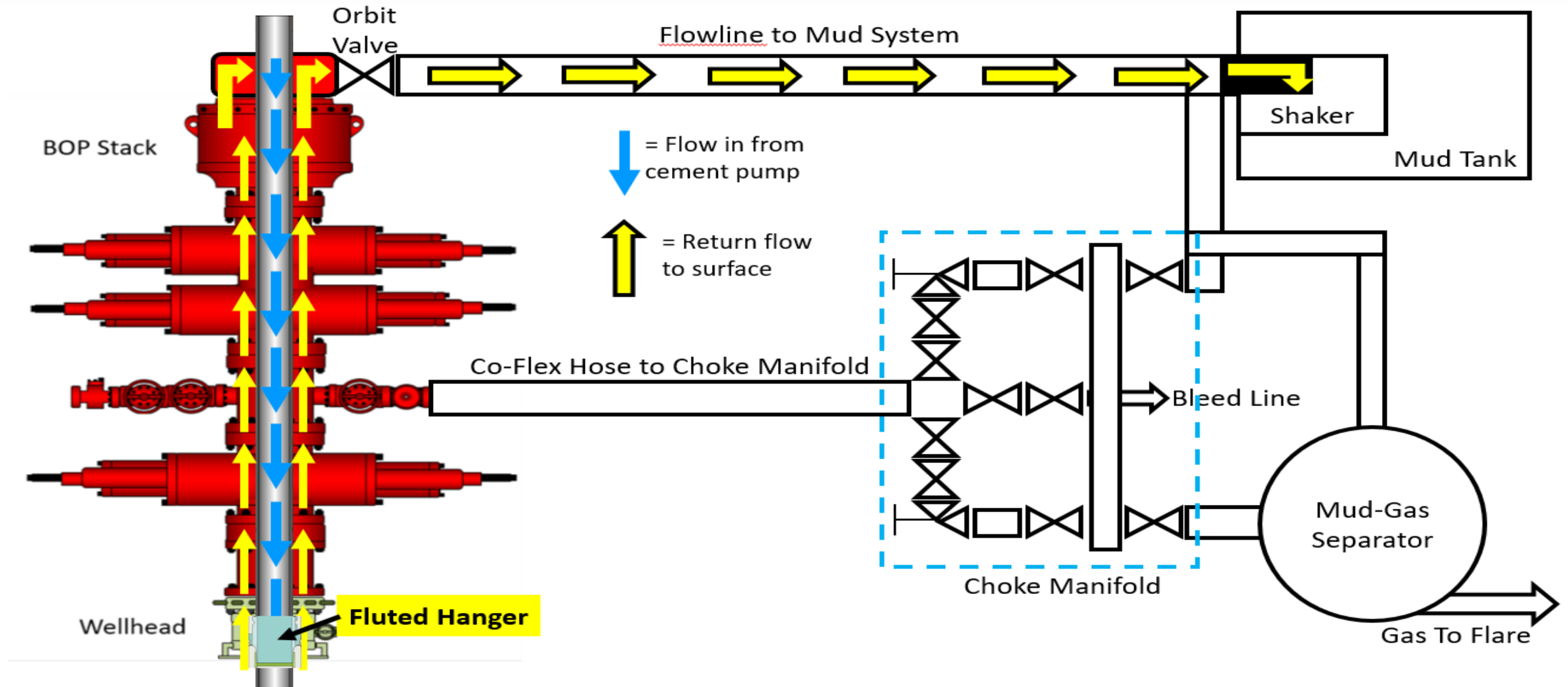
- Solid Body Mandrel Hanger allows for casing to be landed and pressure isolated in one step, **prior** to cementing
- Lockring is engaged to lock casing in place
- Casing is isolated and returns throughout cement job flow through the casing valves and through flowback iron independent of rig



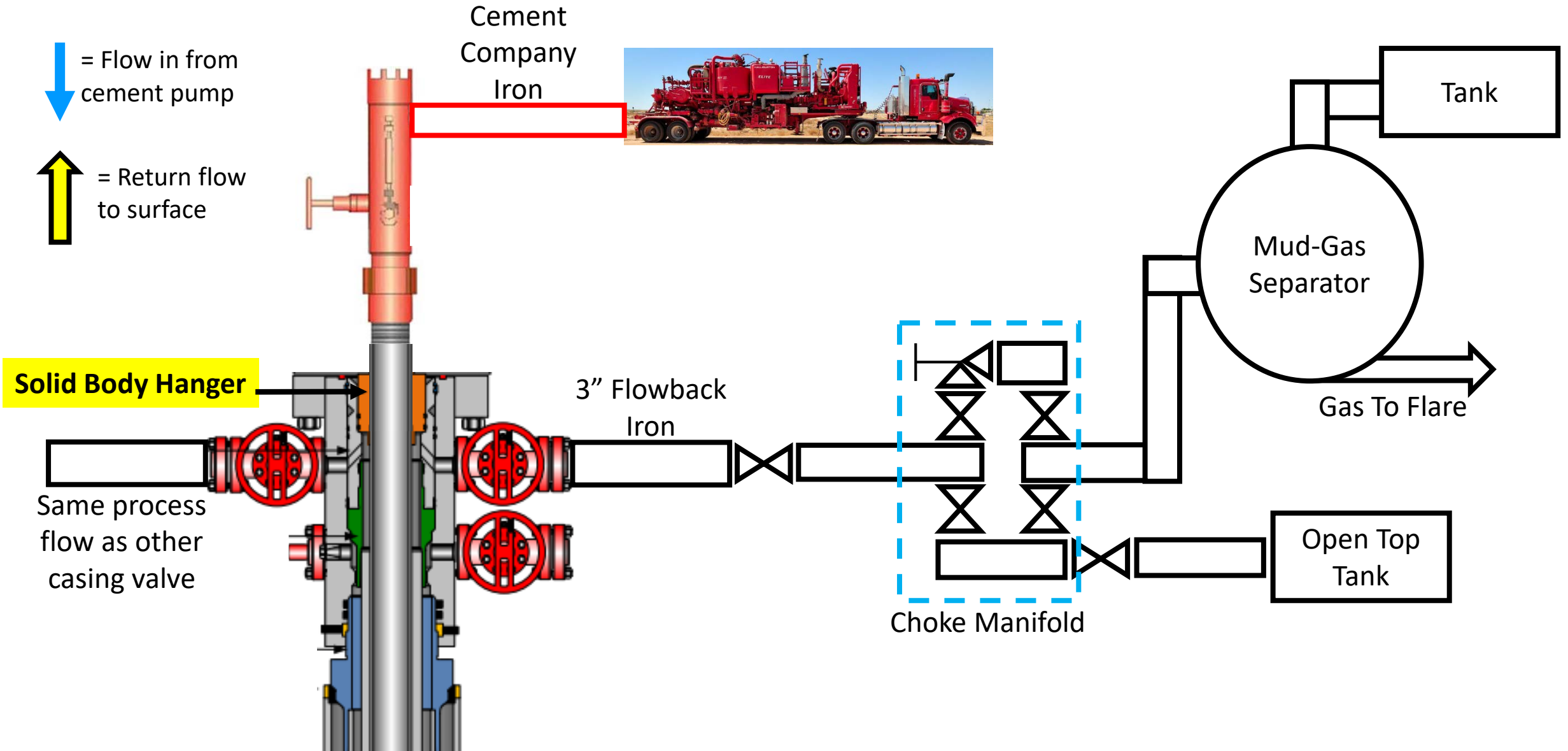
# Conventional Cementing Flow Diagram



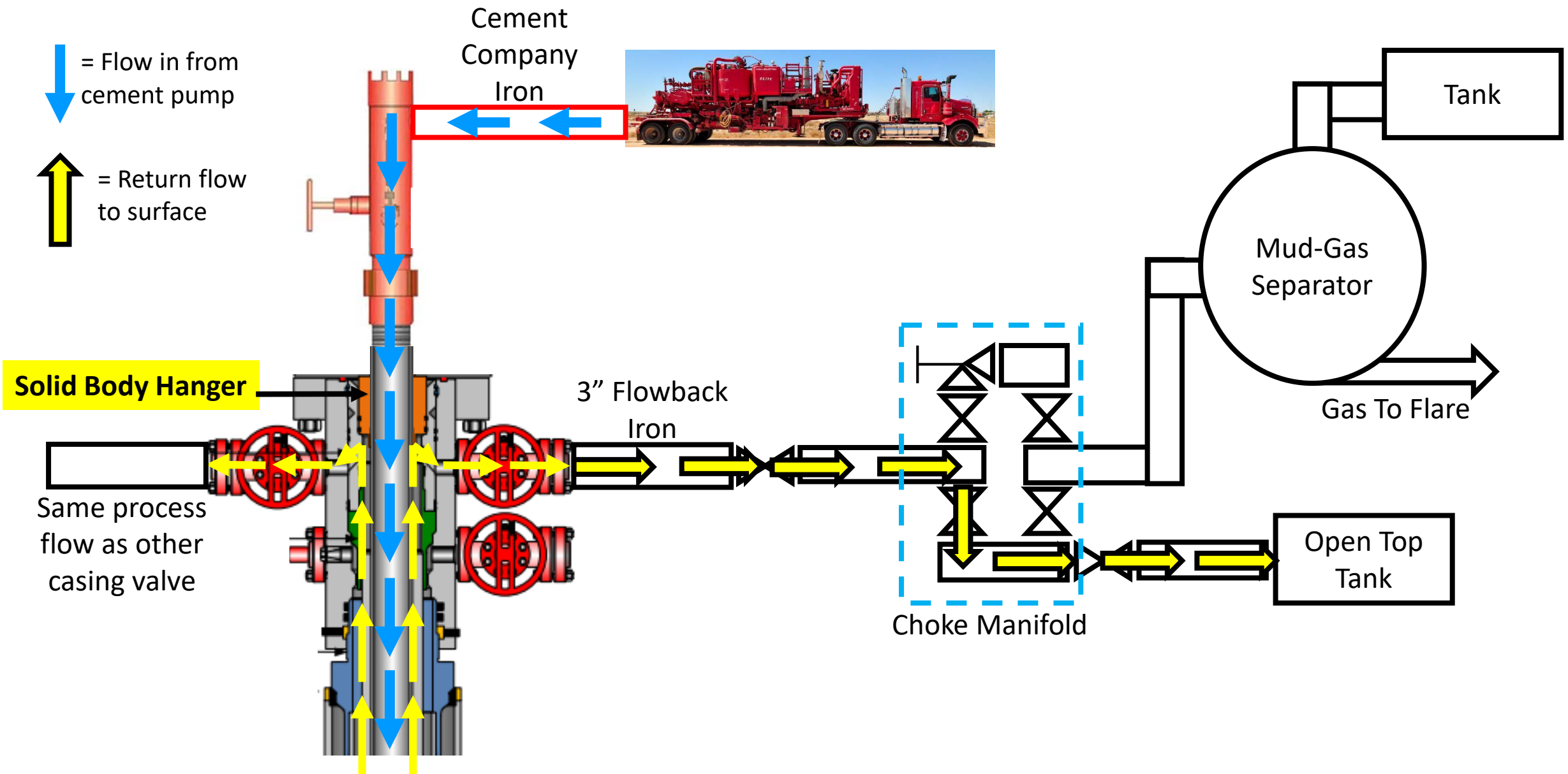
# Conventional Cementing Flow Diagram



# Offline Cementing -- Intermediate Casing

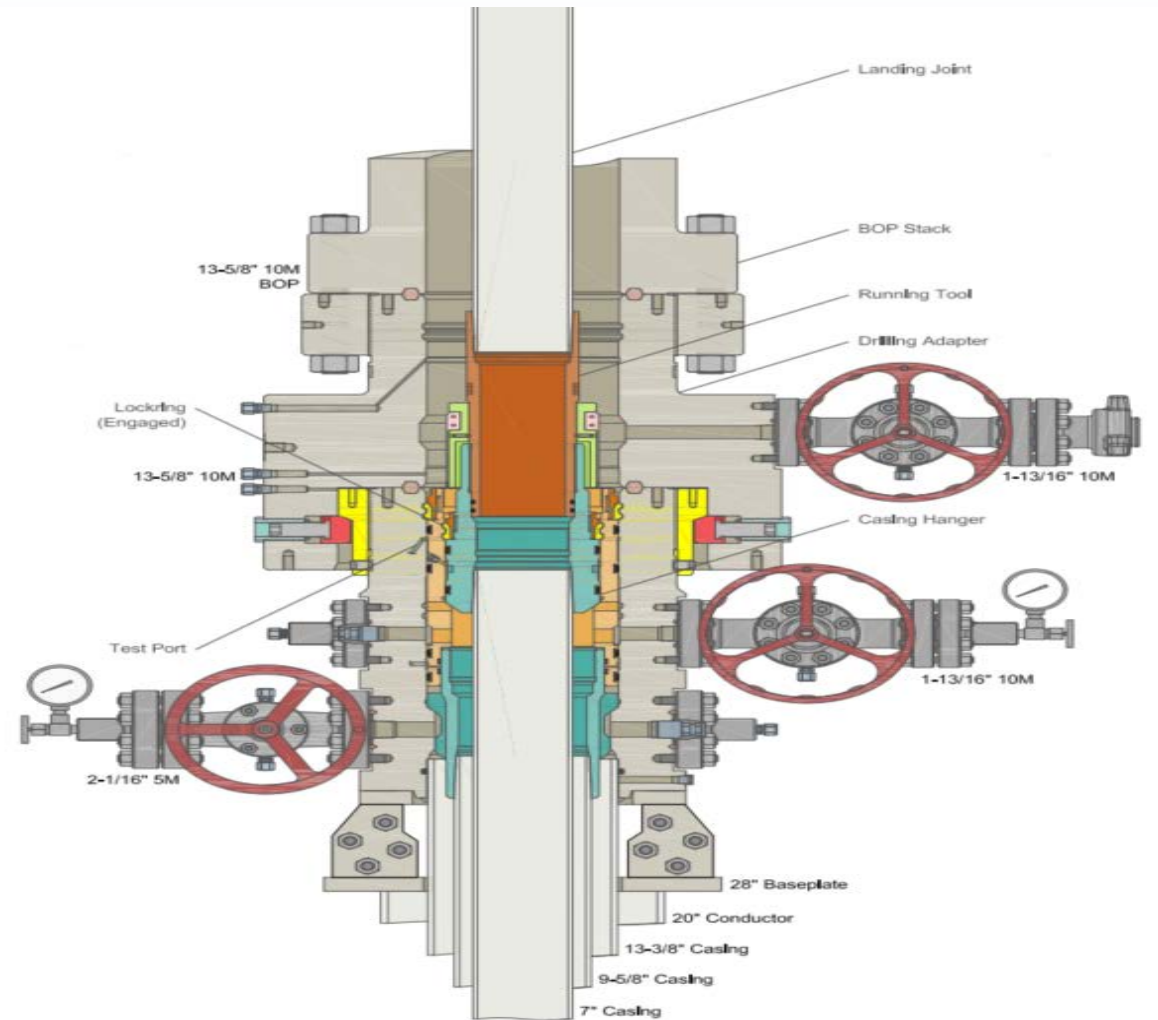


# Offline Cementing -- Intermediate Casing



# Offline Cementing Progression

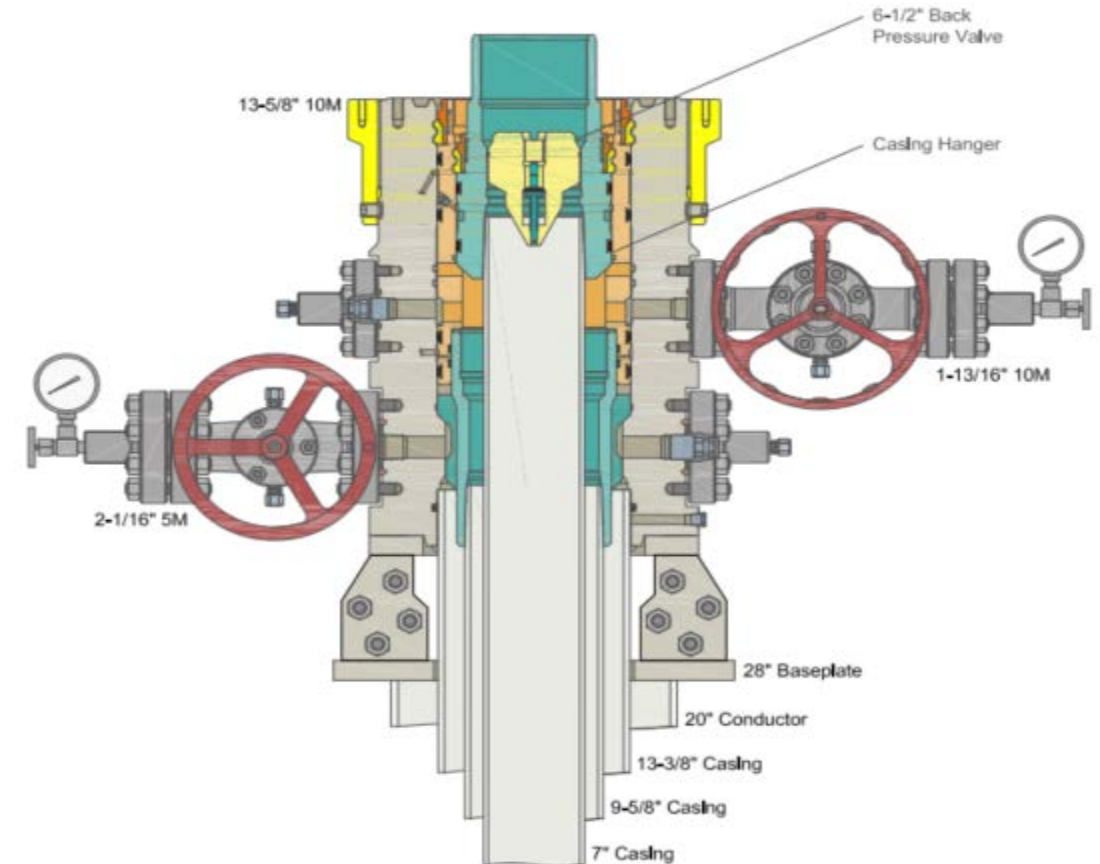
- Run 7" casing
- Land 11" nominal x 7" hanger
- Test casing hanger
- Energize 11" nom x 7" hanger lock ring and pull test
- Re-test casing hanger
- Barriers & Procedures after landing casing before setting packoff
  - 10K BOP & 5K Annular-Internal and Annular barrier
  - Kill Weight Fluid in annulus and casing (ensure well is static before setting solid body packoff) Internal and Annular barrier
    - **If well is not static we WILL NOT set solid body packoff.**
  - 10K float collar-Internal Barrier
  - 10k float Shoe-Internal Barrier
    - **After circulating a 1.5 casing capacities to ensure full column of mud and no entrained gas pumps will be shut off and floats checked for flow**





# Offline Cementing Progression

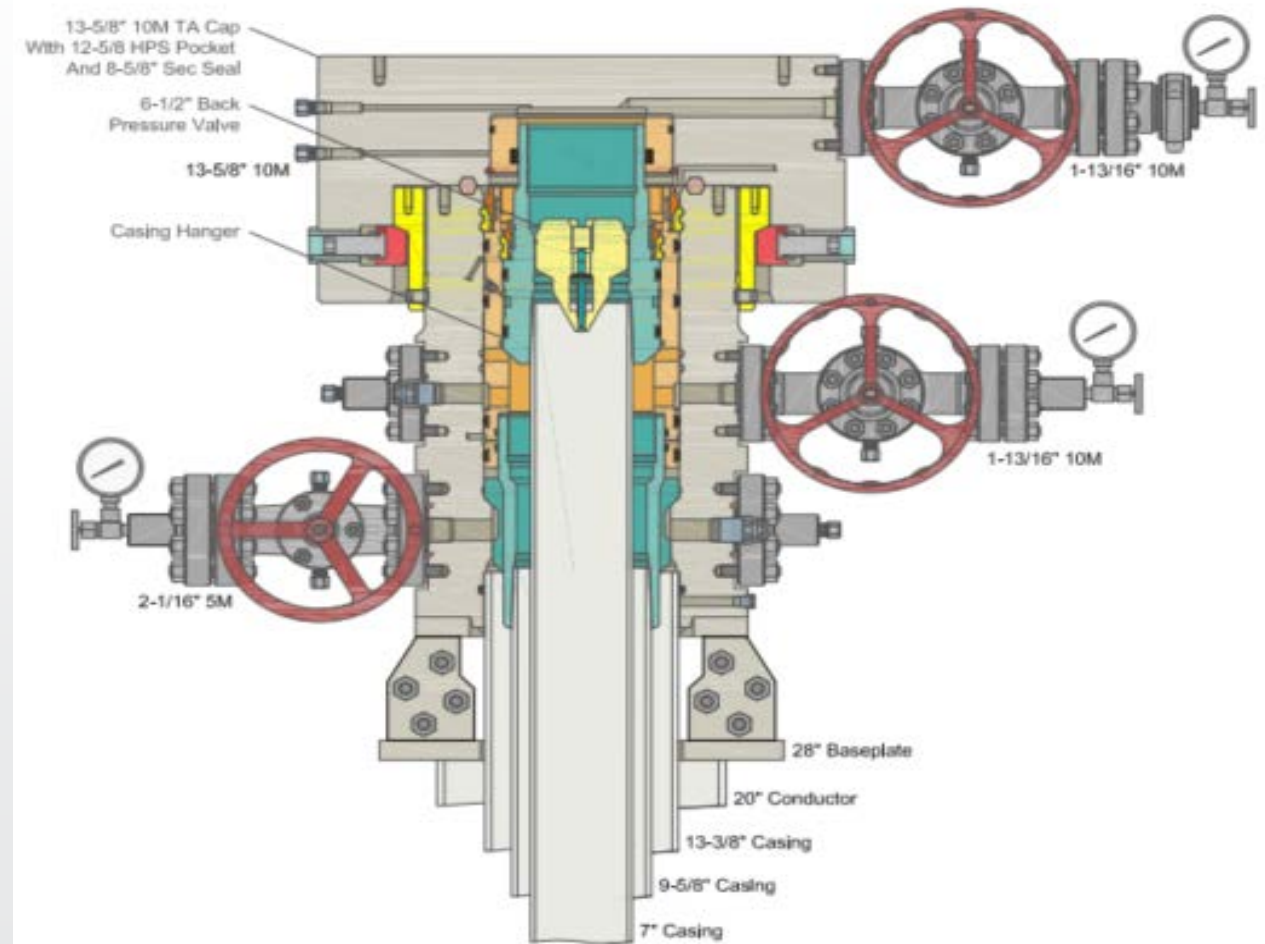
- Pick up running tool with 6-1/2" nominal Back Pressure valve run into well and set
- Barriers and procedures **BEFORE** removing BOP's
  - Kill weight Fluid in annulus-Annular Barrier
  - Solid Body Packoff-Annular Barrier
  - 10K Float Equipment-Internal Barrier
  - 10K Back pressure valve installed with BOP still on well-Internal Barrier
    - BPV will be tested before it arrives on location by Cactus





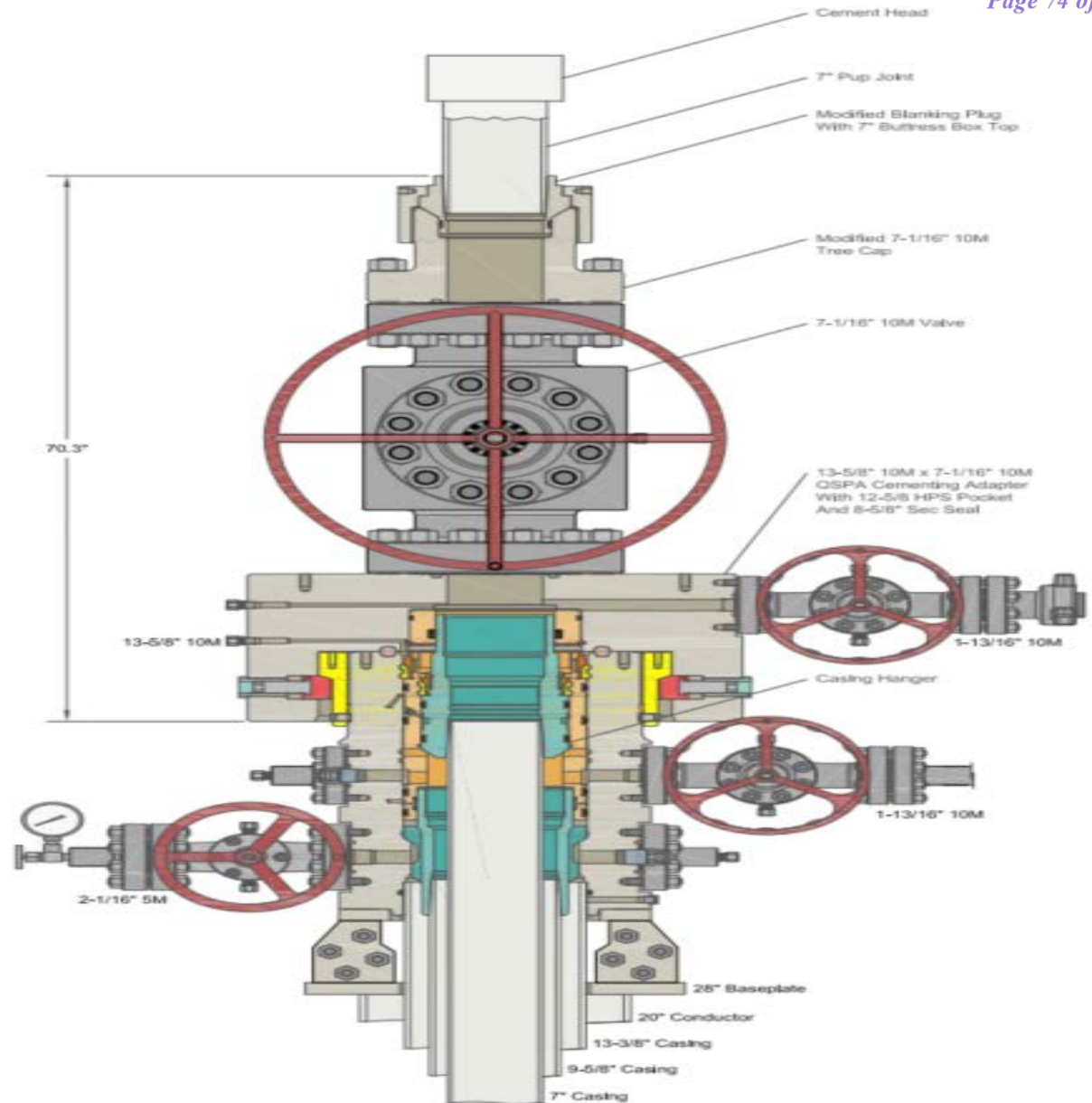
# Offline Cementing Progression

- Nipple down BOP
- Nipple up TA Cap and test
- Skid Drilling Rig
- Barriers and procedures **AFTER** removing BOP's
  - Kill weight Fluid in annulus-Annular Barrier
  - Solid Body Packoff-Annular Barrier
  - 10K Float Equipment-Internal Barrier
  - 10K Back pressure valve-Internal Barrier
  - 10K rated TA cap with Valve-Internal Barrier



# Offline Cementing Progression

- Check Pressure on TA Cap and remove
- Install adaptor with Gate valve for off line cementing and test
- Rig up flowback iron independent of rig
- Retrieve Back Pressure Valve
- Shut in well
- Rig up to cement and pump job
- NU 10K TA cap after cement job
- Barriers and procedures before rigging up cementing equipment
  - Address well and ensure no pressure on TA cap
    - Ability to pump into well through casing valves on backside to kill if needed
  - Kill weight Fluid in annulus-Annular barrier
  - Solid Body Packoff-Annular barrier
  - 10K Float Equipment-Internal Barrier
  - 10K Back pressure valve-Internal Barrier



# Offline Cementing Risk and COA Compliance

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- All testing and breaks tested in accordance with Onshore Order # 2 and COA's
- If no cement to surface, bradenhead squeeze still possible with offline cementing equipment
- Time from skid rig to offline cementing ops typically 24 hours
- **Conditions where we would not Offline Cement**
  - Well is flowing
- All wellhead equipment rated to 10K maintaining APD compliant
  - 10K flowback iron independent of rig circulating system
  - 10K Back Pressure Valve
  - 10K Gate Valve & TA combo for second barrier during operations
  - 10K 1-13/16 Valve coming off TA cap
  - 10K TA Cap



U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

## SUPO Data Report

09/19/2023

**APD ID:** 10400088889**Submission Date:** 10/30/2022**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** JAMES 29-32 FEDERAL COM**Well Number:** 32H**Well Type:** OIL WELL**Well Work Type:** Drill

Highlighted data  
reflects the most  
recent changes

[Show Final Text](#)

### Section 1 - Existing Roads

**Will existing roads be used?** YES**Existing Road Map:**

JAMES\_29\_32\_FEDERAL\_COM\_EXISTING\_PUBLIC\_ACCESS\_ROAD\_MAP\_20230405091939.pdf

**Existing Road Purpose:** ACCESS,FLUID TRANSPORT**Row(s) Exist?** YES

#### ROW ID(s)

**ID:** 137119**ID:** 138298**ID:** 35915**Do the existing roads need to be improved?** NO**Existing Road Improvement Description:****Existing Road Improvement Attachment:**

### Section 2 - New or Reconstructed Access Roads

**Will new roads be needed?** NO

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** JAMES 29-32 FEDERAL COM**Well Number:** 32H

### Section 3 - Location of Existing Wells

**Existing Wells Map?** YES**Attach Well map:**

JAMES\_29\_32\_FEDERAL\_COM\_WELL\_RADIUS\_MAP\_20230405092039.pdf

### Section 4 - Location of Existing and/or Proposed Production Facilities

**Submit or defer a Proposed Production Facilities plan?** SUBMIT**Production Facilities description:** Will use the existing James Fed 38H CTB located at the James Fed 35H well pad on exhibit M.**Production Facilities map:**

JAMES\_29\_32\_FEDERAL\_COM\_FLOW\_LINE\_ROW\_20230405092127.pdf

### Section 5 - Location and Types of Water Supply

#### Water Source Table

**Water source type:** MUNICIPAL

<b>Water source use type:</b>	SURFACE CASING
	INTERMEDIATE/PRODUCTION CASING

<b>Source latitude:</b>	<b>Source longitude:</b>
-------------------------	--------------------------

**Source datum:**

<b>Water source permit type:</b>	WATER RIGHT
----------------------------------	-------------

**Permit Number:**

<b>Water source transport method:</b>	TRUCKING
---------------------------------------	----------

**Source land ownership:** FEDERAL**Source transportation land ownership:** FEDERAL**Water source volume (barrels):** 5000**Source volume (acre-feet):** 0.64446548**Source volume (gal):** 210000

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** JAMES 29-32 FEDERAL COM**Well Number:** 32H**Water source and transportation**

JAMES\_29\_32\_FEDERAL\_COM\_PROPOSED\_FRAC\_WATER\_MAP\_20230405092234.pdf

JAMES\_29\_32\_FEDERAL\_COM\_PROPOSED\_FRESH\_WATER\_MAP\_20230405092234.pdf

**Water source comments:** Attached are 2 proposed water routes, fresh water would be trucked, frac water would be moved using a 12" layflat line.**New water well?** N**New Water Well Info****Well latitude:****Well Longitude:****Well datum:****Well target aquifer:****Est. depth to top of aquifer(ft):****Est thickness of aquifer:****Aquifer comments:****Aquifer documentation:****Well depth (ft):****Well casing type:****Well casing outside diameter (in.):****Well casing inside diameter (in.):****New water well casing?****Used casing source:****Drilling method:****Drill material:****Grout material:****Grout depth:****Casing length (ft.):****Casing top depth (ft.):****Well Production type:****Completion Method:****Water well additional information:****State appropriation permit:****Additional information attachment:****Section 6 - Construction Materials****Using any construction materials:** YES**Construction Materials description:** Caliche will be obtained from the actual well site if available. If not available onsite caliche will be obtained from Swag caliche pit located in NE/NE of Sec 29.**Construction Materials source location**

JAMES\_29\_32\_FEDERAL\_COM\_CALICHE\_MAP\_20230405092451.pdf

**Section 7 - Methods for Handling****Waste type:** DRILLING**Waste content description:** Drilling Fluids, drill cuttings, water and other waste produced from the well during drilling operations.**Amount of waste:** 15000 barrels**Waste disposal frequency :** Weekly**Safe containment description:** N/A

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** JAMES 29-32 FEDERAL COM**Well Number:** 32H**Safe containmant attachment:****Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL**Disposal type description:****Disposal location description:** Haul to R360 Environmental Solutions, 4507 Carlsbad Hwy, Hobbs, NM 88240**Waste type:** SEWAGE**Waste content description:** Human Waste**Amount of waste:** 300 gallons**Waste disposal frequency :** Weekly**Safe containment description:** Waste will be properly contained and disposed of properly at a state approved disposal facility.**Safe containmant attachment:****Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE**Disposal type description:****Disposal location description:** A licensed 3rd party contractor will be used to haul and dispose human waste to City of Toyah TX waste water facility.**Waste type:** GARBAGE**Waste content description:** Garbage and trash produced during drilling and completion operations**Amount of waste:** 32500 pounds**Waste disposal frequency :** Weekly**Safe containment description:** N/A**Safe containmant attachment:****Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL**Disposal type description:****Disposal location description:** A licensed 3rd party hauls trash to Lea County Landfill**Reserve Pit****Reserve Pit being used?** NO**Temporary disposal of produced water into reserve pit?** NO**Reserve pit length (ft.)** **Reserve pit width (ft.)****Reserve pit depth (ft.)** **Reserve pit volume (cu. yd.)****Is at least 50% of the reserve pit in cut?****Reserve pit liner****Reserve pit liner specifications and installation description**



**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** JAMES 29-32 FEDERAL COM**Well Number:** 32H

### Cuttings Area

**Cuttings Area being used?** NO**Are you storing cuttings on location?** N**Description of cuttings location****Cuttings area length (ft.)****Cuttings area width (ft.)****Cuttings area depth (ft.)****Cuttings area volume (cu. yd.)****Is at least 50% of the cuttings area in cut?****WCuttings area liner****Cuttings area liner specifications and installation description**

### Section 8 - Ancillary

**Are you requesting any Ancillary Facilities?:** N**Ancillary Facilities****Comments:**

### Section 9 - Well Site

**Well Site Layout Diagram:**

JAMES\_29\_FEDERAL\_COM\_W2E2\_Well\_Pad\_Layout\_20221029123614.pdf

**Comments:**

### Section 10 - Plans for Surface

**Type of disturbance:** New Surface Disturbance**Multiple Well Pad Name:** James 29 Fed Com W2E2**Multiple Well Pad Number:** 39H**Recontouring**

JAMES\_29\_FEDERAL\_COM\_Reclamation\_plat\_20221029123834.pdf

**Drainage/Erosion control construction:** To control and prevent potentially contaminated precipitation from leaving the pad site, a perimeter berm and settlement pond will be installed. Contaminated water will be removed from pond, stored in waste tanks, and disposed of at a state approved facility. Standing water or puddles will not be allowed. Drainage ditches would be established and maintained on the pad and along access roads to divert water away from operations. Natural drainage areas disturbed during construction would be re-contoured to near original condition prior to construction. Erosion Control Best Management Practices would be used where necessary and consist of seeding, fiber rolls, water bars, silt fences, and temporary diversion dikes. Areas disturbed during construction that are no longer needed for operations would be obliterated, re-contoured to near original condition prior to construction. Erosion Control Best Management Practices would be used where necessary and consist of seeding, fiber rolls, water bars, silt fences, and temporary diversion dikes. Areas disturbed during construction that are no longer needed for



**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** JAMES 29-32 FEDERAL COM**Well Number:** 32H

operations would be obliterated, re-contoured, and reclaimed to near original condition to re-establish natural drainage.

**Drainage/Erosion control reclamation:** All disturbed and re-contoured areas would be reseeded according to specifications. Approved seed mixtures would be certified weed free and consist of grasses, forbs, or shrubs similar to the surrounding area. Compacted soil areas may need to be obliterated and reclaimed to near natural conditions by re-contouring all slopes to facilitate and re-establish natural drainage.

<b>Well pad proposed disturbance (acres):</b> 4.459	<b>Well pad interim reclamation (acres):</b> 1.824	<b>Well pad long term disturbance (acres):</b> 2.635
<b>Road proposed disturbance (acres):</b> 0	<b>Road interim reclamation (acres):</b> 0	<b>Road long term disturbance (acres):</b> 0
<b>Powerline proposed disturbance (acres):</b> 0	<b>Powerline interim reclamation (acres):</b> 0	<b>Powerline long term disturbance (acres):</b> 0
<b>Pipeline proposed disturbance (acres):</b> 1.553	<b>Pipeline interim reclamation (acres):</b> 0	<b>Pipeline long term disturbance (acres):</b> 1.553
<b>Other proposed disturbance (acres):</b> 0	<b>Other interim reclamation (acres):</b> 0	<b>Other long term disturbance (acres):</b> 0
<b>Total proposed disturbance:</b> 6.012	<b>Total interim reclamation:</b> 1.824	<b>Total long term disturbance:</b> 4.188

**Disturbance Comments:** Surface Ownership for pipeline disturbance is BLM.

**Reconstruction method:** After well plugging, all disturbed areas would be returned to the original contour or a contour that blends with the surrounding landform including roads unless the surface owner requests that they be left intact. In consultation with the surface owners it will be determined if any gravel or similar materials used to reinforce an area are to be removed, buried, or left in place during final reclamation. Salvaged topsoil, if any, would be re-spread evenly over the surfaces to be re-vegetated. As necessary, the soil surface would be prepared to provide a seedbed for re-establishment of desirable vegetation. Site preparation may include gouging, scarifying, dozer track-walking, mulching, or fertilizing. Reclamation, Re-vegetation, and Drainage: All disturbed and re-contoured areas would be reseeded using techniques outlined under Phase I and II of this plan or as specified by the land owner. Approved seed mixtures would be certified weed free and consist of grasses, forbs, or shrubs similar to the surrounding area. Compacted soil areas may need to be obliterated and reclaimed to near natural conditions by re-contouring all slopes to facilitate and re-establish natural drainage.

**Topsoil redistribution:** The original stock piled topsoil, if any, will be spread evenly over the areas being reclaimed and the original landform will be restored for all disturbed areas including well pad, production facilities, roads, pipelines, and power line corridors as close as possible to the original topography. The location will then be seeded

**Soil treatment:** The soil surface would be prepared to provide a seedbed for reestablishment of desirable vegetation. Establish control of erosion and invasion of non-native plants to reestablish plant community.

**Existing Vegetation at the well pad:** N/A

**Existing Vegetation at the well pad**

**Existing Vegetation Community at the road:** N/A

**Existing Vegetation Community at the road**

**Existing Vegetation Community at the pipeline:** N/A

**Existing Vegetation Community at the pipeline**

**Existing Vegetation Community at other disturbances:** N/A

**Existing Vegetation Community at other disturbances**

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** JAMES 29-32 FEDERAL COM**Well Number:** 32H**Non native seed used?** N**Non native seed description:****Seedling transplant description:****Will seedlings be transplanted for this project?** N**Seedling transplant description****Will seed be harvested for use in site reclamation?** N**Seed harvest description:****Seed harvest description attachment:****Seed****Seed Table****Seed Summary****Total pounds/Acre:****Seed Type****Pounds/Acre****Seed reclamation****Operator Contact/Responsible Official****First Name:****Last Name:****Phone:****Email:****Seedbed prep:****Seed BMP:****Seed method:****Existing invasive species?** N**Existing invasive species treatment description:****Existing invasive species treatment****Weed treatment plan description:** N/A**Weed treatment plan****Monitoring plan description:** N/A**Monitoring plan****Success standards:** N/A

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** JAMES 29-32 FEDERAL COM

**Well Number:** 32H

**Pit closure description:** N/A

**Pit closure attachment:**

## Section 11 - Surface

**Disturbance type:** OTHER

**Describe:** CTB

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:**

**USFS Ranger District:**

**Disturbance type:** WELL PAD

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** JAMES 29-32 FEDERAL COM

**Well Number:** 32H

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:**

**USFS Ranger District:**

**Disturbance type:** EXISTING ACCESS ROAD

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:**

**USFS Ranger District:**

**Disturbance type:** PIPELINE

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** JAMES 29-32 FEDERAL COM**Well Number:** 32H**NPS Local Office:****State Local Office:****Military Local Office:****USFWS Local Office:****Other Local Office:****USFS Region:****USFS Forest/Grassland:****USFS Ranger District:****Disturbance type:** OTHER**Describe:** OVERHEAD POWER LINE**Surface Owner:** BUREAU OF LAND MANAGEMENT**Other surface owner description:****BIA Local Office:****BOR Local Office:****COE Local Office:****DOD Local Office:****NPS Local Office:****State Local Office:****Military Local Office:****USFWS Local Office:****Other Local Office:****USFS Region:****USFS Forest/Grassland:****USFS Ranger District:****Section 12 - Other****Right of Way needed?** N**Use APD as ROW?****ROW Type(s):****ROW**

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** JAMES 29-32 FEDERAL COM

**Well Number:** 32H

**SUPO Additional Information:** Please attached SUPO with additional attachments.

**Use a previously conducted onsite?** Y

**Previous Onsite information:** 6/17/2022 with Caroline Kaufman- BLM and Todd Miller - Coterra.

**Other SUPO**

JAMES\_29\_32\_FEDERAL\_COM\_SUPO\_20230428105923.pdf

JAMES\_19\_20\_FEDERAL\_POWER\_LINE\_NETWORK\_\_REV\_4\_26\_2023\_BG\_Edits\_20230428105935.pdf



U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

## PWD Data Report

09/19/2023

**APD ID:** 10400088889

**Submission Date:** 10/30/2022

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** JAMES 29-32 FEDERAL COM

**Well Number:** 32H

**Well Type:** OIL WELL

**Well Work Type:** Drill

### Section 1 - General

Would you like to address long-term produced water disposal? NO

### Section 2 - Lined

Would you like to utilize Lined Pit PWD options? N

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Lined pit PWD on or off channel:**

**Lined pit PWD discharge volume (bbl/day):**

**Lined pit**

**Pit liner description:**

**Pit liner manufacturers**

**Precipitated solids disposal:**

**Describe precipitated solids disposal:**

**Precipitated solids disposal**

**Lined pit precipitated solids disposal schedule:**

**Lined pit precipitated solids disposal schedule**

**Lined pit reclamation description:**

**Lined pit reclamation**

**Leak detection system description:**

**Leak detection system**

**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** JAMES 29-32 FEDERAL COM**Well Number:** 32H**Lined pit Monitor description:****Lined pit Monitor****Lined pit: do you have a reclamation bond for the pit?****Is the reclamation bond a rider under the BLM bond?****Lined pit bond number:****Lined pit bond amount:****Additional bond information**

### Section 3 - Unlined

**Would you like to utilize Unlined Pit PWD options?** N**Produced Water Disposal (PWD) Location:****PWD disturbance (acres):****PWD surface owner:****Unlined pit PWD on or off channel:****Unlined pit PWD discharge volume (bbl/day):****Unlined pit****Precipitated solids disposal:****Describe precipitated solids disposal:****Precipitated solids disposal****Unlined pit precipitated solids disposal schedule:****Unlined pit precipitated solids disposal schedule****Unlined pit reclamation description:****Unlined pit reclamation****Unlined pit Monitor description:****Unlined pit Monitor****Do you propose to put the produced water to beneficial use?****Beneficial use user****Estimated depth of the shallowest aquifer (feet):****Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?****TDS lab results:****Geologic and hydrologic****State****Unlined Produced Water Pit Estimated****Unlined pit: do you have a reclamation bond for the pit?**



**Operator Name:** CIMAREX ENERGY COMPANY**Well Name:** JAMES 29-32 FEDERAL COM**Well Number:** 32H**Is the reclamation bond a rider under the BLM bond?****Unlined pit bond number:****Unlined pit bond amount:****Additional bond information****Section 4 -****Would you like to utilize Injection PWD options?** N**Produced Water Disposal (PWD) Location:****PWD surface owner:****PWD disturbance (acres):****Injection PWD discharge volume (bbl/day):****Injection well mineral owner:****Injection well type:****Injection well number:****Injection well name:****Assigned injection well API number?****Injection well API number:****Injection well new surface disturbance (acres):****Minerals protection information:****Mineral protection****Underground Injection Control (UIC) Permit?****UIC Permit****Section 5 - Surface****Would you like to utilize Surface Discharge PWD options?** N**Produced Water Disposal (PWD) Location:****PWD surface owner:****PWD disturbance (acres):****Surface discharge PWD discharge volume (bbl/day):****Surface Discharge NPDES Permit?****Surface Discharge NPDES Permit attachment:****Surface Discharge site facilities information:****Surface discharge site facilities map:****Section 6 -****Would you like to utilize Other PWD options?** N**Produced Water Disposal (PWD) Location:****PWD surface owner:****PWD disturbance (acres):****Other PWD discharge volume (bbl/day):**

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** JAMES 29-32 FEDERAL COM

**Well Number:** 32H

**Other PWD type description:**

**Other PWD type**

**Have other regulatory requirements been met?**

**Other regulatory requirements**



U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

## Bond Info Data

09/19/2023

**APD ID:** 10400088889

**Submission Date:** 10/30/2022

Highlighted data  
reflects the most  
recent changes

**Operator Name:** CIMAREX ENERGY COMPANY

**Well Name:** JAMES 29-32 FEDERAL COM

**Well Number:** 32H

[Show Final Text](#)

**Well Type:** OIL WELL

**Well Work Type:** Drill

### Bond

**Federal/Indian APD:** FED

**BLM Bond number:** NMB001188

**BIA Bond number:**

**Do you have a reclamation bond?** NO

**Is the reclamation bond a rider under the BLM bond?**

**Is the reclamation bond BLM or Forest Service?**

**BLM reclamation bond number:**

**Forest Service reclamation bond number:**

**Forest Service reclamation bond**

**Reclamation bond number:**

**Reclamation bond amount:**

**Reclamation bond rider amount:**

**Additional reclamation bond information**

**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 266644

CONDITIONS

Operator: CIMAREX ENERGY CO. 6001 Deauville Blvd Midland, TX 79706	OGRID: 215099
	Action Number: 266644
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104	9/21/2023
pkautz	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	9/21/2023
pkautz	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	9/21/2023
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing	9/21/2023
pkautz	IF ON ANY STRING CEMENT DOES NOT CIRCULATE, A RCBL MUST BE RUN ON THAT STRING OF CASING.	9/21/2023