

Well Name: DOS EQUIS 11-14 FEDERAL COM	Well Location: T24S / R32E / SEC 11 / NENE / 32.238377 / -103.640554	County or Parish/State: LEA / NM
Well Number: 62H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM02889	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002547083	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

Notice of Intent

Sundry ID: 2757468

Type of Submission: Notice of Intent **Type of Action:** APD Change

Date Sundry Submitted: 10/23/2023 **Time Sundry Submitted:** 09:12

Date proposed operation will begin: 11/01/2023

Procedure Description: Cimarex Energy Co. respectfully requests to change the approved APD as follows: SHL/KOP Current: Unit B, Sec 11, T24S, R32E, 384 FNL & 1156 FEL SHL New: Unit A, Sec 11, T24S, R32E, 204 FNL & 1257 FEL LP/FTP Current: Unit B, Sec 11, T24S, R32E, 384 FNL & 843 FEL LP/FTP/KOP New: Unit A, Sec 11, T24S, R32E, 100 FNL & 450 FEL BHL/LTP Current: Unit P, Sec 14, T24S, R32E 100 FSL & 843 FEL BHL/LTP New: Unit P, Sec 14, T24S, R32E 100 FSL & 450 FEL TVD/TD Current: 12,300 TVD & 22,200 MD TVD/TD New: 12,380 TVD & 22,561 MD

NOI Attachments

Procedure Description

Combined_Dos_Equis_11_14_Fed_Com_62H_Sundry_Attachments_10232023_20231030101414.pdf

Received by OCD: 11/13/2023 2:46:39 PM

Page 2 of 26

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Lease Number: NMNM02889	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002547083	Well Status: Approved Application for Permit to Drill	Operator: CIMAREX ENERGY COMPANY

Conditions of Approval

Specialist Review
Dos_Equis_11_14_Fed_Com_62H_COA_20231107063321.pdf

Operator

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: SHELLY BOWEN	Signed on: OCT 30, 2023 10:14 AM
Name: CIMAREX ENERGY COMPANY	
Title: Regulatory Analyst	
Street Address: 6001 DEAUVILLE BLVD STE 300N	
City: MIDLAND	State: TX
Phone: (432) 620-1644	
Email address: DL_PBUREGULATORY@COTERRA.COM	

Field

Representative Name:		
Street Address:		
City:	State:	Zip:
Phone:		
Email address:		

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS	BLM POC Title: Petroleum Engineer
BLM POC Phone: 5752342234	BLM POC Email Address: cwalls@blm.gov
Disposition: Approved	Disposition Date: 11/13/2023
Signature: Chris Walls	

Form 3160-5
(June 2019)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

FORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2021

5. Lease Serial No.

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.

9. API Well No.

10. Field and Pool or Exploratory Area

11. Country or Parish, State

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well
☐ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

3a. Address 3b. Phone No. (include area code)

4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description)

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

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

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

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)

Title

Signature

Date

THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

Date

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

Office

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

(Instructions on page 2)

GENERAL INSTRUCTIONS

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

SPECIFIC INSTRUCTIONS

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

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

NOTICES

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

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

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

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

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

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

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

Response to this request is mandatory.

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

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

Additional Information

Location of Well

0. SHL: NENE / 648 FNL / 2617 FEL / TWSP: 24S / RANGE: 32E / SECTION: 11 / LAT: 32.238377 / LONG: -103.640554 (TVD: 0 feet, MD: 0 feet)

PPP: NENE / 0 FNL / 843 FEL / TWSP: 24S / RANGE: 32E / SECTION: 14 / LAT: 32.224881 / LONG: -103.639558 (TVD: 12322 feet, MD: 17031 feet)

PPP: NESE / 2642 FNL / 843 FEL / TWSP: 24S / RANGE: 32E / SECTION: 11 / LAT: 32.232178 / LONG: -103.639553 (TVD: 12333 feet, MD: 14376 feet)

PPP: NENE / 1112 FNL / 843 FEL / TWSP: 24S / RANGE: 32E / SECTION: 11 / LAT: 32.236369 / LONG: -103.63955 (TVD: 12333 feet, MD: 14376 feet)

BHL: SESE / 100 FSL / 2130 FWL / TWSP: 24S / RANGE: 32E / SECTION: 14 / LAT: 32.210672 / LONG: -103.639564 (TVD: 12380 feet, MD: 22561 feet)

CONFIDENTIAL

Dos Equis 11-14 Fed Com 62H – API 30-025-47083

Cimarex Energy Co. respectfully requests to change the approved APD as follows:

SHL/KOP Current: Unit B, Sec 11, T24S, R32E, 384 FNL & 1156 FEL

SHL New: Unit A, Sec 11, T24S, R32E, 204 FNL & 1257 FEL

LP/FTP Current: Unit B, Sec 11, T24S, R32E, 384 FNL & 843 FEL

LP/FTP/KOP New: Unit A, Sec 11, T24S, R32E, 100 FNL & 450 FEL

BHL/LTP Current: Unit P, Sec 14, T24S, R32E 100 FSL & 843 FEL

BHL/LTP New: Unit P, Sec 14, T24S, R32E 100 FSL & 450 FEL

TVD/TD Current: 12,300 TVD & 22,200 MD

TVD/TD New: 12,380 TVD & 22,561 MD

Variance Request #1 Coterra requests permission to skid the rig to the next well on the pad to begin operations immediately after the cement job for the surface casing has been completed. After the cement job is completed, no operations on the subject well will be conducted until at least 8 hours have elapsed and both lead and tail slurries have achieved 500 psi compressive strength. While cement cures, the surface casing of the subject well will be suspended in the well by a mandrel and landing ring system, which is independent from the rig and ensures that casing remains centered while the rig is active on other wells.

Variance Request #2: Coterra requests approval to execute an offline cement job on the 7 5/8" intermediate casing. The procedure will include the following:

- Land casing in the wellhead with a solid-body casing hanger.
- Install backpressure valve.
- Skid rig to next well in drilling sequence.
- Check for pressure and remove backpressure valve.
- Install cement head and risers from casing valves.
- Circulate down casing taking returns through appropriately designs flowback equipment.
- Pump lead and tail cement.
- Displace cement and land plug.
- Verify floats are holding.
- Rig down cement crew.
- Install backpressure valve and TA cap.

Variance Request #3: Request approval to omit the DV tool from the 7-5/8 intermediate casing string. In lieu of a DV tool, Coterra will retain the option to pump down the 7-5/8 annulus through casing valves with the appropriate cement slurry in the event returns to surface are not achieved on the primary job.

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

¹ API Number 30-025-47083	² Pool Code 98309	³ Pool Name WC-025 G-08 S243213C ; Wolfcamp
⁴ Property Code 322999	⁵ Property Name DOS EQUIS 11-14 FEDERAL COM	
⁷ OGBD No. 215099	⁸ Operator Name CIMAREX ENERGY CO.	⁶ Well Number 62H
		⁹ Elevation 3603.5'

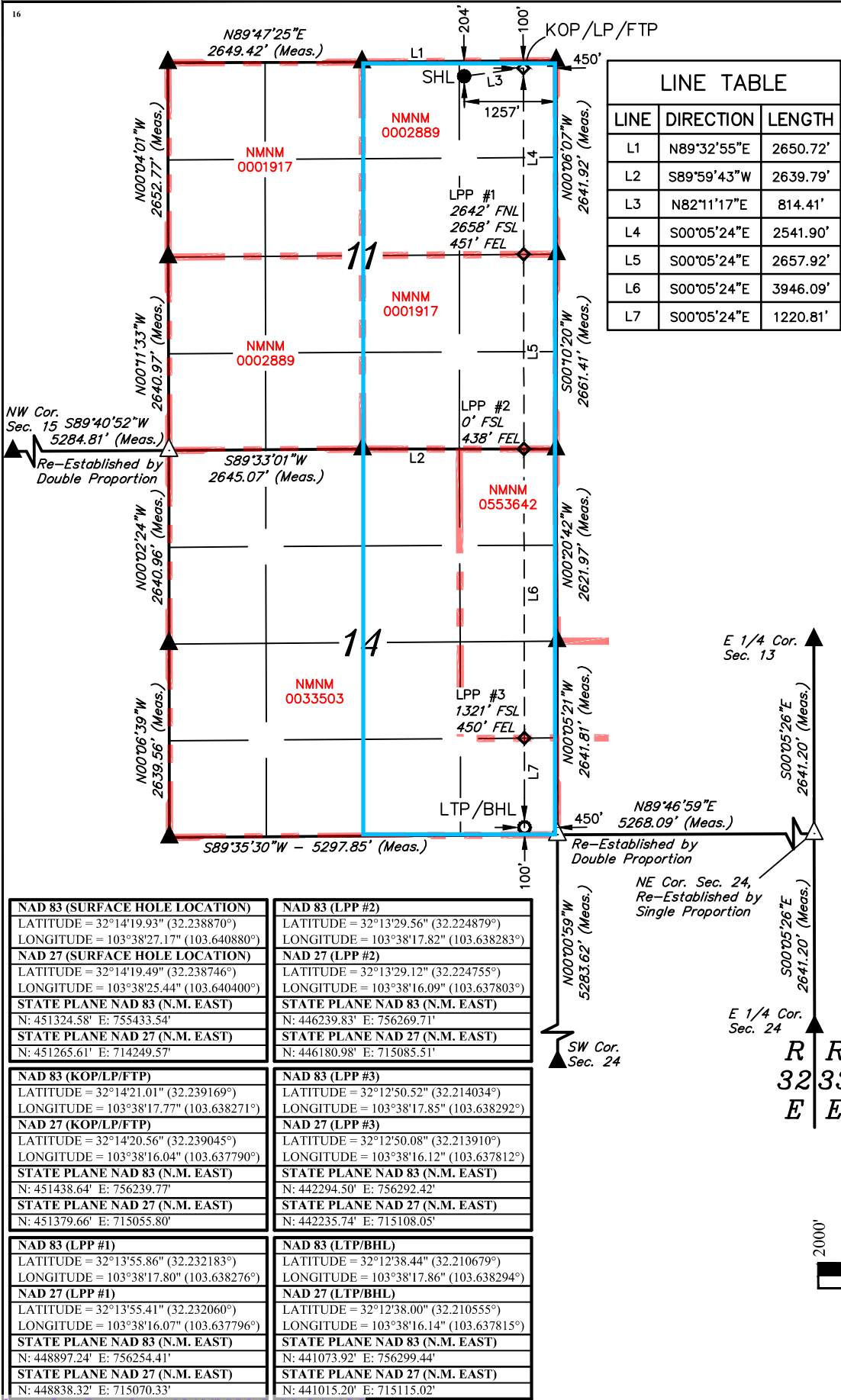
¹⁰ Surface Location

UL or lot no. A	Section 11	Township 24S	Range 32E	Lot Idn	Feet from the 204	North/South line NORTH	Feet from the 1257	East/West line EAST	County LEA
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¹¹ Bottom Hole Location If Different From Surface

UL or lot no. P	Section 14	Township 24S	Range 32E	Lot Idn	Feet from the 100	North/South line SOUTH	Feet from the 450	East/West line EAST	County LEA
¹² Dedicated Acres 640		¹³ Joint or Infill		¹⁴ Consolidation Code		¹⁵ 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.



1. Geological Formations

TVD of target 12,400

Pilot Hole TD N/A

MD at TD 22,567

Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	1145	N/A	
Top of Salt	1514	Hydrocarbons	
Salt Bottom	4904	N/A	
Cherry Canyon	5801	N/A	
Brushy Canyon	7143	Hydrocarbons	
Bone Spring	8840	Hydrocarbons	
Wolfcamp	12400	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
14 3/4	0	1216	1216	10-3/4"	40.50	J-55	BT&C	2.84	5.63	12.77
9 7/8	0	12623	12361	7-5/8"	29.70	L-80	BT&C	2.48	1.19	1.81
6 3/4	0	11800	11800	5-1/2"	20.00	L-80	BT&C	1.15	1.17	2.09
6 3/4	11800	22567	12400	5"	18.00	P-110	BT&C	1.67	1.69	53.70
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

Request Variance for 5-1/2" x 7-5/8" annular clearance. The portion that does not meet clearance will not be cemented

	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.	Y
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	N
Is well within the designated 4 string boundary.	N
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	N
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	N
Is 2nd string set 100' to 600' below the base of salt?	N
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	N
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	N
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	N
Is AC Report included?	Y

3. Cementing Program

Casing	# Sk	Wt. lb/gal	Yld ft ³ /sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	472	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	127	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate	1000	10.30	3.64	22.18		Lead: Tuned Light + LCM
	198	14.80	1.36	6.57	9.5	Tail: Class C + Retarder
Production	1385	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	49
Production	12423	25

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
9 7/8	13 5/8	5M	Annular	X	50% of working pressure
			Blind Ram		5M
			Pipe Ram	X	
			Double Ram	X	
			Other		
6 3/4	13 5/8	10M	Annular	X	50% of working pressure
			Blind Ram		10M
			Pipe Ram	X	
			Double Ram	X	
			Other		

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

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

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

5. Mud Program

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 1216'	FW Spud Mud	8.30 - 8.80	30-32	N/C
1216' to 12623'	Brine Diesel Emulsion	8.50 - 9.00	30-35	N/C
12623' to 22567'	Oil Based Mud	12.00 - 12.50	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.

The Brine Emulsion is completely saturated brine fluid that ties diesel into itself to lower the weight of the fluid. The drilling fluid is completely salt saturated.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
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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
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7. Drilling Conditions

Condition	
BH Pressure at deepest TVD	8060 psi
Abnormal Temperature	No

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

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

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

A multi-bowl wellhead system will be utilized.

After running the 10-3/4" surface casing, a 13 5/8" BOP/BOPE system with a minimum working pressure of 10000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 10000 psi test. Annular will be tested to 50% of 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 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 10000 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.

Geologic Prognosis



Well Information					Contact Information
Well Name: Dos Equis 11-14 Fed Com 62H		County: Lea		Jenny Blake	
API #:		State: New Mexico		Office: (432) 571-7800	
Dev/Exp: Development		Field:		Cell: (281) 639-4419	
					Email: Jenny.Blake@coterra.com
Surface Hole Information					Staci Mueller
Footages:	Section:	Township/Block:	Range:	Direction	
204' FNL / 1257' FEL	11	24S	32E	N-S	
Bottom Hole Information					Office: (432) 571-7898
Footages:	Section:	Township/Block:	Range:		Cell: (406) 794-2287
100' FSL / 450' FEL	14	24S	32E		Email: Staci.Mueller@coterra.com
Target Information					
Wolfcamp Y Sand		Landing TVD: 12,400'		TD TVD: 12,400'	
Generated By: Jenny Blake Date Generated: 2/10/2023					
Est. GL Elevation: 3628		Rig:			
Est. KB above GL 23					
Est. KB Elevation: 3713					
Horizon	TVD top	TVD base	SSTVD top	Thickness	Comments
Rustler	1145	1514	2483	369	Hardline 100' FSL/100' FNL & 280' FWL/280' FEL
Top Salt	1514	4904	2114	3390	
Base Salt/Lamar	4904	4953	-1276	49	
Top Delaware Sands/Bell Canyon	4953	5801	-1325	848	
Cherry Canyon	5801	7143	-2173	1342	
Brushy Canyon	7143	8545	-3515	1402	
Basal Brushy Canyon	8545	8840	-4917	295	
Bone Spring Lime	8840	8954	-5212	114	
Leonard	8954	9290	-5326	336	
Avalon	9290	9931	-5662	641	
1st Bone Spring Sand	9931	10498	-6303	567	
2nd Bone Spring Sand	10498	11029	-6870	531	
3rd Bone Spring Carb	11029	11855	-7401	826	
3rd Bone Spring Sand	11855	12250	-8227	395	
Wolfcamp	12250	12400	-8622	150	
Wolfcamp Y Sand Target	12400	N/A	-8687	N/A	
Potential Geologic / Drilling Hazards: N/A					
Type Log: 30025414700000					
Offset Injection Wells:					
Open Hole Logs: n/a					
Service Provider:					
Ops Contact:					
Sales Contact:					
Log Type:					
Mudlogging Vendor: n/a					



Coterra Dos Equis 11-14 Federal Com 62H Rev0 kFc 22Mar23 Proposal
Geodetic Report

Def Plan

Report Date:	March 22, 2023 - 07:53 PM (UTC 0)	Survey / DLS Computation:	Minimum Curvature / Lubinski
Client:	COTERRA	Vertical Section Azimuth:	179.670 °(GRID North)
Field:	NM Lea County (NAD 83)	Vertical Section Origin:	0.000 ft, 0.000 ft
Structure / Slot:	Coterra Dos Equis 11-14 Federal Com Pad (A)	TVD Reference Datum:	RKB
Well:	Dos Equis 11-14 Federal Com 62H	TVD Reference Elevation:	3626.500 ft above MSL
Borehole:	Dos Equis 11-14 Federal Com 62H	Seabed / Ground Elevation:	3603.500 ft above MSL
UBHI / API#:	Unknown / Unknown	Magnetic Declination:	6.287°
Survey Name:	Coterra Dos Equis 11-14 Federal Com 62H Rev0 kFc 22Mar23	Total Gravity Field Strength:	998.4382mgn (9.80665 Based)
Survey Date:	March 22, 2023	Gravity Model:	GARM
Tort / AHD / DDI / ERD Ratio:	108.998 ° / 11179.602 ft / 6.346 / 0.902	Total Magnetic Field Strength:	47499.224 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	Magnetic Dip Angle:	59.803°
Location Lat / Long:	32°14'19.93165"N , 103°38'27.16951"W	Declination Date:	March 22, 2023
Location Grid N/E Y/X:	N 451324.580 ftUS , E 755433.540 ftUS	Magnetic Declination Model:	HDGM 2023
CRS Grid Convergence Angle:	0.3694°	North Reference:	Grid North
Grid Scale Factor:	0.99996159	Grid Convergence Used:	0.3694°
Version / Patch:	2022.5.0.11	Total Corr Mag North->Grid North:	5.9175°
		Local Coord Referenced To:	Well Head

Comments	MD (ft)	Incl (°)	Azim (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (°)	Longitude (°)	DLS (°/100ft)	BR (°/100ft)	TR (°/100ft)
SHL [204° FNL, 1257° FEL]	0.00	0.00	81.95	0.00	-3,626.50	0.00	0.00	0.00	451,324.58	755,433.54	32.23886990	-103.64088042			
	100.00	0.00	81.95	100.00	-3,526.50	0.00	0.00	0.00	451,324.58	755,433.54	32.23886990	-103.64088042	0.00	0.00	0.00
	200.00	0.00	81.95	200.00	-3,426.50	0.00	0.00	0.00	451,324.58	755,433.54	32.23886990	-103.64088042	0.00	0.00	0.00
	300.00	0.00	81.95	300.00	-3,326.50	0.00	0.00	0.00	451,324.58	755,433.54	32.23886990	-103.64088042	0.00	0.00	0.00
	400.00	0.00	81.95	400.00	-3,226.50	0.00	0.00	0.00	451,324.58	755,433.54	32.23886990	-103.64088042	0.00	0.00	0.00
	500.00	0.00	81.95	500.00	-3,126.50	0.00	0.00	0.00	451,324.58	755,433.54	32.23886990	-103.64088042	0.00	0.00	0.00
	600.00	0.00	81.95	600.00	-3,026.50	0.00	0.00	0.00	451,324.58	755,433.54	32.23886990	-103.64088042	0.00	0.00	0.00
	700.00	0.00	81.95	700.00	-2,926.50	0.00	0.00	0.00	451,324.58	755,433.54	32.23886990	-103.64088042	0.00	0.00	0.00
	800.00	0.00	81.95	800.00	-2,826.50	0.00	0.00	0.00	451,324.58	755,433.54	32.23886990	-103.64088042	0.00	0.00	0.00
	900.00	0.00	81.95	900.00	-2,726.50	0.00	0.00	0.00	451,324.58	755,433.54	32.23886990	-103.64088042	0.00	0.00	0.00
	1,000.00	0.00	81.95	1,000.00	-2,626.50	0.00	0.00	0.00	451,324.58	755,433.54	32.23886990	-103.64088042	0.00	0.00	0.00
	1,100.00	0.00	81.95	1,100.00	-2,526.50	0.00	0.00	0.00	451,324.58	755,433.54	32.23886990	-103.64088042	0.00	0.00	0.00
	1,145.00	0.00	81.95	1,145.00	-2,481.50	0.00	0.00	0.00	451,324.58	755,433.54	32.23886990	-103.64088042	0.00	0.00	0.00
	1,200.00	0.00	81.95	1,200.00	-2,426.50	0.00	0.00	0.00	451,324.58	755,433.54	32.23886990	-103.64088042	0.00	0.00	0.00
	1,300.00	0.00	81.95	1,300.00	-2,326.50	0.00	0.00	0.00	451,324.58	755,433.54	32.23886990	-103.64088042	0.00	0.00	0.00
Rustler	1,400.00	0.00	81.95	1,400.00	-2,226.50	0.00	0.00	0.00	451,324.58	755,433.54	32.23886990	-103.64088042	0.00	0.00	0.00
	1,500.00	0.00	81.95	1,500.00	-2,126.50	0.00	0.00	0.00	451,324.58	755,433.54	32.23886990	-103.64088042	0.00	0.00	0.00
	1,514.00	0.00	81.95	1,514.00	-2,112.50	0.00	0.00	0.00	451,324.58	755,433.54	32.23886990	-103.64088042	0.00	0.00	0.00
	1,600.00	0.00	81.95	1,600.00	-2,026.50	0.00	0.00	0.00	451,324.58	755,433.54	32.23886990	-103.64088042	0.00	0.00	0.00
	1,700.00	0.00	81.95	1,700.00	-1,926.50	0.00	0.00	0.00	451,324.58	755,433.54	32.23886990	-103.64088042	0.00	0.00	0.00
Nudge, Build 2°/100ft	1,800.00	0.00	81.95	1,800.00	-1,826.50	0.00	0.00	0.00	451,324.58	755,433.54	32.23886990	-103.64088042	0.00	0.00	0.00
	1,900.00	2.00	81.95	1,899.98	-1,726.52	-0.23	0.24	1.73	451,324.82	755,435.27	32.23887054	-103.64087483	2.00	2.00	0.00
	2,000.00	4.00	81.95	1,999.84	-1,626.66	-0.94	0.98	6.91	451,325.56	755,440.45	32.23887247	-103.64085805	2.00	2.00	0.00
Hold	2,100.00	6.00	81.95	2,099.45	-1,527.05	-2.11	2.20	15.54	451,326.78	755,449.08	32.23887567	-103.64083012	2.00	2.00	0.00
	2,200.00	8.00	81.95	2,198.70	-1,427.80	-3.75	3.91	27.61	451,328.49	755,461.14	32.23888015	-103.64079106	2.00	2.00	0.00
	2,274.96	9.50	81.95	2,272.78	-1,353.72	-5.28	5.50	38.89	451,330.08	755,472.43	32.23888434	-103.64075452	2.00	2.00	0.00
	2,300.00	9.50	81.95	2,297.48	-1,329.02	-5.83	6.08	42.99	451,330.66	755,476.52	32.23888586	-103.64074128	0.00	0.00	0.00
	2,400.00	9.50	81.95	2,396.11	-1,230.39	-8.05	8.39	59.33	451,332.97	755,492.86	32.23889192	-103.64068838	0.00	0.00	0.00
	2,500.00	9.50	81.95	2,494.74	-1,131.76	-10.27	10.70	75.67	451,335.28	755,509.20	32.23889799	-103.64063549	0.00	0.00	0.00
	2,600.00	9.50	81.95	2,593.37	-1,033.13	-12.49	13.02	92.01	451,337.60	755,525.54	32.23890405	-103.64058260	0.00	0.00	0.00
	2,700.00	9.50	81.95	2,692.00	-934.50	-14.70	15.33	108.35	451,339.91	755,541.88	32.23891011	-103.64052970	0.00	0.00	0.00
	2,800.00	9.50	81.95	2,790.63	-835.87	-16.92	17.64	124.69	451,342.22	755,558.22	32.23891618	-103.64047681	0.00	0.00	0.00
	2,900.00	9.50	81.95	2,889.26	-737.24	-19.14	19.95	141.03	451,344.53	755,574.56	32.23892224	-103.64042392	0.00	0.00	0.00
	3,000.00	9.50	81.95	2,987.89	-638.61	-21.36	22.26	157.37	451,346.84	755,590.90	32.23892831	-103.64037102	0.00	0.00	0.00
	3,100.00	9.50	81.95	3,086.51	-539.99	-23.57	24.58	173.71	451,349.15	755,607.24	32.23893437	-103.64031813	0.00	0.00	0.00
	3,200.00	9.50	81.95	3,185.14	-441.36	-25.79	26.89	190.05	451,351.47	755,623.58	32.23894044	-103.64026524	0.00	0.00	0.00
	3,300.00	9.50	81.95	3,283.77	-342.73	-28.01	29.20	206.39	451,353.78	755,639.92	32.23894650	-103.64021234	0.00	0.00	0.00
Base Salt/Lamar Delaware Sands/Bell Canyon	3,400.00	9.50	81.95	3,382.40	-244.10	-30.23	31.51	222.73	451,356.09	755,656.26	32.23895256	-103.64015945	0.00	0.00	0.00
	3,500.00	9.50	81.95	3,481.03	-145.47	-32.44	33.82	239.07	451,358.40	755,672.60	32.23895863	-103.64010656	0.00	0.00	0.00
	3,600.00	9.50	81.95	3,579.66	-46.84	-34.66	36.13	255.41	451,360.71	755,688.94	32.23896469	-103.64005366	0.00	0.00	0.00
	3,700.00	9.50	81.95	3,678.29	51.79	-36.88	38.45	271.75	451,363.02	755,705.28	32.23897076	-103.64000077	0.00	0.00	0.00
	3,800.00	9.50	81.95	3,776.92	150.42	-39.10	40.76	288.09	451,365.34	755,721.62	32.23897682	-103.63994788	0.00	0.00	0.00
	3,900.00	9.50	81.95	3,875.54	249.04	-41.32	43.07	304.43	451,367.65	755,737.96	32.23898288	-103.63989499	0.00	0.00	0.00
	4,000.00	9.50	81.95	3,974.17	347.67	-43.53	45.38	320.78	451,369.96	755,754.30	32.23898895	-103.63984209	0.00	0.00	0.00
	4,100.00	9.50	81.95	4,072.80	446.30	-45.75	47.69	337.12	451,372.27	755,770.64	32.23899501	-103.63978920	0.00	0.00	0.00
	4,200.00	9.50	81.95	4,171.43	544.93	-47.97	50.00	353.46	451,374.58	755,786.98	32.23900108	-103.63973631	0.00	0.00	0.00
	4,300.00	9.50	81.95	4,270.06	643.56	-50.19	52.32	369.80	451,376.89	755,803.32	32.23900714	-103.63968341	0.00	0.00	0.00
	4,400.00	9.50	81.95	4,368.69	742.19	-52.40	54.63	386.14	451,379.21	755,819.66	32.23901320	-103.63963052	0.00	0.00	0.00
	4,500.00	9.50	81.95	4,467.32	840.82	-54.62	56.94	402.48	451,381.52	755,836.00	32.23901927	-103.63957763	0.00	0.00	0.00
	4,600.00	9.50	81.95	4,565.95	939.45	-56.84	59.25	418.82	451,383.83	755,852.34	32.23902533	-103.63952473	0.00	0.00	0.00
	4,700.00	9.50	81.95	4,664.58	1,038.08	-59.06	61.56	435.16	451,386.14	755,868.68	32.23903140	-103.63947184	0.00	0.00	0.00
	4,800.00	9.50	81.95	4,763.20	1,136.70	-61.27	63.88	451.50	451,388.45	755,885.02	32.23903746	-103.63941895	0.00	0.00	0.00
Cherry Canyon	4,900.00	9.50	81.95	4,861.83	1,235.33	-63.49	66.19	467.84	451,390.76	755,901.36	32.23904352	-103.63936605	0.00	0.00	0.00
	4,942.75	9.50	81.95	4,904.00	1,277.50	-64.44	67.18	474.83	451,391.75	755,908.35	32.23904612	-103.63934344	0.00	0.00	0.00
	4,992.43	9.50	81.95	4,953.00	1,326.50	-65.54	68.32	482.94	451,392.90	755,916.47	32.23904913	-103.63931716	0.00	0.00	0.00
	5,000.00	9.50	81.95	4,960.46	1,333.96	-65.71	68.50	484.18	4515						

Comments	MD (ft)	Incl (°)	Azim (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (°)	Longitude (°)	DLS (°/100ft)	BR (°/100ft)	TR (°/100ft)
Avalon	9,300.00	0.00	81.95	9,234.53	5,608.03	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	9,355.47	0.00	81.95	9,290.00	5,663.50	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	9,400.00	0.00	81.95	9,334.53	5,708.03	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	9,500.00	0.00	81.95	9,434.53	5,808.03	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	9,600.00	0.00	81.95	9,534.53	5,908.03	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	9,700.00	0.00	81.95	9,634.53	6,008.03	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	9,800.00	0.00	81.95	9,734.53	6,108.03	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	9,900.00	0.00	81.95	9,834.53	6,208.03	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
1st BS Sand	9,996.47	0.00	81.95	9,931.00	6,304.50	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	10,000.00	0.00	81.95	9,934.53	6,308.03	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	10,100.00	0.00	81.95	10,034.53	6,408.03	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	10,200.00	0.00	81.95	10,134.53	6,508.03	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	10,300.00	0.00	81.95	10,234.53	6,608.03	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	10,400.00	0.00	81.95	10,334.53	6,708.03	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	10,500.00	0.00	81.95	10,434.53	6,808.03	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	10,563.47	0.00	81.95	10,498.00	6,871.50	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
2nd BS Sand	10,600.00	0.00	81.95	10,534.53	6,908.03	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	10,700.00	0.00	81.95	10,634.53	7,008.03	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	10,800.00	0.00	81.95	10,734.53	7,108.03	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	10,900.00	0.00	81.95	10,834.53	7,208.03	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	11,000.00	0.00	81.95	10,934.53	7,308.03	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	11,094.47	0.00	81.95	11,029.00	7,402.50	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	11,100.00	0.00	81.95	11,034.53	7,408.03	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	11,200.00	0.00	81.95	11,134.53	7,508.03	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
3rd BS Carb	11,300.00	0.00	81.95	11,234.53	7,608.03	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	11,400.00	0.00	81.95	11,334.53	7,708.03	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	11,500.00	0.00	81.95	11,434.53	7,808.03	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	11,600.00	0.00	81.95	11,534.53	7,908.03	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	11,700.00	0.00	81.95	11,634.53	8,008.03	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	11,800.00	0.00	81.95	11,734.53	8,108.03	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	11,872.99	0.00	81.95	11,807.52	8,181.02	-109.42	114.06	806.26	451,438.64	756,239.77	32.23916910	-103.63827060	0.00	0.00	0.00
	11,900.00	2.70	179.67	11,834.52	8,208.02	-108.78	113.43	806.27	451,438.00	756,239.77	32.23916736	-103.63827060	10.00	10.00	0.00
3rd BS Sand	11,920.53	4.75	179.67	11,855.00	8,228.50	-107.45	112.09	806.27	451,436.67	756,239.78	32.23916369	-103.63827060	10.00	10.00	0.00
	12,000.00	12.70	179.67	11,933.49	8,306.99	-95.40	100.05	806.34	451,424.62	756,239.85	32.23913057	-103.63827063	10.00	10.00	0.00
	12,100.00	22.70	179.67	12,028.63	8,402.13	-65.03	69.68	806.52	451,394.26	756,240.03	32.23904711	-103.63827070	10.00	10.00	0.00
	12,200.00	32.70	179.67	12,117.06	8,490.56	-18.61	23.26	806.79	451,347.83	756,240.29	32.23891950	-103.63827081	10.00	10.00	0.00
Wolfcamp	12,300.00	42.70	179.67	12,196.08	8,569.58	42.47	-37.82	807.14	451,286.76	756,240.64	32.23875162	-103.63827095	10.00	10.00	0.00
	12,378.58	50.56	179.67	12,250.00	8,623.50	99.54	-94.90	807.47	451,229.69	756,240.97	32.23859474	-103.63827108	10.00	10.00	0.00
	12,400.00	52.70	179.67	12,263.30	8,636.80	116.34	-111.69	807.56	451,212.90	756,241.07	32.23854858	-103.63827112	10.00	10.00	0.00
	12,500.00	62.70	179.67	12,316.66	8,690.16	200.76	-196.11	808.05	451,128.48	756,241.56	32.23831654	-103.63827131	10.00	10.00	0.00
Build 5"/100ft	12,600.00	72.70	179.67	12,354.56	8,728.06	293.16	-288.51	808.58	451,036.08	756,242.09	32.23806256	-103.63827153	10.00	10.00	0.00
	12,622.99	75.00	179.67	12,360.95	8,734.45	315.25	-310.59	808.71	451,014.00	756,242.22	32.23800185	-103.63827158	10.00	10.00	0.00
	12,700.00	7													

Comments	MD (ft)	Incl (°)	Azim (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (°)	Longitude (°)	DLS ("/100ft)	BR ("/100ft)	TR ("/100ft)
Pool NMNM0553642 exit to NMI	21,346.00	90.00	179.67	12,400.00	8,773.50	9,034.84	-9,030.04	858.91	442,294.91	756,292.41	32.21403476	-103.63829166	0.00	0.00	0.00
	21,400.00	90.00	179.67	12,400.00	8,773.50	9,088.84	-9,084.04	859.22	442,240.91	756,292.72	32.21388633	-103.63829179	0.00	0.00	0.00
	21,500.00	90.00	179.67	12,400.00	8,773.50	9,188.84	-9,184.04	859.79	442,140.91	756,293.30	32.21361147	-103.63829202	0.00	0.00	0.00
	21,600.00	90.00	179.67	12,400.00	8,773.50	9,288.84	-9,284.04	860.37	442,040.92	756,293.87	32.21333660	-103.63829224	0.00	0.00	0.00
	21,700.00	90.00	179.67	12,400.00	8,773.50	9,388.84	-9,384.03	860.94	441,940.93	756,294.45	32.21306173	-103.63829247	0.00	0.00	0.00
	21,800.00	90.00	179.67	12,400.00	8,773.50	9,488.84	-9,484.03	861.52	441,840.93	756,295.02	32.21278687	-103.63829270	0.00	0.00	0.00
	21,900.00	90.00	179.67	12,400.00	8,773.50	9,588.84	-9,584.03	862.09	441,740.94	756,295.60	32.21251200	-103.63829293	0.00	0.00	0.00
	22,000.00	90.00	179.67	12,400.00	8,773.50	9,688.84	-9,684.03	862.67	441,640.94	756,296.18	32.21223714	-103.63829316	0.00	0.00	0.00
	22,100.00	90.00	179.67	12,400.00	8,773.50	9,788.84	-9,784.03	863.25	441,540.95	756,296.75	32.21196227	-103.63829339	0.00	0.00	0.00
	22,200.00	90.00	179.67	12,400.00	8,773.50	9,888.84	-9,884.03	863.82	441,440.95	756,297.33	32.21168741	-103.63829362	0.00	0.00	0.00
	22,300.00	90.00	179.67	12,400.00	8,773.50	9,988.84	-9,984.02	864.40	441,340.96	756,297.90	32.21141254	-103.63829385	0.00	0.00	0.00
	22,400.00	90.00	179.67	12,400.00	8,773.50	10,088.84	-10,084.02	864.97	441,240.97	756,298.48	32.21113768	-103.63829408	0.00	0.00	0.00
	22,500.00	90.00	179.67	12,400.00	8,773.50	10,188.84	-10,184.02	865.55	441,140.97	756,299.05	32.21086281	-103.63829431	0.00	0.00	0.00
	22,567.05	90.00	179.67	12,400.00	8,773.50	10,255.89	-10,251.07	865.93	441,073.92	756,299.44	32.21067850	-103.63829446	0.00	0.00	0.00
Dos Equis 11-14 Federal Com 6:															

Survey Type: Def Plan

Survey Error Model: ISCWSA0 3 - D 95 % Confidence 2.7955 sigma
Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	11,800.000	1/100.000	30.000			A001Mb_MWD	Dos Equis 11-14 Federal Com 62H / Coterra Dos Equis 11-14 Federal Com 62H Rev0 kFc 22Mar23
	1	11,800.000	22,553.906	1/100.000	30.000			A008Mb_MWD+IFR1+MS	Dos Equis 11-14 Federal Com 62H / Coterra Dos Equis 11-14 Federal Com 62H Rev0 kFc 22Mar23

Upon approval of the Application for Permit to Drill (APD) the following surface use plan of operations will be followed and carried out. The surface use plan outlines the proposed surface disturbance. If any other disturbance is needed after the APD is approved, a BLM sundry notice or right of way application will be submitted for approval prior to any additional surface disturbance.

Existing Roads

- Directions to location - Exhibit A.
- Public access route - Exhibit B.
- Existing access road for the proposed project. Please see Exhibit B and C.
- Cimarex Energy will:
 - Improve and/or maintain existing road(s) condition the same as or better than before the operations began.
 - Provide plans for improvement and /or maintenance of existing roads if requested.
 - Repair or replace damaged or deteriorated structures as needed. Including cattle guards and culverts.
 - Prevent and abate fugitive dust as needed, whether created by vehicular traffic, equipment operations, or other events.
 - Obtain written BLM approval prior to the application of surfactants, binding agents, or other dust suppression chemicals on the roadways.
- The maximum width of the driving surface will be 18'. The road will be crowned and ditched with a 2% slope from the tip of the crown to the edge of the driving surface. The ditches will be 1' deep with 3:1 slopes. The driving surface will be made of 6" rolled and compacted caliche.

New or Reconstructed Access Roads

No new road to be constructed to E2E2 well pad location existing ROW approved in NM-13174.

Well Radius Map

Please see Exhibit E for wells within one mile or proposed well SHL and BHL.

Proposed or Existing Production Facility

No new facility will be constructed for this project if the well is productive.

- Dos Equis 11-14 Fed Com East Zone 2 CTB - Exhibit F
 - Direction to facility
 - Facility pad location layout and cut and fill
 - Facility pad archeological boundary
 - Facility pad flowline corridor

Gas Pipeline Specifications

- No pipeline proposed. A 3rd party will be laying a gas pipeline to the well. Custody transfer meter will be on pad.

Salt Water Disposal Specifications

- No new SWD pipelines are required for this project.

Power Lines

- 141.87 feet of power line will be constructed from existing overhead power line to E2E2 pad ROW approved in NM-130410A.

Well Site Location

- Proposed well pad/location layout - Exhibit J.
- Proposed Rig layout - Exhibit K
 - The rig layout, including V-door and flare line may change depending on rig availability. The pad dimensions and orientation will remain the same. No additional disturbance is anticipated if a rig layout change is necessary to accommodate the drilling rig. If additional disturbance is required a sundry notice will be submitted to the BLM for approval.
 - Mud pits in the closed circulation system will be steel pits and the cuttings will be stored in the steel containment pits.
 - Cuttings will be stored in steel pits until they are hauled to a state-approved disposal facility.
- Archeological boundary - Exhibit L
- Multi well pad: Dos Equis 11-14 Fed Com 8H, 62H-74H
- Pad Size: 500' x 560'
- Construction Material
 - If possible, native caliche will be obtained from the excavation of drill site. The primary way of obtaining caliche will be by "turning over" the location. This means caliche will be obtained from the actual well site. A caliche permit will be obtained from BLM prior to pushing up any caliche. 2,400 cu yds is the max amount of caliche needed for pad and roads. Amount will vary for each pad. The procedure below has been approved by BLM personnel:
 - The top 6 inches of topsoil is pushed off and stockpiled along the side of the location.
 - An approximate 120' x 120' area is used within the proposed well site to remove caliche.
 - Subsoil is removed and piled alongside the 120' x 120' area within the pad site.
 - When caliche is found, material will be stockpiled within the pad site to build the location and road.
 - Then subsoil is pushed back in the hole and caliche is spread accordingly across entire location and road.
 - Once well is drilled, the stockpiled top soil will be used for interim reclamation and spread along areas where caliche is picked up and the location size is reduced. Neither caliche nor subsoil will be stockpiled outside of the well pad. Topsoil will be stockpiled along the edge of the pad as depicted in Exhibit J - Layout Diagram.
 - In the event that no caliche is found onsite, caliche will be hauled in from BLM-approved caliche pit in Sec 07-24S-33E or Sec 20-23S-33E.
 - Mud pits in the closed circulation system will be steel pits and the cuttings will be stored in steel containment pits.
- Cuttings will be stored in steel pits until they are hauled to a state-approved disposal facility.
- If the well is a producer, those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements. Exhibit P: Interim Reclamation Diagram.
- There are no known dwellings within 1.5 miles of this location.

Bulk Line Pipelines

All proposed pipelines will be constructed in a 70' ROW corridor.

- Bulk lines
 - New bulk lines to be constructed to service the wells, amendment to NM-145455 forthcoming.
 - 8- 12" Buried steel bulk lines.
 - Length: 3,426'.

Water Resources

- A temporary surface pipeline will be used to transport water for completion operations.
 - The temporary surface line will carry fresh and/or treated produced water.
- 10" or 12" lay-flat surface pipeline.
- Temporary pipeline length: 5,810'.
- Operating pressure: <140 psi.
- The temporary surface line shall be laid no more than 10 feet from the edge of the existing disturbance.
- Please see Exhibit O for proposed route.

Methods of Handling Waste

- Drilling fluids, produced oil, and water from the well during drilling and completion operations will be stored safely and disposed of properly in a NMOCD approved disposal facility.
- Garbage and trash produced during drilling and completion operations will be collected in a trash container and disposed of properly at a state approved disposal facility. All trash on and around well site will be collected for disposal.
- Human waste and grey water will be contained and disposed of properly at a state approved disposal site.
- After drilling and completion operations, trash, chemicals, salts, frac sand and other waste will be removed and disposed of properly at a state approved disposal site.
- The well will be drilled utilizing a closed loop system. Drill cuttings will be properly disposed of into steel tanks and taken to an NMOCD approved disposal facility.

Waste Minimization Plan

See Gas Capture Plan.

Ancillary Facilities

No camps or airstrips to be constructed.

Interim and Final Reclamation

- Rehabilitation of the location will start in a timely manner after all proposed drilling wells have been drilled from the pad or if drilling operations have ceased as outlined below:
 - No approved or pending drill permits for wells located on the drill pad
 - No drilling activity for 5 years from the drill pad
- Surfacing materials will be removed and returned to a mineral pit or recycled to repair or build roads and well pads.
- Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion. These may need to be modified in certain circumstances to prevent inundation of the location's pad and surface facilities. After the area has been shaped and contoured, topsoil from the spoil pile will be placed over the disturbed area to the extent possible. Revegetation procedures will comply with BLM standards.
- Exhibit P illustrates the proposed Surface Reclamation plans after cessation of drilling operations as outlined above.
 - The areas of the location not essential to production facilities and operations will be reclaimed and seeded per BLM requirements.
- Operator will amend the surface reclamation plan if well is a dry hole and/or a single well pad.

Surface Ownership

- The wellsite is on surface owned by BLM.
- A copy of Surface Use Agreement has been given to the surface owner.
- The land is used mainly for farming, cattle ranching, recreational use, and oil and gas production.

Cultural Resource Survey - Archeology

- Cultural Resources Survey will be conducted for the entire project as proposed in the APD and submitted to the BLM for review and approval.

On Site Notes and Information

Onsite Date: 8/29/2017

BLM Personnel on site: Jesse Bassett

Cimarex Energy personnel on site: Barry Hunt

Pertinent information from onsite:

Moved well 56' west and 54' south so as to avoid gas pipelines. V-Door West. Top soil east. Interim reclamation: All sides. Access road at existing road at SE corner. Cut off NE corner of pad and only 130 ft. to the south. Pad size= 500' (E/W) x 510' (N/S). Flowlines from SW corner, south and west, to battery.

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Cimarex
LEASE NO.:	NMNM02889
LOCATION:	Section 11, T.24 S, R.32 E., NMPM
COUNTY:	Lea County, New Mexico
WELL NAME & NO.:	Dos Equis 11-14 Fed Com 62H
SURFACE HOLE FOOTAGE:	204'/N & 1257'/E
BOTTOM HOLE FOOTAGE:	100'/S & 450'/E

*Changes approved through engineering via **Sundry 2727949** on 10-16-2023. Any previous COAs not addressed within the updated COAs still apply.*

COA

H₂S	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Potash / WIPP	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P	<input type="checkbox"/> WIPP
Cave / Karst	<input checked="" type="radio"/> Low	<input type="radio"/> Medium	<input type="radio"/> High	<input type="radio"/> Critical
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both	<input type="radio"/> Diverter
Cementing	<input type="checkbox"/> Primary Squeeze	<input type="checkbox"/> Cont. Squeeze	<input type="checkbox"/> EchoMeter	<input type="checkbox"/> DV Tool
Special Req	<input type="checkbox"/> Break Testing	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit
Variance	<input checked="" type="checkbox"/> Flex Hose	<input type="checkbox"/> Casing Clearance	<input type="checkbox"/> Pilot Hole	<input type="checkbox"/> Capitan Reef
Variance	<input type="checkbox"/> Four-String	<input checked="" type="checkbox"/> Offline Cementing	<input checked="" type="checkbox"/> Fluid-Filled	<input type="checkbox"/> Open Annulus
<input type="checkbox"/> Batch APD / Sundry				

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H₂S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware** formation. As a result, 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, please provide measured values and formations to the BLM.

B. CASING

1. The **10-3/4** inch surface casing shall be set at approximately **1250** 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.
 - 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.

Intermediate casing must be kept 1/3rd fluid filled to meet BLM minimum collapse requirement.

2. The minimum required fill of cement behind the **7-5/8** inch intermediate casing is:
 - Cement to surface. If cement does not circulate see B.1.a, c-d above.

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

3. The minimum required fill of cement behind the **5-1/2 x 5**-inch production casing is:
 - Cement should tie-back at least **200 feet** into previous casing string. 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 **10,000 (10M) psi**. **Variance is approved to use a 5000 (5M) Annular which shall be tested to 5000 (5M) psi.**
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - e. Whenever any seal subject to test pressure is broken, all the tests in 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.

Offline Cementing

Contact the BLM prior to the commencement of any offline cementing procedure.

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
(575) 361-2822

☒ Lea County

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after

- installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
- b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per **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 10/16/2023

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 285072

CONDITIONS

Operator: CIMAREX ENERGY CO. 6001 Deauville Blvd Midland, TX 79706	OGRID: 215099
	Action Number: 285072
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	None	12/6/2023